Town of Paradise Valley

6401 E Lincoln Dr
Paradise Valley, AZ 85253

Meeting Notice and Agenda

Town Council

Mayor Mark Stanton
Vice Mayor Ellen Andeen-Keller
Councilmember Christine Labelle
Councilmember Karen Liepmann
Councilmember Scott Moore
Councilmember Julie Pace
Councilmember Anna Thomasson

Thursday, September 11, 2025 | **3:00 PM** | **Council Chambers**

Amended

1. CALL TO ORDER / ROLL CALL

Notice is hereby given that members of the Town Council will attend either in person or by electronic conference system, pursuant to A.R.S. §38-431(4).

2. STUDY SESSION ITEMS - These items will be discussed at 3:00 PM

The Study Session is open to the public for viewing, and the following items are scheduled for discussion among the Council, Staff, and their designees. The Town Council will be briefed by staff and other Town representatives. There will be no votes and no final action taken on discussion items. The Council may give direction to staff and request that items be scheduled for consideration and final action at a later date. The order of discussion items and the estimated time scheduled to hear each item are subject to change.

25-199 **Discussion of Facilities Condition Assessment Results**
45 Minutes

Staff Contact: Robert Deserano 480-348-3589

25-202 **Discussion of Potential Code Amendments Regarding Large Vehicle Parking, Group Homes, and Noise**
30 Minutes

Staff Contact: Chad Weaver, 480-348-3522

3. EXECUTIVE SESSION - These items will be discussed following the Study Session

25-186 Discussion or consultation with the Town Attorney in order to consider the Town Council's position and instruct the Town Attorney regarding the Town's position regarding contracts that are subject to pending or contemplated litigation or in settlement discussions conducted in order to avoid or resolve litigation related to Five Star Development project as authorized by A.R.S. §38-431.03(A)(4); and discussion and consultation with the Town Attorney for legal advice regarding the development agreement and associated agreements with Five Star Development as authorized by A.R.S. §38-431.03(A)(3).

25-192 Discussion or consultation with the Town Attorney for legal advice regarding pending or contemplated legislation as authorized by A.R.S. §38 431.03(A)(3); and discussion or consultation with the Town Attorney in order to consider the Town Council's position and instruct its attorneys regarding potential impacts of legislation on existing contracts as authorized by A.R.S. §38-431.03(A)(4).

25-187 Discussion or consultation with the Town Attorney, as authorized by A.R.S. §38-431.03(A)(4), in order to consider the Town's position and instruct legal counsel regarding the contract between the Town of Paradise Valley and the United States Postal Service; and discussion or consultation with the Town Attorney, as authorized by A.R.S. §38-431.03(A)(3) for legal advice relating to the contract.

25-188 The Town Council may go into executive session at one or more times during the meeting as needed to confer with the Town Attorney for legal advice regarding any of the items listed on the agenda as authorized by A.R.S. §38-431.03(A)(3).

4. BREAK

5. RECONVENE FOR REGULAR MEETING 6:00 PM

6. ROLL CALL

7. PLEDGE OF ALLEGIANCE*

8. PRESENTATIONS*

25-193 **Proclaim September 2025 as Ovarian Cancer Awareness Month**

Recommendation: Proclaim September 2025 as Ovarian Cancer Awareness Month

Staff Contact: Duncan Miller, 480-348-3610

25-196 **Planning Commission Update**

Staff Contact: Duncan Miller, 480-348-3610

25-197 **Board of Adjustment Update**

Staff Contact: Duncan Miller, 480-348-3610

9. CALL TO THE PUBLIC

Citizens may address the Council on any matter not on the agenda or any item on the Study Session (Section 3 on the agenda). In conformance with Open Meeting Laws, Council may not discuss or take action on this matter at this Council meeting, but may respond to criticism, ask that staff review a matter raised, or ask that it be placed on a future agenda. Those making comments shall limit their remarks to three (3) minutes. Please fill out a Speaker Request form prior to addressing the Council.

10. CONSENT AGENDA

All items on the Consent Agenda are considered by the Town Council to be routine and will be enacted by a single motion. There will be no separate discussion of these items. If a member of the Council or public desires discussion on any item it will be removed from the Consent Agenda and considered separately. Please fill out a Speaker Request form prior to the start of the meeting and indicate which item you would like to address.

25-190 **Minutes of Town Council Meeting June 12, 2025**

25-191 **Minutes of Town Council Special Meeting August 25, 2025**

25-194 **Discussion and Possible Action to Approve the Second Amendment to CON-24-047-PBW Landscape and Maintenance Services**

Recommendation: Authorize the Town Manager to execute the Second Amendment to the Landscape Maintenance Agreement with King's Landscape and Maintenance LLC increasing the contract amount from $41,196.33 to $111,489.03.

Staff Contact: Chris Martinez, 480-348-352

25-201 **Discussion and Possible Action to Ratify and Approve Participation in the Purdue Direct Settlement and Approve the Town's Participation in Future National Opioid Settlements, Including the Proposed Secondary Opioid Manufacturers Settlement Agreement, and Authorize the Mayor or Town Manager to Complete and Execute the Necessary Participation and Release Forms, Waiving Future Claims Against Each Defendant Related to the National Opioid Epidemic in Order to Participate in the National Settlements.**

Recommendation: Ratify and approve participation in the Purdue Direct Settlement and approve the Town's participation in future national opioid settlements, including the Secondary Opioid Manufacturers Settlement Agreement, and authorize the Mayor or Town Manager to complete and execute the necessary participation and release Forms.

Staff Contact: Deborah Robberson, 480-348-3609

11. PUBLIC HEARINGS

The Town Council may hear public comments and take action on any of these items. Citizens may address the Council regarding any or all of these items. Those making comments are limited to three (3) minutes. Speakers may not yield their time to others. Please fill out a Speaker Request form prior to the start of the meeting and indicate which item you would like to address.

12. ACTION ITEMS

The Town Council May Take Action on This Item. Citizens may address the Council regarding any or all of these items. Those making comments are limited to three (3) minutes. Speakers may not yield their time to others. Please fill out a Speaker Request form prior to the start of the meeting and indicate which item you would like to address.

25-195 **Discussion and Possible Action to Authorize the Town Manager to Execute a Linking Agreement for Cooperative Purchase with Motorola Solutions for Police Radio Equipment and Services**

Recommendation: Authorize the Town Manager to execute a linking agreement for the purchase of Police Department radio equipment and services from Motorola Solutions in an amount not to exceed $390,500.

Staff Contact: Freeman Carney, 480-948-7410

13. FUTURE AGENDA ITEMS

The Town Council May Take Action on This Item. The Mayor or Town Manager will present the long range meeting agenda schedule and announce major topics for the following meeting. Any member of the Council may move to have the Town Manager add a new agenda item to a future agenda. Upon concurrence of four more Members, which may include the Mayor, the item shall be added to the list of future agenda items and scheduled by the Town Manager as a future agenda item within 60 days, or longer with Council approval.

25-189 **Consideration of Requests for Future Agenda Items**

Recommendation: Review the current list of pending agenda topics.

Staff Contact: Town Manager, 480-348-3690

14. MAYOR / COUNCIL / MANAGER COMMENTS

The Mayor, Council or Town Manager may provide a summary of current events. In conformance with Open Meeting Laws, Council may not have discussion or take action at this Council meeting on any matter discussed during the summary.

15. ADJOURN

AGENDA IS SUBJECT TO CHANGE

**Notice is hereby given that pursuant to A.R.S. §1-602.A.9, subject to certain specified statutory exceptions, parents have a right to consent before the State or any of its political subdivisions make a video or audio recording of a minor child. Meetings of the Town Council are audio and/or video recorded, and, as a result, proceedings in which children are present may be subject to such recording. Parents in order to exercise their rights may either file written consent with the Town Clerk to such recording, or take personal action to ensure that their child or children are not present when a recording may be made. If a child is present at the time a recording is made, the Town will assume that the rights afforded parents pursuant to A.R.S. §1-602.A.9 have been waived.*

The Town of Paradise Valley endeavors to make all public meetings accessible to persons with disabilities. With 72 hours advance notice, special assistance can also be provided for disabled persons at public meetings. Please call 480-948-7411 (voice) or 480-483-1811 (TDD) to request accommodation to participate in the Town Council meeting.

Town of Paradise Valley

6401 E Lincoln Dr
Paradise Valley, AZ 85253

Action Report

File #: 25-199

AGENDA TITLE:
Discussion of Facilities Condition Assessment Results

STAFF CONTACT:

TOWN
Of
PARADISE VALLEY

STAFF REPORT

TO: **Mayor Mark Stanton and Town Council Members**

FROM: **Andrew B. Ching, Town Manager**
Isaac Chavira, Public Works Director
Robert Deserano, Public Works Superintendent

DATE: **September 11, 2025**

DEPARTMENT: Public Works
Robert Deserano 480-348-3589

AGENDA TITLE:
Discussion of Facilities Condition Assessment Results

SUMMARY STATEMENT:
On October 10, 2024 and December 12, 2024, the Town Council was briefed on Comprehensive Facilities Conditions Assessments (FCA). The purpose of an FCA is to identify the size and scope of the facilities capital re-investment and deferred maintenance needs, as well as prioritize those needs. Assessments enable the Town to plan for the future by having an appropriate process and tools for addressing facility needs, as well as developing an appropriate phase-out strategy (by priority). On April 24, 2025, the Council discussed a proposed scope of work and authorized staff to issue a request for proposals.

On May 8, 2025, the Council awarded a contract to Bureau Veritas to conduct a rigorous evaluation of Town facilities and produce an accurate analysis that identifies, describes, and estimates facility maintenance and enhancement needs.

Representatives from Bureau Veritas will be present to report on their findings

ATTACHMENT(S):
A. Staff Report
B. Presentation
C. Communications Building FCA
D. Ambulance Building (The House) FCA
E. Fire Station 91 FCA
F. Fire Station 92 FCA
G. Municipal Court FCA
H. Police Department FCA
I. Public Works FCA
J. Town Hall FCA
K. Electrical System Assessment

TOWN OF PARADISE VALLEY FACILITY CONDITION ASSESSMENT SUMMARY

PURPOSE OF PRESENTATION

- Follow up report of the facilities assessment
- Approval of the facilities assessment report and to review and approve funding for immediate and for future fiscal years will be discussed in the presentation slides.

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SYSTEM EXPENDITURE FORECAST

ALL SITES

System Expenditure Forecast						
System	**Immediate**	**Short Term (1-2 yr)**	**Near Term (3-5 yr)**	**Med Term (6-10 yr)**	**Long Term (11-20 yr)**	**TOTAL**
Structure	-	-	-	-	$168,800	$168,800
Facade	$2,000	$34,500	$148,600	$161,900	$761,800	$1,108,800
Roofing	-	$497,900	$21,000	$88,500	$300,800	$908,100
Interiors	-	$45,000	$449,400	$354,900	$1,241,500	$2,090,800
Conveying	-	-	-	$22,200	-	$22,200
Plumbing	-	$30,900	$113,500	$68,500	$445,200	$658,200
HVAC	$27,000	$7,800	$350,600	$318,500	$755,500	$1,459,500
Fire Protection	-	-	$34,000	$29,900	$101,400	$165,300
Electrical	$55,000	$17,400	$353,200	$538,200	$1,158,400	$2,122,100
Fire Alarm & Electronic Systems	$15,200	-	$248,500	$125,400	$213,500	$602,600
Equipment & Furnishings	-	$29,600	$112,900	$134,900	$202,000	$479,500
Special Construction & Demo	-	-	$5,200	$6,500	$2,761,300	$2,773,000
Site Development	$2,000	-	$63,400	$78,100	$1,200,200	$1,343,700
Site Pavement	-	$74,300	$61,500	$171,500	$872,200	$1,179,700
Site Utilities	-	$8,500	$46,400	$85,700	$175,400	$315,900
TOTALS (3% inflation)	**$101,200**	**$745,900**	**$2,008,400**	**$2,184,700**	**$10,358,000**	**$15,398,200**

Totals have been rounded to the nearest $100.** ***The darker the shading, the higher the cost.

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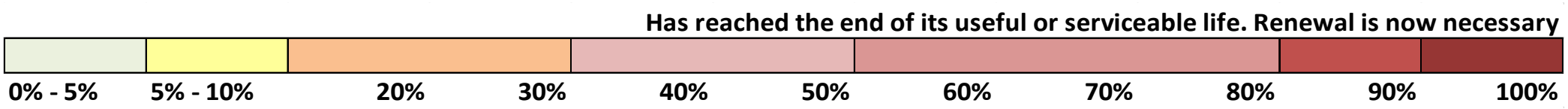
FACILITY CONDITION INDEX



FACILITY CONDITION INDEX (FCI)

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate each building's Facility Condition Index (FCI), which provides a theoretical objective indication of a building's overall condition. By definition, the FCI is defined as the ratio of the cost of current needs divided by current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.



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CURRENT REPLACEMENT VALUE (CRV)

Current Replacement Value (CRV) is the amount of money needed to replace an asset, or item with a new one of similar kind and quality using current market prices for materials and labor.

The CRV for this assessment does not include structural items, such as foundation. Only the items assessed. The Total Replacement Value of any given building may be significantly higher when including those items.

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FCI SUMMARY

- Facility Condition Index = building needs/building replacement cost
- Higher Number indicates greater need

Facility (year built)	Cost/SF	Total SF	Replacement Value	Current	3-Year	5-Year	10-Year
Communications Building (2016)	$525	700	$367,500	0.0%	0.0%	4.0%	14.0%
Fire Station 91 (2009)	$525	9,961	$5,229,525	0.1%	1.6%	7.0%	11.5%
Fire Station 92 (2009)	$525	11,346	$5,956,650	0.0%	1.1%	6.6%	9.6%
Municipal Court (2013)	$525	6,000	$3,150,000	0.0%	0.8%	1.5%	9.8%
PMT Ambulance House (1966)	$175	3,701	$647,675	0.0%	20.8%	34.5%	35.7%
Police Department (1996)	$525	18,441	$9,681,525	0.0%	3.4%	10.0%	17.8%
Public Works (1994)	$525	8,999	$4,724,475	0.6%	0.6%	4.2%	10.7%
Town Hall (1973)	$525	14,866	$7,804,650	0.9%	3.8%	8.2%	13.4%

ALL SITES

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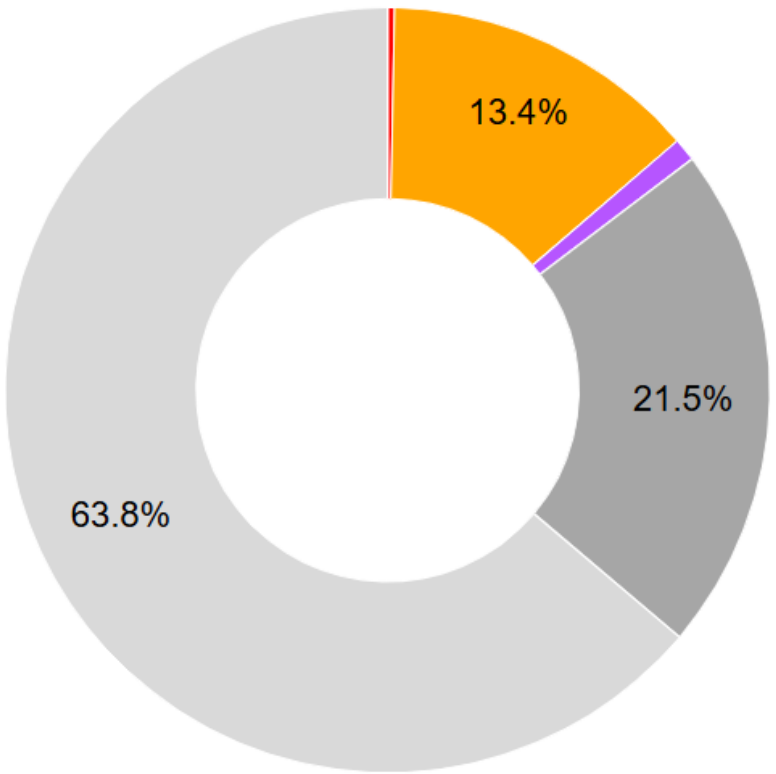


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COST BY TYPE

ALL SITES



- Safety
  $15,000
- Performance/Integrity
  $675,400
- Retrofit/Adaptation
  $49,100
- Aged But Functional
  $1,083,500
- Lifecycle/Renewal
  $3,217,300

10-YEAR TOTAL: $5,040,300

Plan Type Descriptions	
Safety	An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity	Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility	Does not meet ADA, UFAS, and/or other handicap accessibility requirements.
Environmental	Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation	Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Lifecycle/Renewal	Any component or system that is not currently deficient or problematic but for which future replacement or repair is anticipated and budgeted.
Aged But Functional	Any component or system that has aged past its industry-average expected useful life (EUL) but is not currently deficient or problematic.

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IMMEDIATE NEEDS



IMMEDIATE NEEDS

ALL SITES

Facility/Building	Total Items	Total Cost
Fire Station 91	1	$3,000
PMT Ambulance House	1	$200
Police Department	1	$2,000
Public Works	3	$27,000
Town Hall	3	$69,000
Total	**9**	**$101,200**

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SAMPLE DATA DETAIL



ASSET DETAIL - EXAMPLE

Observation Details - Obs #9408491

Mark as Completed Delete

Description	D3055 - Packaged Unit, RTU, Pad or Roof-Mounted, 4 TON, Replace
Component	Packaged Unit
Attributes	RTU, Pad or Roof-Mounted
Action	Replace
Master Cost Id	22318
Manufacturer	Rudd
Model	Inaccessible
Serial Number	Inaccessible
Category	HVAC / Facility HVAC Distribution Systems / Variable Air Volume Unit
Location	B Roof
Condition	Failed
Report Section	7.1
Comments	Damaged during fire. Being replaced per POC.
BV Comments	
Capacity Description	RTU, Pad or Roof-Mounted
Flagged for Review	No
GPS	
Created:	Paul.scanzillo@bureauveritas.com on 6/6/2025 12:32:06 PM
Last Modified:	paul.scanzillo on 6/16/2025 11:46:04 PM



<< >>

Cost Estimate	
Quantity	1.00 EA
Unit Cost*	$9,000.00
Subtotal	$9,000

* Includes Soft Costs and Mark-ups

Replacement Cycle	
Replacement Years	2025 2045
RUL	0 years
[redacted] Age / Lifespan (EUL)	
EAge	20 years
Lifespan (EUL):	20 years
In-Service Date	2010

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REPORT SAMPLE



REPORT SAMPLE

Sample for all sites



Casework in Poor condition.

Cabinetry, Standard
Police Department Evidence Room

Uniformat Code: E2010
Recommendation: **Replace in 2027**

Priority Score: **82.7**

Plan Type:
Performance/Integrity

Cost Estimate: $18,000

**$$$**$

Worn and damaged casework. - AssetCALC ID: 9398078



Packaged Unit in Failed condition.

RTU, Pad or Roof-Mounted
Building B - Fleet Shop Public Works B Roof

Uniformat Code: D3050
Recommendation: **Replace in 2025**

Priority Score: **81.9**

Plan Type:
Performance/Integrity

Cost Estimate: $9,000

**$$**$$

Damaged during fire. Being replaced per POC. - AssetCALC ID: 9408490

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REPORT SAMPLE

Sample for all sites



Fire Alarm Panel in Failed condition.

Fully Addressable
Town Hall Lobby

Uniformat Code: D7050
Recommendation: **Replace in 2025**

Priority Score: **90.9**

Plan Type: Safety

Cost Estimate: $15,000

$$$$

Aged and not communicating. - AssetCALC ID: 9387282



Parking Lots in Poor condition.

Pavement, Asphalt
PMT Ambulance House Site Parking Areas

Uniformat Code: G2020
Recommendation: **Mill & Overlay in 2026**

Priority Score: **84.8**

Plan Type:
Performance/Integrity

Cost Estimate: $17,800

$$$$

Cracked due to excessive wear and tear. No designated striped parking spaces. - AssetCALC ID: 9384419

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REPLACEMENT RESERVES



1ST 5 YEAR SUMMARY OF 10

All Sites
5 Year

Replacement Reserves Report

8/22/2025

Location	2025	2026	2027	2028	2029	2030	Total Escalated Estimate
Communications Building	$0	$0	$0	$0	$0	$14,845	**$14,845**
Fire Station 91	$3,000	$7,828	$0	$72,787	$257,786	$27,057	**$368,458**
Fire Station 92	$0	$0	$53,257	$13,375	$254,210	$71,663	**$392,505**
Municipal Court	$0	$1,185	$0	$24,466	$18,571	$4,521	**$48,743**
PMT Ambulance House	$180	$60,276	$74,046	$0	$0	$89,134	**$223,636**
Police Department	$2,000	$21,682	$301,480	$1,967	$600,052	$43,805	**$970,986**
Public Works	$0	$0	$0	$0	$0	$0	
Public Works / Building A - Office Building	$0	$0	$0	$0	$58,920	$0	**$58,920**
Public Works / Building B - Fleet Shop	$27,000	$0	$0	$0	$7,541	$30,141	**$64,682**
Public Works / Facility Shop	$0	$0	$0	$0	$39,055	$0	**$39,055**
Public Works / Site	$0	$0	$0	$0	$34,643	$0	**$34,643**
Town Hall	$69,000	$155	$226,033	$0	$289,538	$54,370	**$639,096**
Grand Total	**$101,180**	**$91,124**	**$654,816**	**$112,595**	**$1,560,317**	**$335,537**	**$2,855,569**

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2ND 5 YEAR SUMMARY OF 10

All Sites
10 Year

Replacement Reserves Report

8/22/2025

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total Escalated Estimate
Communications Building	$0	$0	$0	$0	$0	$14,845	$0	$28,779	$0	$7,698	$0	**$51,322**
Fire Station 91	$3,000	$7,828	$0	$72,787	$257,786	$27,057	$1,910	$6,395	$0	$224,823	$941	**$602,528**
Fire Station 92	$0	$0	$53,257	$13,375	$254,210	$71,663	$0	$0	$78,945	$80,354	$20,159	**$571,963**
Municipal Court	$0	$1,185	$0	$24,466	$18,571	$4,521	$32,060	$0	$229,387	$0	$0	**$310,190**
PMT Ambulance House	$180	$60,276	$74,046	$0	$0	$89,134	$5,493	$0	$0	$0	$2,392	**$231,521**
Police Department	$2,000	$21,682	$301,480	$1,967	$600,052	$43,805	$174,912	$33,699	$241,867	$13,270	$286,233	**$1,720,967**
Public Works	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Public Works / Building A - Office Building	$0	$0	$0	$0	$58,920	$0	$16,657	$0	$7,601	$48,146	$56,848	**$188,172**
Public Works / Building B - Fleet Shop	$27,000	$0	$0	$0	$7,541	$30,141	$0	$0	$0	$3,120	$5,644	**$73,446**
Public Works / Facility Shop	$0	$0	$0	$0	$39,055	$0	$1,075	$0	$15,448	$29,031	$13,305	**$97,914**
Public Works / Site	$0	$0	$0	$0	$34,643	$0	$0	$0	$57,765	$46,685	$6,384	**$145,476**
Town Hall	$69,000	$155	$226,033	$0	$289,538	$54,370	$60,001	$4,305	$156,864	$33,324	$153,292	**$1,046,882**
Grand Total	**$101,180**	**$91,124**	**$654,816**	**$112,595**	**$1,560,317**	**$335,537**	**$292,108**	**$73,177**	**$787,877**	**$486,450**	**$545,198**	**$5,040,379**

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Gregg Young
Program Manager
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FACILITY CONDITION ASSESSMENT

prepared for

Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, AZ 85253
Isaac Chavira



Communications Building
6824 North Highlands Drive
Paradise Valley, AZ 85253

PREPARED BY:
Bureau Veritas
6021 University Boulevard, Suite 200
Ellicott City, MD 21043
800.733.0660
www.bvna.com

BV CONTACT:
Gregg Young
Program Manager
800.733.0660 x7296228
Gregg.Young@bureauveritas.com

BV PROJECT #:
172662.25R000-008.468

DATE OF REPORT:
July 9, 2025

ON SITE DATE:
May 29, 2025

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1. Executive Summary

Property Overview and Assessment Details

General Information	
Property Type	Communications Building
Number of Buildings	1
Main Address	6824 North Highlands Drive, Paradise Valley, AZ 85253
Site Developed	2016
Outside Occupants / Leased Spaces	City of Scottsdale owns server room and Second Floor
Date(s) of Visit	May 29, 2025
Management Point of Contact	Paradise Valley Public Works Mr. Isaac Chavira, Public Works Director (480) 348-3540, ichavira@paradisevalleyaz.gov
On-site Point of Contact (POC)	Paradise Valley Public Works Eric Shurtleff, Facilities Maintenance Technician (602) 769-0629
Assessment and Report Prepared By	Billy Barnett
Reviewed By	*for,* Gregg Young Program Manager 800.733.0660 x7296228 Gregg.Young@bureauveritas.com
AssetCalc Link	Full dataset for this assessment can be found at: https://www.assetcalc.net/

Significant/Systemic Findings and Deficiencies

Historical Summary

Communications Building is a structure located in Paradise Valley, Arizona and houses communication equipment utilized by public works organizations in the area.

Communications Building consists of one building built in 2016. It measures approximately 700 square feet, and contains a generator room, a server room lower level and a server room upper level. With the exception of diesel generator ancillary equipment and HVAC equipment, City of Scottsdale maintains the server room and equipment within. There are no restrooms or sinks in the building. There were no major renovations conducted since construction.

Architectural

Communications Building is a masonry structure with steel-framed roof decking and beams. The structure is built on a concrete slab foundation with typical perimeter concrete wall footings. The roof structure of the buildings is flat and is green/living covered in vegetation and rocks that are congruent with the surrounding landscape. Communications Building has no windows.

At the interior of the Communications Building, the walls are cement and the ceilings are exposed throughout. Most of the flooring in the building sealed concrete.

Roof and the back of the building was inaccessible due to signage cautioning that radio frequency beyond that point possibly exceeding FCC rules for human exposure.

Mechanical, Electrical, Plumbing and Fire (MEPF)

Communications is heated and cooled by condensing units and fan coil units/interior air handlers. Electrical service is made up of a local utility-fed, interior switchboard that feeds distribution panels throughout. There is a diesel generator and an automatic transfer switch. Interior lighting consists mainly of fluorescent fixtures.

The building has municipal water for irrigation. No hot water is available. No concerns have been addressed by maintenance personnel regarding ongoing plumbing issues.

The building is outfitted with fire extinguishers and a FM-200 fire suppression system for the server room area.

Server room upper level was inaccessible due to signage cautioning that radio frequency beyond that point possibly exceeding FCC rules for human exposure.

Site

The site is approximately 0.18 acres and is highly sloped throughout. The aggressive slope prevented safe access to site's northern boundary. The building is located in the center of the site and has no designated parking.

Site hardscape at Communications Building consists of a concrete driveway.

The site is covered in stone landscaping with irrigation and small bushes spread throughout. There are no building-mounted or walkway light fixtures.

Recommended Additional Studies

No additional studies recommended at this time.

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate the Facility Condition Index (FCI), which provides a theoretical objective indication of a facility's overall condition. The FCI is defined as the ratio of the cost of current needs divided by the current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone mathematical values. The table below presents the current, 3-year, 5-year, and 10-year FCI's for this facility:

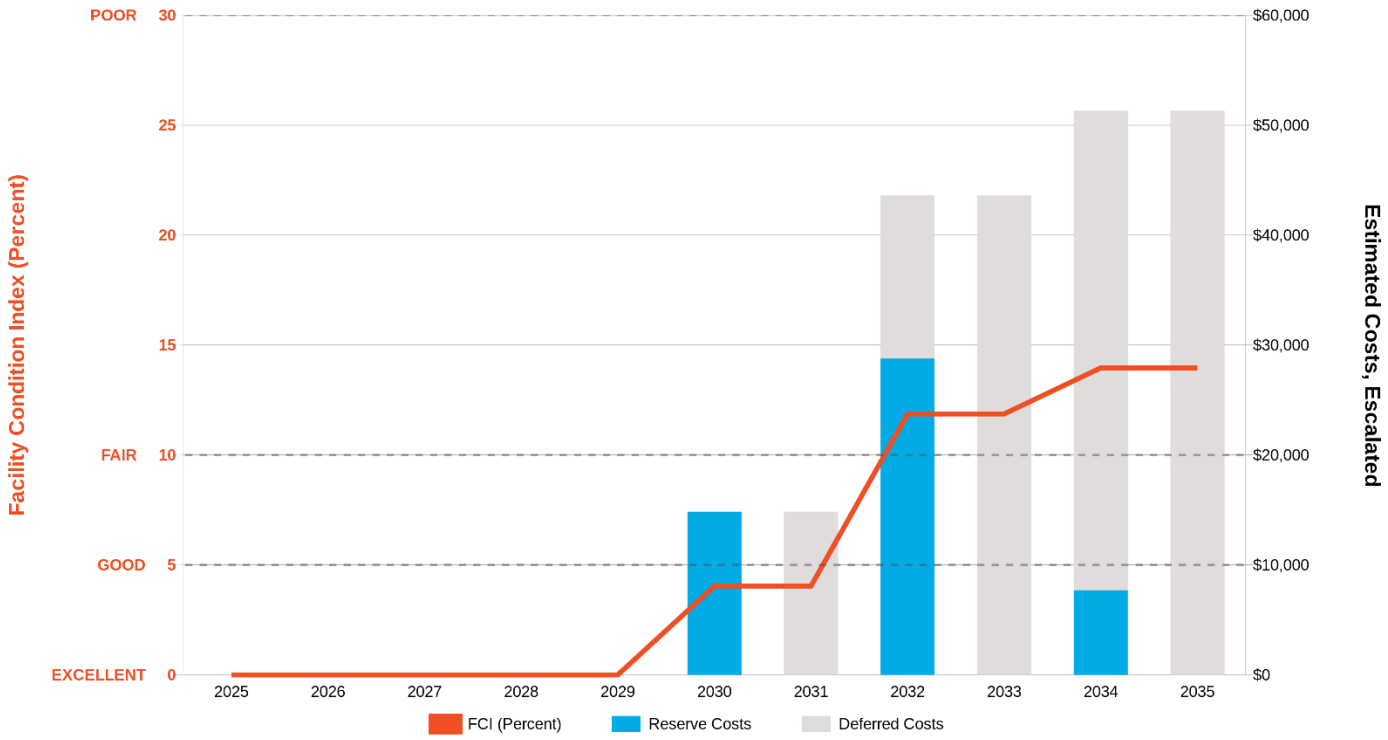
FCI Analysis		
Replacement Value *$367,500*	*Total SF* *700*	*Cost/SF* *$525*

	Est Reserve Cost	FCI
Current	$0	0 **%**
3-Year	$0	0 **%**
5-Year	$14,900	4.0 **%**
10-Year	$51,400	14.0 **%**

NEEDS OVER TIME: The vertical blue bars in the graphic below represent the year-by-year needs identified for the facility. The orange line forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures over the next ten years. The dollar amounts allocated for each year are associated with the values along the right Y axis.

Needs by Year with Unaddressed FCI Over Time

Replacement Value: $367,500.00 **Inflation Rate: 3%** **Average Needs (per year - over next 10 years): $4,665.00**



Immediate Needs

There are no immediate needs to report.

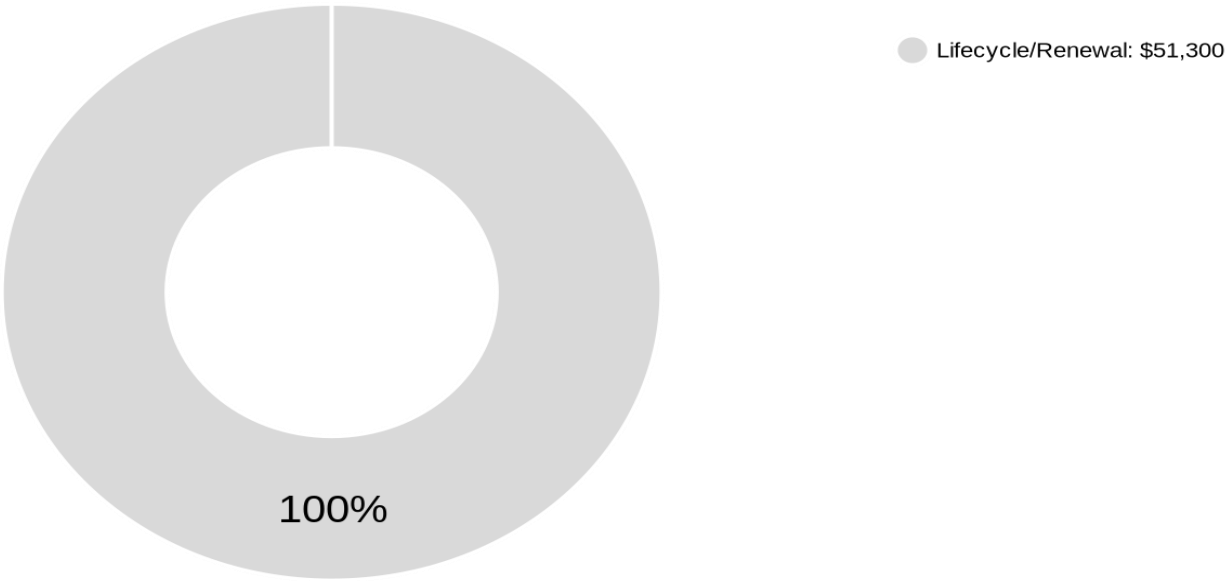
Key Findings

There are no key findings to report.

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the "why" part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the "best" fit, typically the one with the greatest significance and highest on the list below.

Plan Type Descriptions and Distribution		
Safety		An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity		Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility		Does not meet ADA, UFAS, and/or other accessibility requirements.
Environmental		Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation		Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Aged But Functional		Any component or system that has aged past its industry-average expected useful life (EUL) but is not currently deficient or problematic.
Lifecycle/Renewal		Any component or system that is neither deficient nor aged past EUL but for which future replacement or repair is anticipated and budgeted.



10-Year Total: $51,300

2. Building Systems and Site Elements





Building Systems Summary		
Address	6824 North Highlands Drive, Paradise Valley, AZ 85253	
GPS Coordinates	33.5364004, -111.9884587	
Constructed/Renovated	2016	
Building Area	700 SF	
Number of Stories	1 above grade	
System	*Description*	*Condition*
Structure	Masonry bearing walls with metal roof deck supported by open-web steel joists	Good
Facade	Wall Finish: Stucco Windows: None	Good
Roof	Flat construction with live plants	Good
Interiors	Walls: Concrete Floors: Stained concrete Ceilings: Exposed	Good
Elevators	None	n/a

Building Systems Summary		
Plumbing	Distribution: Copper supply Hot Water: None Fixtures: None	Good
HVAC	Non-Central System: Split system consisting of interior fan coils and exterior condensing units.	Good
Fire Suppression	Dedicated computer/server room chemical system	Good
Electrical	Source and Distribution: Main panel with copper Interior Lighting: LED and linear fluorescent Emergency Power: Diesel generator with automatic transfer switch	Good
Fire Alarm	Alarm panel with smoke detectors, heat detectors, alarms, strobes, pull stations, back-up emergency lights, and exit signs	Fair
Equipment/Special	None	n/a
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	Most of the interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, and the exterior walls of the facility.	
Key Spaces Not Observed	Areas of note that were either inaccessible or not observed for other reasons are listed here: · Roof; lack of ladder or other means of access and safety concerns, sensitivity to operations · Server room; area/space not part of contracted scope, sensitivity to operations · 2nd Floor of server room; area/space not part of contracted scope, sensitivity to operations	

Site Information		
Site Area	0.18 acres	
Parking Spaces	N/A	
System	*Description*	*Condition*
Site Pavement	Concrete lots	Good
Site Development	CMU wall fencing	Good
Landscaping and Topography	Limited landscaping features bushes Irrigation present CMU retaining walls Severe site slopes along east, west and north boundary	Good
Utilities	Municipal water Local utility-provided electric	Good
Site Lighting	None	Good
Ancillary Structures	None	Good
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	Most of the exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	Areas of note that were either inaccessible or not observed for other reasons are listed here: · Rear elevation; safety concerns, sensitivity to operations	

The table below shows the anticipated costs by trade or building system over the next 20 years.

Communications Building: System Expenditure Forecast						
System	**Immediate**	**Short Term (1-2 yr)**	**Near Term (3-5 yr)**	**Med Term (6-10 yr)**	**Long Term (11-20 yr)**	**TOTAL**
Structure	$0	$0	$0	$0	$0	$0
Facade	$0	$0	$11,071	$0	$14,878	$25,949
Roofing	$0	$0	$0	$0	$15,842	$15,842
Interiors	$0	$0	$3,245	$0	$4,361	$7,606
Plumbing	$0	$0	$0	$0	$0	$0
HVAC	$0	$0	$0	$28,778	$0	$28,778
Fire Protection	$0	$0	$0	$0	$58,137	$58,137
Electrical	$0	$0	$527	$0	$134,473	$135,000
Fire Alarm and Electronic Systems	$0	$0	$0	$1,826	$2,906	$4,732
Sitework	$0	$0	$0	$5,871	$2,728	$8,599
TOTALS	**$0**	**$0**	**$14,900**	**$36,500**	**$233,400**	**$284,800**

3. ADA Accessibility

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “commercial facilities” on the basis of disability. Regardless of its age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Buildings completed and occupied after January 26, 1992, are required to comply fully with the ADAAG. Existing facilities constructed prior to this date are held to a less standard of compliance to the extent allowed by structural feasibility and the financial resources available. As an alternative, a reasonable accommodation pertaining to barrier removal must be made.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the material included in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this assessment. A full measured ADA survey would be required to identify more specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance
- Only a representative sample of areas was observed
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance
- Itemized costs for individual non-compliant items are included in the dataset
- For any “none” boxes checked or reference to “no issues” identified, that alone does not guarantee full compliance

The facility was originally constructed in 2016. The facility has not since been substantially renovated.

4. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

5. Opinions of Probable Costs

Cost estimates are embedded throughout this report, including the very detailed Replacement Reserves report in the appendix. The cost estimates are predominantly based on construction rehabilitation costs developed by the *RSMeans data from Gordian.* While the *RSMeans data from Gordian* is the primary reference source for the Bureau Veritas cost library, secondary and supporting sources include but are not limited to other industry experts work, such as *Marshall & Swift* and *CBRE Whitestone.* For improved accuracy, additional research integrated with Bureau Veritas's historical experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions also come into play when deemed necessary. Invoice or bid documents provided either by the owner or facility construction resources may be reviewed early in the process or for specific projects as warranted.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

To account for differences in prices between locations, the base costs are modified by geographical location factors to adjust for to market conditions, transportation costs, or other local contributors. When requested by the client, the costs may be further adjusted by several additional factors including; labor rates (prevailing minimum wage), general contractor fees for profit and overhead, and insurance. If desired, costs for design and permits, and a contingency factor, may also be included in the calculations.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system or component replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

6. Certification

Town of Paradise Valley, FCA wInventory Program (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of Communications Building, 6824 North Highlands Drive, Paradise Valley, AZ 85253, the “Property”. It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager’s walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property’s original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and Bureau Veritas.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of Bureau Veritas. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to Bureau Veritas.

Prepared by: Billy Barnett
Project Assessor

Reviewed by: Rashad Alnial

Technical Report Reviewer
for
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Program Manager
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7. Appendices

Appendix A: Photographic Record
Appendix B: Site Plan(s)
Appendix C: Pre-Survey Questionnaire(s)
Appendix D: Accessibility Review and Photos
Appendix E: Component Condition Report
Appendix F: Replacement Reserves
Appendix G: Equipment Inventory List
Appendix H: Electrical Study

Appendix A:
Photographic Record

Photographic Overview



1 - FRONT ELEVATION



2 - LEFT ELEVATION



3 - REAR ELEVATION



4 - RIGHT ELEVATION

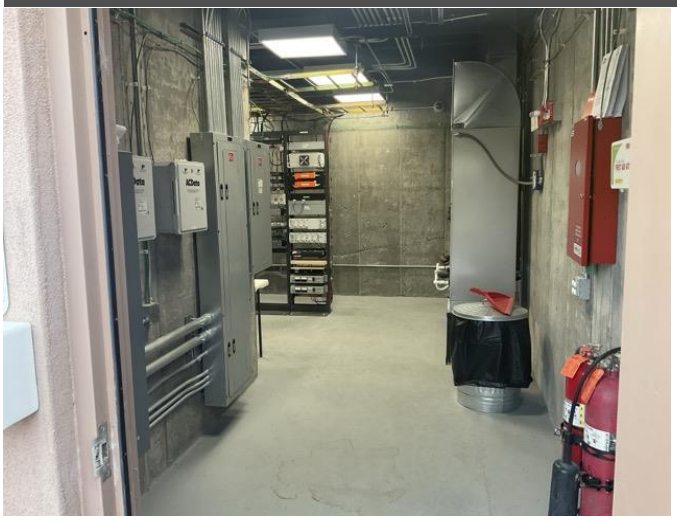


5 - ROOF



6 - ROOF APPURTENANCES

Photographic Overview



7 - OVERVIEW OF IT ROOM #1



8 - OVERVIEW OF IT ROOM #2



9 - GENERATOR ROOM



10 - SECOND LEVEL IT ROOM (INACCESSIBLE)



11 - SITE UTILITY



12 - SITE SOUTH

Appendix B:
Site Plan(s)

Site Plan



Project Number	Project Name
172662.25R000-008.468	Communications Building
Source	**On-Site Date**
Google	May 29, 2025

Appendix C:
Pre-Survey Questionnaire(s)

BV FACILITY CONDITION ASSESSMENT: PRE-SURVEY QUESTIONNAIRE

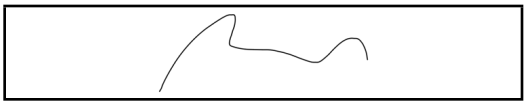
Building / Facility Name:	Communications Building
Name of person completing form:	Eric Shurtleff
Title / Association w/ property:	Facility Maintenance Technician
Length of time associated w/ property:	16
Date Completed:	5/29/2025
Phone Number:	6027690629
Method of Completion:	INTERVIEW - verbally completed during interview

Directions: Please answer all questions to the best of your knowledge and in good faith. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses.

Data Overview		Response		
1	Year(s) constructed	Constructed: 2016	Renovated:	
2	Building size in SF	700 **SF**		
3	Major Renovation/Rehabilitation		Year	Additional Detail
		Facade		
		Roof		
		Interiors		
		HVAC		
		Electrical		
		Site Pavement		
		Accessibility		
4	List other significant capital improvements (focus on recent years; provide approximate date).			
5	List any major capital expenditures planned/requested for the next few years. Have they been budgeted?			
6	Describe any on-going extremely problematic, historically chronic, or immediate facility needs.			

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Response				Comments
		Yes	No	Unk	NA	
7	Are there any problems with foundations or structures, like excessive settlement?		X			
8	Are there any wall, window, basement or roof leaks?		X			
9	Has any part of the facility ever contained visible suspect mold growth, or have there been any indoor air quality complaints?		X			
10	Are your elevators unreliable, with frequent service calls?				X	
11	Are there any plumbing leaks, water pressure, or clogging/backup issues?		X			
12	Have there been any leaks or pressure problems with natural gas, HVAC piping, or steam service?		X			
13	Are any areas of the facility inadequately heated, cooled or ventilated? Poorly insulated areas?		X			
14	Is the electrical service outdated, undersized, or problematic?		X			
15	Are there any problems or inadequacies with exterior lighting?		X			
16	Is site/parking drainage inadequate, with excessive ponding or other problems?		X			
17	Are there any other unresolved construction defects or significant issues/hazards at the property that have not yet been identified above?		X			
18	ADA: Has an accessibility study been previously performed? If so, when?				X	
19	ADA: Have any ADA improvements been made to the property since original construction? Describe.				X	
20	ADA: Has building management reported any accessibility-based complaints or litigation?				X	
21	Are any areas of the property leased to outside occupants?		X			



Signature of Assessor



Signature of POC

Appendix D:
Accessibility Review and Photos

Visual Survey - 2010 ADA Standards for Accessible Design

Property Name: **Communications Building**

BV Project Number: **172662.25R000-008.468**

Accessibility aspects were not evaluated at this facility/building/location.

Appendix E:
Component Condition Report

Component Condition Report | 008 - Communications Building

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A4010	Substructure	Good	Foundation, Concrete Slab-on-Grade, w/ Integral Perimeter Footings	700 SF	66	9410736
B1010	Superstructure	Good	Structural Framing, Steel Light Gauge, Steel Light Gauge	700 SF	66	9410724
Facade						
B2010	Building Exterior	Fair	Exterior Walls, Stucco, Prep & Fog Coat or Paint	2,500 SF	5	9410732
B2050	Building Exterior	Good	Exterior Door, Steel, Commercial	3	31	9410727
Roofing						
B3010	Roof	Fair	Roofing, Green w/ Hot-Applied Rubberized Asphalt	700 SF	11	9410740
B3020	Roof	Fair	Roof Appurtenances, Gutters & Downspouts, Aluminum w/ Fittings	105 LF	11	9410737
Interiors						
C1010	Throughout Building	Good	Interior Wall, Concrete	1,400 SF	41	9410729
C2030	Hallways & Common Areas	Fair	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	700 SF	5	9410739
C2050	Throughout Building	Fair	Ceiling Finishes, exposed irregular elements, Prep & Paint	700 SF	5	9410744
Plumbing						
D2010	Building Exterior	Good	Backflow Preventer, Domestic Water	1	21	9410726
HVAC						
D3030	Site Utility Areas	Fair	Split System, Condensing Unit/Heat Pump	1	7	9410743
D3030	Electrical Room	Fair	Split System, Fan Coil Unit, DX, 3.5 to 5 TON	1	7	9410745
D3030	Site Utility Areas	Fair	Split System, Condensing Unit/Heat Pump	1	7	9410721
D3030	Electrical Room	Fair	Split System, Fan Coil Unit, DX, 3.5 to 5 TON	1	7	9410749
D3050	Throughout Building	Good	HVAC System, Ductwork, Medium Density	700 SF	21	9410748
Fire Protection						
D4010	Throughout Building	Fair	Fire Suppression System, Server Rooms, Special/Chemical/Clean Agent	700 SF	11	9410728
Electrical						

Component Condition Report | 008 - Communications Building

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D5010	Electrical Room	Good	Generator, Diesel	1	17	9410722
D5010	Electrical Room	Good	Automatic Transfer Switch, ATS	1	17	9410746
D5020	Electrical Room	Good	Supplemental Components, Circuit Breaker/Disconnect, 400 AMP	1	21	9410730
D5020	Electrical Room	Good	Distribution Panel, 120/240 V	1	22	9410734
D5030	Electrical Room	Good	Electrical System, Wiring & Switches, Average or Low Density/Complexity	700 SF	31	9410731
D5040	Throughout Building	Fair	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures	700 SF	11	9410735
D5040	Throughout Building	Fair	Emergency & Exit Lighting System, Full Interior Upgrade, LED	700 SF	5	9410733
Fire Alarm & Electronic Systems						
D7030	Throughout Building	Fair	Security/Surveillance System, Full System Upgrade, Average Density	700 SF	9	9410720
D7050	Throughout Building	Fair	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	700 SF	11	9410723
Pedestrian Plazas & Walkways						
G2020	Site Parking Areas	Good	Parking Lots, Pavement, Concrete	1,100 SF	41	9410741
Sitework						
G2060	Building Exterior	Fair	Fences & Gates, Vehicle Gate, Chain Link Manual	1	16	9410742
G2060	Site General	Good	Retaining Wall, Concrete Masonry Unit (CMU)	1,000 SF	31	9410747
G2080	Site General	Fair	Irrigation System, Pop-Up Spray Heads, Commercial, Replace/Install	4,500 SF	9	9410738
Utilities						
G3010	Site General	Good	Piping & Valves, Piping Copper, Site Water, 4 IN, Replace/Install	50 LF	31	9410725

Appendix F:
Replacement Reserves

Replacement Reserves Report

008 - Communications Building

7/9/2025

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total Escalated Estimate
008 - Communications Building	$0	$0	$0	$0	$0	$14,845	$0	$28,779	$0	$7,698	$0	$81,732	$0	$0	$0	$19,950	$2,728	$128,922	$0	$0	$0	**$284,654**
Grand Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$14,845**	**$0**	**$28,779**	**$0**	**$7,698**	**$0**	**$81,732**	**$0**	**$0**	**$0**	**$19,950**	**$2,728**	**$128,922**	**$0**	**$0**	**$0**	**$284,654**

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
B2010	Building Exterior	9410732	Exterior Walls, Stucco, Prep & Fog Coat or Paint	10	5	5	2500	SF	$3.82	$9,550						$9,550										$9,550						**$19,100**
B3010	Roof	9410740	Roofing, Green w/ Hot-Applied Rubberized Asphalt, Replace	20	9	11	700	SF	$15.00	$10,500												$10,500										**$10,500**
B3020	Roof	9410737	Roof Appurtenances, Gutters & Downspouts, Aluminum w/ Fittings, Replace	20	9	11	105	LF	$9.00	$945												$945										**$945**
C2030	Hallways & Common Areas	9410739	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	10	5	5	700	SF	$1.50	$1,050						$1,050										$1,050						**$2,100**
C2050	Throughout Building	9410744	Ceiling Finishes, exposed irregular elements, Prep & Paint	10	5	5	700	SF	$2.50	$1,750						$1,750										$1,750						**$3,500**
D3030	Site Utility Areas	9410743	Split System, Condensing Unit/Heat Pump, Replace	15	8	7	1	EA	$7,100.00	$7,100								$7,100														**$7,100**
D3030	Electrical Room	9410745	Split System, Fan Coil Unit, DX, 3.5 to 5 TON, Replace	15	8	7	1	EA	$4,600.00	$4,600								$4,600														**$4,600**
D3030	Site Utility Areas	9410721	Split System, Condensing Unit/Heat Pump, Replace	15	8	7	1	EA	$7,100.00	$7,100								$7,100														**$7,100**
D3030	Electrical Room	9410749	Split System, Fan Coil Unit, DX, 3.5 to 5 TON, Replace	15	8	7	1	EA	$4,600.00	$4,600								$4,600														**$4,600**
D4010	Throughout Building	9410728	Fire Suppression System, Server Rooms, Special/Chemical/Clean Agent, Replace	20	9	11	700	SF	$60.00	$42,000												$42,000										**$42,000**
D5010	Electrical Room	9410722	Generator, Diesel, Replace	25	8	17	1	EA	$58,000.00	$58,000																		$58,000				**$58,000**
D5010	Electrical Room	9410746	Automatic Transfer Switch, ATS, Replace	25	8	17	1	EA	$20,000.00	$20,000																		$20,000				**$20,000**
D5040	Throughout Building	9410733	Emergency & Exit Lighting System, Full Interior Upgrade, LED, Replace	10	5	5	700	SF	$0.65	$455						$455										$455						**$910**
D5040	Throughout Building	9410735	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures, Replace	20	9	11	700	SF	$5.00	$3,500												$3,500										**$3,500**
D7030	Throughout Building	9410720	Security/Surveillance System, Full System Upgrade, Average Density, Replace	15	6	9	700	SF	$2.00	$1,400										$1,400												**$1,400**
D7050	Throughout Building	9410723	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	20	9	11	700	SF	$3.00	$2,100												$2,100										**$2,100**
G2060	Building Exterior	9410742	Fences & Gates, Vehicle Gate, Chain Link Manual, Replace	25	9	16	1	EA	$1,700.00	$1,700																	$1,700					**$1,700**
G2080	Site General	9410738	Irrigation System, Pop-Up Spray Heads, Commercial, Replace/Install	20	11	9	4500	SF	$1.00	$4,500										$4,500												**$4,500**
Totals, Unescalated											**$0**	**$0**	**$0**	**$0**	**$0**	**$12,805**	**$0**	**$23,400**	**$0**	**$5,900**	**$0**	**$59,045**	**$0**	**$0**	**$0**	**$12,805**	**$1,700**	**$78,000**	**$0**	**$0**	**$0**	**$193,655**
Totals, Escalated (3.0% inflation, compounded annually)											**$0**	**$0**	**$0**	**$0**	**$0**	**$14,845**	**$0**	**$28,779**	**$0**	**$7,698**	**$0**	**$81,732**	**$0**	**$0**	**$0**	**$19,950**	**$2,728**	**$128,922**	**$0**	**$0**	**$0**	**$284,654**

* Markup has been included in unit costs.

Appendix G:
Equipment Inventory List

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D20 Plumbing													
1	9410726	D2010	**Backflow Preventer**	Domestic Water	.75 IN	008 - Communications Building	Building Exterior	Watts	LF009M3QT	57715		3003791	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D30 HVAC													
1	9410743	D3030	**Split System**	Condensing Unit/Heat Pump	5 TON	008 - Communications Building	Site Utility Areas	Carrier	24AAA560A300	1517E16741	2017	3003801	
2	9410721	D3030	**Split System**	Condensing Unit/Heat Pump	5 TON	008 - Communications Building	Site Utility Areas	Carrier	24AAA560A300	1517E16727	2017	3003795	
3	9410745	D3030	**Split System**	Fan Coil Unit, DX, 3.5 to 5 TON	5 Ton	008 - Communications Building	Electrical Room	Carrier	FX4DNF061LOOACAA	0917A88211	2017	3003774	
4	9410749	D3030	**Split System**	Fan Coil Unit, DX, 3.5 to 5 TON	5 Ton	008 - Communications Building	Electrical Room	Carrier	FX4DNF061L00ACAA	0917A88197	2017	3003797	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D50 Electrical													
1	9410722	D5010	**Generator**	Diesel	75 KW	008 - Communications Building	Electrical Room		80REOZJF	SGM32JWZR	2017	3003818	
2	9410746	D5010	**Automatic Transfer Switch**	ATS	400 AMP	008 - Communications Building	Electrical Room	Kohler	Inaccessible	Inaccessible		3003800	
3	9410734	D5020	**Distribution Panel**	120/240 V	400 AMP	008 - Communications Building	Electrical Room	Siemens	P1A42ML400CTST	No dataplate	2017	3003798	

Appendix H:
Electrical Study

225 Broadway Suite 350, San Diego, CA 92101
1 + 310 364 5228 | 1 + 619 323 1515
mailto: Info@120degreez.com | www.120degreez.com



Arc Flash, Short Circuit, and Load Flow Analysis provided for:

COMMUNICATIONS BLD

6824 N. Highlands Drive

Paradise Valley, AZ 85253

COMMUNICATIONS BLD

6824 N. Highlands Drive

Paradise Valley, AZ 85253

FOR:
Town of Paradise Valley
Department of Public Works
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

Submitted By:
Amir Amiri, P.E.
Electrical Engineer

Submittal date:
DATE: 6-19-2025

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APPENDIX 5 – WORK PERMIT

APPENDIX 6 – PPE TABLES AND ARC FLASH LABELS

1. EXECUTIVE SUMMARY

1.1. Introduction

A System Coordination and Arc Flash study of the distribution system was performed for the town of Paradise Valley's Communications building located at 6824 N. Highlands Drive, Paradise Valley, AZ 85253. The study determined the adequacy of the system components and the installed protective equipment. The study/analysis performed included short circuit, load flow, protective device coordination studies and incident energy (Arc-flash) evaluations. The power distribution system provided for the site is the following:

- SES-COM is a 400 amp, 240/120V, 1-phase service fed from a 50 KVA utility transformer with a Short Circuit current determined by the power company to be 28,539 Amps. Back up power is provided by a generator.

The serving utility has provided the short circuit current availability of this transformer with their service manual which is noted in the field notes provided. The serving utility's published available fault current (AFC) for each transformer which is called out in the field notes. Values used were provided by SRP for phase-to-phase faults. Each Service Equipment System (SES) serves primarily lighting and equipment loads of the building in which it is located.
The short circuit analysis evaluates the short time thermal and electrodynamic strength of the facilities equipment. Arc flash and protective equipment studies evaluate the incident energy at specific points of the distribution system to provide Arc-Flash hazard warning labels and personal protective equipment (PPE) recommendations. System protection coordination analysis is used to evaluate the adequacy of the protective devices (Fuses-Circuit Breakers) for the proper protection of system components and are unitized in the verify selective coordination of overcurrent protective devices. Finally, the load flow analysis evaluates the ability of equipment and cables to safely serve the loads they supply. Voltage drop values are included in the appendix report. The report relied upon the more conservative three phase analysis vs one phase for this report.

Major objectives of the analysis are:

- Compare the calculated fault duties with withstanding/interrupting ratings for customer owned electrical distribution system equipment and note any area of deficiency.
- Demonstrate protective device coordination and note any area of deficiency. Recommended settings for protective devices that will isolate faults in a manner that is consistent with the basic system design and operation. The recommendations given will balance system protection and selective fault isolation.
- Identify incident energy levels, arc flash boundaries, and what level of Personal Protective Equipment (PPE) is required for safe energized work, in accordance with NFPA 70E 2018.
- Evaluate and assess the panels, switches, fuses, and cables nominal values under the current and voltage levels at site, according the load flow analysis results.

Note areas of deficiency and make recommendations for corrective measures that are consistent with applicable codes and standards.

1.1.1. Full narratives of the analysis performed as well as the findings and recommendations of the analysis are included in Sections 2 and 3 of this report. The appendices include the computer output from the analysis performed and tables containing the settings for the adjustable devices in the scope of work. Time current curves, a copy of the Arc-Flash labels, and a one-line diagram of the system model are also included in the appendices.

1.1.2. Various scenarios (where relevant) were modeled, and all related studies' results have been detailed in this report.

The following were the scenarios that were modeled and evaluated:

- Scenario #1: Short circuit analysis
- Scenario #2: Arc-Flash analysis
- Scenario #3: Load Flow analysis
- Scenario #4: TCC Tables

The assessment of the power distribution system components and equipment will be done based on the worst-case outcomes, including the highest levels of fault currents, load flow currents and assumed current usage as well as the highest available arc flash incident energy. The results of the analysis are included in Appendixes of this report. The appendices include the data derived from the SKM analysis software. Additionally, the Appendixes include Time-Current curves of protective devices, a copy of the Arc-Flash labels to be installed, one line diagram for overall system for short circuit, and incident energies. Additional diagrammatic illustrations of the one-line diagram are included.

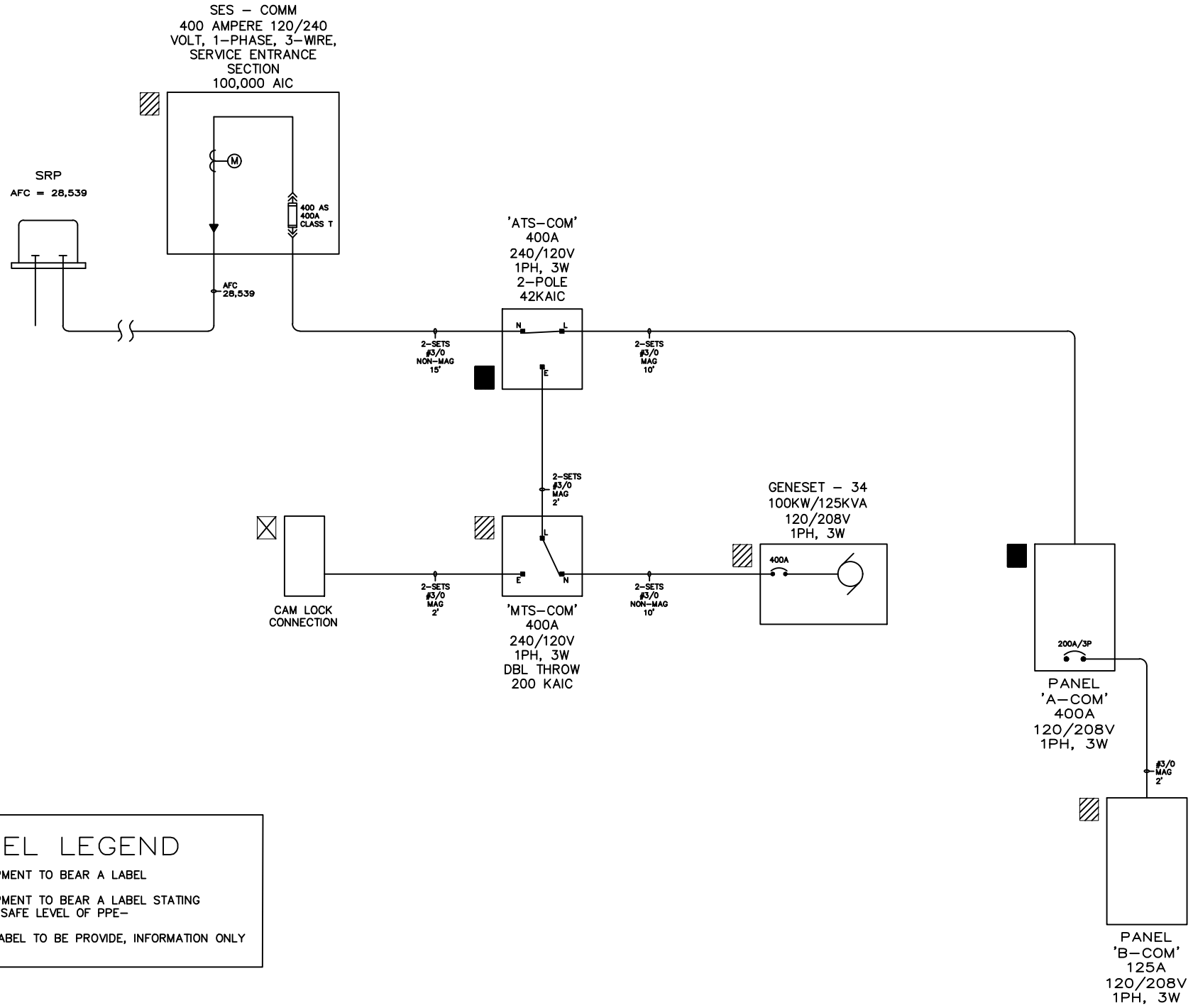
1.2.2 DC systems less than 50 volts.

The Occupational Safety and Health Administration, under 29 CFR 1910.303(g)(2)(i), considers electrical systems rated 50 volts or more as hazardous. By extension, those systems rated less than 50 volts are not considered to be hazardous. NFPA 70E, section 130.5(C), under Table 130.5(C), indicates that there is no likelihood of occurrence "For dc systems, maintenance on a single cell for a battery system or multi-cell units in an open rack.". As a result, DC systems rated 50 volts or less are not addressed by this study and are excluded from its scope.

1.2. Distribution System

The electrical system's overall single line diagrams are shown in the following figures below. Each individual single line is shown with the associated field report that contains the facilities equipment technical specifications and ratings, based upon visual observations. The actual field notes should be referenced for existing conditions as this report focuses on the Short Circuit Fault currents and Arc Flash evaluation. The physical condition of the services and equipment are described by the Excel report but are not formally addressed by this study.

COMMUNICATIONS BUILDING



LABEL LEGEND

- EQUIPMENT TO BEAR A LABEL
- EQUIPMENT TO BEAR A LABEL STATING –NO SAFE LEVEL OF PPE–
- NO LABEL TO BE PROVIDE, INFORMATION ONLY

FACILITY	COMMUNICATIONS BUILDING	ADDRESS:	6824 N. Highlands Drive, PARADISE VALLEY

UTILITY:	SRP
TRANSFORMER SIZE:	50
TRANSFORMER %Z:	1.60%
SECONDARY COND SIZE:	(1) x #4/0 AL
LENGTH:	
AFC (PER UTILITY TABLES)	28,539
VOLTAGE:	120/240
PHASE:	1Ø-3W
NOTE:	METER NUMBER Q22803

OTHER COMMENTS

EQUIPMENT NAME:	SES - COM	VOLTAGE:	120/240	PHASE:	1Ø-3W	AMPS:	400	SCCR:	65K	MAIN:	SWITCH
EQUIPMENT TYPE:	METER SECTION									MODEL:	CLASS T
MANUFACTURER:	JMT									AMPS	400
MODEL:											
TYPE:											
FED FROM:	UTILITY XFMR										
AFC:	28,539										
FEEDER SIZE:											
CONDUCTOR TYPE:											
RACEWAY TYPE:											
LENGTH:											
MAIN:	400										

OTHER COMMENTS

EQUIPMENT APPEARS TO BE IN GOOD CONDITION
RECOMMEND PREVENTATIVE MAINTENANCE.

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
ATS COM	400	400	T	100K			

EQUIPMENT NAME:	ATS COM	VOLTAGE:	120/240	PHASE:	1Ø-3W	AMPS:	400	SCCR:	?	MAIN:	
EQUIPMENT TYPE:	AUTOMATIC XFR SW									MODEL:	
MANUFACTURER:	KOHLER									AMPS	
MODEL:	KSS-AFNA-0400S										
TYPE:											
FED FROM:											
AFC:											
FEEDER SIZE:	2-SETS OF #3/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	15'										
MAIN:											

OTHER COMMENTS

SWITCH HAS MULTIPLE TERMINATIONS WHERE MORE THAN TWO CONDUCTORS
ARE TERMINATED. THIS IS A VIOLATION OF THE EQUIPMENT'S LISTING
AND CAN BE HAZARDOUS. THE TERMINATION WILL IMPACT THE WITHSTAND RATING OF THE EQUIPMENT.
A LABEL INDICATING THE EQUIPMENT'S WITHSTAND RATING WAS NOT IDENTIFIED.
A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'A-COM'							

EQUIPMENT NAME:	MTS - COM	VOLTAGE:	120/240	PHASE:	1Ø-3W	AMPS:	400	SCCR:	200K	MAIN:	
EQUIPMENT TYPE:	AUTOMATIC XFR SW									MODEL:	
MANUFACTURER:	SIEMENS									AMPS	
MODEL:	DTNF225										
TYPE:											
FED FROM:	GENSET & COM LOCK										
AFC:											
FEEDER SIZE:	2-SETS OF #3/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	10'										
MAIN:											

OTHER COMMENTS

NON-FUSIBLE DOUBLE THROW SAFETY SWITCH TYPE VBII USED AS A TRANSFER SWITCH
ROOM IS BEING USED FOR STORAGE. MATERIALS ARE STORED WITHIN DEDICATED WORKING SPACE
REQUIRED BY THE FIRE CODE AND NATIONAL ELECTRICAL CODE.

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'D'							

EQUIPMENT NAME:	GENSET - COM	VOLTAGE:	120/240	PHASE:	1Ø-3W	AMPS:	76KW	SCCR:	25K	MAIN:	MCB
EQUIPMENT TYPE:	GENSET									MODEL:	UNK
MANUFACTURER:	KOHLER									AMPS:	400
MODEL:	80REOZJF					OTHER COMMENTS					
TYPE:	GENSET					100KW GENSET					
FED FROM:						MAXIMUM LOAD PER MANUFACTURER IS 317 AMPERES.					
AFC:						COULD NOT REMOVE DEAD FRONT COVER DUE TO EQUIPMENT CONFIGURATION.					
SETS:	2					A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#3/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	10'										
MAIN:	400										
OCPD:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
ATS COM	225	225			KAP362251212		

EQUIPMENT NAME:	PANEL 'A-COM'	VOLTAGE:	120/240	PHASE:	1Ø-3W	AMPS:	400	SCCR:	22K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SIEMENS									AMPS:	
MODEL:						OTHER COMMENTS					
TYPE:						SIEMENS BLH AND QRH CIRCUIT BREAKERS ARE INSTALLED. 22K AND 25K AIC RESPECTIVELY					
FED FROM:	ATS COM					THE AVAILABLE FAULT CURRENT TO THE PANEL EXCEEDS THE AIC RATING OF THE CIRCUIT BREAKERS					
AFC:						AND THERE IS NO EVIDENCE OF A SERIES RATING LABEL INSTALLED.					
SETS:	2 SETS					A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#3/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	10'										
MAIN:											
OCPD:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'B-COM'	200	200		25K	QRH22B200		

EQUIPMENT NAME:	PANEL 'B-COM'	VOLTAGE:	120/240	PHASE:	1Ø-3W	AMPS:	250	SCCR:	22K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SIEMENS									AMPS:	
MODEL:	P1					OTHER COMMENTS					
TYPE:						TYPE BL AND BAF CIRCUIT BREAKERS - 10K AIC					
FED FROM:	PANEL 'A-COM'					MAIN CIRCUIT BREAKER - 65K AIC					
AFC:						AFC APPEARS TO EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN					
SETS:	2					IF THE AFC EXCEEDS 22,000 AMPERES, A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#3/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	2'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

1.3. Findings

1.3.1. Short Circuit Analysis

The short circuit study provides the available fault current at each busbar (point or node) of the distribution system based upon the impedance of the system to that point. Based upon these results, we can compare the equipment's short circuit current withstanding ratings (SCCR) and the ampere interrupting current ratings (AIC) with the available fault current**.**

Based on the short circuit study, calculated faults exceed the KAIC ratings of the Panels A and B.

At the locations noted, the available fault current exceeds the AIC and/or SCCR ratings of the equipment. As documentation from the manufacturer was not available, it is not possible to verify if the equipment is permitted to be used as part of a series rated system. While it appears that the applications of the labels are correct, it should be independently verified.

1.3.2. Protective Device Coordination

1.3.2.1. The TCC reports show adequate over current protection coordination.

1.3.2.2. The protective device settings in this report (Refer to TCC reports), do show that there is reasonable system protection for this installation. Refer to sections 2.6 and 3.3 for more details.

1.3.3. Arc Flash Evaluation

1.3.3.1. **The utility's metering cabinet and the main switchboard are often found to have incident energy levels that exceed 40 Cal/cm^2 (no safe level of PPE).** In locations where no safe level of PPE is recommended, energized work should be prohibited or extension tools (e.g., hotstick) should be used to distance personnel from the potential arc point. The incident energy at the indicated working distance dictates the required level of PPE. Wherever possible, protective device settings are suggested to try to reduce the incident energy levels. Please refer to Sections 2.5 and 3.2 for more detailed information.

1.3.3.2. The incident energy calculations utilize the data obtained from the serving utility. The incident energy calculations also assume the recommended settings shown both in the SKM Arc Flash One-Line and the follow up report for each SES distribution system. These settings must be implemented for the data provided on the labels to be correct. **Improper or inadequate maintenance can result in increased opening time of overcurrent protective devices, thus increasing the incident energy and negating the results of this study.**

1.3.3. Load Flow Analysis

The table in Appendix 3 provides an overview of the all the distribution panels predicted voltage drop. The voltage drop to all equipment appears to be satisfactory. It should be noted that excessive voltage drop can cause electronic equipment, such as computer systems, to unexpectedly shut down and effects the electrical system's performance. None of the locations studied were found to have current capacity less than available demand current flow.

Refer to Section 3.4 for more detail.

1.4. Study Notes

This study is based upon the most accurate information available at the time the study was conducted.

In reviewing the report, the serving utility typically does not provide the actual values for their contribution to the available fault current nor the impedance of their transformers. Values are published in their respective Electrical Service Requirement Manuals (ESRM) however, they will not guarantee the accuracy of this information. Additionally, there is no external labeling of the equipment that would provide this information. As a result, the values provided in this study may differ from actual values.

The serving utilities also will not indicate if overcurrent protective equipment, devices, or relays have been provided on the line side of their distribution transformer(s). As a result, it is prudent to perform these studies assuming that no protection has been provided.

There is equipment that was not surveyed due to being in locked rooms or otherwise inaccessible. Without being able to determine panel condition, we generated a Red Dangerous label for such panels.

Precise measurements of the distribution system feeders are all but impossible. Every effort has been made to estimate conductor length based upon equipment location and observed raceway or cable routing. Additionally, calculations provided in this study assume magnetic raceways above grade and non-magnetic raceways below grade except where positive identification is possible.

The results of this study are valid for a maximum of 5 calendar years after the date of publication and are invalidated whenever any of the following conditions or modifications are made to the distribution system or where the electrical equipment is not properly maintained.

The following conditions will negate the findings of this study and render the results invalid.

- Changes made to the utility distribution system or equipment
- The addition of equipment or loads
- Removal or replacement of overcurrent devices with differing specifications
- Changing overcurrent protective device settings
- Any modification to the facility distribution system
- Improper maintenance of equipment
- Removal of equipment
- Equipment that is not properly exercised as required by the manufacturer(s).

Whenever new equipment or loads have been provided after this study has been published, it is strongly recommended that a new study be provided to assess how the changes have impacted the system.

2. ANALYSIS

2.1. Basis of Analysis

Electrical system inputs, for the analysis performed, are composed of both non-intrusive on-site data gathering methods and integrating predictable values. This information is presented in the Excel spreadsheets included in this report. Source data was obtained from the Salt River Project Electrical Service Requirements Manual. SKM Power Tools version "9.0.0.7" was used for all analysis performed. Using this software, a computer model of the electrical system was created based on data obtained for the analysis. The single line diagram of the distribution system is shown on Fig.01 which is a graphical representation of the electrical system. The components on the Single Line Diagram (SLD) included all required device information for the analysis. This model was then used to study the electrical system and generate the calculations found in Appendices 1 through 5 of this report.

2.2. Campus as built Data Gathering Assumptions

When reviewing the system single line diagram, the provided information is based upon visual observations made at the site. In some circumstances it was not possible to access or open equipment. Access to this equipment may have been limited to any of the following conditions.

- Personnel not permitted to de-energize equipment
- Personnel could not gain access to equipment due to locked doors, gates or covers
- Equipment could not be opened or accessed without de-energizing the equipment or systems
- Staff felt the opening of the equipment may expose persons or property to an unreasonable risk due to the condition of the equipment.

As demand loads are necessary to complete the calculations, this study is based upon information provided by the facilities owner indicating the highest demand loads for the last calendar year. This information is supplied by the serving utility to the facility owner/operator. Where this information has not been provided, all calculations performed have been based upon a value 80% of the rating of the electrical service(s) for the facility with an anticipated power factor (PF) of 80%.

As demand loads are necessary to complete the calculations, it was necessary to make assumptions for these loads to complete the study. As load studies have not been completed for each panel or feeder, we based the study by using the following assumptions for all estimated loads (actual values are used when provided):

- Motors protected by circuit breakers: 40% of the circuit breaker rating
- Motors protected by fuses: 50% of the fuse rating
- All other loads: 50% of the rating of the upstream OCPD.

These assumptions are conservative in nature and should provide an acceptable range of results. It should be noted that in some instances, these assumptions indicate that equipment may not be suitable for the loads applied. The values provided do not necessarily indicate an overloaded or unsafe condition however, additional investigation may be necessary to assure the safe and continued operation of the equipment or systems.

The demand loads for switchboards and panelboards will be as follows:

Panelboard load estimate:

- **Main Distribution Board SES-COM:** 228 amps (reference Load Flow One Line).
- **Panel A:** 228 amps
- **Panel B:** 101 amps

2.3. Equipment Evaluation

Each device on the one-line diagram in Fig.01 is identified by an identifier. Common identifiers used in this report include:

AFC– Available Fault Current
AF – Arc Flash
IC – Interrupting Current
Gen – Generator
SCC – Short Circuit Current
CB – Circuit Breaker
SW – Switch
IE – Incident Energy
PPE – Personal Protective Equipment
TCC – Time Current Curve
AF – Arc Flash
SWB – Switchboard
LV – Low Voltage
CBL – Cable
LF – Load Flow
SC – Short Circuit

The incident energy summary in each report contains the available fault current calculations at each indicated device in the electrical system. Incident energy may increase if protective device settings in the electrical equipment is changed or adjusted or, if they are replaced. Increases in incident energy may also result from improper or inadequate maintenance or new construction.

Electrical equipment and protection devices must be in proper working condition for the equipment to operate properly and open as expected. A maintenance inspection and testing program should ensure that all equipment and devices function as designed by the manufacturer. NFPA 70E 2018 provides standards for electrical safety, including the following requirements for electrical equipment and protective devices:

> **General Maintenance Requirements** - Electrical equipment shall be maintained in accordance with manufacturers' instructions or industry consensus standards to reduce the risk of failure and the subsequent exposure of employees to electrical hazards.
>
> **Overcurrent Protective Devices** - Overcurrent protective devices shall be maintained in accordance with the manufacturers' instructions or industry consensus standards. Maintenance, tests, and inspections shall be documented.
>
> **210.5 Protective Devices** - Protective devices shall be maintained to adequately withstand or interrupt available fault current.

As of June, 2025, the amended 2014 National Electrical Code (NEC) is in effect in the town of Paradise Valley. Article 110 of the NEC contains requirements for all electrical installations, including maintenance and mechanical execution of work:

> **110.12(B): Mechanical Execution of work** - There shall be no damaged parts that may adversely affect safe operation or mechanical strength of the equipment such as parts that are broken, bent, cut; or deteriorated by corrosion, chemical action, or overheating.
>
> **110.26: Spaces about Electrical Equipment** - Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.

Additionally, when series ratings are used the National Electrical Code (NEC) Article 110 requires series combination rated overcurrent devices are visibly marked by permanently affixed means as stated:

> **110.22(B): Engineered Series Combination Systems** - Equipment enclosures for circuit breakers or fuses applied in compliance with series combination ratings selected under engineering supervision in accordance with 240.86(A) shall be legibly marked in the field as directed by the engineer to indicate the equipment has been applied with a series combination system. The marking shall meet the requirements in 110.21(B) and shall be readily visible and state the following: CAUTION – ENGINEERED SERIES COMBINATION SYSTEM RATED XXXXX AMPERES. IDENTIFIED REPLACEMENT COMPONENTS REQUIRED.

Equipment that is malfunctioning, has been inadequately or improperly installed, maintained, or modified, may result in injury or death, and will invalidate the results of this study.

2.4 Short Circuit Analysis

An analysis of the system was performed to determine the maximum fault levels at the equipment covered within the scope of work. SKM Power Tools version 9.0.1.3 (Unbalanced/Single Phase Subroutine) was used for the analysis using the comprehensive ANSI/IEEE C37.13 standard for calculation of these fault currents during short-circuit. The following short circuit currents have been calculated for system components:

- Initial Symmetrical line to line short circuit current (SCC1)
- Initial Symmetrical single line to ground short circuit current (SCC2)

The SCC1 is the maximum available short circuit current at any point in the distribution system, this is generally at the point the utility company connects to the system's service entrance system. This connection is called the point of service or the service point. The available fault current, at each point in the distribution system, is based upon the contributed fault current provided by the utility (this value is provided by the serving utility or from the utilities tables). Then, through analyzing the fault current calculations, the electrical system's components' fault withstand capability will be assessed by comparing them with SCC1.

The short-circuit current should not exceed the equipment rating with required factors for the protective device.

Based on the short circuit study, calculated faults exceeded the KAIC ratings of the Panels A, and B.

The Short Circuit Analysis in each SES SKM report summarizes the fault duties at each device. The AF incident energy summary in the SES report shows IE at the safe distance and PPE requirements for each location into the system.

2.5 Arc Flash Evaluation

Arc Flash Evaluations are used to assess arc flash hazards and to assess the work Site risk to personnel. The Occupational Safety and Health Administration (OSHA), and the National Fire Protection Association (NFPA) standard 70E provide requirements for arc flash and other work Site hazards. OSHA requires employers provide a workplace free from recognized hazards that may cause injury or death to their employees. NFPA 70E 2018 provides the Standard for Electrical Safety in the Workplace. NFPA 70E 130.5 states:

"An arc flash risk assessment shall be performed and shall determine if an arc flash hazard exists. If an arc flash hazard exists, the risk assessment shall determine appropriate safety-related work practices, the arc flash boundary, and the PPE to be used within the arc flash boundary."

Arc Flash Evaluations are used to determine the required level of personal protective equipment (PPE), arc flash boundaries, and restrictions on the work of energized equipment. This information must include on the labels as required by NFPA and OSHA standards.

NFPA 70E 130.5(H) requires electrical equipment to be field-marked with a label containing the following information:

(1) Nominal system voltage
(2) Arc flash boundary
(3) At least one of the following:

a. Available incident energy and the corresponding working distance, OR the arc flash PPE category in Table 130.7(C)(15)(a) or Table 130.7(C)(15)(b) for the equipment, but not both
b. Minimum arc rating of clothing
c. Site-specific level of PPE

Furthermore, the National Electrical Code (NEC) contains additional requirements for the installation of Arc-Flash warning labels and arc energy reduction:

110.16 Arc-Flash Hazard Warning. Electrical equipment, such as switchboards, switchgear, panelboards, industrial control panels, meter socket enclosures, and motor control centers, that in other than dwelling units, and is likely to require examination, adjustment, servicing, or maintenance while energized, shall be field or factory marked to warn qualified persons of potential electric arc flash hazards. The marking shall meet the requirements in 110.21(B) and shall be located to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

240.67 Arc Energy Reduction. Where fuses rated 1200 A or higher are installed, 240.67(A) and (B) shall apply. This requirement shall become effective January 1, 2020.

(A) Documentation. Documentation shall be available to those authorized to design, install, operate, or inspect the installation as to the location of the fuses.
(B) Method to Reduce Clearing Time. A fuse shall have a clearing time of 0.07 seconds or less at the available arcing current, or one of the following shall be provided:

(1) Differential relaying
(2) Energy-reducing maintenance switching with local status
(3) Energy-reducing active arc flash mitigation system
(4) An approved equivalent means

240.87 Arc Energy Reduction. Where the highest continuous current trip setting for which the actual overcurrent device installed in a circuit breaker is rated or can be adjusted is 1200 A or higher, 240.87(A) and (B) shall apply. Not applicable for this Campus as all Overcurrent Circuit protection is 1000 amp or less.

NFPA 70E 130.5(G) also contains information on the selection of PPE where required based on the incident energy available at the equipment. Different types of PPE are suggested dependent on the exposure level of the energy as rated in Cal/cm^2. The energy exposure levels are shown in the Incident Energy Summary in each report. The levels are defined using the following energy Cal/cm^2:

Level A: 1.2 Cal/cm^2
Level B: 4 Cal/cm^2
Level C: 8 Cal/cm^2
Level D: 25 Cal/cm^2
Level E: 40 Cal/cm^2
Level D: 100 Cal/cm^2
Level E: 120 Cal/cm^2

The upper limit for the highest rated PPE is 40 Cal/cm^2. Energy exposure beyond this upper limit is relatively unsafe with any PPE, and energized work at equipment exceeding this rating should be avoided. **Arc-Flash labels with incident energy exceeding this threshold show the required PPE as "No Safe PPE Available – Energized Work is Prohibited".**

NFPA 70E 130.7(C) describes PPE requirements in effect at specified boundaries of working distance. NFPA 70E 130.4 is effective where working within the "restricted Approach Boundary", and NFPA 70E 130.5 were working within the "Arc Flash Boundary". Previous versions of NFPA 70E 2018 contain varied names and descriptions for these boundaries. This analysis uses NFPA 70E 2018, the most recent version as of the preparation of the analysis, as the basis for descriptions of approach boundaries.

The incident energy calculations utilize information provided by the serving utility. The incident energy calculations also assume the correct settings of overcurrent protective devices for the data provided on the labels to be correct. Improper or inadequate maintenance can result in increased opening time of the overcurrent protective device(s), thus increasing the incident energy.

2.5.1 Arc Flash Labels

Equipment labels containing the incident energy level, working boundaries and PPE requirements for exposed energized work are in Appendix 6. The labels are color coded per ANSI Z535.4 and are to be field-marked per NFPA 70E 130.5(D) and NEC 110.16.

The settings used in Arc Energy Reduction or other temporary means of incident energy reduction should be reset as soon as the work is complete to return the system to the normal engineered settings. Failure to do so will result in non-selective operation of the system and may result in unnecessary loss of power to critical systems.

2.6 Coordination Analysis

A protective device Coordination Study was performed to evaluate the capability of the protective devices to provide protection under fault conditions. The Coordination Study was performed by plotting the protective device characteristics as Time-Current Characteristic (TCC) curve sets. SKM Power Tools version 9.0.1.3 was used for TCC plots and analysis in this report. Protective devices including fuses and breakers were compared in a graphed set to coordinate the operating time and current of devices adjacent to each other in the electrical system.

In many systems, compromises need to be made between coordination, protection, and service needs of the Site due to the amperage and devices in the system.

ANSI/IEEE Standard 242-2001 states, "Whether minimizing the risk of equipment damage or preserving service continuity is the more important objective depends on the operating philosophy of the particular plant or business."

Subsequent changes in devices or operation of the system may require re-evaluation of protective devices.

Time-Current Curve (TCC) sets for the systems analyzed are in the Appendix 4 report. The voltage and current are considered in the one-line diagram that show the relationship between the protective devices plotted on each curve set. The curves for each device are terminated at the maximum fault magnitude available at the device's location. The curve sets consist of the TCC of devices plotted on a log-log graph showing current and time axis. The findings based on the TCC plots do not address lack of selectivity due to instantaneous units being in series.

2.7 Load Flow Evaluation

An analysis of the system was performed to determine the maximum voltage drop, voltage phase, power factor, branches voltage, current, power losses, active and reactive power.

2.8 Energized Electrical Work Permit

An example of an Energized Electrical Work Permit is included in the Appendix. It is provided for reference and may be used as needed to meet the requirements of NFPA 70E 2018 for the facility.

3. STUDYS' RESULTS INTERPRETATION

3.1 Short Circuit Interpretation

Starting with Init.Sym.RMS provided for the service as the available symmetrical short circuit current at service equipment by the serving utility:

- SES-COM is a 400 amp, 240/120V, 1-phase service fed from a 50 KVA utility transformer with a Short Circuit current determined by the power company to be 28,539 Amps.

The fault current from the service entrance to the downstream equipment is reduced proportionately based on the impedance of each successive buss or line. Short Circuit Current ratings, or Ampere Interrupting Capacity ratings, are based upon the available energy at each specific point in the electrical system according to the short circuit study.

The model utilizes information obtained from field observations and compared the available fault current with the interrupting and/or short circuit ratings (IC) of the protective devices in the electrical system.

Based on short circuit study, Panels A and B exceed their KAIC values. Issues with the electrical system at the main location are noted in the Excel report. *Reference Excel field report.*

Eq. Name	SES-COM	Panel A	Panel B			
SC RATING(KASCw)	**65KA** ☑	**22KA** ☒	**10KA** ☒			
$I_{k"-3Ph.-Init.Sym.}$	**25.6KA**	**22.0KA**	**21.5KA**			

Table (1)

NOTE 1:

☑ : Passed. Equipment is adequate to use under circumstance.

☒ : Failed. Equipment is not adequate to use under circumstance. Client must upgrade the panel or perhaps the circuit breakers with higher ratings as proposed in this report.

3.2 Arc Flash Study Interpretation

The analysis of faults and protective devices were used to evaluate incident energy in the electrical system. These rapid clearing times help to reduce the time that the arc is ON. The quicker an overcurrent device opens or clears the fault, a lower value of Incident Energy is expected and in turn, lowers the AF categories. The AF study also evaluated the incident energy for the facility where the system(s) supply was provided.

The incident energy (IE) at the service point, is elevated, as we did not consider any MV circuit breaker on transformer primary side as the serving utility will not provide this information. It should be noted that where a MV CB / or fuse on transformer primary is provided, the IE provided by the utility system will be significantly decreased.

All sources of energy should follow lock-out tag-out procedures and the switchgear should be in a constant de-energized state when servicing, modifying, or maintaining the equipment. The following general site recommendations are:

The worst-case energy levels should be utilized in developing energized electrical safety procedures and other PPE required for the site.

Voltage should always be verified to be equal to or less than the indicated voltage on the provided labels and/or the nameplate provided with the equipment, or the findings of this report will be invalidated.

Labels are to be printed with the following color code as per customer request.

INCIDENT ENERGY (cal/cm^2)	CLOTHING DESCRIPTION	COLOR CODE
<1.2	Non-melting or untreated natural fiber long-sleeve shirt, long pants or coveralls, and other PPE per NFPA 70E-2018 Article 130.7(C).	
1.2-12	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>12-40	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>40*	INCIDENT ENERGIES AT THIS LOCATION EXCEEDS THE MAXIMUM SAFE WORKING LEVEL. ENERGIZED WORK IS NOT RECOMMENDED	

3.30 Coordination Study Interpretation

The short circuit analysis of faults was modeled with protective devices in the electrical system. Inserting all protective elements in one diagram could cause confusion, so each radial branch's TCC have been shown in individual TCC diagrams.

Typical TCC curves are provided in Appendix 4.

TCC diagrams show Circuit breaker to cable coordination and do not call out undersized bus systems. It should be noted that changing overcurrent device sizes or settings may introduce additional hazards or issues; any changes should be done in consultation with a registered electrical engineer.

3.40 Load Flow Study Interpretation

The load flow study calculated all system nominal currents, voltages, and power consumption throughout the distribution system assuming normal operation of the facility with nominal demands.

Assumptions for the facility demand loads had to be utilized to evaluate the system. The indicated loads are not actual and should be independently verified. It is recommended, as part of a continuing maintenance program, to periodically conduct load studies whenever systems are modified or equipment is added. The study should determine the actual loads used during the system operation and for a period of not less than 30 days. Based upon the study's findings, it may become necessary to remove or relocate loads or, it may find that load balancing may become necessary. It should be noted that actual loads are often significantly less than the calculated loads mandated by the NEC as these calculations tend to be very conservative.

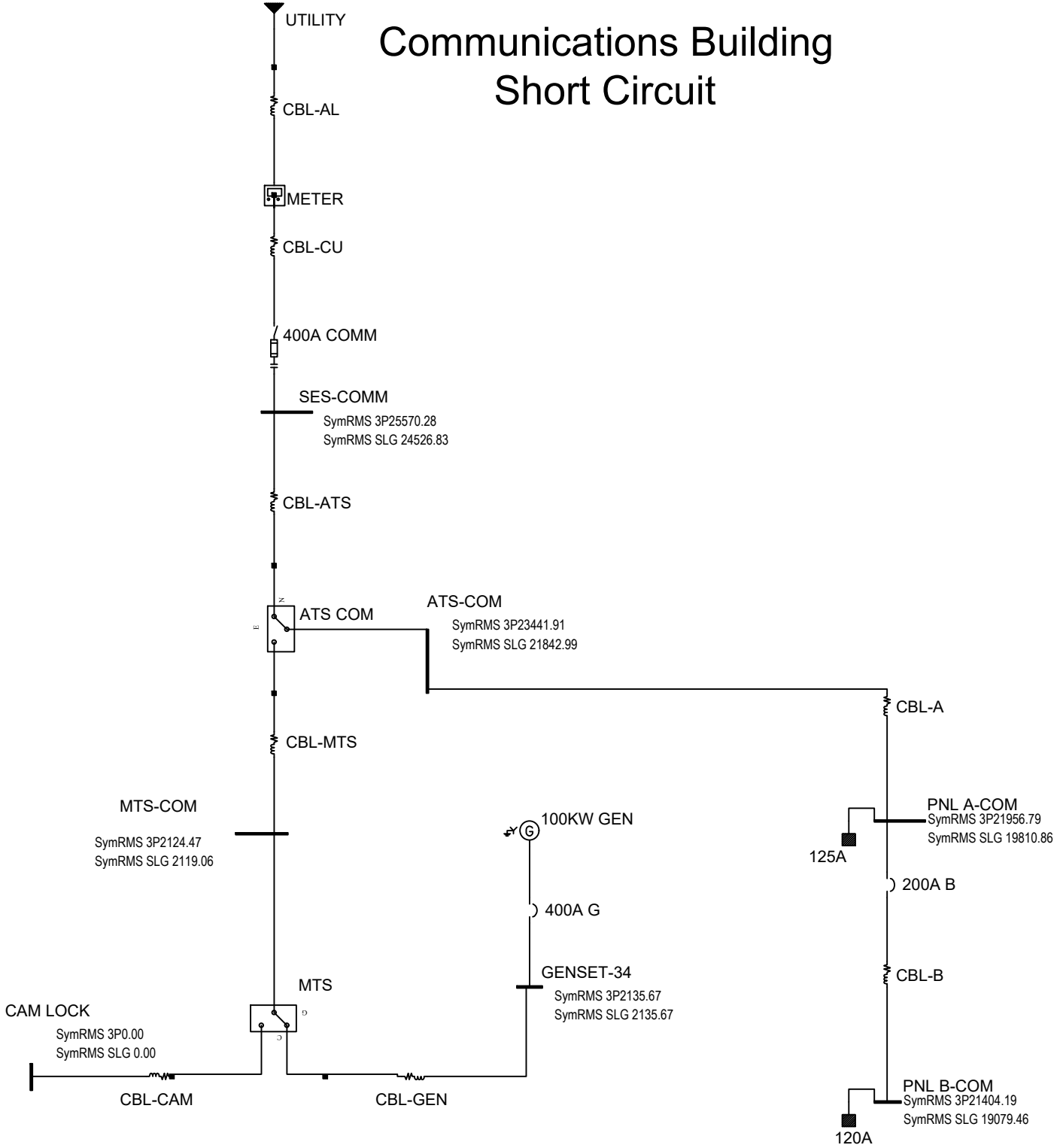
OCPD: Over Current Protection Device (Fuse/Breaker) are acceptable based upon estimated loads.

It appears that the voltage drop for the campus distribution system's feeders are acceptable. It should be noted that where voltage drop is excessive (greater than 5%) it may create operational issues (impacting the proper operation of data processing equipment as an example) and increase operational costs, it can also reduce the life expectancy of equipment such as motors and HVAC equipment and impact the proper operation of overcurrent devices and will increase clearing time which will also increase the incident energy of an arc flash. Finally, excessive voltage drop can also damage conductor insulation due to the increased heating of the conductor. Where these calculations indicate excessive voltage drop is present, the systems components should be evaluated by a registered electrical engineer.

APPENDIX 1

SHORT CIRCUIT SKM REPORT

Communications Building
Short Circuit



DAPPER Fault Contribution Complete Report

Comprehensive Short Circuit Study Settings

Three Phase Fault	Yes	**Faulted Bus**	All Buses
Single Line to Ground	Yes	**Bus Voltages**	First Bus From Fault
Line to Line Fault	No	**Branch Currents**	First Branch From Fault
Line to Line to Ground	No	**Phase or Sequence**	Report phase quantities
Motor Contribution	Yes	**Fault Current Calculation**	Asymmetrical RMS (with DC offset and Decay)
Transformer Tap	Yes	**Asym Fault Current at Time**	0.50 **Cycles**
Xformer Phase Shift	Yes		

				Initial Symmetrical Amps				Asymmetrical Amps				Init Sym Neutral Amps	
Bus Name	**Contributions**			**3 Phase**	**SLG**	**LLG**	**LL**	**3 Phase**	**SLG**	**LLG**	**LL**	**SLG**	**LLG**
BUS-0003				**28,539**	**28,539**	**0**	**0**	**39,461**	**39,461**	**0**	**0**		
CBL-AL	CABLE	In		0	0	0	0	0	0	0	0		
UTILITY	UTILITY	In		28,539	28,539	0	0	39,461	39,461	0	0	28,539	
SES-COMM				**25,570**	**24,527**	**0**	**0**	**28,636**	**26,989**	**0**	**0**		
CBL-ATS	CABLE	In		0	0	0	0	0	0	0	0		
CBL-CU	CABLE	In		25,570	24,527	0	0	28,636	26,989	0	0	24,527	
BUS-0006				**25,720**	**24,723**	**0**	**0**	**28,918**	**27,305**	**0**	**0**		

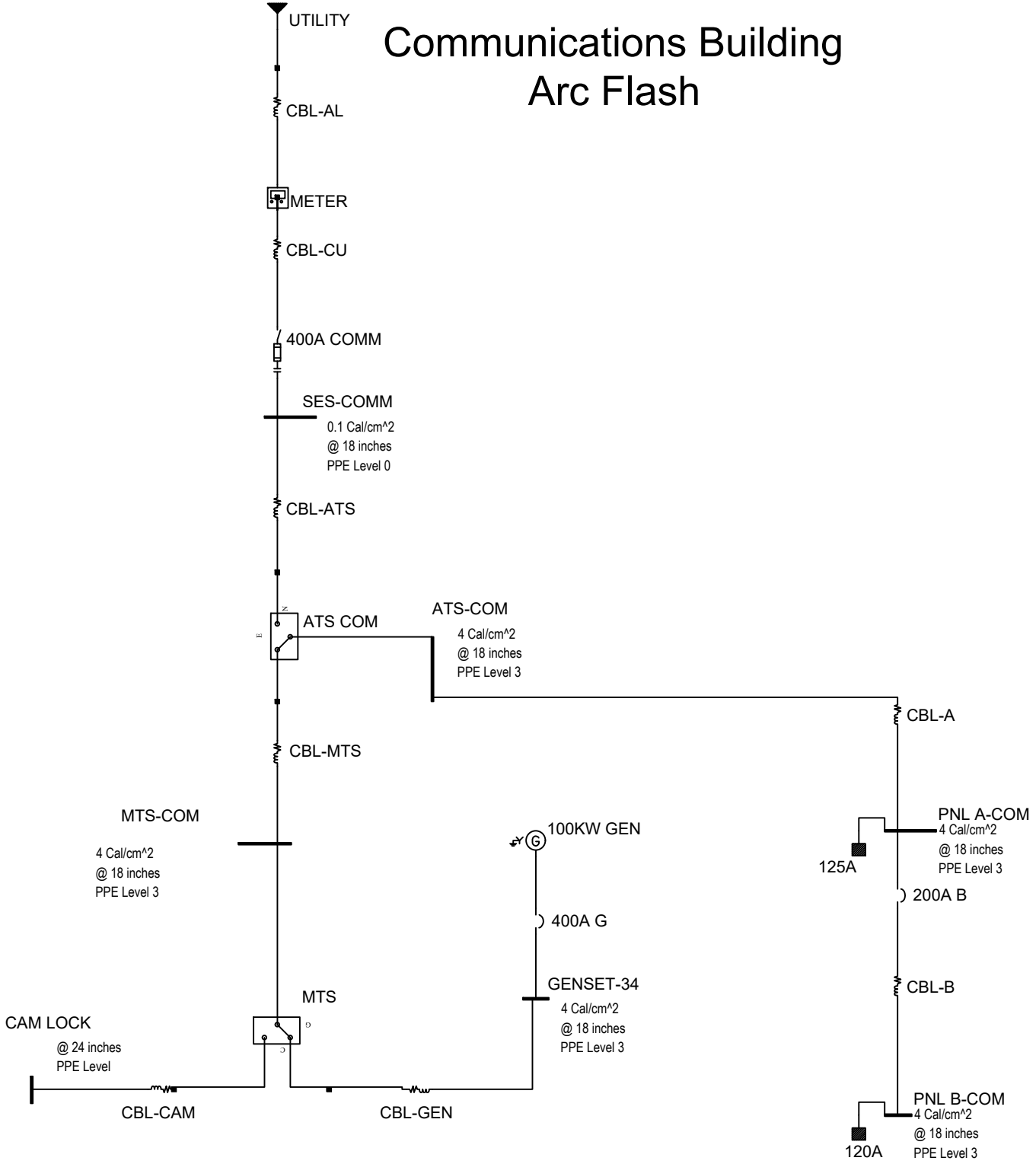
Bus Name	---------Contributions---------		----------Initial Symmetrical Amps---------- 3 Phase	SLG	LLG	LL	----------Asymmetrical Amps---------- 3 Phase	SLG	LLG	LL	---Init Sym Neutral Amps-- SLG	LLG
CBL-AL	CABLE	In	25,720	24,723	0	0	28,918	27,305	0	0	24,723	
CBL-CU	CABLE	In	0	0	0	0	0	0	0	0		
BUS-0011			**23,442**	**21,843**	**0**	**0**	**25,112**	**23,118**	**0**	**0**		
CBL-ATS	CABLE	In	23,442	21,843	0	0	25,112	23,118	0	0	21,843	
ATS COM		In	23,442	21,843	0	0	25,112	23,118	0	0		
ATS-COM			**23,442**	**21,843**	**0**	**0**	**25,112**	**23,118**	**0**	**0**		
CBL-A	CABLE	In	0	0	0	0	0	0	0	0		
PNL A-COM			**21,957**	**19,811**	**0**	**0**	**23,099**	**20,501**	**0**	**0**		
CBL-A	CABLE	In	21,957	19,811	0	0	23,099	20,501	0	0	19,811	
CBL-B	CABLE	In	0	0	0	0	0	0	0	0		
BUS-0014			**2,123**	**2,116**	**0**	**0**	**3,270**	**3,246**	**0**	**0**		
CBL-MTS	CABLE	In	2,123	2,116	0	0	3,270	3,246	0	0	2,116	
ATS COM		In	0	0	0	0	0	0	0	0		
PNL B-COM			**21,404**	**19,079**	**0**	**0**	**22,393**	**19,629**	**0**	**0**		
CBL-B	CABLE	In	21,404	19,079	0	0	22,393	19,629	0	0	19,079	
BUS-0016			**2,124**	**2,119**	**0**	**0**	**3,280**	**3,263**	**0**	**0**		

Bus Name	---------Contributions---------		----------Initial Symmetrical Amps---------- 3 Phase	SLG	LLG	LL	----------Asymmetrical Amps---------- 3 Phase	SLG	LLG	LL	---Init Sym Neutral Amps-- SLG	LLG
CBL-MTS	CABLE	In	0	0	0	0	0	0	0	0		
BUS-0017			**2,124**	**2,119**	**0**	**0**	**3,280**	**3,263**	**0**	**0**		
CBL-GEN	CABLE	In	2,124	2,119	0	0	3,280	3,263	0	0	2,119	
MTS		In	0	0	0	0	0	0	0	0		
GENSET-34			**2,136**	**2,136**	**0**	**0**	**3,350**	**3,350**	**0**	**0**		
CBL-GEN	CABLE	In	0	0	0	0	0	0	0	0		
100KW GEN	GEN	In	2,136	2,136	0	0	3,350	3,350	0	0	2,136	
BUS-0019			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		
CBL-CAM	CABLE	In	0	0	0	0	0	0	0	0		
MTS		In	2,124	2,119	0	0	3,280	3,263	0	0		
CAM LOCK			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		
CBL-CAM	CABLE	In	0	0	0	0	0	0	0	0		

APPENDIX 2

ARC FLASH SKM REPORT

Communications Building
Arc Flash



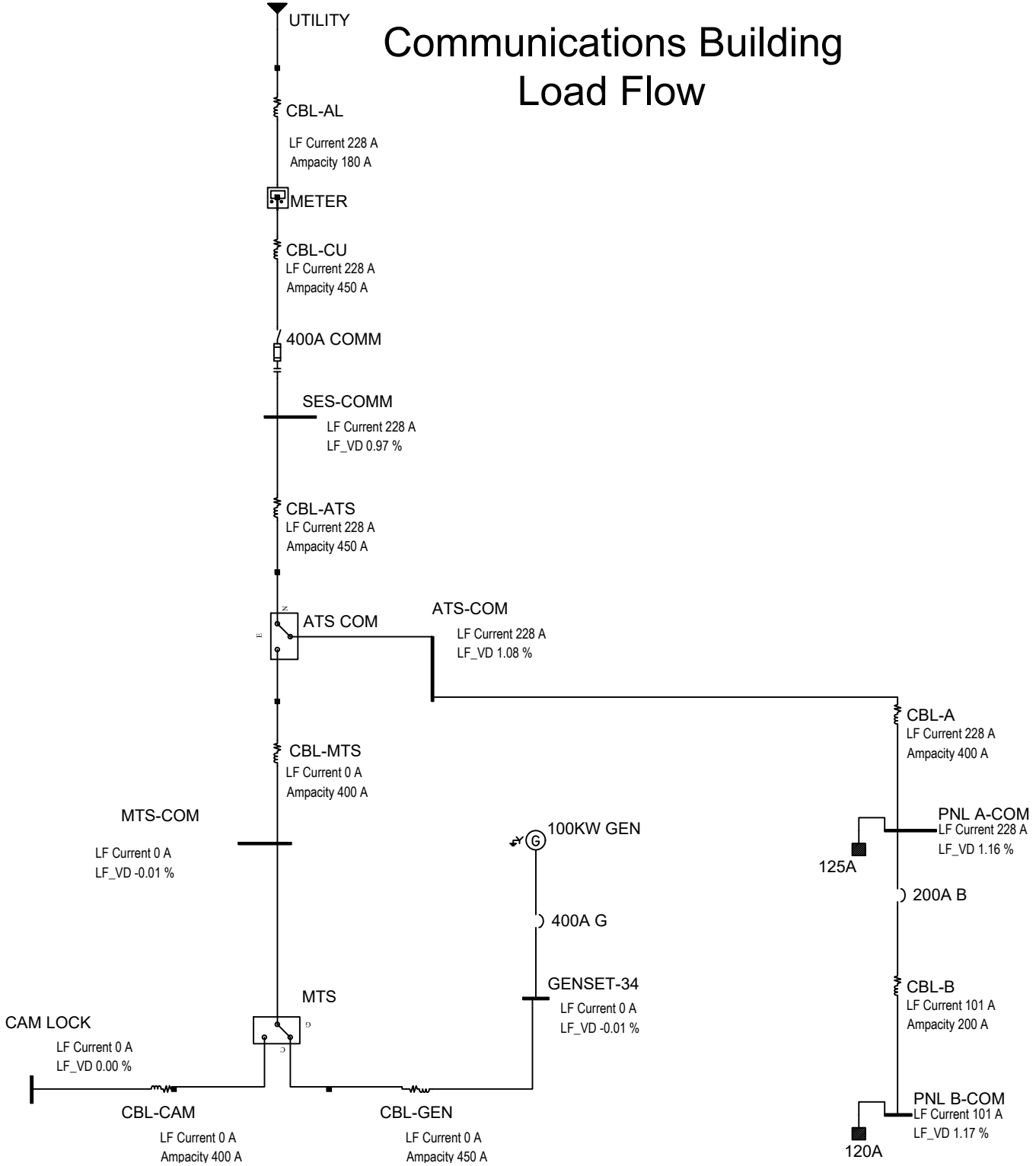
Arc Flash Evaluation Report

Bus Name	Bus kV	Protective Device Name	Bus Bolted/ Arcing (kA)	Prot Bolted/ Arcing (kA)	Trip/ Breaker Time (sec.)	Equip Type/ Gap (mm)	Electrode Config / WC Config	Box Height/ Width (in)	Box Depth (in)	ArcFlash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	PPE
ATS-COM	0.240	400A G	2.12	2.12	2.000	PNL	VCB	14	10	38.14	18.00	3.98	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			0.95	0.95	0.000	25	VCB	12					
GENSET-34	0.240	400A G	2.14	2.14	2.000	PNL	VCB	14	10	38.30	18.00	4.01	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			0.96	0.96	0.000	25	VCB	12					
MTS-COM	0.240	400A G	2.12	2.12	2.000	PNL	VCB	14	10	38.16	18.00	3.99	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			0.95	0.95	0.000	25	VCB	12					
PNL A-COM	0.240	400A G	2.11	2.11	2.000	PNL	VCB	14	10	38.02	18.00	3.96	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			0.95	0.95	0.000	25	VCB	12					
PNL B-COM	0.240	200A B	2.11	2.11	2.000	PNL	VCB	14	10	37.97	18.00	3.96	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			0.94	0.94	0.000	25	VCB	12					
SES-COMM	0.240	400A COMM	25.57	25.57	0.004	PNL	VCB	14	10	4.44	18.00	0.13	No Arc-rated PPE Required
			12.66	12.66	0.000	25	VCB	12					

APPENDIX 3

LOAD FLOW STUDY

Communications Building Load Flow



Project: Communications Building
Base Project

Load Flow Summary Report

Load Flow Study Settings

Include Source Impedance	Yes	**Bus Voltage Drop %**	5.00
Solution Method	Exact (Iterative)	**Branch Voltage Drop %**	3.00
Load Specification	Connected Load		

Swing Generators

Source	In/Out Service	Vpu	Angle	kW	kvar	VD%	Utility Impedance
UTILITY	In	1.00	0.00	75.4	56.3	0.55	1.05 +*j* 8.36

PQ Generators

Participation PQ Source	In/Out Service	VD %	Vp.u.	KW	KVAR
100KW GEN	In	-0.01	1.000	0.0	0.0

Buses

Bus Name	In/Out Service	Design Volts	LF Volts	Angle Degree	PU Volts	%VD
ATS-COM	In	240	237	-0.20	0.99	1.08
GENSET-34	In	240	240	-0.45	1.00	-0.01
MTS-COM	In	240	240	-0.45	1.00	-0.01
PNL A-COM	In	240	237	-0.19	0.99	1.16
PNL B-COM	In	240	237	-0.19	0.99	1.17
SES-COMM	In	240	238	-0.20	0.99	0.97

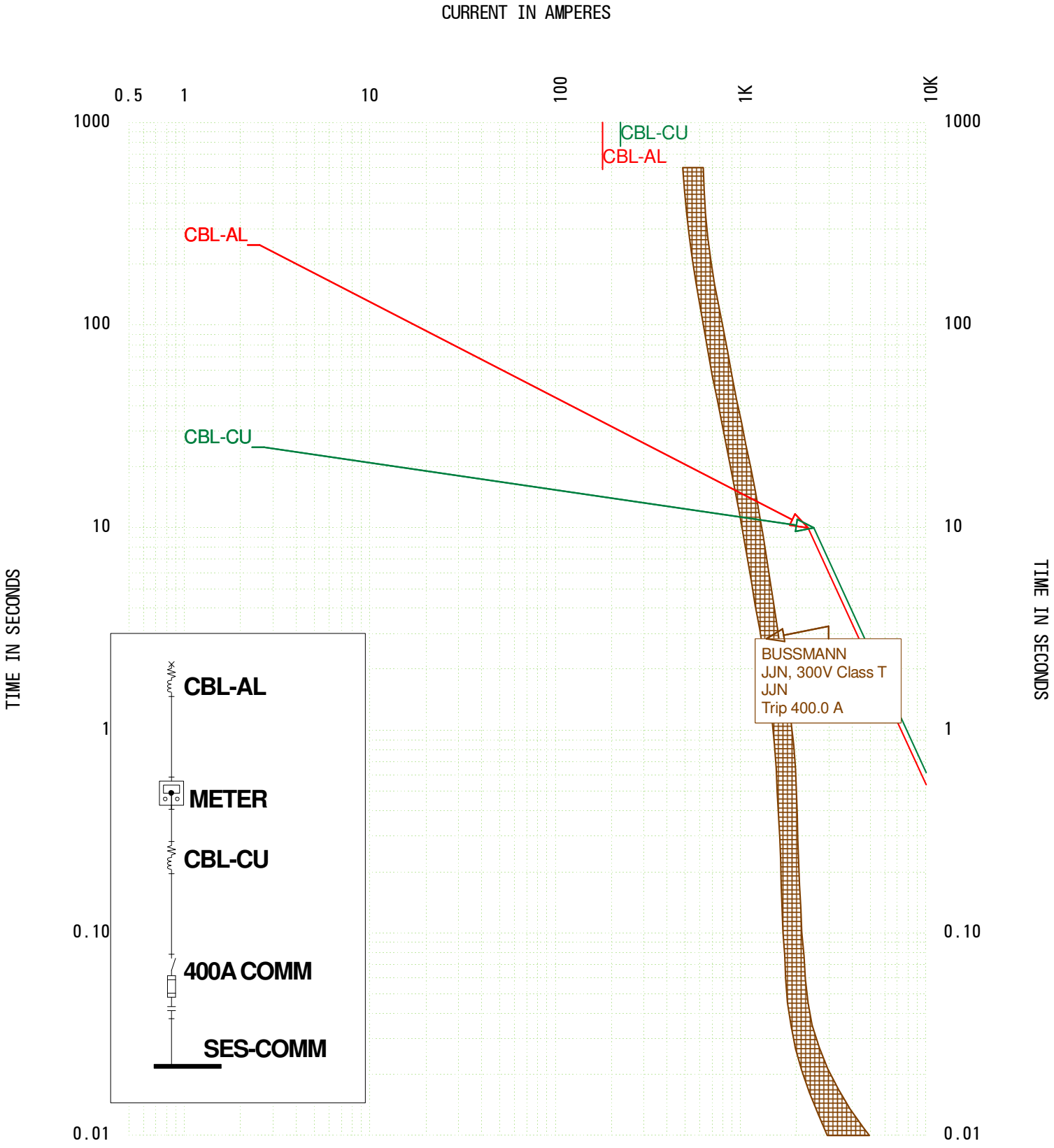
Cables

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
ATS-COM	CBL-A	In	0.08	74.9	56.2	93.6	227.7	0.80
PNL A-COM				0.1	0.0	0.1	56.9	
BUS-0003	CBL-AL	In	0.41	75.4	56.3	94.1	227.7	0.80
BUS-0006				0.4	0.1	0.4	126.5	
BUS-0006	CBL-CU	In	0.01	75.0	56.2	93.7	227.7	0.80
SES-COMM				0.0	0.0	0.0	50.6	
BUS-0017	CBL-GEN	In	0.00	0.0	0.0	0.0	0.0	0.00
GENSET-34				0.0	0.0	0.0	0.0	
BUS-0019	CBL-CAM	In	0.00	0.0	0.0	0.0	0.0	0.00
CAM LOCK				0.0	0.0	0.0	0.0	
BUS-0022	CBL-MTS	In	0.00	0.0	0.0	0.0	0.0	0.00
MTS-COM				0.0	0.0	0.0	0.0	
PNL A-COM	CBL-B	In	0.01	33.3	24.9	41.6	101.2	0.80
PNL B-COM				0.0	0.0	0.0	50.6	

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
SES-COMM	CBL-ATS	In	0.11	75.0	56.2	93.7	227.7	0.80
BUS-0011				0.1	0.0	0.1	50.6	

APPENDIX 4

TCC REPORT

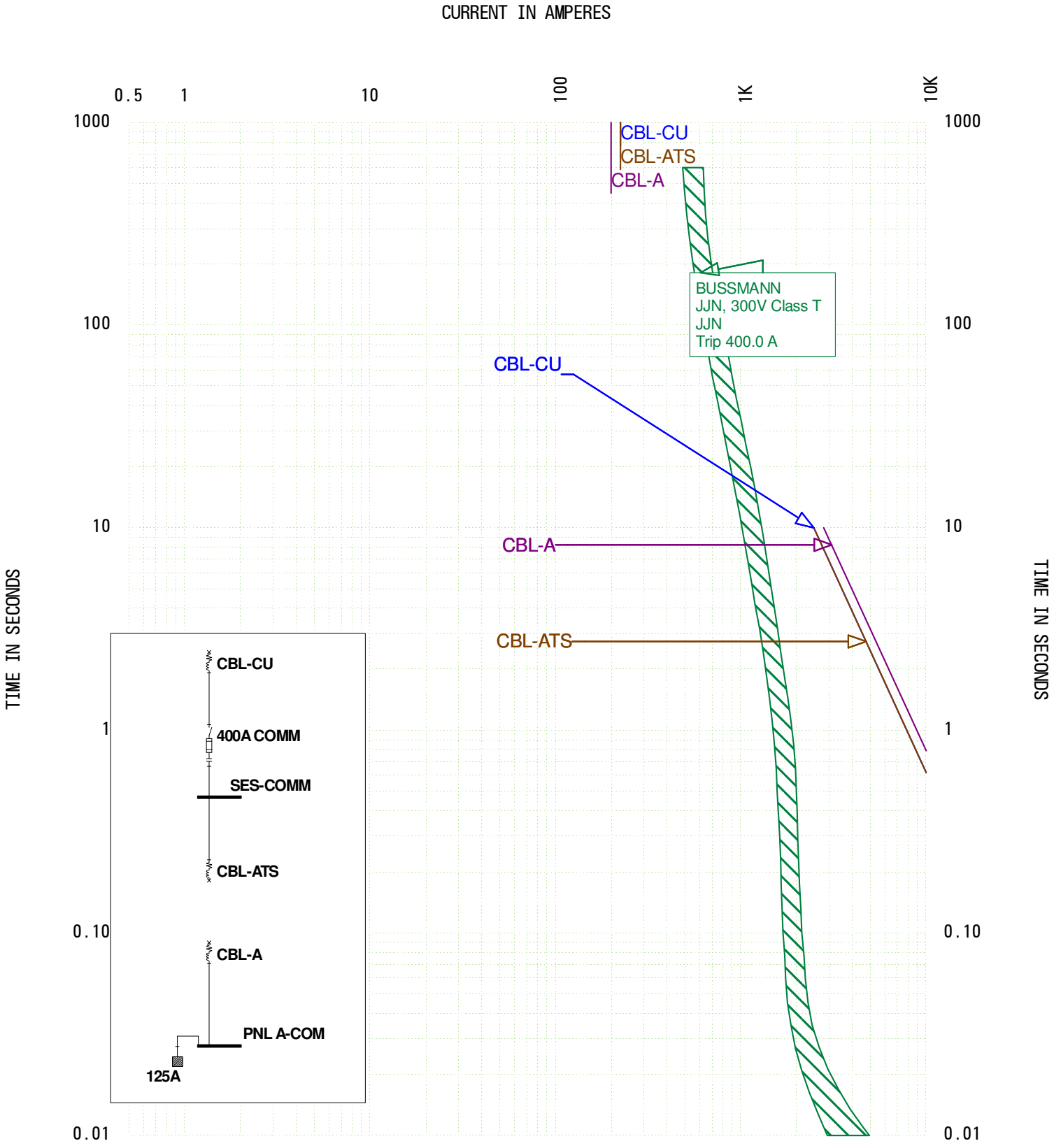


TCC Name: SES-COM
Oneline: SES-COM
June 20, 2025 2:23 PM

Current Scale x 1

Reference Voltage: 240

SKM Systems Analysis, Inc.

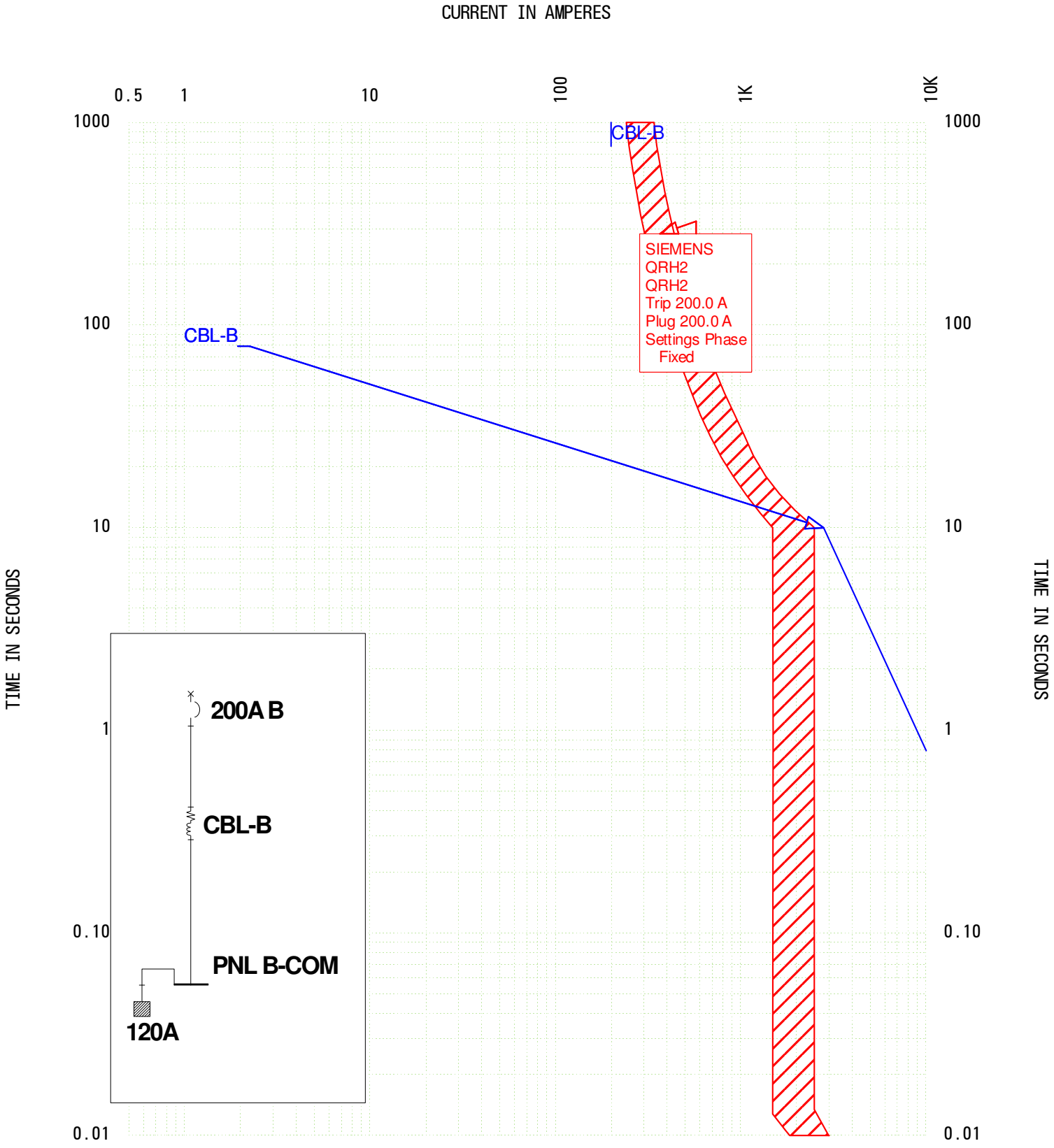


TCC Name: PNL A-COM
Oneline: PNL A-COM
June 20, 2025 2:29 PM

Current Scale x 1

Reference Voltage: 240

SKM Systems Analysis, Inc.

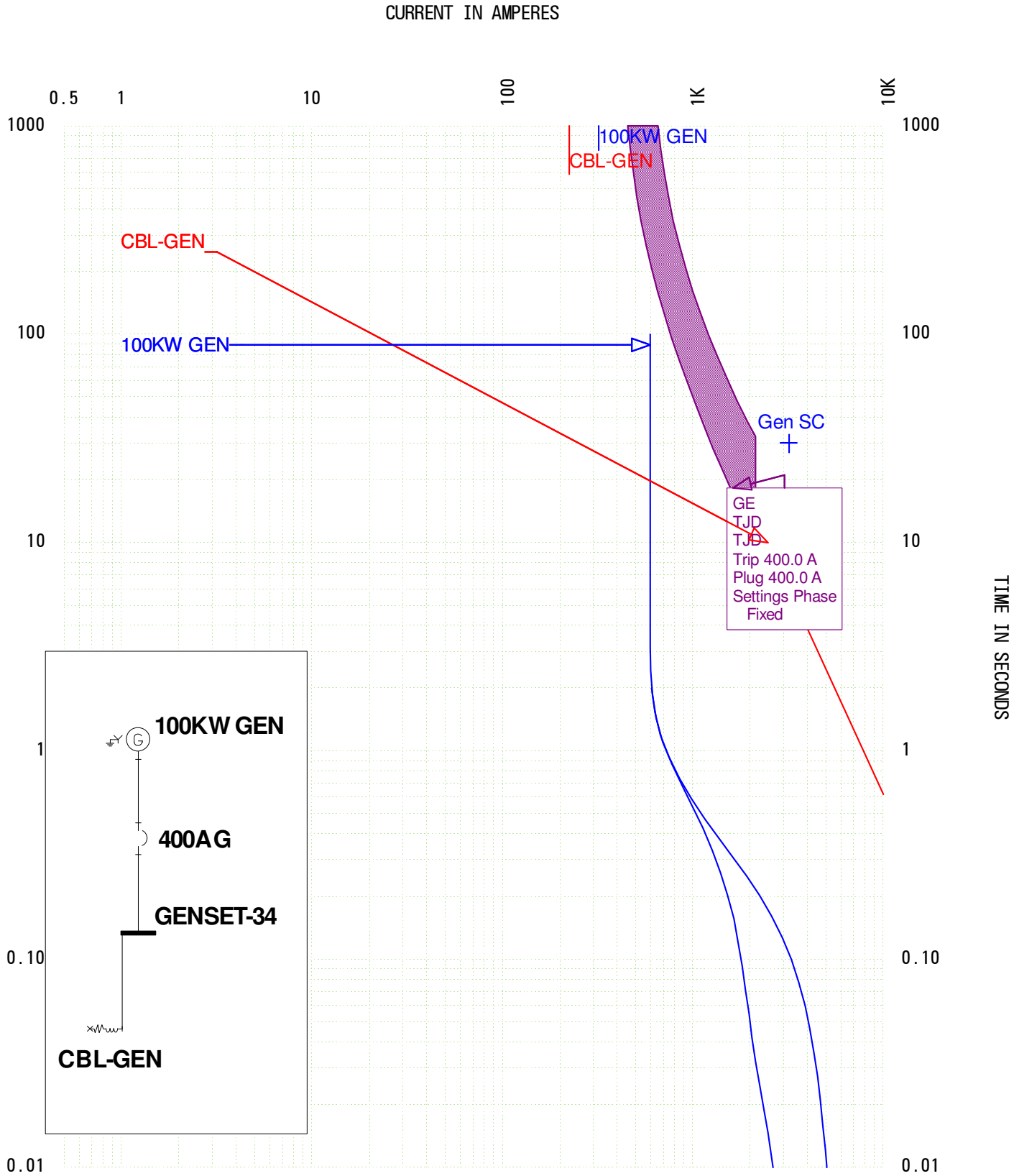


TCC Name: PNL B-COM
Oneline: PNL B-COM
June 20, 2025 2:30 PM

Current Scale x 1

Reference Voltage: 240

SKM Systems Analysis, Inc.



TCC Name: GEN SET-34
Oneline: GEN SET-34
June 20, 2025 2:26 PM

Current Scale x 1

Reference Voltage: 240

SKM Systems Analysis, Inc.

APPENDIX 5

WORK PERMIT SAMPLE

ENERGIZED ELECTRICAL WORK PERMIT

PART I: TO BE COMPLETED BY THE REQUESTER:

Job/Work Order Number: _____

(1) Description of circuit/equipment/job location:

_____

_____

(2) Description of work to be done:

_____

_____

_____

(3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage:

_____

_____

_____ _____

Requester/Title Date

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS DOING THE WORK

Check When Complete

(1) Detailed job description procedure to be used in performing the above detailed work: ☐

_____

_____

(2) Description of the Safe Work Practices to be employed: ☐

Arc Flash Boundary	8"	Incident Energy	0.35 cal/cm^2	Working Distance	18"
Shock Hazard	208 VAC	Limited Approach Restricted Approach	42" 12"	Glove Class	00
Required PPE	No Arc-rated PPE Required				

(3) Means employed to restrict the access of unqualified persons from the work area:

_____ ☐

(4) Evidence of completion of a job briefing including discussion of any job-related hazards:

_____

(5) Do you agree the above described work can be done safely? ☐ Yes ☐ No (If no, return to requester)

_____ _____

Electrically Qualified Person(s) Date

_____ _____

Electrically Qualified Person(s) Date

PART III: APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

_____ _____

Maintenance/Engineering Manager Manufacturing Manager

_____ _____

Safety Manager Electrically Knowledgeable Person

_____ _____

General Manager Date

APPENDIX 6

ARC FLASH LABELS

PPE TABLE

ARC FLASH LABELS

	Incident Energy From (cal/cm^2)	Incident Energy To (cal/cm^2)	IE Low Marginal (cal/cm^2)	IE High Marginal (cal/cm^2)	PPE Level #	PPE Level	Clothing Layers	Required Minimum Arc Rating of PPE (cal/cm^2)	Notes	Level Background Color	Level Foreground Color	Warning Label Text
1	0.0	1.2	0.000	1.190	0	No Arc-rated PPE Required	N/A	N/A	H.3			WARNING
2	1.2	12.0	1.210	11.800	3	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	2 or 3	12	130.5(G)			WARNING
3	12.0	40.0	12.200	40.000	4	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	3 or more	40	130.5(G)			WARNING
4	40.0	9999.0	40.000	9998.000	Dangerous!	DO NOT WORK ON LIVE!	ↄ NOT WORK ON LIV	N/A	DO NOT WORK ON LIVE!			DANGER

	Head & Eye & Hearing Protection	Hand & Arm Protection	Foot Protection	PPE Others 1	PPE Others 2	PPE Others 3	PPE Others 4	PPE Others 5
1	Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	N/A	Safety glasses	N/A	> 50V voltage rated tools + Class 0 (minimum) gloves	Dielectric shoes or insulating mat (step and touch potential).	
2	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
3	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Arc-rated Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
4	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

38 in	Arc Flash Boundary
3.99 cal/cm^2	Incident Energy at **18 in**
PPE	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
240 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	**MTS-COM**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/20/25**	**By:**	**AA/MP/RR**

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

4 in	Arc Flash Boundary
0.13 cal/cm^2	Incident Energy at **18 in**
PPE	No Arc-rated PPE Required
240 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	**SES-COMM**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/20/25**	**By:**	**AA/MP/RR**

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

240 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL A-COM**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/20/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has insufficient KAIC rating. The equipment/panel is to be de-energized before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

240 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL B-COM**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/20/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has insufficient KAIC rating. The equipment/panel is to be de-energized before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

240 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**ATS-COM**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/20/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

240 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**GENSET-34**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/20/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

The End of Study Report

FACILITY CONDITION ASSESSMENT

prepared for

Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, AZ 85253
Isaac Chavira



EMT Ambulance Building
6517 East Lincoln Drive
Paradise Valley, AZ 85253

PREPARED BY:
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Gregg.Young@bureauveritas.com

BV PROJECT #:
172662.25R000-001.468

DATE OF REPORT:
July 7, 2025

ON SITE DATE:
May 27, 2025

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1. Executive Summary

Property Overview and Assessment Details

General Information	
Property Type	Single-family
Number of Buildings	1
Main Address	6517 East Lincoln Drive, Paradise Valley, AZ 85253
Site Developed	1966
Outside Occupants / Leased Spaces	None
Date(s) of Visit	May 27, 2025
Management Point of Contact	Paradise Valley Public Works Mr. Isaac Chavira, Public Works Director (480) 348-3540, ichavira@paradisevalleyaz.gov
On-site Point of Contact (POC)	Paradise Valley Public Works John Fraley, Lead Technician (480) 797-2060
Assessment and Report Prepared By	Billy Barnett
Reviewed By	Rashad Alnial *for,* Gregg Young Program Manager 800.733.0660 x7296228 Gregg.Young@bureauveritas.com
Link	Full dataset for this assessment can be found at: https://www.assetcalc.net/

Significant/Systemic Findings and Deficiencies

Historical Summary

EMT Ambulance Building is a residential-like structure located in Paradise Valley, Arizona and serves as lodging for on duty/on call EMT personnel. It was formerly a private residence. The building is located directly behind and shares the same street address as the Municipal Court building.

EMT Ambulance Building consists of one building built in 1966. It measures approximately 3,518 square feet, and contains a day room, storage room, bunkrooms, restrooms, a residential kitchen, laundry room, enclosed carport, and an ancillary carport structure. There have been no major renovations conducted since construction, resulting in the building being in mostly aged but functional condition.

Architectural

EMT Ambulance Building is a conventional wood frame structure over concrete slab foundation. The roof structure of the building is mainly of medium sloped construction covered in asphalt shingles. The building's exterior wood siding appears to be degraded and in need of repair.

The enclosed carport uses a chain link fence as its gate and contains the building's utility areas. The ancillary carport consists of metal posts and a canopy roof. The door to the carport storage room is missing. The carport ceiling has minor damage in need of repair.

At the interior of the building, most of the walls are painted gypsum. The ceilings are painted gypsum. The flooring in the building is carpet, ceramic tile and VCT. There are a few cracked ceramic tiles in the entry way in need of replacement. There are various holes in the interior walls which are in need of repair and paint.

Mechanical, Electrical, Plumbing and Fire (MEPF)

EMT Ambulance Building is heated and cooled by an interior FCU and an exterior condensing unit. Electrical service is made up of a local utility-fed, exterior distribution panel which is fed from the Municipal Court building. Interior lighting consists mainly of incandescent fixtures with some restroom fixtures missing light bulbs and the kitchen light fixture missing its cover.

The building has municipal water and an onsite septic tank. Hot water is provided by a gas-powered water heater. No concerns have been addressed by maintenance personnel regarding ongoing plumbing issues.

The building is not outfitted with a sprinkler system. The building is equipped with fire extinguishers. A smoke detector is located in the kitchen and is degraded and in need of replacement.

Site

The site is approximately 0.38 acres and is relatively flat. The building is located in the center of the site and has an asphalt lot with no designated parking spaces.

Site hardscape at EMT Ambulance Building consists of an asphalt lot and concrete sidewalks adjacent to the building.

The site is covered in stone and vegetative landscaping without irrigation and mature trees clustered in the front and backyard. There are numerous building-mounted incandescent light fixtures and one pole-mounted LED light fixture. The asphalt lot has large cracks due to excessive wear and tear.

Recommended Additional Studies

No additional studies recommended at this time.

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate the Facility Condition Index (FCI), which provides a theoretical objective indication of a facility's overall condition. The FCI is defined as the ratio of the cost of current needs divided by the current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone mathematical values. The table below presents the current, 3-year, 5-year, and 10-year FCI's for this facility:

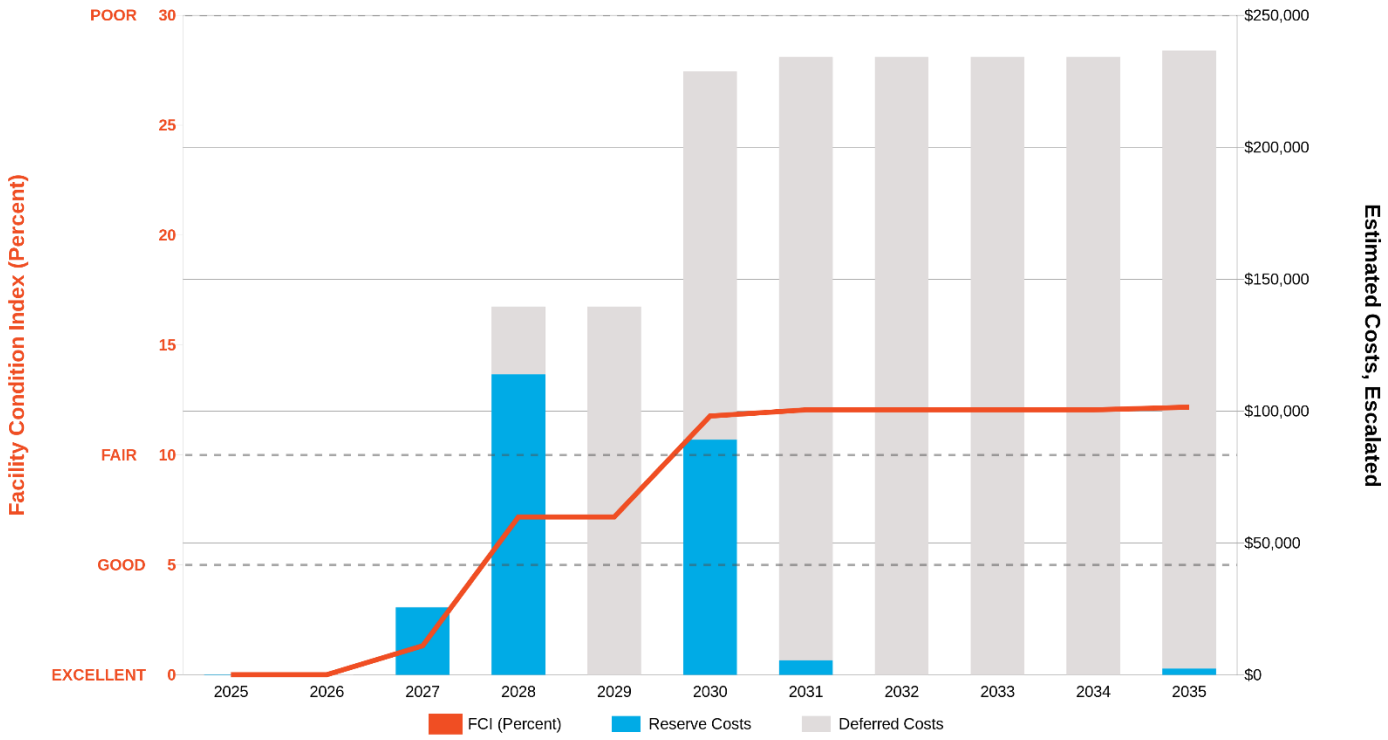
FCI Analysis		
Replacement Value *$1,943,025*	*Total SF* *3,701*	*Cost/SF* *$525*

	Est Reserve Cost	FCI
Current	$200	0.0 **%**
3-Year	$139,700	7.2 **%**
5-Year	$228,800	11.8 **%**
10-Year	$236,700	12.2 **%**

NEEDS OVER TIME: The vertical blue bars in the graphic below represent the year-by-year needs identified for the facility. The orange line forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures over the next ten years. The dollar amounts allocated for each year are associated with the values along the right Y axis.

Needs by Year with Unaddressed FCI Over Time

Replacement Value: $1,943,025.00 **Inflation Rate: 3%** **Average Needs (per year - over next 10 years): $21,511.00**



Immediate Needs

Location	UF Code	Description	Condition	Plan Type	Cost
EMT Ambulance Building	D7051	Fire Alarm Devices, Smoke/Carbon Monoxide Detector, residential by contractor, Replace	Poor	Performance/Integrity	$200
TOTAL (1 items)					**$200**

Key Findings



Exterior Walls in Poor condition.

Wood Siding
EMT Ambulance Building
Building Exterior

Uniformat Code: B2010
Recommendation: **Replace in 2027**

Plan Type: Performance/Integrity

Cost Estimate: $5,000

Degraded wood siding throughout - AssetCALC ID: 9384417



Parking Lots in Poor condition.

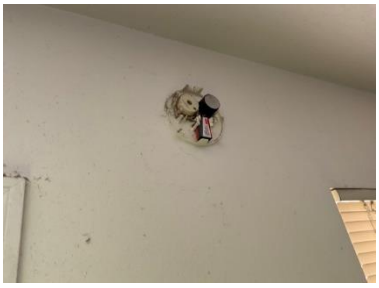
Pavement, Asphalt
EMT Ambulance Building
Site Parking Areas

Uniformat Code: G2020
Recommendation: **Mill and Overlay in 2027**

Plan Type: Performance/Integrity

Cost Estimate: $17,800

Cracked due to excessive wear and tear. No designated striped parking spaces. - AssetCALC ID: 9384419



Fire Alarm Devices in Poor condition.

Smoke/Carbon Monoxide Detector, residential by contractor
EMT Ambulance Building

Uniformat Code: D7050
Recommendation: **Replace in 2025**

Plan Type: Performance/Integrity

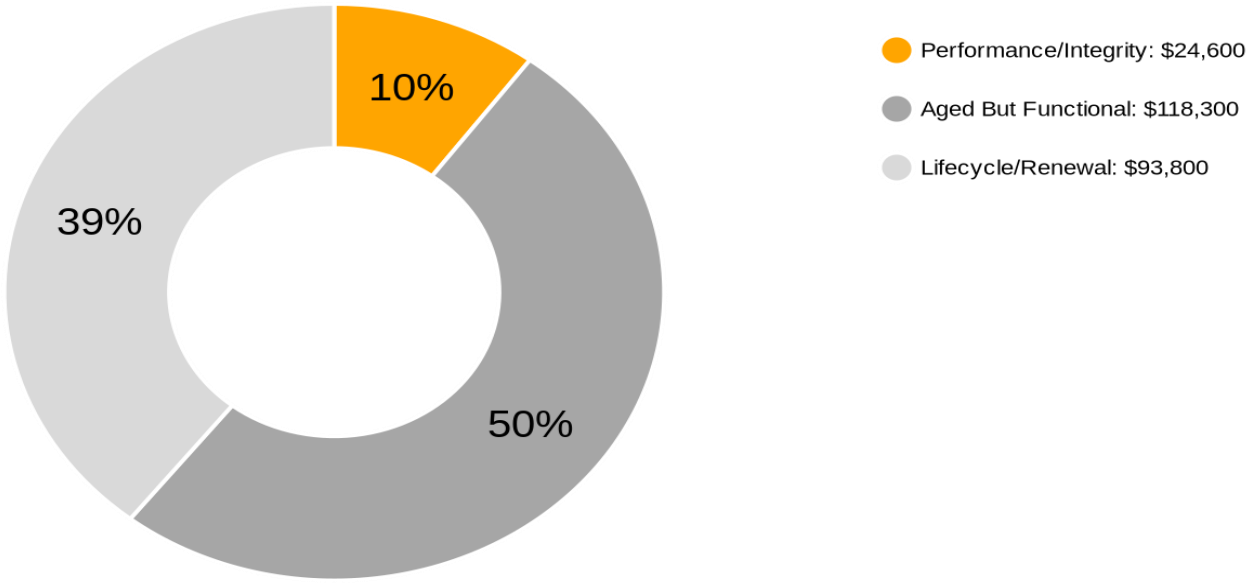
Cost Estimate: $200

Degraded smoke detector in kitchen - AssetCALC ID: 9401798

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the "why" part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the "best" fit, typically the one with the greatest significance and highest on the list below.

Plan Type Descriptions and Distribution		
Safety		An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity		Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility		Does not meet ADA, UFAS, and/or other accessibility requirements.
Environmental		Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation		Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Aged But Functional		Any component or system that has aged past its industry-average expected useful life (EUL) but is not currently deficient or problematic.
Lifecycle/Renewal		Any component or system that is neither deficient nor aged past EUL but for which future replacement or repair is anticipated and budgeted.



10-Year Total: $236,600

2. Building Systems and Site Elements





Building Systems Summary		
Address	6517 East Lincoln Drive, Paradise Valley, AZ 85253	
GPS Coordinates	33.5305137, -111.9398897	
Constructed/Renovated	1966	
Building Area	3,701 SF	
Number of Stories	1 above grade	
System	*Description*	*Condition*
Structure	Conventional wood frame structure over concrete slab foundation	Fair
Facade	Primary Wall Finish: Brick Secondary Wall Finish: Wood siding Windows: Wood	Fair
Roof	Gable construction with asphalt shingles	Fair
Interiors	Walls: Painted gypsum board and brick Floors: Carpet, VCT, and ceramic tile Ceilings: Painted gypsum board	Fair
Elevators	None	n/a

Building Systems Summary		
Plumbing	Distribution: Copper. PVC waste and venting Hot Water: Gas water heater with integral tanks Fixtures: Toilets, showers, and sinks in all restrooms	Fair
HVAC	Non-Central System: Split system consisting of a fan coil unit and a condensing unit	Fair
Fire Suppression	Fire extinguishers only	Fair
Electrical	Source and Distribution: Main switchboard, Fed from Municipal Court building with copper wiring Interior Lighting: Incandescent Emergency Power: None	Fair
Fire Alarm	Smoke detector only. Kitchen smoke detector degraded.	Failed
Equipment/Special	None	n/a
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	The interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, the exterior walls of the facility, and the roof.	
Key Spaces Not Observed	All key areas of the facility were accessible and observed.	

Site Information		
Site Area	0.04 acres	
Parking Spaces	0 total spaces all in open lots; 0 of which are accessible.	
System	*Description*	*Condition*
Site Pavement	Asphalt lot with limited areas of concrete aprons and pavement and adjacent concrete sidewalks and curbs	Poor
Site Development	Chain link, wrought iron and CMU wall fencing	Fair
Landscaping and Topography	Limited landscaping features including lawns, trees and bushes Irrigation not present Low to moderate site slopes throughout	Fair
Utilities	Municipal water, on-site septic Local utility-provided electric	Fair
Site Lighting	Pole-mounted: LED Building-mounted: Incandescent	Fair
Ancillary Structures	Carport	Fair
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	All key areas of the exterior site were accessible and observed.	

The table below shows the anticipated costs by trade or building system over the next 20 years.

EMT Ambulance Building: System Expenditure Forecast						
System	**Immediate**	**Short Term (1-2 yr)**	**Near Term (3-5 yr)**	**Med Term (6-10 yr)**	**Long Term (11-20 yr)**	**TOTAL**
Structure	$0	$0	$0	$0	$168,795	$168,795
Facade	$0	$5,304	$26,861	$0	$0	$32,165
Roofing	$0	$0	$20,116	$0	$0	$20,116
Interiors	$0	$0	$52,037	$0	$88,267	$140,304
Plumbing	$0	$1,379	$58,667	$0	$2,148	$62,194
HVAC	$0	$0	$8,230	$5,492	$36,081	$49,803
Electrical	$0	$0	$19,999	$0	$0	$19,999
Fire Alarm and Electronic Systems	$180	$0	$6,117	$241	$325	$6,863
Equipment and Furnishings	$0	$0	$11,007	$0	$0	$11,007
Special Construction and Demo	$0	$0	$0	$0	$14,800	$14,800
Sitework	$0	$18,851	$0	$2,150	$758	$21,759
TOTALS	**$200**	**$25,600**	**$203,100**	**$7,900**	**$311,200**	**$548,000**

3. ADA Accessibility

Generally, Title III of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “commercial facilities” on the basis of disability. Regardless of its age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

Buildings completed and occupied after January 26, 1992 are required to comply fully with the ADAAG. Existing facilities constructed prior to this date are held to the lesser standard of compliance to the extent allowed by structural feasibility and the financial resources available. As an alternative, a reasonable accommodation pertaining to barrier removal must be made.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the material included in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this assessment. A full measured ADA survey would be required to identify more specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance
- Only a representative sample of areas was observed
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance
- Itemized costs for individual non-compliant items are included in the dataset
- For any “none” boxes checked or reference to “no issues” identified, that alone does not guarantee full compliance

The facility was originally constructed in 1966. The facility has not since been substantially renovated.

No costs or detailed follow-up study are currently recommended since this facility is neither accessible to the general public nor a place where employees regularly work or reside. Accessibility accommodations will reportedly be made when and if use changes or specific needs arise. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey.

4. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

5. Opinions of Probable Costs

Cost estimates are embedded throughout this report, including the very detailed Replacement Reserves report in the appendix. The cost estimates are predominantly based on construction rehabilitation costs developed by the *RSMeans data from Gordian.* While the *RSMeans data from Gordian* is the primary reference source for the Bureau Veritas cost library, secondary and supporting sources include but are not limited to other industry experts work, such as *Marshall & Swift* and *CBRE Whitestone.* For improved accuracy, additional research integrated with Bureau Veritas's historical experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions also come into play when deemed necessary. Invoice or bid documents provided either by the owner or facility construction resources may be reviewed early in the process or for specific projects as warranted.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

To account for differences in prices between locations, the base costs are modified by geographical location factors to adjust for to market conditions, transportation costs, or other local contributors. When requested by the client, the costs may be further adjusted by several additional factors including; labor rates (prevailing minimum wage), general contractor fees for profit and overhead, and insurance. If desired, costs for design and permits, and a contingency factor, may also be included in the calculations.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system or component replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

6. Certification

Town of Paradise Valley, FCA wInventory Program (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of EMT Ambulance Building, 6517 East Lincoln Drive, Paradise Valley, AZ 85253, the "Property". It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager's walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property's original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and Bureau Veritas.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of Bureau Veritas. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to Bureau Veritas.

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Project Assessor

Reviewed by:

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7. Appendices

Appendix A: Photographic Record
Appendix B: Site Plan(s)
Appendix C: Pre-Survey Questionnaire(s)
Appendix D: Accessibility Review and Photos
Appendix E: Component Condition Report
Appendix F: Replacement Reserves
Appendix G: Equipment Inventory List
Appendix H: Electrical Study

Appendix A:
Photographic Record

Photographic Overview



1 - FRONT ELEVATION



2 - LEFT ELEVATION



3 - REAR ELEVATION



4 - RIGHT ELEVATION



5 - OVERVIEW OF THE ROOF

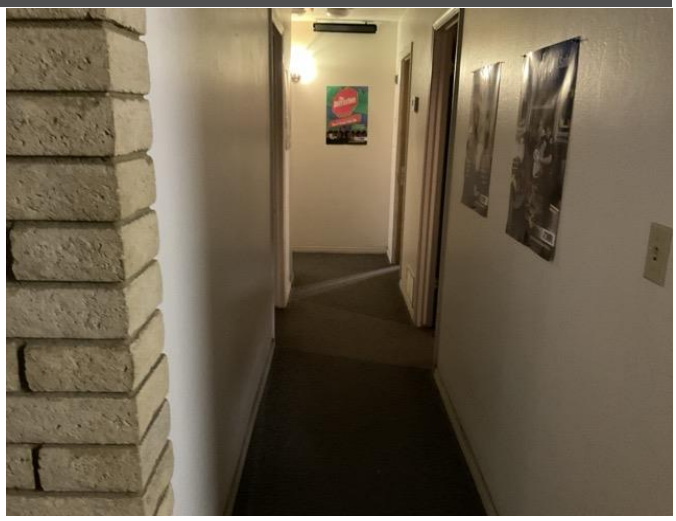


6 - ASPHALT SHINGLES ROOFING

Photographic Overview



7 - ENTRY



8 - INTERIOR CORRIDOR



9 - TYPICAL BUNKROOM #1



10 - TYPICAL BUNKROOM #2



11 - DAY ROOM



12 - KITCHEN

Photographic Overview



13 - LAUNDRY ROOM



14 - RESTROOM



15 - UTILITY CLOSET



16 - CARPORT



17 - SHED STRUCTURE



18 - PARKING LOT

Appendix B:
Site Plan(s)

Site Plan



Project Number	Project Name
172662.25R000-001.468	EMT Ambulance Building
Source	**On-Site Date**
Google	May 28, 2025

Appendix C:
Pre-Survey Questionnaire(s)

BV FACILITY CONDITION ASSESSMENT: PRE-SURVEY QUESTIONNAIRE

Building / Facility Name: EMT Ambulance Building

Name of person completing form: Fraley, John

Title / Association w/ property: Lead Technician

Length of time associated w/ property: 4

Date Completed: 5/28/2025

Phone Number: 4807972060

Method of Completion: INTERVIEW - verbally completed during interview

Directions: Please answer all questions to the best of your knowledge and in good faith. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses.

Data Overview		Response		
1	Year(s) constructed	Constructed: 1966	Renovated:	
2	Building size in SF	3,701 **SF**		
3	Major Renovation/Rehabilitation		Year	Additional Detail
		Facade		
		Roof		
		Interiors		
		HVAC		
		Electrical		
		Site Pavement		
		Accessibility		
4	List other significant capital improvements (focus on recent years; provide approximate date).			
5	List any major capital expenditures planned/requested for the next few years. Have they been budgeted?			
6	Describe any on-going extremely problematic, historically chronic, or immediate facility needs.			

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Response				Comments
		Yes	No	Unk	NA	
7	Are there any problems with foundations or structures, like excessive settlement?		X			
8	Are there any wall, window, basement or roof leaks?		X			
9	Has any part of the facility ever contained visible suspect mold growth, or have there been any indoor air quality complaints?		X			
10	Are your elevators unreliable, with frequent service calls?				X	
11	Are there any plumbing leaks, water pressure, or clogging/backup issues?		X			Septic
12	Have there been any leaks or pressure problems with natural gas, HVAC piping, or steam service?		X			
13	Are any areas of the facility inadequately heated, cooled or ventilated? Poorly insulated areas?		X			
14	Is the electrical service outdated, undersized, or problematic?		X			
15	Are there any problems or inadequacies with exterior lighting?		X			
16	Is site/parking drainage inadequate, with excessive ponding or other problems?		X			
17	Are there any other unresolved construction defects or significant issues/hazards at the property that have not yet been identified above?		X			
18	ADA: Has an accessibility study been previously performed? If so, when?				X	
19	ADA: Have any ADA improvements been made to the property since original construction? Describe.				X	
20	ADA: Has building management reported any accessibility-based complaints or litigation?				X	
21	Are any areas of the property leased to outside occupants?		X			

Signature of Assessor

Signature of POC

Appendix D:
Accessibility Review and Photos

Visual Survey - 2010 ADA Standards for Accessible Design

Property Name: **EMT Ambulance Building**

BV Project Number: **172662.25R000-001.468**

Accessibility aspects were not evaluated at this facility/building/location.

Appendix E:
Component Condition Report

Component Condition Report | 001 - EMT Ambulance Building

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A4010	Substructure	Fair	Foundation, Concrete Slab-on-Grade, w/ Integral Perimeter Footings	3,518 SF	16	9384409
B1010	Superstructure	Fair	Structural Framing, Wood, Conventional Stud	3,518 SF	16	9384430
Facade						
B2010	Building Exterior	Fair	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	2,300 SF	3	9384406
B2010	Building Exterior	Poor	Exterior Walls, Wood Siding	500 SF	2	9384417
B2020	Building Exterior	Fair	Glazing, any type by SF	300 SF	5	9384426
B2050	Building Exterior	Fair	Exterior Door, Wood, Solid-Core	4	3	9384410
Roofing						
B3010	Roof	Fair	Roofing, Asphalt Shingle, 20-Year Standard	3,700 SF	3	9384438
B3080	Building Exterior	Fair	Soffit/Fascia, Wood	300 SF	3	9384439
Interiors						
C1010	Throughout Building	Fair	Interior Wall, Brick	100 SF	5	9401549
C1030	Throughout Building	Fair	Interior Door, Wood, Solid-Core Commercial	9	3	9384424
C2010	Throughout Building	Fair	Wall Finishes, any surface, Prep & Paint	6,900 SF	3	9384428
C2030	Throughout Building	Fair	Flooring, Carpet, Commercial Standard	2,400 SF	3	9384414
C2030	Throughout Building	Fair	Flooring, Ceramic Tile	1,100 SF	20	9384429
C2030	Restrooms	Fair	Flooring, Vinyl Tile (VCT)	70 SF	3	9384415
C2050	Throughout Building	Fair	Ceiling Finishes, any flat surface, Prep & Paint	3,500 SF	3	9384422
Plumbing						
D2010	Utility Rooms/Areas	Fair	Water Heater, Gas, Residential, 30 to 50 GAL	1	2	9384412
D2010	Restrooms	Fair	Shower, Valve & Showerhead	2	3	9384433
D2010	Restrooms	Fair	Shower, Ceramic Tile	2	3	9384441
D2010		Fair	Plumbing System, Supply & Sanitary, Medium Density (excludes fixtures)	3,701 SF	5	9433472

Component Condition Report | 001 - EMT Ambulance Building

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D2010	Restrooms	Fair	Toilet, Commercial Water Closet	3	3	9384436
HVAC						
D3030	Site General	Fair	Split System, Condensing Unit/Heat Pump	1	5	9384434
D3030	Utility Rooms/Areas	Fair	Split System, Fan Coil Unit, DX, 3.5 to 5 TON	1	6	9384416
D3050	Throughout Building	Fair	HVAC System, Ductwork, Medium Density	3,518 SF	17	9384427
Electrical						
D5030	Electrical Room	Fair	Electrical System, Wiring & Switches, Average or Low Density/Complexity	3,518 SF	3	9384423
D5040	Throughout Building	Fair	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures	3,518 SF	3	9384418
D5040	Building Exterior	Fair	Exterior Light, any type, w/ LED Replacement	5	5	9384437
Fire Alarm & Electronic Systems						
D6060	Throughout Building	Fair	Intercom/PA System, Intercom System Upgrade, Facility-Wide	3,518 SF	5	9384432
D7050		Poor	Fire Alarm Devices, Smoke/Carbon Monoxide Detector, residential by contractor	1	0	9401798
Equipment & Furnishings						
E1030	Commercial Kitchen	Fair	Foodservice Equipment, Sink, 2-Bowl	1	3	9384425
E2010	Hallways & Common Areas	Fair	Casework, Cabinetry, Economy	25 LF	3	9384420
E2010	Restrooms	Fair	Casework, Bathroom Vanity Cabinet, Wood w/ Cultured Marble Sink Top	3	3	9384431
Special Construction & Demo						
F1020	Site General	Fair	Shed/Gazebo/Shade Structure, Wood or Metal-Framed, Basic/Minimal	380 SF	15	9384408
Pedestrian Plazas & Walkways						
G2020	Site Parking Areas	Poor	Parking Lots, Pavement, Asphalt, Mill & Overlay	5,077 SF	2	9384419
Sitework						
G2060	Site General	Fair	Fences & Gates, Fence, Chain Link 6'	20 LF	20	9384440
G2060	Building Exterior	Good	Fences & Gates, Screen Walls, Concrete Masonry Unit (CMU)	1,320 SF	40	9384413
G2060	Site General	Fair	Fences & Gates, Pedestrian Gate, Wrought Iron	1	10	9384442
G4050	Site General	Fair	Site Lighting, Wall Pack or Walkway Ceiling/Pole-Mounted, any type w/ LED, Higher-Lumen	1	10	9384407

Appendix F:
Replacement Reserves

Replacement Reserves Report

001 - EMT Ambulance Building

7/7/2025

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total Escalated Estimate
001 - EMT Ambulance Building	$180	$0	$25,535	$113,912	$0	$89,134	$5,493	$0	$0	$0	$2,392	$0	$0	$51,913	$0	$14,801	$168,796	$25,408	$596	$0	$49,668	**$547,828**
Grand Total	**$180**	**$0**	**$25,535**	**$113,912**	**$0**	**$89,134**	**$5,493**	**$0**	**$0**	**$0**	**$2,392**	**$0**	**$0**	**$51,913**	**$0**	**$14,801**	**$168,796**	**$25,408**	**$596**	**$0**	**$49,668**	**$547,828**

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
A4010	Substructure	9384409	Foundation, Concrete Slab-on-Grade, w/ Integral Perimeter Footings	75	59	16	3518	SF	$11.90	$41,864																	$41,864					**$41,864**
B1010	Superstructure	9384430	Structural Framing, Wood, Conventional Stud	75	59	16	3518	SF	$18.00	$63,324																	$63,324					**$63,324**
B2010	Building Exterior	9384417	Exterior Walls, Wood Siding, Replace	30	28	2	500	SF	$10.00	$5,000			$5,000																			**$5,000**
B2010	Building Exterior	9384406	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	20	17	3	2300	SF	$1.86	$4,278				$4,278																		**$4,278**
B2020	Building Exterior	9384426	Glazing, any type by SF, Replace	30	25	5	300	SF	$55.00	$16,500						$16,500																**$16,500**
B2050	Building Exterior	9384410	Exterior Door, Wood, Solid-Core, Replace	25	22	3	4	EA	$700.00	$2,800				$2,800																		**$2,800**
B3010	Roof	9384438	Roofing, Asphalt Shingle, 20-Year Standard, Replace	20	17	3	3700	SF	$3.80	$14,060				$14,060																		**$14,060**
B3080	Building Exterior	9384439	Soffit/Fascia, Wood, Replace	20	17	3	300	SF	$14.50	$4,350				$4,350																		**$4,350**
C1010	Throughout Building	9401549	Interior Wall, Brick, Replace	50	45	5	100	SF	$53.00	$5,300						$5,300																**$5,300**
C1030	Throughout Building	9384424	Interior Door, Wood, Solid-Core Commercial, Replace	40	37	3	9	EA	$700.00	$6,300				$6,300																		**$6,300**
C2010	Throughout Building	9384428	Wall Finishes, any surface, Prep & Paint	10	7	3	6900	SF	$1.50	$10,350				$10,350										$10,350								**$20,700**
C2030	Throughout Building	9384429	Flooring, Ceramic Tile, Replace	40	20	20	1100	SF	$18.00	$19,800																				$19,800		**$19,800**
C2030	Restrooms	9384415	Flooring, Vinyl Tile (VCT), Replace	15	12	3	70	SF	$5.00	$350				$350															$350			**$700**
C2030	Throughout Building	9384414	Flooring, Carpet, Commercial Standard, Replace	10	7	3	2400	SF	$7.50	$18,000				$18,000										$18,000								**$36,000**
C2050	Throughout Building	9384422	Ceiling Finishes, any flat surface, Prep & Paint	10	7	3	3500	SF	$2.00	$7,000				$7,000										$7,000								**$14,000**
D2010	Utility Rooms/Areas	9384412	Water Heater, Gas, Residential, 30 to 50 GAL, Replace	15	13	2	1	EA	$1,300.00	$1,300			$1,300															$1,300				**$2,600**
D2010	001 - EMT Ambulance Building	9433472	Plumbing System, Supply & Sanitary, Medium Density (excludes fixtures), Replace	40	35	5	3701	SF	$11.00	$40,711						$40,711																**$40,711**
D2010	Restrooms	9384433	Shower, Valve & Showerhead, Replace	30	27	3	2	EA	$800.00	$1,600				$1,600																		**$1,600**
D2010	Restrooms	9384441	Shower, Ceramic Tile, Replace	30	27	3	2	EA	$2,500.00	$5,000				$5,000																		**$5,000**
D2010	Restrooms	9384436	Toilet, Commercial Water Closet, Replace	30	27	3	3	EA	$1,300.00	$3,900				$3,900																		**$3,900**
D3030	Site General	9384434	Split System, Condensing Unit/Heat Pump, Replace	15	10	5	1	EA	$7,100.00	$7,100						$7,100															$7,100	**$14,200**
D3030	Utility Rooms/Areas	9384416	Split System, Fan Coil Unit, DX, 3.5 to 5 TON, Replace	15	9	6	1	EA	$4,600.00	$4,600							$4,600															**$4,600**
D3050	Throughout Building	9384427	HVAC System, Ductwork, Medium Density, Replace	30	13	17	3518	SF	$4.00	$14,072																		$14,072				**$14,072**
D5030	Electrical Room	9384423	Electrical System, Wiring & Switches, Average or Low Density/Complexity, Replace	40	37	3	3518	SF	$2.50	$8,795				$8,795																		**$8,795**
D5040	Throughout Building	9384418	Interior Lighting System, Full Upgrade, Low Density & Standard Fixtures, Replace	20	17	3	3518	SF	$2.10	$7,388				$7,388																		**$7,388**
D5040	Building Exterior	9384437	Exterior Light, any type, w/ LED Replacement, Replace	20	15	5	5	EA	$400.00	$2,000						$2,000																**$2,000**
D6060	Throughout Building	9384432	Intercom/PA System, Intercom System Upgrade, Facility-Wide, Replace	20	15	5	3518	SF	$1.50	$5,277						$5,277																**$5,277**
D7050	001 - EMT Ambulance Building	9401798	Fire Alarm Devices, Smoke/Carbon Monoxide Detector, residential by contractor, Replace	10	10	0	1	EA	$180.00	$180	$180																$180				$180	**$540**
E1030	Commercial Kitchen	9384425	Foodservice Equipment, Sink, 2-Bowl, Replace	30	27	3	1	EA	$2,100.00	$2,100				$2,100																		**$2,100**
E2010	Hallways & Common Areas	9384420	Casework, Cabinetry, Economy, Replace	20	17	3	25	LF	$175.00	$4,375				$4,375																		**$4,375**
E2010	Restrooms	9384431	Casework, Bathroom Vanity Cabinet, Wood w/ Cultured Marble Sink Top, Replace	20	17	3	3	EA	$1,200.00	$3,600				$3,600																		**$3,600**
F1020	Site General	9384408	Shed/Gazebo/Shade Structure, Wood or Metal-Framed, Basic/Minimal, Replace	30	15	15	380	SF	$25.00	$9,500																$9,500						**$9,500**
G2020	Site Parking Areas	9384419	Parking Lots, Pavement, Asphalt, Mill & Overlay	25	23	2	5077	SF	$3.50	$17,770			$17,770																			**$17,770**
G2060	Site General	9384442	Fences & Gates, Pedestrian Gate, Wrought Iron, Replace	25	15	10	1	EA	$800.00	$800																	$800					**$800**
G2060	Site General	9384440	Fences & Gates, Fence, Chain Link 6', Replace	40	20	20	20	LF	$21.00	$420																					$420	**$420**
G4050	Site General	9384407	Site Lighting, Wall Pack or Walkway Ceiling/Pole-Mounted, any type w/ LED, Higher-Lumen, Replace	20	10	10	1	EA	$800.00	$800																	$800					**$800**
Totals, Unescalated											**$180**	**$0**	**$24,070**	**$104,246**	**$0**	**$76,888**	**$4,600**	**$0**	**$0**	**$0**	**$1,780**	**$0**	**$0**	**$35,350**	**$0**	**$9,500**	**$105,188**	**$15,372**	**$350**	**$0**	**$27,500**	**$405,024**
Totals, Escalated (3.0% inflation, compounded annually)											**$180**	**$0**	**$25,535**	**$113,912**	**$0**	**$89,134**	**$5,493**	**$0**	**$0**	**$0**	**$2,392**	**$0**	**$0**	**$51,913**	**$0**	**$14,801**	**$168,796**	**$25,408**	**$596**	**$0**	**$49,668**	**$547,828**

* Markup has been included in unit costs.

Appendix G:
Equipment Inventory List

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D20 Plumbing													
1	9384412	D2010	**Water Heater**	Gas, Residential, 30 to 50 GAL	40 GAL	001 - EMT Ambulance Building	Utility Rooms/Areas	Rheem	222440F1	RHLHM511211404	2012	3003808	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D30 HVAC													
1	9384434	D3030	**Split System**	Condensing Unit/Heat Pump	5 TON	001 - EMT Ambulance Building	Site General	York	YHJF60T41S1B	W1L5060624	2015	3003810	
2	9384416	D3030	**Split System**	Fan Coil Unit, DX, 3.5 to 5 TON	5 Ton	001 - EMT Ambulance Building	Utility Rooms/Areas	York	AHE60D3XH21B	W1C6462326	2016	3003813	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
E10 Equipment													
1	9384425	E1030	**Foodservice Equipment**	Sink, 2-Bowl		001 - EMT Ambulance Building	Commercial Kitchen						

Appendix H:
Electrical Study

225 Broadway Suite 350, San Diego, CA 92101
1 + 310 364 5228 | 1 + 619 323 1515
mailto: Info@120degreez.com | www.120degreez.com



Arc Flash, Short Circuit, and Load Flow Analysis provided for:

EMT BUILDING

6517 E. Lincon Drive

Paradise Valley, AZ 85253

EMT BUILDING

6517 E. Lincon Drive

Paradise Valley, AZ 85253

FOR:
Town of Paradise Valley
Department of Public Works
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

Submitted By:
Amir Amiri, P.E.
Electrical Engineer

Submittal date:
DATE: 6-19-2025

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APPENDIX 2 – ARC FLASH SKM REPORT

APPENDIX 3 – LOAD FLOW STUDY REPORT

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APPENDIX 5 – WORK PERMIT

APPENDIX 6 – PPE TABLES AND ARC FLASH LABELS

1. EXECUTIVE SUMMARY

1.1. Introduction

A System Coordination and Arc Flash study of the distribution system was performed for the town of Paradise Valley's EMT Building located at 6517 E. Lincon Drive, Paradise Valley, AZ 85253. The study determined the adequacy of the system components and the installed protective equipment. The study/analysis performed included short circuit, load flow, protective device coordination studies and incident energy (Arc-flash) evaluations. The power distribution system provided for this site is the following:

- SES-EMT is a 200 amp 240/120V, 1-phase service fed from 25 KVA utility transformer with a Short Circuit current determined by the power company to be 14,318 Amps. This service was installed per the NEC's 6 switch rule i.e. the panel has 6 circuits or less that when added together will not exceed the bus rating of the panel (200 amps). There is no main breaker to perform overcurrent analysis. The panel has issues that are noted in the Excel field report.

The serving utility has provided the short circuit current availability of this transformer with their service manual which is noted in the field notes provided. The serving utility's published available fault current (AFC) for each transformer which is called out in the field notes. Values used were provided by APS for phase-to-phase faults. Each Service Equipment System (SES) serves primarily lighting and equipment loads of the building in which it is located.

The short circuit analysis evaluates the short time thermal and electrodynamic strength of the facilities equipment. Arc flash and protective equipment studies evaluate the incident energy at specific points of the distribution system to provide Arc-Flash hazard warning labels and personal protective equipment (PPE) recommendations. System protection coordination analysis is used to evaluate the adequacy of the protective devices (Fuses-Circuit Breakers) for the proper protection of system components and are unitized in the verify selective coordination of overcurrent protective devices. Finally, the load flow analysis evaluates the ability of equipment and cables to safely serve the loads they supply. Voltage drop values are included in the appendix report.

Major objectives of the analysis are:

- Compare the calculated fault duties with withstanding/interrupting ratings for customer owned electrical distribution system equipment and note any area of deficiency.
- Demonstrate protective device coordination and note any area of deficiency. Recommended settings for protective devices that will isolate faults in a manner that is consistent with the basic system design and operation. The recommendations given will balance system protection and selective fault isolation.
- Identify incident energy levels, arc flash boundaries, and what level of Personal Protective Equipment (PPE) is required for safe energized work, in accordance with NFPA 70E 2018.
- Evaluate and assess the panels, switches, fuses, and cables nominal values under the current and voltage levels at site, according the load flow analysis results.

Note areas of deficiency and make recommendations for corrective measures that are consistent with applicable codes and standards.

1.1.1. Full narratives of the analysis performed as well as the findings and recommendations of the analysis are included in Sections 2 and 3 of this report. The appendices include the computer output from the analysis performed and tables containing the settings for the adjustable devices in the scope of work. Time current curves, a copy of the Arc-Flash labels, and a one-line diagram of the system model are also included in the appendices.

1.1.2. Various scenarios (where relevant) were modeled, and all related studies' results have been detailed in this report.

The following were the scenarios that were modeled and evaluated:

- Scenario #1: Short circuit analysis
- Scenario #2: Arc-Flash analysis
- Scenario #3: Load Flow analysis
- Scenario #4: TCC Tables

The assessment of the power distribution system components and equipment will be done based on the worst-case outcomes, including the highest levels of fault currents, load flow currents and assumed current usage as well as the highest available arc flash incident energy. The results of the analysis are included in Appendixes of this report. The appendices include the data derived from the SKM analysis software. Additionally, the Appendixes include Time-Current curves of protective devices, a copy of the Arc-Flash labels to be installed, one line diagram for overall system for short circuit, and incident energies. Additional diagrammatic illustrations of the one-line diagram are included.

1.2.2 DC systems less than 50 volts.

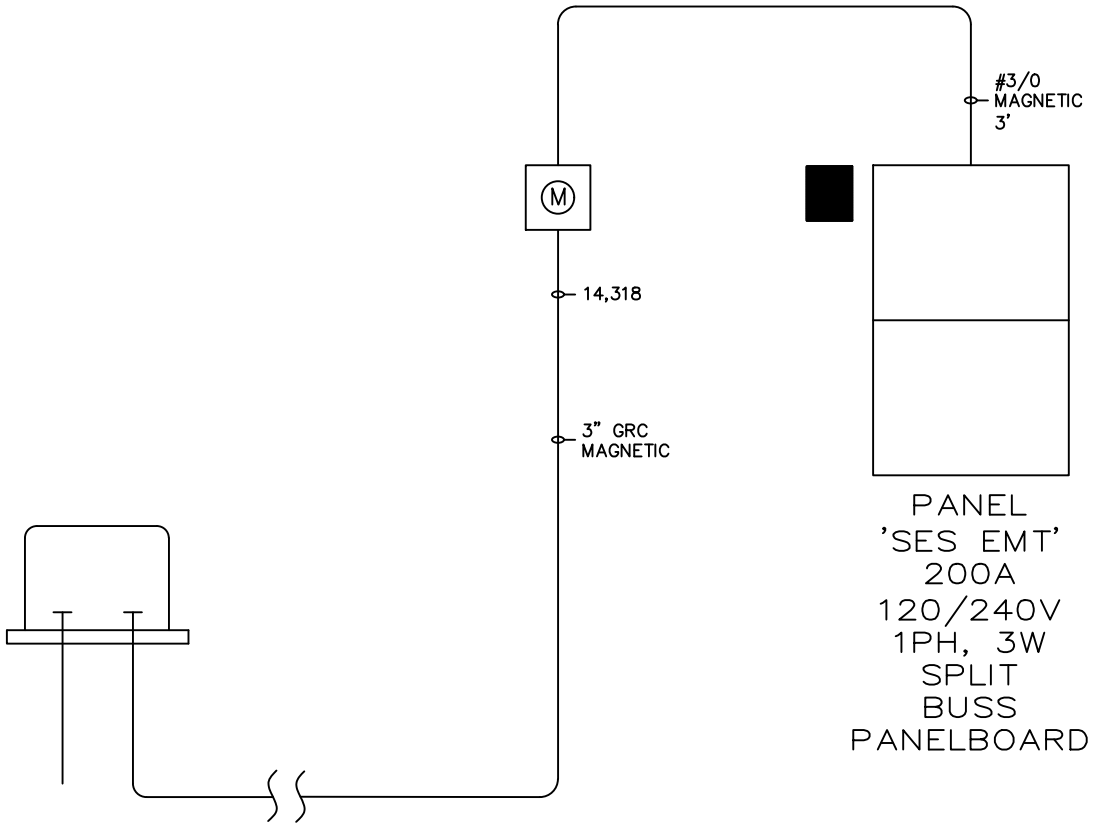
The Occupational Safety and Health Administration, under 29 CFR 1910.303(g)(2)(i), considers electrical systems rated 50 volts or more as hazardous. By extension, those systems rated less than 50 volts are not considered to be hazardous. NFPA 70E, section 130.5(C), under Table 130.5(C), indicates that there is no likelihood of occurrence "For dc systems, maintenance on a single cell for a battery system or multi-cell units in an open rack.". As a result, DC systems rated 50 volts or less are not addressed by this study and are excluded from its scope.

1.2. Distribution System

The electrical system's overall single line diagrams are shown in the following figures below. Each individual single line is shown with the associated field report that contains the facilities equipment technical specifications and ratings, based upon visual observations. The actual field notes should be referenced for existing conditions as this report focuses on the Short Circuit Fault currents and Arc Flash evaluation. The physical condition of the services and equipment are described by the Excel report but are not formally addressed by this study.

EMT – AMBULANCE BUILDING

SES–EMT
METER SOCKET AND PANEL
FIELD INSTALLED
SEPARATELY



LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

EQUIPMENT TO BEAR A LABEL STATING
–NO SAFE LEVEL OF PPE–

FACILITY	**EMT AMBULANCE BLDG**	**ADDRESS:**	**6517 E. LINCOLN DRIVE, PARADISE VALLEY AZ**

UTILITY:	**APS**
TRANSFORMER SIZE:	**25 KVA**
TRANSFORMER %Z:	**2.70%**
SECONDARY COND SIZE:	**(1) x 1/0 AL**
LENGTH:	
AFC (PER UTILITY TABLES)	**14,318**
VOLTAGE:	**120/240**
PHASE:	**1Ø-3W**

OTHER COMMENTS

NOTE: **METER NUMBER 1256154**

EQUIPMENT NAME:	**SES - EMT**	**VOLTAGE:**	**120/240**	**PHASE:**	**1Ø-3W**	**AMPS:**	**200**	**SCCR:**	**10K**	**MAIN:**	**6 SW RULE**
EQUIPMENT TYPE:	**PANELBOARD**									**MODEL:**	
MANUFACTURER:	**GE**									**AMPS**	
MODEL:											
TYPE:											
FED FROM:	**UTILITY XFMR**										
AFC:	**14,318**										
FEEDER SIZE:											
CONDUCTOR TYPE:											
RACEWAY TYPE:											
LENGTH:											
MAIN:											

OTHER COMMENTS

THE EQUIPMENT HAS A MIX OF 10K AIC CIRCUIT BREAKERS FROM DIFFERENT MANUFACTURERS
THE EQUIPMENT HAS A NEMA 1 (INDOOR) RATING AND IS INSTALLED ON THE EXTERIOR OF THE BUILDING.
THE SERVICE IS IN POOR CONDITION AND SHOULD BE REPLACED.
THE AVAILABLE FAULT CURRENT EXCEEDS THE RATING OF THE EQUIPMENT
A LABEL STATING THAT THERE IS NO SAFE LEVEL OF PPE WILL BE APPLIED.

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

1.3. Findings

1.3.1. Short Circuit Analysis

The short circuit study provides the available fault current at each busbar (point or node) of the distribution system based upon the impedance of the system to that point. Based upon these results, we can compare the equipment's short circuit current withstanding ratings (SCCR) and the ampere interrupting current ratings (AIC) with the available fault current**.**

Based on the short circuit study, calculated fault exceeded the 10 KAIC rating of SES-EMT.

At the locations noted, the available fault current exceeds the AIC and/or SCCR ratings of the equipment. As documentation from the manufacturer was not available, it is not possible to verify if the equipment is permitted to be used as part of a series rated system. While it appears that the applications of the labels are correct, it should be independently verified.

1.3.2. Protective Device Coordination

1.3.2.1. The MDP SES-EMT service feeders (TCC Report) show no over current protection coordination. However, this service was installed per the NEC's 6 switch rule and the design is NEC code compliant.

1.3.2.2. The protective device settings in this report (Refer to TCC reports), are **not applicable**. Refer to sections 2.6 and 3.3 for more details.

1.3.3. Arc Flash Evaluation

1.3.3.1. **The utility's metering cabinet and the main switchboard are often found to have incident energy levels that exceed 40 Cal/cm^2 (no safe level of PPE).** In locations where no safe level of PPE is recommended, energized work should be prohibited or extension tools (e.g., hotstick) should be used to distance personnel from the potential arc point. The incident energy at the indicated working distance dictates the required level of PPE. Wherever possible, protective device settings are suggested to try to reduce the incident energy levels. Please refer to Sections 2.5 and 3.2 for more detailed information.

1.3.3.2. The incident energy calculations utilize the data obtained from the serving utility. The incident energy calculations also assume the recommended settings shown both in the SKM Arc Flash One-Line and the follow up report for each SES distribution system. These settings must be implemented for the data provided on the labels to be correct. **Improper or inadequate maintenance can result in increased opening time of overcurrent protective devices, thus increasing the incident energy and negating the results of this study.**

1.3.3. Load Flow Analysis

The table in Appendix 3 provides an overview of the all the distribution panels predicted voltage drop. The voltage drop to all equipment appears to be satisfactory. It should be noted that excessive voltage drop can cause electronic equipment, such as computer systems, to unexpectedly shut down and effects the electrical system's performance. None of the locations studied were found to have current capacity less than available demand current flow.

Refer to Section 3.4 for more detail.

1.4. Study Notes

This study is based upon the most accurate information available at the time the study was conducted.

In reviewing the report, the serving utility typically does not provide the actual values for their contribution to the available fault current nor the impedance of their transformers. Values are published in their respective Electrical Service Requirement Manuals (ESRM) however, they will not guarantee the accuracy of this information. Additionally, there is no external labeling of the equipment that would provide this information. As a result, the values provided in this study may differ from actual values.

The serving utilities also will not indicate if overcurrent protective equipment, devices, or relays have been provided on the line side of their distribution transformer(s). As a result, it is prudent to perform these studies assuming that no protection has been provided.

There is equipment that was not surveyed due to being in locked rooms or otherwise inaccessible. Without being able to determine panel condition, we generated a Red Dangerous label for such panels.

Precise measurements of the distribution system feeders are all but impossible. Every effort has been made to estimate conductor length based upon equipment location and observed raceway or cable routing. Additionally, calculations provided in this study assume magnetic raceways above grade and non-magnetic raceways below grade except where positive identification is possible.

The results of this study are valid for a maximum of 5 calendar years after the date of publication and are invalidated whenever any of the following conditions or modifications are made to the distribution system or where the electrical equipment is not properly maintained.

The following conditions will negate the findings of this study and render the results invalid.

- Changes made to the utility distribution system or equipment
- The addition of equipment or loads
- Removal or replacement of overcurrent devices with differing specifications
- Changing overcurrent protective device settings
- Any modification to the facility distribution system
- Improper maintenance of equipment
- Removal of equipment
- Equipment that is not properly exercised as required by the manufacturer(s).

Whenever new equipment or loads have been provided after this study has been published, it is strongly recommended that a new study be provided to assess how the changes have impacted the system.

2. ANALYSIS

2.1. Basis of Analysis

Electrical system inputs, for the analysis performed, are composed of both non-intrusive on-site data gathering methods and integrating predictable values. This information is presented in the Excel spreadsheets included in this report. Source data was obtained from the Salt River Project Electrical Service Requirements Manual. SKM Power Tools version "9.0.0.7" was used for all analysis performed. Using this software, a computer model of the electrical system was created based on data obtained for the analysis. The single line diagram of the distribution system is shown on Fig.01 which is a graphical representation of the electrical system. The components on the Single Line Diagram (SLD) included all required device information for the analysis. This model was then used to study the electrical system and generate the calculations found in Appendices 1 through 5 of this report.

2.2. Campus as built Data Gathering Assumptions

When reviewing the system single line diagram, the provided information is based upon visual observations made at the site. In some circumstances it was not possible to access or open equipment. Access to this equipment may have been limited to any of the following conditions.

- Personnel not permitted to de-energize equipment
- Personnel could not gain access to equipment due to locked doors, gates or covers
- Equipment could not be opened or accessed without de-energizing the equipment or systems
- Staff felt the opening of the equipment may expose persons or property to an unreasonable risk due to the condition of the equipment.

As demand loads are necessary to complete the calculations, this study is based upon information provided by the facilities owner indicating the highest demand loads for the last calendar year. This information is supplied by the serving utility to the facility owner/operator. Where this information has not been provided, all calculations performed have been based upon a value 80% of the rating of the electrical service(s) for the facility with an anticipated power factor (PF) of 80%.

As demand loads are necessary to complete the calculations, it was necessary to make assumptions for these loads to complete the study. As load studies have not been completed for each panel or feeder, we based the study by using the following assumptions for all estimated loads (actual values are used when provided):

- Motors protected by circuit breakers: 40% of the circuit breaker rating
- Motors protected by fuses: 50% of the fuse rating
- All other loads: 50% of the rating of the upstream OCPD.

These assumptions are conservative in nature and should provide an acceptable range of results. It should be noted that in some instances, these assumptions indicate that equipment may not be suitable for the loads applied. The values provided do not necessarily indicate an overloaded or unsafe condition however, additional investigation may be necessary to assure the safe and continued operation of the equipment or systems.

The demand loads for switchboards and panelboards will be as follows:

Panelboard load estimate:

- **Main Distribution Board SES-EMT:** 121 amps (reference Load Flow One Line).

2.3. Equipment Evaluation

Each device on the one-line diagram in Fig.01 is identified by an identifier. Common identifiers used in this report include:

AFC– Available Fault Current
AF – Arc Flash
IC – Interrupting Current
Gen – Generator
SCC – Short Circuit Current
CB – Circuit Breaker
SW – Switch
IE – Incident Energy
PPE – Personal Protective Equipment
TCC – Time Current Curve
AF – Arc Flash
SWB – Switchboard
LV – Low Voltage
CBL – Cable
LF – Load Flow
SC – Short Circuit

The incident energy summary in each report contains the available fault current calculations at each indicated device in the electrical system. Incident energy may increase if protective device settings in the electrical equipment is changed or adjusted or, if they are replaced. Increases in incident energy may also result from improper or inadequate maintenance or new construction.

Electrical equipment and protection devices must be in proper working condition for the equipment to operate properly and open as expected. A maintenance inspection and testing program should ensure that all equipment and devices function as designed by the manufacturer. NFPA 70E 2018 provides standards for electrical safety, including the following requirements for electrical equipment and protective devices:

> **General Maintenance Requirements** - Electrical equipment shall be maintained in accordance with manufacturers' instructions or industry consensus standards to reduce the risk of failure and the subsequent exposure of employees to electrical hazards.
>
> **Overcurrent Protective Devices** - Overcurrent protective devices shall be maintained in accordance with the manufacturers' instructions or industry consensus standards. Maintenance, tests, and inspections shall be documented.
>
> **210.5 Protective Devices** - Protective devices shall be maintained to adequately withstand or interrupt available fault current.

As of June, 2025, the amended 2014 National Electrical Code (NEC) is in effect in the town of Paradise Valley. Article 110 of the NEC contains requirements for all electrical installations, including maintenance and mechanical execution of work:

> **110.12(B): Mechanical Execution of work** - There shall be no damaged parts that may adversely affect safe operation or mechanical strength of the equipment such as parts that are broken, bent, cut; or deteriorated by corrosion, chemical action, or overheating.
>
> **110.26: Spaces about Electrical Equipment** - Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.

Additionally, when series ratings are used the National Electrical Code (NEC) Article 110 requires series combination rated overcurrent devices are visibly marked by permanently affixed means as stated:

> **110.22(B): Engineered Series Combination Systems** - Equipment enclosures for circuit breakers or fuses applied in compliance with series combination ratings selected under engineering supervision in accordance with 240.86(A) shall be legibly marked in the field as directed by the engineer to indicate the equipment has been applied with a series combination system. The marking shall meet the requirements in 110.21(B) and shall be readily visible and state the following: CAUTION – ENGINEERED SERIES COMBINATION SYSTEM RATED XXXXX AMPERES. IDENTIFIED REPLACEMENT COMPONENTS REQUIRED.

Equipment that is malfunctioning, has been inadequately or improperly installed, maintained, or modified, may result in injury or death, and will invalidate the results of this study.

2.4 Short Circuit Analysis

An analysis of the system was performed to determine the maximum fault levels at the equipment covered within the scope of work. SKM Power Tools version 9.0.1.3 (Unbalanced/Single Phase Subroutine) was used for the analysis using the comprehensive ANSI/IEEE C37.13 standard for calculation of these fault currents during short-circuit. The following short circuit currents have been calculated for system components:

- Initial Symmetrical line to line short circuit current (SCC1)
- Initial Symmetrical single line to ground short circuit current (SCC2)

The SCC1 is the maximum available short circuit current at any point in the distribution system, this is generally at the point the utility company connects to the system's service entrance system. This connection is called the point of service or the service point. The available fault current, at each point in the distribution system, is based upon the contributed fault current provided by the utility (this value is provided by the serving utility or from the utilities tables). Then, through analyzing the fault current calculations, the electrical system's components' fault withstand capability will be assessed by comparing them with SCC1.

The short-circuit current should not exceed the equipment rating with required factors for the protective device.

Based on the short circuit study, calculated fault exceeded the 10 KAIC rating of SES-EMT.

The Short Circuit Analysis in each SES SKM report summarizes the fault duties at each device. The AF incident energy summary in the SES report shows IE at the safe distance and PPE requirements for each location into the system.

2.5 Arc Flash Evaluation

Arc Flash Evaluations are used to assess arc flash hazards and to assess the work Site risk to personnel. The Occupational Safety and Health Administration (OSHA), and the National Fire Protection Association (NFPA) standard 70E provide requirements for arc flash and other work Site hazards. OSHA requires employers provide a workplace free from recognized hazards that may cause injury or death to their employees. NFPA 70E 2018 provides the Standard for Electrical Safety in the Workplace. NFPA 70E 130.5 states:

"An arc flash risk assessment shall be performed and shall determine if an arc flash hazard exists. If an arc flash hazard exists, the risk assessment shall determine appropriate safety-related work practices, the arc flash boundary, and the PPE to be used within the arc flash boundary."

Arc Flash Evaluations are used to determine the required level of personal protective equipment (PPE), arc flash boundaries, and restrictions on the work of energized equipment. This information must include on the labels as required by NFPA and OSHA standards.

NFPA 70E 130.5(H) requires electrical equipment to be field-marked with a label containing the following information:

(1) Nominal system voltage
(2) Arc flash boundary
(3) At least one of the following:

a. Available incident energy and the corresponding working distance, OR the arc flash PPE category in Table 130.7(C)(15)(a) or Table 130.7(C)(15)(b) for the equipment, but not both
b. Minimum arc rating of clothing
c. Site-specific level of PPE

Furthermore, the National Electrical Code (NEC) contains additional requirements for the installation of Arc-Flash warning labels and arc energy reduction:

110.16 Arc-Flash Hazard Warning. Electrical equipment, such as switchboards, switchgear, panelboards, industrial control panels, meter socket enclosures, and motor control centers, that in other than dwelling units, and is likely to require examination, adjustment, servicing, or maintenance while energized, shall be field or factory marked to warn qualified persons of potential electric arc flash hazards. The marking shall meet the requirements in 110.21(B) and shall be located to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

240.67 Arc Energy Reduction. Where fuses rated 1200 A or higher are installed, 240.67(A) and (B) shall apply. This requirement shall become effective January 1, 2020.

(A) Documentation. Documentation shall be available to those authorized to design, install, operate, or inspect the installation as to the location of the fuses.
(B) Method to Reduce Clearing Time. A fuse shall have a clearing time of 0.07 seconds or less at the available arcing current, or one of the following shall be provided:

(1) Differential relaying
(2) Energy-reducing maintenance switching with local status
(3) Energy-reducing active arc flash mitigation system
(4) An approved equivalent means

240.87 Arc Energy Reduction. Where the highest continuous current trip setting for which the actual overcurrent device installed in a circuit breaker is rated or can be adjusted is 1200 A or higher, 240.87(A) and (B) shall apply. Not applicable for this Campus as all Overcurrent Circuit protection is 1000 amp or less.

NFPA 70E 130.5(G) also contains information on the selection of PPE where required based on the incident energy available at the equipment. Different types of PPE are suggested dependent on the exposure level of the energy as rated in Cal/cm^2. The energy exposure levels are shown in the Incident Energy Summary in each report. The levels are defined using the following energy Cal/cm^2:

Level A: 1.2 Cal/cm^2
Level B: 4 Cal/cm^2
Level C: 8 Cal/cm^2
Level D: 25 Cal/cm^2
Level E: 40 Cal/cm^2
Level D: 100 Cal/cm^2
Level E: 120 Cal/cm^2

The upper limit for the highest rated PPE is 40 Cal/cm^2. Energy exposure beyond this upper limit is relatively unsafe with any PPE, and energized work at equipment exceeding this rating should be avoided. **Arc-Flash labels with incident energy exceeding this threshold show the required PPE as "No Safe PPE Available – Energized Work is Prohibited".**

NFPA 70E 130.7(C) describes PPE requirements in effect at specified boundaries of working distance. NFPA 70E 130.4 is effective where working within the "restricted Approach Boundary", and NFPA 70E 130.5 were working within the "Arc Flash Boundary". Previous versions of NFPA 70E 2018 contain varied names and descriptions for these boundaries. This analysis uses NFPA 70E 2018, the most recent version as of the preparation of the analysis, as the basis for descriptions of approach boundaries.

The incident energy calculations utilize information provided by the serving utility. The incident energy calculations also assume the correct settings of overcurrent protective devices for the data provided on the labels to be correct. Improper or inadequate maintenance can result in increased opening time of the overcurrent protective device(s), thus increasing the incident energy.

2.5.1 Arc Flash Labels

Equipment labels containing the incident energy level, working boundaries and PPE requirements for exposed energized work are in Appendix 6. The labels are color coded per ANSI Z535.4 and are to be field-marked per NFPA 70E 130.5(D) and NEC 110.16.

The settings used in Arc Energy Reduction or other temporary means of incident energy reduction should be reset as soon as the work is complete to return the system to the normal engineered settings. Failure to do so will result in non-selective operation of the system and may result in unnecessary loss of power to critical systems.

2.6 Coordination Analysis

A protective device Coordination Study was performed to evaluate the capability of the protective devices to provide protection under fault conditions. The Coordination Study was performed by plotting the protective device characteristics as Time-Current Characteristic (TCC) curve sets. SKM Power Tools version 9.0.1.3 was used for TCC plots and analysis in this report. Protective devices including fuses and breakers were compared in a graphed set to coordinate the operating time and current of devices adjacent to each other in the electrical system.

In many systems, compromises need to be made between coordination, protection, and service needs of the Site due to the amperage and devices in the system.

ANSI/IEEE Standard 242-2001 states, "Whether minimizing the risk of equipment damage or preserving service continuity is the more important objective depends on the operating philosophy of the particular plant or business."

Subsequent changes in devices or operation of the system may require re-evaluation of protective devices.

Time-Current Curve (TCC) sets for the systems analyzed are in the Appendix 4 report. The voltage and current are considered in the one-line diagram that show the relationship between the protective devices plotted on each curve set. The curves for each device are terminated at the maximum fault magnitude available at the device's location. The curve sets consist of the TCC of devices plotted on a log-log graph showing current and time axis. The findings based on the TCC plots do not address lack of selectivity due to instantaneous units being in series.

2.7 Load Flow Evaluation

An analysis of the system was performed to determine the maximum voltage drop, voltage phase, power factor, branches voltage, current, power losses, active and reactive power.

2.8 Energized Electrical Work Permit

An example of an Energized Electrical Work Permit is included in the Appendix. It is provided for reference and may be used as needed to meet the requirements of NFPA 70E 2018 for the facility.

3. STUDYS' RESULTS INTERPRETATION

3.1 Short Circuit Interpretation

Starting with Init.Sym.RMS provided for the service as the available symmetrical short circuit current at service equipment by the serving utility:

- SES-EMT is a single phase 240/120V system with an APS utility provided 14.3 KA fault value.

The fault current from the service entrance to the downstream equipment is reduced proportionately based on the impedance of each successive buss or line. Short Circuit Current ratings, or Ampere Interrupting Capacity ratings, are based upon the available energy at each specific point in the electrical system according to the short circuit study.

The model utilizes information obtained from field observations and compared the available fault current with the interrupting and/or short circuit ratings (IC) of the protective devices in the electrical system.

Based on short circuit study, SES-EMT exceeds its KAIC value. Issues with the electrical system are noted in the Excel report. Typically, this panel would receive a Red label for an insufficient KAIC rating. Hower, this panel has other issues and will receive a Red label for other deficiencies. *Reference Excel field report.*

Eq. Name	SES-EMT					
SC RATING(KASCw)	10KA ☒					
$I_{k"-3Ph.-Init.Sym.}$	12.9KA					

Table (1)

NOTE 1:

☑ : Passed. Equipment is adequate to use under circumstance.

☒ : Failed. Equipment is not adequate to use under circumstance. Client must upgrade the panel or perhaps the circuit breakers with higher ratings as proposed in this report.

3.2 Arc Flash Study Interpretation

The analysis of faults and protective devices were used to evaluate incident energy in the electrical system. These rapid clearing times help to reduce the time that the arc is ON. The quicker an overcurrent device opens or clears the fault, a lower value of Incident Energy is expected and in turn, lowers the AF categories. The AF study also evaluated the incident energy for the facility where the system(s) supply was provided.

The incident energy (IE) at the service point, is elevated, as we did not consider any MV circuit breaker on transformer primary side as the serving utility will not provide this information. It should be noted that where a MV CB / or fuse on transformer primary is provided, the IE provided by the utility system will be significantly decreased.

All sources of energy should follow lock-out tag-out procedures and the switchgear should be in a constant de-energized state when servicing, modifying, or maintaining the equipment. The following general site recommendations are:

The worst-case energy levels should be utilized in developing energized electrical safety procedures and other PPE required for the site.

Voltage should always be verified to be equal to or less than the indicated voltage on the provided labels and/or the nameplate provided with the equipment, or the findings of this report will be invalidated.

Labels are to be printed with the following color code as per customer request.

INCIDENT ENERGY (cal/cm^2)	CLOTHING DESCRIPTION	COLOR CODE
<1.2	Non-melting or untreated natural fiber long-sleeve shirt, long pants or coveralls, and other PPE per NFPA 70E-2018 Article 130.7(C).	
1.2-12	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>12-40	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>40*	INCIDENT ENERGIES AT THIS LOCATION EXCEEDS THE MAXIMUM SAFE WORKING LEVEL. ENERGIZED WORK IS NOT RECOMMENDED	

3.30 Coordination Study Interpretation

The short circuit analysis of faults was modeled with protective devices in the electrical system. Inserting all protective elements in one diagram could cause confusion, so each radial branch's TCC have been shown in individual TCC diagrams.

Typical TCC curves are provided in Appendix 4.

TCC diagrams show Circuit breaker to cable coordination and do not call out undersized bus systems. It should be noted that changing overcurrent device sizes or settings may introduce additional hazards or issues; any changes should be done in consultation with a registered electrical engineer.

3.40 Load Flow Study Interpretation

The load flow study calculated all system nominal currents, voltages, and power consumption throughout the distribution system assuming normal operation of the facility with nominal demands.

Assumptions for the facility demand loads had to be utilized to evaluate the system. The indicated loads are not actual and should be independently verified. It is recommended, as part of a continuing maintenance program, to periodically conduct load studies whenever systems are modified or equipment is added. The study should determine the actual loads used during the system operation and for a period of not less than 30 days. Based upon the study's findings, it may become necessary to remove or relocate loads or, it may find that load balancing may become necessary. It should be noted that actual loads are often significantly less than the calculated loads mandated by the NEC as these calculations tend to be very conservative.

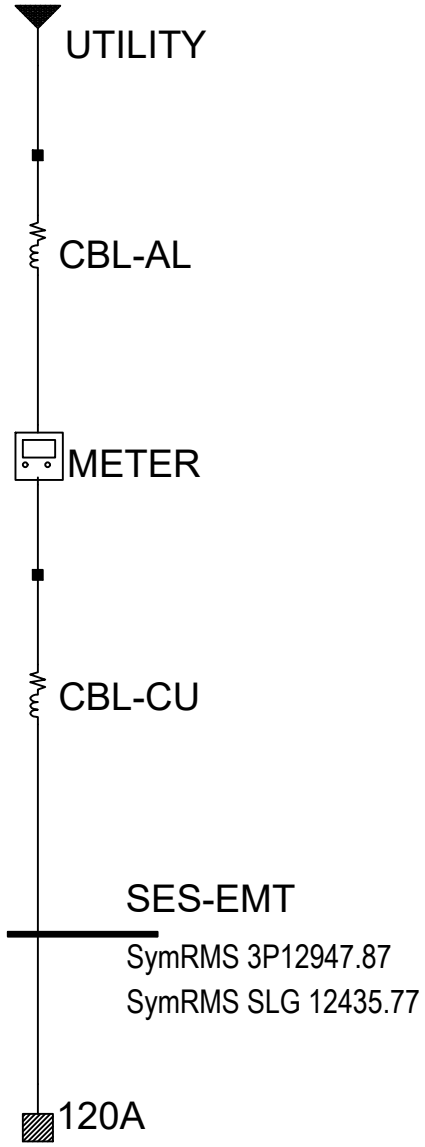
OCPD: Over Current Protection Device (Fuse/Breaker) are acceptable based upon estimated loads.

It appears that the voltage drop for the campus distribution system's feeders are acceptable. It should be noted that where voltage drop is excessive (greater than 5%) it may create operational issues (impacting the proper operation of data processing equipment as an example) and increase operational costs, it can also reduce the life expectancy of equipment such as motors and HVAC equipment and impact the proper operation of overcurrent devices and will increase clearing time which will also increase the incident energy of an arc flash. Finally, excessive voltage drop can also damage conductor insulation due to the increased heating of the conductor. Where these calculations indicate excessive voltage drop is present, the systems components should be evaluated by a registered electrical engineer.

APPENDIX 1

SHORT CIRCUIT SKM REPORT

EMT Ambulance Building
Short Circuit



DAPPER Fault Contribution Complete Report

Comprehensive Short Circuit Study Settings

Three Phase Fault	Yes	**Faulted Bus**	All Buses
Single Line to Ground	Yes	**Bus Voltages**	First Bus From Fault
Line to Line Fault	No	**Branch Currents**	First Branch From Fault
Line to Line to Ground	No	**Phase or Sequence**	Report phase quantities
Motor Contribution	Yes	**Fault Current Calculation**	Asymmetrical RMS (with DC offset and Decay)
Transformer Tap	Yes	**Asym Fault Current at Time**	0.50 **Cycles**
Xformer Phase Shift	Yes		

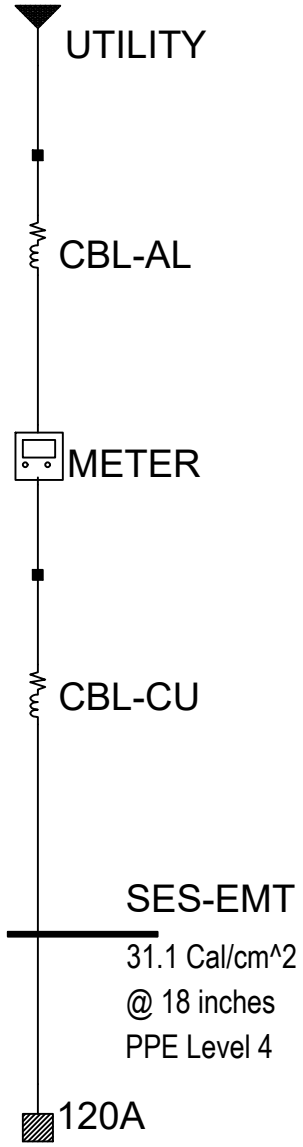
				Initial Symmetrical Amps				Asymmetrical Amps				Init Sym Neutral Amps	
Bus Name	**Contributions**			**3 Phase**	**SLG**	**LLG**	**LL**	**3 Phase**	**SLG**	**LLG**	**LL**	**SLG**	**LLG**
BUS-0003				**14,318**	**14,318**	**0**	**0**	**19,798**	**19,798**	**0**	**0**		
CBL-AL	CABLE	In		0	0	0	0	0	0	0	0		
UTILITY	UTILITY	In		14,318	14,318	0	0	19,798	19,798	0	0	14,318	
SES-EMT				**12,948**	**12,436**	**0**	**0**	**14,306**	**13,412**	**0**	**0**		
CBL-CU	CABLE	In		12,948	12,436	0	0	14,306	13,412	0	0	12,436	
BUS-0006				**13,226**	**12,856**	**0**	**0**	**14,779**	**14,080**	**0**	**0**		

Bus Name	---------Contributions---------		----------Initial Symmetrical Amps---------- 3 Phase	SLG	LLG	LL	----------Asymmetrical Amps---------- 3 Phase	SLG	LLG	LL	---Init Sym Neutral Amps-- SLG	LLG
CBL-AL	CABLE	In	13,226	12,856	0	0	14,779	14,080	0	0	12,856	
CBL-CU	CABLE	In	0	0	0	0	0	0	0	0		

APPENDIX 2

ARC FLASH SKM REPORT

EMT Ambulance Building
Arc Flash



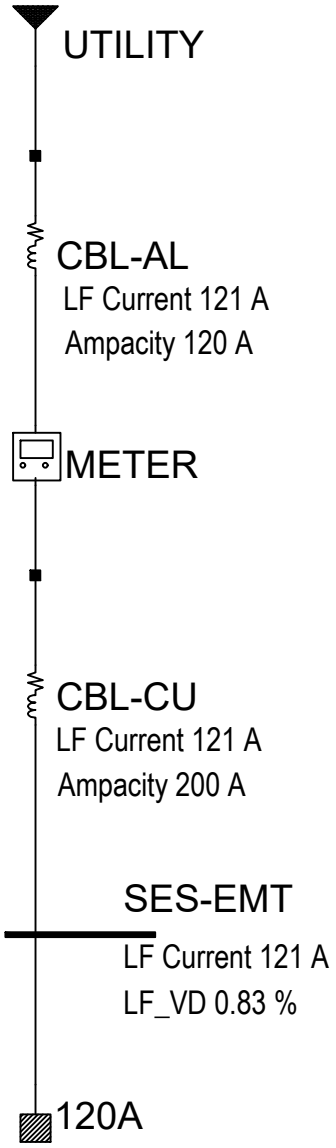
Arc Flash Evaluation Report

Bus Name	Bus kV	Protective Device Name	Bus Bolted/ Arcing (kA)	Prot Bolted/ Arcing (kA)	Trip/ Breaker Time (sec.)	Equip Type/ Gap (mm)	Electrode Config / WC Config	Box Height/ Width (in)	Box Depth (in)	ArcFlash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	PPE
SES-EMT	0.240	MaxTripTime @2.0s	12.95	0.00	2.000	PNL	VCB	14	10	137.88	18.00	31.06	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			6.69	0.00	0.000	25	VCB	12					

APPENDIX 3

LOAD FLOW STUDY

EMT Ambulance Building
Load Flow



Load Flow Summary Report

Load Flow Study Settings

Include Source Impedance	Yes	**Bus Voltage Drop %**	5.00
Solution Method	Exact (Iterative)	**Branch Voltage Drop %**	3.00
Load Specification	Connected Load		

Swing Generators

Source	In/Out Service	Vpu	Angle	kW	kvar	VD%	Utility Impedance
UTILITY	In	1.00	0.00	40.0	30.0	0.59	2.08 +*j* 16.67

Buses

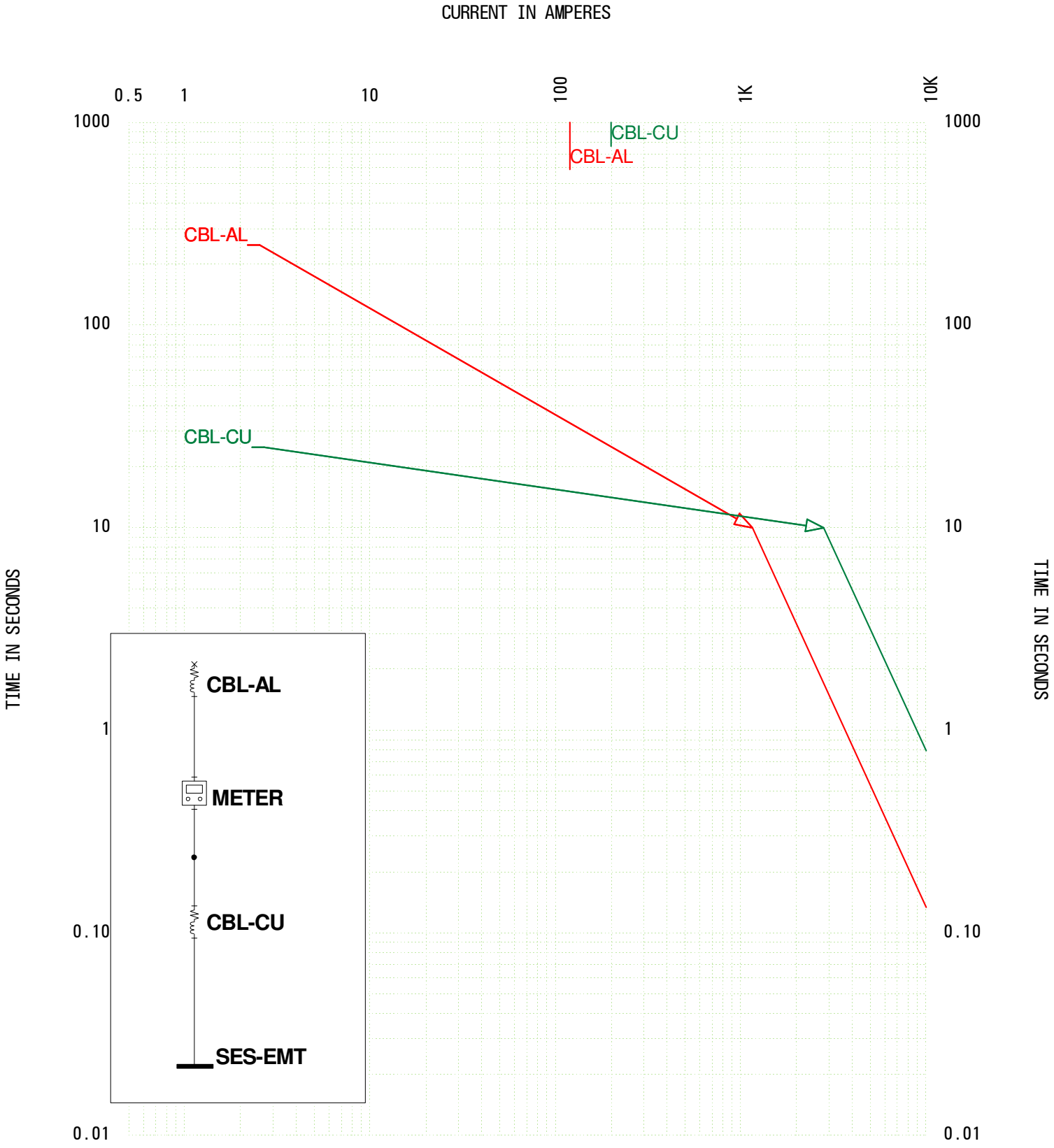
Bus Name	In/Out Service	Design Volts	LF Volts	Angle Degree	PU Volts	%VD
SES-EMT	In	240	238	-0.28	0.99	0.83

Cables

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
BUS-0003	CBL-AL	In	0.22	40.0	30.0	50.0	121.0	0.80
BUS-0006				0.1	0.0	0.1	100.8	
BUS-0006	CBL-CU	In	0.03	39.9	29.9	49.9	121.0	0.80
SES-EMT				0.0	0.0	0.0	60.5	

APPENDIX 4

TCC REPORT



TCC Name: SES-EMT
Oneline: SES-EMT
June 19, 2025 6:53 PM

Current Scale x 1

Reference Voltage: 240

SKM Systems Analysis, Inc.

APPENDIX 5

WORK PERMIT SAMPLE

ENERGIZED ELECTRICAL WORK PERMIT

PART I: TO BE COMPLETED BY THE REQUESTER:

Job/Work Order Number: _____

(1) Description of circuit/equipment/job location:
PNL LA

(2) Description of work to be done:

(3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage:

Requester/Title _____ Date _____

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS DOING THE WORK

Check When Complete

(1) Detailed job description procedure to be used in performing the above detailed work: ☐

(2) Description of the Safe Work Practices to be employed: ☐

Arc Flash Boundary	8"	Incident Energy	0.35 cal/cm^2	Working Distance	18"
Shock Hazard	208 VAC	Limited Approach Restricted Approach	42" 12"	Glove Class	00
Required PPE	No Arc-rated PPE Required				

(3) Means employed to restrict the access of unqualified persons from the work area: ☐

(4) Evidence of completion of a job briefing including discussion of any job-related hazards: ☐

(5) Do you agree the above described work can be done safely? ☐ Yes ☐ No (If no, return to requester)

Electrically Qualified Person(s) _____ Date _____

Electrically Qualified Person(s) _____ Date _____

PART III: APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

Maintenance/Engineering Manager _____ Manufacturing Manager _____

Safety Manager _____ Electrically Knowledgeable Person _____

General Manager _____ Date _____

APPENDIX 6

ARC FLASH LABELS

PPE TABLE

ARC FLASH LABELS

	Incident Energy From (cal/cm^2)	Incident Energy To (cal/cm^2)	IE Low Marginal (cal/cm^2)	IE High Marginal (cal/cm^2)	PPE Level #	PPE Level	Clothing Layers	Required Minimum Arc Rating of PPE (cal/cm^2)	Notes	Level Background Color	Level Foreground Color	Warning Label Text
1	0.0	1.2	0.000	1.190	0	No Arc-rated PPE Required	N/A	N/A	H.3			WARNING
2	1.2	12.0	1.210	11.800	3	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	2 or 3	12	130.5(G)			WARNING
3	12.0	40.0	12.200	40.000	4	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	3 or more	40	130.5(G)			WARNING
4	40.0	9999.0	40.000	9998.000	Dangerous!	DO NOT WORK ON LIVE!	ↄ NOT WORK ON LIV	N/A	DO NOT WORK ON LIVE!			DANGER

	Head & Eye & Hearing Protection	Hand & Arm Protection	Foot Protection	PPE Others 1	PPE Others 2	PPE Others 3	PPE Others 4	PPE Others 5
1	Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	N/A	Safety glasses	N/A	> 50V voltage rated tools + Class 0 (minimum) gloves	Dielectric shoes or insulating mat (step and touch potential).	
2	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
3	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Arc-rated Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
4	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

240 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**SES-EMT**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/19/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

The End of Study Report

225 Broadway Suite 350, San Diego, CA 92101
1 + 310 364 5228 | 1 + 619 323 1515
mailto: Info@120degreez.com | www.120degreez.com



Arc Flash, Short Circuit, and Load Flow Analysis provided for:

EMT BUILDING

6517 E. Lincon Drive

Paradise Valley, AZ 85253

EMT BUILDING

6517 E. Lincon Drive

Paradise Valley, AZ 85253

FOR:
Town of Paradise Valley
Department of Public Works
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

Submitted By:
Amir Amiri, P.E.
Electrical Engineer

Submittal date:
DATE: 6-19-2025

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APPENDIX 5 – WORK PERMIT

APPENDIX 6 – PPE TABLES AND ARC FLASH LABELS

1. EXECUTIVE SUMMARY

1.1. Introduction

A System Coordination and Arc Flash study of the distribution system was performed for the town of Paradise Valley's EMT Building located at 6517 E. Lincon Drive, Paradise Valley, AZ 85253. The study determined the adequacy of the system components and the installed protective equipment. The study/analysis performed included short circuit, load flow, protective device coordination studies and incident energy (Arc-flash) evaluations. The power distribution system provided for this site is the following:

- SES-EMT is a 200 amp 240/120V, 1-phase service fed from 25 KVA utility transformer with a Short Circuit current determined by the power company to be 14,318 Amps. This service was installed per the NEC's 6 switch rule i.e. the panel has 6 circuits or less that when added together will not exceed the bus rating of the panel (200 amps). There is no main breaker to perform overcurrent analysis. The panel has issues that are noted in the Excel field report.

The serving utility has provided the short circuit current availability of this transformer with their service manual which is noted in the field notes provided. The serving utility's published available fault current (AFC) for each transformer which is called out in the field notes. Values used were provided by APS for phase-to-phase faults. Each Service Equipment System (SES) serves primarily lighting and equipment loads of the building in which it is located.

The short circuit analysis evaluates the short time thermal and electrodynamic strength of the facilities equipment. Arc flash and protective equipment studies evaluate the incident energy at specific points of the distribution system to provide Arc-Flash hazard warning labels and personal protective equipment (PPE) recommendations. System protection coordination analysis is used to evaluate the adequacy of the protective devices (Fuses-Circuit Breakers) for the proper protection of system components and are unitized in the verify selective coordination of overcurrent protective devices. Finally, the load flow analysis evaluates the ability of equipment and cables to safely serve the loads they supply. Voltage drop values are included in the appendix report.

Major objectives of the analysis are:

- Compare the calculated fault duties with withstanding/interrupting ratings for customer owned electrical distribution system equipment and note any area of deficiency.
- Demonstrate protective device coordination and note any area of deficiency. Recommended settings for protective devices that will isolate faults in a manner that is consistent with the basic system design and operation. The recommendations given will balance system protection and selective fault isolation.
- Identify incident energy levels, arc flash boundaries, and what level of Personal Protective Equipment (PPE) is required for safe energized work, in accordance with NFPA 70E 2018.
- Evaluate and assess the panels, switches, fuses, and cables nominal values under the current and voltage levels at site, according the load flow analysis results.

Note areas of deficiency and make recommendations for corrective measures that are consistent with applicable codes and standards.

1.1.1. Full narratives of the analysis performed as well as the findings and recommendations of the analysis are included in Sections 2 and 3 of this report. The appendices include the computer output from the analysis performed and tables containing the settings for the adjustable devices in the scope of work. Time current curves, a copy of the Arc-Flash labels, and a one-line diagram of the system model are also included in the appendices.

1.1.2. Various scenarios (where relevant) were modeled, and all related studies' results have been detailed in this report.

The following were the scenarios that were modeled and evaluated:

- Scenario #1: Short circuit analysis
- Scenario #2: Arc-Flash analysis
- Scenario #3: Load Flow analysis
- Scenario #4: TCC Tables

The assessment of the power distribution system components and equipment will be done based on the worst-case outcomes, including the highest levels of fault currents, load flow currents and assumed current usage as well as the highest available arc flash incident energy. The results of the analysis are included in Appendixes of this report. The appendices include the data derived from the SKM analysis software. Additionally, the Appendixes include Time-Current curves of protective devices, a copy of the Arc-Flash labels to be installed, one line diagram for overall system for short circuit, and incident energies. Additional diagrammatic illustrations of the one-line diagram are included.

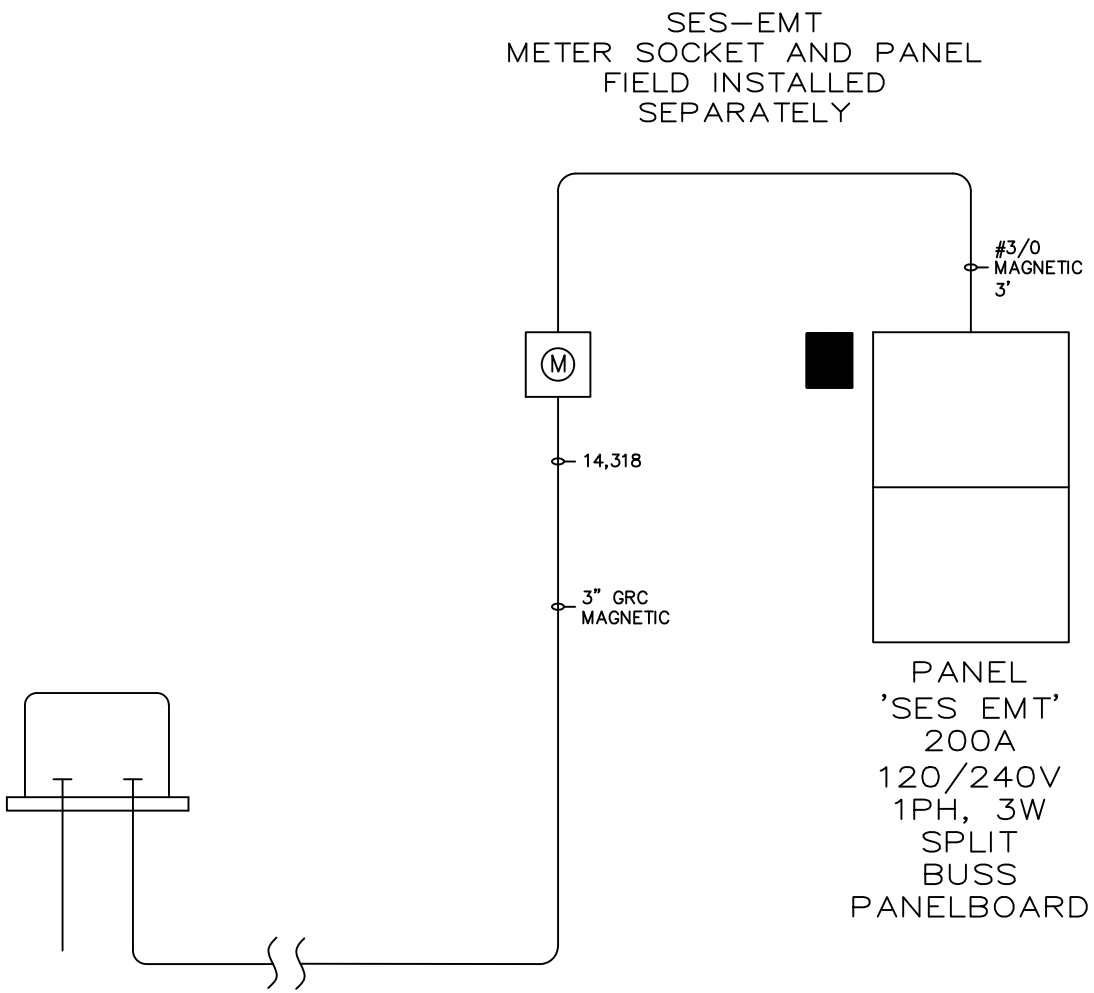
1.2.2 DC systems less than 50 volts.

The Occupational Safety and Health Administration, under 29 CFR 1910.303(g)(2)(i), considers electrical systems rated 50 volts or more as hazardous. By extension, those systems rated less than 50 volts are not considered to be hazardous. NFPA 70E, section 130.5(C), under Table 130.5(C), indicates that there is no likelihood of occurrence "For dc systems, maintenance on a single cell for a battery system or multi-cell units in an open rack.". As a result, DC systems rated 50 volts or less are not addressed by this study and are excluded from its scope.

1.2. Distribution System

The electrical system's overall single line diagrams are shown in the following figures below. Each individual single line is shown with the associated field report that contains the facilities equipment technical specifications and ratings, based upon visual observations. The actual field notes should be referenced for existing conditions as this report focuses on the Short Circuit Fault currents and Arc Flash evaluation. The physical condition of the services and equipment are described by the Excel report but are not formally addressed by this study.

EMT – AMBULANCE BUILDING



LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

EQUIPMENT TO BEAR A LABEL STATING
–NO SAFE LEVEL OF PPE–

FACILITY	**EMT AMBULANCE BLDG**	**ADDRESS:**	**6517 E. LINCOLN DRIVE, PARADISE VALLEY AZ**

UTILITY:	**APS**
TRANSFORMER SIZE:	**25 KVA**
TRANSFORMER %Z:	**2.70%**
SECONDARY COND SIZE:	**(1) x 1/0 AL**
LENGTH:	
AFC (PER UTILITY TABLES)	**14,318**
VOLTAGE:	**120/240**
PHASE:	**1Ø-3W**

OTHER COMMENTS

NOTE: **METER NUMBER 1256154**

EQUIPMENT NAME:	**SES - EMT**	**VOLTAGE:**	**120/240**	**PHASE:**	**1Ø-3W**	**AMPS:**	**200**	**SCCR:**	**10K**	**MAIN:**	**6 SW RULE**
EQUIPMENT TYPE:	**PANELBOARD**									**MODEL:**	
MANUFACTURER:	**GE**									**AMPS**	
MODEL:											
TYPE:											
FED FROM:	**UTILITY XFMR**										
AFC:	**14,318**										
FEEDER SIZE:											
CONDUCTOR TYPE:											
RACEWAY TYPE:											
LENGTH:											
MAIN:											

OTHER COMMENTS

THE EQUIPMENT HAS A MIX OF 10K AIC CIRCUIT BREAKERS FROM DIFFERENT MANUFACTURERS
THE EQUIPMENT HAS A NEMA 1 (INDOOR) RATING AND IS INSTALLED ON THE EXTERIOR OF THE BUILDING.
THE SERVICE IS IN POOR CONDITION AND SHOULD BE REPLACED.
THE AVAILABLE FAULT CURRENT EXCEEDS THE RATING OF THE EQUIPMENT
A LABEL STATING THAT THERE IS NO SAFE LEVEL OF PPE WILL BE APPLIED.

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

1.3. Findings

1.3.1. Short Circuit Analysis

The short circuit study provides the available fault current at each busbar (point or node) of the distribution system based upon the impedance of the system to that point. Based upon these results, we can compare the equipment's short circuit current withstanding ratings (SCCR) and the ampere interrupting current ratings (AIC) with the available fault current**.**

Based on the short circuit study, calculated fault exceeded the 10 KAIC rating of SES-EMT.

At the locations noted, the available fault current exceeds the AIC and/or SCCR ratings of the equipment. As documentation from the manufacturer was not available, it is not possible to verify if the equipment is permitted to be used as part of a series rated system. While it appears that the applications of the labels are correct, it should be independently verified.

1.3.2. Protective Device Coordination

1.3.2.1. The MDP SES-EMT service feeders (TCC Report) show no over current protection coordination. However, this service was installed per the NEC's 6 switch rule and the design is NEC code compliant.

1.3.2.2. The protective device settings in this report (Refer to TCC reports), are **not applicable**. Refer to sections 2.6 and 3.3 for more details.

1.3.3. Arc Flash Evaluation

1.3.3.1. **The utility's metering cabinet and the main switchboard are often found to have incident energy levels that exceed 40 Cal/cm^2 (no safe level of PPE).** In locations where no safe level of PPE is recommended, energized work should be prohibited or extension tools (e.g., hotstick) should be used to distance personnel from the potential arc point. The incident energy at the indicated working distance dictates the required level of PPE. Wherever possible, protective device settings are suggested to try to reduce the incident energy levels. Please refer to Sections 2.5 and 3.2 for more detailed information.

1.3.3.2. The incident energy calculations utilize the data obtained from the serving utility. The incident energy calculations also assume the recommended settings shown both in the SKM Arc Flash One-Line and the follow up report for each SES distribution system. These settings must be implemented for the data provided on the labels to be correct. **Improper or inadequate maintenance can result in increased opening time of overcurrent protective devices, thus increasing the incident energy and negating the results of this study.**

1.3.3. Load Flow Analysis

The table in Appendix 3 provides an overview of the all the distribution panels predicted voltage drop. The voltage drop to all equipment appears to be satisfactory. It should be noted that excessive voltage drop can cause electronic equipment, such as computer systems, to unexpectedly shut down and effects the electrical system's performance. None of the locations studied were found to have current capacity less than available demand current flow.

Refer to Section 3.4 for more detail.

1.4. Study Notes

This study is based upon the most accurate information available at the time the study was conducted.

In reviewing the report, the serving utility typically does not provide the actual values for their contribution to the available fault current nor the impedance of their transformers. Values are published in their respective Electrical Service Requirement Manuals (ESRM) however, they will not guarantee the accuracy of this information. Additionally, there is no external labeling of the equipment that would provide this information. As a result, the values provided in this study may differ from actual values.

The serving utilities also will not indicate if overcurrent protective equipment, devices, or relays have been provided on the line side of their distribution transformer(s). As a result, it is prudent to perform these studies assuming that no protection has been provided.

There is equipment that was not surveyed due to being in locked rooms or otherwise inaccessible. Without being able to determine panel condition, we generated a Red Dangerous label for such panels.

Precise measurements of the distribution system feeders are all but impossible. Every effort has been made to estimate conductor length based upon equipment location and observed raceway or cable routing. Additionally, calculations provided in this study assume magnetic raceways above grade and non-magnetic raceways below grade except where positive identification is possible.

The results of this study are valid for a maximum of 5 calendar years after the date of publication and are invalidated whenever any of the following conditions or modifications are made to the distribution system or where the electrical equipment is not properly maintained.

The following conditions will negate the findings of this study and render the results invalid.

- Changes made to the utility distribution system or equipment
- The addition of equipment or loads
- Removal or replacement of overcurrent devices with differing specifications
- Changing overcurrent protective device settings
- Any modification to the facility distribution system
- Improper maintenance of equipment
- Removal of equipment
- Equipment that is not properly exercised as required by the manufacturer(s).

Whenever new equipment or loads have been provided after this study has been published, it is strongly recommended that a new study be provided to assess how the changes have impacted the system.

2. ANALYSIS

2.1. Basis of Analysis

Electrical system inputs, for the analysis performed, are composed of both non-intrusive on-site data gathering methods and integrating predictable values. This information is presented in the Excel spreadsheets included in this report. Source data was obtained from the Salt River Project Electrical Service Requirements Manual. SKM Power Tools version "9.0.0.7" was used for all analysis performed. Using this software, a computer model of the electrical system was created based on data obtained for the analysis. The single line diagram of the distribution system is shown on Fig.01 which is a graphical representation of the electrical system. The components on the Single Line Diagram (SLD) included all required device information for the analysis. This model was then used to study the electrical system and generate the calculations found in Appendices 1 through 5 of this report.

2.2. Campus as built Data Gathering Assumptions

When reviewing the system single line diagram, the provided information is based upon visual observations made at the site. In some circumstances it was not possible to access or open equipment. Access to this equipment may have been limited to any of the following conditions.

- Personnel not permitted to de-energize equipment
- Personnel could not gain access to equipment due to locked doors, gates or covers
- Equipment could not be opened or accessed without de-energizing the equipment or systems
- Staff felt the opening of the equipment may expose persons or property to an unreasonable risk due to the condition of the equipment.

As demand loads are necessary to complete the calculations, this study is based upon information provided by the facilities owner indicating the highest demand loads for the last calendar year. This information is supplied by the serving utility to the facility owner/operator. Where this information has not been provided, all calculations performed have been based upon a value 80% of the rating of the electrical service(s) for the facility with an anticipated power factor (PF) of 80%.

As demand loads are necessary to complete the calculations, it was necessary to make assumptions for these loads to complete the study. As load studies have not been completed for each panel or feeder, we based the study by using the following assumptions for all estimated loads (actual values are used when provided):

- Motors protected by circuit breakers: 40% of the circuit breaker rating
- Motors protected by fuses: 50% of the fuse rating
- All other loads: 50% of the rating of the upstream OCPD.

These assumptions are conservative in nature and should provide an acceptable range of results. It should be noted that in some instances, these assumptions indicate that equipment may not be suitable for the loads applied. The values provided do not necessarily indicate an overloaded or unsafe condition however, additional investigation may be necessary to assure the safe and continued operation of the equipment or systems.

The demand loads for switchboards and panelboards will be as follows:

Panelboard load estimate:

- **Main Distribution Board SES-EMT:** 121 amps (reference Load Flow One Line).

2.3. Equipment Evaluation

Each device on the one-line diagram in Fig.01 is identified by an identifier. Common identifiers used in this report include:

AFC– Available Fault Current
AF – Arc Flash
IC – Interrupting Current
Gen – Generator
SCC – Short Circuit Current
CB – Circuit Breaker
SW – Switch
IE – Incident Energy
PPE – Personal Protective Equipment
TCC – Time Current Curve
AF – Arc Flash
SWB – Switchboard
LV – Low Voltage
CBL – Cable
LF – Load Flow
SC – Short Circuit

The incident energy summary in each report contains the available fault current calculations at each indicated device in the electrical system. Incident energy may increase if protective device settings in the electrical equipment is changed or adjusted or, if they are replaced. Increases in incident energy may also result from improper or inadequate maintenance or new construction.

Electrical equipment and protection devices must be in proper working condition for the equipment to operate properly and open as expected. A maintenance inspection and testing program should ensure that all equipment and devices function as designed by the manufacturer. NFPA 70E 2018 provides standards for electrical safety, including the following requirements for electrical equipment and protective devices:

> **General Maintenance Requirements** - Electrical equipment shall be maintained in accordance with manufacturers' instructions or industry consensus standards to reduce the risk of failure and the subsequent exposure of employees to electrical hazards.
>
> **Overcurrent Protective Devices** - Overcurrent protective devices shall be maintained in accordance with the manufacturers' instructions or industry consensus standards. Maintenance, tests, and inspections shall be documented.
>
> **210.5 Protective Devices** - Protective devices shall be maintained to adequately withstand or interrupt available fault current.

As of June, 2025, the amended 2014 National Electrical Code (NEC) is in effect in the town of Paradise Valley. Article 110 of the NEC contains requirements for all electrical installations, including maintenance and mechanical execution of work:

> **110.12(B): Mechanical Execution of work** - There shall be no damaged parts that may adversely affect safe operation or mechanical strength of the equipment such as parts that are broken, bent, cut; or deteriorated by corrosion, chemical action, or overheating.
>
> **110.26: Spaces about Electrical Equipment** - Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.

Additionally, when series ratings are used the National Electrical Code (NEC) Article 110 requires series combination rated overcurrent devices are visibly marked by permanently affixed means as stated:

> **110.22(B): Engineered Series Combination Systems** - Equipment enclosures for circuit breakers or fuses applied in compliance with series combination ratings selected under engineering supervision in accordance with 240.86(A) shall be legibly marked in the field as directed by the engineer to indicate the equipment has been applied with a series combination system. The marking shall meet the requirements in 110.21(B) and shall be readily visible and state the following: CAUTION – ENGINEERED SERIES COMBINATION SYSTEM RATED XXXXX AMPERES. IDENTIFIED REPLACEMENT COMPONENTS REQUIRED.

Equipment that is malfunctioning, has been inadequately or improperly installed, maintained, or modified, may result in injury or death, and will invalidate the results of this study.

2.4 Short Circuit Analysis

An analysis of the system was performed to determine the maximum fault levels at the equipment covered within the scope of work. SKM Power Tools version 9.0.1.3 (Unbalanced/Single Phase Subroutine) was used for the analysis using the comprehensive ANSI/IEEE C37.13 standard for calculation of these fault currents during short-circuit. The following short circuit currents have been calculated for system components:

- Initial Symmetrical line to line short circuit current (SCC1)
- Initial Symmetrical single line to ground short circuit current (SCC2)

The SCC1 is the maximum available short circuit current at any point in the distribution system, this is generally at the point the utility company connects to the system's service entrance system. This connection is called the point of service or the service point. The available fault current, at each point in the distribution system, is based upon the contributed fault current provided by the utility (this value is provided by the serving utility or from the utilities tables). Then, through analyzing the fault current calculations, the electrical system's components' fault withstand capability will be assessed by comparing them with SCC1.

The short-circuit current should not exceed the equipment rating with required factors for the protective device.

Based on the short circuit study, calculated fault exceeded the 10 KAIC rating of SES-EMT.

The Short Circuit Analysis in each SES SKM report summarizes the fault duties at each device. The AF incident energy summary in the SES report shows IE at the safe distance and PPE requirements for each location into the system.

2.5 Arc Flash Evaluation

Arc Flash Evaluations are used to assess arc flash hazards and to assess the work Site risk to personnel. The Occupational Safety and Health Administration (OSHA), and the National Fire Protection Association (NFPA) standard 70E provide requirements for arc flash and other work Site hazards. OSHA requires employers provide a workplace free from recognized hazards that may cause injury or death to their employees. NFPA 70E 2018 provides the Standard for Electrical Safety in the Workplace. NFPA 70E 130.5 states:

"An arc flash risk assessment shall be performed and shall determine if an arc flash hazard exists. If an arc flash hazard exists, the risk assessment shall determine appropriate safety-related work practices, the arc flash boundary, and the PPE to be used within the arc flash boundary."

Arc Flash Evaluations are used to determine the required level of personal protective equipment (PPE), arc flash boundaries, and restrictions on the work of energized equipment. This information must include on the labels as required by NFPA and OSHA standards.

NFPA 70E 130.5(H) requires electrical equipment to be field-marked with a label containing the following information:

(1) Nominal system voltage
(2) Arc flash boundary
(3) At least one of the following:

a. Available incident energy and the corresponding working distance, OR the arc flash PPE category in Table 130.7(C)(15)(a) or Table 130.7(C)(15)(b) for the equipment, but not both
b. Minimum arc rating of clothing
c. Site-specific level of PPE

Furthermore, the National Electrical Code (NEC) contains additional requirements for the installation of Arc-Flash warning labels and arc energy reduction:

110.16 Arc-Flash Hazard Warning. Electrical equipment, such as switchboards, switchgear, panelboards, industrial control panels, meter socket enclosures, and motor control centers, that in other than dwelling units, and is likely to require examination, adjustment, servicing, or maintenance while energized, shall be field or factory marked to warn qualified persons of potential electric arc flash hazards. The marking shall meet the requirements in 110.21(B) and shall be located to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

240.67 Arc Energy Reduction. Where fuses rated 1200 A or higher are installed, 240.67(A) and (B) shall apply. This requirement shall become effective January 1, 2020.

(A) Documentation. Documentation shall be available to those authorized to design, install, operate, or inspect the installation as to the location of the fuses.
(B) Method to Reduce Clearing Time. A fuse shall have a clearing time of 0.07 seconds or less at the available arcing current, or one of the following shall be provided:

(1) Differential relaying
(2) Energy-reducing maintenance switching with local status
(3) Energy-reducing active arc flash mitigation system
(4) An approved equivalent means

240.87 Arc Energy Reduction. Where the highest continuous current trip setting for which the actual overcurrent device installed in a circuit breaker is rated or can be adjusted is 1200 A or higher, 240.87(A) and (B) shall apply. Not applicable for this Campus as all Overcurrent Circuit protection is 1000 amp or less.

NFPA 70E 130.5(G) also contains information on the selection of PPE where required based on the incident energy available at the equipment. Different types of PPE are suggested dependent on the exposure level of the energy as rated in Cal/cm^2. The energy exposure levels are shown in the Incident Energy Summary in each report. The levels are defined using the following energy Cal/cm^2:

Level A: 1.2 Cal/cm^2
Level B: 4 Cal/cm^2
Level C: 8 Cal/cm^2
Level D: 25 Cal/cm^2
Level E: 40 Cal/cm^2
Level D: 100 Cal/cm^2
Level E: 120 Cal/cm^2

The upper limit for the highest rated PPE is 40 Cal/cm^2. Energy exposure beyond this upper limit is relatively unsafe with any PPE, and energized work at equipment exceeding this rating should be avoided. **Arc-Flash labels with incident energy exceeding this threshold show the required PPE as "No Safe PPE Available – Energized Work is Prohibited".**

NFPA 70E 130.7(C) describes PPE requirements in effect at specified boundaries of working distance. NFPA 70E 130.4 is effective where working within the "restricted Approach Boundary", and NFPA 70E 130.5 were working within the "Arc Flash Boundary". Previous versions of NFPA 70E 2018 contain varied names and descriptions for these boundaries. This analysis uses NFPA 70E 2018, the most recent version as of the preparation of the analysis, as the basis for descriptions of approach boundaries.

The incident energy calculations utilize information provided by the serving utility. The incident energy calculations also assume the correct settings of overcurrent protective devices for the data provided on the labels to be correct. Improper or inadequate maintenance can result in increased opening time of the overcurrent protective device(s), thus increasing the incident energy.

2.5.1 Arc Flash Labels

Equipment labels containing the incident energy level, working boundaries and PPE requirements for exposed energized work are in Appendix 6. The labels are color coded per ANSI Z535.4 and are to be field-marked per NFPA 70E 130.5(D) and NEC 110.16.

The settings used in Arc Energy Reduction or other temporary means of incident energy reduction should be reset as soon as the work is complete to return the system to the normal engineered settings. Failure to do so will result in non-selective operation of the system and may result in unnecessary loss of power to critical systems.

2.6 Coordination Analysis

A protective device Coordination Study was performed to evaluate the capability of the protective devices to provide protection under fault conditions. The Coordination Study was performed by plotting the protective device characteristics as Time-Current Characteristic (TCC) curve sets. SKM Power Tools version 9.0.1.3 was used for TCC plots and analysis in this report. Protective devices including fuses and breakers were compared in a graphed set to coordinate the operating time and current of devices adjacent to each other in the electrical system.

In many systems, compromises need to be made between coordination, protection, and service needs of the Site due to the amperage and devices in the system.

ANSI/IEEE Standard 242-2001 states, "Whether minimizing the risk of equipment damage or preserving service continuity is the more important objective depends on the operating philosophy of the particular plant or business."

Subsequent changes in devices or operation of the system may require re-evaluation of protective devices.

Time-Current Curve (TCC) sets for the systems analyzed are in the Appendix 4 report. The voltage and current are considered in the one-line diagram that show the relationship between the protective devices plotted on each curve set. The curves for each device are terminated at the maximum fault magnitude available at the device's location. The curve sets consist of the TCC of devices plotted on a log-log graph showing current and time axis. The findings based on the TCC plots do not address lack of selectivity due to instantaneous units being in series.

2.7 Load Flow Evaluation

An analysis of the system was performed to determine the maximum voltage drop, voltage phase, power factor, branches voltage, current, power losses, active and reactive power.

2.8 Energized Electrical Work Permit

An example of an Energized Electrical Work Permit is included in the Appendix. It is provided for reference and may be used as needed to meet the requirements of NFPA 70E 2018 for the facility.

3. STUDYS' RESULTS INTERPRETATION

3.1 Short Circuit Interpretation

Starting with Init.Sym.RMS provided for the service as the available symmetrical short circuit current at service equipment by the serving utility:

- SES-EMT is a single phase 240/120V system with an APS utility provided 14.3 KA fault value.

The fault current from the service entrance to the downstream equipment is reduced proportionately based on the impedance of each successive buss or line. Short Circuit Current ratings, or Ampere Interrupting Capacity ratings, are based upon the available energy at each specific point in the electrical system according to the short circuit study.

The model utilizes information obtained from field observations and compared the available fault current with the interrupting and/or short circuit ratings (IC) of the protective devices in the electrical system.

Based on short circuit study, SES-EMT exceeds its KAIC value. Issues with the electrical system are noted in the Excel report. Typically, this panel would receive a Red label for an insufficient KAIC rating. Hower, this panel has other issues and will receive a Red label for other deficiencies. *Reference Excel field report.*

Eq. Name	SES-EMT					
SC RATING(KASCw)	10KA ☒					
$I_{k"-3Ph.-Init.Sym.}$	12.9KA					

Table (1)

NOTE 1:

☑ : Passed. Equipment is adequate to use under circumstance.

☒ : Failed. Equipment is not adequate to use under circumstance. Client must upgrade the panel or perhaps the circuit breakers with higher ratings as proposed in this report.

3.2 Arc Flash Study Interpretation

The analysis of faults and protective devices were used to evaluate incident energy in the electrical system. These rapid clearing times help to reduce the time that the arc is ON. The quicker an overcurrent device opens or clears the fault, a lower value of Incident Energy is expected and in turn, lowers the AF categories. The AF study also evaluated the incident energy for the facility where the system(s) supply was provided.

The incident energy (IE) at the service point, is elevated, as we did not consider any MV circuit breaker on transformer primary side as the serving utility will not provide this information. It should be noted that where a MV CB / or fuse on transformer primary is provided, the IE provided by the utility system will be significantly decreased.

All sources of energy should follow lock-out tag-out procedures and the switchgear should be in a constant de-energized state when servicing, modifying, or maintaining the equipment. The following general site recommendations are:

The worst-case energy levels should be utilized in developing energized electrical safety procedures and other PPE required for the site.

Voltage should always be verified to be equal to or less than the indicated voltage on the provided labels and/or the nameplate provided with the equipment, or the findings of this report will be invalidated.

Labels are to be printed with the following color code as per customer request.

INCIDENT ENERGY (cal/cm^2)	CLOTHING DESCRIPTION	COLOR CODE
<1.2	Non-melting or untreated natural fiber long-sleeve shirt, long pants or coveralls, and other PPE per NFPA 70E-2018 Article 130.7(C).	
1.2-12	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>12-40	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>40*	INCIDENT ENERGIES AT THIS LOCATION EXCEEDS THE MAXIMUM SAFE WORKING LEVEL. ENERGIZED WORK IS NOT RECOMMENDED	

3.30 Coordination Study Interpretation

The short circuit analysis of faults was modeled with protective devices in the electrical system. Inserting all protective elements in one diagram could cause confusion, so each radial branch's TCC have been shown in individual TCC diagrams.

Typical TCC curves are provided in Appendix 4.

TCC diagrams show Circuit breaker to cable coordination and do not call out undersized bus systems. It should be noted that changing overcurrent device sizes or settings may introduce additional hazards or issues; any changes should be done in consultation with a registered electrical engineer.

3.40 Load Flow Study Interpretation

The load flow study calculated all system nominal currents, voltages, and power consumption throughout the distribution system assuming normal operation of the facility with nominal demands.

Assumptions for the facility demand loads had to be utilized to evaluate the system. The indicated loads are not actual and should be independently verified. It is recommended, as part of a continuing maintenance program, to periodically conduct load studies whenever systems are modified or equipment is added. The study should determine the actual loads used during the system operation and for a period of not less than 30 days. Based upon the study's findings, it may become necessary to remove or relocate loads or, it may find that load balancing may become necessary. It should be noted that actual loads are often significantly less than the calculated loads mandated by the NEC as these calculations tend to be very conservative.

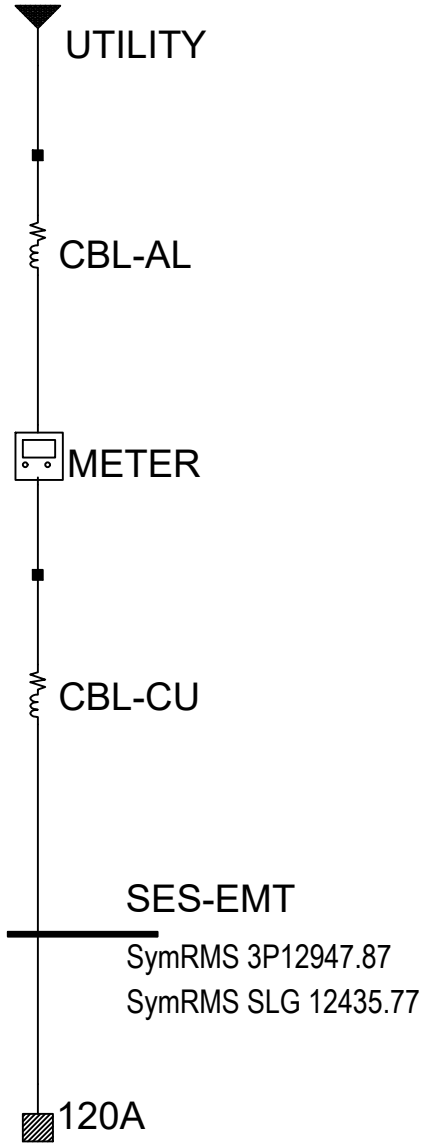
OCPD: Over Current Protection Device (Fuse/Breaker) are acceptable based upon estimated loads.

It appears that the voltage drop for the campus distribution system's feeders are acceptable. It should be noted that where voltage drop is excessive (greater than 5%) it may create operational issues (impacting the proper operation of data processing equipment as an example) and increase operational costs, it can also reduce the life expectancy of equipment such as motors and HVAC equipment and impact the proper operation of overcurrent devices and will increase clearing time which will also increase the incident energy of an arc flash. Finally, excessive voltage drop can also damage conductor insulation due to the increased heating of the conductor. Where these calculations indicate excessive voltage drop is present, the systems components should be evaluated by a registered electrical engineer.

APPENDIX 1

SHORT CIRCUIT SKM REPORT

EMT Ambulance Building
Short Circuit



DAPPER Fault Contribution Complete Report

Comprehensive Short Circuit Study Settings

Three Phase Fault	Yes	**Faulted Bus**	All Buses
Single Line to Ground	Yes	**Bus Voltages**	First Bus From Fault
Line to Line Fault	No	**Branch Currents**	First Branch From Fault
Line to Line to Ground	No	**Phase or Sequence**	Report phase quantities
Motor Contribution	Yes	**Fault Current Calculation**	Asymmetrical RMS (with DC offset and Decay)
Transformer Tap	Yes	**Asym Fault Current at Time**	0.50 **Cycles**
Xformer Phase Shift	Yes		

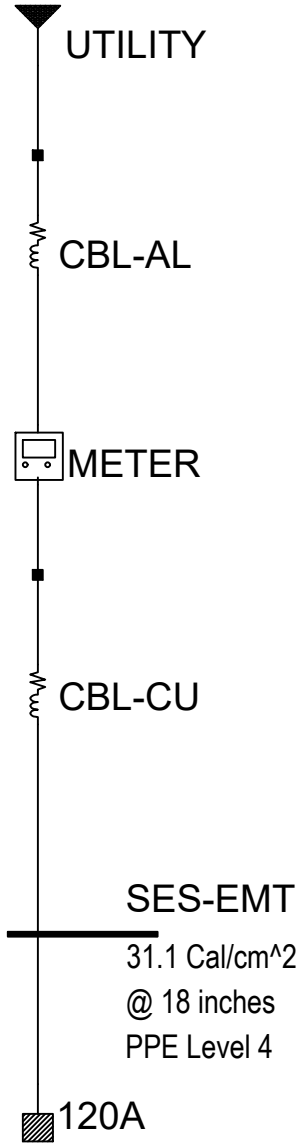
				Initial Symmetrical Amps				Asymmetrical Amps				Init Sym Neutral Amps	
Bus Name	**Contributions**			**3 Phase**	**SLG**	**LLG**	**LL**	**3 Phase**	**SLG**	**LLG**	**LL**	**SLG**	**LLG**
BUS-0003				**14,318**	**14,318**	**0**	**0**	**19,798**	**19,798**	**0**	**0**		
CBL-AL	CABLE	In		0	0	0	0	0	0	0	0		
UTILITY	UTILITY	In		14,318	14,318	0	0	19,798	19,798	0	0	14,318	
SES-EMT				**12,948**	**12,436**	**0**	**0**	**14,306**	**13,412**	**0**	**0**		
CBL-CU	CABLE	In		12,948	12,436	0	0	14,306	13,412	0	0	12,436	
BUS-0006				**13,226**	**12,856**	**0**	**0**	**14,779**	**14,080**	**0**	**0**		

Bus Name	---------Contributions---------		----------Initial Symmetrical Amps---------- 3 Phase	SLG	LLG	LL	----------Asymmetrical Amps---------- 3 Phase	SLG	LLG	LL	---Init Sym Neutral Amps-- SLG	LLG
CBL-AL	CABLE	In	13,226	12,856	0	0	14,779	14,080	0	0	12,856	
CBL-CU	CABLE	In	0	0	0	0	0	0	0	0		

APPENDIX 2

ARC FLASH SKM REPORT

EMT Ambulance Building
Arc Flash



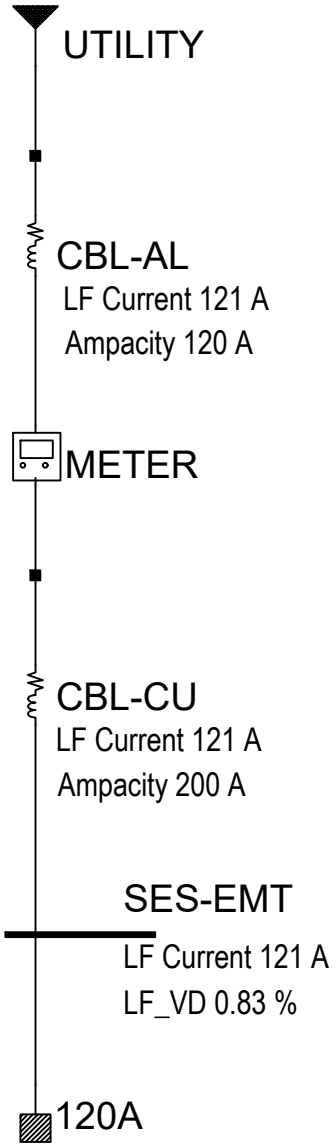
Arc Flash Evaluation Report

Bus Name	Bus kV	Protective Device Name	Bus Bolted/ Arcing (kA)	Prot Bolted/ Arcing (kA)	Trip/ Breaker Time (sec.)	Equip Type/ Gap (mm)	Electrode Config / WC Config	Box Height/ Width (in)	Box Depth (in)	ArcFlash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	PPE
SES-EMT	0.240	MaxTripTime @2.0s	12.95	0.00	2.000	PNL	VCB	14	10	137.88	18.00	31.06	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			6.69	0.00	0.000	25	VCB	12					

APPENDIX 3

LOAD FLOW STUDY

EMT Ambulance Building
Load Flow



Project: EMT-Ambulance Building
Base Project

Load Flow Summary Report

Load Flow Study Settings

Include Source Impedance	Yes	**Bus Voltage Drop %**	5.00
Solution Method	Exact (Iterative)	**Branch Voltage Drop %**	3.00
Load Specification	Connected Load		

Swing Generators

Source	In/Out Service	Vpu	Angle	kW	kvar	VD%	Utility Impedance
UTILITY	In	1.00	0.00	40.0	30.0	0.59	2.08 +*j* 16.67

Buses

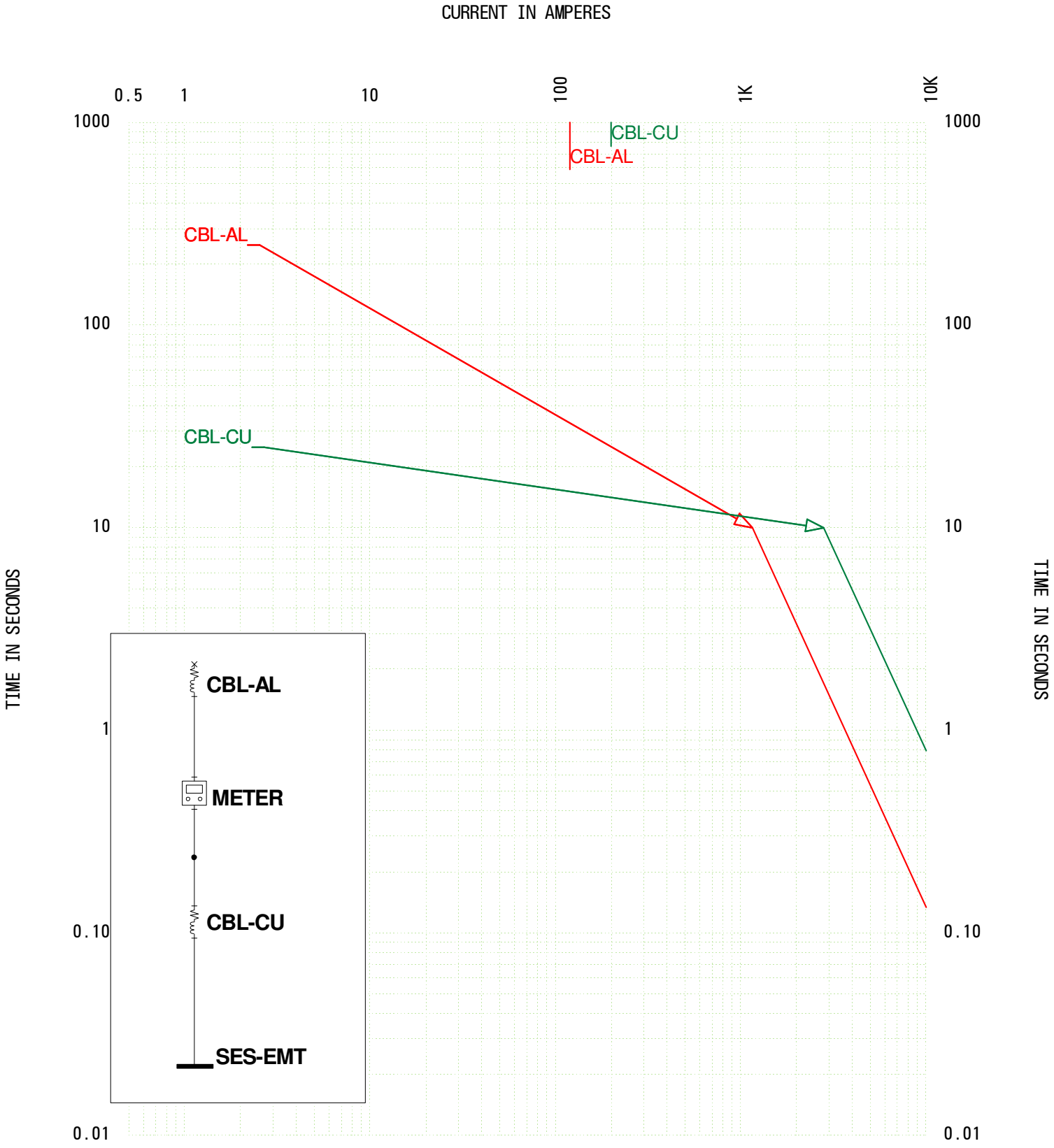
Bus Name	In/Out Service	Design Volts	LF Volts	Angle Degree	PU Volts	%VD
SES-EMT	In	240	238	-0.28	0.99	0.83

Cables

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
BUS-0003	CBL-AL	In	0.22	40.0	30.0	50.0	121.0	0.80
BUS-0006				0.1	0.0	0.1	100.8	
BUS-0006	CBL-CU	In	0.03	39.9	29.9	49.9	121.0	0.80
SES-EMT				0.0	0.0	0.0	60.5	

APPENDIX 4

TCC REPORT



TCC Name: SES-EMT
Oneline: SES-EMT
June 19, 2025 6:53 PM

Current Scale x 1

Reference Voltage: 240

SKM Systems Analysis, Inc.

APPENDIX 5

WORK PERMIT SAMPLE

ENERGIZED ELECTRICAL WORK PERMIT

PART I: TO BE COMPLETED BY THE REQUESTER:

Job/Work Order Number: _____

(1) Description of circuit/equipment/job location:
PNL LA

(2) Description of work to be done:

(3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage:

Requester/Title _____ Date _____

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS DOING THE WORK

Check When Complete

(1) Detailed job description procedure to be used in performing the above detailed work: ☐

(2) Description of the Safe Work Practices to be employed: ☐

Arc Flash Boundary	8"	Incident Energy	0.35 cal/cm^2	Working Distance	18"
Shock Hazard	208 VAC	Limited Approach Restricted Approach	42" 12"	Glove Class	00
Required PPE	No Arc-rated PPE Required				

(3) Means employed to restrict the access of unqualified persons from the work area: ☐

(4) Evidence of completion of a job briefing including discussion of any job-related hazards: ☐

(5) Do you agree the above described work can be done safely? ☐ Yes ☐ No (If no, return to requester)

Electrically Qualified Person(s) _____ Date _____

Electrically Qualified Person(s) _____ Date _____

PART III: APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

Maintenance/Engineering Manager _____ Manufacturing Manager _____

Safety Manager _____ Electrically Knowledgeable Person _____

General Manager _____ Date _____

APPENDIX 6

ARC FLASH LABELS

PPE TABLE

ARC FLASH LABELS

	Incident Energy From (cal/cm^2)	Incident Energy To (cal/cm^2)	IE Low Marginal (cal/cm^2)	IE High Marginal (cal/cm^2)	PPE Level #	PPE Level	Clothing Layers	Required Minimum Arc Rating of PPE (cal/cm^2)	Notes	Level Background Color	Level Foreground Color	Warning Label Text
1	0.0	1.2	0.000	1.190	0	No Arc-rated PPE Required	N/A	N/A	H.3			WARNING
2	1.2	12.0	1.210	11.800	3	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	2 or 3	12	130.5(G)			WARNING
3	12.0	40.0	12.200	40.000	4	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	3 or more	40	130.5(G)			WARNING
4	40.0	9999.0	40.000	9998.000	Dangerous!	DO NOT WORK ON LIVE!	ↄ NOT WORK ON LIV	N/A	DO NOT WORK ON LIVE!			DANGER

	Head & Eye & Hearing Protection	Hand & Arm Protection	Foot Protection	PPE Others 1	PPE Others 2	PPE Others 3	PPE Others 4	PPE Others 5
1	Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	N/A	Safety glasses	N/A	> 50V voltage rated tools + Class 0 (minimum) gloves	Dielectric shoes or insulating mat (step and touch potential).	
2	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
3	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Arc-rated Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
4	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

240 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**SES-EMT**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/19/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

The End of Study Report

FACILITY CONDITION ASSESSMENT

prepared for

Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, AZ 85253



Fire Station 91
8444 North Tatum Boulevard
Paradise Valley, AZ 85253

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BV PROJECT #:
172662.25R000-005.468

DATE OF REPORT:
July 8, 2025

ON SITE DATE:
May 29, 2025

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1. Executive Summary

Property Overview and Assessment Details

General Information	
Property Type	Fire Station
Number of Buildings	1
Main Address	Fire Station 91, 8444 North Tatum Boulevard, Paradise Valley, AZ 85253
Site Developed	2009
Outside Occupants / Leased Spaces	None
Date(s) of Visit	May 29, 2025
Management Point of Contact	Paradise Valley Public Works Mr. Isaac Chavira, Public Works Director (480) 348-3540, ichavira@paradisevalleyaz.gov
On-site Point of Contact (POC)	Paradise Valley Public Works Eric Shurtleff, Facility Maintenance Technician (602) 769-0629
Assessment & Report Prepared By	Billy Barnett
Reviewed By	Rashad Alnial *for,* Gregg Young Program Manager 800.733.0660 x7296228 Gregg.Young@bureauveritas.com
AssetCalc Link	Full dataset for this assessment can be found at: https://www.assetcalc.net/

Significant/Systemic Findings and Deficiencies

Historical Summary

Fire Station 91 is fire station located in Paradise Valley, Arizona and is served by the Phoenix Fire Department. It is part of Battalion 2 in the East District and was formerly known as Fire Station 1.

Fire Station 91 consists of one building built in 2009. It measures approximate 9,961 square feet, and contains dorm rooms, dorm restrooms, a residential kitchen, a day room, a fitness room, a laundry room, apparatus bays and support spaces, and restrooms. There were no major renovations conducted since construction.

Architectural

Fire Station 91 is a masonry structure with steel-framed roof decking and beams. The structure is built on a concrete slab foundation with typical perimeter concrete wall footings. The roof structures of the buildings are mainly medium sloped metal construction with flat sections covered in cement tile. The glazing is aluminum windows including four glazed overhead doors in the apparatus bays.

At the interior of the fire station, most of the walls are painted gypsum or glazed CMU. The ceilings are acoustical tile, with limited areas of painted gypsum and exposed ceilings in the apparatus bay. Most of the flooring in the building is terrazzo or sealed concrete.

Mechanical, Electrical, Plumbing and Fire (MEPF)

Fire Station 92 is heated and cooled by condensing units and fan coil units/interior air handlers. Electrical service is made up of a local utility-fed, interior switchboard that feeds distribution panels throughout including rooftop-mounted solar panels. There is a diesel generator and an automatic transfer switch. Interior lighting consists mainly of fluorescent fixtures.

The building has municipal water and sewer. Hot water is provided by an electric-powered tankless water heater, and No concerns have been addressed by maintenance personnel regarding ongoing plumbing issues.

The building is outfitted with a wet-pipe fire sprinkler system. There is fire suppression within the kitchen hood system. The building is equipped with fire extinguishers.

Site

The site is approximately 0.94 acres and is mildly sloped throughout. The building is located in the center of the site and has parking areas in the west and south portions of the site.

Site hardscape at Fire Station 91 consists concrete driveways, three parking areas, concrete and sidewalks adjacent to the building.

The site is covered in stone landscaping with irrigation and mature trees clustered in the parking lot and at the site edges. There are numerous building-mounted and walkway light fixtures.

Recommended Additional Studies

No additional studies recommended at this time.

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate the Facility Condition Index (FCI), which provides a theoretical objective indication of a facility's overall condition. The FCI is defined as the ratio of the cost of current needs divided by the current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone mathematical values. The table below presents the current, 3-year, 5-year, and 10-year FCI's for this facility:

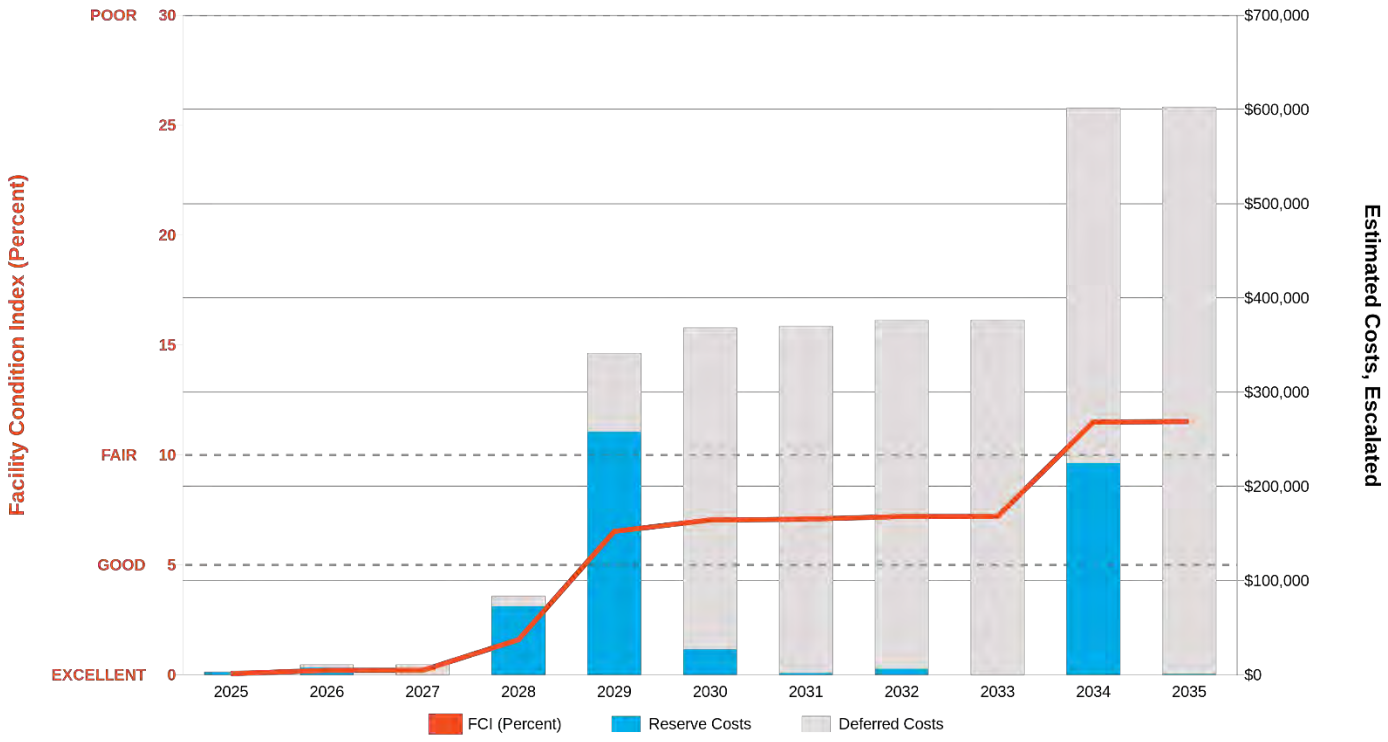
FCI Analysis		
Replacement Value *$5,229,525*	*Total SF* *9,961*	*Cost/SF* *$525*

	Est Reserve Cost	FCI
Current	$3,000	0.1 **%**
3-Year	$83,700	1.6 **%**
5-Year	$368,500	7.0 **%**
10-Year	$602,600	11.5 **%**

NEEDS OVER TIME: The vertical blue bars in the graphic below represent the year-by-year needs identified for the facility. The orange line forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures over the next ten years. The dollar amounts allocated for each year are associated with the values along the right Y axis.

Needs by Year with Unaddressed FCI Over Time

Replacement Value: $5,229,525.00 **Inflation Rate: 3%** **Average Needs (per year - over next 10 years): $54,773.00**



Immediate Needs

Location	UF Code	Description	Condition	Plan Type	Cost
Fire Station 91	D5013	Solar Power, Inverter, 2.8 KW, Replace	Failed	Performance/Integrity	$3,000
TOTAL (1 items)					**$3,000**

Key Findings



Solar Power in Failed condition.

Inverter, 2.8 KW
Fire Station 91
Electrical Room

Uniformat Code: D5010
Recommendation: **Replace in 2025**

Plan Type: Performance/Integrity

Cost Estimate: $3,000

Non-functional. OOC 3-4 years. - AssetCALC ID: 9407858



Evaporative Cooler in Poor condition.

2 to 3 HP
Fire Station 91
Site Utility Areas

Uniformat Code: D3030
Recommendation: **Replace in 2026**

Plan Type: Performance/Integrity

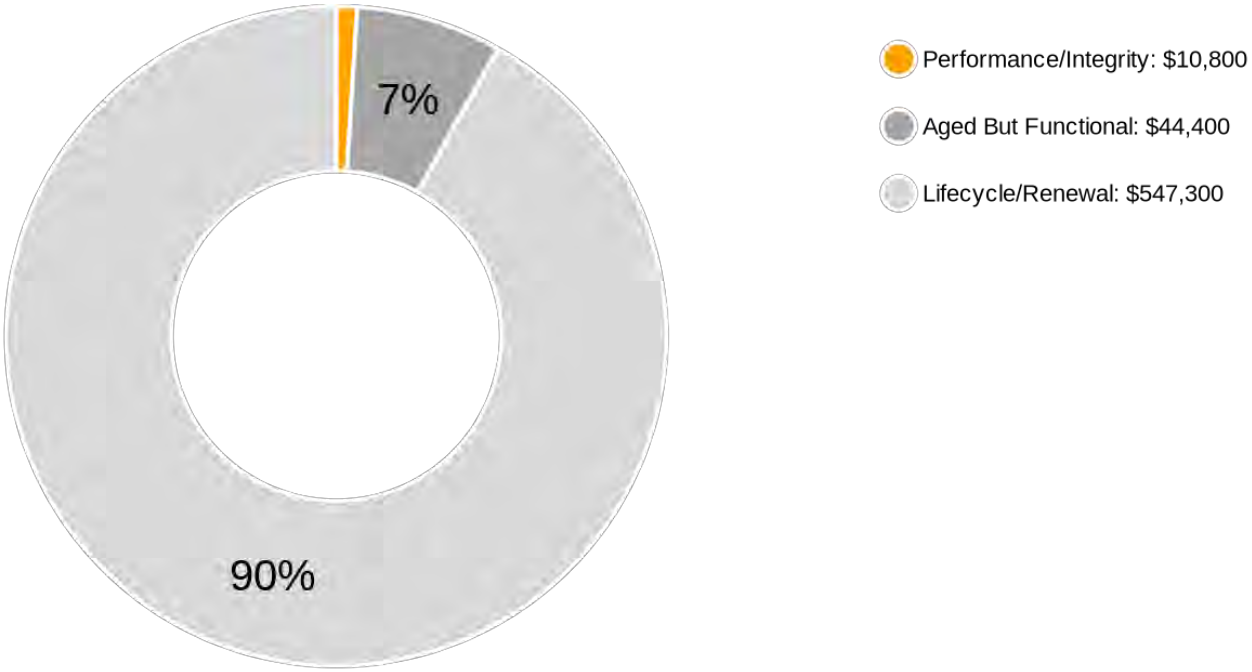
Cost Estimate: $7,600

Actively leaking - AssetCALC ID: 9407870

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the “why” part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the “best” fit, typically the one with the greatest significance and highest on the list below.

Plan Type Descriptions & Distribution		
Safety		An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity		Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility		Does not meet ADA, UFAS, and/or other accessibility requirements.
Environmental		Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation		Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Aged But Functional		Any component or system that has aged past its industry-average expected useful life (EUL) but is not currently deficient or problematic.
Lifecycle/Renewal		Any component or system that is neither deficient nor aged past EUL but for which future replacement or repair is anticipated and budgeted.



10-Year Total: $602,500

2. Building Systems and Site Elements





Building Systems Summary		
Address	8444 North Tatum Boulevard, Paradise Valley, AZ 85253	
GPS Coordinates	33.5604822, -111.9774691	
Constructed/Renovated	2009	
Building Area	9,961 SF	
Number of Stories	1 above grade (mechanical mezzanines are present but not included in the count)	
System	*Description*	*Condition*
Structure	Masonry bearing walls with metal roof deck supported by open-web steel joists and concrete strip/wall footing foundation system	Fair
Facade	Primary Wall Finish: Brick Windows: Aluminum	Fair
Roof	Primary: Gable construction with metal finish Secondary: Flat construction with clay/concrete tiles	Fair
Interiors	Walls: Painted gypsum board, and glazed CMU Floors: Terrazzo and sealed concrete Ceilings: Painted gypsum board and ACT, wood plank, and unfinished/exposed	Fair
Elevators	None	Fair

Building Systems Summary		
Plumbing	Distribution: Copper, PVC waste & venting Hot Water: Electric tankless water heater Fixtures: Toilets and sinks in all restrooms, urinal in lobby restroom, showers in dorm restrooms	Fair
HVAC	Non-Central System: Condensing units with FCUs	Fair
Fire Suppression	Wet-pipe sprinkler system and fire extinguishers	Fair
Electrical	Source & Distribution: Main switchboard Interior Lighting: Linear fluorescent Emergency Power: Diesel generator with automatic transfer switch	Fair
Fire Alarm	Alarm panel with smoke detectors, heat detectors, alarms, strobes, pull stations, back-up emergency lights, and exit signs	Fair
Equipment/Special	None	Fair
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	The interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, the exterior walls of the facility, and the roof.	
Key Spaces Not Observed	All key areas of the facility were accessible and observed.	

Site Information		
Site Area	0.94 acres	
Parking Spaces	14 total spaces all in open lots; 1 of which are accessible.	
System	*Description*	*Condition*
Site Pavement	Concrete lots with adjacent concrete sidewalks, curbs and ramps	Fair
Site Development	Building-mounted signage; wrought iron, CMU wall fencing; Limited picnic tables, trash receptacles	Fair
Landscaping & Topography	Limited landscaping features trees and bushes Irrigation present Brick retaining walls Low to moderate site slopes throughout	Fair
Utilities	Municipal water and sewer Local utility-provided electric	Fair
Site Lighting	Building-mounted: fluorescent Pedestrian walkway and landscape accent lighting	Fair
Ancillary Structures	None	Fair
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	Areas of note that were either inaccessible or not observed for other reasons are listed here: · Roof; lack of ladder or other means of access // safety concerns (no notable equipment present)	

The table below shows the anticipated costs by trade or building system over the next 20 years.

Fire Station 91: System Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Structure	$0	$0	$0	$0	$0	$0
Facade	$0	$0	$32,254	$0	$171,160	$203,414
Roofing	$0	$0	$4,558	$5,219	$0	$9,777
Interiors	$0	$0	$42,145	$15,983	$116,450	$174,578
Conveying	$0	$0	$0	$22,181	$0	$22,181
Plumbing	$0	$0	$0	$1,910	$43,448	$45,358
HVAC	$0	$7,828	$66,252	$6,395	$191,884	$272,359
Fire Protection	$0	$0	$0	$13,906	$9,983	$23,889
Electrical	$3,000	$0	$99,611	$164,400	$13,484	$280,495
Fire Alarm & Electronic Systems	$0	$0	$52,130	$0	$0	$52,130
Equipment & Furnishings	$0	$0	$49,296	$0	$5,596	$54,892
Sitework	$0	$0	$11,367	$4,071	$3,781	$19,219
TOTALS	**$3,000**	**$7,900**	**$357,700**	**$234,100**	**$555,800**	**$1,158,500**

3. ADA Accessibility

Generally, Title II of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “public facilities” on the basis of disability. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

A public entity (i.e. city governments) shall operate each service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities.

However, this does not:

1. Necessarily require a public entity to make each of its existing facilities accessible to and usable by individuals with disabilities;
2. Require a public entity to take any action that would threaten or destroy the historic significance of an historic property; or
3. Require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of a service, program, or activity or in undue financial and administrative burdens. In those circumstances where personnel of the public entity believe that the proposed action would fundamentally alter the service, program, or activity or would result in undue financial and administrative burdens, a public entity has the burden of proving that compliance with 35.150(a) of this part would result in such alteration or burdens. The decision that compliance would result in such alteration or burdens must be made by the head of a public entity or his or her designee after considering all resources available for use in the funding and operation of the service, program, or activity, and must be accompanied by a written statement of the reasons for reaching that conclusion. If an action would result in such an alteration or such burdens, a public entity shall take any other action that would not result in such an alteration or such burdens but would nevertheless ensure that individuals with disabilities receive the benefits or services provided by the public entity.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the material included in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this assessment. A full measured ADA survey would be required to identify more specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance
- Only a representative sample of areas was observed
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance
- Itemized costs for individual non-compliant items are included in the dataset
- For any “none” boxes checked or reference to “no issues” identified, that alone does not guarantee full compliance

The facility was originally constructed in 2009. The facility has not since been substantially renovated.

No detailed follow-up accessibility study is currently recommended since no major or moderate issues were identified at the subject site. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey.

4. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

5. Opinions of Probable Costs

Cost estimates are embedded throughout this report, including the very detailed Replacement Reserves report in the appendix. The cost estimates are predominantly based on construction rehabilitation costs developed by the *RSMeans data from Gordian.* While the *RSMeans data from Gordian* is the primary reference source for the Bureau Veritas cost library, secondary and supporting sources include but are not limited to other industry experts work, such as *Marshall & Swift* and *CBRE Whitestone.* For improved accuracy, additional research integrated with Bureau Veritas's historical experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions also come into play when deemed necessary. Invoice or bid documents provided either by the owner or facility construction resources may be reviewed early in the process or for specific projects as warranted.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

To account for differences in prices between locations, the base costs are modified by geographical location factors to adjust for to market conditions, transportation costs, or other local contributors. When requested by the client, the costs may be further adjusted by several additional factors including; labor rates (prevailing minimum wage), general contractor fees for profit and overhead, and insurance. If desired, costs for design and permits, and a contingency factor, may also be included in the calculations.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system or component replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

6. Certification

Town of Paradise Valley, FCA Inventory Program (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of Fire Station 91, 8444 North Tatum Boulevard, Paradise Valley, AZ 85253, the “Property”. It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager’s walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property’s original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and Bureau Veritas.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of Bureau Veritas. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to Bureau Veritas.

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7. Appendices

Appendix A: Photographic Record
Appendix B: Site and Floor Plan(s)
Appendix C: Pre-Survey Questionnaire(s)
Appendix D: Accessibility Review and Photos
Appendix E: Component Condition Report
Appendix F: Replacement Reserves
Appendix G: Equipment Inventory List
Appendix H: Electrical Study

Appendix A:
Photographic Record

Photographic Overview



1 - FRONT ELEVATION



2 - LEFT ELEVATION



3 - RIGHT ELEVATION



4 - REAR ELEVATION

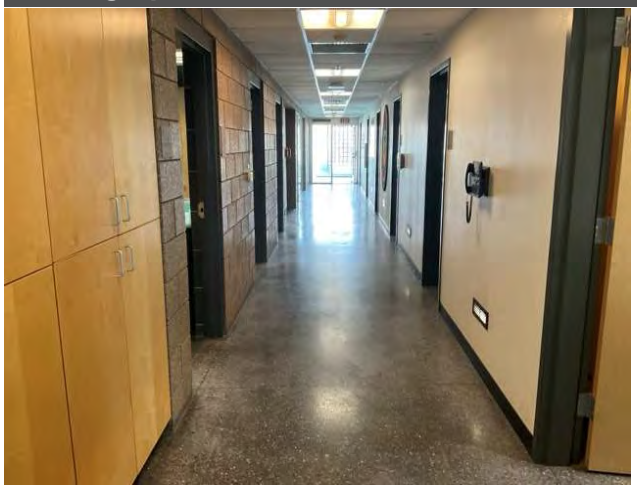


5 - ENTRY



6 - LOBBY

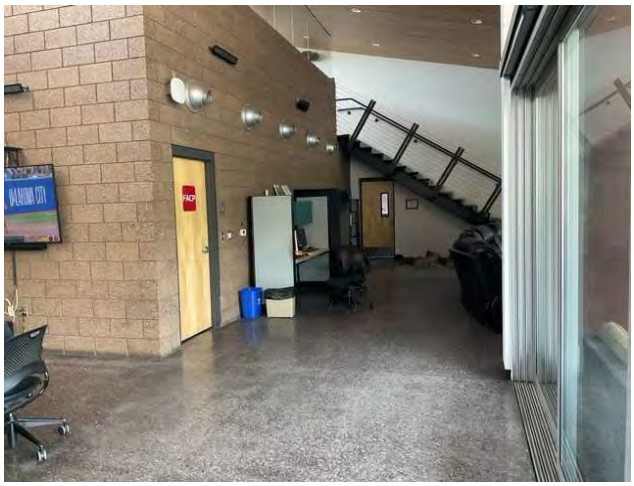
Photographic Overview



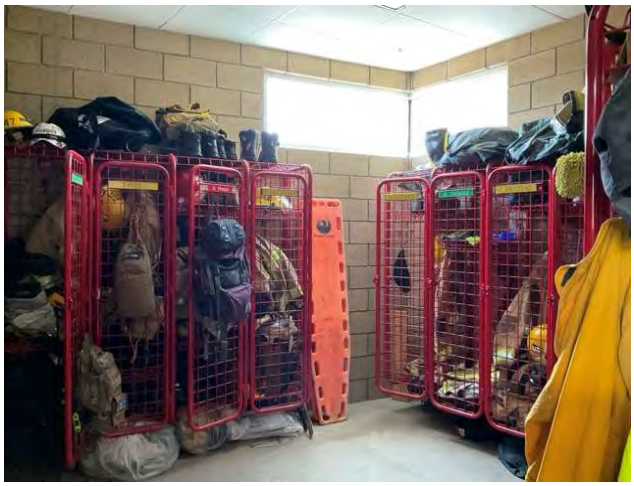
7 - NORTH CORRIDOR



8 - TYPICAL DORM ROOM



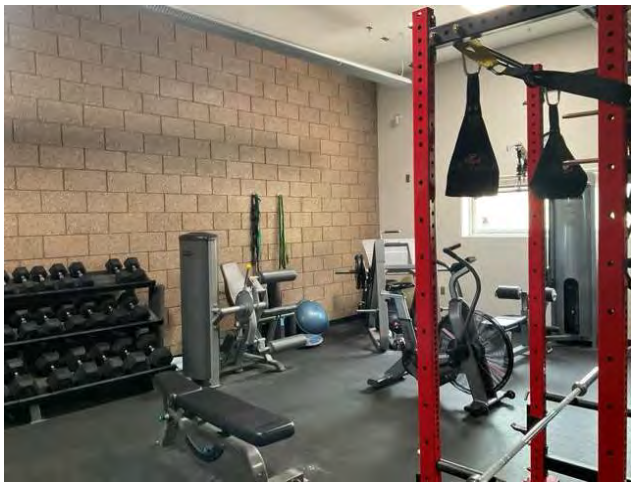
9 - DAY ROOM



10 - TURN-OUT ROOM

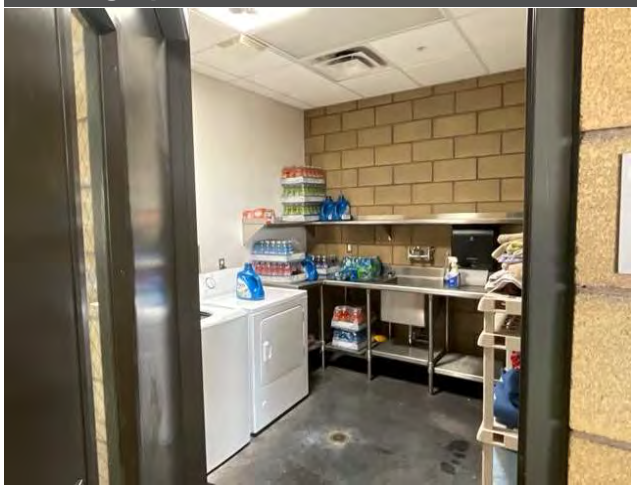


11 - KITCHEN



12 - FITNESS ROOM

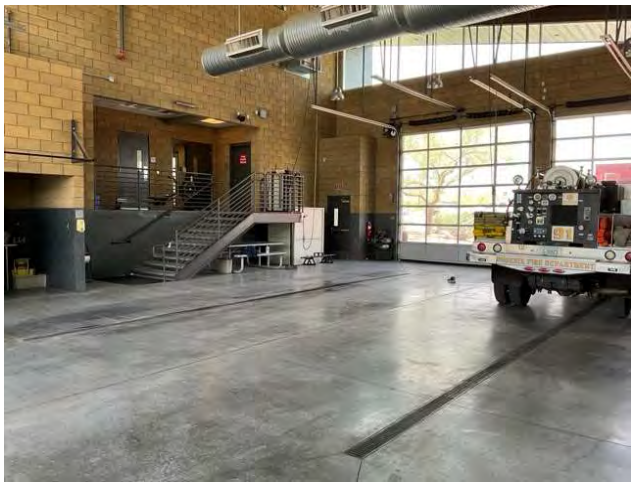
Photographic Overview



13 - LAUNDRY ROOM



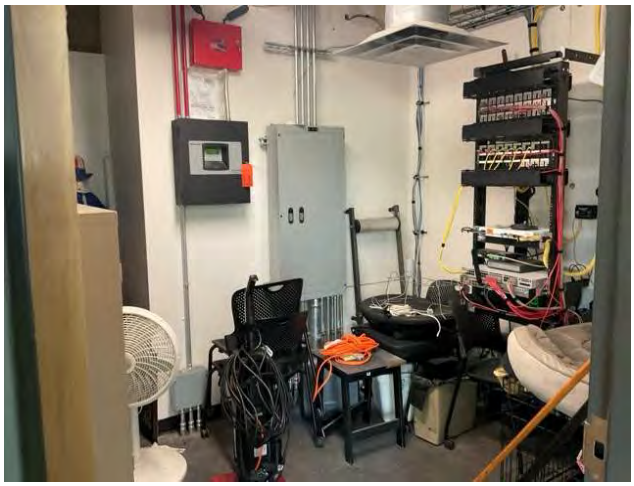
14 - TYPICAL RESTROOM



15 - APPARATUS BAY



16 - JANITOR CLOSET



17 - TELE/COMM ROOM



18 - FIRE RISER ROOM

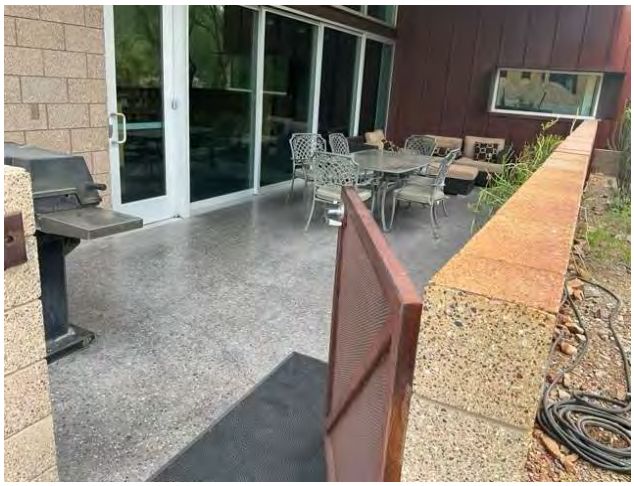
Photographic Overview



19 - SITE UTILITY SOUTH



20 - SITE UTILITY AREA



21 - PATIO



22 - BUILDING NE CORNER



23 - APPARATUS BAY NORTH



24 - BAY SOUTH

Appendix B:
Site and Floor Plan(s)

Site Plan



Project Number	Project Name
172662.25R000-005.468	Fire Station 91
Source	**On-Site Date**
Google	May 29th, 2025

Appendix C:
Pre-Survey Questionnaire(s)

BV FACILITY CONDITION ASSESSMENT: PRE-SURVEY QUESTIONNAIRE

Building / Facility Name: Fire Station 91

Name of person completing form: Eric Shurtleff

Title / Association w/ property: Facility Maintenance Technician

Length of time associated w/ property: 16

Date Completed: 5/29/2025

Phone Number: 6027690629

Method of Completion: INTERVIEW - verbally completed during interview

Directions: Please answer all questions to the best of your knowledge and in good faith. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses.

Data Overview		Response		
1	Year(s) constructed	Constructed: 2009	Renovated:	
2	Building size in SF	9,961 **SF**		
3	Major Renovation/Rehabilitation		Year	Additional Detail
		Facade		
		Roof		
		Interiors		
		HVAC		
		Electrical		
		Site Pavement		
		Accessibility		
4	List other significant capital improvements (focus on recent years; provide approximate date).			
5	List any major capital expenditures planned/requested for the next few years. Have they been budgeted?			
6	Describe any on-going extremely problematic, historically chronic, or immediate facility needs.			

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Response				Comments
		Yes	No	Unk	NA	
7	Are there any problems with foundations or structures, like excessive settlement?		X			
8	Are there any wall, window, basement or roof leaks?		X			
9	Has any part of the facility ever contained visible suspect mold growth, or have there been any indoor air quality complaints?		X			
10	Are your elevators unreliable, with frequent service calls?		X			
11	Are there any plumbing leaks, water pressure, or clogging/backup issues?		X			
12	Have there been any leaks or pressure problems with natural gas, HVAC piping, or steam service?		X			
13	Are any areas of the facility inadequately heated, cooled or ventilated? Poorly insulated areas?		X			
14	Is the electrical service outdated, undersized, or problematic?		X			
15	Are there any problems or inadequacies with exterior lighting?		X			
16	Is site/parking drainage inadequate, with excessive ponding or other problems?		X			
17	Are there any other unresolved construction defects or significant issues/hazards at the property that have not yet been identified above?		X			
18	ADA: Has an accessibility study been previously performed? If so, when?			X		
19	ADA: Have any ADA improvements been made to the property since original construction? Describe.		X			
20	ADA: Has building management reported any accessibility-based complaints or litigation?		X			
21	Are any areas of the property leased to outside occupants?		X			



Signature of Assessor



Signature of POC

Appendix D:
Accessibility Review and Photos

Visual Survey - 2010 ADA Standards for Accessible Design

Property Name: Fire Station 91

BV Project Number: 172662.25R000-005.468

Facility History & Interview

	Question	Yes	No	Unk	Comments
1	Has an accessibility study been previously performed? If so, when?		X		
2	Have any ADA improvements been made to the property since original construction? Describe.		X		
3	Has building management reported any accessibility-based complaints or litigation?		X		

005 - Fire Station 91: Accessibility Issues

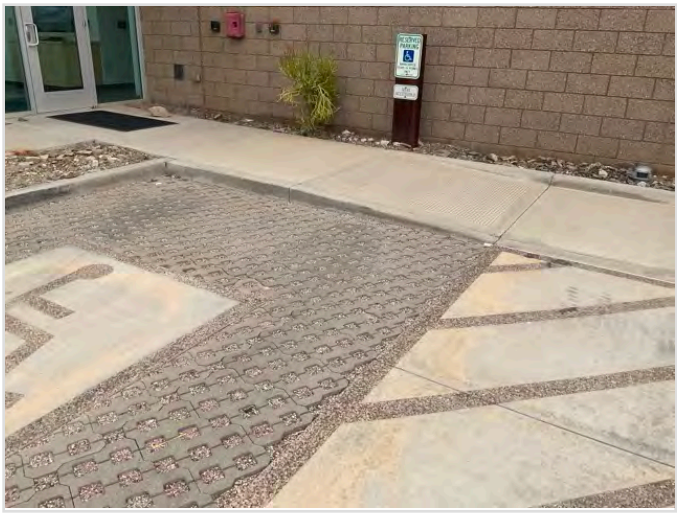
Category	Major Issues (ADA study recommended)	Moderate Issues (ADA study recommended)	Minor Issues	None*
Parking				
Exterior Accessible Route				
Building Entrances				
Interior Accessible Route				
Elevators	**NA**			
Public Restrooms				
Kitchens/Kitchenettes	**NA**			
Playgrounds & Swimming Pools	**NA**			
Other	**NA**			

**be cognizant that if the "None" box is checked that does not guarantee full compliance; this study is limited in nature*

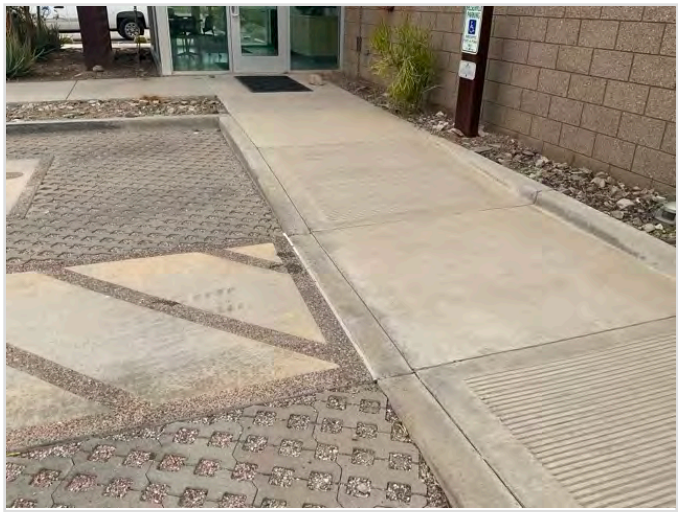
Fire Station 91: Photographic Overview



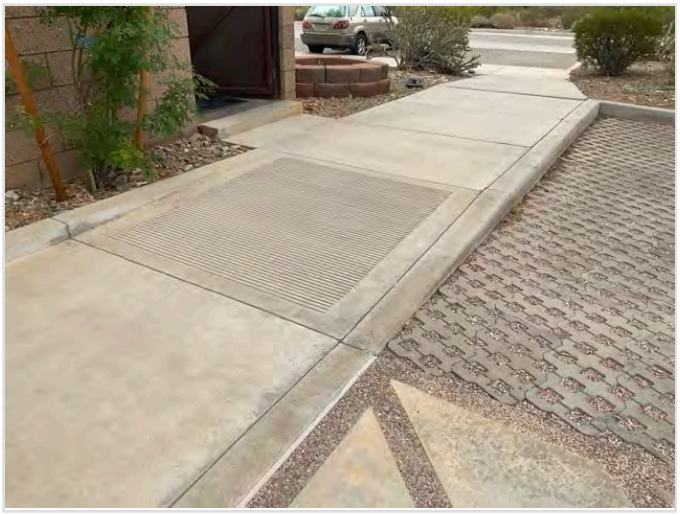
OVERVIEW OF ACCESSIBLE PARKING AREA



CLOSE-UP OF STALL



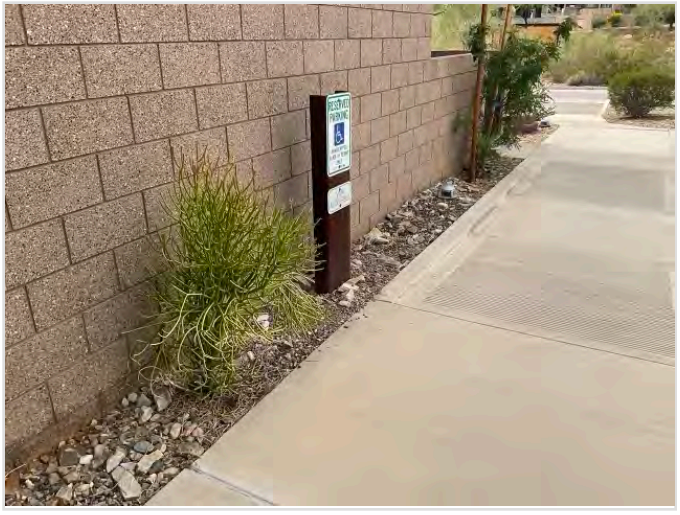
ACCESSIBLE PATH



CURB CUT



MAIN ENTRANCE



SIGNAGE

Fire Station 91: Photographic Overview



ACCESSIBLE INTERIOR PATH



DOOR HARDWARE



TOILET STALL OVERVIEW



SINK, FAUCET HANDLES AND ACCESSORIES

Appendix E:
Component Condition Report

Component Condition Report | 005 - Fire Station 91

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A4010	Substructure	Fair	Foundation, Concrete Slab-on-Grade, w/ Integral Perimeter Footings	9,661 SF	59	9407822
B1010	Superstructure	Good	Structural Framing, Steel Columns & Beams, 1-2 Story Building	9,961 SF	59	9407844
Facade						
B2010	Building Exterior	Fair	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	8,100 SF	4	9407865
B2010	Building Exterior	Fair	Exterior Walls, Metal/Insulated Sandwich Panels	1,700 SF	29	9407882
B2020	Building Exterior	Fair	Glazing, any type by SF	1,700 SF	14	9407866
B2050	Building Exterior	Fair	Exterior Door, Steel, Commercial	2	24	9407879
B2050	Building Exterior	Fair	Automatic Door Opener, Commercial Overhead/Dock Door	4	3	9407837
B2050	Building Exterior	Fair	Exterior Door, Aluminum-Framed & Glazed, Standard Swing	3	14	9407873
Roofing						
B3010	Roof	Good	Roofing, Clay/Concrete Tile	2,700 SF	34	9407892
B3010	Roof	Fair	Roofing, Metal	7,000 SF	24	9407827
B3020	Roof	Fair	Roof Appurtenances, Gutters & Downspouts, Aluminum w/ Fittings	450 LF	4	9407867
B3080	Building Exterior	Fair	Soffit/Fascia, Metal	800 SF	9	9407895
Interiors						
C1010	Throughout Building	Good	Interior Wall, Concrete Block (CMU)	10,000 SF	34	9407899
C1020	Throughout Building	Fair	Interior Glazing, any type by SF	350 SF	24	9407823
C1030	Throughout Building	Fair	Interior Door, Aluminum-Framed & Glazed, Standard Swing	1	24	9407900
C1030	Throughout Building	Fair	Interior Door, Steel, Standard	8	24	9407872
C1030	Throughout Building	Fair	Interior Door, Wood, Solid-Core Commercial	13	24	9407842
C1070	Throughout Building	Fair	Suspended Ceilings, Acoustical Tile (ACT)	3,500 SF	9	9407862
C1090	Hallways & Common Areas	Fair	Lockers, Steel-Baked Enamel, 6' Height per LF	20 LF	4	9407886
C2010	Throughout Building	Fair	Wall Finishes, any surface, Prep & Paint	8,800 SF	5	9407893
C2010	Restrooms	Fair	Wall Finishes, Ceramic Tile	600 SF	21	9407861
C2030	Throughout Building	Fair	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	2,035 SF	5	9407829
C2030	Throughout Building	Good	Flooring, Terrazzo	7,500 SF	34	9407817
C2030	Gymnasium	Fair	Flooring, Rubber Tile	390 SF	3	9407891
C2050	Throughout Building	Fair	Ceiling Finishes, exposed irregular elements, Prep & Paint	2,035 SF	5	9407894
C2050	Throughout Building	Fair	Ceiling Finishes, any flat surface, Prep & Paint	1,000 SF	5	9407896

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
C2050	Throughout Building	Fair	Ceiling Finishes, Wood Paneling	3,500 SF	14	9407860
Conveying						
D1010	Utility Rooms/Areas	Fair	Vertical Lift, Wheelchair, 5' Rise, Renovate	1	9	9407883
Plumbing						
D2010	Restrooms	Fair	Shower, Valve & Showerhead	3	14	9407857
D2010	Throughout Building	Fair	Sink/Lavatory, Vanity Top, Stainless Steel	2	14	9407848
D2010	Throughout Building	Fair	Sink/Lavatory, Service Sink, Floor	1	19	9407847
D2010	Restrooms	Fair	Shower, Terrazzo	3	14	9407841
D2010	Building Exterior	Fair	Backflow Preventer, Domestic Water	1	14	9407875
D2010	Restrooms	Fair	Sink/Lavatory, Wall-Hung	1	14	9407898
D2010	Building Exterior	Fair	Backflow Preventer, Domestic Water	1	14	9407863
D2010	Utility Rooms/Areas	Fair	Water Heater, Gas, Tankless	1	6	9407874
D2010	Throughout Building	Fair	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures)	9,961 SF	24	9407840
D2010	Building Exterior	Fair	Backflow Preventer, Domestic Water	1	14	9407864
D2010	Restrooms	Fair	Toilet, Commercial Water Closet	4	14	9407884
D2010	Restrooms	Fair	Urinal, Standard	1	14	9407836
HVAC						
D3030	Site Utility Areas	Fair	Split System, Condensing Unit/Heat Pump [CU-3]	1	3	9407818
D3030	Site Utility Areas	Fair	Split System, Condensing Unit/Heat Pump [CU-6]	1	3	9407826
D3030	Hallways & Common Areas	Fair	Split System, Fan Coil Unit, DX, 3.5 to 5 TON [FC-2]	1	3	9407825
D3030	Site Utility Areas	Fair	Split System, Condensing Unit/Heat Pump [CU-2]	1	7	9407854
D3030	Site Utility Areas	Fair	Split System, Condensing Unit/Heat Pump [CU-5]	1	3	9407876
D3030	Hallways & Common Areas	Fair	Split System, Fan Coil Unit, DX, 3.5 to 5 TON [FC-3]	1	3	9407833
D3030	Hallways & Common Areas	Fair	Split System, Fan Coil Unit, DX, 3.5 to 5 TON [FC-1]	1	3	9407832
D3030	Utility Rooms/Areas	Fair	Split System, Fan Coil Unit, DX, 3 TON [FC-6]	1	3	9407828
D3030	Site Utility Areas	Fair	Split System, Condensing Unit/Heat Pump	1	12	9407831
D3030	Hallways & Common Areas	Fair	Split System, Fan Coil Unit, DX, 3 TON [FC-4]	1	3	9407821
D3030	Site Utility Areas	Poor	Evaporative Cooler, 2 to 3 HP	1	1	9407870
D3030	Hallways & Common Areas	Fair	Split System, Fan Coil Unit, DX, 3.5 to 5 TON [FC-5]	1	3	9407877
D3030	Site Utility Areas	Fair	Split System, Condensing Unit/Heat Pump [CU-1]	1	3	9407851
D3030	Site Utility Areas	Fair	Split System Ductless, Single Zone [CU-7]	1	3	9407889

Component Condition Report | 005 - Fire Station 91

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D3050	Throughout Building	Fair	HVAC System, Ductwork w/ VAV/FCU, Medium Density	9,961 SF	14	9407838
D3060	Utility Rooms/Areas	Fair	Exhaust Fan, Roof or Wall-Mounted, 36"Damper	1	4	9407849
D3060	Utility Rooms/Areas	Fair	Exhaust Fan, Roof or Wall-Mounted, 36"Damper	1	4	9407850
Fire Protection						
D4010	Throughout Building	Fair	Fire Suppression System, Existing Sprinkler Heads, by SF	9,961 SF	9	9407839
D4010	Mechanical Room	Fair	Supplemental Components, Fire Riser, Dry	1	24	9407815
D4010	Mechanical Room	Fair	Backflow Preventer, Fire Suppression	1	14	9407824
Electrical						
D5010	Electrical Room	Failed	Solar Power, Inverter, 2.8 KW	1	0	9407858
D5010	Site Utility Areas	Fair	Generator, Diesel	1	9	9407830
D5010	Site Utility Areas	Fair	Automatic Transfer Switch, ATS	1	9	9407846
D5010	Electrical Room	Fair	Automatic Transfer Switch, ATS	1	9	9407878
D5010	Roof	Fair	Solar Power, Photovoltaic (PV) Panels by SF	450 SF	4	9407855
D5020	Electrical Room	Fair	Distribution Panel, 120/208 V	1	13	9407852
D5020	Site Utility Areas	Fair	Switchboard, 120/208 V	1	23	9407814
D5030	Electrical Room	Fair	Electrical System, Wiring & Switches, Average or Low Density/Complexity	9,961 SF	24	9407835
D5040	Building Exterior	Fair	Exterior Light, any type, w/ LED Replacement	18	4	9407868
D5040	Throughout Building	Fair	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures	9,961 SF	4	9407856
Fire Alarm & Electronic Systems						
D6060	Throughout Building	Fair	Intercom/PA System, Public Address Upgrade, Facility-Wide	9,961 SF	4	9407885
D7050	Throughout Building	Fair	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	9,961 SF	4	9407816
Equipment & Furnishings						
E1030	Commercial Kitchen	Fair	Foodservice Equipment, Sink, 1-Bowl	1	14	9407859
E1030	Commercial Kitchen	Fair	Foodservice Equipment, Sink, 2-Bowl	1	14	9407820
E2010	Restrooms	Fair	Casework, Bathroom Vanity Cabinet, Wood w/ Cultured Marble Sink Top	3	4	9407845
E2010	Throughout Building	Fair	Casework, Cabinetry, Standard	134 LF	4	9407834
Pedestrian Plazas & Walkways						
G2020	Site Parking Areas	Fair	Parking Lots, Pavement, Concrete	16,500 SF	34	9407888
Sitework						
G2060	Utility Rooms/Areas	Fair	Picnic Table, Metal Powder-Coated	1	10	9407869
G2060	Site General	Fair	Signage, Property, Monument, Replace/Install	1	4	9407880

Component Condition Report | 005 - Fire Station 91

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
G2060	Site Utility Areas	Fair	Fences & Gates, Pedestrian Gate, Wrought Iron	3	9	9407890
G2060	Site General	Fair	Flagpole, Metal	1	14	9407881
G2060	Building Exterior	Fair	Fences & Gates, Screen Walls, Concrete Masonry Unit (CMU)	1,450 SF	34	9407853
G2060	Building Exterior	Good	Fences & Gates, Fence, Wrought Iron 6'	38 LF	34	9407887
G2060	Site General	Fair	Retaining Wall, Brick/Stone	500 SF	24	9407843
G2080	Site General	Fair	Irrigation System, Pop-Up Spray Heads, Commercial, Replace/Install	7,100 SF	4	9407819

Appendix F:
Replacement Reserves

Replacement Reserves Report

005 - Fire Station 91

7/8/2025

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total Escalated Estimate
005 - Fire Station 91	$3,000	$7,828	$0	$72,787	$257,786	$27,057	$1,910	$6,395	$0	$224,823	$941	$0	$5,703	$8,811	$373,256	$41,037	$12,196	$0	$113,399	$1,403	$0	**$1,158,332**
Grand Total	**$3,000**	**$7,828**	**$0**	**$72,787**	**$257,786**	**$27,057**	**$1,910**	**$6,395**	**$0**	**$224,823**	**$941**	**$0**	**$5,703**	**$8,811**	**$373,256**	**$41,037**	**$12,196**	**$0**	**$113,399**	**$1,403**	**$0**	**$1,158,332**

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
B2010	Building Exterior	9407865	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	20	16	4	8100	SF	$1.86	$15,066					$15,066																	**$15,066**
B2020	Building Exterior	9407866	Glazing, any type by SF, Replace	30	16	14	1700	SF	$55.00	$93,500															$93,500							**$93,500**
B2050	Building Exterior	9407873	Exterior Door, Aluminum-Framed & Glazed, Standard Swing, Replace	30	16	14	3	EA	$1,300.00	$3,900															$3,900							**$3,900**
B2050	Building Exterior	9407837	Automatic Door Opener, Commercial Overhead/Dock Door, Replace	15	12	3	4	EA	$3,500.00	$14,000				$14,000															$14,000			**$28,000**
B3020	Roof	9407867	Roof Appurtenances, Gutters & Downspouts, Aluminum w/ Fittings, Replace	20	16	4	450	LF	$9.00	$4,050					$4,050																	**$4,050**
B3080	Building Exterior	9407895	Soffit/Fascia, Metal, Replace	25	16	9	800	SF	$5.00	$4,000										$4,000												**$4,000**
C1070	Throughout Building	9407862	Suspended Ceilings, Acoustical Tile (ACT), Replace	25	16	9	3500	SF	$3.50	$12,250										$12,250												**$12,250**
C1090	Hallways & Common Areas	9407886	Lockers, Steel-Baked Enamel, 6' Height per LF, Replace	20	16	4	20	LF	$500.00	$10,000					$10,000																	**$10,000**
C2010	Throughout Building	9407893	Wall Finishes, any surface, Prep & Paint	10	5	5	8800	SF	$1.50	$13,200						$13,200										$13,200						**$26,400**
C2030	Throughout Building	9407829	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	10	5	5	2035	SF	$1.50	$3,053						$3,053										$3,053						**$6,105**
C2030	Gymnasium	9407891	Flooring, Rubber Tile, Replace	15	12	3	390	SF	$9.00	$3,510				$3,510															$3,510			**$7,020**
C2050	Throughout Building	9407860	Ceiling Finishes, Wood Paneling, Replace	30	16	14	3500	SF	$14.00	$49,000															$49,000							**$49,000**
C2050	Throughout Building	9407894	Ceiling Finishes, exposed irregular elements, Prep & Paint	10	5	5	2035	SF	$2.50	$5,088						$5,088										$5,088						**$10,175**
C2050	Throughout Building	9407896	Ceiling Finishes, any flat surface, Prep & Paint	10	5	5	1000	SF	$2.00	$2,000						$2,000										$2,000						**$4,000**
D1010	Utility Rooms/Areas	9407883	Vertical Lift, Wheelchair, 5' Rise, Renovate	25	16	9	1	EA	$17,000.00	$17,000										$17,000												**$17,000**
D2010	Utility Rooms/Areas	9407874	Water Heater, Gas, Tankless, Replace	15	9	6	1	EA	$1,600.00	$1,600							$1,600															**$1,600**
D2010	Building Exterior	9407875	Backflow Preventer, Domestic Water, Replace	30	16	14	1	EA	$3,200.00	$3,200															$3,200							**$3,200**
D2010	Building Exterior	9407863	Backflow Preventer, Domestic Water, Replace	30	16	14	1	EA	$1,400.00	$1,400															$1,400							**$1,400**
D2010	Building Exterior	9407864	Backflow Preventer, Domestic Water, Replace	30	16	14	1	EA	$1,400.00	$1,400															$1,400							**$1,400**
D2010	Restrooms	9407857	Shower, Valve & Showerhead, Replace	30	16	14	3	EA	$800.00	$2,400															$2,400							**$2,400**
D2010	Throughout Building	9407848	Sink/Lavatory, Vanity Top, Stainless Steel, Replace	30	16	14	2	EA	$1,200.00	$2,400															$2,400							**$2,400**
D2010	Restrooms	9407841	Shower, Terrazzo, Replace	30	16	14	3	EA	$3,000.00	$9,000															$9,000							**$9,000**
D2010	Restrooms	9407898	Sink/Lavatory, Wall-Hung, Replace	30	16	14	1	EA	$1,700.00	$1,700															$1,700							**$1,700**
D2010	Restrooms	9407884	Toilet, Commercial Water Closet, Replace	30	16	14	4	EA	$1,300.00	$5,200															$5,200							**$5,200**
D2010	Restrooms	9407836	Urinal, Standard, Replace	30	16	14	1	EA	$1,100.00	$1,100															$1,100							**$1,100**
D2010	Throughout Building	9407847	Sink/Lavatory, Service Sink, Floor, Replace	35	16	19	1	EA	$800.00	$800																				$800		**$800**
D3030	Site Utility Areas	9407870	Evaporative Cooler, 2 to 3 HP, Replace	15	14	1	1	EA	$7,600.00	$7,600		$7,600															$7,600					**$15,200**
D3030	Site Utility Areas	9407818	Split System, Condensing Unit/Heat Pump, Replace	15	12	3	1	EA	$5,200.00	$5,200				$5,200															$5,200			**$10,400**
D3030	Site Utility Areas	9407826	Split System, Condensing Unit/Heat Pump, Replace	15	12	3	1	EA	$4,000.00	$4,000				$4,000															$4,000			**$8,000**
D3030	Hallways & Common Areas	9407825	Split System, Fan Coil Unit, DX, 3.5 to 5 TON, Replace	15	12	3	1	EA	$4,600.00	$4,600				$4,600															$4,600			**$9,200**
D3030	Site Utility Areas	9407876	Split System, Condensing Unit/Heat Pump, Replace	15	12	3	1	EA	$5,200.00	$5,200				$5,200															$5,200			**$10,400**
D3030	Hallways & Common Areas	9407833	Split System, Fan Coil Unit, DX, 3.5 to 5 TON, Replace	15	12	3	1	EA	$4,600.00	$4,600				$4,600															$4,600			**$9,200**
D3030	Hallways & Common Areas	9407832	Split System, Fan Coil Unit, DX, 3.5 to 5 TON, Replace	15	12	3	1	EA	$4,600.00	$4,600				$4,600															$4,600			**$9,200**
D3030	Utility Rooms/Areas	9407828	Split System, Fan Coil Unit, DX, 3 TON, Replace	15	12	3	1	EA	$3,800.00	$3,800				$3,800															$3,800			**$7,600**
D3030	Hallways & Common Areas	9407821	Split System, Fan Coil Unit, DX, 3 TON, Replace	15	12	3	1	EA	$3,800.00	$3,800				$3,800															$3,800			**$7,600**
D3030	Hallways & Common Areas	9407877	Split System, Fan Coil Unit, DX, 3.5 to 5 TON, Replace	15	12	3	1	EA	$4,600.00	$4,600				$4,600															$4,600			**$9,200**
D3030	Site Utility Areas	9407851	Split System, Condensing Unit/Heat Pump, Replace	15	12	3	1	EA	$5,200.00	$5,200				$5,200															$5,200			**$10,400**
D3030	Site Utility Areas	9407889	Split System Ductless, Single Zone, Replace	15	12	3	1	EA	$3,500.00	$3,500				$3,500															$3,500			**$7,000**
D3030	Site Utility Areas	9407854	Split System, Condensing Unit/Heat Pump, Replace	15	8	7	1	EA	$5,200.00	$5,200							$5,200															**$5,200**
D3030	Site Utility Areas	9407831	Split System, Condensing Unit/Heat Pump, Replace	15	3	12	1	EA	$4,000.00	$4,000														$4,000								**$4,000**
D3050	Throughout Building	9407838	HVAC System, Ductwork w/ VAV/FCU, Medium Density, Replace	30	16	14	9961	SF	$6.00	$59,766															$59,766							**$59,766**
D3060	Utility Rooms/Areas	9407849	Exhaust Fan, Roof or Wall-Mounted, 36"Damper, Replace	20	16	4	1	EA	$5,600.00	$5,600					$5,600																	**$5,600**

Replacement Reserves Report

005 - Fire Station 91

7/8/2025

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
D3060	Utility Rooms/Areas	9407850	Exhaust Fan, Roof or Wall-Mounted, 36"Damper, Replace	20	16	4	1	EA	$5,600.00	$5,600					$5,600																	**$5,600**
D4010	Throughout Building	9407839	Fire Suppression System, Existing Sprinkler Heads, by SF, Replace	25	16	9	9961	SF	$1.07	$10,658										$10,658												**$10,658**
D4010	Mechanical Room	9407824	Backflow Preventer, Fire Suppression, Replace	30	16	14	1	EA	$6,600.00	$6,600															$6,600							**$6,600**
D5010	Site Utility Areas	9407830	Generator, Diesel, Replace	25	16	9	1	EA	$86,000.00	$86,000										$86,000												**$86,000**
D5010	Electrical Room	9407858	Solar Power, Inverter, 2.8 KW, Replace	15	15	0	1	EA	$3,000.00	$3,000	$3,000															$3,000						**$6,000**
D5010	Roof	9407855	Solar Power, Photovoltaic (PV) Panels by SF, Replace	20	16	4	450	SF	$70.00	$31,500					$31,500																	**$31,500**
D5010	Site Utility Areas	9407846	Automatic Transfer Switch, ATS, Replace	25	16	9	1	EA	$20,000.00	$20,000										$20,000												**$20,000**
D5010	Electrical Room	9407878	Automatic Transfer Switch, ATS, Replace	25	16	9	1	EA	$20,000.00	$20,000										$20,000												**$20,000**
D5020	Electrical Room	9407852	Distribution Panel, 120/208 V, Replace	30	17	13	1	EA	$6,000.00	$6,000														$6,000								**$6,000**
D5040	Building Exterior	9407868	Exterior Light, any type, w/ LED Replacement, Replace	20	16	4	18	EA	$400.00	$7,200					$7,200																	**$7,200**
D5040	Throughout Building	9407856	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures, Replace	20	16	4	9961	SF	$5.00	$49,805					$49,805																	**$49,805**
D6060	Throughout Building	9407885	Intercom/PA System, Public Address Upgrade, Facility-Wide, Replace	20	16	4	9961	SF	$1.65	$16,436					$16,436																	**$16,436**
D7050	Throughout Building	9407816	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	20	16	4	9961	SF	$3.00	$29,883					$29,883																	**$29,883**
E1030	Commercial Kitchen	9407859	Foodservice Equipment, Sink, 1-Bowl, Replace	30	16	14	1	EA	$1,600.00	$1,600															$1,600							**$1,600**
E1030	Commercial Kitchen	9407820	Foodservice Equipment, Sink, 2-Bowl, Replace	30	16	14	1	EA	$2,100.00	$2,100															$2,100							**$2,100**
E2010	Restrooms	9407845	Casework, Bathroom Vanity Cabinet, Wood w/ Cultured Marble Sink Top, Replace	20	16	4	3	EA	$1,200.00	$3,600					$3,600																	**$3,600**
E2010	Throughout Building	9407834	Casework, Cabinetry, Standard, Replace	20	16	4	134	LF	$300.00	$40,200					$40,200																	**$40,200**
G2060	Site Utility Areas	9407890	Fences & Gates, Pedestrian Gate, Wrought Iron, Replace	25	16	9	3	EA	$800.00	$2,400										$2,400												**$2,400**
G2060	Utility Rooms/Areas	9407869	Picnic Table, Metal Powder-Coated, Replace	20	10	10	1	EA	$700.00	$700											$700											**$700**
G2060	Site General	9407880	Signage, Property, Monument, Replace/Install	20	16	4	1	EA	$3,000.00	$3,000					$3,000																	**$3,000**
G2060	Site General	9407881	Flagpole, Metal, Replace	30	16	14	1	EA	$2,500.00	$2,500															$2,500							**$2,500**
G2080	Site General	9407819	Irrigation System, Pop-Up Spray Heads, Commercial, Replace/Install	20	16	4	7100	SF	$1.00	$7,100					$7,100																	**$7,100**
Totals, Unescalated											**$3,000**	**$7,600**	**$0**	**$66,610**	**$229,040**	**$23,340**	**$1,600**	**$5,200**	**$0**	**$172,308**	**$700**	**$0**	**$4,000**	**$6,000**	**$246,766**	**$26,340**	**$7,600**	**$0**	**$66,610**	**$800**	**$0**	**$867,514**
Totals, Escalated (3.0% inflation, compounded annually)											**$3,000**	**$7,828**	**$0**	**$72,787**	**$257,786**	**$27,057**	**$1,910**	**$6,395**	**$0**	**$224,823**	**$941**	**$0**	**$5,703**	**$8,811**	**$373,256**	**$41,037**	**$12,196**	**$0**	**$113,399**	**$1,403**	**$0**	**$1,158,332**

* Markup has been included in unit costs.

Appendix G:
Equipment Inventory List

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
B20 OTHER													
1	9407837	B2050	**Automatic Door Opener**	Commercial Overhead/Dock Door		005 - Fire Station 91	Building Exterior						4

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D10 Conveying													
1	9407883	D1010	**Vertical Lift**	Wheelchair, 5' Rise		005 - Fire Station 91	Utility Rooms/Areas	National Wheel-O-Vator Company	No dataplate	No dataplate		3003799	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D20 Plumbing													
1	9407874	D2010	**Water Heater**	Gas, Tankless	5 GPM	005 - Fire Station 91	Utility Rooms/Areas	Navien	NPE-240A	7414X1672821068	2016	3003771	
2	9407875	D2010	**Backflow Preventer**	Domestic Water	2 IN	005 - Fire Station 91	Building Exterior	Wilkins Zurn	975XL2	No dataplate		3003792	
3	9407863	D2010	**Backflow Preventer**	Domestic Water	1 IN	005 - Fire Station 91	Building Exterior	Febco	825Y	J012275		3003788	
4	9407864	D2010	**Backflow Preventer**	Domestic Water	1 IN	005 - Fire Station 91	Building Exterior	Watts	LF009M2QT	040129		3003796	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D30 HVAC													
1	9407870	D3030	**Evaporative Cooler**	2 to 3 HP	18000 CFM	005 - Fire Station 91	Site Utility Areas	Aerocool	UID701	No dataplate		3003768	
2	9407831	D3030	**Split System**	Condensing Unit/Heat Pump	3 TON	005 - Fire Station 91	Site Utility Areas	American Standard Inc.	4A6H4036G1000AB	22161NAX4F	2022	3003847	
3	9407851	D3030	**Split System** [CU-1]	Condensing Unit/Heat Pump	4 TON	005 - Fire Station 91	Site Utility Areas	Trane	4TWX6048B1000BA	8344MHL1F	2008	3003849	
4	9407854	D3030	**Split System** [CU-2]	Condensing Unit/Heat Pump	4 TON	005 - Fire Station 91	Site Utility Areas	Trane	4TWR4048Q1000AA	17196KUL4F	2017	3003846	
5	9407818	D3030	**Split System** [CU-3]	Condensing Unit/Heat Pump	4 TON	005 - Fire Station 91	Site Utility Areas	Trane	4TWX6048B1000BA	8344MF91F	2008	3003853	
6	9407876	D3030	**Split System** [CU-5]	Condensing Unit/Heat Pump	4 TON	005 - Fire Station 91	Site Utility Areas	Trane	4TWX6048B1000BA	8344MFT1F	2008	3003854	
7	9407826	D3030	**Split System** [CU-6]	Condensing Unit/Heat Pump	3 TON	005 - Fire Station 91	Site Utility Areas	Trane	4TWX6036B1000AA	8344PNM1F	2008	3003852	
8	9407832	D3030	**Split System** [FC-1]	Fan Coil Unit, DX, 3.5 to 5 TON	4 Ton	005 - Fire Station 91	Hallways & Common Areas	Trane	4TEE3F48A1000AA	8053OK22V	2008	3003829	
9	9407825	D3030	**Split System** [FC-2]	Fan Coil Unit, DX, 3.5 to 5 TON	4 Tons	005 - Fire Station 91	Hallways & Common Areas	Trane	4TEE3F48A1000AA	8053N212V	2009	3003836	
10	9407833	D3030	**Split System** [FC-3]	Fan Coil Unit, DX, 3.5 to 5 TON	4 Ton	005 - Fire Station 91	Hallways & Common Areas	Trane	4TEE3F48A1000AA	8122YR72V	2008	3003786	
11	9407821	D3030	**Split System** [FC-4]	Fan Coil Unit, DX, 3 TON	3 Ton	005 - Fire Station 91	Hallways & Common Areas	Trane	Inaccessible	Inaccessible		3003851	
12	9407877	D3030	**Split System** [FC-5]	Fan Coil Unit, DX, 3.5 to 5 TON	4 Ton	005 - Fire Station 91	Hallways & Common Areas	Trane	4TEE3F48A1000AA	80532U42V	2008	3003837	
13	9407828	D3030	**Split System** [FC-6]	Fan Coil Unit, DX, 3 TON	3 Ton	005 - Fire Station 91	Utility Rooms/Areas	Trane	4TEE3F37B1000AA	8333TET1V	2008	3003763	
14	9407889	D3030	**Split System Ductless** [CU-7]	Single Zone	1 TON	005 - Fire Station 91	Site Utility Areas	Sanyo	CH1271	0143571	2007	3003830	
15	9407849	D3060	**Exhaust Fan**	Roof or Wall-Mounted, 36"Damper	10000 CFM	005 - Fire Station 91	Utility Rooms/Areas	Inaccessible	Inaccessible	Inaccessible		3003787	
16	9407850	D3060	**Exhaust Fan**	Roof or Wall-Mounted, 36"Damper	10000 CFM	005 - Fire Station 91	Utility Rooms/Areas	Inaccessible	Inaccessible	Inaccessible		3003848	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D40 Fire Protection													
1	9407824	D4010	**Backflow Preventer**	Fire Suppression	4 INCH	005 - Fire Station 91	Mechanical Room	Ames	Colt 200	16-2973		3003773	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D50 Electrical													
1	9407830	D5010	**Generator**	Diesel	150 KW	005 - Fire Station 91	Site Utility Areas	Generac	10313570100	2100235		3003772	
2	9407858	D5010	**Solar Power**	Inverter, 2.8 KW	2.8 KW	005 - Fire Station 91	Electrical Room	Xantrex	No dataplate	No dataplate	2007	3003794	
3	9407846	D5010	**Automatic Transfer Switch**	ATS	400 AMP	005 - Fire Station 91	Site Utility Areas	Generac	0049412	5141083		3003828	
4	9407878	D5010	**Automatic Transfer Switch**	ATS	400 AMP	005 - Fire Station 91	Electrical Room	Generac	No dataplate	Illegible		3003803	
5	9407814	D5020	**Switchboard**	120/208 V	800 AMP	005 - Fire Station 91	Site Utility Areas	Siemens	No dataplate	No dataplate		3003770	
6	9407852	D5020	**Distribution Panel**	120/208 V	400 AMP	005 - Fire Station 91	Electrical Room	Siemens	P2C42JX400FBS	No dataplate	2008	3003833	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
E10 Equipment													
1	9407859	E1030	**Foodservice Equipment**	Sink, 1-Bowl		005 - Fire Station 91	Commercial Kitchen						
2	9407820	E1030	**Foodservice Equipment**	Sink, 2-Bowl		005 - Fire Station 91	Commercial Kitchen						

Appendix H:
Electrical Study

225 Broadway Suite 350, San Diego, CA 92101
1 + 310 364 5228 | 1 + 619 323 1515
mailto: Info@120degreez.com | www.120degreez.com

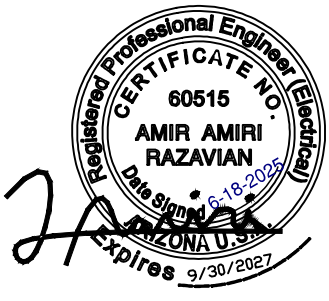


Arc Flash, Short Circuit, and Load Flow Analysis provided for:

FIRE STATION #91

8444 N. Tatum Blvd

Paradise Valley, AZ 85253



FIRE STATION #91

8444 N. Tatum Blvd

Paradise Valley, AZ 85253

FOR:
Town of Paradise Valley
Department of Public Works
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

Submitted By:
Amir Amiri, P.E.
Electrical Engineer

Submittal date:
DATE: 6-12-2025

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APPENDIX 2 – ARC FLASH SKM REPORT

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APPENDIX 6 – PPE TABLES AND ARC FLASH LABELS

1. EXECUTIVE SUMMARY

1.1. Introduction

A System Coordination and Arc Flash study of the distribution system was performed for the town of Paradise Valley's Fire Station 91located at 8444 N. Tatum Blvd, Paradise Valley, AZ 85253. The study determined the adequacy of the system components and the installed protective equipment. The study/analysis performed included short circuit, load flow, protective device coordination studies and incident energy (Arc-flash) evaluations.
The power distribution system provided for this site is the following:

- SES-FS 91 is an 800 amp, 208/120V, 3-phase service fed from a wye utility transformer with a Short Circuit current determined by the power company to be 49,505 Amps.

The serving utility has provided the short circuit current availability of this transformer with their service manual which is noted in the field notes provided. The serving utility's published available fault current (AFC) for each transformer which is called out in the field notes. Values used were provided by APS for phase-to-phase faults. Each Service Equipment System (SES) serves primarily lighting and equipment loads of the building in which it is located.
The short circuit analysis evaluates the short time thermal and electrodynamic strength of the facilities equipment. Arc flash and protective equipment studies evaluate the incident energy at specific points of the distribution system to provide Arc-Flash hazard warning labels and personal protective equipment (PPE) recommendations. System protection coordination analysis is used to evaluate the adequacy of the protective devices (Fuses-Circuit Breakers) for the proper protection of system components and are unitized in the verify selective coordination of overcurrent protective devices. Finally, the load flow analysis evaluates the ability of equipment and cables to safely serve the loads they supply. Voltage drop values are included in the appendix report.

Major objectives of the analysis are:

- Compare the calculated fault duties with withstanding/interrupting ratings for customer owned electrical distribution system equipment and note any area of deficiency.
- Demonstrate protective device coordination and note any area of deficiency. Recommended settings for protective devices that will isolate faults in a manner that is consistent with the basic system design and operation. The recommendations given will balance system protection and selective fault isolation.
- Identify incident energy levels, arc flash boundaries, and what level of Personal Protective Equipment (PPE) is required for safe energized work, in accordance with NFPA 70E 2018.
- Evaluate and assess the panels, switches, fuses, and cables nominal values under the current and voltage levels at site, according the load flow analysis results.

Note areas of deficiency and make recommendations for corrective measures that are consistent with applicable codes and standards.

1.1.1. Full narratives of the analysis performed as well as the findings and recommendations of the analysis are included in Sections 2 and 3 of this report. The appendices include the computer output from the analysis performed and tables containing the settings for the adjustable devices in the scope of work. Time current curves, a copy of the Arc-Flash labels, and a one-line diagram of the system model are also included in the appendices.

1.1.2. Various scenarios (where relevant) were modeled, and all related studies' results have been detailed in this report.

The following were the scenarios that were modeled and evaluated:

- Scenario #1: Short circuit analysis
- Scenario #2: Arc-Flash analysis
- Scenario #3: Load Flow analysis
- Scenario #4: TCC Tables

The assessment of the power distribution system components and equipment will be done based on the worst-case outcomes, including the highest levels of fault currents, load flow currents and assumed current usage as well as the highest available arc flash incident energy. The results of the analysis are included in Appendixes of this report. The appendices include the data derived from the SKM analysis software. Additionally, the Appendixes include Time-Current curves of protective devices, a copy of the Arc-Flash labels to be installed, one line diagram for overall system for short circuit, and incident energies. Additional diagrammatic illustrations of the one-line diagram are included.

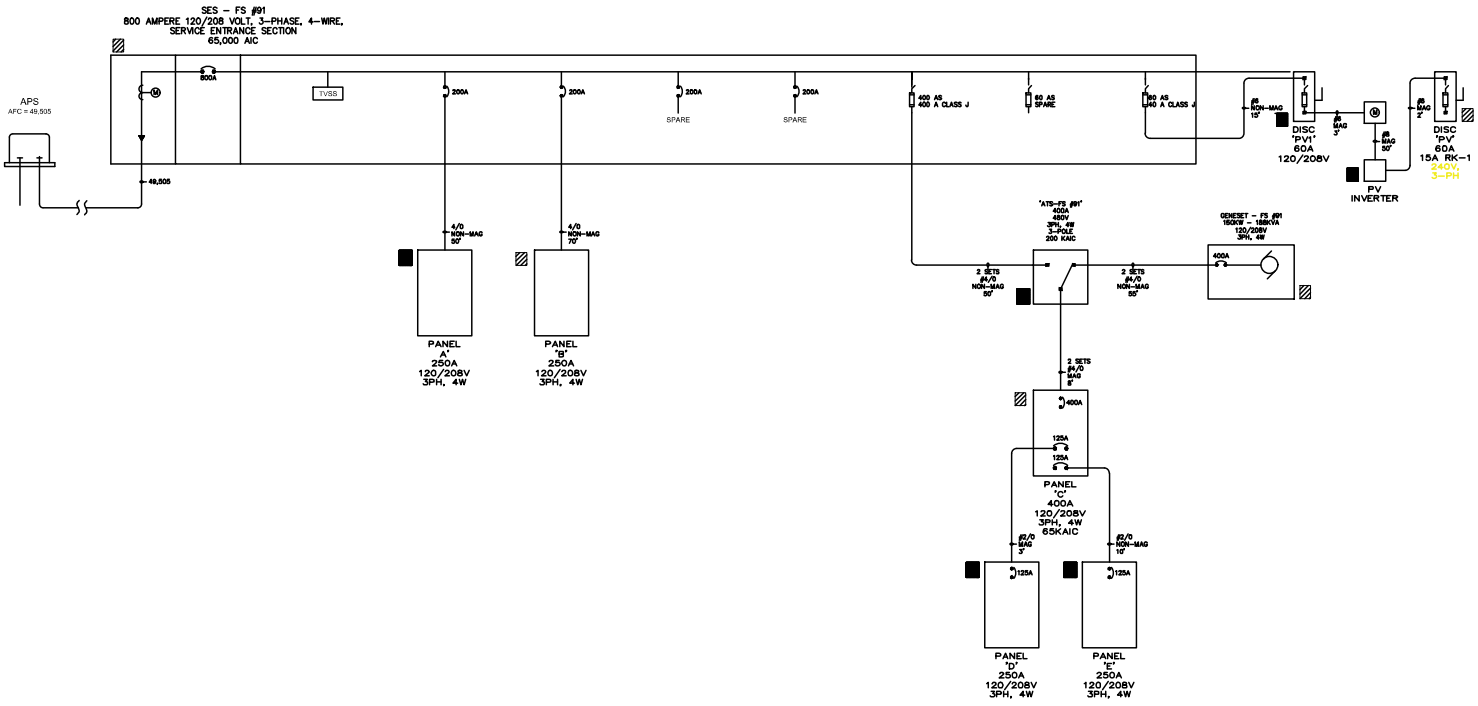
1.2.2 DC systems less than 50 volts.

The Occupational Safety and Health Administration, under 29 CFR 1910.303(g)(2)(i), considers electrical systems rated 50 volts or more as hazardous. By extension, those systems rated less than 50 volts are not considered to be hazardous. NFPA 70E, section 130.5(C), under Table 130.5(C), indicates that there is no likelihood of occurrence "For dc systems, maintenance on a single cell for a battery system or multi-cell units in an open rack.". As a result, DC systems rated 50 volts or less are not addressed by this study and are excluded from its scope.

1.2. Distribution System

The electrical system's overall single line diagrams are shown in the following figures below. Each individual single line is shown with the associated field report that contains the facilities equipment technical specifications and ratings, based upon visual observations. The actual field notes should be referenced for existing conditions as this report focuses on the Short Circuit Fault currents and Arc Flash evaluation. The physical condition of the services and equipment are described by the Excel report but are not formally addressed by this study.

FIRE STATION #91



LABEL LEGEND

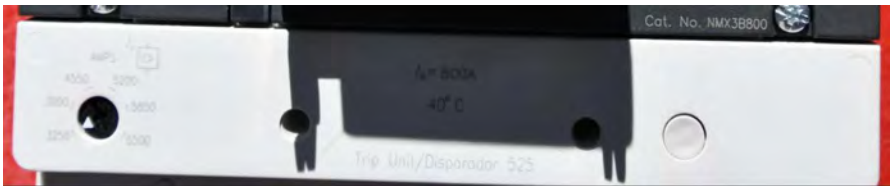
▨ EQUIPMENT TO BEAR A LABEL

■ EQUIPMENT TO BEAR A LABEL STATING –NO SAFE LEVEL OF PPE–

7

FACILITY	FIRE STATION #91	ADDRESS:	8444 N. TATUM BLVD, PARADISE VALLEY
UTILITY:	APS		
TRANSFORMER SIZE:	225	OTHER COMMENTS	
TRANSFORMER %Z:	1.35%		
SECONDARY COND SIZE:	(6) x 750 KCMIL AL		
LENGTH:			
AFC (PER UTILITY TABLES):	49,505		
VOLTAGE:	120/208		
PHASE:	3Ø-4W		
NOTE:	METER NUMBER Q22803		

EQUIPMENT NAME:	SES - FS #91	VOLTAGE:	120/208	PHASE:	3Ø 4w	AMPS:	800	SCCR:	65K	MAIN:	MCB
EQUIPMENT TYPE:	SWITCHBOARD									MODEL:	NMX SB800
MANUFACTURER:	SIEMENS									AMPS	800
MODEL:	SB3 REV. A					OTHER COMMENTS					
TYPE:						THE EQUIPMENT IS IN NEED OF PREVENTATIVE MAINTENANCE					
FED FROM:	UTILITY XFMR										
AFC:	49,505										
FEEDER SIZE:											
CONDUCTOR TYPE:											
RACEWAY TYPE:											
LENGTH:											
MAIN:	800										



SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
TVSS	0	0		65K			TVSS IS INTEGRAL TO THE SERVICE
PANEL 'A'	200	200		65K	FXD63B200		
PANEL 'B'	200	200		65K	FXD63B200		
SPARE (2)	200	200		65K	FXD63B200		2 SPARES
SPARE	60	NA		100K			SPARE
PV SYSTEM	60	40	J FUSES	100K			
ATS FS #91	400	400	JTD	100K			LITTLE FUSE J TIME DELAY FUSE

EQUIPMENT NAME:	ATS FS #91	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	400	SCCR:	200K	MAIN:
EQUIPMENT TYPE:	AUTOMATIC XFR SW									MODEL:
MANUFACTURER:	GENERAC									AMPS
MODEL:	GTSO40W-SG2LDNAY					OTHER COMMENTS				
TYPE:						3 POLE XFR SW.				
FED FROM:	SW-SM & GENSET									
AFC:		EQUIPMENT APPEARS TO BE IN GOOD CONDITION AND SUITABLE FOR THE CONDITIONS HOWEVER,								
FEEDER SIZE:	2-SETS OF #4/0	WIRING WITHIN THE EQUPMENT OBSURED ALL DATA PLATES, INFORMATION COULD NOT BE VERIFIED.								
CONDUCTOR TYPE:	CU	AS A RESULT, THE EQUIPMENT WILL BEAR A LABEL INDICTATING THERE WILL BE NO SAFE LEVEL OF PPE.								
RACEWAY TYPE:	NON-MAG									
LENGTH:	50'									
MAIN:										

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'C'							

EQUIPMENT NAME:	GENSET - FS #91	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	400	SCCR:	25K	MAIN:	MCB
EQUIPMENT TYPE:	GENSET									MODEL:	GBU 403
MANUFACTURER:	GENERAC									AMPS:	400
MODEL:	10313570100					OTHER COMMENTS					
TYPE:	GENSET					150KW GENSET					
FED FROM:		NAMEPLATE INFORMATION SHOWS 600A MCB, CIRCUIT BREAKER INDICATES 400A									
AFC:		MAIN RATED FOR 18K AIC									
SETS:	2 SETS										
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	55'										
MAIN:	400										
OCPD:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
ATS FS #91	400	400					

EQUIPMENT NAME:	PANEL 'C'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	400	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	JXD63B400
MANUFACTURER:	SIEMENS									AMPS:	400
MODEL:						OTHER COMMENTS					
TYPE:						BRANCH BREAKERS: HBL (65K AIC) AND BQD (65K AIC)					
FED FROM:	ATS FS #91										
AFC:											
SETS:	2 SETS										
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	8'										
MAIN:	400										
OCPD:											



SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'D'	200	125		100K	NGB3B125		
PANEL 'E'	200	125		100K	NGB3B125		

EQUIPMENT NAME:	PANEL 'D'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	250	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	ED43B125
MANUFACTURER:	SIEMENS									AMPS:	125
MODEL:	P1					OTHER COMMENTS					
TYPE:						TYPE BL BRANCH CIRCUIT BREAKERS - 10K AIC					
FED FROM:	PANEL 'C'					MAIN CIRCUIT BREAKER - 65K AIC					
AFC:						AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN					
SETS:						A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#2/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	3'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'LOA'	100	100		10K			

EQUIPMENT NAME:	PANEL 'E'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	250	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	ED43B125
MANUFACTURER:	SIEMENS									AMPS:	125
MODEL:	P1					OTHER COMMENTS					
TYPE:						TYPE BL BRANCH CIRCUIT BREAKERS - 10K AIC					
FED FROM:	PANEL 'C'					MAIN CIRCUIT BREAKER - 65K AIC					
AFC:						AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN					
SETS:						A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#2/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	10'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	PANEL 'A'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	250	SCCR:	10K	MAIN:	MLO
EQUIPMENT TYPE:	SWTICHBOARD									MODEL:	
MANUFACTURER:	SIEMENS									AMPS:	
MODEL:	P1					OTHER COMMENTS					
TYPE:						TYPE BL CIRCUIT BREAKERS - 10K AIC					
FED FROM:	SES - FS #91										
AFC:						AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN					
SETS:						A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	50'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	PANEL 'B'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	250	SCCR:	10K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SIEMENS									AMPS:	
MODEL:	P1					OTHER COMMENTS					
TYPE:	PANELBOARD					TYPE BL AND BAF CIRCUIT BREAKERS - 10K AIC					
FED FROM:	SES - FS #91										
AFC:											
SETS:											
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	70'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	PANEL 'C'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	250	SCCR:	65K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SIEMENS									AMPS:	
MODEL:	P1					OTHER COMMENTS					
TYPE:	PANELBOARD					TYPE BL (10K AIC) AND, HBL, BQD CIRCUIT BREAKERS - 65K AIC					
FED FROM:	SES - FS #91										
AFC:						THE PANELBOARD HAS SEVERAL 10K AIC CIRCUIT BREAKERS INSTALLED. THESE					
SETS:						APEAR TO HAVE BEEN INSTALLED AT A LATER DATE.					
FEEDER SIZE:	#4/0					IF THE AVAILABLE FAULT CURRENT EXCEEDS 10,000 AMPERES					
CONDUCTOR TYPE:	CU					A LABEL WILL BE INSTALLED INDICATING THAT THERE WILL BE NO SAFE LEVEL OF PPE.					
RACEWAY TYPE:	NON-MAG										
LENGTH:	135										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	'SW PV1'	VOLTAGE:	240	PHASE:	3Ø-4W	AMPS:	60	SCCR:	100K	MAIN:	SWITCH
EQUIPMENT TYPE:	DISCONNECT									MODEL:	UNKN
MANUFACTURER:										AMPS	
MODEL:						OTHER COMMENTS					
TYPE:						SWITCH WAS PADLOCKED BY UTILITY, NO ACCESS.					
FED FROM:	SES - FS #91					A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
AFC:											
FEEDER SIZE:	#6										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	3'										
MAIN:											

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PV SYSTEM							

EQUIPMENT NAME:	PV'	VOLTAGE:	240	PHASE:	3Ø-4W	AMPS:	60	SCCR:	100K	MAIN:	SWITCH
EQUIPMENT TYPE:	PV SYSTEM									MODEL:	UNKN
MANUFACTURER:										AMPS	
MODEL:						OTHER COMMENTS					
TYPE:						COULD NOT OPEN EQUIPMENT					
FED FROM:	0					A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
AFC:											
FEEDER SIZE:											
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	3'										
MAIN:											

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
SW PV2'							

EQUIPMENT NAME:	'SW PV2'	VOLTAGE:	240	PHASE:	3Ø-4W	AMPS:	60	SCCR:	100K	MAIN:	SWITCH
EQUIPMENT TYPE:	DISCONNECT									MODEL:	
MANUFACTURER:										AMPS	15A RK-1 FUSES
MODEL:						OTHER COMMENTS					
TYPE:											
FED FROM:											
AFC:											
FEEDER SIZE:											
CONDUCTOR TYPE:											
RACEWAY TYPE:	MAGNETIC										
LENGTH:	6'										
MAIN:	15A RK-1 FUSES										

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

1.3. Findings

1.3.1. Short Circuit Analysis

The short circuit study provides the available fault current at each busbar (point or node) of the distribution system based upon the impedance of the system to that point. Based upon these results, we can compare the equipment's short circuit current withstanding ratings (SCCR) and the ampere interrupting current ratings (AIC) with the available fault current**.**

Based on the short circuit study, calculated faults exceed the 10 KAIC ratings of the Panels A, B, C, D, and E.

At the locations noted, the available fault current exceeds the AIC and/or SCCR ratings of the equipment. As documentation from the manufacturer was not available, it is not possible to verify if the equipment is permitted to be used as part of a series rated system. While it appears that the applications of the labels are correct, it should be independently verified.

1.3.2. Protective Device Coordination

1.3.2.1. The MDP SES-FS 91 service feeders (TCC Report) imply poor over current protection coordination. However, this is a common practice for service feeders and the design is NEC code compliant.

1.3.2.2. The protective device settings in this report (Refer to TCC reports), do show that there is reasonable system protection for this installation. Refer to sections 2.6 and 3.3 for more details.

1.3.3. Arc Flash Evaluation

1.3.3.1. **The utility's metering cabinet and the main switchboard are often found to have incident energy levels that exceed 40 Cal/cm^2 (no safe level of PPE).** In locations where no safe level of PPE is recommended, energized work should be prohibited or extension tools (e.g., hotstick) should be used to distance personnel from the potential arc point. The incident energy at the indicated working distance dictates the required level of PPE. Wherever possible, protective device settings are suggested to try to reduce the incident energy levels. Please refer to Sections 2.5 and 3.2 for more detailed information.

1.3.3.2. The incident energy calculations utilize the data obtained from the serving utility. The incident energy calculations also assume the recommended settings shown both in the SKM Arc Flash One-Line and the follow up report for each SES distribution system. These settings must be implemented for the data provided on the labels to be correct. **Improper or inadequate maintenance can result in increased opening time of overcurrent protective devices, thus increasing the incident energy and negating the results of this study.**

1.3.3. Load Flow Analysis

The table in Appendix 3 provides an overview of the all the distribution panels predicted voltage drop. The voltage drop to all equipment appears to be satisfactory. It should be noted that excessive voltage drop can cause electronic equipment, such as computer systems, to unexpectedly shut down and effects the electrical system's performance. None of the locations studied were found to have current capacity less than available demand current flow.

Refer to Section 3.4 for more detail.

1.4. Study Notes

This study is based upon the most accurate information available at the time the study was conducted.

In reviewing the report, the serving utility typically does not provide the actual values for their contribution to the available fault current nor the impedance of their transformers. Values are published in their respective Electrical Service Requirement Manuals (ESRM) however, they will not guarantee the accuracy of this information. Additionally, there is no external labeling of the equipment that would provide this information. As a result, the values provided in this study may differ from actual values.

The serving utilities also will not indicate if overcurrent protective equipment, devices, or relays have been provided on the line side of their distribution transformer(s). As a result, it is prudent to perform these studies assuming that no protection has been provided.

There is equipment that was not surveyed due to being in locked rooms or otherwise inaccessible. Without being able to determine panel condition, we generated a Red Dangerous label for such panels.

Precise measurements of the distribution system feeders are all but impossible. Every effort has been made to estimate conductor length based upon equipment location and observed raceway or cable routing. Additionally, calculations provided in this study assume magnetic raceways above grade and non-magnetic raceways below grade except where positive identification is possible.

The results of this study are valid for a maximum of 5 calendar years after the date of publication and are invalidated whenever any of the following conditions or modifications are made to the distribution system or where the electrical equipment is not properly maintained.

The following conditions will negate the findings of this study and render the results invalid.

- Changes made to the utility distribution system or equipment
- The addition of equipment or loads
- Removal or replacement of overcurrent devices with differing specifications
- Changing overcurrent protective device settings
- Any modification to the facility distribution system
- Improper maintenance of equipment
- Removal of equipment
- Equipment that is not properly exercised as required by the manufacturer(s).

Whenever new equipment or loads have been provided after this study has been published, it is strongly recommended that a new study be provided to assess how the changes have impacted the system.

2. ANALYSIS

2.1. Basis of Analysis

Electrical system inputs, for the analysis performed, are composed of both non-intrusive on-site data gathering methods and integrating predictable values. This information is presented in the Excel spreadsheets included in this report. Source data was obtained from the Salt River Project Electrical Service Requirements Manual. SKM Power Tools version "9.0.0.7" was used for all analysis performed. Using this software, a computer model of the electrical system was created based on data obtained for the analysis. The single line diagram of the distribution system is shown on Fig.01 which is a graphical representation of the electrical system. The components on the Single Line Diagram (SLD) included all required device information for the analysis. This model was then used to study the electrical system and generate the calculations found in Appendices 1 through 5 of this report.

2.2. Campus as built Data Gathering Assumptions

When reviewing the system single line diagram, the provided information is based upon visual observations made at the site. In some circumstances it was not possible to access or open equipment. Access to this equipment may have been limited to any of the following conditions.

- Personnel not permitted to de-energize equipment
- Personnel could not gain access to equipment due to locked doors, gates or covers
- Equipment could not be opened or accessed without de-energizing the equipment or systems
- Staff felt the opening of the equipment may expose persons or property to an unreasonable risk due to the condition of the equipment.

As demand loads are necessary to complete the calculations, this study is based upon information provided by the facilities owner indicating the highest demand loads for the last calendar year. This information is supplied by the serving utility to the facility owner/operator. Where this information has not been provided, all calculations performed have been based upon a value 80% of the rating of the electrical service(s) for the facility with an anticipated power factor (PF) of 80%.

As demand loads are necessary to complete the calculations, it was necessary to make assumptions for these loads to complete the study. As load studies have not been completed for each panel or feeder, we based the study by using the following assumptions for all estimated loads (actual values are used when provided):

- Motors protected by circuit breakers: 40% of the circuit breaker rating
- Motors protected by fuses: 50% of the fuse rating
- All other loads: 50% of the rating of the upstream OCPD.

These assumptions are conservative in nature and should provide an acceptable range of results. It should be noted that in some instances, these assumptions indicate that equipment may not be suitable for the loads applied. The values provided do not necessarily indicate an overloaded or unsafe condition however, additional investigation may be necessary to assure the safe and continued operation of the equipment or systems.

The demand loads for switchboards and panelboards will be as follows:

Panelboard load estimate:

- **Main Distribution Board SES-FS 91:** 552 amps (reference Load Flow One Line).
- **Panel A & B:** 102 & 103 amps
- **Panel C:** 346 amps
- **Panel D & E:** 71 & 72 amps

2.3. Equipment Evaluation

Each device on the one-line diagram in Fig.01 is identified by an identifier. Common identifiers used in this report include:

AFC– Available Fault Current
AF – Arc Flash
IC – Interrupting Current
Gen – Generator
SCC – Short Circuit Current
CB – Circuit Breaker
SW – Switch
IE – Incident Energy
PPE – Personal Protective Equipment
TCC – Time Current Curve
AF – Arc Flash
SWB – Switchboard
LV – Low Voltage
CBL – Cable
LF – Load Flow
SC – Short Circuit

The incident energy summary in each report contains the available fault current calculations at each indicated device in the electrical system. Incident energy may increase if protective device settings in the electrical equipment is changed or adjusted or, if they are replaced. Increases in incident energy may also result from improper or inadequate maintenance or new construction.

Electrical equipment and protection devices must be in proper working condition for the equipment to operate properly and open as expected. A maintenance inspection and testing program should ensure that all equipment and devices function as designed by the manufacturer. NFPA 70E 2018 provides standards for electrical safety, including the following requirements for electrical equipment and protective devices:

> **General Maintenance Requirements** - Electrical equipment shall be maintained in accordance with manufacturers' instructions or industry consensus standards to reduce the risk of failure and the subsequent exposure of employees to electrical hazards.
>
> **Overcurrent Protective Devices** - Overcurrent protective devices shall be maintained in accordance with the manufacturers' instructions or industry consensus standards. Maintenance, tests, and inspections shall be documented.
>
> **210.5 Protective Devices** - Protective devices shall be maintained to adequately withstand or interrupt available fault current.

As of June, 2025, the amended 2014 National Electrical Code (NEC) is in effect in the town of Paradise Valley. Article 110 of the NEC contains requirements for all electrical installations, including maintenance and mechanical execution of work:

> **110.12(B): Mechanical Execution of work** - There shall be no damaged parts that may adversely affect safe operation or mechanical strength of the equipment such as parts that are broken, bent, cut; or deteriorated by corrosion, chemical action, or overheating.
>
> **110.26: Spaces about Electrical Equipment** - Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.

Additionally, when series ratings are used the National Electrical Code (NEC) Article 110 requires series combination rated overcurrent devices are visibly marked by permanently affixed means as stated:

> **110.22(B): Engineered Series Combination Systems** - Equipment enclosures for circuit breakers or fuses applied in compliance with series combination ratings selected under engineering supervision in accordance with 240.86(A) shall be legibly marked in the field as directed by the engineer to indicate the equipment has been applied with a series combination system. The marking shall meet the requirements in 110.21(B) and shall be readily visible and state the following: CAUTION – ENGINEERED SERIES COMBINATION SYSTEM RATED XXXXX AMPERES. IDENTIFIED REPLACEMENT COMPONENTS REQUIRED.

Equipment that is malfunctioning, has been inadequately or improperly installed, maintained, or modified, may result in injury or death, and will invalidate the results of this study.

2.4 Short Circuit Analysis

An analysis of the system was performed to determine the maximum fault levels at the equipment covered within the scope of work. SKM Power Tools version 9.0.1.3 (Unbalanced/Single Phase Subroutine) was used for the analysis using the comprehensive ANSI/IEEE C37.13 standard for calculation of these fault currents during short-circuit. The following short circuit currents have been calculated for system components:

- Initial Symmetrical line to line short circuit current (SCC1)
- Initial Symmetrical single line to ground short circuit current (SCC2)

The SCC1 is the maximum available short circuit current at any point in the distribution system, this is generally at the point the utility company connects to the system's service entrance system. This connection is called the point of service or the service point. The available fault current, at each point in the distribution system, is based upon the contributed fault current provided by the utility (this value is provided by the serving utility or from the utilities tables). Then, through analyzing the fault current calculations, the electrical system's components' fault withstand capability will be assessed by comparing them with SCC1.

The short-circuit current should not exceed the equipment rating with required factors for the protective device.

Based on the short circuit study, calculated faults exceeded the 10 KAIC ratings of the Panels A, B, C, D, and E.

The Short Circuit Analysis in each SES SKM report summarizes the fault duties at each device. The AF incident energy summary in the SES report shows IE at the safe distance and PPE requirements for each location into the system.

2.5 Arc Flash Evaluation

Arc Flash Evaluations are used to assess arc flash hazards and to assess the work Site risk to personnel. The Occupational Safety and Health Administration (OSHA), and the National Fire Protection Association (NFPA) standard 70E provide requirements for arc flash and other work Site hazards. OSHA requires employers provide a workplace free from recognized hazards that may cause injury or death to their employees. NFPA 70E 2018 provides the Standard for Electrical Safety in the Workplace. NFPA 70E 130.5 states:

"An arc flash risk assessment shall be performed and shall determine if an arc flash hazard exists. If an arc flash hazard exists, the risk assessment shall determine appropriate safety-related work practices, the arc flash boundary, and the PPE to be used within the arc flash boundary."

Arc Flash Evaluations are used to determine the required level of personal protective equipment (PPE), arc flash boundaries, and restrictions on the work of energized equipment. This information must include on the labels as required by NFPA and OSHA standards.

NFPA 70E 130.5(H) requires electrical equipment to be field-marked with a label containing the following information:

(1) Nominal system voltage
(2) Arc flash boundary
(3) At least one of the following:

a. Available incident energy and the corresponding working distance, OR the arc flash PPE category in Table 130.7(C)(15)(a) or Table 130.7(C)(15)(b) for the equipment, but not both
b. Minimum arc rating of clothing
c. Site-specific level of PPE

Furthermore, the National Electrical Code (NEC) contains additional requirements for the installation of Arc-Flash warning labels and arc energy reduction:

110.16 Arc-Flash Hazard Warning. Electrical equipment, such as switchboards, switchgear, panelboards, industrial control panels, meter socket enclosures, and motor control centers, that in other than dwelling units, and is likely to require examination, adjustment, servicing, or maintenance while energized, shall be field or factory marked to warn qualified persons of potential electric arc flash hazards. The marking shall meet the requirements in 110.21(B) and shall be located to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

240.67 Arc Energy Reduction. Where fuses rated 1200 A or higher are installed, 240.67(A) and (B) shall apply. This requirement shall become effective January 1, 2020.

(A) Documentation. Documentation shall be available to those authorized to design, install, operate, or inspect the installation as to the location of the fuses.
(B) Method to Reduce Clearing Time. A fuse shall have a clearing time of 0.07 seconds or less at the available arcing current, or one of the following shall be provided:

(1) Differential relaying
(2) Energy-reducing maintenance switching with local status
(3) Energy-reducing active arc flash mitigation system
(4) An approved equivalent means

240.87 Arc Energy Reduction. Where the highest continuous current trip setting for which the actual overcurrent device installed in a circuit breaker is rated or can be adjusted is 1200 A or higher, 240.87(A) and (B) shall apply. Not applicable for this Campus as all Overcurrent Circuit protection is 1000 amp or less.

NFPA 70E 130.5(G) also contains information on the selection of PPE where required based on the incident energy available at the equipment. Different types of PPE are suggested dependent on the exposure level of the energy as rated in Cal/cm^2. The energy exposure levels are shown in the Incident Energy Summary in each report. The levels are defined using the following energy Cal/cm^2:

Level A: 1.2 Cal/cm^2
Level B: 4 Cal/cm^2
Level C: 8 Cal/cm^2
Level D: 25 Cal/cm^2
Level E: 40 Cal/cm^2
Level D: 100 Cal/cm^2
Level E: 120 Cal/cm^2

The upper limit for the highest rated PPE is 40 Cal/cm^2. Energy exposure beyond this upper limit is relatively unsafe with any PPE, and energized work at equipment exceeding this rating should be avoided. **Arc-Flash labels with incident energy exceeding this threshold show the required PPE as "No Safe PPE Available – Energized Work is Prohibited".**

NFPA 70E 130.7(C) describes PPE requirements in effect at specified boundaries of working distance. NFPA 70E 130.4 is effective where working within the "restricted Approach Boundary", and NFPA 70E 130.5 were working within the "Arc Flash Boundary". Previous versions of NFPA 70E 2018 contain varied names and descriptions for these boundaries. This analysis uses NFPA 70E 2018, the most recent version as of the preparation of the analysis, as the basis for descriptions of approach boundaries.

The incident energy calculations utilize information provided by the serving utility. The incident energy calculations also assume the correct settings of overcurrent protective devices for the data provided on the labels to be correct. Improper or inadequate maintenance can result in increased opening time of the overcurrent protective device(s), thus increasing the incident energy.

2.5.1 Arc Flash Labels

Equipment labels containing the incident energy level, working boundaries and PPE requirements for exposed energized work are in Appendix 6. The labels are color coded per ANSI Z535.4 and are to be field-marked per NFPA 70E 130.5(D) and NEC 110.16.

The settings used in Arc Energy Reduction or other temporary means of incident energy reduction should be reset as soon as the work is complete to return the system to the normal engineered settings. Failure to do so will result in non-selective operation of the system and may result in unnecessary loss of power to critical systems.

2.6 Coordination Analysis

A protective device Coordination Study was performed to evaluate the capability of the protective devices to provide protection under fault conditions. The Coordination Study was performed by plotting the protective device characteristics as Time-Current Characteristic (TCC) curve sets. SKM Power Tools version 9.0.1.3 was used for TCC plots and analysis in this report. Protective devices including fuses and breakers were compared in a graphed set to coordinate the operating time and current of devices adjacent to each other in the electrical system.

In many systems, compromises need to be made between coordination, protection, and service needs of the Site due to the amperage and devices in the system.

ANSI/IEEE Standard 242-2001 states, "Whether minimizing the risk of equipment damage or preserving service continuity is the more important objective depends on the operating philosophy of the particular plant or business."

Subsequent changes in devices or operation of the system may require re-evaluation of protective devices.

Time-Current Curve (TCC) sets for the systems analyzed are in the Appendix 4 report. The voltage and current are considered in the one-line diagram that show the relationship between the protective devices plotted on each curve set. The curves for each device are terminated at the maximum fault magnitude available at the device's location. The curve sets consist of the TCC of devices plotted on a log-log graph showing current and time axis. The findings based on the TCC plots do not address lack of selectivity due to instantaneous units being in series.

2.7 Load Flow Evaluation

An analysis of the system was performed to determine the maximum voltage drop, voltage phase, power factor, branches voltage, current, power losses, active and reactive power.

2.8 Energized Electrical Work Permit

An example of an Energized Electrical Work Permit is included in the Appendix. It is provided for reference and may be used as needed to meet the requirements of NFPA 70E 2018 for the facility.

3. STUDYS' RESULTS INTERPRETATION

3.1 Short Circuit Interpretation

Starting with Init.Sym.RMS provided for the service as the available symmetrical short circuit current at service equipment by the serving utility:

- SES-FS 91 is a 3PH 208V system with an APS utility provided 49.5 KA fault value.

The fault current from the service entrance to the downstream equipment is reduced proportionately based on the impedance of each successive buss or line. Short Circuit Current ratings, or Ampere Interrupting Capacity ratings, are based upon the available energy at each specific point in the electrical system according to the short circuit study.

The model utilizes information obtained from field observations and compared the available fault current with the interrupting and/or short circuit ratings (IC) of the protective devices in the electrical system.

Based on short circuit study, Panels A, B, C, D, and E exceed their KAIC values. Issues with the electrical system at the main location are noted in the Excel report. *Reference Excel field report.*

Eq. Name	SES-FS 91	Panel A	Panel B	Panel C	Panel D	Panel E
SC RATING(KASCw)	65KA ☑	10KA ☒	10KA ☒	10KA ☒	10KA ☒	10KA ☒
$I_{k"-3Ph.-Init.Sym.}$	43.9KA ↗	20.1KA ↗	16.2KA ↗	26.3KA ↗	24.5KA ↗	21.9KA ↗

Table (1)

NOTE 1:

☑ : Passed. Equipment is adequate to use under circumstance.

☒ : Failed. Equipment is not adequate to use under circumstance. Client must upgrade the panel or perhaps the circuit breakers with higher ratings as proposed in this report.

3.2 Arc Flash Study Interpretation

The analysis of faults and protective devices were used to evaluate incident energy in the electrical system. These rapid clearing times help to reduce the time that the arc is ON. The quicker an overcurrent device opens or clears the fault, a lower value of Incident Energy is expected and in turn, lowers the AF categories. The AF study also evaluated the incident energy for the facility where the system(s) supply was provided.

The incident energy (IE) at the service point, is elevated, as we did not consider any MV circuit breaker on transformer primary side as the serving utility will not provide this information. It should be noted that where a MV CB / or fuse on transformer primary is provided, the IE provided by the utility system will be significantly decreased.

All sources of energy should follow lock-out tag-out procedures and the switchgear should be in a constant de-energized state when servicing, modifying, or maintaining the equipment. The following general site recommendations are:

The worst-case energy levels should be utilized in developing energized electrical safety procedures and other PPE required for the site.

Voltage should always be verified to be equal to or less than the indicated voltage on the provided labels and/or the nameplate provided with the equipment, or the findings of this report will be invalidated.

Labels are to be printed with the following color code as per customer request.

INCIDENT ENERGY (cal/cm^2)	CLOTHING DESCRIPTION	COLOR CODE
<1.2	Non-melting or untreated natural fiber long-sleeve shirt, long pants or coveralls, and other PPE per NFPA 70E-2018 Article 130.7(C).	
1.2-12	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>12-40	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>40*	INCIDENT ENERGIES AT THIS LOCATION EXCEEDS THE MAXIMUM SAFE WORKING LEVEL. ENERGIZED WORK IS NOT RECOMMENDED	

3.30 Coordination Study Interpretation

The short circuit analysis of faults was modeled with protective devices in the electrical system. Inserting all protective elements in one diagram could cause confusion, so each radial branch's TCC have been shown in individual TCC diagrams.

Typical TCC curves are provided in Appendix 4.

TCC diagrams show Circuit breaker to cable coordination and do not call out undersized bus systems. It should be noted that changing overcurrent device sizes or settings may introduce additional hazards or issues; any changes should be done in consultation with a registered electrical engineer.

3.40 Load Flow Study Interpretation

The load flow study calculated all system nominal currents, voltages, and power consumption throughout the distribution system assuming normal operation of the facility with nominal demands.

Assumptions for the facility demand loads had to be utilized to evaluate the system. The indicated loads are not actual and should be independently verified. It is recommended, as part of a continuing maintenance program, to periodically conduct load studies whenever systems are modified or equipment is added. The study should determine the actual loads used during the system operation and for a period of not less than 30 days. Based upon the study's findings, it may become necessary to remove or relocate loads or, it may find that load balancing may become necessary. It should be noted that actual loads are often significantly less than the calculated loads mandated by the NEC as these calculations tend to be very conservative.

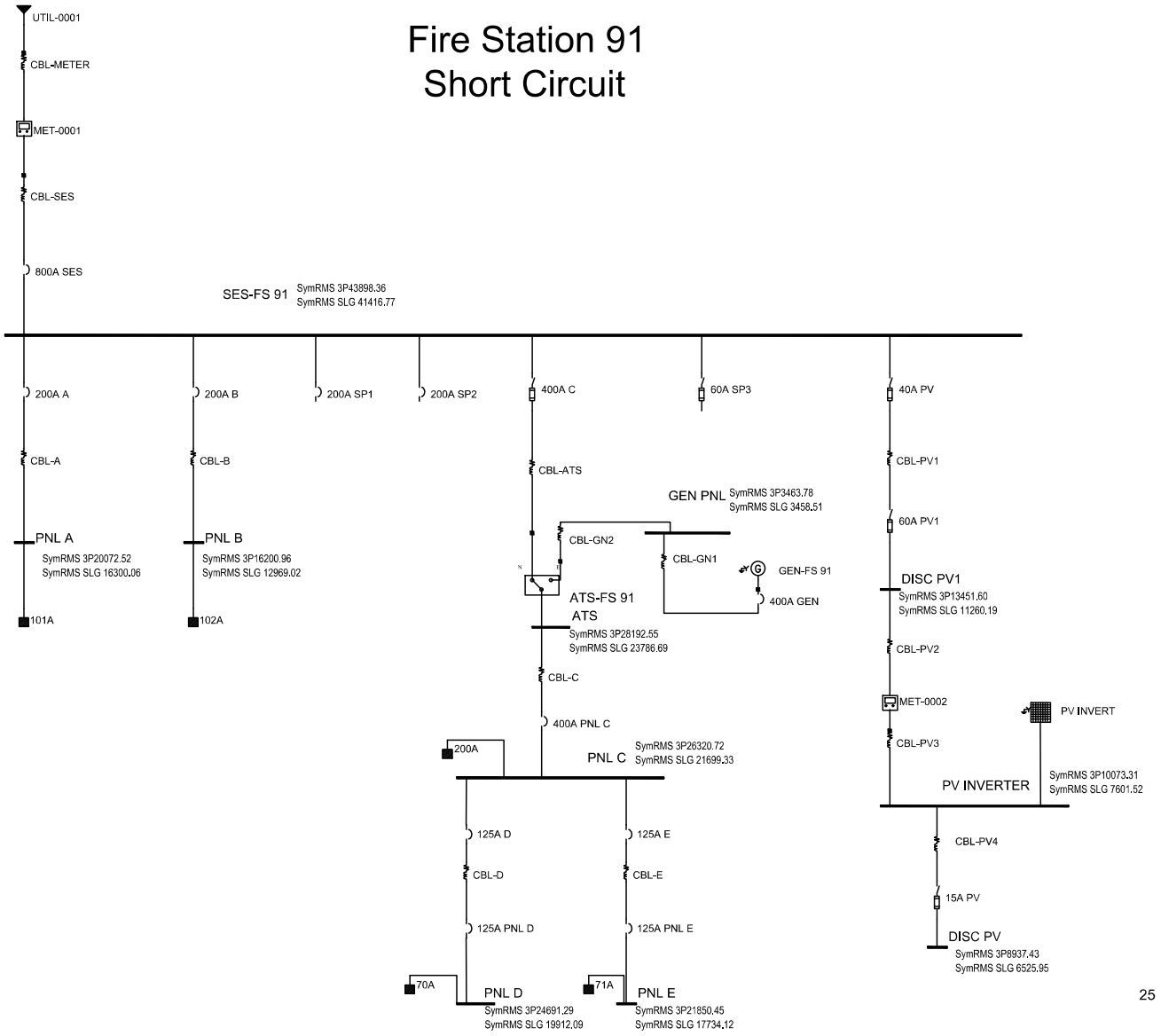
OCPD: Over Current Protection Device (Fuse/Breaker) are acceptable based upon estimated loads.

It appears that the voltage drop for the campus distribution system's feeders are acceptable. It should be noted that where voltage drop is excessive (greater than 5%) it may create operational issues (impacting the proper operation of data processing equipment as an example) and increase operational costs, it can also reduce the life expectancy of equipment such as motors and HVAC equipment and impact the proper operation of overcurrent devices and will increase clearing time which will also increase the incident energy of an arc flash. Finally, excessive voltage drop can also damage conductor insulation due to the increased heating of the conductor. Where these calculations indicate excessive voltage drop is present, the systems components should be evaluated by a registered electrical engineer.

APPENDIX 1

SHORT CIRCUIT SKM REPORT

Fire Station 91
Short Circuit



Project: Fire Station 91
Base Project

DAPPER Fault Contribution Complete Report

Comprehensive Short Circuit Study Settings

Three Phase Fault	Yes	**Faulted Bus**	All Buses
Single Line to Ground	Yes	**Bus Voltages**	First Bus From Fault
Line to Line Fault	No	**Branch Currents**	First Branch From Fault
Line to Line to Ground	No	**Phase or Sequence**	Report phase quantities
Motor Contribution	Yes	**Fault Current Calculation**	Asymmetrical RMS (with DC offset and Decay)
Transformer Tap	Yes	**Asym Fault Current at Time**	0.50 **Cycles**
Xformer Phase Shift	Yes		

			Initial Symmetrical Amps				Asymmetrical Amps				Init Sym Neutral Amps	
Bus Name	**Contributions**		**3 Phase**	**SLG**	**LLG**	**LL**	**3 Phase**	**SLG**	**LLG**	**LL**	**SLG**	**LLG**
BUS-0001			**49,563**	**49,563**	**0**	**0**	**68,531**	**68,530**	**0**	**0**		
CBL-METER	CABLE	In	58	58	0	0	80	80	0	0	58	
UTIL-0001	UTILITY	In	49,505	49,505	0	0	68,450	68,450	0	0	49,505	
BUS-0002			**45,222**	**43,254**	**0**	**0**	**56,851**	**52,430**	**0**	**0**		
CBL-METER	CABLE	In	45,164	43,197	0	0	56,778	52,360	0	0	43,192	
CBL-SES	CABLE	In	58	58	0	0	73	71	0	0	63	
SES-FS 91			**43,898**	**41,417**	**0**	**0**	**53,888**	**48,798**	**0**	**0**		

Bus Name	Contributions		Initial Symmetrical Amps 3 Phase	SLG	LLG	LL	Asymmetrical Amps 3 Phase	SLG	LLG	LL	Init Sym Neutral Amps SLG	LLG
CBL-A	CABLE	In	0	0	0	0	0	0	0	0		
CBL-ATS	CABLE	In	0	0	0	0	0	0	0	0		
CBL-B	CABLE	In	0	0	0	0	0	0	0	0		
CBL-PV1	CABLE	In	58	58	0	0	71	69	0	0	65	
CBL-SES	CABLE	In	43,840	41,359	0	0	53,817	48,730	0	0	41,353	
PNL A			**20,073**	**16,300**	**0**	**0**	**20,201**	**16,424**	**0**	**0**		
CBL-A	CABLE	In	20,073	16,300	0	0	20,201	16,424	0	0	16,300	
PNL B			**16,201**	**12,969**	**0**	**0**	**16,251**	**13,028**	**0**	**0**		
CBL-B	CABLE	In	16,201	12,969	0	0	16,251	13,028	0	0	12,969	
BUS-0009			**3,475**	**3,475**	**0**	**0**	**5,451**	**5,451**	**0**	**0**		
CBL-GN1	CABLE	In	0	0	0	0	0	0	0	0		
GEN-FS 91	GEN	In	3,475	3,475	0	0	5,451	5,451	0	0	3,475	
PNL C			**26,321**	**21,699**	**0**	**0**	**26,830**	**22,029**	**0**	**0**		
CBL-C	CABLE	In	26,321	21,699	0	0	26,830	22,029	0	0	21,699	
CBL-D	CABLE	In	0	0	0	0	0	0	0	0		
CBL-E	CABLE	In	0	0	0	0	0	0	0	0		

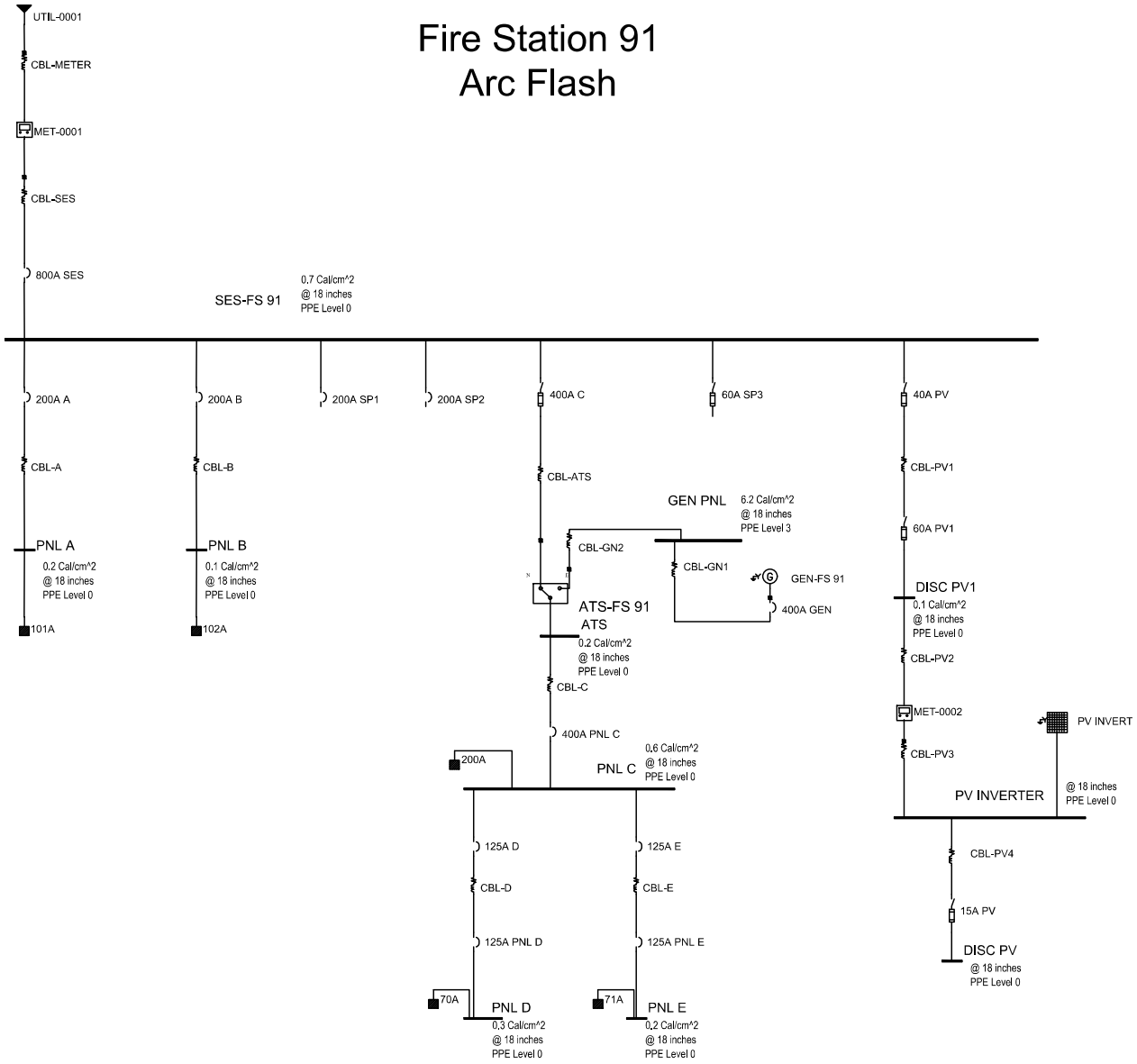
Bus Name	Contributions		Initial Symmetrical Amps 3 Phase	SLG	LLG	LL	Asymmetrical Amps 3 Phase	SLG	LLG	LL	Init Sym Neutral Amps SLG	LLG
PNL D			**24,691**	**19,912**	**0**	**0**	**25,038**	**20,101**	**0**	**0**		
CBL-D	CABLE	In	24,691	19,912	0	0	25,038	20,101	0	0	19,912	
PNL E			**21,850**	**17,734**	**0**	**0**	**21,994**	**17,841**	**0**	**0**		
CBL-E	CABLE	In	21,850	17,734	0	0	21,994	17,841	0	0	17,734	
DISC PV1			**13,452**	**11,260**	**0**	**0**	**13,452**	**11,260**	**0**	**0**		
CBL-PV1	CABLE	In	13,422	11,231	0	0	13,422	11,231	0	0	11,223	
CBL-PV2	CABLE	In	58	58	0	0	58	58	0	0	77	
BUS-0015			**11,526**	**9,084**	**0**	**0**	**11,526**	**9,084**	**0**	**0**		
CBL-PV2	CABLE	In	11,499	9,058	0	0	11,499	9,058	0	0	9,049	
CBL-PV3	CABLE	In	58	58	0	0	58	58	0	0	83	
PV INVERTER			**9,396**	**6,947**	**0**	**0**	**9,396**	**6,947**	**0**	**0**		
CBL-PV3	CABLE	In	9,371	6,924	0	0	9,371	6,924	0	0	6,915	
CBL-PV4	CABLE	In	0	0	0	0	0	0	0	0		
PV INVERT	GEN	In	58	58	0	0	58	58	0	0	89	
DISC PV			**8,397**	**6,035**	**0**	**0**	**8,397**	**6,035**	**0**	**0**		

Bus Name	Contributions		Initial Symmetrical Amps 3 Phase	Initial Symmetrical Amps SLG	Initial Symmetrical Amps LLG	Initial Symmetrical Amps LL	Asymmetrical Amps 3 Phase	Asymmetrical Amps SLG	Asymmetrical Amps LLG	Asymmetrical Amps LL	Init Sym Neutral Amps SLG	Init Sym Neutral Amps LLG
CBL-PV4	CABLE	In	8,397	6,035	0	0	8,397	6,035	0	0	6,035	
GEN PNL			**3,464**	**3,459**	**0**	**0**	**5,389**	**5,373**	**0**	**0**		
CBL-GN1	CABLE	In	3,464	3,459	0	0	5,389	5,373	0	0	3,459	
CBL-GN2	CABLE	In	0	0	0	0	0	0	0	0		
ATS			**28,193**	**23,787**	**0**	**0**	**28,874**	**24,300**	**0**	**0**		
CBL-C	CABLE	In	0	0	0	0	0	0	0	0		
BUS-0021			**28,193**	**23,787**	**0**	**0**	**28,874**	**24,300**	**0**	**0**		
CBL-ATS	CABLE	In	28,193	23,787	0	0	28,874	24,300	0	0	23,787	
ATS-FS 91		In	0	0	0	0	0	0	0	0		
BUS-0023			**3,345**	**3,286**	**0**	**0**	**4,798**	**4,649**	**0**	**0**		
CBL-GN2	CABLE	In	3,345	3,286	0	0	4,798	4,649	0	0	3,286	
ATS-FS 91		In	28,193	23,787	0	0	28,874	24,300	0	0		

APPENDIX 2

ARC FLASH SKM REPORT

Fire Station 91
Arc Flash



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Project: Fire Station 91
Base Project

Arc Flash Evaluation Report

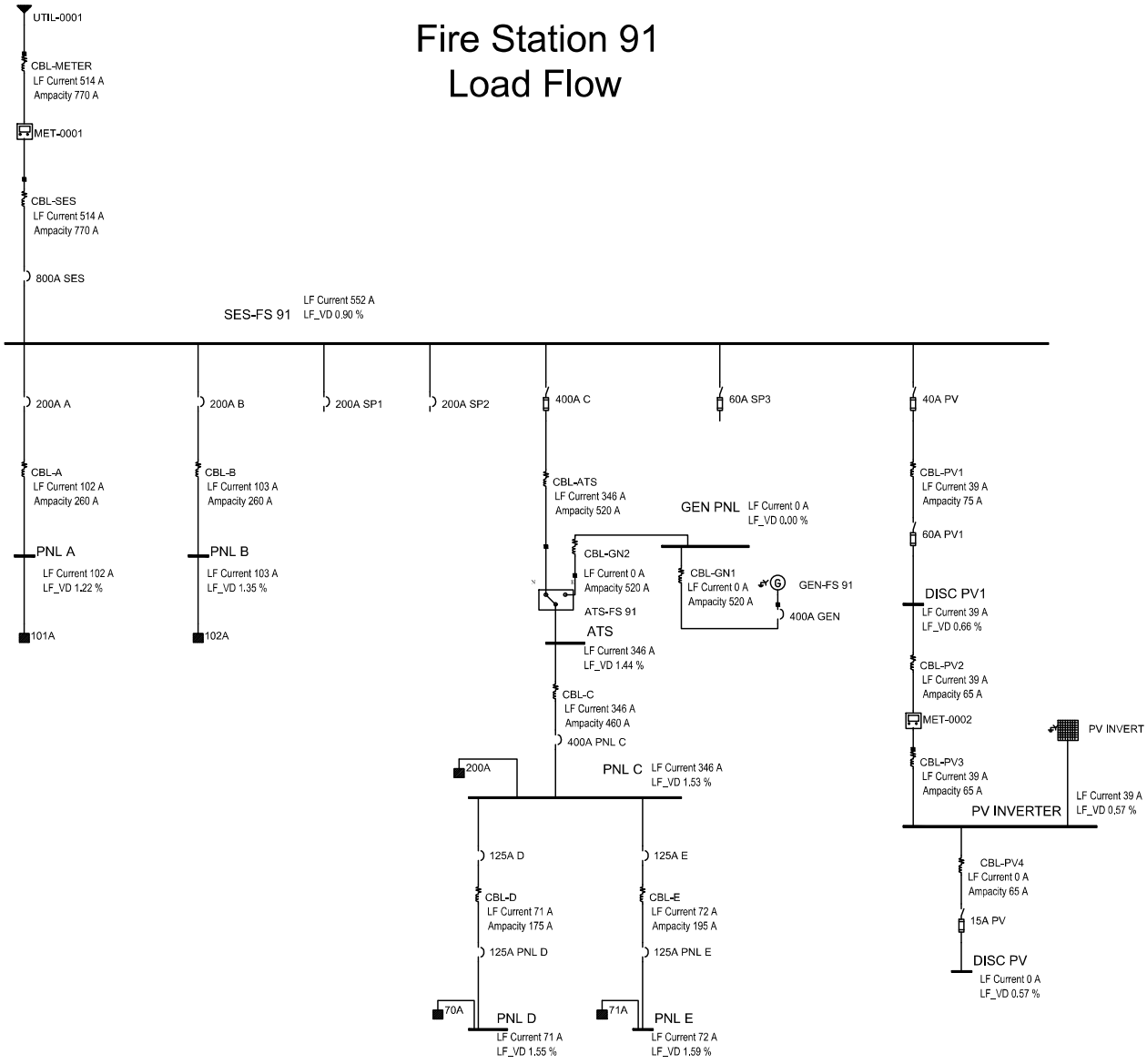
Bus Name	Bus kV	Protective Device Name	Bus Bolted/ Arcing (kA)	Prot Bolted/ Arcing (kA)	Trip/ Breaker Time (sec.)	Equip Type/ Gap (mm)	Electrode Config / WC Config	Box Height/ Width (in)	Box Depth (in)	ArcFlash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	PPE
ATS	0.208	400A C	28.19	28.19	0.008	PNL	VCB	14	10	6.17	18.00	0.22	No Arc-rated PPE Required
			10.50	10.50	0.000	25	VCB	12					
DISC PV	0.208	15A PV	8.40	8.40	0.004	PNL	VCB	14	10	2.00	18.00	0.04	No Arc-rated PPE Required
			3.79	3.79	0.000	25	VCB	12					
DISC PV1	0.208	60A PV1	13.45	13.42	0.004	PNL	VCB	14	10	2.78	18.00	0.06	No Arc-rated PPE Required
			6.24	6.22	0.000	25	VCB	12					
GEN PNL	0.208	400A GEN	3.46	3.46	2.000	PNL	VCB	14	10	50.45	18.00	6.23	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			1.44	1.44	0.000	25	VCB	12					
PNL A	0.208	200A A	20.07	20.07	0.007	PNL	VCB	14	10	5.19	18.00	0.16	No Arc-rated PPE Required
			9.21	9.21	0.000	25	VCB	12					
PNL B	0.208	200A B	16.20	16.20	0.008	PNL	VCB	14	10	4.74	18.00	0.14	No Arc-rated PPE Required
			7.52	7.52	0.000	25	VCB	12					
PNL C	0.208	400A PNL C	26.32	26.32	0.021	PNL	VCB	14	10	11.73	18.00	0.61	No Arc-rated PPE Required
			11.58	11.58	0.000	25	VCB	12					
PNL D	0.208	125A D	24.69	24.69	0.010	PNL	VCB	14	10	7.05	18.00	0.27	No Arc-rated PPE Required
			11.01	11.01	0.000	25	VCB	12					
PNL E	0.208	125A E	21.85	21.85	0.010	PNL	VCB	14	10	6.58	18.00	0.24	No Arc-rated PPE Required
			9.93	9.93	0.000	25	VCB	12					

Bus Name	Bus kV	Protective Device Name	Bus Bolted/ Arcing (kA)	Prot Bolted/ Arcing (kA)	Trip/ Breaker Time (sec.)	Equip Type/ Gap (mm)	Electrode Config / WC Config	Box Height/ Width (in)	Box Depth (in)	ArcFlash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	PPE
PV INVERTER	0.208	40A PV	9.40	9.37	0.004	PNL	VCB	14	10	2.17	18.00	0.04	No Arc-rated PPE Required
			4.27	4.26	0.000	25	VCB	12					
SES-FS 91	0.208	800A SES	43.90	43.84	0.017	PNL	VCB	14	10	12.84	18.00	0.70	No Arc-rated PPE Required
			15.71	15.69	0.000	25	VCB	12					

APPENDIX 3

LOAD FLOW STUDY

Fire Station 91
Load Flow



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Project: Fire Station 91
Base Project

Load Flow Summary Report

Load Flow Study Settings

Include Source Impedance	Yes	**Bus Voltage Drop %**	5.00
Solution Method	Exact (Iterative)	**Branch Voltage Drop %**	3.00
Load Specification	Connected Load		

Swing Generators

Source	In/Out Service	Vpu	Angle	kW	kvar	VD%	Utility Impedance
GEN-FS 91	In	1.00	0.00	0.0	0.0	0.00	3.99 +*j* 79.79
UTIL-0001	In	1.00	0.00	145.4	112.3	0.73	0.70 +*j* 5.56

PQ Generators

Participation PQ Source	In/Out Service	VD %	Vp.u.	KW	KVAR
PV INVERT	In	0.57	0.990	12.6	6.1

Buses

Bus Name	In/Out Service	Design Volts	LF Volts	Angle Degree	PU Volts	%VD
ATS	In	208	205	-0.41	0.99	1.44
DISC PV	In	208	207	-0.50	0.99	0.57
DISC PV1	In	208	207	-0.48	0.99	0.66
GEN PNL	In	208	208	0.00	1.00	0.00
PNL A	In	208	205	-0.42	0.99	1.22
PNL B	In	208	205	-0.41	0.99	1.35
PNL C	In	208	205	-0.41	0.98	1.53
PNL D	In	208	205	-0.40	0.98	1.55
PNL E	In	208	205	-0.40	0.98	1.60
PV INVERTER	In	208	207	-0.50	0.99	0.57
SES-FS 91	In	208	206	-0.43	0.99	0.90

Cables

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
ATS PNL C	CBL-C	In	0.09	98.4 0.1	73.8 0.1	123.0 0.1	346.4 75.3	0.80
BUS-0001 BUS-0002	CBL-METER	In	0.12	145.4 0.2	112.3 0.2	183.7 0.2	513.7 66.7	0.79
BUS-0002 SES-FS 91	CBL-SES	In	0.04	145.2 0.1	112.1 0.1	183.5 0.1	513.7 66.7	0.79
BUS-0015	CBL-PV3	In	0.05	-12.6	-6.1	14.0	39.1	0.90

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
PV INVERTER				0.0	0.0	0.0	60.1	
DISC PV1	CBL-PV2	In	0.05	-12.6	-6.1	14.0	39.1	0.90
BUS-0015				0.0	0.0	0.0	60.1	
GEN PNL	CBL-GN1	In	0.00	0.0	0.0	0.0	0.0	0.00
BUS-0009				0.0	0.0	0.0	0.0	
GEN PNL	CBL-GN2	In	0.00	0.0	0.0	0.0	0.0	0.00
BUS-0023				0.0	0.0	0.0	0.0	
PNL C	CBL-D	In	0.02	20.2	15.1	25.2	71.1	0.80
PNL D				0.0	0.0	0.0	40.6	
PNL C	CBL-E	In	0.06	20.5	15.4	25.6	72.2	0.80
PNL E				0.0	0.0	0.0	37.0	
PV INVERTER	CBL-PV4	In	0.00	0.0	0.0	0.0	0.0	0.00
DISC PV				0.0	0.0	0.0	0.0	
SES-FS 91	CBL-ATS	In	0.54	99.0	74.1	123.7	346.4	0.80
BUS-0021				0.6	0.4	0.7	66.6	
SES-FS 91	CBL-PV1	In	0.24	-12.6	-6.1	14.0	39.1	0.90
DISC PV1				0.0	0.0	0.0	52.1	
SES-FS 91	CBL-A	In	0.32	29.2	21.9	36.5	102.2	0.80
PNL A				0.1	0.1	0.1	39.3	
SES-FS 91	CBL-B	In	0.45	29.5	22.1	36.9	103.4	0.80
PNL B				0.1	0.1	0.2	39.8	

Project: Fire Station 91
Generator

Load Flow Summary Report

Load Flow Study Settings

Include Source Impedance	Yes	**Bus Voltage Drop %**	5.00
Solution Method	Exact (Iterative)	**Branch Voltage Drop %**	3.00
Load Specification	Connected Load		

Swing Generators

Source	In/Out Service	Vpu	Angle	kW	kvar	VD%	Utility Impedance
GEN-FS 91	In	1.00	0.00	69.9	52.4	4.84	3.99 +*j* 79.79
UTIL-0001	In	1.00	0.00	46.2	38.0	0.24	0.70 +*j* 5.56

PQ Generators

Participation PQ Source	In/Out Service	VD %	Vp.u.	KW	KVAR
PV INVERT	In	-0.03	1.000	12.6	6.1

Buses

Bus Name	In/Out Service	Design Volts	LF Volts	Angle Degree	PU Volts	%VD
ATS	In	208	197	-3.21	0.95	5.32
DISC PV	In	208	208	-0.20	1.00	-0.03
DISC PV1	In	208	208	-0.18	1.00	0.06
GEN PNL	In	208	198	-3.23	0.95	4.88
PNL A	In	208	207	-0.12	0.99	0.61
PNL B	In	208	206	-0.11	0.99	0.74
PNL C	In	208	197	-3.21	0.95	5.39
PNL D	In	208	197	-3.21	0.95	5.41
PNL E	In	208	197	-3.20	0.95	5.45
PV INVERTER	In	208	208	-0.20	1.00	-0.03
SES-FS 91	In	208	207	-0.13	1.00	0.30

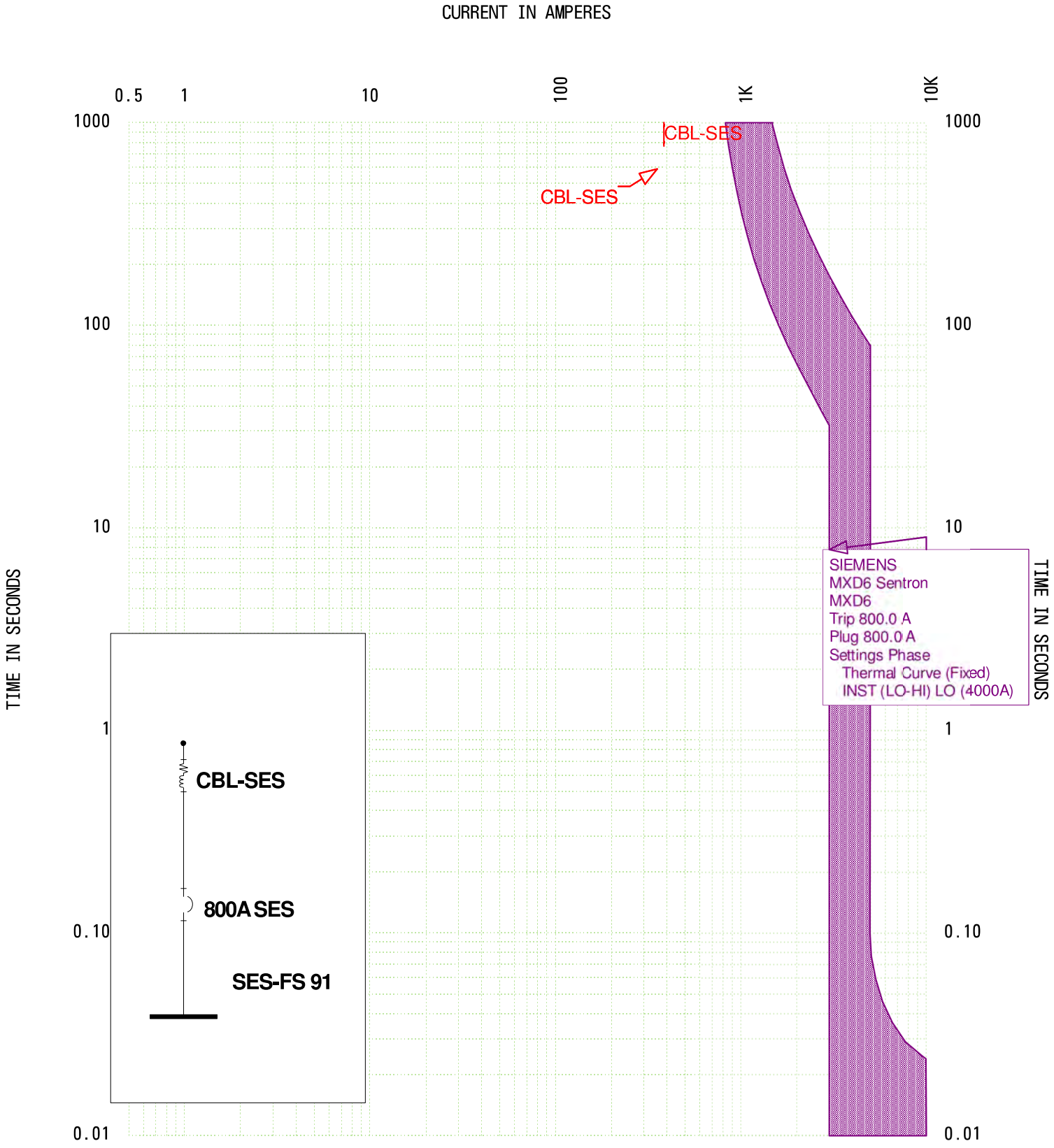
Cables

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
ATS PNL C	CBL-C	In	0.07	69.5 0.0	52.1 0.0	86.9 0.1	254.8 55.4	0.80
BUS-0001 BUS-0002	CBL-METER	In	0.04	46.2 0.0	38.0 0.0	59.8 0.0	166.4 21.6	0.77
BUS-0002 SES-FS 91	CBL-SES	In	0.01	46.2 0.0	37.9 0.0	59.8 0.0	166.4 21.6	0.77
BUS-0015	CBL-PV3	In	0.05	-12.6	-6.1	14.0	38.8	0.90

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
PV INVERTER				0.0	0.0	0.0	77.7	
DISC PV1 BUS-0015	CBL-PV2	In	0.05	-12.6 0.0	-6.1 0.0	14.0 0.0	38.8 59.8	0.90
GEN PNL BUS-0009	CBL-GN1	In	0.04	-69.9 0.0	-52.4 0.0	87.3 0.0	254.8 49.0	0.80
GEN PNL BUS-0023	CBL-GN2	In	0.43	69.9 0.3	52.4 0.2	87.3 0.4	254.8 49.0	0.80
PNL C PNL D	CBL-D	In	0.02	20.2 0.0	15.1 0.0	25.2 0.0	74.0 42.3	0.80
PNL C PNL E	CBL-E	In	0.07	20.5 0.0	15.4 0.0	25.6 0.0	75.1 38.5	0.80
PV INVERTER DISC PV	CBL-PV4	In	0.00	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.00
SES-FS 91 BUS-0021	CBL-ATS	In	0.00	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.00
SES-FS 91 DISC PV1	CBL-PV1	In	0.23	-12.6 0.0	-6.1 0.0	14.0 0.0	38.8 51.8	0.90
SES-FS 91 PNL A	CBL-A	In	0.32	29.2 0.1	21.9 0.1	36.5 0.1	101.6 39.1	0.80
SES-FS 91 PNL B	CBL-B	In	0.45	29.5 0.1	22.1 0.1	36.9 0.2	102.8 39.5	0.80

APPENDIX 4

TCC REPORT

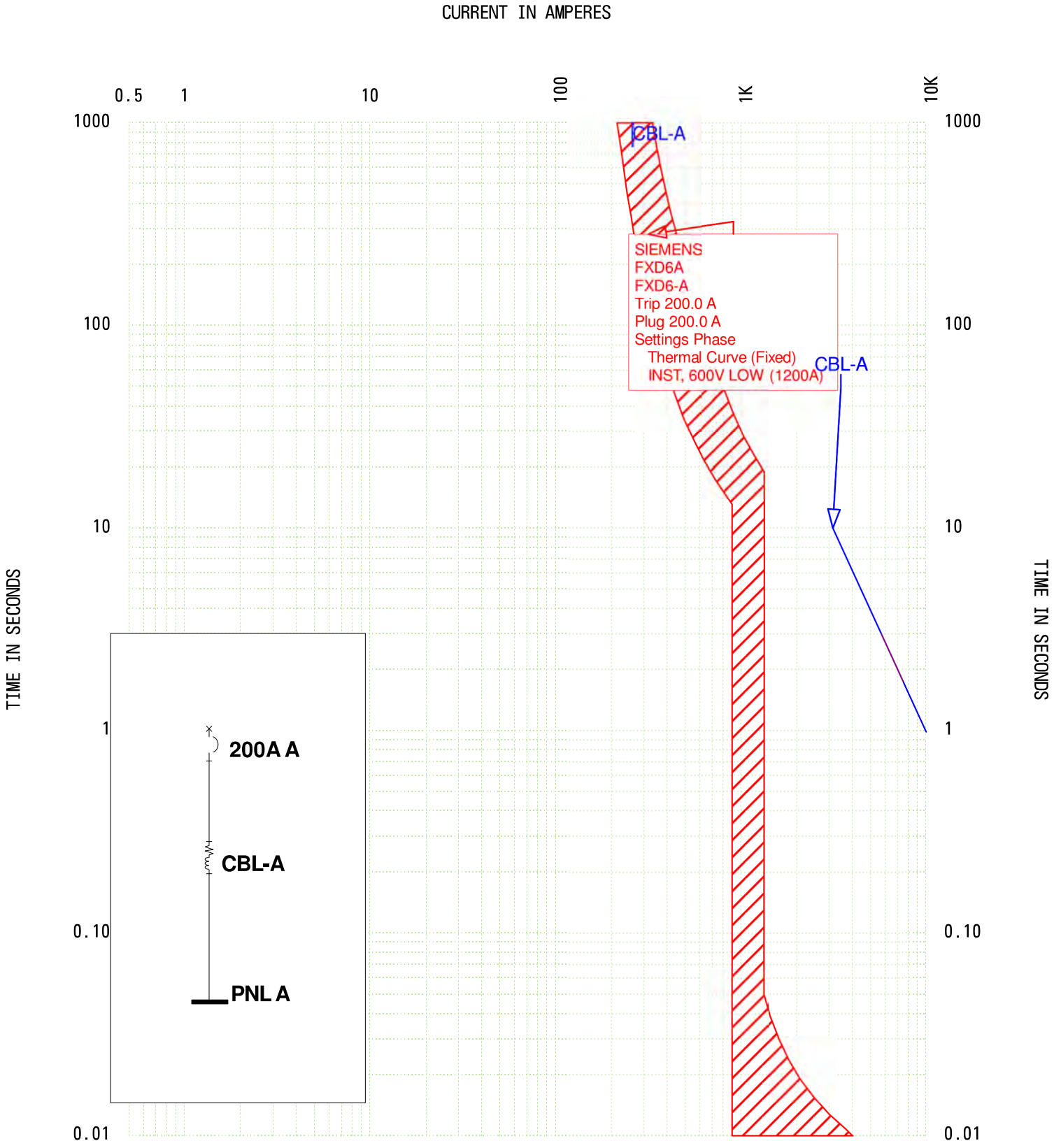


TCC Name: SES-FS 91
Oneline: SES-FS 91
June 9, 2025 9:46 AM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.

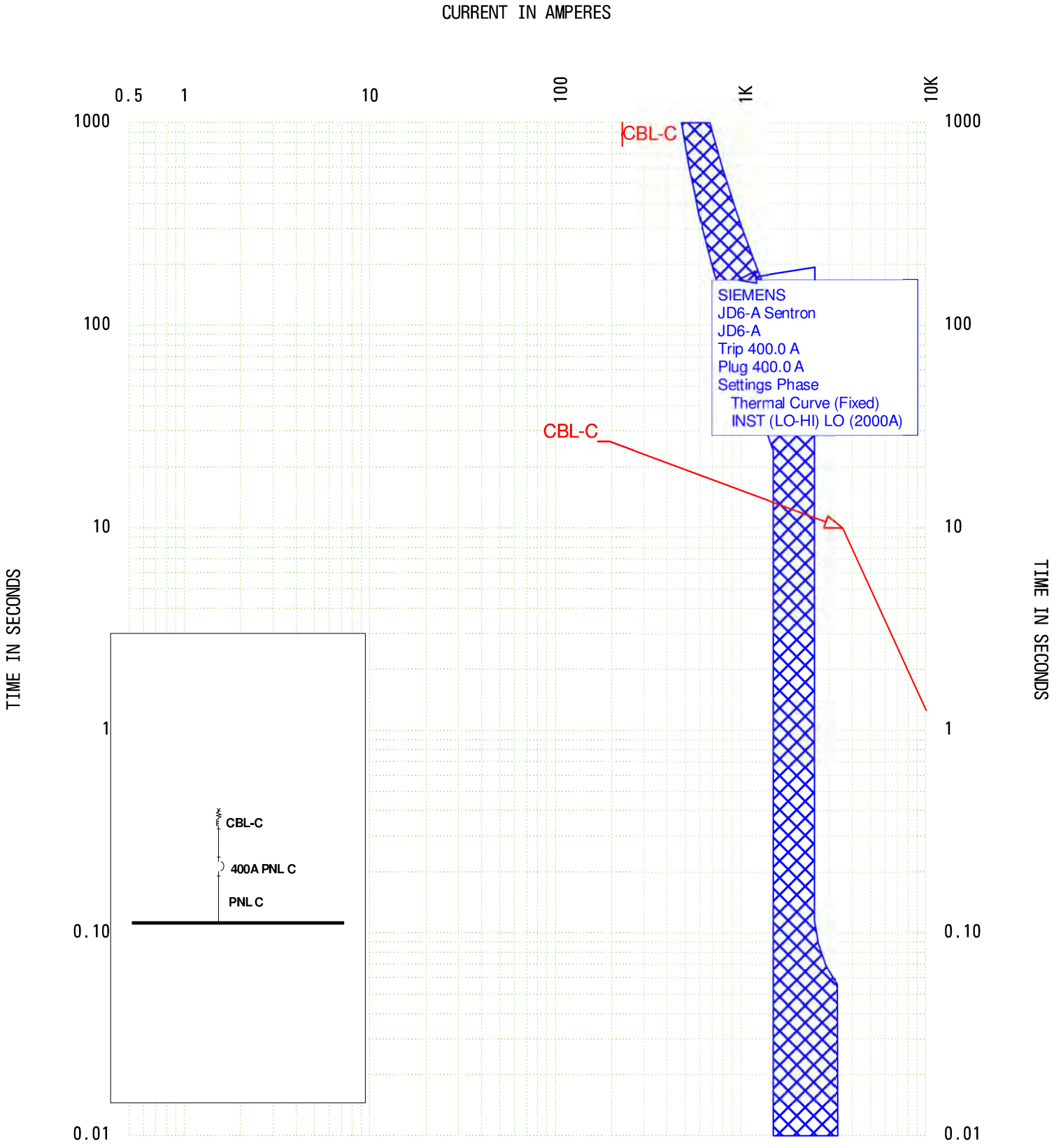


TCC Name: Pnls A&B
Oneline: Pnls A&B
June 9, 2025 10:04 AM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.

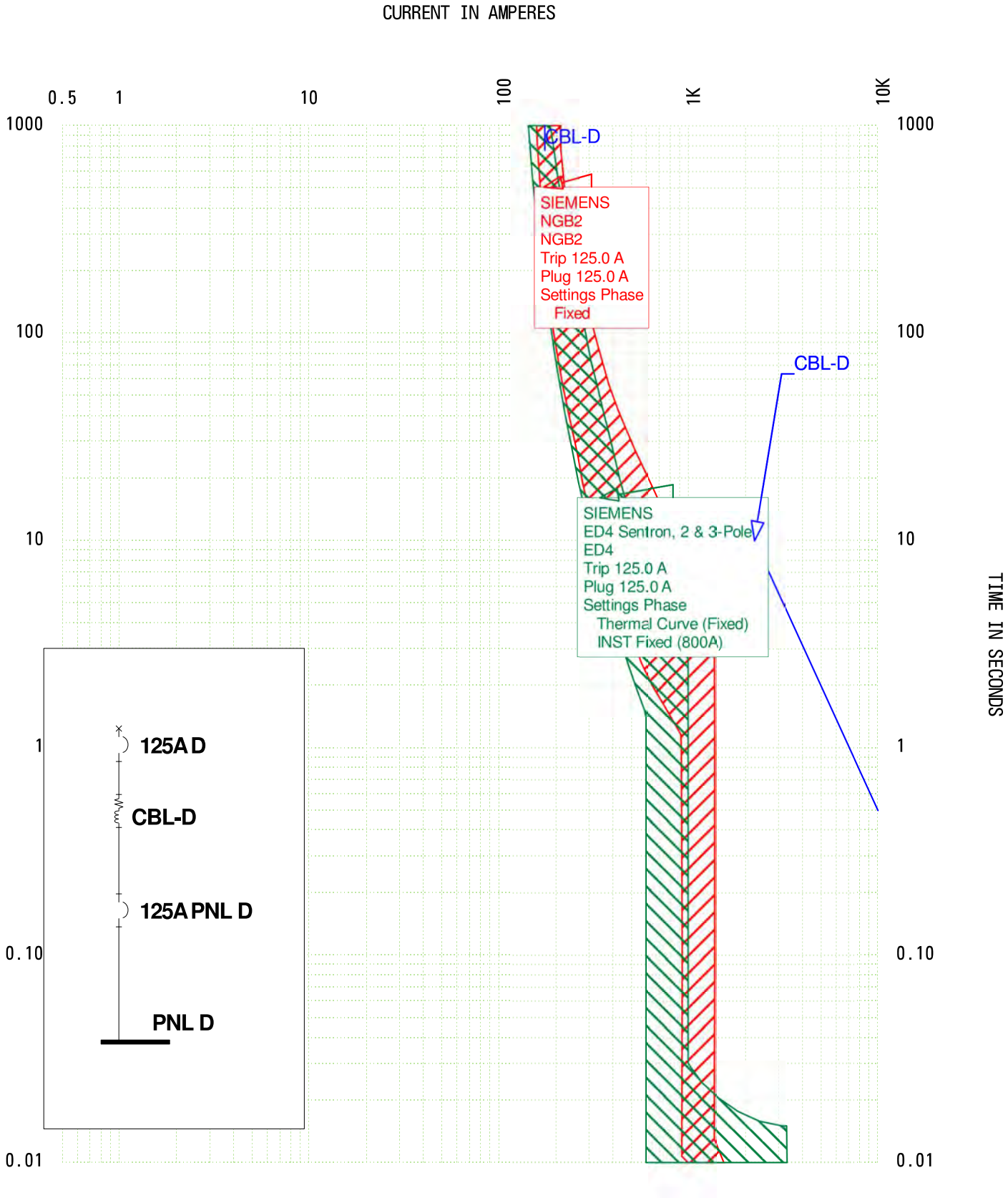


TCC Name: Pnl C
Oneline: Pnl C
June 9, 2025 9:41 AM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.



TCC Name: Pnls D&E
Oneline: Pnls D&E
June 9, 2025 10:07 AM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.

CURRENT IN AMPERES

0.5 1 10 100 1K 10K

1000 100 10 1 0.10 0.01

TIME IN SECONDS

CBL-ATS

BUSSMANN
JKS, 600V Class J
JKS
Trip 400.0 A

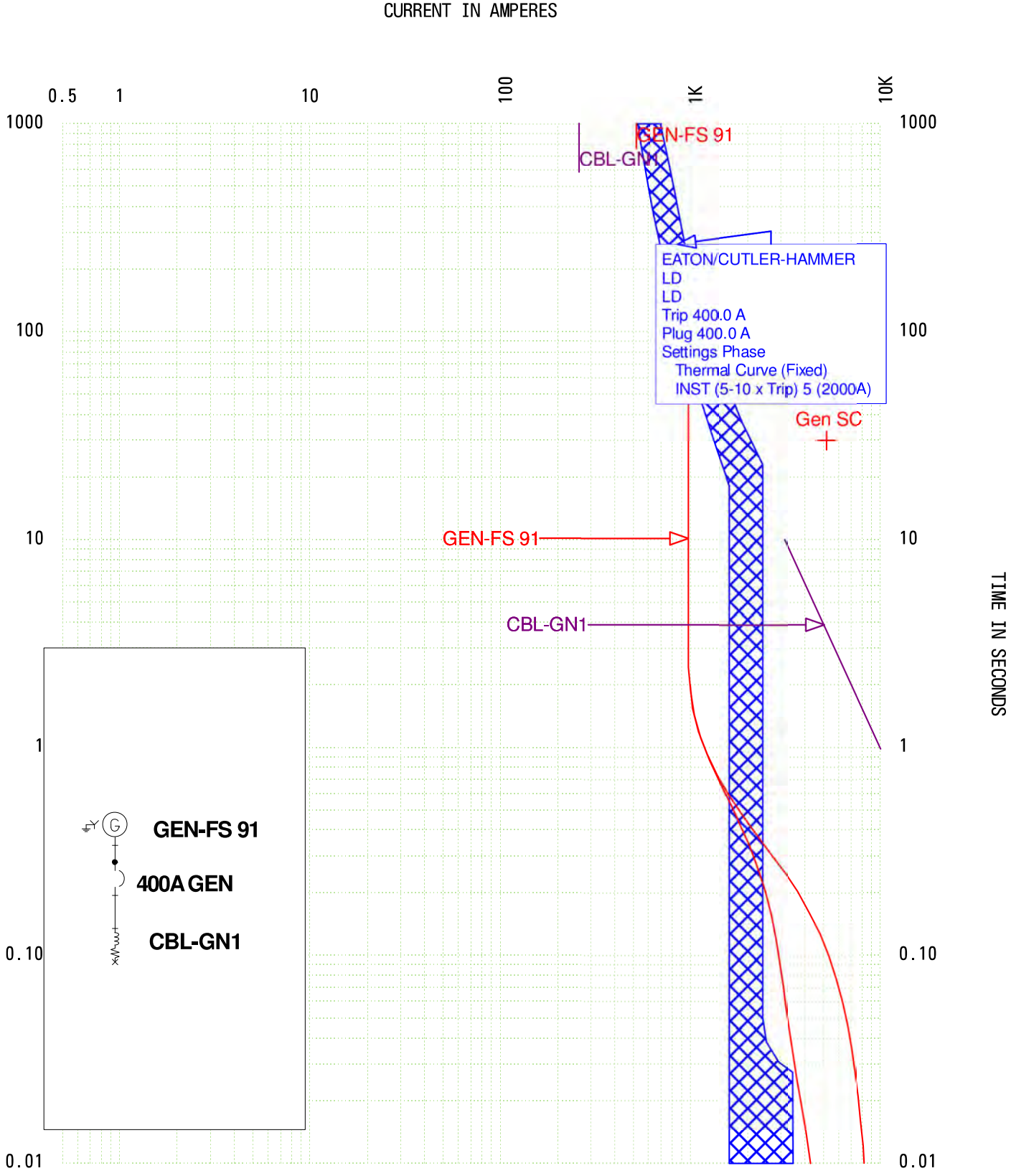
CBL-ATS

400A C

CBL-ATS

ATS-FS 91
ATS

TCC Name: ATS	Current Scale x 1	Reference Voltage: 208
Oneline: ATS		
June 9, 2025 10:23 AM		SKM Systems Analysis, Inc.

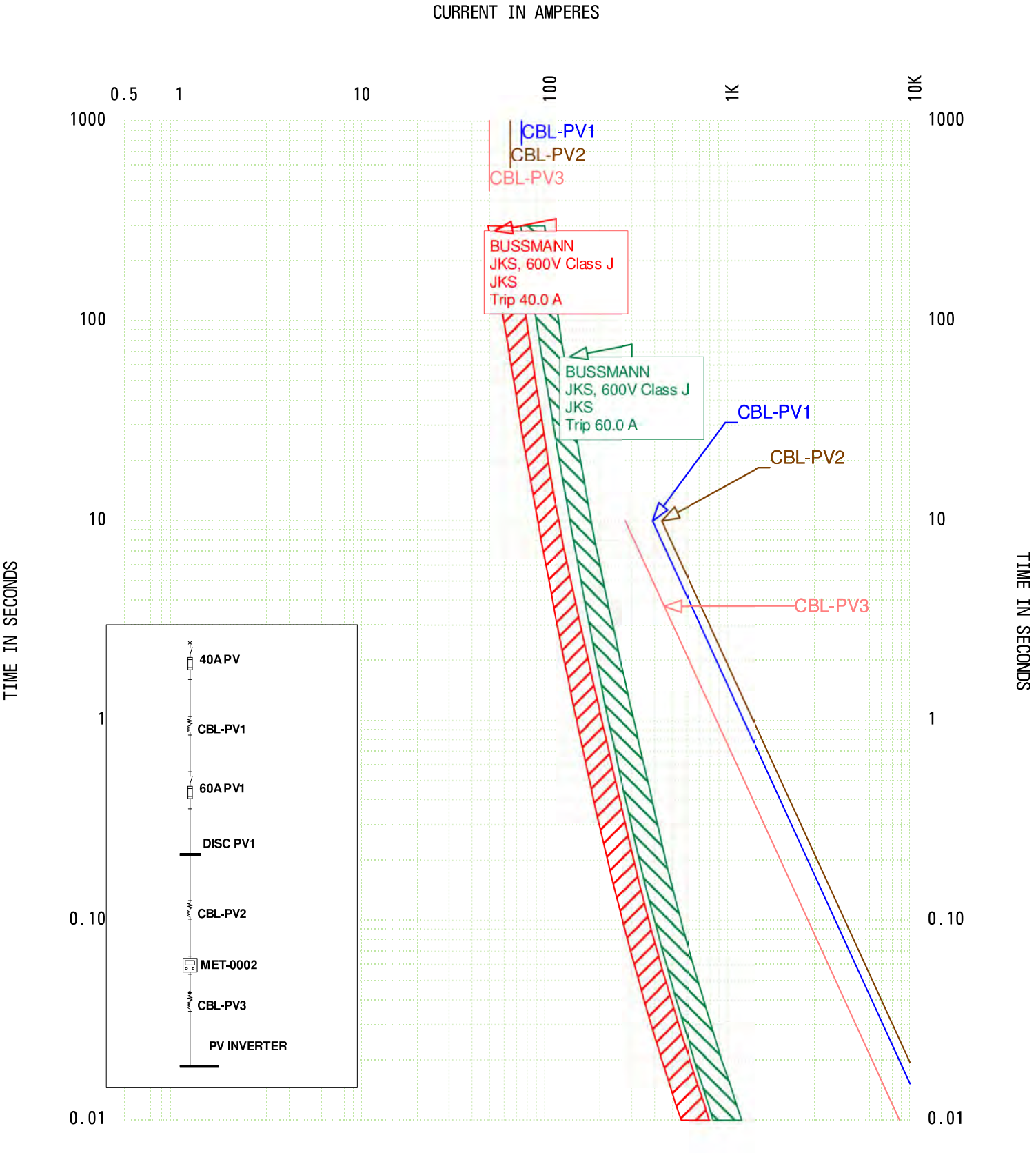


TCC Name: 150 KW Generator
Oneline: 150 KW Generator
June 9, 2025 9:34 AM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.

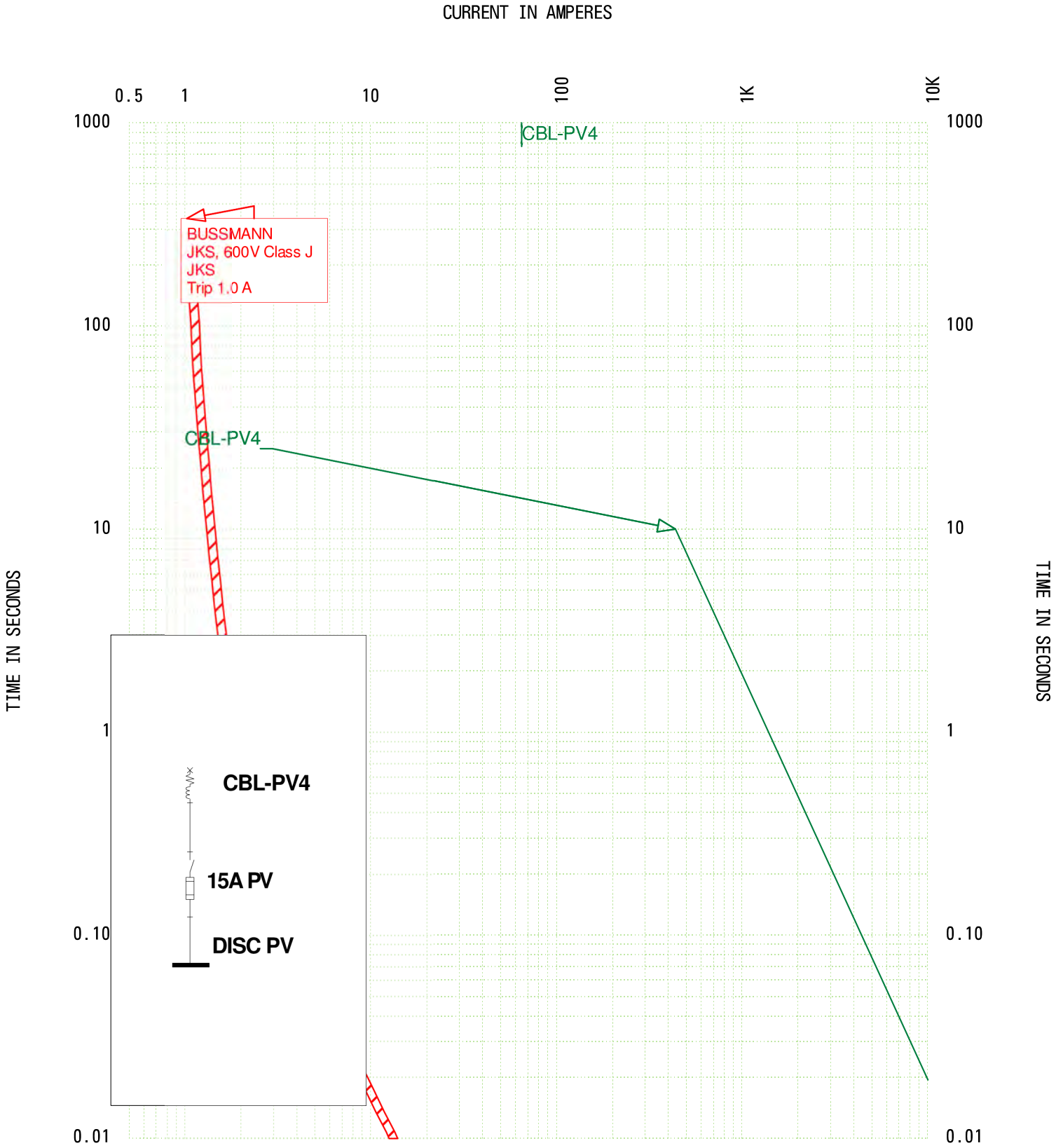


TCC Name: PV Inverter
Oneline: PV Inverter
June 9, 2025 10:13 AM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.



TCC Name: Individual PV arrays
Oneline: Individual PV arrays
June 9, 2025 10:15 AM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.

APPENDIX 5

WORK PERMIT SAMPLE

ENERGIZED ELECTRICAL WORK PERMIT

PART I: TO BE COMPLETED BY THE REQUESTER:

Job/Work Order Number: _____

(1) Description of circuit/equipment/job location:
PNL LA

(2) Description of work to be done:

(3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage:

Requester/Title _____ Date _____

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS DOING THE WORK

Check When Complete

(1) Detailed job description procedure to be used in performing the above detailed work: ☐

(2) Description of the Safe Work Practices to be employed: ☐

Arc Flash Boundary	8"	Incident Energy	0.35 cal/cm^2	Working Distance	18"
Shock Hazard	208 VAC	Limited Approach Restricted Approach	42" 12"	Glove Class	00
Required PPE	No Arc-rated PPE Required				

(3) Means employed to restrict the access of unqualified persons from the work area: ☐

(4) Evidence of completion of a job briefing including discussion of any job-related hazards:

(5) Do you agree the above described work can be done safely? ☐ Yes ☐ No (If no, return to requester)

Electrically Qualified Person(s) _____ Date _____

Electrically Qualified Person(s) _____ Date _____

PART III: APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

Maintenance/Engineering Manager _____ Manufacturing Manager _____

Safety Manager _____ Electrically Knowledgeable Person _____

General Manager _____ Date _____

APPENDIX 6

ARC FLASH LABELS

PPE TABLE

ARC FLASH LABELS

	Incident Energy From (cal/cm^2)	Incident Energy To (cal/cm^2)	IE Low Marginal (cal/cm^2)	IE High Marginal (cal/cm^2)	PPE Level #	PPE Level	Clothing Layers	Required Minimum Arc Rating of PPE (cal/cm^2)	Notes	Level Background Color	Level Foreground Color	Warning Label Text
1	0.0	1.2	0.000	1.190	0	No Arc-rated PPE Required	N/A	N/A	H.3			WARNING
2	1.2	12.0	1.210	11.800	3	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	2 or 3	12	130.5(G)			WARNING
3	12.0	40.0	12.200	40.000	4	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	3 or more	40	130.5(G)			WARNING
4	40.0	9999.0	40.000	9998.000	Dangerous!	DO NOT WORK ON LIVE!	ↄ NOT WORK ON LIV	N/A	DO NOT WORK ON LIVE!			DANGER

	Head & Eye & Hearing Protection	Hand & Arm Protection	Foot Protection	PPE Others 1	PPE Others 2	PPE Others 3	PPE Others 4	PPE Others 5
1	Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	N/A	Safety glasses	N/A	> 50V voltage rated tools + Class 0 (minimum) gloves	Dielectric shoes or insulating mat (step and touch potential).	
2	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
3	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Arc-rated Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
4	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

2 in	Arc Flash Boundary
0.04 cal/cm^2	Incident Energy at 18 in
PPE	No Arc-rated PPE Required
208 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	DISC PV

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/10/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

13 in	Arc Flash Boundary
0.70 cal/cm^2	Incident Energy at 18 in
PPE	No Arc-rated PPE Required
208 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	SES-FS 91

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/10/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

50 in	Arc Flash Boundary
6.23 cal/cm^2	Incident Energy at 18 in
PPE	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
208 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	GEN PNL

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/10/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL A**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/10/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has insufficient KAIC rating. The equipment/panel is to be de-energized before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL C**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/10/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has insufficient KAIC rating. The equipment/panel is to be de-energized before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL B**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/10/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has insufficient KAIC rating. The equipment/panel is to be de-energized before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL D**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/10/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has insufficient KAIC rating. The equipment/panel is to be de-energized before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL E**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/10/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has insufficient KAIC rating. The equipment/panel is to be de-energized before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**ATS**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/10/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PV INVERTER**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/10/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**DISC PV1**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/10/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

The End of Study Report

FACILITY CONDITION ASSESSMENT

prepared for

Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, AZ 85253
Isaac Chavira



Fire Station 92
6539 East Lincoln Drive
Paradise Valley, AZ 85253

PREPARED BY:
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Ellicott City, MD 21043
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www.bvna.com

BV CONTACT:
Gregg Young
Program Manager
979.270.0024
Gregg.Young@bureauveritas.com

BV PROJECT #:
172662.25R000-006.468

DATE OF REPORT:
July 10, 2025

ON SITE DATE:
May 28, 2025

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1. Executive Summary

Property Overview and Assessment Details

General Information	
Property Type	Fire Station
Number of Buildings	1
Main Address	Fire Station 92, 6539 East Lincoln Drive, Paradise Valley, AZ 85253
Site Developed	2009
Outside Occupants / Leased Spaces	None
Date(s) of Visit	May 28, 2025
Management Point of Contact	Paradise Valley Public Works Mr. Isaac Chavira, Public Works Director (480) 348-3540, ichavira@paradisevalleyaz.gov
On-site Point of Contact (POC)	Paradise Valley Public Works John Fraley, Lead Technician (480) 797-2060
Assessment & Report Prepared By	Billy Barnett
Reviewed By	Rashad Alnial *for,* Gregg Young Program Manager 979.270.0024 Gregg.Young@bureauveritas.com
AssetCalc Link	Full dataset for this assessment can be found at: https://www.assetcalc.net/

Significant/Systemic Findings and Deficiencies

Historical Summary

Fire Station 92 is fire station located in Paradise Valley, Arizona and is served by the Phoenix Fire Department. It is part of Battalion 2 in the East District and was formerly known as Fire Station 2.

Fire Station 92 consists of one building built in 2009. It measures approximate 11,434 square feet, and contains an office, dorm rooms, dorm restrooms, a residential kitchen, a day room, a gymnasium, apparatus bays and support spaces, and restrooms. There were no major renovations conducted since construction.

Architectural

Fire Station 92 is a masonry structure with steel-framed roof deck and beams. The structure is built on a concrete slab foundation with typical perimeter concrete wall footings. The roof structures of the buildings are mainly medium sloped metal construction with flat sections covered in cement tile and supporting HVAC equipment. The glazing is aluminum windows including six glazed overhead doors in the apparatus bays.

At the interior of the fire station, most of the walls are painted gypsum or glazed CMU. The ceilings are acoustical tile, with limited areas of painted gypsum and exposed ceilings in the apparatus bay. Most of the flooring in the building is terrazzo or sealed concrete. Utility areas have unfinished floors and ceiling.

Mechanical, Electrical, Plumbing and Fire (MEPF)

Fire Station 92 is heated and cooled by packaged units located on the flat portions of the roof. Electrical service is made up of a local utility-fed, interior switchboard that feeds distribution panels throughout including rooftop-mounted solar panels. There is a diesel generator and an automatic transfer switch. Interior lighting consists mainly of fluorescent fixtures.

The building has municipal water and sewer. Hot water is provided by a solar-powered water heater and a natural gas-powered water heater. No concerns have been addressed by maintenance personnel regarding ongoing plumbing issues.

The building is outfitted with a wet-pipe fire sprinkler system. There is fire suppression within the kitchen hood system. The building is equipped with fire extinguishers.

Site

The site is approximately 1.4 acres and is relatively flat. The building is located in the center of the site and has a covered parking area in the southwest corner of the site.

Site hardscape at Fire Station 92 consists concrete driveways, two parking lots at the back of the building, concrete and sidewalks adjacent to the building.

The site is covered in stone landscaping with irrigation and mature trees clustered in the parking lot and at the site edges. There are numerous building-mounted and walkway light fixtures. The driveway leading to the parking lots has large cracks due to excessive wear and tear.

Recommended Additional Studies

No additional studies recommended at this time.

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate the Facility Condition Index (FCI), which provides a theoretical objective indication of a facility's overall condition. The FCI is defined as the ratio of the cost of current needs divided by the current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone mathematical values. The table below presents the current, 3-year, 5-year, and 10-year FCI's for this facility:

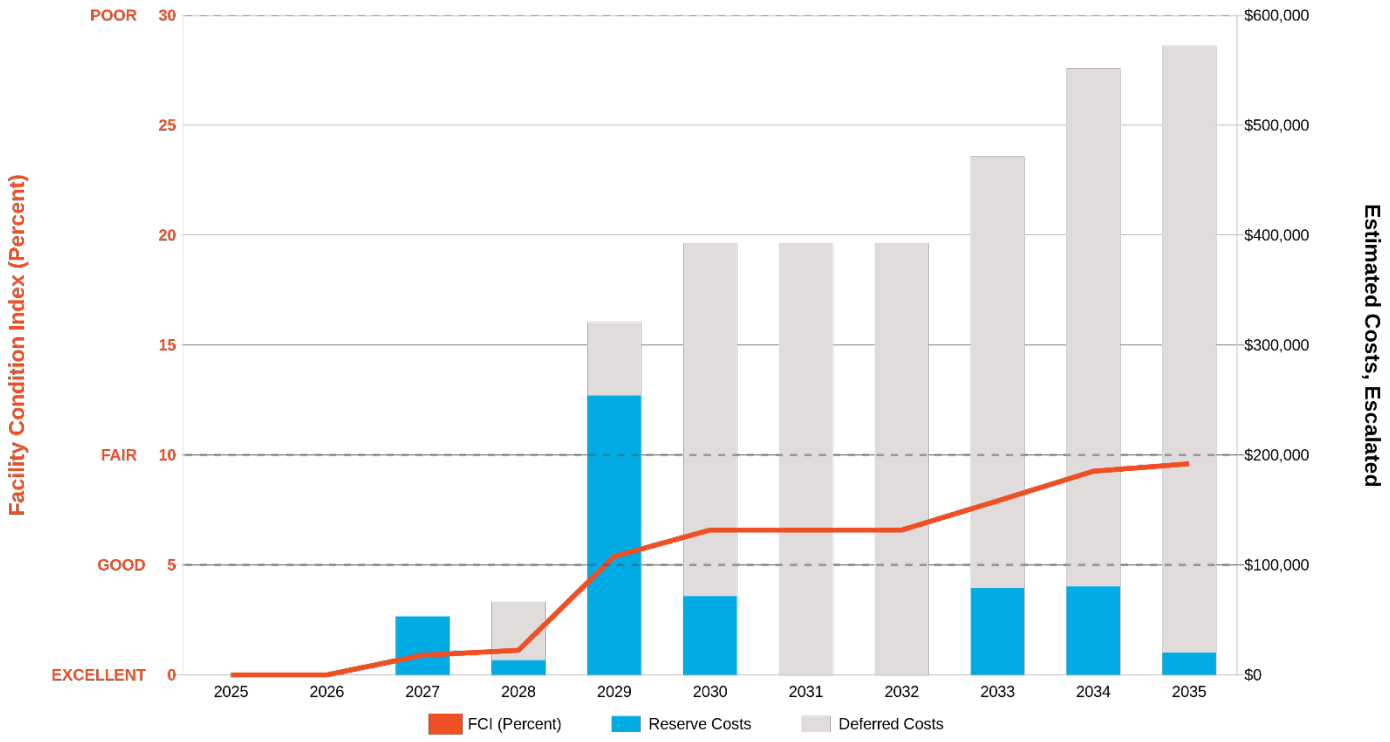
FCI Analysis		
Replacement Value *$5,956,650*	*Total SF* *11,346*	*Cost/SF* *$525*

	Est Reserve Cost	FCI
Current	$0	0 **%**
3-Year	$66,700	1.1 **%**
5-Year	$392,500	6.6 **%**
10-Year	$572,000	9.6 **%**

NEEDS OVER TIME: The vertical blue bars in the graphic below represent the year-by-year needs identified for the facility. The orange line forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures over the next ten years. The dollar amounts allocated for each year are associated with the values along the right Y axis.

Needs by Year with Unaddressed FCI Over Time

Replacement Value: $5,956,650.00 **Inflation Rate: 3%** **Average Needs (per year - over next 10 years): $51,994.00**



Immediate Needs

There are no immediate needs to report.

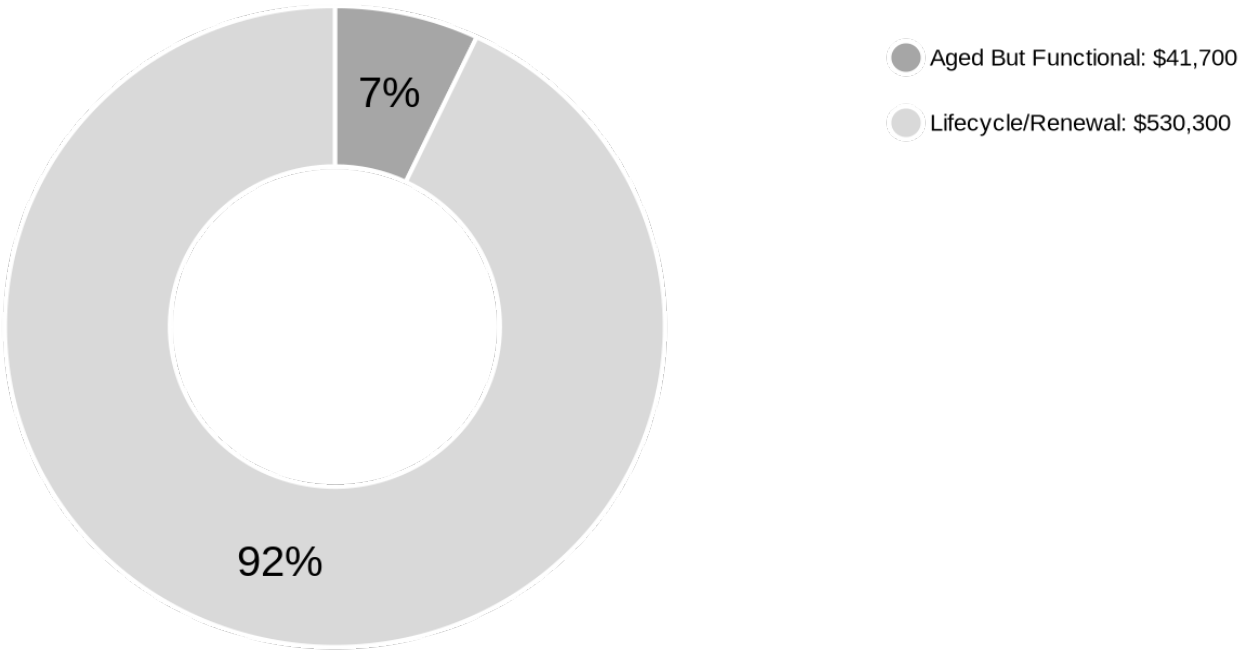
Key Findings

There are no key findings to report.

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the “why” part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the “best” fit, typically the one with the greatest significance and highest on the list below.

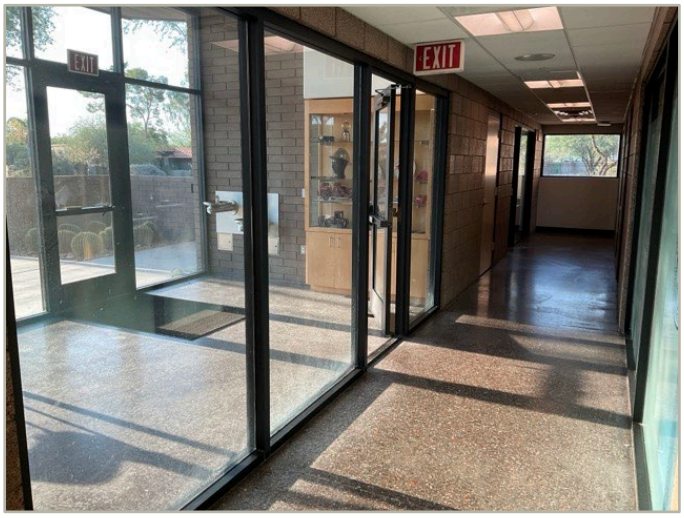
Plan Type Descriptions & Distribution		
Safety		An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity		Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility		Does not meet ADA, UFAS, and/or other accessibility requirements.
Environmental		Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation		Components, systems, or spaces recommended for upgrades in order to meet current standards, facility usage, or client/occupant needs.
Aged But Functional		Any component or system that has aged past its industry-average expected useful life (EUL) but is not currently deficient or problematic.
Lifecycle/Renewal		Any component or system that is neither deficient nor aged past EUL but for which future replacement or repair is anticipated and budgeted.



10-Year Total: $571,900

2. Building Systems and Site Elements





Building Systems Summary		
Address	6539 East Lincoln Drive, Paradise Valley, AZ 85253	
GPS Coordinates	33.5307774, -111.9392682	
Constructed/Renovated	2009	
Building Area	11,346 SF	
Number of Stories	1 above grade	
System	*Description*	*Condition*
Structure	Masonry bearing walls with metal roof deck supported by open-web steel joists and concrete strip/wall footing foundation system	Fair
Facade	Primary Wall Finish: Brick Windows: Aluminum	Fair
Roof	Primary: Gable construction with metal finish Secondary: Flat construction with clay/concrete tiles	Fair
Interiors	Walls: Painted gypsum board and glazed CMU Floors: Terrazzo and sealed concrete Ceilings: Painted gypsum board, ACT, and unfinished/exposed	Fair
Elevators	None	Fair

Building Systems Summary		
Plumbing	Distribution: Copper, PVC waste & venting Hot Water: Gas and solar water heaters with integral tanks Fixtures: Toilets and sinks in all restrooms, urinal in lobby restroom, showers in dorm restrooms	Fair
HVAC	Non-Central System: Packaged units	Fair
Fire Suppression	Wet-pipe sprinkler system and fire extinguishers	Fair
Electrical	Source & Distribution: Main switchboard Interior Lighting: Linear fluorescent Emergency Power: Diesel generator with automatic transfer switch	Fair
Fire Alarm	Alarm panel with smoke detectors, heat detectors, alarms, strobes, pull stations, back-up emergency lights, and exit signs	Fair
Equipment/Special	None	-
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	The interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, the exterior walls of the facility, and the roof.	
Key Spaces Not Observed	All key areas of the facility were accessible and observed.	

Site Information		
Site Area	1.4 acres	
Parking Spaces	17 total spaces all in open lots; 1 of which are accessible.	
System	*Description*	*Condition*
Site Pavement	Concrete lots with adjacent concrete sidewalks, curbs and ramps	Fair
Site Development	Building-mounted signage; wrought iron fencing; Limited picnic tables, trash receptacles	Fair
Landscaping & Topography	Limited landscaping features trees and bushes Irrigation present Brick retaining walls Low to moderate site slopes throughout	Fair
Utilities	Municipal water and sewer Local utility-provided electric and natural gas	Fair
Site Lighting	Building-mounted: fluorescent Pedestrian walkway and landscape accent lighting	Fair
Ancillary Structures	None	Fair
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	All key areas of the exterior site were accessible and observed.	

The table below shows the anticipated costs by trade or building system over the next 20 years.

Fire Station 92: System Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Structure	$0	$0	$0	$0	$0	$0
Facade	$0	$0	$14,235	$0	$125,694	$139,929
Roofing	$0	$0	$6,300	$4,240	$1,966	$12,506
Interiors	$0	$0	$61,905	$20,093	$62,019	$144,017
Plumbing	$0	$17,610	$2,622	$13,961	$62,481	$96,674
HVAC	$0	$0	$44,713	$0	$136,110	$180,823
Fire Protection	$0	$0	$0	$15,962	$9,983	$25,945
Electrical	$0	$0	$82,250	$99,567	$14,122	$195,939
Fire Alarm & Electronic Systems	$0	$0	$21,233	$20,158	$53,441	$94,832
Equipment & Furnishings	$0	$0	$35,453	$0	$3,176	$38,629
Special Construction & Demo	$0	$0	$5,224	$0	$7,021	$12,245
Sitework	$0	$35,646	$65,297	$5,472	$49,085	$155,500
TOTALS	**$0**	**$53,300**	**$339,300**	**$179,500**	**$525,100**	**$1,097,200**

3. ADA Accessibility

Generally, Title II of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “public facilities” on the basis of disability. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

A public entity (i.e. city governments) shall operate each service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities.

However, this does not:

1. Necessarily require a public entity to make each of its existing facilities accessible to and usable by individuals with disabilities;
2. Require a public entity to take any action that would threaten or destroy the historic significance of an historic property; or
3. Require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of a service, program, or activity or in undue financial and administrative burdens. In those circumstances where personnel of the public entity believe that the proposed action would fundamentally alter the service, program, or activity or would result in undue financial and administrative burdens, a public entity has the burden of proving that compliance with 35.150(a) of this part would result in such alteration or burdens. The decision that compliance would result in such alteration or burdens must be made by the head of a public entity or his or her designee after considering all resources available for use in the funding and operation of the service, program, or activity, and must be accompanied by a written statement of the reasons for reaching that conclusion. If an action would result in such an alteration or such burdens, a public entity shall take any other action that would not result in such an alteration or such burdens but would nevertheless ensure that individuals with disabilities receive the benefits or services provided by the public entity.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the material included in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this assessment. A full measured ADA survey would be required to identify more specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance
- Only a representative sample of areas was observed
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance
- Itemized costs for individual non-compliant items are included in the dataset
- For any “none” boxes checked or reference to “no issues” identified, that alone does not guarantee full compliance

The facility was originally constructed in 2009. The facility has not since been substantially renovated.

No detailed follow-up accessibility study is currently recommended since no major or moderate issues were identified at the subject site. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey.

4. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

5. Opinions of Probable Costs

Cost estimates are embedded throughout this report, including the very detailed Replacement Reserves report in the appendix. The cost estimates are predominantly based on construction rehabilitation costs developed by the *RSMeans data from Gordian.* While the *RSMeans data from Gordian* is the primary reference source for the Bureau Veritas cost library, secondary and supporting sources include but are not limited to other industry experts work, such as *Marshall & Swift* and *CBRE Whitestone.* For improved accuracy, additional research integrated with Bureau Veritas's historical experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions also come into play when deemed necessary. Invoice or bid documents provided either by the owner or facility construction resources may be reviewed early in the process or for specific projects as warranted.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

To account for differences in prices between locations, the base costs are modified by geographical location factors to adjust for market conditions, transportation costs, or other local contributors. When requested by the client, the costs may be further adjusted by several additional factors including; labor rates (prevailing minimum wage), general contractor fees for profit and overhead, and insurance. If desired, costs for design and permits, and a contingency factor, may also be included in the calculations.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system or component replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

6. Certification

Town of Paradise Valley (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of Fire Station 92, 6539 East Lincoln Drive, Paradise Valley, AZ 85253, the “Property”. It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager’s walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property’s original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

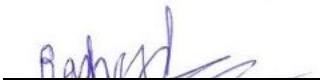
This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and Bureau Veritas.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of Bureau Veritas. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to Bureau Veritas.

Prepared by:

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Reviewed by:



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for
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Program Manager
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7. Appendices

Appendix A: Photographic Record
Appendix B: Site Plan(s)
Appendix C: Pre-Survey Questionnaire(s)
Appendix D: Accessibility Review and Photos
Appendix E: Component Condition Report
Appendix F: Replacement Reserves
Appendix G: Equipment Inventory List

Appendix A:
Photographic Record

Photographic Overview



1 - FRONT ELEVATION



2 - LEFT ELEVATION



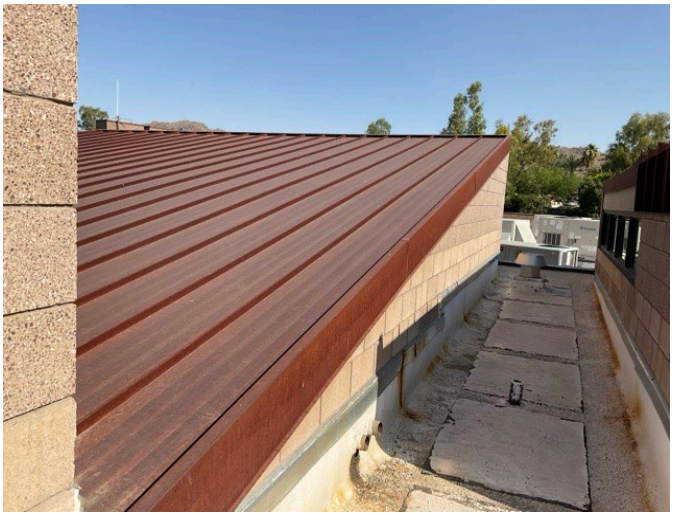
3 - REAR ELEVATION



4 - RIGHT ELEVATION

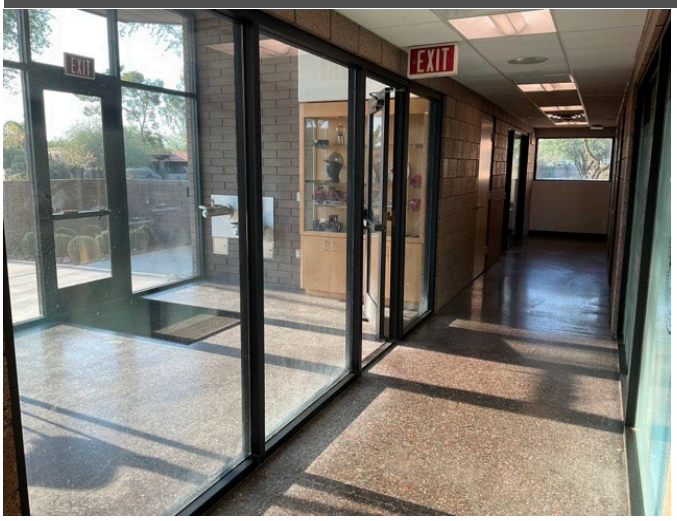


5 - ROOF NORTH



6 - ROOF SOUTH

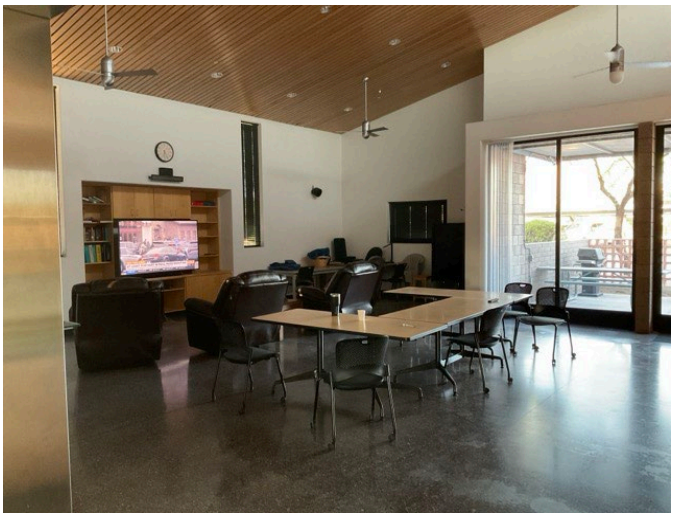
Photographic Overview



7 - LOBBY



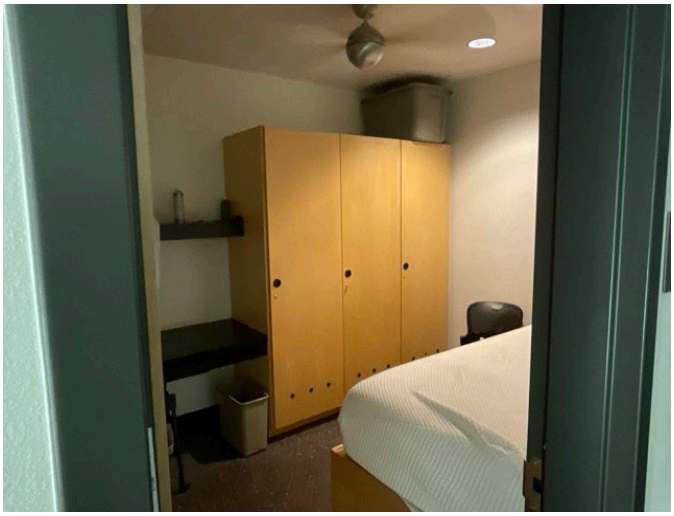
8 - APPARATUS BAYS



9 - DAY ROOM



10 - LIBRARY

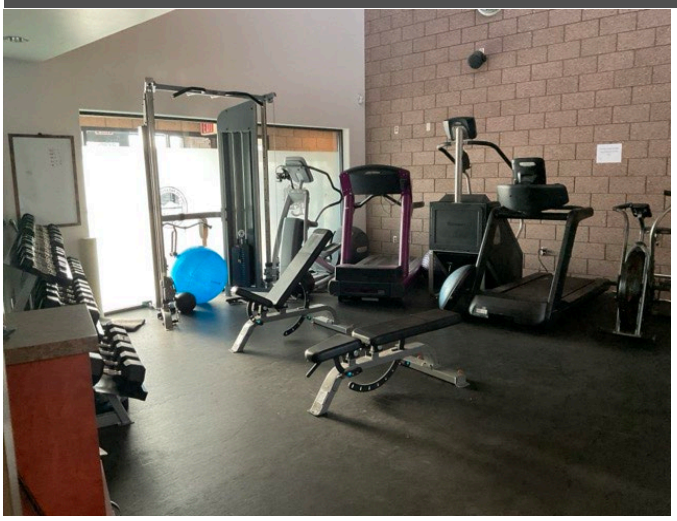


11 - TYPICAL DORM



12 - CAPTAIN DORM ROOM

Photographic Overview



13 - PHYSICAL FITNESS ROOM



14 - LAUNDRY ROOM



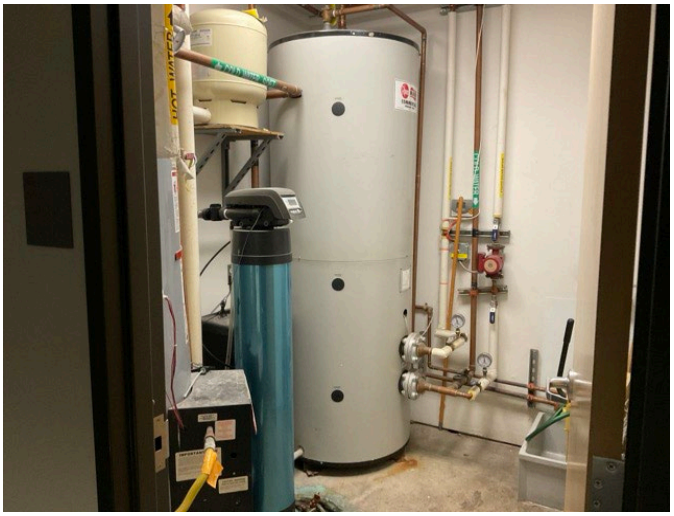
15 - KITCHEN



16 - TYPICAL RESTROOM

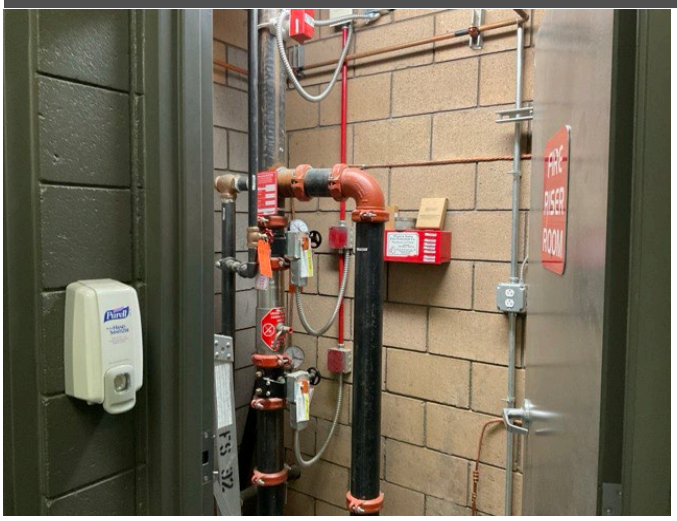


17 - ELECTRIC ROOM

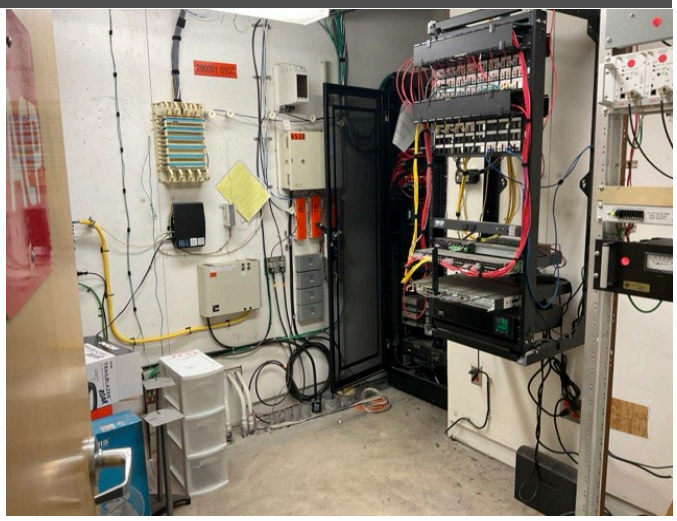


18 - JANITOR CLOSET

Photographic Overview



19 - FIRE RISER ROOM



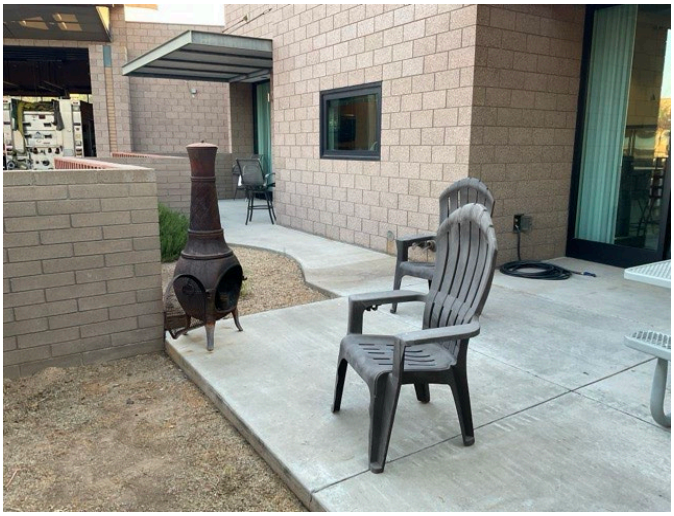
20 - TELECOM ROOM



21 - ENTRANCE



22 - PARKING AREA



23 - PATIO



24 - BAYS

Appendix B:
Site Plan(s)

Site Plan



Project Number	Project Name
172662.25R000-006.468	Fire Station 92
Source	**On-Site Date**
Google	May 28, 2025

Appendix C:
Pre-Survey Questionnaire(s)

BV FACILITY CONDITION ASSESSMENT: PRE-SURVEY QUESTIONNAIRE

Building / Facility Name: Fire Station 92

Name of person completing form: Fraley, John

Title / Association w/ property: Lead Technician

Length of time associated w/ property: 4

Date Completed: 5/28/2025

Phone Number: 4807972060

Method of Completion: INTERVIEW - verbally completed during interview

Directions: Please answer all questions to the best of your knowledge and in good faith. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses.

Data Overview		Response		
1	Year(s) constructed	Constructed: 2009	Renovated:	
2	Building size in SF	11,346 **SF**		
3	Major Renovation/Rehabilitation		Year	Additional Detail
		Facade		
		Roof		
		Interiors		
		HVAC		
		Electrical		
		Site Pavement		
		Accessibility		
4	List other significant capital improvements (focus on recent years; provide approximate date).			
5	List any major capital expenditures planned/requested for the next few years. Have they been budgeted?			
6	Describe any on-going extremely problematic, historically chronic, or immediate facility needs.			

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Response				Comments
		Yes	No	Unk	NA	
7	Are there any problems with foundations or structures, like excessive settlement?		X			
8	Are there any wall, window, basement or roof leaks?		X			
9	Has any part of the facility ever contained visible suspect mold growth, or have there been any indoor air quality complaints?		X			
10	Are your elevators unreliable, with frequent service calls?		X			
11	Are there any plumbing leaks, water pressure, or clogging/backup issues?		X			
12	Have there been any leaks or pressure problems with natural gas, HVAC piping, or steam service?		X			
13	Are any areas of the facility inadequately heated, cooled or ventilated? Poorly insulated areas?		X			
14	Is the electrical service outdated, undersized, or problematic?		X			
15	Are there any problems or inadequacies with exterior lighting?		X			
16	Is site/parking drainage inadequate, with excessive ponding or other problems?		X			
17	Are there any other unresolved construction defects or significant issues/hazards at the property that have not yet been identified above?		X			
18	ADA: Has an accessibility study been previously performed? If so, when?			X		
19	ADA: Have any ADA improvements been made to the property since original construction? Describe.			X		
20	ADA: Has building management reported any accessibility-based complaints or litigation?			X		
21	Are any areas of the property leased to outside occupants?		X			

Signature of Assessor

Signature of POC

Appendix D:
Accessibility Review and Photos

Visual Survey - 2010 ADA Standards for Accessible Design

Property Name: Fire Station 92

BV Project Number: 172662.25R000-006.468

Facility History & Interview

	Question	Yes	No	Unk	Comments
1	Has an accessibility study been previously performed? If so, when?			X	
2	Have any ADA improvements been made to the property since original construction? Describe.			X	
3	Has building management reported any accessibility-based complaints or litigation?			X	

Fire Station 92: Accessibility Issues

Category	Major Issues (ADA study recommended)	Moderate Issues (ADA study recommended)	Minor Issues	None*
Parking				
Exterior Accessible Route				
Building Entrances				
Interior Accessible Route				
Elevators	**NA**			
Public Restrooms				
Kitchens/Kitchenettes	**NA**			
Playgrounds & Swimming Pools	**NA**			
Other	**NA**			

**Be cognizant that if the "None" box is checked that does not guarantee full compliance; this study is limited in nature*

Fire Station 92: Photographic Overview



OVERVIEW OF ACCESSIBLE PARKING AREA



CLOSE-UP OF STALL



ACCESSIBLE PATH



CURB CUT



MAIN ENTRANCE



MAIN ENTRANCE

Fire Station 92: Photographic Overview



ACCESSIBLE INTERIOR PATH



DOOR HARDWARE



TOILET STALL OVERVIEW



SINK, FAUCET HANDLES, AND ACCESSORIES

Appendix E:
Component Condition Report

Component Condition Report | 006 - Fire Station 92

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A4010	Substructure	Fair	Foundation, Concrete Slab-on-Grade, w/ Integral Perimeter Footings	11,434 SF	59	9384275
B1010	Superstructure	Good	Structural Framing, Steel Columns & Beams, 1-2 Story Building	11,434 SF	59	9384249
Facade						
B2010	Building Exterior	Fair	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	6,800 SF	4	9384214
B2020	Building Exterior	Fair	Glazing, any type by SF	800 SF	14	9384273
B2050	Building Exterior	Fair	Exterior Door, Aluminum-Framed & Glazed, Standard Swing	1	14	9384243
B2050	Building Exterior	Fair	Exterior Door, Steel, Commercial	2	24	9384220
B2050	Building Exterior	Fair	Overhead/Dock Door, Steel, 20'x14' (280 SF)	6	14	9384239
Roofing						
B3010	Roof	Good	Roofing, Clay/Concrete Tile	1,745 SF	34	9384207
B3010	Roof	Fair	Roofing, Metal	10,560 SF	24	9384263
B3020	Roof	Fair	Roof Appurtenances, Gutters & Downspouts, Aluminum w/ Fittings	622 LF	4	9384225
B3060	Roof	Fair	Roof Hatch, Metal	1	14	9384271
B3080	Building Exterior	Fair	Soffit/Fascia, Metal	650 SF	9	9384254
Interiors						
C1010	Throughout Building	Fair	Interior Wall, Concrete Block (CMU)	8,000 SF	34	9397816
C1020	Building Exterior	Fair	Interior Glazing, any type by SF	200 SF	24	9384215
C1030	Throughout Building	Fair	Interior Door, Steel, Standard	8	24	9384242
C1030	Throughout Building	Fair	Interior Door, Wood, Solid-Core Commercial	23	24	9384231
C1030	Lobby	Fair	Interior Door, Steel, w/ Extensive Glazing	1	24	9384251
C1070	Throughout Building	Fair	Suspended Ceilings, Acoustical Tile (ACT)	4,400 SF	9	9384277
C1090	Hallways & Common Areas	Fair	Lockers, Steel-Baked Enamel, 6' Height per LF	28 LF	4	9384209
C2010	Throughout Building	Fair	Wall Finishes, any surface, Prep & Paint	13,700 SF	5	9384208

Component Condition Report | 006 - Fire Station 92

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity		RUL	ID
C2010	Restrooms	Good	Wall Finishes, Ceramic Tile	1,100	SF	24	9384250
C2030	Throughout Building	Good	Flooring, Terrazzo	7,985	SF	34	9384205
C2030	Hallways & Common Areas	Fair	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	2,915	SF	5	9384255
C2050	Throughout Building	Fair	Ceiling Finishes, any flat surface, Prep & Paint	3,800	SF	5	9384230
C2050	Throughout Building	Fair	Ceiling Finishes, exposed irregular elements, Prep & Paint	2,915	SF	5	9384261
Plumbing							
D2010	Utility Rooms/Areas	Fair	Water Softener, Domestic Water, 300k Grains & 80 GPM	1		9	9384222
D2010	Restrooms	Fair	Shower, Terrazzo	4		14	9384234
D2010	Utility Rooms/Areas	Fair	Sink/Lavatory, Vanity Top, Stainless Steel	3		14	9384248
D2010	Throughout Building	Fair	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures)	11,434	SF	24	9384218
D2010	Utility Rooms/Areas	Fair	Water Heater, Gas, Commercial (200 MBH)	1		2	9384276
D2010	Restrooms	Fair	Shower, Valve & Showerhead	4		14	9384228
D2010	Restrooms	Fair	Sink/Lavatory, Vanity Top, Enameled Steel	5		14	9384232
D2010	Utility Rooms/Areas	Fair	Storage Tank, Domestic Water, 251 to 500 GAL	1		13	9384269
D2010	Restrooms	Fair	Urinal, Standard	1		14	9384274
D2010	Hallways & Common Areas	Fair	Drinking Fountain, Wall-Mounted, Single-Level	2		3	9384246
D2010	Restrooms	Fair	Toilet, Commercial Water Closet	5		14	9384257
D2010	Utility Rooms/Areas	Fair	Sink/Lavatory, Service Sink, Floor	2		19	9384272
HVAC							
D3020	Utility Rooms/Areas	Fair	Unit Heater, Electric	1		4	9384216
D3030	Site Utility Areas	Good	Evaporative Cooler, 3 to 5 HP	1		13	9384270
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted	1		4	9384266
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted [AC-4]	1		4	9384213
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [AC6]	1		18	9384258
D3050	Throughout Building	Fair	HVAC System, Ductwork, Medium Density	11,434	SF	14	9384212

Component Condition Report | 006 - Fire Station 92

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [AC5]	1	18	9384219
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted [AC-3]	1	4	9384279
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [AC1]	1	19	9384268
D3060	Utility Rooms/Areas	Fair	Exhaust Fan, Roof or Wall-Mounted, 36"Damper	1	4	9384265
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper	1	3	9384260
D3060	Utility Rooms/Areas	Good	Exhaust Fan, Roof or Wall-Mounted, 36"Damper	1	4	9384227
Fire Protection						
D4010	Throughout Building	Fair	Fire Suppression System, Existing Sprinkler Heads, by SF	11,434 SF	9	9384244
D4010	Mechanical Room	Fair	Backflow Preventer, Fire Suppression	1	14	9384278
D4010	Mechanical Room	Fair	Supplemental Components, Fire Riser, Dry	1	24	9384233
Electrical						
D5010	Site Utility Areas	Fair	Solar Power, Inverter, 4.0 KW	1	3	9384211
D5010	Roof	Fair	Solar Power, Photovoltaic (PV) Panels by SF	184 SF	4	9384236
D5010	Electrical Room	Fair	Automatic Transfer Switch, ATS	1	9	9384241
D5010	Site Utility Areas	Fair	Generator, Diesel	1	8	9384204
D5020	Electrical Room	Fair	Distribution Panel, 120/208 V [D]	1	13	9384256
D5020	Site Utility Areas	Fair	Switchboard, 120/208 V	1	23	9384221
D5030	Throughout Building	Good	Electrical System, Wiring & Switches, Average or Low Density/Complexity	11,434 SF	24	9384262
D5040	Throughout Building	Fair	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures	11,434 SF	4	9384210
Fire Alarm & Electronic Systems						
D6060	Throughout Building	Fair	Intercom/PA System, Public Address Upgrade, Facility-Wide	11,434 SF	4	9384226
D7050	Utility Rooms/Areas	Fair	Fire Alarm Panel, Fully Addressable	1	10	9397815
D7050	Throughout Building	Good	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	11,434 SF	15	9384237
Equipment & Furnishings						
E1030	Commercial Kitchen	Fair	Foodservice Equipment, Sink, 2-Bowl	1	14	9384253

Component Condition Report | 006 - Fire Station 92

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity		RUL	ID
E2010	Throughout Building	Fair	Casework, Cabinetry, Standard	105	LF	4	9384206
Special Construction & Demo							
F1020	Site General	Fair	Covered Walkway, any type, Prep & Paint	1,645	SF	5	9384224
Pedestrian Plazas & Walkways							
G2020	Site Parking Areas	Fair	Parking Lots, Pavement, Asphalt, Mill & Overlay	9,600	SF	2	9384217
G2020	Site Parking Areas	Fair	Parking Lots, Pavement, Asphalt, Seal & Stripe	9,600	SF	3	9384264
Athletic, Recreational & Playfield Areas							
G2050	Gymnasium	Fair	Playfield Surfaces, Rubber, Interlocking Tiles	700	SF	5	9384267
Sitework							
G2060	Site General	Fair	Retaining Wall, Brick/Stone	150	SF	24	9384247
G2060	Site General	Fair	Picnic Table, Metal Powder-Coated	1		4	9384259
G2060	Site	Good	Fences & Gates, Screen Walls, Concrete Masonry Unit (CMU)	950	SF	34	9384229
G2060	Site General	Fair	Flagpole, Metal	1		14	9384223
G2060	Site General	Fair	Signage, Property, Monument, Replace/Install	1		4	9384235
G2060	Site General	Good	Fences & Gates, Fence, Wrought Iron 4'	125	LF	34	9384245
G2080	Site General	Good	Irrigation System, Pop-Up Spray Heads, Commercial, Replace/Install	24,500	SF	4	9384240
G4050	Site General	Fair	Site Lighting, Wall Pack or Walkway Ceiling/Pole-Mounted, any type w/ LED, Lower-Lumen	19		4	9384252

Appendix F:
Replacement Reserves

Replacement Reserves Report

006 - Fire Station 92

7/10/2025

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total Escalated Estimate
006 - Fire Station 92	$0	$0	$53,257	$13,375	$254,210	$71,663	$0	$0	$78,945	$80,354	$20,159	$0	$0	$35,421	$262,035	$122,486	$0	$0	$57,610	$15,957	$31,607	**$1,097,079**
Grand Total	**$0**	**$0**	**$53,257**	**$13,375**	**$254,210**	**$71,663**	**$0**	**$0**	**$78,945**	**$80,354**	**$20,159**	**$0**	**$0**	**$35,421**	**$262,035**	**$122,486**	**$0**	**$0**	**$57,610**	**$15,957**	**$31,607**	**$1,097,079**

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
B2010	Building Exterior	9384214	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	20	16	4	6800	SF	$1.86	$12,648					$12,648																	**$12,648**
B2020	Building Exterior	9384273	Glazing, any type by SF, Replace	30	16	14	800	SF	$55.00	$44,000															$44,000							**$44,000**
B2050	Building Exterior	9384243	Exterior Door, Aluminum-Framed & Glazed, Standard Swing, Replace	30	16	14	1	EA	$1,300.00	$1,300															$1,300							**$1,300**
B2050	Building Exterior	9384239	Overhead/Dock Door, Steel, 20'x14' (280 SF), Replace	30	16	14	6	EA	$6,300.00	$37,800															$37,800							**$37,800**
B3020	Roof	9384225	Roof Appurtenances, Gutters & Downspouts, Aluminum w/ Fittings, Replace	20	16	4	622	LF	$9.00	$5,598					$5,598																	**$5,598**
B3060	Roof	9384271	Roof Hatch, Metal, Replace	30	16	14	1	EA	$1,300.00	$1,300															$1,300							**$1,300**
B3080	Building Exterior	9384254	Soffit/Fascia, Metal, Replace	25	16	9	650	SF	$5.00	$3,250										$3,250												**$3,250**
C1070	Throughout Building	9384277	Suspended Ceilings, Acoustical Tile (ACT), Replace	25	16	9	4400	SF	$3.50	$15,400										$15,400												**$15,400**
C1090	Hallways & Common Areas	9384209	Lockers, Steel-Baked Enamel, 6' Height per LF, Replace	20	16	4	28	LF	$500.00	$14,000					$14,000																	**$14,000**
C2010	Throughout Building	9384208	Wall Finishes, any surface, Prep & Paint	10	5	5	13700	SF	$1.50	$20,550						$20,550										$20,550						**$41,100**
C2030	Hallways & Common Areas	9384255	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	10	5	5	2915	SF	$1.50	$4,373						$4,373										$4,373						**$8,745**
C2050	Throughout Building	9384230	Ceiling Finishes, any flat surface, Prep & Paint	10	5	5	3800	SF	$2.00	$7,600						$7,600										$7,600						**$15,200**
C2050	Throughout Building	9384261	Ceiling Finishes, exposed irregular elements, Prep & Paint	10	5	5	2915	SF	$2.50	$7,288						$7,288										$7,288						**$14,575**
D2010	Utility Rooms/Areas	9384269	Storage Tank, Domestic Water, 251 to 500 GAL, Replace	30	17	13	1	EA	$5,000.00	$5,000														$5,000								**$5,000**
D2010	Utility Rooms/Areas	9384276	Water Heater, Gas, Commercial (200 MBH), Replace	20	18	2	1	EA	$16,600.00	$16,600			$16,600																			**$16,600**
D2010	Utility Rooms/Areas	9384222	Water Softener, Domestic Water, 300k Grains & 80 GPM, Replace	25	16	9	1	EA	$10,700.00	$10,700										$10,700												**$10,700**
D2010	Hallways & Common Areas	9384246	Drinking Fountain, Wall-Mounted, Single-Level, Replace	15	12	3	2	EA	$1,200.00	$2,400				$2,400																$2,400		**$4,800**
D2010	Restrooms	9384234	Shower, Terrazzo, Replace	30	16	14	4	EA	$3,000.00	$12,000															$12,000							**$12,000**
D2010	Utility Rooms/Areas	9384248	Sink/Lavatory, Vanity Top, Stainless Steel, Replace	30	16	14	3	EA	$1,200.00	$3,600															$3,600							**$3,600**
D2010	Restrooms	9384228	Shower, Valve & Showerhead, Replace	30	16	14	4	EA	$800.00	$3,200															$3,200							**$3,200**
D2010	Restrooms	9384232	Sink/Lavatory, Vanity Top, Enameled Steel, Replace	30	16	14	5	EA	$1,100.00	$5,500															$5,500							**$5,500**
D2010	Restrooms	9384274	Urinal, Standard, Replace	30	16	14	1	EA	$1,100.00	$1,100															$1,100							**$1,100**
D2010	Restrooms	9384257	Toilet, Commercial Water Closet, Replace	30	16	14	5	EA	$1,300.00	$6,500															$6,500							**$6,500**
D2010	Utility Rooms/Areas	9384272	Sink/Lavatory, Service Sink, Floor, Replace	35	16	19	2	EA	$800.00	$1,600																				$1,600		**$1,600**
D3020	Utility Rooms/Areas	9384216	Unit Heater, Electric, Replace	20	16	4	1	EA	$2,200.00	$2,200					$2,200																	**$2,200**
D3030	Site Utility Areas	9384270	Evaporative Cooler, 3 to 5 HP, Replace	15	2	13	1	EA	$8,800.00	$8,800														$8,800								**$8,800**
D3050	Roof	9384266	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	16	4	1	EA	$9,000.00	$9,000					$9,000																	**$9,000**
D3050	Roof	9384213	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	16	4	1	EA	$7,500.00	$7,500					$7,500																	**$7,500**
D3050	Roof	9384279	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	16	4	1	EA	$7,500.00	$7,500					$7,500																	**$7,500**
D3050	Throughout Building	9384212	HVAC System, Ductwork, Medium Density, Replace	30	16	14	11434	SF	$4.00	$45,736															$45,736							**$45,736**
D3050	Roof	9384258	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	2	18	1	EA	$15,000.00	$15,000																			$15,000			**$15,000**
D3050	Roof	9384219	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	2	18	1	EA	$9,000.00	$9,000																			$9,000			**$9,000**
D3050	Roof	9384268	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	1	19	1	EA	$7,500.00	$7,500																				$7,500		**$7,500**
D3060	Roof	9384260	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	17	3	1	EA	$2,400.00	$2,400				$2,400																			**$2,400**
D3060	Utility Rooms/Areas	9384265	Exhaust Fan, Roof or Wall-Mounted, 36"Damper, Replace	20	16	4	1	EA	$5,600.00	$5,600					$5,600																	**$5,600**
D3060	Utility Rooms/Areas	9384227	Exhaust Fan, Roof or Wall-Mounted, 36"Damper, Replace	20	16	4	1	EA	$5,600.00	$5,600					$5,600																	**$5,600**
D4010	Throughout Building	9384244	Fire Suppression System, Existing Sprinkler Heads, by SF, Replace	25	16	9	11434	SF	$1.07	$12,234										$12,234												**$12,234**
D4010	Mechanical Room	9384278	Backflow Preventer, Fire Suppression, Replace	30	16	14	1	EA	$6,600.00	$6,600															$6,600							**$6,600**
D5010	Site Utility Areas	9384204	Generator, Diesel, Replace	25	17	8	1	EA	$58,000.00	$58,000									$58,000													**$58,000**
D5010	Site Utility Areas	9384211	Solar Power, Inverter, 4.0 KW, Replace	15	12	3	1	EA	$3,120.00	$3,120				$3,120																$3,120			**$6,240**
D5010	Roof	9384236	Solar Power, Photovoltaic (PV) Panels by SF, Replace	20	16	4	184	SF	$70.00	$12,880					$12,880																	**$12,880**
D5010	Electrical Room	9384241	Automatic Transfer Switch, ATS, Replace	25	16	9	1	EA	$20,000.00	$20,000										$20,000												**$20,000**
D5020	Electrical Room	9384256	Distribution Panel, 120/208 V, Replace	30	17	13	1	EA	$6,000.00	$6,000														$6,000								**$6,000**
D5040	Throughout Building	9384210	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures, Replace	20	16	4	11434	SF	$5.00	$57,170					$57,170																	**$57,170**
D6060	Throughout Building	9384226	Intercom/PA System, Public Address Upgrade, Facility-Wide, Replace	20	16	4	11434	SF	$1.65	$18,866					$18,866																	**$18,866**
D7050	Utility Rooms/Areas	9397815	Fire Alarm Panel, Fully Addressable, Replace	15	5	10	1	EA	$15,000.00	$15,000											$15,000											**$15,000**
D7050	Throughout Building	9384237	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	20	5	15	11434	SF	$3.00	$34,302																$34,302						**$34,302**
030	Commercial Kitchen	9384253	Foodservice Equipment, Sink, 2-Bowl, Replace	30	16	14	1	EA	$2,100.00	$2,100															$2,100							**$2,100**

Replacement Reserves Report

006 - Fire Station 92

7/10/2025

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
E2010	Throughout Building	9384206	Casework, Cabinetry, Standard, Replace	20	16	4	105	LF	$300.00	$31,500					$31,500																	**$31,500**
F1020	Site General	9384224	Covered Walkway, any type, Prep & Paint	10	5	5	1645	SF	$2.74	$4,507						$4,507										$4,507						**$9,015**
G2020	Site Parking Areas	9384217	Parking Lots, Pavement, Asphalt, Mill & Overlay	25	23	2	9600	SF	$3.50	$33,600			$33,600																			**$33,600**
G2020	Site Parking Areas	9384264	Parking Lots, Pavement, Asphalt, Seal & Stripe	5	2	3	9600	SF	$0.45	$4,320				$4,320					$4,320					$4,320					$4,320			**$17,280**
G2050	Gymnasium	9384267	Playfield Surfaces, Rubber, Interlocking Tiles, Replace	15	10	5	700	SF	$25.00	$17,500						$17,500															$17,500	**$35,000**
G2060	Site General	9384259	Picnic Table, Metal Powder-Coated, Replace	20	16	4	1	EA	$700.00	$700					$700																	**$700**
G2060	Site General	9384235	Signage, Property, Monument, Replace/Install	20	16	4	1	EA	$3,000.00	$3,000					$3,000																	**$3,000**
G2060	Site General	9384223	Flagpole, Metal, Replace	30	16	14	1	EA	$2,500.00	$2,500														$2,500							**$2,500**
G2080	Site General	9384240	Irrigation System, Pop-Up Spray Heads, Commercial, Replace/Install	20	16	4	24500	SF	$1.00	$24,500					$24,500																	**$24,500**
G4050	Site General	9384252	Site Lighting, Wall Pack or Walkway Ceiling/Pole-Mounted, any type w/ LED, Lower-Lumen, Replace	20	16	4	19	EA	$400.00	$7,600					$7,600																	**$7,600**
Totals, Unescalated											**$0**	**$0**	**$50,200**	**$12,240**	**$225,862**	**$61,817**	**$0**	**$0**	**$62,320**	**$61,584**	**$15,000**	**$0**	**$0**	**$24,120**	**$173,236**	**$78,619**	**$0**	**$0**	**$33,840**	**$9,100**	**$17,500**	**$825,439**
Totals, Escalated (3.0% inflation, compounded annually)											**$0**	**$0**	**$53,257**	**$13,375**	**$254,210**	**$71,663**	**$0**	**$0**	**$78,945**	**$80,354**	**$20,159**	**$0**	**$0**	**$35,421**	**$262,035**	**$122,486**	**$0**	**$0**	**$57,610**	**$15,957**	**$31,607**	**$1,097,079**

* Markup has been included in unit costs.

Appendix G:
Equipment Inventory List

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D20 Plumbing													
1	9384269	D2010	**Storage Tank**	Domestic Water, 251 to 500 GAL	260 GAL	006 - Fire Station 92	Utility Rooms/Areas	Rheem	ST260A	0608N0001300	2008	3003827	
2	9384276	D2010	**Water Heater**	Gas, Commercial (200 MBH)	120 GAL	006 - Fire Station 92	Utility Rooms/Areas	Rheem	HE119-199N	1107T2822N	2007	3003821	
3	9384222	D2010	**Water Softener**	Domestic Water, 300k Grains & 80 GPM	10 GAL	006 - Fire Station 92	Utility Rooms/Areas	GE	268/760	L268248081306		3003824	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D30 HVAC													
1	9384216	D3020	**Unit Heater**	Electric	10 kW	006 - Fire Station 92	Utility Rooms/Areas	No dataplate	No dataplate	No dataplate		3003822	
2	9384270	D3030	**Evaporative Cooler**	3 to 5 HP	21000 CFM	006 - Fire Station 92	Site Utility Areas	Champion Cooler	15012W	IJ7140006	2023	3003807	
3	9384266	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	4 TON	006 - Fire Station 92	Roof	Trane	Illegible	Illegible	2009	3003815	
4	9384268	D3050	**Packaged Unit** [AC1]	RTU, Pad or Roof-Mounted	3 TON	006 - Fire Station 92	Roof	Daikin Industries	DFG0363DH00001SAA	2401171940	2024	3003814	
5	9384279	D3050	**Packaged Unit** [AC-3]	RTU, Pad or Roof-Mounted	3 TON	006 - Fire Station 92	Roof	Trane	Illegible	Illegible	2009	3003806	
6	9384213	D3050	**Packaged Unit** [AC-4]	RTU, Pad or Roof-Mounted	3 TON	006 - Fire Station 92	Roof	Trane	Illegible	Illegible	2009	3003805	
7	9384219	D3050	**Packaged Unit** [AC5]	RTU, Pad or Roof-Mounted	4 TON	006 - Fire Station 92	Roof	Daikin Industries	DFG04830H00001SAA	2310072916	2023	3003816	
8	9384258	D3050	**Packaged Unit** [AC6]	RTU, Pad or Roof-Mounted	6 TON	006 - Fire Station 92	Roof	Daikin Industries	DFG0723OH00001SAA	2309301398	2023	3003817	
9	9384260	D3060	**Exhaust Fan**	Roof or Wall-Mounted, 16" Damper	1200 CFM	006 - Fire Station 92	Roof	Twin City Fan	DCRD-0958	I08-257910-3	2008	3003819	
10	9384265	D3060	**Exhaust Fan**	Roof or Wall-Mounted, 36"Damper	10000 CFM	006 - Fire Station 92	Utility Rooms/Areas	No dataplate	No dataplate	No dataplate		3003820	
11	9384227	D3060	**Exhaust Fan**	Roof or Wall-Mounted, 36"Damper	10000 CFM	006 - Fire Station 92	Utility Rooms/Areas	No dataplate	No dataplate	No dataplate		3003825	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D40 Fire Protection													
1	9384278	D4010	**Backflow Preventer**	Fire Suppression	4 INCH	006 - Fire Station 92	Mechanical Room	Ames	COLT 200	1H-5769		3003790	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D50 Electrical													
1	9384204	D5010	**Generator**	Diesel	100 KW	006 - Fire Station 92	Site Utility Areas	Generac	19199050200	2099622	2008	3003812	
2	9384211	D5010	**Solar Power**	Inverter, 4.0 KW		006 - Fire Station 92	Site Utility Areas	Xantrex	Illegible	Illegible		3003809	
3	9384241	D5010	**Automatic Transfer Switch**	ATS	400 AMP	006 - Fire Station 92	Electrical Room	Generac	GTS040W-3G2LDNAY	97524		3003823	
4	9384221	D5020	**Switchboard**	120/208 V	800 AMP	006 - Fire Station 92	Site Utility Areas	Siemens	SB3	No dataplate	2008	3003811	
5	9384256	D5020	**Distribution Panel** [D]	120/208 V	400 AMP	006 - Fire Station 92	Electrical Room	Siemens	P2C54JX400FBS	No dataplate	2008	3003789	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D70 Electronic Safety & Security													
1	9397815	D7050	**Fire Alarm Panel**	Fully Addressable		006 - Fire Station 92	Utility Rooms/Areas	Honeywell	NFW-50	No dataplate		3003826	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
E10 Equipment													
1	9384253	E1030	**Foodservice Equipment**	Sink, 2-Bowl		006 - Fire Station 92	Commercial Kitchen						

FACILITY CONDITION ASSESSMENT

prepared for

Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, AZ 85253



Municipal Court
6517 East Lincoln Drive
Paradise Valley, AZ 85253

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BV PROJECT #:
172662.25R000-007.468

DATE OF REPORT:
July 9, 2025

ON SITE DATE:
May 28, 2025

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1. Executive Summary

Property Overview and Assessment Details

General Information	
Property Type	Courthouse
Number of Buildings	1
Main Address	Municipal Court, 6517 East Lincoln Drive, Paradise Valley, AZ 85253
Site Developed	2013
Outside Occupants / Leased Spaces	None
Date(s) of Visit	May 28, 2025
Management Point of Contact	Paradise Valley Public Works Mr. Isaac Chavira, Public Works Director (480) 348-3540, ichavira@paradisevalleyaz.gov
On-site Point of Contact (POC)	Paradise Valley Public Works John Fraley, Lead Technician (480) 797-2060
Assessment and Report Prepared By	Paul Scanzillo
Reviewed By	Rashad Alnial *for,* Gregg Young Program Manager 979.270.0024 Gregg.Young@bureauveritas.com
AssetCalc Link	Full dataset for this assessment can be found at: https://www.assetcalc.net/

Significant/Systemic Findings and Deficiencies

Historical Summary

The current Municipal Court building was originally constructed in 2013 and is part of the Town of Paradise Valley Public Works complex. With construction of the new Municipal Court in 2013, trials were moved from the old Town Hall to the Municipal Court building. Except for one office area divided into smaller offices, no substantial renovations have taken place since the original construction. This information is provided from town historical records and discussions with onsite personnel.

Architectural

The CMU/brick structure is sound overall with no apparent settling observed. The flat built-up roof and metal pitched roofs are adequate as well with no ongoing issues or near-term needs with an estimated 50-70% of remaining life. The exterior glazed doors and aluminum insulated windows are free of clouding or seal issues. The steel personnel doors are sound but are in need of painting, more so on the inside. Interior finishes have been well-maintained over the years but will need upgrading in the future. All architectural assets are budgeted and anticipated for replacement based on condition and remaining useful life.

Mechanical, Electrical, Plumbing and Fire (MEPF)

The building is heated and cooled with packaged units located on the roof. The units are original 2013 with an estimated 40% of life cycle remaining. An energy recovery unit is also located on the roof along with exhaust fans and a ductless mini-split heat pump. Ductwork throughout the building appears to be adequate with filtration PM's performed regularly. Electrical service is provided by one pad-mounted transformer feeding a main switchboard, dry-type transformer and distribution panels. Backup electrical power is with a diesel generator located at the Police Department with an automatic transfer switch located in the fire riser room of the court building. Interior and exterior lighting appears to be LED throughout. The plumbing infrastructure is original with no reported issues. Restroom fixtures are all adequate and function as expected. The original water heater is expected to be replaced in the near term. The wet-pipe fire suppression system and fire alarm system have current inspection tags. The fire panel has an estimated 20% of life cycle remaining and is anticipated for replacement in a few years. All MEPF assets are budgeted and anticipated for replacement based on condition and expected remaining useful life.

Site

The asphalt drives and parking areas are original pavement with recent sealing and striping. No cracks or potholes are observed. Concrete sidewalks are observed to be adequate with no cracking observed. Site lighting is with LED pole fixtures and building-mounted fixtures.

Recommended Additional Studies

No additional studies recommended at this time.

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate the Facility Condition Index (FCI), which provides a theoretical objective indication of a facility's overall condition. The FCI is defined as the ratio of the cost of current needs divided by the current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

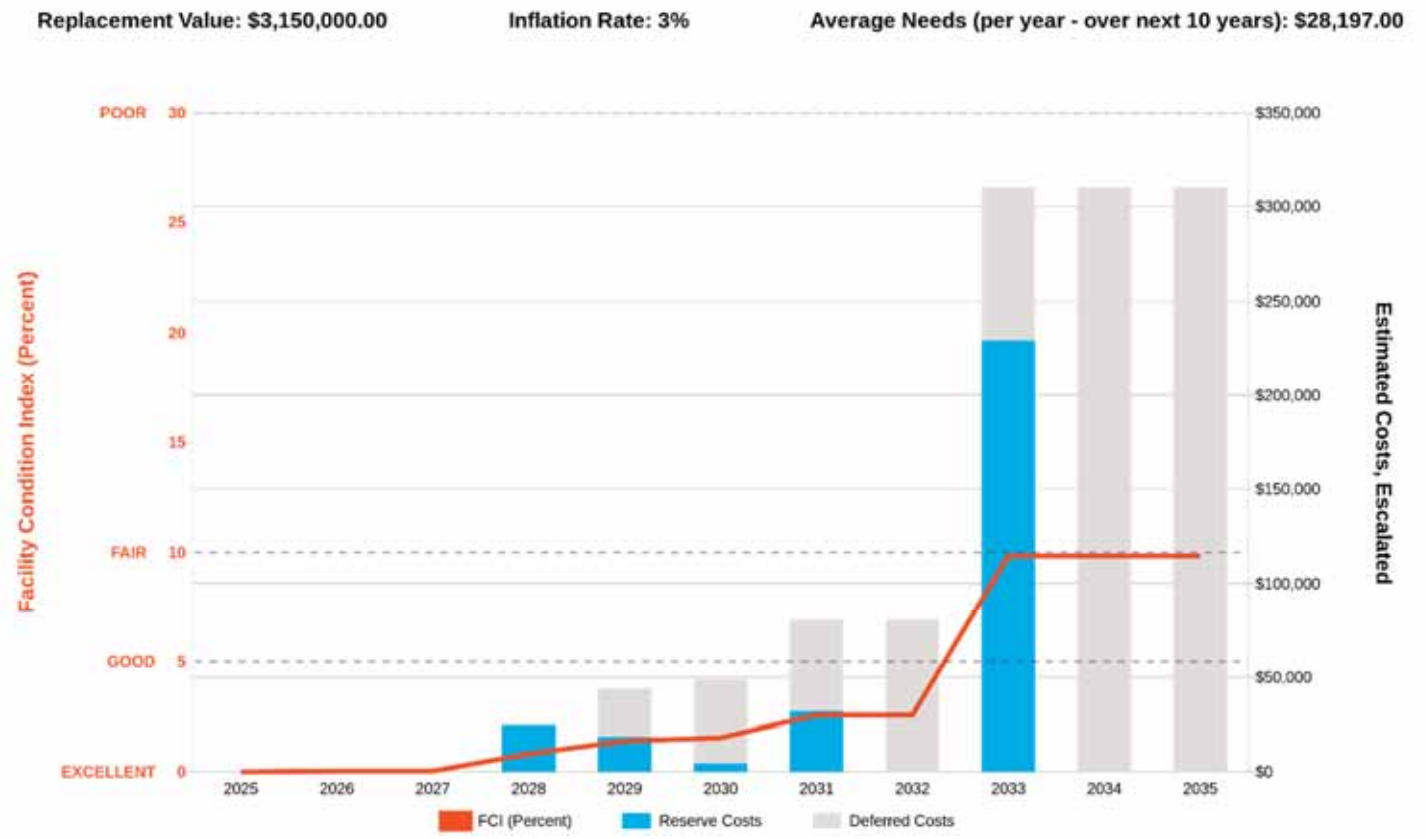
The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone mathematical values. The table below presents the current, 3-year, 5-year, and 10-year FCI's for this facility:

FCI Analysis		
Replacement Value *$3,150,000*	*Total SF* *6,000*	*Cost/SF* *$525*

	Est Reserve Cost	FCI
Current	$0	0 **%**
3-Year	$25,700	0.8 **%**
5-Year	$48,800	1.5 **%**
10-Year	$310,200	9.8 **%**

NEEDS OVER TIME: The vertical blue bars in the graphic below represent the year-by-year needs identified for the facility. The orange line forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures over the next ten years. The dollar amounts allocated for each year are associated with the values along the right Y axis.

Needs by Year with Unaddressed FCI Over Time



Immediate Needs

There are no immediate needs to report.

Key Findings



Exterior Door in Poor condition.

Wood, any type
007 - Municipal Court
Building Exterior

Uniformat Code: B2050
Recommendation: **Refinish in 2026**

Plan Type:
Performance/Integrity

Cost Estimate: $800

The inside of exterior steel doors are scuffed and discolored, need painting. - AssetCALC ID: 9391152



Exterior Light

any type, w/ LED Replacement
007 - Municipal Court
Fire Riser Room

Uniformat Code: D5040
Recommendation: **Replace in 2026**

Plan Type:
Retrofit/Adaptation

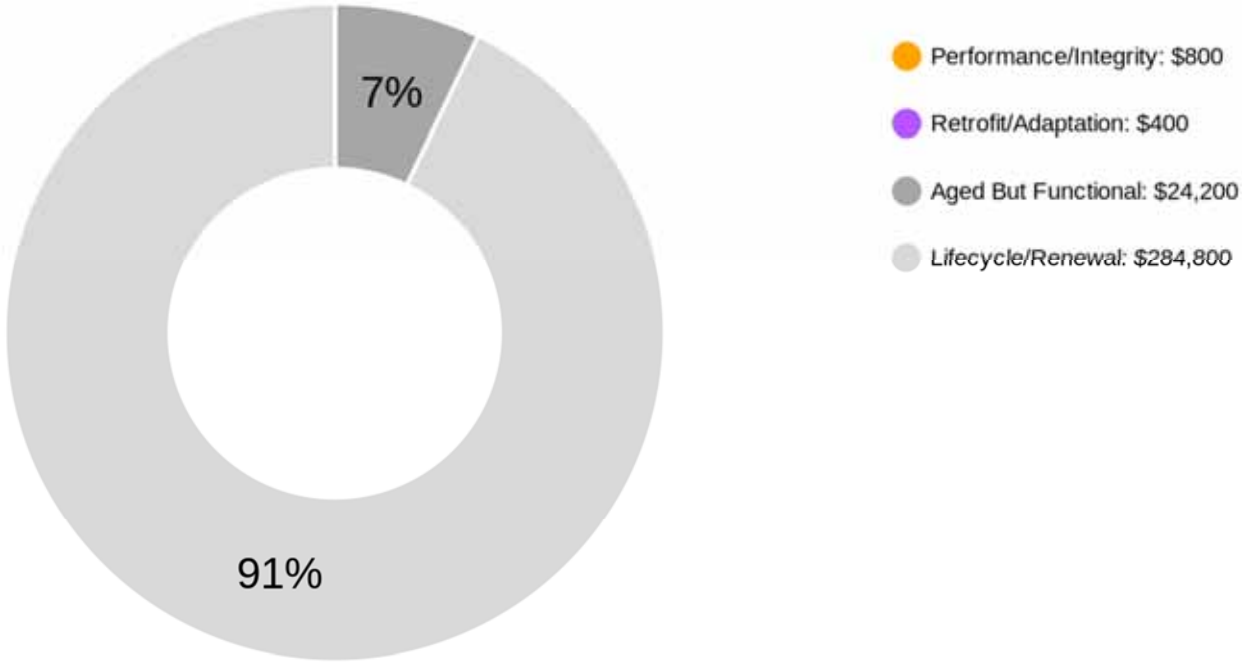
Cost Estimate: $400

Recommend light installed above fire riser room doors. - AssetCALC ID: 9391157

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the “why” part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the “best” fit, typically the one with the greatest significance and highest on the list below.

Plan Type Descriptions and Distribution		
Safety		An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity		Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility		Does not meet ADA, UFAS, and/or other accessibility requirements.
Environmental		Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation		Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Aged But Functional		Any component or system that has aged past its industry-average expected useful life (EUL) but is not currently deficient or problematic.
Lifecycle/Renewal		Any component or system that is neither deficient nor aged past EUL but for which future replacement or repair is anticipated and budgeted.



10-Year Total: $310,200

2. Building Systems and Site Elements





Building Systems Summary		
Address	6517 East Lincoln Drive, Paradise Valley, AZ 85253	
GPS Coordinates	33.5305137, -111.9398897	
Constructed/Renovated	2013	
Building Area	6,000 SF	
Number of Stories	1 above grade	
System	*Description*	*Condition*
Structure	Masonry bearing walls with metal roof deck supported by open-web steel joists and concrete strip/wall footing foundation system	Good
Facade	Primary Wall Finish: Brick and CMU Secondary Wall Finish: Metal siding Windows: Aluminum	Good
Roof	Primary: Flat construction with built-up finish Secondary: Pitched construction with standing-seam metal finish	Fair
Interiors	Walls: Painted gypsum board, acoustical panels, wood paneling, vinyl, ceramic tile, and unfinished Floors: Carpet, ceramic tile, and unfinished concrete Ceilings: Painted gypsum board, ACT, and unfinished/exposed	Fair
Elevators	None	-

Building Systems Summary		
Plumbing	Distribution: Copper supply and PVC waste and venting Hot Water: Electric water heater with integral tank Fixtures: Toilets, urinal, and sinks in all restrooms	Fair
HVAC	Non-Central System: Packaged units on roof Supplemental components: Ductless split-systems and energy recovery unit on roof	Fair
Fire Suppression	Wet-pipe sprinkler system and fire extinguishers	Good
Electrical	Source and Distribution: Main switchboard with copper wiring fed from pad-mount transformer with copper wiring Interior Lighting: LED Emergency Power: Diesel generator located at PD site with automatic transfer switch located in courthouse	Fair
Fire Alarm	Alarm panel with smoke detectors, heat detectors, alarms, strobes, pull stations, back-up emergency lights, and exit signs	Fair
Equipment/Special	None	-
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	The interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, the exterior walls of the facility, and the roofs.	
Key Spaces Not Observed	All key areas of the facility were accessible and observed.	

Site Information		
Site Area	0.9 acres	
Parking Spaces	17 total spaces all in open lots; 2 of which are accessible.	
System	*Description*	*Condition*
Site Pavement	Asphalt lots with limited areas of concrete aprons and pavement and adjacent concrete sidewalks, curbs, ramps, and stairs	Good
Site Development	Building-mounted and property entrance signage Limited Park benches and trash receptacles	Good
Landscaping and Topography	Significant landscaping features including lawns, trees, bushes, and planters Irrigation present Low to moderate site slopes throughout	Good
Utilities	Municipal water and sewer Local utility-provided electric	Good
Site Lighting	Pole-mounted: LED Building-mounted: LED Ground-mounted: LED	Fair
Ancillary Structures	None	-
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	All key areas of the exterior site were accessible and observed.	

The table below shows the anticipated costs by trade or building system over the next 20 years.

007 - Municipal Court: System Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Structure	$0	$0	$0	$0	$0	$0
Facade	$0	$772	$0	$12,959	$71,007	$84,738
Roofing	$0	$0	$0	$0	$74,014	$74,014
Interiors	$0	$0	$19,050	$35,288	$95,657	$149,995
Plumbing	$0	$0	$2,349	$0	$27,490	$29,839
HVAC	$0	$0	$5,245	$90,570	$49,029	$144,844
Fire Protection	$0	$0	$0	$0	$9,427	$9,427
Electrical	$0	$412	$4,521	$7,092	$84,854	$96,879
Fire Alarm and Electronic Systems	$0	$0	$16,390	$38,002	$25,536	$79,928
Equipment and Furnishings	$0	$0	$0	$68,404	$855	$69,259
Sitework	$0	$0	$0	$9,120	$179,606	$188,726
TOTALS	**$0**	**$1,200**	**$47,600**	**$261,500**	**$617,500**	**$927,800**

3. ADA Accessibility

Generally, Title II of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “public facilities” on the basis of disability. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

A public entity (i.e. city governments) shall operate each service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities.

However, this does not:

1. Necessarily require a public entity to make each of its existing facilities accessible to and usable by individuals with disabilities;
2. Require a public entity to take any action that would threaten or destroy the historic significance of an historic property; or
3. Require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of a service, program, or activity or in undue financial and administrative burdens. In those circumstances where personnel of the public entity believe that the proposed action would fundamentally alter the service, program, or activity or would result in undue financial and administrative burdens, a public entity has the burden of proving that compliance with 35.150(a) of this part would result in such alteration or burdens. The decision that compliance would result in such alteration or burdens must be made by the head of a public entity or his or her designee after considering all resources available for use in the funding and operation of the service, program, or activity, and must be accompanied by a written statement of the reasons for reaching that conclusion. If an action would result in such an alteration or such burdens, a public entity shall take any other action that would not result in such an alteration or such burdens but would nevertheless ensure that individuals with disabilities receive the benefits or services provided by the public entity.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the material included in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this assessment. A full measured ADA survey would be required to identify more specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance
- Only a representative sample of areas was observed
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance
- Itemized costs for individual non-compliant items are included in the dataset
- For any “none” boxes checked or reference to “no issues” identified, that alone does not guarantee full compliance

The facility was originally constructed in 2013. The facility has not since been substantially renovated.

No detailed follow-up accessibility study is currently recommended since no major or moderate issues were identified at the subject site. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey.

4. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

5. Opinions of Probable Costs

Cost estimates are embedded throughout this report, including the very detailed Replacement Reserves report in the appendix. The cost estimates are predominantly based on construction rehabilitation costs developed by the *RSMeans data from Gordian.* While the *RSMeans data from Gordian* is the primary reference source for the Bureau Veritas cost library, secondary and supporting sources include but are not limited to other industry experts work, such as *Marshall & Swift* and *CBRE Whitestone.* For improved accuracy, additional research integrated with Bureau Veritas's historical experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions also come into play when deemed necessary. Invoice or bid documents provided either by the owner or facility construction resources may be reviewed early in the process or for specific projects as warranted.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

To account for differences in prices between locations, the base costs are modified by geographical location factors to adjust for to market conditions, transportation costs, or other local contributors. When requested by the client, the costs may be further adjusted by several additional factors including; labor rates (prevailing minimum wage), general contractor fees for profit and overhead, and insurance. If desired, costs for design and permits, and a contingency factor, may also be included in the calculations.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system or component replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

6. Certification

Town of Paradise Valley (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of Municipal Court, 6517 East Lincoln Drive, Paradise Valley, AZ 85253, the “Property”. It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager’s walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property’s original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and Bureau Veritas.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of Bureau Veritas. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to Bureau Veritas.

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7. Appendices

Appendix A: Photographic Record
Appendix B: Site Plan(s)
Appendix C: Pre-Survey Questionnaire(s)
Appendix D: Accessibility Review and Photos
Appendix E: Component Condition Report
Appendix F: Replacement Reserves
Appendix G: Equipment Inventory List

Appendix A:
Photographic Record

Photographic Overview



1 - FRONT ELEVATION



2 - LEFT ELEVATION



3 - REAR ELEVATION



4 - RIGHT ELEVATION



5 - METAL ROOF OVERVIEW



6 - FLAT ROOF OVERVIEW

Photographic Overview



7 - STRUCTURAL COMPONENTS



8 - MAIN ENTRANCE



9 - SECURITY ENTRANCE



10 - INTERIOR OVERVIEW



11 - COURTROOM OVERVIEW



12 - JUDGE'S BENCH

Photographic Overview



13 - JURY AREA



14 - OFFICE AREA



15 - TYPICAL OFFICE



16 - CONFERENCE ROOM

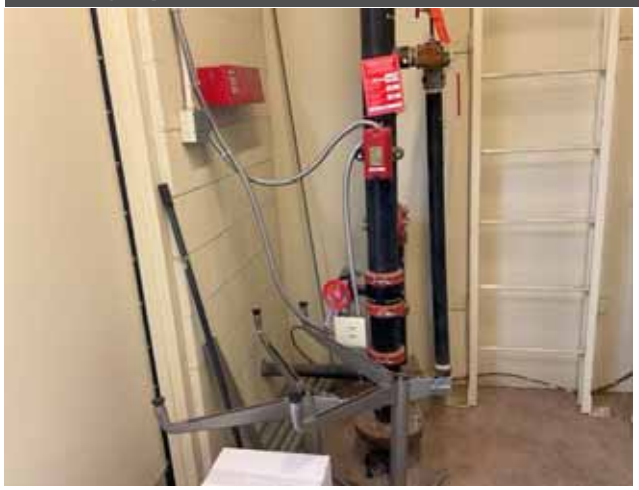


17 - FIRE ALARM COMPONENTS



18 - FIRE ALARM PANEL

Photographic Overview



19 - FIRE RISER



20 - ROOFTOP MECHANICAL EQUIPMENT



21 - ELECTRICAL SWITCHBOARD



22 - PARKING AREA



23 - DOMESTIC PIPING AND WATER HEATER



24 - SIGNAGE AND LANDSCAPING

Appendix B:
Site Plan(s)

Site Plan



Project Number	Project Name
172662.25R000-007.468	Municipal Court
Source	**On-Site Date**
Google	May 28, 2025

N

Appendix C:
Pre-Survey Questionnaire(s)

BV FACILITY CONDITION ASSESSMENT: PRE-SURVEY QUESTIONNAIRE

Building / Facility Name: Municipal Court

Name of person completing form: John Fraley

Title / Association w/ property: Lead Technician

Length of time associated w/ property: 4 Years

Date Completed: 5/28/2025

Phone Number: 480-797-2060

Method of Completion: INTERVIEW - verbally completed during interview

Directions: Please answer all questions to the best of your knowledge and in good faith. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses.

Data Overview		Response		
1	Year(s) constructed	Constructed: 2013	Renovated:	
2	Building size in SF	6,000 **SF**		
3	Major Renovation/Rehabilitation		Year	Additional Detail
		Facade		
		Roof		
		Interiors	2024	One small office divided
		HVAC		
		Electrical		
		Site Pavement		
		Accessibility		
4	List other significant capital improvements (focus on recent years; provide approximate date).	None		
5	List any major capital expenditures planned/requested for the next few years. Have they been budgeted?	None		
6	Describe any on-going extremely problematic, historically chronic, or immediate facility needs.	None		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Response				Comments
		Yes	No	Unk	NA	
7	Are there any problems with foundations or structures, like excessive settlement?		X			
8	Are there any wall, window, basement or roof leaks?		X			
9	Has any part of the facility ever contained visible suspect mold growth, or have there been any indoor air quality complaints?		X			
10	Are your elevators unreliable, with frequent service calls?				X	
11	Are there any plumbing leaks, water pressure, or clogging/backup issues?		X			
12	Have there been any leaks or pressure problems with natural gas, HVAC piping, or steam service?		X			
13	Are any areas of the facility inadequately heated, cooled or ventilated? Poorly insulated areas?		X			
14	Is the electrical service outdated, undersized, or problematic?		X			
15	Are there any problems or inadequacies with exterior lighting?		X			
16	Is site/parking drainage inadequate, with excessive ponding or other problems?		X			
17	Are there any other unresolved construction defects or significant issues/hazards at the property that have not yet been identified above?		X			
18	ADA: Has an accessibility study been previously performed? If so, when?			X		
19	ADA: Have any ADA improvements been made to the property since original construction? Describe.		X			
20	ADA: Has building management reported any accessibility-based complaints or litigation?		X			
21	Are any areas of the property leased to outside occupants?		X			

Signature of Assessor

Signature of POC

Appendix D:
Accessibility Review and Photos

Visual Survey - 2010 ADA Standards for Accessible Design

Property Name: Municipal Court

BV Project Number: 172662.25R000-007.468

Facility History & Interview

	Question	Yes	No	Unk	Comments
1	Has an accessibility study been previously performed? If so, when?			X	
2	Have any ADA improvements been made to the property since original construction? Describe.		X		
3	Has building management reported any accessibility-based complaints or litigation?		X		

007 - Municipal Court: Accessibility Issues

Category	Major Issues (ADA study recommended)	Moderate Issues (ADA study recommended)	Minor Issues	None*
Parking				X
Exterior Accessible Route				X
Building Entrances				X
Interior Accessible Route				X
Elevators	**NA**			
Public Restrooms				X
Kitchens/Kitchenettes	**NA**			
Playgrounds & Swimming Pools	**NA**			
Other	**NA**			

**be cognizant that if the "None" box is checked that does not guarantee full compliance; this study is limited in nature*

007 - Municipal Court: Photographic Overview



OVERVIEW OF ACCESSIBLE PARKING AREA



CLOSE-UP OF STALL



ACCESSIBLE PATH



CURB CUT



ACCESSIBLE ENTRANCE

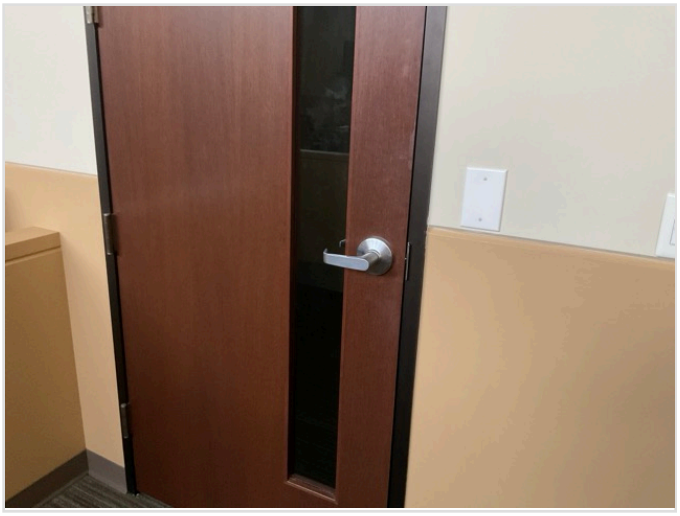


DOOR THRESHOLD

007 - Municipal Court: Photographic Overview



ACCESSIBLE INTERIOR RAMP



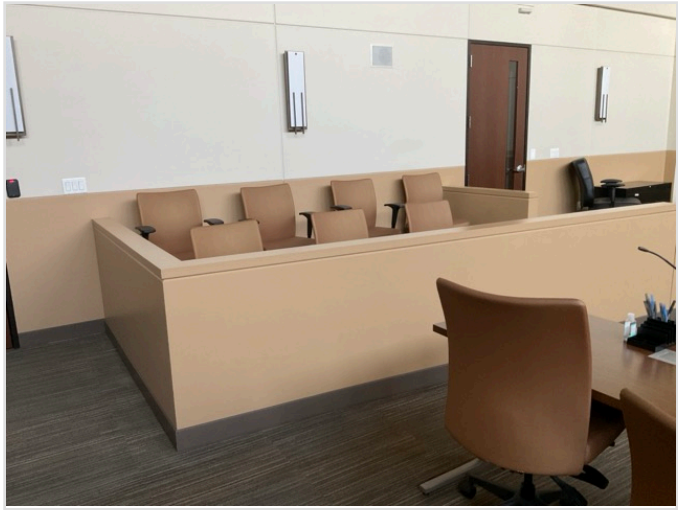
DOOR HARDWARE



TOILET STALL OVERVIEW



SINK, FAUCET HANDLES AND ACCESSORIES



OVERVIEW OF JURY AREA



OVERVIEW OF JUDGE BENCH

Appendix E:
Component Condition Report

Component Condition Report | 007 - Municipal Court

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A1010	Substructure	Good	Foundations, Concrete or CMU Walls w/ Continuous Footings, 1-2 Story Building	365 LF	63	9391144
B1010	Superstructure	Good	Structural Framing, Masonry (CMU) Bearing Walls, 1-2 Story Building	6,000 SF	63	9391184
Facade						
B2010	Building Exterior	Fair	Exterior Walls, Metal Siding	1,100 SF	28	9391150
B2010	Building Exterior	Fair	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	5,500 SF	8	9391185
B2020	Building Exterior	Fair	Glazing, any type by SF	700 SF	18	9391130
B2050	Building Exterior	Fair	Exterior Door, Steel, Commercial	5	28	9391170
B2050	Building Exterior	Poor	Exterior Door, Wood, any type, Refinish	5	1	9391152
B2050	Building Exterior	Fair	Exterior Door, Aluminum-Framed & Glazed, Standard Swing	2	18	9391172
Roofing						
B3010	Roof	Good	Roofing, Metal	2,900 SF	28	9391124
B3010	Roof	Fair	Roofing, Built-Up	3,600 SF	13	9391137
Interiors						
C1030	Throughout Building	Good	Interior Door, Wood, Solid-Core	22	28	9391156
C1070	Throughout Building	Fair	Suspended Ceilings, Acoustical Tile (ACT)	2,700 SF	13	9391168
C1090	Restrooms	Fair	Toilet Partitions, Metal	3	8	9391129
C2010	Restrooms	Good	Wall Finishes, Ceramic Tile	800 SF	28	9391198
C2010	Courtroom	Fair	Wall Finishes, Wood Paneling, Raised Architectural Wainscot	100 SF	18	9391153
C2010	Throughout Building	Fair	Wall Finishes, any surface, Prep & Paint	11,000 SF	4	9391173
C2010	Lobby	Fair	Wall Finishes, Wallpaper	200 SF	3	9391175
C2010	Courtroom	Fair	Wall Finishes, Acoustical Tile (ACT), Fabric-Faced	400 SF	13	9391166
C2030	Throughout Building	Good	Flooring, Ceramic Tile	2,700 SF	28	9391154
C2030	Restrooms	Good	Flooring, Ceramic Tile	600 SF	28	9391189

Component Condition Report | 007 - Municipal Court

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
C2030	Throughout Building	Fair	Flooring, Carpet, Commercial Standard	2,700 SF	6	9391136
C2050	Restrooms	Fair	Ceiling Finishes, any flat surface, Prep & Paint	600 SF	6	9391165
C2050	Throughout Building	Fair	Ceiling Finishes, any flat surface, Prep & Paint	2,700 SF	6	9391179
Plumbing						
D2010	Restroom	Fair	Sink/Lavatory, Wall-Hung, Enameled Steel	1	18	9391131
D2010	Restrooms	Fair	Sink/Lavatory, Vanity Top, Stainless Steel	4	18	9391162
D2010	Throughout Building	Fair	Drinking Fountain, Wall-Mounted, Bi-Level	1	3	9391187
D2010	Throughout Building	Fair	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures)	6,000 SF	28	9391139
D2010	Restrooms	Fair	Toilet, Commercial Water Closet	4	18	9391188
D2010	Restrooms	Fair	Urinal, Standard	1	18	9391142
D2010	119	Fair	Sink/Lavatory, Vanity Top, Stainless Steel	1	18	9391161
D2010	102	Fair	Water Heater, Electric, Residential	1	3	9391171
D2010	102	Fair	Sink/Lavatory, Service Sink, Floor	1	23	9391160
D2030	Roof	Fair	Supplemental Components, Drains, Roof	4	28	9391177
HVAC						
D3030	Roof	Fair	Split System Ductless, Single Zone	1	3	9391174
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted	1	8	9391140
D3050	Throughout Building	Fair	HVAC System, Ductwork, Medium Density	6,000 SF	18	9391151
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted	1	8	9391149
D3050	Roof	Fair	Energy Recovery Unit, Exterior AHU	1	8	9391146
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted [AC-2]	1	8	9391169
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted [AC-1]	1	8	9391134
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-3]	1	8	9391147
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-1]	1	8	9391159
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-2]	1	8	9391138

Component Condition Report | 007 - Municipal Court

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Fire Protection						
D4010	Throughout Building	Fair	Fire Suppression System, Existing Sprinkler Heads, by SF	6,000 SF	13	9391176
D4010	Fire Riser Room	Good	Supplemental Components, Fire Riser, Wet	1	28	9391133
Electrical						
D5010	Fire Riser Room	Fair	Automatic Transfer Switch, ATS	1	13	9391178
D5020	Fire Riser Room	Good	Secondary Transformer, Dry, Stepdown	1	23	9391141
D5020	Building Exterior	Fair	Switchboard, 277/480 V	1	28	9391181
D5030	Throughout Building	Fair	Electrical System, Wiring & Switches, Average or Low Density/Complexity	6,000 SF	28	9391145
D5040	Fire Riser Room	NA	Exterior Light, any type, w/ LED Replacement	1	1	9391157
D5040	Building Exterior	Fair	Exterior Light, any type, w/ LED Replacement	4	8	9391182
D5040	Building Exterior	Fair	Exterior Light, any type, w/ LED Replacement	6	8	9391158
D5040	Throughout Building	Fair	Emergency & Exit Lighting System, Full Interior Upgrade, LED	6,000 SF	5	9391163
D5040	Courtroom	Good	Interior Lighting System, Full Upgrade, Medium Density & Standard Fixtures	6,000 SF	15	9391186
D5040	Building Exterior	Fair	Exterior Light, any type, w/ LED Replacement	4	8	9391143
Fire Alarm & Electronic Systems						
D7030	Throughout Building	Fair	Security/Surveillance System, Full System Upgrade, Average Density	6,000 SF	8	9391135
D7050	105	Fair	Fire Alarm Panel, Fully Addressable	1	3	9391122
D7050	Throughout Building	Fair	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	6,000 SF	8	9391164
Equipment & Furnishings						
E1060	119	Good	Residential Appliances, Refrigerator, 14 to 18 CF	1	12	9391155
E2010	Courtroom	Fair	Casework, Cabinetry, Standard	100 LF	8	9391123
E2010	Restrooms	Fair	Casework, Cabinetry, Standard	20 LF	8	9391128
E2010	Throughout Building	Fair	Casework, Cabinetry, Standard	60 LF	8	9391132
Pedestrian Plazas & Walkways						
G2030	Site	Good	Sidewalk, Concrete, Large Areas	1,500 SF	38	9391167

Component Condition Report | 007 - Municipal Court

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Sitework						
G2060	Site	Fair	Flagpole, Metal	1	18	9391148
G2060	Building Exterior	Fair	Signage, Property, Building-Mounted Individual Letters, Replace/Install	28	8	9391180
G2060	Site	Fair	Signage, Property, Monument, Replace/Install	1	8	9391126
Utilities						
G4010	Building Exterior	Fair	Site Transformer, Liquid Filled, Property-Owned	1	18	9391125

Appendix F:
Replacement Reserves

Replacement Reserves Report

007 - Municipal Court

7/9/2025

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total Escalated Estimate
007 - Municipal Court	$0	$1,185	$0	$24,466	$18,571	$4,521	$32,060	$0	$229,387	$0	$0	$1,038	$855	$142,257	$24,958	$48,141	$43,086	$0	$357,153	$0	$0	**$927,679**
Grand Total	**$0**	**$1,185**	**$0**	**$24,466**	**$18,571**	**$4,521**	**$32,060**	**$0**	**$229,387**	**$0**	**$0**	**$1,038**	**$855**	**$142,257**	**$24,958**	**$48,141**	**$43,086**	**$0**	**$357,153**	**$0**	**$0**	**$927,679**

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
B2010	Building Exterior	9391185	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	20	12	8	5500	SF	$1.86	$10,230									$10,230														**$10,230**
B2020	Building Exterior	9391130	Glazing, any type by SF, Replace	30	12	18	700	SF	$55.00	$38,500																			$38,500				**$38,500**
B2050	Building Exterior	9391152	Exterior Door, Wood, any type, Refinish	10	9	1	5	EA	$150.00	$750		$750										$750											**$1,500**
B2050	Building Exterior	9391172	Exterior Door, Aluminum-Framed & Glazed, Standard Swing, Replace	30	12	18	2	EA	$1,300.00	$2,600																			$2,600				**$2,600**
B3010	Roof	9391137	Roofing, Built-Up, Replace	25	12	13	3600	SF	$14.00	$50,400														$50,400									**$50,400**
C1070	Throughout Building	9391168	Suspended Ceilings, Acoustical Tile (ACT), Replace	25	12	13	2700	SF	$3.50	$9,450														$9,450									**$9,450**
C1090	Restrooms	9391129	Toilet Partitions, Metal, Replace	20	12	8	3	EA	$850.00	$2,550									$2,550														**$2,550**
C2010	Courtroom	9391153	Wall Finishes, Wood Paneling, Raised Architectural Wainscot, Replace	30	12	18	100	SF	$28.00	$2,800																			$2,800				**$2,800**
C2010	Lobby	9391175	Wall Finishes, Wallpaper, Replace	15	12	3	200	SF	$2.20	$440				$440															$440				**$880**
C2010	Throughout Building	9391173	Wall Finishes, any surface, Prep & Paint	10	6	4	11000	SF	$1.50	$16,500					$16,500										$16,500								**$33,000**
C2010	Courtroom	9391166	Wall Finishes, Acoustical Tile (ACT), Fabric-Faced, Replace	25	12	13	400	SF	$14.00	$5,600														$5,600									**$5,600**
C2030	Throughout Building	9391136	Flooring, Carpet, Commercial Standard, Replace	10	4	6	2700	SF	$7.50	$20,250							$20,250										$20,250						**$40,500**
C2050	Restrooms	9391165	Ceiling Finishes, any flat surface, Prep & Paint	10	4	6	600	SF	$2.00	$1,200							$1,200										$1,200						**$2,400**
C2050	Throughout Building	9391179	Ceiling Finishes, any flat surface, Prep & Paint	10	4	6	2700	SF	$2.00	$5,400							$5,400										$5,400						**$10,800**
D2010	102	9391171	Water Heater, Electric, Residential, Replace	15	12	3	1	EA	$650.00	$650				$650															$650				**$1,300**
D2010	Throughout Building	9391187	Drinking Fountain, Wall-Mounted, Bi-Level, Replace	15	12	3	1	EA	$1,500.00	$1,500				$1,500															$1,500				**$3,000**
D2010	Restroom	9391131	Sink/Lavatory, Wall-Hung, Enameled Steel, Replace	30	12	18	1	EA	$1,700.00	$1,700																			$1,700				**$1,700**
D2010	Restrooms	9391162	Sink/Lavatory, Vanity Top, Stainless Steel, Replace	30	12	18	4	EA	$1,200.00	$4,800																			$4,800				**$4,800**
D2010	Restrooms	9391188	Toilet, Commercial Water Closet, Replace	30	12	18	4	EA	$1,300.00	$5,200																			$5,200				**$5,200**
D2010	Restrooms	9391142	Urinal, Standard, Replace	30	12	18	1	EA	$1,100.00	$1,100																			$1,100				**$1,100**
D2010	119	9391161	Sink/Lavatory, Vanity Top, Stainless Steel, Replace	30	12	18	1	EA	$1,200.00	$1,200																			$1,200				**$1,200**
D3030	Roof	9391174	Split System Ductless, Single Zone, Replace	15	12	3	1	EA	$4,800.00	$4,800				$4,800															$4,800				**$9,600**
D3050	Roof	9391140	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	12	8	1	EA	$9,000.00	$9,000									$9,000														**$9,000**
D3050	Roof	9391149	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	12	8	1	EA	$11,000.00	$11,000									$11,000														**$11,000**
D3050	Roof	9391146	Energy Recovery Unit, Exterior AHU, Replace	20	12	8	1	EA	$17,300.00	$17,300									$17,300														**$17,300**
D3050	Roof	9391169	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	12	8	1	EA	$15,000.00	$15,000									$15,000														**$15,000**
D3050	Roof	9391134	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	12	8	1	EA	$15,000.00	$15,000									$15,000														**$15,000**
D3050	Throughout Building	9391151	HVAC System, Ductwork, Medium Density, Replace	30	12	18	6000	SF	$4.00	$24,000																			$24,000				**$24,000**
D3060	Roof	9391147	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	12	8	1	EA	$1,400.00	$1,400									$1,400														**$1,400**
D3060	Roof	9391159	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	12	8	1	EA	$1,400.00	$1,400									$1,400														**$1,400**
D3060	Roof	9391138	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	12	8	1	EA	$1,400.00	$1,400									$1,400														**$1,400**
D4010	Throughout Building	9391176	Fire Suppression System, Existing Sprinkler Heads, by SF, Replace	25	12	13	6000	SF	$1.07	$6,420														$6,420									**$6,420**
D5010	Fire Riser Room	9391178	Automatic Transfer Switch, ATS, Replace	25	12	13	1	EA	$25,000.00	$25,000														$25,000									**$25,000**
D5040	Fire Riser Room	9391157	Exterior Light, any type, w/ LED Replacement, Replace	20	19	1	1	EA	$400.00	$400		$400																					**$400**
D5040	Throughout Building	9391163	Emergency & Exit Lighting System, Full Interior Upgrade, LED, Replace	10	5	5	6000	SF	$0.65	$3,900						$3,900										$3,900							**$7,800**
D5040	Building Exterior	9391182	Exterior Light, any type, w/ LED Replacement, Replace	20	12	8	4	EA	$400.00	$1,600									$1,600														**$1,600**
D5040	Building Exterior	9391158	Exterior Light, any type, w/ LED Replacement, Replace	20	12	8	6	EA	$400.00	$2,400									$2,400														**$2,400**
D5040	Building Exterior	9391143	Exterior Light, any type, w/ LED Replacement, Replace	20	12	8	4	EA	$400.00	$1,600									$1,600														**$1,600**
D5040	Courtroom	9391186	Interior Lighting System, Full Upgrade, Medium Density & Standard Fixtures, Replace	20	5	15	6000	SF	$4.50	$27,000																$27,000							**$27,000**
D7030	Throughout Building	9391135	Security/Surveillance System, Full System Upgrade, Average Density, Replace	15	7	8	6000	SF	$2.00	$12,000									$12,000														**$12,000**
D7050	105	9391122	Fire Alarm Panel, Fully Addressable, Replace	15	12	3	1	EA	$15,000.00	$15,000				$15,000															$15,000				**$30,000**
D7050	Throughout Building	9391164	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	20	12	8	6000	SF	$3.00	$18,000									$18,000														**$18,000**

Replacement Reserves Report

007 - Municipal Court

7/9/2025

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
E1060	119	9391155	Residential Appliances, Refrigerator, 14 to 18 CF, Replace	15	3	12	1	EA	$600.00	$600													$600									**$600**
E2010	Courtroom	9391123	Casework, Cabinetry, Standard, Replace	20	12	8	100	LF	$300.00	$30,000									$30,000													**$30,000**
E2010	Restrooms	9391128	Casework, Cabinetry, Standard, Replace	20	12	8	20	LF	$300.00	$6,000									$6,000													**$6,000**
E2010	Throughout Building	9391132	Casework, Cabinetry, Standard, Replace	20	12	8	60	LF	$300.00	$18,000									$18,000													**$18,000**
G2060	Building Exterior	9391180	Signage, Property, Building-Mounted Individual Letters, Replace/Install	20	12	8	28	EA	$150.00	$4,200									$4,200													**$4,200**
G2060	Site	9391126	Signage, Property, Monument, Replace/Install	20	12	8	1	EA	$3,000.00	$3,000									$3,000													**$3,000**
G2060	Site	9391148	Flagpole, Metal, Replace	30	12	18	1	EA	$2,500.00	$2,500																			$2,500			**$2,500**
G4010	Building Exterior	9391125	Site Transformer, Liquid Filled, Property-Owned, Replace	30	12	18	1	EA	$103,000.00	$103,000																			$103,000			**$103,000**
Totals, Unescalated											**$0**	**$1,150**	**$0**	**$22,390**	**$16,500**	**$3,900**	**$26,850**	**$0**	**$181,080**	**$0**	**$0**	**$750**	**$600**	**$96,870**	**$16,500**	**$30,900**	**$26,850**	**$0**	**$209,790**	**$0**	**$0**	**$634,130**
Totals, Escalated (3.0% inflation, compounded annually)											**$0**	**$1,185**	**$0**	**$24,466**	**$18,571**	**$4,521**	**$32,060**	**$0**	**$229,387**	**$0**	**$0**	**$1,038**	**$855**	**$142,257**	**$24,958**	**$48,141**	**$43,086**	**$0**	**$357,153**	**$0**	**$0**	**$927,679**

* Markup has been included in unit costs.

Appendix G:
Equipment Inventory List

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D20 Plumbing													
1	9391171	D2010	**Water Heater**	Electric, Residential	20 GAL	007 - Municipal Court	102	A. O. Smith	Inaccessible	Inaccessible	2013	2095386	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D30 HVAC													
1	9391174	D3030	**Split System Ductless**	Single Zone	1.5 TON	007 - Municipal Court	Roof	Panasonic	CU-S18NKUA	6860801527	2013	2095419	
2	9391146	D3050	**Energy Recovery Unit**	Exterior AHU	2000 CFM	007 - Municipal Court	Roof	RenewAire	HE1XRT	H13 4155C	2013	2045777	
3	9391140	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	4 TON	007 - Municipal Court	Roof	Carrier	50HCQA04A2A5A0A0A0	2413C66622	2013	2095421	
4	9391149	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	5 TON	007 - Municipal Court	Roof	Carrier	50HCQA05A2A5A0A0A0	2513C76025	2013	2045775	
5	9391134	D3050	**Packaged Unit** [AC-1]	RTU, Pad or Roof-Mounted	7 TON	007 - Municipal Court	Roof	Carrier	50HCQA07A2A5A0A0A0	3013G30091	2013	2045781	
6	9391169	D3050	**Packaged Unit** [AC-2]	RTU, Pad or Roof-Mounted	6 TON	007 - Municipal Court	Roof	Carrier	50HCQA06A2A5A0A0A0	2013C83638	2013	2045776	
7	9391159	D3060	**Exhaust Fan** [EF-1]	Roof or Wall-Mounted, 12" Damper	90 CFM	007 - Municipal Court	Roof	Greenheck	G-090-D-X	13405490 1309	2013	2045737	
8	9391138	D3060	**Exhaust Fan** [EF-2]	Roof or Wall-Mounted, 12" Damper	600 CFM	007 - Municipal Court	Roof	Greenheck	G-060-D-X	13405491 1309	2013	2045699	
9	9391147	D3060	**Exhaust Fan** [EF-3]	Roof or Wall-Mounted, 12" Damper	600 CFM	007 - Municipal Court	Roof	Greenheck	G-060-D-X	13405492 1309	2013	2095398	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D50 Electrical													
1	9391178	D5010	**Automatic Transfer Switch**	ATS	600 AMP	007 - Municipal Court	Fire Riser Room	Kohler	Decision-Maker. MPAC, 1200	No dataplate	2013	2045730	
2	9391141	D5020	**Secondary Transformer**	Dry, Stepdown	75 KVA	007 - Municipal Court	Fire Riser Room	Square D	EX75T3H	No dataplate	2018	2095418	
3	9391181	D5020	**Switchboard**	277/480 V	1200 AMP	007 - Municipal Court	Building Exterior	Square D	33164754-001 N	No dataplate	2013		

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D70 Electronic Safety & Security													
1	9391122	D7050	**Fire Alarm Panel**	Fully Addressable		007 - Municipal Court	105	Honeywell	No dataplate	No dataplate	2013	2045780	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
G40 Electrical Site Improvements													
1	9391125	G4010	**Site Transformer**	Liquid Filled, Property-Owned	1000 kVA	007 - Municipal Court	Building Exterior	Howard Industries	9137-435555-017	31944	2013	2045762	

FACILITY CONDITION ASSESSMENT

prepared for

Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, AZ 85253
Isaac Chavira



Police Department
6433 East Lincoln Drive
Paradise Valley, AZ 85253

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BV PROJECT #:
172662.25R000-004.468

DATE OF REPORT:
July 8, 2025

ON SITE DATE:
May 28, 2025

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1. Executive Summary

Property Overview and Assessment Details

General Information	
Property Type	Police Department
Number of Buildings	1
Main Address	6433 East Lincoln Drive, Paradise Valley, AZ 85253
Site Developed	1996 Renovated 2025
Outside Occupants / Leased Spaces	None
Date(s) of Visit	May 28, 2025
Management Point of Contact	Paradise Valley Public Works Mr. Isaac Chavira, Public Works Director (480) 348-3540, ichavira@paradisevalleyaz.gov
On-site Point of Contact (POC)	Paradise Valley Public Works John Fraley, Lead Technician (480) 797-2060
Assessment and Report Prepared By	Paul Scanzillo
Reviewed By	Rashad Alnial *for,* Gregg Young Program Manager 800.733.0660 x7296228 Gregg.Young@bureauveritas.com
AssetCalc Link	Full dataset for this assessment can be found at: https://www.assetcalc.net/

Significant/Systemic Findings and Deficiencies

Historical Summary

The Police Department building was originally constructed in 1996 and is part of the Town of Paradise Valley Public Works complex. A renovation to the dispatch office was recently completed in 2025. This information is provided from town historical records and discussions with onsite personnel.

Architectural

The CMU structure is sound overall but with a vertical crack observed in the CMU at the southeast corner. The flat built-up roof is observed to have issues with bubbling and heaving of the membrane. The 10-year roof warranty is reported to have just expired. The exterior glazed doors and aluminum insulated windows are free of clouding or seal issues. The steel personnel doors are sound with no observed issues. Interior finishes have been well-maintained over the years but will need upgrading in the future. The concrete floor in the armory is worn and needs repainting. All architectural assets are budgeted and anticipated for replacement based on condition and the remaining useful.

Mechanical, Electrical, Plumbing and Fire (MEPF)

The building is heated and cooled with packaged units located on the roof. The units have been replaced at different times over the years with one unit at 25% of the remaining life cycle. The most current 2022 replacements are at 85% of remaining life. The exhaust fans appear to be original but are functional and are anticipated for replacement in the near term. Ductwork throughout the building appears to be adequate with filtration PMs performed regularly. Electrical service is provided by one pad-mounted transformer feeding a main switchboard, dry-type transformer and distribution panels. Backup electrical power is with a diesel generator with an automatic transfer switch and UPS. Interior and exterior lighting appears to be LED throughout. The plumbing infrastructure is original with no reported issues. Restroom fixtures are all adequate and function as expected. The water heater will be aging out in approximately 7 years. The wet-pipe fire suppression system and fire alarm system have current inspection tags. The fire panel has an estimated 50% of life cycle remaining. All MEPF assets are budgeted and anticipated for replacement based on condition and expected remaining useful life.

Site

The asphalt drives and parking areas are original pavements with recent sealing and striping. No cracks or potholes are observed. The concrete pavers leading up to the front entrance of the building are heaving and uneven and are recommended for repairs to prevent the development of trip hazards. The concrete sidewalks are observed to be adequate with no cracking observed. Site lighting is with LED pole fixtures and building-mounted fixtures.

Recommended Additional Studies

No additional studies recommended at this time.

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate the Facility Condition Index (FCI), which provides a theoretical objective indication of a facility's overall condition. The FCI is defined as the ratio of the cost of current needs divided by the current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone mathematical values. The table below presents the current, 3-year, 5-year, and 10-year FCI's for this facility:

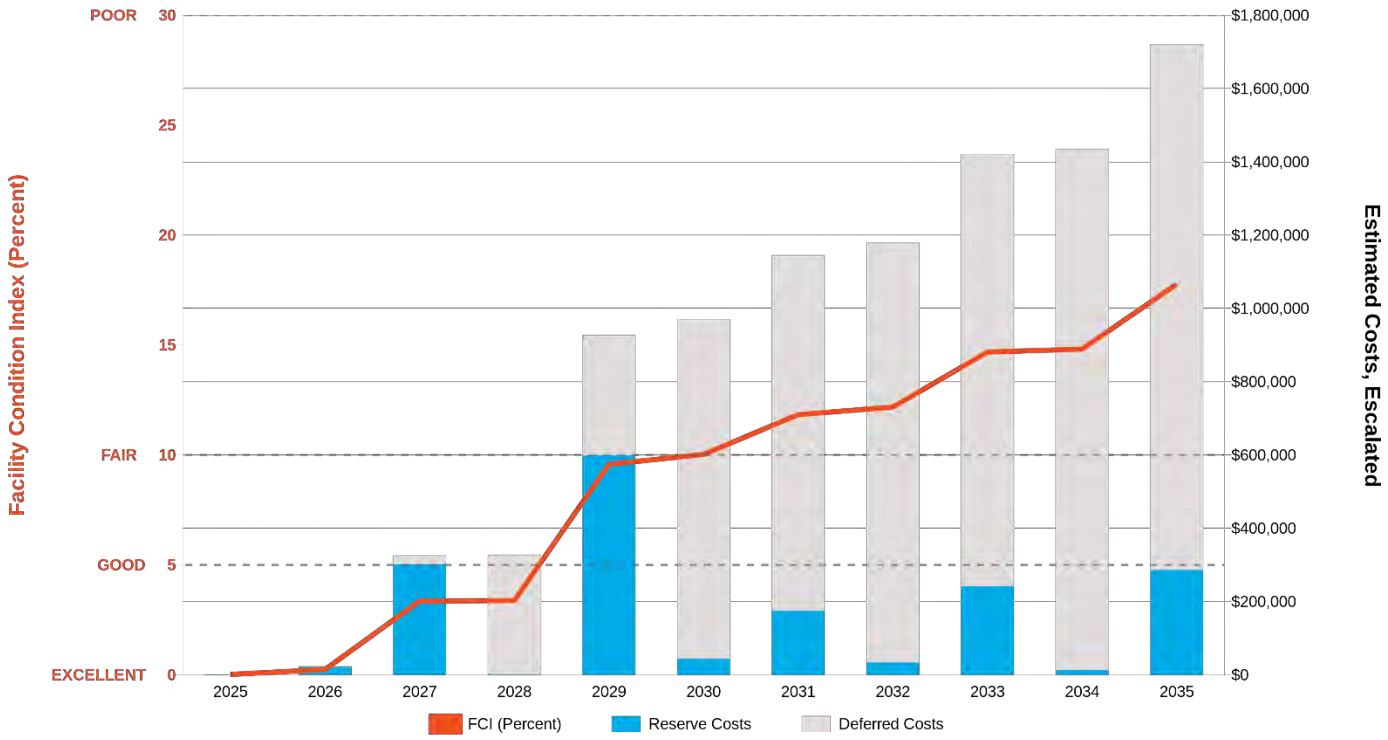
FCI Analysis		
Replacement Value *$9,681,525*	*Total SF* *18,441*	*Cost/SF* *$525*

	Est Reserve Cost	FCI
Current	$2,000	0.0 **%**
3-Year	$327,200	3.4 **%**
5-Year	$971,000	10.0 **%**
10-Year	$1,721,000	17.8 **%**

NEEDS OVER TIME: The vertical blue bars in the graphic below represent the year-by-year needs identified for the facility. The orange line forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures over the next ten years. The dollar amounts allocated for each year are associated with the values along the right Y axis.

Needs by Year with Unaddressed FCI Over Time

Replacement Value: $9,681,525.00 **Inflation Rate: 3%** **Average Needs (per year - over next 10 years): $156,447.00**



Immediate Needs

Location	UF Code	Description	Condition	Plan Type	Cost
Police Department	B2012	Exterior Walls, Concrete Block (CMU), Repair	Poor	Performance/Integrity	$2,000
TOTAL (1 items)					**$2,000**

Key Findings



Exterior Walls in Poor condition.

Concrete Block (CMU)
Police Department
Southeast Corner

Uniformat Code: B2010
Recommendation: **Repair in 2025**

Plan Type:
Performance/Integrity

Cost Estimate: $2,000

CMU is cracked vertically due to settling. Repair as needed to prevent water infiltration. - AssetCALC ID: 9398019



Roofing in Poor condition.

Built-Up
Police Department
Roof

Uniformat Code: B3010
Recommendation: **Replace in 2027**

Plan Type:
Performance/Integrity

Cost Estimate: $258,200

Brittle bubbles observed in places. 10 year warranty expired in 2024 per POC. Recommend complete replacement to maintain building integrity. - AssetCALC ID: 9398034



Sidewalk in Poor condition.

Brick/Masonry Pavers
Police Department
Site

Uniformat Code: G2030
Recommendation: **Replace in 2026**

Plan Type:
Performance/Integrity

Cost Estimate: $19,800

Pavers are heaved and uneven with gaps present. Repairs have been made to minimize trip hazards. Recommend reinstalling or replacing pavers as needed. - AssetCALC ID: 9398038



Sink/Lavatory in Poor condition.

Service Sink, Floor
Police Department
PS-123

Uniformat Code: D2010
Recommendation: **Replace in 2026**

Plan Type:
Performance/Integrity

Cost Estimate: $800

Cracked basin - AssetCALC ID: 9398074



Casework in Poor condition.

Cabinetry, Standard
Police Department
Breakroom

Uniformat Code: E2010
Recommendation: **Replace in 2027**

Plan Type:
Performance/Integrity

Cost Estimate: $18,000

Worn and damaged casework. - AssetCALC ID: 9398078



Flooring in Poor condition.

any surface, with Paint or Sealant
Police Department
Armory

Uniformat Code: C2030
Recommendation: **Prep and Paint in 2026**

Plan Type:
Performance/Integrity

Cost Estimate: $500

Peeling paint - AssetCALC ID: 9397987



Storm Drainage Components

Drainage Swale, Concrete
Police Department

Uniformat Code: G3030
Recommendation: **Install in 2027**

Plan Type:
Retrofit/Adaptation

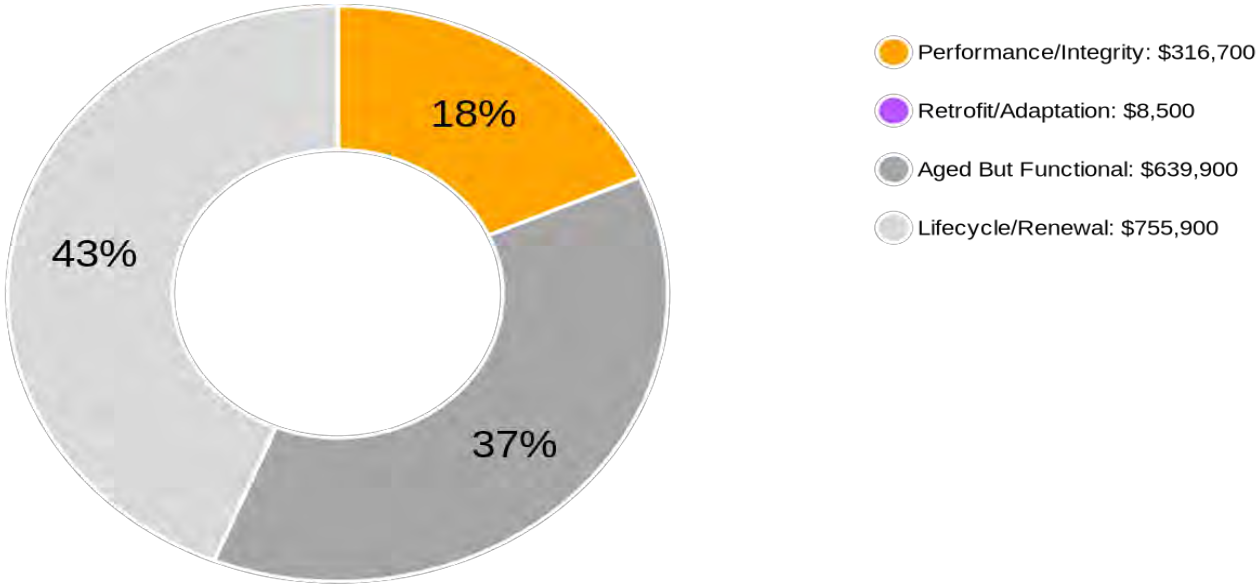
Cost Estimate: $8,000

Storm water ponds at squad car parking during heavy rain per POC. Recommend a storm water management system be installed. - AssetCALC ID: 9399544

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the "why" part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the "best" fit, typically the one with the greatest significance and highest on the list below.

Plan Type Descriptions and Distribution		
Safety		An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity		Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility		Does not meet ADA, UFAS, and/or other accessibility requirements.
Environmental		Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation		Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Aged But Functional		Any component or system that has aged past its industry-average expected useful life (EUL) but is not currently deficient or problematic.
Lifecycle/Renewal		Any component or system that is neither deficient nor aged past EUL but for which future replacement or repair is anticipated and budgeted.



10-Year Total: $1,720,900

2. Building Systems and Site Elements





Building Systems Summary		
Address	6433 East Lincoln Drive, Paradise Valley, AZ 85253	
GPS Coordinates	33.5306269, -111.9410088	
Constructed/Renovated	1996 Renovated 2025	
Building Area	18,441 SF	
Number of Stories	1 above grade	
System	*Description*	*Condition*
Structure	Masonry bearing walls with metal roof deck supported by open-web steel joists and concrete strip/wall footing foundation system	Fair
Facade	Primary Wall Finish: Painted stucco Secondary Wall Finish: CMU Windows: Aluminum	Fair
Roof	Flat construction with built-up finish	Fair
Interiors	Walls: Painted gypsum board, painted CMU, ceramic tile, padding, and unfinished Floors: Carpet, VCT, LVT, ceramic tile, laminate faux wood, epoxy, painted concrete, and unfinished concrete Ceilings: Painted gypsum board, ACT, and unfinished/exposed	Fair
Elevators	None	-

Building Systems Summary		
Plumbing	Distribution: Copper supply and PVC waste and venting Hot Water: Gas water heater with integral tank Fixtures: Toilets, urinals, and sinks in all restrooms	Fair
HVAC	Non-Central System: Packaged units and split-system heat pumps	Fair
Fire Suppression	Wet-pipe sprinkler system and fire extinguishers	Good
Electrical	Source and Distribution: Main switchboard with copper wiring fed from pad-mount transformer with copper wiring Interior Lighting: LED Emergency Power: Diesel generator with automatic transfer switch and UPS	Fair
Fire Alarm	Alarm panel with smoke detectors, heat detectors, alarms, strobes, pull stations, back-up emergency lights, and exit signs	Fair
Equipment/Special	Commercial kitchen equipment	Fair
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	Most of the interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, the exterior walls of the facility, and the roof.	
Key Spaces Not Observed	The IT Building was inaccessible.	

Site Information		
Site Area	2.54 acres	
Parking Spaces	51 total spaces all in open lots; 4 of which are accessible.	
System	*Description*	*Condition*
Site Pavement	Asphalt lots with limited areas of concrete aprons and pavement and adjacent concrete sidewalks, curbs, ramps, and stairs	Fair
Site Development	Building-mounted signage; sliding vehicle gates; CMU retaining walls	Fair
Landscaping and Topography	Significant landscaping features including lawns, trees, bushes, and planters Irrigation present Low to moderate site slopes throughout	Good
Utilities	Municipal water and sewer Local utility-provided electric and natural gas	Good
Site Lighting	Pole-mounted: LED Building-mounted: LED	Fair
Ancillary Structures	CMU Generator Building and CMU IT Building	Good
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	All key areas of the exterior site were accessible and observed.	

The table below shows the anticipated costs by trade or building system over the next 20 years.

Police Department: System Expenditure Forecast

System	Immediate	Short Term (1-2 yr)	Near Term (3-5 yr)	Med Term (6-10 yr)	Long Term (11-20 yr)	TOTAL
Structure	$0	$0	$0	$0	$0	$0
Facade	$2,000	$0	$46,595	$87,536	$92,465	$228,596
Roofing	$0	$273,896	$0	$0	$0	$273,896
Interiors	$0	$463	$170,681	$136,107	$401,987	$709,238
Plumbing	$0	$824	$59,532	$24,244	$146,168	$230,768
HVAC	$0	$0	$140,161	$78,271	$199,620	$418,052
Fire Protection	$0	$0	$34,024	$0	$13,842	$47,866
Electrical	$0	$0	$100,445	$115,985	$530,244	$746,674
Fire Alarm and Electronic Systems	$0	$0	$62,266	$65,169	$0	$127,435
Equipment and Furnishings	$0	$19,096	$7,143	$59,888	$53,271	$139,398
Special Construction and Demo	$0	$0	$0	$0	$506,027	$506,027
Sitework	$0	$28,881	$24,952	$182,762	$380,801	$617,396
TOTALS	**$2,000**	**$323,200**	**$645,800**	**$750,000**	**$2,324,500**	**$4,045,500**

3. ADA Accessibility

Generally, Title II of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “public facilities” on the basis of disability. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

A public entity (i.e. city governments) shall operate each service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities.

However, this does not:

1. Necessarily require a public entity to make each of its existing facilities accessible to and usable by individuals with disabilities;
2. Require a public entity to take any action that would threaten or destroy the historic significance of an historic property; or
3. Require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of a service, program, or activity or in undue financial and administrative burdens. In those circumstances where personnel of the public entity believe that the proposed action would fundamentally alter the service, program, or activity or would result in undue financial and administrative burdens, a public entity has the burden of proving that compliance with 35.150(a) of this part would result in such alteration or burdens. The decision that compliance would result in such alteration or burdens must be made by the head of a public entity or his or her designee after considering all resources available for use in the funding and operation of the service, program, or activity, and must be accompanied by a written statement of the reasons for reaching that conclusion. If an action would result in such an alteration or such burdens, a public entity shall take any other action that would not result in such an alteration or such burdens but would nevertheless ensure that individuals with disabilities receive the benefits or services provided by the public entity.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the material included in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this assessment. A full measured ADA survey would be required to identify more specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance
- Only a representative sample of areas was observed
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance
- Itemized costs for individual non-compliant items are included in the dataset
- For any “none” boxes checked or reference to “no issues” identified, that alone does not guarantee full compliance

The facility was originally constructed in 1996. The facility has not since been substantially renovated.

No detailed follow-up accessibility study is currently recommended since no major or moderate issues were identified at the subject site. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey.

4. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

5. Opinions of Probable Costs

Cost estimates are embedded throughout this report, including the very detailed Replacement Reserves report in the appendix. The cost estimates are predominantly based on construction rehabilitation costs developed by the *RSMeans data from Gordian.* While the *RSMeans data from Gordian* is the primary reference source for the Bureau Veritas cost library, secondary and supporting sources include but are not limited to other industry experts work, such as *Marshall & Swift* and *CBRE Whitestone.* For improved accuracy, additional research integrated with Bureau Veritas's historical experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions also come into play when deemed necessary. Invoice or bid documents provided either by the owner or facility construction resources may be reviewed early in the process or for specific projects as warranted.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

To account for differences in prices between locations, the base costs are modified by geographical location factors to adjust for to market conditions, transportation costs, or other local contributors. When requested by the client, the costs may be further adjusted by several additional factors including; labor rates (prevailing minimum wage), general contractor fees for profit and overhead, and insurance. If desired, costs for design and permits, and a contingency factor, may also be included in the calculations.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system or component replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

6. Certification

Town of Paradise Valley, FCA wInventory Program (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of Police Department, 6433 East Lincoln Drive, Paradise Valley, AZ 85253, the “Property”. It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager’s walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property’s original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and Bureau Veritas.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of Bureau Veritas. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to Bureau Veritas.

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7. Appendices

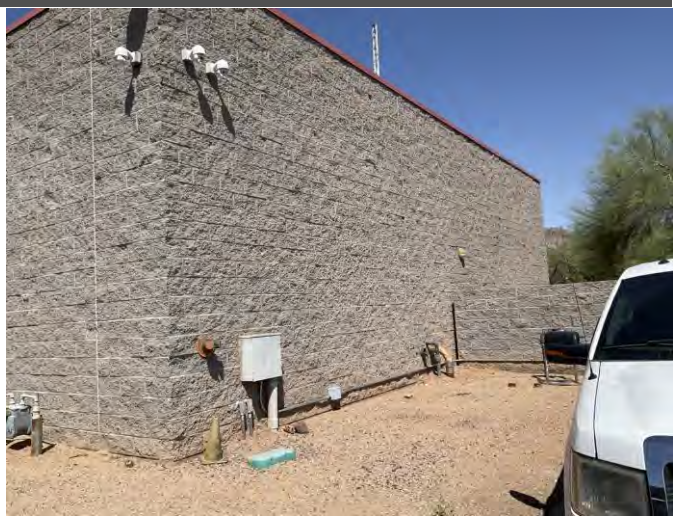
Appendix A: Photographic Record
Appendix B: Site Plan(s)
Appendix C: Pre-Survey Questionnaire(s)
Appendix D: Accessibility Review and Photos
Appendix E: Component Condition Report
Appendix F: Replacement Reserves
Appendix G: Equipment Inventory List
Appendix H: Electrical Study

Appendix A:
Photographic Record

Photographic Overview



1 - FRONT ELEVATION



2 - LEFT ELEVATION



3 - REAR ELEVATION



4 - RIGHT ELEVATION

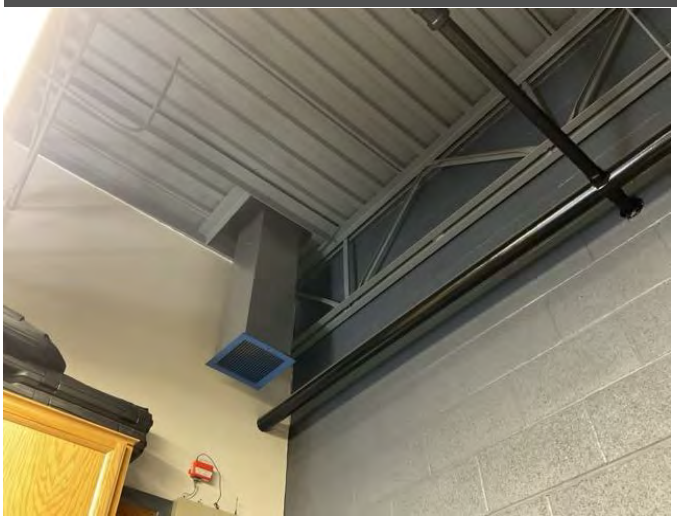


5 – ARMORY AND PRISONER UNLOADING



6 - IT BUILDING

Photographic Overview



7 - STRUCTURAL ELEMENTS



8 - PRIMARY ROOF OVERVIEW



9 - SECONDARY ROOF OVERVIEW



10 - ROOF DRAINAGE

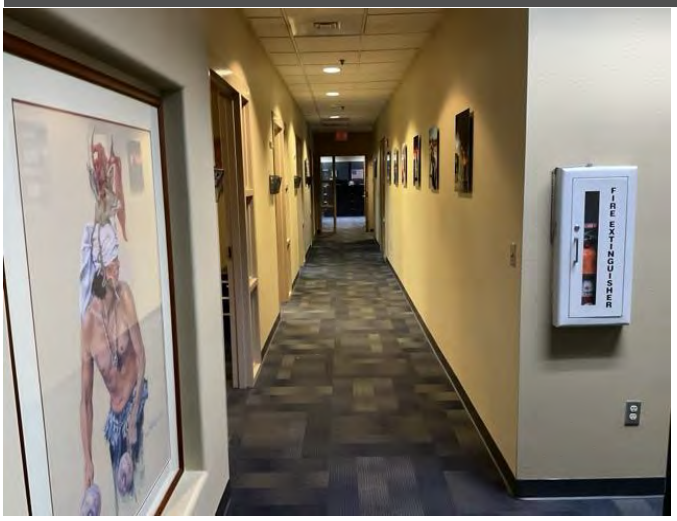


11 - PRISONER UNLOADING

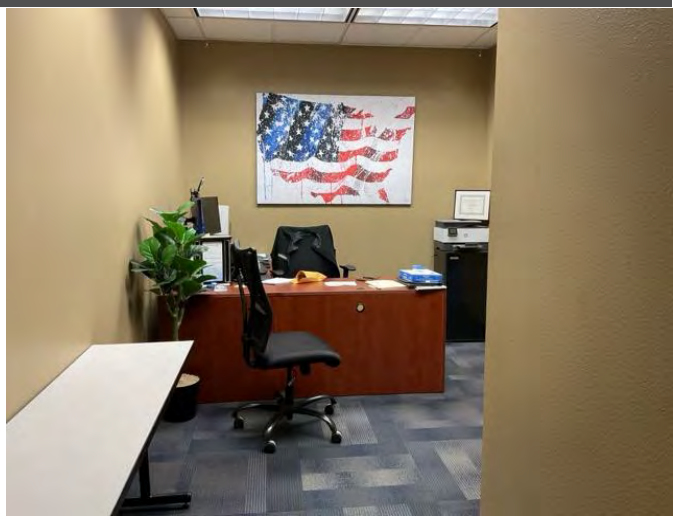


12 - MAIN LOBBY

Photographic Overview



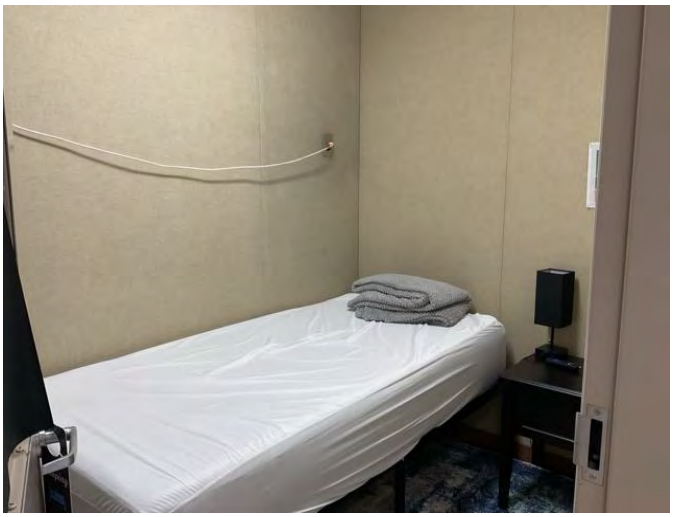
13 - TYPICAL HALL



14 - TYPICAL OFFICE



15 - CONFERENCE ROOM



16 - QUIET ROOM

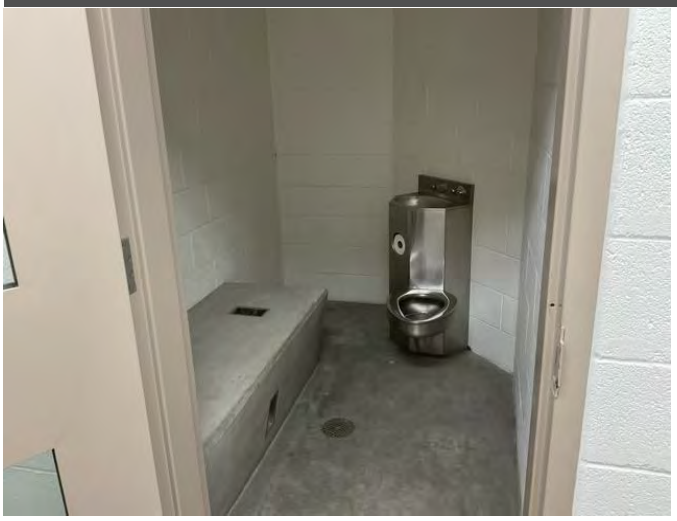


17 - GYM



18 - CLASSROOM

Photographic Overview



19 - TYPICAL CELL



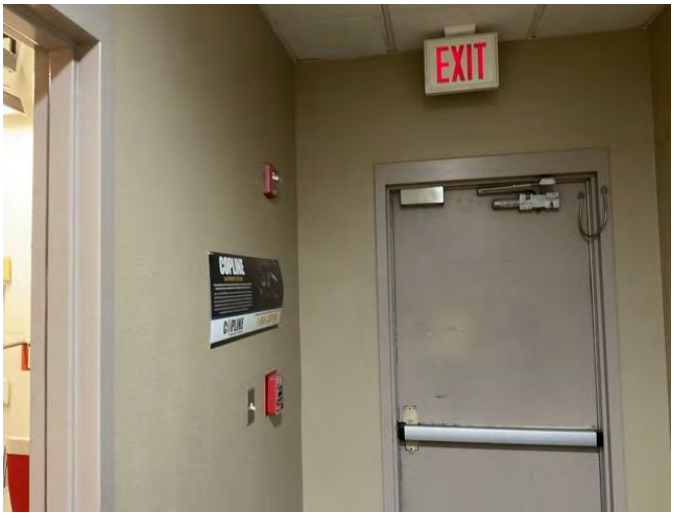
20 - DOMESTIC WATER PIPING



21 - WATER HEATER



22 - ROOFTOP MECHANICAL EQUIPMENT



23 - FIRE ALARM COMPONENTS



24 - FIRE ALARM PANEL

Photographic Overview



25 - FIRE RISER



26 - HVAC FAN COIL UNIT



27 - SPLIT-SYSTEM HEATPUMP



28 - ELECTRICAL ROOM



29 - CMU WALL



30 - STAFF PARKING AREA

Appendix B:
Site Plan(s)

Site Plan



Project Number	Project Name
172662.25R000-004.468	Police Department
Source	**On-Site Date**
Google	May 28, 2025

Appendix C:
Pre-Survey Questionnaire(s)

BV FACILITY CONDITION ASSESSMENT: PRE-SURVEY QUESTIONNAIRE

Building / Facility Name: Police Department

Name of person completing form: John Fraley

Title / Association w/ property: Lead Technician

Length of time associated w/ property: 4 Years

Date Completed: 5/28/2025

Phone Number: 480-797-2060

Method of Completion: INTERVIEW - verbally completed during interview

Directions: Please answer all questions to the best of your knowledge and in good faith. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses.

Data Overview		Response		
1	Year(s) constructed	Constructed: 1996	Renovated:	
2	Building size in SF	18,441 **SF**		
3	Major Renovation/Rehabilitation		Year	Additional Detail
		Facade		
		Roof		
		Interiors	2025	Office areas opened up for squad room and dispatch call center
		HVAC		
		Electrical		
		Site Pavement		
		Accessibility		
4	List other significant capital improvements (focus on recent years; provide approximate date).	None		
5	List any major capital expenditures planned/requested for the next few years. Have they been budgeted?	None		
6	Describe any on-going extremely problematic, historically chronic, or immediate facility needs.	None		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Response				Comments
		Yes	No	Unk	NA	
7	Are there any problems with foundations or structures, like excessive settlement?		X			
8	Are there any wall, window, basement or roof leaks?		X			
9	Has any part of the facility ever contained visible suspect mold growth, or have there been any indoor air quality complaints?		X			
10	Are your elevators unreliable, with frequent service calls?				X	
11	Are there any plumbing leaks, water pressure, or clogging/backup issues?		X			
12	Have there been any leaks or pressure problems with natural gas, HVAC piping, or steam service?		X			
13	Are any areas of the facility inadequately heated, cooled or ventilated? Poorly insulated areas?		X			
14	Is the electrical service outdated, undersized, or problematic?		X			
15	Are there any problems or inadequacies with exterior lighting?		X			
16	Is site/parking drainage inadequate, with excessive ponding or other problems?	X				Water ponding at squad car parking
17	Are there any other unresolved construction defects or significant issues/hazards at the property that have not yet been identified above?		X			
18	ADA: Has an accessibility study been previously performed? If so, when?			X		
19	ADA: Have any ADA improvements been made to the property since original construction? Describe.		X			
20	ADA: Has building management reported any accessibility-based complaints or litigation?		X			
21	Are any areas of the property leased to outside occupants?		X			

Signature of Assessor

Signature of POC

Appendix D:
Accessibility Review and Photos

Visual Survey - 2010 ADA Standards for Accessible Design

Property Name: Police Department

BV Project Number: 172662.25R000-004.468

Facility History & Interview

	Question	Yes	No	Unk	Comments
1	Has an accessibility study been previously performed? If so, when?			X	
2	Have any ADA improvements been made to the property since original construction? Describe.		X		
3	Has building management reported any accessibility-based complaints or litigation?		X		

004 - Police Department: Accessibility Issues

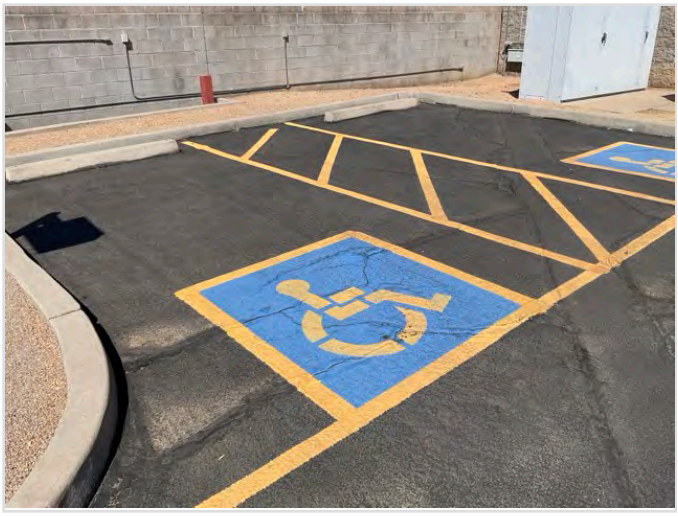
Category	Major Issues (ADA study recommended)	Moderate Issues (ADA study recommended)	Minor Issues	None*
Parking				X
Exterior Accessible Route				X
Building Entrances				X
Interior Accessible Route				X
Elevators	**NA**			
Public Restrooms				X
Kitchens/Kitchenettes	**NA**			
Playgrounds & Swimming Pools	**NA**			
Other	**NA**			

**be cognizant that if the "None" box is checked that does not guarantee full compliance; this study is limited in nature*

004 - Police Department: Photographic Overview



OVERVIEW OF ACCESSIBLE PARKING AREA



2ND AREA OF ACCESSIBLE PARKING



ACCESSIBLE PATH



CURB CUT



ACCESSIBLE ENTRANCE



DOOR THRESHOLD

004 - Police Department: Photographic Overview



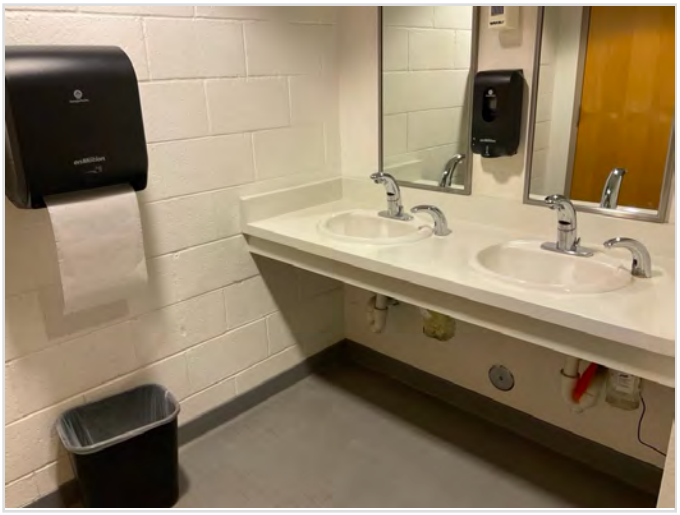
ACCESSIBLE INTERIOR PATH



DOOR HARDWARE



TOILET STALL OVERVIEW



SINK, FAUCET HANDLES AND ACCESSORIES

Appendix E:
Component Condition Report

Component Condition Report | 004 - Police Department

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A4010	Substructure	Good	Foundation, Concrete Slab-on-Grade, w/ Integral Perimeter Footings	18,441 SF	46	9398063
B1010	Superstructure	Good	Structural Framing, Masonry (CMU) Bearing Walls, 1-2 Story Building	18,441 SF	46	9398079
Facade						
B2010	Building Exterior	Fair	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	5,600 SF	6	9398042
B2010	Building Exterior	Fair	Exterior Walls, any painted surface, 1-2 Story Building, Prep & Paint	7,800 SF	4	9398014
B2010	Southeast Corner	Poor	Exterior Walls, Concrete Block (CMU), Repair	100 SF	0	9398019
B2020	Building Exterior	Fair	Glazing, any type by SF	600 SF	10	9397945
B2050	Big Evidence	Good	Exterior Door, Steel, Commercial	8	15	9397977
B2050	Building Exterior	Fair	Overhead/Dock Door, Steel, 20'x20' (400 SF)	2	4	9398012
B2050	Building Exterior	Fair	Overhead/Dock Door, Steel, 12'x12' (144 SF)	4	10	9397983
B2050	Generator Building	Good	Exterior Door, Wire Mesh Metal, Gate	2	8	9397972
B2050	Building Exterior	Fair	Exterior Door, Aluminum-Framed & Glazed, Standard Swing	5	10	9397946
Roofing						
B3010	Roof	Poor	Roofing, Built-Up	18,441 SF	2	9398034
Interiors						
C1030	Throughout Building	Fair	Interior Door, Wood, Solid-Core	48	11	9398040
C1030	Office Areas	Fair	Interior Door, Aluminum-Framed & Glazed, Standard Swing	2	12	9397957
C1030	Throughout Building	Fair	Interior Door, Steel, Fire-Rated at 90 Minutes or Over	13	11	9398002
C1070	Throughout Building	Fair	Suspended Ceilings, Acoustical Tile (ACT)	16,300 SF	6	9397985
C1090	Locker Rooms	Fair	Lockers, Steel-Baked Enamel, 12" W x 15" D x 72" H	88 LF	6	9398071
C1090	Restrooms	Good	Toilet Partitions, Plastic/Laminate	8	12	9397959
C2010	Quiet Room	Fair	Wall Finishes, Gym Wall Pads, Secured and 1.5" Thick	400 SF	6	9398052
C2010	Locker Rooms	Fair	Wall Finishes, Ceramic Tile	1,500 SF	11	9398006

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
C2010	Throughout Building	Fair	Wall Finishes, any surface, Prep & Paint	33,500 SF	4	9397990
C2010	Locker Rooms	Fair	Wall Finishes, any surface, Prep & Paint	1,500 SF	4	9397944
C2030	Restrooms & Locker Rooms	Fair	Flooring, Ceramic Tile	1,200 SF	11	9398047
C2030	PS-120C	Fair	Flooring, any surface, w/ Epoxy Coating, Prep & Paint	200 SF	4	9397984
C2030	Throughout Building	Fair	Flooring, Carpet, Commercial Standard	12,600 SF	4	9398044
C2030	Lobby & Breakroom	Good	Flooring, Laminate Faux Wood	2,000 SF	12	9398054
C2030	Dispatch	Excellent	Flooring, Luxury Vinyl Tile (LVT)	400 SF	15	9398021
C2030	Armory	Poor	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	300 SF	1	9397987
C2030	PS-138	Fair	Flooring, Carpet, Commercial Standard	100 SF	4	9398065
C2030	Gym	Fair	Flooring, Rubber Tile	400 SF	8	9397979
C2030	PS-120C	Fair	Flooring, Vinyl Tile (VCT)	300 SF	4	9397958
C2050	Locker Rooms	Fair	Ceiling Finishes, any flat surface, Prep & Paint	1,200 SF	6	9398016
Plumbing						
D2010	Site General	Fair	Backflow Preventer, Domestic Water [Irrigation]	1	4	9398013
D2010	Restrooms	Fair	Sink/Lavatory, Wall-Hung, Enameled Steel	2	15	9397991
D2010	Throughout Building	Fair	Drinking Fountain, Wall-Mounted, Single-Level	3	8	9397982
D2010	Dispatch	Excellent	Sink/Lavatory, Vanity Top, Stainless Steel	2	30	9397962
D2010	Restrooms	Fair	Toilet, Commercial Water Closet	15	4	9398026
D2010	Locker Rooms	Fair	Shower, Valve & Showerhead	4	4	9398017
D2010	Chiller Building	Fair	Backflow Preventer, Domestic Water [Chiller]	1	4	9397995
D2010	PS-123	Fair	Water Heater, Gas, Commercial (125 MBH)	1	7	9397955
D2010	Restrooms	Good	Sink/Lavatory, Vanity Top, Enameled Steel	8	29	9398062
D2010	Jails	Fair	Toilet, Commercial Water Closet	5	4	9397994
D2010	Throughout Building	Fair	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures)	18,441 SF	11	9397993
D2010	Throughout Building	Fair	Sink/Lavatory, Vanity Top, Stainless Steel	2	4	9397965

Component Condition Report | 004 - Police Department

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D2010	Chiller Building	Fair	Backflow Preventer, Domestic Water [Irrigation]	1	4	9398033
D2010	Sally Port	Fair	Emergency Plumbing Fixtures, Eye Wash & Shower Station	1	4	9398043
D2010	Restrooms	Fair	Urinal, Standard	3	10	9398039
D2010	PS-123	Poor	Sink/Lavatory, Service Sink, Floor	1	1	9398074
D2010	Site General	Fair	Backflow Preventer, Domestic Water	1	4	9398000
D2010	Site General	Fair	Backflow Preventer, Domestic Water	1	4	9397970
D2010	Site General	Fair	Backflow Preventer, Domestic Water	1	4	9398035
D2010	Janitor Closets	Fair	Sink/Lavatory, Service Sink, Floor	2	4	9397953
D2030	Roof	Fair	Supplemental Components, Drains, Roof	12	11	9398005
HVAC						
D3010	Generator Building	Good	Storage Tank, Fuel, Interior	1	19	9397948
D3030	Building Exterior	Good	Split System, Condensing Unit/Heat Pump	1	10	9397989
D3030	Building Exterior	Fair	Split System, Condensing Unit/Heat Pump [CU1 & CU2]	1	8	9397950
D3030	Vehicle Bay 2	Fair	Split System, Fan Coil Unit, DX	1	5	9398046
D3030	Building Exterior	Fair	Split System, Condensing Unit/Heat Pump [CU3]	1	8	9397960
D3030	Building Exterior	Fair	Split System, Condensing Unit/Heat Pump	1	5	9397998
D3030	PS-107	Good	Split System, Fan Coil Unit, DX	1	10	9397996
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted [#9]	1	12	9397943
D3050	Armory Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted	1	14	9398029
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted [#2]	1	5	9398068
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted [#10]	1	12	9398060
D3050	Throughout Building	Fair	HVAC System, Ductwork, Medium Density	18,441 SF	4	9398024
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [#3]	1	13	9397969
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [#11]	1	13	9397988
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [#13]	1	13	9398067

Component Condition Report | 004 - Police Department

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted [#12]	1	11	9398032
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [#4]	1	17	9397986
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [#6]	1	17	9398072
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [#8]	1	12	9397942
D3050	Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted [#5]	1	5	9398056
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [#1]	1	17	9398073
D3050	Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted [#7]	1	17	9398059
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper [EF-2]	1	4	9398070
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-6]	1	4	9398031
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper	1	4	9397971
D3060	Armory Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-8]	1	4	9398076
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper [EF-3]	1	4	9398036
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper [EF-4]	1	4	9398004
D3060	Armory Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-11]	1	4	9398064
D3060	Armory Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-12]	1	4	9397968
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper	1	4	9397952
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-9]	1	4	9398075
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 16" Damper	1	4	9398028
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-13]	1	4	9398030
D3060	Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper [EF-1]	1	4	9398027
Fire Protection						
D4010	Throughout Building	Fair	Fire Suppression System, Existing Sprinkler Heads, by SF	18,441 SF	4	9397974
D4010	Site General	Fair	Backflow Preventer, Fire Suppression	1	4	9398049
D4010	PS-123	Fair	Supplemental Components, Fire Riser, Wet	1	11	9397951
Electrical						

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D5010	PS-107	Good	Automatic Transfer Switch, ATS	1	19	9397956
D5010	PS-107	Fair	Uninterruptible Power Supply, UPS	1	4	9397966
D5010	Generator Building	Good	Generator, Diesel	1	19	9398058
D5020	Building Exterior	Fair	Secondary Transformer, Dry, Stepdown	1	4	9398020
D5020	Building Exterior	Fair	Secondary Transformer, Dry, Stepdown	1	4	9398051
D5020	Building Exterior	Fair	Secondary Transformer, Dry, Stepdown	1	4	9398041
D5020	Building Exterior	Fair	Secondary Transformer, Dry, Stepdown	1	4	9398057
D5020	Building Exterior	Fair	Switchboard, 277/480 V	1	11	9397976
D5020	PS-107	Fair	Distribution Panel, 277/480 V	1	4	9398018
D5030	Throughout Building	Fair	Electrical System, Wiring & Switches, Average or Low Density/Complexity	18,441 SF	11	9397980
D5040	Building Exterior	Fair	Exterior Light, any type, w/ LED Replacement	3	10	9398037
D5040	Throughout Building	Fair	Emergency & Exit Lighting System, Full Interior Upgrade, LED	18,441 SF	5	9398015
D5040	Throughout Building	Fair	Interior Lighting System, Full Upgrade, Medium Density & Standard Fixtures	18,441 SF	10	9397999
D5040	Sally Port	Fair	Interior Lighting System, Full Upgrade, Medium Density & Standard Fixtures	500 SF	8	9397961
D5040	Building Exterior	Good	Exterior Light, any type, w/ LED Replacement	4	12	9398055
Fire Alarm & Electronic Systems						
D7030	Throughout Building	Fair	Security/Surveillance System, Full System Upgrade, Average Density	18,441 SF	8	9397981
D7050	Dispatch	Fair	Fire Alarm Panel, Fully Addressable	1	7	9397992
D7050	Throughout Building	Fair	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	18,441 SF	4	9398069
Equipment & Furnishings						
E1030	Evidence Room	Fair	Foodservice Equipment, Refrigerator, 2-Door Reach-In	1	6	9397949
E1030	Evidence Room	Good	Foodservice Equipment, Refrigerator, 1-Door Reach-In [Overnight Refrigerator]	1	10	9398053
E1030	Breakroom	Fair	Foodservice Equipment, Refrigerator, 2-Door Reach-In	1	4	9397978
E1030	Evidence Room	Fair	Foodservice Equipment, Freezer, Chest	1	3	9398011
E1030	PS-123	Fair	Foodservice Equipment, Icemaker, Freestanding	1	8	9398023

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UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
E1030	Evidence Room	Fair	Foodservice Equipment, Refrigerator, 1-Door Reach-In	1	6	9398025
E1030	Evidence Room	Fair	Foodservice Equipment, Freezer, 2-Door Reach-In	1	6	9398066
E1040	Lobby	Fair	Healthcare Equipment, Defibrillator (AED), Cabinet-Mounted	1	6	9397963
E2010	Restrooms	Good	Casework, Countertop, Plastic Laminate	32 LF	10	9398061
E2010	Dispatch	Excellent	Casework, Cabinetry, High-End or Laboratory	44 LF	20	9397947
E2010	Throughout Building	Fair	Casework, Cabinetry, Standard	72 LF	10	9398003
E2010	Breakroom	Poor	Casework, Cabinetry, Standard	60 LF	2	9398078
Special Construction & Demo						
F1020	Generator Building	Good	Ancillary Building, Wood-Framed or CMU, Standard	600 SF	15	9398008
F1020	IT Building	Good	Ancillary Building, Wood-Framed or CMU, Standard	800 SF	15	9397964
F1020	Site General	Fair	Covered Walkway, Metal-Framed, Light/Medium Gauge	6,600 SF	15	9398050
Pedestrian Plazas & Walkways						
G2020	Site	Good	Parking Lots, Pavement, Asphalt, Seal & Stripe	22,600 SF	4	9398001
G2020	Site General	Excellent	Vehicular Access Devices, Operator, Large Gate	1	15	9398010
G2020	Site General	Good	Vehicular Access Devices, Operator, Large Gate	1	13	9397954
G2020	Site General	Good	Vehicular Access Devices, Operator, Large Gate	1	13	9398045
G2020	Site General	Excellent	Vehicular Access Devices, Operator, Large Gate	1	15	9397975
G2020	Site	Fair	Parking Lots, Pavement, Asphalt, Mill & Overlay	22,600 SF	8	9397997
G2030	Site	Poor	Sidewalk, Brick/Masonry Pavers	600 SF	1	9398038
Sitework						
G2060	Site	Fair	Signage, Property, Building-Mounted Individual Letters, Replace/Install	6	10	9398007
G2060	Site	Fair	Retaining Wall, Concrete Masonry Unit (CMU)	3,500 SF	11	9397967
G2060	Site	Fair	Fences & Gates, Vehicle Gate, Chain Link Sliding Electric	4	10	9398009
G2060	Site	Fair	Bollard, Concrete or Metal	12	6	9398048
G4050	Site	Fair	Pole Light Fixture, LED Lamp only	14	10	9398077

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UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity		RUL	ID
G4050	Parking Roof Structures	Fair	Site Lighting, Wall Pack or Walkway Ceiling/Pole-Mounted, any type w/ LED, Lower-Lumen	8		10	9398022
G4050	Site	Fair	Pole Light Fixture, LED Lamp only	10		4	9397973
Utilities							
G3030		NA	Storm Drainage Components, Drainage Swale, Concrete, Install	200	LF	2	9399544

Appendix F:
Replacement Reserves

Replacement Reserves Report

004 - Police Department

7/8/2025

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total Escalated Estimate
004 - Police Department	$2,000	$21,682	$301,480	$1,967	$600,052	$43,805	$174,912	$33,699	$241,867	$13,270	$286,233	$727,929	$81,554	$70,930	$289,237	$614,566	$6,258	$57,023	$9,534	$413,599	$53,822	**$4,045,420**
Grand Total	**$2,000**	**$21,682**	**$301,480**	**$1,967**	**$600,052**	**$43,805**	**$174,912**	**$33,699**	**$241,867**	**$13,270**	**$286,233**	**$727,929**	**$81,554**	**$70,930**	**$289,237**	**$614,566**	**$6,258**	**$57,023**	**$9,534**	**$413,599**	**$53,822**	**$4,045,420**

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
B2010	Building Exterior	9398014	Exterior Walls, any painted surface, 1-2 Story Building, Prep & Paint	10	6	4	7800	SF	$3.00	$23,400					$23,400										$23,400								**$46,800**
B2010	Building Exterior	9398042	Exterior Walls, Brick/Masonry/Stone, Clean & Seal, Maintain	20	14	6	5600	SF	$1.86	$10,416							$10,416																**$10,416**
B2010	Southeast Corner	9398019	Exterior Walls, Concrete Block (CMU), Repair	0	29	0	100	SF	$20.00	$2,000	$2,000																						**$2,000**
B2020	Building Exterior	9397945	Glazing, any type by SF, Replace	30	20	10	600	SF	$55.00	$33,000											$33,000												**$33,000**
B2050	Building Exterior	9397946	Exterior Door, Aluminum-Framed & Glazed, Standard Swing, Replace	30	20	10	5	EA	$1,300.00	$6,500											$6,500												**$6,500**
B2050	Big Evidence	9397977	Exterior Door, Steel, Commercial, Replace	40	25	15	8	EA	$4,060.00	$32,480																$32,480							**$32,480**
B2050	Building Exterior	9398012	Overhead/Dock Door, Steel, 20'x20' (400 SF), Replace	30	26	4	2	EA	$9,000.00	$18,000					$18,000																		**$18,000**
B2050	Building Exterior	9397983	Overhead/Dock Door, Steel, 12'x12' (144 SF), Replace	30	20	10	4	EA	$3,200.00	$12,800											$12,800												**$12,800**
B2050	Generator Building	9397972	Exterior Door, Wire Mesh Metal, Gate, Replace	10	2	8	2	EA	$1,900.00	$3,800									$3,800										$3,800				**$7,600**
B3010	Roof	9398034	Roofing, Built-Up, Replace	25	23	2	18441	SF	$14.00	$258,174			$258,174																				**$258,174**
C1030	Throughout Building	9398040	Interior Door, Wood, Solid-Core, Replace	40	29	11	48	EA	$700.00	$33,600												$33,600											**$33,600**
C1030	Throughout Building	9398002	Interior Door, Steel, Fire-Rated at 90 Minutes or Over, Replace	40	29	11	13	EA	$950.00	$12,350												$12,350											**$12,350**
C1030	Office Areas	9397957	Interior Door, Aluminum-Framed & Glazed, Standard Swing, Replace	40	28	12	2	EA	$1,300.00	$2,600													$2,600										**$2,600**
C1070	Throughout Building	9397985	Suspended Ceilings, Acoustical Tile (ACT), Replace	25	19	6	16300	SF	$3.50	$57,050							$57,050																**$57,050**
C1090	Restrooms	9397959	Toilet Partitions, Plastic/Laminate, Replace	20	8	12	8	EA	$750.00	$6,000													$6,000										**$6,000**
C1090	Locker Rooms	9398071	Lockers, Steel-Baked Enamel, 12" W x 15" D x 72" H, Replace	20	14	6	88	LF	$500.00	$44,000							$44,000																**$44,000**
C2010	Locker Rooms	9398006	Wall Finishes, Ceramic Tile, Replace	40	29	11	1500	SF	$18.00	$27,000												$27,000											**$27,000**
C2010	Quiet Room	9398052	Wall Finishes, Gym Wall Pads, Secured and 1.5" Thick, Replace	15	9	6	400	SF	$16.80	$6,720							$6,720																**$6,720**
C2010	Throughout Building	9397990	Wall Finishes, any surface, Prep & Paint	10	6	4	33500	SF	$1.50	$50,250					$50,250										$50,250								**$100,500**
C2010	Locker Rooms	9397944	Wall Finishes, any surface, Prep & Paint	10	6	4	1500	SF	$1.50	$2,250					$2,250										$2,250								**$4,500**
C2030	Armory	9397987	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	10	9	1	300	SF	$1.50	$450		$450										$450											**$900**
C2030	PS-120C	9397984	Flooring, any surface, w/ Epoxy Coating, Prep & Paint	10	6	4	200	SF	$12.00	$2,400					$2,400										$2,400								**$4,800**
C2030	Restrooms & Locker Rooms	9398047	Flooring, Ceramic Tile, Replace	40	29	11	1200	SF	$18.00	$21,600												$21,600											**$21,600**
C2030	PS-120C	9397958	Flooring, Vinyl Tile (VCT), Replace	15	11	4	300	SF	$5.00	$1,500					$1,500																$1,500		**$3,000**
C2030	Gym	9397979	Flooring, Rubber Tile, Replace	15	7	8	400	SF	$9.00	$3,600									$3,600														**$3,600**
C2030	Lobby & Breakroom	9398054	Flooring, Laminate Faux Wood, Replace	15	3	12	2000	SF	$7.00	$14,000													$14,000										**$14,000**
C2030	Dispatch	9398021	Flooring, Luxury Vinyl Tile (LVT), Replace	15	0	15	400	SF	$7.50	$3,000																$3,000							**$3,000**
C2030	Throughout Building	9398044	Flooring, Carpet, Commercial Standard, Replace	10	6	4	12600	SF	$7.50	$94,500					$94,500										$94,500								**$189,000**
C2030	PS-138	9398065	Flooring, Carpet, Commercial Standard, Replace	10	6	4	100	SF	$7.50	$750					$750										$750								**$1,500**
C2050	Locker Rooms	9398016	Ceiling Finishes, any flat surface, Prep & Paint	10	4	6	1200	SF	$2.00	$2,400							$2,400										$2,400						**$4,800**
D2010	PS-123	9397955	Water Heater, Gas, Commercial (125 MBH), Replace	20	13	7	1	EA	$12,400.00	$12,400								$12,400															**$12,400**
D2010	Site General	9398013	Backflow Preventer, Domestic Water, Replace	30	26	4	1	EA	$3,200.00	$3,200					$3,200																		**$3,200**
D2010	Chiller Building	9397995	Backflow Preventer, Domestic Water, Replace	30	26	4	1	EA	$3,200.00	$3,200					$3,200																		**$3,200**
D2010	Chiller Building	9398033	Backflow Preventer, Domestic Water, Replace	30	26	4	1	EA	$3,200.00	$3,200					$3,200																		**$3,200**
D2010	Site General	9398000	Backflow Preventer, Domestic Water, Replace	30	26	4	1	EA	$1,400.00	$1,400					$1,400																		**$1,400**
D2010	Site General	9397970	Backflow Preventer, Domestic Water, Replace	30	26	4	1	EA	$3,200.00	$3,200					$3,200																		**$3,200**
D2010	Site General	9398035	Backflow Preventer, Domestic Water, Replace	30	26	4	1	EA	$3,200.00	$3,200					$3,200																		**$3,200**
D2010	Throughout Building	9397993	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures), Replace	40	29	11	18441	SF	$5.00	$92,205												$92,205											**$92,205**
D2010	PS-123	9398074	Sink/Lavatory, Service Sink, Floor, Replace	35	34	1	1	EA	$800.00	$800		$800																					**$800**
D2010	Restrooms	9398026	Toilet, Commercial Water Closet, Replace	30	26	4	15	EA	$1,300.00	$19,500					$19,500																		**$19,500**
D2010	Locker Rooms	9398017	Shower, Valve & Showerhead, Replace	30	26	4	4	EA	$800.00	$3,200					$3,200																		**$3,200**
D2010	Jails	9397994	Toilet, Commercial Water Closet, Replace	30	26	4	5	EA	$1,300.00	$6,500					$6,500																		**$6,500**
D2010	Throughout Building	9397965	Sink/Lavatory, Vanity Top, Stainless Steel, Replace	30	26	4	2	EA	$1,200.00	$2,400					$2,400																		**$2,400**
D2010	Sally Port	9398043	Emergency Plumbing Fixtures, Eye Wash & Shower Station, Replace	20	16	4	1	EA	$2,300.00	$2,300					$2,300																		**$2,300**
D2010	Janitor Closets	9397953	Sink/Lavatory, Service Sink, Floor, Replace	35	31	4	2	EA	$800.00	$1,600					$1,600																		**$1,600**
D2010	Throughout Building	9397982	Drinking Fountain, Wall-Mounted, Single-Level, Replace	15	7	8	3	EA	$1,200.00	$3,600									$3,600														**$3,600**
D2010	Restrooms	9398039	Urinal, Standard, Replace	30	20	10	3	EA	$1,100.00	$3,300											$3,300												**$3,300**
D2010	Restrooms	9397991	Sink/Lavatory, Wall-Hung, Enameled Steel, Replace	30	15	15	2	EA	$1,700.00	$3,400																$3,400							**$3,400**
D2030	Roof	9398005	Supplemental Components, Drains, Roof, Replace	40	29	11	12	EA	$797.00	$9,564												$9,564											**$9,564**
D3010	Generator Building	9397948	Storage Tank, Fuel, Interior, Replace	25	6	19	1	EA	$6,600.00	$6,600																					$6,600		**$6,600**
D3030	Vehicle Bay 2	9398046	Split System, Fan Coil Unit, DX, Replace	15	10	5	1	EA	$3,800.00	$3,800						$3,800																$3,800	**$7,600**
D3030	Building Exterior	9397998	Split System, Condensing Unit/Heat Pump, Replace	15	10	5	1	EA	$4,000.00	$4,000						$4,000																$4,000	**$8,000**
D3030	Building Exterior	9397950	Split System, Condensing Unit/Heat Pump, Replace	15	7	8	1	EA	$37,800.00	$37,800									$37,800														**$37,800**
D3030	Building Exterior	9397960	Split System, Condensing Unit/Heat Pump, Replace	15	7	8	1	EA	$17,200.00	$17,200									$17,200														**$17,200**

Replacement Reserves Report

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Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
D3030	Building Exterior	9397989	Split System, Condensing Unit/Heat Pump, Replace	15	5	10	1	EA	$3,400.00	$3,400											$3,400											**$3,400**
D3030	PS-107	9397996	Split System, Fan Coil Unit, DX, Replace	15	5	10	1	EA	$3,000.00	$3,000											$3,000											**$3,000**
D3050	Throughout Building	9398024	HVAC System, Ductwork, Medium Density, Replace	30	26	4	18441	SF	$4.00	$73,764					$73,764																	**$73,764**
D3050	Roof	9398068	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	15	5	1	EA	$9,000.00	$9,000						$9,000																**$9,000**
D3050	Roof	9398056	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	15	5	1	EA	$9,000.00	$9,000						$9,000																**$9,000**
D3050	Roof	9398032	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	9	11	1	EA	$11,000.00	$11,000												$11,000										**$11,000**
D3050	Roof	9397943	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	8	12	1	EA	$11,000.00	$11,000													$11,000									**$11,000**
D3050	Roof	9398060	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	8	12	1	EA	$11,000.00	$11,000													$11,000									**$11,000**
D3050	Roof	9397942	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	8	12	1	EA	$11,000.00	$11,000													$11,000									**$11,000**
D3050	Roof	9397969	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	7	13	1	EA	$7,500.00	$7,500														$7,500								**$7,500**
D3050	Roof	9397988	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	7	13	1	EA	$11,000.00	$11,000														$11,000								**$11,000**
D3050	Roof	9398067	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	7	13	1	EA	$11,000.00	$11,000														$11,000								**$11,000**
D3050	Armory Roof	9398029	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	6	14	1	EA	$7,500.00	$7,500															$7,500							**$7,500**
D3050	Roof	9397986	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	3	17	1	EA	$9,000.00	$9,000																	$9,000					**$9,000**
D3050	Roof	9398072	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	3	17	1	EA	$9,000.00	$9,000																	$9,000					**$9,000**
D3050	Roof	9398073	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	3	17	1	EA	$9,000.00	$9,000																	$9,000					**$9,000**
D3050	Roof	9398059	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	3	17	1	EA	$7,500.00	$7,500																	$7,500					**$7,500**
D3060	Roof	9398070	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	16	4	1	EA	$2,400.00	$2,400					$2,400																	**$2,400**
D3060	Roof	9398031	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	16	4	1	EA	$1,400.00	$1,400					$1,400																	**$1,400**
D3060	Roof	9397971	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	16	4	1	EA	$2,400.00	$2,400					$2,400																	**$2,400**
D3060	Armory Roof	9398076	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	16	4	1	EA	$1,400.00	$1,400					$1,400																	**$1,400**
D3060	Roof	9398036	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	16	4	1	EA	$2,400.00	$2,400					$2,400																	**$2,400**
D3060	Roof	9398004	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	16	4	1	EA	$2,400.00	$2,400					$2,400																	**$2,400**
D3060	Armory Roof	9398064	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	16	4	1	EA	$1,400.00	$1,400					$1,400																	**$1,400**
D3060	Armory Roof	9397968	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	16	4	1	EA	$1,400.00	$1,400					$1,400																	**$1,400**
D3060	Roof	9397952	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	16	4	1	EA	$2,400.00	$2,400					$2,400																	**$2,400**
D3060	Roof	9398075	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	16	4	1	EA	$1,400.00	$1,400					$1,400																	**$1,400**
D3060	Roof	9398028	Exhaust Fan, Roof or Wall-Mounted, 16" Damper, Replace	20	16	4	1	EA	$2,400.00	$2,400					$2,400																	**$2,400**
D3060	Roof	9398030	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	16	4	1	EA	$1,400.00	$1,400					$1,400																	**$1,400**
D3060	Roof	9398027	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	16	4	1	EA	$1,400.00	$1,400					$1,400																	**$1,400**
D4010	Throughout Building	9397974	Fire Suppression System, Existing Sprinkler Heads, by SF, Replace	25	21	4	18441	SF	$1.07	$19,732					$19,732																	**$19,732**
D4010	Site General	9398049	Backflow Preventer, Fire Suppression, Replace	30	26	4	1	EA	$10,500.00	$10,500					$10,500																	**$10,500**
D4010	PS-123	9397951	Supplemental Components, Fire Riser, Wet, Replace	40	29	11	1	EA	$10,000.00	$10,000												$10,000										**$10,000**
D5010	Generator Building	9398058	Generator, Diesel, Replace	25	6	19	1	EA	$150,000.00	$150,000																			$150,000			**$150,000**
D5010	PS-107	9397966	Uninterruptible Power Supply, UPS, Replace	15	11	4	1	EA	$38,000.00	$38,000					$38,000														$38,000			**$76,000**
D5010	PS-107	9397956	Automatic Transfer Switch, ATS, Replace	25	6	19	1	EA	$25,000.00	$25,000																			$25,000			**$25,000**
D5020	Building Exterior	9398020	Secondary Transformer, Dry, Stepdown, Replace	30	26	4	1	EA	$7,600.00	$7,600					$7,600																	**$7,600**
D5020	Building Exterior	9398051	Secondary Transformer, Dry, Stepdown, Replace	30	26	4	1	EA	$10,000.00	$10,000					$10,000																	**$10,000**
D5020	Building Exterior	9398041	Secondary Transformer, Dry, Stepdown, Replace	30	26	4	1	EA	$10,000.00	$10,000					$10,000																	**$10,000**
D5020	Building Exterior	9398057	Secondary Transformer, Dry, Stepdown, Replace	30	26	4	1	EA	$6,000.00	$6,000					$6,000																	**$6,000**
D5020	Building Exterior	9397976	Switchboard, 277/480 V, Replace	40	29	11	1	EA	$52,000.00	$52,000												$52,000										**$52,000**
D5020	PS-107	9398018	Distribution Panel, 277/480 V, Replace	30	26	4	1	EA	$5,300.00	$5,300					$5,300																	**$5,300**
D5030	Throughout Building	9397980	Electrical System, Wiring & Switches, Average or Low Density/Complexity, Replace	40	29	11	18441	SF	$2.50	$46,103												$46,103										**$46,103**
D5040	Throughout Building	9398015	Emergency & Exit Lighting System, Full Interior Upgrade, LED, Replace	10	5	5	18441	SF	$0.65	$11,987						$11,987									$11,987							**$23,973**
D5040	Sally Port	9397961	Interior Lighting System, Full Upgrade, Medium Density & Standard Fixtures, Replace	20	12	8	500	SF	$4.50	$2,250									$2,250													**$2,250**
D5040	Building Exterior	9398037	Exterior Light, any type, w/ LED Replacement, Replace	20	10	10	3	EA	$400.00	$1,200											$1,200											**$1,200**
D5040	Throughout Building	9397999	Interior Lighting System, Full Upgrade, Medium Density & Standard Fixtures, Replace	20	10	10	18441	SF	$4.50	$82,985											$82,985											**$82,985**
D5040	Building Exterior	9398055	Exterior Light, any type, w/ LED Replacement, Replace	20	8	12	4	EA	$400.00	$1,600													$1,600									**$1,600**
D7030	Throughout Building	9397981	Security/Surveillance System, Full System Upgrade, Average Density, Replace	15	7	8	18441	SF	$2.00	$36,882									$36,882													**$36,882**
D7050	Throughout Building	9398069	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	20	16	4	18441	SF	$3.00	$55,323					$55,323																	**$55,323**
D7050	Dispatch	9397992	Fire Alarm Panel, Fully Addressable, Replace	15	8	7	1	EA	$15,000.00	$15,000								$15,000														**$15,000**
E1030	Evidence Room	9398011	Foodservice Equipment, Freezer, Chest, Replace	15	12	3	1	EA	$1,800.00	$1,800				$1,800															$1,800			**$3,600**
E1030	Breakroom	9397978	Foodservice Equipment, Refrigerator, 2-Door Reach-In, Replace	15	11	4	1	EA	$4,600.00	$4,600					$4,600															$4,600		**$9,200**
E1030	Evidence Room	9397949	Foodservice Equipment, Refrigerator, 2-Door Reach-In, Replace	15	9	6	1	EA	$4,600.00	$4,600							$4,600															**$4,600**
E1030	Evidence Room	9398025	Foodservice Equipment, Refrigerator, 1-Door Reach-In, Replace	15	9	6	1	EA	$2,700.00	$2,700							$2,700															**$2,700**
E1030	Evidence Room	9398066	Foodservice Equipment, Freezer, 2-Door Reach-In, Replace	15	9	6	1	EA	$5,100.00	$5,100							$5,100															**$5,100**
E1030	PS-123	9398023	Foodservice Equipment, Icemaker, Freestanding, Replace	15	7	8	1	EA	$6,700.00	$6,700									$6,700													**$6,700**
E1030	Evidence Room	9398053	Foodservice Equipment, Refrigerator, 1-Door Reach-In, Replace	15	5	10	1	EA	$2,700.00	$2,700											$2,700											**$2,700**

Replacement Reserves Report

004 - Police Department

7/8/2025

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
E1040	Lobby	9397963	Healthcare Equipment, Defibrillator (AED), Cabinet-Mounted, Replace	10	4	6	1	EA	$1,500.00	$1,500							$1,500										$1,500						**$3,000**
E2010	Breakroom	9398078	Casework, Cabinetry, Standard, Replace	20	18	2	60	LF	$300.00	$18,000			$18,000																				**$18,000**
E2010	Restrooms	9398061	Casework, Countertop, Plastic Laminate, Replace	15	5	10	32	LF	$50.00	$1,600											$1,600												**$1,600**
E2010	Throughout Building	9398003	Casework, Cabinetry, Standard, Replace	20	10	10	72	LF	$300.00	$21,600											$21,600												**$21,600**
E2010	Dispatch	9397947	Casework, Cabinetry, High-End or Laboratory, Replace	20	0	20	44	LF	$500.00	$22,000																						$22,000	**$22,000**
F1020	Generator Building	9398008	Ancillary Building, Wood-Framed or CMU, Standard, Replace	35	20	15	600	SF	$100.00	$60,000																$60,000							**$60,000**
F1020	IT Building	9397964	Ancillary Building, Wood-Framed or CMU, Standard, Replace	35	20	15	800	SF	$100.00	$80,000																$80,000							**$80,000**
F1020	Site General	9398050	Covered Walkway, Metal-Framed, Light/Medium Gauge, Replace	30	15	15	6600	SF	$28.00	$184,800																$184,800							**$184,800**
G2020	Site	9398001	Parking Lots, Pavement, Asphalt, Seal & Stripe	5	1	4	22600	SF	$0.45	$10,170					$10,170					$10,170					$10,170						$10,170		**$40,680**
G2020	Site	9397997	Parking Lots, Pavement, Asphalt, Mill & Overlay	25	17	8	22600	SF	$3.50	$79,100									$79,100														**$79,100**
G2020	Site General	9397954	Vehicular Access Devices, Operator, Large Gate, Replace	15	2	13	1	EA	$9,400.00	$9,400														$9,400									**$9,400**
G2020	Site General	9398045	Vehicular Access Devices, Operator, Large Gate, Replace	15	2	13	1	EA	$9,400.00	$9,400														$9,400									**$9,400**
G2020	Site General	9398010	Vehicular Access Devices, Operator, Large Gate, Replace	15	0	15	1	EA	$9,400.00	$9,400																$9,400							**$9,400**
G2020	Site General	9397975	Vehicular Access Devices, Operator, Large Gate, Replace	15	0	15	1	EA	$9,400.00	$9,400																$9,400							**$9,400**
G2030	Site	9398038	Sidewalk, Brick/Masonry Pavers, Replace	30	29	1	600	SF	$33.00	$19,800		$19,800																					**$19,800**
G2060	Site	9398009	Fences & Gates, Vehicle Gate, Chain Link Sliding Electric, Replace	20	10	10	4	EA	$5,000.00	$20,000											$20,000												**$20,000**
G2060	Site	9398007	Signage, Property, Building-Mounted Individual Letters, Replace/Install	20	10	10	6	EA	$150.00	$900											$900												**$900**
G2060	Site	9397967	Retaining Wall, Concrete Masonry Unit (CMU), Replace	40	29	11	3500	SF	$60.00	$210,000												$210,000											**$210,000**
G2060	Site	9398048	Bollard, Concrete or Metal, Replace	30	24	6	12	EA	$1,000.00	$12,000							$12,000																**$12,000**
G3030	004 - Police Department	9399544	Storm Drainage Components, Drainage Swale, Concrete, Install	30	28	2	200	LF	$40.00	$8,000			$8,000																				**$8,000**
G4050	Site	9397973	Pole Light Fixture, LED Lamp only, Replace	20	16	4	10	EA	$1,200.00	$12,000					$12,000																		**$12,000**
G4050	Site	9398077	Pole Light Fixture, LED Lamp only, Replace	20	10	10	14	EA	$1,200.00	$16,800											$16,800												**$16,800**
G4050	Parking Roof Structures	9398022	Site Lighting, Wall Pack or Walkway Ceiling/Pole-Mounted, any type w/ LED, Lower-Lumen, Replace	20	10	10	8	EA	$400.00	$3,200											$3,200												**$3,200**
Totals, Unescalated											**$2,000**	**$21,050**	**$284,174**	**$1,800**	**$533,139**	**$37,787**	**$146,486**	**$27,400**	**$190,932**	**$10,170**	**$212,985**	**$525,872**	**$57,200**	**$48,300**	**$191,220**	**$394,467**	**$3,900**	**$34,500**	**$5,600**	**$235,870**	**$29,800**	**$2,994,650**
Totals, Escalated (3.0% inflation, compounded annually)											**$2,000**	**$21,682**	**$301,480**	**$1,967**	**$600,052**	**$43,805**	**$174,912**	**$33,699**	**$241,867**	**$13,270**	**$286,233**	**$727,929**	**$81,554**	**$70,930**	**$289,237**	**$614,566**	**$6,258**	**$57,023**	**$9,534**	**$413,599**	**$53,822**	**$4,045,420**

* Markup has been included in unit costs.

Appendix G:
Equipment Inventory List

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D20 Plumbing													
1	9397955	D2010	**Water Heater**	Gas, Commercial (125 MBH)	80 GAL	004 - Police Department	PS-123	A. O. Smith	BTR 154 118	1243M002286	2012	2045826	
2	9398000	D2010	**Backflow Preventer**	Domestic Water	1 IN	004 - Police Department	Site General	Febco	No dataplate	No dataplate	1996	2045793	
3	9397970	D2010	**Backflow Preventer**	Domestic Water	1 IN	004 - Police Department	Site General	Febco	825Y	22282	1996	2045791	
4	9398035	D2010	**Backflow Preventer**	Domestic Water	2 IN	004 - Police Department	Site General	Watts	2"U009 M2AQTRP	12336	1996	2045801	
5	9397995	D2010	**Backflow Preventer** [Chiller]	Domestic Water	1-1/4 IN	004 - Police Department	Chiller Building	Watts	009M2 QT	45091	1996	2045806	
6	9398013	D2010	**Backflow Preventer** [Irrigation]	Domestic Water	2 IN	004 - Police Department	Site General	Febco	825Y	A100374	1996	2045811	
7	9398033	D2010	**Backflow Preventer** [Irrigation]	Domestic Water	2 IN	004 - Police Department	Chiller Building	Febco	825Y	014403	1996	2045792	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D30 HVAC													
1	9397948	D3010	**Storage Tank**	Fuel, Interior	774 GAL	004 - Police Department	Generator Building	No dataplate	No dataplate	No dataplate	2019	2045807	
2	9397989	D3030	**Split System**	Condensing Unit/Heat Pump	2 TON	004 - Police Department	Building Exterior	Rheem	RP1424FJ1NA	W132001312	2020	2045808	
3	9397998	D3030	**Split System**	Condensing Unit/Heat Pump	3 TON	004 - Police Department	Building Exterior	Trane	4TWA3036B3000AA	15243M604F	2015	2045818	
4	9398046	D3030	**Split System**	Fan Coil Unit, DX	3 TON	004 - Police Department	Vehicle Bay 2	Trane	Inaccessible	Inaccessible	2015	2045836	
5	9397996	D3030	**Split System**	Fan Coil Unit, DX	2 TON	004 - Police Department	PS-107	Inaccessible	Inaccessible	Inaccessible	2020	2045835	
6	9397950	D3030	**Split System** [CU1 & CU2]	Condensing Unit/Heat Pump	16 TON	004 - Police Department	Building Exterior	Mitsubishi Electric	PUHY-P192TGMU-A	70W00009		2045839	
7	9397960	D3030	**Split System** [CU3]	Condensing Unit/Heat Pump	8 TON	004 - Police Department	Building Exterior	Mitsubishi Electric	PUHY-P96TGMU-A	86M004		2045803	
8	9398029	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	3 TON	004 - Police Department	Armory Roof	Rheem	RQPL-B030JK	F141901577	2019	2095399	
9	9398073	D3050	**Packaged Unit** [#1]	RTU, Pad or Roof-Mounted	4 TON	004 - Police Department	Roof	Rudd	RJPL-A048DL	F122200785	2022	2095498	
10	9398060	D3050	**Packaged Unit** [#10]	RTU, Pad or Roof-Mounted	5 TON	004 - Police Department	Roof	Trane	4WCY4060A3000CA	172613818L	2017	2095390	
11	9397988	D3050	**Packaged Unit** [#11]	RTU, Pad or Roof-Mounted	5 TON	004 - Police Department	Roof	Rheem	RJPL-A060DL	F071801016	2018	2095395	
12	9398032	D3050	**Packaged Unit** [#12]	RTU, Pad or Roof-Mounted	5 TON	004 - Police Department	Roof	Trane	4WCC3060A4000BA	161511834L	2016	2045834	
13	9398067	D3050	**Packaged Unit** [#13]	RTU, Pad or Roof-Mounted	5 TON	004 - Police Department	Roof	Rheem	RJPL-A060DL	F161801504	2018	2045769	
14	9398068	D3050	**Packaged Unit** [#2]	RTU, Pad or Roof-Mounted	4 TON	004 - Police Department	Roof	Rheem	RJPL-A048DL 000	7647F191002608	2010	2045764	
15	9397969	D3050	**Packaged Unit** [#3]	RTU, Pad or Roof-Mounted	3 TON	004 - Police Department	Roof	Rheem	RJPL-A036DL	F251800246	2018	2095432	
16	9397986	D3050	**Packaged Unit** [#4]	RTU, Pad or Roof-Mounted	4 TON	004 - Police Department	Roof	Rudd	RJPL-A048DL	F442101809	2022	2045832	
17	9398056	D3050	**Packaged Unit** [#5]	RTU, Pad or Roof-Mounted	4 TON	004 - Police Department	Roof	Rheem	RJPL-A048DL	7647F071006239	2010	2045778	
18	9398072	D3050	**Packaged Unit** [#6]	RTU, Pad or Roof-Mounted	4 TON	004 - Police Department	Roof	Rheem	RJPL-A048DL	F182200428	2022	2045822	
19	9398059	D3050	**Packaged Unit** [#7]	RTU, Pad or Roof-Mounted	3 TON	004 - Police Department	Roof	Rheem	RJPL-A036DL	F132201239	2022	2095420	
20	9397942	D3050	**Packaged Unit** [#8]	RTU, Pad or Roof-Mounted	5 TON	004 - Police Department	Roof	Trane	4WCZ6060B 1000AB	17044KBR9H	2017	2045828	
21	9397943	D3050	**Packaged Unit** [#9]	RTU, Pad or Roof-Mounted	5 TON	004 - Police Department	Roof	Trane	4WCY4060A3000CA	173013457L	2017	2045830	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
22	9397971	D3060	**Exhaust Fan**	Roof or Wall-Mounted, 16" Damper	1300 CFM	004 - Police Department	Roof	Greenheck	GB-130-4X	Illegible	1996	2095394	
23	9397952	D3060	**Exhaust Fan**	Roof or Wall-Mounted, 16" Damper	1300 CFM	004 - Police Department	Roof	Greenheck	Inaccessible	Inaccessible	1996	2045766	
24	9398028	D3060	**Exhaust Fan**	Roof or Wall-Mounted, 16" Damper	1140 CFM	004 - Police Department	Roof	Greenheck	346S450634	90C11DH	1996	2095391	
25	9398027	D3060	**Exhaust Fan** [EF-1]	Roof or Wall-Mounted, 12" Damper	850 CFM	004 - Police Department	Roof	Greenheck	G-085-V6-6-X	13963045	1996	2045772	
26	9398064	D3060	**Exhaust Fan** [EF-11]	Roof or Wall-Mounted, 12" Damper	800 CFM	004 - Police Department	Armory Roof	Greenheck	GB-80-4	95H06009	1996	2045736	
27	9397968	D3060	**Exhaust Fan** [EF-12]	Roof or Wall-Mounted, 12" Damper	800 CFM	004 - Police Department	Armory Roof	Greenheck	GB-80-4	95H06010	1996	2045709	
28	9398030	D3060	**Exhaust Fan** [EF-13]	Roof or Wall-Mounted, 12" Damper	800 CFM	004 - Police Department	Roof	Greenheck	GB-80-4	95H06011	1996	2095392	
29	9398070	D3060	**Exhaust Fan** [EF-2]	Roof or Wall-Mounted, 16" Damper	1300 CFM	004 - Police Department	Roof	Greenheck	GB-130-4	95H06919	1996	2045827	
30	9398036	D3060	**Exhaust Fan** [EF-3]	Roof or Wall-Mounted, 16" Damper	1300 CFM	004 - Police Department	Roof	Greenheck	GB-130-4	95H	1996	2045838	
31	9398004	D3060	**Exhaust Fan** [EF-4]	Roof or Wall-Mounted, 16" Damper	1300 CFM	004 - Police Department	Roof	Greenheck	GB-130-4	95H06921	1996	2095387	
32	9398031	D3060	**Exhaust Fan** [EF-6]	Roof or Wall-Mounted, 12" Damper	800 CFM	004 - Police Department	Roof	Greenheck	GB-80-4	95H10601218	1996	2045723	
33	9398076	D3060	**Exhaust Fan** [EF-8]	Roof or Wall-Mounted, 12" Damper	800 CFM	004 - Police Department	Armory Roof	Greenheck	GB-80-4	95H06013	1996	2095397	
34	9398075	D3060	**Exhaust Fan** [EF-9]	Roof or Wall-Mounted, 12" Damper	800 CFM	004 - Police Department	Roof	Greenheck	GB-80-4	95H00011	1996	2095389	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D40 Fire Protection													
1	9398049	D4010	**Backflow Preventer**	Fire Suppression	6 IN	004 - Police Department	Site General	Wilkins Zurn	350ADA 6"	35029	1996	2045784	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D50 Electrical													
1	9398058	D5010	**Generator**	Diesel	405 KW	004 - Police Department	Generator Building	Kohler	400RE0ZJB	SGM32P858	2019	2045783	
2	9397966	D5010	**Uninterruptible Power Supply**	UPS	65 KVA	004 - Police Department	PS-107	Liebert	NP0WER	M08J300018	2008	2045796	
3	9397956	D5010	**Automatic Transfer Switch**	ATS	600 AMP	004 - Police Department	PS-107	Kohler	Decision-Maker MPAC, 1200	No dataplate	2019	2045797	
4	9398020	D5020	**Secondary Transformer**	Dry, Stepdown	45 KVA	004 - Police Department	Building Exterior	General Electric	9T83B3873	No dataplate	1996	2045831	
5	9398051	D5020	**Secondary Transformer**	Dry, Stepdown	75 KVA	004 - Police Department	Building Exterior	General Electric	9T83B3874	No dataplate	1996	2045821	
6	9398041	D5020	**Secondary Transformer**	Dry, Stepdown	75 KVA	004 - Police Department	Building Exterior	General Electric	9T83B3874	No dataplate	1996	2045819	
7	9398057	D5020	**Secondary Transformer**	Dry, Stepdown	150 KVA	004 - Police Department	Building Exterior	MGM Transformer Company	HT15A3B2SH	15YS-1503-1-29	1996	2045813	
8	9397976	D5020	**Switchboard**	277/480 V	1200 AMP	004 - Police Department	Building Exterior	General Electric	No dataplate	No dataplate	1996	2045837	
9	9398018	D5020	**Distribution Panel**	277/480 V	400 AMP	004 - Police Department	PS-107	Square D	12-05978267-EØ	No dataplate	1996	2045785	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D70 Electronic Safety & Security													
1	9397992	D7050	**Fire Alarm Panel**	Fully Addressable		004 - Police Department	Dispatch	Honeywell	No dataplate	No dataplate	2017	2045820	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
E10 Equipment													
1	9398066	E1030	**Foodservice Equipment**	Freezer, 2-Door Reach-In		004 - Police Department	Evidence Room	Everest	EBF2	BBF214090016	2016	2045843	
2	9398011	E1030	**Foodservice Equipment**	Freezer, Chest		004 - Police Department	Evidence Room	Dylis	ICM050LC	B30FMZEONO0BYD6F1404	2013	2045850	
3	9398023	E1030	**Foodservice Equipment**	Icemaker, Freestanding		004 - Police Department	PS-123	Manitowoc	Inaccessible	Inaccessible		2045794	
4	9398025	E1030	**Foodservice Equipment**	Refrigerator, 1-Door Reach-In		004 - Police Department	Evidence Room	Everest	EBR1	BBR115020006	2016	2045860	
5	9397949	E1030	**Foodservice Equipment**	Refrigerator, 2-Door Reach-In		004 - Police Department	Evidence Room	True Manufacturing Co	T-49-HC	9652516	2016	2045861	
6	9397978	E1030	**Foodservice Equipment**	Refrigerator, 2-Door Reach-In		004 - Police Department	Breakroom	Everest	EMGR48B	BMGR48B24030003		2045824	
7	9398053	E1030	**Foodservice Equipment** [Overnight Refrigerator]	Refrigerator, 1-Door Reach-In		004 - Police Department	Evidence Room	Inaccessible	Inaccessible	Inaccessible		2045863	
8	9397963	E1040	**Healthcare Equipment**	Defibrillator (AED), Cabinet-Mounted		004 - Police Department	Lobby						

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
G20 OTHER													
1	9398010	G2020	**Vehicular Access Devices**	Operator, Large Gate		004 - Police Department	Site General	LiftMaster	CSL24UL MC	505244810005	2025	2045814	
2	9397954	G2020	**Vehicular Access Devices**	Operator, Large Gate		004 - Police Department	Site General	LiftMaster	HDSL24UL MC	1723N4652	2023	2045786	
3	9398045	G2020	**Vehicular Access Devices**	Operator, Large Gate		004 - Police Department	Site General	LiftMaster	HDSL24UL MC	1723N4654	2023	2045790	
4	9397975	G2020	**Vehicular Access Devices**	Operator, Large Gate		004 - Police Department	Site General	LiftMaster	CSL24UL MC	505244810002	2025	2045817	

Appendix H:
Electrical Study

225 Broadway Suite 350, San Diego, CA 92101
1 + 310 364 5228 | 1 + 619 323 1515
mailto: Info@120degreez.com | www.120degreez.com

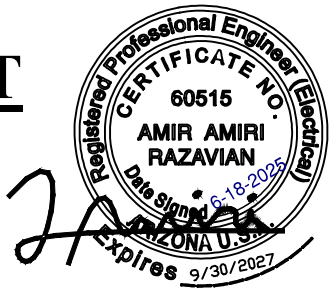


Arc Flash, Short Circuit, and Load Flow Analysis provided for:

POLICE DEPARTMENT

6433 E. Lincon Drive

Paradise Valley, AZ 85253



POLICE DEPARTMENT

6433 E. Lincon Drive

Paradise Valley, AZ 85253

FOR:
Town of Paradise Valley
Department of Public Works
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

Submitted By:
Amir Amiri, P.E.
Electrical Engineer

Submittal date:
DATE: 6-19-2025

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APPENDIX 5 – WORK PERMIT

APPENDIX 6 – PPE TABLES AND ARC FLASH LABELS

1. EXECUTIVE SUMMARY

1.1. Introduction

A System Coordination and Arc Flash study of the distribution system was performed for the town of Paradise Valley's Police Department located at 6433 E. Lincon Drive, Paradise Valley, AZ 85253. The study determined the adequacy of the system components and the installed protective equipment. The study/analysis performed included short circuit, load flow, protective device coordination studies and incident energy (Arc-flash) evaluations. The power distribution system provided for this site is the following:

- SES-PD is a 1200 amp, 480/277V, 3-phase unprotected service that relies upon the NEC allowed 6 disconnect rule fed from a wye utility transformer with an available Short Circuit current of 25,773 amps as determined by the power company.

The serving utility has provided the short circuit current availability of this transformer with their service manual which is noted in the field notes provided. The serving utility's published available fault current (AFC) for each transformer which is called out in the field notes. Values used were provided by APS for phase-to-phase faults. Each Service Equipment System (SES) serves primarily lighting and equipment loads of the building in which it is located.

The short circuit analysis evaluates the short time thermal and electrodynamic strength of the facilities equipment. Arc flash and protective equipment studies evaluate the incident energy at specific points of the distribution system to provide Arc-Flash hazard warning labels and personal protective equipment (PPE) recommendations. System protection coordination analysis is used to evaluate the adequacy of the protective devices (Fuses-Circuit Breakers) for the proper protection of system components and are unitized in the verify selective coordination of overcurrent protective devices. Finally, the load flow analysis evaluates the ability of equipment and cables to safely serve the loads they supply. Voltage drop values are included in the appendix report. As this site has a generator, reports and labels were generated using the worst-case conditions of either the Utility power or the Generator.

Major objectives of the analysis are:

- Compare the calculated fault duties with withstanding/interrupting ratings for customer owned electrical distribution system equipment and note any area of deficiency.
- Demonstrate protective device coordination and note any area of deficiency. Recommended settings for protective devices that will isolate faults in a manner that is consistent with the basic system design and operation. The recommendations given will balance system protection and selective fault isolation.
- Identify incident energy levels, arc flash boundaries, and what level of Personal Protective Equipment (PPE) is required for safe energized work, in accordance with NFPA 70E 2018.
- Evaluate and assess the panels, switches, fuses, and cables nominal values under the current and voltage levels at site, according the load flow analysis results.

Note areas of deficiency and make recommendations for corrective measures that are consistent with applicable codes and standards.

1.1.1. Full narratives of the analysis performed as well as the findings and recommendations of the analysis are included in Sections 2 and 3 of this report. The appendices include the computer output from the analysis performed and tables containing the settings for the adjustable devices in the scope of work. Time current curves, a copy of the Arc-Flash labels, and a one-line diagram of the system model are also included in the appendices.

1.1.2. Various scenarios (where relevant) were modeled, and all related studies' results have been detailed in this report.

The following were the scenarios that were modeled and evaluated:

- Scenario #1: Short circuit analysis
- Scenario #2: Arc-Flash analysis
- Scenario #3: Load Flow analysis
- Scenario #4: TCC Tables

The assessment of the power distribution system components and equipment will be done based on the worst-case outcomes, including the highest levels of fault currents, load flow currents and assumed current usage as well as the highest available arc flash incident energy. The results of the analysis are included in Appendixes of this report. The appendices include the data derived from the SKM analysis software. Additionally, the Appendixes include Time-Current curves of protective devices, a copy of the Arc-Flash labels to be installed, one line diagram for overall system for short circuit, and incident energies. Additional diagrammatic illustrations of the one-line diagram are included.

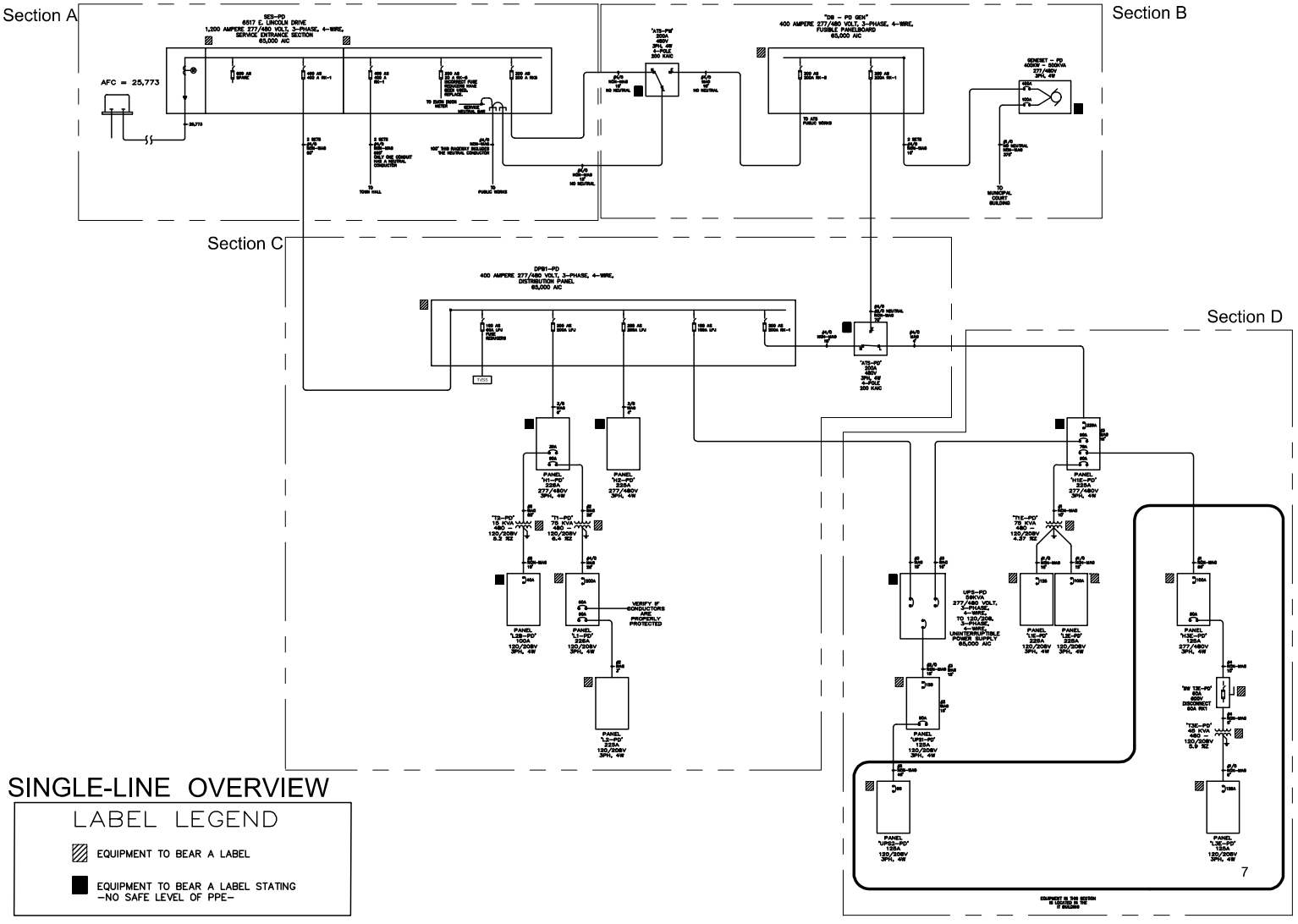
1.2.2 DC systems less than 50 volts.

The Occupational Safety and Health Administration, under 29 CFR 1910.303(g)(2)(i), considers electrical systems rated 50 volts or more as hazardous. By extension, those systems rated less than 50 volts are not considered to be hazardous. NFPA 70E, section 130.5(C), under Table 130.5(C), indicates that there is no likelihood of occurrence "For dc systems, maintenance on a single cell for a battery system or multi-cell units in an open rack.". As a result, DC systems rated 50 volts or less are not addressed by this study and are excluded from its scope.

1.2. Distribution System

The electrical system's overall single line diagrams are shown in the following figures below. Each individual single line is shown with the associated field report that contains the facilities equipment technical specifications and ratings, based upon visual observations. The actual field notes should be referenced for existing conditions as this report focuses on the Short Circuit Fault currents and Arc Flash evaluation. The physical condition of the services and equipment are described by the Excel report but are not formally addressed by this study.

POLICE DEPARTMENT

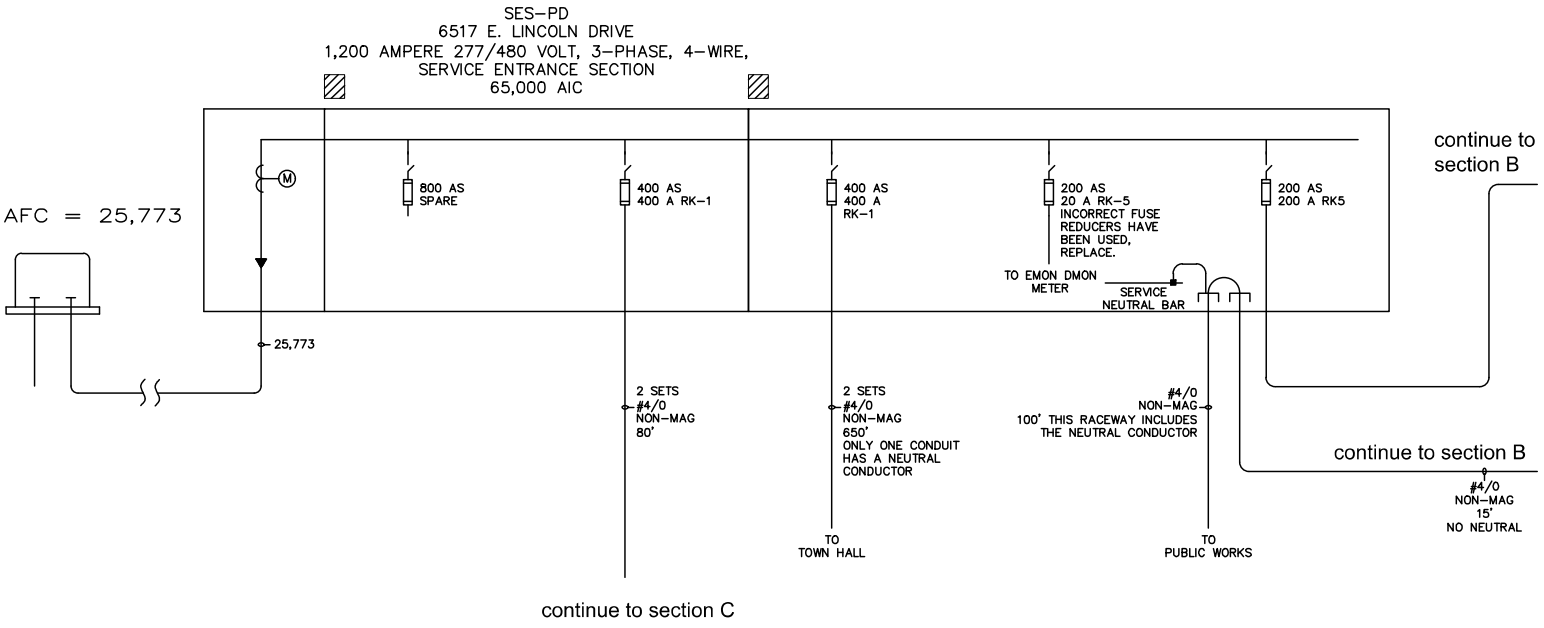


SINGLE-LINE OVERVIEW

LABEL LEGEND

- EQUIPMENT TO BEAR A LABEL
- EQUIPMENT TO BEAR A LABEL STATING –NO SAFE LEVEL OF PPE–

POLICE DEPARTMENT



SINGLE-LINE Section A

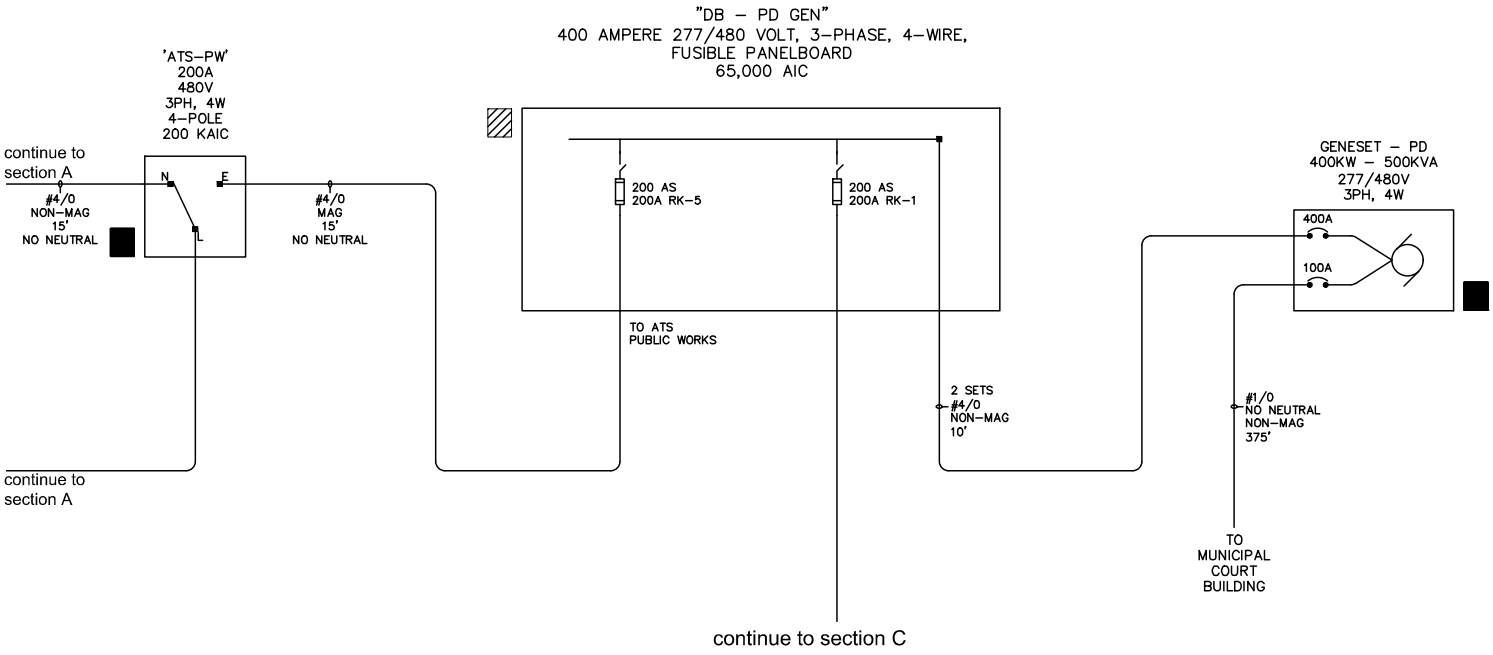
LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

EQUIPMENT TO BEAR A LABEL STATING
–NO SAFE LEVEL OF PPE–

8

POLICE DEPARTMENT



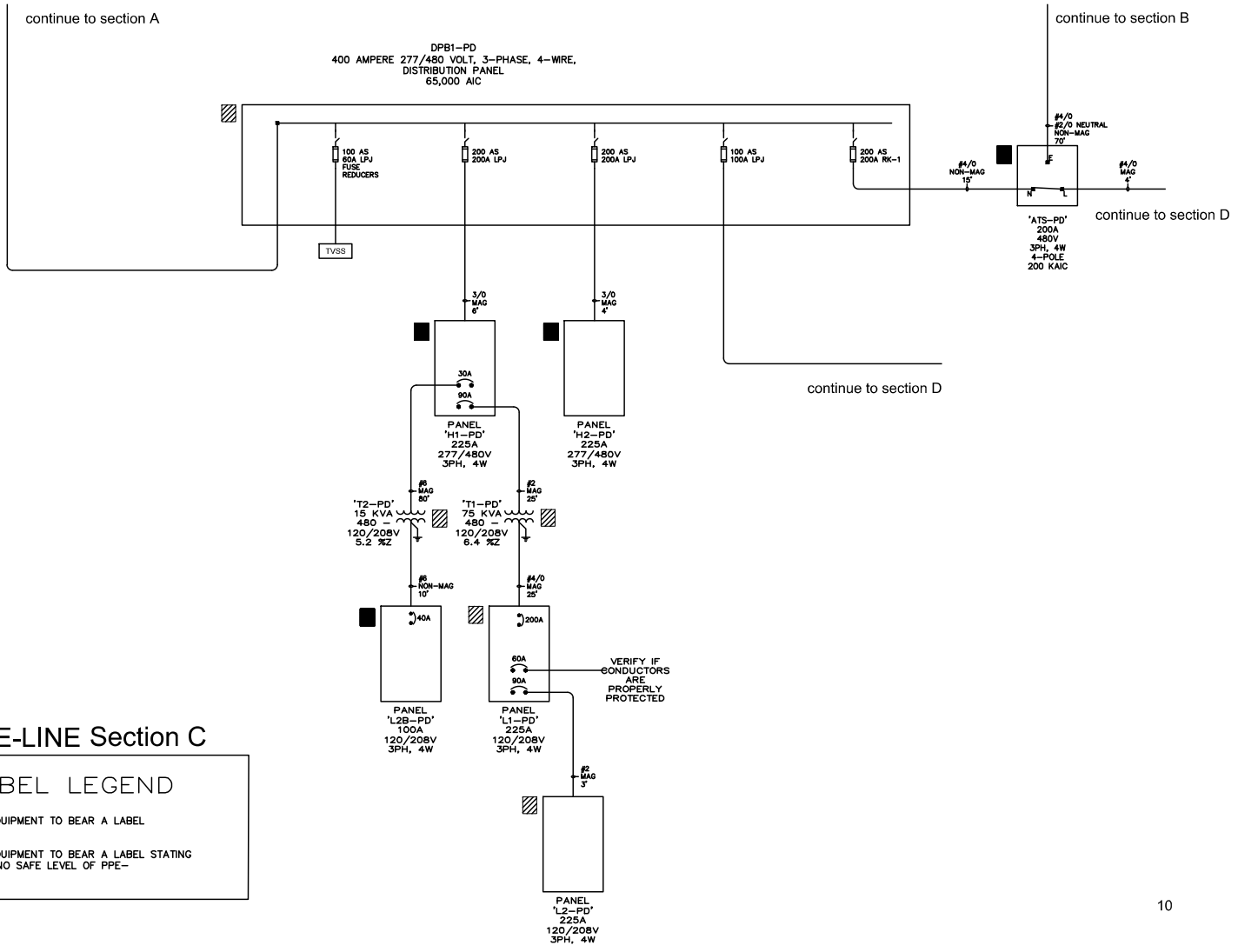
SINGLE-LINE Section B

LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

EQUIPMENT TO BEAR A LABEL STATING –NO SAFE LEVEL OF PPE–

POLICE DEPARTMENT



SINGLE-LINE Section C

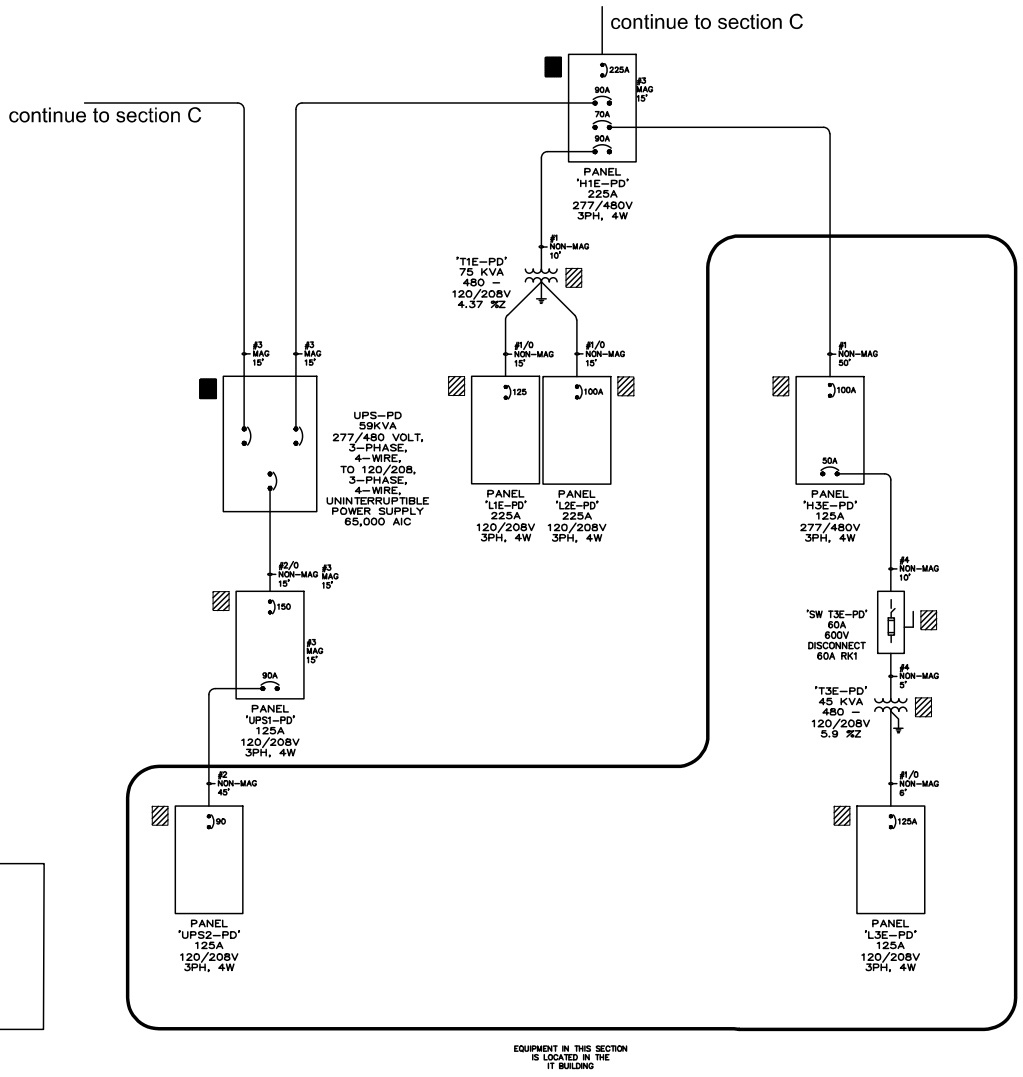
LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

EQUIPMENT TO BEAR A LABEL STATING –NO SAFE LEVEL OF PPE–

10

POLICE DEPARTMENT



SINGLE-LINE Section D

LABEL LEGEND

- EQUIPMENT TO BEAR A LABEL
- EQUIPMENT TO BEAR A LABEL STATING -NO SAFE LEVEL OF PPE-

11

FACILITY	POLICE DEPARTMENT	ADDRESS:	6433 E. LINCOLN DRIVE, PARADISE VALLEY

UTILITY:	APS
TRANSFORMER SIZE:	1,000
TRANSFORMER %Z:	5.35%
SECONDARY COND SIZE:	(3) x 750 KCMIL AL
LENGTH:	
AFC (PER UTILITY TABLES)	25,773
VOLTAGE:	277/480
PHASE:	3Ø-4W
NOTE:	METER NUMBER V91517

OTHER COMMENTS

THE ARIZONA PUBLIC SERVICE TRANSFORMER IS LEAKING OIL.
IT IS RECOMMENDED THAT THE UTILITY BE CONTACTED TO ASSESS THE EQUIPMENT CONDITION, RECOMMEND REPLACEMENT.

EQUIPMENT NAME:	SES - PD	VOLTAGE:	277/480	PHASE:	3Ø 4w	AMPS:	1200	SCCR:	65K	MAIN:	6 SW RULE
EQUIPMENT TYPE:	SWITCHBOARD									MODEL:	
MANUFACTURER:	GENERAL ELECTRIC									AMPS	
MODEL:	AV-2										
TYPE:											
FED FROM:	UTILITY XFMR										
AFC:	25,773										
FEEDER SIZE:											
CONDUCTOR TYPE:											
RACEWAY TYPE:											
LENGTH:											
MAIN:											

OTHER COMMENTS

THE EQUIPMENT IS IN NEED OF PREVENTATIVE MAINTENANCE
SEE DEFICIENCY REPORT UNDER SEPARATE COVER FOR ADDITIONAL ISSUES

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
EMON-DMON MTR	200	20	RK5	100K			INCORRECT FUSE REDUCER
DPB1-PD	400	400	RK1	100K			
ATS-PW	200	200	RK5	100K			SEE DEFICIENCY REPORT
SWBD-HA (TOWN HALL)	400	400	RK1	100K			SEE DEFICIENCY REPORT
SPARE	800		RK1				

EQUIPMENT NAME:	ATS-PD	VOLTAGE:	277/480	PHASE:	3Ø 4w	AMPS:	200	SCCR:	65K	MAIN:	
EQUIPMENT TYPE:	AUTOMATIC XFR SW									MODEL:	
MANUFACTURER:	KOHLER									AMPS	
MODEL:	KSS-AMVA-0200S										
TYPE:											
FED FROM:	DB-PD GEN										
AFC:											
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	70'										
MAIN:											

OTHER COMMENTS

4 POLE XFR SW.

WE COULD NOT IDENTIFY A LABEL INDICATING THE EQUIPMENT'S SHORT CIRCUIT CURRENT RATING
A LABEL WILL BE PROVIDED INDICATING THERE IS NO SAFE LEVEL OF PPE.
FEEDER FROM DPB1-PD HAS A REDUCED NEUTRAL (2/0).

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'H1E-PD'							

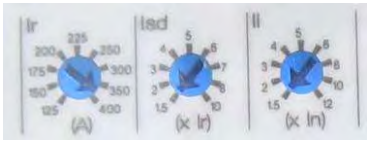
EQUIPMENT NAME:	GENSET - PD	VOLTAGE:	277/480	PHASE:	3Ø-4W	AMPS:	405KW	SCCR:	25K	MAIN:	MCB
EQUIPMENT TYPE:	GENSET									MODEL:	GBU 403
MANUFACTURER:	KOHLER									AMPS:	225
MODEL:	10199050200										
TYPE:	GENSET										
FED FROM:											
AFC:											

OTHER COMMENTS

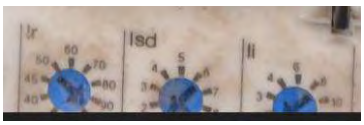
405KW, 506 KVA GENSET
MAIN BONDING JUMPER IS INSTALLED
SEE DEFICIENCY REPORT UNDER SEPARATE COVER FOR ADDITIONAL ISSUES

SETS:	
FEEDER SIZE:	#4/0
CONDUCTOR TYPE:	CU
RACEWAY TYPE:	NON-MAG
LENGTH:	20'
MAIN:	225A
OCPD:	

400A SETTINGS



150A SETTINGS



SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
DPB1-PD	200	200		35K	LG400	SQ D	
MUNICIPAL COURT	100	100		35K	HG 150	SQ D	

EQUIPMENT NAME:	DB-PD GEN	VOLTAGE:	277/480	PHASE:	3Ø 4w	AMPS:	400	SCCR:	65K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SQUARE D									AMPS	
MODEL:	QMB SERIES E1					OTHER COMMENTS					
TYPE:						EQUIPMENT IS IN GOOD CONDITON					
FED FROM:	GENSET - PD					PROVIDE PREVENTATIVE MAINTENANCE					
AFC:											
SETS:	2										
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	10'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
DPB1-PD	200	200	RK1	100K			
ATS-PW	200	200	RK5	100K			SEE DEFICIENCY REPORT

EQUIPMENT NAME:	DPB1-PD	VOLTAGE:	277/480	PHASE:	3Ø 4w	AMPS:	400	SCCR:	65K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SQUARE D									AMPS	
MODEL:	QMB SERIES E1					OTHER COMMENTS					
TYPE:	FUSIBLE PNLBD					EQUIPMENT IS IN GOOD CONDITON					
FED FROM:	SES - PD					PROVIDE PREVENTATIVE MAINTENANCE					
AFC:											
SETS:	2										
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	80'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
TVSS	100	60	J	100K			
H1-PD	200	200	J	100K			
H2-PD	200	200	J	100K			
UPS-PD	100	100	J	100K			
ATS-PD	200	200	RK1	100K			

EQUIPMENT NAME:	H1-PD	VOLTAGE:	277/480	PHASE:	3Ø-4W	AMPS:	225	SCCR:	14K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SQUARE D									AMPS:	
MODEL:	NEHB					OTHER COMMENTS					
TYPE:						TYPE EHB BRANCH CIRCUIT BREAKERS - 14K AIC					
FED FROM:	DPB1-PD										
AFC:						AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN					
SETS:						A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#3/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	6'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
T1-PD	100	30		14K	EHB		
T2-PD	100	90		14K	EHB		

EQUIPMENT NAME:	H2-PD	VOLTAGE:	277/480	PHASE:	3Ø-4W	AMPS:	225	SCCR:	14K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SQUARE D									AMPS:	
MODEL:	NEHB					OTHER COMMENTS					
TYPE:						TYPE EHB BRANCH CIRCUIT BREAKERS - 14K AIC					
FED FROM:	DPB1-PD					MAIN CB HAS A 25K AIC RATING.					
AFC:						AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN					
SETS:						A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#3/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	3'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	T1-PD				
EQUIPMENT TYPE:	TRANSFORMER				
KVA:	75				
PRIMARY VOLT:	277/480			OTHER COMMENTS	
SECONDAY VOLT:	120/240				
PHASE:	3Ø-4W				
IMPEDANCE:	6.4				
MANUFACTURER:					
XFMR PRIMARY				XFMR SECONDARY	
FED FROM:	H1-PD				
FEEDER PRIMARY:	#2	FEEDER SECONDARY:	#4/0	FEEDER SECONDARY:	
CONDUCTOR TYPE:	CU	CONDUCTOR TYPE:	CU	CONDUCTOR TYPE:	
RACEWAY TYPE:	MAGNETIC	RACEWAY TYPE:	MAGNETIC	RACEWAY TYPE:	
FEEDER LENGTH:	25'	FEEDER LENGTH:	25'	FEEDER LENGTH:	
		FEEDS:	L1-PD	FEEDS:	

EQUIPMENT NAME:	T2-PD				
EQUIPMENT TYPE:	TRANSFORMER				
KVA:	15				
PRIMARY VOLT:	277/480			OTHER COMMENTS	
SECONDAY VOLT:	120/240				
PHASE:	3Ø-4W				
IMPEDANCE:	5.2				
MANUFACTURER:					
XFMR PRIMARY				XFMR SECONDARY	
FED FROM:	H1-PD				
FEEDER PRIMARY:	#6	FEEDER SECONDARY:	#6	FEEDER SECONDARY:	
CONDUCTOR TYPE:	CU	CONDUCTOR TYPE:	CU	CONDUCTOR TYPE:	
RACEWAY TYPE:	MAGNETIC	RACEWAY TYPE:	MAGNETIC	RACEWAY TYPE:	
FEEDER LENGTH:	80'	FEEDER LENGTH:	10'	FEEDER LENGTH:	
		FEEDS:	L2B-PD	FEEDS:	

EQUIPMENT NAME:	L1-PD	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	225	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	200
MANUFACTURER:	SQUARE D									AMPS:	200
MODEL:	NQOD					OTHER COMMENTS					
TYPE:						TYPE QOB BRANCH CIRCUIT BREAKERS - 10K AIC					
FED FROM:	CU					MAIN CB HAS A 25K AIC RATING.					
AFC:											
SETS:											
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	25'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
L2-PD	100	90		10			

EQUIPMENT NAME:	L2-PD	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	100	SCCR:	10K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SQUARE D									AMPS:	
MODEL:	NQOD					OTHER COMMENTS					
TYPE:						TYPE QOB BRANCH CIRCUIT BREAKERS - 10K AIC					
FED FROM:	L1-PD										
AFC:											
SETS:											
FEEDER SIZE:	#2										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	3'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	L2B-PD	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	100	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	LOADCENTER									MODEL:	100
MANUFACTURER:	SIEMENS									AMPS:	40
MODEL:						OTHER COMMENTS					
TYPE:		MULTIPLE MANUFACTURERS AT 10K AIC									
FED FROM:	T2-PD	TO MAINTAIN LISTING, ONLY SIEMENS BREAKERS MAY BE INSTALLED.									
AFC:		A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.									
SETS:											
FEEDER SIZE:	#6										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	10'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	UPS-PD	VOLTAGE:	277/480	PHASE:	3Ø-4W	KW	56	SCCR:	65K	MAIN:	MLO
EQUIPMENT TYPE:	UPS	OUTPUT	120/208			KVA	59			MODEL:	
MANUFACTURER:	LIEBERT									AMPS:	
MODEL:	NPOWER					OTHER COMMENTS					
TYPE:		IT WAS NOT POSSIBLE TO VERIFY THE CIRCUIT BREAKER MANUFACTURER OR AIC RATINGS									
E POWER FED FROM:	H1E-PD	AS REMOVING THE DEADFRONT CREATED THE POSSIBLITY OF TAKING THE EQUIPMENT OFF LINE WHICH WAS NOT PERMITTED.									
N POWER FED FROM:	DPB1-PD	AS A RESULT, A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.									
AFC:											
SETS:		A NEUTRAL CONDUCTOR HAS NOT BEEN PROVIDED FROM PANEL H1E-PD AND DPB1-PD TO THE UPS.									
FEEDER SIZE:	#3	IT IS UNKNOWN HOW THIS MAY IMPACT THE OPERATION OF THE EQUIPMENT.									
CONDUCTOR TYPE:	CU	THE EQUIPMENT MANUFACTURER SHOULD BE CONSULTED AS									
RACEWAY TYPE:	MAGNETIC	THE DATAPLATE INFORMATION INDICATES A NEURAL CONDUCTOR IS REQUIRED.									
LENGTH:	15'	THIS WILL VIOLATE THE LISTING OF THE PRODUCT AND MAY VOID THE WARRANTY.									
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
UPS1-PD							

EQUIPMENT NAME:	UPS1-PD	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	225	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	TQD32150
MANUFACTURER:	GE									AMPS	150
MODEL:	A SERIES II					OTHER COMMENTS					
TYPE:		THQB 10K AIC BRANCH BREAKERS									
FED FROM:	UPS-PD										
AFC:											
FEEDER SIZE:	#2/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	15'										
MAIN:											

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
UPS2-PD	100	90		10	THQB		

EQUIPMENT NAME:	UPS2-PD	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	125	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	THQB
MANUFACTURER:	GE									AMPS	90
MODEL:	A SERIES II					OTHER COMMENTS					
TYPE:											
FED FROM:	UPS1-PD										
AFC:											
FEEDER SIZE:	#2										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	45'										
MAIN:											

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	H1E-PD	VOLTAGE:	277/480	PHASE:	3Ø-4W	AMPS:	225	SCCR:	14K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	KAL36225
MANUFACTURER:	SQUARE D									AMPS:	225
MODEL:	NEHB					OTHER COMMENTS					
TYPE:						TYPE EHB BRANCH CIRCUIT BREAKERS - 14K AIC					
FED FROM:	ATS-PD					MAIN CB HAS A 25K AIC RATING.					
AFC:						AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN					
SETS:						A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	4'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
UPS-PD	100	90		14K	EHB		
H3E-PD	100	70		14K	EHB		
T1E-PD	100	90		14K	EHB		

EQUIPMENT NAME:	T1E-PD						
EQUIPMENT TYPE:	TRANSFORMER						
KVA:	75						
PRIMARY VOLT:	277/480			OTHER COMMENTS			
SECONDAY VOLT:	120/240						
PHASE:	3Ø-4W						
IMPEDANCE:	4.37						
MANUFACTURER:							
XFMR PRIMARY		XFMR SECONDARY					
FED FROM:	H1E-PD						
FEEDER PRIMARY:	#1	FEEDER SECONDARY:	#1/0	FEEDER SECONDARY:	#1/0		
CONDUCTOR TYPE:	CU	CONDUCTOR TYPE:	CU	CONDUCTOR TYPE:	CU		
RACEWAY TYPE:	MAGNETIC	RACEWAY TYPE:	MAGNETIC	RACEWAY TYPE:	MAGNETIC		
FEEDER LENGTH:	10	FEEDER LENGTH:	15	FEEDER LENGTH:	15		
		FEEDS:	L1E-PD	FEEDS:	L2E-PD		

EQUIPMENT NAME:	L1E-PD	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	125	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	THQB
MANUFACTURER:	SQ D									AMPS	125
MODEL:	NQOD					OTHER COMMENTS					
TYPE:						10K AIC BREAKERS					
FED FROM:	T1E-PD										
AFC:											
FEEDER SIZE:	#1/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	15										
MAIN:											

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	L2E-PD	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	125	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	QOB
MANUFACTURER:	SQ D									AMPS	100
MODEL:	NQOD					OTHER COMMENTS					
TYPE:						10K AIC BREAKERS					
FED FROM:	L1E-PD										
AFC:											
FEEDER SIZE:	#1/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	15										
MAIN:											

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	H3E-PD	VOLTAGE:	277/480	PHASE:	3Ø-4W	AMPS:	225	SCCR:	14K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SQUARE D									AMPS:	100
MODEL:	NEHB					OTHER COMMENTS					
TYPE:						TYPE EHB BRANCH CIRCUIT BREAKERS - 14K AIC					
FED FROM:	H1E-PD					MAIN CB HAS A 25K AIC RATING.					
AFC:						IF THE AFC EXCEEDS THE AIC RATING OF THE CIRCUIT BREAKERS					
SETS:						A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#1										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	50'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
SW T3E-PD	100	50		14			

EQUIPMENT NAME:	SW T3E-PD	VOLTAGE:	277/480	PHASE:	3Ø-4W	AMPS:	60	SCCR:	100K	MAIN:	SWITCH
EQUIPMENT TYPE:	DISCONNECT									MODEL:	
MANUFACTURER:	SQUARE D									AMPS:	
MODEL:						OTHER COMMENTS					
TYPE:						TYPE EHB BRANCH CIRCUIT BREAKERS - 14K AIC					
FED FROM:	H3E-PD					MAIN CB HAS A 25K AIC RATING.					
AFC:						IF THE AFC EXCEEDS THE AIC RATING OF THE CIRCUIT BREAKERS					
SETS:						A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
FEEDER SIZE:	#4										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	10'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
T3E-PD	60	60	RK1	100			

EQUIPMENT NAME:	T3E-PD						
EQUIPMENT TYPE:	TRANSFORMER						
KVA:	45						
PRIMARY VOLT:	277/480				OTHER COMMENTS		
SECONDAY VOLT:	120/240						
PHASE:	3Ø-4W						
IMPEDANCE:	5.9						
MANUFACTURER:							
XFMR PRIMARY				XFMR SECONDARY			
FED FROM:	0						
FEEDER PRIMARY:	#4	FEEDER SECONDARY:	#1/0		FEEDER SECONDARY:		
CONDUCTOR TYPE:	CU	CONDUCTOR TYPE:	CU		CONDUCTOR TYPE:		
RACEWAY TYPE:	MAGNETIC	RACEWAY TYPE:	NON-MAG		RACEWAY TYPE:		
FEEDER LENGTH:	5'	FEEDER LENGTH:	6'		FEEDER LENGTH:		
		FEEDS:	L3E-PD		FEEDS:		

EQUIPMENT NAME:	L3E-PD	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	225	SCCR:	10K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	GE									AMPS:	125
MODEL:	A SERIES II					OTHER COMMENTS					
TYPE:						TYPE THQB BRANCH CIRCUIT BREAKERS - 10K AIC					
FED FROM:	T3E-PD					MAIN CB HAS A 25K AIC RATING.					
AFC:											
SETS:											
FEEDER SIZE:	#1/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	6'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
SW T3E-PD	100	50		14			

1.3. Findings

1.3.1. Short Circuit Analysis

The short circuit study provides the available fault current at each busbar (point or node) of the distribution system based upon the impedance of the system to that point. Based upon these results, we can compare the equipment's short circuit current withstanding ratings (SCCR) and the ampere interrupting current ratings (AIC) with the available fault current**.**

Based on the short circuit study, calculated faults exceeded the KAIC ratings of some panels. Reference section 3.1 Table 1 for the complete list.

At the locations noted, the available fault current exceeds the AIC and/or SCCR ratings of the equipment. As documentation from the manufacturer was not available, it is not possible to verify if the equipment is permitted to be used as part of a series rated system. While it appears that the applications of the labels are correct, it should be independently verified.

1.3.2. Protective Device Coordination

1.3.2.1. The MDP SES-PD service (TCC Report) has no over current protection. However, this is allowed by the NEC if the service has 6 or less circuits and the combined circuits are at or below the bus rating of the main service (1200 amps for this site). The design is NEC code compliant.

1.3.2.2. The protective device settings in this report (Refer to TCC reports), do show that there is reasonable system protection for this installation. Refer to sections 2.6 and 3.3 for more details.

1.3.3. Arc Flash Evaluation

1.3.3.1. **The utility's metering cabinet and the main switchboard are often found to have incident energy levels that exceed 40 Cal/cm^2 (no safe level of PPE).** In locations where no safe level of PPE is recommended, energized work should be prohibited or extension tools (e.g., hotstick) should be used to distance personnel from the potential arc point. The incident energy at the indicated working distance dictates the required level of PPE. Wherever possible, protective device settings are suggested to try to reduce the incident energy levels. Please refer to Sections 2.5 and 3.2 for more detailed information.

1.3.3.2. The incident energy calculations utilize the data obtained from the serving utility. The incident energy calculations also assume the recommended settings shown both in the SKM Arc Flash One-Line and the follow up report for each SES distribution system. These settings must be implemented for the data provided on the labels to be correct. **Improper or inadequate maintenance can result in increased opening time of overcurrent protective devices, thus increasing the incident energy and negating the results of this study.**

1.3.3. Load Flow Analysis

The table in Appendix 3 provides an overview of the all the distribution panels predicted voltage drop. **The voltage drop to some equipment being borderline of concern under normal power conditions and will be an issue when using the Generator for backup power unless load shedding is implemented.** It should be noted that excessive voltage drop can cause electronic equipment, such as computer systems, to unexpectedly shut down and effects the electrical system's performance. None of the locations studied were found to have current capacity less than available demand current flow.

Refer to Section 3.4 for more detail.

1.4. Study Notes

This study is based upon the most accurate information available at the time the study was conducted.

In reviewing the report, the serving utility typically does not provide the actual values for their contribution to the available fault current nor the impedance of their transformers. Values are published in their respective Electrical Service Requirement Manuals (ESRM) however, they will not guarantee the accuracy of this information. Additionally, there is no external labeling of the equipment that would provide this information. As a result, the values provided in this study may differ from actual values.

The serving utilities also will not indicate if overcurrent protective equipment, devices, or relays have been provided on the line side of their distribution transformer(s). As a result, it is prudent to perform these studies assuming that no protection has been provided.

There is equipment that was not surveyed due to being in locked rooms or otherwise inaccessible. Without being able to determine panel condition, we generated a Red Dangerous label for such panels.

Precise measurements of the distribution system feeders are all but impossible. Every effort has been made to estimate conductor length based upon equipment location and observed raceway or cable routing. Additionally, calculations provided in this study assume magnetic raceways above grade and non-magnetic raceways below grade except where positive identification is possible.

The results of this study are valid for a maximum of 5 calendar years after the date of publication and are invalidated whenever any of the following conditions or modifications are made to the distribution system or where the electrical equipment is not properly maintained.

The following conditions will negate the findings of this study and render the results invalid.

- Changes made to the utility distribution system or equipment
- The addition of equipment or loads
- Removal or replacement of overcurrent devices with differing specifications
- Changing overcurrent protective device settings
- Any modification to the facility distribution system
- Improper maintenance of equipment
- Removal of equipment
- Equipment that is not properly exercised as required by the manufacturer(s).

Whenever new equipment or loads have been provided after this study has been published, it is strongly recommended that a new study be provided to assess how the changes have impacted the system.

2. ANALYSIS

2.1. Basis of Analysis

Electrical system inputs, for the analysis performed, are composed of both non-intrusive on-site data gathering methods and integrating predictable values. This information is presented in the Excel spreadsheets included in this report. Source data was obtained from the Salt River Project Electrical Service Requirements Manual. SKM Power Tools version "9.0.0.7" was used for all analysis performed. Using this software, a computer model of the electrical system was created based on data obtained for the analysis. The single line diagram of the distribution system is shown on Fig.01 which is a graphical representation of the electrical system. The components on the Single Line Diagram (SLD) included all required device information for the analysis. This model was then used to study the electrical system and generate the calculations found in Appendices 1 through 5 of this report.

2.2. Campus as built Data Gathering Assumptions

When reviewing the system single line diagram, the provided information is based upon visual observations made at the site. In some circumstances it was not possible to access or open equipment. Access to this equipment may have been limited to any of the following conditions.

- Personnel not permitted to de-energize equipment
- Personnel could not gain access to equipment due to locked doors, gates or covers
- Equipment could not be opened or accessed without de-energizing the equipment or systems
- Staff felt the opening of the equipment may expose persons or property to an unreasonable risk due to the condition of the equipment.

As demand loads are necessary to complete the calculations, this study is based upon information provided by the facilities owner indicating the highest demand loads for the last calendar year. This information is supplied by the serving utility to the facility owner/operator. Where this information has not been provided, all calculations performed have been based upon a value 80% of the rating of the electrical service(s) for the facility with an anticipated power factor (PF) of 80%.

As demand loads are necessary to complete the calculations, it was necessary to make assumptions for these loads to complete the study. As load studies have not been completed for each panel or feeder, we based the study by using the following assumptions for all estimated loads (actual values are used when provided):

- Motors protected by circuit breakers: 40% of the circuit breaker rating
- Motors protected by fuses: 50% of the fuse rating
- All other loads: 50% of the rating of the upstream OCPD.

These assumptions are conservative in nature and should provide an acceptable range of results. It should be noted that in some instances, these assumptions indicate that equipment may not be suitable for the loads applied. The values provided do not necessarily indicate an overloaded or unsafe condition however, additional investigation may be necessary to assure the safe and continued operation of the equipment or systems.

The demand loads for switchboards and panelboards will be as follows:

Panelboard load estimate:

- **Main Distribution Board SES-PD:** 518 amps (reference Load Flow One Line).
- **Genset PD:** 424 amps
- **DPB1-PD:** 205 amps
- **H1E-PD:** 184 amps

2.3. Equipment Evaluation

Each device on the one-line diagram in Fig.01 is identified by an identifier. Common identifiers used in this report include:

AFC– Available Fault Current
AF – Arc Flash
IC – Interrupting Current
Gen – Generator
SCC – Short Circuit Current
CB – Circuit Breaker
SW – Switch
IE – Incident Energy
PPE – Personal Protective Equipment
TCC – Time Current Curve
AF – Arc Flash
SWB – Switchboard
LV – Low Voltage
CBL – Cable
LF – Load Flow
SC – Short Circuit

The incident energy summary in each report contains the available fault current calculations at each indicated device in the electrical system. Incident energy may increase if protective device settings in the electrical equipment is changed or adjusted or, if they are replaced. Increases in incident energy may also result from improper or inadequate maintenance or new construction.

Electrical equipment and protection devices must be in proper working condition for the equipment to operate properly and open as expected. A maintenance inspection and testing program should ensure that all equipment and devices function as designed by the manufacturer. NFPA 70E 2018 provides standards for electrical safety, including the following requirements for electrical equipment and protective devices:

> **General Maintenance Requirements** - Electrical equipment shall be maintained in accordance with manufacturers' instructions or industry consensus standards to reduce the risk of failure and the subsequent exposure of employees to electrical hazards.
>
> **Overcurrent Protective Devices** - Overcurrent protective devices shall be maintained in accordance with the manufacturers' instructions or industry consensus standards. Maintenance, tests, and inspections shall be documented.
>
> **210.5 Protective Devices** - Protective devices shall be maintained to adequately withstand or interrupt available fault current.

As of June, 2025, the amended 2014 National Electrical Code (NEC) is in effect in the town of Paradise Valley. Article 110 of the NEC contains requirements for all electrical installations, including maintenance and mechanical execution of work:

> **110.12(B): Mechanical Execution of work** - There shall be no damaged parts that may adversely affect safe operation or mechanical strength of the equipment such as parts that are broken, bent, cut; or deteriorated by corrosion, chemical action, or overheating.
>
> **110.26: Spaces about Electrical Equipment** - Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.

Additionally, when series ratings are used the National Electrical Code (NEC) Article 110 requires series combination rated overcurrent devices are visibly marked by permanently affixed means as stated:

> **110.22(B): Engineered Series Combination Systems** - Equipment enclosures for circuit breakers or fuses applied in compliance with series combination ratings selected under engineering supervision in accordance with 240.86(A) shall be legibly marked in the field as directed by the engineer to indicate the equipment has been applied with a series combination system. The marking shall meet the requirements in 110.21(B) and shall be readily visible and state the following: CAUTION – ENGINEERED SERIES COMBINATION SYSTEM RATED XXXXX AMPERES. IDENTIFIED REPLACEMENT COMPONENTS REQUIRED.

Equipment that is malfunctioning, has been inadequately or improperly installed, maintained, or modified, may result in injury or death, and will invalidate the results of this study.

2.4 Short Circuit Analysis

An analysis of the system was performed to determine the maximum fault levels at the equipment covered within the scope of work. SKM Power Tools version 9.0.1.3 (Unbalanced/Single Phase Subroutine) was used for the analysis using the comprehensive ANSI/IEEE C37.13 standard for calculation of these fault currents during short-circuit. The following short circuit currents have been calculated for system components:

- Initial Symmetrical line to line short circuit current (SCC1)
- Initial Symmetrical single line to ground short circuit current (SCC2)

The SCC1 is the maximum available short circuit current at any point in the distribution system, this is generally at the point the utility company connects to the system's service entrance system. This connection is called the point of service or the service point. The available fault current, at each point in the distribution system, is based upon the contributed fault current provided by the utility (this value is provided by the serving utility or from the utilities tables). Then, through analyzing the fault current calculations, the electrical system's components' fault withstand capability will be assessed by comparing them with SCC1.

The short-circuit current should not exceed the equipment rating with required factors for the protective device.

Based on the short circuit study, calculated faults exceeded the KAIC ratings of some panels. Reference section 3.1 Table 1 for the complete list.

The Short Circuit Analysis in each SES SKM report summarizes the fault duties at each device. The AF incident energy summary in the SES report shows IE at the safe distance and PPE requirements for each location into the system.

2.5 Arc Flash Evaluation

Arc Flash Evaluations are used to assess arc flash hazards and to assess the work Site risk to personnel. The Occupational Safety and Health Administration (OSHA), and the National Fire Protection Association (NFPA) standard 70E provide requirements for arc flash and other work Site hazards. OSHA requires employers provide a workplace free from recognized hazards that may cause injury or death to their employees. NFPA 70E 2018 provides the Standard for Electrical Safety in the Workplace. NFPA 70E 130.5 states:

"An arc flash risk assessment shall be performed and shall determine if an arc flash hazard exists. If an arc flash hazard exists, the risk assessment shall determine appropriate safety-related work practices, the arc flash boundary, and the PPE to be used within the arc flash boundary."

Arc Flash Evaluations are used to determine the required level of personal protective equipment (PPE), arc flash boundaries, and restrictions on the work of energized equipment. This information must include on the labels as required by NFPA and OSHA standards.

NFPA 70E 130.5(H) requires electrical equipment to be field-marked with a label containing the following information:

(1) Nominal system voltage
(2) Arc flash boundary
(3) At least one of the following:

a. Available incident energy and the corresponding working distance, OR the arc flash PPE category in Table 130.7(C)(15)(a) or Table 130.7(C)(15)(b) for the equipment, but not both
b. Minimum arc rating of clothing
c. Site-specific level of PPE

Furthermore, the National Electrical Code (NEC) contains additional requirements for the installation of Arc-Flash warning labels and arc energy reduction:

110.16 Arc-Flash Hazard Warning. Electrical equipment, such as switchboards, switchgear, panelboards, industrial control panels, meter socket enclosures, and motor control centers, that in other than dwelling units, and is likely to require examination, adjustment, servicing, or maintenance while energized, shall be field or factory marked to warn qualified persons of potential electric arc flash hazards. The marking shall meet the requirements in 110.21(B) and shall be located to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

240.67 Arc Energy Reduction. Where fuses rated 1200 A or higher are installed, 240.67(A) and (B) shall apply. This requirement shall become effective January 1, 2020.

(A) Documentation. Documentation shall be available to those authorized to design, install, operate, or inspect the installation as to the location of the fuses.
(B) Method to Reduce Clearing Time. A fuse shall have a clearing time of 0.07 seconds or less at the available arcing current, or one of the following shall be provided:

(1) Differential relaying
(2) Energy-reducing maintenance switching with local status
(3) Energy-reducing active arc flash mitigation system
(4) An approved equivalent means

240.87 Arc Energy Reduction. Where the highest continuous current trip setting for which the actual overcurrent device installed in a circuit breaker is rated or can be adjusted is 1200 A or higher, 240.87(A) and (B) shall apply. Not applicable for this Campus as all Overcurrent Circuit protection is 1000 amp or less.

NFPA 70E 130.5(G) also contains information on the selection of PPE where required based on the incident energy available at the equipment. Different types of PPE are suggested dependent on the exposure level of the energy as rated in Cal/cm^2. The energy exposure levels are shown in the Incident Energy Summary in each report. The levels are defined using the following energy Cal/cm^2:

Level A: 1.2 Cal/cm^2
Level B: 4 Cal/cm^2
Level C: 8 Cal/cm^2
Level D: 25 Cal/cm^2
Level E: 40 Cal/cm^2
Level D: 100 Cal/cm^2
Level E: 120 Cal/cm^2

The upper limit for the highest rated PPE is 40 Cal/cm^2. Energy exposure beyond this upper limit is relatively unsafe with any PPE, and energized work at equipment exceeding this rating should be avoided. **Arc-Flash labels with incident energy exceeding this threshold show the required PPE as "No Safe PPE Available – Energized Work is Prohibited".**

NFPA 70E 130.7(C) describes PPE requirements in effect at specified boundaries of working distance. NFPA 70E 130.4 is effective where working within the "restricted Approach Boundary", and NFPA 70E 130.5 were working within the "Arc Flash Boundary". Previous versions of NFPA 70E 2018 contain varied names and descriptions for these boundaries. This analysis uses NFPA 70E 2018, the most recent version as of the preparation of the analysis, as the basis for descriptions of approach boundaries.

The incident energy calculations utilize information provided by the serving utility. The incident energy calculations also assume the correct settings of overcurrent protective devices for the data provided on the labels to be correct. Improper or inadequate maintenance can result in increased opening time of the overcurrent protective device(s), thus increasing the incident energy.

2.5.1 Arc Flash Labels

Equipment labels containing the incident energy level, working boundaries and PPE requirements for exposed energized work are in Appendix 6. The labels are color coded per ANSI Z535.4 and are to be field-marked per NFPA 70E 130.5(D) and NEC 110.16.

The settings used in Arc Energy Reduction or other temporary means of incident energy reduction should be reset as soon as the work is complete to return the system to the normal engineered settings. Failure to do so will result in non-selective operation of the system and may result in unnecessary loss of power to critical systems.

2.6 Coordination Analysis

A protective device Coordination Study was performed to evaluate the capability of the protective devices to provide protection under fault conditions. The Coordination Study was performed by plotting the protective device characteristics as Time-Current Characteristic (TCC) curve sets. SKM Power Tools version 9.0.1.3 was used for TCC plots and analysis in this report. Protective devices including fuses and breakers were compared in a graphed set to coordinate the operating time and current of devices adjacent to each other in the electrical system.

In many systems, compromises need to be made between coordination, protection, and service needs of the Site due to the amperage and devices in the system.

ANSI/IEEE Standard 242-2001 states, "Whether minimizing the risk of equipment damage or preserving service continuity is the more important objective depends on the operating philosophy of the particular plant or business."

Subsequent changes in devices or operation of the system may require re-evaluation of protective devices.

Time-Current Curve (TCC) sets for the systems analyzed are in the Appendix 4 report. The voltage and current are considered in the one-line diagram that show the relationship between the protective devices plotted on each curve set. The curves for each device are terminated at the maximum fault magnitude available at the device's location. The curve sets consist of the TCC of devices plotted on a log-log graph showing current and time axis. The findings based on the TCC plots do not address lack of selectivity due to instantaneous units being in series.

2.7 Load Flow Evaluation

An analysis of the system was performed to determine the maximum voltage drop, voltage phase, power factor, branches voltage, current, power losses, active and reactive power. As this site has a generator, the load flow was performed and shown with the generator operational as it provided the worst-case results for voltage drop. Voltage drop was borderline concern under normal power, but load shedding will need to be implemented to avoid low voltage issues on the emergency panels.

2.8 Energized Electrical Work Permit

An example of an Energized Electrical Work Permit is included in the Appendix. It is provided for reference and may be used as needed to meet the requirements of NFPA 70E 2018 for the facility.

3. STUDYS' RESULTS INTERPRETATION

3.1 Short Circuit Interpretation

Starting with Init.Sym.RMS provided for the service as the available symmetrical short circuit current at service equipment by the serving utility:

- SES-PD is a 1200 amp, 480/277V, 3-phase unprotected service fed from a wye utility transformer with an available Short Circuit current of 25,773 amps as determined by the power company.

The fault current from the service entrance to the downstream equipment is reduced proportionately based on the impedance of each successive buss or line. Short Circuit Current ratings, or Ampere Interrupting Capacity ratings, are based upon the available energy at each specific point in the electrical system according to the short circuit study.

The model utilizes information obtained from field observations and compared the available fault current with the interrupting and/or short circuit ratings (IC) of the protective devices in the electrical system.

Based on short circuit study, some panels exceed their KAIC values as shown in Table 1. There are other issues with the electrical system which are noted in the Excel report and which resulted in many of the panels below receiving Red labels. *Reference Excel field report and Appendix 5 Arc Flash labels.*

Eq. Name	SES-PD	Panel DB-PD GEN	Panel H1E-PD	Panel H3E-PD	Panel L3E-PD	
SC RATING(KASCw)	65KA ☑	65KA ☑	14KA ☒	14KA ☑	10KA ☑	
$I_{k"-3Ph.-Init.Sym.}$	25.1KA	3.6KA	19.3KA	13.5KA	2.0KA	

Eq. Name	DPB1-PD	Panel H1-PD	Panel L2B	Panel L1-PD	Panel L2-PD	Panel H2-PD
SC RATING(KASCw)	65KA ☑	14KA ☒	10KA ☑	10KA ☑	10KA ☑	14KA ☒
$I_{k"-3Ph.-Init.Sym.}$	21.0KA	20.3KA	0.8KA	2.9KA	2.9KA	20.5KA

Eq. Name	UPS-PD	Panel UPS1	Panel UPS2	Panel L1E	Panel L2E	
SC RATING(KASCw)	65KA ☑	10KA ☑	10KA ☑	10KA ☑	10KA ☑	
$I_{k"-3Ph.-Init.Sym.}$	18.2KA	0.8KA	0.8KA	4.2KA	4.2KA	

Table (1)

NOTE 1:

☑ : Passed. Equipment is adequate to use under circumstance.

☒ : Failed. Equipment is not adequate to use under circumstance. Client must upgrade the panel or perhaps the circuit breakers with higher ratings as proposed in this report.

FACILITY CONDITION ASSESSMENT

prepared for

Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, AZ 85253
Isaac Chavira



Public Works
6401 East Lincoln Drive
Paradise Valley, AZ 85253

PREPARED BY:
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BV PROJECT #:
172662.25R000-003.487

DATE OF REPORT:
July 7, 2025

ON SITE DATE:
May 29, 2025

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1. Executive Summary

Campus Overview and Assessment Details

General Information	
Property Type	Office/Warehouse
Number of Buildings	3
Main Address	6401 East Lincoln Drive, Paradise Valley, AZ 85253
Site Developed	1994 Renovated 2004
Outside Occupants / Leased Spaces	None
Date(s) of Visit	May 29, 2025
Management Point of Contact	Paradise Valley Public Works Mr. Isaac Chavira, Public Works Director (480) 348-3540, ichavira@paradisevalleyaz.gov
On-site Point of Contact (POC)	Paradise Valley Public Works John Fraley, Lead Technician (480) 797-2060
Assessment and Report Prepared By	Paul Scanzillo
Reviewed By	Rashad Alnial *for,* Gregg Young Program Manager 800.733.0660 x7296228 Gregg.Young@bureauveritas.com
AssetCalc Link	Full dataset for this assessment can be found at: https://www.assetcalc.net/

Campus Findings and Deficiencies

Historical Summary

The Public Works complex is comprised of three buildings, Main Office Building A, the Fleet Shop Building B and the Facility Shop. The buildings were constructed in 1994 with an expansion to the Main Office added in 2004. The Fleet Shop experienced a fire and is currently in the process of being renovated and is unoccupied.

Architectural

The Main Office and Fleet Shop masonry structures appear to be sound with no issues. The flat built-up roofs are adequate for the near term with proper drainage observed. The fully glazed exterior doors, steel doors and aluminum insulated windows are adequate for the near term as well. The exterior wall finishes appear to be well-maintained on the Main Office, but the unfinished Fleet Shop CMU will need sealing and finishing as part of the renovation project. The overhead garage doors at the Fleet Shop are in the process of being installed with automatic openers. The Facility Shop appears to be sound as well. The roof was inaccessible, so it was observed from ground level, observing the underside of the truck bays and office ceilings. No leaks were observed during the assessment. The exterior metal siding on the shop is free of issues and is noted to be non-insulated. The interior finishes in the Main Office have been well-maintained over the years with a recent upgrade in the employee breakroom, including new cabinetry, commercial refrigerator and floor finishes. The carpeting in the office area appears to be aged and worn and is recommended for replacement in the future. The original ACT ceiling is worn with some tile damage in places. The Facility Shop office finishes are somewhat worn but functional for the near term. All interior finishes in the Fleet Shop are in the process of being completed and are budgeted and anticipated in the cost tables. All assets are budgeted and anticipated for replacement based on condition and expected remaining useful life.

Mechanical, Electrical, Plumbing and Fire (MEPF)

The Main Office Building is cooled with three packaged units located on the roof. Two will be reaching the end-of-life cycle in the near term, the third was replaced in 2018 with 65% life remaining. The ductwork appears to be adequate with no issues found. Electrical service appears to be provided from a switchboard in the Fleet Shop and is of adequate capacity for the loads served. Lighting is with LED fixtures throughout. The plumbing infrastructure and fixtures appear to have been upgraded and are estimated to be adequate for most of the reserve term. Except for exit lights, there is no fire alarm system observed, which is a life-safety concern. A full fire alarm system is recommended for installation. Except for fire extinguishers with current inspection tags, a fire suppression system is also missing. There are three packaged units on the roof of the Fleet Shop which are reported to be being replaced as a result of the building fire and are budgeted for replacement in the cost tables. The electrical service to the building is by the same switchboard as the main office building switchboard and is observed to be functional. A temporary panelboard is present for the renovation project. Lighting will be LED once completed. There are exit signs observed. A fire alarm system and fire suppression system are recommended for installation. Fire extinguishers are present with current inspection tags. One ductless mini-split system is located at the Facility Shop, providing cooling for the maintenance office. The electrical system appears to be original and is adequate for the loads served with no reported issues. Lighting is with LED fixtures throughout. The plumbing is with one hose bib located inside the shop, fed from the main office building. There are no restrooms found at the maintenance shop. Except for fire extinguishers which have current inspection tags and exit signs, there are no other fire alarm components, nor a fire suppression system installed. All assets are budgeted and anticipated based on condition and expected remaining useful life.

Site

The asphalt drives and parking areas are original pavements with recent sealing and striping. No open cracks or potholes are observed. The concrete sidewalks are observed to be adequate with no cracking observed. Site lighting is with LED pole fixtures and building-mounted fixtures. No additional lighting is reported to being needed. Site fencing, CMU retaining walls and metal parking shade structures are observed to be free of issues with no apparent near-term needs.

Recommended Additional Studies

No additional studies recommended at this time.

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate the Facility Condition Index (FCI), which provides a theoretical objective indication of a facility's overall condition. The FCI is defined as the ratio of the cost of current needs divided by the current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone mathematical values. The table below presents the current, 3-year, 5-year, and 10-year FCI's for this facility:

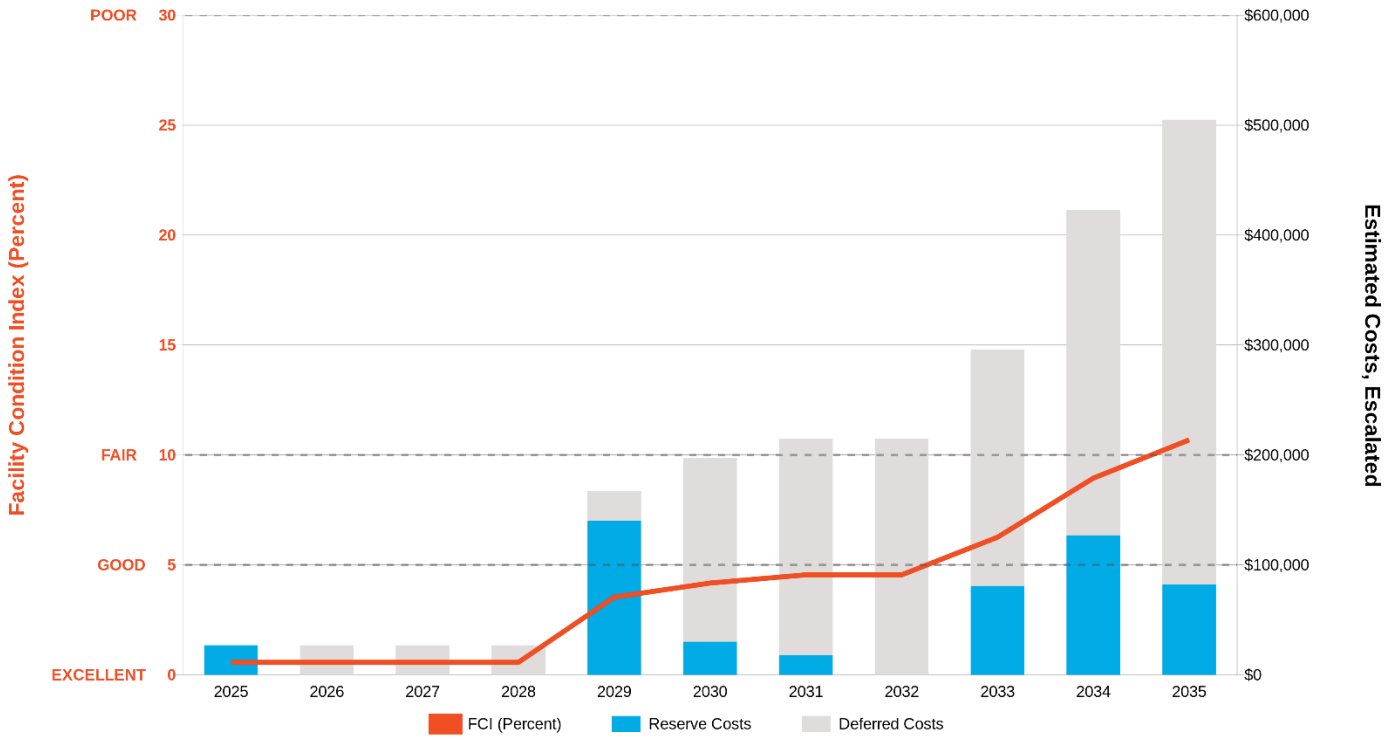
FCI Analysis		
Replacement Value *$4,724,475*	*Total SF* *8,999*	*Cost/SF* *$525*

	Est Reserve Cost	FCI
Current	$27,000	0.6 **%**
3-Year	$27,000	0.6 **%**
5-Year	$197,300	4.2 **%**
10-Year	$505,000	10.7 **%**

NEEDS OVER TIME: The vertical blue bars in the graphic below represent the year-by-year needs identified for the facility. The orange line forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures over the next ten years. The dollar amounts allocated for each year are associated with the values along the right Y axis.

Needs by Year with Unaddressed FCI Over Time

Replacement Value: $4,724,475.00 **Inflation Rate: 3%** **Average Needs (per year - over next 10 years): $45,907.00**



Immediate Needs

Location	UF Code	Description	Condition	Plan Type	Cost
Public Works / Building B - Fleet Shop	D3055	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	Failed	Failed	$9,000
Public Works / Building B - Fleet Shop	D3055	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	Failed	Failed	$9,000
Public Works / Building B - Fleet Shop	D3055	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	Failed	Failed	$9,000
TOTAL (3 items)					**$27,000**

Key Findings



Packaged Unit in Failed condition.

RTU, Pad or Roof-Mounted
Building B - Fleet Shop
B Roof

Uniformat Code: D3050
Recommendation: **Replace in 2025**

Plan Type:
Performance/Integrity

Cost Estimate: $9,000

Damaged during the fire. Being replaced per POC. - AssetCALC ID: 9408490



Packaged Unit in Failed condition.

RTU, Pad or Roof-Mounted
Building B - Fleet Shop
B Roof

Uniformat Code: D3050
Recommendation: **Replace in 2025**

Plan Type:
Performance/Integrity

Cost Estimate: $9,000

Damaged during the fire. Being replaced per POC. - AssetCALC ID: 9408491



Packaged Unit in Failed condition.

RTU, Pad or Roof-Mounted
Building B - Fleet Shop
B Roof

Uniformat Code: D3050
Recommendation: **Replace in 2025**

Plan Type:
Performance/Integrity

Cost Estimate: $9,000

Damaged during the fire. Being replaced per POC. - AssetCALC ID: 9408497



Fire Alarm System

Full System Upgrade, Standard Addressable
Building A - Office Building
Throughout Building

Uniformat Code: D7050
Recommendation: **Upgrade/Install in 2029**

Plan Type:
Retrofit/Adaptation

Cost Estimate: $9,000

Only exit lights are present throughout the building. Recommend installing a complete fire alarm system. - AssetCALC ID: 9408331



Fire Alarm System

Full System Upgrade, Standard Addressable
Facility Shop
Throughout Building

Uniformat Code: D7050
Recommendation: **Upgrade/Install in 2029**

Plan Type:
Retrofit/Adaptation

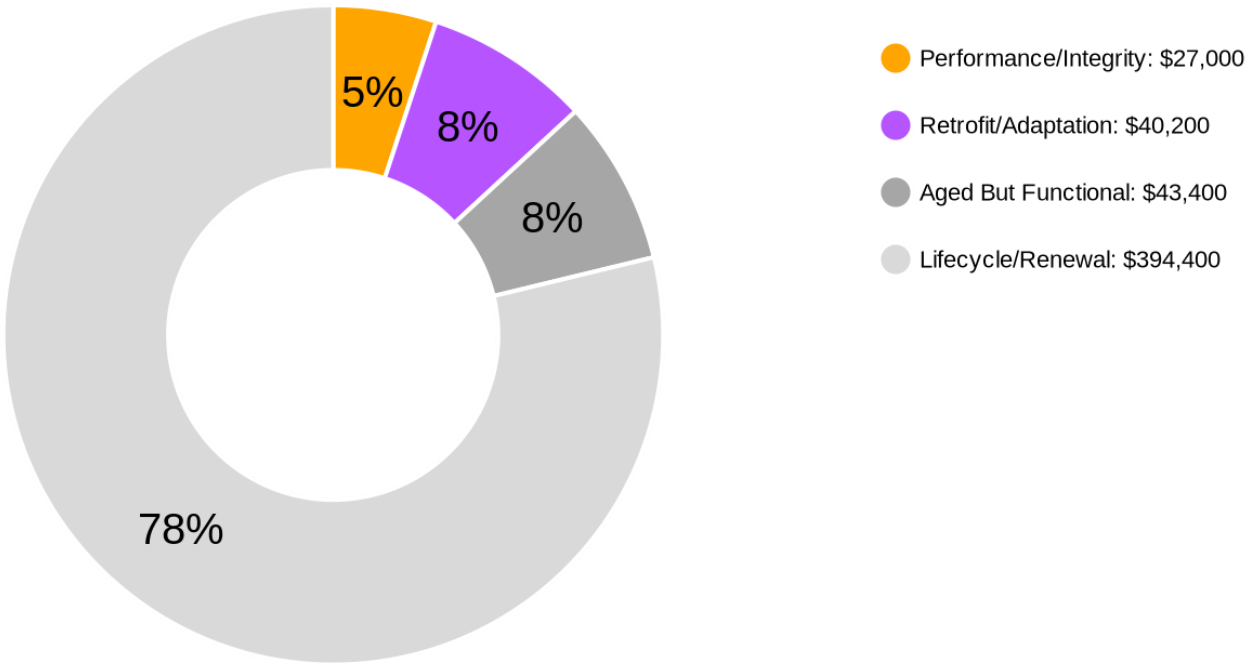
Cost Estimate: $26,700

Missing fire alarm system. Recommend the installation of a new system. - AssetCALC ID: 9408432

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the “why” part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the “best” fit, typically the one with the greatest significance and highest on the list below.

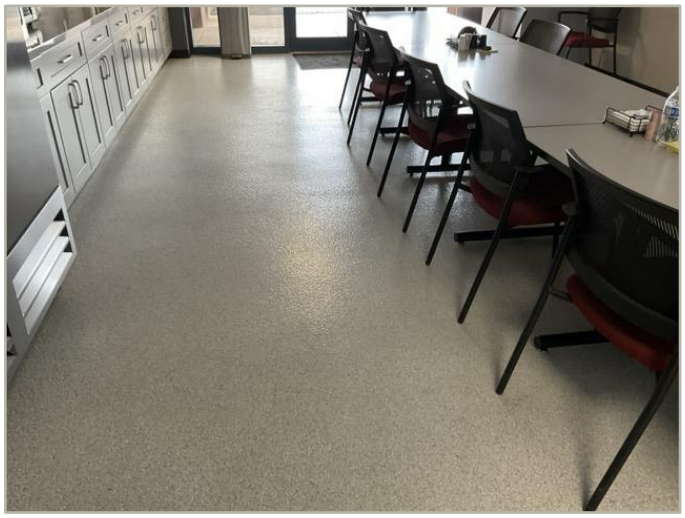
Plan Type Descriptions and Distribution		
Safety		An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity		Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility		Does not meet ADA, UFAS, and/or other accessibility requirements.
Environmental		Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation		Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Aged But Functional		Any component or system that has aged past its industry-average expected useful life (EUL) but is not currently deficient or problematic.
Lifecycle/Renewal		Any component or system that is neither deficient nor aged past EUL but for which future replacement or repair is anticipated and budgeted.



10-Year Total: $505,000

2. Building A - Office Building





Building A - Office Building: Building Systems Summary		
Address	6401 East Lincoln Drive, Paradise Valley, AZ 85253	
GPS Coordinates	33.5388471, -111.9641728	
Constructed/Renovated	1994 Renovated 2004	
Building Area	3,000 SF	
Number of Stories	1 above grade	
System	*Description*	*Condition*
Structure	Masonry bearing walls with metal roof deck supported by open-web steel joists and concrete strip/wall footing foundation system	Good
Facade	Primary Wall Finish: Painted stucco Secondary Wall Finish: CMU Windows: Aluminum	Fair
Roof	Flat construction with built-up finish	Fair
Interiors	Walls: Painted gypsum board, painted CMU, ceramic tile, and unfinished Floors: Carpet, ceramic tile, epoxy, painted concrete, and unfinished concrete Ceilings: Painted gypsum board, ACT, and unfinished/exposed	Fair
Elevators	None	-

Building A - Office Building: Building Systems Summary		
Plumbing	Distribution: Copper supply and PVC waste and venting Hot Water: Electric water heater with integral tank Fixtures: Toilets, urinals, and sinks in all restrooms	Fair
HVAC	Non-Central System: Packaged units	Fair
Fire Suppression	Fire extinguishers only	Good
Electrical	Source and Distribution: Main switchboard with copper wiring fed from pad-mount transformer with copper wiring Interior Lighting: LED Emergency Power: None	Fair
Fire Alarm	Emergency and exit lights only	Fair
Equipment/Special	Commercial kitchen equipment	Good
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	The interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, the exterior walls of the facility, and the roof.	
Key Spaces Not Observed	All key areas of the facility were accessible and observed.	

Building A - Office Building: Site Information		
Site Area	7.4 acres	
Parking Spaces	128 total spaces all in open lots; one of which is accessible.	
System	*Description*	*Condition*
Site Pavement	Asphalt lots with limited areas of concrete aprons and pavement and adjacent concrete sidewalks, curbs, ramps, and stairs	Fair
Site Development	Building-mounted signage; chain-link fencing; CMU retaining walls	Fair
Landscaping and Topography	Significant landscaping features including lawns, trees, bushes, and planters Irrigation present Low to moderate site slopes throughout	Good
Utilities	Municipal water and sewer Local utility-provided electric and natural gas	Good
Site Lighting	Pole-mounted: LED Building-mounted: LED	Fair
Ancillary Structures	None	-
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	All key areas of the exterior site were accessible and observed.	

The table below shows the anticipated costs by trade or building system over the next 20 years.

Building A - Office Building: System Expenditure Forecast						
System	**Immediate**	**Short Term (1-2 yr)**	**Near Term (3-5 yr)**	**Med Term (6-10 yr)**	**Long Term (11-20 yr)**	**TOTAL**
Structure	$0	$0	$0	$0	$0	$0
Facade	$0	$0	$0	$12,537	$79,987	$92,524
Roofing	$0	$0	$0	$56,444	$0	$56,444
Interiors	$0	$0	$28,530	$7,600	$125,187	$161,317
Plumbing	$0	$0	$1,800	$22,702	$18,880	$43,382
HVAC	$0	$0	$18,457	$15,657	$16,153	$50,267
Electrical	$0	$0	$0	$12,113	$24,515	$36,628
Fire Alarm and Electronic Systems	$0	$0	$10,129	$0	$0	$10,129
Equipment and Furnishings	$0	$0	$0	$2,194	$25,145	$27,339
Sitework	$0	$0	$0	$0	$4,705	$4,705
TOTALS	**$0**	**$0**	**$59,000**	**$129,300**	**$294,600**	**$482,900**

3. Building B - Fleet Shop





Building B - Fleet Shop: Building Systems Summary		
Address	6401 East Lincoln Drive, Paradise Valley, AZ 85253	
GPS Coordinates	33.5388471, -111.9641728	
Constructed/Renovated	1994 Renovated 2025	
Building Area	3,000 SF	
Number of Stories	1 above grade	
System	*Description*	*Condition*
Structure	Masonry bearing walls with wood roof deck supported by wood T-joists and concrete strip/wall footing foundation system	Good
Facade	Wall Finish: Unfinished CMU Windows: None	Fair
Roof	Flat construction with built-up finish	Fair
Interiors	Walls: Unfinished CMU Floors: Unfinished concrete Ceilings: Unfinished/exposed	Fair
Elevators	None	-

Building B - Fleet Shop: Building Systems Summary		
Plumbing	Distribution: None Hot Water: None Fixtures: None	-
HVAC	Non-Central System: Packaged units	Failed
Fire Suppression	Fire extinguishers only	Good
Electrical	Source and Distribution: Main switchboard with copper wiring fed from pad-mount transformer with copper wiring Interior Lighting: LED Emergency Power: None	Fair
Fire Alarm	Emergency and exit lights only	Fair
Equipment/Special	None	-
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	The interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, the exterior walls of the facility, and the roof.	
Key Spaces Not Observed	All key areas of the facility were accessible and observed.	

Building B - Fleet Shop: Site Information		
Site Area	0.25 acres	
Parking Spaces	None	
System	*Description*	*Condition*
Site Pavement	Asphalt lots with limited areas of concrete aprons and pavement and adjacent concrete sidewalks, curbs, ramps, and stairs	Fair
Site Development	Chain-link fencing	Good
Landscaping and Topography	Landscaping not present Irrigation not present Low to moderate site slopes throughout	Good
Utilities	Municipal water and sewer Local utility-provided electric	Good
Site Lighting	Pole-mounted: None Building-mounted: LED	Fair
Ancillary Structures	None	Fair
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	All key areas of the exterior site were accessible and observed.	

The table below shows the anticipated costs by trade or building system over the next 20 years.

Building B - Fleet Shop: System Expenditure Forecast						
System	**Immediate**	**Short Term (1-2 yr)**	**Near Term (3-5 yr)**	**Med Term (6-10 yr)**	**Long Term (11-20 yr)**	**TOTAL**
Structure	$0	$0	$0	$0	$0	$0
Facade	$0	$0	$0	$0	$0	$0
Roofing	$0	$0	$0	$0	$0	$0
Interiors	$0	$0	$0	$3,023	$4,063	$7,086
Plumbing	$0	$0	$0	$3,119	$0	$3,119
HVAC	$27,000	$0	$0	$0	$48,765	$75,765
Fire Protection	$0	$0	$0	$0	$0	$0
Electrical	$0	$0	$30,140	$2,620	$34,351	$67,111
Fire Alarm and Electronic Systems	$0	$0	$0	$0	$16,255	$16,255
Equipment and Furnishings	$0	$0	$7,540	$0	$11,748	$19,288
TOTALS	**$27,000**	**$0**	**$37,700**	**$8,800**	**$115,200**	**$188,700**

4. Facility Shop





Facility Shop: Building Systems Summary		
Address	6401 East Lincoln Drive, Paradise Valley, AZ 85253	
GPS Coordinates	33.5388471, -111.9641728	
Constructed/Renovated	1994	
Building Area	8,900 SF	
Number of Stories	1 above grade (mechanical mezzanines are present but not included in the count)	
System	*Description*	*Condition*
Structure	Pre-engineered steel structure over concrete slab foundation	Good
Facade	Wall Finish: Metal Windows: None	Fair
Roof	Metal finish	Fair
Interiors	Walls: Painted gypsum board and unfinished Floors: Carpet and unfinished concrete Ceilings: Painted gypsum board and unfinished/exposed	Fair
Elevators	None	-

Facility Shop: Building Systems Summary		
Plumbing	Distribution: Copper supply for hose bib and no waste and venting Hot Water: None Fixtures: None	Fair
HVAC	Non-Central System: Ductless mini-split system	Fair
Fire Suppression	Fire extinguishers only	Fair
Electrical	Source and Distribution: Main panel with copper wiring Interior Lighting: LED Emergency Power: None	Fair
Fire Alarm	Smoke detectors, back-up emergency lights, and exit signs	Fair
Equipment/Special	None	-
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	The interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, the exterior walls of the facility, and the roof. The roof was observed from ground level.	
Key Spaces Not Observed	All key areas of the facility were accessible and observed.	

Facility Shop: Site Information		
Site Area	3.2 acres	
Parking Spaces	None	
System	*Description*	*Condition*
Site Pavement	Asphalt lots with limited areas of concrete aprons and pavement and adjacent concrete sidewalks, curbs, ramps, and stairs	Fair
Site Development	Chain-link fencing	Good
Landscaping and Topography	Landscaping not present Irrigation not present Low to moderate site slopes throughout	Good
Utilities	Municipal water and sewer Local utility-provided electric	Good
Site Lighting	Pole-mounted: None Building-mounted: LED	Fair
Ancillary Structures	None	Fair
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	All key areas of the exterior site were accessible and observed.	

The table below shows the anticipated costs by trade or building system over the next 20 years.

Facility Shop: System Expenditure Forecast						
System	**Immediate**	**Short Term (1-2 yr)**	**Near Term (3-5 yr)**	**Med Term (6-10 yr)**	**Long Term (11-20 yr)**	**TOTAL**
Structure	$0	$0	$0	$0	$0	$0
Facade	$0	$0	$0	$23,590	$143,044	$166,634
Roofing	$0	$0	$0	$0	$208,967	$208,967
Interiors	$0	$0	$5,064	$2,340	$10,886	$18,290
Plumbing	$0	$0	$0	$0	$7,789	$7,789
HVAC	$0	$0	$3,939	$0	$6,137	$10,076
Electrical	$0	$0	$0	$32,925	$76,317	$109,242
Fire Alarm and Electronic Systems	$0	$0	$30,051	$0	$0	$30,051
TOTALS	**$0**	**$0**	**$39,100**	**$58,900**	**$453,200**	**$551,200**

5. Site Summary





Site: Site Information		
Site Area	7.4 acres	
Parking Spaces	128 total spaces all in open lots; 1 of which are accessible.	
System	*Description*	*Condition*
Site Pavement	Asphalt lots with limited areas of concrete aprons and pavement and adjacent concrete sidewalks, curbs, ramps, and stairs	Fair
Site Development	Building-mounted signage; chain-link fencing; CMU retaining walls	Fair
Landscaping and Topography	Significant landscaping features including lawns, trees, bushes, and planters Irrigation present Low to moderate site slopes throughout	Good
Utilities	Municipal water and sewer Local utility-provided electric and natural gas	Good
Site Lighting	Pole-mounted: LED Building-mounted: LED	Fair
Ancillary Structures	None	-

Site: Site Information	
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.
Site Additional Studies	No additional studies are currently recommended for the site areas.
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.
Site Key Spaces Not Observed	All key areas of the exterior site were accessible and observed.

The table below shows the anticipated costs by trade or building system over the next 20 years.

Site: System Expenditure Forecast						
System	**Immediate**	**Short Term (1-2 yr)**	**Near Term (3-5 yr)**	**Med Term (6-10 yr)**	**Long Term (11-20 yr)**	**TOTAL**
Plumbing	$0	$0	$0	$0	$0	$0
Special Construction and Demo	$0	$0	$0	$6,523	$2,139,940	$2,146,463
Sitework	$0	$0	$34,643	$104,307	$1,290,737	$1,429,687
TOTALS	**$0**	**$0**	**$34,700**	**$110,900**	**$3,430,700**	**$3,576,300**

6. ADA Accessibility

Generally, Title II of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “public facilities” on the basis of disability. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

A public entity (i.e. city governments) shall operate each service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities.

However, this does not:

1. Necessarily require a public entity to make each of its existing facilities accessible to and usable by individuals with disabilities;
2. Require a public entity to take any action that would threaten or destroy the historic significance of an historic property; or
3. Require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of a service, program, or activity or in undue financial and administrative burdens. In those circumstances where personnel of the public entity believe that the proposed action would fundamentally alter the service, program, or activity or would result in undue financial and administrative burdens, a public entity has the burden of proving that compliance with 35.150(a) of this part would result in such alteration or burdens. The decision that compliance would result in such alteration or burdens must be made by the head of a public entity or his or her designee after considering all resources available for use in the funding and operation of the service, program, or activity, and must be accompanied by a written statement of the reasons for reaching that conclusion. If an action would result in such an alteration or such burdens, a public entity shall take any other action that would not result in such an alteration or such burdens but would nevertheless ensure that individuals with disabilities receive the benefits or services provided by the public entity.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the material included in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this assessment. A full measured ADA survey would be required to identify more specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance
- Only a representative sample of areas was observed
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance
- Itemized costs for individual non-compliant items are included in the dataset
- For any “none” boxes checked or reference to “no issues” identified, that alone does not guarantee full compliance

The following table summarizes the accessibility conditions of the general site and each significant building included in this report:

Accessibility Summary			
Facility	*Year Built/ Renovated*	*Prior Study Provided?*	*Major/Moderate Issues Observed?*
Building A - Office Building	1994 / 2004	Yes / No	No
Building B - Fleet Shop	1994 / 2025	No	No
Facility Shop	1994	No	No

No detailed follow-up accessibility study is currently recommended since no major or moderate issues were identified at the subject site. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey.

7. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

8. Opinions of Probable Costs

Cost estimates are embedded throughout this report, including the very detailed Replacement Reserves report in the appendix. The cost estimates are predominantly based on construction rehabilitation costs developed by the *RSMeans data from Gordian.* While the *RSMeans data from Gordian* is the primary reference source for the Bureau Veritas cost library, secondary and supporting sources include but are not limited to other industry experts work, such as *Marshall & Swift* and *CBRE Whitestone.* For improved accuracy, additional research integrated with Bureau Veritas's historical experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions also come into play when deemed necessary. Invoice or bid documents provided either by the owner or facility construction resources may be reviewed early in the process or for specific projects as warranted.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

To account for differences in prices between locations, the base costs are modified by geographical location factors to adjust for to market conditions, transportation costs, or other local contributors. When requested by the client, the costs may be further adjusted by several additional factors including; labor rates (prevailing minimum wage), general contractor fees for profit and overhead, and insurance. If desired, costs for design and permits, and a contingency factor, may also be included in the calculations.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system or component replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

9. Certification

Town of Paradise Valley, FCA wInventory Program (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of Public Works, 6401 East Lincoln Drive, Paradise Valley, AZ 85253, the “Property”. It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager’s walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property’s original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and Bureau Veritas.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of Bureau Veritas. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to Bureau Veritas.

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10. Appendices

Appendix A: Photographic Record
Appendix B: Site Plan(s)
Appendix C: Pre-Survey Questionnaire(s)
Appendix D: Accessibility Review and Photos
Appendix E: Component Condition Report
Appendix F: Replacement Reserves
Appendix G: Equipment Inventory List
Appendix H: Electrical Study

Appendix A:
Photographic Record

Photographic Overview



1 - FRONT ELEVATION



2 - LEFT ELEVATION



3 - RIGHT ELEVATION



4 - BUILDING FACADE

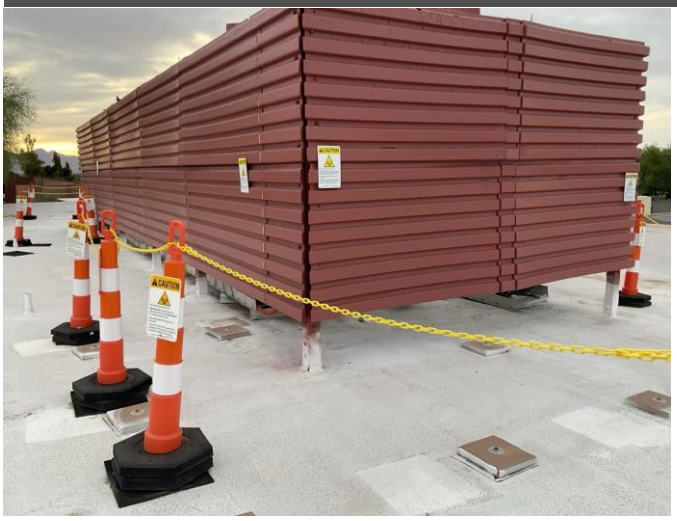


5 - MAIN OFFICE BUILDING ROOF OVERVIEW

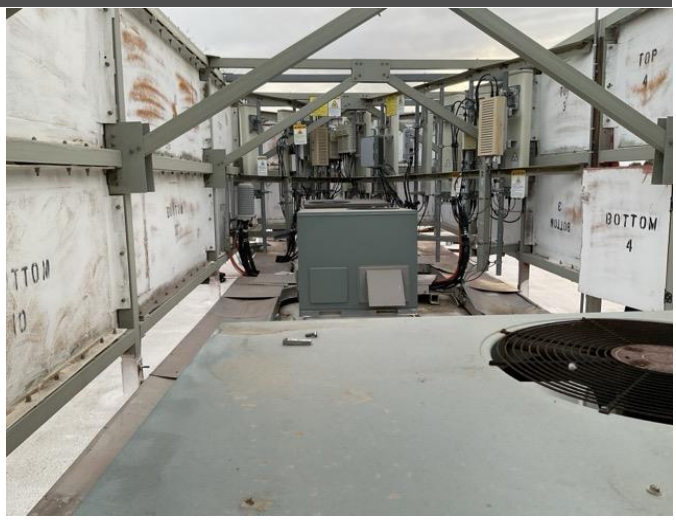


6 - FLEET SHOP

Photographic Overview



7 - FLEET SHOP ROOF ENCLOSURE



8 - FLEET SHOP ROOFTOP MECH EQUIPMENT



9 - FLEET SHOP OVERVIEW



10 - FACILITY SHOP

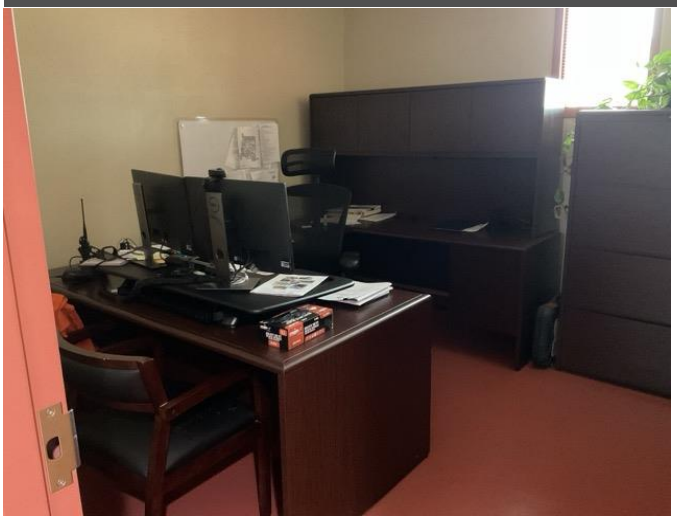


11 - FACILITY SHOP PARKING



12 - MAIN BUILDING ENTRANCE

Photographic Overview



13 - TYPICAL OFFICE



14 - MAIN OFFICE CONFERENCE ROOM



15 - BREAK ROOM OVERVIEW



16 - HVAC PACKAGED UNIT MAIN BUILDING



17 - ELECTRICAL ROOM FLEET SHOP



18 - WATER HEATER

Photographic Overview



19 - MAIN PARKING AREA



20 - SECONDARY PARKING AREA



21 - SIDEWALKS AND LANDSCAPING



22 - LANDSCAPING



23 - LANDSCAPING AND SHADE STRUCTURES



24 - PROPERTY SIGNAGE

Photographic Overview



25 - BUILDING SIGNAGE



26 - RETAINING WALL



27 - FENCES AND GATES



28 - FENCES AND GATES



29 - WALKWAY COVERING



30 - PUBLIC WORKS YARD OVERVIEW

Appendix B:
Site Plan(s)

Site Plan



Project Number	Project Name
172662.25R000-003.468	Public Works
Source	**On-Site Date**
Google	May 29, 2025

BUREAU VERITAS

N

Appendix C:
Pre-Survey Questionnaire(s)

BV FACILITY CONDITION ASSESSMENT: PRE-SURVEY QUESTIONNAIRE

Building / Facility Name: Public Works

Name of person completing form: John Fraley

Title / Association w/ property: Lead Technician

Length of time associated w/ property: 4 Years

Date Completed: 5/29/2025

Phone Number: 480.797.2060

Method of Completion: INTERVIEW - verbally completed during interview

Directions: Please answer all questions to the best of your knowledge and in good faith. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses.

Data Overview		Response		
1	Year(s) constructed	Constructed: 1994	Renovated: 2004	
2	Building size in SF	8,999 **SF**		
3	Major Renovation/Rehabilitation		Year	Additional Detail
		Facade		
		Roof		
		Interiors		
		HVAC		
		Electrical		
		Site Pavement		
		Accessibility		
4	List other significant capital improvements (focus on recent years; provide approximate date).	None		
5	List any major capital expenditures planned/requested for the next few years. Have they been budgeted?	None		
6	Describe any on-going extremely problematic, historically chronic, or immediate facility needs.	None		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Response				Comments
		Yes	No	Unk	NA	
7	Are there any problems with foundations or structures, like excessive settlement?		X			
8	Are there any wall, window, basement or roof leaks?		X			
9	Has any part of the facility ever contained visible suspect mold growth, or have there been any indoor air quality complaints?		X			
10	Are your elevators unreliable, with frequent service calls?				X	
11	Are there any plumbing leaks, water pressure, or clogging/backup issues?		X			
12	Have there been any leaks or pressure problems with natural gas, HVAC piping, or steam service?		X			
13	Are any areas of the facility inadequately heated, cooled or ventilated? Poorly insulated areas?		X			
14	Is the electrical service outdated, undersized, or problematic?		X			
15	Are there any problems or inadequacies with exterior lighting?		X			
16	Is site/parking drainage inadequate, with excessive ponding or other problems?	X				Water ponds at front parking on heavy rain.
17	Are there any other unresolved construction defects or significant issues/hazards at the property that have not yet been identified above?		X			
18	ADA: Has an accessibility study been previously performed? If so, when?			X		
19	ADA: Have any ADA improvements been made to the property since original construction? Describe.		X			
20	ADA: Has building management reported any accessibility-based complaints or litigation?		X			
21	Are any areas of the property leased to outside occupants?		X			

Signature of Assessor

Signature of POC

Appendix D:
Accessibility Review and Photos

Visual Survey - 2010 ADA Standards for Accessible Design

Property Name: Public Works

BV Project Number: 172662.25R000-003.468

Facility History & Interview

	Question	Yes	No	Unk	Comments
1	Has an accessibility study been previously performed? If so, when?			X	
2	Have any ADA improvements been made to the property since original construction? Describe.		X		
3	Has building management reported any accessibility-based complaints or litigation?		X		

003 - Public Works: Accessibility Issues

Category	Major Issues (ADA study recommended)	Moderate Issues (ADA study recommended)	Minor Issues	None*
Parking			Only 1 accessible space in front of building, non-van accessible	
Exterior Accessible Route				X
Building Entrances				X
Interior Accessible Route			Missing lowered service counter.	
Elevators	**NA**			
Public Restrooms				X
Kitchens/Kitchenettes	**NA**			
Playgrounds & Swimming Pools	**NA**			
Other	**NA**			

**be cognizant that if the "None" box is checked that does not guarantee full compliance; this study is limited in nature*

003 - Public Works: Photographic Overview



OVERVIEW OF ACCESSIBLE PARKING AREA



CLOSE-UP OF STALL



ACCESSIBLE PATH



CURB CUT



ACCESSIBLE ENTRANCE



DOOR THRESHOLD

003 - Public Works: Photographic Overview



MISSING LOWERED SERVICE COUNTER



DOOR HARDWARE



TOILET STALL OVERVIEW



SINK, FAUCET HANDLES AND ACCESSORIES

Appendix E:
Component Condition Report

Component Condition Report | 003 - Public Works / Building A - Office Building

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A1010	Substructure	Good	Foundations, Concrete or CMU Walls w/ Continuous Footings, 1-2 Story Building	250 LF	44	9408327
B1010	Superstructure	Good	Structural Framing, Masonry (CMU) Bearing Walls, 1-2 Story Building	3,000 SF	44	9408358
Facade						
B2010	Building Exterior	Fair	Exterior Walls, any painted surface, 1-2 Story Building, Prep & Paint	3,500 SF	6	9408359
B2020	Building Exterior	Fair	Glazing, any type by SF	300 SF	15	9408357
B2050	Building Exterior	Fair	Exterior Door, Steel, Commercial	4	20	9408353
B2050	Building Exterior	Fair	Exterior Door, Aluminum-Framed & Glazed, Standard Swing	4	15	9408374
Roofing						
B3010	A Roof	Fair	Roofing, Built-Up	3,000 SF	10	9408370
Interiors						
C1030	Throughout Building	Fair	Interior Door, Wood, Solid-Core	10	19	9408337
C1070	Throughout Building	Fair	Suspended Ceilings, Acoustical Tile (ACT)	2,400 SF	4	9408345
C1090	Locker Rooms	Good	Toilet Partitions, Plastic/Laminate	4	15	9408376
C1090	Locker Rooms	Good	Lockers, Steel-Baked Enamel, 12" W x 15" D x 72" H	20 LF	15	9408351
C2010	Locker Rooms	Fair	Wall Finishes, Ceramic Tile	1,200 SF	19	9408326
C2010	Throughout Building	Fair	Wall Finishes, any surface, Prep & Paint	4,800 SF	4	9408334
C2030	Throughout Building	Good	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	800 SF	8	9408371
C2030	Locker Rooms	Fair	Flooring, Ceramic Tile	600 SF	19	9408332
C2030	Break Room	Good	Flooring, any surface, w/ Epoxy Coating, Prep & Paint	300 SF	8	9408325
C2030	Throughout Building	Fair	Flooring, Carpet, Commercial Standard	1,300 SF	4	9408349
C2050	Locker Rooms	Good	Ceiling Finishes, any flat surface, Prep & Paint	600 SF	8	9408372
Plumbing						
D2010	Locker Rooms	Fair	Toilet, Commercial Water Closet	4	15	9408339

Component Condition Report | 003 - Public Works / Building A - Office Building

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D2010	Break Room	Good	Sink/Lavatory, Vanity Top, Stainless Steel	1	28	9408328
D2010	Water Heater Room	Good	Water Heater, Electric, Residential	1	13	9408343
D2010	Locker Rooms	Good	Sink/Lavatory, Vanity Top, Enameled Steel	1	20	9408329
D2010	Locker Rooms	Fair	Sink/Lavatory, Wall-Hung, Enameled Steel	1	15	9408360
D2010	Water Heater Room	Fair	Storage Tank, Domestic Water	1	9	9408363
D2010	Throughout Building	Fair	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures)	3,000 SF	9	9408368
D2010	Locker Rooms	Fair	Urinal, Standard	2	15	9408330
D2010	Locker Rooms	Fair	Shower, Valve & Showerhead	2	4	9408352
D2030	A Roof	Fair	Supplemental Components, Drains, Roof	1	19	9408333
HVAC						
D3050	Throughout Building	Fair	HVAC System, Ductwork, Medium Density	3,000 SF	9	9408350
D3050	A Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted	1	4	9408344
D3050	A Roof	Fair	Packaged Unit, RTU, Pad or Roof-Mounted	1	4	9408364
D3050	A Roof	Good	Packaged Unit, RTU, Pad or Roof-Mounted	1	13	9408369
D3060	A Roof	Fair	Exhaust Fan, Roof or Wall-Mounted, 12" Damper	1	4	9408347
Electrical						
D5030	Throughout Building	Fair	Electrical System, Wiring & Switches, Average or Low Density/Complexity	3,000 SF	9	9408373
D5040	Throughout Building	Fair	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures	3,000 SF	12	9408348
D5040	Throughout Building	Fair	Emergency & Exit Lighting System, Full Interior Upgrade, LED	3,000 SF	6	9408338
Fire Alarm & Electronic Systems						
D7050	Throughout Building	NA	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	3,000 SF	4	9408331
Equipment & Furnishings						
E1030	Break Room	Good	Foodservice Equipment, Refrigerator, 2-Door Reach-In	1	14	9408341
E1040	Break Room	Fair	Healthcare Equipment, Defibrillator (AED), Cabinet-Mounted	1	6	9408356
E2010	Break Room	Good	Casework, Cabinetry, Standard	30 LF	19	9408354

Component Condition Report | 003 - Public Works / Building A - Office Building

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
E2010	Locker Rooms	Good	Casework, Countertop, Plastic Laminate	6 LF	10	9408342
Sitework						
G2060	Building Exterior	Fair	Signage, Property, Building-Mounted Individual Letters, Replace/Install	22	12	9408365

Component Condition Report | 003 - Public Works / Building B - Fleet Shop

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A4010	Substructure	Good	Foundation, Concrete Slab-on-Grade, w/ Integral Perimeter Footings	3,000 SF	44	9408480
B1010	Superstructure	Good	Structural Framing, Masonry (CMU) Bearing Walls, 1-2 Story Building	3,000 SF	44	9408493
Facade						
B2050	Building Exterior	Excellent	Overhead/Dock Door, Aluminum, 12'x12' (144 SF)	3	30	9408498
Roofing						
B3010	B Roof	Excellent	Roofing, Built-Up	3,000 SF	25	9408482
Interiors						
C1030	Throughout Building	Excellent	Interior Door, Steel, Standard	4	40	9408496
C1070	Office Areas	Excellent	Suspended Ceilings, Acoustical Tile (ACT)	500 SF	25	9408499
C2010	Office Areas	Excellent	Wall Finishes, any surface, Prep & Paint	1,500 SF	10	9408486
Plumbing						
D2010	Throughout Building	Excellent	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures)	3,000 SF	40	9408484
D2030	B Roof	Fair	Supplemental Components, Drains, Roof	3	9	9408492
HVAC						
D3050	Throughout Building	Excellent	HVAC System, Ductwork, Medium Density	3,000 SF	30	9408483
D3050	B Roof	Failed	Packaged Unit, RTU, Pad or Roof-Mounted	1	0	9408497
D3050	B Roof	Failed	Packaged Unit, RTU, Pad or Roof-Mounted	1	0	9408491
D3050	B Roof	Failed	Packaged Unit, RTU, Pad or Roof-Mounted	1	0	9408490

Component Condition Report | 003 - Public Works / Building B - Fleet Shop

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Fire Protection						
D4010	Throughout Building	Excellent	Fire Suppression System, Full System Install/Retrofit, Medium Density/Complexity, Renovate	3,000 SF	40	9408495
Electrical						
D5020	Electrical Room	Fair	Secondary Transformer, Dry, Stepdown	1	5	9408500
D5020	Electrical Room	Fair	Distribution Panel, 120/208 V	1	5	9408488
D5030	Throughout Building	Excellent	Electrical System, Wiring & Switches, Average or Low Density/Complexity	3,000 SF	40	9408501
D5040	Throughout Building	Excellent	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures	3,000 SF	20	9408485
D5040	Throughout Building	Excellent	Emergency & Exit Lighting System, Full Interior Upgrade, LED	3,000 SF	10	9408489
D5040	Building Exterior	Good	Exterior Light, any type, w/ LED Replacement	6	15	9408494
Fire Alarm & Electronic Systems						
D7050	Throughout Building	Excellent	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	3,000 SF	20	9408481
Equipment & Furnishings						
E1030	Building Exterior	Fair	Foodservice Equipment, Icemaker, Freestanding	1	4	9408487

Component Condition Report | 003 - Public Works / Facility Shop

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A4010	Substructure	Good	Foundation, Concrete Slab-on-Grade, w/ Integral Perimeter Footings	8,900 SF	44	9408415
B1010	Superstructure	Good	Structural Framing, Steel Columns & Beams, 1-2 Story Building	8,900 SF	44	9408430
Facade						
B2010	Building Exterior	Fair	Exterior Walls, Metal/Insulated Sandwich Panels	3,600 SF	20	9408425
B2050	Building Exterior	Good	Automatic Door Opener, Commercial Overhead/Dock Door	1	10	9408420
B2050	Building Exterior	Fair	Exterior Door, Steel, Commercial	2	8	9408429
B2050	Building Exterior	Fair	Overhead/Dock Door, Steel, 12'x12' (144 SF)	2	10	9408416
Roofing						

Component Condition Report | 003 - Public Works / Facility Shop

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
B3010	Roof	Fair	Roofing, Metal	8,900 SF	20	9408419
Interiors						
C1030	Office	Fair	Interior Door, Steel, Standard	1	15	9408424
C2010	Office	Fair	Wall Finishes, any surface, Prep & Paint	600 SF	6	9408426
C2030	Office	Fair	Flooring, Carpet, Commercial Standard	600 SF	4	9408434
C2050	Throughout Building	Good	Ceiling Finishes, any flat surface, Prep & Paint	500 SF	8	9408414
Plumbing						
D2010	Shop	Fair	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures)	1,000 SF	15	9408417
HVAC						
D3030	Building Exterior	Fair	Split System Ductless, Single Zone	1	4	9408421
Electrical						
D5020	Shop	Fair	Distribution Panel, 120/208 V	1	15	9408433
D5030	Throughout Building	Fair	Electrical System, Wiring & Switches, Average or Low Density/Complexity	8,900 SF	9	9408422
D5040	Throughout Building	Good	Emergency & Exit Lighting System, Full Interior Upgrade, LED	3,500 SF	8	9408428
D5040	Building Exterior	Fair	Exterior Light, any type, w/ LED Replacement	1	8	9408431
D5040	Throughout Building	Good	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures	8,900 SF	15	9408423
Fire Alarm & Electronic Systems						
D7050	Throughout Building	NA	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	8,900 SF	4	9408432

Component Condition Report | 003 - Public Works / Site

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Plumbing						
D2010	Site General	Good	Backflow Preventer, Domestic Water	1	29	9408335
Special Construction & Demo						
F1020	Site	Fair	Shed/Gazebo/Shade Structure, Wood or Metal-Framed, Basic/Minimal	200 SF	9	9408367

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
F1020	Site	Good	Covered Parking Structure, Metal-Framed, Rain/Shade	22,000 SF	20	9408361
F1020	Site	Good	Covered Parking Structure, Metal-Framed, Rain/Shade	1,800 SF	18	9408418
Pedestrian Plazas & Walkways						
G2020	Site	Good	Parking Lots, Pavement, Asphalt, Seal & Stripe	68,400 SF	4	9408355
G2020	Site	Fair	Parking Lots, Pavement, Asphalt, Mill & Overlay	68,400 SF	15	9408346
Athletic, Recreational & Playfield Areas						
G2050	Site	Fair	Sports Apparatus, Basketball, Backboard/Rim/Pole	1	10	9408362
Sitework						
G2060	Site	Good	Signage, Property, Monument, Replace/Install	1	15	9408375
G2060	Site	Fair	Retaining Wall, Concrete Masonry Unit (CMU)	7,200 SF	20	9408336
G2060	Site	Fair	Fences & Gates, Fence, Chain Link 8'	400 LF	20	9408366
G2060	Site	Fair	Bollard, Concrete or Metal	10	12	9408427
G4050	Site	Fair	Pole Light Fixture, LED Lamp only	38	8	9408340

Appendix F:
Replacement Reserves

7/7/2025

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total Escalated Estimate
003 - Public Works	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
003 - Public Works / Building A - Office Building	$0	$0	$0	$0	$58,920	$0	$16,657	$0	$7,601	$48,146	$56,848	$0	$26,091	$17,476	$32,596	$68,239	$22,386	$0	$10,215	$86,267	$31,318	**$482,760**
003 - Public Works / Building B - Fleet Shop	$27,000	$0	$0	$0	$7,541	$30,141	$0	$0	$0	$3,120	$5,644	$0	$0	$0	$0	$3,739	$0	$0	$0	$11,748	$99,697	**$188,631**
003 - Public Works / Facility Shop	$0	$0	$0	$0	$39,055	$0	$1,075	$0	$15,448	$29,031	$13,305	$0	$0	$0	$6,807	$81,170	$1,444	$0	$5,575	$6,137	$352,011	**$551,059**
003 - Public Works / Site	$0	$0	$0	$0	$34,643	$0	$0	$0	$57,765	$46,685	$6,384	$0	$14,258	$0	$46,558	$377,651	$0	$0	$153,219	$53,973	$2,785,024	**$3,576,158**
Grand Total	**$27,000**	**$0**	**$0**	**$0**	**$140,160**	**$30,141**	**$17,732**	**$0**	**$80,814**	**$126,982**	**$82,180**	**$0**	**$40,349**	**$17,476**	**$85,960**	**$530,799**	**$23,830**	**$0**	**$169,009**	**$158,126**	**$3,268,050**	**$4,798,608**

003 - Public Works

003 - Public Works / Building A - Office Building

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
B2010	Building Exterior	9408359	Exterior Walls, any painted surface, 1-2 Story Building, Prep & Paint	10	4	6	3500	SF	$3.00	$10,500							$10,500										$10,500						**$21,000**
B2020	Building Exterior	9408357	Glazing, any type by SF, Replace	30	15	15	300	SF	$55.00	$16,500																$16,500						**$16,500**
B2050	Building Exterior	9408374	Exterior Door, Aluminum-Framed & Glazed, Standard Swing, Replace	30	15	15	4	EA	$1,300.00	$5,200																$5,200						**$5,200**
B2050	Building Exterior	9408353	Exterior Door, Steel, Commercial, Replace	40	20	20	4	EA	$4,060.00	$16,240																				$16,240		**$16,240**
B3010	A Roof	9408370	Roofing, Built-Up, Replace	25	15	10	3000	SF	$14.00	$42,000											$42,000											**$42,000**
C1030	Throughout Building	9408337	Interior Door, Wood, Solid-Core, Replace	40	21	19	10	EA	$700.00	$7,000																			$7,000			**$7,000**
C1070	Throughout Building	9408345	Suspended Ceilings, Acoustical Tile (ACT), Replace	25	21	4	2400	SF	$3.50	$8,400					$8,400																	**$8,400**
C1090	Locker Rooms	9408376	Toilet Partitions, Plastic/Laminate, Replace	20	5	15	4	EA	$750.00	$3,000																$3,000						**$3,000**
C1090	Locker Rooms	9408351	Lockers, Steel-Baked Enamel, 12" W x 15" D x 72" H, Replace	20	5	15	20	LF	$500.00	$10,000																$10,000						**$10,000**
C2010	Locker Rooms	9408326	Wall Finishes, Ceramic Tile, Replace	40	21	19	1200	SF	$18.00	$21,600																			$21,600			**$21,600**
C2010	Throughout Building	9408334	Wall Finishes, any surface, Prep & Paint	10	6	4	4800	SF	$1.50	$7,200					$7,200										$7,200							**$14,400**
C2030	Throughout Building	9408371	Flooring, any surface, w/ Paint or Sealant, Prep & Paint	10	2	8	800	SF	$1.50	$1,200									$1,200									$1,200				**$2,400**
C2030	Break Room	9408325	Flooring, any surface, w/ Epoxy Coating, Prep & Paint	10	2	8	300	SF	$12.00	$3,600									$3,600									$3,600				**$7,200**
C2030	Locker Rooms	9408332	Flooring, Ceramic Tile, Replace	40	21	19	600	SF	$18.00	$10,800																			$10,800			**$10,800**
C2030	Throughout Building	9408349	Flooring, Carpet, Commercial Standard, Replace	10	6	4	1300	SF	$7.50	$9,750					$9,750										$9,750							**$19,500**
C2050	Locker Rooms	9408372	Ceiling Finishes, any flat surface, Prep & Paint	10	2	8	600	SF	$2.00	$1,200									$1,200									$1,200				**$2,400**
D2010	Water Heater Room	9408363	Storage Tank, Domestic Water, Replace	30	21	9	1	EA	$2,400.00	$2,400										$2,400												**$2,400**
D2010	Water Heater Room	9408343	Water Heater, Electric, Residential, Replace	15	2	13	1	EA	$900.00	$900														$900								**$900**
D2010	Throughout Building	9408368	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures), Replace	40	31	9	3000	SF	$5.00	$15,000										$15,000												**$15,000**
D2010	Locker Rooms	9408352	Shower, Valve & Showerhead, Replace	30	26	4	2	EA	$800.00	$1,600					$1,600																	**$1,600**
D2010	Locker Rooms	9408339	Toilet, Commercial Water Closet, Replace	30	15	15	4	EA	$1,300.00	$5,200																$5,200						**$5,200**
D2010	Locker Rooms	9408360	Sink/Lavatory, Wall-Hung, Enameled Steel, Replace	30	15	15	1	EA	$1,700.00	$1,700																$1,700						**$1,700**
D2010	Locker Rooms	9408330	Urinal, Standard, Replace	30	15	15	2	EA	$1,100.00	$2,200																$2,200						**$2,200**
D2010	Locker Rooms	9408329	Sink/Lavatory, Vanity Top, Enameled Steel, Replace	30	10	20	1	EA	$1,100.00	$1,100																					$1,100	**$1,100**
D2030	A Roof	9408333	Supplemental Components, Drains, Roof, Replace	40	21	19	1	EA	$797.00	$797																			$797			**$797**
D3050	A Roof	9408344	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	16	4	1	EA	$7,500.00	$7,500					$7,500																	**$7,500**
D3050	A Roof	9408364	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	16	4	1	EA	$7,500.00	$7,500					$7,500																	**$7,500**
D3050	Throughout Building	9408350	HVAC System, Ductwork, Medium Density, Replace	30	21	9	3000	SF	$4.00	$12,000										$12,000												**$12,000**
D3050	A Roof	9408369	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	7	13	1	EA	$11,000.00	$11,000															$11,000							**$11,000**
D3060	A Roof	9408347	Exhaust Fan, Roof or Wall-Mounted, 12" Damper, Replace	20	16	4	1	EA	$1,400.00	$1,400					$1,400																	**$1,400**
D5030	Throughout Building	9408373	Electrical System, Wiring & Switches, Average or Low Density/Complexity, Replace	40	31	9	3000	SF	$2.50	$7,500										$7,500												**$7,500**
D5040	Throughout Building	9408338	Emergency & Exit Lighting System, Full Interior Upgrade, LED, Replace	10	4	6	3000	SF	$0.65	$1,950							$1,950										$1,950					**$3,900**
D5040	Throughout Building	9408348	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures, Replace	20	8	12	3000	SF	$5.00	$15,000														$15,000								**$15,000**
D7050	Throughout Building	9408331	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	20	16	4	3000	SF	$3.00	$9,000					$9,000																	**$9,000**
E1030	Break Room	9408341	Foodservice Equipment, Refrigerator, 2-Door Reach-In, Replace	15	1	14	1	EA	$4,600.00	$4,600															$4,600							**$4,600**
E1040	Break Room	9408356	Healthcare Equipment, Defibrillator (AED), Cabinet-Mounted, Replace	10	4	6	1	EA	$1,500.00	$1,500							$1,500										$1,500					**$3,000**
E2010	Locker Rooms	9408342	Casework, Countertop, Plastic Laminate, Replace	15	5	10	6	LF	$50.00	$300											$300											**$300**
E2010	Break Room	9408354	Casework, Cabinetry, Standard, Replace	20	1	19	30	LF	$300.00	$9,000																			$9,000			**$9,000**
G2060	Building Exterior	9408365	Signage, Property, Building-Mounted Individual Letters, Replace/Install	20	8	12	22	EA	$150.00	$3,300														$3,300								**$3,300**
Totals, Unescalated											**$0**	**$0**	**$0**	**$0**	**$52,350**	**$0**	**$13,950**	**$0**	**$6,000**	**$36,900**	**$42,300**	**$0**	**$18,300**	**$11,900**	**$21,550**	**$43,800**	**$13,950**	**$0**	**$6,000**	**$49,197**	**$17,340**	**$333,537**
Totals, Escalated (3.0% inflation, compounded annually)											**$0**	**$0**	**$0**	**$0**	**$58,920**	**$0**	**$16,657**	**$0**	**$7,601**	**$48,146**	**$56,848**	**$0**	**$26,091**	**$17,476**	**$32,596**	**$68,239**	**$22,386**	**$0**	**$10,215**	**$86,267**	**$31,318**	**$482,760**

003 - Public Works / Building B - Fleet Shop

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
C2010	Office Areas	9408486	Wall Finishes, any surface, Prep & Paint	10	0	10	1500	SF	$1.50	$2,250											$2,250										$2,250	**$4,500**
D2030	B Roof	9408492	Supplemental Components, Drains, Roof, Replace	40	31	9	3	EA	$797.00	$2,391										$2,391												**$2,391**
D3050	B Roof	9408497	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	20	0	1	EA	$9,000.00	$9,000	$9,000																				$9,000	**$18,000**

Replacement Reserves Report

7/7/2025

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
D3050	B Roof	9408491	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	20	0	1	EA	$9,000.00	$9,000	$9,000																				$9,000	**$18,000**
D3050	B Roof	9408490	Packaged Unit, RTU, Pad or Roof-Mounted, Replace	20	20	0	1	EA	$9,000.00	$9,000	$9,000																				$9,000	**$18,000**
D5020	Electrical Room	9408500	Secondary Transformer, Dry, Stepdown, Replace	30	25	5	1	EA	$20,000.00	$20,000						$20,000																**$20,000**
D5020	Electrical Room	9408488	Distribution Panel, 120/208 V, Replace	30	25	5	1	EA	$6,000.00	$6,000						$6,000																**$6,000**
D5040	Throughout Building	9408489	Emergency & Exit Lighting System, Full Interior Upgrade, LED, Replace	10	0	10	3000	SF	$0.65	$1,950											$1,950										$1,950	**$3,900**
D5040	Building Exterior	9408494	Exterior Light, any type, w/ LED Replacement, Replace	20	5	15	6	EA	$400.00	$2,400																$2,400						**$2,400**
D5040	Throughout Building	9408485	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures, Replace	20	0	20	3000	SF	$5.00	$15,000																					$15,000	**$15,000**
D7050	Throughout Building	9408481	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	20	0	20	3000	SF	$3.00	$9,000																					$9,000	**$9,000**
E1030	Building Exterior	9408487	Foodservice Equipment, Icemaker, Freestanding, Replace	15	11	4	1	EA	$6,700.00	$6,700					$6,700															$6,700		**$13,400**
Totals, Unescalated											**$27,000**	**$0**	**$0**	**$0**	**$6,700**	**$26,000**	**$0**	**$0**	**$0**	**$2,391**	**$4,200**	**$0**	**$0**	**$0**	**$0**	**$2,400**	**$0**	**$0**	**$0**	**$6,700**	**$55,200**	**$130,591**
Totals, Escalated (3.0% inflation, compounded annually)											**$27,000**	**$0**	**$0**	**$0**	**$7,541**	**$30,141**	**$0**	**$0**	**$0**	**$3,120**	**$5,644**	**$0**	**$0**	**$0**	**$0**	**$3,739**	**$0**	**$0**	**$0**	**$11,748**	**$99,697**	**$188,631**

003 - Public Works / Facility Shop

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
B2010	Building Exterior	9408425	Exterior Walls, Metal/Insulated Sandwich Panels, Replace	45	25	20	3600	SF	$22.00	$79,200																					$79,200	**$79,200**
B2050	Building Exterior	9408429	Exterior Door, Steel, Commercial, Replace	40	32	8	2	EA	$4,060.00	$8,120									$8,120													**$8,120**
B2050	Building Exterior	9408416	Overhead/Dock Door, Steel, 12'x12' (144 SF), Replace	30	20	10	2	EA	$3,200.00	$6,400											$6,400											**$6,400**
B2050	Building Exterior	9408420	Automatic Door Opener, Commercial Overhead/Dock Door, Replace	15	5	10	1	EA	$3,500.00	$3,500											$3,500											**$3,500**
B3010	Roof	9408419	Roofing, Metal, Replace	40	20	20	8900	SF	$13.00	$115,700																					$115,700	**$115,700**
C1030	Office	9408424	Interior Door, Steel, Standard, Replace	40	25	15	1	EA	$600.00	$600																$600						**$600**
C2010	Office	9408426	Wall Finishes, any surface, Prep & Paint	10	4	6	600	SF	$1.50	$900							$900										$900					**$1,800**
C2030	Office	9408434	Flooring, Carpet, Commercial Standard, Replace	10	6	4	600	SF	$7.50	$4,500					$4,500										$4,500							**$9,000**
C2050	Throughout Building	9408414	Ceiling Finishes, any flat surface, Prep & Paint	10	2	8	500	SF	$2.00	$1,000									$1,000										$1,000			**$2,000**
D2010	Shop	9408417	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures), Replace	40	25	15	1000	SF	$5.00	$5,000																$5,000						**$5,000**
D3030	Building Exterior	9408421	Split System Ductless, Single Zone, Replace	15	11	4	1	EA	$3,500.00	$3,500					$3,500															$3,500		**$7,000**
D5020	Shop	9408433	Distribution Panel, 120/208 V, Replace	30	15	15	1	EA	$2,000.00	$2,000																$2,000						**$2,000**
D5030	Throughout Building	9408422	Electrical System, Wiring & Switches, Average or Low Density/Complexity, Replace	40	31	9	8900	SF	$2.50	$22,250										$22,250												**$22,250**
D5040	Throughout Building	9408428	Emergency & Exit Lighting System, Full Interior Upgrade, LED, Replace	10	2	8	3500	SF	$0.65	$2,275									$2,275										$2,275			**$4,550**
D5040	Building Exterior	9408431	Exterior Light, any type, w/ LED Replacement, Replace	20	12	8	1	EA	$800.00	$800									$800													**$800**
D5040	Throughout Building	9408423	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures, Replace	20	5	15	8900	SF	$5.00	$44,500																$44,500						**$44,500**
D7050	Throughout Building	9408432	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	20	16	4	8900	SF	$3.00	$26,700					$26,700																	**$26,700**
Totals, Unescalated											**$0**	**$0**	**$0**	**$0**	**$34,700**	**$0**	**$900**	**$0**	**$12,195**	**$22,250**	**$9,900**	**$0**	**$0**	**$0**	**$4,500**	**$52,100**	**$900**	**$0**	**$3,275**	**$3,500**	**$194,900**	**$339,120**
Totals, Escalated (3.0% inflation, compounded annually)											**$0**	**$0**	**$0**	**$0**	**$39,055**	**$0**	**$1,075**	**$0**	**$15,448**	**$29,031**	**$13,305**	**$0**	**$0**	**$0**	**$6,807**	**$81,170**	**$1,444**	**$0**	**$5,575**	**$6,137**	**$352,011**	**$551,059**

003 - Public Works / Site

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
F1020	Site	9408367	Shed/Gazebo/Shade Structure, Wood or Metal-Framed, Basic/Minimal, Replace	30	21	9	200	SF	$25.00	$5,000										$5,000												**$5,000**
F1020	Site	9408418	Covered Parking Structure, Metal-Framed, Rain/Shade, Replace	30	12	18	1800	SF	$50.00	$90,000																			$90,000			**$90,000**
F1020	Site	9408361	Covered Parking Structure, Metal-Framed, Rain/Shade, Replace	30	10	20	22000	SF	$50.00	$1,100,000																					$1,100,000	**$1,100,000**
G2020	Site	9408355	Parking Lots, Pavement, Asphalt, Seal & Stripe	5	1	4	68400	SF	$0.45	$30,780					$30,780					$30,780					$30,780					$30,780		**$123,120**
G2020	Site	9408346	Parking Lots, Pavement, Asphalt, Mill & Overlay	25	10	15	68400	SF	$3.50	$239,400																$239,400						**$239,400**
G2050	Site	9408362	Sports Apparatus, Basketball, Backboard/Rim/Pole, Replace	25	15	10	1	EA	$4,750.00	$4,750											$4,750											**$4,750**
G2060	Site	9408366	Fences & Gates, Fence, Chain Link 8', Replace	40	20	20	400	LF	$25.00	$10,000																					$10,000	**$10,000**
G2060	Site	9408375	Signage, Property, Monument, Replace/Install	20	5	15	1	EA	$3,000.00	$3,000																$3,000						**$3,000**
G2060	Site	9408336	Retaining Wall, Concrete Masonry Unit (CMU), Replace	40	20	20	7200	SF	$60.00	$432,000																					$432,000	**$432,000**
G2060	Site	9408427	Bollard, Concrete or Metal, Replace	30	18	12	10	EA	$1,000.00	$10,000													$10,000									**$10,000**
G4050	Site	9408340	Pole Light Fixture, LED Lamp only, Replace	20	12	8	38	EA	$1,200.00	$45,600									$45,600													**$45,600**
Totals, Unescalated											**$0**	**$0**	**$0**	**$0**	**$30,780**	**$0**	**$0**	**$0**	**$45,600**	**$35,780**	**$4,750**	**$0**	**$10,000**	**$0**	**$30,780**	**$242,400**	**$0**	**$0**	**$90,000**	**$30,780**	**$1,542,000**	**$2,062,870**
Totals, Escalated (3.0% inflation, compounded annually)											**$0**	**$0**	**$0**	**$0**	**$34,643**	**$0**	**$0**	**$0**	**$57,765**	**$46,685**	**$6,384**	**$0**	**$14,258**	**$0**	**$46,558**	**$377,651**	**$0**	**$0**	**$153,219**	**$53,973**	**$2,785,024**	**$3,576,158**

* Markup has been included in unit costs.

Appendix G:
Equipment Inventory List

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
B20 OTHER													
1	9408420	B2050	**Automatic Door Opener**	Commercial Overhead/Dock Door		003 - Public Works / Facility Shop	Building Exterior	Inaccessible	Inaccessible	Inaccessible		2045853	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D20 Plumbing													
1	9408363	D2010	**Storage Tank**	Domestic Water	80 GAL	003 - Public Works / Building A - Office Building	Water Heater Room	Goulds	V250D	2410138107404	2004	2045858	
2	9408343	D2010	**Water Heater**	Electric, Residential	30 GAL	003 - Public Works / Building A - Office Building	Water Heater Room	A. O. Smith	ECT 30 200	0917J002144	2023	2045859	
3	9408335	D2010	**Backflow Preventer**	Domestic Water	3 IN	003 - Public Works / Site	Site General	Watts	LF909	1017117	2024	2045854	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D30 HVAC													
1	9408421	D3030	**Split System Ductless**	Single Zone	1 TON	003 - Public Works / Facility Shop	Building Exterior	Mitsubishi Electric	MUZ-GE12NA	3007785	2007	2045833	
2	9408497	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	4 TON	003 - Public Works / Building B - Fleet Shop	B Roof	Rheem	RQPL-B048JK	7468F251006964	2010	2045782	
3	9408344	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	3 TON	003 - Public Works / Building A - Office Building	A Roof	Trane	4WCC3036A3000AB	9161MBU9H	2009	2045804	
4	9408491	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	4 TON	003 - Public Works / Building B - Fleet Shop	B Roof	Rudd	Inaccessible	Inaccessible	2010	2045823	
5	9408364	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	3 TON	003 - Public Works / Building A - Office Building	A Roof	Trane	4WCC3036A3000AB	9162RGS9H	2009	2045789	
6	9408369	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	5 TON	003 - Public Works / Building A - Office Building	A Roof	Trane	4WCZ6060B3000AA	181314149L	2018	2045800	
7	9408490	D3050	**Packaged Unit**	RTU, Pad or Roof-Mounted	4 TON	003 - Public Works / Building B - Fleet Shop	B Roof	Rheem	RQPL-B048JK	7468F251006965	2010	2045829	
8	9408347	D3060	**Exhaust Fan**	Roof or Wall-Mounted, 12" Damper	500 CFM	003 - Public Works / Building A - Office Building	A Roof	Fan tech	REC 10XL	545597	2009	2045805	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D50 Electrical													
1	9408500	D5020	**Secondary Transformer**	Dry, Stepdown	150 KVA	003 - Public Works / Building B - Fleet Shop	Electrical Room	GE	9T23B3876	No dataplate	1994	2045855	
2	9408488	D5020	**Distribution Panel**	120/208 V	400 AMP	003 - Public Works / Building B - Fleet Shop	Electrical Room	GE	No dataplate	No dataplate	1994	2045856	
3	9408433	D5020	**Distribution Panel**	120/208 V	200 AMP	003 - Public Works / Facility Shop	Shop	No dataplate	No dataplate	No dataplate		2045851	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
E10 Equipment													
1	9408487	E1030	**Foodservice Equipment**	Icemaker, Freestanding		003 - Public Works / Building B - Fleet Shop	Building Exterior	Manitowoc	IY0504A-161	1120234750	2011	2045857	
2	9408341	E1030	**Foodservice Equipment**	Refrigerator, 2-Door Reach-In		003 - Public Works / Building A - Office Building	Break Room	Broich Enterprises	AR49EZ	H23119720	2024	2045862	
3	9408356	E1040	**Healthcare Equipment**	Defibrillator (AED), Cabinet-Mounted		003 - Public Works / Building A - Office Building	Break Room						

Appendix H:
Electrical Study

THIS APPENDIX IS INTENTIONALLY LEFT BLANK.

FACILITY CONDITION ASSESSMENT

prepared for

Town of Paradise Valley
6401 East Lincoln Drive
Paradise Valley, AZ 85253
Isaac Chavira



Town Hall
6401 East Lincoln Drive
Paradise Valley, AZ 85253

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BV PROJECT #:
172662.25R000-002.468

DATE OF REPORT:
July 7, 2025

ON SITE DATE:
May 29, 2025

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1. Executive Summary

Property Overview and Assessment Details

General Information	
Property Type	Town Hall
Number of Buildings	1
Main Address	6401 East Lincoln Drive, Paradise Valley, AZ 85253
Site Developed	1973 Renovated 2019
Outside Occupants / Leased Spaces	None
Date(s) of Visit	May 29, 2025
Management Point of Contact	Paradise Valley Public Works Mr. Isaac Chavira, Public Works Director (480) 348-3540, ichavira@paradisevalleyaz.gov
On-site Point of Contact (POC)	Paradise Valley Public Works John Fraley, Lead Technician (480) 797-2060
Assessment and Report Prepared By	Paul Scanzillo
Reviewed By	*for,* Gregg Young Program Manager 800.733.0660 x7296228 Gregg.Young@bureauveritas.com
AssetCalc Link	Full dataset for this assessment can be found at: https://www.assetcalc.net/

Significant/Systemic Findings and Deficiencies

Historical Summary

The Town of Paradise Valley Public Works Complex was developed in 1974 with construction of the original Town Hall building. An addition to the Town Hall transpired in 1980 with a refurbishment in 1996. In 2005, the west wing was reported to be added with a renovation in 2019. This information was provided from town historical records and discussions with onsite personnel.

Architectural

The masonry structure appears to be sound overall. The exterior walls are free of cracks which would be indicative of settling or structural issues. The exterior stucco and paint are adequate for the short term but will need repainting in the future. Backfilling against the building allowed for a good visual of the metal roof, wood rafter tails and wood fascia. Some of the rafter tails and facia are dry rotted on the older section and are recommended for repair or replacement to maintain integrity of the roof structure. The metal roof finish on the older section appears to be worn with rust developing overall and will need replacement in the near future. Roof drainage appears to be functional as expected with no reported water infiltration or drainage problems. The two flat roof sections were inaccessible during the assessment. The exterior glazed doors, exterior steel doors and aluminum windows all appear to have been upgraded at some point and are adequate for the near term with no apparent issues observed. Interior finishes have been well-maintained over the years. Casework in the boardroom area and elsewhere is adequate with no anticipated short or near-term needs. Carpeting throughout the boardroom and adjacent offices was replaced in 2023 with 80% of the remaining useful life. Floor finishes in the newer 2019 remodeled area are adequate for the short term, but the carpeting will need upgrading in the future. All architectural assets are budgeted and anticipated for replacement based on condition and expected remaining useful life.

Mechanical, Electrical, Plumbing and Fire (MEPF)

An air-cooled chiller with a 2-pipe hydronic system is located at the exterior of the building. The chiller feeds fan-coil units located throughout the building. The chiller was replaced in 2023 with an expected useful life beyond the reserve term. The fan-coil units are located in the ceiling cavities above the ACT ceiling. The fan-coil units were accessible, and some data-plate information was available along with CSM equipment information. Some units have been replaced over the years with the newest replacements in 2023/2024. There are several original 2005 units that are functional but will need upgrading in the near term. Supplemental climatization is with ductless mini-split heat pumps which are anticipated for replacement in the term. The Building Automation System has been upgraded with a digital system in 2023 and is reported to function as expected. The electrical system appears to have been upgraded in 1996 and is of sufficient capacity and functionality for the near term but will need an additional upgrade in the term. There is no emergency backup power present for the building. The plumbing infrastructure is reported to being upgraded in 2005 during the west expansion. Restroom fixtures are reported to have been replaced during a 2019 renovation. An electric water heater was replaced in 2024, and an on-demand instantaneous water heater was installed in 2019. Both water heaters are functioning as expected. Except for fire extinguishers throughout the building with current inspection tags, there is not a system-wide fire suppression system. The fire alarm system is non-functional with connectivity issues with the fire alarm control panel. The exit lights appear to be functional throughout the building, but some older fixtures will need upgrading in the future. All MEPF assets are budgeted and anticipated for replacement based on condition and expected remaining useful life.

Site

The asphalt drives and parking areas are original pavements with recent sealing and striping. No open cracks or potholes are observed. The concrete sidewalks are observed to be adequate with no cracking observed. Site lighting is with LED pole fixtures and building-mounted fixtures. A fountain is located at the unused entrance and is non-functional with standing stagnant water.

Recommended Additional Studies

No additional studies recommended at this time.

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate the Facility Condition Index (FCI), which provides a theoretical objective indication of a facility's overall condition. The FCI is defined as the ratio of the cost of current needs divided by the current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone mathematical values. The table below presents the current, 3-year, 5-year, and 10-year FCI's for this facility:

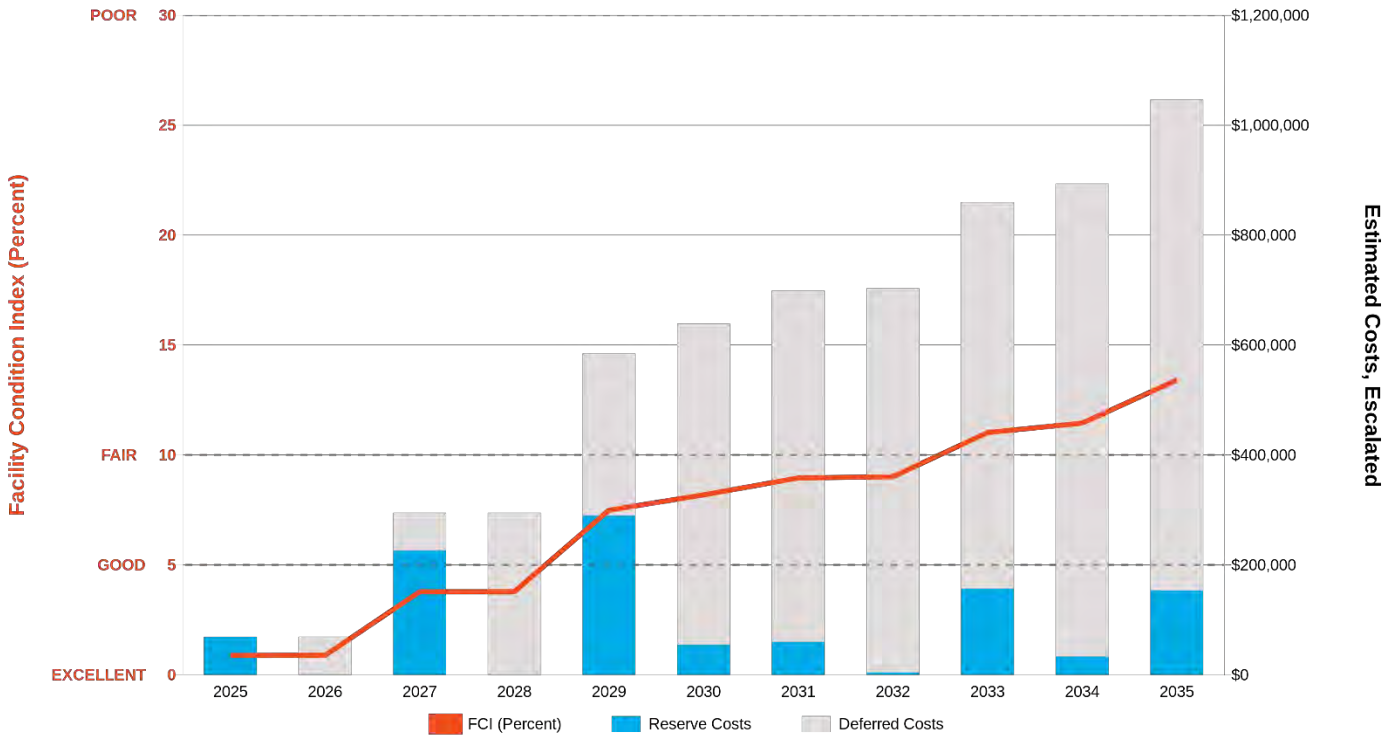
FCI Analysis		
Replacement Value *$7,804,650*	*Total SF* *14,866*	*Cost/SF* *$525*

	Est Reserve Cost	FCI
Current	$69,000	0.9 **%**
3-Year	$295,200	3.8 **%**
5-Year	$639,100	8.2 **%**
10-Year	$1,046,900	13.4 **%**

NEEDS OVER TIME: The vertical blue bars in the graphic below represent the year-by-year needs identified for the facility. The orange line forecasts what would happen to the FCI (left Y axis) over time, assuming zero capital expenditures over the next ten years. The dollar amounts allocated for each year are associated with the values along the right Y axis.

Needs by Year with Unaddressed FCI Over Time

Replacement Value: $7,804,650.00 **Inflation Rate: 3%** **Average Needs (per year - over next 10 years): $95,168.00**



Immediate Needs

Location	UF Code	Description	Condition	Plan Type	Cost
Town Hall	D5021	Switchboard, 277/480 V, Replace	Poor	Performance/Integrity	$52,000
Town Hall	D7051	Fire Alarm Panel, Fully Addressable, Replace	Failed	Safety	$15,000
Town Hall	G2061	Decorative Fountains, Aerator or Nozzle, 1 HP, Replace	Failed	Performance/Integrity	$2,000
TOTAL (3 items)					**$69,000**

Key Findings



Fire Alarm Panel in Failed condition.

Fully Addressable
Town Hall
Lobby

Uniformat Code: D7050
Recommendation: **Replace in 2025**

Plan Type: Safety

Cost Estimate: $15,000

Aged and not communicating. - AssetCALC ID: 9387282



Roofing in Poor condition.

Metal
Town Hall
Roof

Uniformat Code: B3010
Recommendation: **Replace in 2027**

Plan Type: Performance/Integrity

Cost Estimate: $193,300

Rusted metal - AssetCALC ID: 9387301



Exterior Walls in Poor condition.

any type, Repairs per Man-Day
Town Hall
Building Exterior

Uniformat Code: B2010
Recommendation: **Repair in 2027**

Plan Type: Performance/Integrity

Cost Estimate: $19,800

Dry rotted facia boards and rafters' tails - AssetCALC ID: 9387329



Switchboard in Poor condition.

277/480 V
Town Hall
Chiller Yard

Uniformat Code: D5020
Recommendation: **Replace in 2025**

Plan Type: Performance/Integrity

Cost Estimate: $52,000

Broken handle will not open. - AssetCALC ID: 9387348



Decorative Fountains in Failed condition.

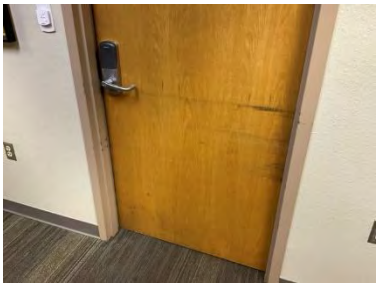
Aerator or Nozzle, 1 HP
Town Hall
Site

Uniformat Code: G2060
Recommendation: **Replace in 2025**

Plan Type: Performance/Integrity

Cost Estimate: $2,000

Non-functional fountain with stagnant, standing water. - AssetCALC ID: 9387288



Exterior Door in Poor condition.

Wood, any type
Town Hall
Post Office

Uniformat Code: B2050
Recommendation: **Refinish in 2026**

Plan Type: Performance/Integrity

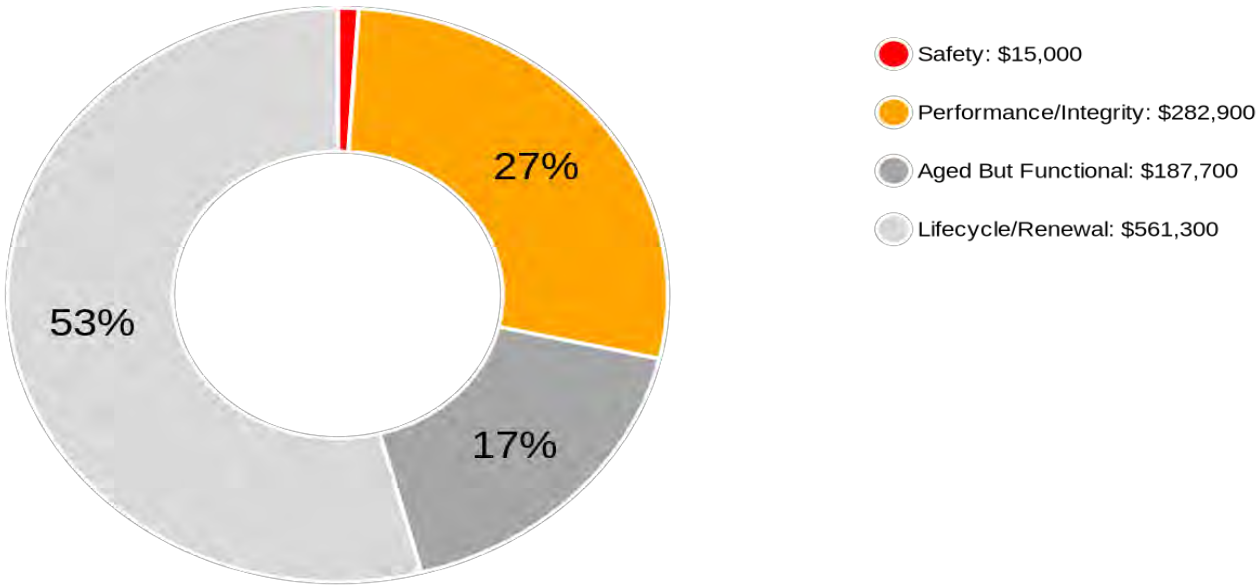
Cost Estimate: $200

Post Office door is scuffed, needs refinishing - AssetCALC ID: 9387279

Plan Types

Each line item in the cost database is assigned a Plan Type, which is the primary reason or rationale for the recommended replacement, repair, or other corrective action. This is the “why” part of the equation. A cost or line item may commonly have more than one applicable Plan Type; however, only one Plan Type will be assigned based on the “best” fit, typically the one with the greatest significance and highest on the list below.

Plan Type Descriptions and Distribution	
Safety	An observed or reported unsafe condition that if left unaddressed could result in injury; a system or component that presents potential liability risk.
Performance/Integrity	Component or system has failed, is almost failing, performs unreliably, does not perform as intended, and/or poses risk to overall system stability.
Accessibility	Does not meet ADA, UFAS, and/or other accessibility requirements.
Environmental	Improvements to air or water quality, including removal of hazardous materials from the building or site.
Retrofit/Adaptation	Components, systems, or spaces recommended for upgrades in in order to meet current standards, facility usage, or client/occupant needs.
Aged But Functional	Any component or system that has aged past its industry-average expected useful life (EUL) but is not currently deficient or problematic.
Lifecycle/Renewal	Any component or system that is neither deficient nor aged past EUL but for which future replacement or repair is anticipated and budgeted.



10-Year Total: $1,046,900

2. Building Systems and Site Elements





Building Systems Summary		
Address	6401 East Lincoln Drive, Paradise Valley, AZ 85253	
GPS Coordinates	33.5306974, -111.9493251	
Constructed/Renovated	1973 Renovated 2019	
Building Area	14,866 SF	
Number of Stories	1 above grade (mechanical mezzanines are present but not included in the count)	
System	*Description*	*Condition*
Structure	Masonry bearing walls with wood roof deck supported by wood joists and concrete strip/wall footing foundation system	Fair
Facade	Primary Wall Finish: Stucco Secondary Wall Finish: Wood eaves and facia Windows: Aluminum	Poor
Roof	Primary: Hip construction with metal finish Secondary: Flat construction with built-up finish	Fair
Interiors	Walls: Painted gypsum board, painted CMU, ceramic tile, plate glass, and unfinished Floors: Carpet, VCT, ceramic tile, and unfinished concrete Ceilings: Painted gypsum board, ACT, wood rafters, and unfinished/exposed	Fair

Building Systems Summary		
Elevators	None	-
Plumbing	Distribution: Copper supply and PVC waste and venting Hot Water: Electric water heater with integral tank and tankless water heater Fixtures: Toilets, urinals, and sinks in all restrooms	Good
HVAC	Central System: Chiller feeding fan coil terminal units Supplemental components: Ductless mini split-system heat pumps	Fair
Fire Suppression	Fire extinguishers only	Fair
Electrical	Source and Distribution: Main switchboards with copper wiring fed from pad-mount transformer with copper wiring Interior Lighting: LED Emergency Power: None	Fair
Fire Alarm	Alarm panel with smoke detectors, heat detectors, alarms, strobes, pull stations, back-up emergency lights, and exit signs	Failed
Equipment/Special	None	-
Accessibility	Presently it does not appear an accessibility study is needed for this building. See the appendix for associated photos and additional information.	
Additional Studies	No additional studies are currently recommended for the building.	
Areas Observed	The interior spaces were observed to gain a clear understanding of the facility's overall condition. Other areas accessed and assessed included the exterior equipment and assets directly serving the building, the exterior walls of the facility and the roofs. The sloped metal roofs were observed from ground level.	
Key Spaces Not Observed	Areas of note that were either inaccessible or not observed for other reasons are listed here: · The flat roofs were inaccessible without the use of a lift.	

Site Information		
Site Area	2.23 acres	
Parking Spaces	27 total spaces, all of which are in open lots; 3 of which are accessible.	
System	*Description*	*Condition*
Site Pavement	Asphalt lots with limited areas of concrete aprons and pavement and adjacent concrete sidewalks, curbs, ramps, and stairs	Fair
Site Development	Property entrance signage; fountain	Poor
Landscaping and Topography	Significant landscaping features including lawns, trees, bushes, and planters Irrigation present Concrete retaining walls Low to moderate site slopes throughout	Good
Utilities	Municipal water and sewer Local utility-provided electric	Good
Site Lighting	Pole-mounted: LED Building-mounted: LED	Fair
Ancillary Structures	CMU chiller building	Good
Site Accessibility	Presently it does not appear an accessibility study is needed for the exterior and site areas. See the appendix for associated photos and additional information.	
Site Additional Studies	No additional studies are currently recommended for the site areas.	
Site Areas Observed	The exterior areas within the property boundaries were observed to gain a clear understanding of the site's overall condition.	
Site Key Spaces Not Observed	All key areas of the exterior site were accessible and observed.	

The table below shows the anticipated costs by trade or building system over the next 20 years.

Town Hall: System Expenditure Forecast						
System	**Immediate**	**Short Term (1-2 yr)**	**Near Term (3-5 yr)**	**Med Term (6-10 yr)**	**Long Term (11-20 yr)**	**TOTAL**
Structure	$0	$0	$0	$0	$0	$0
Facade	$0	$21,159	$25,323	$25,265	$63,571	$135,318
Roofing	$0	$205,027	$10,129	$22,577	$0	$237,733
Interiors	$0	$0	$112,669	$134,446	$334,167	$581,282
Plumbing	$0	$0	$0	$2,609	$136,855	$139,464
HVAC	$0	$0	$63,642	$93,350	$71,741	$228,733
Electrical	$52,000	$0	$33,384	$103,473	$246,008	$434,865
Fire Alarm and Electronic Systems	$15,000	$0	$50,195	$0	$115,047	$180,242
Equipment and Furnishings	$0	$0	$13,506	$4,400	$102,237	$120,143
Special Construction and Demo	$0	$0	$0	$0	$93,478	$93,478
Sitework	$2,000	$0	$35,047	$21,657	$335,585	$394,289
TOTALS	**$69,000**	**$226,200**	**$343,900**	**$407,800**	**$1,498,700**	**$2,545,600**

3. ADA Accessibility

Generally, Title II of the Americans with Disabilities Act (ADA) prohibits discrimination by entities to access and use of “areas of public accommodations” and “public facilities” on the basis of disability. Regardless of their age, these areas and facilities must be maintained and operated to comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

A public entity (i.e. city governments) shall operate each service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities.

However, this does not:

1. Necessarily require a public entity to make each of its existing facilities accessible to and usable by individuals with disabilities.
2. Require a public entity to take any action that would threaten or destroy the historic significance of an historic property; or
3. Require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of a service, program, or activity or in undue financial and administrative burdens. In those circumstances where personnel of the public entity believe that the proposed action would fundamentally alter the service, program, or activity or would result in undue financial and administrative burdens, a public entity has the burden of proving that compliance with 35.150(a) of this part would result in such alteration or burdens. The decision that compliance would result in such alteration or burdens must be made by the head of a public entity or his or her designee after considering all resources available for use in the funding and operation of the service, program, or activity, and must be accompanied by a written statement of the reasons for reaching that conclusion. If an action would result in such an alteration or such burdens, a public entity shall take any other action that would not result in such an alteration or such burdens but would nevertheless ensure that individuals with disabilities receive the benefits or services provided by the public entity.

Removal of barriers to accessibility should be addressed from a liability standpoint in order to comply with federal law, but the barriers may or may not be building code violations. The Americans with Disabilities Act Accessibility Guidelines are part of the ADA federal civil rights law pertaining to the disabled and are not a construction code. State and local jurisdictions have adopted the ADA Guidelines or have adopted other standards for accessibility as part of their construction codes.

During the FCA, Bureau Veritas performed a limited high-level accessibility review of the facility non-specific to any local regulations or codes. The scope of the visual observation was limited to the same areas observed while performing the FCA and the categories set forth in the material included in the appendix. It is understood by the Client that the limited observations described herein do not comprise a full ADA Compliance Survey, and that such a survey is beyond the scope of this assessment. A full measured ADA survey would be required to identify more specific potential accessibility issues. Additional clarifications of this limited survey:

- This survey was visual in nature and actual measurements were not taken to verify compliance
- Only a representative sample of areas was observed
- Two overview photos were taken for each subsection regardless of perceived compliance or non-compliance
- Itemized costs for individual non-compliant items are included in the dataset
- For any “none” boxes checked or reference to “no issues” identified, that alone does not guarantee full compliance

The facility was originally constructed in 1973. The facility was substantially renovated in 1996. Widespread accessibility improvements appear to have been implemented at that time.

No detailed follow-up accessibility study is currently recommended since no major or moderate issues were identified at the subject site. Reference the appendix for specific data, photos, and tables or checklists associated with this limited accessibility survey.

4. Purpose and Scope

Purpose

Bureau Veritas was retained by the client to render an opinion as to the Property's current general physical condition on the day of the site visit.

Based on the observations, interviews and document review outlined below, this report identifies significant deferred maintenance issues, existing deficiencies, and material code violations of record, which affect the Property's use. Opinions are rendered as to its structural integrity, building system condition and the Property's overall condition. The report also notes building systems or components that have realized or exceeded their typical expected useful lives.

The physical condition of building systems and related components are typically defined as being in one of five condition ratings. For the purposes of this report, the following definitions are used:

Condition Ratings	
Excellent	New or very close to new; component or system typically has been installed within the past year, sound and performing its function. Eventual repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Good	Satisfactory as-is. Component or system is sound and performing its function, typically within the first third of its lifecycle. However, it may show minor signs of normal wear and tear. Repair or replacement will be required when the component or system either reaches the end of its useful life or fails in service.
Fair	Showing signs of wear and use but still satisfactory as-is, typically near the median of its estimated useful life. Component or system is performing adequately at this time but may exhibit some signs of wear, deferred maintenance, or evidence of previous repairs. Repair or replacement will be required due to the component or system's condition and/or its estimated remaining useful life.
Poor	Component or system is significantly aged, flawed, functioning intermittently or unreliably; displays obvious signs of deferred maintenance; shows evidence of previous repair or workmanship not in compliance with commonly accepted standards; has become obsolete; or exhibits an inherent deficiency. The present condition could contribute to or cause the deterioration of contiguous elements or systems. Either full component replacement is needed or repairs are required to restore to good condition, prevent premature failure, and/or prolong useful life.
Failed	Component or system has ceased functioning or performing as intended. Replacement, repair, or other significant corrective action is recommended or required.
Not Applicable	Assigning a condition does not apply or make logical sense, most commonly due to the item in question not being present.

Scope

The standard scope of the Facility Condition Assessment includes the following:

- Visit the Property to evaluate the general condition of the building and site improvements, review available construction documents in order to familiarize ourselves with, and be able to comment on, the in-place construction systems, life safety, mechanical, electrical, and plumbing systems, and the general built environment.
- Identify those components that are exhibiting deferred maintenance issues and provide cost estimates for Immediate Costs and Replacement Reserves based on observed conditions, maintenance history and industry standard useful life estimates. This will include the review of documented capital improvements completed within the last five-year period and work currently contracted for, if applicable.
- Provide a full description of the Property with descriptions of in-place systems and commentary on observed conditions.
- Provide a high-level categorical general statement regarding the subject Property's compliance to Title III of the Americans with Disabilities Act. This will not constitute a full ADA survey, but will help identify exposure to issues and the need for further review.
- Obtain background and historical information about the facility from a building engineer, property manager, maintenance staff, or other knowledgeable source. The preferred methodology is to have the client representative or building occupant complete a Pre-Survey Questionnaire (PSQ) in advance of the site visit. Common alternatives include a verbal interview just prior to or during the walk-through portion of the assessment.
- Review maintenance records and procedures with the in-place maintenance personnel.
- Observe a representative sample of the interior spaces/units, including vacant spaces/units, to gain a clear understanding of the property's overall condition. Other areas to be observed include the exterior of the property, the roofs, interior common areas, and the significant mechanical, electrical and elevator equipment rooms.
- Provide recommendations for additional studies, if required, with related budgetary information.
- Provide an Executive Summary at the beginning of this report, which highlights key findings and includes a Facility Condition Index as a basis for comparing the relative conditions of the buildings within the portfolio.

5. Opinions of Probable Costs

Cost estimates are embedded throughout this report, including the very detailed Replacement Reserves report in the appendix. The cost estimates are predominantly based on construction rehabilitation costs developed by the *RSMeans data from Gordian.* While the *RSMeans data from Gordian* is the primary reference source for the Bureau Veritas cost library, secondary and supporting sources include but are not limited to other industry experts work, such as *Marshall & Swift* and *CBRE Whitestone.* For improved accuracy, additional research integrated with Bureau Veritas's historical experience with past costs for similar properties, city cost indexes, and assumptions regarding future economic conditions also come into play when deemed necessary. Invoice or bid documents provided either by the owner or facility construction resources may be reviewed early in the process or for specific projects as warranted.

Opinions of probable costs should only be construed as preliminary, order of magnitude budgets. Actual costs most probably will vary from the consultant's opinions of probable costs depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing or bundling of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, use of subcontractors, and whether competitive pricing is solicited, etc. Certain opinions of probable costs cannot be developed within the scope of this guide without further study. Opinions of probable cost for further study should be included in the FCA.

Methodology

Based upon site observations, research, and judgment, along with referencing Expected Useful Life (EUL) tables from various industry sources, Bureau Veritas opines as to when a system or component will most probably necessitate replacement. Accurate historical replacement records, if provided, are typically the best source of information. Exposure to the elements, initial quality and installation, extent of use, the quality and amount of preventive maintenance exercised, etc., are all factors that impact the effective age of a system or component. As a result, a system or component may have an effective age that is greater or less than its actual chronological age. The Remaining Useful Life (RUL) of a component or system equals the EUL less its *effective age*, whether explicitly or implicitly stated. Projections of Remaining Useful Life (RUL) are based primarily on age and condition with the presumption of continued use and maintenance of the Property similar to the observed and reported past use and maintenance practices, in conjunction with the professional judgment of Bureau Veritas's assessors. Significant changes in occupants and/or usage may affect the service life of some systems or components.

Where quantities could not be or were not derived from an actual construction document take-off or facility walk-through, and/or where systemic costs are more applicable or provide more intrinsic value, budgetary square foot and gross square foot costs are used. Estimated costs are based on professional judgment and the probable or actual extent of the observed defect, inclusive of the cost to design, procure, construct and manage the corrections.

To account for differences in prices between locations, the base costs are modified by geographical location factors to adjust for to market conditions, transportation costs, or other local contributors. When requested by the client, the costs may be further adjusted by several additional factors including; labor rates (prevailing minimum wage), general contractor fees for profit and overhead, and insurance. If desired, costs for design and permits, and a contingency factor, may also be included in the calculations.

Definitions

Immediate Needs

Immediate Needs are line items that require immediate action as a result of: (1) material existing or potential unsafe conditions, (2) failed or imminent failure of mission critical building systems or components, or (3) conditions that, if not addressed, have the potential to result in, or contribute to, critical element or system failure within one year or will most probably result in a significant escalation of its remedial cost.

For database and reporting purposes the line items with RUL=0, and commonly associated with *Safety* or *Performance/Integrity* Plan Types, are considered Immediate Needs.

Replacement Reserves

Cost line items traditionally called Replacement Reserves (equivalently referred to as Lifecycle/Renewals) are for recurring probable renewals or expenditures, which are not classified as operation or maintenance expenses. The replacement reserves should be budgeted for in advance on an annual basis. Replacement Reserves are reasonably predictable both in terms of frequency and cost. However, Replacement Reserves may also include components or systems that have an indeterminable life but, nonetheless, have a potential for failure within an estimated time period.

Replacement Reserves generally exclude systems or components that are estimated to expire after the reserve term and are not considered material to the structural and mechanical integrity of the subject property. Furthermore, systems and components that are not deemed to have a material effect on the use of the Property are also excluded. Costs that are caused by acts of God, accidents, or other occurrences that are typically covered by insurance, rather than reserved for, are also excluded.

Replacement costs are solicited from ownership/property management, Bureau Veritas's discussions with service companies, manufacturers' representatives, and previous experience in preparing such schedules for other similar facilities. Costs for work performed by the ownership's or property management's maintenance staff are also considered.

Bureau Veritas's reserve methodology involves identification and quantification of those systems or components requiring capital reserve funds within the assessment period. The assessment period is defined as the effective age plus the reserve term. Additional information concerning system or component replacement costs (in today's dollars), typical expected useful lives, and remaining useful lives were estimated so that a funding schedule could be prepared. The Replacement Reserves Schedule presupposes that all required remedial work has been performed or that monies for remediation have been budgeted for items defined as Immediate Needs.

For the purposes of 'bucketizing' the System Expenditure Forecasts in this report, the Replacement Reserves have been subdivided and grouped as follows: Short Term (years 1-3), Near Term (years 4-5), Medium Term (years 6-10), and Long Term (years 11-20).

Key Findings

In an effort to highlight the most significant cost items and not be overwhelmed by the Replacement Reserves report in its totality, a subsection of Key Findings is included within the Executive Summary section of this report. Key Findings typically include repairs or replacements of deficient items within the first five-year window, as well as the most significant high-dollar line items that fall anywhere within the ten-year term. Note that while there is some subjectivity associated with identifying the Key Findings, the Immediate Needs are always included as a subset.

6. Certification

Town of Paradise Valley, FCA wInventory Program (the Client) retained Bureau Veritas to perform this Facility Condition Assessment in connection with its continued operation of Town Hall, 6401 East Lincoln Drive, Paradise Valley, AZ 85253, the "Property". It is our understanding that the primary interest of the Client is to locate and evaluate materials and building system defects that might significantly affect the value of the property and to determine if the present Property has conditions that will have a significant impact on its continued operations.

The conclusions and recommendations presented in this report are based on the brief review of the plans and records made available to our Project Manager during the site visit, interviews of available property management personnel and maintenance contractors familiar with the Property, appropriate inquiry of municipal authorities, our Project Manager's walk-through observations during the site visit, and our experience with similar properties.

No testing, exploratory probing, dismantling or operating of equipment or in-depth studies were performed unless specifically required under the *Purpose and Scope* section of this report. This assessment did not include engineering calculations to determine the adequacy of the Property's original design or existing systems. Although walk-through observations were performed, not all areas may have been observed (see Section 1 for specific details). There may be defects in the Property, which were in areas not observed or readily accessible, may not have been visible, or were not disclosed by management personnel when questioned. The report describes property conditions at the time that the observations and research were conducted.

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and Bureau Veritas.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of Bureau Veritas. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to Bureau Veritas.

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7. Appendices

Appendix A: Photographic Record
Appendix B: Site Plan(s)
Appendix C: Pre-Survey Questionnaire(s)
Appendix D: Accessibility Review and Photos
Appendix E: Component Condition Report
Appendix F: Replacement Reserves
Appendix G: Equipment Inventory List
Appendix H: Electrical Study

Appendix A:
Photographic Record

Photographic Overview



1 - FRONT ELEVATION



2 - LEFT ELEVATION



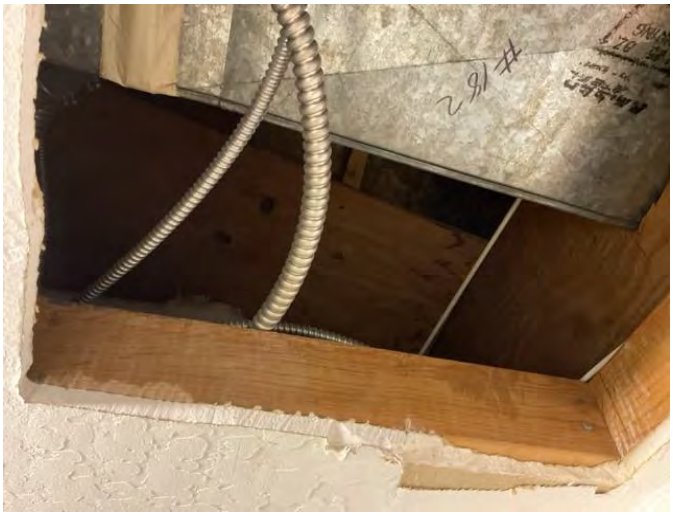
3 - REAR ELEVATION



4 - RIGHT ELEVATION



5 - MEZZANINE ROOF STRUCTURE



6 - ROOF STRUCTURE COMPONENTS

Photographic Overview



7 - PRIMARY ROOF OVERVIEW



8 - BOARDROOM OVERVIEW



9 - BOARDROOM OVERVIEW



10 - MAYOR'S OFFICE

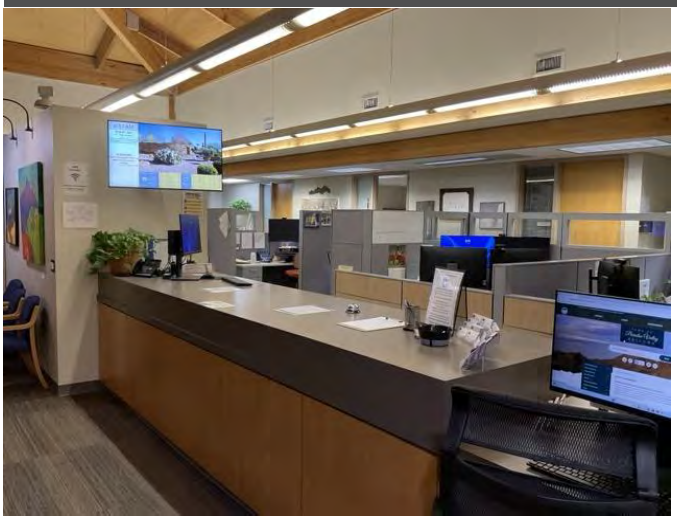


11 - TOWN MANAGER'S OFFICE

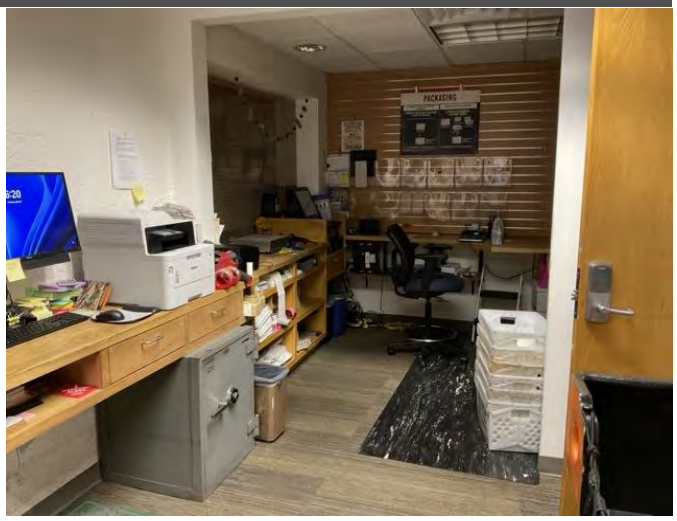


12 - TYPICAL OFFICE

Photographic Overview



13 - SERVICE COUNTER



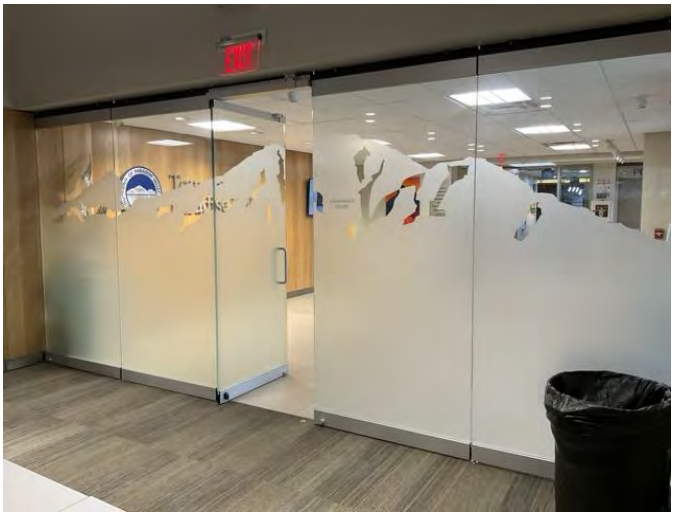
14 - POST OFFICE OVERVIEW



15 - COMMUNITY ROOM OVERVIEW



16 - MEZZANINE STORAGE



17 - PLATE GLASS PARTITION



18 - FIRE ALARM DEVICES

Photographic Overview



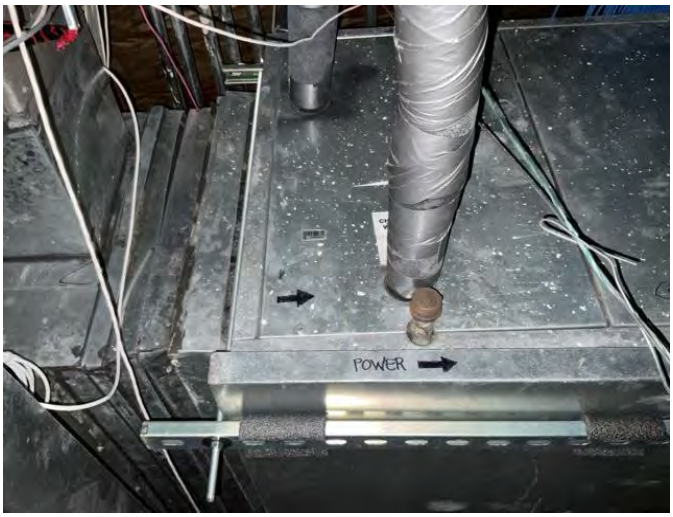
19 - NONCOMPLIANT FIRE ALARM PANEL



20 - EMERGENCY AND EXIT LIGHTING



21 – AIR COOLED CHILLER AND PUMPS



22 – FAN COIL UNIT



23 - DOMESTIC WATER PIPING

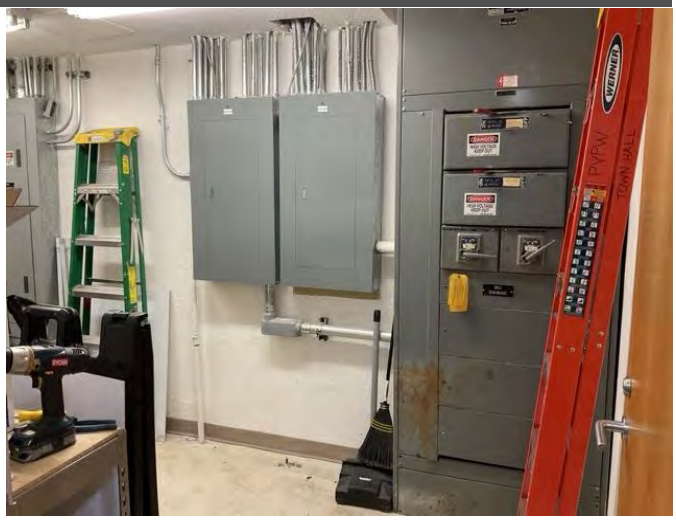


24 - WATER HEATER

Photographic Overview



25 - MAIN ELECTRICAL ROOM



26 - SECONDARY ELECTRICAL ROOM



27 - MAIN PARKING AREA



28 - SECONDARY PARKING AREA



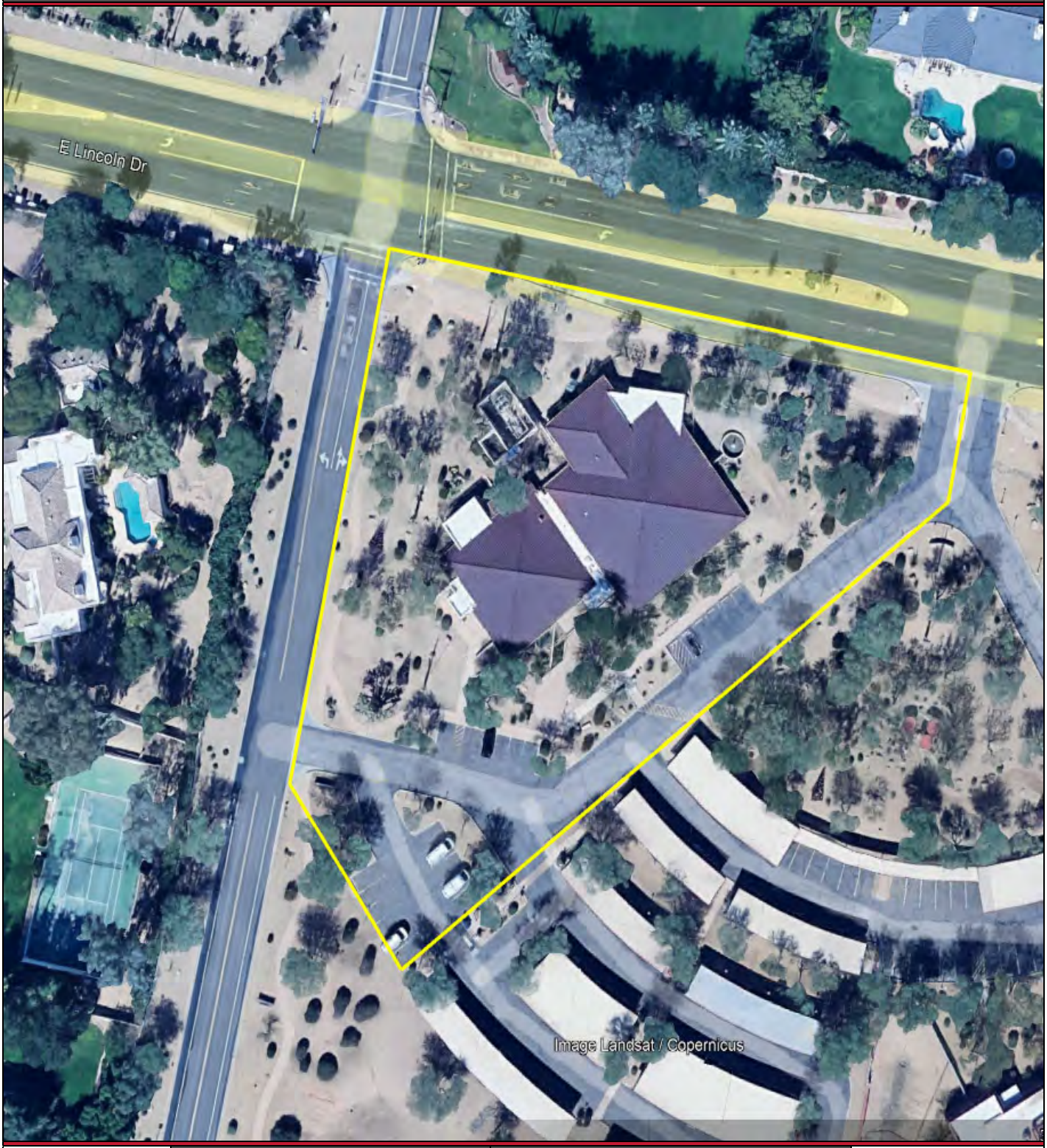
29 - SIDEWALKS AND LANDSCAPING



30 - PROPERTY SIGNAGE

Appendix B:
Site Plan(s)

Site Plan



Project Number	Project Name
172662.25R000-002.468	Town Hall
Source	**On-Site Date**
Google	May 29, 2025

N

Appendix C:
Pre-Survey Questionnaire(s)

BV FACILITY CONDITION ASSESSMENT: PRE-SURVEY QUESTIONNAIRE

Building / Facility Name: Town Hall

Name of person completing form: John Fraley

Title / Association w/ property: Lead Technician

Length of time associated w/ property: 4 Years

Date Completed: 5/29/2025

Phone Number: 480-797-2060

Method of Completion: INTERVIEW - verbally completed during interview

Directions: Please answer all questions to the best of your knowledge and in good faith. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses.

Data Overview		Response		
1	Year(s) constructed	Constructed: 1973	Renovated: 2019	
2	Building size in SF	14,866 **SF**		
3	Major Renovation/Rehabilitation		Year	Additional Detail
		Facade		
		Roof		
		Interiors		
		HVAC		
		Electrical		
		Site Pavement		
		Accessibility		
4	List other significant capital improvements (focus on recent years; provide approximate date).	None		
5	List any major capital expenditures planned/requested for the next few years. Have they been budgeted?	None		
6	Describe any on-going extremely problematic, historically chronic, or immediate facility needs.	None		

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any ***Yes*** responses. (**NA** indicates "*Not Applicable*", **Unk** indicates "*Unknown*")

	Question	Response				Comments
		Yes	No	Unk	NA	
7	Are there any problems with foundations or structures, like excessive settlement?		X			
8	Are there any wall, window, basement or roof leaks?		X			
9	Has any part of the facility ever contained visible suspect mold growth, or have there been any indoor air quality complaints?		X			
10	Are your elevators unreliable, with frequent service calls?				X	
11	Are there any plumbing leaks, water pressure, or clogging/backup issues?		X			
12	Have there been any leaks or pressure problems with natural gas, HVAC piping, or steam service?	X				Main drain pipes leaked but repaired
13	Are any areas of the facility inadequately heated, cooled or ventilated? Poorly insulated areas?		X			
14	Is the electrical service outdated, undersized, or problematic?		X			
15	Are there any problems or inadequacies with exterior lighting?		X			
16	Is site/parking drainage inadequate, with excessive ponding or other problems?		X			
17	Are there any other unresolved construction defects or significant issues/hazards at the property that have not yet been identified above?		X			
18	ADA: Has an accessibility study been previously performed? If so, when?			X		
19	ADA: Have any ADA improvements been made to the property since original construction? Describe.		X			
20	ADA: Has building management reported any accessibility-based complaints or litigation?		X			
21	Are any areas of the property leased to outside occupants?		X			

Signature of Assessor

Signature of POC

Appendix D:
Accessibility Review and Photos

Visual Survey - 2010 ADA Standards for Accessible Design

Property Name: Town Hall

BV Project Number: 172662.25R000-002.468

Facility History & Interview

	Question	Yes	No	Unk	Comments
1	Has an accessibility study been previously performed? If so, when?			X	
2	Have any ADA improvements been made to the property since original construction? Describe.		X		
3	Has building management reported any accessibility-based complaints or litigation?		X		

002 - Town Hall: Accessibility Issues

Category	Major Issues (ADA study recommended)	Moderate Issues (ADA study recommended)	Minor Issues	None*
Parking				X
Exterior Accessible Route				X
Building Entrances				X
Interior Accessible Route				X
Elevators	**NA**			
Public Restrooms				X
Kitchens/Kitchenettes	**NA**			
Playgrounds & Swimming Pools	**NA**			
Other	**NA**			

**be cognizant that if the "None" box is checked that does not guarantee full compliance; this study is limited in nature*

002 - Town Hall: Photographic Overview



OVERVIEW OF ACCESSIBLE PARKING AREA



2ND AREA OF ACCESSIBLE PARKING



ACCESSIBLE PATH



CURB CUT

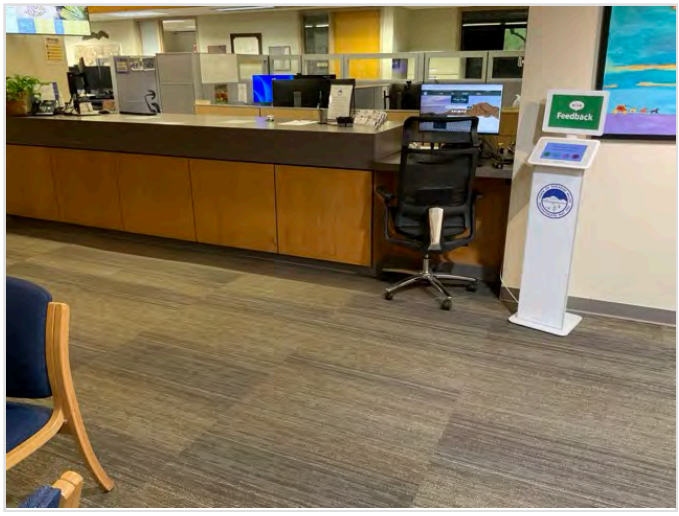


ACCESSIBLE ENTRANCE



DOOR THRESHOLD

002 - Town Hall: Photographic Overview



ACCESSIBLE INTERIOR PATH



DOOR HARDWARE



TOILET STALL OVERVIEW



SINK, FAUCET HANDLES AND ACCESSORIES

Appendix E:
Component Condition Report

Component Condition Report | 002 - Town Hall

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
Structure						
A1010	Substructure	Fair	Foundations, Concrete or CMU Walls w/ Continuous Footings, 1-2 Story Building	648 LF	23	9402961
B1010	Superstructure	Fair	Structural Framing, Masonry (CMU) Bearing Walls, 1-2 Story Building	14,866 SF	23	9402962
Facade						
B2010	Building Exterior	Poor	Exterior Walls, any type, Repairs per Man-Day, Repair	18	2	9387329
B2010	Building Exterior	Fair	Exterior Walls, any painted surface, 1-2 Story Building, Prep & Paint	7,500 SF	4	9387352
B2020	Building Exterior	Fair	Glazing, any type by SF	200 SF	10	9387284
B2050	Post Office	Poor	Exterior Door, Wood, any type, Refinish	1	1	9387279
B2050	Building Exterior	Fair	Exterior Door, Aluminum-Framed & Glazed, Standard Swing	6	10	9387327
B2050	Building Exterior	Fair	Exterior Door, Steel, Commercial	4	20	9387307
Roofing						
B3010	Roof	Poor	Roofing, Metal	14,866 SF	2	9387301
B3010	Roof	Fair	Roofing, Built-Up	1,200 SF	10	9446479
B3020	Roof	Fair	Roof Appurtenances, Gutters & Downspouts, Aluminum w/ Fittings	1,000 LF	4	9387281
Interiors						
C1010	Community Room	Good	Movable Partition, Gym Divider, Deluxe/Operable	200 SF	19	9387346
C1030	Throughout Building	Fair	Interior Door, Wood, Solid-Core	45	20	9387300
C1070	Throughout Building	Fair	Suspended Ceilings, Acoustical Tile (ACT)	13,400 SF	5	9387335
C1090	Restrooms	Good	Toilet Partitions, Plastic/Laminate	6	14	9387323
C2010	Throughout Building	Fair	Wall Finishes, any surface, Prep & Paint	28,500 SF	6	9387319
C2010	Office Areas	Fair	Wall Finishes, Plate Glass	200 SF	20	9387304
C2010	Restrooms	Good	Wall Finishes, Ceramic Tile	1,000 SF	34	9387313
C2030	Storage	Fair	Flooring, Vinyl Tile (VCT)	300 SF	4	9387310
C2030	Newer Addition	Fair	Flooring, Carpet, Commercial Standard	6,600 SF	4	9387276

Component Condition Report | 002 - Town Hall

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
C2030	Breakroom	Fair	Flooring, Ceramic Tile	400 SF	20	9387299
C2030	Restrooms	Good	Flooring, Ceramic Tile	400 SF	34	9387343
C2030	Lobby	Good	Flooring, Ceramic Tile	600 SF	34	9387275
C2030	Board Area/Offices	Good	Flooring, Carpet, Commercial Standard	6,600 SF	8	9387316
C2050	Restrooms	Fair	Ceiling Finishes, any flat surface, Prep & Paint	400 SF	4	9387347
C2050	Council Area	Fair	Ceiling Finishes, Wood Paneling	1,100 SF	10	9387278
Plumbing						
D2010	Throughout Building	Good	Sink/Lavatory, Vanity Top, Stainless Steel	2	28	9387295
D2010	Restrooms	Good	Urinal, Standard	2	24	9387354
D2010	Mothering Room	Fair	Water Heater, Electric, Instant Hot	1	9	9387338
D2010	Chiller Yard	Good	Storage Tank, Domestic Water	1	28	9387289
D2010	Lobby	Fair	Drinking Fountain, Wall-Mounted, Bi-Level	1	9	9387269
D2010	Throughout Building	Fair	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures)	14,866 SF	20	9387268
D2010	Restrooms	Good	Toilet, Commercial Water Closet	6	24	9387318
D2010	Restrooms	Good	Sink/Lavatory, Vanity Top, Enameled Steel	4	24	9387274
D2010	Janitor Closet	Fair	Sink/Lavatory, Service Sink, Floor	1	15	9387337
D2010	Storage	Good	Water Heater, Electric, Residential	1	14	9387287
HVAC						
D3020	Chiller Yard	Good	Boiler Supplemental Components, Expansion Tank	1	38	9387328
D3030	Chiller Yard	Good	Chiller, Air-Cooled	1	23	9387333
D3030	Building Exterior	Fair	Split System Ductless, Single Zone	1	9	9387341
D3030	Building Exterior	Fair	Split System Ductless, Single Zone	1	9	9387314
D3030	Building Exterior	Fair	Split System Ductless, Single Zone	1	7	9387334
D3050	Duncan Miller	Fair	Fan Coil Unit, Hydronic Terminal [FC-1]	1	4	9387321
D3050	Throughout Building	Good	HVAC System, Hydronic Piping, 2-Pipe	14,866 SF	39	9387294

Component Condition Report | 002 - Town Hall

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D3050	Throughout Building	Fair	HVAC System, Ductwork, Medium Density	14,866 SF	10	9387349
D3050	Chiller Yard	Good	Pump, Distribution, HVAC Chilled or Condenser Water [P-4]	1	13	9387332
D3050	By Dawn Jacobs	Fair	Fan Coil Unit, Hydronic Terminal [FC-4]	1	4	9387320
D3050	SW Lobby	Good	Fan Coil Unit, Hydronic Terminal [FC-10]	1	19	9387290
D3050	Womens Restroom	Fair	Fan Coil Unit, Hydronic Terminal [FC-12]	1	4	9387296
D3050	Goldwater Conference Room	Fair	Fan Coil Unit, Hydronic Terminal [FC-5]	1	4	9387342
D3050	Finance	Fair	Fan Coil Unit, Hydronic Terminal [FC-8]	1	4	9387326
D3050	C.R. / Attorney	Good	Fan Coil Unit, Hydronic Terminal [FC-17]	1	18	9387353
D3050	Chiller Yard	Good	Pump, Distribution, HVAC Chilled or Condenser Water [P-2]	1	13	9387325
D3050	Chuck Ransom	Fair	Fan Coil Unit, Hydronic Terminal [FC-3]	1	4	9387273
D3050	Large Conference	Good	Fan Coil Unit, Hydronic Terminal [FC-14]	1	18	9387308
D3050	Attorney	Good	Fan Coil Unit, Hydronic Terminal [FC-13]	1	18	9387322
D3050	Chiller Yard	Good	Pump, Distribution, HVAC Chilled or Condenser Water [P-1]	1	13	9387305
D3050	NE Lobby	Fair	Fan Coil Unit, Hydronic Terminal [FC-9]	1	4	9387339
D3050	Employee Lounge	Good	Fan Coil Unit, Hydronic Terminal [FC-16]	1	18	9387293
D3050	IT Office	Fair	Fan Coil Unit, Hydronic Terminal [FC-11]	1	4	9387340
D3050	By Post Office	Fair	Fan Coil Unit, Hydronic Terminal [FC-6]	1	4	9387351
D3050	Copy Room	Fair	Fan Coil Unit, Hydronic Terminal [FC-7]	1	4	9387291
D3050	Paul Michaud	Fair	Fan Coil Unit, Hydronic Terminal [FC-2]	1	4	9387355
D3050	Chiller Yard	Good	Pump, Distribution, HVAC Chilled or Condenser Water [P-3]	1	13	9387344
Electrical						
D5020	TH-121 Electrical Room	Fair	Switchboard, 120/208 V	1	11	9387280
D5020	Chiller Yard	Fair	Switchboard, 277/480 V [SWBD HA]	1	11	9387350
D5020	Chiller Yard	Poor	Switchboard, 277/480 V	1	0	9387348
D5020	Chiller Yard	Fair	Secondary Transformer, Dry, Stepdown	1	4	9387336

Component Condition Report | 002 - Town Hall

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
D5020	Electrical Room	Fair	Switchboard, 120/208 V [SWBD-LC]	1	11	9387283
D5020	Electrical Room	Fair	Distribution Panel, 120/208 V [HA]	1	6	9387317
D5030	Throughout Building	Fair	Electrical System, Wiring & Switches, Average or Low Density/Complexity	14,866 SF	11	9387331
D5040	Throughout Building	Fair	Emergency & Exit Lighting System, Full Interior Upgrade, LED	14,866 SF	4	9387302
D5040	Building Exterior	Fair	Exterior Light, any type, w/ LED Replacement	4	10	9387345
D5040	Throughout Building	Fair	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures	14,866 SF	8	9387324
Fire Alarm & Electronic Systems						
D6060	Throughout Building	Fair	Intercom/PA System, Public Address Upgrade, Facility-Wide	14,866 SF	14	9387286
D7050	Lobby	Failed	Fire Alarm Panel, Fully Addressable	1	0	9387282
D7050	Throughout Building	Fair	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	14,866 SF	4	9387303
D8010	Throughout Building	Good	BAS/HVAC Controls, Basic System or Legacy Upgrades, Upgrade/Install	14,866 SF	13	9387315
Equipment & Furnishings						
E1040	Lobby	Fair	Healthcare Equipment, Defibrillator (AED), Cabinet-Mounted	1	6	9387271
E2010	Throughout Building	Good	Casework, Cabinetry, Standard	220 LF	14	9387311
E2010	Restrooms	Fair	Casework, Countertop, Plastic Laminate	40 LF	9	9387309
E2010	Breakroom	Fair	Casework, Cabinetry, Standard	40 LF	4	9387270
Special Construction & Demo						
F1020	Chiller Building	Fair	Ancillary Building, Wood-Framed or CMU, Standard	600 SF	15	9387330
Pedestrian Plazas & Walkways						
G2020	Site	Good	Parking Lots, Curb & Gutter, Concrete	1,300 LF	44	9387306
G2020	Site	Fair	Parking Lots, Pavement, Asphalt, Mill & Overlay	21,200 SF	12	9387298
G2020	Site	Good	Parking Lots, Pavement, Asphalt, Seal & Stripe	21,200 SF	4	9387297
G2030	Site	Fair	Sidewalk, Brick/Masonry Pavers	1,300 SF	15	9402453
G2030	Site	Fair	Sidewalk, Concrete, Large Areas	6,500 SF	15	9387272
Sitework						

Component Condition Report | 002 - Town Hall

UF L3 Code	Location	Condition	Asset/Component/Repair	Quantity	RUL	ID
G2060	Site	Fair	Retaining Wall, Concrete Masonry Unit (CMU)	300 SF	20	9387292
G2060	Site	Good	Signage, Property, Monument, Replace/Install	1	14	9387277
G2060	Site	Failed	Decorative Fountains, Aerator or Nozzle, 1 HP	1	0	9387288
G2080	Site	Fair	Irrigation System, Control Panel	1	9	9387285
G4050	Site	Fair	Pole Light Fixture, LED Lamp only	18	4	9387312

Appendix F:
Replacement Reserves

Replacement Reserves Report

002 - Town Hall

7/7/2025

Location	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total Escalated Estimate
002 - Town Hall	$69,000	$155	$226,033	$0	$289,538	$54,370	$60,001	$4,305	$156,864	$33,324	$153,292	$231,603	$105,791	$84,536	$288,801	$276,072	$71,008	$0	$117,502	$35,736	$287,659	**$2,545,592**
Grand Total	**$69,000**	**$155**	**$226,033**	**$0**	**$289,538**	**$54,370**	**$60,001**	**$4,305**	**$156,864**	**$33,324**	**$153,292**	**$231,603**	**$105,791**	**$84,536**	**$288,801**	**$276,072**	**$71,008**	**$0**	**$117,502**	**$35,736**	**$287,659**	**$2,545,592**

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
B2010	Building Exterior	9387329	Exterior Walls, any type, Repairs per Man-Day, Repair	0	-2	2	18	EA	$1,100.00	$19,800			$19,800																				**$19,800**
B2010	Building Exterior	9387352	Exterior Walls, any painted surface, 1-2 Story Building, Prep & Paint	10	6	4	7500	SF	$3.00	$22,500					$22,500										$22,500								**$45,000**
B2020	Building Exterior	9387284	Glazing, any type by SF, Replace	30	20	10	200	SF	$55.00	$11,000											$11,000												**$11,000**
B2050	Post Office	9387279	Exterior Door, Wood, any type, Refinish	10	9	1	1	EA	$150.00	$150		$150										$150											**$300**
B2050	Building Exterior	9387327	Exterior Door, Aluminum-Framed & Glazed, Standard Swing, Replace	30	20	10	6	EA	$1,300.00	$7,800											$7,800												**$7,800**
B2050	Building Exterior	9387307	Exterior Door, Steel, Commercial, Replace	40	20	20	4	EA	$4,060.00	$16,240																						$16,240	**$16,240**
B3010	Roof	9387301	Roofing, Metal, Replace	40	38	2	14866	SF	$13.00	$193,258			$193,258																				**$193,258**
B3010	Roof	9446479	Roofing, Built-Up, Replace	25	15	10	1200	SF	$14.00	$16,800											$16,800												**$16,800**
B3020	Roof	9387281	Roof Appurtenances, Gutters & Downspouts, Aluminum w/ Fittings, Replace	20	16	4	1000	LF	$9.00	$9,000					$9,000																		**$9,000**
C1010	Community Room	9387346	Movable Partition, Gym Divider, Deluxe/Operable, Replace	25	6	19	200	SF	$22.30	$4,460																					$4,460		**$4,460**
C1030	Throughout Building	9387300	Interior Door, Wood, Solid-Core, Replace	40	20	20	45	EA	$700.00	$31,500																						$31,500	**$31,500**
C1070	Throughout Building	9387335	Suspended Ceilings, Acoustical Tile (ACT), Replace	25	20	5	13400	SF	$3.50	$46,900						$46,900																	**$46,900**
C1090	Restrooms	9387323	Toilet Partitions, Plastic/Laminate, Replace	20	6	14	6	EA	$750.00	$4,500															$4,500								**$4,500**
C2010	Office Areas	9387304	Wall Finishes, Plate Glass, Replace	40	20	20	200	SF	$50.00	$10,000																						$10,000	**$10,000**
C2010	Throughout Building	9387319	Wall Finishes, any surface, Prep & Paint	10	4	6	28500	SF	$1.50	$42,750							$42,750										$42,750						**$85,500**
C2030	Breakroom	9387299	Flooring, Ceramic Tile, Replace	40	20	20	400	SF	$18.00	$7,200																						$7,200	**$7,200**
C2030	Storage	9387310	Flooring, Vinyl Tile (VCT), Replace	15	11	4	300	SF	$5.00	$1,500					$1,500																$1,500		**$3,000**
C2030	Newer Addition	9387276	Flooring, Carpet, Commercial Standard, Replace	10	6	4	6600	SF	$7.50	$49,500					$49,500										$49,500								**$99,000**
C2030	Board Area/Offices	9387316	Flooring, Carpet, Commercial Standard, Replace	10	2	8	6600	SF	$7.50	$49,500									$49,500										$49,500				**$99,000**
C2050	Council Area	9387278	Ceiling Finishes, Wood Paneling, Replace	30	20	10	1100	SF	$14.00	$15,400											$15,400												**$15,400**
C2050	Restrooms	9387347	Ceiling Finishes, any flat surface, Prep & Paint	10	6	4	400	SF	$2.00	$800					$800										$800								**$1,600**
D2010	Mothering Room	9387338	Water Heater, Electric, Instant Hot, Replace	15	6	9	1	EA	$500.00	$500										$500													**$500**
D2010	Storage	9387287	Water Heater, Electric, Residential, Replace	15	1	14	1	EA	$900.00	$900															$900								**$900**
D2010	Throughout Building	9387268	Plumbing System, Supply & Sanitary, Low Density (excludes fixtures), Replace	40	20	20	14866	SF	$5.00	$74,330																						$74,330	**$74,330**
D2010	Lobby	9387269	Drinking Fountain, Wall-Mounted, Bi-Level, Replace	15	6	9	1	EA	$1,500.00	$1,500										$1,500													**$1,500**
D2010	Janitor Closet	9387337	Sink/Lavatory, Service Sink, Floor, Replace	35	20	15	1	EA	$800.00	$800																$800							**$800**
D3030	Building Exterior	9387334	Split System Ductless, Single Zone, Replace	15	8	7	1	EA	$3,500.00	$3,500								$3,500															**$3,500**
D3030	Building Exterior	9387341	Split System Ductless, Single Zone, Replace	15	6	9	1	EA	$3,500.00	$3,500										$3,500													**$3,500**
D3030	Building Exterior	9387314	Split System Ductless, Single Zone, Replace	15	6	9	1	EA	$3,500.00	$3,500										$3,500													**$3,500**
D3050	Chiller Yard	9387332	Pump, Distribution, HVAC Chilled or Condenser Water, Replace	15	2	13	1	EA	$5,100.00	$5,100														$5,100									**$5,100**
D3050	Chiller Yard	9387325	Pump, Distribution, HVAC Chilled or Condenser Water, Replace	15	2	13	1	EA	$5,100.00	$5,100														$5,100									**$5,100**
D3050	Chiller Yard	9387305	Pump, Distribution, HVAC Chilled or Condenser Water, Replace	15	2	13	1	EA	$5,100.00	$5,100														$5,100									**$5,100**
D3050	Chiller Yard	9387344	Pump, Distribution, HVAC Chilled or Condenser Water, Replace	15	2	13	1	EA	$5,100.00	$5,100														$5,100									**$5,100**
D3050	Duncan Miller	9387321	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	By Dawn Jacobs	9387320	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	Womens Restroom	9387296	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	Goldwater Conference Room	9387342	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	Finance	9387326	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	Chuck Ransom	9387273	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	NE Lobby	9387339	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	IT Office	9387340	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	By Post Office	9387351	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	Copy Room	9387291	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$4,880.00	$4,880					$4,880																		**$4,880**
D3050	Paul Michaud	9387355	Fan Coil Unit, Hydronic Terminal, Replace	20	16	4	1	EA	$7,750.00	$7,750					$7,750																		**$7,750**
D3050	Throughout Building	9387349	HVAC System, Ductwork, Medium Density, Replace	30	20	10	14866	SF	$4.00	$59,464											$59,464												**$59,464**
D3050	C.R. / Attorney	9387353	Fan Coil Unit, Hydronic Terminal, Replace	20	2	18	1	EA	$4,880.00	$4,880																			$4,880				**$4,880**
D3050	Large Conference	9387308	Fan Coil Unit, Hydronic Terminal, Replace	20	2	18	1	EA	$4,880.00	$4,880																			$4,880				**$4,880**
D3050	Attorney	9387322	Fan Coil Unit, Hydronic Terminal, Replace	20	2	18	1	EA	$4,880.00	$4,880																			$4,880				**$4,880**
D3050	Employee Lounge	9387293	Fan Coil Unit, Hydronic Terminal, Replace	20	2	18	1	EA	$4,880.00	$4,880																			$4,880				**$4,880**
D3050	SW Lobby	9387290	Fan Coil Unit, Hydronic Terminal, Replace	20	1	19	1	EA	$4,880.00	$4,880																				$4,880			**$4,880**
D5020	Chiller Yard	9387348	Switchboard, 277/480 V, Replace	40	40	0	1	EA	$52,000.00	$52,000	$52,000																						**$52,000**
D5020	Chiller Yard	9387336	Secondary Transformer, Dry, Stepdown, Replace	30	26	4	1	EA	$20,000.00	$20,000					$20,000																		**$20,000**
D5020	TH-121 Electrical Room	9387280	Switchboard, 120/208 V, Replace	40	29	11	1	EA	$50,000.00	$50,000												$50,000											**$50,000**
D5020	Chiller Yard	9387350	Switchboard, 277/480 V, Replace	40	29	11	1	EA	$35,000.00	$35,000												$35,000											**$35,000**

Replacement Reserves Report

002 - Town Hall

7/7/2025

Uniformat Code	Location Description	ID	Cost Description	Lifespan (EUL)	EAge	RUL	Quantity	Unit	Unit Cost*	Subtotal	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Deficiency Repair Estimate
D5020	Electrical Room	9387283	Switchboard, 120/208 V, Replace	40	29	11	1	EA	$45,000.00	$45,000												$45,000										**$45,000**
D5020	Electrical Room	9387317	Distribution Panel, 120/208 V, Replace	30	24	6	1	EA	$6,000.00	$6,000							$6,000															**$6,000**
D5030	Throughout Building	9387331	Electrical System, Wiring & Switches, Average or Low Density/Complexity, Replace	40	29	11	14866	SF	$2.50	$37,165												$37,165										**$37,165**
D5040	Throughout Building	9387302	Emergency & Exit Lighting System, Full Interior Upgrade, LED, Replace	10	6	4	14866	SF	$0.65	$9,663					$9,663										$9,663							**$19,326**
D5040	Throughout Building	9387324	Interior Lighting System, Full Upgrade, High Density & Standard Fixtures, Replace	20	12	8	14866	SF	$5.00	$74,330									$74,330													**$74,330**
D5040	Building Exterior	9387345	Exterior Light, any type, w/ LED Replacement, Replace	20	10	10	4	EA	$400.00	$1,600											$1,600											**$1,600**
D6060	Throughout Building	9387286	Intercom/PA System, Public Address Upgrade, Facility-Wide, Replace	20	6	14	14866	SF	$1.65	$24,529															$24,529							**$24,529**
D7050	Lobby	9387282	Fire Alarm Panel, Fully Addressable, Replace	15	15	0	1	EA	$15,000.00	$15,000	$15,000															$15,000						**$30,000**
D7050	Throughout Building	9387303	Fire Alarm System, Full System Upgrade, Standard Addressable, Upgrade/Install	20	16	4	14866	SF	$3.00	$44,598					$44,598																	**$44,598**
D8010	Throughout Building	9387315	BAS/HVAC Controls, Basic System or Legacy Upgrades, Upgrade/Install	15	2	13	14866	SF	$2.50	$37,165														$37,165								**$37,165**
E1040	Lobby	9387271	Healthcare Equipment, Defibrillator (AED), Cabinet-Mounted, Replace	10	4	6	1	EA	$1,500.00	$1,500							$1,500										$1,500					**$3,000**
E2010	Breakroom	9387270	Casework, Cabinetry, Standard, Replace	20	16	4	40	LF	$300.00	$12,000					$12,000																	**$12,000**
E2010	Restrooms	9387309	Casework, Countertop, Plastic Laminate, Replace	15	6	9	40	LF	$50.00	$2,000										$2,000												**$2,000**
E2010	Throughout Building	9387311	Casework, Cabinetry, Standard, Replace	20	6	14	220	LF	$300.00	$66,000															$66,000							**$66,000**
F1020	Chiller Building	9387330	Ancillary Building, Wood-Framed or CMU, Standard, Replace	35	20	15	600	SF	$100.00	$60,000																$60,000						**$60,000**
G2020	Site	9387297	Parking Lots, Pavement, Asphalt, Seal & Stripe	5	1	4	21200	SF	$0.45	$9,540					$9,540					$9,540					$9,540					$9,540		**$38,160**
G2020	Site	9387298	Parking Lots, Pavement, Asphalt, Mill & Overlay	25	13	12	21200	SF	$3.50	$74,200													$74,200									**$74,200**
G2030	Site	9402453	Sidewalk, Brick/Masonry Pavers, Replace	30	15	15	1300	SF	$33.00	$42,900																$42,900						**$42,900**
G2030	Site	9387272	Sidewalk, Concrete, Large Areas, Replace	50	35	15	6500	SF	$9.00	$58,500																$58,500						**$58,500**
G2060	Site	9387288	Decorative Fountains, Aerator or Nozzle, 1 HP, Replace	10	50	0	1	EA	$2,000.00	$2,000	$2,000										$2,000										$2,000	**$6,000**
G2060	Site	9387277	Signage, Property, Monument, Replace/Install	20	6	14	1	EA	$3,000.00	$3,000															$3,000							**$3,000**
G2060	Site	9387292	Retaining Wall, Concrete Masonry Unit (CMU), Replace	40	20	20	300	SF	$60.00	$18,000																					$18,000	**$18,000**
G2080	Site	9387285	Irrigation System, Control Panel, Replace	15	6	9	1	EA	$5,000.00	$5,000										$5,000												**$5,000**
G4050	Site	9387312	Pole Light Fixture, LED Lamp only, Replace	20	16	4	18	EA	$1,200.00	$21,600					$21,600																	**$21,600**
Totals, Unescalated											**$69,000**	**$150**	**$213,058**	**$0**	**$257,251**	**$46,900**	**$50,250**	**$3,500**	**$123,830**	**$25,540**	**$114,064**	**$167,315**	**$74,200**	**$57,565**	**$190,932**	**$177,200**	**$44,250**	**$0**	**$69,020**	**$20,380**	**$159,270**	**$1,863,675**
Totals, Escalated (3.0% inflation, compounded annually)											**$69,000**	**$155**	**$226,033**	**$0**	**$289,538**	**$54,370**	**$60,001**	**$4,305**	**$156,864**	**$33,324**	**$153,292**	**$231,603**	**$105,791**	**$84,536**	**$288,801**	**$276,072**	**$71,008**	**$0**	**$117,502**	**$35,736**	**$287,659**	**$2,545,592**

* Markup has been included in unit costs.

Appendix G:
Equipment Inventory List

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D20 Plumbing													
1	9387289	D2010	**Storage Tank**	Domestic Water		002 - Town Hall	Chiller Yard	Inaccessible	Inaccessible	Inaccessible	2023	2045852	
2	9387338	D2010	**Water Heater**	Electric, Instant Hot	4160 Watts	002 - Town Hall	Mothering Room	Chronomite	CM-20L/208-ADJ	1554190	2019	2045799	
3	9387287	D2010	**Water Heater**	Electric, Residential	40 GAL	002 - Town Hall	Storage	Rheem	XE40M06ST45U1	M392311983	2024	2045816	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D30 HVAC													
1	9387328	D3020	**Boiler Supplemental Components**	Expansion Tank	150 PSI	002 - Town Hall	Chiller Yard		383926	CRN R3840.5C L-85-150	2023	2045875	
2	9387333	D3030	**Chiller**	Air-Cooled	51 TON	002 - Town Hall	Chiller Yard	Daikin Industries	AGZ051EDSEMNN0B	SLPU221145603	2023	2045788	
3	9387341	D3030	**Split System Ductless**	Single Zone	1 TON	002 - Town Hall	Building Exterior	Daikin Industries	RXB12AXVJU	KWD0A5SLY15FR	2019	2045870	
4	9387314	D3030	**Split System Ductless**	Single Zone	1 TON	002 - Town Hall	Building Exterior	Mitsubishi Electric	MUY-GE12NA	2006760 T	2019	2045845	
5	9387334	D3030	**Split System Ductless**	Single Zone	1 TON	002 - Town Hall	Building Exterior	Mitsubishi Electric	MUZ-WR12NA	25C26117	2017	2045846	
6	9387305	D3050	**Pump** [P-1]	Distribution, HVAC Chilled or Condenser Water	2 HP	002 - Town Hall	Chiller Yard	Armstrong	74352016-081	1895200-001	2023	2045815	
7	9387325	D3050	**Pump** [P-2]	Distribution, HVAC Chilled or Condenser Water	2 HP	002 - Town Hall	Chiller Yard	Armstrong	74352016-081	1895200-001	2023	2045809	
8	9387344	D3050	**Pump** [P-3]	Distribution, HVAC Chilled or Condenser Water	2 HP	002 - Town Hall	Chiller Yard	Armstrong	74350136-081	XAZ90D3_11	2023	2045876	
9	9387332	D3050	**Pump** [P-4]	Distribution, HVAC Chilled or Condenser Water	2 HP	002 - Town Hall	Chiller Yard	Armstrong	74350136-081	XAZ90D3_11	2023	2045844	
10	9387321	D3050	**Fan Coil Unit** [FC-1]	Hydronic Terminal	2000 CFM	002 - Town Hall	Duncan Miller		HH 08B-C6BL-E005-00310-BMA16+FT2	050296AHU	2005	2045840	
11	9387290	D3050	**Fan Coil Unit** [FC-10]	Hydronic Terminal	2000 CFM	002 - Town Hall	SW Lobby	Enviro-Tec	HDD	6HMM 005624	2024	2045873	
12	9387340	D3050	**Fan Coil Unit** [FC-11]	Hydronic Terminal	2000 CFM	002 - Town Hall	IT Office	Environmental Technologies	HH 16B-C6BL-E008-01410-CMA15-FT	050296AHU	2005	2045879	
13	9387296	D3050	**Fan Coil Unit** [FC-12]	Hydronic Terminal	13 KW	002 - Town Hall	Womens Restroom	Enviro-Tec	H	AHU090529-01P10	2009	2045841	
14	9387322	D3050	**Fan Coil Unit** [FC-13]	Hydronic Terminal	1.5 TON	002 - Town Hall	Attorney	No dataplate	No dataplate	No dataplate	2023	2045881	
15	9387308	D3050	**Fan Coil Unit** [FC-14]	Hydronic Terminal	1.5 TON	002 - Town Hall	Large Conference	No dataplate	No dataplate	No dataplate	2023	2045878	
16	9387293	D3050	**Fan Coil Unit** [FC-16]	Hydronic Terminal	3.5 TON	002 - Town Hall	Employee Lounge	Enviro-Tec	CDH	AHU000823-01	2023	2045842	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
17	9387353	D3050	**Fan Coil Unit** [FC-17]	Hydronic Terminal	1.5 TON	002 - Town Hall	C.R. / Attorney	Enviro-Tec	CDH	AHU000823-01	2023	2045880	
18	9387355	D3050	**Fan Coil Unit** [FC-2]	Hydronic Terminal	2500 CFM	002 - Town Hall	Paul Michaud	No dataplate	No dataplate	No dataplate	2005	2045848	
19	9387273	D3050	**Fan Coil Unit** [FC-3]	Hydronic Terminal	2000 CFM	002 - Town Hall	Chuck Ransom	Environmental Technologies	HH 12B-06BR-E005-01010-A16-FV2	050296AHU	2005	2045877	
20	9387320	D3050	**Fan Coil Unit** [FC-4]	Hydronic Terminal	2000 CFM	002 - Town Hall	By Dawn Jacobs	Environmental Technologies	HH 12B-C5BR-E005-01010-BMA16-FTR	0502	2005	2045865	
21	9387342	D3050	**Fan Coil Unit** [FC-5]	Hydronic Terminal	2000 CFM	002 - Town Hall	Goldwater Conference Room	Environmental Technologies	HH 30B-C6BR-E020-03010-EMA09-FT2	050296AHU	2005	2045874	
22	9387351	D3050	**Fan Coil Unit** [FC-6]	Hydronic Terminal	2000 CFM	002 - Town Hall	By Post Office	Environmental Technologies	HH 30B-C6BR-E020-03010-EMA09-FT2	050296AHU	2005	2045867	
23	9387291	D3050	**Fan Coil Unit** [FC-7]	Hydronic Terminal	2000 CFM	002 - Town Hall	Copy Room	Trane	BCHC054G1A0A1G04F000000A0000000000000000	T06H43142	2006	2045871	
24	9387326	D3050	**Fan Coil Unit** [FC-8]	Hydronic Terminal	2000 CFM	002 - Town Hall	Finance	Environmental Technologies	0B-C6BR-E010-01810-DMA15-FT2	050296AHU	2005	2045872	
25	9387339	D3050	**Fan Coil Unit** [FC-9]	Hydronic Terminal	2000 CFM	002 - Town Hall	NE Lobby	Environmental Technologies	HH 12B-C6BL-E008-01210-CMA16-FT2	050296AHU	2005	2045866	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D50 Electrical													
1	9387336	D5020	**Secondary Transformer**	Dry, Stepdown	150 KVA	002 - Town Hall	Chiller Yard	Acme Electric Corporation	TP533163S	No dataplate	1996	2045869	
2	9387280	D5020	**Switchboard**	120/208 V	800 AMP	002 - Town Hall	TH-121 Electrical Room	General Electric	No dataplate	No dataplate	1996	2045825	
3	9387348	D5020	**Switchboard**	277/480 V	1200 AMP	002 - Town Hall	Chiller Yard	General Electric	Inaccessible	Inaccessible	1996	2045847	
4	9387350	D5020	**Switchboard** [SWBD HA]	277/480 V	400 AMP	002 - Town Hall	Chiller Yard	Siemens	No dataplate	No dataplate	1996	2045868	
5	9387283	D5020	**Switchboard** [SWBD-LC]	120/208 V	600 AMP	002 - Town Hall	Electrical Room	Square D	No dataplate	No dataplate	1996	2045810	
6	9387317	D5020	**Distribution Panel** [HA]	120/208 V	400 AMP	002 - Town Hall	Electrical Room	Siemens	S3E42JX300FTS	No dataplate	1996	2045787	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
D70 Electronic Safety & Security													
1	9387282	D7050	**Fire Alarm Panel**	Fully Addressable		002 - Town Hall	Lobby	Simplex	4005	I30360 EQW	1996	2045864	

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
E10 Equipment													
1	9387271	E1040	**Healthcare Equipment**	Defibrillator (AED), Cabinet-Mounted		002 - Town Hall	Lobby						

Index	ID	UFCode	Component Description	Attributes	Capacity	Building	Location Detail	Manufacturer	Model	Serial	Dataplate Yr	Barcode	Qty
G20 OTHER													
1	9387285	G2080	**Irrigation System**	Control Panel		002 - Town Hall	Site	Irritrol	No dataplate	No dataplate	2019	2045849	

Appendix H:
Electrical Study

225 Broadway Suite 350, San Diego, CA 92101
1 + 310 364 5228 | 1 + 619 323 1515
mailto: Info@120degreez.com | www.120degreez.com



Arc Flash, Short Circuit, and Load Flow Analysis provided for:

TOWN HALL

6401 E. Lincoln Drive

Paradise Valley, AZ 85253



TOWN HALL

6401 E. Lincoln Drive

Paradise Valley, AZ 85253

FOR:
Town of Paradise Valley
Department of Public Works
6401 E. Lincoln Drive
Paradise Valley, AZ 85253

Submitted By:
Amir Amiri, P.E.
Electrical Engineer

Submittal date:
DATE: 6-25-2025

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APPENDIX 4 – TCC REPORT

APPENDIX 5 – WORK PERMIT

APPENDIX 6 – PPE TABLES AND ARC FLASH LABELS

1. EXECUTIVE SUMMARY

1.1. Introduction

A System Coordination and Arc Flash study of the distribution system was performed for the town of Paradise Valley's Town Hall located at 6401 E. Lincoln Drive, Paradise Valley, AZ 85253. The study determined the adequacy of the system components and the installed protective equipment. The study/analysis performed included short circuit, load flow, protective device coordination studies and incident energy (Arc-flash) evaluations. The power distribution system provided for the site is the following:

- SWBD HA is a 400 amp, 480/277V, 3-phase service fed from a 400-amp fused circuit from the Police station's SES-PD switchboard. The calculated Short Circuit current determined by the Police Station's SKM report is calculated to be 26,021 Amps.

Each Service Equipment System (SES) serves primarily lighting and equipment loads of the building in which it is located.
The short circuit analysis evaluates the short time thermal and electrodynamic strength of the facilities equipment. Arc flash and protective equipment studies evaluate the incident energy at specific points of the distribution system to provide Arc-Flash hazard warning labels and personal protective equipment (PPE) recommendations. System protection coordination analysis is used to evaluate the adequacy of the protective devices (Fuses-Circuit Breakers) for the proper protection of system components and are unitized in the verify selective coordination of overcurrent protective devices. Finally, the load flow analysis evaluates the ability of equipment and cables to safely serve the loads they supply. Voltage drop values are included in the appendix report. The report relied upon the more conservative three phase analysis vs one phase for this report.

Major objectives of the analysis are:

- Compare the calculated fault duties with withstanding/interrupting ratings for customer owned electrical distribution system equipment and note any area of deficiency.
- Demonstrate protective device coordination and note any area of deficiency. Recommended settings for protective devices that will isolate faults in a manner that is consistent with the basic system design and operation. The recommendations given will balance system protection and selective fault isolation.
- Identify incident energy levels, arc flash boundaries, and what level of Personal Protective Equipment (PPE) is required for safe energized work, in accordance with NFPA 70E 2018.
- Evaluate and assess the panels, switches, fuses, and cables nominal values under the current and voltage levels at site, according the load flow analysis results.

Note areas of deficiency and make recommendations for corrective measures that are consistent with applicable codes and standards.

1.1.1. Full narratives of the analysis performed as well as the findings and recommendations of the analysis are included in Sections 2 and 3 of this report. The appendices include the computer output from the analysis performed and tables containing the settings for the adjustable devices in the scope of work. Time current curves, a copy of the Arc-Flash labels, and a one-line diagram of the system model are also included in the appendices.

1.1.2. Various scenarios (where relevant) were modeled, and all related studies' results have been detailed in this report.

The following were the scenarios that were modeled and evaluated:

- Scenario #1: Short circuit analysis
- Scenario #2: Arc-Flash analysis
- Scenario #3: Load Flow analysis
- Scenario #4: TCC Tables

The assessment of the power distribution system components and equipment will be done based on the worst-case outcomes, including the highest levels of fault currents, load flow currents and assumed current usage as well as the highest available arc flash incident energy. The results of the analysis are included in Appendixes of this report. The appendices include the data derived from the SKM analysis software. Additionally, the Appendixes include Time-Current curves of protective devices, a copy of the Arc-Flash labels to be installed, one line diagram for overall system for short circuit, and incident energies. Additional diagrammatic illustrations of the one-line diagram are included.

1.2.2 DC systems less than 50 volts.

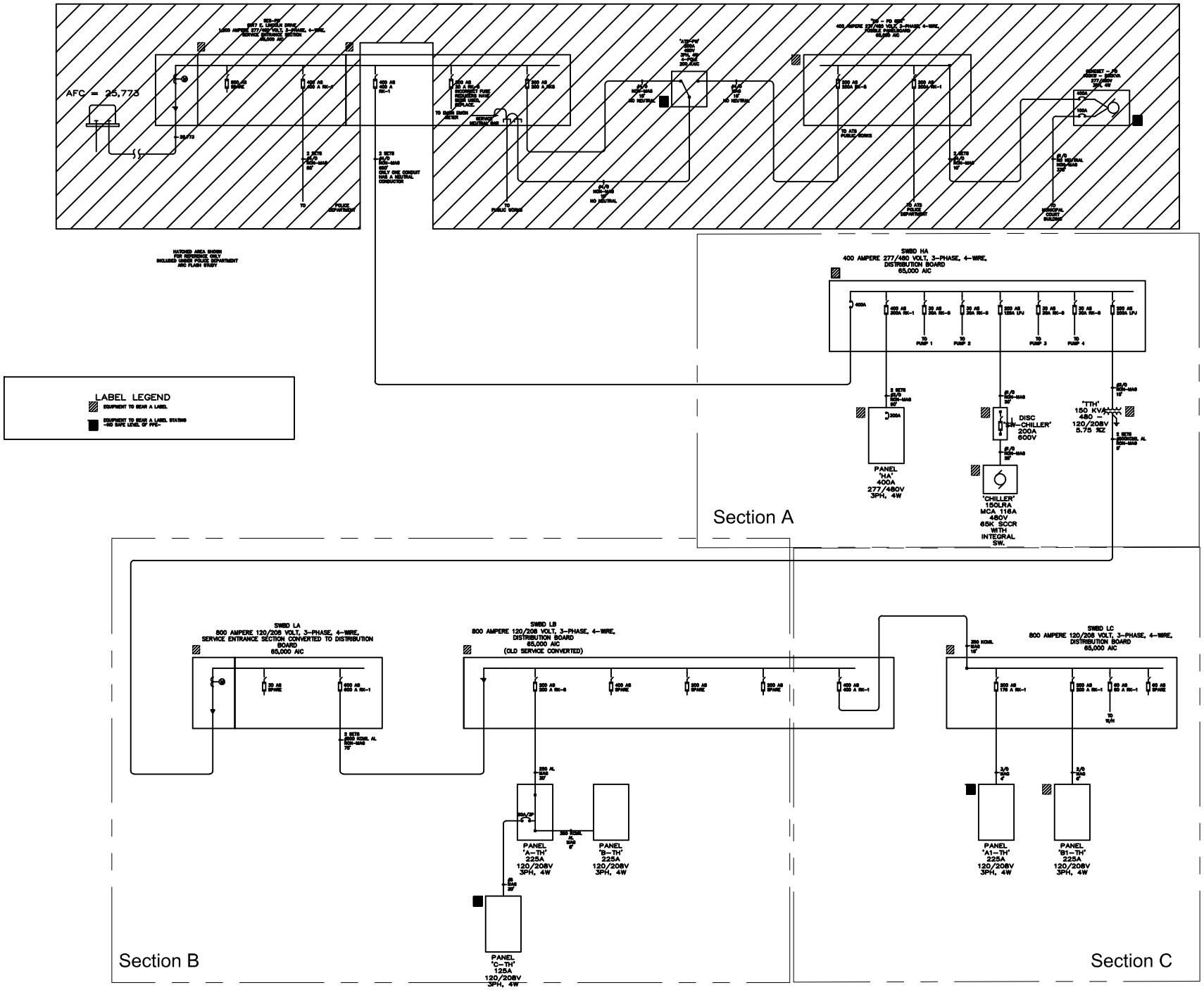
The Occupational Safety and Health Administration, under 29 CFR 1910.303(g)(2)(i), considers electrical systems rated 50 volts or more as hazardous. By extension, those systems rated less than 50 volts are not considered to be hazardous. NFPA 70E, section 130.5(C), under Table 130.5(C), indicates that there is no likelihood of occurrence "For dc systems, maintenance on a single cell for a battery system or multi-cell units in an open rack.". As a result, DC systems rated 50 volts or less are not addressed by this study and are excluded from its scope.

1.2. Distribution System

The electrical system's overall single line diagrams are shown in the following figures below. Each individual single line is shown with the associated field report that contains the facilities equipment technical specifications and ratings, based upon visual observations. The actual field notes should be referenced for existing conditions as this report focuses on the Short Circuit Fault currents and Arc Flash evaluation. The physical condition of the services and equipment are described by the Excel report but are not formally addressed by this study.

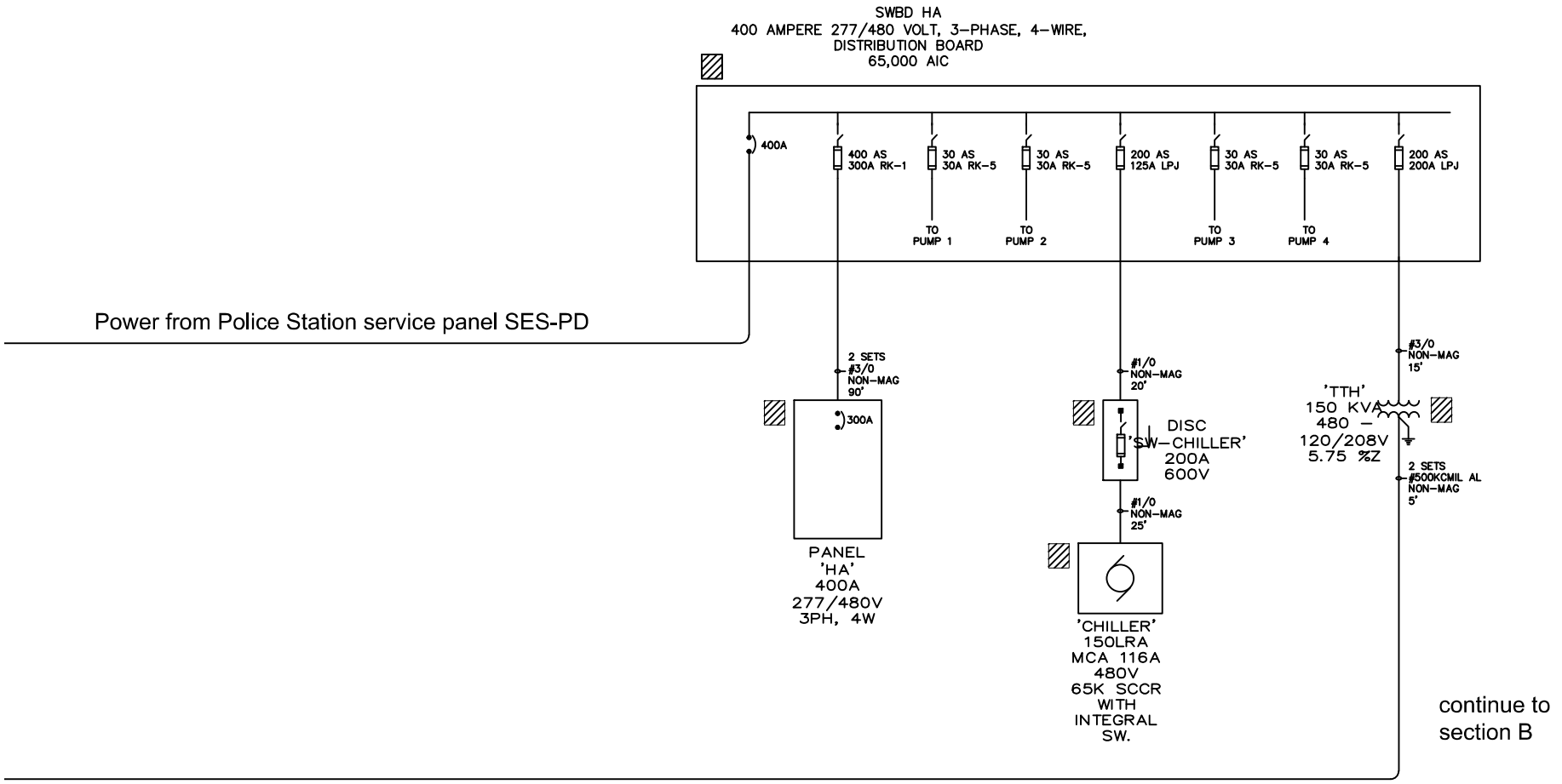
TOWN HALL

SINGLE-LINE OVERVIEW



TOWN HALL

SINGLE-LINE Section A



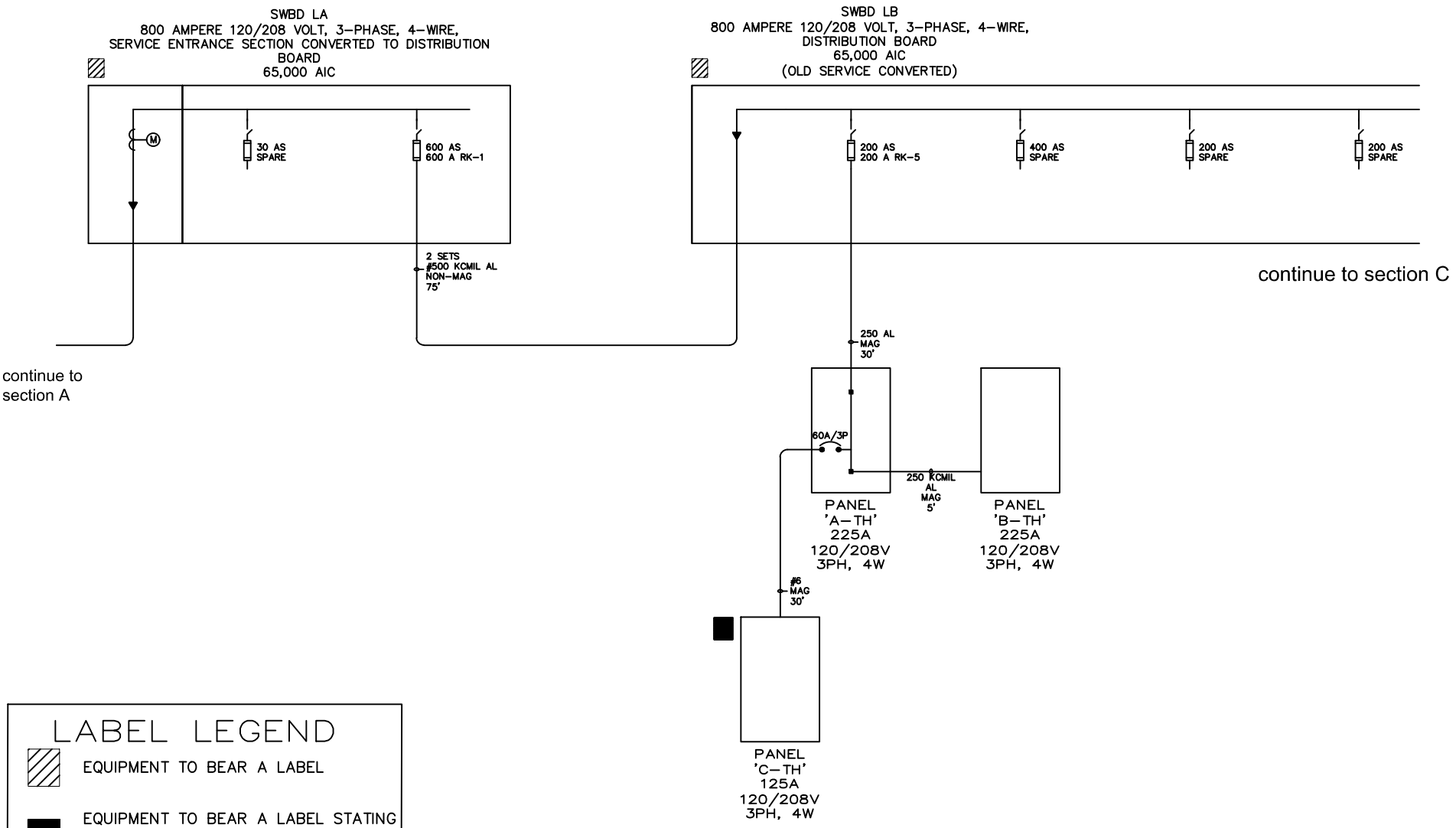
LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

EQUIPMENT TO BEAR A LABEL STATING
-NO SAFE LEVEL OF PPE-

TOWN HALL

SINGLE-LINE Section B



LABEL LEGEND

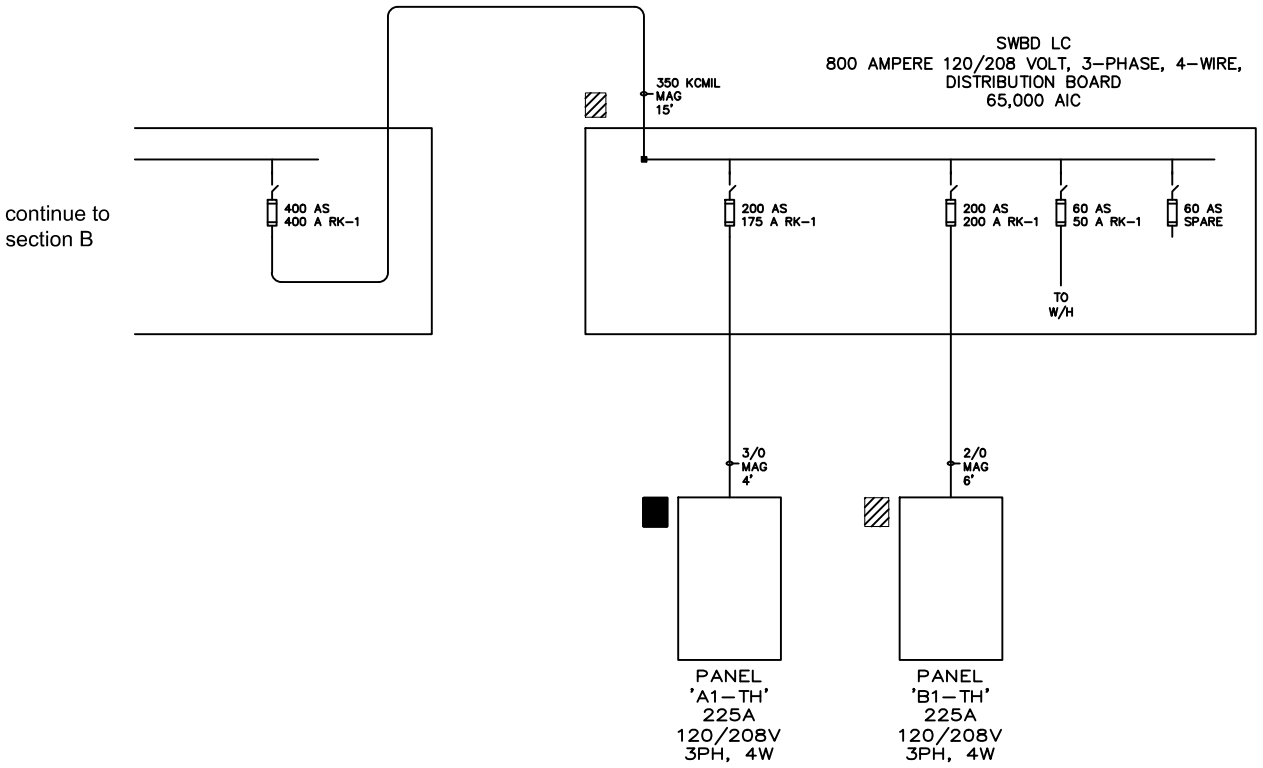
EQUIPMENT TO BEAR A LABEL

EQUIPMENT TO BEAR A LABEL STATING
-NO SAFE LEVEL OF PPE-

999

TOWN HALL

SINGLE-LINE Section C



LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

EQUIPMENT TO BEAR A LABEL STATING
-NO SAFE LEVEL OF PPE-

667

THIS SECTION SHOWN FOR REFERENCE ONLY

FACILITY	**TOWN HALL**	**ADDRESS:**	**6401 E. LINCOLN DRIVE, PARADISE VALLEY**

FACILITY	**POLICE DEPARTMENT**	**ADDRESS:**	**6433 E. LINCOLN DRIVE, PARADISE VALLEY**

UTILITY:	APS
TRANSFORMER SIZE:	1,000
TRANSFORMER %Z:	5.35%
SECONDARY COND SIZE:	(3) x 750 KCMIL AL
LENGTH:	
AFC (PER UTILITY TABLES)	25,773
VOLTAGE:	277/480
PHASE:	3Ø-4W
NOTE:	METER NUMBER V91517

OTHER COMMENTS

THE ARIZONA PUBLIC SERVICE TRANSFORMER IS LEAKING OIL.
IT IS RECOMMENDED THAT THE UTILITY BE CONTACTED TO ASSESS THE EQUIPMENT CONDITION, RECOMMEND REPLACEMENT.

EQUIPMENT NAME:	SES - PD	VOLTAGE:	277/480	PHASE:	3Ø 4w	AMPS:	1200	SCCR:	65K	MAIN:	6 SW RULE
EQUIPMENT TYPE:	SWITCHBOARD									MODEL:	
MANUFACTURER:	GENERAL ELECTRIC									AMPS	
MODEL:	AV-2										
TYPE:											
FED FROM:	UTILITY XFMR										
AFC:	25,773										
FEEDER SIZE:											
CONDUCTOR TYPE:											
RACEWAY TYPE:											
LENGTH:											
MAIN:											

OTHER COMMENTS

THE EQUIPMENT IS IN NEED OF PREVENTATIVE MAINTENANCE
SEE DEFICIENCY REPORT UNDER SEPARATE COVER FOR ADDITIONAL ISSUES

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
EMON-DMON MTR	200	20	RK5	100K			INCORRECT FUSE REDUCER
DPB1-PD	400	400	RK1	100K			
ATS-PW	200	200	RK5	100K			SEE DEFICIENCY REPORT
SWBD-HA (TOWN HALL)	400	400	RK1	100K			SEE DEFICIENCY REPORT
SPARE	800		RK1				

EQUIPMENT NAME:	SWBD HA	VOLTAGE:	277/480	PHASE:	3Ø 4w	AMPS:	400	SCCR:	65K	MAIN:	MCB
EQUIPMENT TYPE:	SWITCHBOARD									MODEL:	HJD63F400
MANUFACTURER:	SIEMENS									AMPS	400
MODEL:	SB										
TYPE:											
FED FROM:	SES - PD										
SETS:	2 SETS										
FEEDER SIZE:	#4/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	650'										
MAIN:	400A										

OTHER COMMENTS

THE EQUIPMENT IS IN NEED OF PREVENTATIVE MAINTENANCE
THE EQUIPMENT PARALLEL FEEDER ONLY HAS A NEUTRAL IN ONE OF THE PARALLEL FEEDERS.

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL "HA-TH"	400	300	LPJ	100K			
"XFMR T-TH"	200	200	LPJ	100K			
DISC "SW-CHILLER"	200	125	LPJ	100K			

EQUIPMENT NAME:	"XFMR T-TH"
EQUIPMENT TYPE:	TRANSFORMER
KVA:	150
PRIMARY VOLT:	277/480
SECONDAY VOLT:	120/240
PHASE:	3Ø-4W
IMPEDANCE:	5.75
MANUFACTURER:	

OTHER COMMENTS

XFMR PRIMARY		XFMR SECONDARY		XFMR SECONDARY	
FED FROM:	SWBD HA				
FEEDER PRIMARY:	#3/0	FEEDER SECONDARY:	500 KCMIL	FEEDER SECONDARY:	
CONDUCTOR TYPE:	CU	CONDUCTOR TYPE:	AL	CONDUCTOR TYPE:	
RACEWAY TYPE:	NON-MAG	RACEWAY TYPE:	NON-MAG	RACEWAY TYPE:	
FEEDER LENGTH:	15'	FEEDER LENGTH:	5'	FEEDER LENGTH:	
		FEEDS:	SWBD LA	FEEDS:	

EQUIPMENT NAME:	PANEL "HA-TH"	VOLTAGE:	277/480	PHASE:	3Ø 4w	AMPS:	400	SCCR:	14K	MAIN:	MCB
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SIEMENS									AMPS:	300
MODEL:	S3					OTHER COMMENTS					
TYPE:						BQD BRANCH BREAKERS					
FED FROM:	SWBD HA										
AFC:											
SETS:	2										
FEEDER SIZE:	#3/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	90'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	DISC "SW-CHILLER"	VOLTAGE:	600	PHASE:	3Ø-3W	AMPS:	200	SCCR:	100K	MAIN:	SWITCH
EQUIPMENT TYPE:	DISCONNECT									MODEL:	
MANUFACTURER:	SQUARE D									AMPS	
MODEL:						OTHER COMMENTS					
TYPE:											
FED FROM:	SWBD HA										
AFC:											
FEEDER SIZE:	#1/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	20'										
MAIN:											

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
CHILLER	200	125	RK-5				

EQUIPMENT NAME:	CHILLER	VOLTAGE:	600	PHASE:	3Ø-3W	AMPS:	200	SCCR:	65K	MAIN:	SWITCH
EQUIPMENT TYPE:	DISCONNECT									MODEL:	
MANUFACTURER:	DAIKIN									AMPS	
MODEL:						OTHER COMMENTS					
TYPE:						INTEGRAL NON-FUSED SWITCH ON CONTROLLER - NAMEPLATE INDICATES SCCR OF 65K					
FED FROM:	DISC "SW-CHILLER"										
AFC:											
FEEDER SIZE:	#1/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	NON-MAG										
LENGTH:	25'										
MAIN:											

FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
CHILLER	200	125	RK-5				

EQUIPMENT NAME:	'SWBD LA'	VOLTAGE:	120/208	PHASE:	3Ø 4w	AMPS:	800	SCCR:	65K	MAIN:	6 SW RULE
EQUIPMENT TYPE:	SWITCHBOARD									MODEL:	
MANUFACTURER:	GE									AMPS	
MODEL:	SB3 REV. A					OTHER COMMENTS					
TYPE:						THE EQUIPMENT IS IN NEED OF PREVENTATIVE MAINTENANCE					
FED FROM:	"XFMR T-TH"										
SETS:	2					THE BLADE ON THE LINE SIDE OF THE 600A FUSE ON 'A' PHASE IS DISCOLORED (Top fuse). IT IS UNKNOWN IF THIS IS					
FEEDER SIZE:	500 KCMIL					DUE TO OVERHEATING WHICH MAY BE DUE TO IMPROPER INSTALLATION OR OVERLOADING OF THE DEVICE.					
CONDUCTOR TYPE:	AL					A THERMAL TEST SHOULD BE DONE TO VERIFY.					
RACEWAY TYPE:	NON-MAG					THIS SWITCHBOARD WAS THE ORIGINAL ELECTRICAL SERVICE FOR THE BUILDING, THE UTILITY METER STILL REMAINS					
LENGTH:	5'					HOWEVER, IT IS FED FROM TRANSFORMER 'TTH'.					
MAIN:						MAIN BONDING JUMPER IS INSTALLED HERE AND AT XFMR T-TH					

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
SPARE	30						NOT USED
'SWBD LB'	600	600	RK1	100K			

EQUIPMENT NAME:	'SWBD LB'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	400	SCCR:	65K	MAIN:	MLO
EQUIPMENT TYPE:	SWITCHBOARD									MODEL:	
MANUFACTURER:	SIEMENS									AMPS:	
MODEL:						OTHER COMMENTS					
TYPE:											
FED FROM:	'SWBD LA'					THIS EQUIPMENT WAS PREVIOUSLY THE ELECTRICAL SERVICE TO THE BUILDING AND HAS BEEN					
AFC:						CONVERTED TO A DISTRIBUTION BOAD. THERE IS NO INDICATION THAT THE EQUIPMENT HAS BEEN					
SETS:	2 SETS					RE-EVALUATED BY A NATIONALLY RECOGNIZED TESTING LABORATORY OR A FIELD EVALUATING BODY.					
FEEDER SIZE:	500 KCMIL										
CONDUCTOR TYPE:	AL					THERE IS NO EQUIPMENT GROUNDING CONDUCTOR BROUGHT TO THE EQUIPMENT. THE ORIGINAL					
RACEWAY TYPE:	MAGNETIC					MAIN BONDING JUMPER REMIANS, BOTH IN VIOLATION OF THE ELECTRICAL CODE.					
LENGTH:	75'					THE EQUIPMENT WILL BE LABELED AS HAVING NO SAFE LEVEL OF PPE, DO NOT SERVICE WHILE ENERGIZED.					
MAIN:						SEE DEFICIENCY REPORT FOR ADDITIONAL INFORMATION					
OCPD:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'A-TH'	200	125	RK-1	65K			
'SWBD LC'	400	400	RK-5	65K			FUSE IS TOO LARGE FOR THE CONDUCTORS
SPARE	400	250	RK-5	65K			
(2) SPARE	200						(2) SPARE SWITCES
SPARE	60			65K			

EQUIPMENT NAME:	PANEL 'A-TH'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	225	SCCR:	10K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	GE									AMPS:	
MODEL:	NLTQ					OTHER COMMENTS					
TYPE:						AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN					
FED FROM:	'SWBD LB'					A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
AFC:						THERE ARE A MIX OF CIRCUIT BREAKERS MANUFACTURED BY OTHER EQUIPMENT MANUFACTURERS INSTALLED IN THE					
SETS:						PANELBOARD IN VIOLATION OF THE LISTING OF BOTH THE CIRCUIT BREAKERS AND THE PANELBOARD					
FEEDER SIZE:	250 KCMIL					ALL CIRCUIT BREAKERS THAT ARE NOT GE BEAKERS, MUST BE REPLACED.					
CONDUCTOR TYPE:	AL										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	30'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'B-TH'							FEED THROUGH LUGS
PANEL 'C-TH'	100	60		10K			

EQUIPMENT NAME:	PANEL 'B-TH'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	225	SCCR:	10K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	GE									AMPS:	
MODEL:	NLTQ					OTHER COMMENTS					
TYPE:						AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN					
FED FROM:	'SWBD LB'					A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.					
AFC:											
SETS:											
FEEDER SIZE:	250 KCMIL										
CONDUCTOR TYPE:	AL										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	5'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	PANEL 'C-TH'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	125	SCCR:	10K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SIEMENS									AMPS:	
MODEL:	S1					OTHER COMMENTS					
TYPE:						TYPE BL CIRCUIT BREAKERS - 10K AIC					
FED FROM:	PANEL 'A-TH'										
AFC:											
SETS:											
FEEDER SIZE:	#6										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	30'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	'SWBD-LC'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	800	SCCR:	65K	MAIN:	MLO
EQUIPMENT TYPE:	SWITCHBOARD									MODEL:	
MANUFACTURER:	GE									AMPS:	
MODEL:	AV-LINE					OTHER COMMENTS					
TYPE:		THE FEEDERS TO THIS SWITCHBOARD ARE TOO SMALL FOR THE OCPD PROVIDED, REDUCE FUSE SIZE AT SWBD LC OR,									
FED FROM:	'SWBD LB'	INCREASE THE SIZE OF THE CONDUCTORS.									
AFC:		THE SIZE OF THE OCPD TO PANEL B1-TH ARE TOO LARGE FOR THE CONDUCTORS. REDUCE TO 175 A FUSES.									
SETS:											
FEEDER SIZE:	350 KCMIL										
CONDUCTOR TYPE:	AL										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	15'										
MAIN:		SEE DEFICIENCY REPORT FOR ADDITIONAL INFORMATION									
OCPD:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES
PANEL 'A1-TH'	200	175	RK-1	65K			
PANEL 'B1-TH'	200	200	RK-1	65K			FUSE IS TOO LARGE FOR THE CONDUCTORS
WATER HEATER	60	50	RK-1	65K			
SPARE	60			65K			

EQUIPMENT NAME:	PANEL 'A1-TH'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	225	SCCR:	10K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SQ D									AMPS:	
MODEL:	NQ					OTHER COMMENTS					
TYPE:	PANELBOARD					QOB BRANCH CIRCUIT BREAKERS					
FED FROM:	'SWBD-LC'	AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN									
AFC:		A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.									
SETS:											
FEEDER SIZE:	#3/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	4'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

EQUIPMENT NAME:	PANEL 'B1-TH'	VOLTAGE:	120/208	PHASE:	3Ø-4W	AMPS:	225	SCCR:	65K	MAIN:	MLO
EQUIPMENT TYPE:	PANELBOARD									MODEL:	
MANUFACTURER:	SQ D									AMPS:	
MODEL:	NQ					OTHER COMMENTS					
TYPE:	PANELBOARD					QOB BRANCH CIRCUIT BREAKERS					
FED FROM:	'SWBD-LC'	AFC WILL EXCEED THE AIC RATING OF THE PANEL. NO SERIES RATINGS ARE SHOWN									
AFC:		A LABEL WILL BE PLACED INDICATING THERE IS NO SAFE LEVEL OF PPE.									
SETS:		THE UPSTREAM OCPD IS TOO LARGE FOR THE CONDUCTORS FEEDING THIS PANEL.									
FEEDER SIZE:	#2/0										
CONDUCTOR TYPE:	CU										
RACEWAY TYPE:	MAGNETIC										
LENGTH:	6'										
MAIN:											

SUB-FEEDS	FRAME	SIZE	FUSE TYPE	AIC	CB MODEL	CB MAN	ADDITIONAL NOTES

1.3. Findings

1.3.1. Short Circuit Analysis

The short circuit study provides the available fault current at each busbar (point or node) of the distribution system based upon the impedance of the system to that point. Based upon these results, we can compare the equipment's short circuit current withstanding ratings (SCCR) and the ampere interrupting current ratings (AIC) with the available fault current**.**

Based on the short circuit study, none of the panels calculated faults exceed their KAIC ratings.

At the locations noted, the available fault current exceeds the AIC and/or SCCR ratings of the equipment. As documentation from the manufacturer was not available, it is not possible to verify if the equipment is permitted to be used as part of a series rated system. While it appears that the applications of the labels are correct, it should be independently verified.

1.3.2. Protective Device Coordination

1.3.2.1. The TCC reports show adequate over current protection coordination.

1.3.2.2. The protective device settings in this report (Refer to TCC reports), do show that there is reasonable system protection for this installation. Refer to sections 2.6 and 3.3 for more details.

1.3.3. Arc Flash Evaluation

1.3.3.1. **The utility's metering cabinet and the main switchboard are often found to have incident energy levels that exceed 40 Cal/cm^2 (no safe level of PPE).** In locations where no safe level of PPE is recommended, energized work should be prohibited or extension tools (e.g., hotstick) should be used to distance personnel from the potential arc point. The incident energy at the indicated working distance dictates the required level of PPE. Wherever possible, protective device settings are suggested to try to reduce the incident energy levels. Please refer to Sections 2.5 and 3.2 for more detailed information.

1.3.3.2. The incident energy calculations utilize the data obtained from the serving utility. The incident energy calculations also assume the recommended settings shown both in the SKM Arc Flash One-Line and the follow up report for each SES distribution system. These settings must be implemented for the data provided on the labels to be correct. **Improper or inadequate maintenance can result in increased opening time of overcurrent protective devices, thus increasing the incident energy and negating the results of this study.**

1.3.3. Load Flow Analysis

The table in Appendix 3 provides an overview of the all the distribution panels predicted voltage drop. The voltage drop to all equipment appears to be satisfactory. It should be noted that excessive voltage drop can cause electronic equipment, such as computer systems, to unexpectedly shut down and effects the electrical system's performance. None of the locations studied were found to have current capacity less than available demand current flow.

Refer to Section 3.4 for more detail.

1.4. Study Notes

This study is based upon the most accurate information available at the time the study was conducted.

In reviewing the report, the serving utility typically does not provide the actual values for their contribution to the available fault current nor the impedance of their transformers. Values are published in their respective Electrical Service Requirement Manuals (ESRM) however, they will not guarantee the accuracy of this information. Additionally, there is no external labeling of the equipment that would provide this information. As a result, the values provided in this study may differ from actual values.

The serving utilities also will not indicate if overcurrent protective equipment, devices, or relays have been provided on the line side of their distribution transformer(s). As a result, it is prudent to perform these studies assuming that no protection has been provided.

There is equipment that was not surveyed due to being in locked rooms or otherwise inaccessible. Without being able to determine panel condition, we generated a Red Dangerous label for such panels.

Precise measurements of the distribution system feeders are all but impossible. Every effort has been made to estimate conductor length based upon equipment location and observed raceway or cable routing. Additionally, calculations provided in this study assume magnetic raceways above grade and non-magnetic raceways below grade except where positive identification is possible.

The results of this study are valid for a maximum of 5 calendar years after the date of publication and are invalidated whenever any of the following conditions or modifications are made to the distribution system or where the electrical equipment is not properly maintained.

The following conditions will negate the findings of this study and render the results invalid.

- Changes made to the utility distribution system or equipment
- The addition of equipment or loads
- Removal or replacement of overcurrent devices with differing specifications
- Changing overcurrent protective device settings
- Any modification to the facility distribution system
- Improper maintenance of equipment
- Removal of equipment
- Equipment that is not properly exercised as required by the manufacturer(s).

Whenever new equipment or loads have been provided after this study has been published, it is strongly recommended that a new study be provided to assess how the changes have impacted the system.

2. ANALYSIS

2.1. Basis of Analysis

Electrical system inputs, for the analysis performed, are composed of both non-intrusive on-site data gathering methods and integrating predictable values. This information is presented in the Excel spreadsheets included in this report. Source data was obtained from the Salt River Project Electrical Service Requirements Manual. SKM Power Tools version "9.0.0.7" was used for all analysis performed. Using this software, a computer model of the electrical system was created based on data obtained for the analysis. The single line diagram of the distribution system is shown on Fig.01 which is a graphical representation of the electrical system. The components on the Single Line Diagram (SLD) included all required device information for the analysis. This model was then used to study the electrical system and generate the calculations found in Appendices 1 through 5 of this report.

2.2. Campus as built Data Gathering Assumptions

When reviewing the system single line diagram, the provided information is based upon visual observations made at the site. In some circumstances it was not possible to access or open equipment. Access to this equipment may have been limited to any of the following conditions.

- Personnel not permitted to de-energize equipment
- Personnel could not gain access to equipment due to locked doors, gates or covers
- Equipment could not be opened or accessed without de-energizing the equipment or systems
- Staff felt the opening of the equipment may expose persons or property to an unreasonable risk due to the condition of the equipment.

As demand loads are necessary to complete the calculations, this study is based upon information provided by the facilities owner indicating the highest demand loads for the last calendar year. This information is supplied by the serving utility to the facility owner/operator. Where this information has not been provided, all calculations performed have been based upon a value 80% of the rating of the electrical service(s) for the facility with an anticipated power factor (PF) of 80%.

As demand loads are necessary to complete the calculations, it was necessary to make assumptions for these loads to complete the study. As load studies have not been completed for each panel or feeder, we based the study by using the following assumptions for all estimated loads (actual values are used when provided):

- Motors protected by circuit breakers: 40% of the circuit breaker rating
- Motors protected by fuses: 50% of the fuse rating
- All other loads: 50% of the rating of the upstream OCPD.

These assumptions are conservative in nature and should provide an acceptable range of results. It should be noted that in some instances, these assumptions indicate that equipment may not be suitable for the loads applied. The values provided do not necessarily indicate an overloaded or unsafe condition however, additional investigation may be necessary to assure the safe and continued operation of the equipment or systems.

The demand loads for switchboards and panelboards will be as follows:

Panelboard load estimates:

- **Main Distribution Board SWBD HA:** 339 amps (reference Load Flow One Line).
- **CHILLER:** 120 amps
- **150 KVA Xfmr:** 117 amps

2.3. Equipment Evaluation

Each device on the one-line diagram in Fig.01 is identified by an identifier. Common identifiers used in this report include:

AFC– Available Fault Current
AF – Arc Flash
IC – Interrupting Current
Gen – Generator
SCC – Short Circuit Current
CB – Circuit Breaker
SW – Switch
IE – Incident Energy
PPE – Personal Protective Equipment
TCC – Time Current Curve
AF – Arc Flash
SWB – Switchboard
LV – Low Voltage
CBL – Cable
LF – Load Flow
SC – Short Circuit

The incident energy summary in each report contains the available fault current calculations at each indicated device in the electrical system. Incident energy may increase if protective device settings in the electrical equipment is changed or adjusted or, if they are replaced. Increases in incident energy may also result from improper or inadequate maintenance or new construction.

Electrical equipment and protection devices must be in proper working condition for the equipment to operate properly and open as expected. A maintenance inspection and testing program should ensure that all equipment and devices function as designed by the manufacturer. NFPA 70E 2018 provides standards for electrical safety, including the following requirements for electrical equipment and protective devices:

> **General Maintenance Requirements** - Electrical equipment shall be maintained in accordance with manufacturers' instructions or industry consensus standards to reduce the risk of failure and the subsequent exposure of employees to electrical hazards.
>
> **Overcurrent Protective Devices** - Overcurrent protective devices shall be maintained in accordance with the manufacturers' instructions or industry consensus standards. Maintenance, tests, and inspections shall be documented.
>
> **210.5 Protective Devices** - Protective devices shall be maintained to adequately withstand or interrupt available fault current.

As of June, 2025, the amended 2014 National Electrical Code (NEC) is in effect in the town of Paradise Valley. Article 110 of the NEC contains requirements for all electrical installations, including maintenance and mechanical execution of work:

> **110.12(B): Mechanical Execution of work** - There shall be no damaged parts that may adversely affect safe operation or mechanical strength of the equipment such as parts that are broken, bent, cut; or deteriorated by corrosion, chemical action, or overheating.
>
> **110.26: Spaces about Electrical Equipment** - Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.

Additionally, when series ratings are used the National Electrical Code (NEC) Article 110 requires series combination rated overcurrent devices are visibly marked by permanently affixed means as stated:

> **110.22(B): Engineered Series Combination Systems** - Equipment enclosures for circuit breakers or fuses applied in compliance with series combination ratings selected under engineering supervision in accordance with 240.86(A) shall be legibly marked in the field as directed by the engineer to indicate the equipment has been applied with a series combination system. The marking shall meet the requirements in 110.21(B) and shall be readily visible and state the following: CAUTION – ENGINEERED SERIES COMBINATION SYSTEM RATED XXXXX AMPERES. IDENTIFIED REPLACEMENT COMPONENTS REQUIRED.

Equipment that is malfunctioning, has been inadequately or improperly installed, maintained, or modified, may result in injury or death, and will invalidate the results of this study.

2.4 Short Circuit Analysis

An analysis of the system was performed to determine the maximum fault levels at the equipment covered within the scope of work. SKM Power Tools version 9.0.1.3 (Unbalanced/Single Phase Subroutine) was used for the analysis using the comprehensive ANSI/IEEE C37.13 standard for calculation of these fault currents during short-circuit. The following short circuit currents have been calculated for system components:

- Initial Symmetrical line to line short circuit current (SCC1)
- Initial Symmetrical single line to ground short circuit current (SCC2)

The SCC1 is the maximum available short circuit current at any point in the distribution system, this is generally at the point the utility company connects to the system's service entrance system. This connection is called the point of service or the service point. The available fault current, at each point in the distribution system, is based upon the contributed fault current provided by the utility (this value is provided by the serving utility or from the utilities tables). Then, through analyzing the fault current calculations, the electrical system's components' fault withstand capability will be assessed by comparing them with SCC1.

The short-circuit current should not exceed the equipment rating with required factors for the protective device.

Based on the short circuit study, none of the panels calculated faults exceed their KAIC ratings.

The Short Circuit Analysis in each SES SKM report summarizes the fault duties at each device. The AF incident energy summary in the SES report shows IE at the safe distance and PPE requirements for each location into the system.

2.5 Arc Flash Evaluation

Arc Flash Evaluations are used to assess arc flash hazards and to assess the work Site risk to personnel. The Occupational Safety and Health Administration (OSHA), and the National Fire Protection Association (NFPA) standard 70E provide requirements for arc flash and other work Site hazards. OSHA requires employers provide a workplace free from recognized hazards that may cause injury or death to their employees. NFPA 70E 2018 provides the Standard for Electrical Safety in the Workplace. NFPA 70E 130.5 states:

"An arc flash risk assessment shall be performed and shall determine if an arc flash hazard exists. If an arc flash hazard exists, the risk assessment shall determine appropriate safety-related work practices, the arc flash boundary, and the PPE to be used within the arc flash boundary."

Arc Flash Evaluations are used to determine the required level of personal protective equipment (PPE), arc flash boundaries, and restrictions on the work of energized equipment. This information must include on the labels as required by NFPA and OSHA standards.

NFPA 70E 130.5(H) requires electrical equipment to be field-marked with a label containing the following information:

(1) Nominal system voltage
(2) Arc flash boundary
(3) At least one of the following:

a. Available incident energy and the corresponding working distance, OR the arc flash PPE category in Table 130.7(C)(15)(a) or Table 130.7(C)(15)(b) for the equipment, but not both
b. Minimum arc rating of clothing
c. Site-specific level of PPE

Furthermore, the National Electrical Code (NEC) contains additional requirements for the installation of Arc-Flash warning labels and arc energy reduction:

110.16 Arc-Flash Hazard Warning. Electrical equipment, such as switchboards, switchgear, panelboards, industrial control panels, meter socket enclosures, and motor control centers, that in other than dwelling units, and is likely to require examination, adjustment, servicing, or maintenance while energized, shall be field or factory marked to warn qualified persons of potential electric arc flash hazards. The marking shall meet the requirements in 110.21(B) and shall be located to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

240.67 Arc Energy Reduction. Where fuses rated 1200 A or higher are installed, 240.67(A) and (B) shall apply. This requirement shall become effective January 1, 2020.

(A) Documentation. Documentation shall be available to those authorized to design, install, operate, or inspect the installation as to the location of the fuses.
(B) Method to Reduce Clearing Time. A fuse shall have a clearing time of 0.07 seconds or less at the available arcing current, or one of the following shall be provided:

(1) Differential relaying
(2) Energy-reducing maintenance switching with local status
(3) Energy-reducing active arc flash mitigation system
(4) An approved equivalent means

240.87 Arc Energy Reduction. Where the highest continuous current trip setting for which the actual overcurrent device installed in a circuit breaker is rated or can be adjusted is 1200 A or higher, 240.87(A) and (B) shall apply. Not applicable for this Campus as all Overcurrent Circuit protection is 1000 amp or less.

NFPA 70E 130.5(G) also contains information on the selection of PPE where required based on the incident energy available at the equipment. Different types of PPE are suggested dependent on the exposure level of the energy as rated in Cal/cm^2. The energy exposure levels are shown in the Incident Energy Summary in each report. The levels are defined using the following energy Cal/cm^2:

Level A: 1.2 Cal/cm^2
Level B: 4 Cal/cm^2
Level C: 8 Cal/cm^2
Level D: 25 Cal/cm^2
Level E: 40 Cal/cm^2
Level D: 100 Cal/cm^2
Level E: 120 Cal/cm^2

The upper limit for the highest rated PPE is 40 Cal/cm^2. Energy exposure beyond this upper limit is relatively unsafe with any PPE, and energized work at equipment exceeding this rating should be avoided. **Arc-Flash labels with incident energy exceeding this threshold show the required PPE as "No Safe PPE Available – Energized Work is Prohibited".**

NFPA 70E 130.7(C) describes PPE requirements in effect at specified boundaries of working distance. NFPA 70E 130.4 is effective where working within the "restricted Approach Boundary", and NFPA 70E 130.5 were working within the "Arc Flash Boundary". Previous versions of NFPA 70E 2018 contain varied names and descriptions for these boundaries. This analysis uses NFPA 70E 2018, the most recent version as of the preparation of the analysis, as the basis for descriptions of approach boundaries.

The incident energy calculations utilize information provided by the serving utility. The incident energy calculations also assume the correct settings of overcurrent protective devices for the data provided on the labels to be correct. Improper or inadequate maintenance can result in increased opening time of the overcurrent protective device(s), thus increasing the incident energy.

2.5.1 Arc Flash Labels

Equipment labels containing the incident energy level, working boundaries and PPE requirements for exposed energized work are in Appendix 6. The labels are color coded per ANSI Z535.4 and are to be field-marked per NFPA 70E 130.5(D) and NEC 110.16.

The settings used in Arc Energy Reduction or other temporary means of incident energy reduction should be reset as soon as the work is complete to return the system to the normal engineered settings. Failure to do so will result in non-selective operation of the system and may result in unnecessary loss of power to critical systems.

2.6 Coordination Analysis

A protective device Coordination Study was performed to evaluate the capability of the protective devices to provide protection under fault conditions. The Coordination Study was performed by plotting the protective device characteristics as Time-Current Characteristic (TCC) curve sets. SKM Power Tools version 9.0.1.3 was used for TCC plots and analysis in this report. Protective devices including fuses and breakers were compared in a graphed set to coordinate the operating time and current of devices adjacent to each other in the electrical system.

In many systems, compromises need to be made between coordination, protection, and service needs of the Site due to the amperage and devices in the system.

ANSI/IEEE Standard 242-2001 states, "Whether minimizing the risk of equipment damage or preserving service continuity is the more important objective depends on the operating philosophy of the particular plant or business."

Subsequent changes in devices or operation of the system may require re-evaluation of protective devices.

Time-Current Curve (TCC) sets for the systems analyzed are in the Appendix 4 report. The voltage and current are considered in the one-line diagram that show the relationship between the protective devices plotted on each curve set. The curves for each device are terminated at the maximum fault magnitude available at the device's location. The curve sets consist of the TCC of devices plotted on a log-log graph showing current and time axis. The findings based on the TCC plots do not address lack of selectivity due to instantaneous units being in series.

2.7 Load Flow Evaluation

An analysis of the system was performed to determine the maximum voltage drop, voltage phase, power factor, branches voltage, current, power losses, active and reactive power.

2.8 Energized Electrical Work Permit

An example of an Energized Electrical Work Permit is included in the Appendix. It is provided for reference and may be used as needed to meet the requirements of NFPA 70E 2018 for the facility.

3. STUDYS' RESULTS INTERPRETATION

3.1 Short Circuit Interpretation

Starting with Init.Sym.RMS provided for the service as the available symmetrical short circuit current at service equipment by the serving utility:

- SWBD HA is a 400 amp, 480/277V, 3-phase service fed from a 400-amp fused circuit from the Police station's SES-PD switchboard. The calculated Short Circuit current determined by the Police Station's SKM report is calculated to be 26,021 Amps.

The fault current from the service entrance to the downstream equipment is reduced proportionately based on the impedance of each successive buss or line. Short Circuit Current ratings, or Ampere Interrupting Capacity ratings, are based upon the available energy at each specific point in the electrical system according to the short circuit study.

The model utilizes information obtained from field observations and compared the available fault current with the interrupting and/or short circuit ratings (IC) of the protective devices in the electrical system.

Based on short circuit study, none of the panels exceed their KAIC values. However, there are issues with the electrical system which are noted in the Excel report. *Reference Excel field report.*

Eq. Name	SWBD HA	Panel HA	SWBD LA	SWBD LB	SWBD LC	
SC RATING(KASCw)	65KA ☑	14KA ☑	65KA ☑	65KA ☑	65KA ☑	
$I_{k"-3Ph.-Init.Sym.}$	9.5KA ↗	8.4KA ↗	5.6KA ↗	5.2KA ↗	5.0KA ↗	

Eq. Name	Panel A-TH	Panel B-TH	Panel C-TH	Panel A1-TH	Panel B1-TH	
SC RATING(KASCw)	10KA ☑	10KA ☑	10KA ☑	10KA ☑	10KA ☑	
$I_{k"-3Ph.-Init.Sym.}$	4.8KA ↗	4.7KA ↗	3.4KA ↗	5.0KA ↗	4.9KA ↗	

Table (1)

NOTE 1:

☑ : Passed. Equipment is adequate to use under circumstance.

☒ : Failed. Equipment is not adequate to use under circumstance. Client must upgrade the panel or perhaps the circuit breakers with higher ratings as proposed in this report.

3.2 Arc Flash Study Interpretation

The analysis of faults and protective devices were used to evaluate incident energy in the electrical system. These rapid clearing times help to reduce the time that the arc is ON. The quicker an overcurrent device opens or clears the fault, a lower value of Incident Energy is expected and in turn, lowers the AF categories. The AF study also evaluated the incident energy for the facility where the system(s) supply was provided.

The incident energy (IE) at the service point, is elevated, as we did not consider any MV circuit breaker on transformer primary side as the serving utility will not provide this information. It should be noted that where a MV CB / or fuse on transformer primary is provided, the IE provided by the utility system will be significantly decreased.

All sources of energy should follow lock-out tag-out procedures and the switchgear should be in a constant de-energized state when servicing, modifying, or maintaining the equipment. The following general site recommendations are:

The worst-case energy levels should be utilized in developing energized electrical safety procedures and other PPE required for the site.

Voltage should always be verified to be equal to or less than the indicated voltage on the provided labels and/or the nameplate provided with the equipment, or the findings of this report will be invalidated.

Labels are to be printed with the following color code as per customer request.

INCIDENT ENERGY (cal/cm^2)	CLOTHING DESCRIPTION	COLOR CODE
<1.2	Non-melting or untreated natural fiber long-sleeve shirt, long pants or coveralls, and other PPE per NFPA 70E-2018 Article 130.7(C).	
1.2-12	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>12-40	AR total body and face protection (rated equal to or greater IE level), and other PPE per NFPA-70E-2018 Table 130.5(G) and Article 130.7(C).	
>40*	INCIDENT ENERGIES AT THIS LOCATION EXCEEDS THE MAXIMUM SAFE WORKING LEVEL. ENERGIZED WORK IS NOT RECOMMENDED	

3.30 Coordination Study Interpretation

The short circuit analysis of faults was modeled with protective devices in the electrical system. Inserting all protective elements in one diagram could cause confusion, so each radial branch's TCC have been shown in individual TCC diagrams.

Typical TCC curves are provided in Appendix 4.

TCC diagrams show Circuit breaker to cable coordination and do not call out undersized bus systems. It should be noted that changing overcurrent device sizes or settings may introduce additional hazards or issues; any changes should be done in consultation with a registered electrical engineer.

3.40 Load Flow Study Interpretation

The load flow study calculated all system nominal currents, voltages, and power consumption throughout the distribution system assuming normal operation of the facility with nominal demands.

Assumptions for the facility demand loads had to be utilized to evaluate the system. The indicated loads are not actual and should be independently verified. It is recommended, as part of a continuing maintenance program, to periodically conduct load studies whenever systems are modified or equipment is added. The study should determine the actual loads used during the system operation and for a period of not less than 30 days. Based upon the study's findings, it may become necessary to remove or relocate loads or, it may find that load balancing may become necessary. It should be noted that actual loads are often significantly less than the calculated loads mandated by the NEC as these calculations tend to be very conservative.

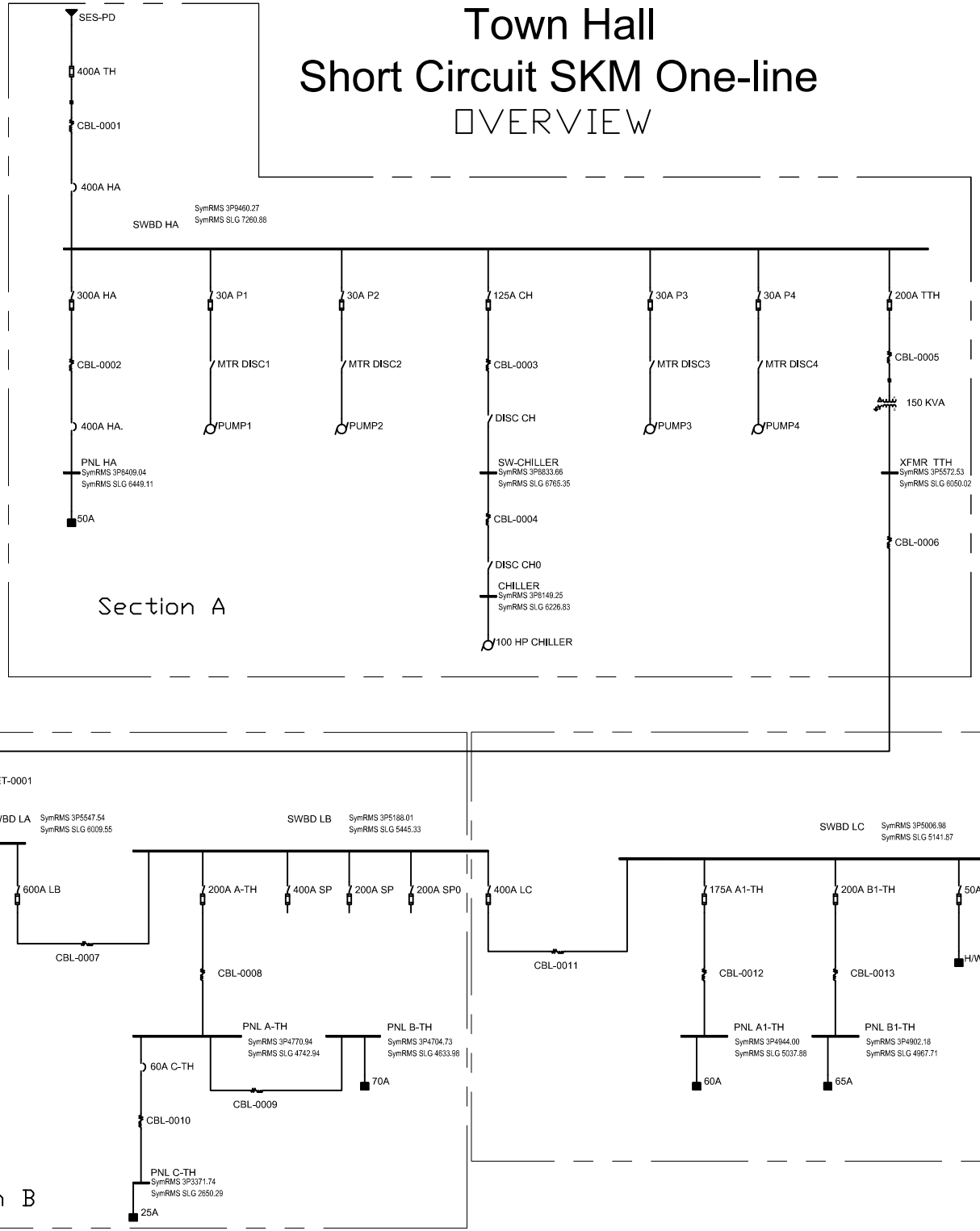
OCPD: Over Current Protection Device (Fuse/Breaker) are acceptable based upon estimated loads.

It appears that the voltage drop for the campus distribution system's feeders are acceptable. It should be noted that where voltage drop is excessive (greater than 5%) it may create operational issues (impacting the proper operation of data processing equipment as an example) and increase operational costs, it can also reduce the life expectancy of equipment such as motors and HVAC equipment and impact the proper operation of overcurrent devices and will increase clearing time which will also increase the incident energy of an arc flash. Finally, excessive voltage drop can also damage conductor insulation due to the increased heating of the conductor. Where these calculations indicate excessive voltage drop is present, the systems components should be evaluated by a registered electrical engineer.

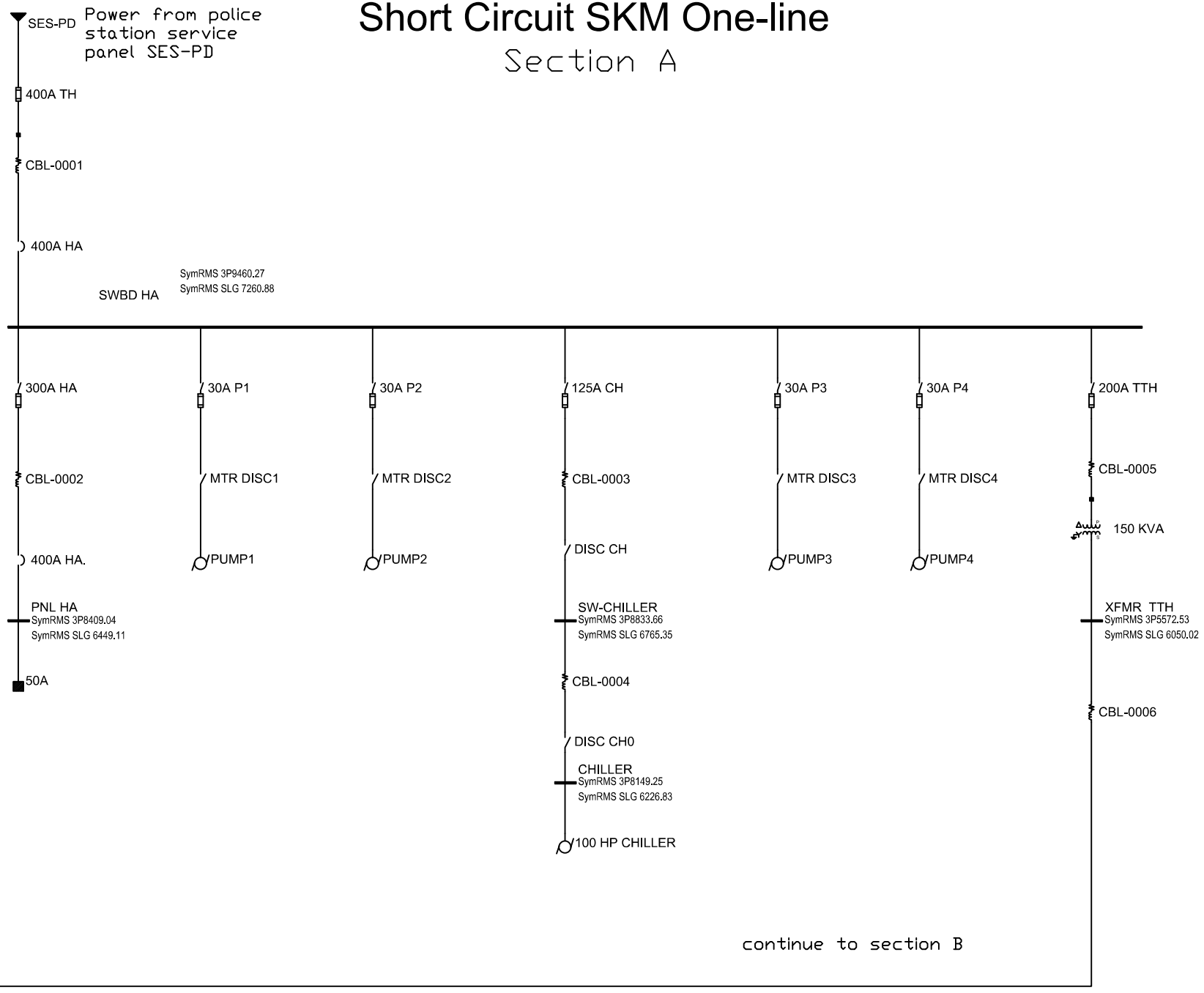
APPENDIX 1

SHORT CIRCUIT SKM REPORT

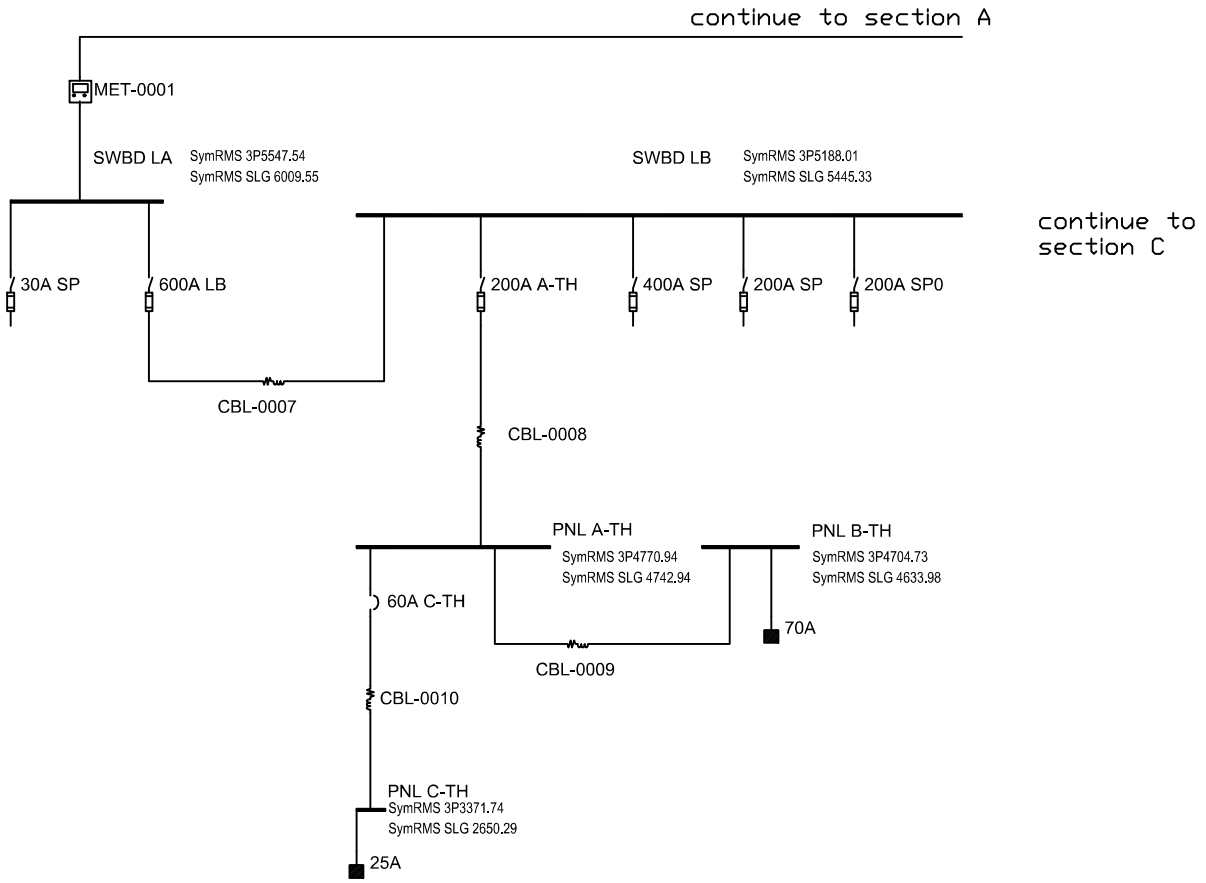
Town Hall
Short Circuit SKM One-line
OVERVIEW



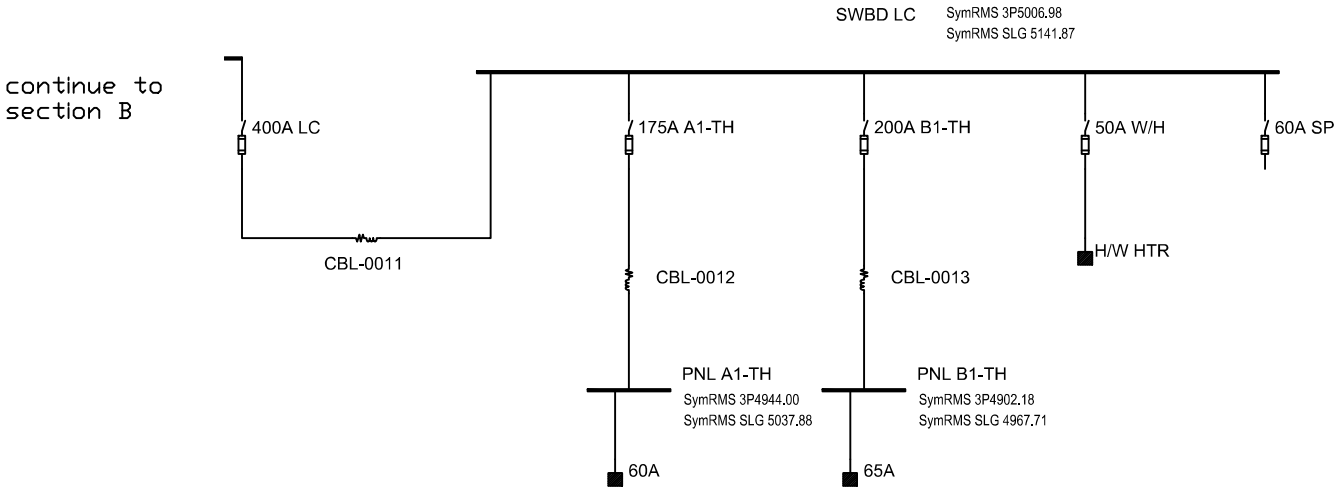
Town Hall
Short Circuit SKM One-line
Section A



Town Hall
Short Circuit SKM One-line
Section B



Town Hall
Short Circuit SKM One-line
Section C



DAPPER Fault Contribution Complete Report

Comprehensive Short Circuit Study Settings

Three Phase Fault	Yes	**Faulted Bus**	All Buses
Single Line to Ground	Yes	**Bus Voltages**	First Bus From Fault
Line to Line Fault	No	**Branch Currents**	First Branch From Fault
Line to Line to Ground	No	**Phase or Sequence**	Report phase quantities
Motor Contribution	Yes	**Fault Current Calculation**	Asymmetrical RMS (with DC offset and Decay)
Transformer Tap	Yes	**Asym Fault Current at Time**	0.50 **Cycles**
Xformer Phase Shift	Yes		

			----------Initial Symmetrical Amps----------				----------Asymmetrical Amps----------				---Init Sym Neutral Amps--	
Bus Name	**---------Contributions---------**		**3 Phase**	**SLG**	**LLG**	**LL**	**3 Phase**	**SLG**	**LLG**	**LL**	**SLG**	**LLG**
BUS-0001			**26,021**	**25,339**	**0**	**0**	**35,676**	**34,844**	**0**	**0**		
CBL-0001	CABLE	In	987	641	0	0	1,353	881	0	0		
SES-PD	UTILITY	In	25,045	24,706	0	0	34,338	33,973	0	0	25,339	
SWBD HA			**9,460**	**7,261**	**0**	**0**	**9,515**	**7,310**	**0**	**0**		
CBL-0001	CABLE	In	8,538	6,787	0	0	8,588	6,832	0	0	7,261	
CBL-0002	CABLE	In	0	0	0	0	0	0	0	0		
CBL-0003	CABLE	In	739	378	0	0	743	380	0	0		

Bus Name	---------Contributions---------		----------Initial Symmetrical Amps---------- 3 Phase	SLG	LLG	LL	----------Asymmetrical Amps---------- 3 Phase	SLG	LLG	LL	---Init Sym Neutral Amps-- SLG	LLG
CBL-0005	CABLE	In	0	0	0	0	0	0	0	0		
PUMP1	IND-MTR	In	78	40	0	0	79	40	0	0		
PUMP2	IND-MTR	In	78	40	0	0	79	40	0	0		
PUMP3	IND-MTR	In	78	40	0	0	79	40	0	0		
PUMP4	IND-MTR	In	78	40	0	0	79	40	0	0		
PNL HA			**8,409**	**6,449**	**0**	**0**	**8,439**	**6,480**	**0**	**0**		
CBL-0002	CABLE	In	8,409	6,449	0	0	8,439	6,480	0	0	6,449	
SW-CHILLER			**8,834**	**6,765**	**0**	**0**	**8,870**	**6,798**	**0**	**0**		
CBL-0003	CABLE	In	8,195	6,438	0	0	8,228	6,469	0	0	6,765	
CBL-0004	CABLE	In	741	379	0	0	744	380	0	0		
CHILLER			**8,149**	**6,227**	**0**	**0**	**8,172**	**6,248**	**0**	**0**		
CBL-0004	CABLE	In	7,525	5,907	0	0	7,546	5,927	0	0	6,227	
100 HP CHILLER	IND-MTR	In	745	379	0	0	747	381	0	0		
BUS-0006			**9,084**	**6,969**	**0**	**0**	**9,128**	**7,011**	**0**	**0**		
CBL-0005	CABLE	In	9,084	6,969	0	0	9,128	7,011	0	0	6,969	
150 KVA	2W-XFMR	In	0	0	0	0	0	0	0	0		

069

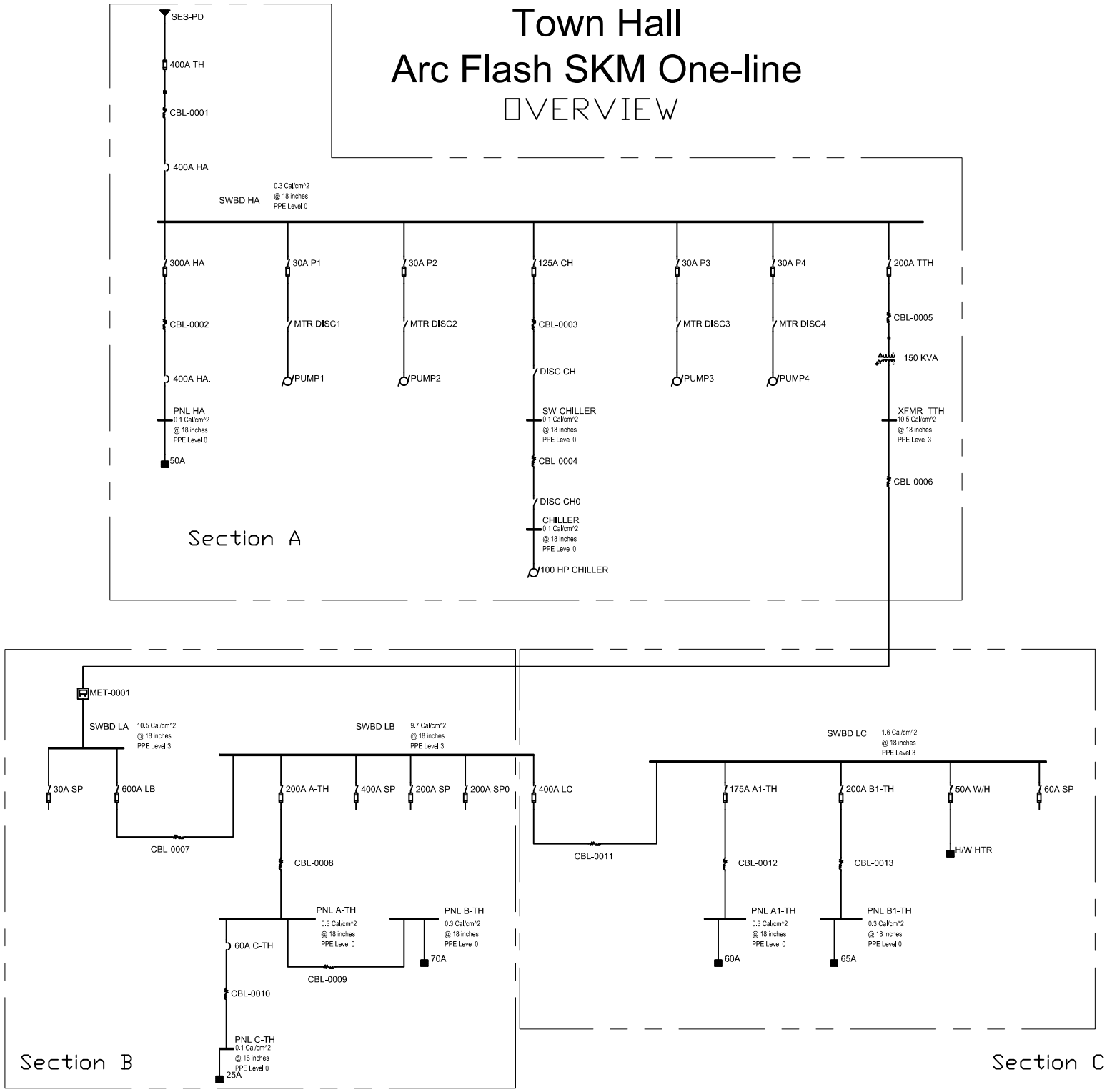
Bus Name	---------Contributions---------		----------Initial Symmetrical Amps---------- 3 Phase	SLG	LLG	LL	----------Asymmetrical Amps---------- 3 Phase	SLG	LLG	LL	---Init Sym Neutral Amps-- SLG	LLG
XFMR TTH			**5,573**	**6,050**	**0**	**0**	**6,593**	**7,478**	**0**	**0**		
CBL-0006	CABLE	In	0	0	0	0	0	0	0	0		
150 KVA	2W-XFMR	In	5,573	6,050	0	0	6,593	7,478	0	0	6,050	
SWBD LA			**5,548**	**6,010**	**0**	**0**	**6,537**	**7,382**	**0**	**0**		
CBL-0006	CABLE	In	5,548	6,010	0	0	6,537	7,382	0	0	6,010	
CBL-0007	CABLE	In	0	0	0	0	0	0	0	0		
SWBD LB			**5,188**	**5,445**	**0**	**0**	**5,821**	**6,230**	**0**	**0**		
CBL-0007	CABLE	In	5,188	5,445	0	0	5,821	6,230	0	0	5,445	
CBL-0008	CABLE	In	0	0	0	0	0	0	0	0		
CBL-0011	CABLE	In	0	0	0	0	0	0	0	0		
PNL A-TH			**4,771**	**4,743**	**0**	**0**	**5,090**	**4,974**	**0**	**0**		
CBL-0008	CABLE	In	4,771	4,743	0	0	5,090	4,974	0	0	4,743	
CBL-0009	CABLE	In	0	0	0	0	0	0	0	0		
CBL-0010	CABLE	In	0	0	0	0	0	0	0	0		
PNL B-TH			**4,705**	**4,634**	**0**	**0**	**4,991**	**4,825**	**0**	**0**		
CBL-0009	CABLE	In	4,705	4,634	0	0	4,991	4,825	0	0	4,634	

Bus Name	---------Contributions---------		----------Initial Symmetrical Amps---------- 3 Phase	SLG	LLG	LL	----------Asymmetrical Amps---------- 3 Phase	SLG	LLG	LL	---Init Sym Neutral Amps-- SLG	LLG
PNL C-TH			**3,372**	**2,650**	**0**	**0**	**3,378**	**2,651**	**0**	**0**		
CBL-0010	CABLE	In	3,372	2,650	0	0	3,378	2,651	0	0	2,650	
SWBD LC			**5,007**	**5,142**	**0**	**0**	**5,503**	**5,647**	**0**	**0**		
CBL-0011	CABLE	In	5,007	5,142	0	0	5,503	5,647	0	0	5,142	
CBL-0012	CABLE	In	0	0	0	0	0	0	0	0		
CBL-0013	CABLE	In	0	0	0	0	0	0	0	0		
PNL A1-TH			**4,944**	**5,038**	**0**	**0**	**5,403**	**5,477**	**0**	**0**		
CBL-0012	CABLE	In	4,944	5,038	0	0	5,403	5,477	0	0	5,038	
PNL B1-TH			**4,902**	**4,968**	**0**	**0**	**5,328**	**5,353**	**0**	**0**		
CBL-0013	CABLE	In	4,902	4,968	0	0	5,328	5,353	0	0	4,968	

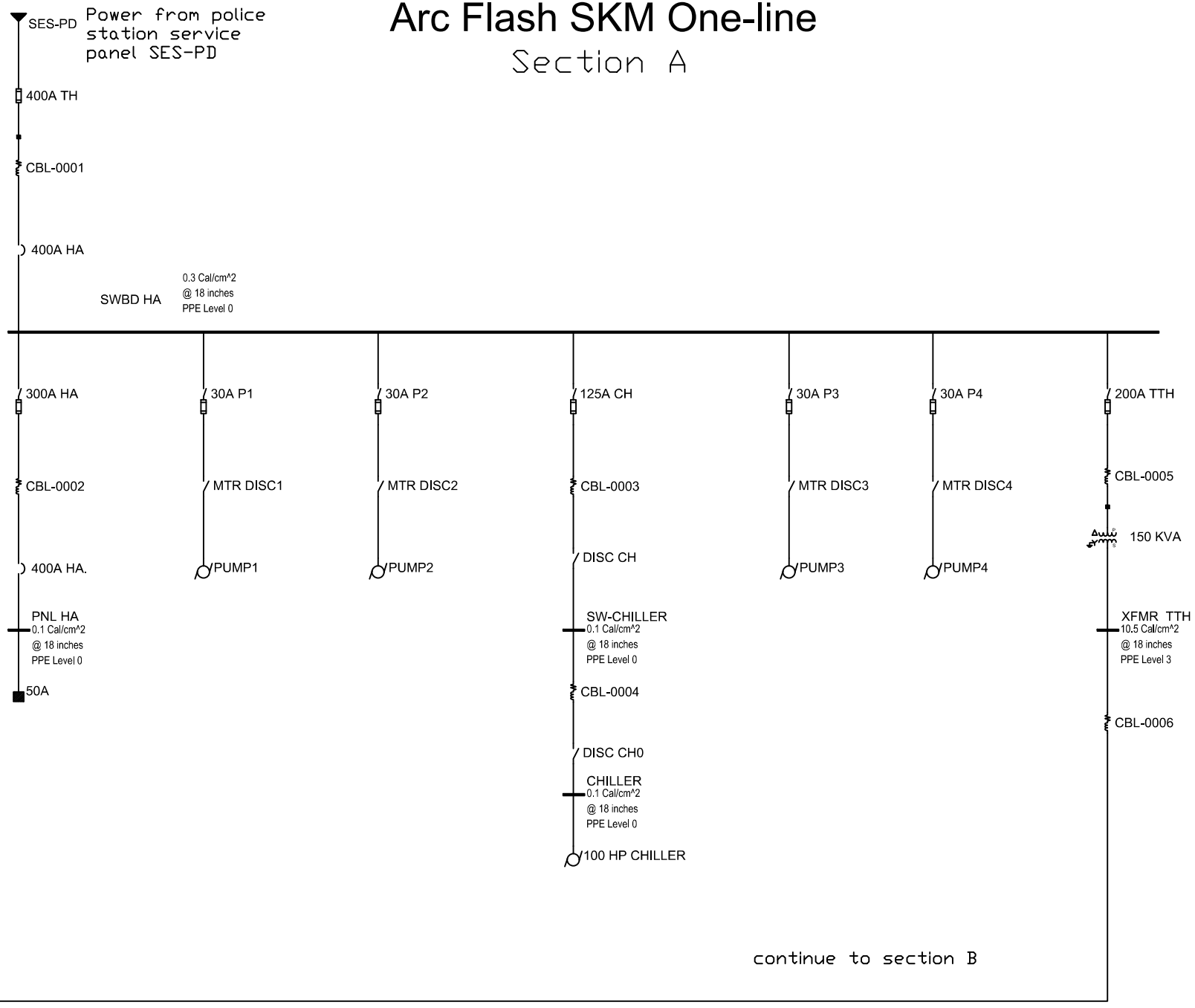
APPENDIX 2

ARC FLASH SKM REPORT

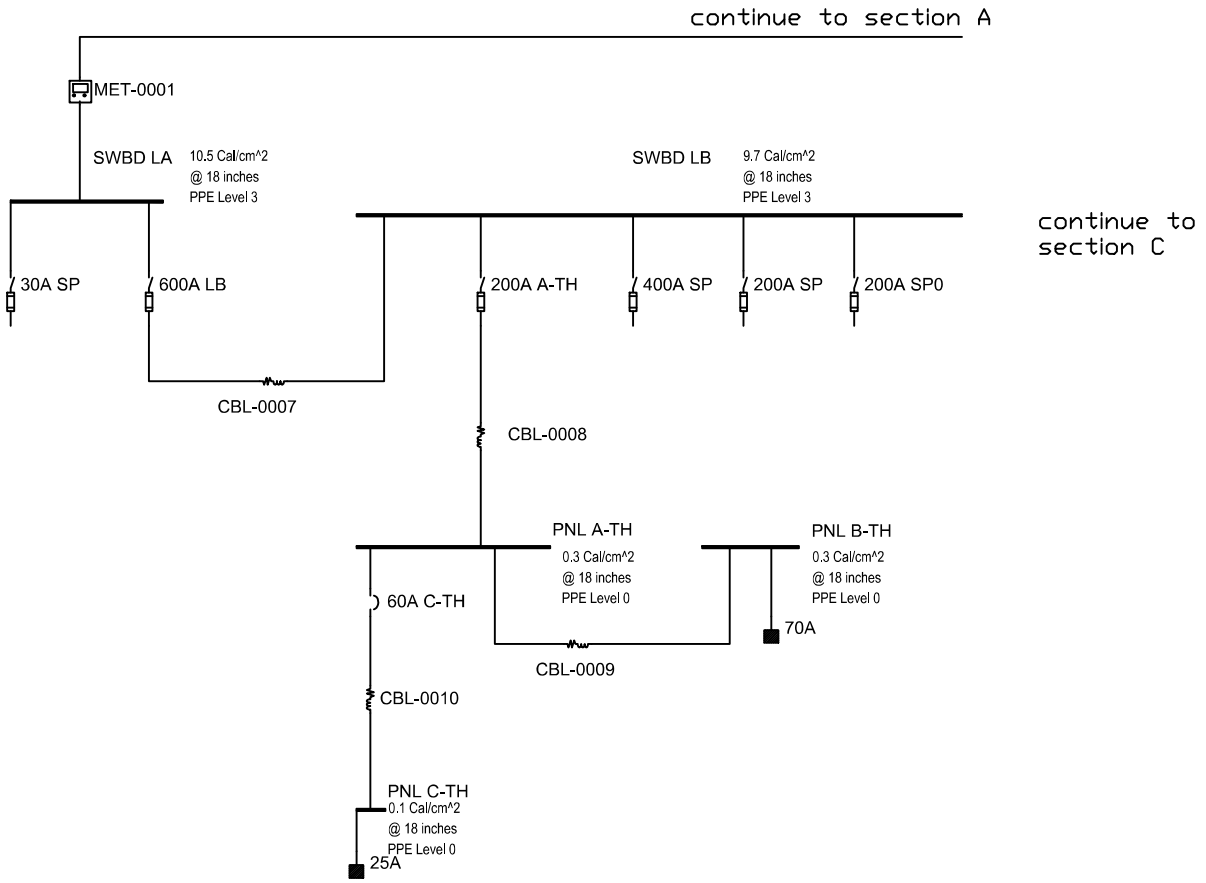
Town Hall
Arc Flash SKM One-line
OVERVIEW



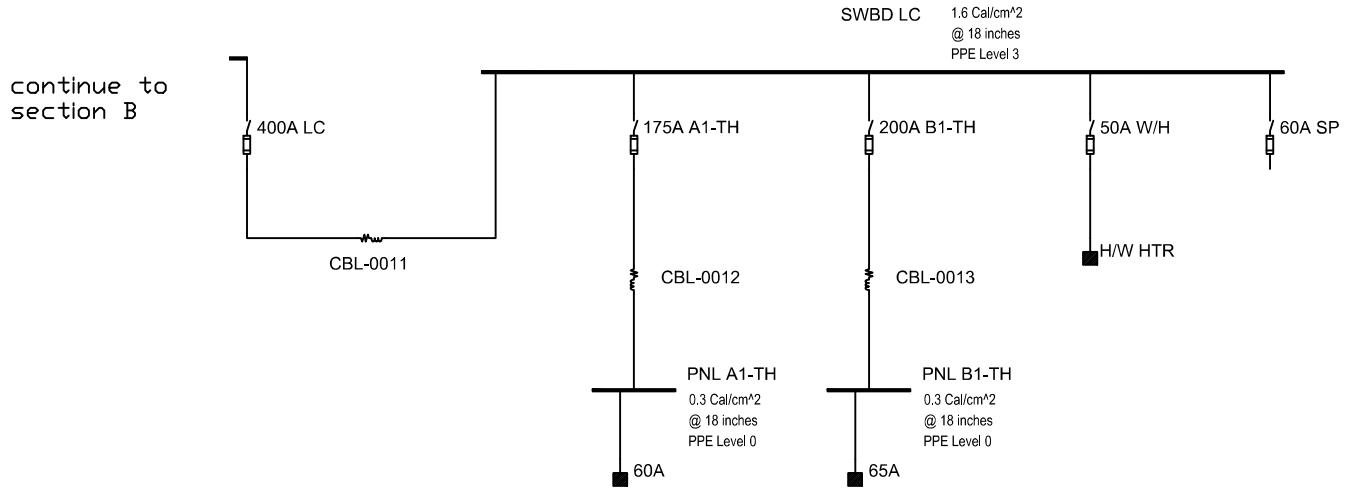
Town Hall
Arc Flash SKM One-line
Section A



Town Hall
Arc Flash SKM One-line
Section B



Town Hall
Arc Flash SKM One-line
Section C



Arc Flash Evaluation Report

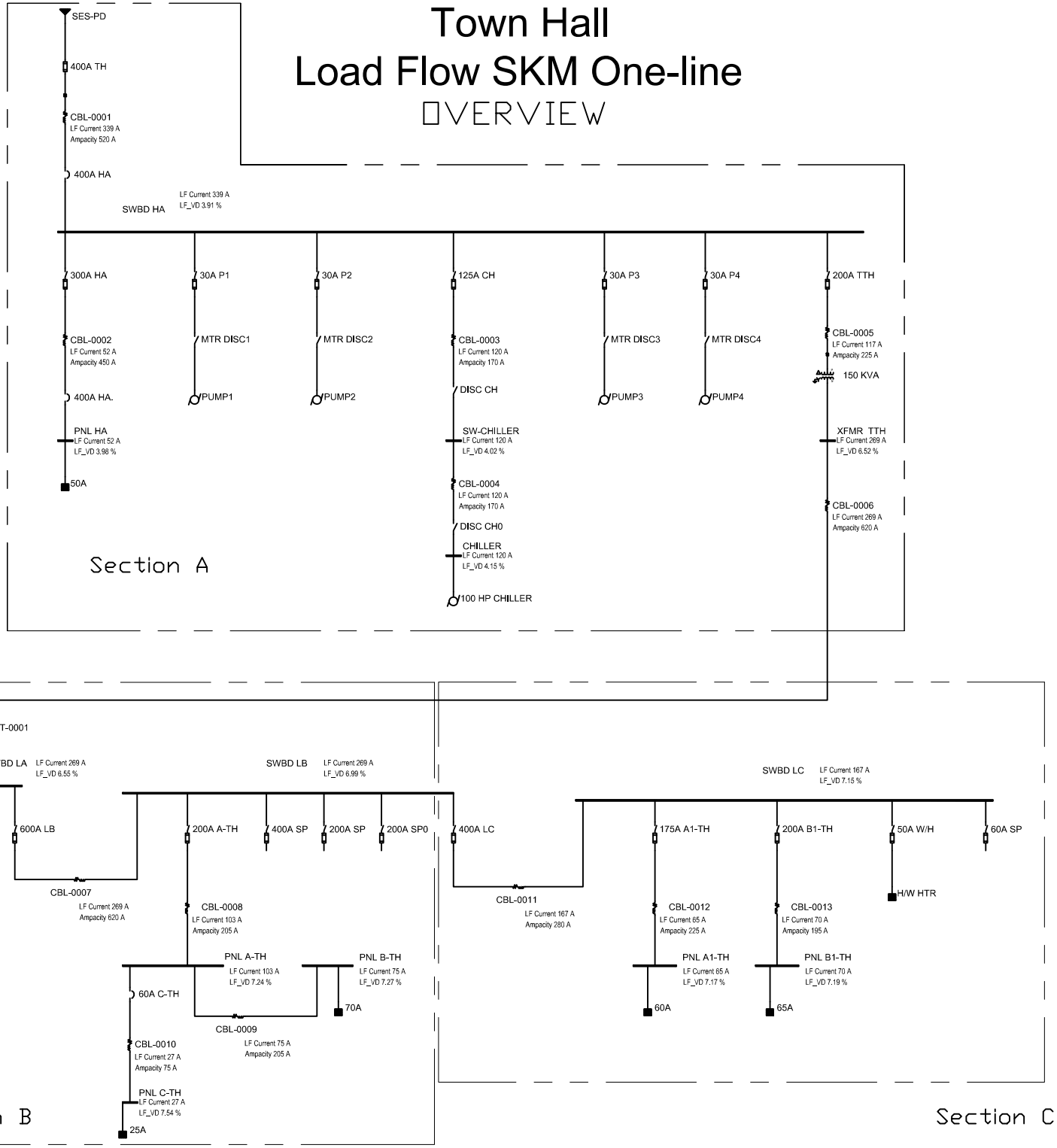
Bus Name	Bus kV	Protective Device Name	Bus Bolted/ Arcing (kA)	Prot Bolted/ Arcing (kA)	Trip/ Breaker Time (sec.)	Equip Type/ Gap (mm)	Electrode Config / WC Config	Box Height/ Width (in)	Box Depth (in)	ArcFlash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	PPE
CHILLER	0.480	125A CH	8.15	7.53	0.004	PNL	VCB	14	10	2.68	18.00	0.06	No Arc-rated PPE Required
			6.18	5.70	0.000	25	VCB	12					
PNL A-TH	0.208	200A A-TH	4.77	4.77	0.008	PNL	VCB	14	10	6.74	18.00	0.25	No Arc-rated PPE Required
			2.04	2.04	0.000	25	VCB	12					
PNL A1-TH	0.208	175A A1-TH	4.94	4.94	0.008	PNL	VCB	14	10	6.74	18.00	0.25	No Arc-rated PPE Required
			2.12	2.12	0.000	25	VCB	12					
PNL B-TH	0.208	200A A-TH	4.70	4.70	0.008	PNL	VCB	14	10	6.74	18.00	0.25	No Arc-rated PPE Required
			2.01	2.01	0.000	25	VCB	12					
PNL B1-TH	0.208	200A B1-TH	4.94	4.94	0.062	PNL	VCB	14	10	6.74	18.00	0.25	No Arc-rated PPE Required
			2.12	2.12	0.000	25	VCB	12					
PNL C-TH	0.208	60A C-TH	3.37	3.37	0.030	PNL	VCB	14	10	3.25	18.00	0.08	No Arc-rated PPE Required
			1.21	1.21	0.000	25	VCB	12					
PNL HA	0.480	300A HA	8.41	8.41	0.008	PNL	VCB	14	10	4.22	18.00	0.12	No Arc-rated PPE Required
			6.38	6.38	0.000	25	VCB	12					
SW-CHILLER	0.480	125A CH	8.83	8.19	0.004	PNL	VCB	14	10	2.83	18.00	0.06	No Arc-rated PPE Required
			6.72	6.23	0.000	25	VCB	12					
SWBD HA	0.480	400A HA	9.46	8.54	0.020	PNL	VCB	14	10	7.84	18.00	0.32	No Arc-rated PPE Required
			7.21	6.51	0.000	25	VCB	12					

Bus Name	Bus kV	Protective Device Name	Bus Bolted/ Arcing (kA)	Prot Bolted/ Arcing (kA)	Trip/ Breaker Time (sec.)	Equip Type/ Gap (mm)	Electrode Config / WC Config	Box Height/ Width (in)	Box Depth (in)	ArcFlash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	PPE
SWBD LA	0.208	200A TTH	5.55	5.55	2.000	PNL	VCB	14	10	69.90	18.00	10.49	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			2.41	2.41	0.000	25	VCB	12					
SWBD LB	0.208	600A LB	5.19	5.19	2.000	PNL	VCB	14	10	66.60	18.00	9.71	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			2.24	2.24	0.000	25	VCB	12					
SWBD LC	0.208	400A LC	5.00	5.00	1.094	PNL	VCB	14	10	21.32	18.00	1.57	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			2.15	2.15	0.000	25	VCB	12					
XFMR TTH	0.208	200A TTH	5.57	5.57	2.000	PNL	VCB	14	10	70.13	18.00	10.54	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
			2.42	2.42	0.000	25	VCB	12					

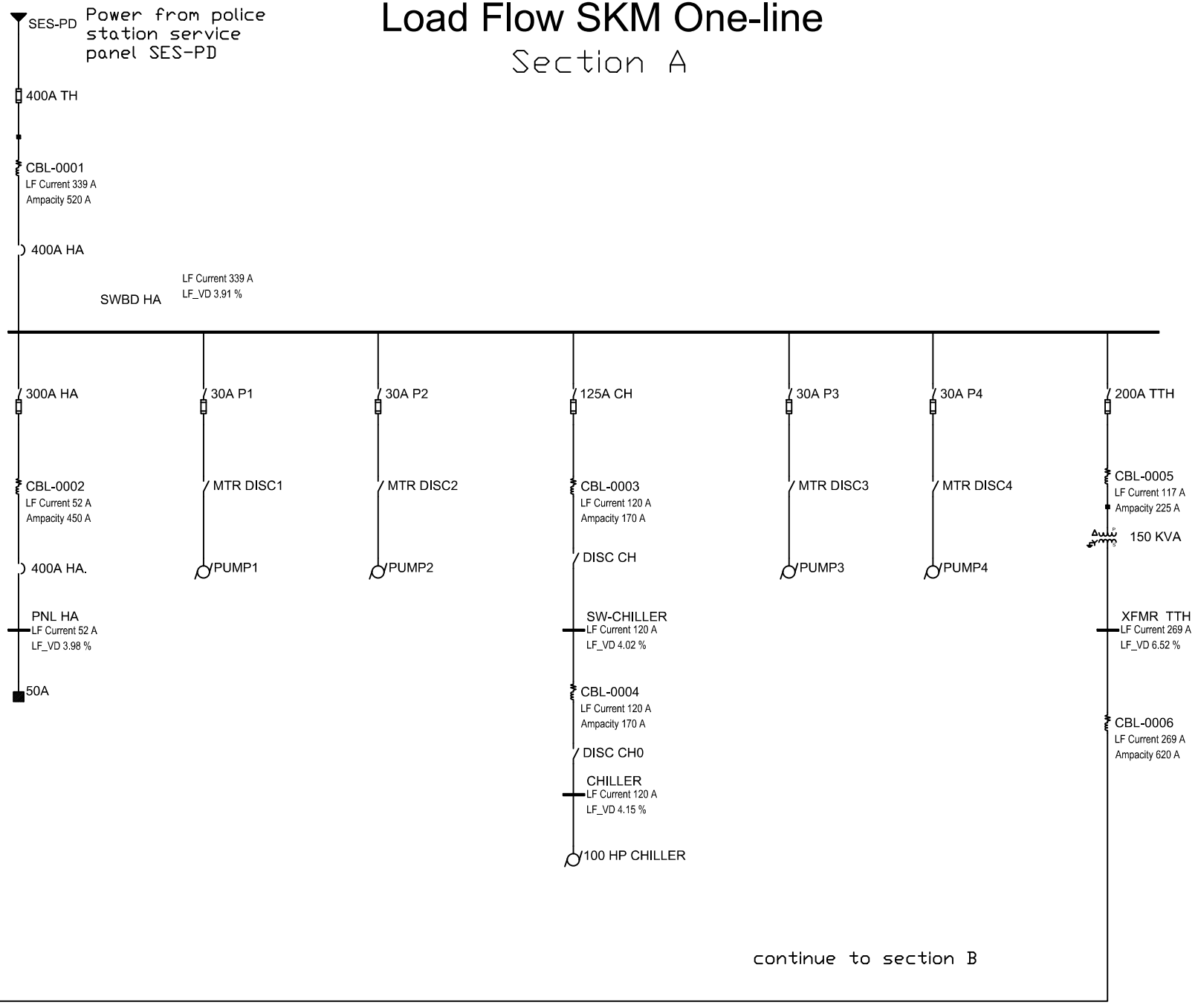
APPENDIX 3

LOAD FLOW STUDY

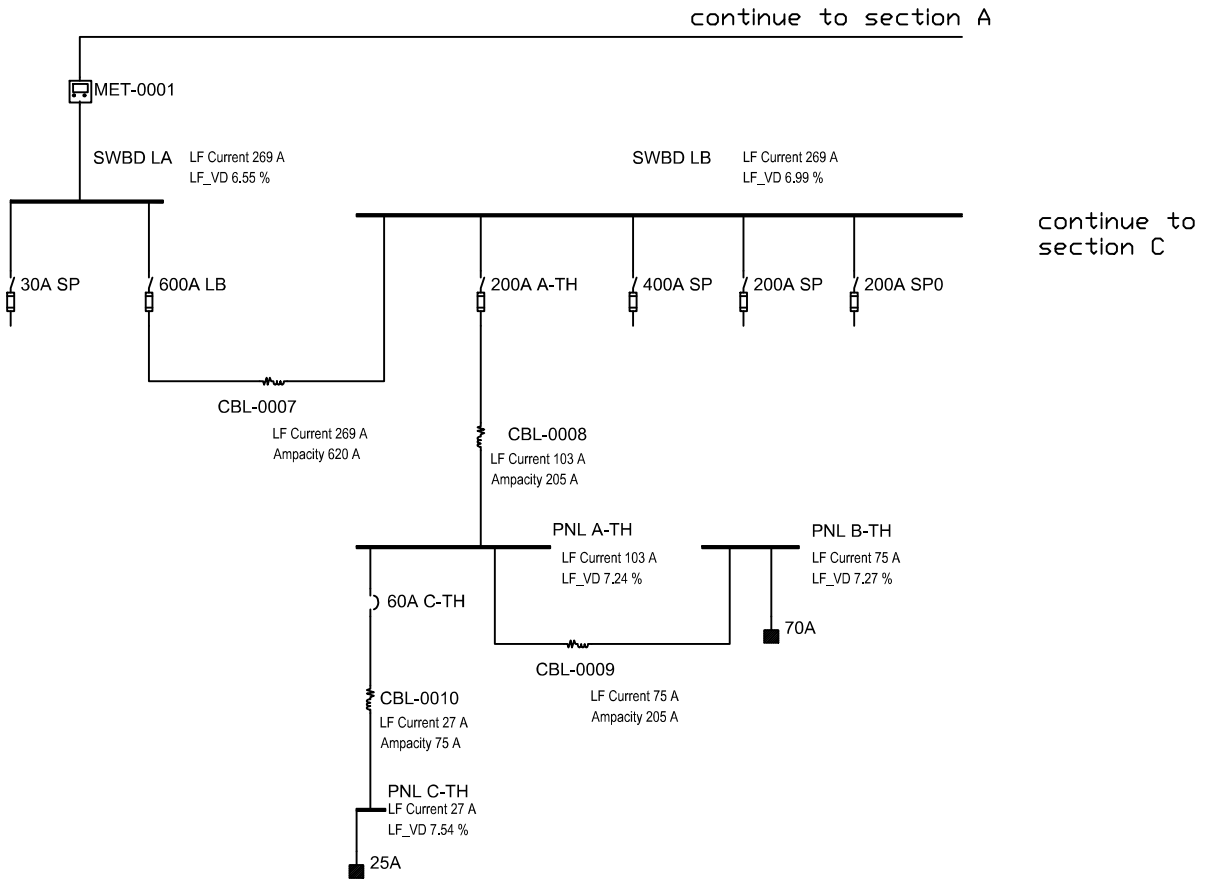
Town Hall
Load Flow SKM One-line
OVERVIEW



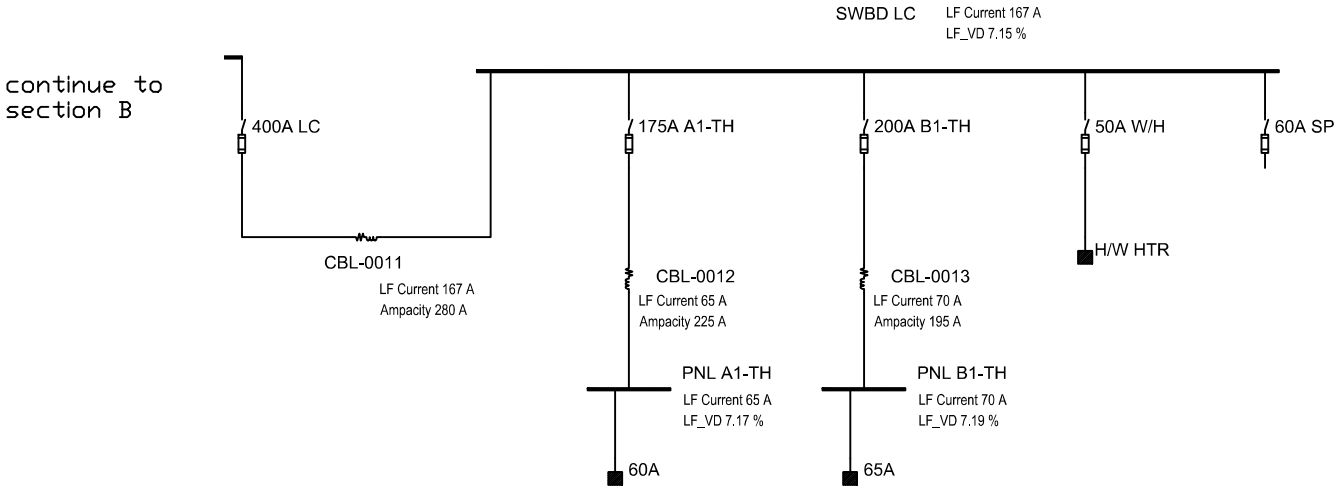
Town Hall
Load Flow SKM One-line
Section A



Town Hall
Load Flow SKM One-line
Section B



Town Hall
Load Flow SKM One-line
Section C



Load Flow Summary Report

Load Flow Study Settings

Include Source Impedance	Yes	**Bus Voltage Drop %**	5.00
Solution Method	Exact (Iterative)	**Branch Voltage Drop %**	3.00
Load Specification	Connected Load		

Swing Generators

Source	In/Out Service	Vpu	Angle	kW	kvar	VD%	Utility Impedance
SES-PD	In	1.00	0.00	222.0	168.7	0.95	0.60 +*j* 4.77

Buses

Bus Name	In/Out Service	Design Volts	LF Volts	Angle Degree	PU Volts	%VD
CHILLER	In	480	460	-0.35	0.96	4.15
PNL A1-TH	In	208	193	-1.99	0.93	7.17

Bus Name	In/Out Service	Design Volts	LF Volts	Angle Degree	PU Volts	%VD
PNL A-TH	In	208	193	-1.97	0.93	7.24
PNL B1-TH	In	208	193	-1.99	0.93	7.19
PNL B-TH	In	208	193	-1.96	0.93	7.27
PNL C-TH	In	208	192	-1.86	0.92	7.54
PNL HA	In	480	461	-0.39	0.96	3.98
SWBD HA	In	480	461	-0.40	0.96	3.91
SWBD LA	In	208	194	-2.03	0.93	6.55
SWBD LB	In	208	193	-2.00	0.93	6.99
SWBD LC	In	208	193	-1.99	0.93	7.15
SW-CHILLER	In	480	461	-0.38	0.96	4.02
XFMR TTH	In	208	194	-2.03	0.93	6.52

Cables

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
BUS-0001	CBL-0001	In	2.96	222.0	168.7	278.8	338.6	0.80
SWBD HA				7.1	4.4	8.4	65.1	
PNL A-TH	CBL-0009	In	0.03	20.2	15.1	25.2	75.5	0.80
PNL B-TH				0.0	0.0	0.0	36.8	
PNL A-TH	CBL-0010	In	0.30	7.2	5.4	9.0	27.0	0.80
PNL C-TH				0.0	0.0	0.0	36.1	
SWBD HA	CBL-0005	In	0.05	73.1	58.0	93.3	116.8	0.78
BUS-0006				0.0	0.0	0.1	51.9	
SWBD HA	CBL-0002	In	0.07	33.3	25.0	41.6	52.1	0.80
PNL HA				0.0	0.0	0.0	11.6	

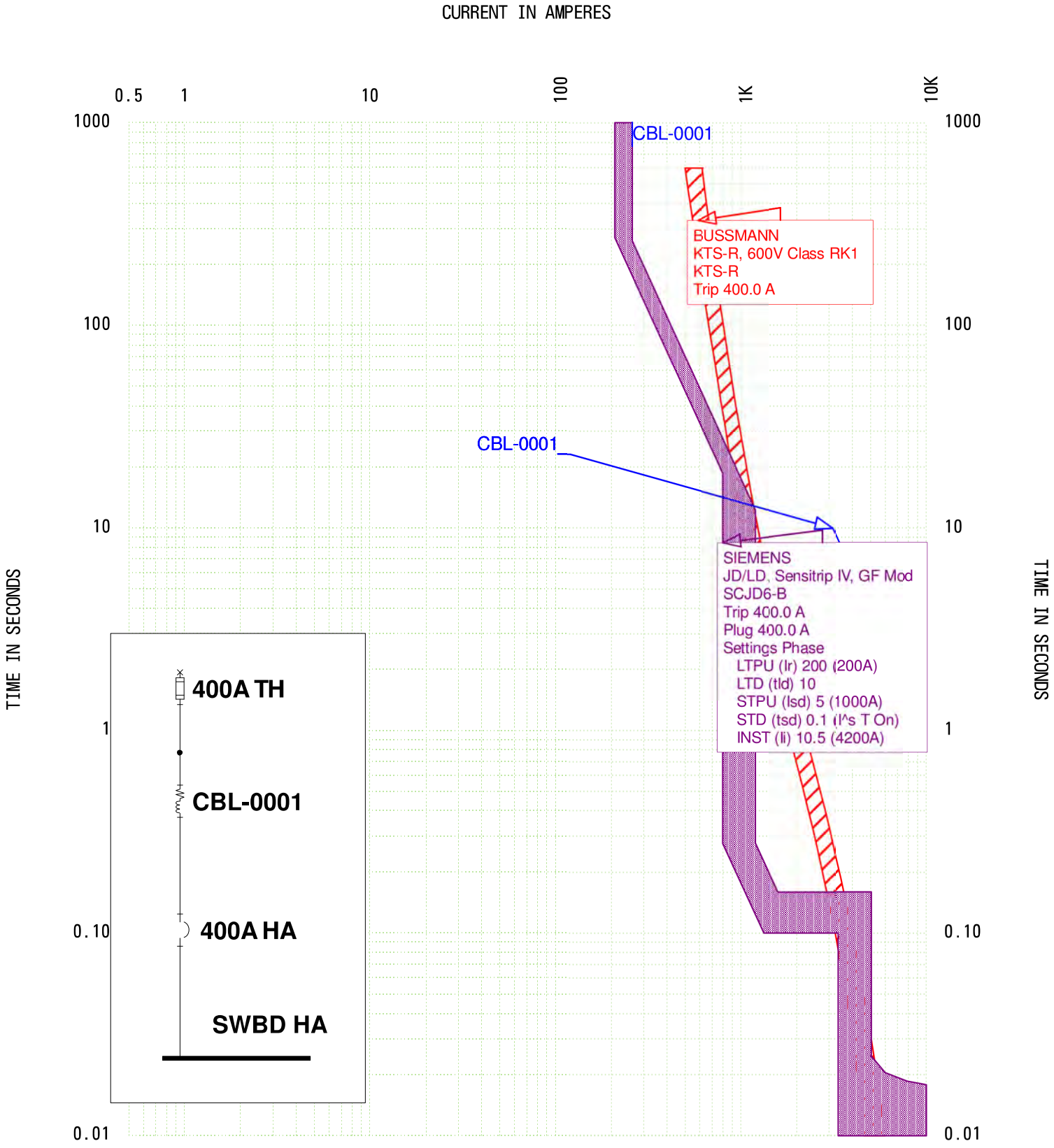
From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
SWBD HA SW-CHILLER	CBL-0003	In	0.11	76.4 0.1	57.2 0.0	95.5 0.1	119.5 70.3	0.80
SWBD LA SWBD LB	CBL-0007	In	0.45	72.6 0.4	54.4 0.2	90.7 0.4	269.5 43.5	0.80
SWBD LB PNL A-TH	CBL-0008	In	0.24	27.5 0.1	20.6 0.0	34.4 0.1	102.5 50.0	0.80
SWBD LB SWBD LC	CBL-0011	In	0.15	44.8 0.1	33.6 0.0	55.9 0.1	167.0 59.6	0.80
SWBD LC PNL A1-TH	CBL-0012	In	0.02	17.3 0.0	13.0 0.0	21.6 0.0	64.6 28.7	0.80
SWBD LC PNL B1-TH	CBL-0013	In	0.04	18.7 0.0	14.1 0.0	23.4 0.0	70.0 35.9	0.80
SW-CHILLER CHILLER	CBL-0004	In	0.14	76.3 0.1	57.2 0.0	95.4 0.1	119.5 70.3	0.80
XFMR TTH SWBD LA	CBL-0006	In	0.03	72.7 0.0	54.4 0.0	90.8 0.0	269.5 43.5	0.80

2-Winding Transformers

From Bus To Bus	Component Name	In/Out Service	%VD	kW Loss	kvar Loss	kVA Loss	LF Amps Rating %	PF
BUS-0006 XFMR TTH	150 KVA	In	2.55	73.0 0.4	58.0 3.6	93.2 3.6	117.0 64.7	0.78

APPENDIX 4

TCC REPORT

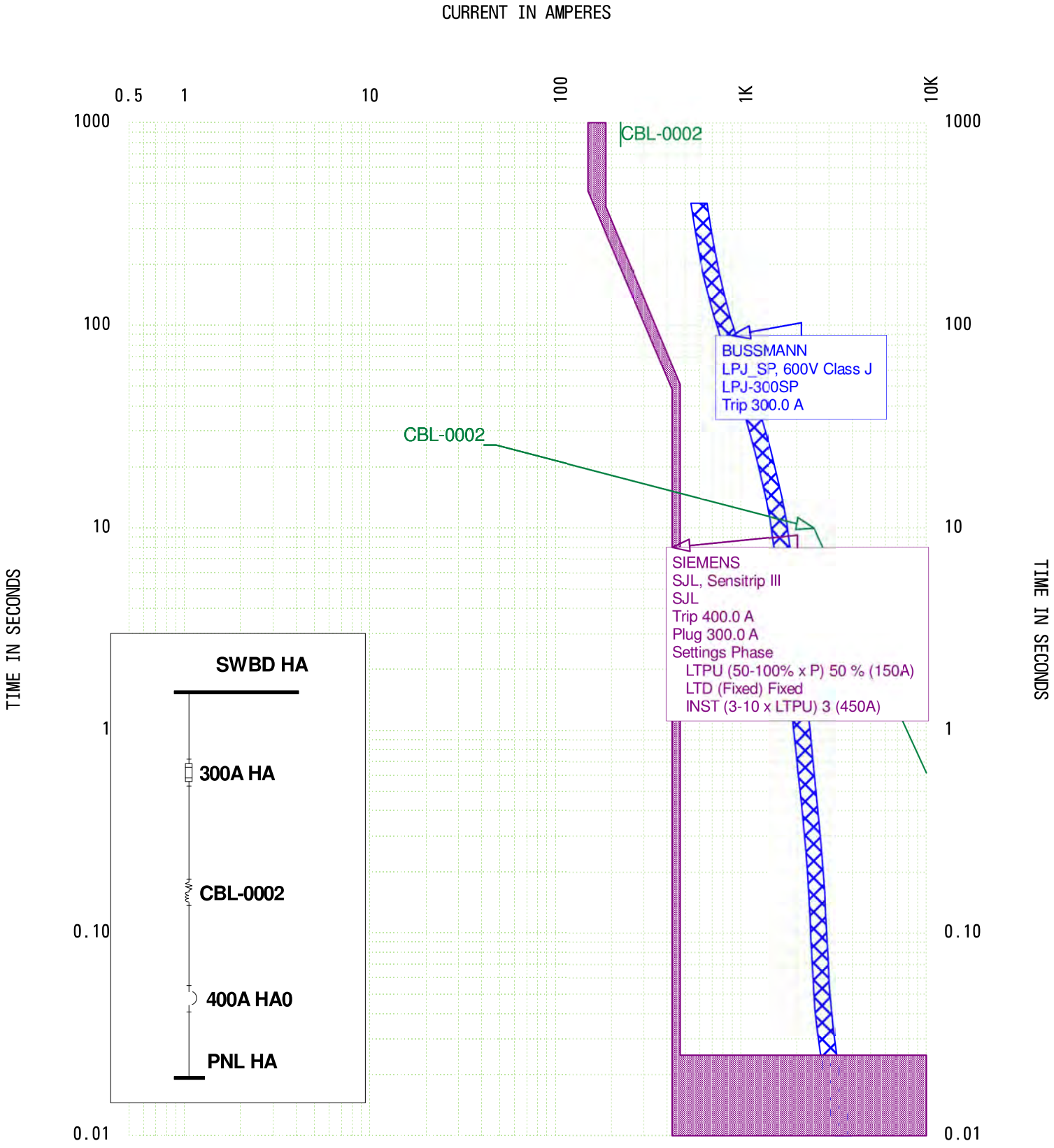


TCC Name: SWBD HA
Oneline: SWBD HA
June 21, 2025 10:32 AM

Current Scale x 1

Reference Voltage: 480

SKM Systems Analysis, Inc.

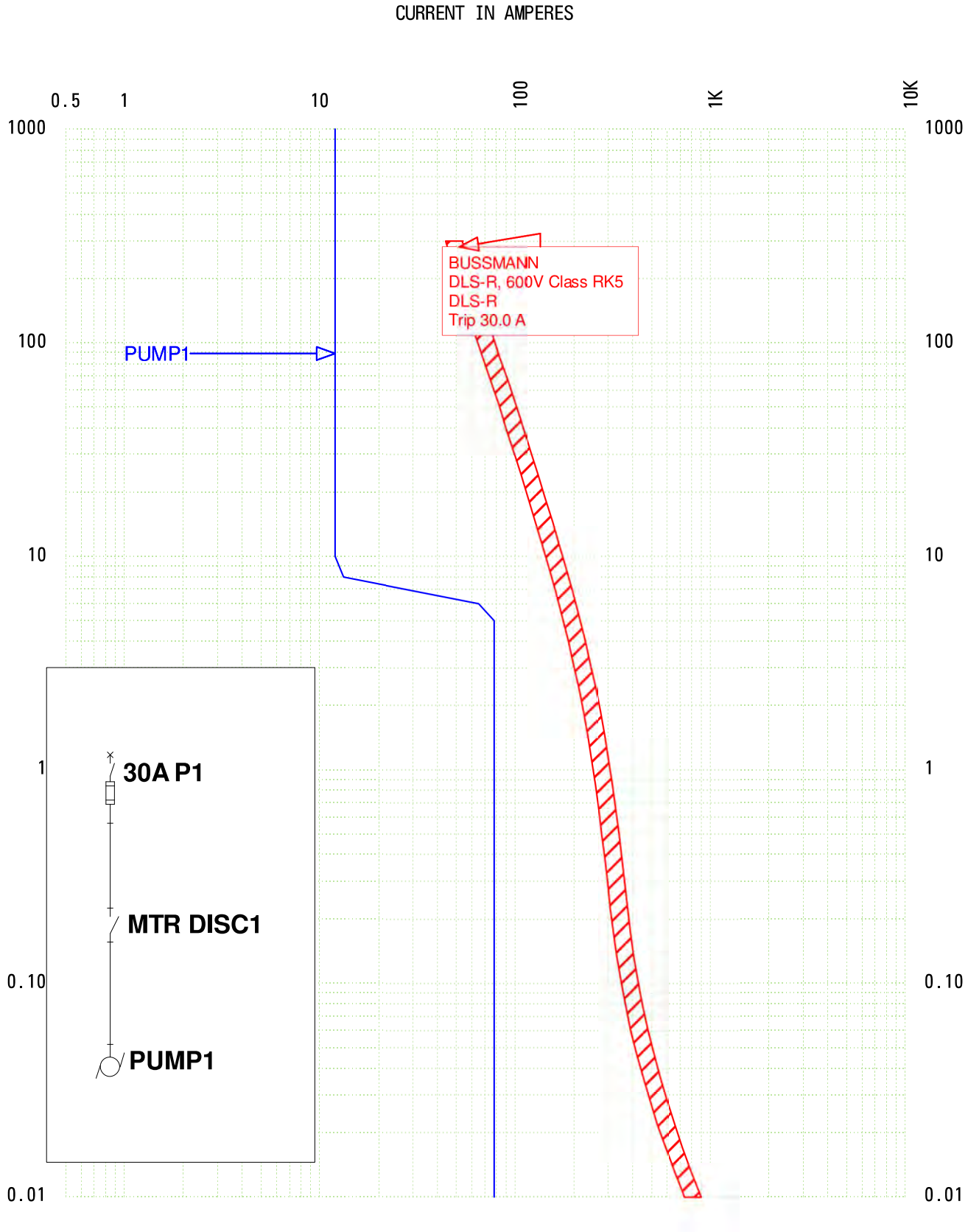


TCC Name: PNL HA
Oneline: PNL HA
June 21, 2025 10:34 AM

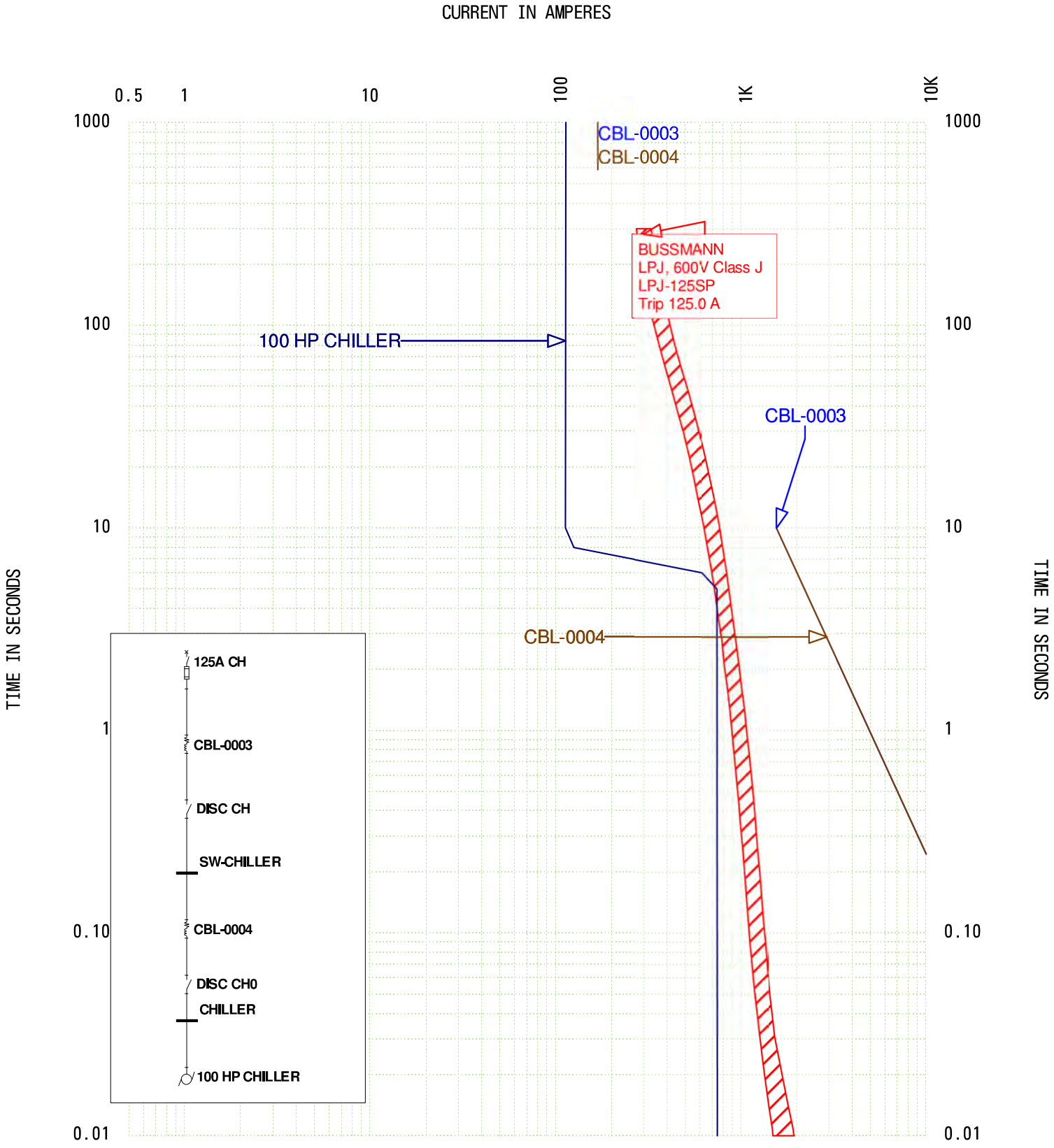
Current Scale x 1

Reference Voltage: 480

SKM Systems Analysis, Inc.



TCC Name: PUMPS 1-4	Current Scale x 1	Reference Voltage: 480
Oneline: PUMPS 1-4		
June 21, 2025 1:34 PM		SKM Systems Analysis, Inc.

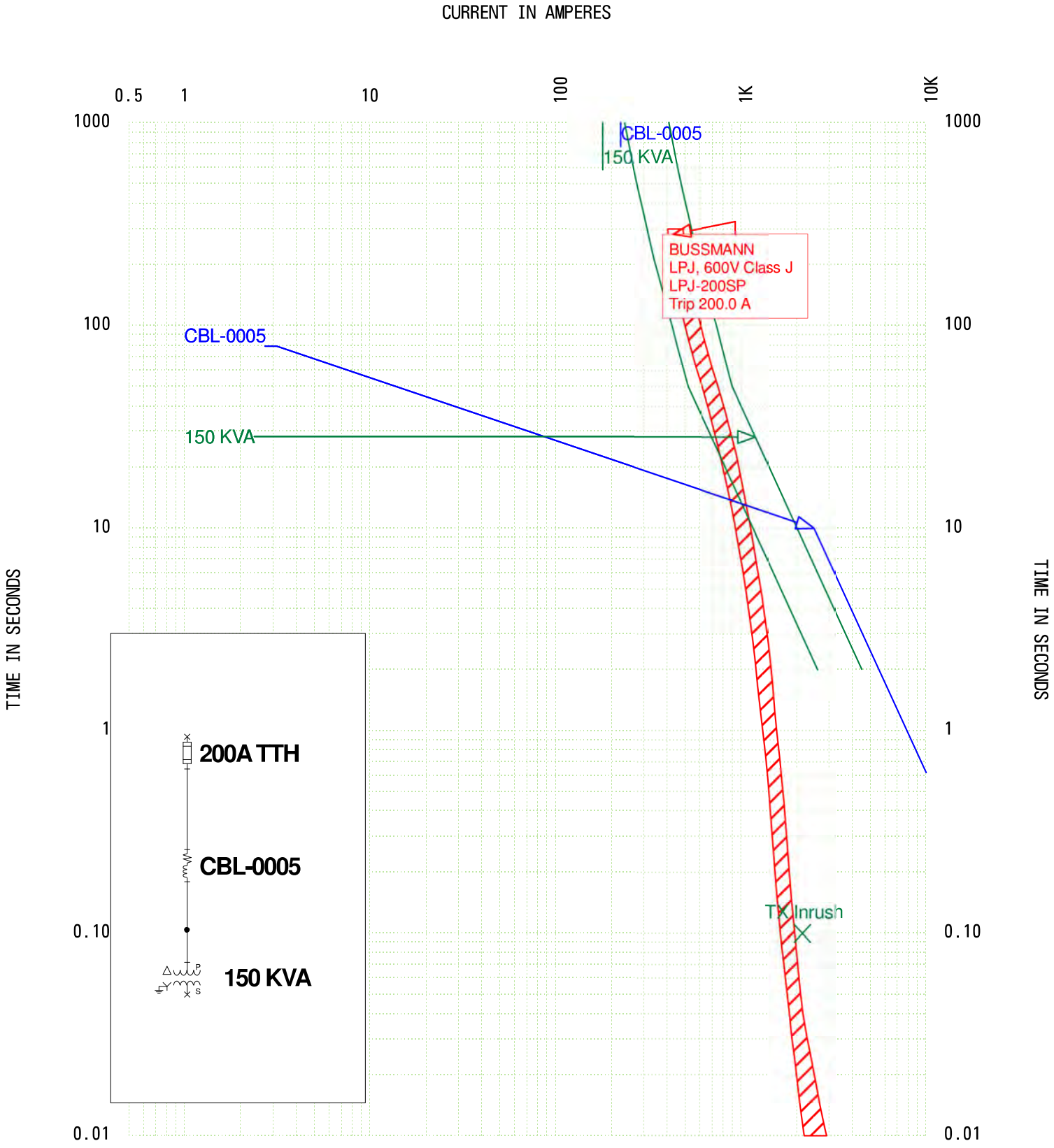


TCC Name: CHILLER
Oneline: CHILLER
June 21, 2025 1:35 PM

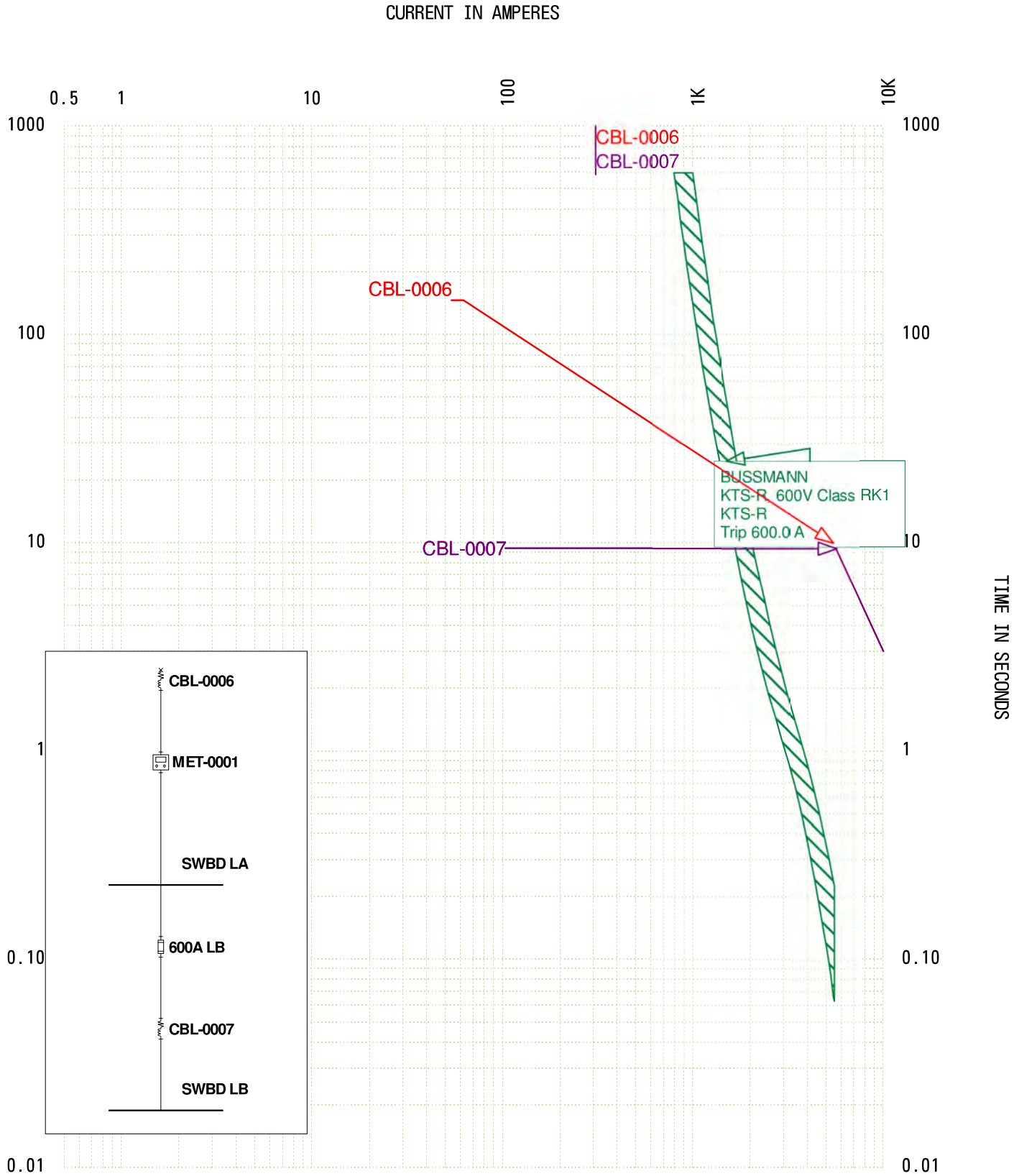
Current Scale x 1

Reference Voltage: 480

SKM Systems Analysis, Inc.



TCC Name: XFMR TTH	Current Scale x 1	Reference Voltage: 480
Oneline: XFMR TTH		
June 21, 2025 11:47 AM		SKM Systems Analysis, Inc.

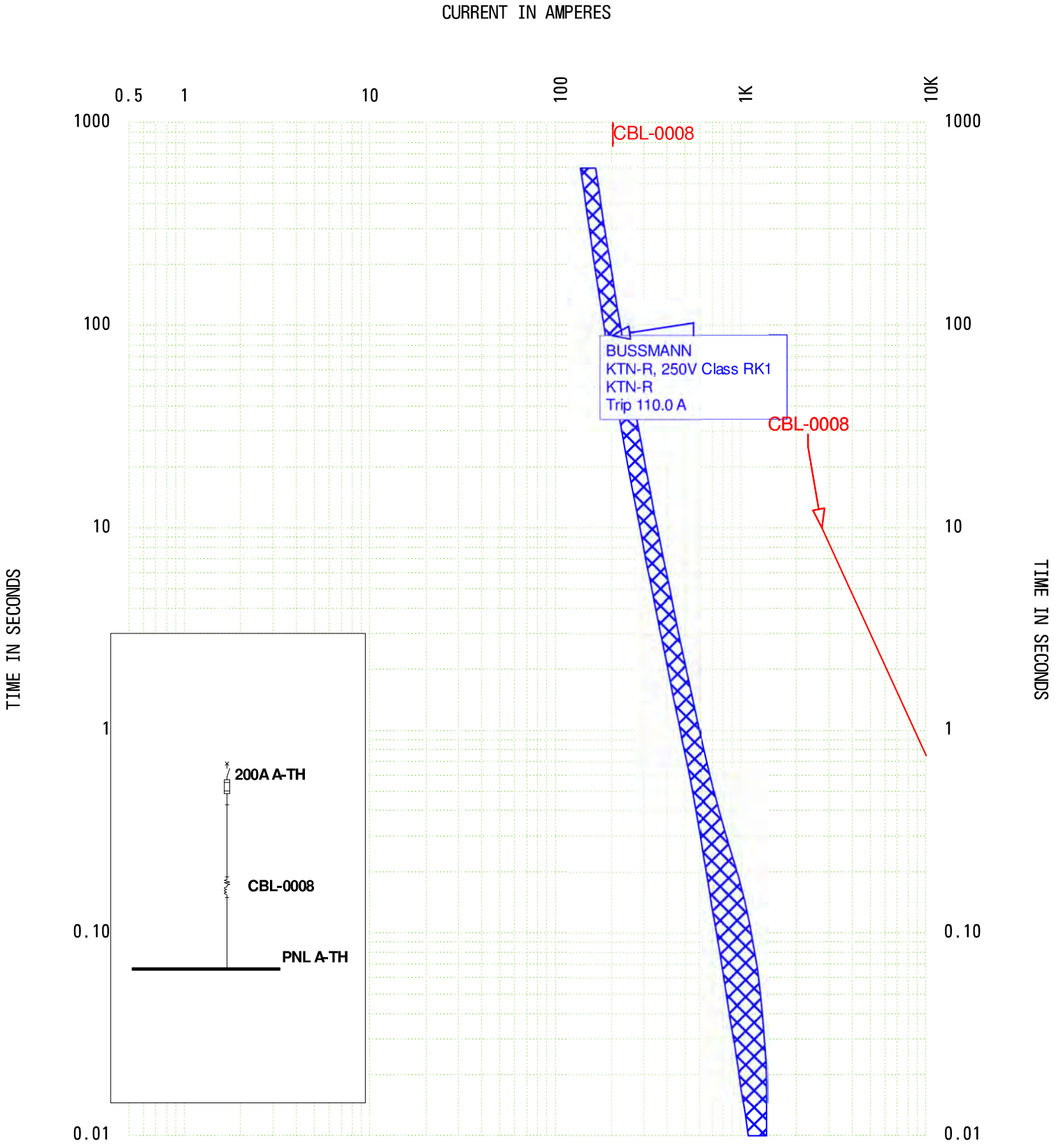


TCC Name: SWBD LA & LB
Oneline: SWBD LA & LB
June 21, 2025 11:46 AM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.

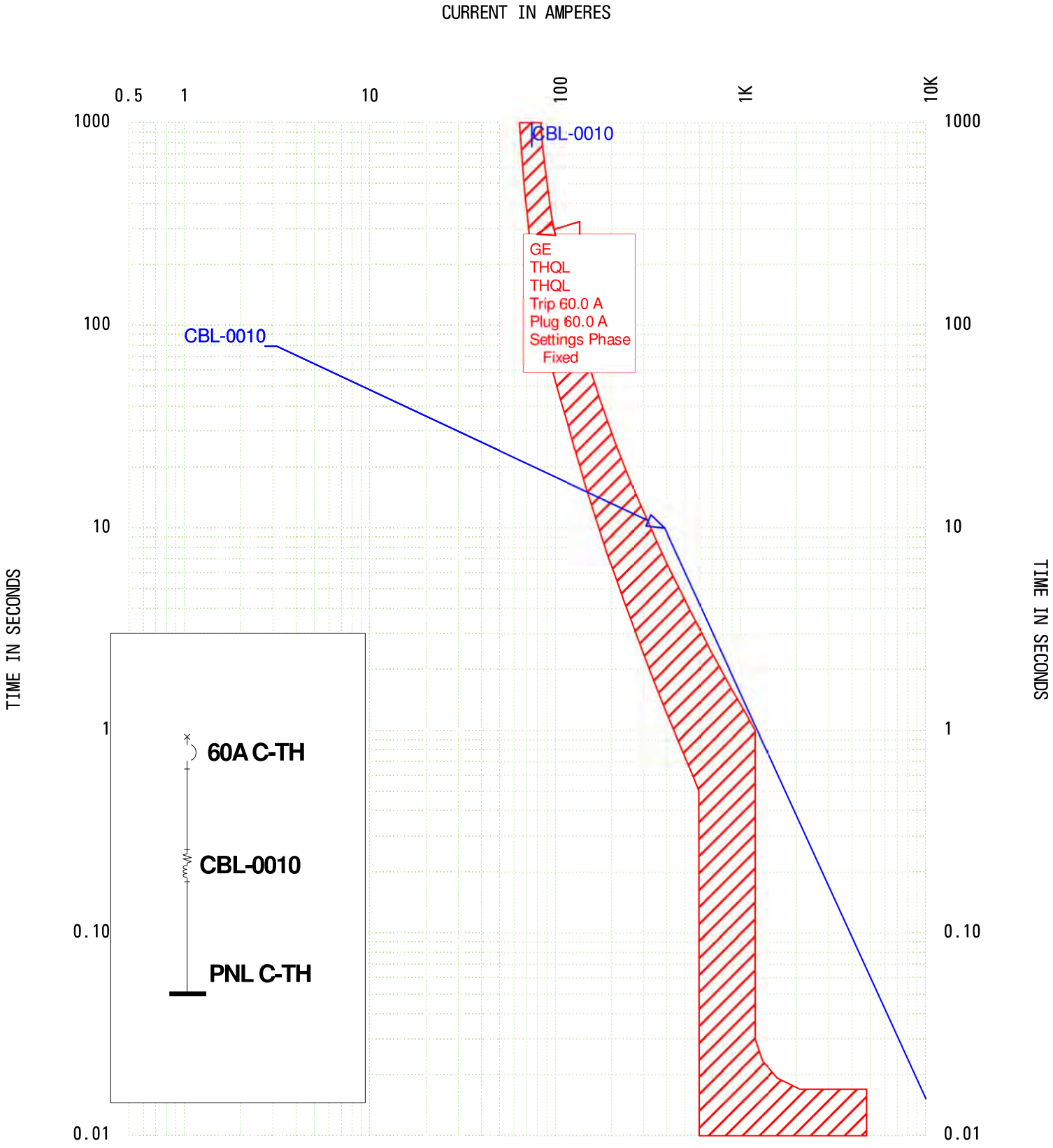


TCC Name: PNL A-TH
Oneline: PNL A-TH
June 21, 2025 1:39 PM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.

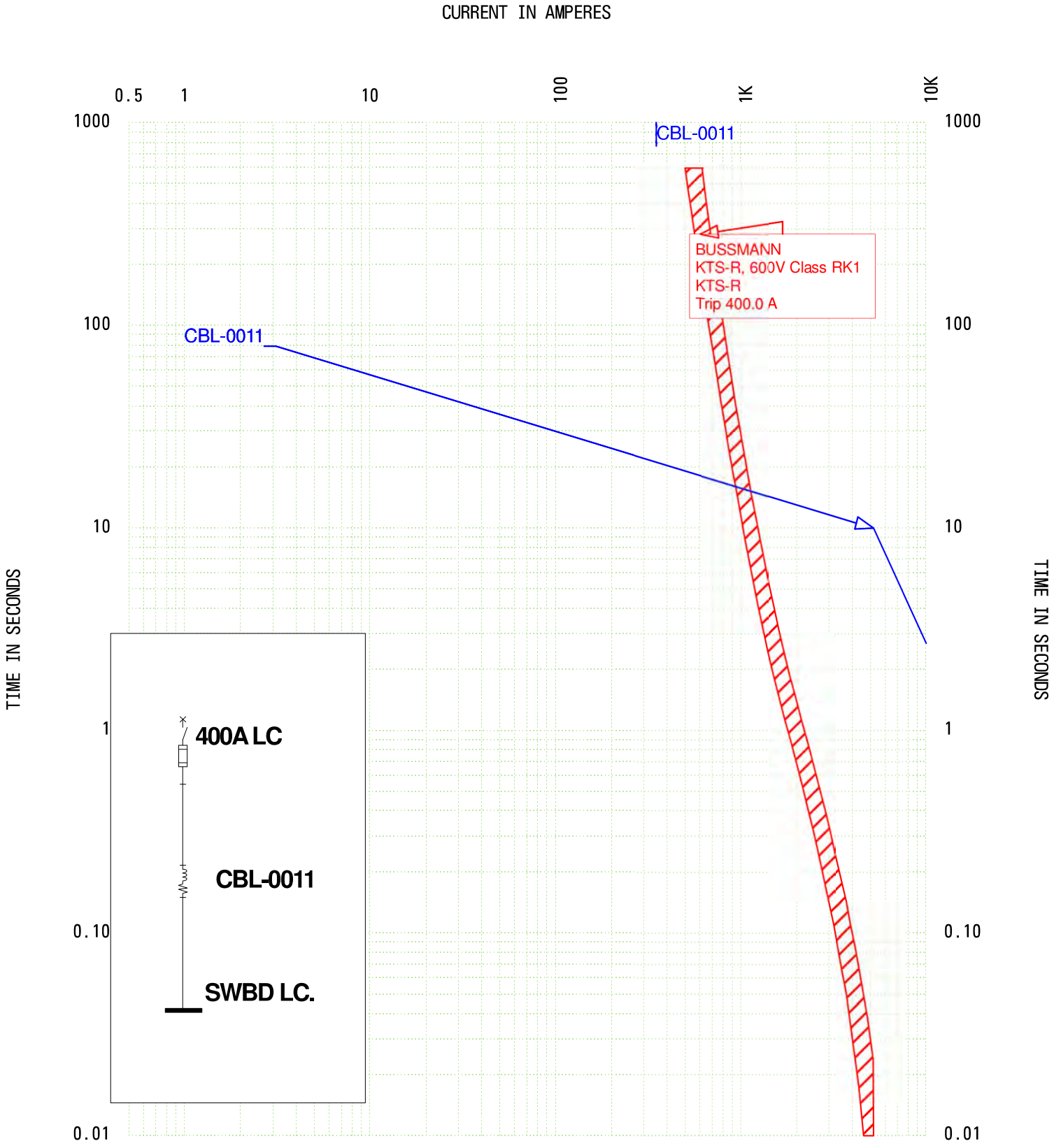


TCC Name: PNL C-TH
Oneline: PNL C-TH
June 21, 2025 1:40 PM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.

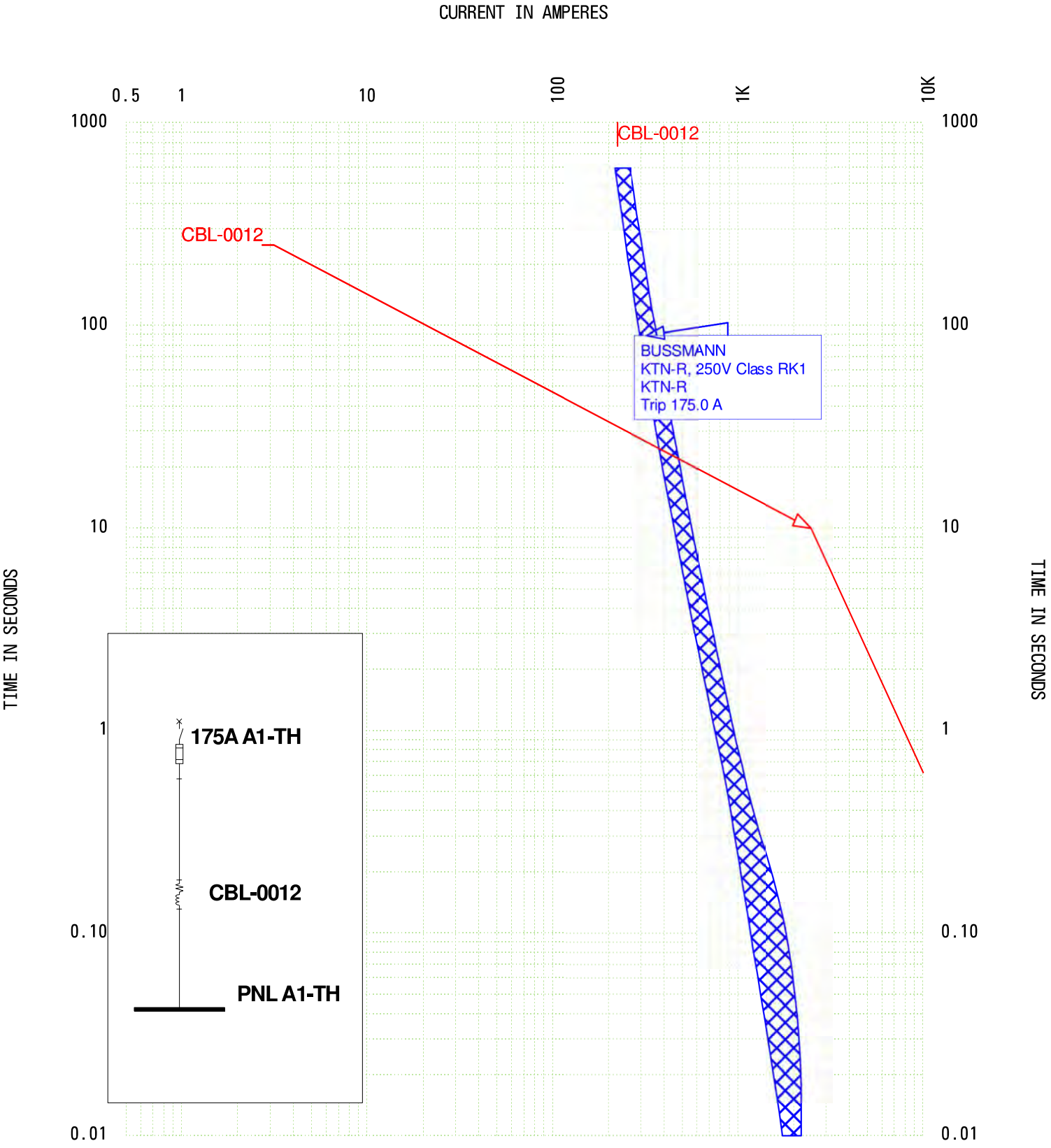


TCC Name: SWBD LC
Oneline: SWBD LC
June 21, 2025 1:47 PM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.

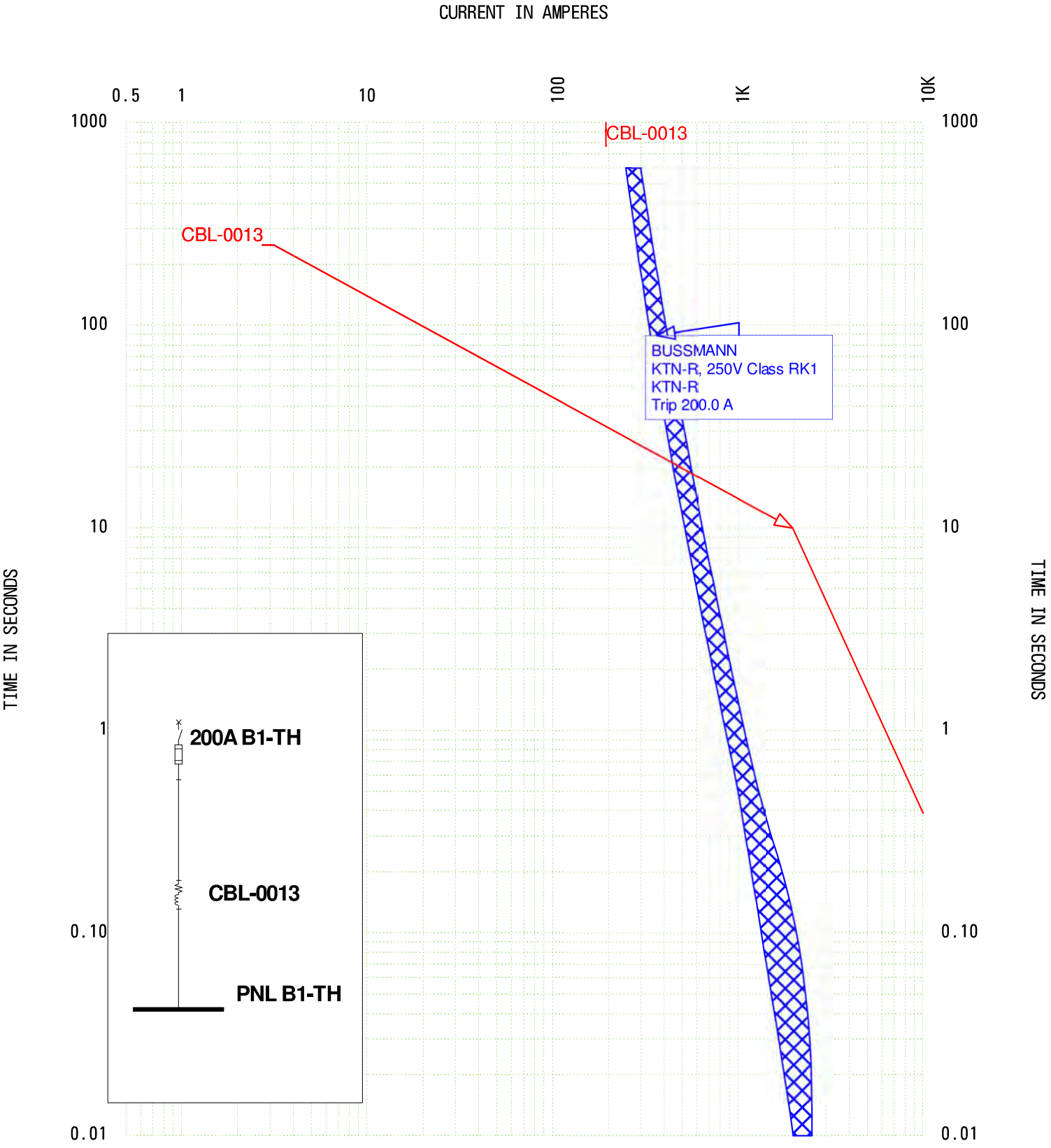


TCC Name: PNL A1-TH
Oneline: PNL A1-TH
June 21, 2025 1:55 PM

Current Scale x 1

Reference Voltage: 208

SKM Systems Analysis, Inc.



TCC Name: PNL B1-TH	Current Scale x 1	Reference Voltage: 208
Oneline: PNL B1-TH		
June 21, 2025 1:44 PM		SKM Systems Analysis, Inc.

APPENDIX 5

WORK PERMIT SAMPLE

ENERGIZED ELECTRICAL WORK PERMIT

PART I: TO BE COMPLETED BY THE REQUESTER:

Job/Work Order Number: _____

(1) Description of circuit/equipment/job location:
PNL LA

(2) Description of work to be done:

(3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage:

Requester/Title _____ Date _____

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS DOING THE WORK

Check When Complete

(1) Detailed job description procedure to be used in performing the above detailed work: ☐

(2) Description of the Safe Work Practices to be employed: ☐

Arc Flash Boundary	8"	Incident Energy	0.35 cal/cm^2	Working Distance	18"
Shock Hazard	208 VAC	Limited Approach Restricted Approach	42" 12"	Glove Class	00
Required PPE	No Arc-rated PPE Required				

(3) Means employed to restrict the access of unqualified persons from the work area: ☐

(4) Evidence of completion of a job briefing including discussion of any job-related hazards: ☐

(5) Do you agree the above described work can be done safely? ☐ Yes ☐ No (If no, return to requester)

Electrically Qualified Person(s) _____ Date _____

Electrically Qualified Person(s) _____ Date _____

PART III: APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

Maintenance/Engineering Manager _____ Manufacturing Manager _____

Safety Manager _____ Electrically Knowledgeable Person _____

General Manager _____ Date _____

APPENDIX 6

ARC FLASH LABELS

PPE TABLE

ARC FLASH LABELS

	Incident Energy From (cal/cm^2)	Incident Energy To (cal/cm^2)	IE Low Marginal (cal/cm^2)	IE High Marginal (cal/cm^2)	PPE Level #	PPE Level	Clothing Layers	Required Minimum Arc Rating of PPE (cal/cm^2)	Notes	Level Background Color	Level Foreground Color	Warning Label Text
1	0.0	1.2	0.000	1.190	0	No Arc-rated PPE Required	N/A	N/A	H.3			WARNING
2	1.2	12.0	1.210	11.800	3	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	2 or 3	12	130.5(G)			WARNING
3	12.0	40.0	12.200	40.000	4	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit	3 or more	40	130.5(G)			WARNING
4	40.0	9999.0	40.000	9998.000	Dangerous!	DO NOT WORK ON LIVE!	ↄ NOT WORK ON LIV	N/A	DO NOT WORK ON LIVE!			DANGER

	Head & Eye & Hearing Protection	Hand & Arm Protection	Foot Protection	PPE Others 1	PPE Others 2	PPE Others 3	PPE Others 4	PPE Others 5
1	Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	N/A	Safety glasses	N/A	> 50V voltage rated tools + Class 0 (minimum) gloves	Dielectric shoes or insulating mat (step and touch potential).	
2	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Leather Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
3	Hardhat + Arc-rated hard hat liner + Safety Glasses or Goggles + Ear Canal Inserts	Arc-rated Gloves	Leather footwear	Safety glasses, electrically rated hard hat with hood and face shield. Hearing protection.	Arc-rated shirt (long-sleeve) plus Arc-rated pants (long) or Arc-rated coverall, or arc rated arc flash suit jacket, pants, & hood, Arc-rated rainwear as needed.	> 50V voltage rated tools + Class 0 (minimum) gloves and leather protectors (flash).	Leather shoes (flash) as needed. Dielectric shoes or insulating mat (step and touch potential).	
4	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	DO NOT WORK ON LIVE!	

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

3 in	Arc Flash Boundary
0.06 cal/cm^2	Incident Energy at 18 in
PPE	No Arc-rated PPE Required
480 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location: CHILLER

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/23/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

7 in	Arc Flash Boundary
0.25 cal/cm^2	Incident Energy at 18 in
PPE	No Arc-rated PPE Required
208 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location: PNL B-TH

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/23/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

7 in	Arc Flash Boundary
0.25 cal/cm^2	Incident Energy at 18 in
PPE	No Arc-rated PPE Required
208 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location: PNL A1-TH

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/23/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

4 in	Arc Flash Boundary
0.12 cal/cm^2	Incident Energy at 18 in
PPE	No Arc-rated PPE Required
480 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location: PNL HA

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/23/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

3 in	Arc Flash Boundary
0.06 cal/cm^2	Incident Energy at 18 in
PPE	No Arc-rated PPE Required
480 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	SW-CHILLER

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/23/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

70 in	Arc Flash Boundary
10.5 cal/cm^2	Incident Energy at 18 in
PPE	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
208 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	SWBD LA

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/23/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

8 in	Arc Flash Boundary
0.32 cal/cm^2	Incident Energy at 18 in
PPE	No Arc-rated PPE Required
480 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	SWBD HA

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/23/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

67 in	Arc Flash Boundary
9.71 cal/cm^2	Incident Energy at 18 in
PPE	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
208 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	SWBD LB

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/23/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

WARNING

Arc Flash and Shock Risk

Appropriate PPE Required

70 in	Arc Flash Boundary
10.5 cal/cm^2	Incident Energy at 18 in
PPE	Arc-rated shirt & pants or arc-rated coverall or arc-rated arc flash suit
208 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach

Location:	XFMR TTH

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	25-040	Prepared on:	06/23/25	By:	AA/MP/RR

Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL A-TH**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/23/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL C-TH**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/23/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**PNL B1-TH**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/23/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

DANGER

NO SAFE PPE EXISTS

ENERGIZED WORK PROHIBITED

Arc Flash Boundary
Incident Energy at

No Safe PPE

208 VAC

Shock Risk when cover is removed
Glove Class
Limited Approach
Restricted Approach

Location:	**SWBD LC**

120 DEGREEZ MEP ENGINEERING

225 Broadway
Suite 350
San Diego, CA 92101
(310) 364-5228

Job#:	**25-040**	**Prepared on:**	**06/23/25**	**By:**	**AA/MP/RR**

DANGER: Panel/equipment has deficiencies that require the equipment/panel to be de-engerised before servicing or working with covers removed.

The End of Study Report

Town of Paradise Valley

Paradise Valley

Arizona

ELECTRICAL ASSESSMENT REPORT

Prepared For:

Prepared By:

120 DEGREEZ ENGINEERING

Registered Professional Engineer (Electrical) CERTIFICATE NO. 60515 AMIR AMIRI RAZAVIAN Date Signed 6-18-2025 ARIZONA Expires 9/30/2027

June 12, 2025

REVISED: June 18, 2025

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EXECUTIVE SUMMARY

120 Degreez Engineering has been engaged to provide an assessment and Arc-Flash study for several of the Town of Paradise Valley's municipal building's electrical distribution systems.

This report addresses deficiencies and observations identified during the data collection phase for the ongoing Arc-Flash hazard analysis. As of the issuance date of this report, the Arc-Flash evaluations are still ongoing and will be submitted under separate cover upon completion.

The primary objective of this report is to identify potential deficiencies within the electrical distribution systems that could adversely affect facility operations, highlight associated safety hazards, and recommend appropriate corrective actions to mitigate identified risks.

In identifying system issues, this report presents a high-level overview of observed deficiencies and outlines potential operational and safety consequences should corrective measures not be implemented. To support mitigation planning, recommended actions have been categorized into three levels as follows:

- **Low**: Corrective action is recommended. While the issue poses a relatively minor risk, addressing it will enhance system reliability and safety.
- **High**: Corrective action is required. These issues present a significant risk to personnel safety or property and must be addressed in a timely manner.
- **Critical**: Immediate corrective action is mandatory. Items in this category represent an imminent hazard to life or property and demand urgent remediation.

This report focuses primarily on the major components of the electrical distribution systems. Evaluation of electrical installations beyond these components was not included within the scope of this assessment. However, this exclusion should not be interpreted as implying that such areas are without concern or do not warrant further review. Based on the deficiencies identified within the assessed systems, it is reasonable to anticipate that similar issues may exist elsewhere within the broader electrical infrastructure.

Electrical single line diagrams for each building included in this assessment will be provided alongside the Arc-Flash reports. While every effort has been made to ensure the accuracy of these diagrams, it is important to note that due to inconsistent equipment identification and labeling,

absolute accuracy cannot be guaranteed. As such, these diagrams should be used for reference purposes only and not as definitive representations of the electrical systems.

ASSESSMENT METHODOLOGY

This report is based on visual and non-invasive observations conducted during the assessment. In certain instances, it was determined that opening specific electrical equipment posed an unacceptable risk to personnel safety or carried the potential for unintended de-energization of critical systems. In such cases, the equipment were not accessed. These limitations should be considered when interpreting the findings and recommendations presented in this report.

The National Electrical Code (NEC) serves as the primary standard for evaluating the safety and compliance of electrical equipment and systems referenced in this report. The NEC is a nationally recognized consensus standard developed by industry experts and maintained by the National Fire Protection Association (NFPA). It is widely adopted by jurisdictions across the United States and often incorporated into local laws and regulations. As such, it provides the authoritative basis for determining whether an electrical installation meets the minimum requirements for safety.

Failure to comply with the National Electrical Code (NEC) and other nationally recognized standards is considered unsafe by the Uniform Building Code (UBC), Uniform Fire Code (UFC), and the NEC itself. However, the degree of hazard associated with non-compliance can vary significantly depending on the specific condition and the nature of the risk involved.

It is important to note that not all code violations constitute an immediate life safety hazard. Some deviations may pose minimal risk under normal conditions. That said, non-compliant conditions—especially those not initially deemed hazardous—can deteriorate over time, sometimes rapidly, and evolve into imminent safety threats. Therefore, even seemingly minor violations should be addressed proactively to prevent escalation into more dangerous situations.

PROJECT DESCRIPTION

The following facilities were included in this assessment:

- **EMT Ambulance Building** – Constructed in 1966
- **Town Hall** – Constructed in 1973
- **Public Works (3 buildings)** – Constructed in 1996
- **Police Department (2 buildings)** – Constructed in 1996
- **Fire Station #91** – Constructed in 2009
- **Fire Station #92** – Constructed in 2011
- **Municipal Court** – Constructed in 2014
- **Communications Building** – Constructed in 2017

All buildings listed above are located within the Town of Paradise Valley's Municipal Complex, with the exception of **Fire Station #91** and the **Communications Building**, which are situated off-site.

POLICE DEPARTMENT

1.0 Electrical Service Condition and Maintenance Requirements
Priority: CRITICAL

The electrical service is currently in fair condition; however, it has not undergone the preventive maintenance recommended by the equipment manufacturer. Regular maintenance is essential for the reliable and safe operation of electrical systems. Accumulation of dust, dirt, and debris can impair the mechanical function of overcurrent protection devices and switches. Without proper maintenance, these devices may fail to operate correctly during a fault condition, potentially resulting in fire or shock hazards. Additionally, dirt buildup can cause overheating of overcurrent devices, leading to nuisance tripping and a reduction in equipment lifespan.

According to **NFPA 70B – Standard for Electrical Equipment Maintenance**, electrical equipment must be maintained in accordance with the manufacturer's recommendations (Section 4.1.1). As a general guideline, equipment should be cleaned and overcurrent devices exercised **annually**, unless otherwise specified by the manufacturer.

Furthermore, **NFPA 70B Table 9.2.2** stipulates that equipment classified under Condition 3 must be maintained every 12 months. Per Section 9.2.2, Condition 3 applies when any of the following criteria are met:

1. The equipment has missed the last two successive maintenance cycles as outlined in the Electrical Maintenance Program (EMP).
2. The previous two maintenance cycles revealed issues requiring repair or replacement of major components.
3. There is an active or unresolved alert from a continuous monitoring system.
4. Predictive maintenance techniques have identified urgent corrective actions.

Failure to adhere to these standards may compromise system reliability and safety.

2.0 Improper Installation of Electrical Demand Meter
Priority: HIGH

An E-Mon D-Mon electrical demand meter has been improperly installed on the deadfront enclosure of the service equipment. Specifically, the device has been mounted on a panel that is required to remain accessible for maintenance and operation. This installation violates NEC Section 110.3(B), which mandates that electrical equipment must be installed and used in accordance with its listing and labeling instructions .

Improperly mounting equipment on access panels can:

- **Obstruct required access** to internal components,
- **Create safety hazards** for personnel during maintenance or emergency operations,
- **Compromise the integrity** of the enclosure and its intended function.

To ensure compliance with NEC requirements and maintain safe working conditions, the demand meter should be removed and relocated to a suitable location that does not interfere with required access or violate manufacturer installation guidelines.

3.0 Improper Parallel Feeder Installation – Town Hall Distribution Board "HA"
Priority: CRITICAL

The Town Hall building's distribution board "HA" is fed from the Police Department's electrical service via a 400-ampere switch and parallel feeder conductors. The feeder consists of two sets of three #4/0 copper ungrounded conductors (phase conductors) wired in parallel.
Per NEC Section 310.10(H)(2), parallel conductors are permitted only when the following conditions are met:

1. All conductors are of the same length.
2. All conductors are made of the same material.
3. All conductors are of the same size (circular mil area).
4. All conductors have the same insulation type.
5. All conductors are terminated in the same manner

Additionally, NEC Section 310.10(H)(3) requires that when parallel conductors are installed in separate raceways, each raceway must contain the same number of conductors and have the same electrical characteristics to ensure balanced current sharing and prevent overheating

In this installation, the electrical contractor failed to install a grounded (neutral) conductor in each raceway, violating:

- NEC 300.3(B) – which requires all circuit conductors, including the grounded conductor, to be grouped together to reduce inductive heating and ensure proper fault current paths.
- NEC 300.20 – which addresses the need to minimize inductive effects by grouping conductors of the same circuit together

This improper configuration introduces significant impedance in the fault current path, which can prevent overcurrent protective devices from operating correctly, posing a serious fire and life safety hazard.
Required Corrective Action

- Remove all existing conductors from both raceways.
- Install new, code-compliant parallel conductors, ensuring each raceway contains a complete set of phase and neutral conductors.

- Clean and inspect both raceways by pulling a mandrel through each to ensure they are free of debris and damage.
- Verify compliance with all applicable NEC requirements before re-energizing the system.

4.0 Improper Bonding of Grounding Electrode Conductor Raceway
Priority: CRITICAL

The grounding electrode conductor (GEC) for the Police Department's electrical service is installed in a metallic (ferrous) raceway but is not bonded at both ends, as required by NEC Section 250.64(E). This section mandates that ferrous metal raceways and enclosures containing a GEC must be electrically continuous and bonded at each end to the grounding electrode or the conductor itself to establish an electrically parallel path.

Hazards of Improper Bonding

Failure to bond the raceway at both ends can result in:

- Conductor fusing (melting) during high-current events such as lightning strikes or fault-induced overvoltages.
- Arcing hazards, which can lead to fire or equipment damage.
- Voltage fluctuations (dips and surges) that may damage sensitive electrical equipment.
- Shock and electrocution risks due to potential differences between grounded metal objects and electrical enclosures.

  Code-Compliant Installation

  While the NEC permits the use of metallic raceways for GECs, this is only allowed if both ends are properly bonded. In this case:
- The raceway is routed underground, making it impractical to bond the below-grade end.
- The termination fitting at the service enclosure does not support bonding provisions.

Recommended Corrective Action

To ensure compliance and safety:

- Remove the existing GEC from the metallic raceway.

- Reinstall the GEC in a non-magnetic, non-metallic raceway such as PVC, which does not require bonding at either end.
- This approach maintains physical protection for the conductor while eliminating the risks associated with improper bonding.

5.0 Lightning Protection System – Bonding Deficiency
Priority: HIGH

The Police Department appears to have a lightning protection system installed. These systems are highly specialized and must meet stringent design and installation standards to effectively protect both the building structure and the electrical distribution system.

A single lightning strike can carry hundreds of millions of volts and tens of thousands of amps, far exceeding the capacity of standard electrical systems. Without proper integration, this energy can cause catastrophic damage.

Upon review, there is no visible evidence that the lightning protection system is bonded to the building's electrical distribution system or grounding electrode system, as required by the National Electrical Code (NEC):

- NEC 250.60 prohibits using the lightning protection grounding electrode as the sole grounding means for electrical systems.
- NEC 250.58 requires that all grounding electrodes present at a building be interconnected to form a common grounding electrode system.
- NEC 250.104 mandates bonding of metal piping systems and structural steel to the grounding electrode system to ensure equipotential bonding.

Risks of Improper Bonding

Failure to bond the lightning protection system to the electrical and grounding systems can result in:

- Arcing between lightning conductors and nearby electrical or metallic components.
- Equipment damage due to voltage surges and potential differences.
- Fire and shock hazards during a lightning event.

Recommended Action

A qualified lightning protection system specialist should be retained to:

- Evaluate the current installation for compliance with UL 96A and NFPA 780 standards.
- Verify bonding between the lightning protection system, electrical distribution system, and grounding electrode system.
- Recommend corrective actions where deficiencies are found.
  Proper bonding ensures that lightning energy is safely and effectively directed to ground, protecting both personnel and infrastructure.

6.0 Leaking Utility Transformer – Immediate Action Required
Priority: HIGH

The utility transformer serving the facility is exhibiting signs of oil leakage. This condition requires immediate attention from the serving utility, Arizona Public Service (APS).

Transformer oil serves two critical functions:

1. Electrical insulation – preventing internal arcing and short circuits.
2. Thermal regulation – dissipating heat generated during operation.

A continued loss of insulating oil can lead to:

- Overheating, potentially resulting in catastrophic failure, including fire or explosion.
- Environmental contamination, as oil seeps into the surrounding soil, potentially triggering costly remediation efforts.

It is important to note that leaks do not self-correct and will worsen over time. Therefore, APS should be contacted immediately to assess the condition of the transformer and determine whether repair or replacement is necessary.

7.0 Standby Generator Lighting – Battery Backup Verification
Priority: LOW

It is recommended to verify that the lighting provided for the standby generator area includes a minimum 1½-hour battery backup. This is a lower priority item, but ensuring adequate emergency lighting is important for safe access and operation of the generator during power outages or low-light conditions.

8.0 Improper Neutral Conductor Installation at Generator ATS
Priority: CRITICAL

A 100A, 4-pole Automatic Transfer Switch (ATS) located on the exterior wall of the generator enclosure is missing a neutral (grounded) conductor between the generator and the service entrance section, which serves as a junction point feeding the Public Works Building.

System Configuration and Code Requirements

The generator includes a System Bonding Jumper (SBJ)—formerly known as the Main Bonding Jumper—connecting the generator's neutral to the equipment grounding and grounding electrode systems. This configuration classifies the generator as a Separately Derived System due to the use of a 4-pole ATS, which transfers all three phases and the neutral conductor between normal and standby power sources.

Per NEC 250.30(A), a separately derived system must include a properly installed SBJ at the source (generator) to ensure a low-impedance path for ground-fault current, enabling overcurrent protective devices to operate correctly. The absence of a neutral conductor from the generator to the ATS and onward to the system violates this requirement.

Observed Violations
- NEC 250.4(B): Requires electrical systems to be grounded in a manner that ensures the operation of overcurrent protection devices during ground faults.
- NEC 250.30(A): Mandates a complete and properly bonded grounding system for separately derived systems.

- NEC 300.3(B): Requires all conductors of the same circuit—including grounded and grounding conductors—to be routed together in the same raceway or cable assembly.
- NEC 300.20: Addresses the need to minimize inductive heating and impedance by maintaining proximity of all circuit conductors.

Hazards

- Fire and electrocution risk due to the inability of overcurrent devices to clear ground faults.
- Overheating and insulation degradation from separated conductors.
- Unpredictable voltage behavior and potential equipment damage.

Additional Concern

A neutral conductor is present from the service and enters the feeder conduit to the Engineering Building, but it was not found in the building's disconnecting means. Its termination point is currently unknown, adding further uncertainty and risk.

Recommended Corrective Action

- Install a properly sized neutral conductor from the generator through the ATS to the feeder serving the Public Works Building.
- Ensure the neutral is not connected to the service neutral bus, as this violates SDS isolation requirements.
- Route all conductors of the circuit together in the same raceway to comply with NEC 300.3(B) and 300.20.
- Engage a qualified electrical engineer to perform a comprehensive review of the standby power system and develop a corrective action plan.

POLICE DEPARTMENT – MAIN ELECTRICAL ROOM

9.0 Available Fault Current (AFC) and Equipment Suitability

Priority: CRITICAL

Available Fault Current (AFC) refers to the maximum current that can be delivered to a fault at a specific point in the electrical distribution system. The magnitude of this current is influenced by the impedance of the system at the fault location—the lower the impedance, the higher the fault current. As a result, faults occurring closer to the service entrance typically experience significantly higher fault currents.

The National Electrical Code mandates that all equipment and overcurrent devices be suitable for the Available Fault Current under sections 110.9 (for overcurrent devices) and 110.10 for all other electrical equipment.

During the review of the distribution equipment in this building—and across other buildings on the campus—it was observed that multiple circuit breakers may not be adequately rated for the Available Fault Current (AFC) at their respective installation points.

Unless these breakers are part of a listed series-rated system, their interrupting capacity may be insufficient to safely clear a fault. This condition poses a significant safety risk, as breakers that are not properly rated for the AFC may fail to interrupt fault current, potentially resulting in equipment damage, fire, or personal injury.

Where overcurrent devices are installed and not suitable for the Available Fault Current they represent a very serious fire and life safety hazard. A ruptured device may not safely open on a fault condition, it can expel molten material and shrapnel. The failure of a device can cause an arc flash and arc blast, both of which can be life threatening.

A brief video of a moderate arc flash and blast can be viewed at the internet web address below. Please note that the authors of this video do not identify the voltage or the Available Fault Current so the total energy release is unknown.

https://youtu.be/6hpE5LYj-CY

A review of the electrical distribution systems revealed that many 480/277-volt panels, and some 208/120-volt panels, are equipped with circuit breakers that do not have an Ampere Interrupting Capacity (AIC) rating sufficient for the Available Fault Current (AFC) at their respective locations.

Using circuit breakers with an AIC rating below the calculated AFC is a serious safety hazard. In the event of a fault, these breakers may fail to interrupt the current, potentially resulting in:

- Catastrophic equipment failure
- Arc flash incidents
- Fire or explosion

- Severe injury or fatality

This condition is a direct violation of NEC Section 110.9, which requires that overcurrent protective devices have an interrupting rating not less than the available fault current at the line terminals of the equipment.

It should be noted that some of these circuit breakers may be suitable if they have been tested, and listed by a Nationally Recognized Testing Laboratory (NRTL) as part of a Series Rated System. NRTLs include originations such as Underwriters Laboratories (UL).

A series rated system is a combination of fuses or circuit breakers that have been tested in a laboratory, in the enclosures they are to be installed in, and found to safely interrupt or open a faulted circuit where the upstream device (1st device) that is fully rated for the available fault current and the downstream device(s) which are not rated for the available fault current. This can only be verified through testing, there is no mathematical formula than can predict if overcurrent devices can successfully and safely be series rated.

Manufacturers of overcurrent protective devices publish detailed information identifying which devices have been tested and approved for use in series-rated systems. This information is typically provided in the form of labels, booklets, or technical documentation, and is required to be maintained with the equipment after installation.

Per NEC Section 110.22(C), any equipment utilizing a series-rated combination must be clearly and permanently marked to indicate that a series rating is being used. This labeling is critical to:

- Ensure safe maintenance and servicing.
- Prevent unauthorized or unsafe modifications.
- Maintain compliance with code and manufacturer specifications.

Failure to maintain proper documentation or labeling can result in misapplication of protective devices, potentially leading to equipment failure or safety hazards during fault conditions.

Series-rated system requirements were first formally introduced into the National Electrical Code (NEC) in the 1980s, although manufacturers had been identifying and publishing series rating compatibility data well before that time. Despite this, the concept remained poorly understood in many regions until the early 1990s.

Even today, many designers, contractors, and inspectors may be unfamiliar with or misunderstand the principles and hazards associated with series-rated systems. One particularly misguided but once common practice involved using a fuse to protect a downstream circuit breaker, relying on the current-limiting properties of the fuse to compensate for the breaker's lower interrupting capacity.

This practice, however, has not been legally permitted for over 40 years. The NEC requires that series-rated combinations be tested, listed, and labeled by the manufacturer, and that they be installed exactly as specified. Any deviation from the tested configuration invalidates the series rating and can result in dangerous fault conditions.

It appears, at least for older elements of this site, that the previous designers improperly used the let-through current properties of fuses to protect circuit breakers. Fuses may only be used to protect a circuit breaker if they have been tested as part of a series rated system. Failure to properly apply these requirements is a violation of the code, the listing of the equipment, voids equipment warranties, and places people and property at risk.

In all instances where the Available Fault Current (AFC) exceeds the Ampere Interrupting Capacity (AIC) rating of installed circuit breakers, a registered electrical engineer should be engaged to perform a thorough review of the electrical equipment. This review must include consultation with the equipment manufacturer to determine whether a listed series-rated system may be applied.

Extreme caution is warranted during this evaluation. Many panelboards, circuit breakers, and distribution systems may have been modified or upgraded over time to accommodate series-rated configurations. However, existing equipment may not reflect these changes, and older components may not be compatible with modern series-rated systems.

Critically, no assumptions should be made regarding the applicability of series ratings to older equipment. A series rating must be supported by manufacturer documentation that is specific to the equipment model and manufacturing date. Without this documentation, the use of a series rating is not permitted and may result in non-compliance with NEC requirements and serious safety hazards.

This should be considered a critical path corrective action and applies for almost all building’s and structures owned by the Town of Paradise Valley.

10.0 Missing Short Circuit Current Rating Label – Automatic Transfer Switch
Priority: HIGH

The Automatic Transfer Switch (ATS) for this building is designed to transfer power between the normal utility supply and the standby generator system during a power outage. However, the ATS is missing a label identifying its Short Circuit Current Rating (SCCR)—a critical specification required for safety and code compliance.

While the equipment appears to be suitable for the available fault current based on past experience, this could not be verified during the site visit. The SCCR must be confirmed through manufacturer documentation or engineering analysis.

Importance of SCCR

The Short Circuit Current Rating (also known as the withstand rating) defines the maximum fault current the equipment can safely endure without rupturing or failing. Unlike overcurrent devices that operate during a fault, the ATS is passive during such events and must be mechanically braced to withstand the extreme thermal and magnetic forces generated by fault currents, which can exceed tens of thousands of amperes.

Failure to verify the SCCR can result in:

- Equipment rupture or explosion.
- Fire hazards.
- Severe injury or fatality.
- Non-compliance with NEC Section 110.10, which requires all equipment to have a short circuit rating equal to or greater than the available fault current at its supply point.

Required Actions

- Contact the manufacturer or a licensed electrical engineer to verify the SCCR of the ATS.
- Obtain and affix proper labeling or documentation to the equipment.
- Do not open or service the ATS while energized until the SCCR is verified.
- If servicing is required, de-energize and lock out all power sources to the ATS to prevent inadvertent operation.

11.0 Improper Installation of Recent Circuit Additions
Priority: HIGH

Recent electrical work involving the addition of new circuits has not been completed in a workmanlike manner. Specific deficiencies observed include:

- Improperly supported cables and raceways
- Incorrect or incomplete terminations
- Physical damage to conductors and conduit

These issues are unacceptable, particularly in a facility where operational continuity and safety are critical. The current installation violates several provisions of the National Electrical Code (NEC), including:

- NEC 110.0 & 110.3(B) – Equipment must be installed in accordance with its listing and labeling.
- NEC 110.12(A) – Requires a neat and workmanlike installation.
- NEC 250.4(A)(5) – Mandates effective grounding and bonding paths.
- NEC 300.4 – Requires protection of conductors from physical damage.
- NEC 330.30 & 358.30 – Require that Type MC cable and EMT conduit be securely fastened and supported at specified intervals.

Best Practices and Recommendations

- Non-flexible conduit should be used unless flexibility is required for vibration isolation or movement.
- All conduits and cables must be terminated using listed fittings appropriate for the wiring method.
- Equipment and wiring must be:
    - Properly supported
    - Correctly terminated
    - Securely connected

This ensures mechanical integrity, electrical safety, and the reliable operation of overcurrent protective devices.

Action Required

A qualified electrical contractor should:

- Inspect all recent installations
- Correct all code violations
- Ensure compliance with NEC requirements and manufacturer specifications

12.0 Feeder conduits to and from the UPS
Priority: HIGH

The feeder conduits to and from the Uninterruptible Power Supply (UPS) system have not been properly supported. As noted in Item #8, this is unacceptable in a facility where operational continuity is critical.

Improperly supported conduits can result in:

- Mechanical strain on conductors and terminations
- Increased risk of conductor insulation damage
- Potential failure of critical power infrastructure

13.0 Improper Flexible Conduit Installation and Conductor Termination – Panelboard "L1E"
Priority: CRITICAL

At Panelboard "L1E", a section of flexible conduit has been installed without an equipment grounding conductor, which is a violation of NEC Section 250.118. Flexible conduit types that are not listed as effective ground-fault current paths must include a separate equipment grounding conductor. Without it, the conduit may not provide a low-impedance path to ground, potentially preventing overcurrent devices from clearing a fault, which poses a serious fire and shock hazard.

Additionally, the conductors terminated on one of the circuit breakers are oversized for the breaker lugs. To force the termination, the conductors were trimmed and damaged, which is a dangerous and unacceptable practice. This can result in:

- Overheating at the termination point
- Nuisance tripping
- Increased risk of fire or equipment failure

These conditions violate the following NEC sections:

- 110.3(B) – Equipment must be installed in accordance with its listing and labeling.
- 110.10 – Equipment must withstand the available fault current without damage.
- 110.12(A) – Requires a neat and workmanlike installation.
- 110.14(A) – Conductors must be properly sized and terminated to prevent overheating and ensure reliable connections.

Recommended Action

- Remove and replace the improperly installed flexible conduit with a compliant wiring method that includes an equipment grounding conductor.
- Replace the damaged conductors with properly sized conductors that match the circuit breaker's terminal rating.
- Ensure all terminations are made using listed and approved methods to maintain electrical and mechanical integrity.

14.0 Improper Grounding Conductor Termination – Panelboard "L1E"

Priority: CRITICAL

At Panelboard "L1E", technicians have improperly connected equipment grounding conductors (EGCs) to the neutral bar, which is a direct violation of NEC Section 250.24(A)(5). This section prohibits the connection of grounding conductors to the grounded (neutral) conductor on the load side of the service disconnect.

Safety and Operational Concerns

This improper connection causes current to flow on the equipment grounding system, including:

- Metal enclosures
- Conduit systems
- Potentially grounded structural components

This condition effectively energizes these components, creating:

- Shock hazards—especially dangerous if the neutral conductor becomes loose, damaged, or disconnected.
- Interference with sensitive electronic and data systems due to stray currents on grounding paths.
- Code non-compliance and increased liability for facility operators.

Broader Issue

This condition was also observed at other equipment locations throughout the facility. It indicates a systemic issue with grounding practices that must be addressed immediately.

Recommended Action

- All improper connections between equipment grounding conductors and neutral bars should be immediately removed.
- A licensed electrical contractor should inspect all affected panels and equipment to:
    - Correct grounding terminations
    - Verify compliance with NEC grounding and bonding requirements

15.0 Reduced Neutral Conductor Size at Automatic Transfer Switch

Priority: LOW

At the automatic transfer switch (ATS), the neutral conductor from the generator has been reduced in size. Whether this installation is acceptable cannot be determined without a comprehensive review of all connected loads, particularly the presence of non-linear loads that may introduce harmonic distortion into the system.

Per NEC Section 310.15(A)(5)(4), non-linear loads—such as computers, servers, variable frequency drives (VFDs), and LED lighting—can cause triplen harmonics (multiples of the 3rd harmonic) to accumulate in the neutral conductor. This can result in:

- Overloading of the neutral conductor
- Excessive heating
- Insulation damage
- Failure of sensitive electronic equipment
- Fire hazards in extreme cases

Important Consideration

While the neutral conductor will only carry current when the generator is operating (i.e., during a power outage), and the risk of insulation damage is reduced, the potential for harmonic-related issues remains if the generator serves non-linear loads.

Recommended Action

- A qualified electrical engineer should evaluate the load profile of the system, including:
  - The types of loads served
  - The presence and magnitude of harmonic currents
  - The neutral conductor sizing relative to these conditions
- If non-linear loads are present, the neutral conductor may need to be increased in size or derated in accordance with NEC guidelines.

POLICE DEPARTMENT – BUILDING EXTERIOR

16.0 Improper Installation of 15 kVA Transformer
Priority: HIGH

The 15 kVA transformer located on the exterior of the building appears to be improperly installed. Electrical equipment installed in wet or outdoor environments must be specifically listed and rated for such conditions to ensure safe and reliable operation.

According to the National Electrical Manufacturers Association (NEMA):

- NEMA 1 enclosures are rated for indoor use only, providing minimal protection against dust and no protection against moisture.
- NEMA 3R enclosures are required for outdoor use in wet locations, offering protection against rain, sleet, and external ice formation.

The transformer in question appears to have a NEMA 1 rating, which is not suitable for outdoor exposure. Most transformers intended for outdoor use are equipped with rain shields or weatherproof kits that upgrade the enclosure to a NEMA 3R rating.

Recommended Action

- The equipment manufacturer should be consulted to:
  - Confirm the current NEMA rating of the transformer.
  - Determine if a weatherproofing kit or rain shield is available to upgrade the enclosure to NEMA 3R.

- If the manufacturer cannot provide the necessary components, the transformer should be replaced with a unit listed for outdoor use.

Failure to address this issue may result in moisture ingress, leading to electrical faults, corrosion, insulation failure, and potential fire or shock hazards.

17.0 Improper Circuit Breaker Installation – Panelboard Fed from 15 kVA Transformer
Priority: HIGH

The panelboard fed from the 15 kVA transformer contains multiple circuit breakers that are not listed for use within the panelboard. This is a serious code and safety violation.

Only overcurrent protective devices (OCPDs) that are specifically identified by the panelboard manufacturer may be installed. These devices are tested and listed as part of a recognized assembly, and their use is essential to:

- Maintain the UL listing of the panelboard
- Ensure safe operation under fault conditions
- Preserve manufacturer warranties

Hazards of Using Unlisted Breakers

Installing circuit breakers not listed for use in the panelboard can result in:

- Improper mechanical fit or electrical contact
- Failure to trip under fault conditions
- Increased risk of arcing, overheating, or fire
- Serious injury to personnel servicing or operating the equipment

This practice voids the panelboard's listing and may also violate NEC Sections 110.3(B) and 110.14, which require that equipment be installed in accordance with its listing and labeling, and that terminations be made using approved methods.

Recommended Action

- A licensed electrical contractor should:
  - Identify and remove all unlisted breakers
  - Replace them with manufacturer-approved devices
  - Verify compatibility using the panelboard's documentation or by consulting the manufacturer directly

INFORMATION TECHNOLOGY BUILDING

18.0 Absence of Grounding Electrode System
Priority: HIGH

The building currently lacks a grounding electrode system, which is a direct violation of NEC Section 250.32. This section mandates that all buildings supplied by a feeder or branch circuit must have a grounding electrode system installed and connected to the electrical distribution system.

Purpose and Importance

A grounding electrode system is essential for:

- Limiting voltage differences between the electrical system and conductive building components such as structural steel and metallic water piping
- Safely dissipating overvoltages caused by lightning, utility switching, or accidental contact with higher-voltage systems
- Providing a reference point for the electrical system voltage to stabilize operation and enhance safety

This requirement is functionally similar to the grounding requirements for service equipment, ensuring that the building's electrical system is properly bonded to earth.

Recommended Action

- A qualified electrical contractor should:
    - Install a code-compliant grounding electrode system, that may include ground rods, building steel, or a concrete-encased electrode (Ufer ground)
    - Bond the grounding electrode system to the building's electrical distribution system in accordance with NEC 250.32 and 250.50

19.0 Lack of Bonding Between Electrical and Low Voltage Systems
Priority: High

The building's electrical distribution system does not appear to be properly bonded to the low voltage system, which is a violation of NEC Article 800, Part IV – Grounding Methods.

Specifically, NEC 800.100 requires that the primary protector and metallic members of communication cables be bonded to the building's grounding electrode system.

Importance of Proper Bonding

Bonding the low voltage system to the building's grounding electrode system is essential to:

- Limit voltage differences between systems
- Protect sensitive data and communication equipment from overvoltage conditions
- Prevent equipment damage and data corruption
- Ensure personnel safety by eliminating shock hazards from stray voltages

Failure to establish this bond can result in erratic system behavior, data errors, and equipment failures, particularly during lightning events or utility switching surges.

Recommended Action

- A qualified electrical engineer, preferably with expertise in low voltage and data systems, should:
  - Review the current installation
  - Verify compliance with NEC Article 800.100
  - Recommend corrective actions, including proper bonding to the grounding electrode system and exposed metallic components

20.0 Transformer Bonding to Grounding Electrode System – Verification Required
Priority: High

The transformer located on the exterior of the building should be verified for proper bonding to the building's grounding electrode system. During the site visit, no visible connection to the grounding electrode system was observed.

According to NEC Section 250.50 and 250.53(C), all grounding electrodes present at a building must be bonded together to form a single grounding electrode system. The use of ground rods alone, without bonding to the building's primary grounding electrode system (e.g., building steel, water pipe, or concrete-encased electrode), is not permitted.

Importance of Proper Bonding

- Ensures equipotential bonding between all conductive systems
- Reduces voltage differences that can lead to shock hazards
- Provides a low-impedance path to ground for fault and lightning currents
- Maintains compliance with NEC grounding requirements

Recommended Action

- A qualified electrical contractor or engineer should:
  - Verify the presence and continuity of the bonding connection between the transformer and the building's grounding electrode system
  - Install bonding conductors if missing, using listed connectors and methods

TOWN HALL

1.0 Code Violation: Missing Equipment Grounding Conductor
Priority: CRITICAL

The existing electrical service inside the structure is currently fed from the new electrical service located on the north side of the building. However, an equipment grounding conductor (EGC) has not been installed between the two systems. This condition constitutes a violation of the National Electrical Code (NEC), specifically:

- NEC 250.24(A)(5): This section prohibits the connection of grounded conductors (neutrals) to normally non–current-carrying metal parts or equipment grounding conductors on the load side of the service disconnect. Doing so can create parallel paths for return current, which compromises the integrity of the grounding system and can delay the operation of overcurrent protection devices.
- NEC 250.110: This section requires that all non–current-carrying metal parts of electrical equipment be connected to an equipment grounding conductor to ensure a safe and effective ground-fault current path.

Recommendation: Install a properly sized equipment grounding conductor between the old and new electrical services to comply with NEC requirements and ensure personnel safety and system reliability.

For further context, refer to Town Hall Issue #2.0.

2.0 Code Violation: Improper Main Bonding Jumper Installation
Priority: CRITICAL

The old electrical service within the building has a Main Bonding Jumper (MBJ) installed, which connects the neutral (grounded conductor) to the equipment grounding conductors. This connection is located downstream of the main service disconnect, which is a direct violation of the National Electrical Code (NEC).

NEC Requirements:

- NEC 250.24(C) mandates that the main bonding jumper must be installed only at the service disconnecting means. This is the single point where the neutral is permitted to be bonded to the equipment grounding system and the grounding electrode system.
- Downstream of this point (i.e., in subpanels or secondary service equipment), the neutral must remain isolated from the equipment grounding conductors and the grounding electrode system.

Safety Implications:
Improper bonding downstream of the service disconnect creates multiple return paths for neutral current. This can result in:

- Unintended current flow on metal parts of the building or conduit systems.
- Shock hazards due to energized enclosures or exposed conductive parts.
- Fire hazards, especially if the neutral connection becomes loose or fails, causing excessive current on grounding paths.

Recommendation:

- Remove the main bonding jumper from the old service equipment.
- Ensure that the neutral is isolated from the equipment grounding system in all downstream panels. The only location where the neutral-to-ground bond should exist is at the main service disconnect on the north side of the building.
- Remove the existing conductors and install a complete set of conductors which include the ungrounded, grounded, and equipment grounding conductors.

3.0 Installation Deficiency: Improper Raceway Termination at Distribution Board
Priority: LOW

The feeders to the distribution board located in the electrical room nearest the post office have not been installed in accordance with standard workmanlike practices. Specifically, the raceway was either not installed properly or not terminated correctly at the enclosure. While there appears to be a sufficient electrical connection to the equipment, the current installation lacks the mechanical and grounding integrity expected in a compliant system.

NEC and Best Practice Considerations:

- NEC 300.12 requires that raceways be installed in a neat and workmanlike manner.
- NEC 250.96(A) and NEC 300.10 emphasize the importance of maintaining electrical continuity and proper bonding of metal raceways to ensure effective grounding.

Recommendation:
To enhance safety and ensure compliance:

- Install a bonding bushing on the raceway where it enters the distribution board.
- This will ensure a reliable ground path and protect the conductors from potential abrasion or damage at the raceway termination point.

This corrective action will help mitigate the risk of electrical faults and improve the overall integrity of the grounding system.

4.0 Missing Covers on Boxes and Condulets
Priority: LOW

During inspection, it was observed that boxes and condulets across multiple facilities are missing covers, leaving electrical conductors exposed. This condition is a direct violation of the National Electrical Code (NEC) and presents both safety and operational hazards.

NEC Requirements:

- NEC 314.28(C): Requires that all pull boxes, junction boxes, and conduit bodies be provided with covers that are compatible with the box or conduit body construction and suitable for the conditions of use.
- NEC 110.12(A): States that electrical equipment shall be installed in a neat and workmanlike manner, and that unused openings shall be closed to afford protection equivalent to the wall of the equipment.

Safety Implications:

- Exposed conductors increase the risk of accidental contact, which can lead to electrical shock or arc flash incidents.
- Open boxes allow for the ingress of dust, moisture, and debris, which can degrade insulation and lead to short circuits or equipment failure.

Recommendation:

- Immediately install appropriate covers on all open boxes and condulets.
- Ensure that all covers are securely fastened and rated for the environment in which they are installed (e.g., damp or wet locations if applicable).

5.0 Inadequate Working Clearance at Panel "B"

Priority: CRITICAL

A permanent shelf has been installed directly below Panel "B" in one of the electrical closets. This installation violates the National Electrical Code (NEC) Section 110.26, which mandates minimum working space requirements around electrical equipment to ensure safe operation and maintenance.

NEC 110.26 Requirements:

- A minimum clear working space of:
  - 30 inches wide
  - 36 inches deep
  - 6.5 feet high (or the height of the equipment, whichever is greater)
- This space must be free of obstructions, including permanent fixtures like shelves, and must not be used for storage, especially of combustible materials.

Safety Implications:

- Obstructed access can delay emergency response or prevent safe de-energization of circuits.
- Stored materials, particularly combustibles, increase the risk of fire and electrical hazards.
- Technicians may be unable to safely service or troubleshoot equipment, increasing the risk of injury.

Additional Observations:

- Similar violations involving storage within required working clearances have been observed in multiple locations and buildings.
- While the NEC does not prohibit storage in electrical rooms, the practice should be strongly discouraged.

Recommendation:

- Remove the shelf and any stored materials from the working clearance area around Panel “B”.
- Conduct a facility-wide review to ensure all electrical equipment maintains the required clearances.
- Consider implementing signage or barriers to prevent future encroachment into these critical safety zones.

6.0 Improper Termination and Grounding of MC Cable

Priority: HIGH

In the computer room, a Metal Clad (MC) Cable has been improperly terminated and is not securely fastened to the panel from which it originates. Additionally, the cable has been improperly sleeved in Electrical Metallic Tubing (EMT) without proper grounding. This installation violates the National Electrical Code (NEC) and poses a significant safety risk.

NEC Violations:

- NEC 250.132: Requires that equipment grounding conductors be installed with the circuit conductors to ensure a continuous and effective ground-fault current path.
- NEC 250.134: Specifies that non–current-carrying metal parts of equipment (such as MC cable armor and EMT) must be connected to an equipment grounding conductor to ensure proper bonding and grounding.

Safety Implications:

- Improper termination can lead to mechanical strain on conductors, increasing the risk of insulation damage and arcing.
- Lack of grounding creates a shock hazard and may prevent overcurrent protection devices from operating correctly during a fault.
- Improper sleeving in EMT without bonding both ends can result in the conduit becoming energized, posing a severe electrical and fire hazard.

Recommendation:

- Immediately correct the termination of the MC cable using an approved MC connector.
- Properly bond the EMT sleeve using listed fittings and ensure it is grounded in accordance with NEC requirements.
- Verify that an equipment grounding conductor is present and continuous from the panel to the load.

7.0 Restricted Access Due to Soil Erosion at The Electrical Service and Distribution Board "HA"

Priority: HIGH

At the building's electrical service and distribution board "HA", soil erosion from a nearby grade change has raised the ground level directly in front of the equipment. As a result, the equipment doors can no longer open fully, which violates NEC requirements and creates a significant safety hazard.

NEC Requirements:

- NEC 110.26(A)(2) requires that doors or hinged panels on electrical equipment be able to open a minimum of 90 degrees to provide the required working space for safe operation and maintenance.

Safety Implications:

- Restricted door movement limits technician access, increasing the risk of accidental contact with live components.
- In an emergency, delayed access to disconnects or breakers can compromise safety and response time.

- Soil contact with equipment enclosures may also lead to corrosion or moisture intrusion, further degrading system integrity.

Recommendation:

- Immediately remove the excess soil in front of the panel to restore the required clearance and allow the doors to open fully.
- Install a permanent barrier or retaining structure to prevent future soil encroachment and maintain compliance with NEC clearance requirements.

8.0 Parallel Feeders to Distribution Board "HA"
Priority: CRITICAL

Distribution Board "HA" fed from the PD building has only on neutral in one raceway for the parallel feeders. Please reference Police Department issue #3 for further information.

9.0 Equipment Grounding Conductors Terminated on Neutral Bar - Distribution Board "HA"
Priority: *Critical*

Equipment grounding conductors been improperly terminated on the neutral bar. This is a violation of the National Electrical Code unless it occurs at the main service panel, where such bonding is specifically allowed. Please reference Issue #14 under the Police Department section.

10.0 Improper Installation of Flexible Cables
Priority: LOW

In the referenced area (see Police Department Issue #11), flexible cables have been installed in a manner that does not comply with the National Electrical Code (NEC). These cables are not properly secured or terminated, which can lead to mechanical strain, grounding issues, and safety hazards.

11.0 Inadequate Clearance for Transformer "TTH"
Priority: LOW

The 150 kVA transformer "TTH", located adjacent to the building's electrical service, has not been installed with the required 6-inch clearance from the wall, as mandated by the National Electrical Code.

NEC Requirements:

- NEC 110.3(B): Requires that equipment be installed and used in accordance with its listing and labeling, which typically includes manufacturer-specified clearance requirements for ventilation and heat dissipation.
- NEC 450.9: States that ventilation shall be provided to prevent the transformer from operating at a temperature higher than its rating. This includes maintaining minimum clearances from walls or other obstructions to allow for proper airflow.

Safety and Operational Implications:

- Transformers generate significant heat during operation. Inadequate clearance can:
  - Restrict airflow, leading to overheating
  - Shorten equipment lifespan
  - Increase fire risk, especially in enclosed or poorly ventilated spaces

Recommendation:

- Reposition the transformer to provide at least 6 inches of clearance from the wall, or as specified by the manufacturer's installation instructions.

12.0 Cracked Nylon Insulation on Conductors in Distribution Board "HA"
Priority: HIGH

During assessment of Distribution Board "HA", it was observed that some conductors exhibit visible cracks in their nylon insulation. This condition may compromise the dielectric integrity of the insulation and poses a potential shock or arc fault hazard.

Reference:

- See Police Department Issue #3 for a related occurrence and further context.
  Why This Matters:
- Cracked insulation can expose the conductor, increasing the risk of:
  - Short circuits
  - Electrical arcing
  - Shock hazards
  - Fire risks, especially in high-load environments

Recommendation:

- Conduct insulation resistance testing (commonly referred to as a "megger test") on the affected conductors to assess the integrity of the insulation.
- If the insulation fails to meet acceptable resistance thresholds, the conductors should be replaced.

13.0 Improper Overcurrent Protection for Feeder Conductors – Panel "B1-TH"
Priority: CRITICAL

The feeder conductors supplying Panel "B1-TH" are not adequately protected in accordance with NEC 240.4, which requires protection against short circuits, ground faults, and overloads. The conductors are #2/0 AWG, which have an ampacity of 175 amperes per NEC Table 310.15(B)(16) and Section 110.14. However, the upstream overcurrent protection device is rated at 200 amperes, exceeding the allowable protection for these conductors.

It appears that 175-amp fuses, which are appropriate for these conductors, may have been mistakenly installed in the fusible switch serving Panel "A1-TH" instead. This condition should be verified promptly. If confirmed, the 175-amp fuses should be relocated to the correct fusible switch serving Panel "B1-TH" as soon as possible to ensure compliance and safety.

Key Issues Identified:

1. Overrated Overcurrent Protection:
   - The feeder conductors are #2/0 AWG copper, which are rated for a maximum of 175 amperes per NEC Table 310.15(B)(16) and NEC 110.14(C).
   - The upstream overcurrent protection device is rated at 200 amperes, exceeding the allowable protection for these conductors.

2. Potential Fuse Misplacement:
    - It appears that 175-amp fuses, which are appropriate for the #2/0 AWG conductors, may have been mistakenly installed in the fusible switch serving Panel “A1-TH” instead of Panel “B1-TH”.
    - This misplacement compromises the protection of the feeder conductors and increases the risk of overheating and electrical failure.

NEC and Safety Considerations:

- NEC 240.4: Requires conductors to be protected against overcurrent in accordance with their ampacity unless otherwise permitted.
- NEC Table 310.15(B)(16): Specifies the ampacity of conductors based on insulation type and temperature rating.
- NEC 110.14(C): Requires conductor ampacity to be based on the temperature rating of equipment terminals.
- NEC 240.6(A): Lists standard ampere ratings for overcurrent protective devices.

Recommendation:

- Verify the placement of the 175-amp fuses to determine if they are incorrectly installed in the switch for Panel “A1-TH”.
- If confirmed, relocate the 175-amp fuses to the correct fusible switch supplying Panel “B1-TH”.
- Clearly label all fusible switches and associated panels to prevent future misidentification.

14.0 Improper Overcurrent Protection for Feeder Conductors – Switchboard “LC”
Priority: CRITICAL

The feeder conductors supplying Switchboard “LC” are not adequately protected in accordance with NEC 240.4, which requires protection against short circuits, ground faults, and overloads. The conductors are #350 kCMIL copper conductors which have a rated ampacity of 310 amperes per NEC Table 310.15(B)(16) and Section 110.14. However, the upstream overcurrent protection device is rated at 400 amperes, exceeding the allowable protection for these conductors.

Section 240.4(B) of the NEC allows conductors to be “protected” by the next standard size overcurrent protective device above the rating of the conductors. In this case the next

standard size is 350 amperes, however it is imperative to understand that it is not permitted for the load served by conductor to exceed its rated ampacity of 310 amperes.

There is also a potential issue with the use of 350 ampere fuses as they are considered a standard size, however they are not a typical size and availability for installation and future replacement can be an issue. Additionally, it is unknown what the actual loads are supplied by this equipment nor are the types of loads known so it will not be possible, without further study, to determine if the use of 350 ampere fuses will meet all requirements of the NEC.

Key Issues Identified:

1. Overrated Overcurrent Protection:
    - The feeder conductors are #350 kCMIL copper, rated for 310 amperes per NEC Table 310.15(B)(16) and NEC 110.14(C).
    - The upstream overcurrent protection device is rated at 400 amperes, which exceeds the allowable protection for these conductors.
2. Misapplication of NEC 240.4(B):
    - NEC 240.4(B) permits the use of the next standard overcurrent device rating (350 amperes) above the conductor ampacity only if the load does not exceed the conductor's ampacity.
    - In this case, the actual load characteristics are unknown, making it impossible to confirm compliance with this exception.
3. Fuse Availability and Practicality:
    - While 350-amp fuses are considered a standard size under NEC 240.6(A), they are not commonly stocked, which may present challenges for installation and future maintenance.
    - The lack of load data further complicates the decision to use 350-amp fuses, as it cannot be confirmed whether they will meet all NEC requirements.

NEC and Safety Considerations:

- NEC 240.4: Requires conductors to be protected against overcurrent in accordance with their ampacity.
- NEC 240.4(B): Allows the next standard size overcurrent device if the conductor does not supply a continuous load exceeding its ampacity.
- NEC Table 310.15(B)(16): Specifies ampacity values for conductors based on insulation and temperature ratings.

- NEC 110.14(C): Requires conductor ampacity to align with the temperature rating of equipment terminals.
- NEC 240.6(A): Defines standard ampere ratings for overcurrent protective devices.

Recommendation:

- A registered electrical engineer should conduct a detailed load analysis to determine the actual current demand on the feeder conductors.
- If the load does not exceed 300 amperes, consider replacing the 400-amp overcurrent device with a 300-amp device, ensuring availability and future serviceability.
- If the load exceeds 310 amperes, upgrade the feeder conductors to match the 400-amp protection or reconfigure the system to comply with NEC 240.4.

15.0 Improper Installation – Switchboard "LA"

Priority: CRITICAL

The Town Hall building's electrical service was originally supplied directly by Arizona Public Service via a utility transformer connected to Switchboard "LA." This setup was later altered: the utility transformer was removed, and a new transformer—owned by the Town of Paradise Valley and fed from the Police Department—was installed to supply 208/120V power.

Issue:

The new transformer, classified as a separately derived system, has been improperly installed. A System Bonding Jumper (SBJ) was placed inside the transformer enclosure. However, the Main Bonding Jumper (MBJ) at Switchboard "LA" was not removed during the refeed process.

According to NEC Section 250.30, only one bonding jumper (either SBJ or MBJ) is allowed to connect the neutral to the grounding system. Having both creates a parallel path for return current, which violates NEC 250.24(A)(5). This can result in:

- Return current flowing over equipment grounding conductors and metallic building components.
- Energizing building frames and equipment.
- Increased risk of shock and fire hazards.

Additional Concern:

A similar improper neutral-to-ground connection exists at **Switchboard "LB"**, compounding the safety risks. See **Issues #1 and #2** under the Town Hall section for more details.

Action Required:
Immediate correction is necessary to bring the installation into compliance with NEC and eliminate hazardous conditions.

MUNICIPAL COURT

1.0 Obstructed Access to Electrical Panels in Courthouse
PRIORITY: HIGH

In the courthouse, three electrical panels have been identified as being obstructed by furniture, which restricts access to the equipment. This condition is a violation of the National Electrical Code (NEC) and poses a safety risk to personnel.

Reference:

- See Town Hall Item #5 for a similar issue and additional context.

2.0 Engineering Review Required: AIC and Series Ratings of Circuit Breakers
PRIORITY: HIGH

In the building's electrical system, concerns have been raised regarding the AIC (Ampere Interrupting Capacity) and series ratings of the installed circuit breakers. These ratings are critical for ensuring that the breakers can safely interrupt fault currents without failure.

Reference:

- See Police Department Issue #9 for related context.

3.0 Storage of Combustible Materials in Electrical Equipment Working Clearance
PRIORITY: HIGH

It has been observed that combustible materials are being stored within the required working clearance of electrical equipment in this facility. This practice is a violation of the National Electrical Code (NEC) and presents a serious fire and safety hazard.

FIRE STATION #92

1.0 Improper Mounting and Damaged Enclosure for Generator Circuit Breaker
Priority: CRITICAL

The generator's circuit breaker has been found to be loosely mounted to the deadfront (cover) of the enclosure, rather than to a structural frame, which is the standard and safe practice for most electrical equipment.

Key Issues Identified:

1. Improper Mounting:
    - The circuit breaker is attached to the removable deadfront, meaning it must be disconnected or removed to service the equipment.
    - The breaker is loosely mounted presenting a serious hazard to technicians serving the equipment.
2. Damaged Deadfront:
    - The deadfront is physically damaged, and the breaker is loosely attached, increasing the risk of:
        - Mechanical failure
        - Electrical arcing
        - Shock hazards during operation or servicing
3. Missing Rear Cover:
    - A second cover at the rear of the enclosure is missing, leaving generator conductors exposed.
    - This presents a serious electrical hazard to personnel and increases the risk of accidental contact or short circuits.

NEC and Safety Considerations:

- NEC 110.3(B): Equipment must be installed in accordance with its listing and labeling, which includes proper mounting and enclosure integrity.
- NEC 110.27(A): Requires that live parts be guarded to prevent accidental contact.
- NEC 408.3(A): Mandates that overcurrent devices be securely mounted and readily accessible.

Recommendation:

- Immediately source and install replacement deadfront covers from the original equipment manufacturer (OEM).
- Install a rear cover to fully enclose and protect the generator conductors.
- Consider a qualified electrical inspection to assess the full extent of the hazard and verify compliance after repairs.

2.0 Deteriorated warning labels on the Photovoltaic System
Priority: LOW

The required warning labels on the Photovoltaic System (PV) have deteriorated and are no longer clearly legible. The labels should be replaced.

3.0 Engineering Review Required: AIC and Series Ratings of Circuit Breakers
Priority: HIGH

In the building's electrical system, concerns have been raised regarding the AIC (Ampere Interrupting Capacity) and series ratings of the installed circuit breakers. These ratings are critical for ensuring that the breakers can safely interrupt fault currents without failure.

Reference:

- See Police Department Issue #9 for related context.

4.0 Storage of Combustible Materials in Electrical Equipment Working Clearance
Priority: HIGH

It has been observed that combustible materials are being stored within the required working clearance of electrical equipment in this facility. This practice is a violation of the National Electrical Code (NEC) and presents a serious fire and safety hazard.

PUBLIC WORKS / ENGINEERING

1.0 Service Bay Fire
Priority: Critical

There has been a fire in one of the service bays in this facility. The cause of the fire is outside the scope for this evaluation. The fire appears to have caused slight to no damage, other than smoke damage, to the electrical distribution system.

A Guideline published by the National Electrical Manufacturers Association (NEMA), titled: Evaluating Fire- and Heat-Damaged Electrical Equipment (NEMA GD 2-2021), recommendations when electrical equipment has been compromised due to a fire or smoke damage. The Guideline, which is a consensus of the opinions of Electrical Manufacturers, outlines the suggestions (which may also be requirements of the equipment manufacturers) as it pertains to electrical equipment. The document does state the document is "not intended to override the recommended guidance of the specific equipment manufacturer."

The Guidelines indicate that it is necessary to consult with the equipment manufacturer to determine the steps necessary to recondition the equipment or if it will be necessary to replace the equipment. The document states, in part:

> *A working knowledge of electrical systems and the equipment in question is required to evaluate damage related to a fire event. The original manufacturer of the equipment should be contacted if any questions arise or specific*

recommendations are needed. In many cases, equipment replacement will be necessary.

After consultation with the manufacturer, some larger types of electrical equipment may be reconditioned by properly trained personnel. The potential for reconditioning can vary with the nature of the electrical function, the significance of the heat and fire residue, the age of the equipment, and the length of time the equipment was exposed to excessive heat or other damaging conditions. Because other damage to affected equipment can occur (e.g., chemical or structural damage), the equipment subject to the stresses of exposure to fire and/or heat needs to be carefully examined and evaluated to ensure that safety and performance are not negatively impacted.

Attempts to recondition equipment without consulting the manufacturer can result in additional hazards due to the use of improper cleaning agents, which can further damage the equipment (see National Electrical Code® [NEC] Section 110.11, Informational Note No. 2) or due to improper reconditioning techniques.

The Guideline states that overcurrent devices (fuses and circuit breakers) that have been exposed to fire residue should be replaced. Additionally, it recommends that panelboards, enclosed switches, and transformers should be replaced. Due to the age and condition of the equipment, and the added impact the event had on the equipment, it is recommended that all electrical distribution equipment should be replaced.

The document also indicates that conductors, devices (receptacles and switches), light fixtures all be replaced with the possibility that conduit may be reconditioned. We concur with the replacement of the indicated products. The conduit and non-flexible raceways that were not directly exposed to the heat of the fire may be reused where practical provided a separate equipment grounding conductor is installed with the circuit conductors.

2.0 Inadequate Clearance for Transformer
Priority: CRITICAL

The 150 kVA transformer has not been installed with the required 6-inch clearance from the wall, as mandated by the National Electrical Code (NEC). This condition restricts

proper ventilation and heat dissipation, which can lead to overheating, reduced equipment lifespan, and potential fire hazards.

In addition to the previously noted clearance issue (see Town Hall Item #11), the 150 kVA transformer is producing elevated sound levels, which may indicate improper installation procedures.

Likely Cause:
It is believed that the shipping bolts were not properly relaxed during installation. These bolts are used to secure the transformer core and coil assembly during transport and must be loosened or removed upon installation to allow the vibration isolation mounts to function correctly.

Consequences of Improper Setup:

- Increased vibration and noise, which can:
  - Transmit through the building structure
  - Cause discomfort or distraction in nearby occupied spaces
- Accelerated wear on internal components due to mechanical stress
- Reduced transformer lifespan and potential for premature failure

Due to these conditions, it is recommended that this equipment be relocated and replaced.

3.0 Improper installation of Panel “A/C”
Priority: CRITICAL

3.1 Inadequate Working Clearances (NEC 110.26 Violation)

Panel “A/C” has been installed directly behind the building’s transformer, violating NEC 110.26 clearance requirements. This placement forces technicians to lean on the grounded transformer while operating or servicing the panel. In the event of accidental contact with an energized component, this setup creates a direct path through the technician’s body—posing a severe shock and electrocution hazard. The risk of being immobilized by the current further increases the danger. Immediate relocation of the panel is required.

3.2 Missing Neutral Conductor and Improper Connections

The panel was installed without a dedicated neutral conductor as required by NEC Sections 200.2(B), 200.3 and 250.20. Instead, both neutral (white) and equipment grounding (green) conductors are connected to the insulated neutral bar, which is isolated from the panel enclosure. It appears that equipment grounding conductors are being misused as neutral conductors.

This creates a serious life safety and fire hazard and must be corrected immediately.

3.3 Improper Grounding and Lack of Fault Path

The neutral bar is being used for both grounding and ungrounded conductors, and there is no dedicated equipment grounding conductor bonded to the panel enclosure. This condition can energize downstream equipment enclosures and fails to provide a proper ground fault path. Without this path, overcurrent protection may not be activated during a fault, especially given the poor raceway installation.

3.4 Improper installation of Panel “A/C”

The panelboard includes overcurrent devices that are not listed for use with the equipment.

4.0 Improperly Installed Wiring and Compromised Grounding Path
Priority: CRITICAL

The wiring within the building has not been installed in a workmanlike manner, as required by the National Electrical Code (NEC). Several deficiencies have been identified:

Observed Issues:

- There are conduits that are not properly supported, leading to mechanical strain and potential conductor damage.
- Improper terminations and loose fittings compromise the integrity of the raceway system.
- The grounding path is unreliable, as the raceways (used as equipment grounding conductors) may not provide a continuous and effective fault current path.

NEC References:

- NEC 110.12(A): Requires that electrical equipment be installed in a neat and workmanlike manner.
- NEC 300.10: Mandates that raceways be securely fastened and electrically continuous.
- NEC 250.96(A): Requires that metal raceways used as equipment grounding conductors be properly bonded to ensure a low-impedance fault current path.

Safety Implications:

- A compromised grounding path can result in arcing during a ground fault, especially dangerous in areas with combustible or flammable materials.
- Loose or unsupported conduits can lead to mechanical failure, conductor insulation damage, and shock hazards.
- In the event of a fault, overcurrent protection devices may not operate correctly, increasing the risk of fire or equipment damage.

Recommendation:

- Secure all conduits with appropriate supports and ensure proper termination using listed fittings.

5.0 Potential Hazard: Electrical Room Adjacent to Vehicle Service Bays
Priority: CRITICAL

The electrical room in this facility is located adjacent to service bays, and the nature of the work performed in those bays is currently unknown. This raises a potential safety concern depending on whether the facility qualifies as a Major Repair Garage under applicable codes.

Key Definitions and Code Requirements:

Major Repair Garage (per NEC and NFPA 30A):

A facility where **major repairs** are performed, such as:

- Engine overhauls
- Fuel system repairs (including draining fuel tanks)
- Painting or body work

If gasoline, diesel, or natural gas is involved, and fuel system work is performed, the area is considered a Class I Division 2 hazardous location.

NEC 511.7 and Related Guidance:

- Electrical rooms adjacent to classified areas must be:
  - Separated by an unpierced wall or partition, or
  - Maintained at positive pressure relative to the classified area, with mechanical ventilation providing at least four air changes per hour.
- If these conditions are not met, all electrical equipment in the room must be:
  - Installed 18 inches or more above the floor, or
  - Rated for Class I Division 2 (explosion-proof or hazardous location-rated).

Current Assessment:

- The facility is not currently in use, so this is a minor issue at present.
- However, if the facility is intended to operate as a Major Repair Garage, the current configuration may pose a significant fire or deflagration hazard if:
  - The electrical room is not positively pressurized
  - The electrical equipment is not rated for hazardous locations

Recommendation:

- Confirm the intended use of the service bays (Major vs. Minor Repair Garage).
- If Major Repair Garage use is planned:
  - Engage registered Mechanical and Electrical Engineers to evaluate:
    - Ventilation system design
    - Room pressurization
    - Electrical equipment compliance
  - Implement necessary modifications to ensure safe occupancy and code compliance.

6.0 Improper Grounding – Storage Building
Priority: CRITICAL

In the storage building to the south of the repair facility there is a panelboard that has been installed just inside the building. Equipment grounding conductors been improperly terminated on the neutral bar. This is a violation of the National Electrical Code unless it occurs at the main service panel, where such bonding is specifically allowed. Please reference Issue #14 under the Police Department section.

7.0 Missing Grounding Electrode Connection at Storage Building Panelboard
Priority: HIGH

The panelboard serving the storage building does not appear to be connected to the building's grounding electrode system (GES). This is a serious violation of the National Electrical Code (NEC) and presents a significant shock hazard.

Reference:

- See Police Department Issue #18 for additional context and a similar condition.

FIRE STATION #91

1.0 Engineering Review Required: AIC and Series Ratings of Circuit Breakers
PRIORITY: HIGH

In the building's electrical system, concerns have been raised regarding the AIC (Ampere Interrupting Capacity) and series ratings of the installed circuit breakers. These ratings are critical for ensuring that the breakers can safely interrupt fault currents without failure.

Reference:

- See Police Department Issue #9 for related context.

2.0 Storage of Combustible Materials in Electrical Equipment Working Clearance
Priority: HIGH

It has been observed that combustible materials are being stored within the required working clearance of electrical equipment in this facility. This practice is a violation of the National Electrical Code (NEC) and presents a serious fire and safety hazard.

3.0 Obscured Short Circuit Current Rating Label – Automatic Transfer Switch
Priority: LOW

The Automatic Transfer Switch (ATS) for this building is designed to transfer power between the normal utility supply and the standby generator system during a power outage. However, the ATS is missing a label identifying its Short Circuit Current Rating (SCCR)—a critical specification required for safety and code compliance.

This is a low priority as it is believed the equipment is suitable for the conditions it is installed in but still must be verified. Technicians who investigate this may be required to de-energize the equipment to safely view the labels.

EMT BUILDING

1.0 Electrical Panel Condition and Suitability
Priority: CRITICAL

The electrical panel in this building is original to the structure and presents multiple serious concerns that compromise both safety and code compliance.

Identified Issues:

1. Unsuitable for Location:
    - The panel is not rated for the environmental conditions of its current location (e.g., moisture, dust, or corrosive atmosphere).

- This violates NEC 110.3(B) and NEC 110.11, which require equipment to be installed in accordance with its listing and protected from environmental deterioration.

2. Inadequate Overcurrent Protection:
    - The installed overcurrent devices are not rated for the available fault current, violating NEC 110.9, which mandates that interrupting ratings must be sufficient for the available fault current at the equipment.
3. Lack of Maintenance and Missing Seals:
    - Conduit entry seals are missing, exposing the panel to dust, moisture, and pests.
    - This compromises the integrity of the enclosure and violates NEC 300.15 and NEC 110.12(A), which require proper sealing and maintenance.
4. Improperly Installed Overcurrent Devices:
    - Devices have been installed that are not listed or labeled for use within the enclosure, violating NEC 110.3(B) and NEC 408.36, which require that all components be listed for use in the specific panelboard.
    -

Safety Implications:

- Shock and arc flash hazards
- Increased risk of fire
- Failure of protective devices during faults
- Non-compliance with insurance and inspection requirements

Recommendation:

- Engage a licensed electrical contractor to:
    - Replace the panel with a modern, listed panelboard suitable for the environment and fault current.

2.0 Improper Raceway and Cable Installation from Electrical Service
Priority: HIGH

The raceways and cables installed from the electrical service into the building have been found to be improperly supported and potentially unsuitable for the environment in which they are installed.

NEC Requirements:

- NEC 300.11(A): Requires that raceways and cables be securely fastened in place and supported at intervals in accordance with their type and use.
- NEC 300.5 and 300.6: Address installation conditions (e.g., underground, wet locations) and require that materials be suitable for the environment to prevent corrosion or degradation.
- NEC 110.12(A): Mandates that all electrical installations be performed in a neat and workmanlike manner.

Safety and Performance Implications:

- Unsupported raceways or cables can sag, pull on terminations, or become damaged, leading to:
  - Mechanical failure
  - Conductor insulation damage
  - Shock or fire hazards
- Improper cable type for the location (e.g., indoor-rated cable used outdoors or underground) can result in premature failure and code violations.
-

Recommendation:

- When the electrical service is replaced, ensure that:
  - All raceways and cables are properly supported using listed hardware.
  - Cable types are verified for suitability based on location (e.g., wet, corrosive, or underground environments).
  - The installation is reviewed by a licensed electrical contractor to ensure full NEC compliance.

COMMUNICATIONS BUILDING

1.0 Storage of Combustible Materials in Electrical Equipment Working Clearance Priority: HIGH

It has been observed that combustible materials are being stored within the required working clearance of the facilities automatic transfer switch. This practice is a violation of the National Electrical Code (NEC) and presents a serious fire and safety hazard.

2.0 Engineering Review Required: AIC and Series Ratings of Circuit Breakers

Priority: Critical

In the building's electrical system, concerns have been raised regarding the AIC (Ampere Interrupting Capacity) and series ratings of the installed circuit breakers. These ratings are critical for ensuring that the breakers can safely interrupt fault currents without failure.

3.0 Improper Conductor Terminations in ATS

Priority: Critical

Several locations within the Automatic Transfer Switch (ATS) have been identified where three conductors are terminated under a single lug that is only rated for two conductors. Additionally, some conductors are too small for the lugs they are terminated in, violating multiple sections of the National Electrical Code (NEC).

NEC Violations:

- NEC 110.3(B): Requires that equipment be installed and used in accordance with its listing and labeling, including the number and size of conductors permitted per terminal.
- NEC 110.10: Mandates that the electrical system be designed and installed to withstand the available fault current without damage.
- NEC 110.14(A): Requires that terminals be used only with conductors of the correct size and number, as specified by the terminal's listing.

Functional and Safety Concerns:

1. **Electrical Performance:**
    - Terminations are responsible for:
        - Transferring current from the conductor to the equipment
        - Securing the conductor to the equipment
    - When conductors are undersized or overcrowded in a lug:
        - The electrical contact area is reduced
        - Current-carrying capacity is compromised
        - Overheating can occur, leading to insulation damage or fire

2. Mechanical Security:

- Improperly secured conductors may loosen or pull free during a fault condition.
- This can:
  - Prevent overcurrent devices from operating properly
  - Leave energized conductors exposed, posing a shock or arc flash hazard to technicians
  - Jeopardize system reliability and continuity of service

Recommendation:

- Engage a **licensed electrical contractor** to:
  - Re-terminate all affected conductors using lugs rated for the correct number and size of conductors
  - Replace or upgrade terminals where necessary to accommodate the existing wiring
  - Verify all terminations for torque and compliance with manufacturer specifications

COMMON ISSUES – PROJECT WIDE

The following issues were observed across multiple facilities and represent systemic concerns that should be addressed to improve safety, reliability, and maintainability of the Town's electrical infrastructure:

1. Inadequate Equipment Labeling

Many electrical components are either poorly labeled or not labeled at all. This significantly impairs a technician's ability to identify circuits and equipment, leading to extended troubleshooting times. More critically, the inability to quickly identify and de-energize circuits may result in technicians working on energized equipment, increasing the risk of electrical shock, arc flash incidents, and unintentional power outages

2. Noncompliance with Design Documents

A review of historical construction documents indicates that, in several cases, contractors either failed to follow the engineer's design intent or lacked the technical understanding to interpret the drawings correctly. These deviations have resulted in serious deficiencies that were not identified during inspections by design professionals or the Building Official.

3. **Improper Grounding and Bonding**

Numerous instances of improper or missing grounding and bonding were identified. Proper grounding and bonding are essential for the safe operation of electrical systems. Noncompliance with NEC requirements can lead to catastrophic equipment failure, increased fire risk, and serious life safety hazards.

4. **Missing or Improperly Installed Equipment Covers**

In many locations, electrical equipment covers and deadfronts are either missing or not properly secured. While this may appear minor, it poses a significant safety risk. Covers are designed to contain arc flash and arc blast events. Missing or loose hardware compromises the structural integrity of enclosures and may expose technicians to falling debris or energized components. All missing or damaged hardware should be replaced with components that meet or exceed the original specifications.

5. **Lack of Preventive Maintenance**

There is a widespread lack of routine maintenance across the Town's electrical systems. Preventive maintenance is critical to ensuring equipment operates as intended. Neglecting maintenance not only shortens equipment lifespan but also increases the likelihood of unsafe conditions and unexpected failures.

ADDITIONAL RECOMMENDATIONS

The following recommendations are supplementary to the primary issues identified in this report. While considered secondary in priority, these best practices are intended to support long-term system reliability, enhance safety, and assist municipal technicians in effectively maintaining and troubleshooting electrical infrastructure. Implementing these measures can help prevent future issues and streamline response efforts when problems arise.

1.0 Electrical System Reference Documentation

It is recommended that a **laminated, up-to-date single-line diagram** be framed and permanently mounted on the interior wall of the main electrical room for each facility. This diagram should clearly illustrate the building's electrical distribution system, enabling technicians to quickly and accurately understand system configuration during routine maintenance or emergency response.

The diagram must be kept current and revised promptly to reflect any modifications to the electrical infrastructure. Maintaining accurate documentation in this manner supports operational efficiency, enhances safety, and reduces the risk of service errors.

2.0 Equipment Identification and Labeling

All transformers, panelboards, transfer switches, disconnect switches, and distribution boards should be assigned a **unique identifier** and clearly marked with a **permanent, durable label** appropriate for the environmental conditions in which the equipment is installed (e.g., indoor, outdoor, high-moisture, or corrosive environments).

While this may appear to be a minor task, it plays a **critical role in both equipment servicing and asset management**. Proper labeling ensures that technicians can quickly and accurately identify components during maintenance or emergency response, and it

supports effective tracking and documentation of electrical assets over the lifecycle of the facility.

2.1 Equipment Naming and Source Identification

a. Unique Site-Wide Naming Convention

To avoid confusion and ensure clarity across the facility, each piece of electrical equipment should be assigned a **unique identifier** that is consistent and non-repetitive across the entire site. Generic labels such as “Panel A” or “Panel B” should be avoided, as multiple components with similar names may exist within the same property.

A standardized naming convention—developed in consultation with a qualified electrical engineer—should be implemented. This convention should be intuitive, scalable, and reflective of the equipment’s location and function within the system.

b. Source and Load Labeling

In addition to unique identifiers, all equipment should be clearly labeled to indicate both the source of supply and, where applicable, the equipment or circuits it serves. This enhances operational awareness and facilitates efficient troubleshooting.

> ***Example:***
> A panelboard located in the Police Department and fed from a distribution board might be labeled as follows:
>
> **PANEL “H1-PD”**
> ***FED FROM DISTRIBUTION BOARD “DB1-PD”***

This level of detail allows technicians and staff to quickly trace power paths, understand system relationships, and respond effectively during maintenance or emergency situations.

3.0 Electrical System Mapping

It is recommended that a **qualified electrical contractor** be engaged to perform a comprehensive mapping of the facility's electrical distribution system. This process should include:

- Identification and documentation of all electrical system components
- Determination of each component's **source of supply**
- Mapping of all **downstream equipment** served by each component

This task is essential for developing a complete understanding of the system's configuration, interdependencies, and potential vulnerabilities. It also aligns with the equipment identification and labeling recommendations outlined in **Item 2**, supporting improved maintenance, troubleshooting, and future planning.

4.0 Preventive Maintenance Program

It is recommended that a **qualified electrical contractor** be retained to implement a comprehensive preventive maintenance program for all critical components of the electrical distribution system. This includes, but is not limited to:

- Panelboards
- Disconnect switches
- Transformers
- Transfer switches
- Standby generators
- Distribution boards
- Service entrance equipment

The selected contractor should have demonstrated expertise in the application of the following standards and regulations:

- **NFPA 70E** – *Standard for Electrical Safety in the Workplace*

- **NFPA 70B** – *Standard for Electrical Equipment Maintenance*
- **OSHA** – *Occupational Safety and Health Administration requirements*

Strict adherence to these standards is essential to ensure personnel safety, minimize the risk of equipment failure, and maintain the operational integrity of the facility's electrical infrastructure.

5.0 Lightning Protection System Bonding Verification

It is recommended to verify that any existing **lightning protection system** is properly bonded to the building's **grounding electrode system**, in full compliance with applicable codes and standards, including:

- **NFPA 780** – *Standard for the Installation of Lightning Protection Systems*
- **NEC Article 250** – *Grounding and Bonding Requirements*

Proper bonding is essential to ensure the safe dissipation of lightning energy and to eliminate potential differences that could pose serious hazards to personnel, equipment, and building infrastructure.

This verification should be conducted by a **qualified professional** with proven experience in the **design, installation, and inspection** of lightning protection systems.

6.0 Standby Generator Maintenance and Reliability Assurance

At present, it is unclear whether the standby generators serving the facilities are being exercised and maintained in accordance with the manufacturers' recommended schedules. Adherence to these guidelines is **critical to ensuring reliable generator performance** during utility outages or emergency conditions.

Visual observations indicate that routine maintenance may not be occurring as required. To address this concern, it is strongly recommended that a **qualified and certified service provider** be engaged to:

- Conduct a thorough evaluation of each generator's current condition and operational readiness

- Verify compliance with manufacturer-recommended maintenance procedures and **industry standards**, such as **NFPA 110 – Standard for Emergency and Standby Power Systems**
- Develop and implement a **documented maintenance and testing program**, including periodic load testing, fuel system inspections, battery checks, and control system diagnostics

Establishing a structured maintenance protocol will help ensure the generators operate as intended during critical events, reduce the risk of failure, and extend the service life of this essential equipment.

7.0 Design Professional Involvement in Construction Oversight

For all future capital improvement and renovation projects, it is strongly recommended that the respective design architects and engineers be engaged to conduct periodic site assessments throughout the construction phase and again upon project completion—prior to the final inspection by the Town of Paradise Valley's Building Official.

Design professionals possess in-depth knowledge of their construction documents and performance specifications, enabling them to effectively support contractors and inspectors in verifying compliance with both the Town's adopted codes and the original design intent. Their involvement can significantly reduce the likelihood of equipment or system failures, extend the operational life of installed systems, and, most importantly, help ensure a safe and code-compliant installation.

7.1 Independent Third-Party Peer Review

In certain cases—particularly those involving critical infrastructure or facilities where public safety is a primary concern—it may be advisable to engage an independent third-party engineering consultant. This consultant would be responsible for conducting a peer review of the design professional's construction documents and performing site inspections throughout the project lifecycle.

Independent third-party reviewers bring an objective perspective and are solely focused on ensuring the final product meets the highest standards of quality and compliance with nationally recognized codes and best practices. Their involvement can serve as an additional layer of assurance, helping to identify potential

oversights, enhance system reliability, and support the delivery of safe, code-compliant installations.

8.0 Recommendation for Electrical Distribution Equipment Standardization

To ensure consistency, compatibility, and ease of maintenance across all electrical systems, it is recommended that all electrical distribution equipment—whether newly added or replaced—be sourced from a single major equipment manufacturer. Standardizing on one manufacturer helps streamline spare parts inventory, simplifies training for maintenance personnel, and enhances system reliability.
The following manufacturers are recommended for their proven performance, reliability, and widespread industry support:

- **Eaton**
- **Schneider Electric (Square D)**
- **Siemens**

Selecting one of these manufacturers for all future installations and replacements will support long-term operational efficiency and reduce the risk of compatibility issues.

9.0 Final Safety Advisory

There is a significant concern for the safety of individuals who may service or interact with the electrical systems and equipment described in this report. It is strongly recommended that only qualified personnel — those who have received formal training in the installation, operation, and maintenance of electrical systems — be permitted to perform any work on this equipment.

Evidence suggests that untrained or inexperienced individuals may have made modifications or additions to the system. This introduces an elevated risk of electric shock, particularly due to potentially hidden hazards such as energized equipment grounding conductors, which are not intended to carry current under normal conditions.

As a result, it is strongly advised that no maintenance or service be performed on any energized system. Due to the possibility of unseen hazards, all power to the structure should be completely de-energized before any work is undertaken. This precaution is essential to ensure that technicians are not unknowingly exposed to unsafe or life-threatening conditions.

SUMMARY

The building distribution systems reviewed during this assessment and arc-flash study exhibited widely varying conditions.

For structures built prior to 1980, the condition of electrical equipment and installations typically ranges from fair to very poor. Equipment over 30 years old is at or beyond its expected service life, and replacement parts are increasingly difficult—or impossible—to obtain, as manufacturers no longer support outdated models. In many cases, years of neglect and improper modifications have further compromised the safety and reliability of these systems. Unless otherwise noted in this report, such systems should be replaced during any future building modifications.

For equipment and systems that we installed between 20 and 40 years ago, proper maintenance of the equipment is critical assure the continuity of operations and the equipment's ability to safely perform their desired functions. Furthermore all works should be performed and inspected by individuals who are specialists in the electrical field. Maintenance engineers and inspectors who are not specialists in the electrical field will not have the knowledge or experience to understand the requirements or recognize the hazards in this very complex discipline.

In viewing the distribution systems in these buildings, it is apparent that a significant amount of work has been done improperly and, in some cases, in an unsafe manner. This may have been avoided if the design professionals who were engaged to provide the electrical design also completed periodic inspections. The additional fees associated with these services would more than offset the cost to make the corrective actions that are suggested within this document.

Proper maintenance also should not be overlooked: Maintenance of the electrical systems is critical to reduce failures, extend equipment life, assure proper operation of equipment, and provide for a safe built environment for the Citizens and Employees of the Town of Paradise Valley.

This report should be shared with the Managers and Directors who are responsible for the ongoing operations and maintenance of the Town of Paradise Valley's facilities. Additionally, the document should be presented to those who may be contracted to provide further and more detailed assessments, make corrective actions, or provide designs or modifications to the electrical systems.

Respectfully submitted,

Mark Ptashkin CBO
Chief Operating Officer
120 Degreez Engineering

Town of Paradise Valley

6401 E Lincoln Dr
Paradise Valley, AZ 85253

Action Report

File #: 25-202

AGENDA TITLE:
Discussion of Potential Code Amendments Regarding Large Vehicle Parking, Group Homes, and Noise

STAFF CONTACT:

TOWN
Of
PARADISE VALLEY

STAFF REPORT

TO: **Mayor and Town Council**

FROM: **Andrew Ching, Town Manager**
Chad Weaver, Community Development Director

DATE: **September 11, 2025**

DEPARTMENT: **Community Development Department**
Chad Weaver, 480-348-3522

AGENDA TITLE: **Discussion of Potential Code Amendments Regarding Large Vehicle Parking, Group Homes, and Noise**

SUMMARY STATEMENT:

Council previously requested the opportunity to discuss potential code changes when approving the Michael Baker contract for the clean-up of the zoning ordinance. That process is ongoing, but this presentation will allow the Council to provide guidance on specific additional items that have been raised to the Town Manager in the interim.

Next Steps
Council provides guidance for future consideration.

ATTACHMENT(S):
A. Staff Report
B. Staff Presentation

TOWN OF PARADISE VALLEY

Code Changes

Town Council
Study Session
September 11, 2025

PURPOSE

- June 12 Council approved Michael Baker Contract to update Zoning Code
- Council was invited to provide input on additional Code amendments or improvements
- Seeking input on the items raised. May be brought back for future consideration.

CODE CONCERNS

- On-street parking, truck parking
- Group Homes
- Noise

ON-STREET PARKING, TRUCK PARKING

- For a chassis rated more than one ton or a vehicle more than twenty-two feet in length, or any trailer, on a street or right of way, for 72 hours or longer. (Town Code)

- "Abandoned vehicle" means a vehicle, trailer or semitrailer that is of a type subject to registration under this title whether lost, stolen, abandoned or otherwise unclaimed and that has been abandoned on a public highway, public property or elsewhere in this state, including private property. Evidence that a vehicle was left unattended for a period of forty-eight hours within the right-of-way of any highway, road, street or other public thoroughfare or for a period of seventy-two hours on public or private property or elsewhere in this state is prima facie evidence of abandonment. (ARS)

GROUP HOMES

- Current Town Process
  - Up to 10 residents for those under ADA
  - Reasonable Accommodation option

- ARS
  - Would allow reduction to max of 6 due to lack of multi-family housing

NOISE

- Yard Maintenance
  - 7 AM - 5 PM on Monday through Friday and between 9 AM and 5 PM on Saturdays and Sundays (Town Code)
- Construction
  - 5 AM – 7 PM Monday to Friday and 7 AM – 7 PM on Saturdays from May 1 to October 15 (ARS)
  - 7 AM – 5 PM Monday through Friday otherwise (Town Code)
- Sport Court
  - 20 foot setback to edge or painted line of play
  - No limit on number

Action Report

File #: 25-186

Action Report

File #: 25-192

Discussion or consultation with the Town Attorney for legal advice regarding pending or contemplated legislation as authorized by A.R.S. §38 431.03(A)(3); and discussion or consultation with the Town Attorney in order to consider the Town Council's position and instruct its attorneys regarding potential impacts of legislation on existing contracts as authorized by A.R.S. §38-431.03(A)(4).

Action Report

File #: 25-187

Discussion or consultation with the Town Attorney, as authorized by A.R.S. §38-431.03(A)(4), in order to consider the Town's position and instruct legal counsel regarding the contract between the Town of Paradise Valley and the United States Postal Service; and discussion or consultation with the Town Attorney, as authorized by A.R.S. §38-431.03(A)(3) for legal advice relating to the contract.

Action Report

File #: 25-188

The Town Council may go into executive session at one or more times during the meeting as needed to confer with the Town Attorney for legal advice regarding any of the items listed on the agenda as authorized by A.R.S. §38-431.03(A)(3).

Town of Paradise Valley

6401 E Lincoln Dr
Paradise Valley, AZ 85253

Action Report

File #: 25-193

AGENDA TITLE:
Proclaim September 2025 as Ovarian Cancer Awareness Month

RECOMMENDATION:
Proclaim September 2025 as Ovarian Cancer Awareness Month

STAFF CONTACT:

TOWN
Of
PARADISE VALLEY

STAFF REPORT

TO: **Mayor Bien-Willner and Town Council Members**

FROM: **Andrew B. Ching, Town Manager**
Duncan Miller, Town Clerk

DATE: **September 11, 2025**

DEPARTMENT: Town Manager
Duncan Miller, 480-348-3610

AGENDA TITLE:
Proclaim September 2025 as Ovarian Cancer Awareness Month

RECOMMENDATION:
Proclaim September 2025 Ovarian Cancer Awareness Month

SUMMARY STATEMENT:

According to the American Association for Cancer Research, ovarian cancer is rare but because it often goes undiagnosed and untreated, the survival rate is low. It is the fifth leading cause of cancer-related death among American women.

To honor survivors and promote awareness about this disease, Mayor Stanton will proclaim September 2025 as Ovarian Cancer Awareness Month in Paradise Valley.

ATTACHMENT(S):
A. Staff Report
B. Proclamation

Proclamation

WHEREAS, *Ovarian cancer is the 5th leading cause of death among women and the American Cancer Society estimates each year approximately 20,890 women will be diagnosed with ovarian cancer in 2054 and 12,730 individuals will die from the disease nationwide, including 470 new cases and 330 deaths in Arizona; and*

WHEREAS, *in the United States, a woman's lifetime risk of being diagnosed with ovarian cancer is approximately 1 in 91, and her lifeteime risk of dying from the disease is approximately 1 in 43 in Arizona; and*

WHEREAS, *although the five-year survival rate for Stage I ovarian cancer exceeds 90 percent, only 15 percent of cases are diagnosed at this early stage. For those diagnosed in later stages, the five-year survival rate drops below 30 percent; and*

WHEREAS, *while screening tools such as mammograms and Pap tests exist for breast and cervical cancers, no equivalent screening test exists for ovarian cancer, making awareness of symptoms and risk factors essential for early intervention; and*

WHEREAS, *increased public education about ovarian cancer can help save lives by promoting earlier diagnosis, supporting access to gynecologic oncology care, and encouraging research funding for better detection and treatment options; and*

WHEREAS, *during this month, the Town of Paradise Valley joins all those affected by ovarian cancer — those currently battling, those who have lost their lives, their families and caregivers, and our dedicated healthcare professionals — in raising awareness, promoting education, and fostering hope for earlier diagnoses, improved treatments, and ultimately a cure;*

NOW, THEREFORE, *I, Mark Stanton, Mayor of the Town of Paradise Valley, do hereby proclaim* the month of September, 2025, as

Ovarian Cancer Awareness Month

and I encourage the residents of Paradise Valley to discuss risk factors with their doctors and remain vigilant against symptoms, and pay tribute to all those who have been lost to and continue to fight against Ovarian Cancer.

IN WITNESS WHEREOF, *I have set my hand and caused to be affixed the seal of the Town of Paradise Valley this 11th day of September, 2025.*

Mark Stanton, Mayor

Attest:

Duncan Miller, Town Clerk

Action Report

File #: 25-196

AGENDA TITLE:
Planning Commission Update

STAFF CONTACT:

TOWN
Of
PARADISE VALLEY

STAFF REPORT

TO: **Mayor Bien-Willner and Town Council Members**

FROM: **Andrew Ching, Town Manager**
Duncan Miller, Town Clerk

DATE: **September 11, 2025**

DEPARTMENT: Town Manager
Duncan Miller, 480-348-3610

AGENDA TITLE:
Planning Commission Update

SUMMARY STATEMENT:

Each year, the Town's various volunteer committees, commissions, and boards provides an update to the Town Council. Planning Commission Chair Pamela Georgelos will present the annual update on the Commission's activities.

ATTACHMENTS:
A. Staff Report
B. Presentation

TOWN OF PARADISE VALLEY

Planning Commission Update

Pamela Georgelos
Planning Commission Chair
September 11, 2025

PLANNING COMMISSION MEMBERS

- 7 members
- Appointed by Town Council
- Serve a staggered three-year term
- Select a chairperson each April
- 3 members serve on Hillside Building Committee

Pamela Georgelos Chair
Bob Brown
Charles Covington
Craig Curtis
Timothy Dickman
William Nassikas
James Rose

ROLE OF PLANNING COMMISSION

1. Hear requests & make recommendations to Town Council
2. Hear requests and make decisions

Meeting Information
• Regular meeting times 1st & 3rd Tuesday of each month at Town Hall • 6:00 p.m. start time • Agenda & packet material available on Town website

ROLE OF PLANNING COMMISSION

Hear requests & make recommendations to Town Council on the following:

Special Use Permit Amendments

- Major (e.g., Smoke Tree Resort)
- Intermediate (e.g., Phoenix Country Day School)


Smoke Tree Resort

Zoning Ordinance Amendments

- State Required (e.g., Residential application procedures)
- Town-Initiated (e.g., Personal Wireless Service Facilities)

General Plan Amendments

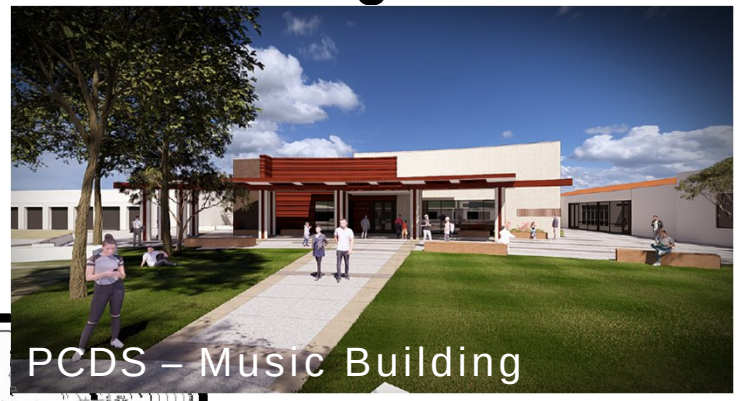
- Site Specific (e.g., Redevelopment of Ascension Lutheran)
- Entire General Plan Update (minimum of every 10 years)

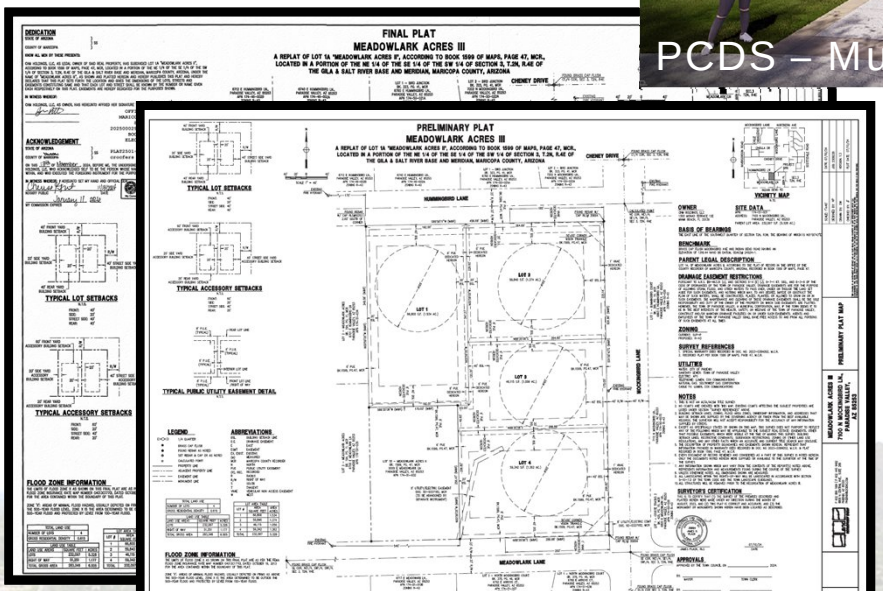

PCDS – Performance Arts Ctr

ROLE OF PLANNING COMMISSION

Hear requests & make decisions on the following:

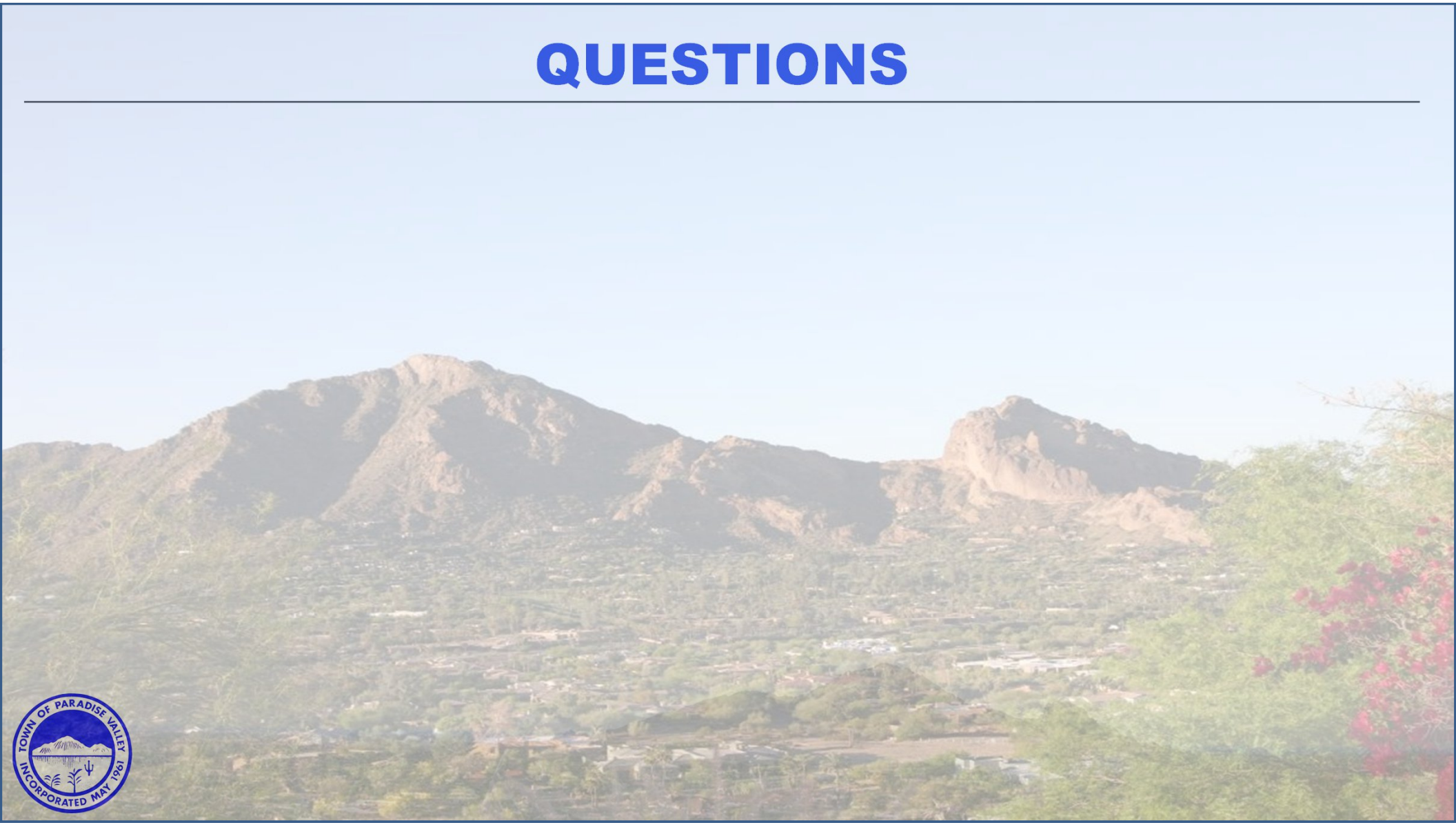
- Minor Special Use Permits
- Conditional Use Permits
  - Water booster stations
  - Private road
  - Antennas
- Lot Splits
  - Site under 2.5 acres
- Preliminary Plats


PCDS – Music Building


FINAL PLAT
MEADOWLARK ACRES III

PRELIMINARY PLAT
MEADOWLARK ACRES III

QUESTIONS



Action Report

File #: 25-197

AGENDA TITLE:
Board of Adjustment Update

STAFF CONTACT:

TOWN
Of
PARADISE VALLEY

STAFF REPORT

TO: **Mayor Bien-Willner and Town Council Members**

FROM: **Andrew Ching, Town Manager**
Duncan Miller, Town Clerk

DATE: **September 11, 2025**

DEPARTMENT: Town Manager
Duncan Miller, 480-348-3610

AGENDA TITLE:
Board of Adjustment Update

SUMMARY STATEMENT:

Each year, the Town's various volunteer committees, commissions, and boards provides an update to the Town Council. Board of Adjustment Chair Eric Leibsohn will present the annual update on the Board's activities.

ATTACHMENTS:
A. Staff Report
B. Presentation

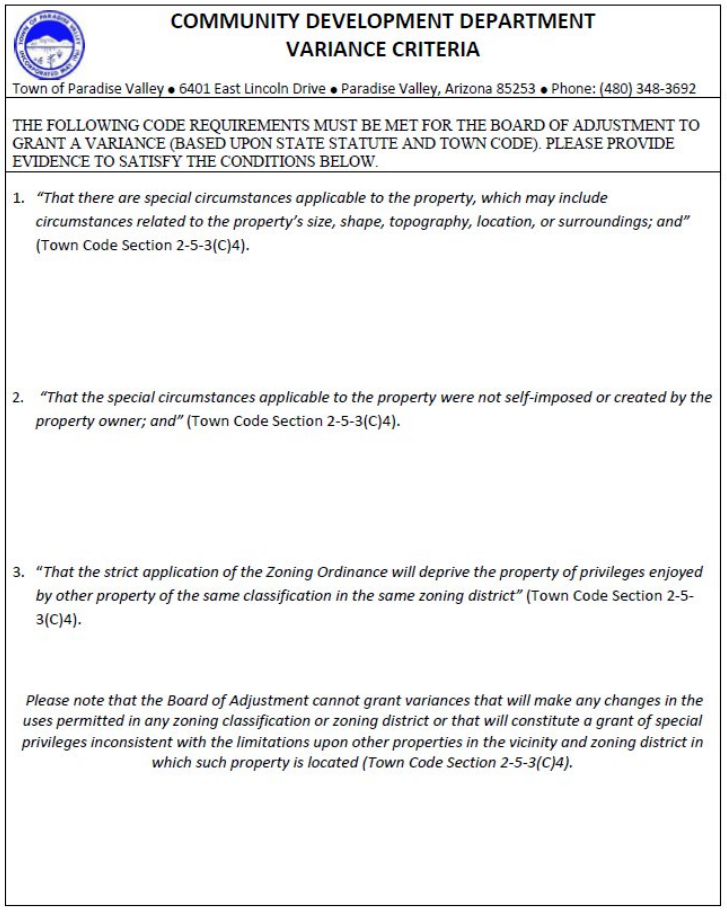
TOWN OF PARADISE VALLEY

Board of Adjustment Update

Eric Leibsohn
Board of Adjustment Chair
September 11, 2025

BOARD OF ADJUSTMENT ROLE

- Board of Adjustment is a Quasi-Judicial Body that:
  - Hears and decides variances from Zoning Ordinance based on specific state mandated criteria
  - Hears and decides appeals from decisions of Zoning Administrator



COMMUNITY DEVELOPMENT DEPARTMENT
VARIANCE CRITERIA

Town of Paradise Valley • 6401 East Lincoln Drive • Paradise Valley, Arizona 85253 • Phone: (480) 348-3692

THE FOLLOWING CODE REQUIREMENTS MUST BE MET FOR THE BOARD OF ADJUSTMENT TO GRANT A VARIANCE (BASED UPON STATE STATUTE AND TOWN CODE). PLEASE PROVIDE EVIDENCE TO SATISFY THE CONDITIONS BELOW.

1. *"That there are special circumstances applicable to the property, which may include circumstances related to the property's size, shape, topography, location, or surroundings; and"* (Town Code Section 2-5-3(C)4).

2. *"That the special circumstances applicable to the property were not self-imposed or created by the property owner; and"* (Town Code Section 2-5-3(C)4).

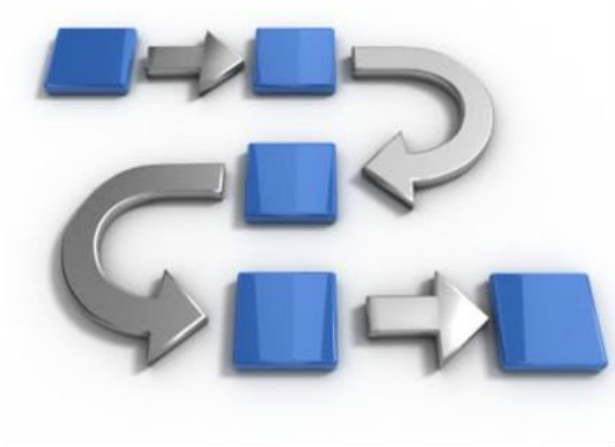
3. *"That the strict application of the Zoning Ordinance will deprive the property of privileges enjoyed by other property of the same classification in the same zoning district"* (Town Code Section 2-5-3(C)4).

Please note that the Board of Adjustment cannot grant variances that will make any changes in the uses permitted in any zoning classification or zoning district or that will constitute a grant of special privileges inconsistent with the limitations upon other properties in the vicinity and zoning district in which such property is located (Town Code Section 2-5-3(C)4).

BOARD OF ADJUSTMENT MEMBERS

- 7 volunteer members
- Appointed by Town Council
- Serve a staggered three-year term
- Elect Chair each April by majority vote of Board

PROCESS



- 2 to 3 Month Process
- Pre-application Review by Staff
- Application Submittal
  - Staff review to deem complete
  - Noticing in newspaper
  - Posting on site
  - Noticing of property owners within 1,500’ radius
- Public Hearing
  - Board may deny, approve as submitted, approve with conditions, or continue

PROCEDURES

<u>BOA Handbook Adopted February 2, 2023</u>

- Consistent with State Law criteria for variances
- Outlines expectations of members
- Code of conduct
- Chairman's script to clarify Board role for residents attending meetings

QUESTIONS?

Thank you!

Action Report

File #: 25-190

TOWN
Of
PARADISE VALLEY

TOWN COUNCIL MEETING
6401 E. LINCOLN DRIVE
PARADISE VALLEY, ARIZONA 85253
MINUTES
THURSDAY, JUNE 12, 2025

1. CALL TO ORDER / ROLL CALL

Mayor Stanton called to order the Town Council Meeting for Thursday, June 12, 2025 at 3:00 PM in the Town Hall Boardroom, 6401 E. Lincoln Drive, Paradise Valley, AZ 85253.

COUNCIL MEMBERS PRESENT
Mayor Mark Stanton
Vice Mayor Ellen Andeen-Keller
Council Member Christine Labelle
Council Member Karen Liepmann
Council Member Scott Moore attended by video conference
Council Member Julie Pace
Council Member Anna Thomasson

STAFF MEMBERS PRESENT
Town Manager Andrew B. Ching
Town Attorney Andrew McGuire
Police Chief Freeman Carney
Town Clerk Duncan Miller
Community Development Director Chad Weaver
Public Works Director Isaac Chavira
CFO Leslie DeReche
Capital Projects Manager Sam Kayat

2. EXECUTIVE SESSION

25-155 **Discussion or consultation with the Town Attorney, as authorized by A.R.S. §38-431.03(A)(4), in order to consider the Town's position and instruct legal counsel regarding the contract between the Town of Paradise Valley and the United States Postal Service; and discussion or consultation with the Town Attorney, as authorized by A.R.S. §38-431.03(A)(3) for legal advice.**

25-145 **The Town Council may go into executive session at one or more times during the meeting as needed to confer with the Town Attorney for legal advice regarding any of the items listed on the**

agenda as authorized by A.R.S. §38-431.03(A)(3).

3. STUDY SESSION ITEMS

25-152 Legislative Update and Status of Bills of Interest to the Town

Highground Public Affairs Consultants Chief Operating Officer Doug Cole updated the Council on activities at the state legislature. He said the Senate and Governor's office have been meeting and are largely in agreement on the FY2026 budget and it is anticipated that they may roll some of the requests from the House into their version of the budget legislation. He summarized the status of bills related to Photo Radar, Zoning/Prime Contracting, and General Government.

25-135 Discussion of Rose Lane SRP Underground Utility Conversion District

Community Development Director Chad Weaver and CIP Manager Sam Kayat updated the Council on the Salt River Project (SRP) Underground Utility Conversion District on Rose Ln. Patricia DiRoss and William Howard with SRP were present to respond to questions.

Mr. Weaver reviewed the SRP Municipal Aesthetics Program, described the remaining districts in Paradise Valley to be undergrounded (Rose Lane, 40th St, 38th St, and Denton Lane), and briefed the Council on the Rose Lane District.

The Rose Lane District is located at the southwest corner of Rose Land and Palo Cristi Rd and consists of removing three utility poles and undergrounding overhead lines and equipment for an estimated total project cost of $257,500 split between SRP, resident contributions, and the Town's share.

Project cost estimate	$ 257,500
SRP aesthetic funds used	$ 128,750
Remaining balance to be split	$ 128,750
Town's share (66.7%) *	$ 85,876
Residents' contribution (33.3%) *	$ 42,874

He said the Town would coordinate with SRP and the residents in and around the district over the summer and bring a construction contract back to the Council in in the fall.

The Council discussed resident outreach and communication strategies to encourage participation in the undergrounding district.

25-166 Discussion and Possible Direction to Staff Regarding Ordinance 2025-03, Amending Chapter 2, Article 2-2, Section 2-2-2 of the Town Code Relating to the Annual Process for Selection of the Vice Mayor

Town Attorney Andrew McGuire presented a revised ordinance providing a process for the selection of the Vice Mayor based on discussion and direction from the previous Council study session. The goal of the ordinance was to provide an opportunity for every Council Member to serve as Vice Mayor after they have been on the Council for at least one year.

The Council debated the merits of the ordinance and discussed scenarios related to how the ordinance would be applied.

Direction was given to schedule the ordinance for a vote a vote in the fall.

25-162 Discussion of the Status of the Municipal Property Corporation

Town Clerk Duncan Miller provide background on the Paradise Valley Municipal Property Corporation (MPC) and seek Council direction on whether the MPC should be transitioned to an inactive status or dissolved.

The MPC was created in 1993 and issued excise tax revenue bonds in 1993 and 1998 and refinanced the 1998 bonds in 2009. The Town also debt financed capital projects in 2016 and 2020 but did so through a private placement of excise tax revenue obligations instead of issuing bonds through the MPC. Since 2009, the MPC has had essentially no business other than meeting periodically to approve the minutes of the previous meeting.

He presented three options: dissolve the MPC, transition it to an inactive status, or maintain the status quo. There was Council consensus to transition the MPC to inactive status.

Mayor Stanton recessed the meeting at 5:25 PM.

4. BREAK

DRAFT

5. RECONVENE FOR REGULAR MEETING

Mayor Stanton reconvened the meeting at 6:00 PM in the Town Hall Council Chambers.

6. ROLL CALL

COUNCIL MEMBERS PRESENT
Mayor Mark Stanton
Vice Mayor Ellen Andeen-Keller
Council Member Christine Labelle
Council Member Karen Liepmann
Council Member Scott Moore attended by video conference
Council Member Julie Pace
Council Member Anna Thomasson

STAFF MEMBERS PRESENT
Town Manager Andrew B. Ching
Town Attorney Andrew J. McGuire
Police Chief Freeman Carney
Town Clerk Duncan Miller
Community Development Director Chad Weaver
Public Works Director Isaac Chavira
CFO Leslie DeReche

7. PLEDGE OF ALLEGIANCE

Sergeant Michael Unger led the Pledge of Allegiance.

8. PRESENTATIONS

There were no presentations.

9. CALL TO THE PUBLIC

There were no public comments.

10. CONSENT AGENDA

Mr. Ching summarized the items on the items on the consent agenda.

A motion was made by Council Member Pace, seconded by Vice Mayor Andeen-Keller, to approve the Consent Agenda with the exception of items 25-148, 25-150, 25-156, and 25-167. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann

DRAFT

Council Member Moore
Council Member Pace
Council Member Thomasson

25-144 Minutes of Town Council Meeting May 22, 2025

25-147 Discussion and Possible Action to Cancel the June 26, 2025 Regular Council Meeting

Recommendation: Cancel the June 26, 2025 Regular Council meeting.

25-149 Discussion and Possible Action Regarding Series 11 Liquor License Acquisition of Control Application Submitted by Sanctuary on Camelback Mountain Resort and Spa

Recommendation: Forward the Sanctuary on Camelback Mountain Resort & Spa application for Acquisition of Control of a Series 11 liquor license to the Arizona Department of Liquor Licenses and Control with a recommendation for approval.

25-153 Discussion and Possible Action to Approve a Contract with Michael Baker International, Inc for Professional Services Relating to Updating the Paradise Valley Zoning Code

Recommendation: Approve the Contract CON-25-012-ENG with Michael Baker International, Inc. in the amount not-to-exceed $129,510 for Professional Services relating to updating the Town's Zoning Code and authorize the Town Manager to execute the contract.

25-164 Discussion and Possible Action to Approve the Purchase of Equipment and Services Related to the Upfitting of Police Department Patrol Vehicles Budgeted in Fiscal Year 2025/2026

Recommendation: Authorize the expenditure of funds budgeted in Fiscal Year 2026 related to the upfitting of four Police Department patrol vehicles in an amount not to exceed $105,000.

25-157 Discussion and Possible Action to Adopt Resolution 2025-07 Adopting the Annual Public Safety Personnel Retirement System (PSPRS) Pension Funding Policy for Fiscal Year 2026

Recommendation: Adopt Resolution 2025-07

25-151 Discussion and Possible Action to Adopt Resolution 2025-11 Authorizing the Approval of a Grant Agreement with the Arizona Department of Administration for Implementation and Operation of

the 9-1-1 Emergency Telecommunication System and Authorizing the Town Manager to Execute the Agreement

Recommendation: Adopt Resolution 2025-11

25-148 Discussion and Possible Action Regarding Acceptance of Donations to the Town of Paradise Valley for Fiscal Year 2025

Recommendation: Authorize acceptance of donations to the Town received in Fiscal Year 2025.

A motion was made by Vice Mayor Andeen-Keller, seconded by Council Member Thomasson, to authorize acceptance of donations to the Town received in Fiscal Year 2025. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

25-150 Discussion and Possible Action to Award Community Services Funding for Fiscal Year 2025

Recommendation: Authorize the Town Manager to execute funding agreements with the agencies listed in the staff report in the amount of $65,000.

A motion was made by Council Member Pace, seconded by Council Member Labelle, to authorize the Town Manager to execute funding agreements with the agencies listed in the staff report in the amount of $65,000. The motion carried by the following vote:

Aye: 6 - Mayor Stanton
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

Nay: 1 - Vice Mayor Andeen-Keller

25-156 Discussion and Possible Action to Adopt Resolution 2025-09 Amending the Financial Management Policies

Recommendation: Adopt Resolution 2025-09.

DRAFT

A motion was made by Council Member Labelle, seconded by Council Member Thomasson, to adopt Resolution 2025-09. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

25-167 Discussion and Possible Action Regarding Resolution 2025-10, Relating to the Second Amendment to an Intergovernmental Agreement with the City of Scottsdale Regarding Scottsdale Road

Recommendation: Adopt Resolution 2025-10.

A motion was made by Council Member Liepmann, seconded by Council Member Thomasson, to adopt Resolution 2025-10. The motion carried by the following vote:

Aye: 5 - Mayor Stanton
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Thomasson

Nay: 2 - Vice Mayor Andeen-Keller
Council Member Pace

11. PUBLIC HEARING

There were no public hearings.

12. ACTION ITEMS

25-158 Discussion and Possible Action to Adopt Resolution 2025-08 Amending the Fiscal Year 2025 Budget

CFO Leslie DeReche stated that the purpose of this resolution was to make an additional payment to the Public Safety Personnel Retirement System unfunded accrued actuarial liability in the amount of $2.5 million dollars. The payment would be transferred from the contingency fund.

There were no public comments and no further discussion.

DRAFT

A motion was made by Council Member Pace, seconded by Vice Mayor Andeen-Keller, to adopt Resolution 2025-08. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

25-159 Discussion and Possible Action to Authorize the Town Manager to Execute Amendment Eight to the Professional Services Agreement with Brown and Associates for Third Party Plan Review and Inspection Services Related to Construction Activities at the Five Star Development, and Amendment Seven to the Third Party Inspection Agreement with Five Star Resort Owner, LLC and Five Star Land Owner, LLC.

Community Development Director Chad Weaver stated that this item is to renew an agreement the Town has entered into with Brown and Associates and Five Star Development over the last several years. Brown and Associates conduct building inspections at the Five Star Resort property on behalf of the Town and Five Star reimburses the Town.

Mr. Weaver responded to questions from the Council regarding the timing of payments and volume of inspections.

There were no public comments.

A motion was made by Council Member Pace, seconded by Vice Mayor Andeen-Keller, to

1.Authorize the Town Manager to execute Amendment eight to the Professional Services Agreement with Brown and Associates for Third Party Plan Review and Inspection Services Related to Construction Activities at the Five Star Development, and

2.Authorize the Town Manager to execute Amendment seven to the agreement with Five Star Resort Owner, LLC and Five Star Land Owner, LLC for third-party inspection services. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

25-160 Discussion and Possible Action to Authorize Town Manager to Execute a Linking Agreement for Cooperative Purchase with Brown & Associates Certified Inspection Services, Inc. for Third Party Plan Review and Inspection Services.

Mr. Weaver stated that the purpose of this contract with Brown and Associates was to provide supplemental on-call plan review and inspection services to improve prompt service delivery.

There were no public comments.

A motion was made by Council Member Labelle, seconded by Council Member Pace, to authorize the Town Manager to execute a linking agreement for Cooperative Purchase with Brown & Associates Certified Inspection Services, Inc. for Third Party Plan Review and Inspection Services in an amount not to exceed $150,000. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

25-163 Discussion and Possible Action to Approve the Purchase of Heavy Equipment Vehicles Budgeted in Fiscal Year 2025/2026

Public Works Superintendent Robert Deserano presented a request to purchase a backhoe loader, bucket truck, and articulated loader for the Public Works Streets Division.

There were no public comments.

A motion was made by Council Member Pace, seconded by Vice Mayor Andeen-Keller, to authorize the purchase of two heavy equipment vehicles in Fiscal Year 2026 in an amount not to exceed $480,131.25. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

25-165 Discussion and Possible Action to Approve the Purchase of Vehicles Budgeted in Fiscal Year 2025/2026

Mr. Deserano presented a request to purchase one 2025 Ford Escape for the Community Development Department, one 2025 Ford F250 for the Public Works Department, and four 2025 Ford Explorers for the Police Department.

There were no public comments.

A motion was made by Council Member Thomasson, seconded by Council Member Labelle, to authorize the purchase of six vehicles budgeted in Fiscal Year 2026 in an amount not to exceed $300,000. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

13. FUTURE AGENDA ITEMS

25-146 Consideration of Requests for Future Agenda Items

Town Manager Ching summarized the future agenda schedule.

14. MAYOR / COUNCIL / MANAGER COMMENTS

Council Members provided comments and updates on current events.

15. ADJOURN

A motion was made at 7:04 PM by Vice Mayor Andeen-Keller, seconded by Council Member Labelle, to adjourn. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

DRAFT

Mayor Stanton adjourned the meeting at 7:17 PM

TOWN OF PARADISE VALLEY

SUBMITTED BY:

_____
Duncan Miller, Town Clerk

STATE OF ARIZONA)
:ss.
COUNTY OF MARICOPA)

CERTIFICATION

I, Duncan Miller, Town Clerk of the Town of Paradise Valley, Arizona hereby certify that the following is a full, true, and correct copy of the minutes of the regular meeting of the Paradise Valley Town Council held on Thursday, June 12, 2025

I further certify that said Municipal Corporation is duly organized and existing. The meeting was properly called and held and that a quorum was present.

_____
Duncan Miller, Town Clerk

DRAFT

Action Report

File #: 25-191

TOWN
Of
PARADISE VALLEY

TOWN COUNCIL MEETING
6401 E. LINCOLN DRIVE
PARADISE VALLEY, ARIZONA 85253
MINUTES
MONDAY AUGUST 25, 2025

1. CALL TO ORDER / ROLL CALL

Mayor Stanton called to order the Town Council Special Meeting for Monday, August 25, 2025 at 3:00 PM in the Town Hall Boardroom, 6401 E. Lincoln Drive, Paradise Valley, AZ 85253.

COUNCIL MEMBERS PRESENT
Mayor Mark Stanton
Vice Mayor Mark Ellen Andeen-Keller
Council Member Christine Labelle
Council Member Karen Liepmann
Council Member Scott Moore attended by video conference
Council Member Julie Pace attended by video conference
Council Member Anna Thomasson

STAFF MEMBERS PRESENT
Town Manager Andrew B. Ching
Town Attorney Andrew McGuire, Gust Rosenfeld PLC
Town Clerk Duncan Miller
Community Development Director Chad Weaver

2. EXECUTIVE SESSION

25-179 **Discussion and consultation with the Town Attorney, as authorized by A.R.S. §38-431.03(A)(3), for legal advice regarding the development agreement and associated agreements with Five Star Development.**

25-180 **Discussion or consultation with the Town Attorney, as authorized by A.R.S. §38-431.03(A)(4), in order to consider the Town's position and instruct legal counsel regarding the contract between the Town of Paradise Valley and the United States Postal Service; and discussion or consultation with the Town Attorney, as authorized by A.R.S. §38-431.03(A)(3) for legal advice relating to the contract.**

A motion was made by Vice Mayor Andeen-Keller, seconded by Council Member Thomasson, to go into executive session to receive legal advice regarding items 25-179 and 25-180. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

4. ADJOURN

A motion was made at 5:08 PM by Mayor Stanton, seconded by Council Member Thomasson, to adjourn. The motion carried by the following vote:

Aye: 7 - Mayor Stanton
Vice Mayor Andeen-Keller
Council Member Labelle
Council Member Liepmann
Council Member Moore
Council Member Pace
Council Member Thomasson

Mayor Stanton adjourned the meeting at 5:08 PM

TOWN OF PARADISE VALLEY

SUBMITTED BY:

_____
Duncan Miller, Town Clerk

STATE OF ARIZONA)
:ss.
COUNTY OF MARICOPA)

CERTIFICATION

I, Duncan Miller, Town Clerk of the Town of Paradise Valley, Arizona hereby certify that the following is a full, true, and correct copy of the minutes of the regular meeting of the Paradise Valley Town Council held on Tuesday, February 4, 2025

I further certify that said Municipal Corporation is duly organized and existing. The meeting was properly called and held and that a quorum was present.

_____
Duncan Miller, Town Clerk

Action Report

File #: 25-194

AGENDA TITLE:
Discussion and Possible Action to Approve the Second Amendment to CON-24-047-PBW Landscape and Maintenance Services

RECOMMENDATION:
Authorize the Town Manager to execute the Second Amendment to the Landscape Maintenance Agreement with King's Landscape and Maintenance LLC increasing the contract amount from $41,196.33 to $111,489.03.

STAFF CONTACT:

TOWN
Of
PARADISE VALLEY

STAFF REPORT

TO: **Mayor Stanton and Town Council Members**

FROM: **Andrew B. Ching, Town Manager**
Isaac Chavira, Public Works Director
Chris Martinez, Public Works Superintendent

DATE: **September 11, 2025**

DEPARTMENT: Public Works
Isaac Chavira, 480-348-3540
Chris Martinez, 480-348-3527

AGENDA TITLE:
Discussion and Possible Action to Approve the Second Amendment to CON-24-047-PBW Landscape and Maintenance Services.

RECOMMENDATION:
Authorize the Second Amendment to the Landscape Maintenance Agreement with King's Landscape and Maintenance LLC increasing the contract among from $41,196.33 to $111,489.03. The cost increase is due to additional services requested by the Town under Linking Agreement, No. CON-24-047-PBW. The additional services for FY25-26' shall increase the compensation to the contractor by $70,292.70 resulting in an increase of the combined not to exceed compensation from $41,196.33 to $111,489.03

SUMMARY STATEMENT:

Fiscal Year 2025/26 Landscape Maintenance Project:

Roadways scheduled for maintenance by contracted services vendor Kings Landscape Maintenance LLC:

1. **September, October, November (each area to be serviced once a month):**
   - Right of Ways adjacent to Tatum and McDonald intersection (southeast and northeast corners).
   - Stanford from Palo Cristi Rd to 40th St
   - McDonald from Tatum Blvd to Scottsdale Rd
   - 56th St from McDonald Dr to Lincoln Dr
   - 59th St from McDonald Dr to Lincoln Dr
   - Doubletree Ranch Rd from Tatum Blvd to Invergordon Rd.

2. **March, April, May (each area to be serviced once a month):**
   - Right of Ways adjacent to Tatum and McDonald intersection (southeast and northeast corners).
   - Stanford from Palo Cristi Rd to 40th St
   - McDonald from Tatum Blvd to Scottsdale Rd
   - 56th St from McDonald Dr to Lincoln Dr
   - 59th St from McDonald Dr to Lincoln Dr
   - Doubletree Ranch Rd from Tatum Blvd to Invergordon Rd.

BUDGETARY IMPACT:
The total proposed increase is $70,292.70. The Landscape Islands/Right of Way Budget, Highway Users Revenue Fund (HURF) (line item #20-40-595) for FY 2025/26 is $161,500.00. The Landscape Maintenance project cost allocation is as follows:

- September, October, November services = $35,146.35
- March, April, May services = $35,146.35
- **Total Project Cost = $ $70,292.70**

ATTACHMENT(S):
A. Staff Report
B. Proposal for Landscape Maintenance Services
C. CON-24-047-PBW-A2

King's Landscaping & Maintenance

8214 S 15TH ST
Phoenix, AZ 85042
(480) 270-9691

QUOTE

Submitted on 8/13/2025

Quote for	Payable to	Quote #
Town of Paradice Valley	Kings Landscape & Maintenance	20581
Tempe Contract #T24-026-03		
6401 E. Lincoln Drive Paradice Valley Az. 85253	**Project** Streets Maintenance Services	**Due date**

Job Description

Regular maintenance service along streets.

Blow and rake islands, trim shrub, remove suckers on the low base of trees up to 6Ft.

Haul away all debris.

Lift up trees up to 15” from the ground up,along the street side.

Trees small less than 10 feet canopies will be brought into the medium.

Each road will be serviced one time each month. (September , October, November, March, April & May.)

Maintenance service for 6 months.

LABOR	HR.	Unit price	Total price
Service for 2025 September, October and November.			
Triangles along McDonald Dr. and east wall. Approx. 78,320 SF	390	$28.23	$11,009.70
Stanford from 32 St to 40 St. Approx. 9,939 SF.	90	$28.23	$2,540.70
McDonald Dr. from Tatum blvd. & Scottsdale Rd. Approx.	216	$28.23	$6,097.68
56 St. from McDonald Dr. & Lincoln Dr. Approx. 13,646 Sl	105	$28.23	$2,964.15
59 St from McDonald dr. & Lincoln Dr. Approx. 7,280 SF	54	$28.23	$1,524.42
Doubletree Ranch Rd. From Tatum blvd. & Invergordon R	390	$28.23	$11,009.70
Service for 2026 March, April and May.			

	Triangles along McDonald Dr. and east wall. Approx. 78,320 SF	390	$28.23	$11,009.70
	Stanford from 32 St to 40 St. Approx. 9,939 SF.	90	$28.23	$2,540.70
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	59 St from McDonald dr. & Lincoln Dr. Approx. 7,280 SF	54	$28.23	$1,524.42
	Doubletree Ranch Rd. From Tatum blvd. & Invergordon R	390	$28.23	$11,009.70

			Subtotal	**$70,292.70**
	MATERIALS	**Qty**	**Unit price**	**Total price**
Item #1			$0.00	$0.00
Item #2			$0.00	$0.00
				$0.00
				$0.00

Notes:

Subtotal	**$0.00**
Sales Tax 8.8%	**$0.00**
	$70,292.70

Docusign Envelope ID: 231E2718-B1F9-4070-BC64-C4CE3F64BCBB

SECOND AMENDMENT
TO
LINKING AGREEMENT
BETWEEN
THE TOWN OF PARADISE VALLEY
AND
KINGS LANDSCAPE AND MAINTENANCE LLC

THIS SECOND AMENDMENT TO THE LINKING AGREEMENT (this "Second Amendment") is entered into as of 8/19 2025, between the Town of Paradise Valley, an Arizona municipal corporation (the "Town"), and Contractor, an Arizona Corporation (the "Contractor").

RECITALS

A. The Town and the Contractor entered into the Linking Agreement, No. CON-24-047-PBW dated June 14, 2024, for the Contractor to provide Landscaping and irrigation for street beautification projects and entered into a First Amendment dated August 2, 2024 (the original Linking and first two amendments collectively constituting the "Agreement").

B. The Town has determined that additional services by the Contractor are necessary (the "Additional Services").

C. The Town and the Contractor desire to enter into this Second Amendment to (i) modify the scope of work to include the Additional Services, and (ii) provide for the increase in compensation to the Vendor for the Additional Services.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing introduction and recitals, which are incorporated herein by reference, the following mutual covenants and conditions, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Town and the Contractor hereby agree as follows:

1. Incorporation of Defined Terms. All capitalized terms not otherwise defined in this Second Amendment have the same meanings as contained in the Agreement.

2. Scope of Work. The Contractor shall provide the Additional Services as set forth in the Additional Scope of Work, attached hereto as Exhibit 1 and incorporated herein by reference.

3. Compensation. The Town shall increase the compensation to the Contractor by $70,292.70 for the Additional Services at the rates set forth in the Fee Proposal attached hereto as a

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part of Exhibit 1, resulting in an increase of the combined not-to-exceed compensation from $41,196.33 to $111,489.03

4. Effect of Amendment. The Agreement is affirmed and ratified and, except as expressly modified herein, all terms and conditions of the Agreement shall remain in full force and effect.

5. Non-Default. By executing this Second Amendment, the Contractor affirmatively asserts that (i) the Town is not currently in default, nor has been in default at any time prior to this Second Amendment, under any of the terms or conditions of the Agreement, and (ii) any and all claims, known and unknown, relating to the Agreement and existing on or before the date of this Second Amendment are forever waived.

6. Conflict of Interest. This Second Amendment and the Agreement may be canceled by the Town pursuant to ARIZ. REV. STAT. § 38-511.

7. Forced Labor of Ethnic Uyghurs. To the extent applicable under ARIZ. REV. STAT. § 35-394, the Contractor warrants and certifies that it does not currently, and agrees that it will not, for the duration of the Agreement, as amended, use the forced labor, any goods or services produced by the forced labor, or any contractors, subcontractors, or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China. If the Contractor becomes aware that it is not in compliance with this paragraph, the Contractor shall notify the Town of the noncompliance within five business days of becoming aware of it. If the Contractor fails to provide a written certification that the Contractor has remedied the noncompliance within 180 days after that, the Agreement shall terminate unless the termination date of the Agreement occurs before the end of the remedy, in which case the Agreement terminates on its termination date.

[SIGNATURES ON FOLLOWING PAGES]

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IN WITNESS WHEREOF, the parties hereto have executed this instrument as of the date and year first set forth above.

"Town"

TOWN OF PARADISE VALLEY,
an Arizona municipal corporation

DocuSigned by:
Andrew Ching
5B8E4040A9944A3...
Andrew Ching, Town Manager

ATTEST:

DocuSigned by:
Duncan Miller
FD56FF67A95043D...
Duncan Miller, Town Clerk

APPROVED AS TO FORM:

Signed by:
6C9F79CECF0C427...
Andrew J. McGuire, Town Attorney
Gust Rosenfeld, PLC

"Contractor"

KINGS LANDSCAPE AND
MAINTENANCE LLC,
a Limited liability company:

By: _____

Name: Xavier King

Title: Owner

Docusign Envelope ID: 231E2718-B1F9-4070-BC64-C4CE3F64BCBB

EXHIBIT 1
TO
SECOND AMENDMENT
TO
LINKING AGREEMENT
BETWEEN
THE TOWN OF PARADISE VALLEY
AND
KINGS LANDSCAPE AND MAINTENANCE LLC

[Additional Scope of Work and Fee Proposal]

See following page.

Docusign Envelope ID: 231E2718-B1F9-4070-BC64-C4CE3F64BCBB

King's Landscaping & Maintenance

8214 S 15TH ST
Phoenix, AZ 85042
(480) 270-9691

QUOTE

Submitted on 8/13/2025

Quote for	Payable to	Quote #
Town of Paradice Valley	Kings Landscape & Maintenance	20581
Tempe Contract #T24-026-03		
6401 E. Lincoln Drive	**Project**	**Due date**
Paradice Valley Az. 85253	Streets Maintenance Services	

Job Description

Regular maintenance service along streets.

Blow and rake islands, trim shrub, remove suckers on the low base of trees up to 6Ft.

Haul away all debris.

Lift up trees up to 15" from the ground up,along the street side.

Trees small less than 10 feet canopies will be brought into the medium.

Each road will be serviced one time each month. (September , October, November, March, April & May.)

Maintenance service for 6 months.

LABOR	HR.	Unit price	Total price
Service for 2025 September, October and November.			
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Docusign Envelope ID: 231E2718-B1F9-4070-BC64-C4CE3F64BCBB

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Doubletree Ranch Rd. From Tatum blvd. & Invergordon R	390	$28.23	$11,009.70

		Subtotal	**$70,292.70**
MATERIALS	**Qty**	**Unit price**	**Total price**
Item #1		$0.00	$0.00
Item #2		$0.00	$0.00
			$0.00
			$0.00

Notes:

Subtotal	**$0.00**
Sales Tax 8.8%	**$0.00**
	$70,292.70

Action Report

File #: 25-201

AGENDA TITLE:
Discussion and Possible Action to Ratify and Approve Participation in the Purdue Direct Settlement and Approve the Town's Participation in Future National Opioid Settlements, Including the Proposed Secondary Opioid Manufacturers Settlement Agreement, and Authorize the Mayor or Town Manager to Complete and Execute the Necessary Participation and Release Forms, Waiving Future Claims Against Each Defendant Related to the National Opioid Epidemic in Order to Participate in the National Settlements.

RECOMMENDATION:
Ratify and approve participation in the Purdue Direct Settlement and approve the Town's participation in future national opioid settlements, including the Secondary Opioid Manufacturers Settlement Agreement, and authorize the Mayor or Town Manager to complete and execute the necessary participation and release Forms.

STAFF CONTACT:

TOWN
Of
PARADISE VALLEY

STAFF REPORT

TO: **Mayor Mark Stanton and Town Council Members**

FROM: **Andrew B. Ching, Town Manager**
Andrew J. McGuire, Town Attorney

DATE: **September 11, 2025**

DEPARTMENT: **Town Attorney's Office**
Deborah Robberson, 480-348-3609

AGENDA TITLE:
Discussion and Action to ratify and approve participation in the Purdue Direct Settlement and approve the Town's participation in future national opioid settlements, including the proposed Secondary Opioid Manufacturers Settlement Agreement, and authorize the Mayor or Town Manager to complete and execute the necessary participation and release forms, waiving future claims against each defendant related to the national opioid epidemic in order to participate in the national settlements.

RECOMMENDATION:
Ratify and approve participation in the Purdue Direct Settlement and approve the Town's participation in future national opioid settlements, including the Secondary Opioid Manufacturers Settlement Agreement, and authorize the Mayor or Town Manager to complete and execute the necessary participation and release Forms.

SUMMARY STATEMENT:
The opioid epidemic led to national litigation against certain members of the prescription opioid supply chain, including manufacturers and distributors. This litigation has resulted in a series of national settlements.

The Town is currently a participant in several national settlements:

2021 settlements with Johnson & Johnson and the distributors: McKesson, Cardinal Health, and AmerisourceBergen (the "2021 National Settlements");

2022 settlements with five more defendants: Teva, Allergan, Walmart, Walgreens, and CVS (the "2022 National Settlements"); and

2024 settlement with The Kroger Co.

Funds from national settlements are distributed in accordance with the One Arizona Distribution of Opioid Settlement Funds Agreement, which the Council approved on October 21, 2021. The Town's share has been set at .34% of funds distributed to Maricopa County local governments. Approximately $ 268,405 has been distributed to the Town through FY25. Use of the settlement funds is restricted to strategies related to opioid prevention, treatment, recovery and harm reduction.

Two additional national settlements are currently proposed: 1) the "Purdue Direct Settlement" with Purdue Pharma L.P. and the Sackler family in the aggregate amount of $7.4 billion; and 2) the "Secondary Manufacturers Settlements" with eight opioids manufacturers (Alvogen, Amneal, Apotex, Hikma, Indivior, Mylan, Sun, and Zydus) with a maximum value of approximately $720 million. The attached Settlement Overviews provide more detailed information on the terms of the settlements.

To participate in these settlements the Town must "opt in" by executing participation and release forms, pursuant to which the Town forever waives any and all claims against the settling defendants related to their role in the opioid epidemic. In exchange, the Town will receive a share of settlement payments calculated pursuant to the One Arizona Agreement.

To ensure compliance with submission requirements, the Town Manager executed the necessary documents to participate in the Purdue Direct Settlement and the requested action by the Council is to ratify and approve participation in that settlement.

In addition, Council is requested to approve the Town's participation in all future national opioid settlements, including the currently proposed Secondary Opioid Manufacturers Settlement Agreement, and authorize the Mayor or Town Manager to complete and execute the necessary participation and release of claims forms.

BUDGETARY IMPACT:

1. The total distribution to Paradise Valley is not known at this time and may depend on the rate of participation by states and subdivisions.
2. The exact timing or amounts of payments is not known at this time and may depend on the rate of participation by states and subdivisions.
3. The use of funds will be heavily restricted as set forth in the settlement.

ATTACHMENTS:

A. Staff Report
B. Purdue Pharma L.P. & Sackler Family Settlement Overview
C. Settlement Overview Memo to Local Governments re: Secondary Manufacturers Settlement
D. Purdue Subdivision Participation and Release Form (Executed)
E. Documentation to Participate in the New National Opioids Secondary Manufacturers Settlements

National Opioid Settlement: Purdue Pharma L.P.
Rubris Reference Number: CL-1730727

TO LOCAL POLITICAL SUBDIVISIONS:
THIS NOTICE CONTAINS IMPORTANT INFORMATION ABOUT A NEW NATIONAL OPIOID SETTLEMENT.

PURDUE PHARMA L.P. & SACKLER FAMILY SETTLEMENT OVERVIEW

A proposed nationwide settlement agreement has been reached with Purdue (and certain of its affiliates) and the Sackler family concerning alleged misconduct related to opioids.

The proposed settlement is being implemented in connection with Purdue's bankruptcy proceedings, and consists of, among other things, a settlement of Purdue's claims against the Sacklers and certain other parties (referred to as the "Estate Settlement"), and a settlement of direct claims against the Sacklers held by States, local governments and other creditors (the "Direct Settlement", and together with the Estate Settlement, the "Settlement"). The Settlement contemplates that the Sacklers will be paying an aggregate of $6.5 billion in 16 payments over 15 years, including $1.5 billion on the settlement's Effective Date (expected to be in 2026), though some amounts are subject to discounted prepayments. These amounts are in addition to amounts available from the Purdue estate including amounts available on the Effective Date (expected to be around $900 million) and amounts that may be paid in the future.

The Settlement also contains injunctive relief governing opioid dispensing practices and requires the successor-in-interest of Purdue Pharma L.P. to implement safeguards to prevent diversion of prescription opioids, and also restrict certain Sacklers from directly or indirectly engaging in the manufacturing or sale of opioids, as detailed in the Settlement.

The proposed settlement has two key participation steps now that **all eligible states and territories elected to participate in the Direct Settlement.**

First, eligible subdivisions within each participating state decide whether to participate in the Direct Settlement. The Direct Settlement is documented in the Governmental Entity and Shareholder Direct Settlement Agreement, which is commonly referred to as the "GESA". The more subdivisions that participate, the more funds flow to that state and its subdivisions. Any subdivision that does not participate cannot directly share in any of the Direct Settlement funds, even if the subdivision's state is settling and other participating subdivisions are sharing in settlement funds.

YOU MUST PARTICIPATE IN THE DIRECT SETTLEMENT BY RETURNING YOUR PARTICIPATION FORM IN ORDER TO RECEIVE THE BENEFITS OF THE SETTLEMENT.

Second, concurrently with the solicitation of eligible subdivisions to participate in the Direct Settlement, votes will be solicited for approval of Purdue Pharma L.P.'s bankruptcy plan, which plan will provide distributions in respect of the Estate Settlement. NOT ALL SUBDIVISIONS ELIGIBLE TO PARTICIPATE IN THE SETTLEMENT WILL RECEIVE PACKAGES TO VOTE ON THE PLAN.

Please note that this is NOT a solicitation or a request for subdivisions to submit votes on the Purdue bankruptcy plan. This settlement package only pertains to a decision to participate in the Direct Settlement with the Sacklers.

If you receive a package to vote on the plan you should follow the applicable instructions for voting. PLEASE NOTE THAT VOTING ON THE PLAN IS SEPARATE FROM PARTICIPATION IN THE DIRECT SETTLEMENT. **IT IS NOT NECESSARY TO VOTE ON THE PLAN IN ORDER TO RECEIVE THE BENEFITS OF THE SETTLEMENT.**

WHO IS RUBRIS INC. AND WHAT IS THE IMPLEMENTATION ADMINISTRATOR?

The Direct Settlement provides that an Implementation Administrator will provide notice and manage the collection of participation forms. Rubris Inc. is the Implementation Administrator for the Direct Settlement and was also retained for the prior national opioid settlements.

WHY IS YOUR SUBDIVISION RECEIVING THIS NOTICE?

Your state has elected to participate in the Settlement, and therefore your subdivision may participate in the Direct Settlement. This notice is also being sent directly to counsel for such subdivisions if the Implementation Administrator has their information.

If you are represented by an attorney with respect to opioid claims, please contact them. **Subdivisions can participate in the Settlement whether or not they filed a lawsuit or are represented.**

WHERE CAN YOU FIND MORE INFORMATION?

Detailed information about the Settlement, including each settlement agreement, may be found at: https://nationalopioidsettlement.com/purdue-sacklers-settlements/. This website will be updated to include information about how the Settlement is being implemented in most states and how funds will be allocated within your state.

You are encouraged to review the terms of the settlement agreements and discuss the terms and benefits with your counsel, your Attorney General's Office, and other contacts within your state.

Your subdivision will need to decide whether to participate in the proposed Settlement, and subdivisions are encouraged to work through this process before the **September 30, 2025** deadline.

HOW DO YOU PARTICIPATE IN THE SETTLEMENT?

The Settlement requires that you take affirmative steps to "opt in" to the Settlement.

In the next few weeks, you will receive documentation and instructions from the Implementation Administrator. In order to participate in the settlement, a subdivision must sign and return the required documentation.

Please add the following email addresses to your "safe" list so emails do not go to spam / junk folders: dse_na3@docusign.net and opioidsparticipation@rubris.com. Please monitor your email for the Participation Form and instructions.

All required documentation must be signed and returned on or before **September 30, 2025**.

National Opioids Settlements: Alvogen, Amneal, Apotex, Hikma, Indivior, Mylan, Sun, Zydus
Opioids Implementation Administrator
opioidsparticipation@rubris.com

Paradise Valley town, AZ
Rubris Reference Number: CL-1762792

TO LOCAL POLITICAL SUBDIVISIONS AND SPECIAL DISTRICTS:
THIS NOTICE CONTAINS IMPORTANT INFORMATION ABOUT NATIONAL OPIOID SETTLEMENTS.

SETTLEMENT OVERVIEW

Proposed nationwide settlement agreements ("Settlements") have been reached that would resolve opioid litigation brought by states, local political subdivisions, and special districts against eight opioids manufacturers, Alvogen, Amneal, Apotex, Hikma, Indivior, Mylan, Sun, and Zydus (the "Manufacturers"). Local political subdivisions and special districts are referred to as "subdivisions."

The Settlements require the settling Manufacturers to pay hundreds of millions of dollars to abate the opioid epidemic. The Settlements will provide a maximum of approximately $720 million in cash to participating states and subdivisions to remediate and abate the impacts of the opioid crisis. Depending on participation by states and subdivisions, the Settlements require:

- Alvogen to immediately pay up to approximately $19 million;
- Amneal to pay up to approximately $74 million over 10 years, and to provide either approximately $177 million of its generic version of the drug Narcan or up to an additional approximately $44 million in cash;
- Apotex to immediately pay up to approximately $65 million;
- Hikma to immediately pay up to approximately $98 million, and to provide either approximately $35 million of its naloxone product or up to an additional approximately $7 million in cash;
- Indivior to pay up to approximately $75 million over five years, a portion of which, at the election of the state, could be paid in the form of Indivior's branded buprenorphine and/or nalmefene products with a value of up to $140 million.;
- Mylan to pay up to approximately $290 million over nine years;
- Sun to immediately pay up to approximately $32 million; and
- Zydus to immediately pay up to approximately $15 million.

The Settlements also contain injunctive relief governing opioid marketing, sale, distribution, and/or distribution practices and require the Manufacturers to implement safeguards to prevent diversion of prescription opioids.

Each of the proposed settlements has two key participation steps.

First, each eligible state decides whether to participate in each Settlement. A list of participating states for each settlement can be found at https://nationalopioidsettlement.com/.

Second, eligible subdivisions within each participating state decide whether to participate in each Settlement. The more subdivisions that participate, the more funds flow to that state and its subdivisions. Any subdivision that does not participate cannot directly share in any of the settlement funds, even if the subdivision's state is settling and other participating subdivisions are sharing in settlement funds. If the state does not participate in a particular Settlement, the subdivisions in that state are not eligible to participate in that Settlement.

WHO IS RUBRIS INC. AND WHAT IS THE IMPLEMENTATION ADMINISTRATOR?

The Settlements provide that an Implementation Administrator will provide notice and manage the collection of participation forms. Rubris Inc. is the Implementation Administrator for these new Settlements and was also retained for the prior national opioid settlements.

WHY IS YOUR SUBDIVISION RECEIVING THIS NOTICE?

Your state has elected to participate in one or more of the Settlements, and your subdivision may participate in those Settlements in which your state has elected to participate. This notice is also sent directly to counsel for such subdivisions if the Implementation Administrator has their information.

If you are represented by an attorney with respect to opioid claims, please contact them.
Subdivisions can participate in the Settlements whether or not they filed a lawsuit or are represented.

WHERE CAN YOU FIND MORE INFORMATION?

Detailed information about the Settlements, including each settlement agreement, may be found at: https://nationalopioidsettlement.com. This website also includes information about how the Settlements are being implemented in most states and how funds will be allocated within your state.

You are encouraged to review the settlement agreement terms and discuss the terms and benefits with your counsel, your Attorney General's Office, and other contacts within your state. Information and documents regarding the Settlements and your state allocation can be found on the settlement website at https://nationalopioidsettlement.com/.

Your subdivision will need to decide whether to participate in the proposed Settlements, and subdivisions are encouraged to work through this process before the ***October 8, 2025*** deadline.

HOW DO YOU PARTICIPATE IN THE SETTLEMENTS?

The Settlements require that you take affirmative steps to "opt in" to the Settlements.

In the next few weeks, you will receive documentation and instructions from the Implementation Administrator or, in some cases, your Attorney General's Office. In order to participate in a settlement, a subdivision must sign and return the required Participation Form for that settlement.

Please add the following email addresses to your "safe" list so emails do not go to spam / junk folders: dse_na3@docusign.net and opioidsparticipation@rubris.com. Please monitor your email for the Participation Forms and instructions.

All required documentation must be signed and returned on or before ***October 8, 2025***.

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EXHIBIT K

Subdivision Participation and Release Form

Governmental Entity: Paradise Valley town		State: AZ
Authorized Signatory: Andrew Ching		
Address 1: 6401 E Lincoln Dr		
Address 2:		
City, State, Zip: Paradise Valley	Arizona	85253
Phone: 480-348-3533		
Email: aching@paradisevalleyaz.gov		

The governmental entity identified above ("*Governmental Entity*"), in order to obtain and in consideration for the benefits provided to the Governmental Entity pursuant to that certain Governmental Entity & Shareholder Direct Settlement Agreement accompanying this participation form (the "*Agreement*")[1], and acting through the undersigned authorized official, hereby elects to participate in the Agreement, grant the releases set forth below, and agrees as follows.

1. The Governmental Entity is aware of and has reviewed the Agreement, and agrees that by executing this Participation and Release Form, the Governmental Entity elects to participate in the Agreement and become a Participating Subdivision as provided therein.

2. The Governmental Entity shall promptly after the Effective Date, and prior to the filing of the Consent Judgment, dismiss with prejudice any Shareholder Released Claims and Released Claims that it has filed. With respect to any Shareholder Released Claims and Released Claims pending in *In re National Prescription Opiate Litigation*, MDL No. 2804, the Governmental Entity authorizes the Plaintiffs' Executive Committee to execute and file on behalf of the Governmental Entity a Stipulation of Dismissal with Prejudice substantially in the form found at https://nationalopioidsettlement.com.

3. The Governmental Entity agrees to the terms of the Agreement pertaining to Participating Subdivisions as defined therein.

4. By agreeing to the terms of the Agreement and becoming a Releasor, the Governmental Entity is entitled to the benefits provided therein, including, if applicable, monetary payments beginning following the Effective Date.

5. The Governmental Entity agrees to use any monies it receives through the Agreement solely for the purposes provided therein.

6. The Governmental Entity submits to the jurisdiction of the court in the Governmental Entity's state where the Consent Judgment is filed for purposes limited to that court's role as and to the extent provided in, and for resolving disputes to the extent provided in, the

[1] Capitalized terms used in this Exhibit K but not otherwise defined in this Exhibit K have the meanings given to them in the Agreement or, if not defined in the Agreement, the Master Settlement Agreement.

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Agreement. The Governmental Entity likewise agrees to arbitrate before the National Arbitration Panel as provided in, and for resolving disputes to the extent otherwise provided in, the Agreement.

7. The Governmental Entity has the right to enforce the Agreement as provided therein.

8. The Governmental Entity, as a Participating Subdivision, hereby becomes a Releasor for all purposes in the Agreement, including without limitation all provisions of Article 10 (Release), and along with all departments, agencies, divisions, boards, commissions, districts, instrumentalities of any kind and attorneys, and any person in his or her official capacity whether elected or appointed to serve any of the foregoing and any agency, person, or other entity claiming by or through any of the foregoing, and any other entity identified in the definition of Subdivision Releasor, to the maximum extent of its authority, for good and valuable consideration, the adequacy of which is hereby confirmed, the Shareholder Released Parties and Released Parties are, as of the Effective Date, hereby released and forever discharged by the Governmental Entity and its Subdivision Releasors from: any and all Causes of Action, including, without limitation, any Estate Cause of Action and any claims that the Governmental Entity or its Subdivision Releasors would have presently or in the future been legally entitled to assert in its own right (whether individually or collectively), notwithstanding section 1542 of the California Civil Code or any law of any jurisdiction that is similar, comparable or equivalent thereto (which shall conclusively be deemed waived), whether existing or hereinafter arising, in each case, (A) directly or indirectly based on, arising out of, or in any way relating to or concerning, in whole or in part, (i) the Debtors, as such Entities existed prior to or after the Petition Date, and their Affiliates, (ii) the Estates, (iii) the Chapter 11 Cases, or (iv) Covered Conduct and (B) as to which any conduct, omission or liability of any Debtor or any Estate is the legal cause or is otherwise a legally relevant factor (each such release, as it pertains to the Shareholder Released Parties, the "Shareholder Released Claims", and as it pertains to the Released Parties other than the Shareholder Released Parties, the "Released Claims"). For the avoidance of doubt and without limiting the foregoing: the Shareholder Released Claims and Released Claims include any Cause of Action that has been or may be asserted against any Shareholder Released Party or Released Party by the Governmental Entity or its Subdivision Releasors (whether or not such party has brought such action or proceeding) in any federal, state, or local action or proceeding (whether judicial, arbitral, or administrative) (A) directly or indirectly based on, arising out of, or in any way relating to or concerning, in whole or in part, (i) the Debtors, as such Entities existed prior to or after the Petition Date, and their Affiliates, (ii) the Estates, (iii) the Chapter 11 Cases, or (iv) Covered Conduct and (B) as to which any conduct, omission or liability of any Debtor or any Estate is the legal cause or is otherwise a legally relevant factor.

9. As a Releasor, the Governmental Entity hereby absolutely, unconditionally, and irrevocably covenants not to bring, file, or claim, or to cause, assist or permit to be brought, filed, or claimed, or to otherwise seek to establish liability for any Shareholder Released Claims or Released Claims against any Shareholder Released Party or Released Party in any forum whatsoever, subject in all respects to Section 9.02 of the Master Settlement Agreement. The releases provided for herein (including the term "Shareholder Released

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Claims" and "Released Claims") are intended by the Governmental Entity and its Subdivision Releasors to be broad and shall be interpreted so as to give the Shareholder Released Parties and Released Parties the broadest possible release of any liability relating in any way to Shareholder Released Claims and Released Claims and extend to the full extent of the power of the Governmental Entity to release claims. The Agreement shall be a complete bar to any Shareholder Released Claim and Released Claims.

10. To the maximum extent of the Governmental Entity's power, the Shareholder Released Parties and the Released Parties are, as of the Effective Date, hereby released and discharged from any and all Shareholder Released Claims and Released Claims of the Subdivision Releasors.

11. The Governmental Entity hereby takes on all rights and obligations of a Participating Subdivision as set forth in the Agreement.

12. In connection with the releases provided for in the Agreement, each Governmental Entity expressly waives, releases, and forever discharges any and all provisions, rights, and benefits conferred by any law of any state or territory of the United States or other jurisdiction, or principle of common law, which is similar, comparable, or equivalent to § 1542 of the California Civil Code, which reads:

> **General Release; extent.** A general release does not extend to claims that the creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release that, if known by him or her, would have materially affected his or her settlement with the debtor or released party.

A Releasor may hereafter discover facts other than or different from those which it knows, believes, or assumes to be true with respect to the Shareholder Released Claims or such other Claims released pursuant to this release, but each Governmental Entity hereby expressly waives and fully, finally, and forever settles, releases and discharges, upon the Effective Date, any and all Shareholder Released Claims or such other Claims released pursuant to this release that may exist as of such date but which Releasors do not know or suspect to exist, whether through ignorance, oversight, error, negligence or through no fault whatsoever, and which, if known, would materially affect the Governmental Entities' decision to participate in the Agreement.

13. Nothing herein is intended to modify in any way the terms of the Agreement, to which Governmental Entity hereby agrees. To the extent any portion of this Participation and Release Form not relating to the release of, or bar against, liability is interpreted differently from the Agreement in any respect, the Agreement controls.

14. Notwithstanding anything to the contrary herein or in the Agreement, (x) nothing herein shall (A) release any Excluded Claims or (B) be construed to impair in any way the rights and obligations of any Person under the Agreement; and (y) the Releases set forth herein shall be subject to being deemed void to the extent set forth in Section 9.02 of the Master Settlement Agreement.

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I have all necessary power and authorization to execute this Participation and Release Form on behalf of the Governmental Entity.

Signature: DocuSigned by: Andrew Ching 5B8E4040A0944A3...

Name: Andrew Ching

Title: Town Manager, Town of Paradise Valley, Arizona

Date: 8/4/2025

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New National Opioids Settlement: Secondary Manufacturers
Opioids Implementation Administrator
opioidsparticipation@rubris.com

Paradise Valley town, AZ
Reference Number: CL-1762792

TO LOCAL POLITICAL SUBDIVISIONS:

THIS PACKAGE CONTAINS DOCUMENTATION TO PARTICIPATE IN THE NEW NATIONAL OPIOIDS SECONDARY MANUFACTURERS SETTLEMENTS. YOU MUST TAKE ACTION IN ORDER TO PARTICIPATE.

Deadline: October 8, 2025

A new proposed national opioids settlement ("*Secondary Manufacturers Settlements*") has been reached with eight opioids manufacturers: Alvogen, Amneal, Apotex, Hikma, Indivior, Mylan, Sun, and Zydus ("Settling Defendants"). This *Combined Participation Package* is a follow-up communication to the *Notice of National Opioids Settlement* recently received electronically by your subdivision.

You are receiving this *Combined Participation Package* because Arizona is participating in the Secondary Manufacturers Settlements.

Arizona is eligible and participating in the settlements with all eight manufacturers, therefore, the subdivisions in Arizona are eligible to participate in all eight manufacturers' settlements.

This electronic envelope contains:

- A *Combined Participation Form* for the *Secondary Manufacturers Settlements* that your subdivision is eligible to join, including a release of any claims.

The *Combined Participation Form* must be executed, without alteration, and submitted on or before October 8, 2025, in order for your subdivision to be considered for initial participation calculations and payment eligibility under the *Secondary Manufacturers Settlement*.

Based upon *Combined Participation Forms* received on or before October 8, 2025, the subdivision participation rate will be used to determine whether participation is sufficient for each settlement to move forward and whether a state earns its maximum potential payment under each settlement. If a settlement moves forward, your release will become effective. If a settlement does not move forward, that release will not become effective.

Any subdivision that does not participate cannot directly share in the settlement funds, even if Arizona is settling and other participating subdivisions are sharing in settlement funds. Any subdivision that does not participate may also reduce the

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amount of money for programs to remediate the opioid crisis in Arizona. Please note, the distribution of settlement funds will be determined by the One Arizona Distribution of Opioid Settlement Funds Agreement.

You are encouraged to discuss the terms and benefits of the *Secondary Manufacturers Settlements* with your counsel, your Attorney General's Office, and other contacts within your state.

Information and documents regarding the *Secondary Manufacturers Settlements*, implementation in your state, and how funds will be allocated within your state can be found on the national settlement website at https://nationalopioidsettlement.com/. This website will be supplemented as additional documents are created.

This *Participation Packet* is different than the participation packet you recently received from Rubris concerning a settlement with Purdue Pharma, L.P, and the Sackler Family. The *Secondary Manufacturers Settlements* discussed in this *Participation Packet* are different than the settlement with Purdue and the Sacklers, and you may participate in the *Secondary Manufacturers Settlements* regardless of whether you join the Purdue and Sackler settlement.

How to return signed forms:

There are three methods for returning the executed *Combined Participation Form* to the Implementation Administrator:

(1) *Electronic Signature via DocuSign*: Executing the *Combined Participation Form* electronically through DocuSign will return the signed form to the Implementation Administrator and associate your form with your subdivision's records. Electronic signature is the most efficient method for returning the *Combined Participation Form*, allowing for more timely participation and the potential to meet higher settlement payment thresholds, and is therefore strongly encouraged.

(2) *Manual Signature returned via DocuSign*: DocuSign allows forms to be downloaded, signed manually, then uploaded to DocuSign and returned automatically to the Implementation Administrator. Please be sure to complete all fields. As with electronic signature, returning a manually signed *Combined Participation Form* via DocuSign will associate your signed forms with your subdivision's records.

(3) *Manual Signature returned via electronic mail*: If your subdivision is unable to return an executed *Combined Participation Form* using DocuSign, the signed *Combined Participation Form* may be returned via electronic mail to opioidsparticipation@rubris.com. Please include the name, state, and reference ID of your subdivision in the body of the email and use the subject line Combined Settlement Participation Form – [Subdivision Name, Subdivision State] – [Reference ID].

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Detailed instructions on how to sign and return the *Combined Participation Form*, including changing the authorized signer, can be found at https://nationalopioidsettlement.com/additional-settlements/. You may also contact opioidsparticipation@rubris.com.

The sign-on period for subdivisions ends on October 8, 2025.

If you have any questions about executing the *Combined Participation Form*, please contact your counsel, the Implementation Administrator at opioidsparticipation@rubris.com, or Jane Fallon, Assistant Attorney General, Arizona Attorney General's Office, Jane.Fallon@azag.gov or 602-542-7972.

Thank you,

Secondary Manufacturers Settlements Implementation Administrator

The Implementation Administrator is retained to provide the settlement notice required by the Secondary Manufacturers Settlements and to manage the collection of the Combined Participation Form.

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EXHIBIT K

Secondary Manufacturers' Combined Subdivision Participation and Release Form ("Combined Participation Form")

Governmental Entity: Paradise Valley town	State: AZ
Authorized Official:	
Address 1:	
Address 2:	
City, State, Zip:	
Phone:	
Email:	

The governmental entity identified above ("*Governmental Entity*"), in order to obtain and in consideration for the benefits provided to the Governmental Entity pursuant to each of the settlements which are listed in paragraph 1 below (each a "Secondary Manufacturer's Settlement" and collectively, "the Secondary Manufacturers' Settlements"), and acting through the undersigned authorized official, hereby elects to participate in each of the Secondary Manufacturers' Settlements, release all Released Claims against all Released Entities in each of the Secondary Manufacturers' Settlements, and agrees as follows.

1. The Participating Entity hereby elects to participate in each of the following Secondary Manufacturers' Settlements as a Participating Entity:

   a. Settlement Agreement for Alvogen, Inc. dated April 4, 2025.
   b. Settlement Agreement for Apotex Corp. dated April 4, 2025.
   c. Settlement Agreement for Amneal Pharmaceuticals LLC dated April 4, 2025.
   d. Settlement Agreement for Hikma Pharmaceuticals USA Inc. dated April 4, 2025.
   e. Settlement Agreement for Indivior Inc. dated April 4, 2025.
   f. Settlement Agreement for Viatris Inc. ("Mylan") dated April 4, 2025.
   g. Settlement Agreement for Sun Pharmaceutical Industries, Inc. dated April 4, 2025.
   h. Settlement Agreement for Zydus Pharmaceuticals (USA) Inc. dated April 4, 2025.

2. The Governmental Entity is aware of and has reviewed each of the Secondary Manufacturers' Settlements, understands that all capitalized terms not defined in this Combined Participation Form have the meanings defined in each of the Secondary Manufacturers' Settlements, and agrees that by executing this Combined Participation Form, the Governmental Entity elects to participate in each of the Secondary Manufacturers' Settlements and become a Participating Subdivision as provided in each of the Secondary Manufacturers' Settlements.

3. The Governmental Entity shall promptly, and in any event no later than 14 days after the Reference Date and prior to the filing of the Consent Judgment, dismiss with prejudice any Released Claims that it has filed against any Released Entity in each of the Secondary Manufacturers' Settlements. With respect to any Released Claims pending in *In re National Prescription Opiate Litigation*, MDL No. 2804, the Governmental Entity

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authorizes the Plaintiffs' Executive Committee to execute and file on behalf of the Governmental Entity a Stipulation of Dismissal with Prejudice for each of the manufacturers listed in paragraph 1 above substantially in the form found at *https://nationalopioidsettlement.com/additional-settlements/.*

4. The Governmental Entity agrees to the terms of each of the Secondary Manufacturers' Settlements pertaining to Participating Subdivisions as defined therein.

5. By agreeing to the terms of each of the Secondary Manufacturers' Settlements and becoming a Releasor, the Governmental Entity is entitled to the benefits provided therein, including, if applicable, monetary payments beginning after the Effective Date.

6. The Governmental Entity agrees to use any monies it receives through each of the Secondary Manufacturers' Settlements solely for the purposes provided therein.

7. The Governmental Entity submits to the jurisdiction of the court and agrees to follow the process for resolving any disputes related to each Secondary Manufacturer's Settlement as described in each of the Secondary Manufacturers' Settlements.[1]

8. The Governmental Entity has the right to enforce each of the Secondary Manufacturers' Settlements as provided therein.

9. The Governmental Entity, as a Participating Subdivision, hereby becomes a Releasor for all purposes in each of the Secondary Manufacturers' Settlements, including without limitation all provisions related to release of any claims,[2] and along with all departments, agencies, divisions, boards, commissions, districts, instrumentalities of any kind and attorneys, and any person in his or her official capacity whether elected or appointed to serve any of the foregoing and any agency, person, or other entity claiming by or through any of the foregoing, and any other entity identified in the definition of Releasor, provides for a release to the fullest extent of its authority. As a Releasor, the Governmental Entity hereby absolutely, unconditionally, and irrevocably covenants not to bring, file, or claim, or to cause, assist or permit to be brought, filed, or claimed, or to otherwise seek to establish liability for any Released Claims against any Released Entity in each of the Secondary Manufacturers' Settlements in any forum whatsoever. The releases provided for in each of the Secondary Manufacturers' Settlements are intended by the Parties to be broad and shall be interpreted so as to give the Released Entities in each of the Secondary Manufacturers' Settlements the broadest possible bar against any liability relating in any way to Released

[1] *See* Settlement Agreement for Alvogen, Inc. Section VII.F.2; Settlement Agreement for Apotex Corp. Section VII.F.2; Settlement Agreement for Amneal Pharmaceuticals LLC Section VII.F.2; Settlement Agreement for Hikma Pharmaceuticals USA Inc. Section VII.F.2; Settlement Agreement for Indivior Section VI.F.2; Settlement Agreement for Mylan Section VI.F.2; Settlement Agreement for Sun Pharmaceutical Industries, Inc. Section VII.F.2; Settlement Agreement for Zydus Pharmaceuticals (USA) Inc. Section VII.F.2.

[2] *See* Settlement Agreement for Alvogen, Inc. Section XI; Settlement Agreement for Amneal Pharmaceuticals LLC Section X; Settlement Agreement for Apotex Corp. Section XI; Settlement Agreement for Hikma Pharmaceuticals USA Inc. Section XI; Settlement Agreement for Indivior Section X; Settlement Agreement for Mylan Section X; Settlement Agreement for Sun Pharmaceutical Industries, Inc. Section XI; Settlement Agreement for Zydus Pharmaceuticals (USA) Inc. Section XI.

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Claims and extend to the full extent of the power of the Governmental Entity to release claims. Each of the Secondary Manufacturers' Settlements shall be a complete bar to any Released Claim against that manufacturer's Released Entities.

10. The Governmental Entity hereby takes on all rights and obligations of a Participating Subdivision as set forth in each of the Secondary Manufacturers' Settlements.

11. In connection with the releases provided for in each of the Secondary Manufacturers' Settlements, each Governmental Entity expressly waives, releases, and forever discharges any and all provisions, rights, and benefits conferred by any law of any state or territory of the United States or other jurisdiction, or principle of common law, which is similar, comparable, or equivalent to § 1542 of the California Civil Code, which reads:

> **General Release; extent.** A general release does not extend to claims that the creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release that, if known by him or her would have materially affected his or her settlement with the debtor or released party.

A Releasor may hereafter discover facts other than or different from those which it knows, believes, or assumes to be true with respect to the Released Claims in each of the Secondary Manufacturers' Settlements, but each Governmental Entity hereby expressly waives and fully, finally, and forever settles, releases and discharges, upon the Effective Date, any and all Released Claims that may exist as of such date but which Releasors do not know or suspect to exist, whether through ignorance, oversight, error, negligence or through no fault whatsoever, and which, if known, would materially affect the Governmental Entities' decision to participate in each of the Secondary Manufacturers' Settlements.

12. The Governmental Entity understands and acknowledges that each of the Secondary Manufacturers' Settlements is an independent agreement with its own terms and conditions. Nothing herein is intended to modify in any way the terms of any of the Secondary Manufacturers' Settlements, to which Governmental Entity hereby agrees, aside from the exceptions in paragraph 13 below. To the extent this Combined Participation Form is interpreted differently from any of the Secondary Manufacturers' Settlements in any respect, the individual Secondary Manufacturer's Settlement controls.

13. For the avoidance of doubt, in the event that some but not all of the Secondary Manufacturers' Settlements proceed past their respective Reference Dates, all releases and other commitments or obligations shall become void ***only as to*** those Secondary Manufacturers' Settlements that fail to proceed past their Reference Dates. All releases and other commitments or obligations (including those contained in this Combined Participation Form) shall remain in full effect as to each Secondary Manufacturer's Settlement that proceeds past its Reference Date, and this Combined Participation Form need not be modified, returned, or destroyed as long as any Secondary Manufacturer's Settlement proceeds past its Reference Date.

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I have all necessary power and authorization to execute this Combined Participation Form on behalf of the Governmental Entity.

Signature: _____

Name: _____

Title: _____

Date: _____

Action Report

File #: 25-195

AGENDA TITLE:
Discussion and Possible Action to Authorize the Town Manager to Execute a Linking Agreement for Cooperative Purchase with Motorola Solutions for Police Radio Equipment and Services

RECOMMENDATION:
Authorize the Town Manager to execute a linking agreement for the purchase of Police Department radio equipment and services from Motorola Solutions in an amount not to exceed $390,500.

STAFF CONTACT:

TOWN
Of
PARADISE VALLEY

STAFF REPORT

TO: **Mayor Stanton and Town Council Members**

FROM: **Andrew Ching, Town Manager**
Freeman Carney, Chief of Police

DATE: **September 11, 2025**

DEPARTMENT: Police Department
Freeman Carney, 480-948-7410

AGENDA TITLE:
Discussion and Possible Action to Authorize the Town Manager to Execute a Linking Agreement for Cooperative Purchase with Motorola Solutions for Police Radio Equipment and Services

RECOMMENDATION:
Authorize the Town Manager to execute a linking agreement for the purchase of Police Department radio equipment and services from Motorola Solutions in an amount not to exceed $390,500.

SUMMARY STATEMENT:

The Paradise Valley Police Department Communications Section serves as the lifeline between our residents requesting help and officers responding in the field. Reliable two-way radio communications are critical to ensuring timely emergency response and effective coordination of public safety resources.

For FY26, Town Council approved the purchase of the following radio equipment and services:

- 3 Motorola AXS Radio Consoles and associated licenses
- 4 Motorola Consolettes (replacement of 4)
- GCP8000 Site Controller (replacement of 1; manages site radio channels, assigns voice & data channels, and monitors alarms from the radio equipment)
- Desktop Monitor, foot pedals, gooseneck mics needed to use Radio Console equipment (replacement for 2 dispatch positions, and addition of 1)
- Training for all Communications Staff to use new Graphical User Interface (GUI) and administrator training for setting up the GUI.

The Department's current MCC7500 radio consoles were purchased in 2015 and are operating on Windows 10, which is approaching end-of-support. With aging equipment and evolving technology, a system refresh is necessary to maintain operational reliability and support future demands. The Department is looking for approval to move forward with this budgeted project.

The new Motorola AXS Radio Consoles will provide:

- Increased flexibility, allowing in-house configuration by Communications administrators rather than relying solely on Motorola technicians
- Enhanced integration capabilities to meet the Department's evolving communication needs
- A long-term solution, with a projected life cycle of at least 10 years before another replacement is required

BUDGETARY IMPACT:

The invoice from Motorola totals $355,000. The council approved $390,500 in the Police Departments FY26 budget to fund this project.

ATTACHMENT(S):

A. Staff Report
B. Linking Agreement and Proposal
C. Presentation

LINKING AGREEMENT
FOR COOPERATIVE PURCHASE

MOTOROLA SOLUTIONS, INC.
COMMANDCENTRAL AXS DISPATCH SOLUTION

This Linking Agreement for Cooperative Purchase (this "**Agreement**") is made and entered into on _____, 2025 (the "**Effective Date**") by and between the Town of Paradise Valley, an Arizona municipal corporation (the "**Town**"), and Motorola Solutions, Inc. a Delaware corporation authorized to do business in Arizona (the "**Contractor**"). The Town and Contractor are the only parties to this Agreement; they are each individually a "**Party**," and together they are the "**Parties**."

RECITALS

A. On October 9, 2019, after a competitive procurement process, the State of Arizona entered into Contract No. CTR046830 with the Contractor to purchase public communications equipment and services (the "**Base Agreement**"). A copy of the Base Agreement is attached hereto as **Exhibit A**, and the terms of the Base Agreement are incorporated herein by reference to the extent not inconsistent with this Agreement. The Base Agreement permits its cooperative use by other governmental agencies, including the Town.

B. Pursuant to A.R.S. §§ 41-2631 *et seq.* and Town of Paradise Valley Resolution Nos. 1205 and 1207, the Town has the authority to utilize cooperative purchasing contracts and engage contractors under the terms thereof.

C. The Town desires to contract for goods or services identical or nearly identical to the goods or services the Contractor is providing other units of government under the Base Agreement, and the Contractor desires to provide such goods and services as set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, the Contractor and the Town, in consideration of the foregoing Introduction and Recitals, which are incorporated herein by reference, and for the consideration hereinafter set forth, promise, covenant, and agree as follows:

1. Scope of Work; Terms, Conditions, and Specifications.

   1.1. The Contractor shall provide the Town with the public communications equipment and services generally described as the Contractor's latest generation CommandCentral AXS dispatch solution, and more particularly identified in (the "**Scope of Work**") attached hereto as **Exhibit B** and incorporated herein by reference.

   1.2. The Contractor agrees to comply with all the terms, conditions, and specifications of the Base Agreement. Such terms, conditions, and specifications are specifically incorporated into and are an enforceable part of this Agreement, except to the extent superseded herein or otherwise provided in

Exhibit C. For the purposes of this Agreement, all references to the State in the Base Agreement shall mean the Town of Paradise Valley, Arizona.

1.3. The Contractor shall comply with all the Town's specific requirements and/or options, as specified in **Exhibit C** attached hereto and incorporated herein by reference. **To the extent there is any conflict between Exhibit B or C and the Base Agreement, Exhibits B and C take precedence.**

1.4. The Contractor acknowledges and agrees that work order(s) containing unauthorized exceptions, conditions, limitations, or provisions in conflict with the terms of this Agreement (collectively, the "Unauthorized Conditions"), other than the Town's project-specific requirements, are hereby expressly declared void and shall be of no force and effect. Acceptance by the Town of any work order or invoice containing any such Unauthorized Conditions or failure to demand full compliance with the terms and conditions set forth in this Agreement or in the Base Agreement shall not alter such terms and conditions or relieve the Contractor from, nor be construed or deemed a waiver of, its requirements and obligations in the performance of this Agreement. If this Agreement is renewed pursuant to Subsection 3 and such renewal includes any Unauthorized Conditions, other than price, those terms will be null and void.

2. Payment. Payment to the Contractor for the services, materials, or equipment provided shall be made in accordance with the terms and conditions of the Base Agreement and the price list set forth in **Exhibit B**. The total compensation for the goods or services purchased under this Agreement shall not exceed $355,000.

3. Contract Term and Renewal.

3.1. This Agreement shall be effective as of the date first set forth above and shall remain in full force and effect until October 9, 2026, unless terminated, canceled, or extended as otherwise provided in this Agreement.

3.2. The Town Manager or designee may extend the term of this Agreement consistent with the extension, if any, of the Base Agreement. Extensions are not automatic and shall only occur if the Town gives the Contractor notice of its intent to extend this Agreement.

3.3. Upon the expiration of the Base Agreement, including any authorized renewals thereof, the Town may, at its option, extend this Agreement on a month-to-month basis for a maximum of six months. The purpose of such month-to-month extensions, if any, shall be to allow for the Town's procurement processes in the selection of a vendor to provide the services or materials provided under this Agreement.

4. Certificates of Insurance. All insurance provisions of the Base Agreement shall apply, including, without limitation, the requirement to name the Town, its agents, representatives, officials, volunteers, officers, elected officials, and employees as additional insured. Prior to commencing work under this Agreement, the Contractor shall furnish the Town with Certificate(s) of Insurance and formal endorsements issued by the Contractor's insurer(s) as evidence that policies providing the required coverages, conditions, and limits required by this Agreement are in full force and effect.

5. E-Verify. The Contractor complies with A.R.S. § 23-214 and agrees to comply with the requirements of A.R.S. § 41-4401.

6. Boycott of Israel Prohibited. To the extent Title 35 applies to this Agreement, the Contractor warrants that it is not and will not participate in prohibited activity in contravention of A.R.S. § 35-393.01.

7. Cancellation for Conflict of Interest. This Agreement may be canceled pursuant to A.R.S. § 38-511.

8. Counterparts. This Agreement may be executed in any number of counterparts, all such counterparts shall be deemed to constitute one and the same instrument, and each of said counterparts shall be deemed original hereof.

9. Forced Labor of Ethnic Uyghurs. To the extent applicable under A.R.S. § 35-394, the Contractor warrants and certifies that it does not currently, and agrees that it will not, for the duration of this Agreement, use the forced labor, any goods or services produced by the forced labor, or any contractors, subcontractors, or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China. If the Contractor becomes aware that it is not in compliance with this paragraph, it shall notify the Town of the noncompliance within five business days of becoming aware of it. If the Contractor fails to provide a written certification that it has remedied the noncompliance within 180 days after that, this Agreement shall terminate unless the termination date of this Agreement occurs before the end of the remedy, in which case this Agreement terminates on its termination date.

10. Indemnification. To the fullest extent permitted by law, the Contractor shall indemnify, defend, and hold harmless the Town and each council member, officer, employee, or agent thereof (the Town and any such person being herein called an "Indemnified Party"), for, from, and against any and all losses, claims, damages, liabilities, costs, and expenses (including, but not limited to, reasonable attorneys' fees, court costs and the costs of appellate proceedings) to which any such Indemnified Party may become subject, under any theory of liability whatsoever ("Claims") to the extent that such Claims (or actions in respect thereof) are caused by the negligent acts, recklessness or intentional misconduct of the Contractor, its officers, employees, agents, or any tier of subcontractor in connection with the Contractor's work or services in the performance of this Agreement. The amount and type of insurance coverage requirements set forth in this Agreement or the Base Agreement will in no way be construed as limiting the scope of the indemnity in this section.

11. Provisions Required by Law. Each and every provision of law and any clause required by law to be in this Agreement will be read and enforced as though it were included herein and, if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either Party, this Agreement will promptly be physically amended to make such insertion or correction.

[SIGNATURES ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF, the Parties have hereunto subscribed their names.

TOWN OF PARADISE VALLEY,
an Arizona municipal corporation:

_____
Andrew Ching, Town Manager

ATTEST:

_____
Duncan Miller, Town Clerk

APPROVED AS TO FORM:

_____
Andrew J. McGuire, Town Attorney

MOTOROLA SOLUTIONS, INC.
a Delaware corporation:

By: _____

Name: _____

Title: _____

LINKING AGREEMENT
FOR COOPERATIVE PURCHASE

MOTOROLA SOLUTIONS, INC.
PUBLIC COMMUNICATION EQUIPMENT AND SERVICES

EXHIBIT A
BASE AGREEMENT

(See attached: Public Communication Equipment and Services, Contract No. CTR046830, October 9, 2019)

LINKING AGREEMENT
FOR COOPERATIVE PURCHASE

MOTOROLA SOLUTIONS, INC.
COMMANDCENTRAL AXS DISPATCH SOLUTION

EXHIBIT B
SCOPE OF WORK AND PRICING

See the following page(s).

LINKING AGREEMENT
FOR COOPERATIVE PURCHASE

MOTOROLA SOLUTIONS, INC.
COMMANDCENTRAL AXS DISPATCH SOLUTION

EXHIBIT C
SPECIFIC REQUIREMENTS/OPTIONS OF TOWN

Notices: All notices required under the Linking Agreement shall be sent to:

Police Chief
Town of Paradise Valley
6401 E. Lincoln Drive
Paradise Valley, Arizona 85253

With mandatory copy to:

Town Attorney
Town of Paradise Valley
6401 E. Lincoln Drive
Paradise Valley, Arizona 85253

Contract Amendment

CTR046830 Amendment One (1)

Arizona Department of Administration
State Procurement Office
1802 W Jackson St., #100
Phoenix, AZ 85007

CONTRACTOR:	**STATE AGENCY:**
MOTOROLA SOLUTIONS INC 3332 E. Broadway Rd. Phoenix, AZ 85040 **CONTACT:** Walter Whately **PHONE:** (520) 457-8604 **EMAIL:** walter.whately@motorolasolutions.com	AZ Department of Administration (ADOA) State Procurement Office 1400 W Washington St. 3100 Phoenix, AZ 85007 **CONTACT:** Jim Atkins **PHONE:** (602) 245-8268 **EMAIL:** james.atkins@azdoa.gov

Public Communications Equipment and Services

Pursuant to Section 2-D: Uniform Terms and Conditions, Section 5.0 Contract Changes, 5.1 Amendments, of the above referenced contract, it is hereby amended as follow:

1) In accordance with Special Terms and Conditions, Section 3.1, Term of Contract, the contract is hereby extended through **October 9, 2026**.

ALL OTHER REQUIREMENTS, SPECIFICATIONS, TERMS AND CONDITIONS REMAIN UNCHANGED

* ***Please ensure all required Certificate Of Insurance are updated and submitted to the State Procurement Office.***

ACKNOWLEDGEMENT AND AUTHORIZATION

This amendment shall be fully executed upon the electronic approval in the State e-Procurement system by an authorized representative of the Contractor and applied to the contract in the State e-Procurement system by the Procurement Officer or delegate.

Public Communication Equipment and Services

CTR046830

Motorola Solutions Inc.

This contract is for public communication equipment and services for all State of Arizona Agencies, Boards and Commissions including members of the State of Arizona Purchasing Cooperative. The sections awarded include:

- **2-Way Radios**
- **Digital Microwave Terminals**
- **LMR Base Station Antennas, Microwave Antennas**
- **Radio Dispatch Consoles**
- **Back-up Batteries**
- **Prefab Communications Shelter**
- **Service**

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- **Offer and Acceptance**
- **Part 2: Scope, Pricing and Terms and Conditions (Rev 2)**
- **3-C Proposed Subcontracts**
- **5-B Conformance Statement**
- **Exceptions**
- **BAFO Change Log**

The solicitation for this contract was ADSPO19-00008376 and was started in ProcureAZ. The solicitation file can be found in APP under BPM001941.

Attachment 1

Offer and Acceptance Form

SUBMISSION OF OFFER: Undersigned hereby offers and agrees to provide Biometric Products and Services to in compliance with the Solicitation indicated above and our Offer indicated by the latest dated version below:

Initial Offer:	1. **September 4, 2018** (date)	LM (initial)						
Revised Offers:	2. x (date #1)	(initial)	3. x (date #1)	(initial)	4. x (date #1)	(initial)		
	5. x (date #4)	(initial)	6. x (date #5)	(initial)	7. x (date #6)	(initial)		
Best and Final Offer:	8. **September 16, 2019** (date)	LM (initial)						

Motorola Solutions, Inc. (Offeror company name)	(Signature of person authorized to sign Offer) LM (Initials)
2900 S. Diablo Way Ste 150 (Address)	Larry Mabry MSSSI Vice President & Director Sales (Printed name and title)
Tempe, AZ 85282 (City | State | ZIP)	Walter Whatley Senior Account Executive (Contact name and title)
36-1115800 (Federal tax identifier (EIN or SSN))	Walter.whatley@motorolasolutions.com 520-457-8604 (Contact Email Address / Contact phone number)

CERTIFICATION: By signature in the above, Offeror certifies that it:

1. will not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11246, [Arizona] State Executive Order 2009-9 or A.R.S. §§ 41−1461 through 1465;
2. has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted offer. Failure to provide a valid signature affirming the stipulations required by this clause will result in rejection of the Offer. Signing the Offer with a false statement will void the Offer, any resulting contract, and may be subject to legal penalties under law;
3. complies with A.R.S. § 41-3532 when offering electronics or information technology products, services, or maintenance; and
4. is not debarred from, or otherwise prohibited from participating in any contract awarded by federal, state, or local government.

ACCEPTANCE OF OFFER: State hereby accepts the initial Offer, Revised Offer, or Best and Final Offer identified by number **#** at the top of this form, and which was dated **date** (the Accepted Offer). Offeror is now bound (as Contractor) to carry out the Work under the attached Contract, of which the Accepted Offer forms a part. Contractor is cautioned not to commence any billable work or to provide any material or perform any service under the Contract until Contractor receives the applicable Order or written notice to proceed from Procurement Officer.

State's Contract No. is: CTR046830 **The effective date of the Contract is: 10-09-2019** **Contract awarded: 10-09-2019**

(Procurement Officer signature)	Procurement Officer, James Atkins

Part 2: Scope, Pricing and Terms and Conditions (Rev 2)

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1.0 Background

1.1 [illegible]

1.2 [illegible]

1.3 [illegible]

2.0 2-Way Radios

2.1 Analog & Digital Vehicular Mounted Mobile Radio Equipment [illegible]

2.2 Mobile Data Radio Vehicular Mounted Equipment [illegible]

2.3 Desktop Analog &Digital Base Station Radio Equipment: [illegible]

2.4 Analog & Digital Personal/Portable Radio Equipment: [illegible]

2.5 Analog & Digital Motorcycle Rear-mounted Radios: [illegible]

2.6 Low Power Vehicular Repeater: [illegible]

2.7 Multi Band Radios: [illegible]

2.8 Base/Mobile Relay Station Fixed Radio Equipment: [illegible]

2.9 Fixed Link Base Radios: [illegible]

2.10 Communications Service Monitors: [illegible]

[illegible]

- ***VHF (High-band):*** [illegible]
- ***UHF*** [illegible]
- ***700/800*** [illegible]

- ***800*** [illegible]
- ***Narrowband*** [illegible]
- ***FDMA*** [illegible]
- ***TDMA*** [illegible]
- ***P25:*** [illegible]
- ***High Tier Subscriber Equipment*** [illegible]
- ***Mid-Tier Subscriber Equipment*** [illegible]
- ***Low Tier Subscriber Equipment*** [illegible]

2.11 **Radio Standards** [illegible]

2.12 **Transmitter Characteristics** [illegible]

2.12.1 [illegible]

2.12.2 [illegible]

2.12.3 [illegible]

2.12.2 [illegible]

2.12.3 [illegible]

2.12.4 [illegible]

[illegible]

[illegible]

2.12.5 [illegible]

2.12.6 [illegible]

2.12.7 [illegible]

2.12.8 [illegible]

2.12.9 [illegible]

2.12.10 [illegible]

[illegible]

2.12.11 [illegible]

2.13 **Receiver Characteristics -** [illegible]

2.13.1 [illegible]

2.13.2 [illegible]

D [illegible] R 2 [illegible]

2 [illegible] [illegible]

[illegible]

[illegible]

[illegible]

2 [illegible] R [illegible]

2 [illegible] [illegible]

- [illegible]
- [illegible]

2 [illegible] [illegible]

2 [illegible] [illegible]

2 [illegible] [illegible]

- [illegible]
- [illegible]

2 [illegible] [illegible]

2 [illegible] [illegible]

- [illegible]
- [illegible]
- [illegible]

2.14 Transceiver Unit Specifications:

2 [illegible] [illegible]

2.2.2 [illegible]

2.15 Trunking Operation Option:

2.15.1 [illegible]

2.15.2 [illegible]

2.15.3 [illegible]

2.16 ANALOG & DIGITAL VEHICULAR MOUNTED MOBILE RADIO EQUIPMENT

2.16.1 **Model Specifications**

2.16.1.1 **High-Tier, Mid-Tier:** [illegible]

2.16.1.2 **Low-Tier:** [illegible]

2.17 Electrical Specifications:

[illegible]

2.18 Transmitter Characteristics:

[illegible]

2.18.1 **Carrier Power Output Rating: (all minimum intermittent power at 20% duty cycle)**

2.18.2 **High Tier VHF:** [illegible]

2.18.3 **Low-Tier VHF** [illegible]

2.18.4 [illegible]

2.□□□□□ **High-Tier** □□□□□d □ □□r □□r □□□□r □□

□

2.□□□6□ **Mid-Tier** □□□□□d □ □□r □□r □□□□r □

□

2.□□□□□ **Low Tier** □□□□□d □ □□r □□r □□□□r □□

□

2.□□□□□ **Audio Frequency Harmonic Distortion:** □ □

2.□□□□□□□□ □ □□□□□□r □□□□ □□ □□d □□□□□□□□□□□□ □□□□□□□□□ □□□□d 6□□ □□ □□□□ □□ □ d □□□□□□□□□

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2.□□□□□**FM Hum and Noise Attenuation:** □

2.□□□□□□□□ **High-Tier** □□□□□d □ □□□2□□□□ □ □□□

2.□□□□□□□□ **Low Tier** □□□□□d □ □□□2□□□□ □ □□□

2.19 Receiver Standards □

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- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

2.2[illegible] **Interconnecting Cables.** [illegible]

2.21 Supplied Components: [illegible]

2.2[illegible] **Microphone and Control Head**

- [illegible]
- [illegible]
- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]
  - [illegible]

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2.2 [illegible]

Carrier Power Output Rating: (all minimum intermittent power at 20% duty cycle)

[illegible]

[illegible]

[illegible]

- **System Modulation:**

[illegible]

- **Conducted and Radiated Spurious Emission Attenuation:**

[illegible]

- **Harmonic Emission Attenuation**

[illegible]

- **FM Hum and Noise Attenuation:**

[illegible]

2.25 Receiver Characteristics:

2.2 **Operating Frequency**

[illegible]

2.2.2 **Receiver Standards:**

- **EIA 12 dB SINAD Sensitivity:**

[illegible]

- **Adjacent Channel Selectivity Desensitization:**

[illegible]

[illegible]

- **Spurious Response Attenuation:**

[illegible]

[illegible]

- **Intermodulation Spurious Attenuation:**

[illegible]

- **Frequency Stability:**

[illegible]

2.26 DESK-TOP ANALOG & DIGITAL BASE STATION RADIO EQUIPMENT:

[illegible]

2.26 [illegible]

2.26.2 [illegible]

2.26.3 [illegible]

2.27 ANALOG & DIGITAL PERSONAL /PORTABLE RADIO EQUIPMENT

2.27.1 **Model Specifications**

2.27.1.1 [illegible]

[illegible]

[illegible]

2.27.1.2 Model [illegible]

[illegible]

[illegible]

2.27.1.3 [illegible]

[illegible]

2.28 Transmitter Standards

[illegible]

2.28.1 [illegible]

- [illegible]

[illegible]

[illegible]

- [illegible]

2.28.2 [illegible]

- [illegible]
- [illegible]

2.28.3 [illegible]

- [illegible]
- [illegible]

2.28.4 [illegible]

- [illegible]
- [illegible]

2.29 Receiver Characteristics

2.2.1.1 [illegible]

[illegible]

[illegible]

2.2.2.1 [illegible]

[illegible]

[illegible]

2.2.3.1 [illegible]

[illegible]

[illegible]

2.2.4.1 [illegible]

[illegible]

[illegible]

2.30 General Electric and Mechanical Characteristics:

2.30.1 **Components Included:**

[illegible]

[illegible]

2.30.2 **Programming:**

- [illegible]
- [illegible]

2.31 Battery Cycle

[illegible]

2.32 Battery Chargers

2.32.1 **High-Tier:** [illegible]

[illegible]

2.32.2 **Low-Tier:** [illegible]

2.33 Mobile Radio Converter Console and Charger (High-Tier Model Only):

2.33.1 **Availability** [illegible]

[illegible]

2.33.2 [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

2.33.2.1 [illegible]

2.33.3 [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

2[illegible] [illegible] 2[illegible] [illegible]

2[illegible] M[illegible]

2.34 ANALOG & DIGITAL MOTORCYCLE REAR-MOUNT RADIO:

[illegible]

2[illegible] **Installation:**
[illegible]

2[illegible] **Interconnecting Cables:**

2[illegible] [illegible]

2[illegible] [illegible]

2[illegible] **Control Panel:**

[illegible]

2[illegible] **Microphone:**

2[illegible] [illegible]

2[illegible] [illegible]

[illegible]

2[illegible] **Optional Weatherproof Housing:**

2[illegible] [illegible]

2[illegible] [illegible]

2[illegible] **Power Supply:**

2[illegible] [illegible]

2[illegible] [illegible]

2[illegible] [illegible]

2.35 FIXED LINK BASE RADIOS

[illegible]

2[illegible] **Power Requirements**

[illegible]

2[illegible] [illegible]

2[illegible] [illegible]

2[illegible] **Environmental**

[illegible]

2.36 Duplexer, BP & BP/BR

[illegible]

- [illegible]

- [illegible]

[illegible]

2.36.1 **Option A** - [illegible]

- [illegible]
- [illegible]

2.36.2 **Option B** - [illegible]

- [illegible]
- [illegible]

2.37 Re-Radiation Loss

[illegible]

2.38 Common Circuitry

[illegible]

2.39 Audio Requirements

[illegible]

2.40 Physical Size/Form Factor

[illegible]

2.41 Transmitter Characteristics

[illegible]

2.41.1 **Carrier Power Output**

- [illegible]
- [illegible]

2.41.2 [illegible]

2.41.3 [illegible]

2.41.4 [illegible]

2.42 Receiver Characteristics

2.42.1 [illegible]

2.42.2 [illegible]

2.42.3 [illegible]

2.42.4 [illegible]

2.42.5 [illegible]

2.42.6 [illegible]

2.43 LOW POWER VEHICULAR REPEATERS EQUIPMENT

[illegible]

2.44 MULTI-BAND RADIOS

[illegible]

2.45 ANALOG & DIGITAL BASE/MOBILE RELAY STATION FIXED RADIO EQUIPMENT

Model Specifications

2.45.1 **Basic Operations**

[illegible]

- [illegible]
- [illegible]
- [illegible]

[illegible]

2.46 Electrical Specification:

[illegible]

2.47 Transmitter Characteristics:

2.47.1 [illegible]

2.47.2 [illegible]

2.□□□□□□ □□□□□r□□□□□ □□□□r□□□□□□□□□□□□□□□□□□□□d□□□r□□□□□□□□□□□r□□□□□□□□□□□□□□r□□□□□□□□□□□□□□□□□□□

[illegible]

2.49 Station Control and Operation: [illegible]

2[illegible] **Station Audio Control:** [illegible]

[illegible]

2[illegible]2[illegible] **Tone Control Scheme:** [illegible]

[illegible]

2[illegible]2[illegible] **Transmit Tone Control:** [illegible]

- [illegible]

  [illegible]

  [illegible]

  [illegible]

- [illegible]"[illegible]

- [illegible]

- [illegible]

2[illegible]2[illegible] **Tone Squelch Disable:** [illegible]

[illegible]

[illegible]

[illegible]D[illegible]

2[illegible] **Repeater Enable/Disable Function:** [illegible]

[illegible]

[illegible]

[illegible]

2.□□□□□□ **E&M / DC Control** □

□□□□□□

- [illegible]

- [illegible]

2.52.2 [illegible]

[illegible]

2.52.3 [illegible]

[illegible]

2.52.4 [illegible]

[illegible]

2.52 COMMUNICATION SERVICE MONITORS

[illegible]

2.52.1 **Physical Construction**

[illegible]

2.52.2 **Electrical Specifications:**

[illegible]

2.52.2.1 [illegible]

2.52.2.2 [illegible]

2.52.3 **Service Monitor Operating Sections:**

- R
- R R
- D R
- R
- R
- r
- r
- M
- d
- D M
- R

2 2 r R d d r d d r

2 2 r M M

2 2 6 2

2 2 2D

2 2 d M r r

2 2 r R

2 2 M d M M

2 2 d r d

2.53 Receiver Monitor/Display:

r r d d d D d r d d r d

2 r R r d r

2 2 2 r d D

2 d d

2 D M R 2 r r r d

2 D M r r d

2 6 D d d D r

2 r M r r R r r d

2.54 Oscilloscope

r D d d d d r r r r d r r r r d d r d

2.55 Spectrum Analyzer

2.55.1 [illegible]

2.55.2 [illegible]

2.55.3 [illegible]

2.55.4 [illegible]

2.55.5 [illegible]

2.56 Duplex RF Signal Generator

2.56.1 [illegible]

2.56.2 [illegible]

2.57 Accessories

[illegible]

2.58 Operational Considerations

[illegible]

[illegible]

2.59 Configurations

[illegible]

2.59.1 [illegible]

2.59.2 [illegible]

2.60 GENERAL SPECIFICATIONS:

2.60.1 [illegible]

2.6 [illegible]

2.6 [illegible]

2.6 [illegible]

2.61 CONTRACTOR SUPPORT (Installation and Maintenance):

2.6 [illegible]

- [illegible]

- [illegible] **will be included** [illegible]

- [illegible]

[illegible]

2[illegible]2[illegible] [illegible]

[illegible]

2[illegible] [illegible]

[illegible]

2.62 WORKMANSHIP [illegible]

[illegible]

2.63 PROGRAMMING [illegible]

[illegible]

3.0 Digital Microwave Terminals

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.2 General Requirements

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.3 As-Built Drawings

[illegible]

3.4 Contractor's Guarantee

[illegible]

3.5 Warranty Service and Maintenance Contracts

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.6 Failure to Meet Requirements of Specifications

[illegible]

[illegible]

3.7 Detailed Specifications of Equipment

[illegible]

[illegible]

3.8 Maintenance and Test Equipment List

[illegible]

3.9 Material and Workmanship

[illegible]

3.10 Test Procedures

[illegible]

3.11 Identification

[illegible]

3.12 Servicing

[illegible]

3.13 Factory Testing

[illegible]

[illegible]

[illegible]

3.14 Training

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]

[illegible]

[illegible] [illegible]

3.15 System Options

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

3.16 Non-Frequency Specific Requirements

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

3.17 Printed Circuit Connections

[illegible] [illegible]

[illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.18 Mechanical Requirements

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.19 Environmental

[illegible]

[illegible]

[illegible] R[illegible] [illegible] [illegible] [

[illegible]

[illegible]

3.23 Service Channel and Orderwire

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.24 Redundancy and Protection

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.25 Space Diversity

[illegible]

3.26 Adaptive Equalization

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

□26□2□ □□□□ □□□ □□□□

3.33 Outdoor Mounted RF Unit

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.34 RF Performance Characteristics for Radio Equipment Operating in the 900 MHz Microwave Radio Band

3.35 For the Band of 928 to 960 MHz with bandwidths of 100 and 200 KHz

[illegible]

3.36 Frequency Tolerance

[illegible]

3.37 Feed Connection

[illegible]

3.38 RF Power Levels

[illegible]

3.39 Receiver Thresholds

[illegible]

[illegible]

3.40 RF Performance Characteristics for Radio Equipment Operating in the 5.9-7.1 GHz Microwave Radio Band.

3.41 6 GHz Frequency Range and Bandwidth

[illegible]

[illegible]

[illegible]

3.42 Feedline Connection

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.43 RF Power Levels

[illegible]

[illegible]

[illegible]

3.44 Receiver Thresholds

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

3.45 RF Performance Characteristics for Radio Equipment Operating in the 10-11 GHz Microwave Radio Band.

3.46 10-11 GHz Frequency Range and Bandwidth

[illegible]

[illegible]

[illegible]

3.47 Feedline Connection

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.48 RF Power Levels

[illegible]

[illegible]

3.49 Receiver Thresholds

[illegible]

Capacity	Received Signal Level (RSL) in dBm
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

3.50 RF Performance Characteristics for Radio Equipment Operating in the 18 GHz Microwave Radio Band

3.51 Frequency Range and Bandwidth

[illegible]

[illegible]

[illegible]

3.52 Feedline Connection

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

3.53 RF Power Levels

□□□□□□□□ □□□□□□ □□□□□□□□□□□□□□□□□□□□ □□□□□ □□ □□□□□□□□□□□□□□□□□□□□

4.0 LMR Base Station Antennas, Microwave Antennas

4.1 Offer(s) and Product Qualifications

4.2 Type(s) of LMR Antennas

4.3 Microwave Antennas (Dishes)

Frequency Band

[illegible]

[illegible]

4.4 Service, Installation and Operations Manuals

[illegible]

[illegible]

[illegible]

[illegible]

4.5 Equipment Service Life

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

4.6 General Equipment Characteristics

[illegible] **Environmental**

[illegible] **Environmental**

[illegible] **Environmental**

[illegible] **Environmental**

Environmental [illegible]

Environmental [illegible]

Operational [illegible]

4.7 Microwave Antennas

[illegible]

[illegible]								
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]								
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]								
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

4.8 Radomes

[illegible]

[illegible]

4.9 Dehydrators

[illegible]

1.	½", 7/8", 1-¼"	Diameter Foam Dielectric Coaxial Cable
2.	7/8"	Diameter Air Dielectric Coaxial Cable
3.	1 5/8"	Diameter Foam Dielectric Coaxial Cable
4.	½"	Diameter Super Flexible Foam Dielectric Coaxial Cable

4.10 Transmission Lines

[illegible]

1.	Waveguide for	5.925 – 7.125 GHz
2.	Waveguide for	10.50 – 11.70 GHz
3.	Waveguide for	17.70 – 19.70 GHz
4.	Waveguide for	21.20 – 23.60 GHz

4.11 Connectors

LMR Connectors

	½" Connector	7/8" Connector	1-¼' Connector	1-5/8 connector	½" Super Flexible Connector
1.	"N" Male	"N" Male	"N" Male	"N" Male	"N" Male
2.	"N" Female	"N" Female	"N" Female	"N" Female	"N" Female
3.	UHF Male	UHF Male			UHF Male
4.	UHF Female	UHF Female			UHF Female
5.	7-16 DIN Male	7-16 DIN Male	7-16 DIN Male	7-16 DIN Male	7-16 DIN Male & Right Angle
6.	7-16 DIN Female	7-16 DIN Female	7-16 DIN Female	7-16 DIN Female	7-16 DIN Female
7.	7/8" EIA	7/8" EIA			

4.12 Waveguide Connectors

	EW63-E65, Tunable, Fixed Tuned, CPR and CPR 137G
2	EW90-E105, Tunable, Fixed Tuned, CPR and, CPR 90G, PBR100
	EW180-E185, Fixed Tuned, UG595/U, PDR180
	EW220-E220, Fixed Tuned, UG595/U, PBR220

5.0 Radio Dispatch Consoles

5.1 General

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

5.2 Electrical Requirements

5.3 Technical Specifications

5.4 DESK-TOP REMOTE CONTROL CONSOLES (TYPE I price category)

General -

[illegible]

[illegible]

[illegible]

[illegible] D[illegible]

[illegible] D[illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] 2[illegible]

[illegible] M[illegible]

[illegible] D M[illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

5.7 Electrical Specifications

[illegible]

[illegible]

[illegible]

5.8 Full-Feature Console – Type III

[illegible]

[illegible]

[illegible]

[illegible]

5.9 Large Full-Feature Console – Classification (Type IV Price Category)

[illegible]

5.10 Control Functions & Status Indicators

[illegible]

5.11 Radio Channel Control Functions

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] [illegible] [illegible] [

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

5.14 Status Indicators

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

5.15 Ancillary Equipment

[illegible] [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible] D[illegible] [illegible] [illegible] [

r [illegible]

[illegible] R[illegible] r[illegible] r[illegible] r

[illegible]

6.2 [illegible]

6.2 [illegible]

6.2.1 [illegible]

6.3 [illegible]

6.3.1 [illegible]

6.3.2 [illegible]

6.3.3 [illegible]

6.4 [illegible]

6.4.1 [illegible]

6.4.2 [illegible]

6.4.3 [illegible]

6.5 [illegible]

6.6 Maintenance Services

6.6.1 [illegible]

6.6.2 [illegible]

6.6.3 [illegible]

6.6.4 [illegible]

6.6.5 [illegible]

6.6.6 [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

5.17 Mechanical Requirements - [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

5.18 Training

[illegible]

[illegible]

[illegible]

5.19 Recommended Maintenance Equipment

5.20 Recommended Replacement Parts

6.0 Generators

6.1

[illegible]

6.2 Requirements

6.2.1 [illegible]

6.2.2 [illegible]

6.2.3 [illegible]

6.2.4 [illegible]

6.2.5 [illegible]

7.0 Back-up Batteries (Including Solar)

7.1 Specifications

7.1.1 [illegible]

7.1.2 [illegible]

7.1.2 (a) [illegible]

7.1.2.1 [illegible]

7.1.2.2 [illegible]

7.1.2.3 [illegible]

7.1.3 [illegible]

7.1.4 [illegible]

7.1.5 [illegible]

7.1.6 [illegible]

7.1.7 [illegible]

7.1.8 [illegible]

7.1.9 [illegible]

8.0 Prefab Communications Shelters

8.1 General

8.1.1 [illegible]

□□□2□ □□□d□r□□□□□□□□□□ □□d□□□r□□□□□□□□□□□□□r□d□□□□d□□□r□□□□□□□□□□□□d□□□□□□□□□□□□□□□□□□

8.2 Requirements□

□2□□□ □r□□□□□□□□ □□ □ □□□□□□□□□□□□□□□□□□r□□□ □□□□□ □□□□□□□□□□□□□d□□ □□□□□□□□□□r□□□□□□□□□□□□□□□

□2□2□ □ □□□r□r□□□□□□□□□ □□□□r□□□□□□□□□□r□□□ □□□□□□□□□□d□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□r□□□□□□□□□□□□□□□□□□□

[illegible] [illegible] [illegible] [

- [illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

EXHIBITS TO THE SCOPE DOCUMENT

NO EXHIBITS FOR THIS SOLICITATION

End of section 2-A

SECTION 2-B: Pricing Document

1.0 Compensation

Contractor will be compensated for the satisfactorily carrying out its obligations under the Contract by the method indicated by the "●" mark below:

●	Contracted Labor Rates (refer to paragraph 1.13 below)
●	Discount Off List or Catalog (refer to paragraph 1.25 below)

1.1 CONTRACTED LABOR RATES. The contracted labor rates are the fully-burdened and marked-up billing rates for Contractor's labor scheduled in Exhibit 1 to this Pricing Document.

1.1.1 The rates are deemed to be inclusive of the actual gross wages plus all:

(a) applicable payroll taxes, non-payroll employer burden, workers' compensation contributions and health and welfare benefit contributions;

(b) retirement or other pension contributions, vacation, sick time or other paid leave allowances and the like;

(c) required home office support, corporate or subordinate licenses or registrations, corporate insurance, professional association fees, advertising, time and travel by any of Contractor's personnel other than billable personnel and any bonuses or other incentives for all personnel (including billable Personnel);

(d) insurance coverages to be provided by Contractor under the Contract; and

(e) profit.

1.1.2 The rates are not subject to overtime or other premium time unless expressly stated otherwise in the Pricing Document or a relevant Annex thereto.

1.1.3 The rates include all transaction privilege and other sales/use taxes, including any gross receipts taxes on services, unless expressly stated otherwise in the Pricing Document or a relevant Annex thereto.

1.1.4 Reimbursable items consist of three components:

(a) *Site Services, Logistics, and Utilities*. State and Contractor shall each provide those items of site services, logistics and utilities that are assigned to them in Attachment 4 to this Pricing Document. Excluding only those item expressly indicated as being provided by State, provided by others, or a reimbursable item, Contractor shall provide all services, equipment, tools, and logistics necessary for its personnel and otherwise as required to carry out the Work and compensation for all those is deemed to be included in the contractual fee mark-up (if any applies).

i. For items indicated to be paid on a "unit rate" basis, Contractor shall submit a worksheet with each application for payment showing the actual amount of payment requested for these items, which amount shall not exceed the unit rate multiplied by the total quantity (i.e., Contractor is "at risk" for costs it incurs that are in excess of the extended value unless State has issued a Change Order for the excess.

ii. For items indicated to be paid on a "cost" basis, Contractor shall request reimbursement for the actual cost of such items at least monthly and shall provide the necessary back-up documentation, including receipts or invoices and timesheets (if applicable).

iii. For items indicated to be paid on a "lump sum" basis, Contractor shall request payment for the completed proportion of such items at least monthly.

(b) *Personnel-Related Expenses*. State will only reimburse for those items of personnel-related expense expressly indicated in Attachment 4 to this Pricing Document as a reimbursable item, and it is agreed that the costs of all other such expenses applicable to its personnel and otherwise as required to carry out the Work are adequately compensated in the contractual fee mark-up (if any applies).

i. For items to be paid on a "unit rate" basis, Contractor shall submit a worksheet with each application for payment showing the actual amount of payment requested for these items, which amount shall not exceed the unit rate multiplied by the total quantity (i.e., Contractor is "at risk" for costs it incurs that are in excess of the extended value unless State has issued a Change Order for the excess.

ii. For items to be paid on a "cost" basis, Contractor shall request reimbursement for the actual cost of such items at least monthly and shall provide the necessary back-up documentation, including receipts or invoices (if applicable). All reimbursements shall be strictly subject to State's travel policy, which is available at https://gao.az.gov/travel.

iii. Contractor must obtain State's written approval prior to booking or going on any reimbursable travel.

iv. Contractor will be reimbursed at the current Travel Policy rates.

v. Contractor shall itemize all per diem and lodging charges.

vi. For items to be paid on a "lump sum" basis, Contractor shall request payment for the applicable proportion of such items at least monthly.

1.2 DISCOUNT OFF LIST OR CATALOG. A discount off list or catalog means a percentage discount to be applied to a base price for from one or more contractually-established price lists against published catalogs. The applicable discounts are scheduled in Exhibit 1 to this Pricing Document.

1.2.1 Unless specified otherwise in the Pricing Document, base price is the price that is most widely offered to general customers at the time of the Order.

1.2.2 The catalogs used to establish base price are specified otherwise in the Pricing Document. If nothing is so specified, then the commercially available catalogs published by Contractor or Subcontractor to a dealer or reseller network for the covered materials or services are to be used.

1.2.3 Each catalog must:

(a) bear the applicable State contract number;

(b) list all materials or services Contractor is authorized to sell under the Contract;

(c) not contain any items that are excluded from the Contract;

(d) provide ordering information and contact information for customer support.

1.2.4 Each catalog and its accompanying price list must include for each item:

(a) a part or model number, if applicable;

(b) a complete and accurate description of the item;

(c) the manufacturer's suggested retail price (MSRP) or Contractor's list price;

(d) a stock keeping unit (SKU) number (SKU) , if applicable;

(e) the item's unit of measure (UOM), if applicable; and

(f) the quantity in the unit of measure (QUOM), if applicable.

1.2.5 Contractor shall provide and maintain concurrent and identical electronic and hardcopy versions of all contracted price lists and catalogs.

(a) The electronic versions are to be provided as an Amendment to the Contract.

i. State, at its discretion, may host Contractor's electronic price lists and catalogs directly, or may link through ProcureAZ as a punch-out.

ii. Regardless of the number and types of links to Contractor's electronic price lists and catalogs, Contractor shall ensure that all Eligible Agencies and Co-Op Buyers are only able to access one unified set of data.

(b) Contractor shall supply sufficient, current hardcopy catalogs and price lists price lists to applicable Eligible Agencies at Contract commencement, and provide prompt hardcopy notice of any changes to list/catalog holders as they occur. Contractor shall not change State or any Eligible Agency (or any Co-Op Buyer, if applicable) for lists/catalogs or updates.

2.0 Pricing

2.1 CONTRACTOR'S BEST PRICING. Supplier warrants that, for the term of the Contract, the prices and discounts set out in Exhibit 1 to this Pricing Document, including any subsequent agreed amendment to it (the "Contract Pricing"), will be equal to or better than the lowest prices and largest discounts, both separately and in combination, at which Contractor sells equivalent items of equipment and materials.

2.1.1 That price-plus-discount equivalence ("Contractor's Best Pricing") is intended to be irrespective of whether or not those other sales have special purchase terms, conditions, rebates or allowances.

2.1.2 If Contractor's Best Pricing for equivalent items of equipment and materials is better than the Contract Pricing, then Contractor agrees to adjust the Contract Pricing to match the Contractor's Best Pricing for all sales related to the Contractor made after the date when the Contractor's Best Pricing was first better than the Contract Pricing.

2.1.3 For clarification of intent, that date is intended to be the date when the difference first occurred, which might have been before the difference was first identified. If it was before, then Supplier agrees to charge at less than the Contract Pricing until the extended difference that would have been realized (i.e., if the Contractor's Best Pricing had been applied when it should have been) has been settled.

2.2 PRICING-ALL-INCLUSIVE:

2.2.1 Pricing is all-inclusive, including any ancillary fees and costs required to accomplish the Scope of Work and all aspects of Contractor's offer as accepted by State. Details of service not explicitly stated in the Scope of Work or in Contractor's Offer, but necessarily a part of, are deemed to be understood by Contractor and included herein. All administrative, reporting, or other requirements, all overhead costs and profit and any other costs toward the accomplishment of the requirements in the Contract are included in the pricing provided.

2.3 PRICE INCREASES:

2.3 The SPO may review a fully documented request for a price increase. The requested increase shall be in writing and be based upon a cost increase to the contractor that was clearly unpredictable at the time of the offer and is directly correlated to the price of the product concerned. Contractor must provide conclusive evidence of a need for any price increases such as being substantiated by the Producer Price Index, Consumer Price Index, or similar pricing guide.

(a) Initial Contract prices will be honored for one year after award of Contract.

(b) All written requests for price adjustments made by the contractor shall be initiated thirty (30) days in advance of any desired price increase to allow State sufficient time to make a fair and equitable determination to any such requests. This may be waived upon proper documentation demonstrating the urgency of the request.

(c) All price adjustments will be implemented by a formal contract change order. State shall determine whether the requested price increase or an alternate option is in the best interest of State.

2.4 PRICE REDUCTIONS:

2.4.1 Price reductions shall by immediately passed along to State and may be submitted in writing to State for consideration at any time during the Contract period. The contractor shall offer State a price reduction on the Contract product(s) concurrent with a published price reduction made to other customers. State at its own discretion may accept a price reduction. The price reduction request shall be in writing and include documentation showing the actual reduction of cost. Sales promotions requests shall include difference in pricing, begin, and end date of promotion along with the products covered.

2.5 ADDITIONAL CHARGES:

2.5.1 Any charges or fees not delineated in the Contract may not be added, billed, or invoiced under the Contract. All additional work shall be approved by Eligible Agency in advance and be in accordance with the contract rate.

2.6 TRAVEL.

2.6.1 Contractor shall get written approval prior to any travel under the Contract in which reimbursement of expenses will be requested. Contractor will be reimbursed for actual expenses incurred in accordance with the current rates specified in State's Travel Policy. Contractor shall itemize all per diem and lodging charges. State Travel Policy, including State rates, may be located at https://gao.az.gov/travel. The Eligible Agency shall reject any claim for travel reimbursement without prior written approval.

2.7 DELIVERY

2.7.1 Unless stated otherwise in the contract, all prices shall be F.O.B. Destination and shall include all freight delivery and unloading at the destination.

3.0 Funding

No particular funding considerations apart from paragraph 4.3 of the Uniform Terms and Conditions [*Availability of Funds*] have been identified as of the Solicitation date.

4.0 Invoicing

4.1 INVOICES GO TO BUYING ENTITY. Contractor shall submit all billing notices or invoices to the ordering Eligible Agency or Co-Op Buyer at the address indicated on the applicable Order document.

4.2 MINIMUM INVOICE REQUIREMENTS. Every invoice must include the following information:

Item	Required
Bill-to name and address	●
Contractor name and contact information	●
Remit-to address	●
State contract number	●
Order number (typically the ProcureAZ PO #)	●
Invoice number and date	●
Date the items shipped or services performed	●
Applicable payment terms	●
Contract line item number	●
Contract line item description	●
Quantity delivered or performed	●
Line item unit of measure	●
Item price	●
Extended pricing	●
Discount off list or catalog	●
Taxes *(as a separate invoice line item)*	●
Upcharge shipping/freight, etc. *(as a separate invoice line item)*	Materials only
Total invoice amount due	●

4.3 NO INVOICE WITHOUT AUTHORIZATION. Contractor shall not seek payment for any:

1. Materials or Services that have not been authorized on an acknowledged Order;
2. expediting, overtime, premiums, or upcharges absent State's express prior approval; or
3. Materials or Services that are the subject of a Contract Amendment or Change Order that has not been fully signed.

4.4 PRE-INVOICE REVIEW. Upon Eligible Agency request and shortly before Contractor is scheduled to submit each invoice, the parties' representatives shall meet informally to review any issues relevant to that upcoming invoice so that the formal invoice process is thereby facilitated and made more efficient.

4.5 SUBMITTING INVOICES. Contractor shall submit an invoice to the ordering Eligible Agency or Co-Op Buyer using the form provided or required by the ordering Eligible Agency or Co-Op Buyer. Every invoice must be signed by Contractor's authorized representative and accompanied by all supporting information and documentation required by the Contract and applicable laws.

4.6 DEFECTIVE INVOICES. Without prejudice to its other rights under the Contract or further obligation to Contractor, the ordering Eligible Agency or Co-Op Buyer may, at its discretion, reject any materially defective invoice.

4.6.1 The ordering Eligible Agency or Co-Op Buyer shall notify Contractor within 5 (five) business days after receipt if it determines an invoice to be materially defective.

4.6.2 Invoices will be deemed automatically rejected upon delivery if they:

4.6.2 (a) are sent to an incorrect address;

4.6.2 (b) do not reference the correct State contract number; or

4.6.2 (c) are payable to any Person other than the Contractor.

4.6.3 The ordering Eligible Agency or Co-Op Buyer will have no obligation to pay against a defective invoice unless and until Contractor has re-submitted it free of defects.

4.7 INVOICING FOR TASK ORDERS. For task order Services, invoices must include the following information as applicable to the relevant task order being invoiced against:

1. substantiation of hours worked using:
   a. a detailed daily timesheet;
   b. itemization to the task level; and
   c. breakdown by service area (if the Contract covers more than one area) and Contract Amendment (if any apply);
2. authorizations and receipts for all allowable reimbursable items being invoiced; and
3. Contractor's certification that the invoice has been examined and to the best of Contractor's knowledge and belief the invoiced amounts are entitled, correct, and accurate as can be demonstrated by the contractually-required books and records upon State's demand.

5.0 Payments

5.1 PAYMENT. The applicable Eligible Agency or Co-Op Buyer shall pay undisputed amounts due to Contractor within the time period specified in Section 18.1 of the Special Terms and Conditions

5.2 JOINT CHECKS OR DIRECT PAY. applicable Eligible Agency or Co-Op Buyer may, but is under no obligation to, pay by joint check or to pay directly to any Subcontractor or other creditor to whom any portion of Contractor's requested payment is owed.

5.3 RECOVERY OF OVER-PAYMENT. If applicable Eligible Agency or Co-Op Buyer determines that an over-payment has been made to Contractor on any prior invoice, it shall inform Contractor of the amount and date of the over-payment and may deduct the over-paid amount from amounts then or thereafter due to Contractor.

5.4 PAYMENTS TO SUBCONTRACTORS. Contractor shall make payment of all undisputed amounts due to Subcontractors within thirty (30) days of receipt of funds from applicable Eligible Agency or Co-Op Buyer applicable to their services.

5.5 PURCHASING CARD. applicable Eligible Agency or Co-Op Buyer may pay invoices for some or all Orders using a purchasing card. Any and all fees related to payment using a Purchasing Card are the responsibility of Contractor. Unless otherwise stated in the Contract there will be no additional fees or increase in prices associated with this method of payment.

5.6 AUTOMATED CLEARING HOUSE. applicable Eligible Agency or Co-Op Buyer may pay invoices for some or all Orders through an Automated Clearing House (ACH). In order to receive payments in this manner from

Eligible Agencies, Contractor must complete an ACH Vendor Authorization Form (form GAO-618) within 30 (thirty) days after the effective date of the Contract. The form is available online at:

https://gao.az.gov/afis/vendor-information

End of Section 2-B

SECTION 2-C: Special Terms and Conditions

The Special Terms and Conditions modify the Uniform Terms and Conditions and its Appendices. It can modify them by replacing, deleting, appending to, or revising the text of an existing provision or by inserting a new paragraph into an existing article. No other document modifies or adds to the Uniform Terms and Conditions, except as may subsequently be otherwise and expressly agreed and incorporated by Contract Amendment.

1.0 Definition of Terms

As used in the Contract, the terms listed below are defined as follows:

1.1. Co-Op Buyer

"Co-Op Buyer" means a member of the State Purchasing Cooperative that has entered into a "Cooperative Purchasing Agreement" with the Arizona Department of Administration State Procurement Office under A.R.S. § 41-2632. Unless there is an applicable Cooperative Purchasing Agreement in effect at the time, a State Purchasing Cooperative member cannot be a Co-Op Buyer. For reference, "Co-Op Buyer" is to be construed as encompassing "eligible procurement unit" under A.A.C. R2-7-101(23).

NOTE: Membership in the State Purchasing Cooperative is open to all Arizona political subdivisions, including cities, counties, school districts, and special districts. Membership is also available to non-profit organizations, other state governments, the federal government and tribal nations. For reference, "non-profit organizations" are defined in A.R.S. § 41-2631(4) as any nonprofit corporation as designated by the IRS under section 501(c)(3) through 501(c)(6) of the tax code.

1.2. Eligible Agency

If the Special Terms and Conditions indicates that the Contract is a "single-agency" contract, then "Eligible Agency" means the particular State of Arizona agency, university, commission, or board identified therein. If the Special Terms and Conditions indicates that the Contract is a "statewide" contract, then "Eligible Agency" means any State of Arizona department, agency, university, commission, or board.

2.0 Contract Interpretation

No modifications to uniform terms and conditions section

3.0 Contract Administration and Operation

3.1 Term of Contract

The term of the Contract will commence on the date indicated on the Acceptance and continue for five (5) years with an optional additional five (5) year term with annual renewal(s) for a total max term of ten (10) years unless canceled, terminated, or permissibly extended.

3.2 Statewide Contract Provisions

The Contract is a "statewide" contract for multiple purchases, projects, or assignments, and can be purchased against by some or all Eligible Agencies and any Co-Op Buyers that elect to participate. Even if only one Eligible Agency needs or elects to purchase against the Contract, it is to be construed as being a "statewide" contract hereunder.

The Contract is an indefinite delivery, indefinite quantity (ID/IQ) type of contract; it is to be construed as a "delivery order" sub-type of ID/IQ contract to the extent the Work is Materials, and a "task order" sub-type to the extent the Work is Services.

1. Contractor shall verify if an ordering entity is a bona fide Co-Op Buyer before selling Materials to or providing Services for them under the Contract. The current list of Co-Op Buyers is available on the State Procurement Office website:

https://spo.az.gov/procurement-services/cooperative-procurement/coop-usage-report

2. Contractor shall sell to Co-Op Buyers at the same price and on the same lead times and other terms and conditions under which it sells to Eligible Agencies, with the sole exception of any legitimately additional costs for extraordinary shipping or delivery requirements if the Co-Op Buyer is having Materials delivered or installed or Services performed at locations not contemplated in the contracted pricing (e.g. delivery to a location outside Arizona).

3. Contractor shall pay State an administrative fee against all Contract sales to Co-Op Buyers, as provided for under A.R.S. § 41-2633. The fee rate is one (1%) percent. Failure to remit the administrative fees is a material breach of contract, and will entitle State to its remedies under Article 8 and its right to terminate for default under Article 9. Method of calculation, payment procedures, and other details are provided on the State Procurement Office website:

   https://spo.az.gov/contractor-resources/statewide-contracts-administrative-fee

4. Contractor shall submit to State a quarterly usage report documenting all Contract sales to both Eligible Agencies and Co-Op Buyers, itemized separately. Contractor shall further itemize divisions, groups or areas within a given Eligible Agency if they place Purchase Orders independently of each other. Failure to submit the report is a material breach of contract, and will entitle State to its remedies under Article 8 and its right to terminate for default under Article 9. Contractor shall submit the report using the forms and following the instructions on the State Procurement Office website:

   https://spo.az.gov/contractor-resources/statewide-contracts-administrative-fee

5. Contractor shall acknowledge each Purchase Order from Eligible Agencies within 1 (one) business day after receipt by either: (a) "approving" the Purchase Order electronically in ProcureAZ, which will indicate Contractor's unqualified acceptance of the Purchase Order as-issued; or (b) "rejecting" the Purchase Order electronically in ProcureAZ, with a concurrent explanation by email to relevant originator as to the reason for rejecting it. By way of reminder, the only grounds on which Contractor may reject or refuse a Purchase Order are those set out in subparagraph 3.12.3 [*Orders are Obligatory*]. Unless and until Contractor has approved the Purchase Order in ProcureAZ, it will have no effect under the Contract and will not oblige either State or Contractor. If the relevant Eligible Agency explicitly instructs at the time that a verbal acceptance is sufficient because of urgency or other unusual circumstances and Contractor duly gives its verbal acceptance, then Contractor will be deemed to have accepted the Purchase Order immediately upon commencing performance, provided that, Contractor must follow-up its verbal acceptance by accepting the Purchase Order electronically in ProcureAZ within 3 (three) business days. Contractor shall thereafter be barred from subsequently rejecting the Purchase Order in ProcureAZ and if it does so the rejection will be void.

6. Contractor shall acknowledge each Purchase Order from Co-Op Buyers in conformance with each buyer's instructions given at the time of ordering or in any supplemental participating agreement Contractor might have with them. Purchase Orders from Co-Op Buyers create no obligation on State's part, since they are entirely

between the Co-Op Buyer and Contractor. That notwithstanding, Contractor's obligation under the Contract is to service Co-Op Buyers commercially as though they were with an Eligible Agency, and Contractor's refusal to do so would be a material breach of the Contract.

3.3 Multiple-Use Provisions

Eligible Agencies may issue Purchase Orders for Services in several forms, all of which become final and effective by a "Release Purchase Order" in ProcureAZ. Purchase Orders issued by Co-Op Buyers will be in whatever form the Co-Op Buyer normally uses. Regardless of origin, Purchase Orders must cite the State contract number to be valid. State may, at its discretion in each instance, determine the scope, schedule, and price for each Purchase Order in any of the following ways:

1. By choosing some or all of the Materials or Services items covered by the Contract for which a price is established in the Pricing Document, then preparing an Purchase Order using those prices (e.g., filling out a purchase order form), and sending it to Contractor.
2. By instructing Contractor to provide a comprehensive proposal of item quantities, combinations, etc., or services hours, personnel, etc., for a defined scope using those established prices as a basis, then validating and negotiating the proposal with Contractor and issuing an Purchase Order if and when reaching agreement.
3. As described in *(2)* above but requesting the proposal from both Contractor and other vendors who are contracted within the applicable scope categories and locations, either sequentially or concurrently, then selecting the proposal or proposals combination that is most advantageous to State.
4. As described in *(3)* above but introducing ad-hoc commercial competition by making the selection and ordering conditional on obtaining more favorable prices than the contractually-established ones.

When evaluating the proposals under *(3)* and *(4)* above, State may select based on price (for example, a quoted number of hours times the contracted or improved rate plus a fixed amount for incidentals), by experience and qualifications (for example, having an office nearer the required work location), or whatever combination thereof it determines is most appropriate to the work in question.

4.0 Costs and Payments

4.1 Proposal Costs

Costs Incurred During Proposal Development. The State will not be responsible for any cost incurred during the period of proposal development, including but not limited to On-Site Visits, Pre-Offer Conferences, Demonstrations and any other costs incurred by the Offeror in preparation for Bid Offering.

5.0 Contract Changes

No modifications to uniform terms and conditions section.

6.0 Risk and Liability

6.1 Contractor Insurance

Indemnification Clause

To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless the State of Arizona, and its departments, agencies, boards, commissions, universities, and any jurisdiction or agency issuing permits for any work included in the project, and their respective directors, officers, officials, agents and employees (hereinafter referred to as "Indemnitee") from and against any and all claims, actions, liabilities, costs, losses, or expenses, (including reasonable attorney's fees), (hereinafter collectively referred to as "Claims") arising out of actual or alleged bodily injury or personal injury of any person (including death) or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by the negligent or willful acts or omissions of Contractor or any of Contractor's directors, officers,

agents, employees, volunteers or subcontractors. This indemnity includes any claim or amount arising or recovered under the Workers' Compensation Law or arising out of the failure of Contractor to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. It is the specific intention of the parties that the Indemnitee shall, in all instances, except for Claims arising solely from the negligent or willful acts or omissions of the Indemnitee, be indemnified by Contractor from and against any and all Claims. It is agreed that Contractor will be responsible for primary loss investigation, defense and judgment costs where this indemnification is applicable. This indemnification will survive the termination of the above listed contract with the Contractor.

This indemnity shall not apply if the contractor or sub-contractor(s) is/are an agency, board, commission or university of the State of Arizona.

Insurance Requirements

Contractor and subcontractors shall procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Contract, insurance against claims for injury to persons or damage to property arising from, or in connection with, the performance of the work hereunder by the Contractor, its agents, representatives, employees or subcontractors.

The Insurance Requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. The State of Arizona in no way warrants that the minimum limits contained herein are sufficient to protect the Contractor from liabilities that arise out of the performance of the work under this Contract by the Contractor, its agents, representatives, employees or subcontractors, and the Contractor is free to purchase additional insurance.

Minimum Scope and Limits of Insurance

Contractor shall provide coverage with limits of liability not less than those stated below.

1. **Commercial General Liability (CGL) – Occurrence Form**

Policy shall include bodily injury, property damage, and broad form contractual liability coverage.

- General Aggregate $2,000,000
- Products – Completed Operations Aggregate $1,000,000
- Personal and Advertising Injury $1,000,000
- Damage to Rented Premises $50,000
- Each Occurrence $2,000,000

The policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to liability arising out of the activities performed by or on behalf of the Contractor.

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

2. **Business Automobile Liability**

Bodily Injury and Property Damage for any owned, hired, and/or non-owned automobiles used in the performance of this Contract.

- Combined Single Limit (CSL) $1,000,000

Policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to liability arising out of the activities performed

by, or on behalf of, the Contractor involving automobiles owned, hired and/or non-owned by the Contractor.

Policy shall contain a waiver of subrogation endorsement as required by this written agreement in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

3. **Workers' Compensation and Employers' Liability**

•	Workers' Compensation	Statutory
•	Employers' Liability	
o	Each Accident	$1,000,000
o	Disease – Each Employee	$1,000,000
o	Disease – Policy Limit	$1,000,000

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

This requirement shall not apply to each Contractor or subcontractor that is exempt under A.R.S. § 23-901, and when such Contractor or subcontractor executes the appropriate waiver form (Sole Proprietor or Independent Contractor).

4. **Professional Liability (Errors and Omissions Liability)**

•	Each Claim	$2,000,000
•	Annual Aggregate	$2,000,000

In the event that the Professional Liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract and, either continuous coverage will be maintained, or an extended discovery period will be exercised, for a period of two (2) years beginning at the time work under this Contract is completed.

The policy shall cover professional misconduct or negligent acts for those positions defined in the Scope of Work of this contract.

4. **Technology Errors & Omissions Insurance**

•	Each Claim	$2,000,000
•	Annual Aggregate	$2,000,000

Such insurance shall cover any, and all errors, omissions, or negligent acts in the delivery of products, services, and/or licensed programs under this contract.

Coverage shall include copyright infringement, infringement of trade dress, domain name, title or slogan.

In the event that the Tech E&O insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract and, either continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years, beginning at the time work under this Contract is completed.

5. **Network Security (Cyber) and Privacy Liability**

•	Each Claim	$2,000,000
•	Annual Aggregate	$2,000,000

Such insurance shall include, but not be limited to, coverage for third party claims and losses with respect to network risks (such as data breaches, unauthorized access or use, ID theft, theft of data) and invasion of privacy regardless of the type of media involved in the loss of private information, crisis management and identity theft response costs. This should also include breach notification costs, credit remediation and credit monitoring, defense and claims expenses, regulatory defense costs plus fines and penalties, cyber extortion, computer program and electronic data restoration expenses coverage (data asset protection), network business interruption, computer fraud coverage, and funds transfer loss.

In the event that the Network Security and Privacy Liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract and, either continuous coverage will be maintained, or an extended discovery period will be exercised for a period of two (2) years beginning at the time work under this Contract is completed.

The policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to vicarious liability of the insured arising out of the activities performed by or on behalf of the Contractor.

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

6. Installation Floater

- Coverage amount is $___TBD At Award

Policy shall contain an Additional Insured endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees.

The State of Arizona and the Department shall be named as loss payee as its interest may appear.

Coverage shall be written on an all risk, replacement cost basis and shall include coverage for flood and earth movement as well as coverage for losses that may occur during equipment testing/commissioning.

Policy shall be maintained until whichever of the following shall first occur: (1) final payment has been made; or, (2) until no person or entity, other than the State of Arizona, has an insurable interest in the property required to be covered.

Policy shall be endorsed such that the insurance shall not be canceled or lapse because of any partial use or occupancy by the State of Arizona.

The Installation Floater must provide coverage from the time the equipment/material becomes the responsibility of the Contractor and shall continue without interruption during the installation, testing and commissioning, including any time during which the equipment/material is being transported to the installation site, or awaiting installation, whether on or off site.

Policy shall contain a Waiver of Subrogation endorsement, as required by written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by the Contractor for the State of Arizona.

Contractor is responsible for the payment of all deductibles under the Installation Floater.

Additional Insurance Requirements

The policies shall include, or be endorsed to include, as required by this written agreement, the following provisions:

The Contractor's policies, as applicable, shall stipulate that the insurance afforded the Contractor shall be primary and that any insurance carried by the Department, its agents, officials, employees or the State of Arizona shall be excess and not contributory insurance, as provided by A.R.S. § 41-621 (E).

Insurance provided by the Contractor shall not limit the Contractor's liability assumed under the indemnification provisions of this Contract.

Notice of Cancellation

Applicable to all insurance policies required within the Insurance Requirements of this Contract, Contractor's insurance shall not be permitted to expire, be suspended, be canceled, or be materially changed for any reason without thirty (30) days prior written notice to the State of Arizona. Within two (2) business days of receipt, Contractor must provide notice to the State of Arizona if they receive notice of a policy that has been or will be suspended, canceled, materially changed for any reason, has expired, or will be expiring. Such notice shall be sent directly to the Department and shall be mailed, emailed, hand delivered or sent by facsimile transmission to (State Representative's Name, Address & Fax Number).

Acceptability of Insurers

Contractor's insurance shall be placed with companies licensed in the State of Arizona or hold approved non-admitted status on the Arizona Department of Insurance List of Qualified Unauthorized Insurers. Insurers shall have an "A.M. Best" rating of not less than A- VII. The State of Arizona in no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor from potential insurer insolvency.

Verification of Coverage

Contractor shall furnish the State of Arizona with certificates of insurance (valid ACORD form or equivalent approved by the State of Arizona) evidencing that Contractor has the insurance as required by this Contract. An authorized representative of the insurer shall sign the certificates.

All such certificates of insurance and policy endorsements must be received by the State before work commences. The State's receipt of any certificates of insurance or policy endorsements that do not comply with this written agreement shall not waive or otherwise affect the requirements of this agreement.

Each insurance policy required by this Contract must be in effect at, or prior to, commencement of work under this Contract. Failure to maintain the insurance policies as required by this Contract, or to provide evidence of renewal, is a material breach of contract.

All certificates required by this Contract shall be sent directly to the Department. The State of Arizona project/contract number and project description shall be noted on the certificate of insurance. The State of Arizona reserves the right to require complete copies of all insurance policies required by this Contract at any time.

Subcontractors

Contractor's certificate(s) shall include all subcontractors as insureds under its policies or Contractor shall be responsible for ensuring and/or verifying that all subcontractors have valid and collectable insurance as evidenced by the certificates of insurance and endorsements for each subcontractor. All coverages for subcontractors shall be subject to the minimum Insurance Requirements identified above. The Department reserves the right to require, at any time throughout the life of this contract, proof from the Contractor that its subcontractors have the required coverage.

Approval and Modifications

The Contracting Agency, in consultation with State Risk, reserves the right to review or make modifications to the insurance limits, required coverages, or endorsements throughout the life of this contract, as deemed necessary. Such action will not require a formal Contract amendment but may be made by administrative action.

Exceptions

In the event the Contractor or subcontractor(s) is/are a public entity, then the Insurance Requirements shall not apply. Such public entity shall provide a certificate of self-insurance. If the Contractor or subcontractor(s) is/are a State of Arizona agency, board, commission, or university, none of the above shall apply.

7.0 Warranties

No modifications to uniform terms and conditions section.

8.0 State's Contractual Remedies

No modifications to uniform terms and conditions section.

9.0 Contract Termination

No modifications to uniform terms and conditions section

10.0 Contract Claims

No modifications to uniform terms and conditions section.

11.0 General Provisions for Products

11.1	**Applicability**	Article 11 applies to the extent the Work is or includes Materials.
11.2	**Off-Contract Materials**	Contractor shall ensure that the design and/or procedures for the Materials ordering method prevents Purchase Orders for off-contract items or excluded items. Notwithstanding that State might have its own internal administrative rules regarding off-contract or excluded item ordering, and endeavors to prevent such purchase orders from occurring, Contractor is responsible for not accepting any such Purchase Orders; State may, at its discretion, return any such items under subparagraph 11.17 or cancel any such Purchase Order under subparagraph 11.18, in either case being without obligation and at Contractor's expense. As used above, "off-contract item" refers to any product not included in the scope of the Contract and for which no price or compensation has been established contractually, and "excluded item" refers to any product expressly stated in the Contract as being excluded from the Contract.
11.3	**Compensation for Late Deliveries**	Contractor shall have clear, published policies in place regarding late delivery, purchase order cancelation, discounts, or rebates given to compensate for late deliveries, etc., and make them readily available to those Eligible Agencies that are likely to need them.
11.4	**Indicate Shipping Costs on Purchase Order**	If shipping cost is additional to the contracted price or rate for an item, the Contractor shall identify the shipping cost it intends to add for shipping, as a separate line item on the price quote provided to ASDB. The Contractor shall also provide the required substantiating documentation for the shipping cost with the price quote. If ASDB approves paying a shipping cost, ASDB will list the agreed upon shipping cost as a line item on their Purchase Order, when it is issued. If there is no additional shipping cost, the Contractor shall indicate on the price quote that shipping is included in the Purchase Order price.
11.5	**Current Products**	Contractor shall keep all products being offered under the Contract: (a) in current and ongoing production; (b) in its advertised product lines; (c) as models or types that are actively functioning in other paying customer environments; and (d) in conformance to the requirements of the Contract.

11.6	**Maintain Comprehensive Selection**	Contractor shall provide at all times the comprehensive selection of products for which a price is established in the Pricing Document.
11.7	**Additional Products**	State, at its discretion, may modify the scope of the Contract by Contract Amendment to include additional products or product categories so long as they are within the general scope of the ones originally covered by the Contract. Once the Contract Amendment has been fully executed, Contractor shall then update all applicable catalogs and price lists and make them available to all affected entities at no additional cost. Either party may make the request to add products to the Contract; regardless of who makes the request, the parties shall negotiate in good faith a fair price for any additional products, but State may elect not to add some or all of the products in question if no agreement is reached on pricing in a timely manner. Contractor's request or proposal in response to State's request must include: (a) documentation demonstrating that the additional products meet or exceed the specifications for the original products while remaining in the same product groups as the original ones; and (b) documentation demonstrating that the proposed price for the additional products is both fair and reasonable and at the same level of discount relative to market price as were the original ones. Demonstration of (b) typically requires showing how prices at which sales are currently or were last made to a significant number of buyers compare to the prices or discounts (as applicable) being proposed for the additional products.
11.8	**Discontinued Products**	If a product or groups of products covered by the Contract are discontinued by the manufacturer, Contractor shall notify State within 5 (five) business days after receiving the manufacturer's notification. State, at its discretion, will either allow Contractor to provide substitutes for the discontinued products or delete the products from the scope of the Contract, both of which will be accomplished by Contract Amendment. Contractor shall then update all applicable catalogs and price lists and make them available to all affected entities at no additional cost. The parties shall negotiate in good faith a fair price for any substitute product, but State may elect to delete the products from the scope of the Contract if no agreement is reached on substitute pricing in a timely manner. When notifying State of the discontinuance, Contractor shall provide: (a) manufacturer's announcement or documentation stating that the products have been discontinued, with identification by model/part number; (b) documentation demonstrating that the substitute products meet or exceed the specifications for the discontinued products while remaining in the same product groups as were the discontinued ones; and (c) documentation demonstrating that the proposed price for the substitute products is both fair and reasonable and at the same level of discount relative to market price as were the discontinued ones (with demonstration being as described in subparagraph 11.7).
11.9	**Forced Substitutions**	Forced substitutions will not be permitted; Contractor shall obtain State's prior written consent before making any discretionary substitution for any product covered by the Contract.
11.10	**Recalls**	In the event of a recall notice, technical service bulletin, or other important notification affecting a product offered under the Contract (collectively, "recalls" hereinafter), Contractor shall send timely notice to State for each applicable Purchase Order referencing the affected Purchase Order and product. Notwithstanding whatever protection Contractor might have under A.R.S. § 12-684 with respect to a manufacturer, Contractor shall handle recalls entirely and without obligation on State's part, other than to permit removal of installed products, retrieval of stored products, etc., as necessary to implement the recall.
11.11	**Delivery**	11.11.1 PRICING. Unless stated otherwise in the Pricing Document, all Materials prices set forth therein are FCA (seller's dock) Incoterms®2010, with "seller's dock" meaning the last place of manufacturing, assembly, integration, final packing, or warehousing before departure to designated point of delivery to State. For reference, the foregoing is to be construed as equivalent to "F.O.B. Origin, Contractor's Facility" under FAR 52.247-30.

11.11.2 LIABILITY. Unless stated otherwise in the Pricing Document or an Purchase Order, Contractor's liability for all Materials is DDP (State-designated receiving point per Purchase Order) Incoterms®2010, but with unloading at destination included. For reference, the foregoing is to be construed as equivalent to "F.O.B. Destination, Within Consignee's Premises" under FAR 52.247-35.

11.11.3 PAYMENT. Unless stated otherwise in the Pricing Document or an Purchase Order, State shall reimburse Contractor the costs of the difference between DDP (State-designated receiving point per Purchase Order) and FCA (seller's dock) with no mark-up, which Contractor shall itemize and invoice separately.

11.12 Delivery Time

Unless stated otherwise in the Pricing Document generally or in the applicable Purchase Order particularly, Contractor shall make delivery within 2 (two) weeks or earlier after receiving each Purchase Order. If Contractor is unable to make delivery within 2 (two) weeks after receiving the Purchase Order, the Contractor will communicate expected delivery time to Eligible Agency within 24 hours after Purchase Order.

11.13 Delivery Locations

Contractor shall offer deliveries to every location served under the scope of the Contract, specifically:

1. if the Contract is for a single State agency in a single area, then Contractor shall deliver to any agency location in that area;
2. if the Contract is for a single State agency in all its locations, then Contractor shall deliver to any of that agency's location in Arizona;
3. if the Contract is for statewide use but excludes certain areas, then Contractor shall deliver to any Eligible Agency location that is not in the excluded areas; and
4. if the Contract is for unrestricted statewide use, then:
    a) Contractor shall deliver to any Eligible Agency anywhere in Arizona;
    b) if the Pricing Document indicates defined delivery areas and prices, those always apply unless the Purchase Order expressly states otherwise and Contractor accepts it.

11.14 Conditions at Delivery Location

Contractor shall verify receiving hours and conditions (i.e. height/weight restrictions, access control, etc.) with the relevant purchaser for the receiving site before scheduling or making a delivery. State will neither allow extra charges for wait time, comebacks, or the like nor excuse late delivery if Contractor has failed to make the verification or comply with the applicable conditions. Contractor shall make each delivery to the specific location indicated in the Purchase Order, which Contractor acknowledges might be inside an industrial building, institutional building, low-rise office building, or high-rise office building instead of a normal receiving dock. Contractor might be required to make deliveries to locations inside a secured perimeter at certain institutional facilities such as prisons where prior clearances are required for each delivery and driver individually. Contractor shall contact each such facility directly to confirm its most-current security clearance procedures, allowable hours for deliveries, visitor dress code, and other applicable rules. State will neither allow extra charges for wait time, comebacks, or the like nor excuse late delivery if Contractor has failed to make the confirmation or comply with the applicable conditions.

11.15 Materials Acceptance

State has the right to make acceptance of Materials subject to a complete inspection on delivery and installation, if installation is Contractor's responsibility. State may apply as acceptance criteria conformity to the Contract, workmanship and quality, correctness of constituent materials, and any other matter for which the Contract or applicable laws state a requirement, whether stated directly or by reference to another document, standard, reference specification, etc. Contractor shall remove any rejected Materials

from the delivery location, or from any immediate environs to which it might have been reasonably necessary to move it, carry it off the delivery premises, and subsequently deliver an equal number or quantity of conforming items. State will not owe Contractor any payment for rejected Materials, and State may, at its discretion, withhold or make partial payment for any rejected Materials that have been returned to Contractor in those instances where State has agreed to permit repair instead of demanding replacement.

11.16 Correcting Defects

Contractor shall, at no additional cost and without entitlement to extension of any delivery deadline or specified time for performance, remove or exchange and replace any defective or non-conforming delivered or installed Materials.

1. Contractor shall be solely responsible for the cost of any associated cutting and patching, temporary protection measures, packing and crating, hoisting and loading, transportation, unpacking, inspection, repacking, reshipping, and reinstallation if installation is within the scope of the Contract.

2. If Contractor fails to do so in a timely manner, State will be entitled to exercise its remedies under paragraph 8.5 [Right of Offset] of the Uniform Terms and Conditions.

3. Whether State will permit Contractor to repair in place or demands that Contractor remove and replace is at State's discretion in each instance, provided that, State shall not apply that discretion punitively if repair in place is practicable and doing so would not create safety hazards, put property at risk, unreasonably interfere with operations, create public nuisance, or give rise to any other reasonable concern on State's part.

11.17 Returns

State may, at its discretion, return for full credit and with no restocking charges any delivered Materials unused in the original packaging, including any instruction manuals or other incidental item that accompanied the original shipment, within 30 (thirty) days after receipt. If State elects to return delivered Materials, then State shall pay all freight, delivery, and transit insurance costs to return the products to the place from which Contractor shipped them, provided that, if State returns delivered Materials because they are defective or non-conforming or for any other reason having to do with Contractor fault or error, then State will not be responsible for paying freight, delivery, or transit insurance costs to return the products and may, at its discretion, either have those billed directly to Contractor or offset them under paragraph 8.5 [Right of Offset] of the Uniform Terms and Conditions.

11.18 Purchase Order Cancellation

State may cancel Purchase Orders within a reasonable period after issuance and at its discretion. The same method as that used for ordering will be used for cancellation. If State cancels an Purchase Order, then State shall:

1. pay Contractor for any portion of the Materials and Services from that Purchase Order that have been properly delivered or performed as of the cancellation effective date plus 1 (one) additional business day;

2. reimburse Contractor for:

   a) its actual, documented costs incurred in fulfilling the Purchase Order up to the cancellation effective date plus 1 (one) additional business day; and

   b) the cost of any obligations it incurred as of the cancellation effective date plus 1 (one) additional business day that demonstrably cannot be canceled, or that have pre-established cancelation penalties specified in the relevant Subcontracts, to the extent the penalties are reasonable and customary for the work in question; and

3. contractor shall not charge or be entitled to charge State for any new costs it incurs after receiving the cancelation notice plus 1 (one) business day or for any lost profits or opportunity.

By way of reminder, State is not liable for any products that were produced, shipped, or delivered or any services that were performed before Contractor had acknowledged the corresponding Purchase Order.

11.19 Product Safety

Materials as-shipped must comply with applicable safety regulations and standards. Unless expressly stated otherwise in the Scope of Work, State is not responsible for making any Materials safe or compliant following acceptance and is relying exclusively on Contractor to deliver only products that are already safe and compliant.

11.20 Hazardous Materials

Contractor shall timely provide State with any "Safety Data Sheets" (SDS) and any other hazard communication documentation required under the US Department of Labor's Occupational Safety and Health Administration (OSHA) "Hazard Communication Standard" (often referred to as the "HazCom 2012 Final Rule") that is reasonably necessary for State to comply with regulations when it or its other contractors install, handle, operate, repair, maintain or remove any Materials. Note that, in the past, those documents might have been referred to as "Material Safety Data Sheets" or "Product Safety Data Sheets", but State (and this Contract) use only the more up-to-date "SDS" reference. Contractor shall ensure that all its relevant personnel understand the nature of and hazards associated with, to the extent it they are Contractor's responsibility under the Contract, the design, shipping, handling, delivery, installation, repair and maintenance of any portion of the Work that is, contains or will become upon use a hazardous material, with "hazardous material" being any material or substance that is: (1) identified now or in the future as being hazardous, toxic or dangerous under applicable laws; or (2) subject to statutory or regulatory requirement governing special handling, disposal or cleanup.

12.0 General Provisions for Services

12.1 Applicability

Article 12 applies to the extent the Work is or includes Services.

12.2 Comprehensive Services Offering

Contractor shall provide the comprehensive range of services for which a price is established in the Pricing Document for ordering by Eligible Agencies, and Co-Op Buyers if co-op buying applies.

12.3 Additional Services

State at its discretion may modify the scope of the Contract by Contract Amendment to include additional services or service categories that are within the general scope of the ones originally covered by the Contract if it determines that doing so is in its best interest. Once the Contract Amendment is fully executed, Contractor shall then update all applicable price lists and make them available to all affected entities at no additional cost. Either party may make the request to add services to the Contract; regardless of who makes the request, the parties shall negotiate in good faith a fair price for any additional services, but State may elect not to add some or all of the services in question if no agreement is reached on pricing in a timely manner. Contractor's request or proposal in response to State's request must include documentation demonstrating that the proposed price for the additional services is both fair and reasonable and comparable to the original ones.

12.4 Off-Contract Services

Contractor shall ensure that the design and/or procedures for the Services ordering method prevents Purchase Orders for off-contract or excluded services. Notwithstanding that State might have its own internal administrative rules regarding off contract or excluded service ordering, and endeavors to prevent such purchase orders from occurring, Contractor is responsible for not accepting any such Purchase Orders. State may, at its discretion, cancel any such Purchase Order without obligation. As used above, "off-contract service" refers to any

service not included in the scope of the Contract and for which no price or compensation has been established contractually, and "excluded service" refers to any service expressly excluded from the scope of the Contract.

12.5 Removal of Personnel

Notwithstanding that Contractor is in every circumstance responsible for hiring, assigning, directing, managing, training, disciplining, and rewarding its personnel, State may at its discretion and without the obligation to demonstrate cause instruct Contractor to remove any of its personnel from State's facilities or from further assignment under the Contract. In such cases, Contractor shall promptly replace them with other personnel having equivalent qualifications, experience, and capabilities.

12.6 Transitions

During commencement, Contractor shall attend transition meetings with any outgoing vendors to coordinate and ease the transition so that the effect on State's operations is kept to a minimum. State may elect to have outgoing vendors complete some or all of their work or purchase orders in progress to ease the transition as is safest and most efficient in each instance, even if that scope is covered under the Contract. Conversely, State anticipates having a continued need for the same materials and services upon expiration or earlier termination of the Contract. Accordingly, Contractor shall work closely with any new (incoming) vendor and State to ensure as smooth and complete a transfer as is practicable. State's representative shall coordinate all transition activities and facilitate joint development of a comprehensive transition plan by both Contractor and the incoming vendor. As with the incoming transition. State may permit Contractor (outgoing) to complete work or purchase orders in progress to ease the transition as is safest and most efficient in each instance.

12.7 Accuracy of Work

Contractor is responsible for the accuracy of the Services, and shall promptly make all necessary revisions or corrections resulting from errors and omissions on its part without additional compensation. Acceptance by State will not relieve Contractor of responsibility for correction of any errors discovered subsequently or necessary clarification of any ambiguities.

12.8 Requirements at Services Location

Contractor personnel shall perform their assigned portions of the Services at the specific location indicated in the Purchase Order (if applicable). Contractor acknowledges that the location might be inside an industrial building, institutional building, or one of various office types and classes. Additionally, if performing the Services requires Contractor personnel to work inside a secured perimeter at certain institutional facilities such as prisons where prior clearances are required, Contractor shall contact the facility directly to confirm its most-current security clearance procedures, allowable hours for work, visitor dress code, and other applicable rules. State will neither allow extra charges for wait time, comebacks, or the like nor excuse late performance if Contractor has failed to make the confirmation or comply with the applicable conditions.

12.9 Services Acceptance

State has the right to make acceptance of Services subject to acceptance criteria. State may apply as acceptance criteria conformity to the Contract, accuracy, completeness, or other indicators of quality or other matter for which the Contract or law states a requirement, whether stated directly or by reference to another document, standard, reference specification, etc. State will not owe Contractor any payment for un-accepted Services; and State may, at its discretion, withhold or make partial payment for any rejected Services if Contractor is still in the process of re-performing or otherwise curing the grounds for State's rejection.

12.10 Corrective Action Required

Notwithstanding any other guarantees, general warranties, or particular warranties Contractor has given under the Contract, if Contractor fails to perform any material portion of the Services, including failing to complete any contractual deliverable, or if its performance fails to meet agreed-upon service levels or service standards set out in or referred to in the Contract, then Contractor shall perform a root-cause analysis to identify the source of the failure and use all commercially reasonable efforts to correct the failure and meet the Contract requirements as promptly as is practicable.

1. Contractor shall provide to State a report detailing the identified cause and setting out its detailed corrective action plan promptly after the date the failure occurred (or the date when the failure first became apparent, if it was not apparent immediately after occurrence).
2. State may demand to review and approve Contractor's analysis and plans, and Contractor shall make any corrections State instructs and adopt State's recommendations so far as is commercially practicable, provided that State may insist on any measures it determines within reason to be necessary for safety or protecting property and the environment.
3. Contractor shall take the necessary action to avoid any like failure in the future, if doing so is appropriate and practicable under the circumstances.

13.0 Data and Information Handling

13.1 Applicability

Article 13 applies to the extent the Work includes handling of any (1) State's proprietary and sensitive data or (2) confidential or access-restricted information obtained from State or from others at State's behest.

13.2 Data Protection and Confidentiality of Information

Contractor warrants that it will establish and maintain procedures and controls acceptable to State for ensuring that State's proprietary and sensitive data is protected from unauthorized access and information obtained from State or others in performance of its contractual duties is not mishandled, misused, or inappropriately released or disclosed. For purposes of this paragraph, all data created by Contractor in any way related to the Contract, provided to Contractor by State, or prepared by others for State are proprietary to State, and all information by those same avenues is State's confidential information. To comply with the foregoing warrant:

1. Contractor shall: (a) notify State immediately of any unauthorized access or inappropriate disclosures, whether stemming from an external security breach, internal breach, system failure, or procedural lapse; (b) cooperate with State to identify the source or cause of and respond to each unauthorized access or inappropriate disclosure; and (c) notify State promptly of any security threat that could result in unauthorized access or inappropriate disclosures; and
2. Contractor shall not: (a) release any such data or allow it to be released or divulge any such information to anyone other than its employees or officers as needed for each person's individual performance of his or her duties under the Contract, unless State has agreed otherwise in advance and in writing; or (b) respond to any requests it receives from a third party for such data or information, and instead route all such requests to State's designated representative.

13.3 Personally Identifiable Information.

Without limiting the generality of paragraph 13.2, Contractor warrants that it will protect any personally identifiable information ("PII") belonging to State's employees' or other contractors or members of the general public that it receives from State or otherwise acquires in its performance under the Contract.

For purposes of this paragraph:

1. PII has the meaning given in the [federal] Office of Management and Budget (OMB) *Memorandum M-07-16 Safeguarding Against and Responding to the Breach of Personally Identifiable Information*; and
2. "protect" means taking measures to safeguard personally identifiable information and prevent its breach that are functionally equivalent to those called for in that OMB memorandum and elaborated on in the [federal] General Services Administration (GSA) *Directive CIO P* 2180*.1 GSA Rules of Behavior for Handling Personally Identifiable Information*.

NOTE (1): For convenience of reference only, the OMB memorandum is available at:

https://www.whitehouse.gov/sites/default/files/omb/memoranda/fy2007/m07-16.pdf

NOTE (2): For convenience of reference only, the GSA directive is available at:

http://www.gsa.gov/portal/directive/d0/content/658222

13.4 Protected Health Information

Contractor warrants that, to the extent performance under the Contract involves individually identifiable health information (referred to hereinafter as protected health information ("PHI") and electronic PHI ("ePHI") as defined in the Privacy Rule referred to below), it:

1. is familiar with and will comply with the applicable aspects of the following collective regulatory requirements regarding patient information privacy protection: (a) the "Privacy Rule" in CFR 45 Part 160 and Part 164 pursuant to the Health Insurance Portability and Accountability Act ("HIPAA") of 1996; (b) Arizona laws, rules, and regulations applicable to PHI/ePHI that are not preempted by CFR 45-160(B) or the Employee Retirement Income Security Act of 1974 ("ERISA") as amended; and (c) State's current and published PHI/ePHI privacy and security policies and procedures;
2. will cooperate with State in the course of performing under the Contract so that both State and Contractor stay in compliance with the requirements in *(1)* above; and
3. will sign any documents that are reasonably necessary to keep both State and Contractor in compliance with the requirements in *(1)* above, in particular "Business Associate Agreements" in accordance with the Privacy Rule.

NOTE: For convenience of reference only, the Privacy Rule is available at:

http://www.hhs.gov/hipaa/for-professionals/privacy/index.html

14.0 Information Technology Work

14.1 Applicability

Article 14 applies to any Invitation for Bids, Request for Proposals, or Request for Quotations for "Information Technology," as defined In A.R.S. § 41-3501(6) 6: " . . . computerized and auxiliary automated information processing, telecommunications and related technology, including hardware, software, vendor support and related services, equipment and projects" if and to the extent that the Work is or includes Information Technology.

14.2 Background Checks

Each of Contractor's personnel who is an applicant for an information technology position must undergo the security clearance and background check procedure, which includes fingerprinting, as required by A.R.S § 41-710. Contractor shall obtain and pay for the security clearance and background check. Contractor personnel who will have administrator privileges on a State network must additionally provide identify and address verification and undergo State-specified training for unescorted access, confidentiality, privacy, and data security.

14.3 Information Access

14.3.1 SYSTEM MEASURES. Contractor shall employ appropriate system management and maintenance, fraud prevention and detection, and encryption application and tools to any systems or networks containing or transmitting State's proprietary data or confidential information.

14.3.2 INDIVIDUAL MEASURES. Contractor personnel shall comply with applicable State policies and procedures regarding data access, privacy, and security, including prohibitions on remote access and obtaining and maintaining access IDs and passwords. Contractor is responsible to State for ensuring that any State access IDs and passwords are used only by the person to whom they were issued. Contractor shall ensure that personnel are only provided the minimum only such level of access necessary to perform his or duties. Contractor shall on request provide a current register of the access IDs and passwords and corresponding access levels currently assigned to its personnel.

14.3.3 ACCESS CONTROL. Contractor is responsible to State for ensuring that hardware, software, data, information, and that has been provided by State or belongs to or is in

the custody of State and is accessed or accessible by Contractor personnel is only used in connection with carrying out the Work, and is never commercially exploited in any manner whatsoever not expressly permitted under the Contract. State may restrict access by Contractor personnel, or instruct Contractor to restrict access their access, if in its determination the requirements of this subparagraph are not being met.

14.4 Pass-Through Indemnity

14.4.1 INDEMNITY FROM THIRD PARTY. For computer hardware or software included in the Work as discrete units that were manufactured or developed solely by a third party, Contractor may satisfy its indemnification obligations under the Contract by, to the extent permissible by law, passing through to State such indemnity as it receives from the third-party source (each a "Pass-Through Indemnity") and cooperating with State in enforcing that indemnity. If the third party fails to honor its Pass-Through Indemnity, or if a Pass-Through Indemnity is insufficient to indemnify State Indemnitees to the extent and degree Contractor is required to do by the Uniform Terms and Conditions, then Contractor shall indemnify, defend and hold harmless State Indemnitees to the extent the Pass-Through Indemnity does not.

14.4.2 NOTIFY OF CLAIMS. State shall notify Contractor promptly of any claim to which a Pass-Through Indemnity might apply. Contractor, with reasonable consultation from State, shall control of the defense of any action on any claim to which a Pass-Through Indemnity applies, including negotiations for settlement or compromise, provided that:

(a) State reserves the right to elect to participate in the action at its own expense;

(b) State reserves the right to approve or reject any settlement or compromise on reasonable grounds and if done so timely; and

(c) State shall in any case cooperate in the defense and any related settlement negotiations.

14.5 Systems and Controls

In consideration for State having agreed to permit Pass-Through Indemnities in lieu of direct indemnity, Contractor agrees to establish and keep in place systems and controls appropriate to ensure that State funds under this Contract are not knowingly used for the acquisition, operation, or maintenance of Materials or Services in violation of intellectual property laws or a third party's intellectual property rights.

14.6 Redress of Infringement

14.6.1 REPLACE, LICENSE, OR MODIFY. If Contractor becomes aware that any Materials or Services infringe, or are likely to be infringing on, any third party's intellectual property rights, then Contractor shall at its sole cost and expense and in consultation with State either:

(a) replace any infringing items with non-infringing ones;

(b) obtain for State the right to continue using the infringing items; or

(c) modify the infringing item so that they become non-infringing, so long as they continue to function as specified following the modification.

14.6.2 CANCELLATION OPTION. In every case under 14.6.1, if none of those options can reasonably be accomplished, or if the continued use of the infringing items is impracticable, State may cancel the relevant Purchase Order or terminate the Contract and Contractor shall take back the infringing items. If State does cancel the Purchase Order or terminate the Contract, Contractor shall refund to State:

(a) for any software created for State under the Contract, the amount State paid to Contactor for creating it;

(b) for all other Materials, the net book value of the product provided according to generally accepted accounting principles; and

(c) for Services, the amount paid by State or an amount equal to 12 (twelve) months of charges, whichever is less.

14.6.3. EXCEPTIONS. Contractor will not be liable for any claim of infringement based solely on any of the following by a State Indemnitee:

(a) modification or use of Materials other than as contemplated by the Contract or expressly authorized or proposed by a Contractor Indemnitor;

(b) operation of Materials with any operating software other than that supplied by Contractor or authorized or proposed by a Contractor Indemnitor; or

(c) combination or use with other products in a manner not contemplated by the Contract or expressly authorized or proposed by a Contractor Indemnitor.

14.7 First Party Liability Limitation

14.7.1 LIMIT. Subject to the provisos that follow below and unless stated otherwise in the Special Terms and Conditions, State's and Contractor's respective first party liability arising from or related to the Contract is limited to the greater of $1,000,000 (one million dollars) or 3 (three) times the purchase price of the specific Materials or Services giving rise to the claim.

14.7.2 PROVISOS. This paragraph 14.7 limits liability for first party direct, indirect, incidental, special, punitive, and consequential damages relating to the Work regardless of the legal theory under which the liability is asserted. This paragraph 14.7 does not limit liability arising from any:

(a) Indemnified Claim against which Contractor has indemnified State Indemnitees;

(b) claim against which Contractor has indemnified State Indemnitees; or

(c) provision of the Contract calling for liquidated damages or specifying amounts or percentages as being at-risk or subject to deduction for performance deficiencies.

14.7.2 PURCHASE PRICE DETERMINATION. If the Contract is for a single-agency and a single Purchase Order (or if no Purchase Order applies), then "purchase price" in Subparagraph 14.7.1 above means the aggregate Contract price current at the time of Contract expiration or earlier termination, including all change orders or other forms of Contract Amendment having an effect on the aggregate price through that date. In all other cases, "purchase price" above means the total price of the Purchase Order for the specific equipment, software, or services giving rise to the claim, and therefore a separate limit will apply to each Purchase Order.

14.7.3 NO EFFECT ON INSURANCE. This paragraph does not modify the required coverage limits, terms, and conditions of, or any insured's ability to claim against, any insurance that Contractor is required by the Contract to provide, and Contractor shall obtain express endorsements that it does not.

14.8 Information Technology Warranty

14.8.1 SPECIFIED DESIGN. Where the Scope of Work for information technology Work provides a detailed design specification or sets out specific performance requirements, Contractor warrants that the Work will provide all functionality material to the intended use stated in the Contract, provided that, the foregoing warranty does not extend to any portions of the Materials that are:

(a) modified or altered by anyone not authorized by Contractor to do so;

(b) maintained in a way inconsistent to any applicable manufacturer recommendations; or

(c) operated in a manner not within its intended use or environment.

14.8.2 COTS SOFTWARE. With respect to Materials provided under the Contract that are commercial-off-the-shelf (COTS) software, Contractor warrants that:

(a) to the extent possible, it will test the software before delivery using commercially available virus detection software conforming to current industry standards;

(b) the COTS software will, to the best of its knowledge, at the time of delivery be free of viruses, backdoors, worms, spyware, malware, and other malicious code

that could hamper performance, collect unlawfully any personally identifiable information, or prevent products from performing as required by the Contract; and

(c) it will provide a new or clean install of any COTS software that State has reason to believes contains harmful code.

14.8.3 PAYMENT HAS NO EFFECT. The warranties in this paragraph are not affected by State's inspection, testing, or payment.

14.9 Specific Remedies

Unless expressly stated otherwise elsewhere in the Contract, State's remedy for breach of warranty includes, at State's discretion, re-performance, repair, replacement, or refund of any amounts paid by State for the nonconforming Work, plus (in every case) Contractor's payment of State's additional, documented, and reasonable costs to procure materials or services equivalent in function, capability, and performance at that first called for. For clarification of intent, the foregoing obligations are limited by the limitation of liability. If none of the forgoing options can reasonably be effected, or if the use of the materials by State is made impractical by the nonconformance, then State may seek any remedy available to it under law.

14.10 Section 508 Compliance

Unless specifically authorized in the Contract, any electronic or information technology offered to the State of Arizona under this Contract shall comply with A.R.S. § 18-131 and § 18-132 and Section 508 of the Rehabilitation Act of 1973, which requires that employees and members of the public shall have access to and use of information technology that is comparable to the access and use by employees and members of the public who are not individuals with disabilities.

14.11 Cloud Applications

The following are required for Contractor of any "cloud" solution that hosts State data outside of the State's network, or transmits and/or receives State data.

1. Submit a completed Arizona Baseline Infrastructure Security Controls assessment spreadsheet as found at: https://aset.az.gov/resources/policies-standards-and-procedures, and mitigate or install compensating controls for any issues of concern identified by State. Contractor is required to provide any requested documentation supporting the review of the assessment. The assessment shall be re-validated on a minimum annual basis.
2. State reserves the right to conduct Penetration tests or hire a third party to conduct penetration tests of the Contractor's application. Contractor will be alerted in advance and arrangements made for an agreeable time. Contractor shall respond to all serious flaws discovered by providing an acceptable timeframe to resolve the issue and/or implement a compensating control.
3. Contractor must submit copy of system logs from cloud system to State of AZ security team on a regular basis to be added to the State SIEM (Security Information Event Monitor) or IDS (Intrusion Detection System).

Contractor must employ a government-rated cloud compartment to better protect sensitive or regulated State data.

15.0 Agency Contract Administration and Operations – Department of Corrections

15.1 Drug Testing Program

The Contractor shall implement a drug and alcohol testing program for applicants, employees and volunteers, at no additional cost to the Department. The Contractor shall ensure that all subcontractors implement the same drug and alcohol testing program required by the Department. The program shall meet the requirements of Department Order 522, Drug-Free Workplace.

15.2 Department Policies and Procedures

The contractor shall follow all Department policies, procedures and Department Orders (DO) and Directors Instruction (DI) i.e., drug-free workplace, dress code, grooming, etc. The policies, procedures, DO and DI are available on the following website www.azcorrections.gov.

15.3 Notice Warning

Any person who takes into or out of or attempts to take into or out of a correctional facility or the grounds belonging to or adjacent to a correctional facility, any item not specifically authorized by the correctional facility, shall be prosecuted under the provisions of the Arizona Revised Statues. All persons, including, employee and visitors, entering upon these confines are subject to routine searches of their persons, vehicles,

Authority	A.R.S. §13-2501:
	A.R.S. §13-2505
	ADC Department Order 708

15.4 Contraband

Contraband means any dangerous drug, narcotic drug, intoxicating liquor or any kind, deadly weapon, dangerous instrument, explosive or any other article whose use of or possession would endanger the safety, security or preservation of order in a correctional facility or any person therein. (Any other article includes any substance which could cause abnormal behavior, i.e., marijuana, nonprescription medications, etc.)

Promoting prison contraband A.R.S. § 13-2505:

A person, not otherwise authorized by law, commits promoting prison contraband:

a. By knowingly taking contraband into a correctional facility or the grounds of such a facility; or

b. By knowingly conveying contraband to any persons confined in a correctional facility; or

c. By knowingly making, obtaining, or possessing contraband while being confined in a correctional facility.

Promoting Prison Contraband is a Class 5 felony.

Authority	A.R.S. § 13-2501
	A.R.S. § 13-2505
	ADC Department Order 70814.4.2

15.5 Rules and Regulations

15.5.1 Attention of the Offerors is called to the requirements specified in **Attachment 6**, Rules for Non-Employees of the Department of Corrections in Arizona State Prison Complexes which shall be adhered to in all respects.

15.5.2 Should the Contractor require signatures of other parties such as subcontractor or persons directly or indirectly employed by the Contractor, it shall be the Contractor's responsibility to obtain such signatures. The signed document must be submitted within ten (10) days of notification of intent to award.

15.6 Unlawful Sexual Conduct

15.6.1 A person – who is employed by the State Department of Corrections or the Department of Juvenile Corrections; is employed by a private prison facility or a city or county jail; Contracts to provide services with the State Department of Corrections, the Department of Juvenile Corrections, a private prison facility or a city or county jail; is an official visitor, volunteer or agency representative of the State Department of Corrections, the Department of Juvenile Corrections, a private prison facility or a city or county jail – commits unlawful sexual conduct by intentionally or knowingly engaging in any act of a sexual nature with an offender who is in the custody of the State Department of Corrections, the Department of Juvenile Corrections, a private prison facility or a city or county jail or with an offender who is under the supervision of either Department or a city or county.

15.6.2 This section does not apply to a person who is employed by the State Department of Corrections, a private prison facility or a city or county jail or who Contracts to provide services with the State Department of Corrections, a private prison facility or a city or county jail or an offender who is on release status if the person was lawfully married to the prisoner or offender on release status before the prisoner or offender was sentenced to the State Department of Corrections or was incarcerated in a city or county jail.

15.6.3 Unlawful sexual conduct with an offender who is under fifteen years of age is a class 2 felony. Unlawful sexual conduct with an offender who is between fifteen and seventeen years of age is a class 3 felony. All other unlawful sexual conduct is a class 5 felony.

15.6.4 Unlawful sexual conduct; correctional facilities; classification; Definition A.R.S. §13-1419.

15.7 Federal Prison Rape Elimination Act 2003

15.7.1 The Contractor shall comply with the Federal Prison Rape Elimination Act of 2003.14.7.2

End of Section 2-C

SECTION 2-D:

Uniform Terms and Conditions

Version 2018 (2/1/2018)

1.0 Definition of Terms

1.1	**Acceptance**	"Acceptance" means the document headed "Offer and Acceptance Form" bearing the State contract number once Procurement Officer has signed it to signify (1) State's formal acceptance of the Accepted Offer and (2) the formation of the Contract.
1.2	**Accepted Offer**	If State did not request a Revised Offer, then "Vendor Offer" means the Initial Offer. If State did request a Revised Offer but not a Best and Final Offer, then "Accepted Offer" means the latest Revised Offer. If State requested a Best and Final Offer, then "Accepted Offer" means the latest Best and Final Offer.
1.3	**Arizona Procurement Code; A.R.S.; A.A.C.**	The "Arizona Procurement Code, "A.R.S.," and "A.A.C." refers to Arizona Revised Statutes ("A.R.S.") § 41-2501, *et seq.*, and the rules promulgated thereunder, Arizona Administrative Code ("A.A.C.") R2-7-101, *et. seq.*
1.4	**Arizona TPT**	"Arizona TPT" means Arizona Transaction Privilege Tax. For information, refer to the Arizona Department of Revenue (DOR) website at: https://www.azdor.gov/business/transactionprivilegetax.aspx.
1.5	**Attachment**	"Attachment" means any item that: 4. the Solicitation required Offeror to submit as part of the relevant Offer (e.g., Initial Offer, Revised Offer, or BAFO); 5. was attached to an Offer when submitted; and 6. was included in the Accepted Offer.
1.6	**Contract**	"Contract" " means the combination of the Solicitation, including the Uniform and Special Instructions to Offerors, the Uniform and Special Terms and Conditions, and the Specifications and Statement or Scope of Work; the Offer and any Best and Final Offers; and any Solicitation Amendments or Contract Amendments or authorized Purchase Orders.
1.7	**Contract Amendment**	"Contract Amendment" means a document signed by Procurement Officer that has been issued for the purpose of making changes to the Contract after execution. Only the Procurement Officer responsible for this Contract has the authority to modify or amend this Contract. In ProcureAZ, the term "Change Order" has the same meaning as "Contract Amendment".
1.8	**Contract Terms and Conditions**	"Contract Terms and Conditions" means the Special Terms and Conditions and these Uniform Terms and Conditions taken collectively.
1.9	**Contractor**	"Contractor" means the Person identified on the Accepted Offer who has entered into the Contract with State.
1.10	**Contractor Indemnitor**	"Contractor Indemnitor" means Contractor or any of its owners, officers, directors, agents, employees, volunteers or Subcontractors.

1.11	**eProcurement System (currently ProcureAZ)**	"eProcurement System" means State's official electronic procurement system, established pursuant to A.A.C. R2-7-201 as set forth in the Arizona Department of Administration State Procurement Office policy. This eProcurement System may be subject to change. The State's current eProcurement system is "ProcureAZ." The current version of the ADOA policy regarding the State's eProcurement System is *Technical Bulletin No. 020, ProcureAZ – The Official State eProcurement System*. NOTE (1): Technical Bulletin No. 020 is available online at: https://spo.az.gov/administration-policy/state-procurement-resource/procurement-regulations NOTE (2): The URL for ProcureAZ itself is: https://procure.az.gov/
1.12	**Gratuity**	"Gratuity" means a payment, loan, subscription, advance, deposit of money, services, or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value is received.
1.13	**Indemnified Basic Claims**	"Indemnified Basic Claims" means any and all claims, actions, liabilities, damages, losses, or expenses, including court costs, attorney fees, and costs of claim processing, investigation and litigation, for bodily injury or personal injury, including death, or loss or damage to any real or tangible or intangible personal property, collectively. See paragraph 6.2.
1.14	**Instructions to Offerors**	"Instructions to Offerors" is Section 3-a of Part 3 of the Solicitation Documents.
1.15	**Materials**	"Materials" has the meaning given in A.R.S. § 41-2503(7). Materials includes software, except that if software is sold or provided as a service, then to the extent it consists of encoded information or computer instructions it is included in "Materials" and to the extent it is a service it described in "Services" below.
1.16	**Offer: Initial Offer; Revised Offer; Best and Final Offer (BAFO)**	"Initial Offer" means, per A.A.C. R2-7-101(33), Offeror's proposal submitted to State in response to the Solicitation, as initially submitted. "Revised Offer" means any revised versions of the Initial Offer that Offeror has submitted to State at State's request as permitted under A.A.C. R2-7-C314 and R2-7-C315. "Best and Final Offer" ("BAFO") means, per A.A.C. R2-7-101(8), the Revised Offer submitted after negotiations have been completed that contain Offeror's most favorable terms for price, service, and products to be delivered. Reference to "an Offer, "the Offer," or "your Offer" means any of the Initial Offer, a Revised Offer, or the Best and Final Offer.
1.17	**Pricing Document**	"Pricing Document" means Section 2-B of Part 2 of the Solicitation Documents, provided that, if there is no such Section in the Contract, then "Pricing Document" is to be construed as referring to whatever item in the Contract contains the contracted pricing and payment provisions.
1.18	**Procurement Officer**	"Procurement Officer" means the person, or his or her designee, who has been duly authorized by the State to enter into and administer the Contract and to make written determinations with respect to the Contract. Procurement Officer is as identified on the Acceptance unless subsequently changed by Contract Amendment.
1.19	**Purchase Order**	"Purchase Order" means the instrument by which State authorizes Contractor to perform some or all of the Work. Whether the Contract will have one Purchase Order or many Purchase Orders depends the scope of the Contract and how State will use it. The Special Terms and Conditions provide that information. Any of the following is to be construed as being a "Purchase Order": 1. "Release" or "Release Purchase Order" in ProcureAZ;

2. "task order", "service order," or "job order" when a Release Purchase Order for Services has already been committed in ProcureAZ; or

3. "purchase order" for buying by Co-Op Buyers, if co-op buying applies.

1.20 Services "Services" has the meaning given in A.R.S. § 41-2503(35), Services include the service aspect s of software described in the definition of "Materials" above.

1.21 Specification "Specification" has the meaning given in A.R.S. § 41-2561. Specifications (if any are included in the Contract), are indexed in the Scope of Work and could be bound separately from the other documents forming the Contract.

1.22 State With respect to the Contract generally, "State" means the State of Arizona and its department, agency, university, commission, or board that has executed the Contract. With respect to administration or rights, remedies, obligations and duties under the Contract for a given Purchase Order, "State" means each of Eligible Agency or Co-Op Buyer who has issued the Purchase Order.

1.23 State Fiscal Year "State Fiscal Year" means the period beginning with July 1 and ending June 30.

1.24 State Indemnitees "State Indemnitees" means, collectively, the State of Arizona, its departments, agencies, universities, commissions, and boards and, and their respective officers, agents, and employees.

1.25 Subcontract "Subcontract" means any Contract, express or implied, between the Contractor and another party or between a subcontractor and another party, delegating, in whole or in part, the making or furnishing of any material or any service required for the performance of the Contract.

1.26 Subcontractor "Subcontractor" has the meaning given in A.R.S. § 41-2503(38).

1.27 Work "Work" means the totality of the provision of Materials and the Services and all the acts of administration, creation, production, and performance necessary to fulfill and incidental to fulfilling all of Contractor's obligations and duties under the Contract in conformance with the Contract and applicable laws.

2.0 Contract Interpretation

2.1 Arizona Law The Contract is governed by, and is to be interpreted in accordance with, the laws of the State of Arizona, including, but not limited to the Arizona Procurement Code, without consideration of conflict of laws principles.

2.2 Implied Terms Each provision of law and any terms required by law to be in this Contract are a part of this Contract as if fully stated in it.

2.3 Contract Order of Precedence COMPLEMENTARY DOCUMENTS. All of the documents forming the Contract are complementary and all provisions are to be interpreted as a single, united Contract. If certain work, requirements, obligations, or duties are set out only in one but not in another, Contractor shall carry out the Work as though the relevant work, requirements, obligations, or duties had been fully described in all, consistent with the other documents forming the Contract and as is reasonably inferable from them as being necessary to produce complete results.

CONFLICTS. In case of any inconsistency, conflict, or ambiguity among the documents forming the Contract and their provisions, the Contract documents and their provisions are to prevail in the following order, descending from most dominate to most subordinate, provided that, among categories of documents or provisions within the same sub-section below, the document or provision with the latest date prevails. Information being identified in one document but not in another is not to be considered a conflict or inconsistency.

(a) Contract Amendments;

(b) the Solicitation Documents, in the order:

(1) Special Terms and Conditions;

(2) Exhibits to the Special Terms and Conditions;

(3) Uniform Terms and Conditions;

(4) Scope of Work;

(5) Exhibits to the Scope of Work;

(6) Pricing Document;

(7) Exhibits to the Pricing Document;

(8) Specifications; and

(9) any other documents referenced or included in the Solicitation;

(c) Orders, in reverse chronological order; and

(d) Accepted Offer.

2.4 Severability

The provisions of this Contract are severable to the extent allowed under Arizona Contract Law. Any term or condition deemed or adjusted illegal or invalid is thereby stricken from the Contract and will not affect any other term or condition of the Contract..

2.5 Complete Integration

The Contract, including any documents incorporated into the Contract by reference and any authorized Contract Amendments and Orders, is intended by the parties as a final and complete expression of their agreement. There are no prior, contemporaneous, or additional agreements, either oral or in writing, pertaining to the Contract. No course of prior dealings between the parties shall supplement or explain any terms used in this document and no other understanding either oral or in writing can independently bind the State to changes to the Contract.

2.6 Independent Contractor

Contractor is an independent contractor and shall act in an independent capacity in performance under the Contract. Neither party is or is to be construed as being to be the employee or agent of the other party, and no action, inaction, event, or circumstance will be grounds for deeming it to be so.

2.7 No Waiver of Rights

Either party's failure to insist on strict performance of any term or condition of the Contract is not, and is not to be construed as being, nor will it be deemed, a waiver of that term or condition or a bar to, or diminishment of the right of, subsequent enforcement of any term or condition.

3.0 Contract Administration and Operation

3.1 Books and Records; Audit

3.1.1 RETAIN RECORDS. By A.R.S. § 41-2548(B), Contractor shall retain and shall contractually require each Subcontractor to retain books and records relating for any cost and pricing data submitted in satisfaction of § 41-2543 for the period specified in the statute.

3.1.2 RIGHT TO AUDIT. The retained books and records are subject to audit by State during that period. By A.R.S. § § 35-214 and-2548(B), Contractor shall retain and shall contractually require each Subcontractor to retain books and records relating to performance under the Contract for the period specified in the statute and those retained books and records are subject to audit by State during that period.

3.1.3 AUDITING. Contractor or Subcontractor shall either make all such books and records under subparagraphs 3.1.1 and 3.1.2 available to State at all reasonable times or produce the records at a designated State office on State's demand, the choice of which being at State's discretion. For the purpose of this paragraph, "reasonable times" are during normal business hours and in such a manner so as to not unreasonably interfere with normal business activities. Any person who obstructs or impairs an audit being conducted or about to be conducted in relation to and Contract or Subcontract with the State may be found guilty of a Class 5 Felony under A.R.S. § 35-215.

3.2 Non-Discrimination

The Contractor shall comply with State Executive Order No. 2009-09 and all other applicable Federal and State laws, rules and regulations, including the Americans with Disabilities Act.

3.3 Contractor Licenses

Contractor shall maintain current all federal, state and local licenses and permits required for the operation of its business in general, for its operations under the Contract, and for the Work itself.

3.4 Inspection and Testing

By A.R.S. § 41-2547, State may at reasonable times inspect the part of Contractor's or Subcontractors' plant or places of business related to performance under the Contract. Accordingly, Contractor agrees to permit (for itself) and ensure (for Subcontractors) access for inspection at any reasonable time to its facilities, processes, and services. State may inspect or test, at its own cost, any finished goods, work-in-progress, components, or unfinished materials that are be supplied under the Contract or that will be incorporated into something to be supplied under the Contract. If the inspection or testing shows non-conformance or defects, then Contractor will owe State reimbursement or payment of all costs it incurred in carrying out or contracting for the inspection and testing, as well as for any re-inspection or re-testing that might be necessary. Neither inspection of facilities nor testing of goods, work, components, or unfinished materials will of itself constitute acceptance by State of those things.

3.5 Notices and Correspondence

3.5.1 TO CONTRACTOR. State shall:

(a) address all Contract correspondence other than formal notices to the email address indicated as "Default for Type" for "General Mailing Address" in Contractor's corresponding ProcureAZ Vendor Profile; and

(b) address notices to Contractor to the "Contractor Name and Title" at the "Mailing Address" indicated in the Contract

3.5.2 TO STATE. Contractor shall :

(a) address all Contract correspondence, other than notices, to the email address indicated in "Contact Instructions" in the ProcureAZ Summary for State; and

(b) address any required notices to State to Procurement Officer identified as "Purchaser" in the ProcureAZ Summary at the following mailing address:

Arizona Department of Administration
State Procurement Office
100 N 15th Ave., Suite 402
Phoenix, AZ 85007

3.5.3 CHANGES. State may change the designated Procurement Officer, update contact information, or change the applicable mailing address by Contract Amendment.

3.6 Signing of Contract Amendments

Contractor's counter-signature – or "approval" in ProcureAZ, in the case of a Change Order – is not required to give effect if the Contract Amendment only covers either:

4. extension of the term of the Contract within the maximum aggregate term;
5. revision to Procurement Officer appointment or contact information; or
6. modifications of a clerical nature that have no effect on terms, conditions, price, scope, or other material aspect of the Contract.

In every case other than those listed in *(1)*, *(2)*, and *(3)* above, both parties' signature – or "approval" in ProcureAZ, in the case of a Change Order – are required to give it effect.

3.7 Click-Through Terms and Conditions

If either party uses a web based ordering system, an electronic purchase order system, an electronic purchase order acknowledgement, a form of an electronic acceptance, or any software based ordering system with respect to the Contract (each an "Electronic Ordering System"), the parties acknowledge and agree that an Electronic Ordering System is for ease of administration only, and Contractor hereby acknowledges and agrees that the persons using Electronic Ordering Systems on behalf of State do not have any actual or apparent authority to create legally binding obligations that vary from the terms and conditions of the Contract. Accordingly, where an authorized State user is required to "click through" or otherwise accept or be made subject to any terms and conditions in using an Electronic Ordering Systems, any such terms and conditions are deemed void upon presentation. Additionally, where an authorized

State user is required to accept or be made subject to any terms and conditions in accessing or employing any Materials or Services, those terms and conditions will also be void.

3.8 Ownership of Intellectual Property

3.8.1 RIGHTS IN WORK PRODUCT. All intellectual property originated or prepared by Contractor pursuant to the Contract, including but not limited to, inventions, discoveries, intellectual copyrights, trademarks, trade names, trade secrets, technical communications, records reports, computer programs and other documentation or improvements thereto, including Contractor's administrative communications and records relating to the Contract, are considered work product and Contractor's property, provided that, State has Government Purpose Rights to that work product as and when it was delivered to State.

(a) "Government Purpose Rights" are:

i. the unlimited, perpetual, irrevocable, royalty free, non-exclusive, worldwide right to use, modify, reproduce, release, perform, display, sublicense, disclose and create derivatives from that work product without restriction for any activity in which State is a party;

ii. the right to release or disclose that work product to third parties for any State government purpose; and

iii. the right to authorize those to whom it rightfully releases or discloses that work product to use, modify, release, create derivative works from the work product for any State government purpose; such recipients being understood to include the federal government, the governments of other states, and various local governments.

(b) "Government Purpose Rights" do not include any right to use, modify, reproduce, perform, release, display, create derivative works from, or disclose that work product for any commercial purpose or to authorize others to do so.

3.8.2 JOINT DEVELOPMENTS. The parties may each use equally any ideas, concepts, know-how, or techniques developed jointly during the course of the Contract, and may do so at their respective discretion, without obligation of notice or accounting to the other party.

3.8.3 PRE-EXISTING MATERIAL. All pre-existing software and other materials developed or otherwise obtained by or for Contractor or its affiliates independently of the Contract or applicable Purchase Orders are not part of the work product to which rights are granted State under subparagraph 3.8.1 above, and will remain the exclusive property of Contractor, provided that any derivative works of such pre-existing material or elements thereof that are created pursuant to the Contract are part of that work product.

3.9 Subcontracts

3.9.1 INITIAL LIST. At the time of Contract execution, Contractor may have listed prospective Subcontractors in Attachment 3-C to the Vendor Offer [*Proposed Subcontractors*]. If a Subcontractor is on this initial list in a Vendor Offer, then the Contractor has the Procurement Officer's advance consent to enter into a Subcontract with each listed candidate.

3.9.2 ADDITIONAL NAMES. Contractor shall not enter into a Subcontract without first obtaining Procurement Officer's written consent with any prospective Subcontractor that (a) was not listed on Attachment 3-C at time of Contract execution or (b) is for any Materials or Services categories other than the ones for which they were previously consented. For either case *(a)* or *(b)*, Contractor shall submit a written request sufficiently in advance of the need date for those materials or services so that performance under the Contract is not impaired. Procurement Officer may request any additional information he or she determines is necessary to assess the submittal, and may withhold consent pending it.

3.9.3 FLOW-DOWN. Contractor shall incorporate the provisions, terms, and conditions of the Contract into every Subcontract by inclusion or by reference, as appropriate. When making any post-execution consent requests, Contractor shall include its warrant that it will do the same for the pending Subcontracts covered by the request. Entering into Subcontracts will not relieve Contractor of any of its obligations or duties under the Contract, including, among other things, the duty to supervise and coordinate the work of Subcontractors. Nothing contained in any Subcontract will create or is to be construed as creating any contractual relationship between State and the Subcontractor.

3.10 E-Verify Requirements

In accordance with A.R.S. § 41-4401, Contractor warrants compliance with all Federal immigration laws and regulations relating to employees and warrants its compliance with Section A.R.S. § 23-214, Subsection A. Contractor acknowledges and agrees that under A.R.S. § 41-4401, State retains the legal right to inspect papers of any Contractor employee who works under the Contract to ensure compliance with the foregoing warranty and understands that a breach of the foregoing warranty under shall be deemed a material breach of the Contract that is subject to penalties up to and including termination of the Contract.

3.11 Offshore Performance of Certain Work Prohibited

Contractor shall only perform those portions of the Services that directly serve State or its clients and involve access to secure or sensitive data or personal client data within the defined territories of the United States. Unless specifically stated otherwise in the Scope of Work, this paragraph does not apply to indirect or overhead services, redundant back-up services, or services that are incidental to performance under the Contract. This provision applies to work performed by Subcontractors at all tiers.

3.12 Purchase Orders

3.12.1 PURCHASE ORDER SUFFICIENCY. A Purchase Order issued by an authorized person that cites the correct State contract number will suffice to authorize Contractor to provide the Materials and perform the Services covered by that Purchase Order.

3.12.2 PURCHASE ORDER TERMS. All Purchase Orders are subject to the Contract Terms and Conditions; a Purchase Order cannot modify the Contract Terms and Conditions.

3.12.3 PURCHASE ORDERS ARE OBLIGATORY. Until the expiration or earlier termination of the Contract, State may issue and Contractor shall accept Purchase Orders that make proper reference to the Contract and are permissible hereunder, provided that, Contractor is not obliged to accept any Purchase Order that is not consistent with the then-current pricing, lead times, specifications, or payment provisions of the Contract. Contractor shall fulfill and complete any Purchase Orders that are begun but not yet completed as of expiration or earlier termination of the Contract unless State instructs otherwise at the time.

3.12.4 SPECIAL CASE. In the special case where both the following conditions are true, Procurement Officer's signature on the Acceptance is Contractor's authorization to perform and therefore no Purchase Order is required: (a) the Contract is identified as being a "single-agency/single-project" contract and (b) the Contract was created in ProcureAZ as something other than a "Master/ Blanket" type.

3.12.5 NO MINIMUMS OR COMMITMENTS. (a) Contractor shall not impose any minimum dollar amount, item count, services volume, or services duration on Purchase Orders; (b) State makes no commitment of any kind concerning the quantity or monetary value of activity actually initiated or completed during the term of the Contract; (c) Contractor shall only deliver or perform as authorized by Purchase Orders; and (d) State is not limited as to the number of Purchase Orders it may issue for the Contract. For clarity of intent, the foregoing applies equally whether an Eligible Agency issues the Purchase Order or, if applicable, a Co-Op Buyer issues it.

3.12.6 NON-CONTRACTED MATERIALS OR SERVICES. Any attempt to knowingly represent for sales, marketing, or related purposes that goods or services not specifically awarded are under a State contract is a violation of the Contract and law.

3.13 Other Contractors

State may undertake with its own forces or award other contracts to the same or other vendors for additional or related work. In such cases, Contractor shall cooperate fully with State's

employees and such other vendors and carefully coordinate, fit, connect, accommodate, adjust, or sequence its work to the related work by others. Where the Contract requires handing-off Contractor's work to others, Contractor shall cooperate as State instructs regarding the necessary transfer of its work product, services, or records to State or the other vendors. Contractor shall not commit or permit any act that interferes with the State's or other vendors' performance of their work.

3.14 Work on State Premises

3.14.1 COMPLIANCE WITH RULES. Contractor is responsible for ensuring that its personnel comply with State's rules, regulations, policies, documented practices, and documented operating procedures while delivering or installing Materials or performing Services on State's grounds or in its facilities. Contractor shall comply with State security requirements in order to deliver, install, or perform at that particular location, without entitlement to any additional compensation or additional time for performance if those particular requirements are not expressly stated in the Contract.

3.14.2 PROTECTION OF GROUNDS AND FACILITIES. Contractor shall deliver or install the Materials and perform the Services without damaging any State grounds or facilities. Contractor shall promptly repair or replace any damage it caused and at its own expense, subject to whatever instructions and restrictions State needs to make to prevent inconvenience or disruption of operations. If Contractor fails to make the necessary repairs or replacements in a timely manner, State will be entitled to exercise its remedies under paragraph 8.5 [*Right of Offset*].

3.15 Advertising, Publishing and Promotion of Contract

Contractor shall not advertise, promote, or otherwise use information concerning the Contractor commercial benefit without the prior written approval of Procurement Officer, which approval Procurement Officer may withhold at his or her discretion.

4.0 Costs and Payments

4.1 Payments

4.1.1 PAYMENT DEADLINE. State shall make payments in compliance with Arizona Revised Statues Titles 35 and 41. Unless stated otherwise in the Pricing Document, State shall make payment in full for Materials that have been delivered and accepted and Services that have been performed and accepted within the time specified in A.R.S. § 35-342 after both of the following become true: (a) all of the Materials being invoiced have been delivered or installed (as applicable) and accepted and all of the Services being invoiced have been performed and accepted; and (b) Contractor has provided a complete and accurate invoice in the form and manner called for in the Pricing Document, provided that, State will not make or be liable for any payments to Contractor until Contractor has registered properly in ProcureAZ and provided a current IRS Form W-9 or an equivalent form to the State unless excused by law from providing one.

4.1.2 PAYMENTS ONLY TO CONTRACTOR. Unless compelled otherwise by operation of law or order of a court of competent jurisdiction, State will only make payment to Contractor under the federal tax identifier indicated on the Vendor Offer.

4.2 Applicable Taxes

4.2.1 CONTRACTOR TO PAY ALL TAXES. State is subject to Arizona TPT. Therefore, Arizona TPT applies to all sales under the Contract and Arizona TPT is Contractor's responsibility (as seller) to remit. Contractor's failure to collect Arizona TPT or any other applicable sales or use taxes from an Eligible Agency or Co-Op Buyer (as buyer) will not relieve Contractor of any obligation to remit sales or use taxes that are due under the Contract or laws. Unless stated otherwise in the Pricing Document, all prices therein include Arizona TPT as well as every other manner of transaction privilege or sales/use tax that is due to a municipality or another state or its political subdivisions. Contractor shall pay all federal, state, and local taxes applicable to its operations and personnel.

4.2.2 TAX INDEMNITY. Contractor shall hold State harmless from any responsibility for taxes or contributions, including any applicable damages and interest, that are due to federal, state, and local authorities with respect to the Work and the Contract, as well any

related costs; the foregoing expressly includes Arizona TPT, unemployment compensation insurance, social security, and workers' compensation insurance.

4.3 Availability of Funds for the Next State fiscal year

Funds may not presently be available for performance under this Contract beyond the current state fiscal year. No legal liability on the part of the State for any payment may arise under this Contract beyond the current state fiscal year until funds are made available for performance of this Contract.

4.4 Availability of Funds for the current State fiscal year

Should the State Legislature enter back into session and reduce the appropriations or for any reason and these goods or services are not funded, the State may take any of the following actions:

4.4.1. Accept a decrease in price offered by the contractor;

4.4.2. Cancel the Contract; or

4.4.3. Cancel the contract and re-solicit the requirements

5.0 Contract Changes

5.1 Amendments

This Contract is issued under the authority of the Procurement Officer who signed this Contract. The Contract may be modified only through a Contract Amendment within the scope of the Contract. Changes to the Contract, including the addition of work or materials, the revision of payment terms, or the substitution of work or materials, directed by a person who is not specifically authorized by the procurement officer in writing or made unilaterally by the Contractor are violations of the Contract and of applicable law. Such changes, including unauthorized written Contract Amendments shall be void and without effect, and the Contractor shall not be entitled to any claim under this Contract based on those changes.

5.2 Assignment and Delegation

5.2.1 IN WHOLE. Contractor shall not assign or delegate its duties under the Contract, in whole or in part, without Procurement Officer's prior written consent; Procurement Officer may withhold at his or her discretion. If Contractor's proposed assignment or delegation stems from a split, sale, acquisition, or other non-merger change in control, then no such consent will be given in any event without the assignee or delegate giving State satisfactory and equivalent evidence or assurance of its financial soundness, competency, capacity, and qualification to perform as that which Contractor possessed when State first awarded it the Contract.

5.2.2 IN PART. Subject to paragraph 3.9 (*Subcontracts*) with respect to subcontracting, Contractor may assign particular rights or delegate particular duties under the Contract, but shall obtain Procurement Officer's written consent before doing so. Procurement Officer shall not unreasonably withhold consent so long as the proposed assignment or delegation does not attempt to modify the Contract in any way or to alter or impair State's rights or remedies under the Contract or laws.

6.0 Risk and Liability

6.1 Risk of Loss

Contractor shall bear all risk of loss to Materials if, and as, those duties are within the scope of the Work, until they have been accepted as conforming by State in the manner specified in the Purchase Order, or as specified generally elsewhere in the Contract if the Purchase Order does not provide particulars. Risk of loss for nonconforming Materials will remain with Contractor notwithstanding acceptance to the extent the loss stems from the nonconformance.

6.2 Basic Indemnification

6.2.1 CONTRACTOR/VENDOR (NOT PUBLIC AGENCY). To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless State Indemnitees from Indemnified Basic Claims that: (a) are caused or alleged to be caused in whole or in part by the negligent or willful acts or omissions of a Contractor Indemnitor; (b) arise out of or are recovered under worker compensation laws; and/or (c) arise out of a Contractor Indemnitor's failure to conform to any federal, state, or local law, statute, ordinance, rule, regulation, or court decree. The parties specifically intend that the Contractor Indemnitors shall indemnify the relevant State Indemnitees from and against Indemnified Basic Claims in all instances except where the Indemnified Basic Claim

arises solely from those State Indemnitees' own negligent or willful acts or omissions. Wherever the indemnification under this subparagraph applies, Contractor is responsible for primary loss investigation, defense, and judgment costs for an on behalf of the other Contractor Indemnitors with respect to State Indemnitees, and accordingly Contractor is also responsible for any cooperation, contribution, or subordination between or amongst the Contractor Indemnitors. In consideration of the award of the Contract by a State Indemnitee, Contractor hereby waives all rights of subrogation against State Indemnities for losses arising from the Work.

If Contractor is a public agency, this paragraph does not apply and subparagraph 6.2.1 below applies instead.

6.2.2 PUBLIC AGENCY. Each party (as 'indemnitor') agrees to indemnify, defend, and hold harmless the other party (as 'indemnitee') from and against any and all claims, losses, liability, costs, or expenses (including reasonable attorney's fees) (hereinafter collectively referred to as 'claims') arising out of bodily injury of any person (including death) or property damage but only to the extent that such claims which result in vicarious/derivative liability to the indemnitee, are caused by the act, omission, negligence, misconduct, or other fault of the indemnitor, its officers, officials, agents, employees, or volunteers.

6.2.3 If Contractor is not a public agency, this paragraph does not apply and subparagraph above applies instead.

6.3 Patent and Copyright Indemnification

CONTRACTOR/VENDOR (NOT PUBLIC AGENCY). With respect to Materials or Services provided or proposed by a Contractor Indemnitor for performance under the Contract, Contractor shall indemnify, defend and hold harmless State Indemnitees against any third-party claims for liability, costs, and expenses, including, but not limited to reasonable attorney fees, for infringement or violation of any patent, trademark, copyright, or trade secret by the Materials and the Services. With respect to the defense and payment of claims under this subparagraph:

1. State shall provide reasonable and timely notification to Contractor of any claim for which Contractor may be liable under this paragraph;
2. Contractor, with reasonable consultation from State, shall have control of the defense of any action on an indemnified claim including all negotiations for its settlement or compromise;
3. State may elect to participate in such action at its own expense; and
4. State may approve or disapprove any settlement or compromise, provided that, (i) State shall not unreasonably withhold or delay such approval or disapproval and (ii) State shall cooperate in the defense and in any related settlement negotiations.

If Contractor is a public agency, this paragraph 6.3 does not apply.

6.4 Force Majeure

6.4.1 DEFINITION. For this paragraph, "force majeure" means an occurrence that is (a) beyond the control of the affected party, (b) occurred without the party's fault or negligence, and (c) something the party was unable to prevent by exercising reasonable diligence. Without limiting the generality of the foregoing, force majeure expressly includes acts of God, acts of the public enemy, war, riots, strikes, mobilization, labor disputes, civil disorders, fire, flood, lockouts, injunctions-intervention-acts, failures or refusals to act by government authorities, and, subject to paragraph 7.10 (*Performance in Public Health Emergency)*, declared public health emergencies. Force majeure expressly does not include late delivery caused by congestion at a manufacturer's plant or elsewhere, an oversold condition of the market, late performance by a Subcontractor unless the delay arises out of an occurrence of force majeure, or inability of either Contractor or any Subcontractor to acquire or maintain any required insurance, bonds, licenses, or permits.

6.4.2 RELIEF FROM PERFORMANCE. Except for payment of sums due, the parties are not liable to each other if an occurrence of force majeure prevents its performance under the Contract. If either party is delayed at any time in the progress of their respective performance under the Contract by an occurrence of force majeure, the delayed party

shall notify the other no later than the following working day after the occurrence, or as soon as it could reasonably have been expected to recognize that the occurrence had effect in cases where the effects were not readily apparent. In any event, the notice must make specific reference to this paragraph specifying the causes of the delay in the notice and, if the effects of the occurrence are on-going, provide an initial notification and thereafter the delayed party shall provide regular updates until such time as the effects are fully known. To the extent it is able, the delayed party shall cause the delay to cease promptly and notify the other party when it has done so. The parties shall extend the time of completion by Contract Amendment for a period equal to the time that the results or effects of the delay prevented the delayed party from performing.

6.4.3 EXCUSABLE DELAY IS NOT DEFAULT. Failure in performance by either party will not constitute default hereunder or give rise to any claim for damages or loss of anticipated profits if and to the extent that such failure was or is being caused by an occurrence of force majeure.

6.4.4 DEFAULT DIMINISHES RELIEF. Entitlement to relief from the effects of an occurrence of force majeure is diminished to the extent that the delay did or will result from the affected party's default unrelated to the occurrence, in which case and to that extent the other party's normal remedies and the affected party's obligations would apply undiminished.

6.5 Third Party Antitrust Violations

Contractor assigns to State any claim for overcharges resulting from antitrust violations to the extent that those violations concern materials or services supplied by third parties to Contractor toward fulfillment of the Contract.

7.0 Warranties

7.1 Liens

The Contractor warrants that the materials supplied under this Contract are free of liens and shall remain free of liens.

7.2 Conformity to Requirements

Contractor warrants that, unless expressly provided otherwise elsewhere in the Contract, the Materials and Services will for 1 (one) year after acceptance and in each instance: (1) conform to the requirements of the Contract, which by way of reminder include without limitation all descriptions, specifications, and drawings identified in the Scope of Work and any Contractor affirmations included as part of the Contract; (2) be free from defects of material and workmanship; (3) conform to or perform in a manner consistent with current industry standards; and (4) be fit for the intended purpose or use described in the Contract. Mere delivery or performance does not substitute for express acceptance by State. Where inspection, testing, or other acceptance assessment of Materials or Services cannot be done until after installation, the forgoing warranty will not begin until State's acceptance.

7.3 Quality

Unless otherwise modified elsewhere in these terms and conditions, the Contractor warrants that, for 1 (one) year after acceptance by the State of the materials, they shall be:

7.3.1. Of a quality to pass without objection in the trade under the Contract description;

7.3.2. Fit for the intended purposes for which the materials are used;

7.3.3. Within the variations permitted by the Contract and are of even kind, quantity, and quality within each unit and among all units;

7.3.4. Adequately contained, packaged and marked as the Contract may require; and

7.3.5. Conform to the written promises or affirmations of fact made by the Contractor.

7.4 Inspection/Testing

The warranties set forth in subparagraphs 7.1 through 7.3 of this paragraph are not affected by inspection or testing of or payment for the materials by the State.

7.5 Compliance with Laws

The materials and services supplied under this Contract shall comply with all applicable Federal, state and local laws, and the Contractor shall maintain all applicable license and permit requirements.

7.6 Survival of Rights and Obligations after Contract Expiration or Termination

7.6.1. Contractor's Representations and Warranties. All representations and warranties made by the Contractor under this Contract shall survive the expiration or termination hereof. In addition, the parties hereto acknowledge that pursuant to A.R.S. § 12-510, except as provided in A.R.S. § 12-529, the State is not subject to or barred by any limitations of actions prescribed in A.R.S., Title 12, Chapter 5.

7.6.2. Purchase Orders. The Contractor shall, in accordance with all terms and conditions of the Contract, fully perform and shall be obligated to comply with all purchase orders received by the Contractor prior to the expiration or termination hereof, unless otherwise directed in writing by the Procurement Officer, including, without limitation, all purchase orders received prior to but not fully performed and satisfied at the expiration or termination of this Contract.

7.7 Contractor Personnel

Contractor warrants that its personnel will perform their duties under the Contract in a professional manner, applying the requisite skills and knowledge, consistent with industry standards, and in accordance with the requirements of the Contract. Contractor further warrants that its key personnel will maintain any certifications relevant to their work, and Contractor shall provide individual evidence of certification to State's authorized representatives upon request.

7.8 Intellectual Property

Contractor warrants that the Materials and Services do not and will not infringe or violate any patent, trademark, copyright, trade secret, or other intellectual property rights or laws, except only to the extent the Specifications do not permit use of any other product and Contractor is not and cannot reasonably be expected to be aware of the infringement or violation.

7.9 Operational Continuity

Contractor warrants that it will perform without relief notwithstanding being sold or acquired; no such event will operate to mitigate or alter any of Contractor's duties hereunder absent a consented delegation under paragraph 5.2 (*Assignment and Delegation*) that expressly recognizes the event.

7.10 Performance in Public Health Emergency

Contractor warrants that it will:

1. have in effect promptly after commencement a plan for continuing performance in the event of a declared public health emergency that addresses, at a minimum: (a) identification of response personnel by name; (b) key succession and performance responses in the event of sudden and significant decrease in workforce; and (c) alternative avenues to keep sufficient product on hand or in the supply chain; and
2. provide a copy of its current plan to State within 3 (three) business days after State's written request. If Contractor claims relief under paragraph 6.4 (*Force Majeure*) for an occurrence of force majeure that is a declared public health emergency, then that relief will be conditioned on Contractor having first implemented its plan and exhausted all reasonable opportunity for that plan implementation to overcome the effects of that occurrence, or mitigate those effects to the extent that overcoming entirely is not practicable.

For clarification of intent, being obliged to implement the plan is not of itself an occurrence of force majeure, and Contractor will not be entitled to any additional compensation or extension of time by virtue of having to implement it. Furthermore, failure to have or implement an appropriate plan will be a material breach of contract.

7.11 Lobbying

7.11.1 PROHIBITION.

(a) Contractor warrants that:

i. it will not engage in lobbying activities, as defined in 40 CFR part 34 and A.R.S. § 41-1231, et seq., using monies awarded under the Contract, provided that, the foregoing does not intend to constrain Contractor's use of its own monies or property, including without limitation any net proceeds duly realized under the Contract or any value thereafter derived from those proceeds; and

ii. Upon award of the Contract, it will disclose all lobbying activities to State to the extent they are an actual or potential conflict of interest or where such activities could create an appearance of impropriety.

(b) Contractor shall implement and maintain adequate controls to assure compliance with *(a)* above.

(c) Contractor shall obtain an equivalent warranty from all Subcontractors and shall include an equivalent no-lobbying provision in all Subcontracts.

7.11.2 EXCEPTION. This paragraph does not apply to the extent that the Services are defined in the Contract as being lobbying for State's benefit or on State's behalf.

8.0 State's Contractual Remedies

8.1 Right to Assurance

If the State in good faith has reason to believe that the Contractor does not intend to, or is unable to perform or continue performing under this Contract, the Procurement Officer may demand in writing that the Contractor give a written assurance of intent to perform. Failure by the Contractor to provide written assurance within the number of Days specified in the demand may, at the State's option, be the basis for terminating the Contract under the Uniform Terms and Conditions or other rights and remedies available by law or provided by the contract.

8.2 Stop Work Order

8.2.1. The State may, at any time, by written order to the Contractor (the "Stop Work Order"), require the Contractor to stop all or any part, of the work called for by this Contract for period(s) of days indicated by the State in the Stop Work Order. The order shall be specifically identified as a Stop Work Order issued under this clause. Upon receipt of the Stop Work Order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the Stop Work Order during the period of work stoppage.

8.2.2. If a Stop Work Order issued under this clause is canceled or the period of the order or any extension expires, the Contractor shall resume work. If the Procurement Officer determines that an equitable adjustment is necessary, he or she shall make an equitable adjustment in the delivery schedule or Contract price, or both, and the Contract shall be amended in writing accordingly.

8.3 Non-exclusive Remedies

The rights and the remedies of the State under this Contract are not exclusive.

8.4 Nonconforming Tender

Materials or services supplied under this Contract shall fully comply with the Contract. The delivery of materials or services or a portion of the materials or services that do not fully comply constitutes a breach of contract. On delivery of nonconforming materials or services, the State may terminate the Contract for default under applicable termination clauses in the Contract, exercise any of its rights and remedies under the Uniform Commercial Code, or pursue any other right or remedy available to it.

8.5 Right of Offset

The State shall be entitled to offset against any sums due the Contractor, any expenses or costs incurred by the State, or damages assessed by the State concerning the Contractor's non-conforming performance or failure to perform the Contract, including expenses, costs and damages described in the Uniform Terms and Conditions.

9.0 Contract Termination

9.1 Cancellation for Conflict of Interests

Pursuant to A.R.S. § 38-511, the State may cancel this Contract within three (3) years after Contract execution without penalty or further obligation if any person significantly involved in initiating, negotiating, securing, drafting or creating the Contract on behalf of the State is or becomes at any time while the Contract or an extension of the Contract is in effect an employee of or a consultant to any other party to this Contract with respect to the subject matter of the Contract. The cancellation shall be effective when the Contractor receives written notice of the cancellation unless the notice specifies a later time. If the Contractor is a political subdivision of the State, it may also cancel this Contract as provided in A.R.S. § 38-511.

9.2	**Gratuities**	The State may, by written notice, terminate this Contract, in whole or in part, if the State determines that employment or a Gratuity was offered or made by the Contractor or a representative of the Contractor to any officer or employee of the State for the purpose of influencing the outcome of the procurement or securing the Contract, an amendment to the Contract, or favorable treatment concerning the Contract, including the making of any determination or decision about contract performance. The State, in addition to any other rights or remedies, shall be entitled to recover exemplary damages in the amount of three times the value of the Gratuity offered by the Contractor.
9.3	**Suspension or Debarment**	The State may, by written notice to the Contractor, immediately terminate this Contract if the State determines that the Contractor has been debarred, suspended or otherwise lawfully prohibited from participating in any public procurement activity, including but not limited to, being disapproved as a subcontractor of any public procurement unit or other governmental body. Submittal of an offer or execution of a contract shall attest that the contractor is not currently suspended or debarred. If the contractor becomes suspended or debarred, the contractor shall immediately notify the State.
9.4	**Termination for Convenience**	The State reserves the right to terminate the Contract, in whole or in part at any time when in the best interest of the State, without penalty or recourse. Upon receipt of the written notice, the Contractor shall stop all work, as directed in the notice, notify all subcontractors of the effective date of the termination and minimize all further costs to the State. In the event of termination under this paragraph, all documents, data and reports prepared by the Contractor under the Contract shall become the property of and be delivered to the State upon demand. The Contractor shall be entitled to receive just and equitable compensation for work in progress, work completed and materials accepted before the effective date of the termination.
9.5	**Termination for Default**	9.5.1. In addition to the rights reserved in the contract, the State may terminate the Contract in whole or in part due to the failure of the Contractor to comply with any term or condition of the Contract, to acquire and maintain all required insurance policies, bonds, licenses and permits, or to make satisfactory progress in performing the Contract. The Procurement Officer shall provide written notice of the termination and the reasons for it to the Contractor. 9.5.2. Upon termination under this paragraph, all goods, materials, documents, data and reports prepared by the Contractor under the Contract shall become the property of and be delivered to the State on demand. 9.5.3. The State may, upon termination of this Contract, procure, on terms and in the manner that it deems appropriate, materials or services to replace those under this Contract. The Contractor shall be liable to the State for any excess costs incurred by the State in procuring materials or services in substitution for those due from the Contractor.
9.6	**Continuation of Performance Through Termination**	The Contractor shall continue to perform, in accordance with the requirements of the Contract, up to the date of termination, as directed in the termination notice.

10.0 Contract Claims

10.1	**Claim Resolution**	Notwithstanding any law to the contrary, all contract claims or controversies under the Contract are to be resolved according to the Arizona Procurement Code, including judicial review under A.R.S. § 12-1518.
10.2	**Arbitration**	The parties to this Contract agree to resolve all disputes arising out of or relating to this Contract through arbitration, after exhausting applicable administrative review, to the extent required by A.R.S. § 12-1518, except as may be required by other applicable statutes (Title 41).

End of Section 2-D
End of Part 2

Attachment 3-C

Proposed Subcontractors

Check "NO" if you **WILL NOT** subcontract any portion of the Work and will therefore be carrying out all of the Work with your own personnel.

○	NO, the Offeror will not subcontract any portion of the Work.

If you WILL subcontract any portion of the Work, check "YES" below and list name of persons or companies you propose to use as subcontractors.

1. Fill in the information for every significant subcontractor – indicate the type of work the subcontractor will perform under the Contract, and their approximate percentage of the total Contract work.
2. Provide copies of relevant certifications each one possesses in the Attachment Supplements section.
3. Provide description of quality assurance methods and quality control measures that you will use to ensure that Subcontractor work meets the Contract requirements.
4. State may demand additional information about proposed subcontractors as a precondition of award.

●	YES, the Offeror will use the Subcontractors listed below:

	Name and contact information	Small Business	Work to be performed	%
1.	Gila Electronics 2481 E Palo Verde St Yuma, AZ 85365 (928) 726-0896	YES	Front-line sales, support, engineering, and field service as a regional Manufacturer's Representative ("MR") of Motorola serving primarily Yuma, La Paz, and Mohave counties.	5
2.	ADW Communications 14350 N 87th St #145 Scottsdale, AZ 85260 (480) 291-6820	YES	Provides turnkey project management, engineering, and construction services for wireless infrastructure.	5
3.	Mangum Civil Constructors, Inc., 1075 E Salter Dr Phoenix, AZ 85024 (602) 466-3926	YES	Full range of construction and technical services in the general and wireless construction industry and are an "In-House" builder with it's own civil, tower, DC and fiber crews	5
4.	High Desert Communications, Inc., 372 W Cullumber Ave Gilbert, AZ 8523 (480) 632-0020	NO	Full service communication site/tower design, engineering, installation, and ongoing support.	5
5.	NB Construction, Inc., 16602 N 23rd Ave Ste 111 Phoenix, AZ 85023 (480) 947-3599	NO	Provider of wireless communications site development services for government, enterprise and commercial carriers.	5

6.	Arizona West Builders, Inc., 7515 S Atwood Mesa, AZ 85212 (480) 988-3630	NO	Licensed general contractor that specializes in "turn-key" construction and maintenance solutions for the cellular industry including tower erection, foundations, excavations, electrical, RF and microwave installation/services, site surveys, power and Telco coordination services.	5
7.	Pyramid Network Services, LLC. 6615 Towpath Road East Syracuse, NY 13057 (315) 701-1300	NO	Pyramid is Motorola Solutions largest preferred vendor for site development services across the United States and Canada, and has completed over 340 distinct public safety projects. Pyramid Network Services—is a leading nationwide turnkey communications systems contractor delivering cost effective solutions to design, develop and deploy wireless communications networks for both commercial carriers AND Federal, State, & Local public safety agencies.	5

End of Attachment 3-C

Attachment 5-B

Conformance Statements

STATE WILL NOT CONSIDER ANY EXCEPTIONS UNLESS DESIGNATED ON THIS FORM.

READ PARAGRAPH **ERROR! REFERENCE SOURCE NOT FOUND.** OF THE INSTRUCTIONS TO OFFERORS BEFORE TAKING ANY EXCEPTIONS – TAKING EXCEPTIONS CAN BE GROUNDS FOR STATE REJECTING OR DOWN-GRADING YOUR OFFER IN EVALUATION.

CONFORMANCE TO THE INSTRUCTIONS:
(PART 3 OF THE SOLICITATION)

Check one of the following – if neither is checked, State will assume that as equivalent to "YES":

○ YES – Offeror acknowledges that it has read and understands the Instructions to Offerors in Section 3-A of the Solicitation Documents and attests that its Offer complies with both.

● NO – Offeror acknowledges that it has read and understands the Instructions to Offerors in Section 3-A of the Solicitation Documents, and attests that its Offer complies with both EXCEPT FOR the exceptions listed in **Attachment 5-B Supplement 1**.

CONFORMANCE TO THE TECHNICAL DOCUMENTS:
(PART 2 OF THE SOLICITATION)

Check one of the following – if neither is checked, State will assume that as equivalent to "YES":

○ YES – Offeror acknowledges that it has read and understands the Scope Document and the Pricing Document in Part 2 of the Solicitation Documents and attests that its Offer complies with both.

● NO – Offeror acknowledges that it has read and understands the Scope Document and the Pricing Document in Part 2 of the Solicitation Documents and attests that its Offer complies with both EXCEPT FOR the exceptions listed in **Attachment 5-B Supplement 2**.

CONFORMANCE TO THE CONTRACT TERMS AND CONDITIONS:
(PART 2 OF THE SOLICITATION)

Check one of the following – if neither is checked, State will assume that as equivalent to "YES":

○ YES – Offeror acknowledges that it has read and understands the Special Terms and Conditions and the Uniform Terms and Conditions, along with their respective Exhibits and Appendices, in Part 2 of the Solicitation Documents and attests that its Offer complies with both.

● NO – Offeror acknowledges that it has read and understand the Special Terms and Conditions and the Uniform Terms and Conditions, along with their respective Exhibits and Appendices in Part 2 of the Solicitation Documents and attests that its Offer complies with both EXCEPT FOR the exceptions listed in **Attachment 5-B Supplement 3**.

ATTACHMENT 5-B Supplement No. 1:

Exceptions to Instructions

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change
Section 1-A: Solicitation Details		
x	x	x
x	x	x
x	x	x
Section 1-B: Instructions to Offerors		
6.3 Cost or Pricing Data	Pursuant to A.R.S § 41-2543 per A.A.C. R2-7-702(B)(2), Motorola certifies to the best of its knowledge and belief the pricing provided within its response is accurate, complete and current. Motorola will cooperate with reasonable requests for pricing validity information but will not be required to provide its internal cost and pricing data which it considers confidential and proprietary information.	9.16.19 See attached Change Log to Attachment 5-B Exceptions, ("5-B Change Log").

Motorola Solutions, Inc.

Company Name

Signature of Person Authorized to Sign

NOTE: Offeror must sign and return all Attachment 5-B Supplements Nos. 1 – 3 (even if not submitting exceptions)

ATTACHMENT 5-B Supplement No. 2:

Exceptions to Technical and Commercial

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change
Section 2-A: Scope of Work (Technical Document)		
2.49.4 E&M / DC Control	Comply with clarification, No DC Control, Exception on DC Contact Keying	9.16.19 See attached 5-B Change Log for all Section 2-A.
2.52.1 Physical Construction	Comply w/ one exception 36.8 lbs x	
2.52.5	Exception 10Mhz to 1050Mhz (useable from 100kHz); Optional to 2700MHz	
2.55.1 x	Exception 10Mhz to 1050Mhz (useable from 100kHz); Optional to 2700MHz	
3.23.1x	Exception- PTP820 doesn't provide way-side service channel.	
3.37 Feed Connection	Exception-TNC connectors	
3.39.1	Exception – 100/200KHz options not supported (OK) - cnReach is a software defined radio. In 900 MHz MAS band current max bandwidth is 50 kHz but 100/200 kHz channels can be added via roadmap.	
Capacity Received Signal Level (RSL) in dBm (c) 28 - DS-1 / 10 MHz -73 76 73 76 77	Exception-not offered	
Capacity Received Signal Level (RSL) in dBm d) 84 - DS-1 / 30 MHz -68 72 69 71 73	Exception not offered	

Capacity Received Signal Level (RSL) in dBm (b) 28 - DS-1 / 10 MHz -80	Exception not offered	
Capacity Received Signal Level (RSL) in dBm (c) 84 - DS-1 / 30 MHz -67 73	Exception not offered	
Capacity Received Signal Level (RSL) in dBm (b) 28 - DS-1 - 78	Exception not offered	
Capacity Received Signal Level (RSL) in dBm (c) 84 - DS-1 - 68 73	Exception not offered	
4.5.1	**Exception-Motorola has a 2-yr standard warranty on microwave and LMR antennas. If any products are discontinued Motorola will be able to provide spare parts and repair for a period of 7 yrs.**	
5.15.12	Motorola does not support DC control	
5.16.2 Panel Wiring/Remote Electronic Circuitry- FPD consoles (a)	Exception CAT5e cable range is only 100 mts. However, Motorola can provide a fiber link to connect the base station to the Conventional interface.	
5.16.2 Panel Wiring/Remote Electronic Circuitry- FPD consoles (b)	Exception CAT5e cable range is only 100 mts. However, Motorola can provide a fiber link to connect the base station to the Conventional interface.	
5.16.5 Maintainability (a)	Exception Motorola's CCGWs can support from 1 to 8 channels per module.	

Section 2-B: Commercial Document

Section 2.1 Contractor Best Pricing	Motorola takes exception to this provision and requires its removal.	Motorola Solutions builds communication equipment, systems and solutions that do not fit within a standard conventional pricing framework. Due to the unique pricing and design specifications for each customer's communication equipment, system and solution requirements, Motorola Solutions cannot guarantee that the pricing offered in this proposal is no higher or lower than prices offered to other customers. 9.16.19 See attached x5-B Change Log.

Motorola Solutions, Inc.

Company Name

Signature of Person Authorized to Sign

NOTE: Offeror must sign and return all Attachment 5-B Supplements Nos. 1 – 3 (even if not submitting exceptions)

ATTACHMENT 5-B Supplement No. 3:

Exceptions to Contract Terms & Conditions

Article/ Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change
Section 3-A: Special Terms & Conditions		
Section 6.1 Contractor Insurance Indemnification Clause	Motorola complies with the general indemnification described in this section subject to removing the words “or intangible” and “arising or recovered under the Worker’s Compensation Law”.	Motorola believes that Workers Compensation is provided for and covered in Subsection 6.1.3. The proposed edits are consistent with the indemnification language agreed by the State in previous contracts, including ADSPO13-036880. 9.16.19 See attached 5-B Change Log
Section 6.1 Contractor Insurance-Insurance Requirements	Please see the attached proposed modifications for how Motorola can comply with the State's insurance requirements	The parties have previously negotiated an insurance module in the Arizona Department of Transportation Solicitation # T11-43-00008, agreed as applicable to ADSPO13-036880. Motorola’s Corporate Insurance Department believes that the changes it has made to this section are in line with what has been previously negotiated and agreed upon between the State and Motorola. 9.16.19 see attached 5-B Change Log
Section 13.1 Applicability	Motorola complies with the language with the removal of the words 'or from others at State's behest.'	It is unclear if Motorola has a contractual relationship with the 3rd party. 9.16.19 See attached 5-B Change Log

Section 13.2 Data Protection & Confidentiality	Motorola proposes the following language in lieu of the RFP language: Contractor warrants that, to the extent the Work includes (1) or (2) above, it will establish and maintain procedures and controls for ensuring that State's proprietary and sensitve data is protected from unauthorized access and that information obtained from the State in performance of its contractual duties is not mishandled, misused, or inappropriately released or disclosed. Contractor, the third party manufacturer, and the copyright owner of any non-Contractor software own and retain all of their repective proprietary rights in the equipment and software, and nothing in this Article 13 is intended to restrict their proprietary rights. All intellectual property developed, originated, or prepared by Contractor in connection with providing to State the Work remain vested exclusively in Contractor, and this Article 13 does not grant to State, either directly or by implication, estoppel, or otherwise, any right, title or interest in Contractor's Proprietary Rights.	The RFP language "all data created by Contractor" in the next to last sentence of the first paragraph in this section implies transfer of IP rights, which is not contemplated in the work Motorola would be performing. 9.16.19 See attached 5-B Change Log.
Section 13.2.1 Data Protection & Confidentiality	Motorola complies with the language in 13.2.1.a and b with the following suggested modifications: (1) with the replacement of 'immediately' with 'promptly' and (2) in 13.2.1.b with the insertion of 'reasonably' at the beginning of the statement. Motorola takes exception to 13.2.c and requests its removal.	Motorola requests these modifications to be in line with industry standard language. Regarding 13.2.c., it is not reasonably practicable to notify the State to every possible threat which might affect the system. 9.16.19 See attached 5-B Change Log.
Section 13.2.2 Data Protection & Confidentiality	**Motorola complies with the language in 13.2.2.a with the insertion of 'except as required by law' a the beginning of the statement.**	**Motorola requests these modifications to be in line with industry standard language.** 9.16.19 See attached 5-B Change Log.
Section 13.3.2 Personally Identifiable Information	**Motorola clarifies that it maintains industry standard security measures to protect the Solution from intrusion, breach, corruption, or other security risk. Please see Section 4.1 of the attached Subscription Services Addendum for more information on Motorola's compliance with security standards.**	**Motorola asserts it is CJIS compliant.** 9.16.19 See attached 5-B Change Log.

Section 14.3.3 Access Control	**Motorola proposes the inclusion of the following language within this section: To the extent permitted by law, State retains ownership of State Data. State grants Motorola and its subcontractors a personal, royalty-free, non-exclusive license to use, host, cache, store, reproduce, copy, modify combine, analyze, create derivatives from, communicate, transmit, publish, display, and distribute such State Data for the purpose of providing the Subscription Services to State, other Motorola customers and end users. In addition to the rights listed above, State grants Motorola a license to sell an Anonymized version of State Data for any purpose.**	**Motorola requests the ability to retain rights to use anonymized and derivative data for purposes of improving its product.** 9.16.19 See attached 5-B Change Log.
Section 14.4 Pass-through Indemnity	**Motorola proposes the language in Section 3 of the Additional Provisions in place of the RFP language regarding infringement indemnity:**	**Motorola requests the use of its standard intellectual properity infringement indemnities for its solutions.** 9.16.19 See attached 5-B Change Log.
Section 14.8.2.b Information Technology Warranty	**Motorola proposes the following language in lieu of the RFP: At Customer's request, Motorola will make every reasonable effort to test and verify specific anti-virus, anti-worm, or anti-hacker patches against a replication of Customer's application. Motorola will respond to any reported problem as an escalated support call.**	**As is industry standard, Motorola does not provide a warranty against worms and viruses.** 9.16.19 See attached 5-B Change Log.
Section 14.11.2 Cloud Applications	**Motorola requests 'serious flaws' be expressly defined. Motorola will not allow either State or third-party penetration testing from within Motorola's system**	**Requested definition to clarify between the parties what errors are agreed as serious meriting correction. Motorola's security policies do not allow outside-Motorola entities access to Motorola's internal system for penetration testing.** 9.16.19 See attached 5-B Change Log.

Section 14.11.3 Cloud Applications	**Motorola proposes the following language: Contract will submit a copy of system logs specific to the State from cloud system to State of AZ security team on an annual basis to be added to the State SIEM (Security Information Event Monitor) or IDS (Intrusion Detection System).**	**Motorola requests clarity on what logs are being requested and the proposed regularity of such requests.** 9.16.19 See attached 5-B Change Log.
Section 15.1 Drug Testing Program	**Motorola affirms that all employees are required to submit to a five-panel drug screen at the time of hire, where permitted by law. If Motorola is awarded the contract, Motorola agrees to discuss the need for additional drug tests of Motorola employees and to negotiate a contractual provision that is mutually acceptable and compliant with applicable law. However, in no event can Motorola agree to waive the rights of its employees, nor can Motorola provide the Customer with any information protected by law, including but not limited to drug test results.**	**Motorola cannot agree to waive the rights of its employees or to providing information protected by law, including drug test results.** 9.16.19 See attached 5-B Change Log.

Article/ Paragraph or Appendix Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change
Section 3-B: Uniform Terms & Conditions		
Section 3.1 Books and Records; Audit	Motorola understands and will comply with all applicable Arizona statutes with the clarifying assertion that Motorola considers its books and records, including those related to product cost data, to be trade secrets, confidential or proprietary and as may be provided by Arizona law, should not be used, duplicated or disclosed to any other third party.	Motorola considers its internal books and records confidential and proprietary information. 9.16.19 See attached 5-B Change Log.

Section 3.4 Inspection and Testing	Motorola acknowledges the State's right to inspect materials, equipment and workmanship at Motorola manufacturing or staging facilities for the limited purpose of evaluating Motorola's performance of this Agreement. Motorola requires thirty days' written notice prior to the inspection of any facility and the State will be responsible for its own costs associated with such inspection. Motorola will restrict inspection of its facilities to areas that are relevant to the performance of the Contract, and to areas which Motorola Solutions does not consider confidential or proprietary in nature. A Motorola representative must accompany State's employees at all times."	Motorola requires sufficient notice of State's intent to inspect Motorola facilities. 9.16.19 See attached 5-B Change Log.
Section 3.8 Ownership of Intellectual Property	It is Motorola's understanding from past dealings with the State Procurement Office that the State is not interested in obtaining ownership interest in any intellectual property and accordingly, these sections, or any other section that may give ownership rights in intellectual property, are not applicable and be of no cause and effect in this contract.	Motorola is providing products and services that are commercially available to any customer and does not intend to perform any Works For Hire. The Pricing included in Motorola's proposal does not reflect the transfer of any intellectual property rights to the State. If performance results in the development of new proprietary and secret concepts, methods, techniques, processes, adaptations, discoveries, improvements and ideas ("Discoveries"), such Discoveries and the intellectual property embodied therein will be owned exclusively by Motorola. If subsequently the State elects to purchase and Motorola elects to sell development services that are intended to result in a new product to be owned by the State, the parties will execute a separate development or Work for Hire agreement. 9.16.19 See attached 5-B Change Log.

Section 6.2 Basic Indemnification	Motorola proposes that all indemnification be handled as provided for in Subsection 6.1- Indemnification of the Special Terms and Conditions.	Motorola believes that Workers Compensation is provided for and covered in Subsection 6.1.3 of the Special Terms and Conditions in Section 2-C. The proposed edits are consistent with the indemnification language agreed by the State in previous contracts, including ADSPO13-036880. 9.16.19 See attached 5-B Change Log.
Section 6.3 Patent and Copyright Indemnification	Please see Section 3 of the attached Additional Provisions which describe Motorola's IP Infringement Indemnifications.	Motorola requests the use of its standard intellectual properity infringement indemnities for its solutions. 9.16.19 See attached 5-B Change Log.
Section 7.2 and 7.3 Conformity and Quality	Please see the attached Section 1 of the Additional Provisions below which explain Motorola's suggested way to address warranty which is in a like manner as in the current contracts between the parties for similar products (i) ADSPO13-036613 and (ii) ADSPO13-036880.	Motorola proposes addressing the State's warranty requirements in a manner consistent with previous contracts. 9.16.19 See attached 5-B Change Log.
Section 9.5.3 Termination for Default	Motorola complies subject to excess costs being reasonable and for materials and services not exceeding that specified in the contract less the unpaid portion of the contract price.	Motorola proposes the suggested modifications to clarify termination costs to be reasonable. 9.16.19 See attached 5-B Change Log.
5C Insurance Certificate	Please see Motorola's Evidence of Coverage Certificate and modifications to the Special Terms and Conditions, Section 6.2, for Motorola's coverage details. Motorola agrees all COI, endorsements and waivers must be valid and provided via email to State Contract Manager within 30 days of contract execution and before any work commences. Motorola's surety requires a signed agreement prior to issuing COI.	9.16.19 See attached 5-B Change Log.

Motorola Solutions, Inc.

Company Name | Signature of Person Authorized to Sign

NOTE: Offeror must sign and return all Attachment 5-B Supplements Nos. 1 – 3 (even if not submitting exceptions)

End of Attachment 5-B

State Response to Exceptions
Motorola Change Log/Revised Attachment 5-B Exceptions 9.16.19

ATTACHMENT 5-B Supplement No. 1:

Exceptions to Instructions

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change	State Response	Vendor Response
Section 1-A: Solicitation Details				
x	None	x		
Section 1-B: Instructions to Offerors				
6.3 Cost or Pricing Data	Pursuant to A.R.S § 41-2543 per A.A.C. R2-7-702(B)(2), Motorola certifies to the best of its knowledge and belief the pricing provided within its response is accurate, complete and current. Motorola will cooperate with reasonable requests for pricing validity information but will not be required to provide its internal cost and pricing data which it considers confidential and proprietary information.	Public exposure of Motorola's internal costs and pricing would put it at a severe competitive disadvantage.	Rejected, exception not accepted. Catalog/list pricing along with % off list data is required as part of soliciataion and is not considered confdential per R2-7-103.	7/25/19 Motorola verbally agreed 8-8-19 Motorola concurs

ATTACHMENT 5-B Supplement No. 2:

Exceptions to Technical and Commercial

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change	State Response	
Section 2-A: Scope of Work (Technical Document)				**8/28/19 Motorola agreed with the State's responses to Motorola's clarifications and exceptions in this Section 2-A**
2.49.4 E&M / DC Control	Comply with clarification, No DC Control, Exception on DC Contact Keying	x	Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
2.52.1 Physical Construction	Comply w/ one exception 36.8 lbs x	x	Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
2.52.5	Exception 10Mhz to 1050Mhz (useable from 100kHz); Optional to 2700MHz	x	Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
2.55.1 X	Exception 10Mhz to 1050Mhz (useable from 100kHz); Optional to 2700MHz		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
3.23.1x	Exception- PTP820 doesn't provide way-side service channel.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
3.37 Feed Connection	Exception-TNC connectors		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed

3.39.1	Exception – 100/200KHz options not supported (OK) - cnReach is a software defined radio. In 900 MHz MAS band current max bandwidth is 50 kHz but 100/200 kHz channels can be added via roadmap.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
Capacity Received Signal Level (RSL) in dBm (c) 28 - DS-1 / 10 MHz -73 76 73 76 77	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm d) 84 - DS-1 / 30 MHz -68 72 69 71 73	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm (b) 28 - DS-1 / 10 MHz -80	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm (c) 84 - DS-1 / 30 MHz -67 73	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm (b) 28 - DS-1 - 78	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm (c) 84 - DS-1 - 68 73	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
4.5.1	**Exception-Motorola has a 2-yr standard warranty on microwave and LMR antennas. If any products are discontinued Motorola will be able to provide spare parts and repair for a period of 7 yrs.**		Accept, the State will accept the exception with End Of Life Notification being provided in writing and buyer being notified of End Of Life Notification at time of order placement.	7/25/19 Motorola verbally agreed
5.15.12	Motorola does not support DC control		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
5.16.2 Panel Wiring/Remote Electronic Circuitry-FPD consoles (a)	Exception CAT5e cable range is only 100 mts. However, Motorola can provide a fiber link to connect the base station to the Conventional interface.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed

ATTACHMENT 5-B Supplement No. 1:

5.16.2 Panel Wiring/Remote Electronic Circuitry-FPD consoles (b)	Exception CAT5e cable range is only 100 mts. However, Motorola can provide a fiber link to connect the base station to the Conventional interface.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
5.16.5 Maintainability (a)	Exception Motorola's CCGWs can support from 1 to 8 channels per module.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
Section 2-B: Commercial Document				
Section 2.1 Contractor Best Pricing	Motorola takes exception to this provision and requires its removal.	Motorola Solutions builds communication equipment, systems and solutions that do not fit within a standard conventional pricing framework. Due to the unique pricing and design specifications for each customer's communication equipment, system and solution requirements, Motorola Solutions cannot guarantee that the pricing offered in this proposal is no higher or lower than prices offered to other customers.	Rejected, exception not accepted. The State requires standardization and uniformity of contract language across its suppliers.	7/25/19 Motorola will send new language to review 8/14/19 Please see below language. Price Guarantee: During the Term of the Agreement and provided Customer is in compliance with all provisions of the Agreement, Motorola asserts its pricing for products and services offered on this Agreement will be consistent with competitively priced products and services for similarly situated state and local customers within the State of Arizona purchasing the same or similar products and services sold in like quantities on substantially similar or comparable terms and conditions. This price guarantee excludes volume discounts, Federal, dealer, and third party distributor pricing.

ATTACHMENT 5-B Supplement No. 3:

Exceptions to Contract Terms & Conditions

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change	State Response
Section 3-A: Special Terms & Conditions			

Section 6.1 Contractor Insurance Indemnification Clause	Motorola complies with the general indemnification described in this section subject to removing the words “or intangible” and “arising or recovered under the Worker’s Compensation Law”.	Motorola believes that Workers Compensation is provided for and covered in Subsection 6.1.3. The proposed edits are consistent with the indemnification language agreed by the State in previous contracts, including ADSPO13- 036880.	Rejected, exception not accepted. Please be specific in your request for a exception. Exceptions from previous contracts (7-9 years old) may not be acceptable. 8-8-19 Please see attachment FINAL Attachment 5-A Confidential Information Designation - State Response 8-8-19	8/8/19 Motorola acknowledges receipt of State's response to Attachment 5-A Confidential Information Designation and asserts Motorola insurance policies are its confidential and proprietary information not generally known externally and will cause Motorola harm if released. Motorola will not release copies of its policies.
Section 6.1 Contractor Insurance- Insurance Requirements	Please see the attached proposed modifications for how Motorola can comply with the State's insurance requirements	The parties have previously negotiated an insurance module in the Arizona Department of Transportation Solicitation # T11-43-00008, agreed as applicable to ADSPO13-036880. Motorola’s Corporate Insurance Department believes that the changes it has made to this section are in line with what has been previously negotiated and agreed upon between the State and Motorola.	Rejected, exception not accepted. Please be specific in your request for a exception. Exceptions from previous contracts (7-9 years old) may not be acceptable. 8-8-19 Please see attachment FINAL Attachment 5-A Confidential Information Designation - State Response 8-8-19 9-6-19 State will discuss duiring meeting on 9/9/19	9.16.19 Motorola includes its revised Insurance redline as discussed with State on 9.13.19; please see attached redline and comment.
Section 13.1 Applicability	Motorola complies with the language with the removal of the words 'or from others at State's behest.'	It is unclear if Motorola has a contractual relationship with the 3rd party.	Rejected, exception not accepted. The State requires standardization and uniformaity of contract language across its suppliers.	7/25/19 Motorola verbally agreed 8/8/19 Motorola notes it withdrew based upon this provision may not be applicable to Motorola's scope of work; specific requirement to be addressed with task order.
Section 13.2 Data Protection & Confidentiality	Motorola proposes the following language in lieu of the RFP language: Contractor warrants that, to the extent the Work includes (1) or (2) above, it will establish and maintain procedures and controls for ensuring that State's proprietary and sensitve data is protected from unauthorized access and that information obtained from the State in performance of its contractual duties is not mishandled, misused, or inappropriately released or disclosed. Contractor, the third party manufacturer, and the copyright owner of any non-Contractor software own and retain all of their repective proprietary rights in the equipment and software, and nothing in this Article 13 is intended to restrict their proprietary rights. All intellectual property developed, originated, or prepared by Contractor in connection with providing to State the Work remain vested exclusively in Contractor, and this Article 13 does not grant to State, either directly or by implication, estoppel, or otherwise, any right, title or interest in Contractor's Proprietary Rights.	The RFP language "all data created by Contractor" in the next to last sentence of the first paragraph in this section implies transfer of IP rights, which is not contemplated in the work Motorola would be performing.	Rejected, exception not accepted. The State requires standardization and uniformaity of contract language across its suppliers. 7/25/19 - State added langauge - Upon the issuance of a Task Order, requirements will be defined. IP rights will not be transferred	8/9/19 Motorola agrees with State's language as noted in comment dated 7/25/19.

Section 13.2.1 Data Protection & Confidentiality	Motorola complies with the language in 13.2.1.a and b with the following suggested modifications: (1) with the replacement of 'immediately' with 'promptly' and (2) in 13.2.1.b with the insertion of 'reasonably' at the beginning of the statement. Motorola takes exception to 13.2.c and requests its removal.	Motorola requests these modifications to be in line with industry standard language. Regarding 13.2.c., it is not reasonably practicable to notify the State to every possible threat which might affect the system.	Rejected, exception not accepted. The State requires standardization and uniformaity of contract language across its suppliers. 7/25/19 - State added langauge - Upon the issuance of a Task Order, requirements will be defined.	8/9/19 Motorola agrees with State's language as noted in comment dated 7/25/19.
Section 13.2.2 Data Protection & Confidentiality	Motorola complies with the language in 13.2.2.a with the insertion of 'except as required by law' a the beginning of the statement.	Motorola requests these modifications to be in line with industry standard language.	Rejected, exception not accepted. The State requires standardization and uniformaity of contract language across its suppliers. 7-25-19 - The State accepts the addition "except as required by law"	8/9/19 Motorola agrees with State's language as noted in comment dated 7/25/19.
Section 13.3.2 Personally Identifiable Information	Motorola clarifies that it maintains industry standard security measures to protect the Solution from intrusion, breach, corruption, or other security risk. Please see Section 4.1 of the attached Subscription Services Addendum for more information on Motorola's compliance with security standards.	Motorola asserts it is CJIS compliant.	Rejected, exception not accepted. The State requires that you meet the States requirements at a minimum.	7/21/19 Motorola may be acceptable, State to verify Federal requirements vs State requirements 8/28/19 Motorola verbally accepts 9/10/19 Motorola accepted.
Section 14.3.3 Access Control	Motorola proposes the inclusion of the following language within this section: To the extent permitted by law, State retains ownership of State Data. State grants Motorola and its subcontractors a personal, royalty-free, non-exclusive license to use, host, cache, store, reproduce, copy, modify combine, analyze, create derivatives from, communicate, transmit, publish, display, and distribute such State Data for the purpose of providing the Subscription Services to State, other Motorola customers and end users. In addition to the rights listed above, State grants Motorola a license to sell an Anonymized version of State Data for any purpose.	Motorola requests the ability to retain rights to use anonymized and derivative data for purposes of improving its product.	Rejected, exception not accepted.	7/25/19 Motorola verbally agreed 8/8/19 Motorola agrees.
Section 14.4 Pass-through Indemnity	Motorola proposes the language in Section 3 of the Additional Provisions in place of the RFP language regarding infringement indemnity:	Motorola requests the use of its standard intellectual properity infringement indemnities for its solutions.	Rejected - Any compromise in wording of the Indemnification clause that reduces protection or shifts liability back to the State of Arizona are in direct violation of A.R.S. § 41-621 and A.R.S. § 35-154. The State cannot accept this exception.	7/25/19 Motorola to review 8/28/19 Motorola conditionally accepts 9/10/19 Motorola agrees to withdraw exception.
Section 14.8.2.b Information Technology Warranty	Motorola proposes the following language in lieu of the RFP: At Customer's request, Motorola will make every reasonable effort to test and verify specific anti-virus, anti-worm, or anti-hacker patches against a replication of Customer's application. Motorola will respond to any reported problem as an escalated support call.	As is industry standard, Motorola does not provide a warranty against worms and viruses.	Rejected, exception not accepted. (b) the COTS software will, **to the best of its knowledge**, at the time of delivery be free of viruses, backdoors, worms, spyware, malware, and other malicious code that could hamper performance, collect unlawfully any personally identifiable information, or prevent products from performing as required by the Contract; and	7/25/19 Motorola to review will probably accept 8/8/19 Motorola accepts State's language.

Section 14.11.2 Cloud Applications	Motorola requests 'serious flaws' be expressly defined. Motorola will not allow either State or third-party penetration testing from within Motorola's system	Requested definition to clarify between the parties what errors are agreed as serious meriting correction. Motorola's security policies do not allow outside-Motorola entities access to Motorola's internal system for penetration testing.	Rejected, exception not accepted. 7/25/19 - State added langauge - Upon the issuance of a Task Order, requirements will be defined.	7/25/19 Motorola to review 8/8/19 Motorola agrees with State's added language regarding issuance of Task Order.
Section 14.11.3 Cloud Applications	Motorola proposes the following language: Contract will submit a copy of system logs specific to the State from cloud system to State of AZ security team on an annual basis to be added to the State SIEM (Security Information Event Monitor) or IDS (Intrusion Detection System).	Motorola requests clarity on what logs are being requested and the proposed regularity of such requests.	Rejected, exception not accepted. 7/25/19 - State added langauge - Upon the issuance of a Task Order, requirements will be defined.	7/25/19 Motorola to review 8/8/19 Motorola agrees with State's added language regarding issuance of Task Order.
Section 15.1 Drug Testing Program	Motorola affirms that all employees are required to submit to a five-panel drug screen at the time of hire, where permitted by law. If Motorola is awarded the contract, Motorola agrees to discuss the need for additional drug tests of Motorola employees and to negotiate a contractual provision that is mutually acceptable and compliant with applicable law. However, in no event can Motorola agree to waive the rights of its employees, nor can Motorola provide the Customer with any information protected by law, including but not limited to drug test results.	Motorola cannot agree to waive the rights of its employees or to providing information protected by law, including drug test results.	Rejected, exception not accepted.	7/25/19 Motorola to review 8/8/19 Pursuant to conversation with State on 7/25/19, this provision has limited applicability to DOC and historically Motorola employees have agreed to background checks. Motorola withdraws its exception.
Section 3-B: Uniform Terms & Conditions				
Section 3.1 Books and Records; Audit	Motorola understands and will comply with all applicable Arizona statutes with the clarifying assertion that Motorola considers its books and records, including those related to product cost data, to be trade secrets, confidential or proprietary and as may be provided by Arizona law, should not be used, duplicated or disclosed to any other third party.	Motorola considers its internal books and records confidential and proprietary information.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response Motorola acknowledges the State's audit requirements. The statements here are meant the clarify and assert that any Motorola cost information provided be afforded trade secret protections pursuant to AZ law. 8/9/19, Pursuant to conversation on 7/25/19, vendor cost and price data is not required if State elects to audit Motorola's performance.

Section 3.4 Inspection and Testing	Motorola acknowledges the State's right to inspect materials, equipment and workmanship at Motorola manufacturing or staging facilities for the limited purpose of evaluating Motorola's performance of this Agreement. Motorola requires thirty days' written notice prior to the inspection of any facility and the State will be responsible for its own costs associated with such inspection. Motorola will restrict inspection of its facilities to areas that are relevant to the performance of the Contract, and to areas which Motorola Solutions does not consider confidential or proprietary in nature. A Motorola representative must accompany State's employees at all times."	Motorola requires sufficient notice of State's intent to inspect Motorola facilities.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response This is a clarification only; Motorola agrees with the State having the contractual right to inspect at its facilities and seeks to outline the parameters of that process 7/25/19 Verbal agreement to remove exception 8/9/19 Motorola concurs.
Section 3.8 Ownership of Intellectual Property	It is Motorola's understanding from past dealings with the State Procurement Office that the State is not interested in obtaining ownership interest in any intellectual property and accordingly, these sections, or any other section that may give ownership rights in intellectual property, are not applicable and be of no cause and effect in this contract.	Motorola is providing products and services that are commercially available to any customer and does not intend to perform any Works For Hire. The Pricing included in Motorola's proposal does not reflect the transfer of any intellectual property rights to the State. If performance results in the development of new proprietary and secret concepts, methods, techniques, processes, adaptations, discoveries, improvements and ideas ("Discoveries"), such Discoveries and the intellectual property embodied therein will be owned exclusively by Motorola. If subsequently the State elects to purchase and Motorola elects to sell development services that are intended to result in a new product to be owned by the State, the parties will execute a separate development or Work for Hire agreement.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions. If it's not applicable, Offeror shall just ignore this section.	6/10/19 Response Motorola would not be providing any custom development work for the State under this agreement and believes this provision to be non applicable. Would the State please confirm. 8/8/19 Pursuant to 7/25/19 discussion, intellectual property ownership is not contemplated in the agreement.
Section 6.2 Basic Indemnification	Motorola proposes that all indemnification be handled as provided for in Subsection 6.1- Indemnification of the Special Terms and Conditions.	Motorola believes that Workers Compensation is provided for and covered in Subsection 6.1.3 of the Special Terms and Conditions in Section 2-C. The proposed edits are consistent with the indemnification language agreed by the State in previous contracts, including ADSPO13-036880.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response Motorola proposes that the general indemnity provisions be governed by Subsection 6.1 within the Special Terms and Conditions in lieu of the basic indemnity outlined in the Uniform terms and conditions; this is consistent with ADSPO13-036880. 7/25/19 Verbal agreement to remove exception 8/8/19 Agreed, during the 7/25 conversation, parties agreed if modification need to handle in special T&C

Section 6.3 Patent and Copyright Indemnification	Please see Section 3 of the attached Additional Provisions which describe Motorola's IP Infringement Indemnifications.	Motorola requests the use of its standard intellectual properity infringement indemnities for its solutions.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response Motorola proposes the inclusion of its industry standard IP Infringement Indemnity for its solutions in lieu of the RFP Patent and Copyright Indemnification, which did not appear t be pursuant to State statute. 7/25/19 Verbal agreement to remove exception 8/8/19 Handle in special T&C's
Section 7.2 and 7.3 Conformity and Quality	Please see the attached Section 1 of the Additional Provisions below which explain Motorola's suggested way to address warranty which is in a like manner as in the current contracts between the parties for similar products (i) ADSPO13-036613 and (ii) ADSPO13-036880.	Motorola proposes addressing the State's warranty requirements in a manner consistent with previous contracts.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response Motorola is proposing its express warranties which apply to its products and services; these are also consistent with the warranty provisions agreed to in previous contracts ADSPO13-036613 and ADSPO13-036880. 7/25/19 Motorola to compare. Motorola warranty may be exceed requirements. 8/8/19 Motorla accepts, discussion was for clarification.
Section 9.5.3 Termination for Default	Motorola complies subject to excess costs being reasonable and for materials and services not exceeding that specified in the contract less the unpaid portion of the contract price.	Motorola proposes the suggested modifications to clarify termination costs to be reasonable.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions. Please see Uniform Terms and Conditions, Section 8 State's Contractual Remidies the State may choose to use prior to Contract Termination.	6/10/19 Response Motorola complies with the language included in 9.5.3 of the Uniform Terms; its modification here is to specify the replacement materials not exceed the specifications of the materials originally purchased (no upgrades). 7/25/19 Added Section 8 language for clarification 8/9/19 Motorola agrees with State's clarification (addition of Section 8 reference).
5C Insurance Certificate	Please see Motorola's Evidence of Coverage Certificate and modifications to the Special Terms and Conditions, Section 6.2, for Motorola's coverage details. Motorola agrees all COI, endorsements and waivers must be valid and provided via email to State Contract Manager within 30 days of contract execution and before any work commences. Motorola's surety requires a signed agreement prior to issuing COI.		Rejected, exception not accepted. The State provides the following clarification: You have 30 days from award (Agreement) to provide Certificates Of Insurance. Pursant to Section 3-A: Instructions to Offerors, 3.0 Offer Preparation, 3.6 Insurance, All COI, endorsements, and waivers must be valid, in place and provided via emailed to the Contracts Manager within 30 days after award and before any work commences as called for in Attachment 5-C [Insurance].	6/10/19 Response Motorola has provided its Evidence of Coverage certificate and references its proposed modifications to the RFP insurance provisions in the Special Terms and Conditions. These modifications are based on statutory as well as Motorola's insurance compliance requirements. 8/14/19 Please see attached revised insurance terms.

6.0 Risk and Liability

6.1 Contractor Insurance

Please see following proposed modifications to the Insurance provisions. Motorola also encloses its Evidence of Coverage certificate.

Insurance Requirements

Contractor and subcontractors shall procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Contract, insurance against claims for injury to persons or damage to property arising from, or in connection with, the performance of the work hereunder by the Contractor, its agents, representatives, employees or subcontractors.

The Insurance Requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. The State of Arizona in no way warrants that the minimum limits contained herein are sufficient to protect the Contractor from liabilities that arise out of the performance of the work under this Contract by the Contractor, its agents, representatives, employees or subcontractors, and the Contractor is free to purchase additional insurance.

Minimum Scope and Limits of Insurance

Contractor shall provide coverage with limits of liability not less than those stated below.

1. Commercial General Liability (CGL) – Occurrence Form

Policy shall include bodily injury, property damage, and broad form contractual liability coverage.

• General Aggregate	$2,000,000
• Products – Completed Operations Aggregate	$1,000,000
• Personal and Advertising Injury	$1,000,000
• Damage to Rented Premises	$50,000
• Each Occurrence	$2,000,000

The policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to liability arising out of the activities performed by or on behalf of the Contractor.

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

The policy shall include coverage for Sexual Abuse and Molestation (SAM). This coverage may be sub-limited to no less than $500,000. The limits may be included within the General Liability limit or provided by separate endorsement with its own limits. If you are unable to obtain SAM coverage under your General Liability because the insurance market will not support it, it should it be included with the Professional Liability.

Contractor must provide the following statement on their Certificate(s) of Insurance: "Sexual Abuse and Molestation coverage is included" or "Sexual Abuse and Molestation coverage is not excluded."

2. Business Automobile Liability

Bodily Injury and Property Damage for any owned, hired, and/or non-owned automobiles used in the performance of this Contract.

- Combined Single Limit (CSL) $1,000,000

Policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to liability arising out of the activities performed by, or on behalf of, the Contractor involving automobiles owned, hired and/or non-owned by the Contractor.

Policy shall contain a waiver of subrogation endorsement as required by this written agreement in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

3. Workers' Compensation and Employers' Liability

- Workers' Compensation Statutory
- Employers' Liability
  - o Each Accident $1,000,000
  - o Disease – Each Employee $1,000,000
  - o Disease – Policy Limit $1,000,000

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

This requirement shall not apply to each Contractor or subcontractor that is exempt under A.R.S. § 23-901, and when such Contractor or subcontractor executes the appropriate waiver form (Sole Proprietor or Independent Contractor).

4. Professional Liability (Errors and Omissions Liability) **including Technology Errors & Omissions and Network Security (Cyber) and Privacy Liability**

- Each Claim $2,000,000
- Annual Aggregate $6,000,000

In the event that the Professional Liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract and, either continuous coverage will be maintained, or an extended discovery period will be exercised, for a period of two (2) years beginning at the time work under this Contract is completed.

The policy shall cover Contractor's professional misconduct or negligent acts for those positions defined in the Scope of Work of this contract.

Such insurance shall cover any, and all errors, omissions, or negligent acts in the delivery of products, services, and/or licensed programs Contractor provides under this contract.

Coverage shall include copyright infringement, infringement of trade dress, domain name, title or slogan.

Such insurance shall include, but not be limited to, coverage for third party claims and losses with respect to network risks (such as data breaches, unauthorized access or use, ID theft, theft of data) and invasion of privacy regardless of the type of media involved in the loss of private information, crisis management and identity theft response costs. This should also include breach notification costs, credit monitoring, defense and claims expenses, regulatory defense

costs plus fines and penalties, cyber extortion, computer program and electronic data restoration expenses coverage (data asset protection), network business interruption,.

Commercial Crime –including employee dishonesty covering liability against direct and verifiable losses of money, securities, products, equipment, material and other property of the State caused by theft or forgery, computer fraud or fund transfers by identifiable employees of in the following limits:

- $2,000,000 each claim
- $5,000,000 annual aggregate

~~The policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to vicarious liability of the insured arising out of the activities performed by or on behalf of the Contractor.~~

~~Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.~~)

4. Installation Floater

- Coverage amount is $___TBD At Award of Contract based on Value_____

Policy shall contain an Additional Insured endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees.

The State of Arizona and the Department shall be named as loss payee as its interest may appear.

Coverage shall be written on an all risk, replacement cost basis and shall include coverage for flood and earth movement as well as coverage for losses that may occur during equipment testing/commissioning.

Policy shall be maintained until whichever of the following shall first occur: (1) final payment has been made; or, (2) until no person or entity, other than the State of Arizona, has an insurable interest in the property required to be covered.

Policy shall be endorsed such that the insurance shall not be canceled or lapse because of any partial use or occupancy by the State of Arizona.

The Installation Floater must provide coverage from the time the equipment/material becomes the responsibility of the Contractor and shall continue without interruption during the installation, testing and commissioning, including any time during which the equipment/material is being transported to the installation site, or awaiting installation, whether on or off site.

Policy shall contain a Waiver of Subrogation endorsement, as required by written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities,

Comment [DAB1]: 9.16.19 After further consultation with its broker and underwriter, Motorola cannot agree to the inclusion of the Additional Insured endorsement within the Professional Liability Policy. It is however, included within the CGL policy.

officers, officials, agents, and employees for losses arising from work performed by the Contractor for the State of Arizona.

Contractor is responsible for the payment of all deductibles under the Installation Floater.

Additional Insurance Requirements

The policies shall include, or be endorsed to include, as required by this written agreement, the following provisions:

The Contractor's policies (excluding the Professional Liability policy) as applicable, shall stipulate that the insurance afforded the Contractor shall be primary and that any insurance carried by the Department, its agents, officials, employees or the State of Arizona shall be excess and not contributory insurance, as provided by A.R.S. § 41-621 (E).

Insurance provided by the Contractor shall not limit the Contractor's liability assumed under the indemnification provisions of this Contract.

Notice of Cancellation

Applicable to all insurance policies required within the Insurance Requirements of this Contract, Contractor's insurance shall not be permitted to expire, be suspended, be canceled, or be materially changed for any reason without thirty (30) days prior written notice to the State of Arizona. Within two (2) business days of receipt, Contractor, (not Contractor's insurance provider), must provide notice to the State of Arizona if they receive notice of a policy that has been or will be suspended, canceled, materially changed for any reason, has expired, or will be expiring. Such notice shall be sent directly to the Department and shall be mailed, emailed, hand delivered or sent by facsimile transmission to (State Representative's Name, Address & Fax Number).

Acceptability of Insurers

Contractor's insurance shall be placed with companies licensed in the State of Arizona or hold approved non-admitted status on the Arizona Department of Insurance List of Qualified Unauthorized Insurers. Insurers shall have an "A.M. Best" rating of not less than A- VII. The State of Arizona in no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor from potential insurer insolvency.

Verification of Coverage

Contractor shall furnish the State of Arizona with certificates of insurance (valid ACORD form or equivalent approved by the State of Arizona) evidencing that Contractor has the insurance as required by this Contract. An authorized representative of the insurer shall sign the certificates.

All such certificates of insurance and policy endorsements must be received by the State before work commences. The State's receipt of any certificates of insurance or policy endorsements that do not comply with this written agreement shall not waive or otherwise affect the requirements of this agreement.

Each insurance policy required by this Contract must be in effect at, or prior to, commencement of work under this Contract. Failure to maintain the insurance policies as required by this Contract, or to provide evidence of renewal, is a material breach of contract.

All certificates required by this Contract shall be sent directly to the Department. The State of Arizona project/contract number and project description shall be noted on the certificate of insurance. In the event of a claim from a third party naming the State of Arizona with allegations arising directly out of the products and/or services rendered by Motorola under this contract, the State of Arizona reserves the right to request Motorola as Contractor to provide access to any and all policy(ies) required by the insurance requirements, including all endorsement(s), within 30 business days of such request. Contractor will be permitted to redact any references or endorsements to other customer (non-State of Arizona) information before providing access to the policies.

Subcontractors

Contractor shall be responsible for ensuring and/or verifying that all subcontractors have valid

and collectable insurance as evidenced by the certificates of insurance and endorsements for each subcontractor. All coverages for subcontractors shall be subject to the minimum Insurance Requirements identified above. The Department reserves the right to require, at any time

throughout the life of this contract, proof from the Contractor that its subcontractors have the required coverage.

Approval and Modifications

Upon 60 days' notice to Contractor, tThe Contracting Agency, in consultation with State Risk, reserves the right to review or make modifications to the insurance limits, required coverages, or endorsements throughout the life of this contract, as deemed necessary. Such action will not require a formal Contract amendment but may be made by administrative action, but will be subject to commercially available terms and conditions on the marketplace.)

Exceptions

In the event the Contractor or subcontractor(s) is/are a public entity, then the Insurance Requirements shall not apply. Such public entity shall provide a certificate of self-insurance. If the Contractor or subcontractor(s) is/are a State of Arizona agency, board, commission, or university, none of the above shall apply.

Comment [K2]: The State would need to make 60 day's notice to Motorola of any change in the insurance requirements and be subject to commercially available terms and conditions in the marketplace and not result in increased premium charges to Motorola. Otherwise, this paragraph is unacceptable. **8.28.19 Procurement will check with Risk Mgmt, but agreed 60 days was reasonable. 9/9/19 State can agree with exception of 'result in increased premium to Motorola' which such event might occur due to legislative changes.. if high/ significant premium increase then State may agree to a price increase.**
9/12/19 Motorola risk and finance agreed with exclusion of 'increased premium charges to Motorola' and includes the 60 days' notice and available marketplace conditions in this revision.
9.13.19 State will double check with risk mgmt; tentatively accept, State to confirm.

Motorola Solutions, Inc.

Change Log to State of Arizona – Additional Provisions-Supplemental Terms – ADSPO19-00008376

The following are changes that Motorola Solutions, Inc. is submitting to our original proposal submitted on September 4, 2018.

Attachment A

For purposes of showing precedence and the parties' past course of doing business, Solicitations # ADSPO13-036880 and ADSPO13-036613, which are the current contracts between the Parties for similar products, contain Additional Provisions for limitation of liability, warranty and the inclusion of Motorola's Software License Agreement. With this in mind, Motorola proposes for the State's consideration the inclusion of the following items:

Section 1:

1.1 EQUIPMENT WARRANTY. During the Warranty Period established in the State of Arizona contract resulting from ADSPO19-00008376, Motorola warrants that the Equipment under normal use and service will be free from material defects in materials and workmanship. If System Acceptance is delayed beyond six (6) months after shipment of the Equipment by events or causes within Customer's control, this warranty expires eighteen (18) months after the shipment of the Equipment.

1.2. MOTOROLA SOFTWARE WARRANTY. Unless otherwise stated in the Software License Agreement, during the Warranty Period, Motorola warrants the Motorola Software in accordance with the terms of the Software License Agreement and the provisions of this Section 1 that are applicable to the Motorola Software. If System Acceptance is delayed beyond six (6) months after shipment of the Motorola Software by events or causes within Customer's control, this warranty expires eighteen (18) months after the shipment of the Motorola Software.

1.3. EXCLUSIONS TO EQUIPMENT AND MOTOROLA SOFTWARE WARRANTIES. These warranties do not apply to: (i) defects or damage resulting from: use of the Equipment or Motorola Software in other than its normal, customary, and authorized manner; accident, liquids, neglect, or acts of God; testing, maintenance, disassembly, repair, installation, alteration, modification, or adjustment not provided or authorized in writing by Motorola; Customer's failure to comply with all applicable industry and OSHA standards; (ii) breakage of or damage to antennas unless caused directly by defects in material or workmanship; (iii) Equipment that has had the serial number removed or made illegible; (iv) batteries (because they carry their own separate limited warranty) or consumables; (v) freight costs to ship Equipment to the repair depot; (vi) scratches or other cosmetic damage to Equipment surfaces that does not affect the operation of the Equipment; and (vii) normal or customary wear and tear.

1.4. WARRANTY CLAIMS. To assert a warranty claim, Customer must notify Motorola in writing of the claim before the expiration of the Warranty Period. Upon receipt of this notice, Motorola will investigate the warranty claim. If this investigation confirms a valid warranty claim, Motorola will (at its option and at no additional charge to Customer) repair the defective Equipment or Motorola Software, replace it with the same or equivalent product, or refund the price of the defective Equipment or Motorola Software. That action will be the full extent of Motorola's liability for the warranty claim. If this investigation indicates the warranty claim is not valid, then Motorola may invoice Customer for responding to the claim on a time and materials basis using Motorola's then current labor rates. Repaired or replaced product is warranted for

the balance of the original applicable warranty period. All replaced products or parts will become the property of Motorola.

1.5. ORIGINAL END USER IS COVERED. These express limited warranties are extended by Motorola to the original user purchasing the System for commercial, industrial, or governmental use only, and are not assignable or transferable.

1.6. DISCLAIMER OF OTHER WARRANTIES. THESE WARRANTIES ARE THE COMPLETE WARRANTIES FOR THE EQUIPMENT AND MOTOROLA SOFTWARE PROVIDED UNDER THIS AGREEMENT AND ARE GIVEN IN LIEU OF ALL OTHER WARRANTIES. MOTOROLA DISCLAIMS ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

"Warranty Period" means ~~one (1) year from the date of System Acceptance or Beneficial Use, whichever occurs first.~~the applicable category warranty period defined in the State of Arizona ADSPO19-00008376.

Section 2 LIMITATION OF LIABILITY

This limitation of liability provision shall apply notwithstanding any contrary provision in this Agreement and to the extent permitted by State of Arizona law. Except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, indemnification, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of the Equipment, Software, or services with respect to which losses or damages are claimed. ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT, THE SALE OR USE OF THE EQUIPMENT OR SOFTWARE, OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT. This limitation of liability will survive the expiration or termination of this Agreement.

Section 3 Intentionally Deleted. ~~PATENT AND COPYRIGHT INFRINGEMENT.~~

~~Motorola will defend at its expense any suit brought against Customer to the extent it is based on a third-party claim alleging that the Equipment manufactured by Motorola or the Motorola Software ("Motorola Product") directly infringes a United States patent or copyright ("Infringement Claim"). Motorola's duties to defend and indemnify are conditioned upon: Customer promptly notifying Motorola in writing of the Infringement Claim; Motorola having sole control of the defense of the suit and all negotiations for its settlement or compromise; and Customer providing to Motorola cooperation and, if requested by Motorola, reasonable assistance in the defense of the Infringement Claim. In addition to Motorola's obligation to defend, and subject to the same conditions, Motorola will pay all damages finally awarded against Customer by a court of competent jurisdiction for an Infringement Claim or agreed to, in writing, by Motorola in settlement of an Infringement Claim.~~

~~If an Infringement Claim occurs, or in Motorola's opinion is likely to occur, Motorola may at its option and expense: (a) procure for Customer the right to continue using the Motorola Product; (b) replace or modify the Motorola Product so that it becomes non-infringing while providing functionally equivalent performance; or (c) accept the return of the Motorola Product and grant Customer a credit for the Motorola Product, less a reasonable charge for depreciation. The depreciation amount will be calculated based upon generally accepted accounting standards.~~

~~Motorola will have no duty to defend or indemnify for any Infringement Claim that is based upon: (a) the~~

~~combination of the Motorola Product with any software, apparatus or device not furnished by Motorola; (b) the use of ancillary equipment or software not furnished by Motorola and that is attached to or used in connection with the Motorola Product; (c) Motorola Product designed or manufactured in accordance with Customer's designs, specifications, guidelines or instructions, if the alleged infringement would not have occurred without such designs, specifications, guidelines or instructions; (d) a modification of the Motorola Product by a party other than Motorola; (e) use of the Motorola Product in a manner for which the Motorola Product was not designed or that is inconsistent with the terms of this Agreement; or (f) the failure by Customer to install an enhancement release to the Motorola Software that is intended to correct the claimed infringement. In no event will Motorola's liability resulting from its indemnity obligation to Customer extend in any way to royalties payable on a per use basis or the Customer's revenues, or any royalty basis other than a reasonable royalty based upon revenue derived by Motorola from Customer from sales or license of the infringing Motorola Product.~~

~~This Section provides Customer's sole and exclusive remedies and Motorola's entire liability in the event of an Infringement Claim. Customer has no right to recover and Motorola has no obligation to provide any other or further remedies, whether under another provision of this Agreement or any other legal theory or principle, in connection with an Infringement Claim. In addition, the rights and remedies provided in this Section are subject to and limited by the restrictions set forth in Motorola's Limitation of Liability.~~

Attachment B. SOFTWARE LICENCE AGREEMENT: For the purposes of showing precedence and the parties past course of doing business, in the Arizona Department of Transportation Solicitation # T11-43-00008 contract dated September 2, 2010, the State of Arizona's Attorney General agreed to an additional provision that provided for licensing of software in accordance with Motorola's Software License Agreement, which was contemplated in ADSPO13-036880. With this in mind, Motorola's Software License Agreement is attached and proposed for inclusion in this contract.

Attachment B

MOTOROLA SOFTWARE LICENSE AGREEMENT

This Exhibit A Motorola Software License Agreement ("Agreement") is between Motorola Solutions, Inc., ("Motorola"), and the purchaser of products containing Motorola software under the State of Arizona's Agreement from RFP ADSPO19-00008376 ("Licensee").

For good and valuable consideration, the parties agree as follows:

Section 1 DEFINITIONS

1.1 "Designated Products" means products provided by Motorola to Licensee with which or for which the Software and Documentation is licensed for use.

1.2 "Documentation" means product and software documentation that specifies technical and performance features and capabilities, and the user, operation and training manuals for the Software (including all physical or electronic media upon which such information is provided).

1.3 "Open Source Software" means software with either freely obtainable source code, license for modification, or permission for free distribution.

1.4 "Open Source Software License" means the terms or conditions under which the Open Source Software is licensed.

1.5 "Primary Agreement" means the agreement to which this exhibit is attached.

1.6 “Security Vulnerability” means a flaw or weakness in system security procedures, design, implementation, or internal controls that could be exercised (accidentally triggered or intentionally exploited) and result in a security breach such that data is compromised, manipulated or stolen or the system damaged.

1.7 “Software” (i) means proprietary software in object code format, and adaptations, translations, de-compilations, disassemblies, emulations, or derivative works of such software; (ii) means any modifications, enhancements, new versions and new releases of the software provided by Motorola; and (iii) may contain one or more items of software owned by a third party supplier. The term "Software" does not include any third party software provided under separate license or third party software not licensable under the terms of this Agreement.

Section 2 SCOPE

Motorola and Licensee enter into this Agreement in connection with Motorola's delivery of certain proprietary software or products containing embedded or pre-loaded proprietary software, or both. This Agreement contains the terms and conditions of the license Motorola is providing to Licensee, and Licensee’s use of the proprietary software and affiliated documentation.

Section 3 GRANT OF LICENSE

3.1. Subject to the provisions of this Agreement and the payment of applicable license fees, Motorola grants to Licensee a personal, limited, non-transferable (except as permitted in Section 7) and non-exclusive license under Motorola’s copyrights and Confidential Information (as defined in the Primary Agreement) embodied in the Software to use the Software, in object code form, and the Documentation solely in connection with Licensee's use of the Designated Products. This Agreement does not grant any rights to source code.

3.2. If the Software licensed under this Agreement contains or is derived from Open Source Software, the terms and conditions governing the use of such Open Source Software are in the Open Source Software Licenses of the copyright owner and not this Agreement. If there is a conflict between the terms and conditions of this Agreement and the terms and conditions of the Open Source Software Licenses governing Licensee’s use of the Open Source Software, the terms and conditions of the license grant of the applicable Open Source Software Licenses will take precedence over the license grants in this Agreement. If requested by Licensee, Motorola will use commercially reasonable efforts to: (i) determine whether any Open Source Software is provided under this Agreement; and (ii) identify the Open Source Software (or specify where that license may be found).

3.3. TO THE EXTENT, IF ANY, THAT THERE IS A SEPARATE LICENSE AGREEMENT PACKAGED WITH, OR PROVIDED ELECTRONICALLY WITH, A PARTICULAR PRODUCT THAT BECOMES EFFECTIVE ON AN ACT OF ACCEPTANCE BY THE END USER, THEN THAT AGREEMENT SUPERCEDES THIS SOFTWARE LICENSE AGREEMENT AS TO THE END USER OF EACH SUCH PRODUCT.

Section 4 LIMITATIONS ON USE

4.1. Licensee may use the Software only for Licensee's internal business purposes and only in accordance with the Documentation. Any other use of the Software is strictly prohibited. Without limiting the general nature of these restrictions, Licensee will not make the Software available for use by third parties on a "time sharing," "application service provider," or "service bureau" basis or for any other similar commercial rental or sharing arrangement.

4.2. Licensee will not, and will not allow or enable any third party to: (i) reverse engineer, disassemble, peel components, decompile, reprogram or otherwise reduce the Software or any portion to a human perceptible form or otherwise attempt to recreate the source code; (ii) modify, adapt, create

derivative works of, or merge the Software; (iii) copy, reproduce, distribute, lend, or lease the Software or Documentation to any third party, grant any sublicense or other rights in the Software or Documentation to any third party, or take any action that would cause the Software or Documentation to be placed in the public domain; (iv) remove, or in any way alter or obscure, any copyright notice or other notice of Motorola's proprietary rights; (v) provide, copy, transmit, disclose, divulge or make the Software or Documentation available to, or permit the use of the Software by any third party or on any machine except as expressly authorized by this Agreement; or (vi) use, or permit the use of, the Software in a manner that would result in the production of a copy of the Software solely by activating a machine containing the Software. Licensee may make one copy of Software to be used solely for archival, back-up, or disaster recovery purposes; *provided* that Licensee may not operate that copy of the Software at the same time as the original Software is being operated. Licensee may make as many copies of the Documentation as it may reasonably require for the internal use of the Software.

4.3. Unless otherwise authorized by Motorola in writing, Licensee will not, and will not enable or allow any third party to: (i) install a licensed copy of the Software on more than one unit of a Designated Product; or (ii) copy onto or transfer Software installed in one unit of a Designated Product onto one other device. Licensee may temporarily transfer Software installed on a Designated Product to another device if the Designated Product is inoperable or malfunctioning, if Licensee provides written notice to Motorola of the temporary transfer and identifies the device on which the Software is transferred. Temporary transfer of the Software to another device must be discontinued when the original Designated Product is returned to operation and the Software must be removed from the other device. Licensee must provide prompt written notice to Motorola at the time temporary transfer is discontinued.

4.4 Licensee will maintain, during the term of this Agreement and for a period of two years thereafter, accurate records relating to this license grant to verify compliance with this Agreement. Motorola or an independent third party ("Auditor") may inspect Licensee's premises, books and records, upon reasonable prior notice to Licensee, during Licensee's normal business hours and subject to Licensee's facility and security regulations. Motorola is responsible for the payment of all expenses and costs of the Auditor. Any information obtained by Motorola and the Auditor will be kept in strict confidence by Motorola and the Auditor and used solely for the purpose of verifying Licensee's compliance with the terms of this Agreement.

Section 5 OWNERSHIP AND TITLE

Motorola, its licensors, and its suppliers retain all of their proprietary rights in any form in and to the Software and Documentation, including, but not limited to, all rights in patents, patent applications, inventions, copyrights, trademarks, trade secrets, trade names, and other proprietary rights in or relating to the Software and Documentation (including any corrections, bug fixes, enhancements, updates, modifications, adaptations, translations, de-compilations, disassemblies, emulations to or derivative works from the Software or Documentation, whether made by Motorola or another party, or any improvements that result from Motorola's processes or, provision of information services). No rights are granted to Licensee under this Agreement by implication, estoppel or otherwise, except for those rights which are expressly granted to Licensee in this Agreement. All intellectual property developed, originated, or prepared by Motorola in connection with providing the Software, Designated Products, Documentation or related services, remains vested exclusively in Motorola, and Licensee will not have any shared development or other intellectual property rights.

Section 6 LIMITED WARRANTY; DISCLAIMER OF WARRANTY

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LINKING AGREEMENT
FOR COOPERATIVE PURCHASE

MOTOROLA SOLUTIONS, INC.
COMMANDCENTRAL AXS DISPATCH SOLUTION

EXHIBIT B
SCOPE OF WORK AND PRICING

See the following page(s).

MOTOROLA SOLUTIONS

Proposal

Town of Paradise Valley

CommandCentral AXS Dispatch Consoles

August 8, 2025

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Motorola Solutions, Inc.
3332 E. Broadway Rd.
Tempe, AZ 85040

Telephone: +1 480 267 8952

August 8, 2025

Heather Beckwith,
Paradise Valley Police Department

Subject: AXS Consoles

Heather,

Motorola Solutions, Inc. is pleased to have the opportunity to provide the Town of Paradise Valley Police Department (PVPD), a proposal for Motorola's latest generation CommandCentral AXS dispatch solution to replace the existing MCC7500 dispatch system.

The dispatch site currently consists of two MCC7500 operator position (Ops). The proposed solution replaces both the MCC7500 OP positions with AXS along with an addition of a third new AXS OP. proposed solution also includes the following:

- Replacement of the legacy GCP8000 conventional site controller.
- Replacement of four existing backup consolette radios with Motorola new APX Consolettes.

The requested solution can be purchased using the State of Arizona Solicitation No. ADSPO19-00008376 Public Communications Equipment and Services which was awarded to Motorola Solutions under the contract number CTR046830. Motorola's proposal is subject to the terms and conditions of the State of Arizona Contract #CTR046830, its Exhibits and applicable Addenda - including a Maintenance Support and Lifecycle Management Addendum ("MSLMA"). This proposal shall remain valid through September 26, 2025. Town of Paradise Valley may accept this proposal by providing to Motorola a signed copy of the MSLMA and a signed Purchase Order specifically referencing "PO is subject to the terms and conditions of the State of Arizona contract #CTR046830, MSLMA and Motorola's Proposal dated August 8, 2025."

Please address any questions to your Account Executive, Jared Zygowicz at (480) 604-5122 or jared.zygowicz@motorolasolutions.com.

We thank you for the opportunity to provide PVPD a new AXS Console solution.

Sincerely,
MOTOROLA SOLUTIONS, INC.

Walter Whately
Area Sales Manager

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Section 1

System Description

1.1 Introduction

Motorola Solutions Inc. (“Motorola”) is pleased to provide the Town of Paradise Valley (“PV”), a proposal for Motorola’s latest generation CommandCentral AXS dispatch solution to replace the existing MCC7500 dispatch system.

The dispatch site currently consists of two MCC7500 operator positions (OPs). The proposed solution replaces both the MCC7500 OP positions with AXS along with an addition of a third new AXS OP. The proposed solution also includes the following:

- Replacement of the legacy GCP8000 conventional site controller with Motorola’s latest generation DSC8000 conventional site controller.
- Replacement of four existing backup consolette radios with Motorola’s new APX consolettes.
  - Note: Existing antenna systems for consolettes shall be verified and reused.

Paradise Valley Dispatch is part of RWC’s Zone 3. The proposed consoles shall operate on ASTRO SR 2021.1 to conform to the current RWC system release.

The existing dispatch site utilizes HP-2620 site switches and GGM8000 site routers as network infrastructure. Please note that this equipment is dated and approaching end of support. Motorola has now moved on to Juniper platform. Motorola understands this equipment will be updated under a separate System Upgrade agreement. The existing T1 backhaul links connecting PVPD to the RWC Zone 3 core are in the process of being upgraded to Ethernet links under a separate agreement. The implementation of the proposed solution is contingent upon the following

- Upgrade of HP2620 switches to Juniper EX4100
- Upgrade of GGM8000 site routers to Juniper SRX345
- Upgrade of existing T1 based network backhaul to Ethernet

The proposed design does not include any modifications to the three existing GGM8000 based CCGWs, the CAM server or the SDM3000 AUX I/O server.

1.2 Dispatch consoles for Paradise Valley

The proposed consoles for PV feature position-based licensing to support trunked radio resources associated with the RWC radio system. Secure encryption licensing is included to support communication with ADP/AES/DES-OFB encrypted talkgroups. To simplify the management of secure keys, OTEK (Over the Air Keying) operation license is included. Additionally, Motorola has included Instant Recall Recorder (IRR) software to enhance dispatch operations. This complement of licensing is intended to replicate the capabilities of PV’s existing MCC series consoles.

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Each AXS console position shall be equipped with a CommandCentral Hub (CCHub) with integrated PC to facilitate the local installation of Motorola's CommandCentral AXS dispatch application handling local call processing and, as applicable, software-based voice encryption operations. The CCHub provides all necessary interfaces for dispatch peripherals such as speakers, microphones, and headset jacks. The proposed solution features a full complement of dispatch site accessories for the AXS consoles, including: two MSI purpose-built USB speakers, two headset jackboxes, two headset bases, one USB desktop microphone, and one dual pedal footswitch. Per PV's request, monitors and headset tops have not been included and shall be provided by PV.

PV dispatch site currently utilizes four APX7500 consolettes as a means of backup connectivity to the RWC network in case the backhaul link to the RWC core experiences a failure. The proposed solution includes replacement of all four consolettes with Motorola's latest APX consolettes. These consolettes shall operate in 7/800 MHz band (single band operation) and shall be equipped with TDMA licenses. Existing antennas for these consolettes shall be reused. Motorola shall verify proper operation of the existing antenna system components and advise PV if any repair or replacements are warranted. The cost for such repair or replacement is not included in the scope of this proposal and can be addressed via a change order.

1.3 Equipment summary

A high-level summary of proposed equipment is as given below:

- Qty one (1) DSC8000 Conventional Site Controller with AC power supply
- Qty three (3) CommandCentral AXS Consoles, each with
  - CommandCentral Hub with integrated PC.
  - Trunking operation license
  - Advanced conventional operation license
  - 160 radio resources licenses
  - OTEK Operation license
  - Enhanced IRR operation license
  - ADP + AES Encryption operation license
  - Two speakers
  - Two headset jacks
  - One footswitch
  - One microphone
- Qty four (4) APX Consolettes, operating in 7/800 MHz band
  - TDMA Operation
- Designated spares for dispatch peripherals

1.4 Space, Power and HVAC

Motorola understands that PV has allocated sufficient space and that the furniture is already in place to accommodate the new third dispatch position. Motorola also understands that the

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network and ground cabling between the adjacent equipment shelter and the new dispatch position already exists.

In order to ensure that sufficient power is available at the site, Motorola has calculated the estimated maximum power draw for the proposed equipment. Please note that this figure does not factor in additional components, which may be installed within the proposed equipment's location. Similarly, in order to provide adequate cooling for the proposed devices, the heat dissipation values of the equipment have been provided based upon the power consumption estimate. These values are included to ensure that Town's existing HVAC system is equipped to support the proposed equipment. Please note that this proposal does not include any UPS or generator equipment.

	Watts/hr	BTU/hr.
AXS Consoles (Three consoles together)	1012.5	3452.6
Backroom equipment (Four Consolettes + DSC8000)	1303.8	4448.5

1.5 Design Assumptions

1. At least one (1) three-pronged NEMA 5-15 power outlet is available within 6' of the new CommandCentral AXS OP.
2. The placement of the new proposed OP is assumed to be within a 330' Ethernet cable run to the dispatch site switch in the equipment backrooms. The Ethernet cabling between each dispatch console and Motorola LAN switches existing or will be provided and installed by The Town.
3. The DSC 8000 AC Power Supply requires access to an NEMA 5-20R outlet supported by a 20A breaker.
4. Console furniture to support the proposed console operator equipment is existing or will be provided by PV.
5. Any site/location upgrades or modifications will be performed by PV.

1.6 CommandCentral AXS Dispatch Description

1.6.1 Overview

The CommandCentral AXS Dispatch Console reduces the barriers between systems within a dispatch center, allowing access to all the mission-critical tools and applications dispatchers need in the moments that matter. This makes operation more efficient in emergency situations. Resources are accessible with an intuitive, highly configurable browser-based GUI. Dispatchers will have an expansive feature set and a mission-critical IP network for transporting information and calls throughout the system.

CommandCentral AXS improves the efficiency and operation of dispatchers in the following ways (additional fees may apply depending upon feature and hardware additions):

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- **Next Generation Dispatch Experience** – The solution responds to touch, type or click, giving dispatchers the flexibility to interact and stay connected to teams in the way that best suits them. Extensive configuration options, flexible deployment configurations and simple scalability means agencies only pay for what is needed now, with the room to adapt and grow as needs change over time.
- **Purpose-Built Dispatch Console Accessories** – Enhances the dispatch experience with accessories, such as gooseneck microphone, speakers, headset jack, and footswitch, designed and tested for industry-leading performance and reliability.

This solution also reduces operating costs and provides a smaller physical footprint in the command center without compromising on features or reliability. This combination of seamless communications, modern architecture, and advanced integration capabilities enables the CommandCentral AXS solution to scale and evolve as needs change over time.

1.6.1.1 Integration with the ASTRO® 25 Network

The proposed dispatch console seamlessly integrates into the ASTRO® 25 system for an integrated, mission-critical network. This tight union between radio infrastructure and console equipment has several operational benefits. The physical space to accommodate the proposed console is comparable to that required for a personal computer.

The console can access both trunked talkgroups and conventional radio channels over the same network. This architecture reduces overall transport costs and the need for duplicate fixed network equipment.

1.6.2 Making Consoles Easy to Operate

Motorola's proposed consoles are optimized for real-time audio, prioritizing emergency calls over other traffic, and minimizing voice queuing. Using robust error mitigation to maintain call quality even when the system is heavily loaded, the proposed console reduces communication errors that may force dispatchers or radio users to repeat their transmissions.

1.6.2.1 Next Generation Dispatch Experience

CommandCentral AXS features a highly configurable graphical user interface (GUI) that provides quick, single-view access to important information and functionalities. The browser-based GUI's versatile folders, tabs, and scalable resources allow users to organize and configure their dispatch experience and make engagement more familiar and intuitive from shift to shift. Folders and tabs can be relocated, exposed, or overlapped as needed, giving dispatchers more control of what information they see and how they interact with those resources. CommandCentral AXS also offers multiple options for routing audio to speakers and controlling volume levels.

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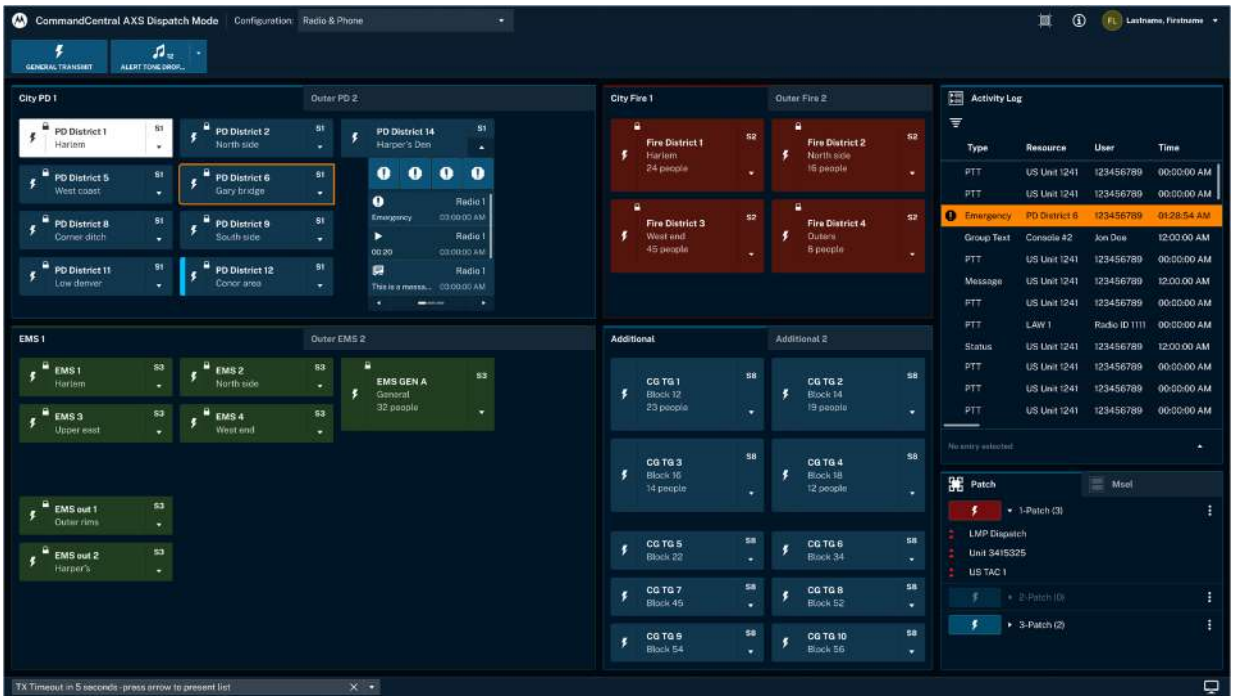


Figure 1: Next Generation Dispatch Experience

CommandCentral AXS features flexible window positioning and capabilities for quick and efficient access to services such as:

- **Activity Log** – Provides an efficient point of reference for all incoming calls into a dispatch console , showing dispatchers detailed, searchable call information (radio resource name and call time) to enable faster and more informed response.
- **Paging** – Allows users to send user configured pages on radio resources. This flexible paging feature is integrated with CommandCentral AXS for both conventional and trunked radio resources, while an external paging encoder port on the CommandCentral Hub enables third-party paging encoders to send pages on the selected radio resources.
- **Patch Capabilities** – Enables dispatchers to set up a communication path between two or more resources that are normally unable to communicate with each other, such as trunked resources and conventional resources.
- **Alert Tones** – Allows dispatchers to send one of fifteen user-configurable alert tones on selected radio resources. Fifteen default .wav files are provided with the dispatch console software, but any combination of these default files may be replaced with user configured.wav files to meet specific needs.
- **Channel Marker** – Enables dispatchers to send a periodically repeating piece of audio on radio resources to meet the specific needs.

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1.6.2.2 Cross Platform Dispatch Capabilities

This solution is designed to take full advantage of Motorola's end-to-end software suite, CommandCentral. These cross platform integrations enhance the dispatch capabilities of CommandCentral AXS.

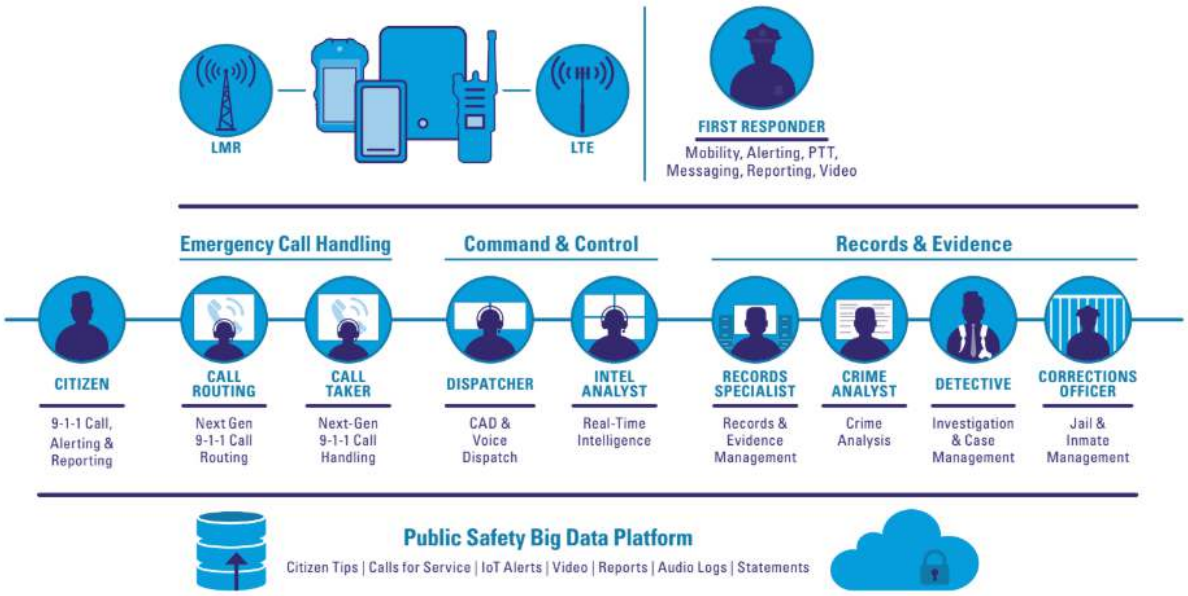


Figure 2: Motorola's End-to-End Portfolio

CommandCentral AXS is an integral part of our end-to-end portfolio, providing greater interoperability and support for current and future investments. As needs grow and change over time, this solution's flexible integration capabilities evolve to satisfy new demands. This adaptability also enables dispatchers to be effective with the integrations and capabilities they need.

1.6.2.3 Headset Sharing

CommandCentral AXS supports Headset Sharing, which enables a dispatcher to use a common headset for both radio and 911 communications and to quickly access basic 911 call taking functionality from CommandCentral AXS. This improves the dispatcher's efficiency and accuracy when they have to concentrate on the radio dispatch GUI while handling 911 calls.

1.6.2.4 Auxiliary Inputs/Outputs

The proposed console supports Global Auxiliary Inputs/Outputs (Aux I/Os) for remote status indications or remote control through dispatch positions. Global Aux I/Os are typically implemented by hardware that is independent of the dispatch positions in a system and may be accessible to multiple dispatch positions. Aux I/O Servers provide the Aux I/O feature for the consoles.

1.6.2.5 Standard Radio Transmission and Reception

A typical proposed dispatch position has a headset and two speakers. One speaker is for selected audio and the second speaker is for all remaining unselected audio. Additional speakers can be added

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to a console allowing dispatchers to configure a specific speaker for a set of designated audio sources. This simplifies multitasking between multiple audio sources and allows flexibility in the way the audio is presented to the dispatcher.

1.6.2.5.1 Receiving Calls from the Field and Other Dispatchers

The proposed console provides dispatchers with greater flexibility for how to hear calls from field radio users and other dispatchers. Each dispatcher can define his or her own audio reception profile by selecting a single audio source, whether conventional or talkgroup, to be heard on a selected speaker or headset (Single Select). The dispatcher can also define groups of radio resources that can all be heard on a selected speaker or headset (Multi-Select).

1.6.2.5.2 Initiating Calls to the Field and Other Dispatchers

The dispatcher has several different ways of initiating a call. In most circumstances, a General Transmit is appropriate. With the General Transmit, the dispatcher selects a resource on the console and activates the transmission through a footswitch, headset transmit button, or a microphone transmit button. If the dispatcher needs to quickly transmit on a resource that is not selected, the dispatcher uses the Instant Transmit function.

A safety switch is available, which prevents accidental activation of functions that may cause negative consequences. The safety switch can be used with Aux I/Os and preprogrammed pages, as well as Instant Transmit switches.

1.6.2.5.3 Audio Communication to the Field and Other Dispatchers

The dispatcher can transmit audio in different ways. They can make calls to all users listening to a specific conventional radio resource or a specific trunking talkgroup. When multiple resources are required, the dispatcher can select additional talkgroups and/or conventional channels, as needed using the Multi-Select feature.

The proposed console also enables dispatchers to make private calls to individual field radio users or dispatchers. Once a private call is established, it can be patched in with another resource at the dispatcher’s discretion.

1.6.2.5.4 Controlling Console Audio

The proposed console offers dispatchers several different ways of controlling or muting the audio on their consoles, such as the following:

- Audio volume can be changed for any specific resource.
- All non-selected resources on the console can be muted for 30 seconds (All Mute) or unmuted, if already muted.
- A dispatcher can transmit on a resource while receiving audio from the same resource or other resources.
- A dispatch position can be configured to automatically mute the other dispatch audio on a shared resource to prevent acoustic feedback when a co-located dispatch position transmits.
- RF Cross Mute automatically mutes the receive audio from a specified channel when the dispatcher transmits on another specified channel to prevent acoustic feedback.

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1.6.2.5.5 Controlling Network Audio

Dispatchers can control audio on the ASTRO® 25 network. The dispatcher can enable or disable radio users to compartmentalize traffic, reduce interruptions, and maintain communications between dispatch and the field. When this function is enabled or disabled, all dispatch consoles with this resource assigned are updated with the current status of the feature. This feature can be controlled from any dispatch position.

1.6.2.6 Emergency Radio Transmission and Reception

As part of a mission-critical communications network, the proposed dispatch console facilitates immediate prioritization and resolution of emergency communications between dispatchers and first responders in the field. This enables dispatchers and first responders to focus on their mission and not their equipment, especially during critical situations.

1.6.2.6.1 Receiving an Emergency Call

When a user in the field or another dispatcher initiates an emergency call, the console emits both visual and audible indications (Emergency Alarm). The audible indication alerts the dispatcher that an emergency is underway; the visual indication directs the dispatcher's attention to the specific resource making the emergency call. The dispatcher can immediately reserve a voice channel for the duration of the emergency.

1.6.2.6.2 Responding to an Emergency Call

A dispatcher can bypass the standard console interface to auto-open a quick list, which contains specific controls for recognizing an emergency call, initiating an emergency call, and ending an emergency call (Auto-Open of Quick List). The dispatcher can then recognize the emergency call, which ends the audible emergency indication and notifies all dispatchers that the emergency is being addressed (Emergency Recognize).

The audible emergency indication may also be muted by a dispatcher without recognizing the emergency alarm (Mute Tones at a Single Op). This can be used in a situation where one agency is monitoring a channel that belongs to another agency. That channel can be configured to not generate audible and/or visual emergency indications.

1.6.2.6.3 Ending an Emergency Call

When an emergency is over, the dispatcher can end the Emergency Alarm. The visual indication on the dispatch position GUI is removed, and the console informs the other dispatch positions that the emergency is over (Emergency End/ Knockdown). The emergency mode remains active on the initiating radio unit until it is ended (reset) by the radio user.

1.6.2.7 Radio Patch Control

The dispatcher can patch communication between trunked and/or conventional radios that are normally unable to communicate with each other due to different features, programming, or even different frequency bands. A patch group is a group of linked resources that can both receive messages from a console and transmit to all other members of the patch group.

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1.6.2.7.1 Setting up a Standard Patch

Patches are supported between trunked resources and/or conventional resources. After the patch is created, the dispatch position transmits all audio on one resource to all other resources in the patch group. In a patch between trunked resources, patched radio users with displays see the ID or alias of the other patched radio(s), as opposed to that of the console. This minimizes confusion and the need for the dispatcher to intervene in the call. Patches are automatically reestablished, if interrupted, so the dispatcher can concentrate on continuing operations.

1.6.2.7.2 Predefined Patches

Patches can be predefined and automatically reinitiated each time a dispatch position computer is restarted (Patch Auto-Start).

1.6.2.8 Call Management and Control

The dispatcher can use the following functionality to manage and control audio for different types of calls between the dispatch position and radio users or other dispatchers.

1.6.2.8.1 Automatic Prioritization of Calls

Calls on the dispatch position are prioritized through a transmission hierarchy. Calls from primary supervisors take priority over those from secondary supervisors, which in turn take priority over non-supervisors. Instant Transmit or All-Points Bulletin (APB) transmissions, regardless of whether they are from a supervisor, take priority over general or patch transmissions.

Multiple dispatchers can be designated as primary supervisors on the same system, which is useful when multiple agencies share one system. With the Network Manager Client installed, supervisors can disable and enable dispatch console functionality as needed.

1.6.2.8.2 Manual Prioritization of Calls

System Access Priority Select allows a dispatcher to prioritize trunked resources on the system as either normal or tactical. A dispatcher can change the priority of a trunked resource to tactical to give the resource a better chance of gaining communication access on a busy system. Only emergency calls have a higher priority than tactical.

When the System Access Priority Select status of a resource is changed, it is updated at all dispatch consoles in the systems that are monitoring that trunked resource.

1.6.2.8.3 Using the Multi-Select Feature

The Multi-Select feature allows a dispatch position to define groups of selected radio resources. When a Multi-Select group is opened, all of the resources in the group are simultaneously selected. Resources can be added or removed from a Multi-Select group while the group is open. The dispatcher can transmit on several resources simultaneously or can listen to multiple resources simultaneously in their headset or select speakers.

1.6.2.8.4 Standard Call Indications

The dispatch position indicates the availability of any given resource, regardless of whether the resource is involved in a transmission. An inbound call indication provides the dispatcher with a visual

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cue of audio activity on a radio resource and allows a dispatcher to see at a glance what the status of a resource is at any moment.

1.6.2.8.5 Call Alerting

A dispatcher can use Call Alert to page an unattended radio or dispatch position through a series of beeps and an indication of the sender's ID. When available, the radio user or dispatcher sees the unit ID of the calling dispatch console or radio ID and is able to return the call.

Additionally, a Call Alert can trigger an activity. For instance, a Call Alert may cause a vehicle's horn to sound and its lights to flash. The dispatcher can even send a Call Alert to a user who is involved in voice and data communications over the network.

1.6.2.9 Enhanced Integrated Instant Recall Recorder (IRR)

The Enhanced IRR is seamlessly integrated with the dispatch position's software, allowing audio and call data from any radio or telephony resource to be recorded and easily played back. Call data includes PTT IDs, name of resource, start time and date, and stop time and date. Two analog inputs are available for use with recording audio from external devices.

1.6.3 Protecting Consoles and Communications

The console enables end-to-end encryption from the dispatcher to the ASTRO® 25 network, so that communications will not be undermined by unencrypted transmissions. Each dispatcher is able to fully participate in secure communications while being confident that sensitive, vital information is not heard by unauthorized individuals.

1.6.3.1 Secure Access to the Console

To use the dispatch position, a dispatcher must enter a valid radio system user account name and password. The dispatch position validates that information with the radio system's network manager and allows the dispatcher to access only the resources for which the user has access rights. This also applies to third-party applications that use the dispatch console's API.

1.6.3.2 Secure Communications at the Console

The console encrypts and decrypts radio voice messages. Thus, radio voice messages are encrypted from end-to- end between the radio user to the dispatch position. The dispatcher can choose whether to encrypt their transmissions on a particular trunked resource. Dispatchers can interface with agencies that have different encryption configurations without any manual intervention or delay.

The AXS Console supports multiple encryption algorithms (AES, DES-OFB, and/or ADP) and multiple secure keys.

The dispatchers may talk and listen on radio resources which have different encryption algorithms without any manual intervention or delay.

The key material for performing audio encryption and decryption is stored locally on the console. This key material is also associated with a Common Key Reference (CKR), so that the appropriate key can be selected for a given talkgroup or a special call type.

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1.6.3.3 Key Management via Key Variable Loader (KVL)

Key management via a key variable loader (KVL) feature provides the ability to manage all the keys for an AXS Console or archiving interface server using only a KVL.

1.6.4 Incorporating Console Configuration and Management

The proposed console system is configured and managed by the same configuration manager, fault manager, and performance reporting applications as the radio system. The user can define exactly which resources are available and how they are presented to the dispatcher. This provides administrators with a single point for configuring and managing the entire ASTRO® 25 system. Changes are automatically distributed throughout the system.

This centralized approach saves valuable time and effort for system administrators and technicians and reduces the errors that can occur when radio IDs and other data are entered at multiple locations. In addition, call traffic and performance reports for each dispatch position can be generated from the system's network manager, enabling administrators to quickly and easily ensure optimal effectiveness and efficiency.

1.6.5 Dispatch Console Solution Components

The proposed components are connected together and to the rest of the ASTRO® 25 system on an IP network through console site routers and switches. The console functions as an integrated component of the total radio system and fully participates in system-level features, such as end-to-end encryption.

The console connects directly to the radio system's IP transport network. Audio processing, encryption, and switching intelligence for dispatch are performed within each software- based dispatch position without additional centralized electronics.

Since the network is IP-based, the system interfaces and components can be distributed physically throughout the network. Some of the available console components are identified below.

1.6.5.1 CommandCentral AXS Dispatch Console Operator Position

The dispatch position supports multiple peripheral accessories, including a USB microphone, USB headset, and USB footswitch. The following list describes the components included in the proposed configuration.

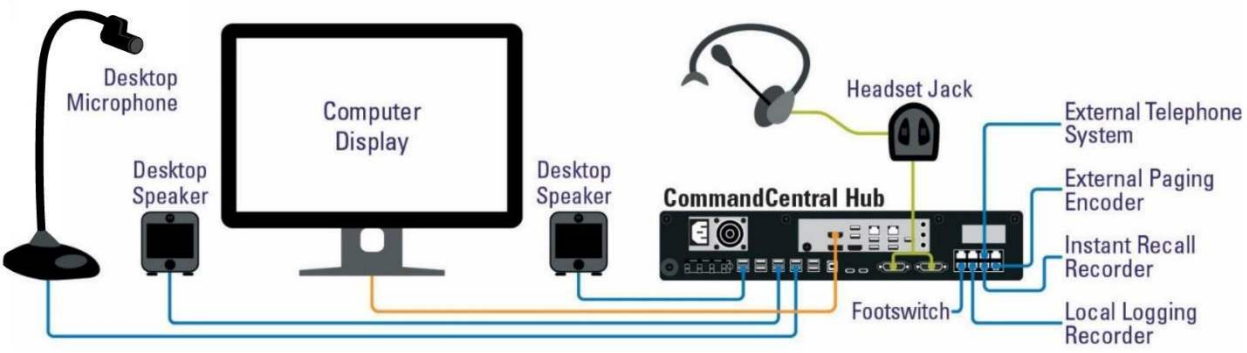


Figure 3: CommandCentral AXS Dispatch Console Accessories Example

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1.6.5.1.1 Computer Display

A variety of touch and non-touch displays are available.

1.6.5.1.2 B1956 CommandCentral Hub (CC Hub)

The CommandCentral Hub (CC Hub) is the platform on which the CommandCentral AXS Dispatch Console operates. The CC Hub contains a number of analog inputs and outputs for connecting various peripheral devices as well as a workstation class computer motherboard.

The PC that is internal to the CC Hub will be programmed with a Microsoft Windows based operating system (OS) image developed for the dispatch application.

1.6.5.1.3 Desktop Speakers

Anywhere from 2 to 8 audio speakers are supported with each dispatch position and can be configured to transmit audio from a specific talkgroup or set of talkgroups. Each speaker is a self-contained unit, with individual volume controls, and can be placed on a desktop or mounted on a rack or computer display.

1.6.5.1.4 Headset Jack

The dispatch position supports up to two headset jacks, both push-to-talk (PTT) and non-PTT-enabled, for simultaneous use by the dispatcher and a supervisor. The headset jack contains two volume controls for the separate adjustment of received radio and telephone audio.

1.6.5.1.5 Headset

The proposed headset consists of two elements. The headset base includes an audio amplifier, a Push-to-Talk switch, and a long cord that connects to the dispatch position. The headset top consists of the earpiece and microphone as well as a short cable that connects to the headset base.

1.6.5.1.6 Gooseneck Microphone

The microphone controls the dispatch position's general transmit and monitor features through two buttons on its base. The microphone can be fastened down or left loose. It can be used alone or in conjunction with a headset.

1.6.5.1.7 Footswitch

Each dispatch position includes a dual pedal footswitch that controls general transmit and monitor functions.

1.6.5.1.8 Telephone/Headset Interface Port

The telephone/headset port provides a connection for an external telephone to the dispatch position. This allows the operator to use a single headset to communicate on both the radio system and an external telephone system.

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1.6.5.1.9 External Paging Encoder Port

The external paging encoder port provides a connection for an optional external tone paging encoder to provide tone paging services via the dispatch console. Analog paging tones generated by the encoder are transmitted by the dispatch console on the selected trunked and/or conventional radio resource(s).

1.6.5.1.10 Local Logging Recorder Port

As an alternative or supplemental approach to an audio logging subsystem, the analog output port on the CommandCentral Hub allows an optionally available external logging recorder to be connected to a dispatch console. Long-term audio recording is used to record a portion of the inbound and outbound audio present on a specific dispatch position. These recordings are typically archived for long-term storage, and provide a historical record of the radio communications made at a given dispatch position.

The analog output port can be configured to log any combination of these audio sources, such as:

- Audio received from a currently selected radio.
- Microphone audio being transmitted by this dispatcher to the currently selected or unselected radio resources.
- Any tones generated by the dispatch position that appear in its speakers (trunking tones, emergency tones, etc.) or tones generated by an external paging encoder.

1.6.5.1.11 Private Aux I/O Port

The dispatch console supports four Private Aux I/O relays located on the CommandCentral Hub of the dispatch position. Each relay can be configured to support any one of the five functions or it can be configured to be unused.

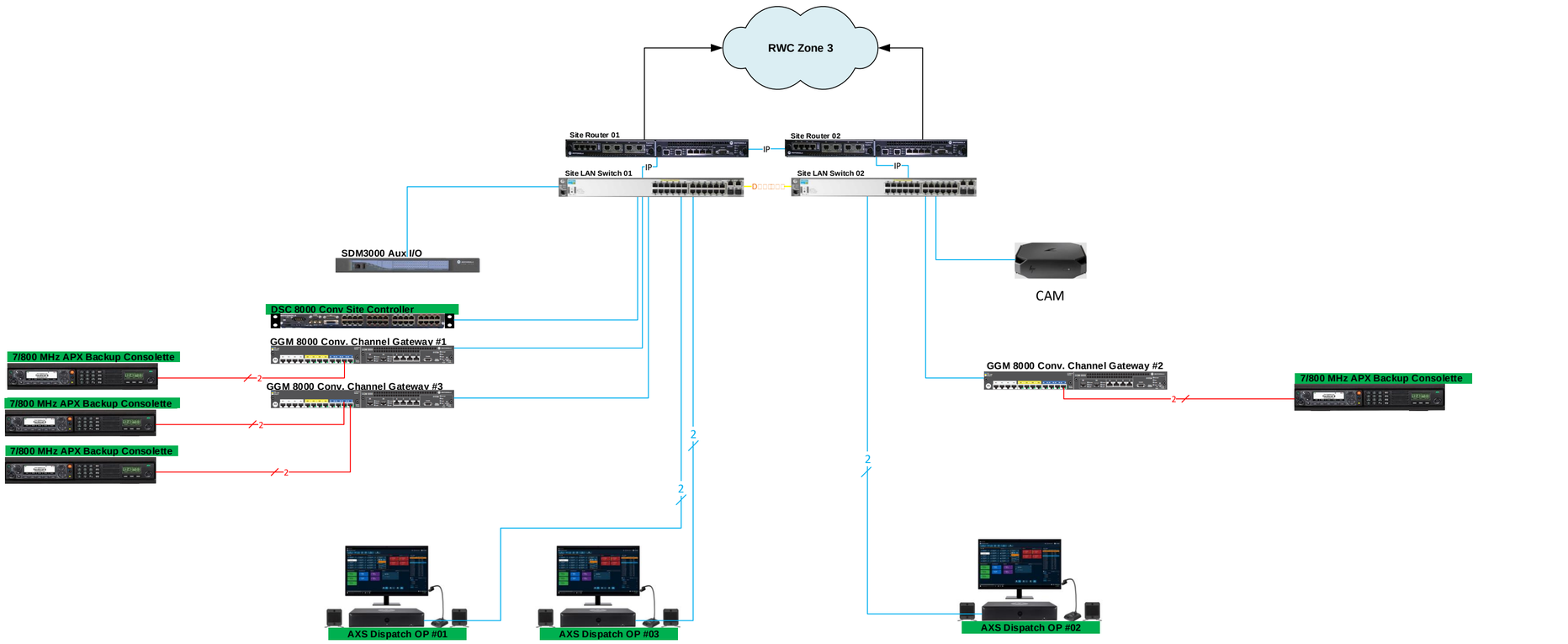
- Call on Selected Channel
- Op PTT
- Emergency Beacon
- Activate Private Relay when Public Aux I/O is Active
- Select Phone Off Hook Relay

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Section 2

System Diagram

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Notes:

- Three (3) consoles will be at the main dispatch room
- Each dispatch console will have redundant Ethernet connection to LAN Switch #01 and #02
- Existing Antenna Systems will be reused

Paradise Valley PD AXS Upgrade

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Section 3

Equipment List

ITEM#	CATEGORY	QTY	NOMENCLATURE	DESCRIPTION
1-	AXS_LICENSE	3	HKVN4729A	AXS DISPATCH CONSOLE LICENSE
2-	AXS_LICENSE	3	HKVN4730A	LICENSE,AXS TRUNKING SERVICES LICENSE
3-	AXS_LICENSE	3	HKVN4731A	LICENSE,AXS ADVANCED CONVENTIONAL SERVICES LICENSE
4-	AXS_LICENSE	3	HKVN4732A	LICENSE,AXS SECURE VOICE SERVICES LICENSE
5-	AXS_LICENSE	3	HKVN4733A	LICENSE,AXS INTEGRATED IRR
6-	AXS_LICENSE	3	HKVN4736A	LICENSE,AXS AMBE+2 VOCODER ROYALTY AND LICENSE
7-	AXS_LICENSE	3	HKVN4739A	LICENSE,AXS SECURE OTEK SERVICES LICENSE
8-	AXS_LICENSE	3	HKVN4737A	LICENSE,AXS STANDARD LEVEL RADIO RESOURCE CAPACITY LICENSE
9-	AXS_LICENSE	1	B1957A	AXS SOFTWARE DVD
10-	AXS_LICENSE	3	T8742A	MCAFEE FOR WINDOWS CLIENT, A2019.2 +PLUS
11-	AXS_LICENSE	3	T8806A	WINDOWS SUPP. TRANSPARENT, A2022.1
12-	AXS CONSOLE	3	B1956A	COMMANDCENTRAL HUB, W/CLIENT PC
12a	AXS CONSOLE	3	CA03850AA	ADD: WINDOWS OS FOR MCC7500E CONSOLE
12b	AXS CONSOLE	3	CA03553AA	ADD: AC LINE CORD, NORTH AMERICA
12c	AXS CONSOLE	3	CA03547AA	ADD: BRACKET, MOUNTING 2RU
12d	AXS CONSOLE	3	CA03548AA	ADD: TWO CABLES, POWER 24VDC
12e	AXS CONSOLE	3	CA03572AA	ADD: CABLE RETENTION BRACKET
13-	AXS CONSOLE	6	B1913A	MCC SERIES HEADSET JACK
14-	AXS CONSOLE	3	B1951B	MICROPHONE, DESKTOP, USB
14a	AXS CONSOLE	3	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M
15-	AXS CONSOLE	6	B1952B	SPEAKER, DESKTOP, USB
15a	AXS CONSOLE	6	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M

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ITEM#	CATEGORY	QTY	NOMENCLATURE	DESCRIPTION
16-	AXS CONSOLE	3	RLN6099A	HDST MODULE BASE W/PTT, 25 FT CBL
17-	AXS CONSOLE	3	L3226A	CERTIFIED OPTICAL WHEEL MOUSE FOR RSD SERVERS AND WORKSTATIONS
18-	AXS CONSOLE	3	L3225A	CERTIFIED KEYBOARD FOR RSD SERVERS AND WORKSTATIONS
19-	AXS CONSOLE	3	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH
20-	DSC8000	1	T8810A	STANDALONE DSC 8000 CONTROLLER
20a	DSC8000	1	CA03678AA	ADD: ASTRO SYSTEM RELEASE 2021.1
20b	DSC8000	1	CA03801AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER
20c	DSC8000	1	UA00787AA	ADD: DSC 8000 CONVENTIONAL SITE CONTROLLER SW
20d	DSC8000	1	CA03832AA	ADD: NM/DISPATCH SITE
21-	DSC8000	1	T8811A	DSC AC POWER SUPPLY CHASSIS
21a	DSC8000	1	CA03800AA	ADD: SINGLE POWER SUPPLY FOR DSC
21b	DSC8000	1	CA03533AA	ADD: DSC AC POWER CABLE - US, 12 FT
22-	SPARES	1	B1913A	MCC SERIES HEADSET JACK
23-	SPARES	1	B1951B	MICROPHONE, DESKTOP, USB
23a	SPARES	1	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M
24-	SPARES	1	B1952B	SPEAKER, DESKTOP, USB
24a	SPARES	1	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M
25-	SPARES	1	RLN6099A	HDST MODULE BASE W/PTT, 25 FT CBL
26-	SPARES	1	DDN1396A	USB DUAL ACTION FOOTSWITCH W/INPUT JAKC KINESIS PART # FS22AJ-JSB
27-	CONSOLETTE	4	L37TSS9PW1AN	MOBILE RADIO ALL BAND CONSOLETTE
27a	CONSOLETTE	4	GA00318AB	ADD: 5Y ESSENTIAL SERVICE
27b	CONSOLETTE	4	GA00580AA	ADD: TDMA OPERATION
27c	CONSOLETTE	4	CA01598AB	ADD: AC LINE CORD US
27d	CONSOLETTE	4	G51AT	SOFTWARE LICENSE ENH:SMARTZONE

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ITEM#	CATEGORY	QTY	NOMENCLATURE	DESCRIPTION
27e	CONSOLETTE	4	GA05508AA	DEL: DELETE VHF BAND
27f	CONSOLETTE	4	GA05509AA	DEL: DELETE UHF BAND
27g	CONSOLETTE	4	L999AG	ADD: FULL FP W/E5/KEYPAD/CLOCK/VU
27h	CONSOLETTE	4	G298AS	SOFTWARE LICENSE ENH: ASTRO 25 OTAR W/ MULTIKEY
27i	CONSOLETTE	4	G843AH	ADD: AES ENCRYPTION AND ADP
27j	CONSOLETTE	4	G806BL	SOFTWARE LICENSE ENH: ASTRO DIGITAL CAI OP APX
27k	CONSOLETTE	4	QA09113AB	ADD: BASELINE RELEASE SW
27l	CONSOLETTE	4	W382AM	ADD: CONTROL STATION DESK GCAI MIC
27m	CONSOLETTE	4	G361AH	SOFTWARE LICENSE ENH: P25 TRUNKING SOFTWARE APX
27n	CONSOLETTE	4	GA00469AA	ENH:EXTENDED DISPATCH APX CONSOLETT
28-	CONSOLETTE	4	HKN6233C	MOBILE RADIO APX CONSOLETTE RACK MOUNT KIT
29-	CONSOLETTE	4	HKN6184C	MOBILE RADIO USB PROGRAMMING CABLE

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Section 4

Statement of Work

4.1 Task Overview

Motorola will install and configure the proposed equipment summarized in the attached System Description and equipment list. The following table describes the project tasks and responsibilities involved throughout the lifecycle of the project.

Prior to starting any equipment installations, Motorola and PV shall conduct a site readiness review to examine existing work, or work performed by others, that is required to support the proposed design. Implementation services included as part of this proposal are based on a single mobilization and will occur between normal business hours, Monday through Friday. Should PV require services to occur during non-business hours, additional costs may apply and will be handled via the change order process.

Project Tasks and Responsibilities

Tasks	Motorola	PV
Project Initiation		
Execute contract and distribute contract documents.	X	X
Assign a Project Manager as a single point of contact.	X	X
Schedule kickoff meeting.	X	
Project Administration	X	X
Ensure that project team members attend all meetings relevant to their role on the project.	X	X
Hold regular project status meetings as agreed upon; record and distribute meeting minutes.	X	
Maintain responsibility for third-party services contracted by Motorola Solutions.	X	
Maintain responsibility for Customer's vendors and issues outside of Motorola Solutions' control.		X
Complete assigned project tasks according to the project schedule.	X	X
Submit project milestone completion document	X	
Upon completion of tasks, approve project milestone completion documents.		X
Project Kickoff / Design Review		
Introduce team, review roles, and decision authority.	X	X
Review Customer's operational requirements, project scope and objectives.	X	X
Review the Design Documents and Statement of Work.	X	X
Develop or update mutually agreed upon detailed project schedule (Performance Schedule).	X	X

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Tasks	Motorola	PV
Provide heat load and power requirements for new equipment.	X	
Provide backhaul performance specifications and demarcation points.	X	
Review safety, security, and site access procedure.	X	X
Update design documents, including System Description, Statement of Work, Project Schedule, and Acceptance Test Plan, based on Design Review agreements	X	
Execute Change Order in accordance with all material changes to the Contract resulting from the Design Review.	X	X
Equipment Storage		
Provide secure warehousing.	X	X
Coordinate receipt of and inventory solution equipment with designated contact.	X	X
Site Access		
Provide site owners/managers with written notice to provide entry to sites identified in the project design documentation.		X
Site Preparation		
Provide adequate HVAC, grounding, lighting, cable routing, and surge protection based upon Motorola Solutions' Standards and Guidelines for Communication Sites (R56).		X
Ensure that electrical service will accommodate installation of system equipment, AC outlets, circuit breakers, surge protectors, and cabling.		X
Supply interior building cable trays, raceways, conduits, and wire supports.		X
Provide backhaul connectivity as required.		X
Provide emergency backed 120VAC power receptacle within 6 feet of each equipment location.		X
Installation		
Deliver solution equipment to installation location.	X	
Install all proposed fixed equipment as outlined in the System Description and equipment list based upon the agreed-upon floor plans, connecting audio, control cables to connect equipment to the power panels or receptacles, and audio/control line connection points in accordance with agreed upon installation and cutover plan.	X	
Install network cabling between the network switch and each console workstation terminated at the Ethernet port at network switch and wall jacks at each dispatch console.		X
Provide console furniture to support console workstation equipment in new dispatch location including grounding to the equipment room in accordance with R56 standards.		X
Bond installed equipment to the customer provided site ground system.	X	
Label installed equipment, racks, and cables.	X	

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Tasks	Motorola	PV
Perform audit of installed equipment to ensure compliance with requirements and R56 installation standards.	X	
Install other equipment and subsystems not specifically listed in Motorola's equipment list and design documents.		X
Interface and Configuration		
Program and configure installed equipment in accordance with design documents.	X	
Configure ASTRO 25 system to support the new dispatch site.	X	
Integrate the dispatch site into the system to ensure proper operation.	X	
System Optimization and Testing		
Verify that all audio and data levels are at factory specified settings.	X	
Verify communication interfaces between sites and devices for proper operation.	X	
Ensure that functionality meets manufacturers' specifications and complies with the final configuration established during design review.	X	
Functional Acceptance Testing		
Verify the operational functionality and features of the solution supplied by Motorola Solutions, as contracted.	X	
Witness the functional testing.		X
Document all issues that arise during the acceptance tests.	X	
If any major task for the system as contractually described fails during the Customer acceptance testing or beneficial use, repeat that particular task after Motorola determines that corrective action has been taken.	X	
Document the results of the acceptance tests and present to Customer for review.	X	
Review and approve final acceptance test results.		X
Resolve any minor task failures before Final System Acceptance.	X	
Training		
Finalize schedule for training coursework.	X	
Provide training facility.		X
Ensure that the training participants fulfill course prerequisites.		X
Conduct the training classes outlined in the Training Plan.	X	
Attend proposed training classes.		X
Transition to Service		
Review the items necessary for transitioning the project to service.	X	
Provide a Customer Support Plan detailing the warranty support associated with the contract equipment.	X	
Finalize Documentation		
Provide manufacturer's installation material, part list and other related material to Customer upon project completion.	X	

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Tasks	Motorola	PV
Provide an electronic as-built system manual on CD or other Customer preferred electronic media. The documentation will include the following: Site Block Diagrams Site Equipment Rack Configurations ATP Test Checklists Functional Acceptance Test Plan Test Sheets and Results Equipment Inventory List Documentation will be delivered in Adobe PDF format on CD/DVD or USB.	X	
Receive and approve documentation.		X
Training (Not Included)		
Final Acceptance		
Sign the Final Project Acceptance Certificate.	X	X

4.2 Change Order Process

Either Party may request changes within the general scope of this Agreement. If a requested change causes an increase or decrease in the cost or time required to perform this Agreement, the Parties will agree to an equitable adjustment of the Contract Price, Performance Schedule, or both, and will reflect the adjustment in a change order. Neither Party is obligated to perform requested changes unless both Parties execute a written change order.

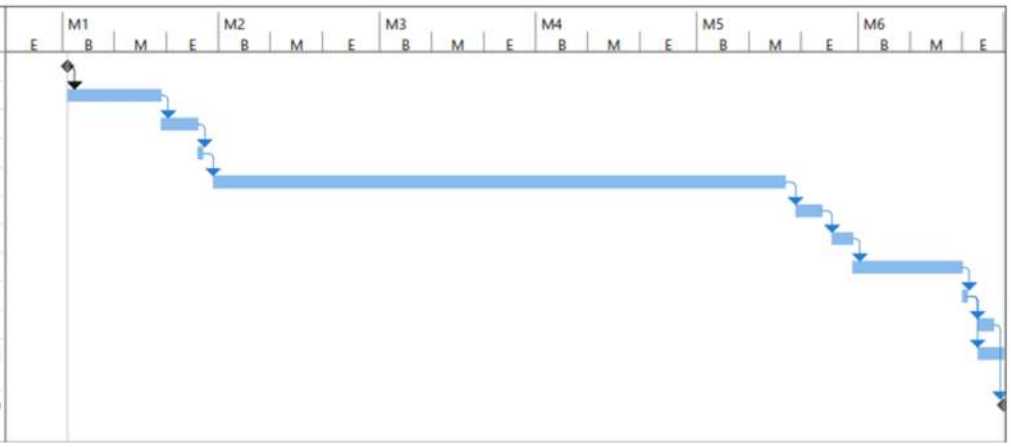
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Section 5

Project Schedule

The estimated time for completion of the project is 6 to 8 months from receipt of a purchase order subject to equipment lead times at the time of order. A preliminary summary schedule is included below. A mutually agreed upon detailed project schedule will be developed by the Motorola's Project Manager upon contract award during the Contract Design Review (CDR) phase of the project.

ID	Task Name
1	Contract_P.O. Signed
2	Contract Administration
3	Kickoff & Design Review
4	Order Processing
5	Manufacturing
6	Ship to Field
7	Receive and Inventory
8	Installation
9	Audit and Acceptance Testing
10	Training
11	Finalize _ Final Documentation
12	Final Acceptance_Transition to Service



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Section 6

Training Plan

Effective training will ensure successful implementation and use of the proposed solution by PV. A detailed training plan has been included below, comprised of targeted coursework developed and delivered by our expert instructors. This plan will provide PV's personnel with a comprehensive understanding of the proposed solution. During the Design Review, Motorola will collaborate with the PV to customize a final training plan focused on the skills necessary to operate and configure the solution effectively and efficiently.

Motorola encourages a maximum of two students per training position to maximize hands on experience and retention.

6.1.1 Console Operator and Supervisor Training Plan

Course Title	Target Audience	Sessions	Duration	Location	Date	Participants
Command Central AXS Dispatch Console Supervisor 2 training consoles Ratio: 2 per training console Course Code: AST1071 (Instructor-led)	Supervisors	1 (8-hour session)	1 day	Paradise Valley, AZ	Prior to cutover	4
Command Central AXS Dispatch Console Operator 2 training consoles Ratio: 2 per training console Course Code: AST1072 (Instructor-led)	Dispatchers	3 (4-hour sessions)	1.5 days	Paradise Valley, AZ	Prior to cutover	Up to 12 (4 students per session)

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6.1.2 Course Descriptions

6.1.2.1 CommandCentral AXS Dispatch Console Administrator

Course Synopsis and Objectives:	This course provides students with an introduction to the Command Central AXS dispatch console, its basic operation and tailored job aids which will be available for assistance in administration. Through facilitation and hands-on activities, the user learns how to perform common tasks associated with the console administration. By the end of this course, the student will be able to: ▪ Operate, administer and configure a CommandCentral AXS Dispatch position for daily use within an organization ▪ Identify the hardware components that make up the dispatcher position ▪ Describe the Purpose of the CommandCentral AXS Dispatch application ▪ Identify elements that make up the menu and toolbar structure within the Dispatch software ▪ Perform dispatcher operations: o Communicating with radios: transmitting and receiving calls within group and individual communications categories o Perform advanced signaling features i.e. Quicklists, Emergency call and alarms, Ambience Listening calls o Perform basic procedures within screen configurations i.e. expanding and compressing resources, adjusting volume o Perform basic procedures within resource groups i.e. multiselect or patch group, APB and patch transmit
Delivery Method:	ILT – Instructor-led training
Duration:	8 hours
Participants:	Dispatch Console Administrators
Class Size:	Based on number of Training Consoles available (2 students per Console)
Prerequisite:	None
Curriculum:	Course Modules: ▪ Course Introduction ▪ CommandCentral AXS Console Overview ▪ CommandCentral AXS Software Administrator Reference User Guide ▪ Course Summary ▪ Final Assessment

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6.1.2.2 CommandCentral AXS Dispatch Console Operator

Course Synopsis and Objectives:	This course provides students with an introduction to the Command Central AXS dispatch console, its basic operation and tailored job aids which will be available for assistance in operation. Through facilitation and hands-on activities, the user learns how to perform common tasks associated with the console operation. By the end of this course, the student will be able to: ▪ Operate and configure a CommandCentral AXS Dispatch position for daily operational use within an organization ▪ Identify the hardware components that make up the dispatcher position ▪ Describe the Purpose of the CommandCentral AXS Dispatch application ▪ Identify elements that make up the menu and toolbar structure within the Dispatch software ▪ Perform dispatcher operations: o Communicating with radios: transmitting and receiving calls within group and individual communications categories o Perform advanced signaling features i.e. Quicklists, Emergency call and alarms, Ambience Listening calls o Perform basic procedures within screen configurations i.e. expanding and compressing resources, adjusting volume o Perform basic procedures within resource groups i.e. multiselect or patch group, APB and patch transmit
Delivery Method:	ILT – Instructor-led training
Duration:	8 hours
Participants:	Dispatch Console Operators
Class Size:	Based on number of Training Consoles available (2 students per Console)
Prerequisite:	None
Curriculum:	Course Modules: ▪ Course Introduction ▪ CommandCentral AXS Console Overview ▪ CommandCentral AXS Software Operator Reference User Guide ▪ Course Summary ▪ Final Assessment

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Section 7

Acceptance Test Plan

System Acceptance of the proposed solution will occur upon successful completion of a Functional Acceptance Test Plan (FATP), which will test the features, functions, and failure modes for the installed equipment in order to verify that the solution operates according to its design. A detailed FATP will be developed and finalized during the Design Review.

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Section 8

Warranty and Support Plan

Motorola will provide warranty services per our standard warranty terms and conditions as outlined within the terms and conditions of Arizona State Contract # CTR046830. In addition to the warranty services, Motorola Solutions will provide during the Warranty Period Essential Plus services that are described generally below. A full description and statement of work describing the services that will be provided are available upon request.

8.1 Technical Support Service

Motorola Technical Support service provides an additional layer of support through centralized, telephone consultation for issues that require a high level of communications network expertise and troubleshooting capabilities. Technical Support is delivered by the System Support Center (SSC). The SSC is staffed with trained, skilled technologists specializing in the diagnosis and swift resolution of network performance issues. These technologists have access to a solutions database as well as in house test labs and development engineers. Technical Support cases are continuously monitored against stringent inbound call management and case management standards to ensure rapid and consistent issue resolution. Technical Support service translates into measurable, customer-specific metrics for assured network performance and system availability.

8.2 Dispatch Service

Motorola's Dispatch Service ensures that trained and qualified technicians are dispatched to diagnose and restore your communications network. Following proven response and restoration processes, the local authorized service center in your area is contacted and a qualified technician is sent to your site. An automated escalation and case management process is followed to ensure that technician site arrival and system restoration comply with contracted response and restore times. Once the issue has been resolved, the System Support Center verifies resolution and with your approval, closes the case. Activity records are also available to provide a comprehensive history of site performance, issues, and resolution.

8.3 On-Site Infrastructure Response

Motorola On-Site Infrastructure Response provides local, trained and qualified technicians who arrive at your location to diagnose and restore your communications network. Following proven response and restore processes, Motorola Dispatch contacts the local authorized service center in your area and dispatches a qualified technician to your site. An automated escalation and case management process ensures that technician site arrival and system restoration comply with contracted response times. The field technician restores the system by performing first level troubleshooting on site. If the technician is unable to resolve the issue, the case is escalated to the System Support Center or product engineering teams as needed.

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8.4 Infrastructure Repair

Infrastructure Repair service provides for the repair of all Motorola-manufactured equipment, as well as equipment from third-party infrastructure vendors. All repair management is handled through a central location eliminating your need to send equipment to multiple locations.

Comprehensive test labs replicate your network in order to reproduce and analyze the issue. State-of-the-art, industry-standard repair tools enable our technicians to troubleshoot, analyze, test, and repair your equipment. Our ISO9001 and TL9000-certified processes and methodologies ensure that your equipment is quickly returned maintaining the highest quality standards.

With Advanced Replacement, Motorola will exchange malfunctioning components and equipment with advanced replacement units or Field Replacement Units (FRUs) as they are available in the Repair Depot's inventory. Malfunctioning equipment will be evaluated and repaired by the infrastructure repair depot and returned to the Repair Depot's FRU inventory upon repair completion. If customers prefer to maintain their existing FRU inventory, a "loaner" FRU can be requested while a unit is being repaired.

8.5 Security Management Operations

The proposed Remote Security Patch Installation Service will provide you with pre-tested security updates, pre-tested and remotely installed by Motorola on your system. When appropriate, Motorola will make these updates available to outside vendors in order to enable them to test each patch, and will incorporate the results of those third-party tests into the updates before installation on your network. Once an update is fully tested and ready for deployment in your system, Motorola will remotely install it onto the system, and notify you that the patch has been successfully installed. If there are any recommended configuration changes, warnings, or workarounds, Motorola will provide detailed documentation along with the updates on the website.

8.6 Network Preventative Maintenance

Network Preventative Maintenance provides an operational test and alignment on your infrastructure or fixed network equipment to ensure that it meets original manufacturer's specifications. Trained technicians:

- Physically inspect equipment.
- Remove dust and foreign substances.
- Clean filters.
- Measure, record, align and adjust equipment to meet original manufacturer's specifications.

This service is performed based on a schedule agreed upon between you and Motorola. Network Preventative Maintenance proactively detects issues that may result in system malfunctions and operational interruptions.

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8.7 Optional Post Warranty Support

Three additional years of Essential Plus Services as described above are included in the Pricing Summary. The pricing is based on current rates based and can be repriced at a later date upon request.

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Section 9

Pricing Summary

Description	Price
Equipment Total	$286,951.97
AZ State Contract Discount	($59,006.31)
System Discount (for signed P.O. by September 26, 2025)	($50,371.01)
Systems Integration and Warranty Support Services	$157,366.13
SUBTOTAL (Before Tax)	**$334,940.78**
Estimated Tax (on equipment only at 8.8%)	$20,059.22
TOTAL (Including Tax)	**$355,000.00**

Due to significant market and tariff volatility, as well as fluctuations in the cost of energy and raw materials including, but not limited to, steel, copper, finished wood, and concrete, Motorola Solutions reserves the right to equitably adjust the contract price, completion schedule, and/or contract requirements. Additionally, Motorola Solutions reserves the right to apply a fuel surcharge to quoted freight rates based on the prevailing diesel cost at the time of shipment.

Except for a payment that is due on the Effective Date, Customer will make payments to Motorola within thirty (30) days after the date of each invoice. Customer will make payments when due in the form of a check, cashier's check, or wire transfer drawn on a U.S. financial institution. Payment for the System purchase will be in accordance with the following milestones.

System Purchase

1. 25% of the Contract Price due upon contract execution (due upon effective date);
2. 60% of the Contract Price due upon shipment of equipment;
3. 10% of the Contract Price due upon installation of equipment; and
4. 5% of the Contract Price due upon Final Acceptance.

Motorola shall make partial shipments of equipment and will request payment upon shipment of such equipment. In addition, Motorola shall invoice for installations completed on a site-by-site basis or when professional services are completed, when applicable. The value of the equipment shipped/services performed will be determined by the value shipped/services performed as a percentage of the total milestone value. Unless otherwise specified, contract discounts are based upon all items proposed and overall system package. For invoicing purposes only, discounts will be applied proportionately to the FNE and Subscriber equipment values to total contract price. Overdue invoices will bear simple interest at the maximum allowable rate by state law.

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9.1 Post Warranty Support Estimates

Post Warranty estimates based on current pricing have been included below for continuing Essential Plus services for three additional years.

These estimates are for planning purposes only and may be purchased with a new Maintenance Agreement or amendment to existing Maintenance Agreements. Pricing shall be subject to renegotiation at the time of purchase.

Description	Year 1	Year 2	Year 3
Essential Plus Services	$19,880.00	$20,675.00	$21,502.00

For Lifecycle Support Plan and Subscription Based Services:

Motorola will invoice Customer annually in advance of each year of the plan.

INFLATION REVIEW. For multi-year agreements, at the end of the first year of the Agreement and each year thereafter, a CPI percentage change calculation shall be performed using the U.S. Department of Labor, Consumer Price Index, “All Items,” Unadjusted Urban Areas (CPI-U). Should the annual inflation rate increase greater than 3% during the previous year, Motorola shall have the right to increase all future maintenance prices by the CPI increase amount exceeding 3%. “All Items,” not seasonally adjusted shall be used as the measure of CPI for this price adjustment. The adjustment calculation will be based upon the CPI for the most recent twelve (12) month increment beginning from the most current month available as posted by the U.S. Department of Labor (http://www.bls.gov) immediately preceding the new maintenance year. For purposes of illustration, if in Year 5 the CPI reported an increase of 8%, Motorola may increase the Year 6 price by 5% (8%-3% base). Any pricing change would be documented in a change order executed with the Customer.

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Motorola Solutions

Section 10

Terms and Conditions

This proposal is subject to the terms and conditions of the State of Arizona Contract #CTR046830, its Exhibits and applicable Addenda - including a Maintenance Support and Lifecycle Management Addendum (“MSLMA”). This proposal shall remain valid through September 26, 2025. The Town of Paradise Valley may accept this proposal by providing to Motorola a signed copy of the MSLMA and a signed Purchase Order specifically referencing “PO is subject to the terms and conditions of the State of Arizona contract #CTR046830, MSLMA and Motorola’s Proposal dated August 8, 2025.”

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Motorola Solutions

MAINTENANCE, SUPPORT AND LIFECYCLE MANAGEMENT ADDENDUM

This Maintenance, Support and Lifecycle Management Addendum (this "**MSLMA**") is entered into between Motorola Solutions, Inc., with office at 500 W. Monroe, suite 4400, Chicago, IL 60661 ("**Motorola**") and the entity set forth in the signature block below or in the Primary Agreement ("**Customer**") and will be subject to, and governed by, the terms of the Master Customer Agreement or Primary Agreement entered into between the Parties, effective as of [_____] the ("**Agreement**"). Capitalized terms used in this MSLMA, but not defined herein, will have the meanings set forth in the Agreement.

1. Addendum. This MSLMA governs Customer's purchase of Maintenance, Support and Lifecycle Management (as defined below) services (and, if set forth in an Ordering Document, related Services) from Motorola and will form part of the Parties' Agreement. In addition to the AGREEMENT, other Addenda may be applicable to the MSMLA, including the Equipment Purchase and Software License Addendum ("**EPSLA**"), with respect to Licensed Software and Equipment, and the Communications System Addendum ("**CSA**") as further described below. This MSLMA will control with respect to conflicting terms in the Agreement or any other applicable Addendum, but only as applicable to the Maintenance, Support and Lifecycle Management services purchased under this MSLMA and not with respect to other Products and Services.

2. Scope

Motorola will provide break/fix maintenance, technical support, or other Services (such as software integration Services) ("Maintenance and Support Services") and/or upgrade services ("Lifecycle Management") as further described in the applicable Ordering Documents.

3. Terms and conditions

3.1 Maintenance and Support services

3.1.1 Purchase Order Acceptance. Purchase orders for additional, continued, or expanded maintenance and software support, during the Warranty Period or after the Warranty Period, become binding only when accepted in writing by Motorola.

3.1.2 Start Date. The "Start Date" for Maintenance and Support Services will be indicated in the applicable Ordering Document.

3.1.3 Auto Renewal. Unless the applicable Ordering Documents specifically states a termination date or one Party notifies the other in writing of its intention to discontinue the Maintenance and Support Services, this Agreement will renew for an additional one (1) year term on every anniversary of the Start Date. At the anniversary date, Motorola may adjust the price of the Services to reflect the renewal rate.

3.1.4 Termination. Written notice of intent to terminate must be provided thirty (30) days or more prior to the anniversary date. If Motorola provides Services after the termination or expiration of this MSLMA, the terms and conditions in effect at the time of termination or expiration will apply to those Services and Customer agrees to pay for those services on a time and materials basis at Motorola's then effective hourly rates. This provision survives the expiration or termination

of the Agreement and applies notwithstanding any contrary provision.

3.1.5 Equipment Definition. For maintenance and support services, Equipment will be defined to mean the hardware specified in the applicable Ordering Documents.

3.1.6 Additional Hardware. If Customer purchases additional hardware from Motorola that becomes part of the Communications System, the additional hardware may be added to this MSLMA and will be billed at the applicable rates after the warranty period for that additional equipment expires. Such hardware will be included in the definition of Equipment.

3.1.7 Maintenance. Equipment will be maintained at levels set forth in the manufacturer's product manuals and routine procedures that are prescribed by Motorola will be followed. Motorola parts or parts of equal quality will be used for Equipment maintenance.

3.1.8 Equipment Condition. All Equipment must be in good working order on the Start Date or when additional equipment is added to the MSLMA. Upon reasonable request by Motorola, Customer will provide a complete serial and model number list of the Equipment. Customer must promptly notify Motorola in writing when any Equipment is lost, damaged, stolen or taken out of service. Customer's obligation to pay maintenance and support fees for this Equipment will terminate at the end of the month in which Motorola receives the written notice. If Equipment cannot, in Motorola's reasonable opinion, be properly or economically maintained for any reason, Motorola may modify the scope of Services related to that Equipment; remove that Equipment from the Agreement; or increase the price to maintain that Equipment.

3.1.9 Equipment Failure. Customer must promptly notify Motorola of any Equipment failure. Motorola will respond to Customer's notification in a manner consistent with the level of Service purchased as indicated in this MSLMA and applicable Ordering Documents.

3.1.10 Intrinsically Safe. Customer must specifically identify any Equipment that is labeled intrinsically safe for use in hazardous environments.

3.1.11 Excluded Services.

a) Service excludes the repair or replacement of Equipment that has become defective or damaged from use in other than the normal, customary, intended, and authorized manner; use not in compliance with applicable industry standards; excessive wear and tear; or accident, liquids, power surges, neglect, acts of God or other force majeure events.

b) Unless specifically included in this MSLMA or the applicable Ordering Documents, Service excludes items that are consumed in the normal operation of the Equipment, such as batteries or magnetic tapes.; upgrading or reprogramming Equipment; accessories, belt clips, battery chargers, custom or special products, modified units, or software; and repair or maintenance of any transmission line, antenna, microwave equipment, tower or tower lighting, duplexer, combiner, or multicoupler. Motorola has no obligations for any transmission medium, such as telephone lines, computer networks, the internet or the worldwide web, or for Equipment malfunction caused by the transmission medium.

3.1.12 Time And Place. Service will be provided at the location specified in this MSLMA and/or the applicable Ordering Documents. When Motorola performs maintenance, support, or

installation at Customer's location, Customer will provide Motorola, at no charge, a non-hazardous work environment with adequate shelter, heat, light, and power and with full and free access to the Equipment. Waivers of liability from Motorola or its subcontractors will not be imposed as a site access requirement. Customer will provide all information pertaining to the hardware and software elements of any system with which the Equipment is interfacing so that Motorola may perform its Services. Unless otherwise stated in this MSLMA or applicable Ordering Documents, the hours of Service will be 8:30 a.m. to 4:30 p.m., local time, excluding weekends and holidays. Unless otherwise stated in this MSLMA or applicable Ordering Documents, the price for the Services exclude any charges or expenses associated with helicopter or other unusual access requirements; if these charges or expenses are reasonably incurred by Motorola in rendering the Services, Customer agrees to reimburse Motorola for those charges and expenses.

3.1.13 Customer Contact. Customer will provide Motorola with designated points of contact (list of names and phone numbers) that will be available twenty-four (24) hours per day, seven (7) days per week, and an escalation procedure to enable Customer's personnel to maintain contact, as needed, with Motorola.

3.2 Lifecycle Management Services

3.2.1 The Software License terms included in the Agreement and its Addendum applies to any Motorola Software provided as part of the Lifecycle Management transactions.

3.2.2 The term of this MSLMA is _____ years, commencing on _____, 201_. The Lifecycle Management Price for the ___ years of services is $_____, excluding applicable sales or use taxes but including discounts as more fully set forth in the pricing pages. Because the Lifecycle Management is a subscription service as more fully described in the applicable Ordering Documents, payment from Customer is due in advance and will not be in accordance with any Payment Milestone Schedule.

3.2.3 The Communications System upgrade will be scheduled during the subscription period and will be performed when Motorola's upgrade operation resources are available. Because there might be a significant time frame between when this MSLMA is executed and when a Communications System upgrade transaction is performed, Motorola may substitute any of the promised Equipment or Software so long as the substitute is equivalent or superior to the initially promised Equipment or Software.

3.2.4 Acceptance of a Lifecycle Management transaction occurs when the Equipment (if any) and Software are delivered, in accordance with the EPSLA, and the Lifecycle Management services are fully performed; there is no Acceptance Testing with a Lifecycle Management transaction.

3.2.5 The Warranty Period for any Equipment or Motorola Software provided under a Lifecycle Management transaction will commence upon shipment and not on Communications System Acceptance or Beneficial Use, and is for a period of ninety (90) days rather than one (1) year. The ninety (90) day warranty for Lifecycle Management services is set forth in the applicable Ordering Documents.

3.2.6 In addition to the description of the Lifecycle Management services and exclusions provided in the applicable Ordering Documents, the following apply:

a) Upon reasonable request by Motorola, Customer will provide a complete serial and model number list of the Equipment.

b) Lifecycle Management services exclude the repair or replacement of Equipment that has become defective or damaged from use in other than the normal, customary, intended, and authorized manner; use not in compliance with applicable industry standards; excessive wear and tear; or accident, liquids, power surges, neglect, acts of God or other force majeure events.

c) Unless specifically included in this MSLMA or the applicable Ordering Documents, Lifecycle Management services exclude items that are consumed in the normal operation of the Equipment; accessories; and repair or maintenance of any transmission line, antenna, microwave equipment, tower or tower lighting, duplexer, combiner, or multicoupler. Motorola has no obligations for any transmission medium, such as telephone lines, computer networks, the internet or the worldwide web, or for Equipment malfunction caused by the transmission medium.

d) Customer will provide Motorola with designated points of contact (list of names and phone numbers) that will be available during the performance of the Lifecycle Management services.

3.2.7 The Lifecycle Management annualized price is based on the fulfillment of the two year cycle. If Customer terminates this service during a two year cycle, except for Motorola's default, then Customer will be required to pay for the balance of payments owed for the two year cycle if a major system release has been implemented before the point of termination.

3.2.8 If Customer terminates this Maintenance and Support or Lifecycle Management service and contractual commitment before the end of the ___ year term, for any reason other than Motorola's default, then the Customer will pay to Motorola a termination fee equal to the discount applied to the last three years of service payments related to the ___ year commitment. This provision survives the expiration or termination of the Agreement and applies notwithstanding any contrary provision.

4. Payment

4.1 Unless alternative payment terms are stated in this MSLMA, Motorola will invoice Customer in advance for each payment period. All other charges will be billed monthly, and the Customer must pay each invoice in U.S. dollars within thirty (30) days of the invoice date. Customer will reimburse Motorola for all property taxes, sales and use taxes, excise taxes, and other taxes or

assessments that are levied as a result of Services rendered under this Agreement (except income, profit, and franchise taxes of Motorola) by any governmental entity.

4.2 INFLATION ADJUSTMENT. For multi-year agreements, at the end of the first year of the Agreement and each year thereafter, a CPI percentage change calculation shall be performed using the U.S. Department of Labor, Consumer Price Index, all Items, Unadjusted Urban Areas (CPI-U). Should the annual inflation rate increase greater than 3% during the previous year, Motorola shall have the right to increase all future maintenance prices by the CPI increase amount exceeding 3%. All items, not seasonally adjusted shall be used as the measure of CPI for this price adjustment. Measurement will take place once the annual average for the new year has been posted by the Bureau of Labor Statistics. For purposes of illustration, if in year 5 the CPI reported an increase of 8%, Motorola may increase the Year 6 price by 5% (8%-3% base).

The Parties hereby enter into this MSLMA as of [_____] (the "**MSLMA Date**").

Motorola: Motorola Solutions, Inc.	**Customer: [_____]**
By: _____	By: _____
Name: _____	Name: _____
Title: _____	Title: _____
Date: _____	Date: _____

END

LINKING AGREEMENT
FOR COOPERATIVE PURCHASE

MOTOROLA SOLUTIONS, INC.
COMMANDCENTRAL AXS DISPATCH SOLUTION

EXHIBIT C
SPECIFIC REQUIREMENTS/OPTIONS OF TOWN

Notices: All notices required under the Linking Agreement shall be sent to:

Police Chief
Town of Paradise Valley
6401 E. Lincoln Drive
Paradise Valley, Arizona 85253

With mandatory copy to:

Town Attorney
Town of Paradise Valley
6401 E. Lincoln Drive
Paradise Valley, Arizona 85253


TOWN OF PARADISE VALLEY
Motorola Radio Consoles
September 11, 2025

Motorola Radio Consoles

The PVPD Communications Section is the lifeline between residents needing help and officers in the field, providing reliable two-way radio communications for timely response and effective coordination.

Motorola Radio Consoles

The Why

- The department's current radio consoles and equipment are 10 years old and operating on Windows 10- approaching end of support.

- With aging equipment, a system refresh is necessary to maintain operational reliability and support future demands.

Motorola Radio Consoles

New Motorola Radio Consoles will provide:

- Greater flexibility with the ability for in-house configuration
- Improved integration to support evolving Department needs
- A long-term reliable solution, with a projected life cycle of at least 10 years

Motorola Radio Consoles

Equipment:

- 3 Radio Consoles and associated licenses
- 4 Motorola Consolettes
- Site Controller (Manages site radio channels, monitors alarms, assigns voice/data channels)
- Position Equipment (foot pedals, mics, desktop monitors)

Recommendation

Authorize the Town Manager to execute a linking agreement for the purchase of Police Department radio equipment and services from Motorola Solutions in an amount not to exceed $390,500.

Action Report

File #: 25-189

AGENDA TITLE:
Consideration of Requests for Future Agenda Items

RECOMMENDATION:
Review the current list of pending agenda topics.

TOWN COUNCIL AGENDA SCHEDULE 2025



MEETING DATE	9/25
EXECUTIVE SESSION	Zoning Code Amendments pursuant to Arizona Law
Study Session	Expenditure Limitation Adjustment Election Options
	Bond Financing Options
Presentations	Barbara Lacey Recognition
	Committee Updates: Hillside & Arts Board
Consent Agenda	
Public Hearings	
Action Items	Ordinance Regarding Selection of the Vice Mayor

TOWN COUNCIL AGENDA SCHEDULE 2025



MEETING DATE	10/9	10/23	11/13	12/11
Executive Session				
	Judicial Performance Review	Town Manager Six Month Check In	Town Attorney Six Month Check In	
Study Session	Zoning Code Update Check In	Sewer Rehab Contract and Manhole Maintenance Update	Committee Volunteer Reappointment Process	
	Personnel Appeals Board Draft Rules of Procedure	Discussion of Youth Forum	Discussion of Legislative Agenda	
	CIP - McDonald Drive Curb Project		Mockingbird Lane Update	
	Stormwater Management Plan			
Presentations	Committee Updates: ACOPS & PSPRS	Committee Updates: PVMPT & Historical		
	Domestic Violence Awareness / Breast Cancer Awareness			
Consent Agenda				Adopt Legislative Agenda
Public Hearings				
Action Items	Adopt Stormwater Management Plan	Appointment of Municipal Court Judges		McDonald Drive Curb Construction Contract
				Las Brisas and Cheney Rd Intersection Improvement Project Contract

This is a tentative calendar and subject to change

Items to be scheduled - Numbering does not reflect priority or order in which items will be scheduled

1 Community Services / Homelessness Services Funding
2 Short term rental ordinance look back
3 Voluntary Water Conservation Outreach and Education
4 Long-Term Capital Project Funding Strategy
5 Mockingbird Ln Construction Contract (1/22/2026)
6 Doubletree Ranch Rd Entryway Construction Contract (2/12/2026)
7 Zoning Code Amendments pursuant to Arizona Law and Michael Baker Contract Check In #1

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EXHIBIT K

Subdivision Participation and Release Form

Governmental Entity: Paradise Valley town		State: AZ
Authorized Signatory: Andrew Ching		
Address 1: 6401 E Lincoln Dr		
Address 2:		
City, State, Zip: Paradise Valley	Arizona	85253
Phone: 480-348-3533		
Email: aching@paradisevalleyaz.gov		

The governmental entity identified above ("*Governmental Entity*"), in order to obtain and in consideration for the benefits provided to the Governmental Entity pursuant to that certain Governmental Entity & Shareholder Direct Settlement Agreement accompanying this participation form (the "*Agreement*")[1], and acting through the undersigned authorized official, hereby elects to participate in the Agreement, grant the releases set forth below, and agrees as follows.

1. The Governmental Entity is aware of and has reviewed the Agreement, and agrees that by executing this Participation and Release Form, the Governmental Entity elects to participate in the Agreement and become a Participating Subdivision as provided therein.

2. The Governmental Entity shall promptly after the Effective Date, and prior to the filing of the Consent Judgment, dismiss with prejudice any Shareholder Released Claims and Released Claims that it has filed. With respect to any Shareholder Released Claims and Released Claims pending in *In re National Prescription Opiate Litigation*, MDL No. 2804, the Governmental Entity authorizes the Plaintiffs' Executive Committee to execute and file on behalf of the Governmental Entity a Stipulation of Dismissal with Prejudice substantially in the form found at https://nationalopioidsettlement.com.

3. The Governmental Entity agrees to the terms of the Agreement pertaining to Participating Subdivisions as defined therein.

4. By agreeing to the terms of the Agreement and becoming a Releasor, the Governmental Entity is entitled to the benefits provided therein, including, if applicable, monetary payments beginning following the Effective Date.

5. The Governmental Entity agrees to use any monies it receives through the Agreement solely for the purposes provided therein.

6. The Governmental Entity submits to the jurisdiction of the court in the Governmental Entity's state where the Consent Judgment is filed for purposes limited to that court's role as and to the extent provided in, and for resolving disputes to the extent provided in, the

[1] Capitalized terms used in this Exhibit K but not otherwise defined in this Exhibit K have the meanings given to them in the Agreement or, if not defined in the Agreement, the Master Settlement Agreement.

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Agreement. The Governmental Entity likewise agrees to arbitrate before the National Arbitration Panel as provided in, and for resolving disputes to the extent otherwise provided in, the Agreement.

7. The Governmental Entity has the right to enforce the Agreement as provided therein.

8. The Governmental Entity, as a Participating Subdivision, hereby becomes a Releasor for all purposes in the Agreement, including without limitation all provisions of Article 10 (Release), and along with all departments, agencies, divisions, boards, commissions, districts, instrumentalities of any kind and attorneys, and any person in his or her official capacity whether elected or appointed to serve any of the foregoing and any agency, person, or other entity claiming by or through any of the foregoing, and any other entity identified in the definition of Subdivision Releasor, to the maximum extent of its authority, for good and valuable consideration, the adequacy of which is hereby confirmed, the Shareholder Released Parties and Released Parties are, as of the Effective Date, hereby released and forever discharged by the Governmental Entity and its Subdivision Releasors from: any and all Causes of Action, including, without limitation, any Estate Cause of Action and any claims that the Governmental Entity or its Subdivision Releasors would have presently or in the future been legally entitled to assert in its own right (whether individually or collectively), notwithstanding section 1542 of the California Civil Code or any law of any jurisdiction that is similar, comparable or equivalent thereto (which shall conclusively be deemed waived), whether existing or hereinafter arising, in each case, (A) directly or indirectly based on, arising out of, or in any way relating to or concerning, in whole or in part, (i) the Debtors, as such Entities existed prior to or after the Petition Date, and their Affiliates, (ii) the Estates, (iii) the Chapter 11 Cases, or (iv) Covered Conduct and (B) as to which any conduct, omission or liability of any Debtor or any Estate is the legal cause or is otherwise a legally relevant factor (each such release, as it pertains to the Shareholder Released Parties, the "Shareholder Released Claims", and as it pertains to the Released Parties other than the Shareholder Released Parties, the "Released Claims"). For the avoidance of doubt and without limiting the foregoing: the Shareholder Released Claims and Released Claims include any Cause of Action that has been or may be asserted against any Shareholder Released Party or Released Party by the Governmental Entity or its Subdivision Releasors (whether or not such party has brought such action or proceeding) in any federal, state, or local action or proceeding (whether judicial, arbitral, or administrative) (A) directly or indirectly based on, arising out of, or in any way relating to or concerning, in whole or in part, (i) the Debtors, as such Entities existed prior to or after the Petition Date, and their Affiliates, (ii) the Estates, (iii) the Chapter 11 Cases, or (iv) Covered Conduct and (B) as to which any conduct, omission or liability of any Debtor or any Estate is the legal cause or is otherwise a legally relevant factor.

9. As a Releasor, the Governmental Entity hereby absolutely, unconditionally, and irrevocably covenants not to bring, file, or claim, or to cause, assist or permit to be brought, filed, or claimed, or to otherwise seek to establish liability for any Shareholder Released Claims or Released Claims against any Shareholder Released Party or Released Party in any forum whatsoever, subject in all respects to Section 9.02 of the Master Settlement Agreement. The releases provided for herein (including the term "Shareholder Released

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Claims" and "Released Claims") are intended by the Governmental Entity and its Subdivision Releasors to be broad and shall be interpreted so as to give the Shareholder Released Parties and Released Parties the broadest possible release of any liability relating in any way to Shareholder Released Claims and Released Claims and extend to the full extent of the power of the Governmental Entity to release claims. The Agreement shall be a complete bar to any Shareholder Released Claim and Released Claims.

10. To the maximum extent of the Governmental Entity's power, the Shareholder Released Parties and the Released Parties are, as of the Effective Date, hereby released and discharged from any and all Shareholder Released Claims and Released Claims of the Subdivision Releasors.

11. The Governmental Entity hereby takes on all rights and obligations of a Participating Subdivision as set forth in the Agreement.

12. In connection with the releases provided for in the Agreement, each Governmental Entity expressly waives, releases, and forever discharges any and all provisions, rights, and benefits conferred by any law of any state or territory of the United States or other jurisdiction, or principle of common law, which is similar, comparable, or equivalent to § 1542 of the California Civil Code, which reads:

> **General Release; extent.** A general release does not extend to claims that the creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release that, if known by him or her, would have materially affected his or her settlement with the debtor or released party.

A Releasor may hereafter discover facts other than or different from those which it knows, believes, or assumes to be true with respect to the Shareholder Released Claims or such other Claims released pursuant to this release, but each Governmental Entity hereby expressly waives and fully, finally, and forever settles, releases and discharges, upon the Effective Date, any and all Shareholder Released Claims or such other Claims released pursuant to this release that may exist as of such date but which Releasors do not know or suspect to exist, whether through ignorance, oversight, error, negligence or through no fault whatsoever, and which, if known, would materially affect the Governmental Entities' decision to participate in the Agreement.

13. Nothing herein is intended to modify in any way the terms of the Agreement, to which Governmental Entity hereby agrees. To the extent any portion of this Participation and Release Form not relating to the release of, or bar against, liability is interpreted differently from the Agreement in any respect, the Agreement controls.

14. Notwithstanding anything to the contrary herein or in the Agreement, (x) nothing herein shall (A) release any Excluded Claims or (B) be construed to impair in any way the rights and obligations of any Person under the Agreement; and (y) the Releases set forth herein shall be subject to being deemed void to the extent set forth in Section 9.02 of the Master Settlement Agreement.

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I have all necessary power and authorization to execute this Participation and Release Form on behalf of the Governmental Entity.

Signature: DocuSigned by: Andrew Ching 5B8E4040A0944A3...

Name: Andrew Ching

Title: Town Manager, Town of Paradise Valley, Arizona

Date: 8/4/2025

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SECOND AMENDMENT
TO
LINKING AGREEMENT
BETWEEN
THE TOWN OF PARADISE VALLEY
AND
KINGS LANDSCAPE AND MAINTENANCE LLC

THIS SECOND AMENDMENT TO THE LINKING AGREEMENT (this "Second Amendment") is entered into as of 8/19 2025, between the Town of Paradise Valley, an Arizona municipal corporation (the "Town"), and Contractor, an Arizona Corporation (the "Contractor").

RECITALS

A. The Town and the Contractor entered into the Linking Agreement, No. CON-24-047-PBW dated June 14, 2024, for the Contractor to provide Landscaping and irrigation for street beautification projects and entered into a First Amendment dated August 2, 2024 (the original Linking and first two amendments collectively constituting the "Agreement").

B. The Town has determined that additional services by the Contractor are necessary (the "Additional Services").

C. The Town and the Contractor desire to enter into this Second Amendment to (i) modify the scope of work to include the Additional Services, and (ii) provide for the increase in compensation to the Vendor for the Additional Services.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing introduction and recitals, which are incorporated herein by reference, the following mutual covenants and conditions, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Town and the Contractor hereby agree as follows:

1. Incorporation of Defined Terms. All capitalized terms not otherwise defined in this Second Amendment have the same meanings as contained in the Agreement.

2. Scope of Work. The Contractor shall provide the Additional Services as set forth in the Additional Scope of Work, attached hereto as Exhibit 1 and incorporated herein by reference.

3. Compensation. The Town shall increase the compensation to the Contractor by $70,292.70 for the Additional Services at the rates set forth in the Fee Proposal attached hereto as a

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part of Exhibit 1, resulting in an increase of the combined not-to-exceed compensation from $41,196.33 to $111,489.03

4. Effect of Amendment. The Agreement is affirmed and ratified and, except as expressly modified herein, all terms and conditions of the Agreement shall remain in full force and effect.

5. Non-Default. By executing this Second Amendment, the Contractor affirmatively asserts that (i) the Town is not currently in default, nor has been in default at any time prior to this Second Amendment, under any of the terms or conditions of the Agreement, and (ii) any and all claims, known and unknown, relating to the Agreement and existing on or before the date of this Second Amendment are forever waived.

6. Conflict of Interest. This Second Amendment and the Agreement may be canceled by the Town pursuant to ARIZ. REV. STAT. § 38-511.

7. Forced Labor of Ethnic Uyghurs. To the extent applicable under ARIZ. REV. STAT. § 35-394, the Contractor warrants and certifies that it does not currently, and agrees that it will not, for the duration of the Agreement, as amended, use the forced labor, any goods or services produced by the forced labor, or any contractors, subcontractors, or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China. If the Contractor becomes aware that it is not in compliance with this paragraph, the Contractor shall notify the Town of the noncompliance within five business days of becoming aware of it. If the Contractor fails to provide a written certification that the Contractor has remedied the noncompliance within 180 days after that, the Agreement shall terminate unless the termination date of the Agreement occurs before the end of the remedy, in which case the Agreement terminates on its termination date.

[SIGNATURES ON FOLLOWING PAGES]

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IN WITNESS WHEREOF, the parties hereto have executed this instrument as of the date and year first set forth above.

"Town"

TOWN OF PARADISE VALLEY,
an Arizona municipal corporation

DocuSigned by:
Andrew Ching
5B8E4040A9944A3...
Andrew Ching, Town Manager

ATTEST:

DocuSigned by:
Duncan Miller
FD56FF67A95043D...
Duncan Miller, Town Clerk

APPROVED AS TO FORM:

Signed by:
6C9F79CECF0C427...
Andrew J. McGuire, Town Attorney
Gust Rosenfeld, PLC

"Contractor"

KINGS LANDSCAPE AND
MAINTENANCE LLC,
a Limited liability company:

By: _____

Name: Xavier King

Title: Owner

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EXHIBIT 1
TO
SECOND AMENDMENT
TO
LINKING AGREEMENT
BETWEEN
THE TOWN OF PARADISE VALLEY
AND
KINGS LANDSCAPE AND MAINTENANCE LLC

[Additional Scope of Work and Fee Proposal]

See following page.

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King's Landscaping & Maintenance

8214 S 15TH ST
Phoenix, AZ 85042
(480) 270-9691

QUOTE

Submitted on 8/13/2025

Quote for	Payable to	Quote #
Town of Paradice Valley	Kings Landscape & Maintenance	20581
Tempe Contract #T24-026-03		
6401 E. Lincoln Drive	**Project**	**Due date**
Paradice Valley Az. 85253	Streets Maintenance Services	

Job Description

Regular maintenance service along streets.

Blow and rake islands, trim shrub, remove suckers on the low base of trees up to 6Ft.

Haul away all debris.

Lift up trees up to 15" from the ground up,along the street side.

Trees small less than 10 feet canopies will be brought into the medium.

Each road will be serviced one time each month. (September , October, November, March, April & May.)

Maintenance service for 6 months.

LABOR	HR.	Unit price	Total price
Service for 2025 September, October and November.			
Triangles along McDonald Dr. and east wall. Approx. 78,320 SF	390	$28.23	$11,009.70
Stanford from 32 St to 40 St. Approx. 9,939 SF.	90	$28.23	$2,540.70
McDonald Dr. from Tatum blvd. & Scottsdale Rd. Approx.	216	$28.23	$6,097.68
56 St. from McDonald Dr. & Lincoln Dr. Approx. 13,646 S	105	$28.23	$2,964.15
59 St from McDonald dr. & Lincoln Dr. Approx. 7,280 SF	54	$28.23	$1,524.42
Doubletree Ranch Rd. From Tatum blvd. & Invergordon R	390	$28.23	$11,009.70
Service for 2026 March, April and May.			

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Triangles along McDonald Dr. and east wall. Approx. 78,320 SF	390	$28.23	$11,009.70
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Doubletree Ranch Rd. From Tatum blvd. & Invergordon R	390	$28.23	$11,009.70

		Subtotal	**$70,292.70**
MATERIALS	**Qty**	**Unit price**	**Total price**
Item #1		$0.00	$0.00
Item #2		$0.00	$0.00
			$0.00
			$0.00

Notes:

Subtotal	**$0.00**
Sales Tax 8.8%	**$0.00**
	$70,292.70