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:

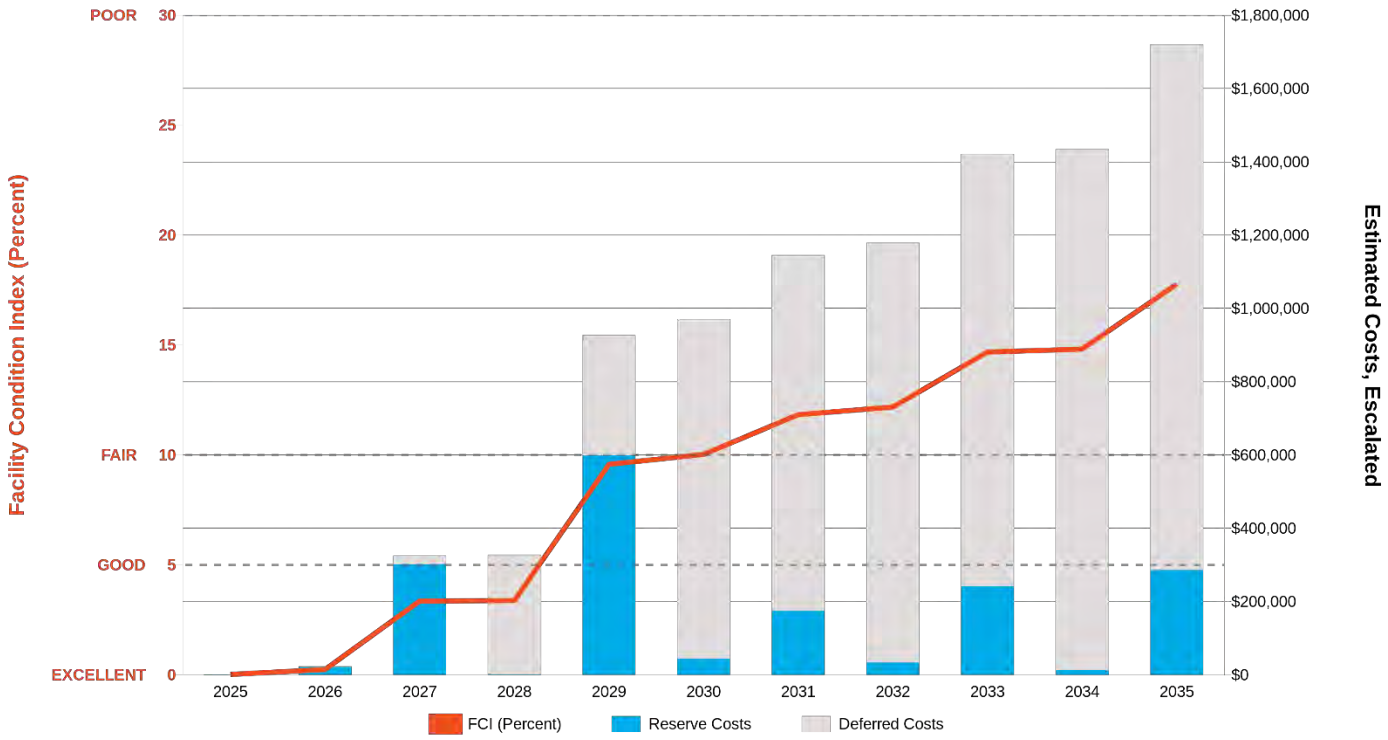
FCI Analysis		
Replacement Value *$9,681,525*	*Total SF* *18,441*	*Cost/SF* *$525*

	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

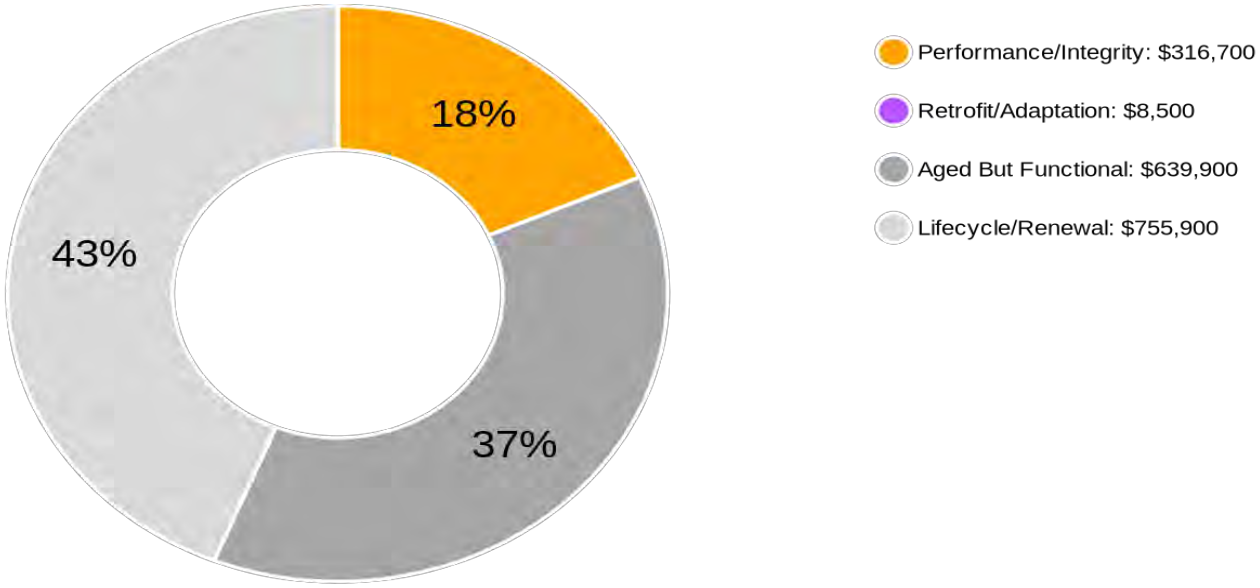
Cost Estimate: $8,000

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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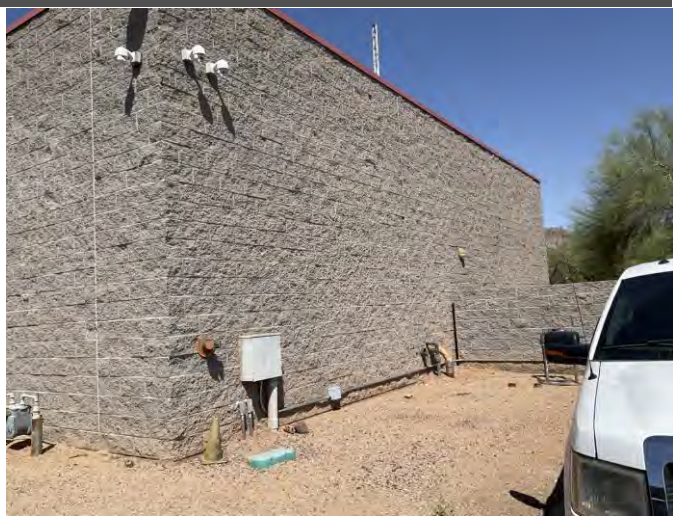
7. Appendices

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

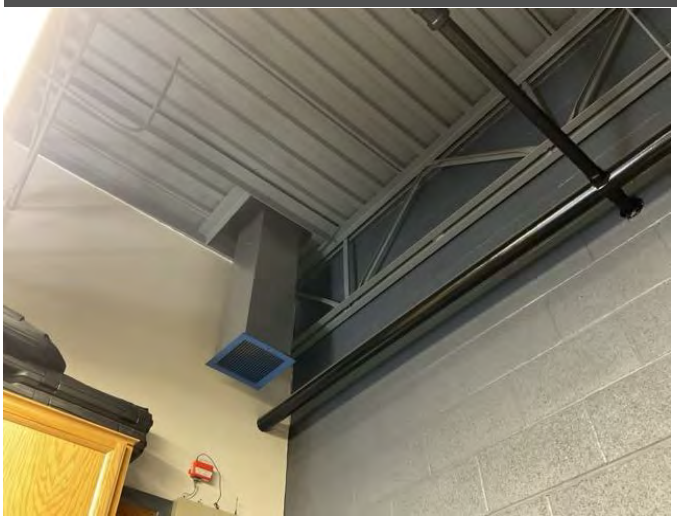
3 - REAR ELEVATION

4 - RIGHT ELEVATION

5 – ARMORY AND PRISONER UNLOADING

6 - IT BUILDING

Photographic Overview



7 - STRUCTURAL ELEMENTS

8 - PRIMARY ROOF OVERVIEW

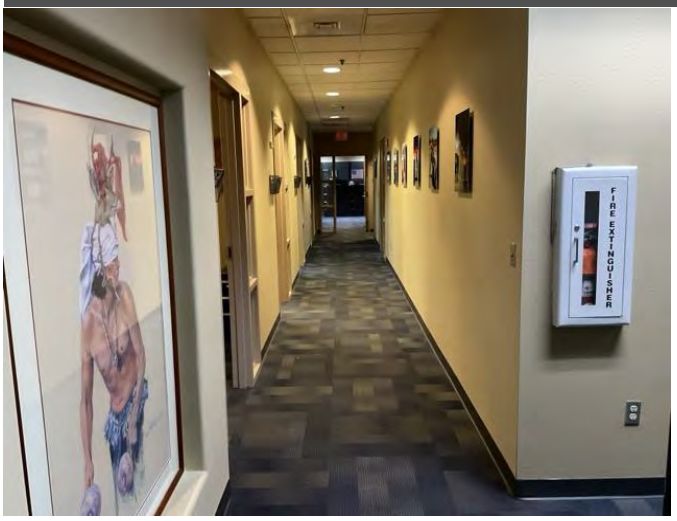
9 - SECONDARY ROOF OVERVIEW

10 - ROOF DRAINAGE

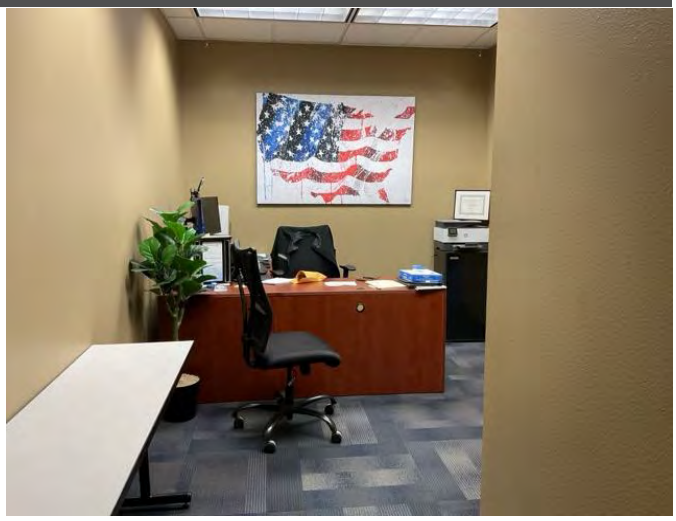
11 - PRISONER UNLOADING

12 - MAIN LOBBY

Photographic Overview

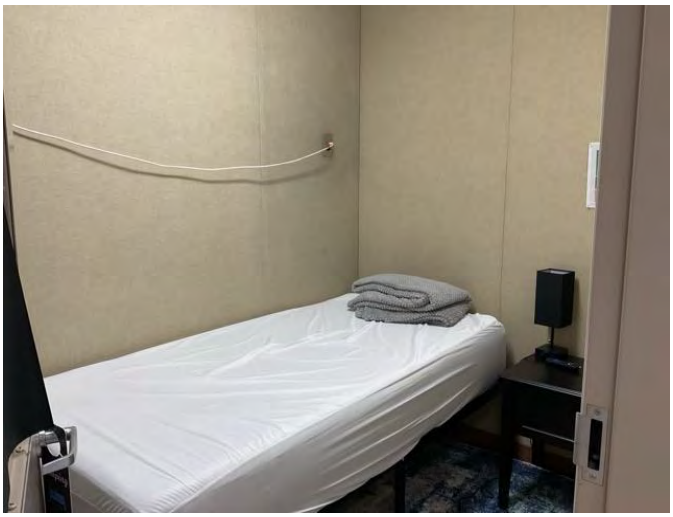


13 - TYPICAL HALL



14 - TYPICAL OFFICE

15 - CONFERENCE ROOM

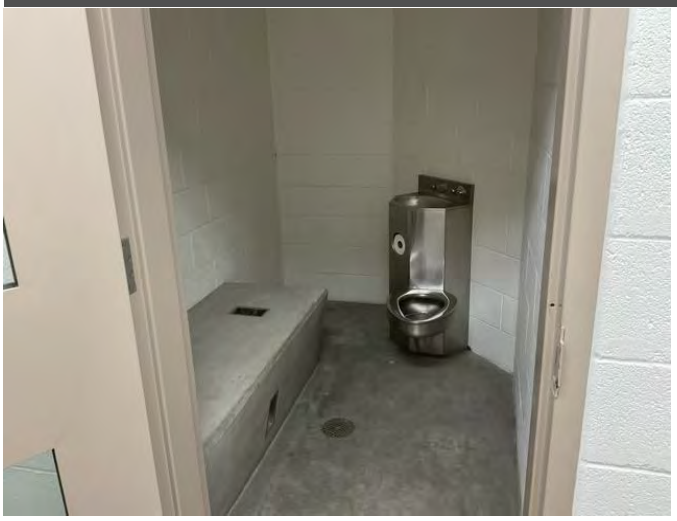


16 - QUIET ROOM

17 - GYM

18 - CLASSROOM

Photographic Overview

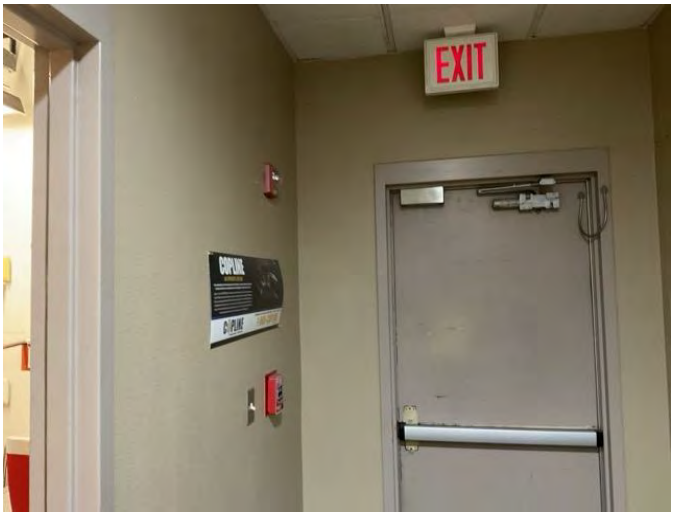


19 - TYPICAL CELL

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

BUREAU VERITAS

N

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		

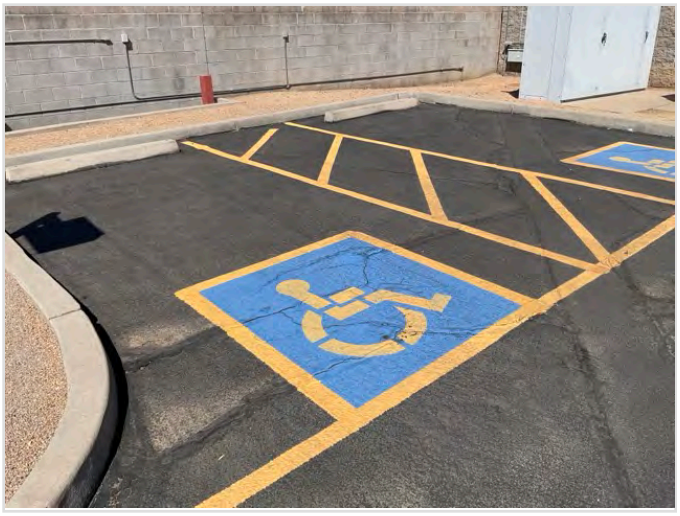
004 - Police Department: Accessibility Issues

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

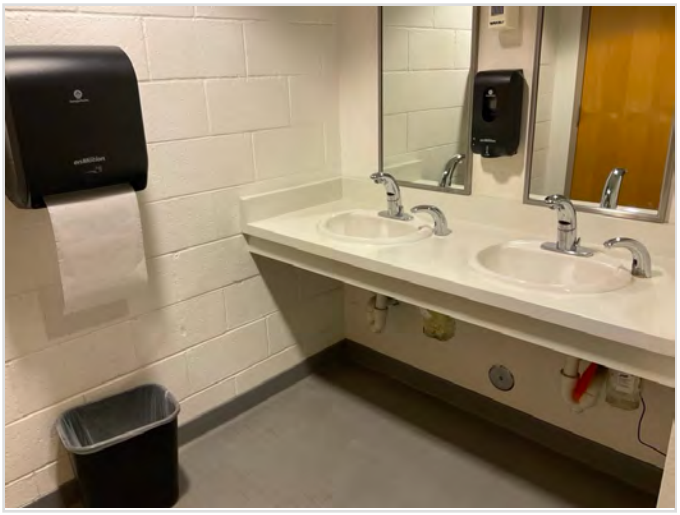
DOOR THRESHOLD

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

Component Condition Report | 004 - Police Department

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						

Component Condition Report | 004 - Police Department

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

Component Condition Report | 004 - Police Department

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

Component Condition Report | 004 - Police Department

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**

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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**

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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
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

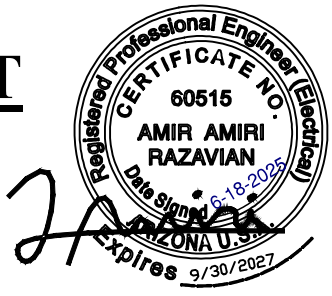
225 Broadway Suite 350, San Diego, CA 92101
1 + 310 364 5228 | 1 + 619 323 1515
mailto: Info@120degreez.com | www.120degreez.com

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

TABLE OF CONTENTS PAGE

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.

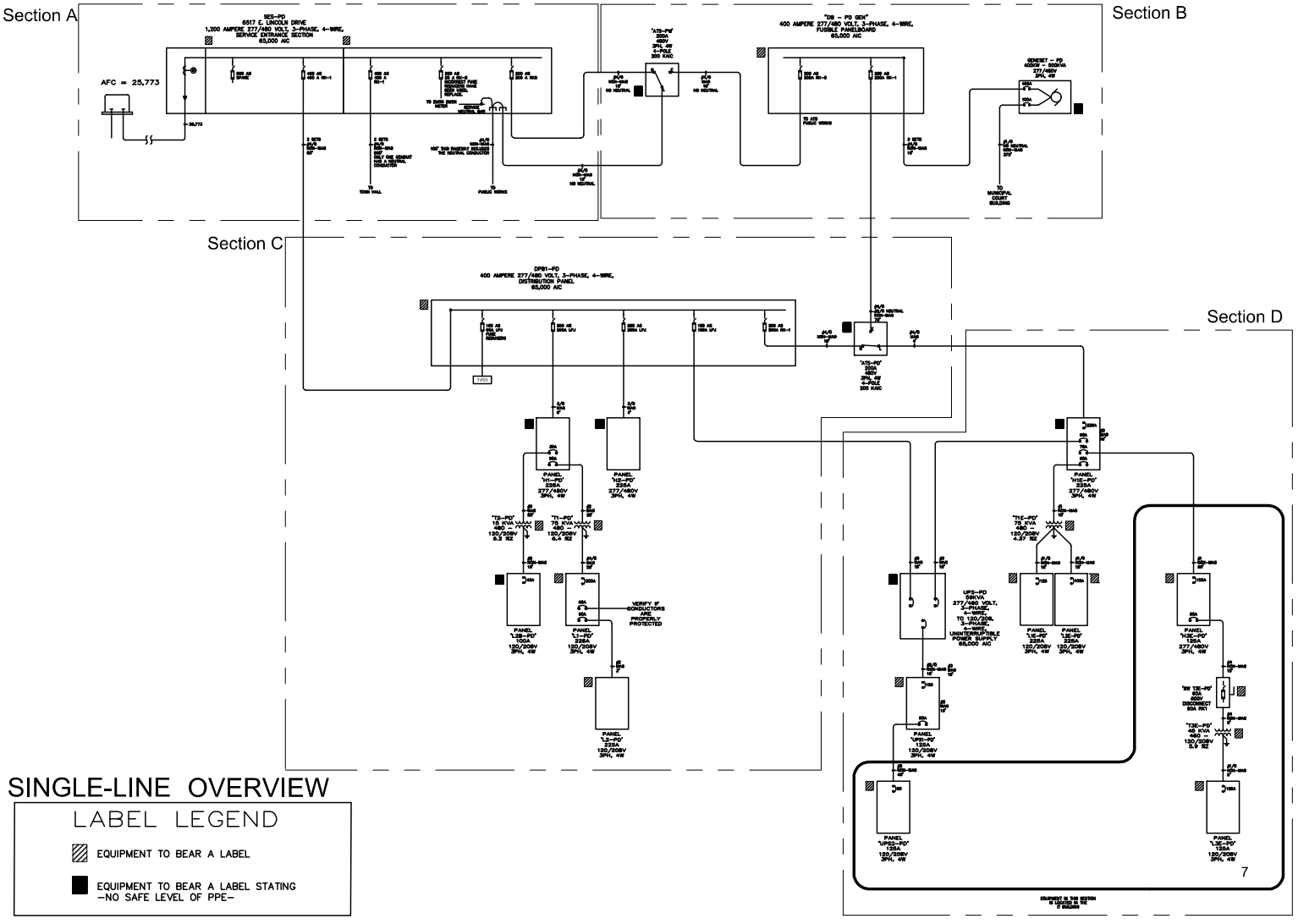
1.2.2 DC systems less than 50 volts.

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

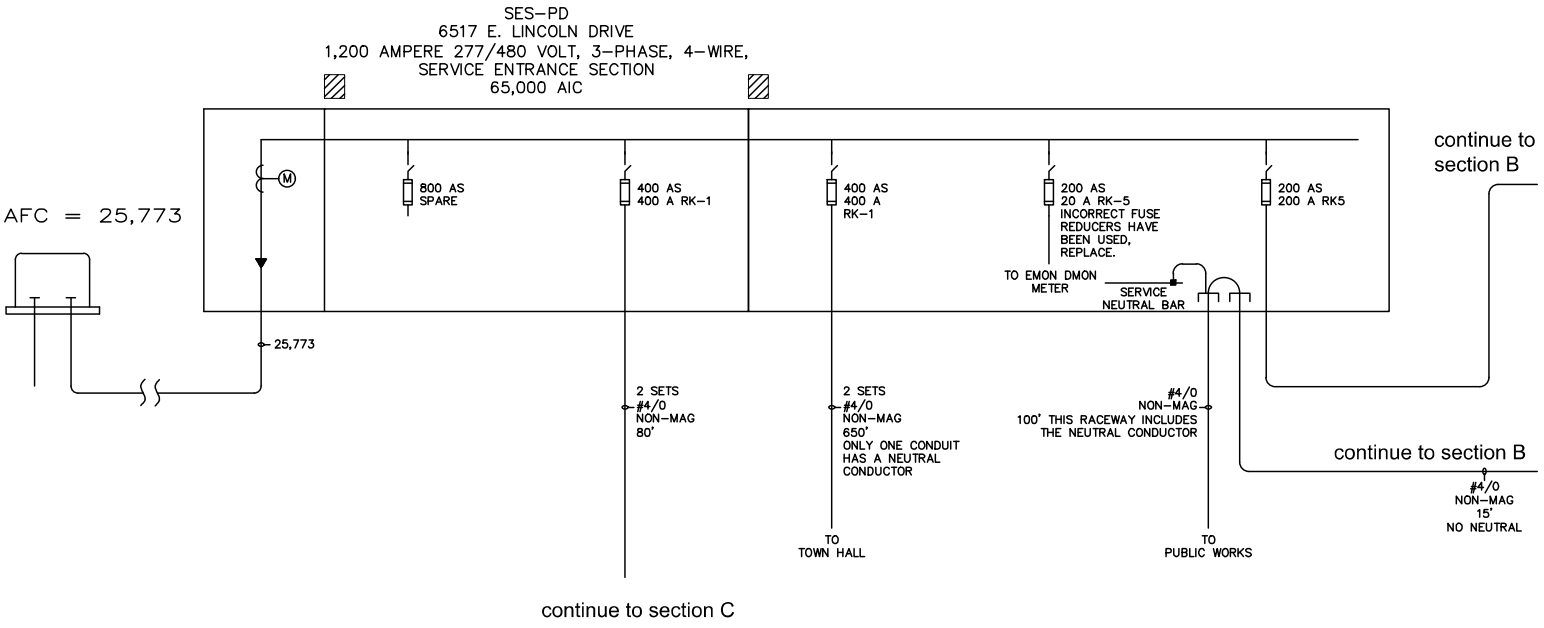


SINGLE-LINE OVERVIEW

LABEL LEGEND

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

POLICE DEPARTMENT



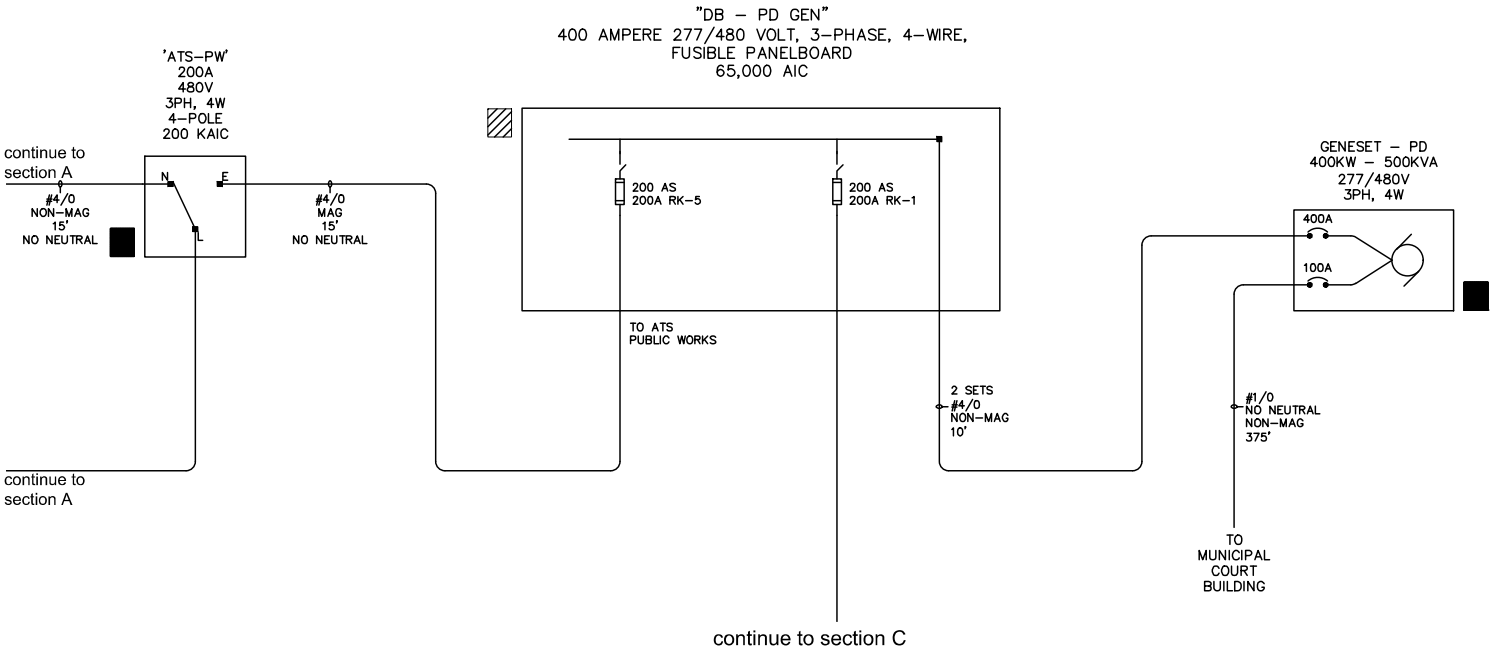
SINGLE-LINE Section A

LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

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

POLICE DEPARTMENT



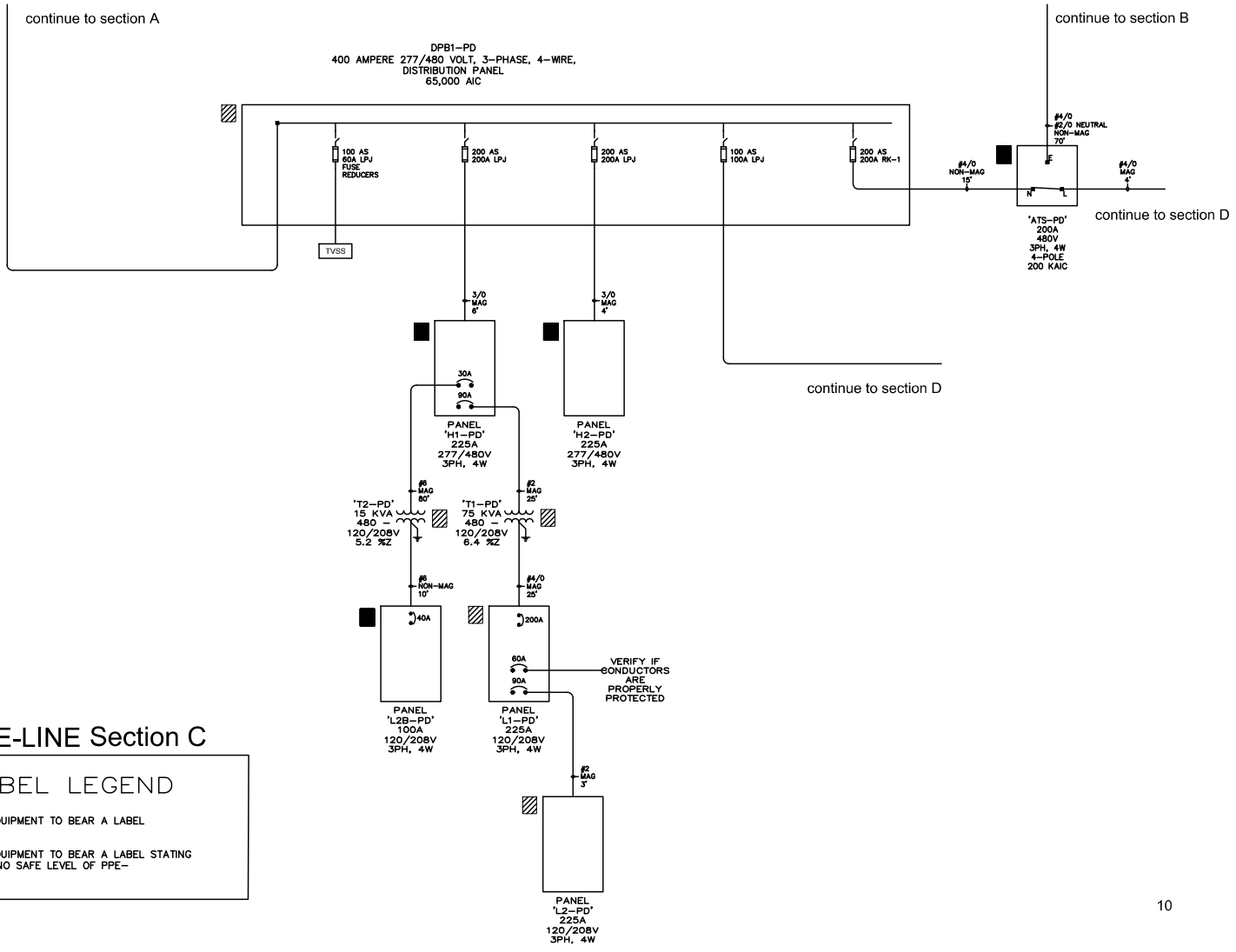
SINGLE-LINE Section B

LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

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

POLICE DEPARTMENT



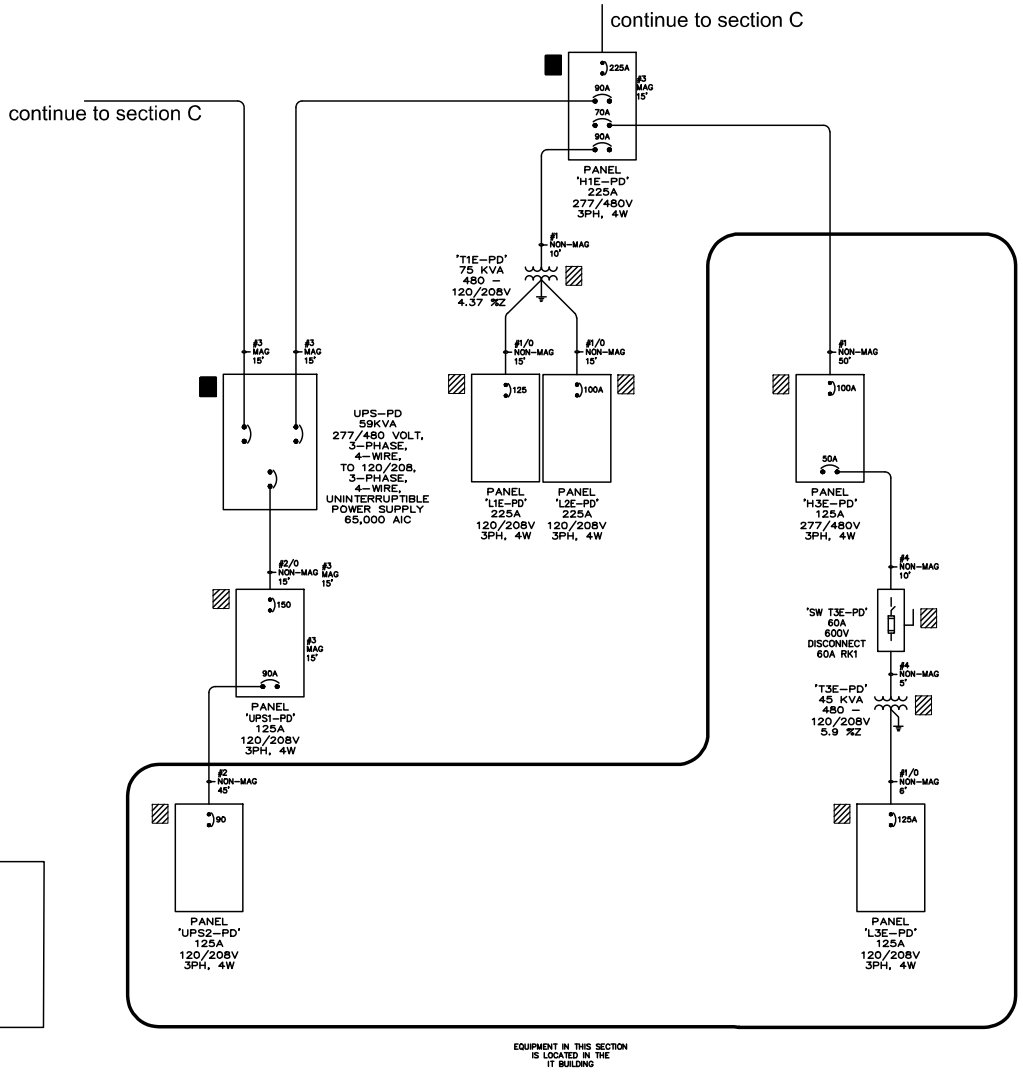
SINGLE-LINE Section C

LABEL LEGEND

EQUIPMENT TO BEAR A LABEL

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

POLICE DEPARTMENT



SINGLE-LINE Section D

LABEL LEGEND

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

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'							

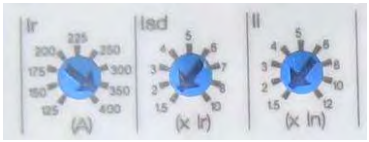
EQUIPMENT NAME:	GENSET - PD	VOLTAGE:	277/480	PHASE:	3Ø-4W	AMPS:	405KW	SCCR:	25K	MAIN:	MCB
EQUIPMENT TYPE:	GENSET									MODEL:	GBU 403
MANUFACTURER:	KOHLER									AMPS:	225
MODEL:	10199050200										
TYPE:	GENSET										
FED FROM:											
AFC:											

OTHER COMMENTS

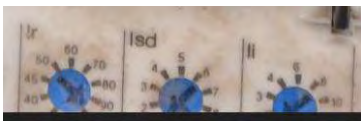
405KW, 506 KVA GENSET
MAIN BONDING JUMPER IS INSTALLED
SEE DEFICIENCY REPORT UNDER SEPARATE COVER FOR ADDITIONAL ISSUES

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.