

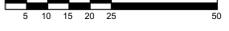
PARCEL: 169-22-071
 Owner Name: TELLES DAVID G/LINDA J
 Property Address:
 4055 E KEIM DR
 PARADISE VALLEY 85253
 Jurisdiction: PARADISE VALLEY
 Zoning: R-43
 PUC: 0151
 Lot Size (sq ft): 44,186
 MCR #: 72-14
 Subdivision: CAMELBACK FOOTHILLS 2
 Lot #: 70
 Floor: 1
 Construction Year: 1966
 Living Space (sq ft): 2,385

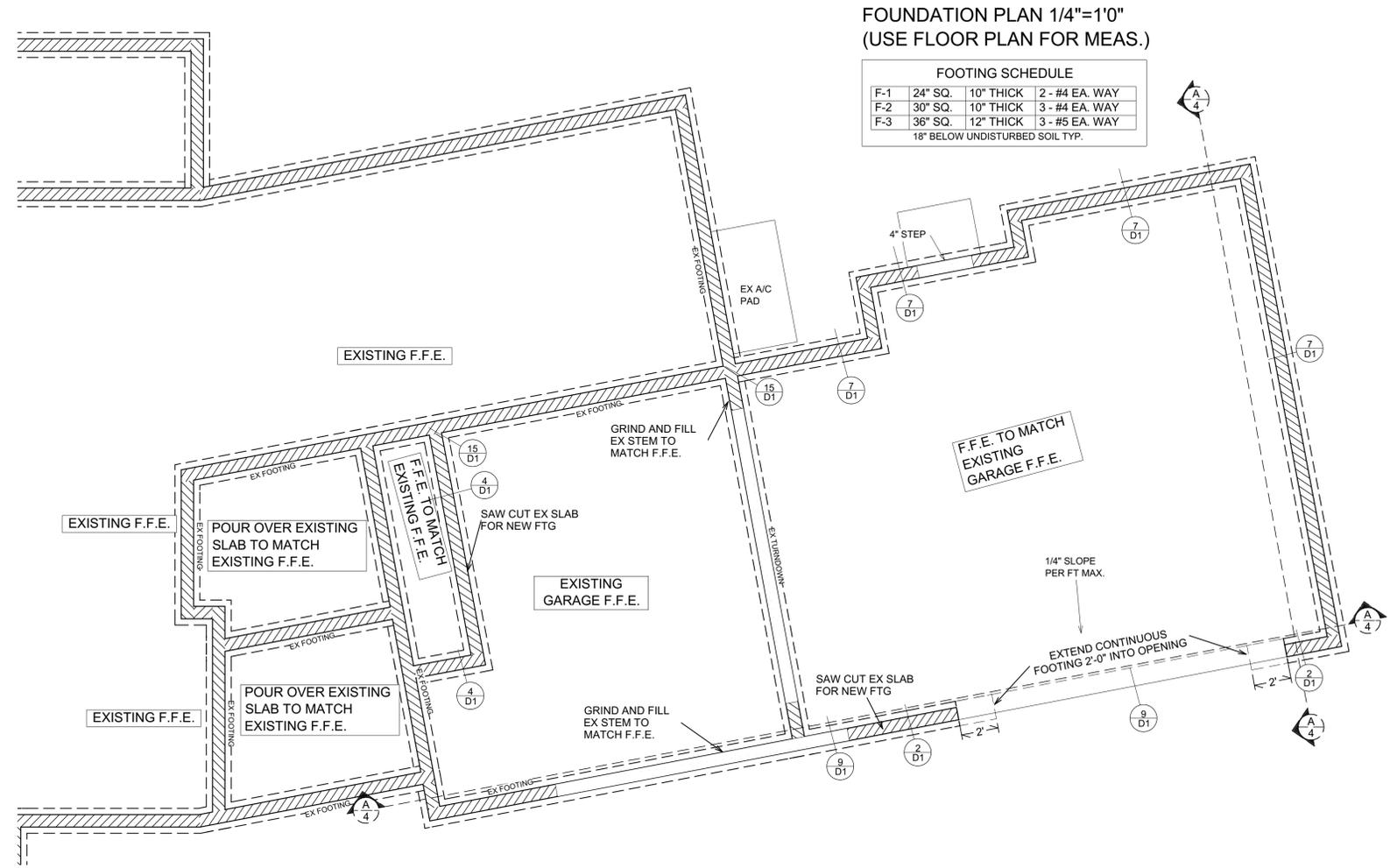
LOT COVERAGE
 LOT AREA = 44,186 S.F.
 MAIN LIVABLE: 2385 S.F.
 BASEMENT: 786 S.F.
 TOTAL: 3171 S.F.
 EX GARAGE: 408 S.F.
 NEW GARAGE: 712 S.F.
 EX STORAGE: 96 S.F.
 EX PORCH: 60 S.F.
 EX PATIO: 240 S.F.
 EX DECK: 240 S.F.
 TOTAL: 4927 S.F.
 TOTAL U.R.: 3901 S.F.
 8.8% COVERAGE



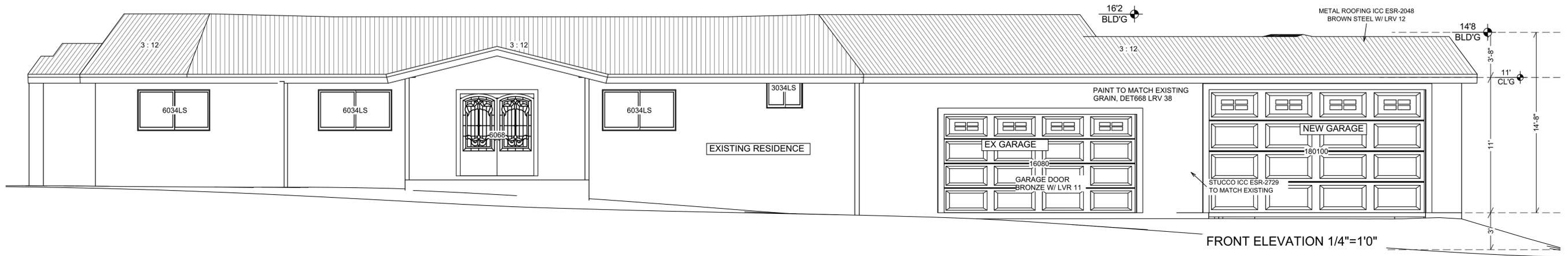
THE GRADE AWAY FROM FOUNDATION WALLS SHALL FALL 6" WITHIN THE FIRST 10'

SITE PLAN
 SCALE 1" = 20'

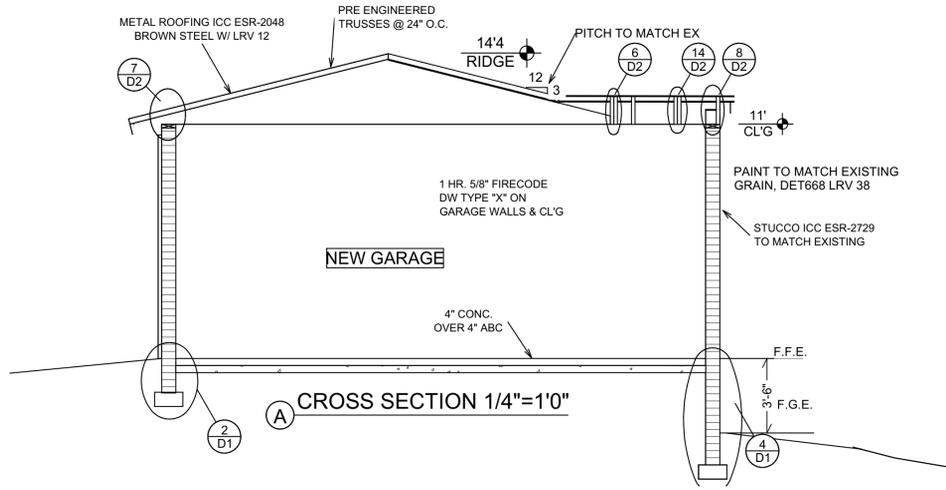




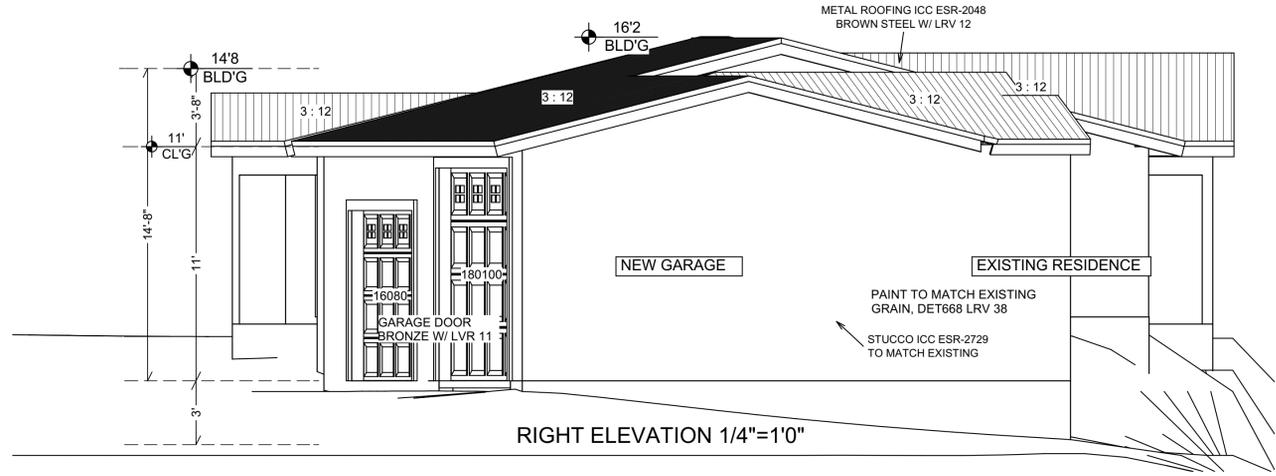
STRUCTURAL ONLY
 ADDITION ONLY



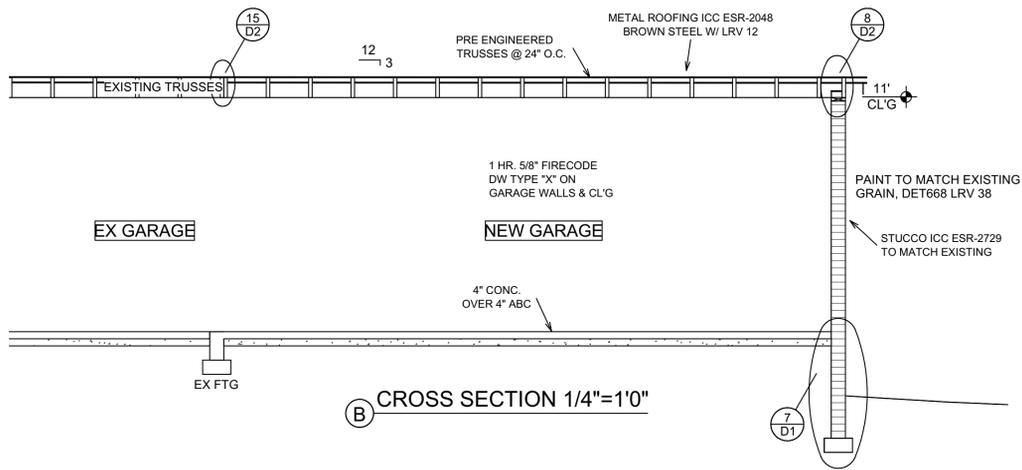
FRONT ELEVATION 1/4"=1'0"



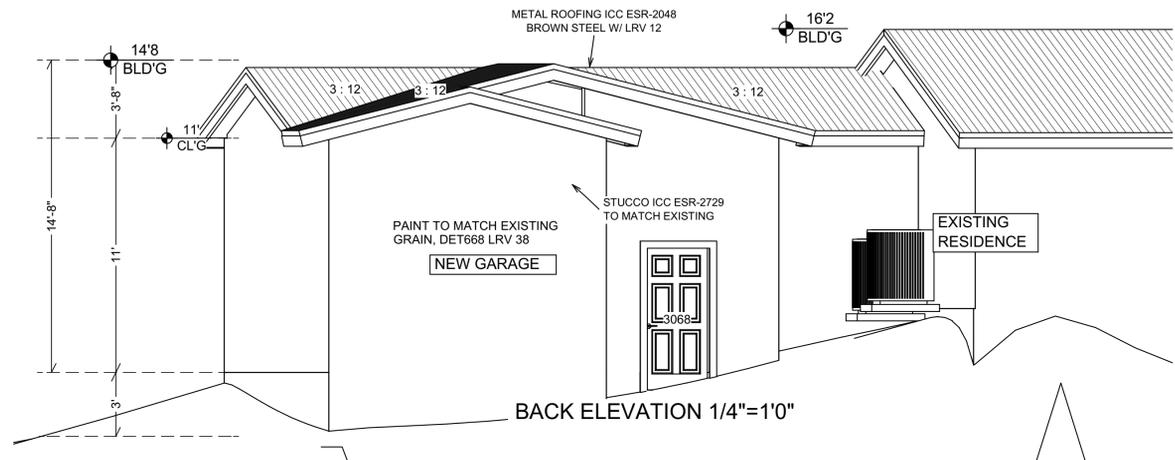
CROSS SECTION 1/4"=1'0"



RIGHT ELEVATION 1/4"=1'0"



CROSS SECTION 1/4"=1'0"



BACK ELEVATION 1/4"=1'0"

NOTE:
F.C.E. 24" ABOVE NATURAL GRADE INDICATION,
REFER TO CIVIL PLAN BY ANDERSON NELSON INC.
FILE 8080

DRAWINGS PROVIDED BY:
RAY CUSTOM DRAFTING
480-243-0100

REVISIONS
 00-00-00
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TELLES RESIDENCE
 4055 E KEIM DR
 PARADISE VALLEY 85253

**ELEVATIONS/
 CROSS SECTIONS**



DATE:

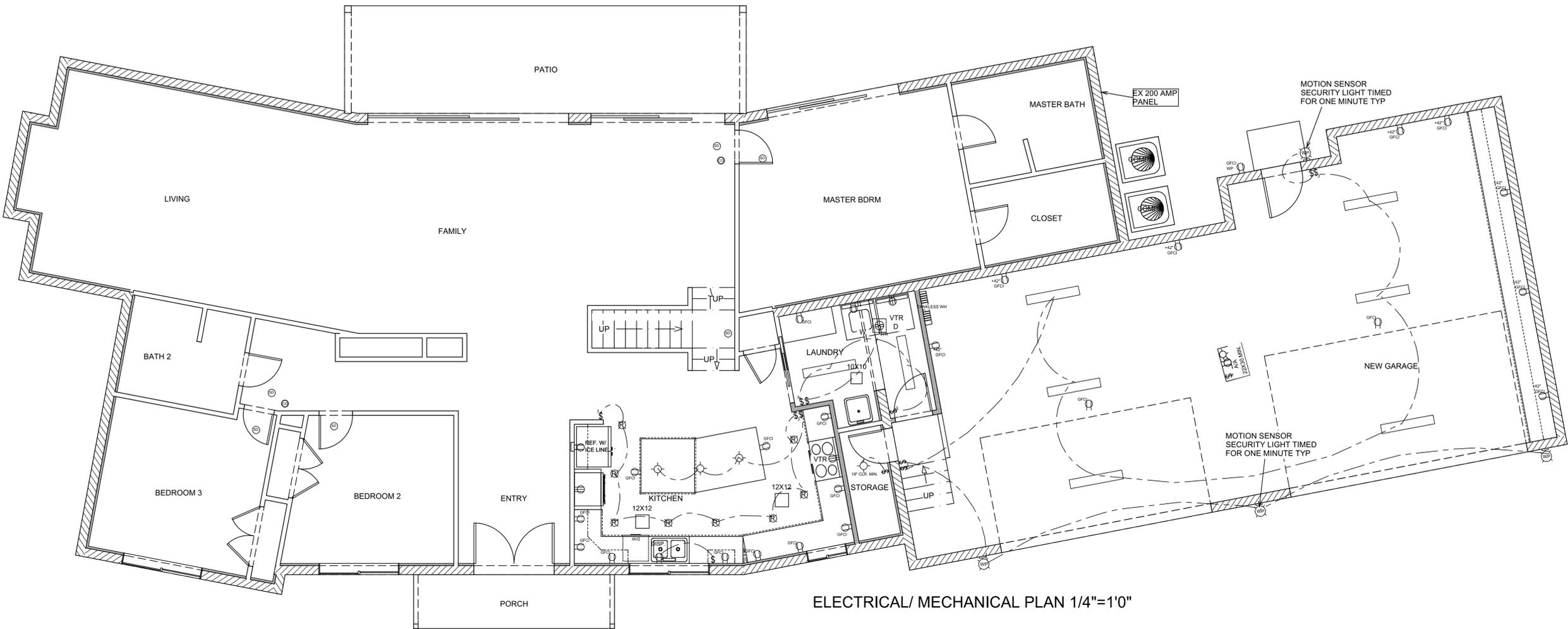
8/15/2019

SCALE:

1/4"=1'-0"

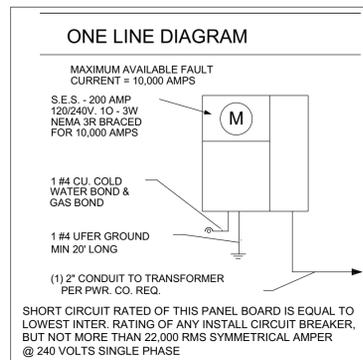
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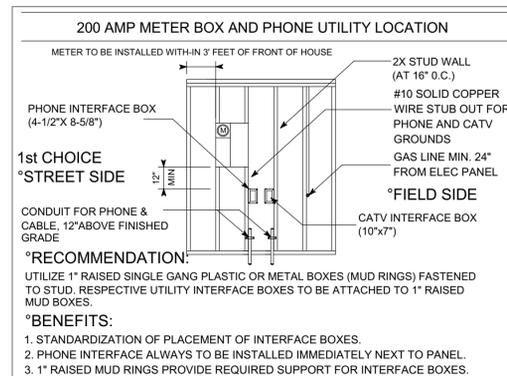


ELECTRICAL/ MECHANICAL PLAN 1/4"=1'0"

LOAD CALCULATIONS		
3171 S.F. X 3 WATTS		9513
APPLIANCE CIRCUITS	2 X 1500 W	3000
LAUNDRY CIRCUITS	1 X 1500 W	1500
DISHWASHER/ DISP.	1 X 1500 W	1500
WATER HEATER	1 X 4500 W	4500
DRYER	1 X 5000 W	5000
RANGE	1 X 12000 W	12000
MIRCOWAVE	1 X 1500 W	1500
BATH	1 X 1500 W	1500
TOTAL		40,013
FIRST 10 KW. @ 100%	10000	
30,013 REMAINDER @ 40 %	12,005	
AC 2 X 6000	12,000	
TOTAL	34,005	
34,005 DIVIDED BY 240V =	142 AMPS.	



PANEL BOARD SCHEDULE					
200 AMP SERVICE					
1.	A/C 1	2	2	RANGE 2.	
3.	A/C 1	40	50	RANGE 4.	
5.	A/C 2	2	2	DRYER 6.	
7.	A/C 2	40	30	DRYER 8.	
9.	DW & DSP	1	20	2	W.H. 10.
11.	KITCHEN	1	20	30	W.H. 12.
13.	KITCHEN	1	20	1	GENERAL 14.
15.	WASHER	1	20	1	LIGHTING 16.
17.		1	20	1	GENERAL 18.
19.		1	20	1	LIGHTING 20.
21.					22.
23.					24.
25.	BATHRM GFI	1	20		26.
27.	MICROWAVE	1	20		BLANK 28.
29.	BLANK				BLANK 30.



ELECTRICAL LEGEND



RAY CUSTOM DRAFTING
480-243-0100

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00-00-00
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TELLES RESIDENCE
4055 E KEIM DR
PARADISE VALLEY 85253

ELECTRICAL/
MECHANICAL



DATE:

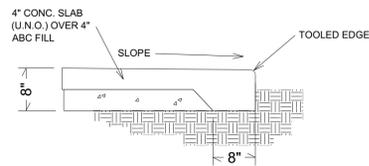
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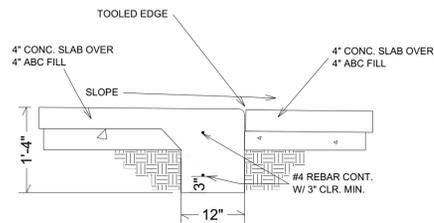
1/4"=1'-0"

SHEET:

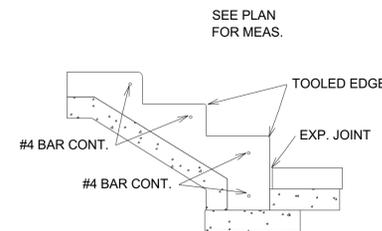
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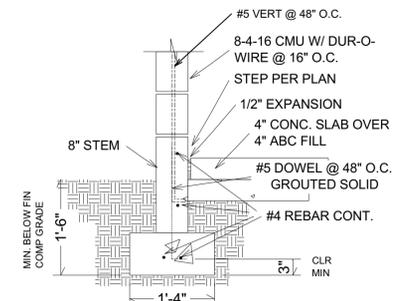
17 TURNDOWN @ EDGE OF SLAB



9 TURNDOWN @ GARAGE



10 CONC STEPS



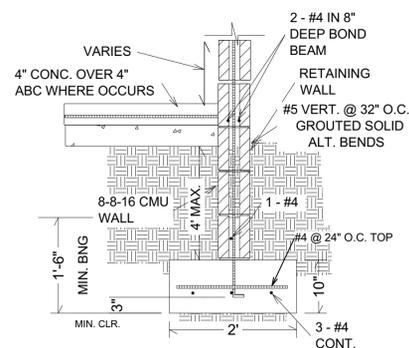
1 TYPICAL WALL FTG

18 INTERIOR BEARING WALL FOOTING

14 RETAINING TURNDOWN

6 RETAINING COLUMN

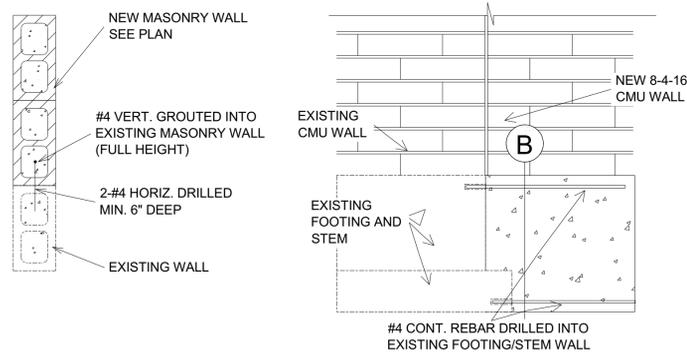
2 FOOTING @ GARAGE



7 GARAGE SIDE RETAINING

3 STEM @ DOOR

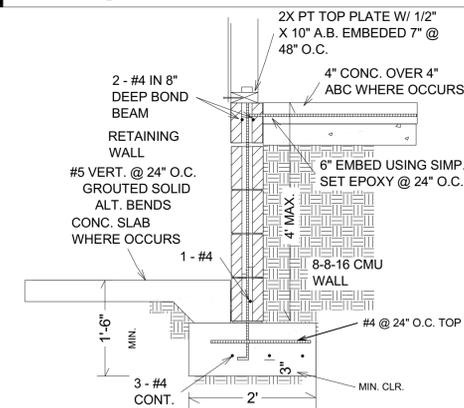
11 NON-BEARING STEP @ GARAGE



15 NEW CMU TO EXISTING



8 FRAME COLUMN FOOTING



4 RETAINING WALL

20 GARAGE PIER

SCALE: 3/4" = 1'0"

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480-243-0100

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00-00-00
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TELLES RESIDENCE
4055 E KEIM DR
PARADISE VALLEY 85253

FOUNDATION
DETAILS



DATE:

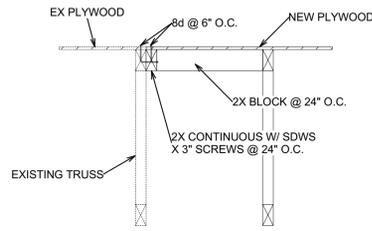
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SCALE:

3/4"=1'-0"

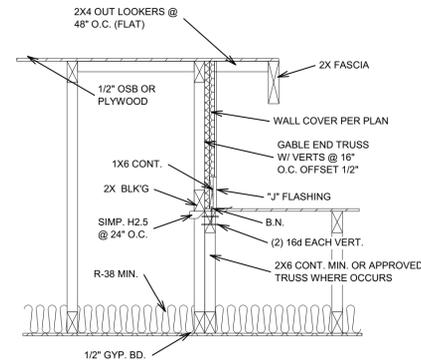
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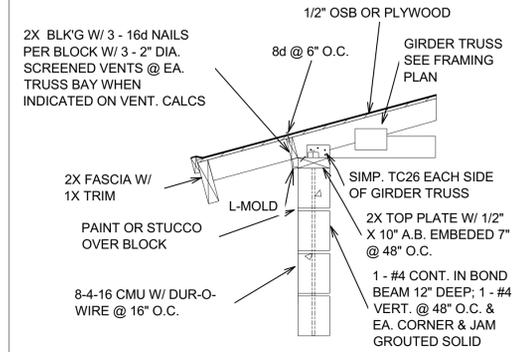


15 NEW TRUSS TO EX

13 GIRDER TRUSS HGR @ GIRDER TRUSS



9 BEAM TO COLUMN



5 GIRDER TRUSS HOLDOWN

1 HIP JACK TRUSS @ GIRDER TRUSS

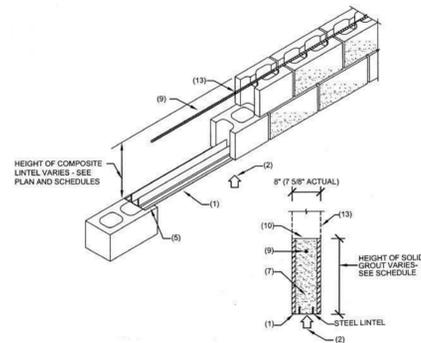
18 TRUSS TO SHEAR WALL CONNECTION

14 TRUSS CONNECTION

10 NEW TRUSS TO EX

6 TRUSS HANGER @ GIRDER TRUSS

2 PONY WALL OVER TRUSS



20

1. PRODUCT NAME (PATENT NO. 346538):
 PREFORMED POWERS STEEL LINTEL SHALL BE GALVANIZED CORR. STEEL AS MANUFACTURED BY POWERS STEEL AND WIRE PRODUCTS, INC. STEEL GRADE SHALL BE ASTM A570 GRADE C (FY = 40 ksi).

2. SHORE LINTELS AS REQUIRED TO COMPENSATE FOR DEAD LOAD DEFLECTION ON NON-CURED MASONRY GROUT. ALL LINTELS GREATER THAN 18" ARE BUILT WITH 1/2" CAMBER.

3. LINTEL TO BE USED WITH BRICK OR CONCRETE MASONRY UNITS HAVING MINIMUM FIN AS SHOWN.

4. STEEL SURFACES IN CONTACT WITH GROUT AND/OR MORTAR SHALL BE UNPAINTED AND FREE OF MATERIAL THAT MIGHT INHIBIT BOND.

5. BEARING EACH END SHALL BE 2" ± 1/2". BEARING SHALL BE ON A MINIMUM 8" DEEP GROUTED CELL PER THE STANDARD BUILDING CODE.

6. FIN = 1500 psi. MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N.

7. GROUT = 3,000 psi. SLUMP RANGE: 8" TO 11". ROD OR VIBRATE GROUT ADEQUATELY TO ENSURE CONSOLIDATION OF GROUT (NO AIR POCKETS). GROUT SHALL COMPLY WITH ASTM C476-83 AND BE EITHER COARSE OR FINE GROUT.

8. MORTAR: TYPE "S" OR TYPE "M" 1800 psi.

9. TOP REINFORCING OR TOP OF WALL REINFORCING, IS REQUIRED BY CODES TO PROVIDE A CONTINUOUS TIE AROUND A STRUCTURE AND TO PROVIDE FOR UPLIFT RESISTANCE AT LINTELS.

10. ATTACHMENTS TO TOP OF WALL PER ARCHITECTURAL AND/OR ENGINEERING DRAWINGS.

11. LIMITATIONS:
 THE LINTELS SHALL NOT EXCEED THE ALLOWABLE DESIGN LOADS AND SPANS SHOWN IN THIS REPORT.
 THE LINTELS SHALL NOT BE USED IN A FIRE RESISTANCE RATED ASSEMBLY UNLESS A TEST REPORT DOCUMENTING FIRE RESISTANCE IS SUBMITTED TO THE BUILDING OFFICIAL.
 A PROPER BARRIER IS REQUIRED WHEN USING CORROSIVE LUMBER PRODUCTS IN CONTACT WITH THE STEEL LINTELS. A PROPER BARRIER WOULD BE A POLYETHYLENE BARRIER WITH A 10 MIL THICKNESS OR TO MAINTAIN A MIN. 1/4" SPACING BETWEEN THE CORROSIVE LUMBER AND STEEL LINTEL.
 NOT FOR USE IN THE HWZ IN MIAMI OR BROWARD COUNTIES AT THIS TIME. MIAMI DADE COMPLIANCE IS BEING SOUGHT.

12. DEFLECTION LIMITS ARE SET TO L/600 FOR ALL LOADS SHOWN ABOVE THE DARKENED SOLID LINE. DEFLECTION LIMITS ARE SET TO L/240 (LIVE LOAD) AND L/240 (DEAD + LIVE LOAD) FOR ALL LOADS SHOWN BELOW DARKENED SOLID LINE, EXCEPT IF COMPOSITE LINTELS WHICH ARE SET TO L/240 (LIVE LOAD) AND L/180 (DEAD + LIVE LOAD).

13. ALL LOADS SHOWN IN TABLES ARE SUPERIMPOSED LOADS. TABLES ARE DATED 3/2012 AND CLEARLY INDICATE SUPERIMPOSED LOADS.

14. A #6 REINFORCING BARS GRADE 40 IS TO SET APPROX. 1-1/2" FROM TOP OF ALL LINTEL DESIGNS AND IN SOME CASES ON THE BOTTOM OF LINTEL AS SHOWN ON LOAD TABLES. TOP HORIZONTAL REINFORCEMENT IS TO BE A CONTINUOUS TIE AS NOTED IN NOTE #9. IN THE CASE THAT THE LINTEL IS NOT WITHIN A COMPOSITE BOND BEAM SYSTEM, TOP HORIZONTAL REINFORCEMENT IS TO EXTEND 2'-0" PAST INSIDE OF JAMBS.

15. MANUFACTURER:
 POWERS STEEL
 4118 E. ELWOOD PHOENIX, AZ 85040
 PHONE (602) 437-1150
 FAX (602) 437-5409

16. TECHNICAL DATA AND ENGINEERING POWERS LINTELS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE FOLLOWING:
 + FLORIDA BUILDING CODE - 2010
 + NAIIPRO7 7/8" LIGHT GAUGE COLD FORMED STEEL DESIGN - 2007
 + ACI 530-08/ASCE 5-09/TMS 402-08

17. TECHNICAL ASSISTANCE IS AVAILABLE FROM THE MANUFACTURER ON SPECIAL DESIGN CONCERNS OR LINTEL DEPTHS DIFFERENT THAN THOSE SHOWN IN THE LOAD TABLES.

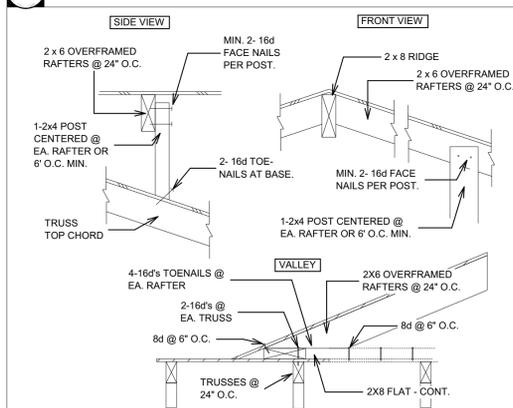
STRUCTURAL ENGINEER FOR THESE LINTELS IS:
 S.E. CONSULTANTS, INC.
 5902 E. THOMAS RD. SUITE 104
 SCOTTSDALE, AZ 85251
 PHONE (480) 946-2010
 FAX (480) 946-1909

IF AN INSPECTOR, CONTRACTOR, SUBCONTRACTOR, OR PLANS EXAMINER HAS ANY TECHNICAL QUESTIONS PLEASE CALL.

INSTALLATION:
 POWERS LINTELS ARE TO BE INSTALLED IN ACCORDANCE WITH STANDARD CONSTRUCTION PRACTICES, SET TO PROPER LINE AND LEVEL, PLUMB AND TRUE, AND IN CORRECT RELATION TO OTHER WORK.

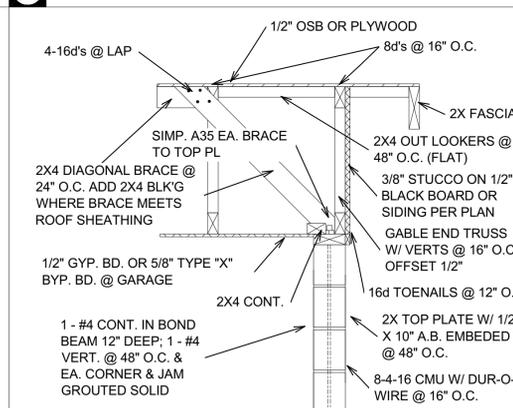
PSR(L)-2 STEEL LINTELS
 NOTE: NO SCALE
 1/8 GAGE IS .000 INCHES THICK.

11 BEAM TO FRAME



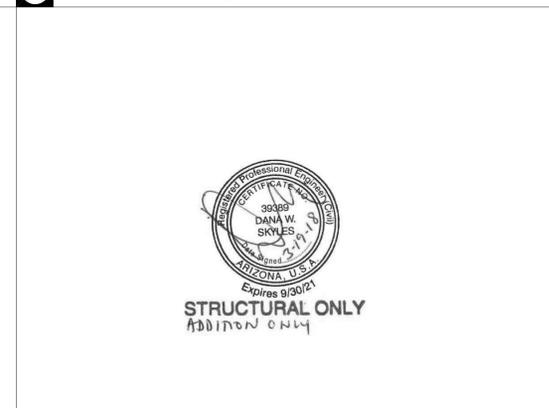
12 OVERFRAMING

7 TRUSS TO PLATE



8 GABLE END TRUSS

3 PATIO JOIST @ PLATE



4 PATIO JOIST @ BEAM

RAY CUSTOM DRAFTING
 480-243-0100

REVISIONS
 00-00-00
 RI

TELLES RESIDENCE
 4055 E KEIM DR
 PARADISE VALLEY 85253

FRAMING DETAILS



DATE:

8/15/2019

SCALE:

3/4" = 1'-0"

SHEET:

D2



STRUCTURAL ONLY
 ADDENDUM ONLY

SCALE: 3/4" = 1'0"

CONSTRUCTION NOTES

- 1. ELECTRICAL**
- PROVIDE A MIN. OF 1 #4 COPPER WIRE CONNECTING THE METAL WATER SYSTEM TO THE SERVICE EQUIPMENT ENCLOSURE GROUNDING BUSS
 - A 200 AMPERE SERVICE SHALL BE PROVIDED WITH A GROUNDING ELECTRODE OF NOT LESS THAN 20 FEET OF #4 BARE COPPER PER NEC OR OTHER APPROVED GROUNDING METHOD SPECIFIED IN NEC. THE MINIMUM SIZE OF GROUNDING ELECTRODE FOR A 400 AMPERE SERVICE FOR A DWELLING UNIT WOULD BE A #10 COPPER CONDUCTOR PER NEC
 - PROVIDE TWO OR MORE 20 AMP APPLIANCE CIRCUITS TO SERVICE THE KITCHEN, BREAKFAST, AND DINING AND ONE SUCH CIRCUIT @ THE LAUNDRY & EA. BATHROOM. W/ A MIN. 40 AMP CIRCUIT FOR RANGE [PER NEC] THESE CIRCUITS SHALL HAVE NO OTHER OUTLETS. PER NEC.
 - OUTLET BOXES IN WALL BETWEEN THE HOUSE AND THE GARAGE MUST BE METAL OR UL APPROVED PLASTIC.
 - CEILING FANS NOT EXCEEDING 35 POUNDS (WITH OR WITHOUT ACCESSORIES) MAY BE SUPPORTED BY OUTLET BOXES PROVIDED THE BOXES ARE IDENTIFIED FOR SUCH USE PER NEC.
 - PROVIDE A WORK OUTLET W/IN 25' OF ANY OUTDOOR HVAC EQUIPMENT.
 - GFCI OUTLETS REQD. IN GARAGE UNLESS SINGLE OUTLET DEDICATED.
 - SMOKE DETECTOR SHALL BE PERMANENTLY WIRED OR WIRELESS AND INTER-CONNECTED W/ BATTERY BACK UP AND PLACED 3' MIN. FROM DUCT OPENINGS, WHERE THE HIGHEST POINT OF A CLG. IN A ROOM THAT OPENS TO THE HALLWAY SERVING THE BEDROOMS EXCEEDS THAT OF THE OPENING TO THE HALLWAY BY 24" OR MORE. SMOKE DETECTORS SHALL BE INSTALLED IN THE HALLWAY AND IN THE ADJACENT ROOMS. CARBON MONOXIDE DETECTORS IF THERE IS FUEL-FIRED APPLIANCE.
 - FIXTURES INCLUDING CEILING FANS THAT ARE LOCATED IN DAMP OR WET LOCATIONS SHALL BE "LISTED" TO BE SUITABLE FOR SUCH LOCATION PER NEC.
 - RECESSED INCANDESCENT LIGHTS SHALL MAINTAIN A 3" CLEARANCE TO INSULATION OR BE LISTED TO HAVE INSULATION IN DIRECT CONTACT WITH THE FIXTURE PER NEC.
 - PROVIDE BONDING TO THE WATER PIPING, GAS AND METAL BUILDING SYSTEMS PER NEC.
 - PERMANENTLY IDENTIFY MULTIPLE HVAC UNITS WITH PERMANENT LABELS/ MARKINGS
 - LIGHT FIXTURES IN CLOTHES CLOSET SHALL COMPLY WITH NEC.
 - ARC FAULT CIRCUIT INTERRUPTER (AFCI) REQUIRED FOR ALL OUTLETS NOT GFCI NEC

- 2. PLUMBING**
- PROVIDE WATER SAVING FIXTURES; TOILETS 1.6 GAL. MAX. FLUSH, SHOWERS MAX. 3 GPM FLOW AND FAUCETS 3 GPM MAX. FLOW. (PER IRC)
 - T&P RELIEF VALVE DRAIN LINE TO BE FULL SIZE STEEL PIPE OR HARD DRAWN COPPER TUBING EXTENDED TO THE EXTERIOR AND TERMINATING IN A DOWNWARD POSITION LESS THAN 2 FT. AND MORE THAN 6" ABOVE GRADE.
 - PIPING MATERIALS SHALL BE AS FOLLOWS; SCHEDULE 40 ABS OR PVC DRAIN & VENT PIPE, TYPE "M" COPPER, TUBING ABOVE SLABS, TYPE "L" BELOW SLABS, INSTALLED W/O JOINTS, AND WROUGHT IRON OR STEEL, GALVANIZED OR BLACK FOR GAS FUEL PIPING.
 - SOLDERS AND FLUX HAVING A LEAD CONTENT IN EXCESS OF 2/10 OF 1% SHALL NOT BE USED IN THE INSTALLATION OR REPAIR OF ANY PLUMBING IN RESIDENTIAL OR NON-RESIDENTIAL FACILITIES PROVIDING WATER FOR HUMAN CONSUMPTION WHICH ARE CONNECTED TO PUBLIC WATER SYSTEMS.
 - 3/4" MIN. TOILET SPACE SHALL BE AS FOLLOWS:
 - PROVIDE PRESSURE BALANCE OR THERMOSTATIC MIXING VALVE CONTROL VAVES FOR ALL SHOWERS AND TUB-SHOWER COMINATIONS.
 - A HIGH LOOP STRAPPED WITH 3/4" STAP AT THE DISHWASHER TO SINK CONNECTOION MAY BE PROVIDED IN LIEU OF THE AIR GAP SPECIFIED BY IRC.
 - HOSE BIBBS ARE TO BE EQUIPPED WITH INTEGRAL BACKFLOW PREVENTERS PER IRC.
 - AN APPROVED DIELECTRIC INSULATOR SHALL BE PROVIDED ON ALL DISSIMILAR METAL WATER PIPING CONNECTIONS OF WATER HEATERS AND RELATED WATER HEATING EQUIPMENT.
 - WATER PRESSURE IN EXCESS OF EIGHTY (80) POUNDS PER SQUARE WILL REQUIRE AN APPROVED REGULATOR
 - GAS WATER HEATER TO HAVE 3M3 DUAL WALL PIPE THRU ROOF.
 - COMB. AIR OPTIONS: 2- 12X12 VENTS (ONE HIGH ONE LOW.) "OR" 2- 7" PIPES (ONE HIGH ONE LOW.)

- 3. STUCCO SYSTEMS**
- STUCCO FINISH SHALL BE WESTERN ONE KOTE, STUCCO SYSTEM OR OTHER ICC APPROVED THIN COAT SYSTEM, SYSTEM SHALL BE APPLIED BY AN APPROVED APPLICATOR STUCCO SYSTEM SHALL BE APPLIED OVER A WEATHER-RESISTIVE BARRIER. THIS WEATHER-RESISTIVE BARRIER SHALL CONSIST OF:
- 1" THICK, 1.5 P.C.F. DENSITY, TYPE II, TONGUE AND GROOVE EXPANDED POLYSTYRENE (E.P.S.) INSULATION BOARD OR OTHER ICC APPROVED TYPE II OR BETTER E.P.S. BOARD "OR" DOW CHEMICAL COMPANY'S 1" THICK, 2.0 P.C.F. DENSITY, TYPE IV, STYROFOAM TG EXTRUDED POLYSTYRENE FOAM INSULATION BOARD (ICC ER 1607) IS ACCEPTABLE AS THE WEATHER-RESISTIVE BARRIER.
 - K-LATH OR OTHER ICC PROVIDED WATER-PROOF PAPER BACKED WIRE-LATH OR C-2 LAYERS OF GRADE "D" KRAFT WATER-PROOF BUILDING PAPER OR OTHER WEATHER-RESISTIVE BARRIER. PROVIDE A 26 GA. CORROSION RESISTANT WEEP SCREED WITH A MIN. VERT. ATTACHMENT FLANGE OF 3 1/2" AND PLACED 3/4" MIN. BELOW THE FOUNDATION LINE ON ALL EXTERIOR STUD. WALLS. SCREED TO BE PLACED 4" MIN. ABOVE FIN. GRADE.

- 4. DOOR AND WINDOW FLASHING**
- PROVIDE TYPE 30 FELT BUILDING PAPER AS FLASHING AT ALL HEADS, JAMBS, AND SILLS OF WINDOW AND DOOR OPENINGS.
 - FLASH HORIZONTAL AND/OR SLOPED AREAS AND 6" MIN. OF VERTICAL WALL SURFACE AROUND OPENINGS.
 - PROVIDE CONTINUOUS SEALANT BEAD WHERE STUCCO BUTTS WINDOW AND DOOR FRAMES SO AS TO PROVIDE A WEATHER-RESISTIVE BARRIER

- 5. SECURITY SPECIFICATIONS**
- EXTERIOR SWINGING DOORS MUST BE SOLID CORE OR METAL SKIN CONSTRUCTION WITH JAMS SHIMMED SOLID FOR SIX INCHES ABOVE AND BELOW THE DEADBOLT LOCK STRIKE PLATE. IF HINGES ARE ON THE OUTSIDE, THEY MUST HAVE NON-REMOVABLE PINS OR BE PIN STANDARD HINGES ALL MAIN OR FRONT ENTRY DOORS MUST HAVE A 180 DEGREE DOOR VIEWER OR BE ARRANGED SO THAT THE OCCUPANT CAN VIEW THE IMMEDIATE AREA OUTSIDE THE DOOR THROUGH A WINDOW. DOORS FROM A DWELLING UNIT TO AN ATTACHED GARAGE ARE ALSO CONSIDERED EXTERIOR SWINGING DOORS. THIS DOES NOT PROHIBIT THE USE OF "FRENCH" DOORS. EXTERIOR SLIDING DOORS MUST HAVE THE SLIDING SECTION EQUIPPED SO THAT IT CANNOT BE RAISED OR REMOVED WHILE IN THE CLOSED AND LOCKED POSITION. AN AUXILIARY NON-KEYED LOCK MUST ALSO BE INSTALLED. THE STATIONARY SECTION SHALL NOT BE REMOVABLE FROM THE OUTSIDE.
 - DEADBOLT LOCKS ARE REQUIRED ON ALL EXTERIOR SWINGING DOORS AND MUST BE EQUIPPED WITH A MINIMUM ONE INCH BOLT THROW, WRENCH RESISTANT COLLAR, FASTENERS WHICH THREAD INTO THE CYLINDER BODY, AND A TWO SCREW STRIKE PLATE USING TWO INCH BY NO. 8 SCREWS (#8 MACHINE SCREWS IN METAL JAMBS. SUCH LOCKS MUST BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY.
 - EXTERIOR WINDOWS SHALL BE DUAL PANE, CONSTRUCTED AND INSTALLED SO AS TO PROHIBIT SLIDING, RAISING, OR REMOVAL OF THE MOVING SECTION WHILE IN THE CLOSED AND LOCKED POSITION. WINDOW PANELS SHALL HAVE WEATHER STRIP MOLDING OR LAUNDRY BEAD WHICH IS NOT EASILY REMOVED FROM THE OUTSIDE AN AUXILIARY LOCK SHALL BE INSTALLED ON ALL WINDOW TRACKS REMOVED FROM THE OUTSIDE AN AUXILIARY LOCK SHALL BE INSTALLED ON ALL WINDOW TRACKS TO PREVENT SLIDING. (SLEEPING-ROOM WINDOWS MAY NOT HAVE LOCKS WHICH REQUIRE A KEY OR SPECIAL KNOWLEDGE OR EFFORT TO UNLOCK).
 - GARAGE DOORS SHALL BE EQUIPPED WITH AT LEAST TWO LOCKING DEVICES OF THE FOLLOWING TYPES: THROW BOLT OR FLUSH BOLT, CYLINDER-TYPE LOCK, PADLOCK AND HASP OR BE EQUIPPED WITH A POWER OPERATED MECHANISM.
 - ATTIC ACCESS DOORS MUST BE LOCATED IN THE INTERIOR OF THE DWELLING OR GARAGE. IF NO INTERIOR LOCATION IS AVAILABLE, A STEEL HASP AND PADLOCK MUST BE INSTALLED.
 - NOTE: THESE REQUIREMENTS ARE NOT INTENDED TO PREVENT USE OF ANY HARDWARE OR METHODS OF CONSTRUCTION NOT SPECIFICALLY PRESCRIBED, WHICH PROVIDED EQUIVALENT SECURITY, WHEN FIRST APPROVED BY THE SUPERINTENDENT OF BUILDING INSPECTIONS.
 - NOTE: DEVICES SHALL NOT BE INSTALLED IN A MANNER TO PREVENT PROPER EGRESS THROUGH DOORS OR BEDROOM WINDOWS AS SPECIFIED IN IRC
 - CITY OF MESA - ALL EXTERIOR DOORS & WINDOWS SHALL COMPLY WITH SECURITY ORDINANCE #2225.

- 6. SOIL/CONCRETE**
- SOIL BEARING: ASSUMED SOIL BEARING VALUE IS 1500 PSF @ 18" BELOW UNDISTURBED SOIL. CONCRETE: FC=2500 P.S.I. @ 28 DAYS
- ANCHOR BOLTS: ASTM A-307 GRADE A REINFORCING STEEL: ASTM A-615 GRADE 40
- SPREAD FOOTINGS UNDER COLS SHALL BE 12" THICK MIN. AND BEAR AT 18" MIN. BELOW UNDISTURBED SOIL.
 - DRIVEWAYS, WALKS & SLOPE OF LANDINGS @ ALL DOORS SHALL BE A MIN. OF 1/4" PER FT.
 - SEAL ALL VOIDS AROUND PIPING PASSING THROUGH CONC. SLABS.
 - SLOPE 1/4" PER FOOT MAX WHERE OCCURS

- 7. LUMBER**
- ALL LUMBER MUST BEAR AN APPROVED GRADING STAMP.
 - CEILING JOISTS RAFTERS, FLOOR JOISTS, ETC. NO. 2 DOUGLAS FIR/LARCH Fb = 875 P.S.I. E = 1,600,000 P.S.I.
 - BUILT-UP BEAMS, LINTELS, HEADERS (EACH MEMBER 2" TO 4") (SINGLE MEMBER USES) NO. 2 DOUGLAS FIR/LARCH Fb=875 P.S.I. E=1,600,000 P.S.I.
 - STUDS, BLOCKING (SINGLE MEMBER USES) STUD GRADE Fb=675 P.S.I. E=1,200,000 P.S.I.
 - PLATES (SINGLE MEMBER USES) STUD GRADE Fb=675 P.S.I. E=1,200,000 P.S.I.
 - POSTS AND TIMBERS: NO. 1 DOUGLAS FIR/LARCH Fb=1000 P.S.I. E=1,700,000 P.S.I.
 - BEAMS AND STRINGERS: NO. 1 DOUGLAS FIR/LARCH Fb=1000 P.S.I. E=1,700,000 P.S.I.
 - GLU-LAM BEAMS: DRY CONDITIONS OF USE DOUGLAS FIR/LARCH COMB 24F. Fb=2400 P.S.I. E=1,800,000 P.S.I.
 - PLYWOOD: P.S.I. -85 ROOF SHEATHING: 1/2 STD. PLYWOOD INDEX 32/16-EXTERIOR OR INTERMEDIATE GLUE OR 7/16" WAFERBOARD CONFORMING TO N.E.R.-108.
 - PROVIDE CITY APPROVED WIND AND SISMIC TIES @ EACH RAFTER TO PLMB & STUD TO PL. CONN.
 - EXTERIOR WOOD PLATES IN CONTACT W/ CONCRETE SHALL BE REDWOOD OR PRESSURE TREATED.
 - ALL PLATES SHALL BE TREATED OR FOUNDATION GRADE REDWOOD

- 8. NAILING SCHEDULE**
- SOLID BLOCKING BETWEEN JOISTS AND RAFTERS TO DOUBLE PLATE SILL OR GIRDER. TOE NAIL PER
- | | |
|------------------------------------------|--------------------------------|
| BLOCKING | 3-16d |
| BRIDGING TO JOIST, TOE NAIL EA. END | 2-8d |
| TOP PLATE TO STUD, END NAIL | 2-16d |
| STUD TO SOLE PLATE, TOE NAIL OR END NAIL | 4-8d TOE NAIL 2-16d END NAIL |
| DOUBL BE STUDS, FACE NAIL | 16d @ 24" O.C. |
| DOUBL BE TOP PLATED, FACE NAIL | 16d @ 16" O.C. |
| TOP PL. LAPS & INTERSECTIONS, FACE NAIL | 2-16d |
| CLG. JOISTS TO PLATE, TOE NAIL | 3-8d |
| CONT. HEADER TO STUD, TOE NAIL | 4-8d |
| CLG. JSTS. LAPS O/ PARTITIONS, FACE NAIL | 3-16d |
| CLG/ JSTS TO PARALLEL RAFTERS, FACE NAIL | 3-16d |
| RAFTER TO PLATE, TOE NAIL | 3-8d |
| RAFTER TO RIDGE BOARD TOE NAIL | 3-16d |
| RAFTER TO VALLEY OR HIP RAFTERS | 3-16d TOE NAIL 3-16d FACE NAIL |
| CORNER STUDS, FACE NAIL | 16d @ 24" O.C. |

- 9. BRACING**
- THE EXTERIOR SIDE OF ALL EXTERIOR WALLS SHALL BE BRACED AT EACH END OF INSIDE AND OUTSIDE CORNERS, ALONG WITH BEING BRACED AT LEAST EVERY 25 FEET IN LENGTH AND CROSS WALLS PER UBC SEC 2513 WHERE 1X4 LET-IN BRACING OR METAL "X" BRACING CANNOT BE UTILIZED DUE TO OPENINGS. BRACE ENTIRE GARAGE DOOR OPENING WALL WITH A MIN. 3/8" PLYWOOD SHEATHING OR 3/8" O.S.B.

- 10. FIREPLACE**
- 0-CLEARANCE
 - FIREPLACE SHALL BE A PERMANENTLY INSTALLED GAS/ELECTRIC LOG INSERT OR COMPLY WITH 40 CFR 60, SUBPART AAA, REF. SENATE BILL 1427.
 - FIREPLACE DETAIL NOTE: PROVIDE MANUFACTURER INSTALLATION INSTRUCTION FOR PRE-FAB FIREPLACE AND CHIMNEY TO INSPECTOR.
 - 2" MINIMUM CLEARANCE BETWEEN FIREPLACE AND ALL COMBUSTIBLES
 - 20" WIDE, FLOOR HEARTH (UNLESS OTHERWISE NOTED)
 - IF GAS FIREPLACE IS EQUIPPED WITH A DAMPER, IT SHALL BE TIGHT FITTING.
 - PROVIDE GAS SHUT-OFF VALVE WITHIN 4' OF GAS FIREPLACE

- 11. GENERAL NOTES**
- SILL HT. AT SLEEPING AREAS SHALL BE 44" MAX AND 5.7 S.F. MIN. OPENABLE AREA WINDOW MIN. WIDTH 20" MIN. HT. 24" OPENING DIRECTLY TO THE OUTSIDE
 - ALL GLASS IN HAZARDOUS AREAS AND ALL GLASS W/IN 18" OF FLOOR (EXCEPT SINGLE PANEES W/ 9 S.F. OR LESS AREA) SHALL BE SAFETY GLASS
 - SHOWER & TUB WALLS SHALL HAVE WATER RES. SHT. RCK. SHOWES TO HAVE CERAMIC TILE OR EQUAL TO 72" W/ROD SHOWER ENCLOSURES SHALL BE RODS, TEMPERED GLASS, OR APPROVED EQUAL.
 - MIN. INSULATION REQUIREMENTS: FRAME WALLS=R-13; MASONRY WALLS=R-6; ROOF=R-38.
 - FIRE BLOCK STUD WALLS AT DROPPED CEILINGS, SOFFITS, AND @ 10'-0" INTERVALS.
 - ALL EXITS TO BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE
 - MANUALLY OPERATED EDGE OR SURFACE-MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED.
 - ALL EXTERIOR SHT. RCK. TO BE TYPE "MR" AKA "BROWNBOARD"
 - ATTIC ACCESS DOOR TO PROVIDE THE SAME DEGREE OF FIRE RESISTANCE AS GARAGE WALL OR 3/2" PLYWOOD OR 5/8" SHT RCK. IF HVAC EQUIP. IS LOCATED IN THE ATTIC PROVIDE A SWITCHED LIGHT, ELEC. OUTLET & A 24" CATWALK W/ IN 20' OF EQUIP. & A 30"X30" WORK PLATFORM.
 - AIR HANDLER IN ATTIC TO HAVE 3/4" DRAIN PIPE DISCHARGING TO A POINT THAT CAN BE READILY OBSERVED. (PAINT PIPE END)
 - DRYER VENTS SHALL BE EXHAUSTED IN ACCORDANCE WITH THE MANUFACTURES INSTRUCTIONS. 35" MAX
 - L.
 - POST ADDRESS NUMBERS VISIBLE & LEGIBLE FROM THE STREET
 - GAS PIPING MAY NOT BE INSTALLED IN OR ON THE GROUND UNDER ANY BUILDING PER IRC SECTION 1211.3. KITCHEN ISLANDS HAVING GAS APPLIANCES SHALL HAVE GAS LINE SLEEVED AND SEALED IN AN APPROVED MANNER. UNDER GROUND GAS PIPING SYSTEM SHALL BE ISOLATED FROM ABOVE GROUND SYSTEMS BY AN APPR. ISOLATION FITTING INSTALLED AT LEAST 6" ABOVE GRADE
 - GUARDRAIL @ 36" W/ PICKETS SPACED SO A 4" SPHERE CANNOT PASS THRU.
 - FOAM ROOFING ICC ESR-5979
 - LAUNDRY ROOMS & BATHROOM FANS @ 50cfm TO HAVE 5 AIRE CHANGES PER HOUR & 100 SQUARE INCHES OF MAKEUP AIR TO BE PROVIDED FOR LAUNDRY ROOM.
 - ALL WEATHER - EXPOSED SURFACES SHALL HAVE A WEATHER-RESISTIVE BARRIER
 - ENERGY CERTIFICATE TO BE POSTED IN SES W/ R, U & SHGC VALUES
 - ISLAND SINK VENTING SHALL COMPLY WITH IRC
 - SPAS AND HYDROMASSAGE TUBS SHALL COMPLY WITH NEC ARTICLE 680.

****NOTE****

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL MEASUREMENTS, SPECS, ELEVATIONS, ROOF LAYOUTS, ETC. WITH SUB-CONTRACTORS, SUPPLIERS, AND ENGINEERS.

GOVERNING CONSTRUCTION CODES

- 2018 International Residential Code
 - 2018 International Building Code
 - 2018 International Mechanical Code
 - 2018 International Plumbing Code
 - 2018 International Fuel Gas Code
 - 2018 International Fire Code
 - 2018 Int'l Property Maintenance Code
 - 2017 National Electric Code
 - 2018 International Energy Conservation Code
- Per Paradise Valley, AZ

14. MASONRY

HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N, TYPE 1, F'm = 1,500 PSI, RUNNING BOND, MORTAR TYPE S, 1,800 PSI. GROUT 2,000 PSI. MECHANICALLY VIBRATE GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING AND AGAIN ABOUT 5 MINUTES LATER. PROVIDE CLEANOUTS IF GROUT LIFT EXCEEDS 4'-0" IN BLOCK WALLS. MAXIMUM GROUT LIFT SHALL BE 8'-0". UNLESS NOTED OTHERWISE ON THE PLANS, PLACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF WALL EXCEEDS 24'-0". CONTROL JOINTS SHALL NOT OCCUR AT WALL CORNERS, INTERSECTIONS, ENDS, WITHIN 24" OF CONCENTRATED POINTS OF BEARING OR JAMBS, OR OVER OPENINGS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS. ALL MASONRY BELOW FINISHED FLOOR OR GRADE SHALL BE GROUTED SOLID.

VERTICAL REINFORCING:

1 #5 IN CENTER OF GROUT AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AT ALL CORNERS, INTERSECTIONS, WALL ENDS, BEAM BEARINGS, JAMBS, EACH SIDE OF CONTROL JOINTS AND AT INTERVALS NOT TO EXCEED 24" O.C. UNLESS NOTED OTHERWISE. TIE AT 8'-0" VERTICALLY, WITH SINGLE WIRE LOOP TIE BY A.A. WIRE PRODUCTS COMPANY. LAP SPLICES SHALL BE 40 BAR DIAMETERS FOR GRADE 40 BARS AND 48 BAR DIAMETERS FOR GRADE 60 BARS. LAP SPLICES SHALL BE 1.3 X LAP LENGTH WHEN ADJACENT SPLICES ARE SEPERATED BY 3' OR LESS. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH DOWELS TO MATCH VERTICAL REINFORCING.

HORIZONTAL REINFORCING:

2 #4 IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT TOP OF WALL. #5 HORIZONTAL @ 32" O.C. PLACE THESE BARS CONTINUOUS THRU CONTROL JOINTS PER TYPICAL DETAIL. PROVIDE BENT BARS PER TYPICAL DETAILS, TO MATCH HORIZONTAL BOND BEAM REINFORCING. AT CORNERS AND WALL INTERSECTION TO MAINTAIN BOND BEAM CONTINUITY. LAP SPLICES SHALL BE 40 BAR DIAMETERS FOR GRADE 40 BARS AND 48 BAR DIAMETERS FOR GRADE 60 BARS. STAGGER SPLICES A MINIMUM OF 40 BAR DIAMETERS. DO NOT SPLICE WITHIN 8'-0" OF CONTROL JOINTS. STANDARD WEIGHT (NO. 9 GAGE WIRE) DUR-O-WAL OR DUR-O-WIRE (OR EQUIVALENT) LADDER TYPE JOINT REINFORCEMENT AT 16" O.C. IN MASONRY WALLS.

N. SPECIAL INSPECTION / QUALITY ASSURANCE PLAN

- ALL MASONRY CONSTRUCTION SHALL REQUIRE LEVEL 1 SPECIAL INSPECTION.
- SPECIAL INSPECTIONS SHALL BE REQUIRED:
 - ALL POST-INSTALLED CONCRETE ANCHORAGE TO CONCRETE (EPOXY GROUT APPLICATIONS)
 - WHEN REQUIRED BY THE LOCAL BUILDING DEPARTMENT:
 - THE OWNERS SHALL EMPLOY SPECIAL INSPECTORS WHO SHALL PROVIDE ADDITIONAL INSPECTIONS DURING CONSTRUCTION IN ACCORDANCE WITH IBC SECTION 17.
 - ALL SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT CERTIFIED INSPECTOR FROM AN ESTABLISHED TESTING AGENCY, LICENSED AND APPROVED BY THE BUILDING DEPARTMENT.
 - THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO VECTOR STRUCTURAL ENGINEERS AND ALL INTERESTED PARTIES.
 - ALL MASONRY CONSTRUCTION SHALL REQUIRE LEVEL 1 SPECIAL INSPECTION.
- STRUCTURAL TESTING IS NOT REQUIRED.
- ALL REPORTS SHALL BE DISTRIBUTED ON A MONTHLY BASIS TO THE ENGINEER OF RECORD, OWNER, CONTRACTOR, AND TO THE BUILDING OFFICIAL.
- NO STRUCTURAL OBSERVATION IS REQUIRED. HOWEVER, THE ENGINEER OF RECORD RESERVES THE RIGHT TO MAKE FIELD OBSERVATIONS DURING CONSTRUCTION APPROXIMATELY ONCE PER WEEK.

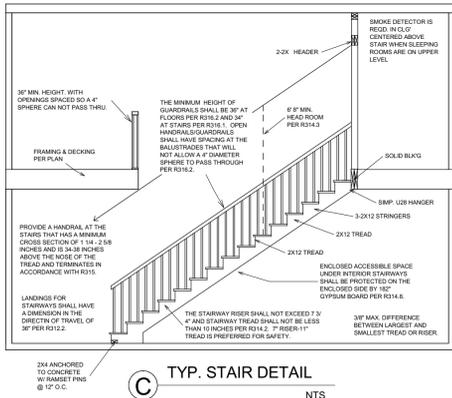
NOISE ATTENUATION

HOMES LOCATED WITHIN 5 MILES OF AN AIRPORT AND 1/2 MILE FROM A FREEWAY SHALL COMPLY WITH THE FOLLOWING NOISE ATTENUATION GUIDELINES:

- PROVIDE EXTERIOR WALL INSULATION EQUAL TO A VALUE OF R-11 WHERE ADJACENT TO LIVABLE AREAS
- PROVIDE CEILING INSULATION EQUAL TO A VALUE OF R-19 OVER LIVABLE AREAS.
- ALL EXTERIOR DOORS EXITING FROM LIVABLE AREAS SHALL BE SOLID CORE OR INSULATED, WITH WEATHER TIGHT GASKETS AND THRESHOLDS OR GASKETED GLASS.
- ALL EXTERIOR WINDOWS ADJACENT TO LIVABLE AREAS SHALL BE DOUBLE-GLAZED (DUAL PANE).
- ALL SOLE PLATES OF EXTERIOR WALLS ADJACENT TO LIVABLE AREAS SHALL BE CAULKED OR SEALED AT THE FLOOR LINE.

WINDOW LEGEND

AT	ARCHED TOP
CT	CIRCLE TOP



DRAWINGS PROVIDED BY:
RAY CUSTOM DRAFTING
480-243-0100

REVISIONS
00-00-00
RI

TELLES RESIDENCE
4055 E KEIM DR
PARADISE VALLEY 85253

NOTES/
CODES



DATE:

8/15/2019

SCALE:

N.T.S.

SHEET:

N1

ENERGY NOTES

- All products listed by ICC/N.E.R. number(s) shall be installed per the report and manufacturer's written instructions. Product substitution(s) for product(s) listed shall also have an ICC approved evaluation report(s) or be approved.
- Provide fire protection smoke detectors.
- Miscellaneous site structures, pools, spas, fences, site walls, retaining walls, and gas storage tanks may require separate permits.
- All exits to be operable from the inside without the use of a key or special knowledge.
- Doors leading into house from garage shall be 20 minute rated or equal, self-closing, self-latching
- Exterior wall penetrations by pipes, ducts or conduits shall be caulked.
- Lumber shall bear an approved grading stamp
- Bottom wood sill plates shall be pressure treated or equal. Exterior wall bottom sill plates shall bear/extend minimum 6 inches above finish grade.
- When structural plans are not sealed by registered design professional, provide engineered truss designs for all prefabricated trusses for review and approval
- Fire blocking shall comply with 2018 IRC
- Masonry Bed and head joints...shall be 3/8 inch-thick, the thickness of the bed joint of the starting course placed over foundations shall not be less than 1/4 inch and not more than 3/4 inch. Mortar joint thickness shall be within the following tolerances from the specified dimensions: 1. Bed joint: + 1/8 inch. 2. Head joint: 1/4 inch + 3/8 inch. 3. Collar joints: 1/4 inch + 3/8 inch.
- Windows located more than 72" above finished grade shall have the lowest part of clear opening of the window to be minimum 24 inches above the floor in which it serves.
- Gypsum board applied to a ceiling shall be 1/2" when framing members are 16" o.c. or 5/8" when framing members are 24" o.c. or use labeled 1/2" sag-resistant gypsum ceiling board. (d).
- Showers and tub-shower combinations shall be provided with individual control valves of the pressure balance or thermostatic mixing valve type.
- Shower area walls shall be finished with a smooth, hard non-absorbent surface, such as ceramic tile, to a height of not less than 72 inches above the drain inlet. Water-resistant gypsum board shall not be installed over a vapor retarder in a shower or tub compartment. Cement, fiber-cement or glass mat gypsum backers installed in accordance with mfgs' recommendations shall be used as backers for wall tile in tub and shower areas and wall panels in shower areas
- Plumbing fixtures shall comply with the following conservation requirements: Water closets-Tank type 1.6 gal. /flush. Shower heads- 2.5 gal. /minute. Faucets- 2.2 gal. /minute, provide aerator. lavatory 2.2 gpm
- Water treatment systems- shall be equipped with an automatic or readily accessible manual shutoff to prevent continuous flow when not in use.
- Domestic dishwashing machines connected to a disposer shall have the discharge installed as high as possible.
- Storage-tank type water heaters shall be installed with a drain pan and drain line.
- The hot water circulating system shall be equipped with an automatic or readily accessible manual on switch and a temperature sensor activated shut-off that can automatically turn off the hot-water circulating pump when the set temperature is reached.
- Provide roof/attic ventilation unless insulation is applied directly to underside of roof sheathing or the dimension is 24 inches or less between the ceiling and bottom of roof sheathing.
- Energy compliance shall be demonstrated by a passing REScheck energy compliance score.
- Provide Minimum R-3 insulation on hot water pipes.
- Supply and return ducts shall be insulated to a minimum R-8. Ducts in floor trusses, minimum R-6.
- Registers, diffusers and grilles shall be mechanically fastened to rigid supports or structural members on at least two opposite sides in addition to being connected to the ductwork they serve.
- The clothes dryer exhaust duct shall be at least the diameter of the appliance outlet and shall terminate on the outside of the bldg. and shall be equipped with a backdraft damper. It shall not exceed 25' from the connection to the transition duct from the dryer to the outlet terminal with reductions for bends, the duct shall terminate not less than 3 feet from a property line in any direction from the opening into bldg.
- Exhaust air from kitchens, bathrooms and toilet rooms shall not be re-circulated within a residence or to another dwelling unit, shall not discharge into an attic and/or crawl space and shall be exhausted directly to the outdoors.
- Electrical fixtures located in damp or wet locations shall be "listed" to be suitable for such location.
- Provide a wall mounted GFCI protected receptacle outlet within 36" of a bathroom or powder room lavatory.
- 15- and 20-ampere receptacles installed in bathrooms, garages and grade-level portions of unfinished accessory buildings used for storage or work areas, and installed outdoors shall have GFCI protection for personnel.
- All branch circuits that supply 15- and 20-ampere outlets installed in family rooms, dining rooms, living rooms, kitchens, parlors, libraries, dens, bedrooms, sunrooms, recreations rooms, closets, hallways and similar rooms or areas shall be protected by a combination type arc-fault circuit interrupter (AFCI) installed to provide protection of the branch circuit.
- 15- and 20-ampere receptacles shall be listed tamper-resistant.
- Provide Smoke Alarms in new and existing areas of home and be AFCI protected. Hard wired and interconnected
- Approved carbon monoxide alarms shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages. Hard wired and interconnected
- Provide a switch for the stairway when there are 6 or more risers.
- Receptacle outlets shall be installed so that no point along the floor line in any wall space is more than 6 feet, measured horizontally, from an outlet in that space, including any wall space 2 feet or more in width.
- Provide a minimum of two 20-amp small appliance branch circuits for the kitchen/dining/breakfast.
- Provide a concrete encased grounding electrode of not less than 20 feet of #4 bare copper.
- Provide bonding to the water piping, gas and metal building systems.
- All metal piping systems, metal parts of electrical equipment, and pump motors associated with the hydro massage tub shall be bonded together using a copper bonding jumper, insulated, covered, or bare, not smaller than No. 8 solid.
- A minimum of 90 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or a minimum of 90 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.
- Recessed luminaries installed in the building thermal envelope shall be IC-rated, labeled with air leakage rate not more than 2.0 cfm... sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.
- Provide outside combustion air to all indoor fireplaces, with air intake located not higher than the firebox.
- Where a listed decorative appliance is installed, the fireplace damper shall be a fixed open and shall comply with the listed decorative appliance manufacturer's installation instructions
- At least one thermostat shall be provided for each separate heating and cooling system.
- The building shall be provided with ventilation that meets the requirements of Section M1507 or with other approved means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.
- The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 5 air changes per hour. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the building official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.
- Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with 2018 IRC
Duct tightness shall be verified by either of the following:
 - Post-construction test: Total leakage shall be less than or equal to 4 cfm per 100 square feet of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
 - Rough-in test: Total leakage shall be less than or equal to 4 cfm per 100 ft2 of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm per 100 square feet of conditioned floor area.
- LENGTH IDENTIFICATION FOR EXHAUST DUCTS IN CONCEALED LOCATION SHALL BE LABELED OR TAGGED WITHIN 6' OF THE DUCT CONNECTION THAT SHOW THE TOTAL LENGTH OF THE EXHAUST DUCT. EXHAUST FANS SHALL EXTEND TO THE OUTSIDE 3' FROM OPERABLE AND ONO-OPERABLE OPENINGS INTO THE BUILDING. GAS PIPING SHALL NOT PENETRATE BUILDING FOUNDATION WALL AT ANY POINT BELOW GRADE. GAS PIPING SHALL ENTER AND EXIT A BUILDING AT A POINT ABOVE GRADE AND THE ANNULAR SPACE BETWEEN THE PIPE AND THE WALL SHALL BE SEALED.

- SEPTIC SYSTEMS -
 - New plastic water, sewer and gas line piping shall be installed with a yellow tracer wire (18 ga) min.
- POOL-
 - All new and altered doors and windows accessing the pool area must comply with the IRC Sec AG105.1 pool barriers and IRC R308.4 item 9. Glazing in Hazardous locations.

- FOUNDATION-
 - minimum soil bearing capacity per R401.4.1. Min = 1500 psf .
 - Shear resistance at the garage door wing walls to be continuous across the garage door. (R602.10.6.2).

- BRACED WALL-
 - The spacing between parallel braced wall lines shall be in accordance with Table R602.10.1.3. (60 feet using wind bracing application). Intermediate braced wall lines through the interior of the building shall be permitted. R602.10.1.3
 - A braced wall panel shall begin within 10 feet (3810 mm) from each end of a braced wall line as determined in Section R602.10.1.1. The distance between adjacent edges of braced wall panels along a braced wall line shall be no greater than 20 feet (6096 mm) as shown in Figure R602.10.2.2.
 - Braced wall lines with a length of 16 feet (4877 mm) or less shall have a minimum of two braced wall panels of any length or one braced wall panel equal to 48 inches (1219mm) or more. Braced wall lines greater than 16 feet (4877 mm) shall have a minimum of two braced wall panels. R602.10.2.3

- ROOF FRAMING and FLOOR FRAMING-

- WINDOWS
 - Doors & windows accessing the pool area must comply with the pool barrier IRC section AG105.1 and hazardous locations per IRC R308.4 #9

- ENERGY EFFICIENCY -
 - Air Leakage per 1102.4
 - The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections N1102.4.1 through N1102.4.4.
 - Building Thermal Envelope per 1102.4.1.1 & 1102.4.1.2
 - When Air infiltration rates of less than 5 air changes per hour require a whole-house mechanical ventilation system in accordance with M1507.3 ? R303.4
 - Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with Section M1601.4.1
 - Recessed luminaries installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces.
 - At least one thermostat shall be provided for each separate heating and cooling system.
 - Where the primary heating system is a forced-air furnace, at least one thermostat per dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule
 - Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with Section M1601.4.1
 - Building framing cavities shall not be used as ducts or plenums.
 - Mechanical system piping capable of carrying fluids above 105F (41C) or below 55F (13C) shall be insulated to a minimum of R-8.
 - The building shall be provided with ventilation that meets the requirements of Section M1507 or with other approved means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.
 - Heating and cooling equipment shall comply with requirements IRC SECTION M 1401.3 & M1601.1
 - A minimum of 90 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or a minimum of 90 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.
 - A PERMANENT CERTIFICATE SHALL BE COMPLETE AND POSTED ON OR IN THE ELECTRICAL DISTRIBUTION PANEL BY THE BUILDER OR REGISTERED DESIGN PROFESSIONAL. THE CERTIFICATE SHALL LIST THE PRE-DOMINATE R-VALUES OF INSULATION INSTALLED IN OR ON CEILING/ ROOF, WALLS, FOUNDATION AND DUCTS OUTSIDE THE CONDITION SPACES; U-FACTORS FOR FENESTRATION AND THE SOLAR HEAT GAIN COEFFICIENT OF FENESTRATION, AND THE RESULTS FROM ANY REQUIRED DUCT SYSTEM AND BUILDING ENVELOPE AIR LEAKAGE TESTING DONE ON THE BLDG.
 - Access doors from condition spaces to unconditioned spaces shall be weather-stripped and insulated to a level equivalent to the insulation on the surrounding surfaces.
 - Provide a 4" diameter moisture exhaust vent for clothes dryer, or as required by the clothes dryers listing and the manufacturers installation instructions provided that is to be presented prior to construction.
 - The clothes dryer exhaust duct shall be at least the diameter of the appliance outlet and shall terminate on the outside of the building, it shall not exceed 35' from the connection to the transition duct from the dryer to the outlet terminal with reductions for bends. the duct shall terminate not less than 3' from a property line, in any direction from openings into buildings.

- HVAC
 - "Every dwelling unit shall be provided with heating and cooling facilities capable of maintaining a minimum room temperatures between of 70 degrees F and 90 degrees F at a point 3 feet (914 mm) above the floor and 2 feet (610 mm) from exterior walls in all habitable rooms. The installation of one or more portable space heaters or portable space coolers shall not be used to achieve compliance with this section."
 - PRIMARY HEATING SYSTEM IS A FORCED-AIR FURNACE, AT LEAST ONE PROGRAMMABLE THERMOSTAT PER A/C UNIT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE TO MAINTAIN DIFFERENT TEMPERATURES THROUGHOUT THE DAY. THE THERMOSTAT SHALL INITIALLY BE PROGRAMMED WITH A HEATING TEMPERATURE SET POINT NO HIGHER THAN 70 DEGREES AND A COOLING TEMPERATURE SET POINT NO LOWER THAN 78 DEGREES.
 - THE BLDG SHALL BE TESTED AND VERIFIED AS HAVING AN AIR LEAKAGE RATE OF NOT TO EXCEED 5 AIR CHANGES PER HOUR IN ZONES 1 AND 2. TESTING SHALL BE CONDUCTED WITH A BLOWER DOOR AT A PRESSURE OF 0.2 INCHES W.G.
 - AIR DUCT TIGHTNESS SHALL BE VERIFIED BY EITHER OF THE FOLLOWING; POST CONSTRUCTION TEST OR ROUGH-IN TEST
 - SUPPLY AND RETURN DUCTS SHALL BE INSTALLED TO A MINIMUM R-8. DUCTS IN FLOOR TRUSSES SHALL BE INSTALLED TO MINIMUM R-6
 - CIRCULATING HOT WATER SYSTEMS SHALL BE PROVIDED WHEN THE LENGTH OF HOT WATER PIPING OR TUBING FROM THE SOURCE OF HOT WATER TO THE FURTHEST FIXTURE EXCEEDS 21' FOR A 3/4" LINE, 32 FEET FOR A 5/8" LINE, 43' FOR A 1/2" LINE AND 50' FOR A 3/8" OR LESS INCH LINE. WHEN THE HOT WATER DISRUPTION SYSTEM CONTAINS MORE THAN ONE PIPE OR TUBE SIZE, THE LARGEST SIZE SHALL BE USED FOR DETERMINING THE MAXIMUM ALLOWABLE LENGTH BEFORE A CIRCULATING HOT WATER SYSTEM IS REQUIRED. THE CIRCULATING SYSTEM SHALL BE EQUIPPED WITH AN AUTOMATIC OR READILY ACCESSIBLE MANUAL ON SWITCH AND A TEMPERATURE SENSOR ACTIVATED SHUT-OFF THAT CAN AUTOMATICALLY TURN OFF THE HOT WATER CIRCULATION PUMP WHEN THE SET TEMPERATURE IS REACHED.
 - HVAC SUPPLY AND RETURN DUCTS INSULATED R-8

- FIREPLACES - G2406
 - Factory built fireplaces (zero-clearance) and factory built chimneys shall be listed by an approved listing agency.
 - The installation manual and highlighted sections that apply to this installation will be made available to the field inspector.
 - Chimneys shall extend at least 2 feet higher than any portion of a building within 10 feet but shall not be less than 3 feet above the highest point where the chimney passes through the roof. R1003.9 and 2427.5.3
 - Maintain proper clearance to combustibles per R1003.18
 - Provide manufacture, model number and ICC report or equal for each fireplace. (R1002, 1004, 1005).
 - Provide a permanently installed approved decorative appliance/gas log set. (R1004.4).
 - Fireplace dampers: Where a listed decorative appliance is installed, the fireplace damper opening shall comply with listed decorative appliance manufacture's installation instructions. (G2453.1)
 - Decorative shrouds shall not be installed at the termination of chimneys of factory-built fireplaces except where listed and labeled for such use. (R1004.3)
 - Provide outside combustion air for interior fireplaces. (R1006.2).

- ELECTRICAL-
 - Receptacle for cord and plug range hood to be supplied by an individual branch circuit. NEC 422.16 and IRC E4101.3
 - Recessed can lights required to be air tight IRC N1102.4.4. IC RATED GASKED OR SEALED
 - SMOKE ALARMS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL217 AND SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WITH BATTERY BACKUP. WIRING SHALL BE PERMANENT WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVER CURRENT PROTECTION Hard wired and interconnected
 - CARBON MONOXIDE ALARMS SHALL BE LISTED UL2075. AND SHALL BE INSTALLED OUTSIDE OF SLEEPING AREA. MAY BE COMBINATION SMOKE/CM Hard wired and interconnected
 - IN AREAS SPECIFIED IN SECTION E3901.1, 125-VOLT, 15- AND 20-AMPERE RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES E400214
 - PROVIDE MINIMUM 90% HIGH EFFICACY LAMPS, SHOW AND LABEL ALL WP/DP LIGHTING FIXTURES AS SUITABLE FOR WET OR DAMP LOCATIONS ACCORDINGLY.
 - RECEPTACLES INSTALLED OUTDOORS IN LOCATION PROTECTED FROM WEATHER ON IN DAMP LOCATIONS SHALL HAVE AN ENCLOSURE FOR THE RECEPTACLE THAT IS WEATHERPROOF WHEN THE RECEPTACLE COVER IS CLOSED AND AN ATTACHMENT PLUG CAP IN NOT INSERTED.
 - WHEN INSTALLED IN WET LOCATION, 15- AND 20- AMP RECEPTACLES SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP AND INSERTED. THIS WILL INCLUDE OUTSIDE LOCATIONS SUBJECT TO RAIN, SPRAY FROM SPRINKLER SYSTEM.
 - AT LEAST ONE OUTLET THAT IS ACCESSIBLE WHILE STANDING AT GRADE LEVEL AND LOCATED NOT MORE THAN 6'-0" ABOVE GRADE SHALL BE INSTALLED OUTDOORS AT THE FRONT AND BACK OF EACH DWELLING UNIT HAVING ACCESS TO GRADE. BALCONIES, DECKS, AND PORCHES THAT ARE ACCESSIBLE FROM THE INSIDE OF THE DWELLING UNIT SHALL HAVE AT LEAST ONE RECEPTACLE INSTALLED WITHIN THE PERIMETER OF THE BALCONY, DECK OR PORCH. THE RECEPTACLE SHALL BE LOCATED NOT MORE THAN 6'-6" ABOVE THE BALCONY, DECK OR PORCH.
 - INSULATION OF HOT WATER PIPE WITH A MINIMUM THERMAL RESISTANCE OF R-3 SHALL BE APPLIED TO THE FOLLOWING: PIPING LARGER THAN 3/4" NOMINAL DIAMETER, PIPING FROM THE WATER HEATER TO THE KITCHEN OUTLETS, PIPING LOCATED OUTSIDE THE CONDITION SPACE, PIPING FROM THE WATER HEATER TO A DISTRIBUTION MANIFOLD, PIPING RUN LENGTHS GREATER THAN THE MAXIMUM RUNS FOR THE NOMINAL PIPE DIAMETER GIVEN IN TABLE N1103.4.2
 - TOILET, BATH AND SHOWER SPACES -
 - Fixtures shall be spaced as per Figure R307.1
 - Individual shower and tub/shower combination valves shall be equipped with control valves of the pressure-balance, thermostatic-mixing or combination pressure-balance/thermostatic-mixing valve types with a high limit stop in accordance with ASSE 1017 or ASME A112.18.1/CSA B125.1. The high limit stop shall be set to limit the water temperature to not greater than 120°F (49°C). In-line thermostatic valves shall not be used for compliance with this section. " P2708.3
 - THE PORTABLE WATER SUPPLY TO LAWN IRRIGATION SYSTEMS SHALL BE PROTECTED AGAINST BACKFLOW BY AN ATMOSPHERIC-TYPE VACUUM BREAKER, A PRESSURE-TYPE VACUUM BREAKER OR A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER, A VALVE SHALL NO BE INSTALLED DOWNSTREAM FROM AN ATMOSPHERIC VACUUM BREAKER. WHERE CHEMICALS ARE INTRODUCED INTO THE SYSTEM, THE PORTABLE WATER SUPPLY SHALL BE PROTECTED AGAINST BACKFLOW BY A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER.
 - THE FLOW VELOCITY OF THE WATER DISTRIBUTION SYSTEM SHALL BE CONTROLLED TO REDUCE THE POSSIBILITY OF WATER HAMMER. A WATER-HAMMER ARRESTOR SHALL BE INSTALLED WHERE QUICK CLOSING VALVES ARE USED. WATER-HAMMER ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS. WATER-HAMMER ARRESTERS SHALL CONFORM TO ASSE 1010.
 - STORAGE-TANK TYPE WATER HEATERS SHALL BE INSTALLED WITH A GALVANIZED STEEL DRAIN PAN AND W/ DRAIN LINE
 - WH-PAN DRAIN-LINE SHALL TERMINATE PER P2801.5.2

- PLUMBING-
 - INSULATION OF HOT WATER PIPE WITH A MINIMUM THERMAL RESISTANCE OF R-3 SHALL BE APPLIED TO THE FOLLOWING: PIPING LARGER THAN 3/4" NOMINAL DIAMETER, PIPING FROM THE WATER HEATER TO THE KITCHEN OUTLETS, PIPING LOCATED OUTSIDE THE CONDITION SPACE, PIPING FROM THE WATER HEATER TO A DISTRIBUTION MANIFOLD, PIPING RUN LENGTHS GREATER THAN THE MAXIMUM RUNS FOR THE NOMINAL PIPE DIAMETER GIVEN IN TABLE N1103.4.2
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 - THE PORTABLE WATER SUPPLY TO LAWN IRRIGATION SYSTEMS SHALL BE PROTECTED AGAINST BACKFLOW BY AN ATMOSPHERIC-TYPE VACUUM BREAKER, A PRESSURE-TYPE VACUUM BREAKER OR A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER, A VALVE SHALL NO BE INSTALLED DOWNSTREAM FROM AN ATMOSPHERIC VACUUM BREAKER. WHERE CHEMICALS ARE INTRODUCED INTO THE SYSTEM, THE PORTABLE WATER SUPPLY SHALL BE PROTECTED AGAINST BACKFLOW BY A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER.
 - THE FLOW VELOCITY OF THE WATER DISTRIBUTION SYSTEM SHALL BE CONTROLLED TO REDUCE THE POSSIBILITY OF WATER HAMMER. A WATER-HAMMER ARRESTOR SHALL BE INSTALLED WHERE QUICK CLOSING VALVES ARE USED. WATER-HAMMER ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS. WATER-HAMMER ARRESTERS SHALL CONFORM TO ASSE 1010.
 - STORAGE-TANK TYPE WATER HEATERS SHALL BE INSTALLED WITH A GALVANIZED STEEL DRAIN PAN AND W/ DRAIN LINE
 - WH-PAN DRAIN-LINE SHALL TERMINATE PER P2801.5.2

- TERMITE-
 - In areas subject to damage from termites as indicated by Table R301.2(1), methods of protection shall be one of the following methods or a combination of these methods:
 - Chemical termite treatment, as provided in Section R318.2.
 - Termite baiting system installed and maintained according to the label.
 - Pressure-preserved-treated wood in accordance with the provisions of Section R317.1.
 - Naturally durable termite-resistant wood.
 - Physical barriers as provided in Section R318.3 and used in locations as specified in Section R317.1.
 - Cold-formed steel framing in accordance with Sections R505.2.1 and R603.2.1.

ALL BRANCH CIRCUITS THAT SUPPLY 120 VOLT, SINGLE PHASE, 15-AND 20AMPERE OUTLETS INSTALLED IN FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS BEDROOMS, SUNROOMS, RECREATIONS ROOMS, CLOSETS, HALLWAYS, AND SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A COMBINATION TYPE ARC-FAULT CIRCUIT INTERRUPTER INSTALLED TO PROVIDE PROTECTION OF THE ENTIRE BRANCH CIRCUIT AND TAMPER RESISTANT.

THE BUILDING THERMAL ENVELOPE INCLUDES THE ROOF/CEILING ASSEMBLY, WALL ASSEMBLIES AND FLOOR ASSEMBLIES THAT SURROUND A CONDITIONED AREA, WHICH IS THE SPACE THAT IS BEING INTENTIONALLY HEATED AND OR COOLED, THE BUILDING ENVELOPE IS THE ASSEMBLY THAT SEPARATES CONDITIONED SPACE FROM UNCONDITIONED SPACE OR THE OUTDOORS. THE WALL BETWEEN A CONDITIONED DWELLING AND AN UNCONDITIONED GARAGE IS PART OF THE BUILDING THERMAL ENVELOPE AND MUST BE INSULATED

RAY CUSTOM DRAFTING
480-243-0100

REVISIONS
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TELLES RESIDENCE
4055 E KEIM DR
PARADISE VALLEY 85253

INTERNATIONAL
ENERGY CODES



DATE:

8/15/2019

SCALE:

SHEET:

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