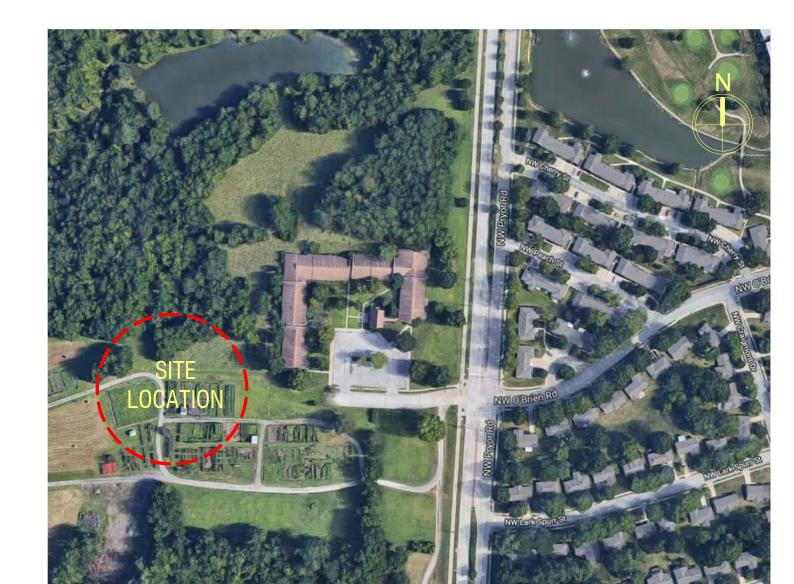


WOODSIDE RIDGE CLUBHOUSE

342 NW AMBERSHAM DR LEE'S SUMMIT, MISSOURI

PERMIT SET: MARCH 17, 2020 REVISION # 1-CITY COMMENTS: MARCH 31, 2020





AERIAL VIEW



SITE MAP



ARCHITECT

B+A ARCHITECTURE

100 W 31ST STREET, SUITE 100

KANSAS CITY, MO 64108

PH: 816-753-6100

CIVIL ENGINEER

OLSSON

1301 BURLINGTON STREET, SUITE 100

NORTH KANSAS CITY, MO 64116

PH: 816 361 1177

STRUCTURAL ENGINEER

PACKARD ENGINEERING

10417 INDIANA AVE.

KANSAS CITY, MO 64137

PH: 816-767-7222

 MEP ENGINEER
 DEVE

 PKMR ENGINEERS
 SUN

 13300 W. 98TH STREET
 120 S

 LENEXA, KS 66215
 LEE'S

 PH: 913-312-0151
 PH: 8

DEVELOPER
SUMMIT HOMES

120 SE 30TH STREET
LEE'S SUMMIT, MO 64082
PH: 816-246-6700

SEAL:



03.31.2020

INDEX

SHEET NUMBER	SHEET NAME	CURRENT REVISION
		•
COVER		
II. ARCHITECTURE	•	
A001	PROJECT INFORMATION	1
A002	WALL TYPES	
A003	SPECIFICATIONS	
A100	FLOOR PLAN	1
A101	ROOF PLAN	
A200	ELEVATIONS	1
A201	ELEVATIONS	
A202	ELEVATIONS	1
A300	BUILDING SECTIONS	
A301	BUILDING SECTIONS	
A302	WALL SECTIONS	
A400	ENLARGED PLANS & INT. ELEV.	1
A500	SECTION DETAILS	
A501	DETAILS	
A600	DOOR/WINDOW SCHEDULES	1
A800	FINISH PLAN & SCHEDULE	
0		
III. STRUCTURAL	OFNEDAL OTDUCTUDAL NOTES AND SLAD DETAILS	
S001	GENERAL STRUCTURAL NOTES AND SLAB DETAILS	
S100	FOUNDATION AND WALL FRAMING PLAN AND NOTES	
S101	FOUNDATION SECTIONS	
S200	ROOF FRAMING PLAN AND NOTES	
S201	ROOF FRAMING SECTIONS	

SHEET Number	SHEET NAME	CURRENT REVISION
IV. MEP		
MEP001	MEP COVER SHEET	
MEP101	SITE PLAN	
MEP201	MECHANICAL SPECIFICATIONS	
MEP202	ELECTRICAL SPECIFICATIONS	
M101	HVAC PLAN	
M201	MECHANICAL SCHEDULES AND DETAILS	
P101	PLUMBING PLAN	
P201	PLUMBING SCHEDULES AND DETAILS	
E101	LIGHTING PLAN	
E201	POWER PLAN	
E301	ELECTRICAL RISER DIAGRAM	
V. SWIMMING PO	OL	
PL100	POOL GENERAL NOTES	
PL101	DIMENSIONED POOL PLAN	
PL102	DETAILED POOL PLAN	
PL103	POOL SECTIONS	
PL104	POOL DETAILS	
PL105	POOL BONDING DIAGRAM	

CODE INFORMATION

OCCUPANCY USE GROUP: A-2 TYPE OF CONSTRUCTION: V-B

	REQUIRED/ALLOWED	PROVIDED
SQUARE FOOTAGE		
PER STORY	6,000 SQ.FT.	1,712 SQ.FT.
TOTAL BUILDING AREA	6,000 SQ.FT.	1,712 SQ.FT.
NUMBER OF STORY	1	1
BUILDING HEIGHT	40'	27'-5 1/4"
BUILDING ELEMENT FIRE RESISTANCE RA	ATING	
PRIMARY STRUCTURAL FRAME	0 HR	0 HR
BEARING WALL - EXTERIOR	0 HR	0 HR
BEARING WALL - INTERIOR	0 HR	0 HR
NONBEARING WALL AND PARTITIONS - EXTERIOR	0 FOR X >=30	0 HR
NONBEARING WALL AND PARTITIONS - INTERIOR	0 HR	0 HR
LOOR CONSTRUCTION	0 HR	0 HR
ROOF CONSTRUCTION	0 HR	0 HR
IRE PROTECTION AND RESISTANCE REQ	UIREMENTS	
FIRE BARRIERS - STAIR ENCLOSURES	N/A	N/A
IRE PARTITIONS - DEMISING WALL	0 HR (IBC 708.3)	0HR
FIRE PARTITIONS - HOR. ASSEMBLIES	N/A	N/A
FIRE PARTITIONS - CORRIDOR WALLS	0 HR (IBC 1018.1 EX. 4)	0HR
FIRE PARTITIONS - AREA SEPARATIONS	N/A (IBC TABLE 508.4)	N/A
FIRE PROTECTION SYSTEM	AUTOMATIC SPRINKLER SYSTEM	N/A (IBC 903.2.1.2)
FIRE ALARM AND DETECTION	A MANUAL FIRE ALARM	N/A (IBC 907.2.1)

EGRESS	
OCCUPANT LOAD	

CLUBHOUSE	TYPE	SF/LOAD FACTOR	OCCUPANCY LOAD
	(1) ASSEMBLY	810/15	54
	(2) STORAGE	237/300	1
	(3) EXERCISE	212/50	5
	TOTAL		60 (A)

555 /15

DITIONAL OCCUPANT LOADST			
BITTOTALE GOOGLY THAT ESTABLE	TYPE	SF/LOAD FACTOR	OCCUPANCY LOAD
	(1) P00L	3,236/50	65
	(2) POOL DECK	4,405/50	88

(3) PATIO / OUTDOOR

	TOTAL		190 (B)	
TOTAL			250 (A+B)	
EGRESS WIDTH - STAIRS (IBC 1005.3)	N/A		N/A	
EGRESS WIDTH - CLUBHOUSE (PER IBC 1005.3)	60 x 0.2" = 12.0" MIN.	7:	2" (EXIT DOORS)	
NUMBER OF EXITS - CLUBHOUSE	2 (PER IBC 1006.2.1)		2	
EGRESS WIDTH - POOL DECK (PER IBC 1005.3)	190×0.2 " = 38.0 " MIN.	7:	2" (EXIT DOORS)	
NUMBER OF EXITS - POOL DECK	2 (PER IBC 1006.2.1)		2	
MAX. TRAVEL DISTANCE TO EXIT	200' MAX. (PER IBC 1017.2)		40'-3"	
ROOF COVER CLASSIFICATION	В		В	

N/A (PER 1108.2.2.1)

ACCESSIBILITY WHEELCHAIR SPACES

ACCESSIBILITY

COLOGIDII		****	LLLU	
LUMBING	FIXT	URE	S	

TYPE - REQUIRED	MALE	FEMALE
WATER CLOSET	(250/2)/75=1.67 (~2)	(250/2)/75=1.67 (~
LAVATORIES	250/200=	1.25 (~2)
SERVICE SINK	1	
WATER FOUNTAIN	1 PER	500

	TYPE	REQUIRED	PROVIDED
	WATER CLOSET	4	4
_	LAVATORIES	2	5
OTAL	URINAL	N/A	1
	SERVICE SINK	1	1
	WATER FOUNTAIN	1	1

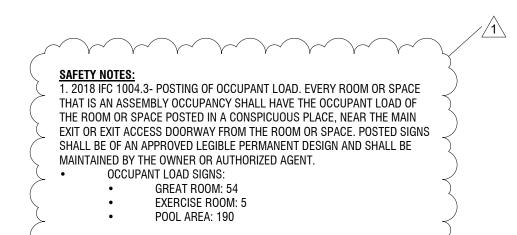
APPLICABLE BUILDING CODES

 2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL MECHANICAL CODE 2018 INTERNATIONAL PLUMBING CODE 2018 INTERNATIONAL FUEL GAS CODE 2018 INTERNATIONAL FIRE CODE 2017 NATIONAL ELECTRIC CODE

DESIGN LOADS

ICC/ANSI A117.1-2017

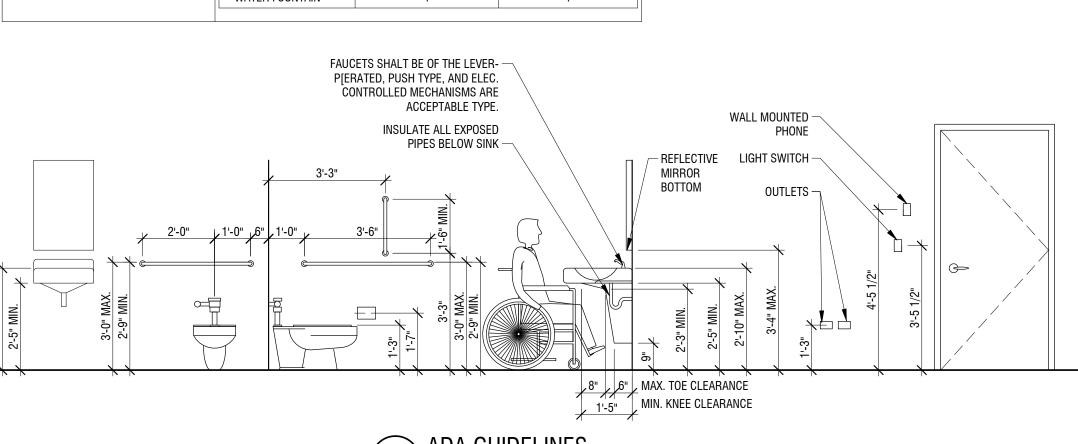
ROOF LIVE LOAD: 20PSF MIN. ROOF SNOW LOAD: 20PSF (GROUND SNOW LOAD) WIND: 93MPH, EXP. B



MATERIALS, CARTONS OR PACKAGES SHALL BE MARKED OR LABELED IN ACCORDANCE WITH APPLICABLE FEDERAL REGULATIONS. BUILDINGS, ROOMS AND SPACES CONTAINING HAZARDOUS MATERIALS SHALL BE IDENTIFIED BY HAZARD WARNING SIGNS IN ACCORDANCE WITH SECTION

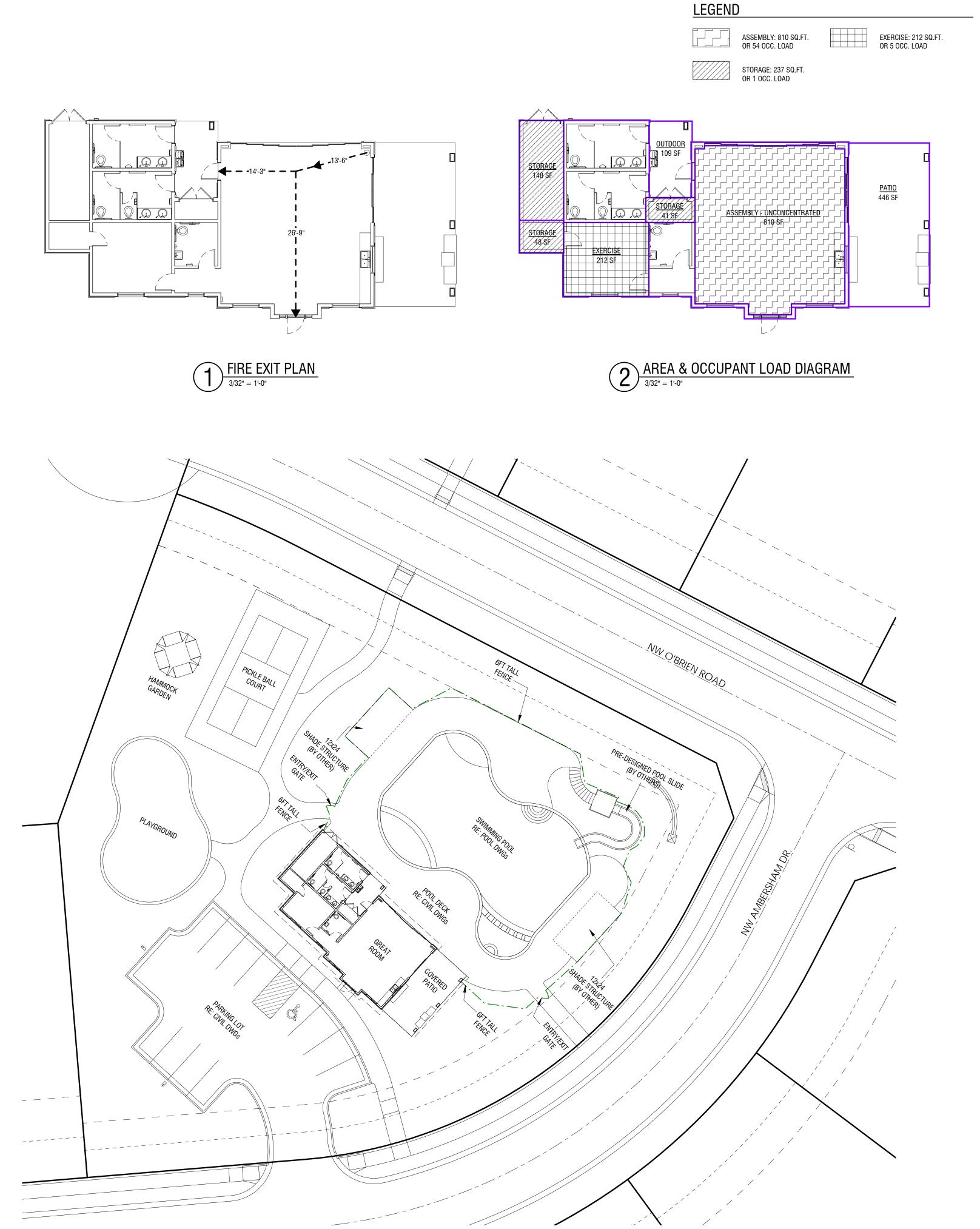
2. 2018 IFC 407.3- IDENTIFICATION. INDIVIDUAL CONTAINERS OF HAZARDOUS

LABEL POOL EQUIPMENT, CHEMICALS ARE STORED ON SITE.



37

N/A





ARCHITECT B+A ARCHITECTURE 100 W 31ST STREET, SUITE 100 KANSAS CITY, MO 64108 PH: 816-753-6100

CIVIL ENGINEER OLSSON 1301 BURLINGTON STREET, SUITE 100 NORTH KANSAS CITY, MO 64116 PH: 816-361-1177

STRUCTURAL ENGINEER PACKARD ENGINEERING 21021 OAK DRIVE BELTON, MO 64012 PH: 816-767-7222

MEP ENGINEER PKMR ENGINEERS 13300 W 98TH STREET LENEXA, KS 66215 PH: 913-312-0151

LANDSCAPE ARCHITECT JASON MEIER 15245 METCALF AVE. OVERLAND PARK, KS 66223 PH: 913-787-2817

WOODSIDE RIDGE CLUBHOUSE
342 NW AMBERSHAM DR
LEE'S SUMMIT, MO 64081

DAT	03.31.202 E ISSUED: MARCH 17, 2020	U
NO.	REVISION	DA
1	City Comments	03/31/2

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PROJECT INFORMATION



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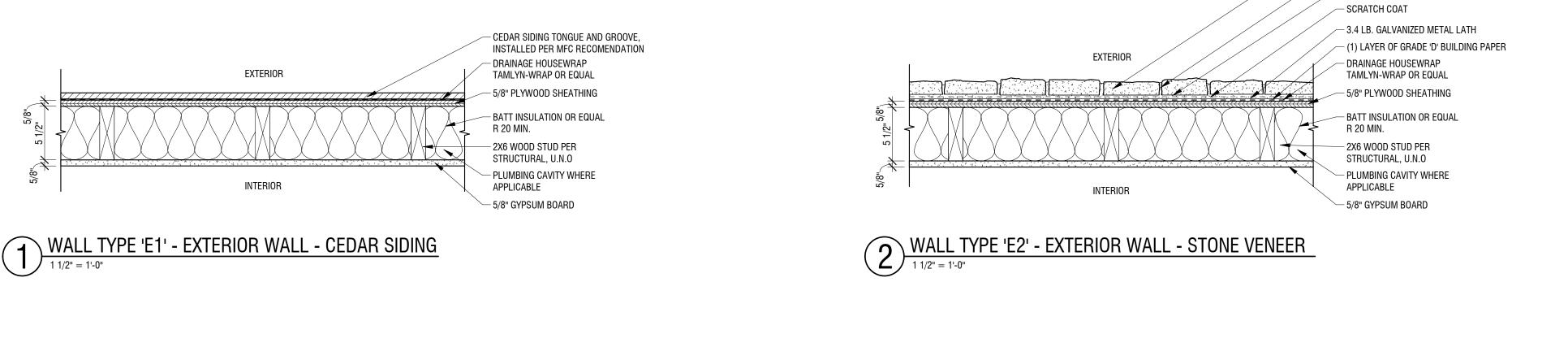
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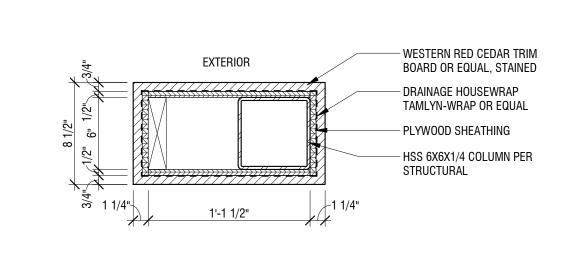
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03.31.2020 REVISION

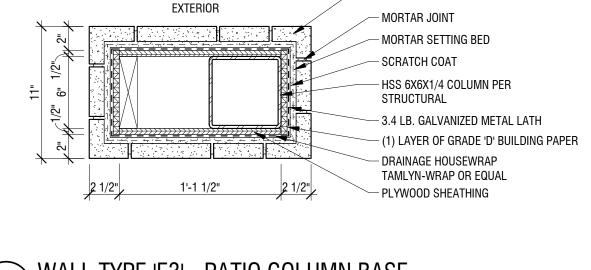
DESIGNED BY: FCR DRAWN BY: FCR CHECKED BY: TT/DMB

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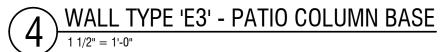


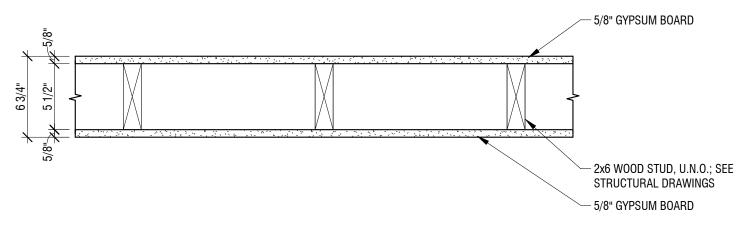




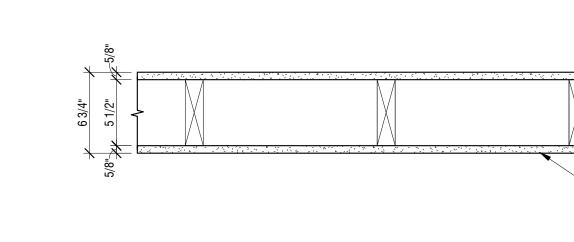


- MANUFACTURED VENEER STONE INSTALLED PER M.F.C. INSTRUCTION









- MANUFACTURED VENEER STONE

– MORTAR JOINT

— MORTAR SETTING BED

INSTALLED PER M.F.C. INSTRUCTION

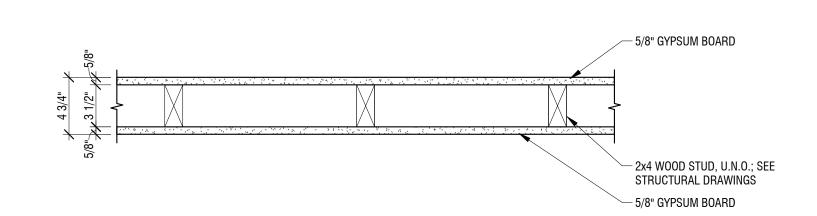
MALL TVDE D2: INTEDIOD MALL 2V6 STIID DILIMPING
7 WALL THE F3 - INTENION WALL 2X0 STOD - PLOWIDING
WALL TYPE 'P3' - INTERIOR WALL 2X6 STUD - PLUMBING

- 5/8" GYPSUM BOARD

- 2x6 WOOD STUD, U.N.O.; SEE

STRUCTURAL DRAWINGS

- 5/8" GYPSUM BOARD



WALL TYPE 'P1' - INTERIOR WALL 2X4 STUD - TYPICAL

1 1/2" = 1'-0"

SPECIFICATIONS:

- GENERAL NOTES
- 1. The Contractor shall not make any changes from these plans without the Owner's written approval prior to the
- 2. The Contractor shall submit any price changes to the Owner for review and approval prior to making any changes in the work that would require a change in cost.
- The Contractor shall be responsible for picking up permits required by City of Overland Park, Kansas.
- 4. The Contractor shall field verify all conditions and report any discrepancies or concerns to the Owner prior to
- All demolition materials and construction debris shall be the responsibility of each subcontractor and shall be disposed of in an dumpster provided by the General Contractor.
- The Sub-Contractor shall be responsible for all concrete testing required in the specifications.
- The Contractor shall field verify site conditions before starting construction. Re: Civil drawings
- 8. The Contractor shall verify the location of all site utilities shown with local utility companies. Utility lines damaged will be replaced at no cost to the owner.
- 9. All sidewalks, driveway aprons and parking paving on the street right-of-way shall conform to the public works requirements of City of Overland Park, Kansas
- 10. If any unforeseen hazardous materials not identified within these construction documents are encountered in the construction process, immediately notify the Owner and stop work at the area of concern and wait for further instruction.
- 11. The Contractor shall check all plans before pouring foundation or concrete slabs to verify that all utility lines, beam pockets, anchor bolts and/or any other embedded or cast in place items are properly located and in place.
- B. SITE CLEARING
- **Project Conditions:**
- Remove trees, shrubs, grass, and other vegetation, improvements, or obstructions, as required to permit installation of new construction.
- 1.2. Completely remove stumps, roots, and other debris protruding through ground surface.
- Disposal of Waste Materials:
- 2.1. Remove waste materials from Owner's property.
- 2.2. Burning is not permitted on Owner's property.
- Transport removed materials to a City approved "dump site".
- EARTHWORK
- Rough Grading: Grade and rough contour site.
- 2. Excavation:
- 2.1. Bearing capacity 1,500 psi minimum
- 2.2. Excavate for building foundations.
- 2.3. Provide shoring where required.
- 3. Trenching.
- 3.1. Excavate trenches for utilities
- Compacted bed and compacted fill over utilities.
- 4. Backfilling: Provide all backfilling and such grading around the new construction as is necessary to prevent water from standing or draining against the building.
- Site Filling & Compacting:
- 5.1. Prepare sub-grade ready for sod, sidewalks and paving.
- Provide compacted aggregate base course for paved area.
- Finish Grading: Place and level topsoil materials prior to landscaping work.
- Classification of Excavated Materials: Excavation materials for this project shall be considered firm soil. Removal of concealed foundation, rock excavation, landfill areas, are not included in this contract. If these items are discovered, the Owner will provide testing and engineering to resolve this issue.
- Protections:
- 8.1. Protect all trees, shrubs, and/or other features remaining as a part of the final landscaping.
- 8.2. Protect above and below grade utilities which are to remain.
- Grade excavation top perimeter to prevent surface water runoff into excavation.
- Surplus Materials: Dispose of unsatisfactory excavated material and surplus satisfactory excavated materials away from the site.
- 10. Borrow: Obtain material required for fill or embankment in excess of that produced within the grading limits of the Work from borrow areas selected and paid for by the Contractor and approved by the Owner's
- 11. Excavating for Structures: In excavating for footings and foundations, take care not to disturb bottom of
- 11.1. Excavate by hand tools to final grade just before concrete is placed;
- 11.2. Trim bottoms to required lines and grades to leave solid base to receive concrete.
- 12. Filling & Backfilling: Backfill excavations as promptly as progress of the Work permits, but not until completion
- of the following: 12.1. Acceptance of construction below finish grade including, where applicable, dampproofing and
- Inspecting, testing, approving, and recording locations of underground utilities.
- 12.3. Removal of concrete formwork.
- Removal of shoring and bracing, and backfilling of voids with satisfactory materials.
- Removal of trash and debris.
- Placement of horizontal bracing on horizontally supported walls or setting of first floor joists and
- Placement of foundation drainage system.
- 13. Expansion Joints: Provide pre-molded joint filler for expansion joints abutting concrete curbs, structures, walks and other fixed objects.
- 14. Concrete Finishing: After completion of floating and when excess moisture or surface sheen has disappeared, complete troweling and finish surface as follows:
- 14.1. Broom finish by drawing a fine-hair broom across concrete surface perpendicular to line of traffic. Repeat operation if required to provide a fine line texture acceptable to the Owner's representative.
- 14.2. On inclined slab surfaces, provide a coarse, non-slip finish by scoring surface with a stiff-bristled broom, perpendicular to line of traffic.
- D. SODDING

Sod: Sod shall contain a good cover of living and growing grasses, must contain 80% good quality native blue grass and 90% free from all noxious weeks and annual grasses and strongly netted. Sod delivered to the job site must not be lifted more than 24 hours in advance of being laid.

- CONCRETE WORK (RE: STRUCTURAL NOTES)
- STRUCTURAL STEEL (RE: STRUCTURAL NOTES)

- G. ROUGH CARPENTRY
- Sizing, and Dimension: All dimension lumber and plywood shown on the Drawings or required to accomplish the work shall be of nominal dimensions unless shown otherwise on the Drawings.
- 2. Moisture Content: All dimension lumber and plywood shall be kiln dried having a moisture content of not more than 15% unless otherwise noted or hereinafter specified.
- 3. Framing Lumber:
 - Plates, blocking, bracing, nailers and general utility purposes: SPF, standard or better
- General framing, joists: SPF#2 or better.
- 3.3. Rim Joist Rimboard or approved equal
- 4. Plywood:
- Floor Sheathing: 4'-0: x 8'-0" x 3/4" thick tongue & groove plywood, APA performance rated panels,
- interior grade C-D with exterior glue, or OSB Contractor's option. Exterior Soffits: Hardie board or approved equal
- Pressure Treated Wood: For all plates in contact with the foundation.
- Provide pressure treated wood (ground contact) for all wood in contact with concrete. 4.4.
- 5. Rough Hardware:
- Joist Hangers: As required and as manufactured by Kant-Sag, Simpson, Teco or approved equal.
- Wood to Steel Beam Connectors: Power actuated fasteners; 5/32" diameter standard velocity fastening
- 5.3. Post Bases: Simpson or approved equal.
- 6. General Framing:
- Install wood blocking and backing required for the work of other trades. Contractor to coordinate
- Fabricate headers full thickness of framing using pieces of stud material set on edge with spacers, or solid lumber of equivalent size.
- Provide double top plates. Lap members minimum 2 feet.
- 7. Bridging: Install wood cross bridging per truss manufacturer's instructions, and as required by current adopted IRC.
- INTERIOR ARCHITECTURAL WOODWORK
- Shelving: Provide wood pole and shelf at all closets unless noted otherwise, or aproved equal
- 2. Trim: Case molding, base trim and stair trim in standard shapes, finish grade wood. Type: Colonial or Princeton as selected by owner.
- 3. Quality Standard:
- Install woodwork to comply with AWI Section 1700.
- Install all work plumb, level, true, and straight with no distortions. Shim as required with concealed shims. Install to a tolerance of 1/4" in 8'-0" for plumb and level and with no variations in flushness of
- Scribe and cut woodwork to fit adjoining work and refinish cut surfaces or repair damaged finish at
- Anchor all work to blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation.
- THERMAL INSULATION
- Batt Insulation: in thickness as indicated on drawings. Comply with FS HH-I-521F, Type II, densities of not less than 0.5 lb per cubic ft. in manufacturer's standard lengths and width as required to coordinate with spaces to be insulated. Provide units with fire rating of 25 per ASTM E84 as manufactured by Certain-Teed Products Corp., Owens Corning Fiberglass Corp., or approved equal.
- 2.1. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.
- Apply a single layer of insulation or required thickness, unless otherwise shown or required to make up total thickness.
- 3. Ceiling/ Roof Insulation: Fiberglass Batt Insulation: R-38 or better
- 4. Wall Insulation: R-20 or better
- 5. Comply with current adopted IECC
- J. STANDING SEAM METAL ROOF
- 1. Standing Seam System:
- 1.1. Conform to UL 790 "Class A Rating" and ASTM's tests to minimize Air and Moisture penetration.
- Berridge Tee-Panel, Berridge Manufacturing Co., or approved equal
- Color to be selected
- 2. Edge Trims & Flashing: approved/recommended by MFG.
- Installation:
 - Apply single layer of # 30 (or equal) felt underlayment over solid sheathing. Apply additional layers when recommended by installation requirements from MFG.
- Install roofing prior to installation of guttering.
- K. JOINT SEALERS
- 1. Applications:
- 1.1. Where exterior paving abuts vertical structures.
 - Exterior building wall joints including at windows, louvers, and exterior doors.
- 1.3.
- 1.4. All joints between dissimilar materials.
- 2. General:
- Prime or seal the joint surfaces wherever shown or recommended by the sealant manufacturer.
- Install sealant to depths as recommended by the sealant manufacturer.
- Set all flashings, thresholds, sills and similar items in full bed of sealant.
- 3. Exterior & Interior Horizontal Joints: Where joints of surfaces are subject to traffic, use two-part polyurethane based, elastomeric sealant as follows: 3.1. Self leveling, complying with ASTM C9820-79, grade P, class 25, "Vulkem 45", one-part.
- 4. Interior Joints: Manufacturer's standard, one-part, no sag, mildew resistant, acrylic emulsion sealant
- complying with ASTM C 834. 5. Joint Fillers: provide resilient and non-extruding type pre-molded bituminous impregnated fiberboard where
- interior and exterior concrete slabs meet walls and similar isolation joints.
- 6. Bond Breaker Tape: Polyethylene tape or other plastic tape as recommended by the sealant manufacturer.
- L. WOOD DOORS & FRAMES
- Interior doors shall be manufactured in accordance with NWWDA 1.S.1. 1-87, sec. 3.7.3 (B) and shall be faced with Craftsman Ceermont door facings as manufactured by Masonite in accordance with Basic Hardboard Product Standard ANSI/AHA 135.4-1982 (reaffirmed, 1988).

- 2. Fitting:
- 2.1. Pre-fit door to provide maximum clearance of 1/8" at sides and top and 3/4" at bottom unless otherwise
- Within four days of fitting each door, seal affected area with at least two coats of water white lacquer
- M. WINDOWS AND SLIDING PANELS

Aluminum-Clad Wood Windows, Architectural Collection E-Series by Andersen or approved equal.

- Alternative Product: Aluminum-Clad Wood Windows, Architect Series Contemporary by Pella
- Additional Information: Window, headers, sills & jambs sheetrock returns.
- N. STORE-FRONT SYSTEM

1. General requirements

- 1.1. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; the furnishing and installation of all aluminum fixed systems.
- 2. Materials
- 2.1. Aluminum Fixed System: MANKO 2450FS storefront and 150 series front set glazed, fixed system with a poured-in-place thermal break with color to be determined by architect. conform to the criteria of ANSI/AAMA 101-I.S2-97.
- 2.2. Glazing: PPG solarban 60. All glazing stops to be snap-in type.
- Installation:
- Use only skilled tradesman for the installation of the aluminum fixed system and components specified 3.2. Bring any discrepancies between the project plans and field conditions to the attention of the General

maintain position and integrity of the fixed system when subjected to normal building movement and the

- Contractor prior to the commencement of any work in the area in question. Erect the aluminum fixed system and components square and true in strict accordance with the manufacturer's published installation instructions. The installer is to furnish adequate anchoring to
- Furnish and apply sealants in accordance with the manufacturer's published installation instructions
- GYPSUM DRYWALL
- 1. Exposed Gypsum Drywall:
- 1.1. Thickness of 1/2" where stud or rafter spacing is 16", 5/8" where stud or rater spacing exceeds 16".
- Sheet size to be maximum length available which will minimize end joints.
- 1.3. Stapling: Stapling of trim accessories will not be permitted. 2. Plastic Edge Trim: Plastic edge trim will not be permitted.
- Installation:
- 3.1. Stagger the boards so that corners of any four boards will not meet at a common point except in vertical
- 3.2. Install the gypsum wallboard to studs at right angles, making end joints, where required, over framing or
- Install ceiling drywall boards in the direction and manner which will minimize the number of end butt joints, and which will avoid end joints in the central area of each ceiling. Stagger end joints at least 1'-0".
- 4. Ceilings: Spray texture ceiling surfaces with medium texture popcorn finish. Paint or as approved by owner.
- Preparation: Wood Surfaces: Clean wood surfaces to be painted of all dirt, oil, or other foreign substances

O. PAINTING

- with scrapers, mineral spirits, and sandpaper, as required. Sand smooth those finished surfaces exposed to view, and dust off. 2. Application:
- Provide the best quality grade of the various types of coating as regularly manufactured by acceptable paint manufacturers, i.e., Sherwin-Williams Paint Company or approved equal.
- Sand and dust between coats to remove defects visible to the unaided eye from a distance of five feet.
- 2.3. Allow sufficient drying time between coats. Where spray application is used, apply each coat to provide the hiding equivalent of brush oats.
- Do not double back with spray equipment to build up film thickness of two coats in one pass. Gypsum Drywall Systems (Walls): two (2) coats interior latex.
- CARPET TILE
- Carpet Tile flooring in Flexible Room and Storage Closet.
- Manufacturer: Patcraft or approved equal. Style: Clean Lines Modular (New Ground Collection)
- Size: 24" x 24"
- Color: Ellation 00522

patios and walkways.

- Product Total Thickness: 0.221 in.
- Primary Backing: Non-Woven Synthetic / Secondary Backing: EcoWorx Tile Refer to Installation Guidelines by Manufacturer.
- Q. CERAMIC/PORCELAIN TILE
- General requirements 1.1. Scope: This section includes all labor. material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to, the following areas; floors, walls, shower walls and floors, countertops, decks and balconies,
- 1.2. Quality Assurance: All workmanship and material shall be in conformance with applicable portions of ANSI Specifications and Standards and Handbook for Ceramic Tile Installation by the Tile Council of America, current edition.
- Materials
- Tile: Refer to the construction documents, see plans, finish schedule and interior elevations for areas receiving tile.
- Tile Backer Board: GEORGIA PACIFIC BUILDING PRODUCTS DensShield Tile Backer. Membranes: Cleavage Membrane: 15# roofing felt or approved equal; Moisture Barrier: 15# roofing 2.3. felt; Waterproof Membrane: hot mopped felt, or approved equal.

- Mortar Bed: CUSTOM BUILDING PRODUCTS Custom-Float Bedding Mortar mixed with water and Acrylic Mortar Admix. Metal lath - 2.5 lbs/yard self furred expanded metal.
- Tile Adhesives: CUSTOM BUILDING PRODUCTS Master-Blend mixed with Custom-Flex latex.
- Grout: CUSTOM BUILDING PRODUCTS Polyblend Sanded Colored Tile Grout for joints 1/8" 1/2". All grout colors shall be selected by the Owner.
- 2.7. Elastomeric Joint Caulk: All joints between floors and walls and at all joints between tile and dissimilar materials. CUSTOM BUILDING PRODUCTS Polyblend Ceramic Tile Caulk. Texture and color shall match
- 2.8. Tile Sealer: as recommended by CUSTOM BUILDING PRODUCTS and approved by Owner. Apply sealer per manufacturer's specifications.
- Preformed Shower Recesses: NOBLE Niches & Curbs #301 Square Niche, install per locations shown
 - within the construction drawings.
- Installation
- Examine surfaces which are to receive tile or stone. Verify that surfaces to receive tile are stable, flat, firm, dry, clean and free of oil, waxes and curing compounds. Do not proceed with work until defects or conditions which would adversely affect quality, execution and permanence of finish work are corrected. All concrete substrates shall be at least 28 days old, completely cured and free of hydrostatic conditions and/or moisture problems. Protect adjacent surfaces prior to beginning tile work.
- 4.2. Installation Methods:
- 4.3. Over Wood Subfloor: Thin-set over glass mesh mortar units. Attach glass mesh mortar units to subfloor
- 4.4. Walls (Dry Locations): Thin-set over glass mesh mortar units.

per manufacturer's recommendations.

- Lay tile in grid pattern unless otherwise indicated on plans or directed by Architect. Terminate tile neatly at obstructions, edges and corners without disruption of pattern or joint alignment. Where tile cuts are necessary cuts shall be neat and scribed. Provide expansion joints, control joints, etc. as shown on
- plans and elsewhere as required.
- 4.6. Install grout in accordance with manufacturer's directions. Clean and seal tile and grout in accordance with product manufacturer's recommendations.
- R. EXTERIOR SIDING
- Stone Veneer
- ThinCut Natural Stone Veneer by Semco Outdoor or approved equal 1.1. Product selected: Weathered Fieldstone Webwall
- 1.3. Size: Stone size can vary from 6" to 10.5" in diameter.
- 1.4. Thickness: 3/4" - 1.5" 1.5. Use Manufactured Sill: 3" deep x 2" thick. Color: Light Cream.
- 1.6. Surface Preparation Summary For Framed Exterior Wall Including Plywood paneling, Wall Sheathing, or Flush Metal Siding - Cover surface with a weather resistant barrier such as tar paper, be sure to lap joints 4" in a single fashion. In accordance with local building codes, install metal lath on top of the weather resistant barrier using galvanized nails or screws 6" on center vertically and 16" on center horizontally, penetrating the studs a minimum of 1". Stop the metal lath 1" from the finished edges. Be sure to
- wrap all corners overlapping the metal lath at least 4". All natural stone should be applied according to local building codes. Water infiltration can result in damage caused from incorrect installation or the absence of such things as caulking, flashing, water proofing, guttering and down spouts. Stone should be installed at least 3" above grade level to prevent
- water from continually saturating behind the back of the stone and causing structural damage. Refer to ThinCut Natural Stone Veneer Installation Guides by manufacturer.

2.5.

- 2. Cedar Siding
- Acceptable manufacturer: Western Red Cedar or approved equal Material: Western Red Cedar Tongue and Groove
- 2.3. Grade: Clear Heart or A Clear 2.4. Width: 6 inches (nominal)/ 5 inches exposed face: Thickness: 1 inch (nominal)

Installation per MFG recommendations

- Refer to Exterior Finishing Schedule on sheets A200, A201 and A202 for finish.
- TOILET ACCESSORIES Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. This section of work includes, but is not limited to; tissue
- dispenser, coat hooks, grab bars, etc. See Toilet Accessory schedule sheet A400
- Installation: Install per manufacturer's instructions PLUMBING (See sheet P101)
- U. CABINETS

1.2. Manufacturer: Profile Cabinet or equal

1.3. See interior finish schedule and legend

Kitchen Cabinets & Restroom Vanities:

- 1.1. Plywood interior. 11 inch adjustable shelves in uppers. Shelves in bases.
- V. FINISH HARDWARE: Bright brass. See Door Hardware Schedule for details
- W. ELECTRICAL (See sheet E 201) X. EXTERIOR ACCESSORIES:
- Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. This section of work includes, but is not limited to; eaves, wall vents, out door restroom signs, grill, bench, etc.
- Installation: Install per manufacturer's instructions



ARCHITECT B+A ARCHITECTURE KANSAS CITY, MO 64108 PH: 816-753-6100

CIVIL ENGINEER OLSSON 1301 BURLINGTON STREET, SUITE 100 NORTH KANSAS CITY, MO 64116

STRUCTURAL ENGINEER PACKARD ENGINEERING 21021 OAK DRIVE BELTON, MO 64012 PH: 816-767-7222

MEP ENGINEER PKMR ENGINEERS 13300 W 98TH STREET LENEXA, KS 66215 PH: 913-312-0151

LANDSCAPE ARCHITECT

JASON MEIER

PH: 913-787-2817

15245 METCALF AVE.

OVERLAND PARK, KS 66223

PH: 816-361-1177

ш S **UBHON MOODSID**

03.31.2020

REVISION

DESIGNED BY: FCR

DRAWN BY: FCR

DATE ISSUED: MARCH 17, 2020

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RCHITECT ANY ERROR INCONSISTENCY OR OMISSION DISCO

SPECIFICATIONS

SEE FINISH SCHEDULE ON SHEET A800 FOR MATERIAL INFORMATION SEE DOOR/WINDOW SCHEDULE ON SHEET A600

SEE SHEET A400 FOR ENLARGED FLOOR PLANS

WALL TYPES

E1 EXTERIOR WALL, 2X6 WOOD STUD, CEDAR SIDING FINISHING, INSULATED

E3 EXTERIOR COLUMN WRAP, HSS

RE: DETAILS 3 & 4 / A002

VENEER BASE

RE: DETAIL 1 / A002 E2 EXTERIOR WALL, 2X6 WOOD STUD, STONE VENEER FINISHING, INSULATED RE: DETAIL 2 / A002

COLUMN, CEDAR FINISHING / STONE

STUD, GYP. BOARD FINISHING RE: DETAIL 5 / A002

RE: DETAIL 7 / A002

P2 TYPICAL INTERIOR WALL, 2X6 WOOD STUD, GYP. BOARD FINISHING RE: DETAIL 6 / A002

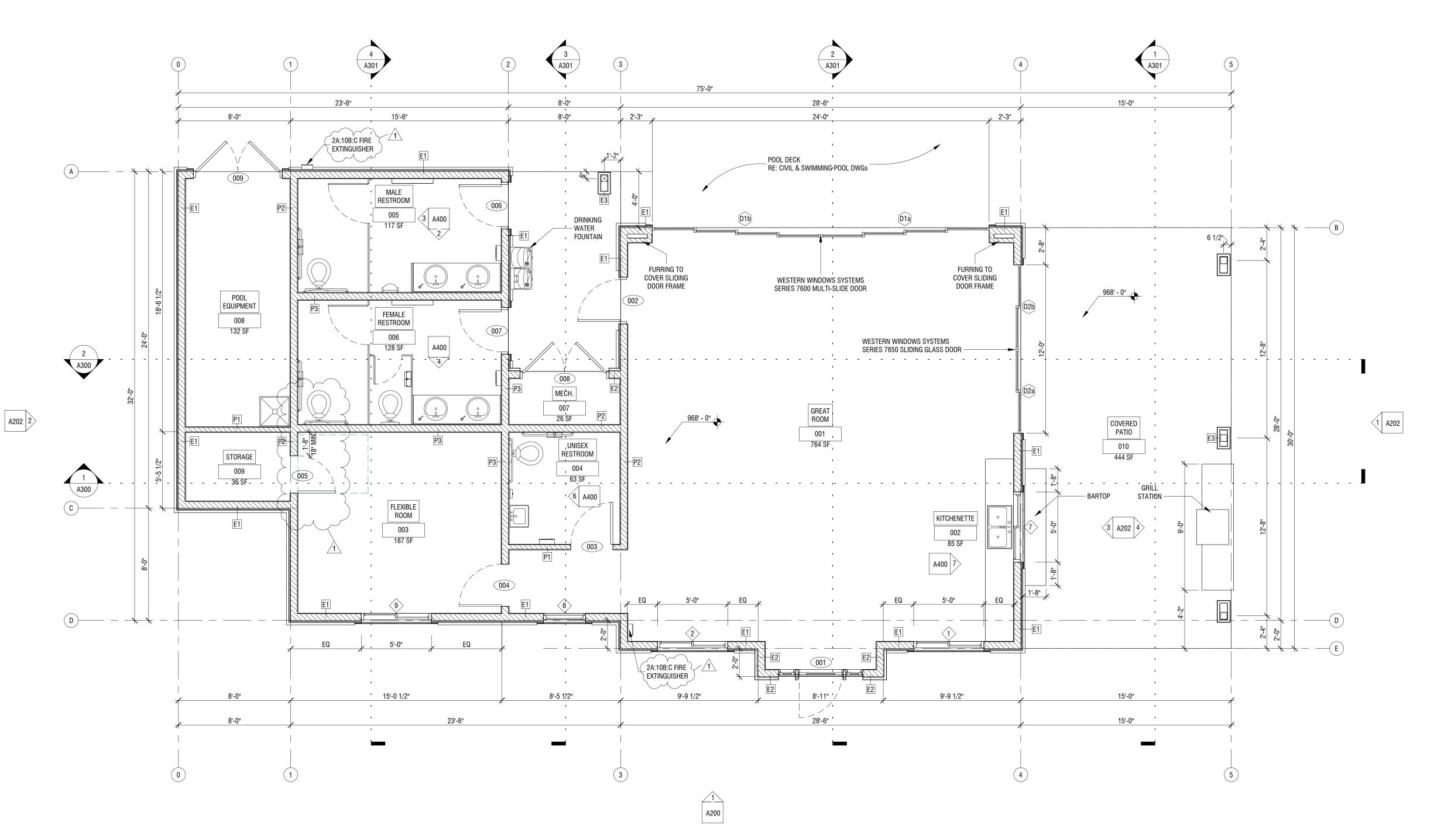
P3 TYPICAL INTERIOR WALL, 2X6 WOOD

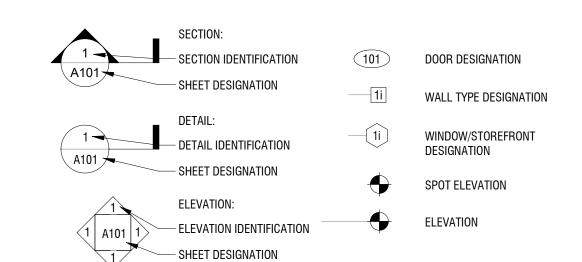
STUD, GYP. BOARD FINISHING - PLUMBING

P1 TYPICAL INTERIOR WALL, 2X4 WOOD

SAFETY NOTES:
1. 2018 IFC 906.5- CONSPICUOUS LOCATION. PORTABLE FIRE EXTINGUISHERS SHALL BE LOCATED IN CONSPICUOUS LOCATIONS WHERE THEY WILL BE READILY ACCESSIBLE AND IMMEDIATELY AVAILABLE FOR USE. THESE LOCATIONS SHALL BE ALONG NORMAL PATHS OF TRAVEL, UNLESS THE FIRE CODE OFFICIAL DETERMINES THAT THE HAZARD POSED INDICATED THE NEED FOR PLACEMENT AWAY FROM NORMAL PATHS OF TRAVEL. PROVIDE 1 2A10BC FIRE EXTINGUISHER IN THE CLUBHOUSE AND 1 2A10BC EXTINGUISHER ON THE EXTERIOR BY THE POOL EQUIPMENT

A201









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WOODSIDE RIDGE CLUBHOUS
342 NW AMBERSHAM DR
LEE'S SUMMIT, MO 64081

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- REFER TO STRUCTURAL DRAWINGS FOR FRAMING INFORMATION
- EXTENT POSSIBLE REFER TO PLUMBING DRAWINGS FOR ROOF DRAINS AND OVERFLOW
- INSTALL ALL ROOF PENETRATIONS AND EQUIPMENT (IE, VENT PIPES, ROOF VENTILATORS) ON THE REAR SIDE OF THE ROOF, TO THE GREATEST



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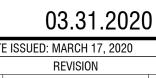
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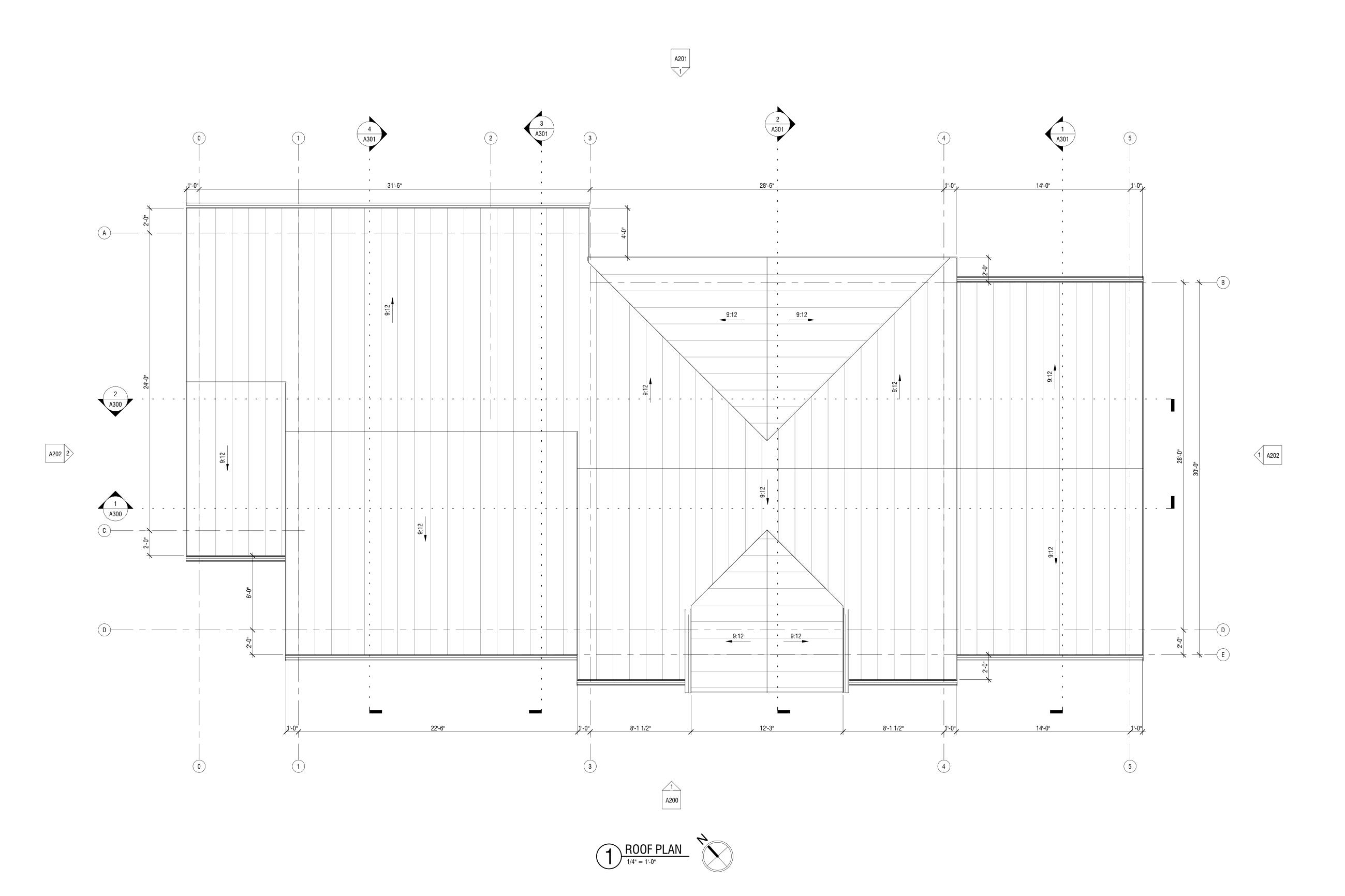
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WOODSIDE RIDGE CLUBHOUSE
342 NW AMBERSHAM DR
LEE'S SUMMIT, MO 64081



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GREATEST EXTENT POSSIBLE

- EXTERIOR COLORS ARE INDICATED BY MATERIAL MANUFACTURERS ALL EXTERIOR MATERIAL TRANSITION, SILLS AND HEADERS WHICH
- ARE NOT CALLED OUT, MATCH TO WALL TRIM COLOR.
- SPLIT SYSTEM W/ GROUND MOUNTED CONDENSORS TO BE SCREENED
- FROM VIEWS BY LANDSCAPING INSTALL ALL ROOF PENETRATIONS AND EQUIPMENT (IE; VENT PIPES; ROOF VENTILATORS) ON THE REAR SIDE OF THE ROOF, TO THE



METAL ROOF



STANDING SEAM PT-1: SW7048



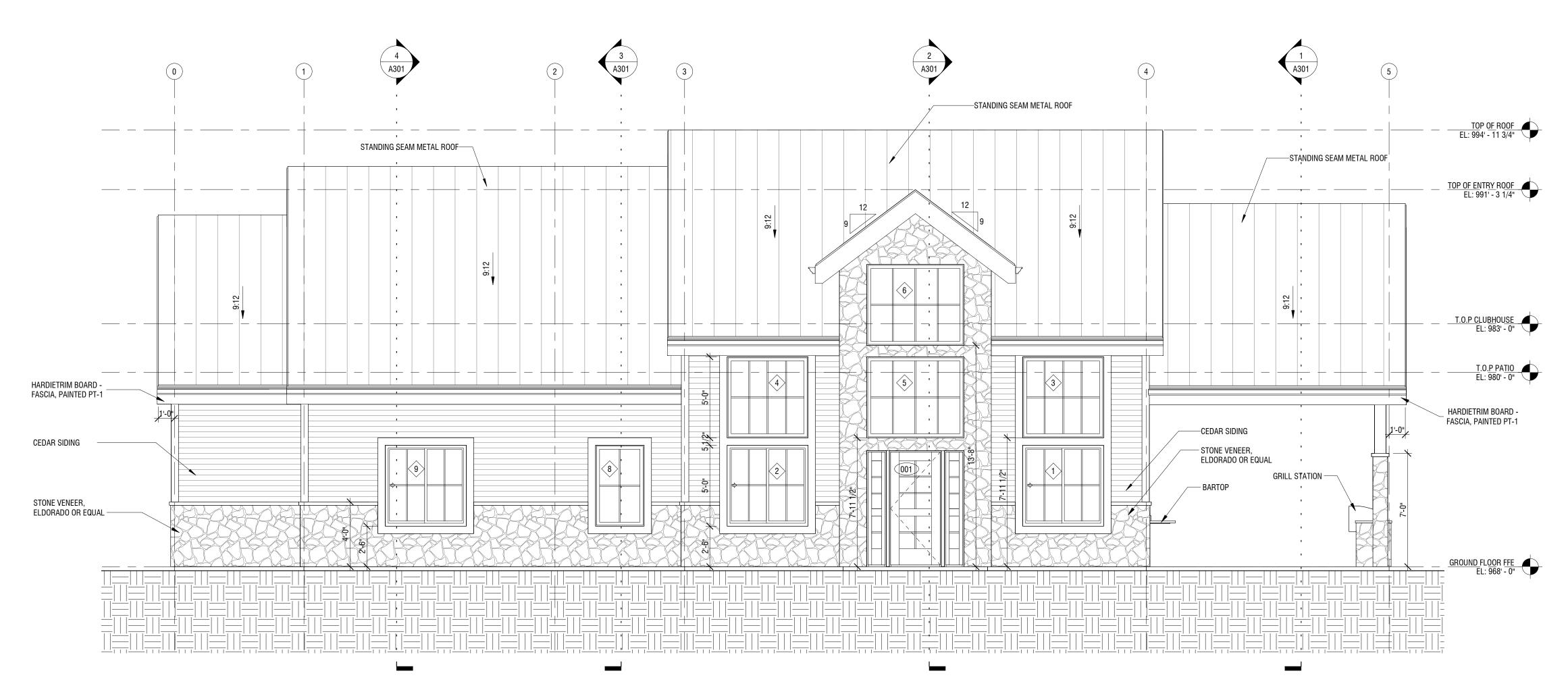
STONE VENEER



CEDAR SIDING

EXTERIOR FINISHING SCHEDULE

NO.	MATERIAL/ITEMS	DESCRIPTION	COLOR/FINISH
1	STANDING SEAM METAL ROOF	BERRIDGE TEE-PANEL OR EQUAL	COLOR: AGED BRONZE
2	STONE VENEER	SEMCO OUTDOOR OR EQUAL	WEATHERED FIELDSTONE WEBWALL
3	CEDAR SIDING	TONGUE AND GROOVE, WESTERN RED CEDAR	TRANSPARENT STAIN NATURAL TONE
4	WALL/WINDOW TRIM	TRIM BOARD, WESTERN RED CEDAR	TRANSPARENT STAIN NATURAL TONE
5	FASCIA	JAMES HARDIE-HARDIETRIM BOARD	PT-1: URBANE BRONZE SW7048
3	SOFFIT	JAMES HARDIE-HARDIESOFFIT BOARD	VENTED SMOOTH - MATCH TO FASCIA COLOR
7	GUTTER	24 GA. STEEL	MATCH TO WINDOW FRAME COLOR
8	WINDOWS	ANDERSEN OR EQUAL/ ALUM. CLAD WOOD	METAL - MATTE, DARK BRONZE COLOR
9	EXTERIOR DOORS	METAL PANEL, PAINTED	MATCH TO WINDOW FRAME COLOR



SOUTH-WEST ELEVATION

1/4" = 1'-0"

SAFETY NOTES:
1. 2018 IFC 501.1- ADDRESS NUMBERS. NEW AND EXISTING BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION PLACED IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY. THESE NUMBERS SHALL CONTRAST WITH THEIR BACKGROUND. IN MULTI-TENANT COMMERCIAL BUILDING WHERE TENANTS HAVE MULTIPLE ENTRANCES LOCATED ON DIFFERENT SIDES OF THE BUILDING, EACH DOOR SHALL BE ADDRESSED. ADDRESS NUMBERS SHALL BE ARABIC NUMBERS OR ALPHABET LETTERS. NUMBERS SHALL BE A MINIMUM OF 4 INCHES (102 MM) HIGH WITH A MINIMUM STROKE WIDTH OF 0.5 INCH (12.7 MM).

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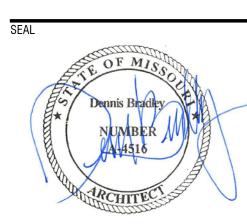
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WOODSIDE RIDGE CLUBHOUSE
342 NW AMBERSHAM DR
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METAL ROOF



STANDING SEAM PT-1: SW7048



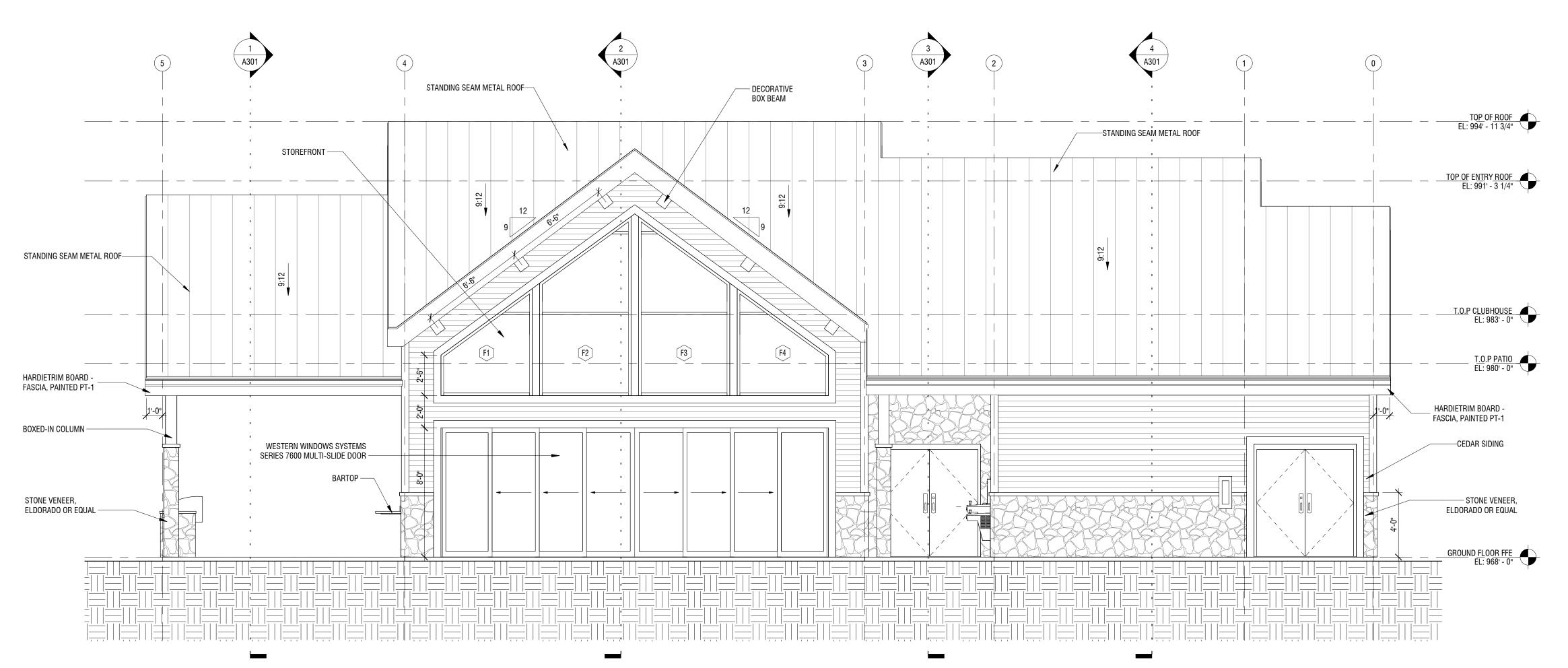
STONE VENEER



CEDAR SIDING

EXTERIOR FINISHING SCHEDULE

NO.	MATERIAL/ITEMS	DESCRIPTION	COLOR/FINISH
1	STANDING SEAM METAL ROOF	BERRIDGE TEE-PANEL OR EQUAL	COLOR: AGED BRONZE
2	STONE VENEER	SEMCO OUTDOOR OR EQUAL	WEATHERED FIELDSTONE WEBWALL
3	CEDAR SIDING	TONGUE AND GROOVE, WESTERN RED CEDAR	TRANSPARENT STAIN NATURAL TONE
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3	SOFFIT	JAMES HARDIE-HARDIESOFFIT BOARD	VENTED SMOOTH - MATCH TO FASCIA COLOR
7	GUTTER	24 GA. STEEL	MATCH TO WINDOW FRAME COLOR
8	WINDOWS	ANDERSEN OR EQUAL/ ALUM. CLAD WOOD	METAL - MATTE, DARK BRONZE COLOR
9	EXTERIOR DOORS	METAL PANEL, PAINTED	MATCH TO WINDOW FRAME COLOR



NORTH-EAST ELEVATION



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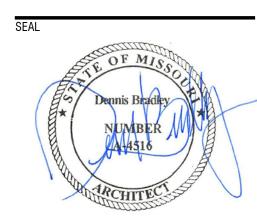
PACKARD ENGINEERING 21021 OAK DRIVE BELTON, MO 64012 PH: 816-767-7222

STRUCTURAL ENGINEER

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WOODSIDE RIDGE CLUBHOUSE
342 NW AMBERSHAM DR
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STANDING SEAM METAL ROOF-

HARDIETRIM BOARD -FASCIA, PAINTED PT-1

RE: STRUCTURAL DWGs

CEDAR SIDING

STONE VENEER, ELDORADO OR EQUAL - (E) (D)



METAL ROOF

-STATION



STANDING SEAM PT-1: SW7048



STONE VENEER



TOP OF ENTRY ROOF EL: 991' - 3 1/4"

T.O.P CLUBHOUSE

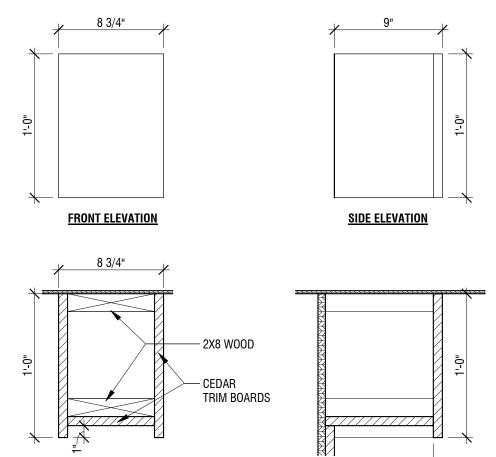
- WESTERN WINDOWS SYSTEMS -SERIES 7650 SLIDING GLASS DOOR

-STANDING SEAM METAL ROOF

– DECORATIVE BOX BEAM



CEDAR SIDING



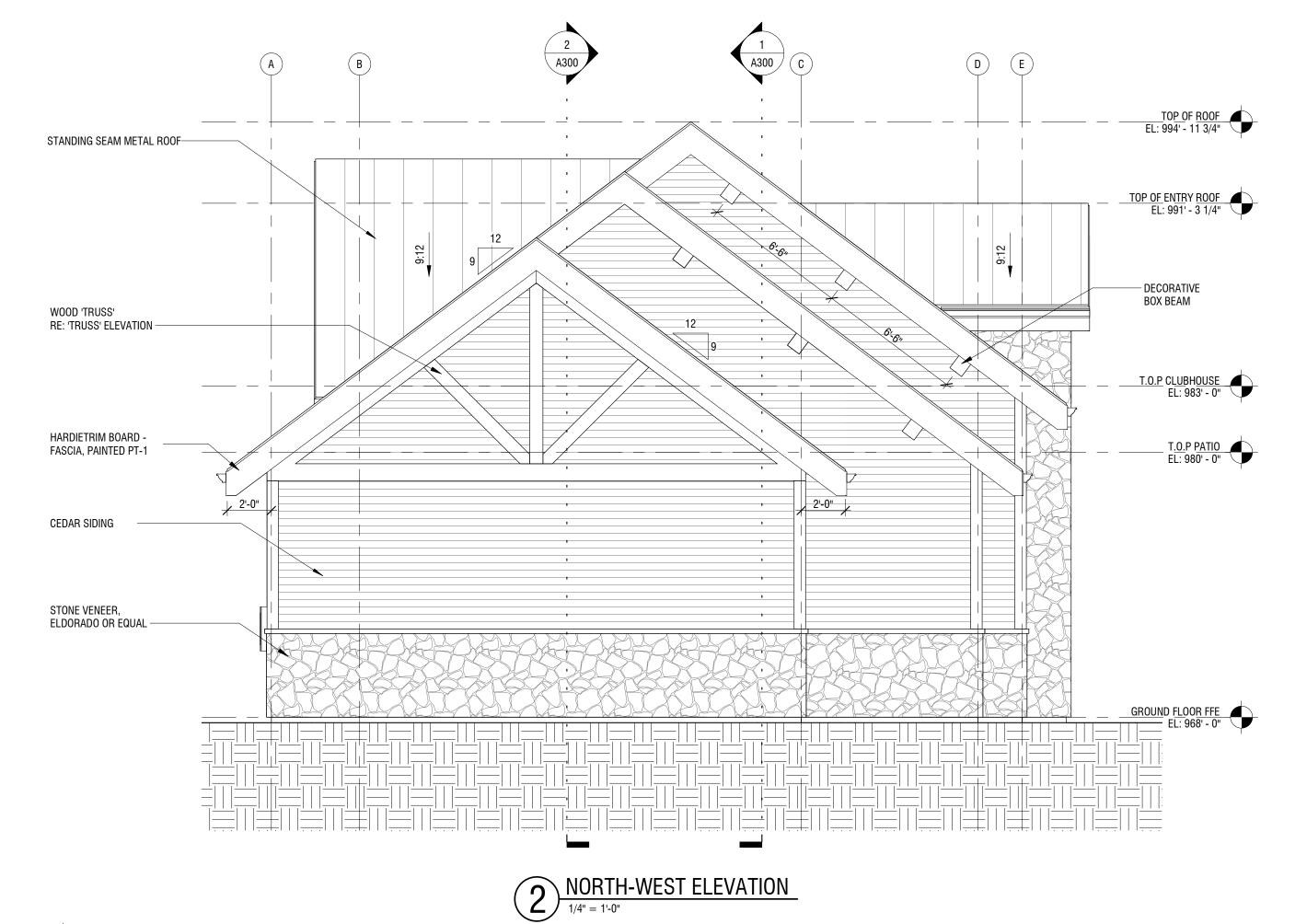
EXTERIOR FINISHING SCHEDULE

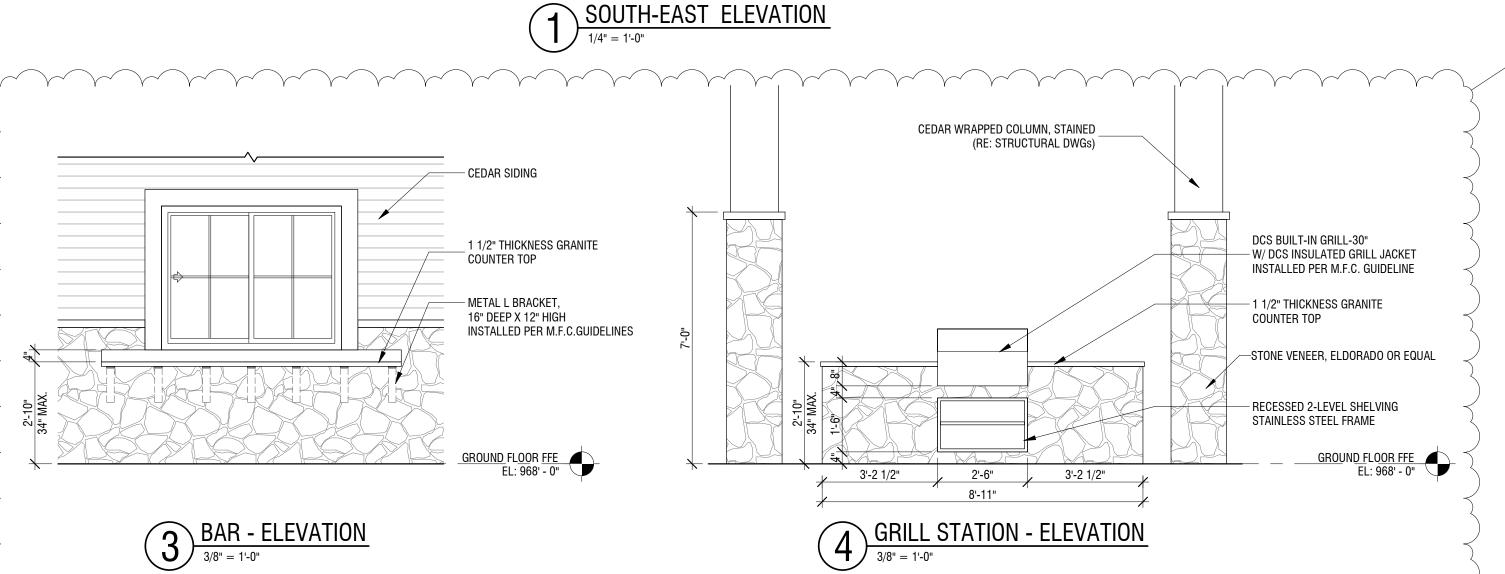
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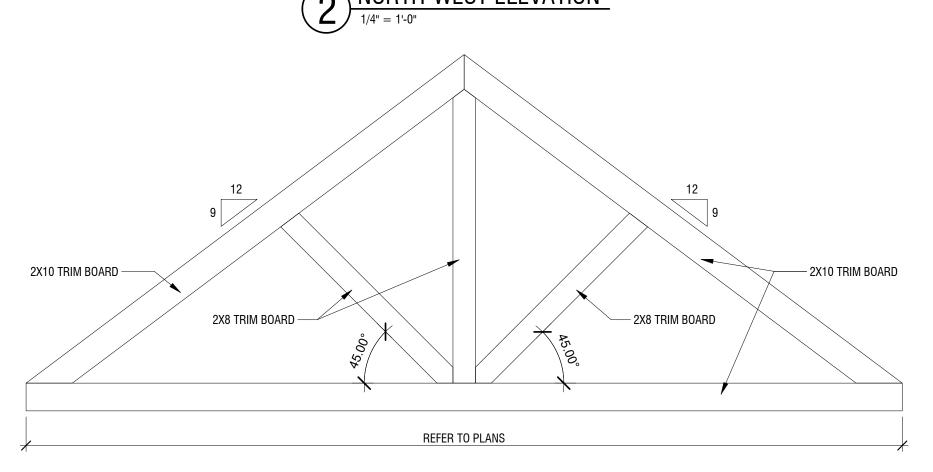
6 DECORATIVE BOX BEAM

SECTION 2

SECTION 1







'TRUSS' - ELEVATION

ARCHITECT B+A ARCHITECTURE 100 W 31ST STREET, SUITE 100 KANSAS CITY, MO 64108 PH: 816-753-6100

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WOODSIDE RIDGE CLUBHOUS
342 NW AMBERSHAM DR
LEE'S SUMMIT, MO 64081

REVISION 1 City Comments

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OLSSON 1301 BURLINGTON STREET, SUITE 100 NORTH KANSAS CITY, MO 64116 PH: 816-361-1177 STRUCTURAL ENGINEER

21021 OAK DRIVE BELTON, MO 64012 PH: 816-767-7222 MEP ENGINEER PKMR ENGINEERS 13300 W 98TH STREET

PACKARD ENGINEERING

LENEXA, KS 66215 PH: 913-312-0151 LANDSCAPE ARCHITECT JASON MEIER 15245 METCALF AVE. OVERLAND PARK, KS 66223 PH: 913-787-2817

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03.31	.2020

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BUILDING SECTIONS



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CIVIL ENGINEER
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WOODSIDE RIDGE CLUBHOUSE
342 NW AMBERSHAM DR
LEE'S SUMMIT, MO 64081

Dennis Bradley

NUMBER

A4516

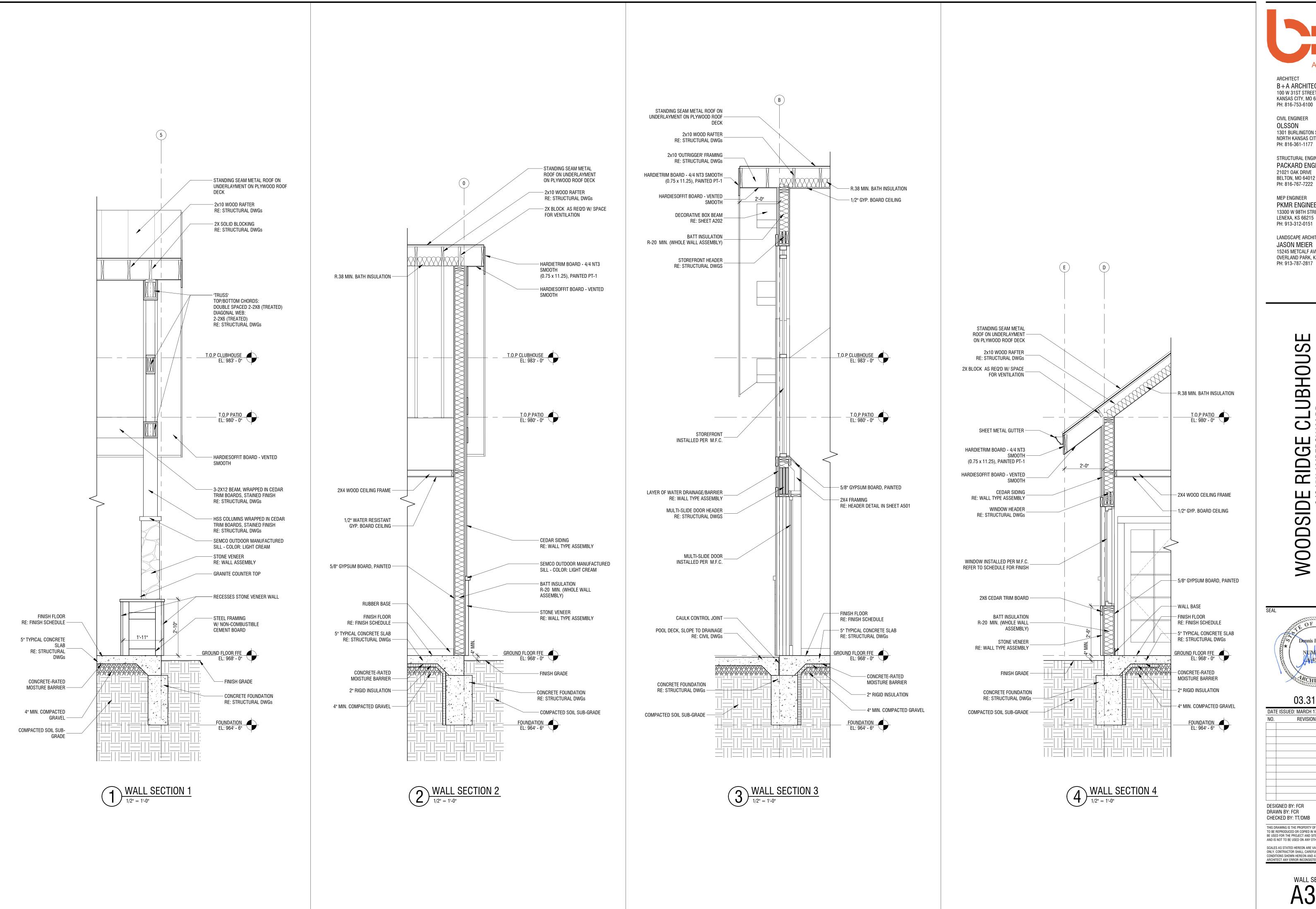
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NO.	REVISION	DA

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BUILDING SECTIONS
A301





B+A ARCHITECTURE 100 W 31ST STREET, SUITE 100 KANSAS CITY, MO 64108 PH: 816-753-6100

CIVIL ENGINEER OLSSON 1301 BURLINGTON STREET, SUITE 100 NORTH KANSAS CITY, MO 64116

PH: 816-361-1177 STRUCTURAL ENGINEER PACKARD ENGINEERING 21021 OAK DRIVE

PH: 816-767-7222 MEP ENGINEER PKMR ENGINEERS 13300 W 98TH STREET LENEXA, KS 66215

PH: 913-312-0151 LANDSCAPE ARCHITECT JASON MEIER 15245 METCALF AVE.

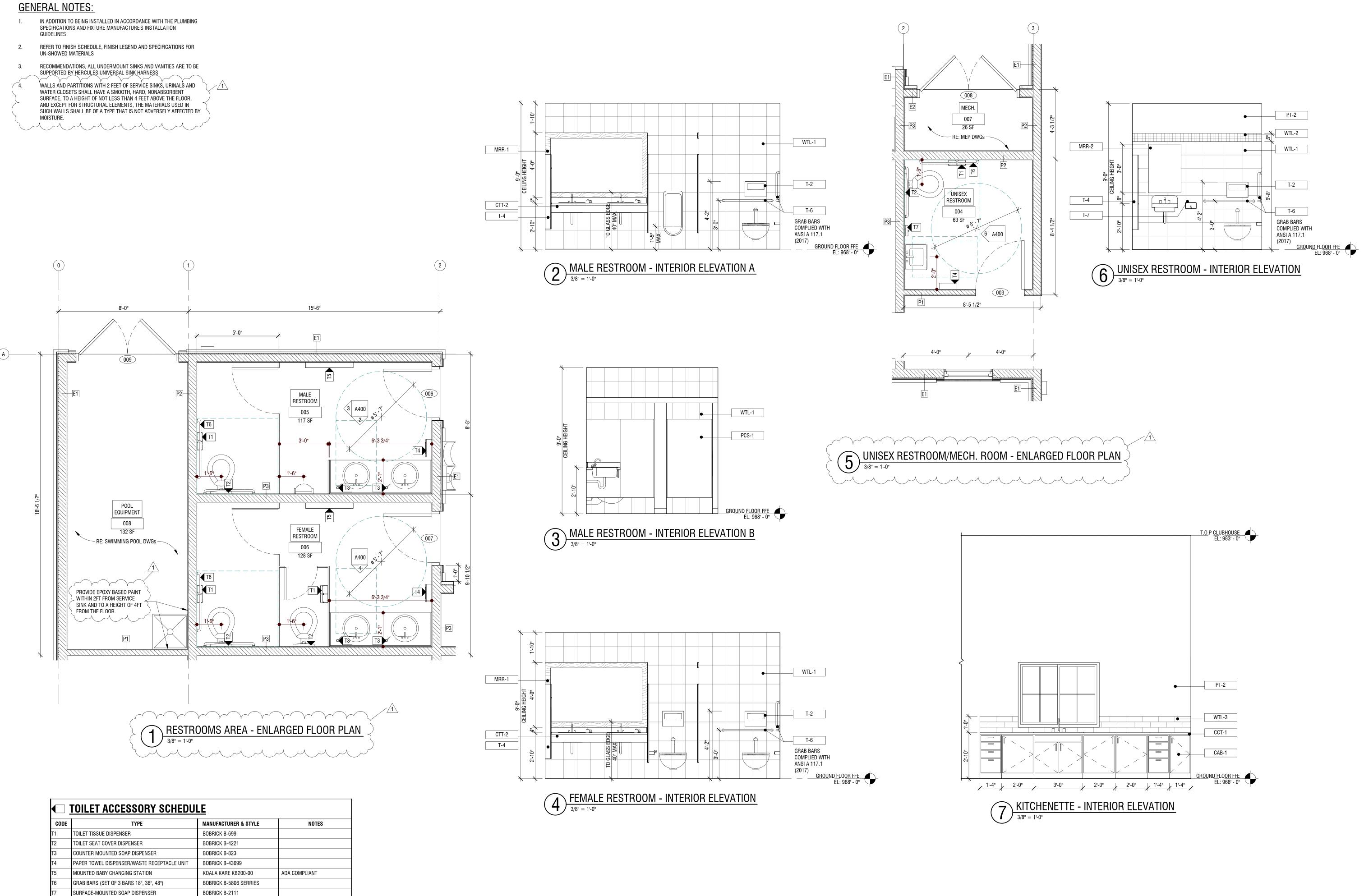
OVERLAND PARK, KS 66223 PH: 913-787-2817

WOODSIDE RIDGE CLUBHOUS
342 NW AMBERSHAM DR
LEE'S SUMMIT, MO 64081

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WALL SECTIONS





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LANDSCAPE ARCHITECT JASON MEIER 15245 METCALF AVE. OVERLAND PARK, KS 66223 PH: 913-787-2817

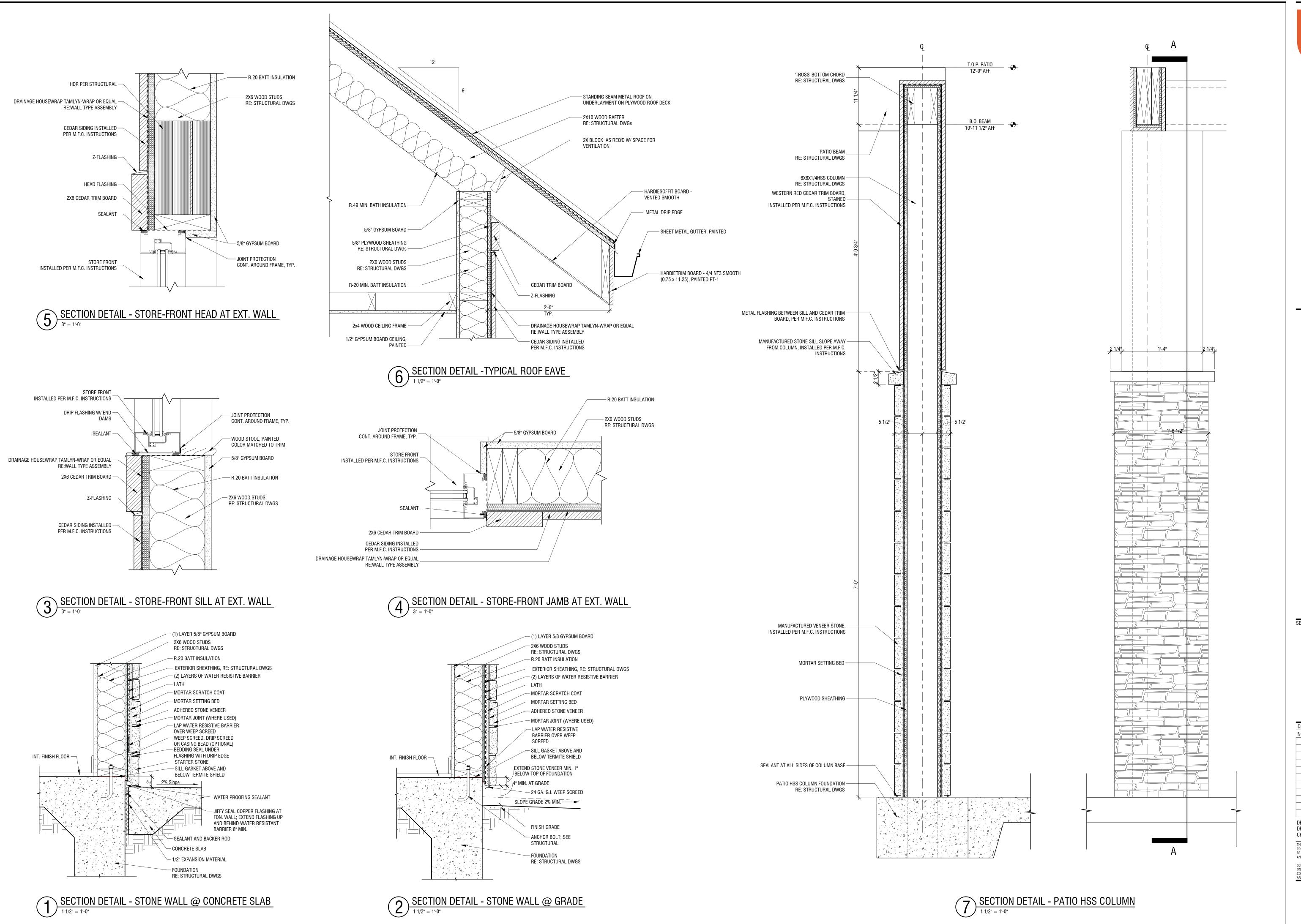
WOODSIDE RIDGE CLUBHOUSE
342 NW AMBERSHAM DR
LEE'S SUMMIT, MO 64081

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ENLARGED PLANS & INT. ELEV.



ARCHITECT B+A ARCHITECTURE 100 W 31ST STREET, SUITE 100

KANSAS CITY, MO 64108 PH: 816-753-6100 CIVIL ENGINEER OLSSON

1301 BURLINGTON STREET, SUITE 100 NORTH KANSAS CITY, MO 64116 PH: 816-361-1177

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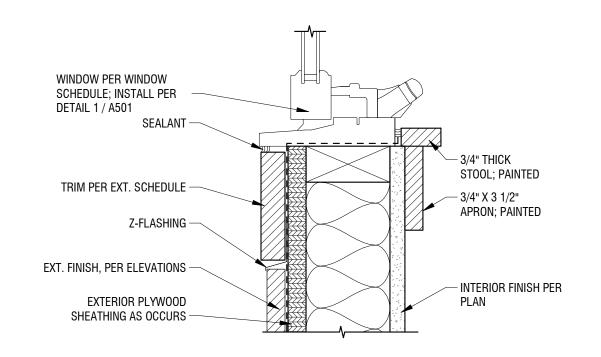
UBHOUSE WOODSIDE

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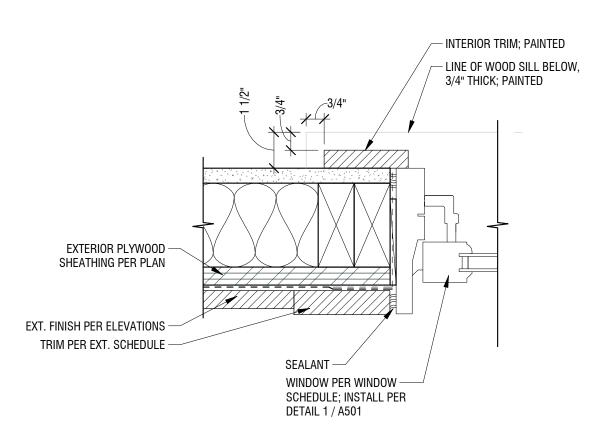
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SECTION DETAILS

2 SECTION DETAIL - WINDOW HEAD AT EXT. WALL 3" = 1'-0"

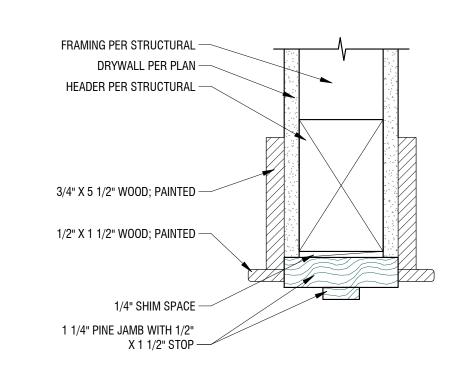


 $\underbrace{3}_{3''=\ 1'\cdot 0''} \underline{\text{SECTION DETAIL - WINDOW SILL AT EXT. WALL}}$



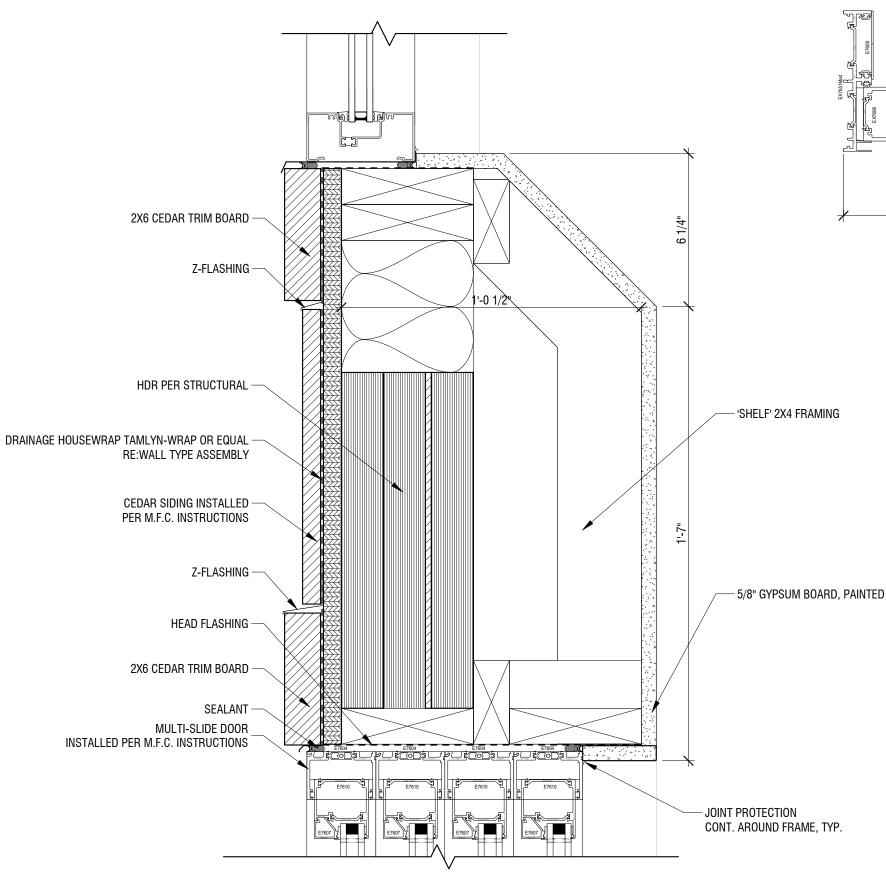
SECTION DETAIL - WINDOW JAMB AT EXT. WALL

3" = 1'-0"

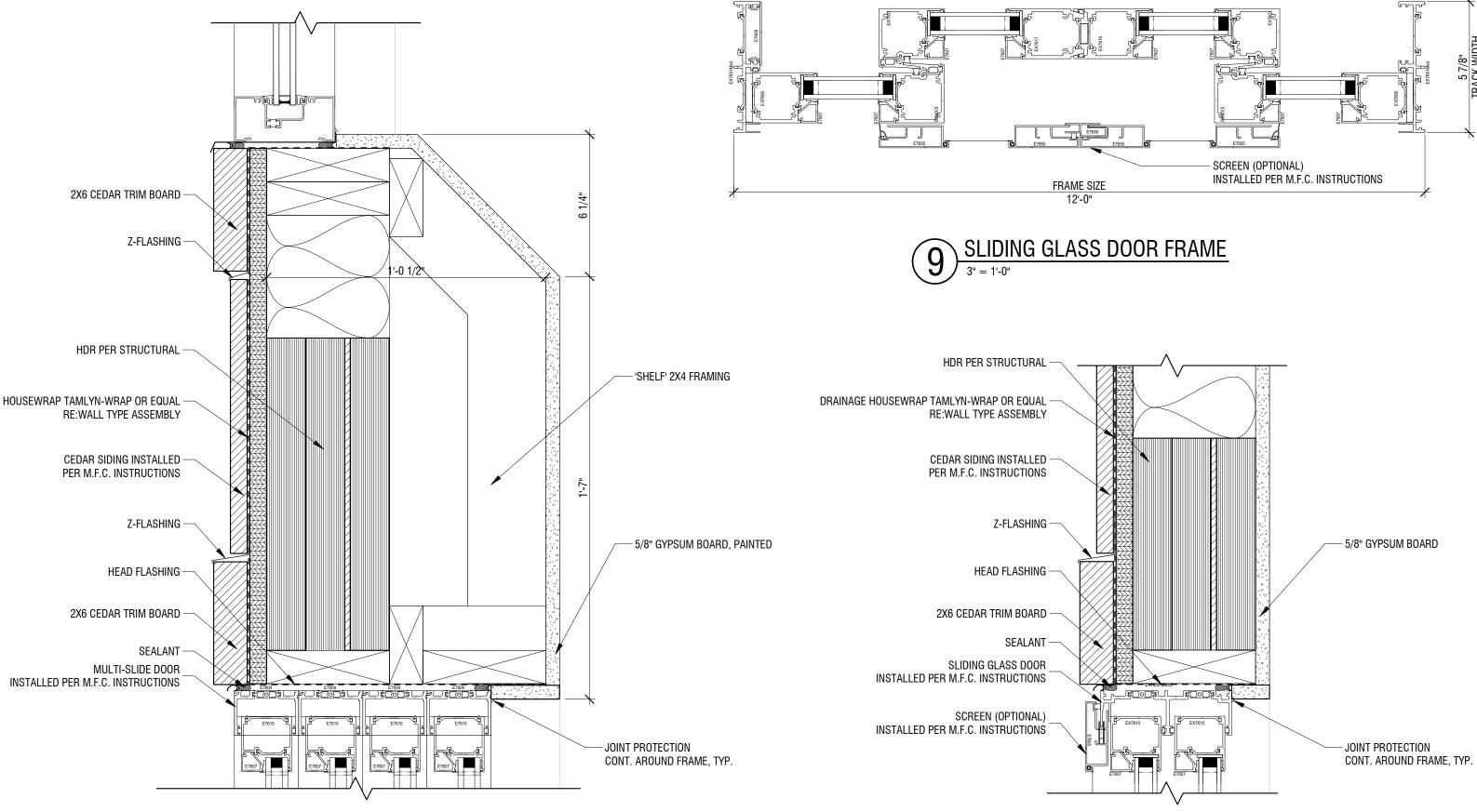


SECTION DETAIL - WOOD TRIM AT DOOR JAMB/HEADER

3" = 1'-0"



SECTION DETAIL - MULTI-SLIDE DOOR HEADER

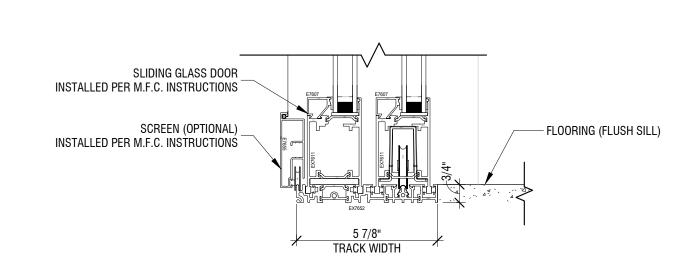


TRACK WIDTH

8 SECTION DETAIL - MULTI-SLIDE DOOR SILL
3" = 1'-0"

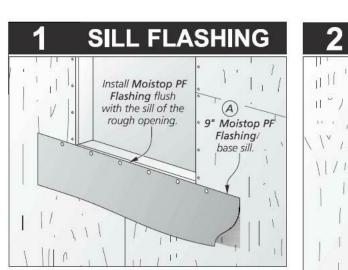
MULTI-SLIDE DOOR

INSTALLED PER M.F.C. INSTRUCTIONS

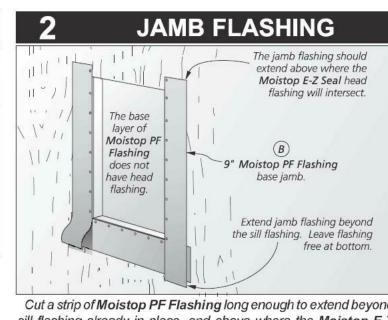


SECTION DETAIL - SLIDING GLASS DOOR HEADER

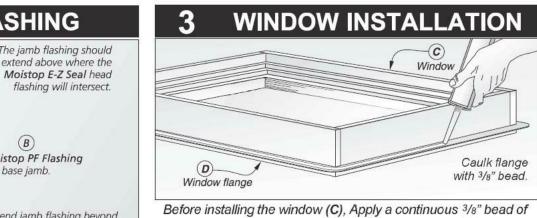
 $\underbrace{ 1 \ 1}_{3'' \ = \ 1' \cdot 0''} \underline{ SECTION \ DETAIL - SLIDING \ GLASS \ DOOR \ SILL }_{3'' \ = \ 1' \cdot 0''}$



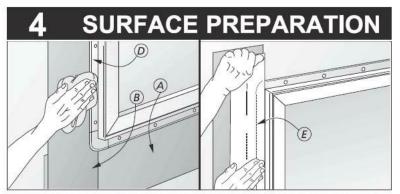
Once the rough opening is prepared, proceed by attaching Moistop PF Flashing (A) flush along the bottom of the rough opening. Be sure not to fasten the lower edge of the flashing so that Jumbo Tex®, Fortify® or WeatherSmart™ may be slipped up underneath the flashing in a weather-board fashion, extend the flashing beyond the jamb flashing to be applied later.



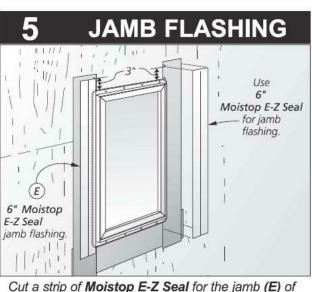
Cut a strip of Moistop PF Flashing long enough to extend beyond sill flashing already in place, and above where the Moistop E-Z Seal head flashing will intersect. Next attach the jamb flashing (B) flush to the edge of the rough opening leaving the bottom free. Repeat above steps for the remaining jamb.



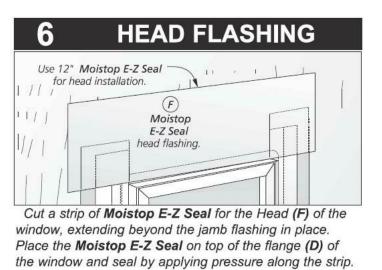
Moistop Sealant to the perimeter of the rough opening or to the backside of the mounting flange (D) of the window. Install the window according to the window manufacturer's instructions.



Wipe the window flange (D) and base Moistop PF Flashing (B) layer clean before applying Moistop E-Z Seal. Cut the desired length of Moistop E-Z Seal with a sharp knife. Pull off the release paper and place the Moistop E-Z Seal on top of the window flange. Apply firm pressure along the entire self adhesive strip to ensure a continuous seal.

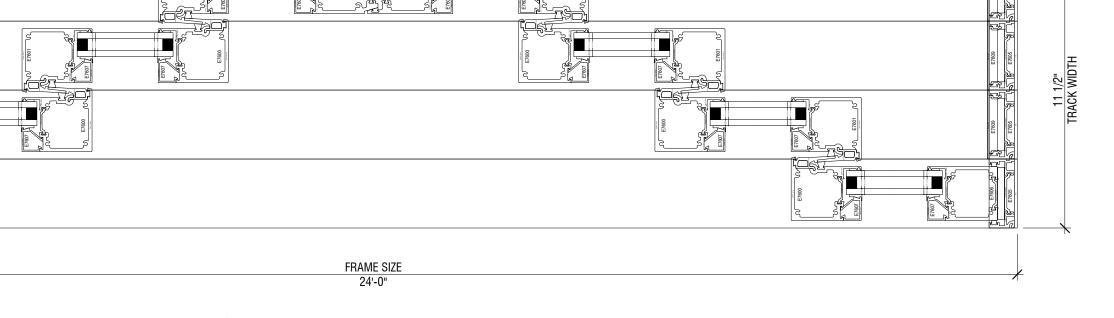


Cut a strip of Moistop E-Z Seal for the jamb (E) of the window, extending beyond the flange (3" minimum top and bottom). Place the Moistop E-Z Seal on top of the flange (D) of the window and seal by applying pressure along the strip. Repeat for other jamb.









 $\underbrace{6}_{3''=1'\text{-}0''}^{\text{MULTI-SLIDE DOOR FRAME}}$

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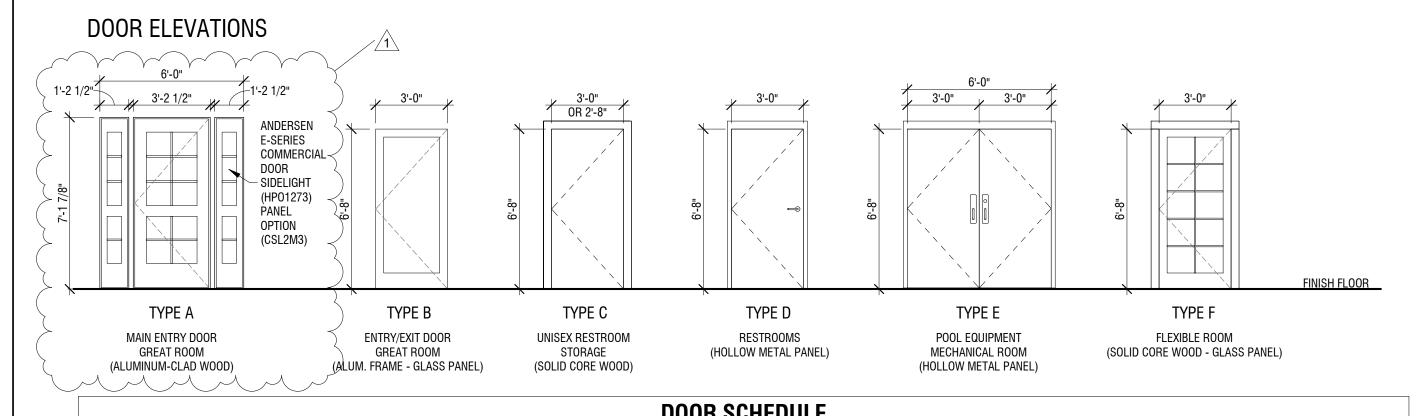
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PH: 913-787-2817

LUBHOUSE WOODSIDE RIDGE CLL 342 NW AMBERSHAM DR LEE'S SUMMIT, MO 64081

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	DOOK 20HEDOLE											
		SIZE		D00R			FRAME					
NO.	TYPE	WIDTH	HEIGHT	OPERATION	MATERIAL	FINISH	FIRE RATING	GLASS	MATERIAL	FINISH	HARDWARE SET	REMARKS
$\overline{}$	$\bigvee \bigvee$	~ \	$\overline{}$		\bigvee	\sim	$\overline{}$	\bigvee	\bigvee	\bigvee	\sim	
001	Α	3' - 2 1/2"	7' - 1 7/8"	SW	ALUM. CLAD WOOD	COLOR TO MATCH		LOW E-4 GLASS	ALUM.	COLOR TO MATCH	BY DOOR	ANDERSEN DOORS, E-SERIES, COMMERCIAL DOOR (ADA SILL),
						WINDOW FRAMES				WINDOW FRAMES	MANUFACTURER,	COLONIAL GRILLE PATTERN, CONCEALED PANIC SYSTEM (CPS)
-											INCLUDE PANIC	CPS3273, PANEL OPTION CP2M3
											HARDWARE	
002	В	3' - 0"	6' - 8"	SW	ALUM/GLASS	*SEE REMARKS	-	TEMP.	ALUM.	*SEE REMARKS	2	RE: EXTERIOR MATERIAL SCHEDULE FOR COLOR
003	C	3' - 0"	6' - 8"	SW	S.C. WOOD	*SEE REMARKS	-	-	WOOD	*SEE REMARKS	8	COLOR MATCH TO PT-3
004	F	3' - 0"	6' - 8"	SW	S.C. WOOD/GLASS	*SEE REMARKS	-	TEMP.	WOOD	*SEE REMARKS	8	COLOR MATCH TO PT-3
005	С	2' - 8"	6' - 8"	SW	S.C. WOOD	*SEE REMARKS	-	-	WOOD	*SEE REMARKS	8	COLOR MATCH TO PT-3
006	D	3' - 0"	6' - 8"	SW	H.M.	*SEE REMARKS	-	-	H.M.	*SEE REMARKS	4	RE: EXTERIOR MATERIAL SCHEDULE FOR COLOR
007	D	3' - 0"	6' - 8"	SW	H.M.	*SEE REMARKS	-	-	H.M.	*SEE REMARKS	4	RE: EXTERIOR MATERIAL SCHEDULE FOR COLOR
800	E	6' - 0"	6' - 8"	SW	H.M.	*SEE REMARKS	-	-	H.M.	*SEE REMARKS	3	RE: EXTERIOR MATERIAL SCHEDULE FOR COLOR
009	E	6' - 0"	6' - 8"	SW	H.M.	*SEE REMARKS		-	H.M.	*SEE REMARKS	3	RE: EXTERIOR MATERIAL SCHEDULE FOR COLOR

ABBREVIATION LEGEND

SWSWINGH.M.HOLLOW METAL
K.D.S.C. WOODSOLID CORE WOODOHOVERHEADK.D.KNOCK DOWNALUM.ALUMINUM

DOOR NOTES

1. SEE EXTERIOR MATERIAL SCHEDULE FOR EXTERIOR DOOR FINISH COLOR 2. INTERIOR DOOR COLOR MATCH INTERIOR WALL COLOR, SEE FINISH LEGEND ON SHEET A800 3. INTERIOR DOOR TRIM COLOR MATCH TO INTERIOR WALL COLOR

DOOR HARDWARE SCHEDULE

SET: 1.0 (NOT USED)

<u>SET: 2.0</u> DOORS: 002

CONTINOUS HINGE		CFMHD1		PE
EXIT DEVICE		7200 X PULL (SEE BELOW)	630	YΑ
CYLINDER RIM/MO	RTISE	AS REQUIRED (MATCH EXISTING KEY S	SYSTEM)	
SMART PAC BRIDG	GE RECTIFIER	2005M3		HS
ELECTRIC STRIKE		9600	630	HS
DOOR PULL, OFFSI	ET	RM331112 MTG-TYPE 12HD	US32D	R0
SURFACE CLOSER		CPS7500	689	NO
DROP PLATE		7788	689	NO
BLADE STOP		6891	689	NO
THRESHOLD		171A		PE
SET WEATHERSHIP	0	BY DOOR MANUFACTURER		
SWEEP		BY DOOR MANUFACTURER		
ELECTROLYNX HAP	RNESS	QC-C1500P		MK
POSITION SWITCH		DPS		SU
MOTION SENSOR		XMS		SU
POWER SUPPLY		BPS-24-1		SU
CARD READER	WALL READER TO I	BE PROVIDED BY SYSTEMS INTEGRATOF	{	

NOTE: ACCESS BY AUTHORIZED CARD CREDENTIAL OR MANUAL KEY. ALWAYS FREE EGRESS.

<u>**SET: 3.0**</u> DOORS: 008, 009

6	HINGE (HEAVY WEIGHT)	T4A3386 NRP 4-1/2" X 4-1/2"	US32D
1	STOREROOM LOCK	PBR 8805FL LC	630
2	FLUSHBOLT	555	
1	CYLINDER RIM/MORTISE	AS REQUIRED (MATCH EXISTI	NG KEY SYSTEM)
1	SURFACE CLOSER, HO	CLP7500R	600 X 689
1	THRESHOLD	154SS	
1	GASKETING	305SSE	
1	RAINGUARD	346C	
1	SWEEP	315SSN	
1	DUST PROOF STRIKE	570	
1	Z ASTRAGAL	BY DOOR MANUFACTURER	

<u>SET: 4.0</u> DOORS: 006, 007

חטטע	13. 000, 007			
3	HINGE (HEAVY WEIGHT)	T4A3386 4-1/2" X 4-1/2"	US32D	MK
1	BATHROOM LOCK	PBR 8862FL IND	630	YΑ
1	SURFACE CLOSER	7500	689	NO
1	DOOR STOP	441	US26D	R0
1	THRESHOLD	171A		PE
1	GASKETING	S88D		PE

DOOR HARDWARE TYPES

NOTE: SEE HARDWARE SPECIFICATIONS FOR MORE INFO; SEE HARDWARE SCHEDULE BELOW FOR MORE INFO

POOL GATE NOTES

POOL GATE FINISH COLOR AND STYLE WILL MATCH POOL FENCE.
 - 6FT TALL, BLACK METAL MONTAGE STYLE
 POOL GATES WILL HAVE EXIT/PANIC HARDWARE.
 POOL GATES WILL BE SET UP FOR FREE EGRESS.

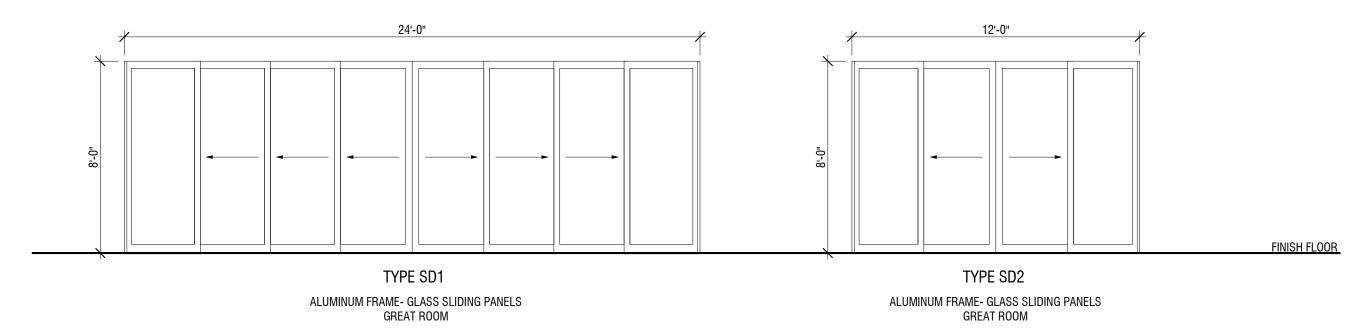
<u>**SET: 5.0**</u> (NOT USED)

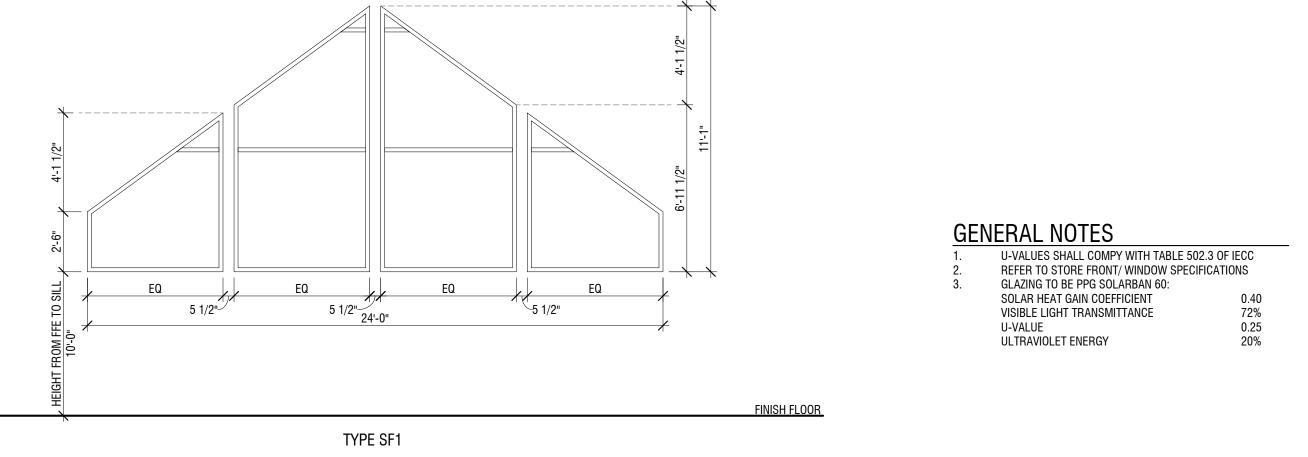
SET: 6.0 (NOT USED)

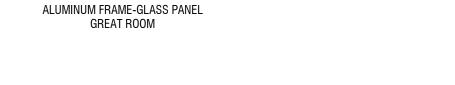
<u>SET: 8.0</u> DOORS: 003, 004, 005

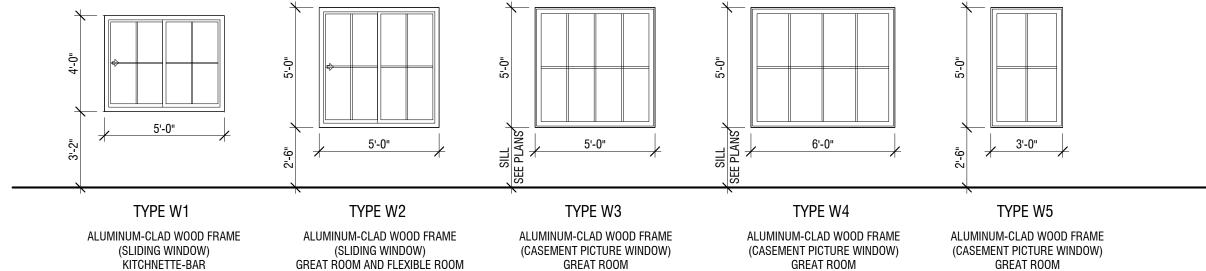
uno.	003, 004, 003		
	HINGE (HEAVY WEIGHT)	T4A3786 NRP 4-1/2" X 4-1/2"	US26D
	CYLINDRICAL LOCK (CLASSROOM)	PB 5408LN LESS CORE	626
	CYLINDER KEY IN LEVER	AS REQUIRED (MATCH EXISTING KEY	SYSTEM)
	SURFACE CLOSER	PR8501	689
	KICK PLATE	K1050 10" X 2" LDW 4BE CSK	US32D
	WALL STOP	409	US32D
	CVCKETIVIC	CRRD	

STOREFRONT/ WINDOW ELEVATIONS









	SLIDING DOOR SCHEDULE										
			SIZE								
NO.	TYPE	WIDTH	HEIGHT	FRAME	REMARKS						
	<u>'</u>			·							
D1a	SD1	12' - 0"	8' - 0"	ALUM. PAINTED, MATCH WINDOW FRAME	WESTERN WINDOW SYSTEMS, SERIES 7600 MULTI-SLIDE DOOR, FLUSH SILL/STANDARD LOW E-GLASS (06X0)						
D1b	SD1	12' - 0"	8' - 0"	ALUM. PAINTED, MATCH WINDOW FRAME	WESTERN WINDOW SYSTEMS, SERIES 7600 MULTI-SLIDE DOOR, FLUSH SILL/STANDARD LOW E-GLASS (06X0)						
D2a	SD2	6' - 0"	8' - 0"	ALUM. PAINTED, MATCH WINDOW FRAME	WESTERN WINDOW SYSTEMS, SERIES 7650 SLIDING GLASS DOOR, FLUSH SILL/STANDARD LOW E-GLASS (OXXO)						
D2b	SD2	6' - 0"	8' - 0"	ALUM. PAINTED, MATCH WINDOW FRAME	WESTERN WINDOW SYSTEMS, SERIES 7650 SLIDING GLASS DOOR, FLUSH SILL/STANDARD LOW E-GLASS (0XXO)						

	STOREFRONT SCHEDULE										
NO.	WIDTH	HEIGHT	SILL HEIGHT	GLASS	FRAME FINISH	REMARK					
F1	5' - 7 7/8"	6' - 7 1/2"	10' - 0"	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME					
F2	5' - 7 7/8"	11' - 1"	10' - 0"	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME					
F3	5' - 7 7/8"	11' - 1"	10' - 0"	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME					
F4	5' - 7 7/8"	6' - 7 1/2"	10' - 0"	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME					

WINDOW SCHEDULE											
	SIZE										
NO.	WIDTH	HEIGHT	TYPE	GLASS	FINISH	REMARKS					
1	5' - 0"	5' - 0"	ALUMCLAD WOOD GLIDING WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES, COLONIAL GRILLE PATTERN - SLD5050					
2	5' - 0"	5' - 0"	ALUMCLAD WOOD GLIDING WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES, COLONIAL GRILLE PATTERN - SLD5050					
3	5' - 0"	5' - 0"	ALUMCLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES, COLONIAL GRILLE PATTERN - CMP5050					
4	5' - 0"	5' - 0"	ALUMCLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES, COLONIAL GRILLE PATTERN - CMP5050					
5	6' - 0"	5' - 0"	ALUMCLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES, COLONIAL GRILLE PATTERN - CMP6050					
6	6' - 0"	5' - 0"	ALUMCLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES, COLONIAL GRILLE PATTERN - CMP6050					
7	5' - 0"	4' - 0"	ALUMCLAD WOOD GLIDING WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES, COLONIAL GRILLE PATTERN - SLD5040					
8	3' - 0"	5' - 0"	ALUMCLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES, COLONIAL GRILLE PATTERN - CMP3050					
9	5' - 0"	5' - 0"	ALUMCLAD WOOD GLIDING WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES, COLONIAL GRILLE PATTERN - SLD5050					



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WOODSIDE RIDGE CLUBHOUS 342 NW AMBERSHAM DR LEE'S SUMMIT, MO 64081

Dennis Bradley

NUMBER

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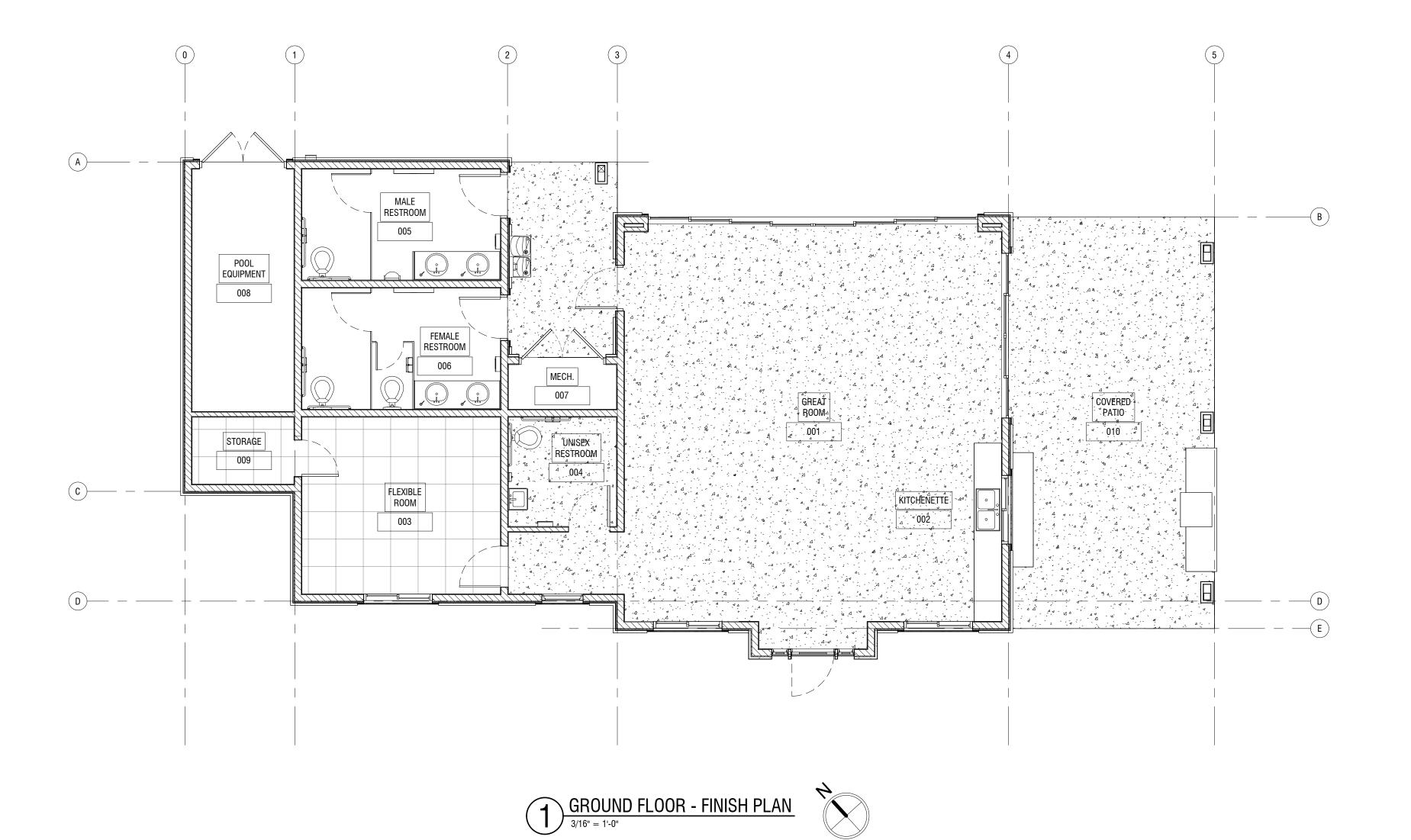
DESIGNED BY: FCR

DOOR/WINDOW SCHEDULES

A600

FINISH NOTES

- FINISH ITEMS TO BE INSTALLED PER MANUFACTURER'S APPROVED PROCEDURES, METHODS AND APPLICABLE
- STANDARDS
 2. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION



MATERIAL LEGEND

STAINED CONCRETE FLOOR

CARPET TILES: 24X24

EPOXY FLOOR FINISH

FINISH SO	INISH SCHEDULE											
ROOM NUMBER	NAME	FLOORING	WALL BASE	TRIM	NE-WALL	NW-WALL	SE-WALL	SW-WALL	CEILING FINISH	REMARKS		
01	GREAT ROOM	STC	WDB/PT-2	-	PT-3	PT-3	PT-3	PT-3	GB/PT-2			
02	KITCHENETTE	STC	WDB/PT-2	-	-	-	PT-3	PT-3	GB/PT-2			
03	FLEXIBLE ROOM	CCT	WDB/PT-3	-	PT-2	PT-2	PT-2	PT-2	GB/PT-2	ROOM HAS 9FT TALL CEILING		
04	UNISEX RESTROOM	STC	TLB-1	-	WTL-1/WTL-2	WTL-1/WTL-2	PT-2	PT-2	WGB/PT-2	ROOM HAS 9FT TALL CEILING		
05	MALE RESTROOM	EPX	-	-	WTL-1	PT-2	PT-2	WTL-1	WGB/PT-2	ROOM HAS 9FT TALL CEILING		
06	FEMALE RESTROOM	EPX	-	-	WTL-1	PT-2	PT-2	WTL-1	WGB/PT-2	ROOM HAS 9FT TALL CEILING		
07	MECH.	EPX	RB	-	PT-2	PT-2	PT-2	PT-2	GB/PT-2	ROOM HAS 9FT TALL CEILING		
08	POOL EQUIPMENT	EPX	RB	-	PT-2	PT-2	PT-2	PT-2	WGB/PT-2	ROOM HAS 9FT TALL CEILING		
09	STORAGE	CCT	WDB/PT-3	-	PT-2	PT-2	PT-2	PT-2	GB/PT-2	ROOM HAS 9FT TALL CEILING		
10	COVERED PATIO	STC	-	-	-	CEDAR SIDING, STAINED	-	-	CDR	RE: EXTERIOR MATERIALS FOR CEDAR SIDING & STAIN		

CODE	MATERIAL	MANUFACTURER	PRODUCT	COLOR/TEXTURE	FINISH	SIZE	NOTES
FLOORIN	IG						
STC	STAINED CONCRETE						
EPX	EPOXY						
CCT	COMMERCIAL CARPET TILE	PATCRAFT (CLEAN LINES MODULAR)	CARPET TILE	ELLATION 00522		24" X 24"	
WALL-TI	LE					-	
TLB-1	TRIM - FLOOR BULLNOSE	DALTILE	LINDEN POINT	LP21 GRIGIO	MATTE	3" X 12"	1/16" GROUT GR-1
WTL-1	PORCELAIN TILE	DALTILE	LINDEN POINT	LP21 GRIGIO-WALL TILE	MATTE	10" X 14"	1/16" GROUT GR-1
WTL-2	PORCELAIN TILE	DALTILE	LINDEN POINT	LP21 GRIGIO-MOSAIC	MATTE	2" X 2"	1/8" GROUT GR-1
WTL-3	CERAMIC TILE	DALTILE	COLOR WHEEL COLLECTION	MATTE SUEDE GRAY 0782	MATTE	4" X 12"	1/16" GROUT GR-1
WALL-0	THERS				•		
PCS-1	TOILET PARTITIONS	ASI ACCURATE PARTITIONS	POWDER COATED STEEL	LIGHT GRAY 990			OVERHEAD BRACED
RB	RUBBER BASE	JOHNSONITE / TARKETT	THERMOSET RUBBER	23 VAPOR GREY		4"	TOELESS, TYPE TS
WDB	WOOD BASE	PACIFIC MUTUAL DOOR & WINDOW	BASE: PR430	PT-3		4 1/4"	
PAINT							
PT-2	PAINT (INTERIOR WALL/CEILING)	SHERWIN WILLIAMS	-	ALABASTER - SW 7008	FLAT	-	PROVIDE MOCK UP FOR
PT-3	PAINT (BASE/TRIMS/DOOR)	SHERWIN WILLIAMS	-	REPOSE GRAY - SW 7015	SEMI-GLOSS	-	OWNER/ ARCHITECT APPROVAL
CEILING					'		
GB	GYPSUM BOARD	-	-	PT-2	FLAT	-	
WGB	WATER RESISTANT GYP. BOARD	-	-	PT-2	FLAT	-	
CDR	CEDAR PLANKS	WESTERN RED CEDAR	-	SELECT KNOTTY	STAINED	3/4"	TONGUE AND GROOVE SYSTEM
GROUT		,			•		
GR-1	GROUT	MAPEI	-	27-SILVER	-	-	PROVIDE MOCK UP FOR OWNER
							ARCHITECT APPROVAL
MILL WO	DRK				-		
CAB-1	CABINETRY	PROFILE OR EQUAL	-	SHERWIN WILLIAMS STAIN	-	-	PROVIDE SHOP-DRAWINGS FOR
				COLOR NEW EBONY (SW 3135)			OWNER/ ARCHITECT APPROVAL
CTT-1	COUNTER TOP	DALTILE	QUARTZ	LINCOLN WHITE NQ59	MATTE	3/4"	
CTT-2	COUNTER TOP	DALTILE	QUARTZ	CABRINI GREY NQ51	MATTE	3/4"	
MIRR-1	BATHROOM MIRROR	SIX PRODUCTS	S-COLLECTION-SPM-C004	0048	-	-	
MIRR-2	BATHROOM MIRROR	BOBRICK	B-293 2436	-	-	24" X 36"	

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OLAL	
Dennis Bradley NUMBER A 4516	

DATE ISS	UED: MARCH 17, 2020	
NO.	REVISION	DATE

DESIGNED BY: FCR
DRAWN BY: FCR
CHECKED BY: TT/DMB

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FINISH PLAN & SCHEDULE

A800

GENERAL STRUCTURAL NOTES:

DESIGN LIVE LOADS: (Per 2012 International Building Code, Unfactored ASD values shown)

- a. Roof----- 20psf (min.); Ground Snow =20psf; Ce=1.0; Is=1.0; Ct=1.0; Cs=0.99
- b. Floor----- 100 psf Storage & Mechanical--- 125 psf
- Exits & Patio---- 100 PSF
- e. Wind Load——————— ASD Wind Speed=93mph; Risk Cat=II; Iw=I.0; Exp. C; Clubhouse GCpi=0.18; Clubhouse: Comp & Clad = 23 psf (Wall Zone 5) and 48 psf (Roof Zone 2 & 3)

 Patio: GCpi = 0.55 & Comp & Clad = 56 psf (Roof Zone 2 & 3)
- f. Earthquake Load————— R.C.=II; le=1.00; Ss = 0.114g; S1 = 0.067g; Site Class D; Sds=0.121; Sd1=0.107; S.D.C. = B; Wood Shear Walls R=6.5

FIELD VERIFICATION:

- a. Contractor shall thoroughly inspect and survey the existing site and related infrastructure to verify conditions, dimensions, elevations, framing, etc. which affect the work shown on the drawings.
- b. Report any variations or discrepancies to the Architect and Engineer before proceeding.

FOUNDATION DESIGN:

(spread footings)

- a. Design of foundations is based upon an assumed allowable vertical bearing pressure of 1500 psf for continuous, and individual spread footings (net, for full dead plus live loads), on suitable existing soil or shallow compacted structural fill 16" below existing interior slab or 36" below exterior grade (min).
- b. Field verify all bearing soils meet assumption (per a KS registered Geotech'l Engineer) prior to placing rebar.
- c. Overexcavate 12" (min) and provide a "cushion" of structural fill for 20' along new wall footings in the natural soils beyond all transitions of bearing wall footings from natural soil bearing to structural fill bearing.
- d. Bearing surfaces should be protected from either inundation or excessive drying during the excavation process. Provide good surface drainage during construction.
- e. All loose soils or soils softened due to moisture concentration in the excavation should be removed prior to pouring concrete for foundations. Replace such unsuitable soils with structural fill as needed.
- f. If soils with moderate to high shrink/swell potential are exposed in excavations for slab or foundation bearing, undercut and replace such unsuitable soil with at least 2 feet of structural fill.
- g. All structural fill shall be appropriate for use on this project site and exhibit less than moderate shrink/ swell potential. The structural fill shall not contain rocks larger than 5" and shall be placed in loose lifts that are 8" thick (or less) compacted to 95% (min) of the maximum density as determined by Standard Proctor Procedures (ASTM D 698). Moisture content shall be controlled to within a range of -3 to +2percent around the optimum.

REINFORCED CONCRETE:

- a. All concrete design is based on current edition of the "Building Code Requirements for Reinforced Concrete" (ACI 318).
- b. All structural concrete shall have minimum 28-day compressive strength of 4000 psi (except footings, which may be 3,000 psi).
- c. Concrete shall be proportioned utilizing Type I or I/II cement (except, concrete exposed directly to soil with high sulfate content shall use Type II cement). Concrete susceptible to freezing shall be formulated for maximum frost resistance in accordance with the ACI Manual of Concrete Practice.
- d. Contractor shall notify Architect of cold joint locations prior to or during concrete forming if they differ from those shown on the plans.
- e. Cold or hot weather concreting procedures shall be provided as recommended in the ACI Manual of Concrete Practice.
- f. All exposed edges and corners shall be chamfered 0.75".
- g. All anchor bolts for beam and column bearing plates shall be placed with setting templates into forms before concrete is poured.

REINFORCING STEEL:

- a. All detailing, fabrication, and placement of reinforcing steel shall be in accordance with the ACI Manual of Concrete Practice.
- b. Reinforcing bars shall conform to the current ASTM Specification A615 and shall be grade 60, except ties, field bent bars where permitted by note on plan, or bars to be welded which shall be grade 40 or weldable grade 60.
- c. Unless noted otherwise: At splices in concrete, lap bars 36 diameters. At splices in masonry, lap bars 42 diameters. At corners, make horizontal bars continuos or provide corner bars. Around openings in walls and slabs, provide 2-#4's, extending 2-0 beyond each edge of opening, each way.
- d. Except as noted on the drawings, minimum concrete protection for reinforcement shall be in accordance with ACI 318.
- e. Welded wire fabric shall conform to ASTM Specification A-185.

<u>GROUT:</u>

a. All grout used beneath bearings shall be non-shrink, non-metallic w/28 day f'c = 5,000 psi.

POST-INSTALLED ANCHORS:

a. Resin Adhesive Anchors (called for or to replace cast—in anhcor bolts called for) shall be "HILTI HIT—ICE or HIT HY-200", "Ramset/Red Head — Epcon", or approved equivalent, with these embeds for general bolts in concrete: 9" for 3/4" dia bolts, 7 1/2" for 5/8"dia and 6" for 1/2"dia. Embeds for Holdown or HSS base bolts in concrete: $17 \frac{1}{2}$ " for $\frac{7}{8}$ " dia bolts, 15" for $\frac{3}{4}$ " dia and $12 \frac{1}{2}$ " for $\frac{5}{8}$ "dia.

STRUCTURAL STEEL:

- a. Structural steel shall be detailed, fabricated, and erected in accordance with Current AISC "Specifications", and "Code of Standard Practice".
- b. Structural steel rolled W shapes shall be ASTM A992. C and MC shapes may be ASTM A36. HSS/Tube shapes shall be ASTM A500 grade B. Angles & loose plates may be ASTM A36. Pipe shapes shall be ASTM A53, Type E or S, grade B.
- c. All bolts, excluding anchor bolts (F1554, Gr 55 or better), shall conform to ASTM A325. Bolt size shall be 0.75", unless noted otherwise on the drawings.
- d. Unless shown otherwise on the drawings, framed beam connections shall consist of 3/8" tab plate or a pair of 1/4" angles using the maximum number of bolts called for in the appropriate AISC Table.
- e. All welding shall be done by a certified welder in accordance with AISC and AWS specifications and recommendations.
- f. All bolted connections are to be snug tight for bearing connections, unless noted otherwise.
- Unless shown otherwise on the drawings, length for cast—in anchor bolts are to be: 18" for 7/8" dia bolts, 15" for 3/4" dia, 12" for 5/8" dia, and 10" for 1/2" dia bolts. Tie bolts in with rebar or set with templates — do not 'hand stab' anchor bolts into poured/cast concrete.

SHOP DRAWINGS (DEFERRED SUBMITTALS):

a. Furnish pdf copy by email of each set of shop and erection drawings for: structural steel and reinforcing bars to Architect and Structural Engineer for review and acceptance prior to fabrication.

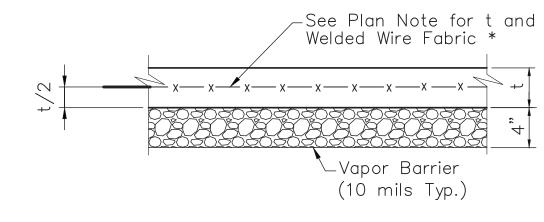
STRUCTURAL ERECTION AND BRACING REQUIREMENTS:

- a. The structural drawings illustrate the completed structure with all elements in their final positions, properly supported and braced.
- b. The Contractor, in the proper sequence, shall provide shoring and bracing as may be required during construction to achieve the final completed structure.

SPECIAL INSPECTIONS (Structural Only):

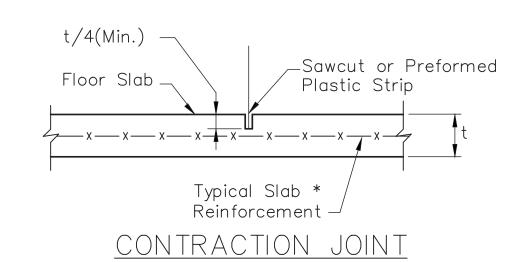
- a. Special Inspections per the IBC (2012 Chapter 1705) that may be required for this project by the governing agency's Building Official include, but may not be limited to, the following (that are not 'lined-out'):
 - 1. Periodic inspections of any excavated foundation bearing soil/rock depth and material
 - 2. Periodic inspections/tests of any structural fill material and base preparation
 - 3. Continuous inspections of any structural fill density, placement, and compaction 4. Periodic inspections of any reinforcing steel (rebar) material and placement
 - -5. Continuous inspections of concrete sampling and placement 6. Periodic inspections of concrete mix design, form work, and curing
 - 7. Periodic inspections of anchor bolt material and placement
 - 8. Periodic inspections of any post-installed anchors and placement in concrete 9. Quality Assurance (QA) for structural steel system erection per AISC 360—10, Chapter N
 - 10.Periodic inspections of cold-formed steel decking material, placement and fastening 11.Periodic inspections of prefabricated wood truss material, placement, bridging and fastening*
- b. Special Inspector for the work noted above shall be 'third party' agent provided by Owner and approved by the governing agency's Building Official (B.O.).
- c. Quality Assurance (QA) for structural steel fabrication shall be provided per AISC 360-10, Chapter N by the fabricator's agent/inspector (if reg'd by the B.O. — ref Section N7).
- d. Quality Control (QC) for structural steel fabrication and erection shall be provided per AISC 360-10, Chapter N by the respective agent/inspector for the fabricator and/or erector.

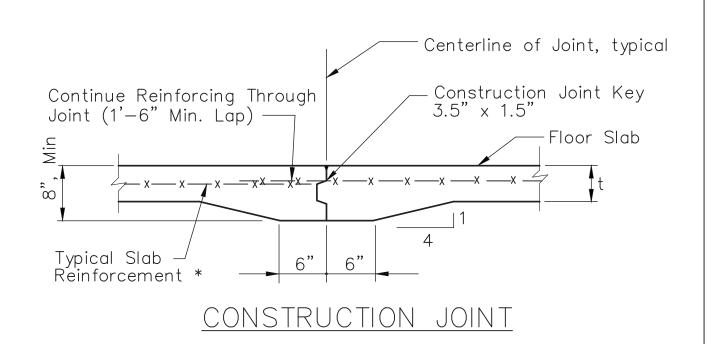
ABBREVIATIONS ABC = Aggregate Base Course T.O.S. = Top of Steel GSN = General Structural Notes T.O.W. = Top of Wall UNO = Unless Noted Otherwise F.V. = Field Verify WWF = Welded Wire Fabric T&B = Top & Bottom E.W. = Each Way O.C. = On Center PSF = Pounds Per Square Foot NTS = Not to Scale O.H. = Opposite Hand O.F. = Outside Face E.F. = Each Face I.F. = Inside Face LEGEND INDICATES TRENCHED CONCRETE FOOTING INDICATES THICKENED SLAB CONCRETE FOOTING INDICATES COLUMN (WOOD OR STEEL) INDICATES OPNG IN FLR OR ROOF. VERIFY SIZE & LOCATION w/ ARCH'L & MECH'L DWGS. MOST OPNGS & OPNG FRMG ARE NOT SHOWN ON PLAN INDICATES WOOD RAFTER/JOIST INDICATES WOOD HEADER INDICATES WOOD BEAM



TYPICAL SLAB-ON-GRADE SECTION

Reinforced Concrete Slab on 4" Aggregate Base Course * - WWF MUST BE PLACED AT SLAB MID-DEPTH





SLAB-ON-GRADE & CONTROL JOINTS

Provide a control joint where indicated per plan, typical.



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DECEMBER 27, 2018 ISSUED: DECEMBER 27, 2018 REVISION DATE DRAWN BY DJP CHECKED BY DJP

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PLAN KEY NOTES:

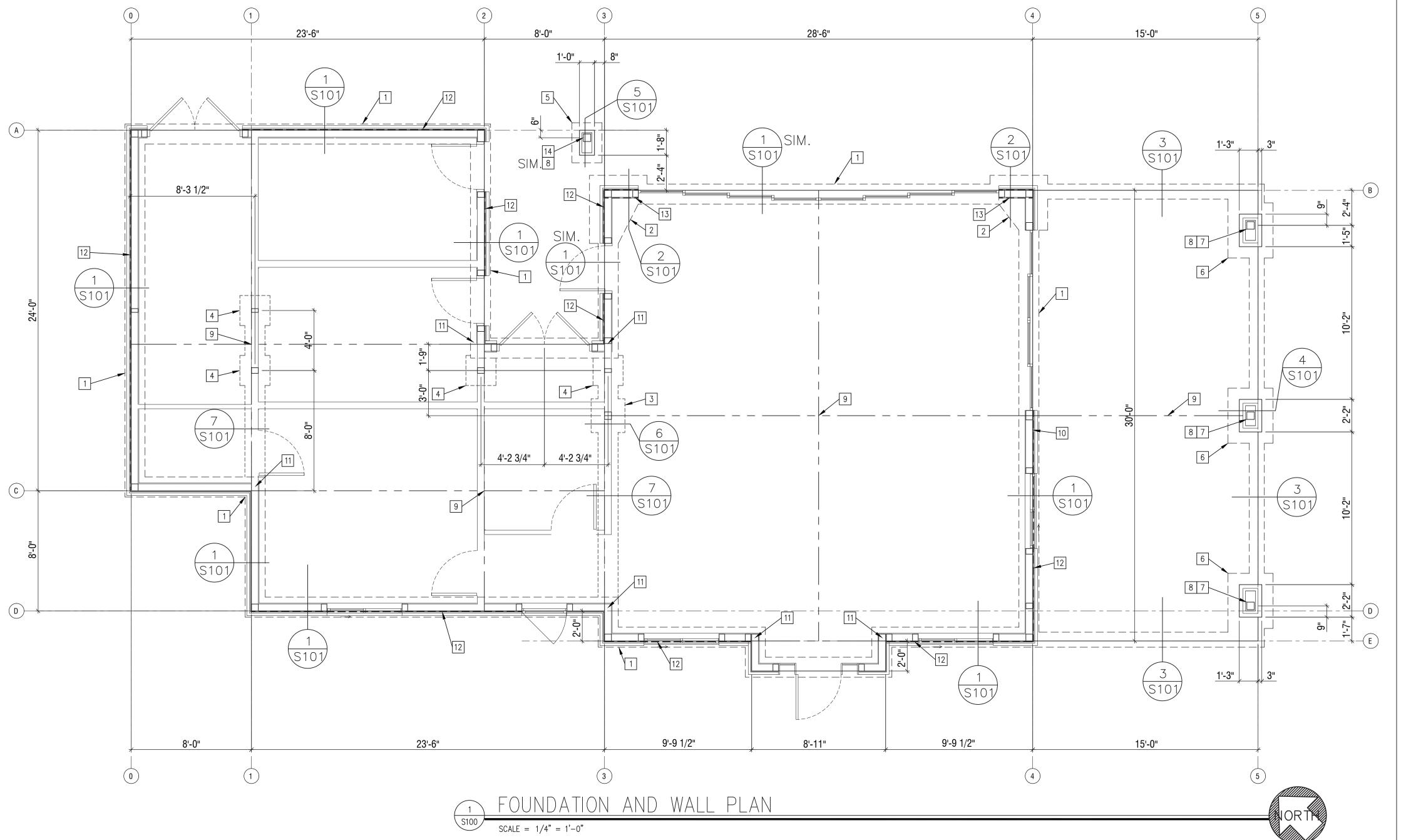
- TRENCHED FOOTING 16" WIDE X 30" DEEP, TYPICAL AT BUILDING SLAB EDGES. TOP OF FOOTING IS 12", MINIMUM, BELOW SLAB SURFACE. REINF w/ 2 #5 CONT, TOP & BOTTOM.
- 2 WIDEN TRENCHED FOOTING AT THIS EXTERIOR WALL AS SHOWN. CONTINUE ALL TRENCHED FOOTING HORIZONTAL REINFORCING THROUGH WIDTH CHANGE.
- 2'-6" SQUARE X 16" DEEP, MINIMUM, THICKENED SLAB FOOTING CENTERED UNDER THIS BUILT-UP COLUMN. REINF w/ 4 #4 X 2'-2" @ 8" O.C., E.W. AT 3" CLEAR FROM BOTTOM OF FOOTING.
- 2'-0" SQUARE X 16" DEEP, MINIMUM, THICKENED SLAB FOOTING CENTERED UNDER THIS BUILT-UP COLUMN. REINF w/ 3 #4 X 1'-8" @ 9" O.C., E.W. AT 3" CLEAR FROM BOTTOM OF FOOTING.
- PROVIDE EXTERIOR PIER/FOOTING AT THIS 'BREEZEWAY COLUMN' ELEMENT = 1'-10" X 2'-6" X 30" DEEP. TOP OF PIER/FOOTING IS AT FFE 12". REINFORCE PER DETAIL/SECTION.
- PROVIDE EXTERIOR PIER/FOOTING AT THIS 'PATIO COLUMN' ELEMENT = 3'-0" X 3'-8" X 30" DEEP. TOP OF PIER/FOOTING IS AT FFE -12". REINFORCE PER DETAIL/SECTION.
- 7 HSS 6X6X1/4 COLUMN w/ BASE PLATE ON 1" SHIM AND GROUT AT TRENCHED FOOTING PER DETAIL. COAT/GALVANIZE ALL STEEL AND BOLTS FROM CONCRETE FOOTING UP TO 3" ABOVE FFE.
- PROVIDE 12" DEPTH PEDESTAL AT ALL FRAMED WALL/COLUMN ELEMENTS AT EDGES OF PATIO AND BREEZEWAY SLABS. REINFORCE PER DETAIL. ADD FIBER REINFORCING TO ALL PEDESTAL POURS @ THE RATE OF 1.5 LB PER C.Y.
- 9 APPROXIMATE LOCATIONS OF SLAB-ON-GRADE CRACK CONTROL JOINTS ARE SHOWN THUS
- DON'T CONNECT SLAB-ON-GRADE AT PATIO AND POOL ENTRY TO STEM WALLS AND ENCLOSED BUILDING SLAB EDGES, TYPICAL.
- PROVIDE A DIAGONAL #4 BAR X 32" AT MID-DEPTH OF SLAB AND CENTERED NEAR EACH INSIDE CORNER OF STEM WALL-TO-SLAB JOINT, TYPICAL.
- DASHED LINE WHERE SHOWN THUS INDICATES SHEAR WALL SHEATHING AT WALL FACE ABOVE PER APPLICABLE GENERAL FRAMING NOTE. SHEATH WALL ABOVE AND BELOW WINDOWS INCLUDED WITHIN THE WALL LENGTH INDICATED.
- NAIL 19/32" (MIN.) APA RATED (40/20) SHEATHING INSIDE AND OUTSIDE AT THIS SHEAR WALL ABOVE w/ 10d @ 3" O.C. AT PANEL EDGES ON SUPPORTS AND @ 6" O.C. ON INTERMEDIATE SUPPORTS. SEE 4/S201
- 14 PROVIDE SIMPSON ABU66RZ POST BASE w/ 5/8" DIA ANCHOR.
 - 1'-4" WIDE X 16" DEEP, MINIMUM, THICKENED SLAB FOOTING CENTERED UNDER THIS BEARING WALL. REINF w/2-#4 CONT @ 12" O.C., E.W. AT 3" CLEAR FROM BOTTOM OF FOOTING.

GENERAL WALL FRAMING NOTES:

- 1. ALL FRAMING TO BE LEFT EXPOSED OR IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED SOUTHERN PINE #1, OR BETTER.
- 2. ALL INTERIOR WOOD FRAMING MEMBERS SHALL BE #2 (FOR HORIZ) OR STUD (FOR VERT) GRADE KILN DRIED SOUTHERN PINE, OR BETTER, UNO. FRAMING SHALL BE CLOSELY FITTED, ACCURATELY SET TO REQUIRED LINES AND HEIGHTS AND SECURELY FASTENED IN PLACE. PROVIDE SOLID BLOCKING AT HORIZONTAL JOINTS OF PANEL EDGES IN SHEAR WALLS. ALL CONNECTIONS IN FRAMING TO BE FASTENED IN ACCORDANCE WITH THE "RECOMMENDED FASTENING SCHEDULE" IN TABLE 2304.9.1 OF THE INTERNATIONAL BUILDING CODE. SEE ARCH'L DRAWINGS FOR BLOCKING REQUIRED AT WALLS FOR ATTACHMENT OF MISCELLANEOUS ITEMS LIKE HANDRAILS, GRAB BARS, FURNACE SHELVES, ETC.
- 3. BEAMS & COLUMNS THAT ARE BUILT-UP w/ MULTIPLE MEMBERS MUST BE ATTACHED BY GLUE & 2 ROWS OF 16d NAILS AT 12" O.C. FOR EACH PIECE
- 4. CONTRACTOR SHOULD PLACE EARLY ORDERS FOR SIMPSON OR APPROVED EQUIVALENT PRODUCTS. COSTS FOR REMEDIAL DESIGNS DUE TO UN-APPROVED ALTERNATE MATERIALS/CONNECTORS WILL BE BORNE BY CONTRACTOR.
- 5. SHEATH ALL INDICATED WALL STUD FACES AT SHEAR WALLS WITH 15/32", MIN, APA RATED (32/16) EXT OR EXP1 PANELS. NAIL w/ 8d @ 6" O.C. AT PANEL EDGES ON SUPPORTS AND 12 O.C. ON OTHER/INTERMEDIATE SUPPORTS, EXCEPT WHERE DETAILED OR NOTED OTHERWISE.
- 6. SEE SHEET S200 FOR BUILT UP COLUMNS TO BE PROVIDED IN WALL FRAMING UNDER BEAMS AND HEADERS ABOVE, TYPICAL UNLESS NOTED OTHERWISE.
- 7. EXTERIOR AND BEARING WALL STUDS ARE 2X6 @ 16" O.C. UP TO 11' TALL. PROVIDE DOUBLED 2X6 STUDS @ 16" O.C. FOR TALLER WALLS.

GENERAL FOUNDATION NOTES:

- 1. CONCRETE SLAB-ON-GRADE TO BE 4", MIN, THICK REINFORCED w/ WWF 6X6- W2.1XW2.1 AT MID-DEPTH. ALL INTERIOR FLOOR SLABS TO BE UNDERLAIN BY 10 MIL, MIN, VAPOR BARRIER AND 4", MIN, CRUSHED STONE BASE COURSE OVER COMPACTED NATIVE SOIL OR STRUCTURAL FILL ADEQUATE FOR ALLOWABLE NET BEARING STRENGTH OF 1500 PSF.
- 2. SEE ARCHITECTURAL DRAWINGS FOR BUILDING DIMENSIONS AND TO VERIFY DIMENSIONS SHOWN (WHICH ARE TO OUTSIDE FACE OF STUD OR 'STOREFRONT' WALL OR COLUMN CENTERLINE).
- 3. SEE DETAILS ON SHEET SOO1 FOR CRACK CONTROL JOINTS TO BE SAWN OR FORMED (AT CONTRACTOR'S OPTION) INTO SLAB-ON-GRADE WHERE SHOWN.





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DANIEL J. PACKARD

NUMBER
PE-24486

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DECEMBER 27, 2018

ISSUED: DECEMBER 27, 2018

NO. REVISION DATE

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DRAWN BY DJP

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S100

BUILT-UP 2X6 STUD COLUMNS

- SLAB PER PLAN/NOTES

100'-0" (=968)

AT THIS WALL ONLY

PLAN

- #4 CONTINUOUS @ EDGE

T.O. SLAB ELEV =

DOUBLE P.T. 2X6 SILL PLATE

2 - 5/8" X 12" X 3" ANCHORS @

8", MAX, O.C. BETWEEN BUILT-

WIDENED TRENCH FOOTING PER

BEAR FOOTING ON COMPETENT

SOIL, ROCK OR FILL PER THE

APPLICABLE GSN

PER DETAIL

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ARCHITECTURE

HOUSE

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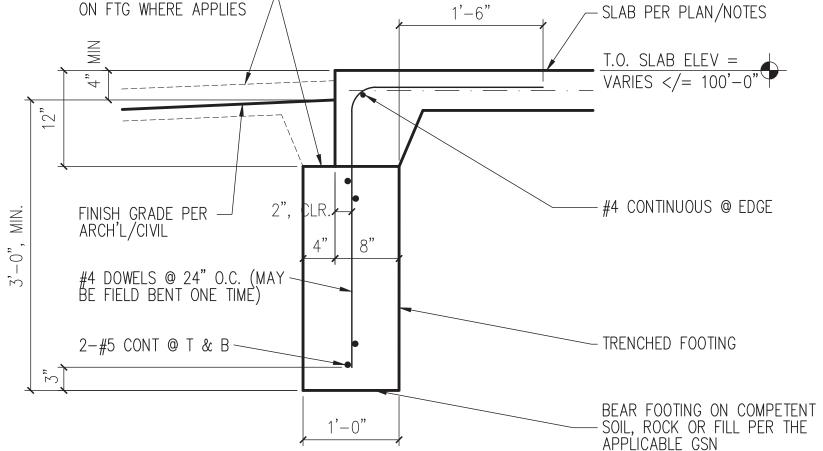
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DECEMBER 27, 2018 ISSUED: DECEMBER 27, 2018 REVISION DATE

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BEAR SIDEWALK OR SLAB

SHEATHING PER PLAN -

NOTE AT SHEAR WALL

FINISH GRADE PER -ARCH'L/CIVIL

#4 DOWELS @ 24"-

ADD 2-#5 @ T & B

FIELD CUT #4 @ 12" / O.C.

SCALE = NONE

SCALE = NONE

U.C.

BEAR SIDEWALK SLAB -ON FTG WHERE APPLIES

2X6 TREATED PLATE w/ -P.A.F.s @ 8" O.C. WITHIN 24" OF COLUMN, E.W.

— SLAB PER PLAN/NOTES

100'-0" (= 968)

T.O. SLAB ELEV =

-4 - #4 X 2'-2" @ 8" O.C. EACH WAY CENTERED

UNDER BUILT-UP COLUMN

PATIO SLAB EDGE FOUNDATION SECTION SCALE = NONE

2", CLR.

VARIES

EXT'R SHEAR PIER/WALL FOUNDATION SECTION

1'-0"

#3 TIE SETS: Ç COLUMN PEDESTAL AT WOOD COLUMN. WOOD COLUMN PER PLAN/ STONE VENEER AND WOOD - NOTES — CENTERED IN COVER NOT SHOWN CASED 'COLUMN' SPACE BEAR SIDEWALK SLAB — - SLAB PER PLAN/NOTES ON FTG WHERE APPLIES T.O. SLAB ELEV = 100'-0" (= 968) FINISH GRADE PER ASTM F1554, GR 55, 5/8" DIA -12" X 3" (w/ 3/4" PROJECTION) A.B. AT CENTER OF BASE ARCH'L/CIVIL 3 - #4 X 2'-2" @ 9" O.C. AT T & B #4 DOWELS X 35" @ 8" O.C., E.F., AROUND -WOOD COLUMN BASE AT PEDESTALS 3 - #5 X 1'-6" @ 12" O.C. AT T & B - WIDENED TRENCH FOOTING BEAR FOOTING ON COMPETENT - SOIL, ROCK OR FILL PER THE APPLICABLE GSN 2'-6" WOOD COLUMN FOUNDATION SECTION

2'-6" SQ

THICKENED SLAB FOOTING SECTION

BUILT-UP STUD COLUMN —

BEAR FOOTING ON COMPETENT

SOIL, ROCK OR FILL PER THE

SCALE = NONE

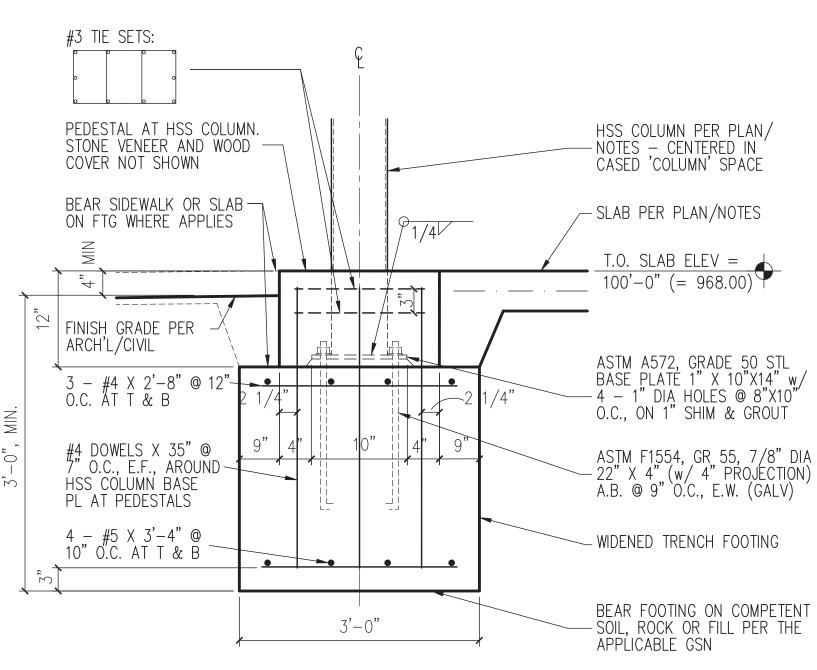
SCALE = NONE

APPLICABLE GSN

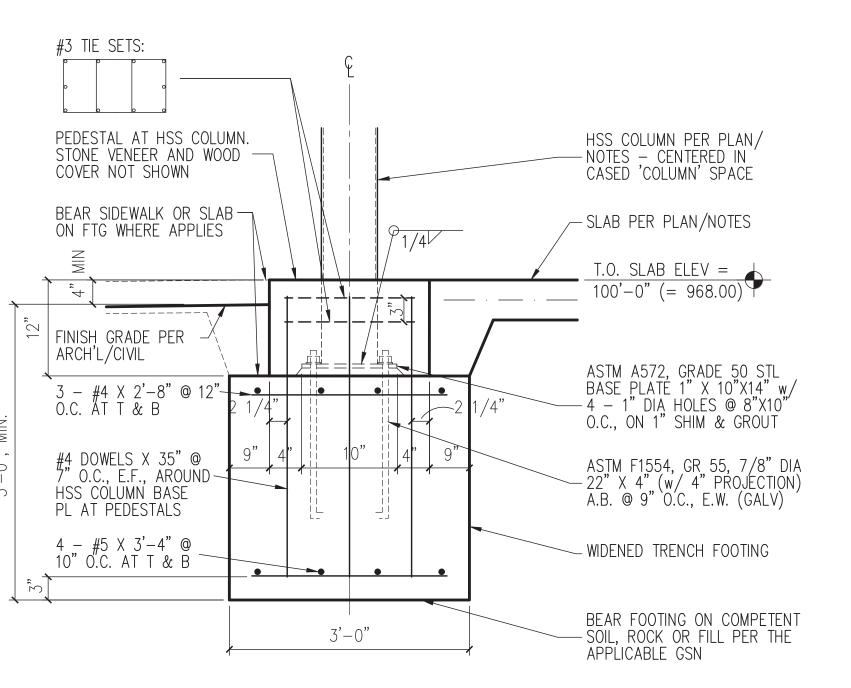
SEE ARCH'L DRAWINGS

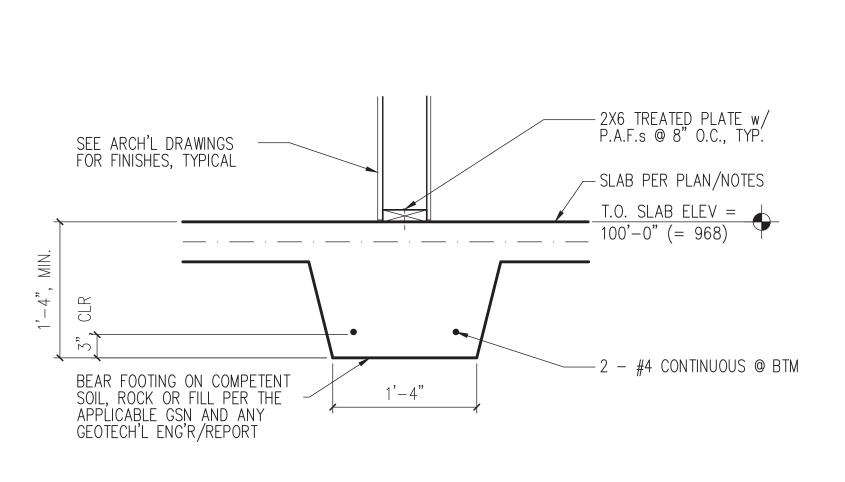
FOR FINISHES, TYPICAL

PER PLAN NOTE

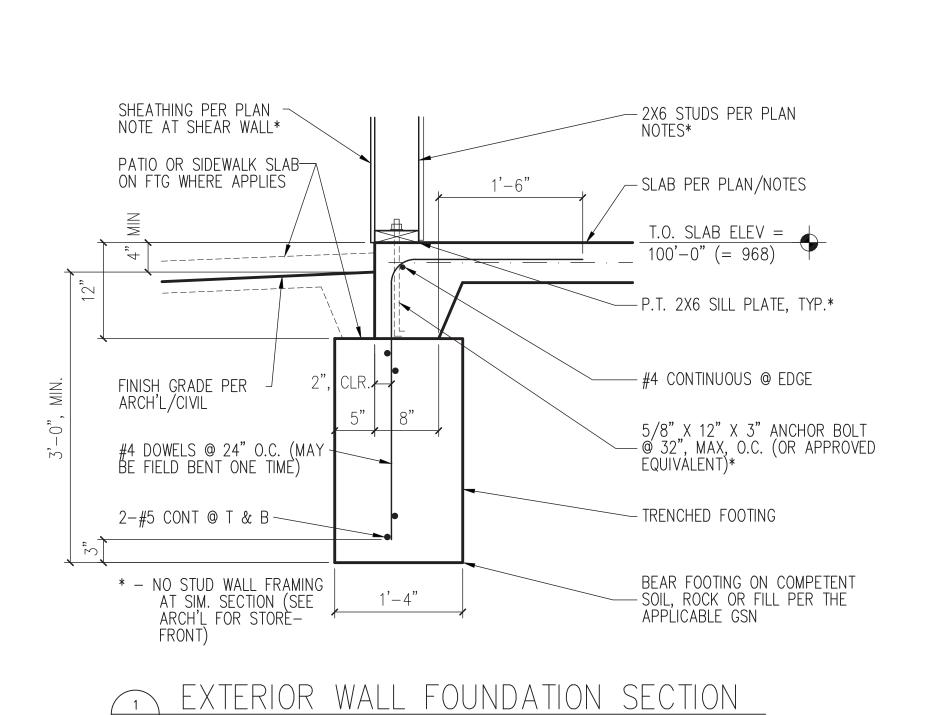


PATIO HSS COLUMN FOUNDATION SECTION SCALE = NONE





INT'R THICKENED SLAB FOUNDATION SECTION SCALE = NONE

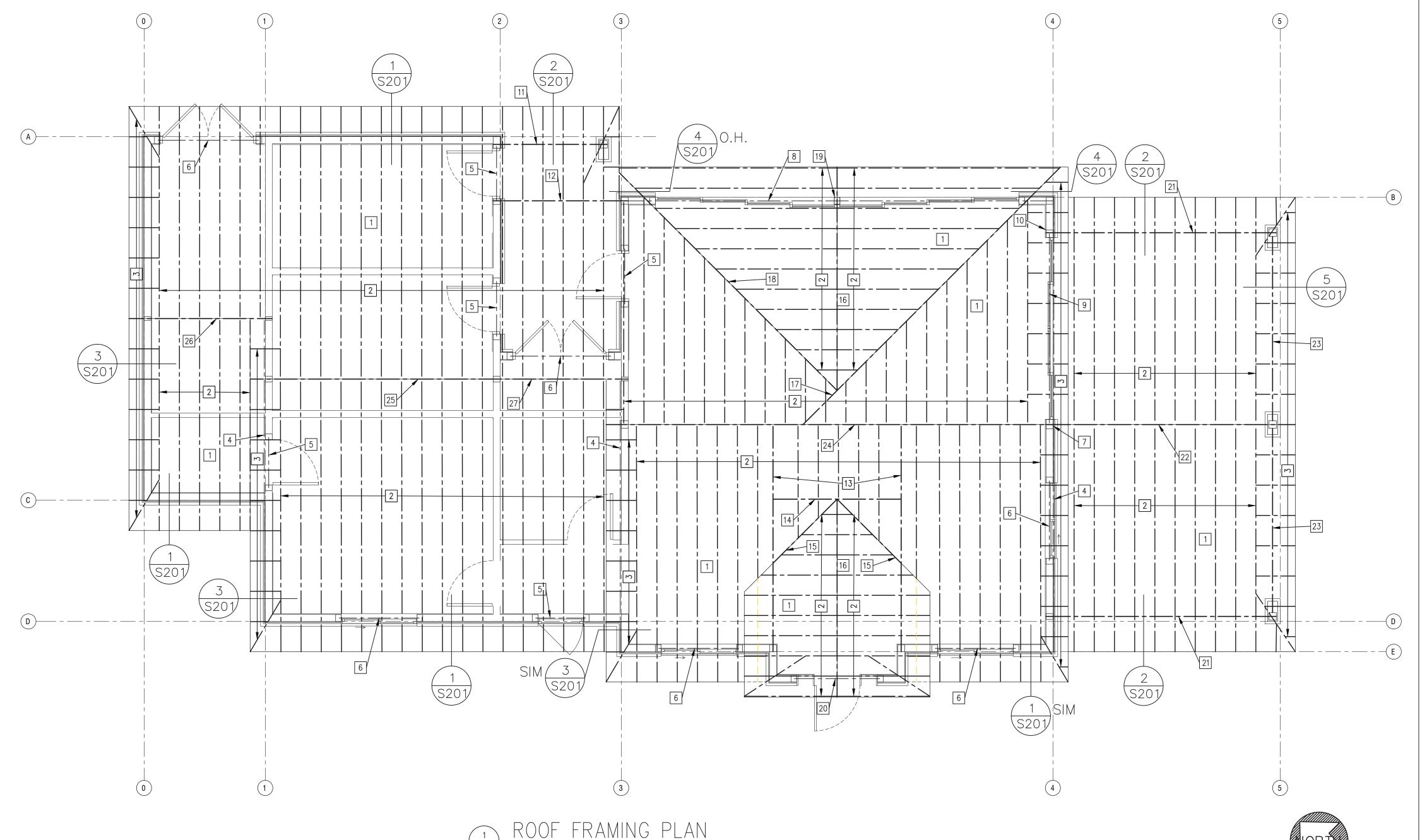


PLAN KEY NOTES:

- 1 TYPICAL ROOF DECKING = 15/32", MIN, APA RATED (32/16) EXT, OR EXP 1, SHEATHING. CLIP OR BLOCK ALL UNSUPPORTED PANEL EDGES. NAIL w/ 8d @ 6" O.C. AT PANEL EDGES ON SUPPORTS AND @ 12" O.C. ON OTHERS.
- 2 2X10 RAFTERS @ 16" (+/-) O.C., TYPICAL WHERE SHOWN THUS (UNLESS NOTED OTHERWISE). ALIGN TO BEAR DIRECTLY OVER STUD(S) AT EXTERIOR FRAMED WALLS, TYPICAL. DOUBLE WHERE SHOWN.
- 3 2X10 'OUTRIGGER' FRAMING @ 24" (MAX) O.C. TO BE USED IN ROOF GABLE END OVERHANG FRAMING, TYPICAL.
- 4 2X10 LEDGER w/ LEDGERLOKS INTO STUDS @ 16" O.C. AT LOWER ROOF CONNECTION TO UPPER EXTERIOR WALL.
- 5 HEADER = 3 2X6 (MIN), TYPICAL UNLESS NOTED OTHERWISE. BEAR EACH END IN WALL ON 1 2X6 JACK STUD (WITH 1 2X6 KING STUD). KING STUDS TO BE FULL HEIGHT OF WALL.
- 6 HEADER = 3 2X8. BEAR EACH END IN WALL ON 1 2X6 JACK STUD (WITH 1 2X6 KING STUD). KING STUDS TO BE FULL HEIGHT OF WALL.
- 7 ADD 3 2X6 PAST KING STUD HERE TO FORM BUILT-UP COLUMN AT THIS END OF HEADER UNDER BEAM END ABOVE.
- 8 HEADER = $3 1 \ 3/4" \times 16"$ LVL AT MAIN ROOM. BUILD EACH END INTO 2'-0" SHEAR WALL/PIER PER DETAIL.
- 9 HEADER = 3 2X10. BEAR EACH END IN WALL ON 2 2X6 JACK STUDS (WITH 1 2X6 KING STUD). KING STUDS TO BE FULL HEIGHT OF WALL.
- 10 ADD 2 2X6 PAST KING STUD HERE TO FORM BUILT-UP COLUMN AT THIS END OF HEADER UNDER BEAM END ABOVE.
- ROOF BEAM = 3 TREATED 2X8 w / 2 1/2" PLYS. BEAR INTERIOR END IN WALL ON 2 2X6 (MIN.) BUILT-UP STUD COLUMN. BEAR EXTERIOR END ON TREATED 6X6 BUILT-UP COUMN WITH SIMPSON BC6 CAP.
- 3 TREATED 2X10 FLUSH SHEAR DRAG/TRANSFER BEAM. FACE HANG RAFTERS FROM BEAM EACH SIDE WITH SIMPSON LUS210 EACH. BEAR EACH END OF BEAM ON BUILT-UP 3 (MIN) 2X6 STUD COLUMN IN EXTERIOR WALLS.
- 3 2X10 BEAM UNDER DORMER SIDE WALLS. BEAR UPPER END OF BEAM IN SIMPSON HUS210-3 FACE HANGER AT RIDGE BEAM.
- 2 2X10 HEADER AT DORMER. BEAR EACH END IN SIMPSON LUS210–2 HANGER AT DORMER SIDE BEAM.
- 15 2X12 VALLEY AT DORMER.
- 16 2X12 RIDGE AT DORMER.
- 2 1 3/4" X 14" LVL VALLEY GIRDER. BEAR RIDGE END IN SIMPSON LSSR410Z SLOPE/SKEW HANGER.
- 18 1 3/4" X 14" LVL VALLEY. BEAR UPPER END IN SIMPSON IUS1.81/14 HANGER.
- 19 3 2X6 BUILT-UP COLUMN SUPPORTING DORMER RIDGE OVER HEADER.
- 3 2X6 BUILT-UP HEADER OVER EACH WALL OPENING AT ENTRY. PROVIDE TWO KING STUDS AT EACH END OF HEADER.
- 3 TREATED 2X12 BEAM. BEAR INTERIOR END ON 3 2X6 BUILT-UP COLUMN IN EXTERIOR WALL. BEAR EXT'R END IN SIMPSON SIMPSON ECCOQ4.62-SDS2.5 COLUMN CAP WELDED TO TOP OF HSS6X6X1/4 STEEL COLUMN.
- 22 2 1 3/4" X 11 1/4" LVL RIDGE BEAM. BEAR INTERIOR END ON 3 2X6 BUILT-UP COLUMN IN EXTERIOR WALL. BEAR EXTERIOR END IN SIMPSON SIMPSON ECCOQ4.62-SDS2.5 COLUMN CAP WELDED TO TOP OF HSS6X6X1/4 STEEL COLUMN. BEAM IS TO BE FLUSH FRAMED WITH RAFTERS.
- 23 2 TREATED 2X8 TOP & BOTTOM CHORDS AT BUILT-UP 'TRUSS'. GLUE AND SCREW EACH 2X8 TO OUTSIDE FACE OF 2 TREATED 2X6 BUILT-UP DIAGONAL 'TRUSS' WEB. FASTEN TO OTHER CHORD AND HSS6X6 CENTER/VERT w/ SIMPSON LTP5, SCREWED, AT EACH FACE.
- [24] 3 1 3/4" X 18" LVL RIDGE BEAM OVER MAIN ROOM (FLUSH FRAMED w/ RAFTERS). BEAR EACH END ON BUILT-UP 6 2X6 COLUMN IN FRAMED WALL.
- 25 2 1 3/4" X 11 1/4" LVL RIDGE BEAM OVER REST ROOM (FLUSH FRAMED w/RAFTERS). BEAR EACH END OF BEAM ON 5 2X6 BUILT-UP COLUMN.
- 2 2X12 RIDGE BEAM OVER EQUIPMENT ROOM (FLUSH FRAMED w/ RAFTERS).
 BEAR EXTERIOR END OF BEAM IN GABLE WALL ON 3 2X6 BUILT-UP COLUMN.
 BEAR INTERIOR END ON 4 2X6 BUILT-UP COLUMN.
- 27 EXTEND 1 1 3/4" X 11 1/4" LVL FROM RESTROOM RIDGE BEAM OVER MECH'L ROOM. BEAR ON 2 2X6 BUILT-UP COLUMN IN MAIN ROOM WALL.

GENERAL ROOF FRAMING NOTES:

- 1. WOOD 2X FRAMING AT PATIO AND BREEZEWAY ROOF, AND ANY TO BE LEFT EXPOSED OTHERWISE, SHALL BE PRESSURE TREATED SOUTHERN PINE #1, OR BETTER. BOX—IN EXTERIOR WOOD AND STEEL FRAMING PER ARCHITECT, TYPICAL.
- 2. INTERIOR WOOD FRAMING MEMBERS SHALL BE #2 KILN DRIED SOUTHERN PINE OR BETTER, UNO. FRAMING SHALL BE CLOSELY FITTED, ACCURATELY SET TO REQUIRED LINES AND HEIGHTS AND SECURELY FASTENED IN PLACE. PROVIDE SOLID BLOCKING AT ALL JOINTS IN WALL SHEATHING MATERIALS. UNSUPPORTED ROOF DECKING JOINTS MUST BE CLIPPED IF NOT BLOCKED. ALL CONNECTIONS IN FRAMING TO BE FASTENED IN ACCORDANCE WITH THE "RECOMMENDED FASTENING SCHEDULE" IN TABLE 2304.9.1 OF THE INTERNATIONAL BUILDING CODE.
- 3. "LVL" = MICROLLAM (1.9E LAMINATED VENEER LUMBER); "LSL" = TIMBERSTRAND (1.55E LAMINATED STRAND LUMBER) AND "PSL" = PARALLAM (2.0E PARALLEL STRAND LUMBER). ALL ARE BY iLEVEL/WEYERHAUSER. APPROVED EQUIVALENTS MAY BE USED.
- 4. BEAMS & COLUMNS THAT ARE BUILT-UP w/ MULTIPLE MEMBERS MUST BE ATTACHED BY GLUE & 2 ROWS OF 16d NAILS AT 12" O.C. FOR EACH PIECE
- 5. CONTRACTOR SHOULD PLACE EARLY ORDERS FOR LVL, LSL, PSL, SIMPSON OR APPROVED EQUIVALENT PRODUCTS. COSTS FOR REMEDIAL DESIGNS DUE TO UN-APPROVED ALTERNATE MATERIALS/CONNECTORS WILL BE BORNE BY CONTRACTOR.
- 6. SEE ARCHITECTURAL DRAWINGS FOR BUILDING DIMENSIONS AND TO VERIFY DIMENSIONS SHOWN (WHICH ARE TO OUTSIDE FACE OF STUD OR COMMON WALL CENTERLINE).
- 7. PROVIDE 2X6 @ 16" O.C CEILING JOISTS SPANNING UP TO 11' AND 2X8 @ 16" O.C. FOR SPANS BEYOND THAT TO 14'. NO SEPARATE CEILING JOISTS AT MAIN ROOM OR PATIO/BREEZEWAY.
- 8. PROVIDE A SIMPSON L90 TO FASTEN THE TOP END OF EACH RAFTER TO THE RIDGE BEAM, TYPICAL
- 9. THE SIMPSON H2A TIE CALLED FOR ON THE DRAWINGS TO FASTEN ROOF FRAMING DIRECTLY TO THE BEARING WALL STUD(S) SHOULD STILL BE USED WHERE THE FRAMING AND STUDS ALIGN.
- 10. WHEREVER ROOF FRAMING DOES NOT LINE UP DIRECTLY OVER BEARING WALL STUDS, THE ROOF FRAMING MEMBER IS TO BE FASTENED TO THE BEARING WALL DOUBLE TOP PLATE WITH A SIMPSON H2.5A AND THE DOUBLE TOP PLATE IS TO BE FASTENED TO EACH UNALIGNED BEARING WALL STUD (SINGLE OR DOUBLE) WITH A SIMPSON TSP (PLACED AT THE SAME FACE OF WALL THAT H2A IS SHOWN ON.





B+A ARCHITECTURE

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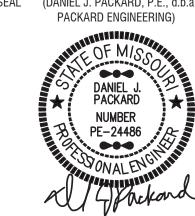
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STRUCTURAL ENGINEER
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21021 OAK DRIVE
BELTON, MO 64012
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B HOUSE

342 NW Ambersham Drive

EAL (DANIEL J. PACKARD, P.E PACKARD ENGINEERIN



ISSUED: DECEMBER 27, 2018

NO. REVISION DATE

DESIGNED BY DJP DRAWN BY DJP CHECKED BY DJP

ANY OTHER PROJECT.

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 ≤ 200

ARCHITECTURE

ARCHITECT

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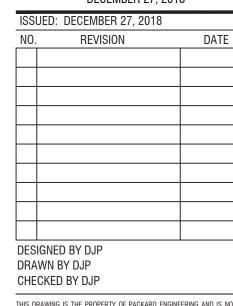
CIVIL ENGINEER OLSSON

 \Box

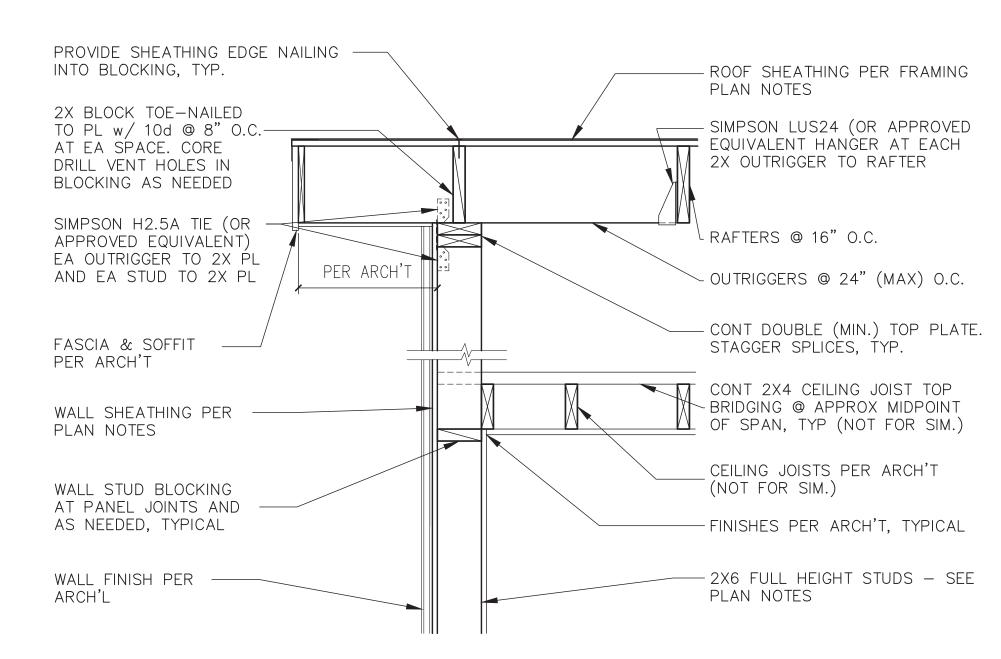
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SEAL (DANIEL J. PACKARD, P.E., d.b.a. PACKARD ENGINEERING) DANIEL J. PACKARD NUMBER PE-24486 DECEMBER 27, 2018 REVISION DATE



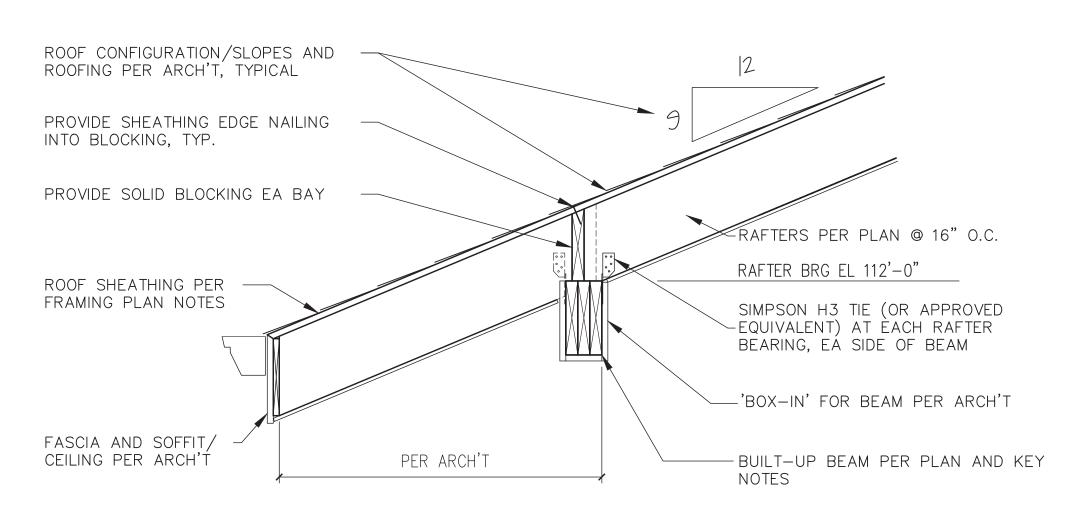
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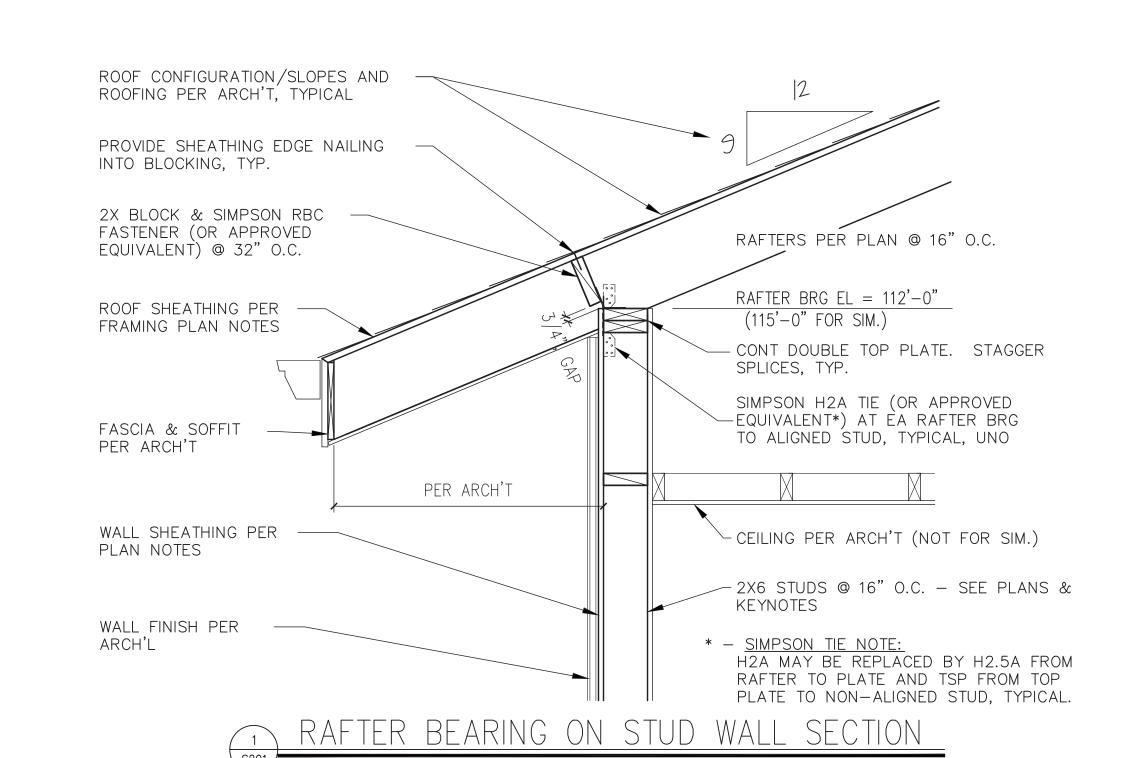
RAFTER BEARING ON GABLE WALL SECTION

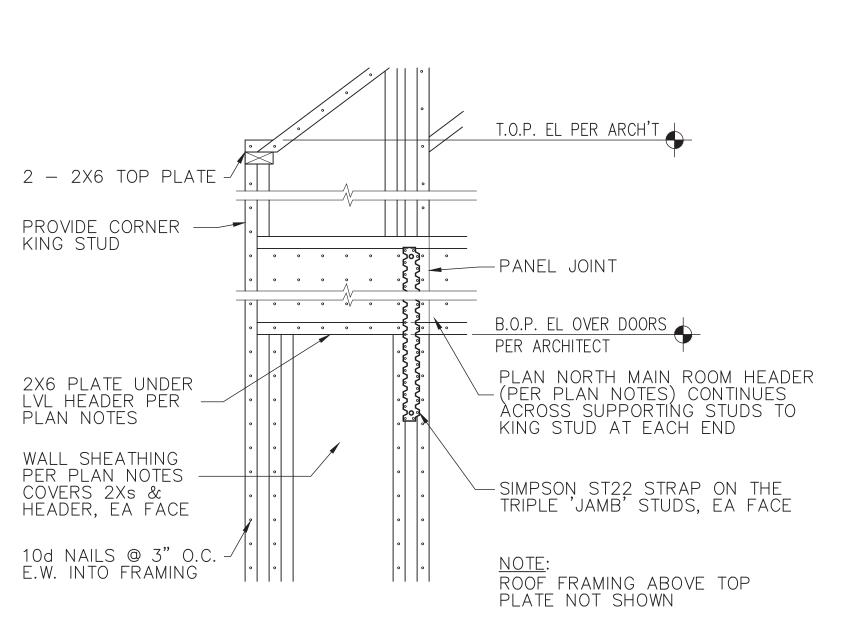
SCALE = NONE

SCALE = NONE



RAFTER BEARING ON BEAM SECTION SCALE = NONE





RAFTER BEARING ON EXTERIOR 'TRUSS' SECTION

- ROOF SHEATHING PER FRAMING

= EQUIVALENT HANGER AT EACH

- DOUBLE/SPACED 2 - 2X8 'TRUSS'

-'BOX-IN' FOR 'TRUSS' MEMBERS

-SIMPSON FASTENER AT SIDES

PER PLAN KEY NOTE, TYPICAL

2X OUTRIGGER TO RAFTER

SIMPSON LUS24 (OR APPROVED

RAFTERS @ 16" O.C.

TOP CHORD (TREATED)

PER ARCH'T, TYPICAL

PLAN NOTES

PROVIDE SHEATHING EDGE NAILING -

PER ARCH'T

INTO BLOCKING, TYP.

2X BLOCK TOE-NAILED

FASCIA AND SOFFIT/ -CEILING PER ARCH'T

SIMPSON H2.5A TIE (OR APPROVED EQUIVALENT)

EA OUTRIGGER TO 2X PL

2 - 2X6 TREATED DIAGONAL -

SCALE = NONE

AT EA SPACE.

'TRUSS' WEB

BOTTOM CHORD

DOUBLE/SPACED 2 -

2X8 TRÉATED 'TRUSS' —

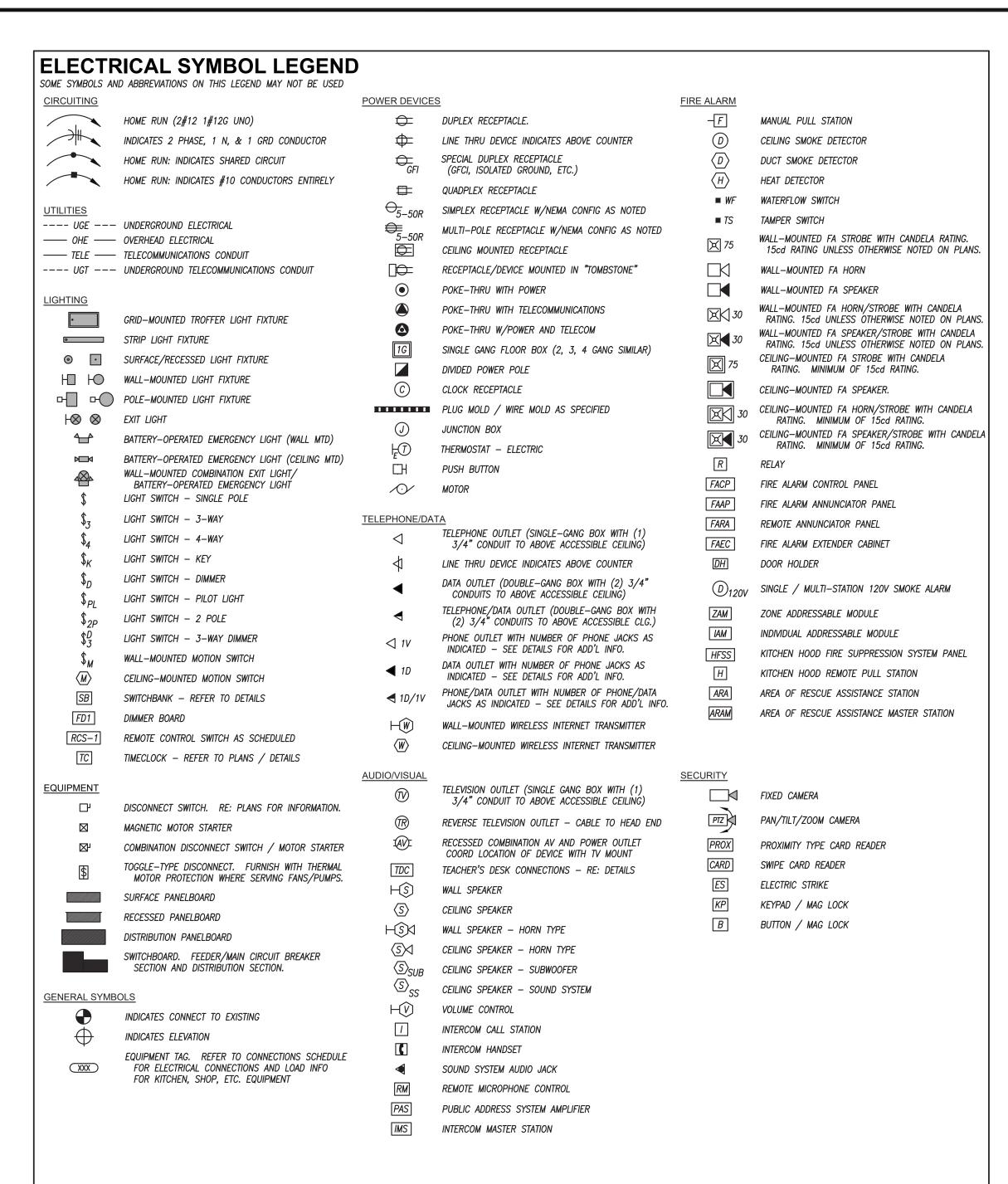
O.C.

TO PL w/ 10d @ 8" O.C. —

OUTRIGGERS @ 24" (MAX) —

SCALE = NONE

HEADER BEARING AT SHEAR PIER SECTION



ABBREVIATIONS

AHJ AUTHORITY HAVING JURISDICTION

BMS BUILDING MANAGEMENT SYSTEM

CM COORDINATE MOUNTING HEIGHT

DCVA DOUBLE CHECK VALVE ASSEMBLY

DHWR DOMESTIC HOT WATER RETURN

EDF ELECTRIC DRINKING FOUNTAIN

ELEV ELEVATION

EMERGENCY FIXTURE/DEVICE

EWT ENTERING WATER TEMPERATURE

FFCO FINISHED FLOOR CLEAN OUT

FGCO FLUSH GRADE CLEAN OUT

FWCO FLUSH WALL CLEAN OUT

GROUND / GANG

GFIP GFI-PROTECTED DEVICE

ISOLATED GROUND

LWT LEAVING WATER TEMPERATURE

M/C MECHANICAL CONTRACTOR

JUNCTION BOX

LED LIGHT EMITTING DIODE

MAU MAKE UP AIR UNIT

MCB MAIN CIRCUIT BREAKER

GPM GALLONS PER MINUTE

HOT DECK

HEATING

MA MIXED AIR

MECH MECHANICAL

GENERAL CONTRACTOR

EXISTING ITEM

FFB FROM FLOOR BELOW

FFA FROM FLOOR ABOVE

FLOW LINE

FP FIRE PROTECTION

FPM FEET PER MINUTE

FLR FLOOR

ЕМ

MH MANHOLE

NL

OA

RR

TFA

TP

VRF

GROUND FAULT CIRCUIT INTERUPTER SA SUPPLY AIR

MLO MAIN LUGS ONLY

NIGHT LIGHT

OUTSIDE AIR

PVC POLYVINYLCHLORIDE

RE/REF REFER / REFERENCE

RESTROOM

SHUNT TRIP

TFB TO FLOOR BELOW

TYPICAL

WCO WALL CLEANOUT

WP WEATHERPROOF

WG WIRE GUARD

TAMPERPROOF

TRANSFER AIR

TO FLOOR ABOVE

UNO UNLESS NOTED OTHERWISE

VTR VENT THROUGH ROOF

VARIABLE REFRIGERANT FLOW

RELOCATED ITEM

SPD SURGE PROTECTIVE DEVICE

REDUCED PRESSURE ZONE

RA RETURN AIR

RF RELIEF FAN

ORD OVERFLOW ROOF DRAIN

P/C PLUMBING CONTRACTOR

PSI POUNDS PER SQUARE INCH

NFA NET FREE AREA

A/E ARCHITECT / ENGINEER

AFF ABOVE FINISHED FLOOR

AFG ABOVE FINISHED GRADE

AG ABOVE GRADE

ARCH ARCHITECT

BLDG BUILDING

CD

CD

CLG

BG BELOW GRADE

CONDUIT

CANDELA

COLD DECK

COOLING

CTE CONNECT TO EXISTING

DCW DOMESTIC COLD WATER

DHW DOMESTIC HOT WATER

E/C ELECTRICAL CONTRACTOR

DDC DIRECT DIGITAL CONTROLS

DRINKING FOUNTAIN

CO CLEAN OUT

DIA DIAMETER

EA EXHAUST AIR

DN DOWN

AHU AIR HANDLING UNIT

BFP BACKFLOW PREVENTER

HIGH EFFICIENCY ROUND DUCT TAKEOFF $-\!\!\bowtie$ (WITH & WITHOUT MANUAL DAMPER SHUTOFF VALVE IN RISER SPIN-IN ROUND DUCT TAKEOFF BALANCING VALVE (WITH & WITHOUT MANUAL DAMPER) - \mathbb{A} -PLUG VALVE **─**▶**ं** AUTO FLOW CONTROL VALVE CONICAL BELLMOUTH ROUND TAKEOFF —ю PIPING ELBOW UP PIPING ELBOW DOWN ROUND DUCT RUNOUT WITH FLEX DUCT PIPING TEE PIPING ELBOW DUCTWORK ELBOW (WITH & WITHOUT TURNING VANES) $-\omega$ PIPING TEE UP PIPING TEE DOWN FD:FIRE DAMPER FS:FIRE/SMOKE DAMPER SD:SMOKE DAMPER BD:BACKDRAFT DAMPER (GRAVITY) -INCREASER / REDUCER UNION ----(MD) AUTOMATIC MOTORIZED DAMPER CAP -----] $\longrightarrow \longleftarrow$ PIPE FLEX SUPPLY DIFFUSER AND DIFFUSER CALLOUT 8"ø(A) 225 (NECK SIZE, TYPE AND CFM) - |5|-- STRAINER LINEAR/SLOT DIFFUSER **---**/-CHECK VALVE INLINE STRAINER RETURN GRILLE OR EXHAUST REGISTER TEST PLUG SUPPLY AIR FLOW INDICATOR -GUIDE **/**──► RETURN AND EXHAUST AIR FLOW INDICATOR $-\!\times\!-$ ANCHOR THERMOSTAT TRIPLE DUTY VALVE TEMPERATURE SENSOR HUMIDISTAT - \nearrow -AUTOMATIC 2-WAY CONTROL VALVE CONTROL WIRING **─**燦⊢ AUTOMATIC 3-WAY CONTROL VALVE SOLENOID VALVE **PLUMBING PIPING** ----- DOMESTIC COLD WATER ---- DOMESTIC HOT WATER PLUMBING FIXTURES/EQUIPMENT ----- recirculating domestic hot water HOSE BIBB ------ SAN ----- WASTE ABOVE GRADE OR FLOOR WALL HYDRANT -- WH — — SAN — — WASTE BELOW GRADE OR FLOOR CLEAN OUT ----- V ----- PLUMBING VENT RPZ REDUCED PRESSURE BACKFLOW PREVENTER ----- W ----- WATER SERVICE DCBP DOUBLE CHECK BACKFLOW PREVENTER —— G —— GAS (NATURAL) PLUMBING FIXTURE AND CALLOUT PIPING SPECIALTIES FD: FLOOR DRAIN, AD: AREA DRAIN, FS: FLOOR SINK PRESS/ TEMP GAUGE WITH COCK RD: ROOF DRAIN (\bigcirc) <u>RD-1</u> ORD: OVERFLOW ROOF DRAIN THERMOMETER. MECHANICAL PIPING ------ RL ------ REFRIGERANT LIQUID PRESSURE REDUCING VALVE ----- RS ----- REFRIGERANT SUCTION — D — DRAIN (CONDENSATE) RELIEF VALVE WATER HAMMER ARRESTER

SHEET INDEX

MEP001 COVER SHEET MEP101 SITE PLAN MEP201 MECHANICAL SPECIFICATIONS

MEP202 ELECTRICAL SPECIFICATIONS HVAC PLAN

MECHANICAL SCHEDULES AND DETAILS PLUMBING PLAN

P201 PLUMBING SCHEDULES AND DETAILS

POWER PLAN ELECTRICAL RISER DIAGRAM

LIGHTING PLAN

REFERENCE TO ROOM NAMES NOT SHOWN. 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND KEEP AT THE JOB SITE, AN UP TO DATE SET OF "RECORD DRAWINGS" SHOWING ALL CHANGES FROM THE ORIGINAL PLANS. THE CONTRACTOR SHALL DELIVER THE "RECORD DRAWINGS" TO THE ENGINEER AT THE CONCLUSION OF THE PROJECT

FUNCTIONAL AND CODE COMPLIANT INSTALLATION. 4. FINAL LOCATIONS OF ALL DEVICES, LIGHT FIXTURES, EQUIPMENT ETC SHALL BE INDICATED ON THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM ARCHITECTURAL PLANS. NO DIMENSIONAL INFORMATION SHALL

5. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS. APPROVALS, LICENSES, ETC. AS NEEDED FOR THE COMPLETE INSTALLATION AND PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR ALL FEES AND DATA NEEDED FOR THIS.

GENERAL NOTES

CLARIFYING PLAN. REFER TO ARCHITECTURAL PLANS FOR

ELECTRONICALLY.

3. THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS (NEW AND EXISTING), DIMENSIONS. AND CLEARANCES PRIOR TO THE COMMENCEMENT OF WORK AND SHALL INCLUDE ALL COSTS, EQUIPMENT, MATERIAL, ACCESSORIES, ETC. REQUIRED FOR A FULLY COMPLETE,

BE OBTAINED FROM MEP DRAWINGS.

TIME FOR INSTALLATION. 6. WHEREVER WORK INTERCONNECTS WITH WORK OF OTHER TRADES, COORDINATE WITH THOSE TRADES TO ENSURE THAT ALL

AND APPROVED.

COORDINATION NOTES

2. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF

ALL SYSTEMS, CONDUITS, PIPES, DUCTS, ETC WITH THE POSITION

AND LAYOUT OF THE STRUCTURE. THE CONTRACTOR IS RESPONSIBLE

FOR PROVIDING NECESSARY OFFSETS, TURNS, RISES AND DROPS

FOR SYSTEMS AND COMPONENTS AS NEEDED TO INSTALL THE MEP

3. COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE

4. CHECK SPACE REQUIREMENTS WITH OTHER TRADES AND

STRUCTURE/CONSTRUCTION TO ENSURE THAT ALL MATERIALS AND

EQUIPMENT CAN BE INSTALLED IN THE SPACE ALLOTTED INCLUDING

FINISHED SUSPENDED CEILINGS AND OTHER SPACES, CHASES, ETC

WITHIN THE BUILDING. MAKE MODIFICATIONS THERETO AS REQUIRED

TO BE PROVIDED UNDER THEIR RESPECTIVE SECTIONS IN AMPLE

SUBCONTRACTORS HAVE THE INFORMATION NECESSARY SO THAT

8. DRAWINGS SHOW THE GENERAL RUNS OF CONDUITS, PIPING AND

DUCTWORK AND APPROXIMATE LOCATION OF OUTLETS. ANY

SIGNIFICANT CHANGES IN LOCATION OF ITEMS NECESSARY IN ORDER

TO MEET FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE

ATTENTION OF THE ARCHITECT/ENGINEER AND RECEIVE HIS APPROVAL

BEFORE SUCH ALTERATIONS ARE MADE. ALL SUCH MODIFICATIONS

OF SURFACES, AREAS AND PROPERTY THAT MAY BE DAMAGED AS A

INTERFERENCES, BOTH ANTICIPATED AND ENCOUNTERED. DETERMINE

THE EXACT ROUTE AND LOCATION OF EACH ITEM PRIOR TO

FABRICATION. MAKE OFFSETS, TRANSITIONS AND CHANGES IN

DIRECTION IN SYSTEMS AS REQUIRED TO MAINTAIN ADEQUATE

11. WHEREVER THE WORK IS OF SUFFICIENT COMPLEXITY, PREPARE

ADDITIONAL COORDINATION DRAWINGS AND ORGANIZE ON-SITE

MEETINGS WITH ALL RELATED SUBCONTRACTORS TO COORDINATE THE

WORK BETWEEN TRADES . DRAWINGS SHALL CLEARLY SHOW THE

SUBMITTED FOR REVIEW PRIOR TO COMMENCING SHOP FABRICATION

WORK AND ITS RELATION TO THE WORK OF OTHER TRADES, AND BE

12. COORDINATE WITH LOCAL UTILITY PROVIDERS FOR THEIR

13. COORDINATE THE MOUNTING OF SUSPENDED LIGHT FIXTURES

UTILIZING INDIRECT LIGHT SO THAT CONDUIT, DUCTWORK,

STRUCTURAL MEMBERS, ETC. ARE NOT LOCATED DIRECTLY ABOVE

THE LIGHT FIXTURE. MAINTAIN A MINIMUM OF 24" CLEARANCE FROM

REQUIREMENTS FOR SERVICE CONNECTIONS AND PROVIDE ALL

NECESSARY PAYMENTS, MATERIALS, LABOR AND TESTING TO

9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR

10. ADJUST LOCATION OF PIPING, DUCTWORK, ETC. TO PREVENT

SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.

RESULT OF CONSTRUCTION ACTIVITIES.

CLEARANCES AND HEADROOM.

OR ERECTION IN THE FIELD.

ACCOMPLISH THE WORK.

THESE ITEMS WHENEVER POSSIBLE.

5. TRANSMIT TO OTHER TRADES ALL INFORMATION REQUIRED FOR WORK

CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS.

SYSTEMS TO CLEAR STRUCTURE, CEILINGS, ETC AND OTHER SYSTEMS

EQUIPMENT WITH ALL OTHER TRADES.

IN POTENTIAL CONFLICT WITH ROUTING.

THEY MAY PROPERLY INSTALL ALL CONNECTIONS AND EQUIPMENT. IDENTIFY ALL ITEMS OF WORK THAT REQUIRE ACCESS SO THAT THE CEILING TRADE WILL KNOW WHERE TO INSTALL ACCESS DOORS AND **GENERAL PLUMBING NOTES** 7. COORDINATE, PROJECT AND SCHEDULE WORK WITH OTHER TRADES IN 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.

LATEST ADOPTED VERSION OF THE INTERNATIONAL PLUMBING CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. NO PIPING SHALL BE INSTALLED WHERE IT WILL SUBJECT TO FREEZING TEMPERATURES. PIPING IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF BUILDING INSULATION, INSULATED AND THE CHASE SHALL BE VENTILATED WITH GRILLES ALLOWING INDOOR AMBIENT CONDITIONS TO CIRCULATE THROUGH THE CHASE.

GEN. MECHANICAL NOTES

LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ.

PROVIDED BY THE M/C CONTRACTOR OR SUBS.

AND FASTENED FROM STRUCTURE.

FIRE SEALING NOTES

REQUIREMENTS.

FIRESTOP SYSTEMS.

AUTHORITIES HAVING JURISDICTION

TESTING AND FIELD EXPERIENCE.

THROUGH FIRE RATED WALLS.

FOR CONSTRUCTION.

1. COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS

2. COORDINATE SIZING OF SLEEVES, OPENINGS, CORE-DRILLED HOLES,

3. DO NOT COVER UP THROUGH—PENETRATION FIRESTOP SYSTEM

4. COMPATIBILITY: PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS

OR CUT OPENINGS TO ACCOMMODATE THROUGH—PENETRATION

INSTALLATIONS UNTIL EXAMINED BY INSPECTOR, IF REQUIRED BY

THAT ARE COMPATIBLE WITH ONE ANOTHER: WITH THE SUBSTRATES

FORMING OPENINGS; AND WITH THE ITEMS, IF ANY, PENETRATING

THROUGH-PENETRATION FIRESTOP SYSTEMS, UNDER CONDITIONS OF

THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER BASED ON

SYSTEM THAT ARE NEEDED TO INSTALL FILL MATERIALS. USE ONLY

COMPONENTS SPECIFIED BY THROUGH-PENETRATION FIRESTOP

SYSTEM MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND

SERVICE AND APPLICATION. AS DEMONSTRATED BY

5. PROVIDE COMPONENTS FOR EACH THROUGH-PENETRATION FIRESTOP

6. PROVIDE SLEEVES THROUGH ALL FIRE—RATED WALLS AND FILL VOIDS

7. FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED

8. PROVIDE FIRE RATED ENCLOSURES OR WRAPS ON LIGHT FIXTURES

AND OTHER ITEMS PENETRATING FIRE RATED CEILINGS,

FLOOR/CEILING/ CEILING/ROOF ASSEMBLIES TO MAINTAIN UL LISTING

SURROUNDING SLEEVES AND INTERIOR TO SLEEVES AROUND PIPING

WITH FIRE STOP PUTTY WITH U.L. LISTED 3 HOUR RATING INSTALLED

INSPECTING AGENCY FOR FIRESTOP SYSTEMS INDICATED.

AS PER MANUFACTURERS RECOMMENDATIONS.

TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE

INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE UL

1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE

2. ANY POWER FOR CONTROL SYSTEMS TO BE PROVIDED BY E/C IS

3. ALL EQUIPMENT SHALL BE ADEQUATELY AND PROPERLY SUPPORTED

4. ALL EQUIPMENT AND ACCESSORIES INSTALLED IN CONCEALED SPACES

5. EACH AIR HANDLING UNIT OVER 2000CFM SHALL BE PROVIDED WITH

6. START UP AND ADJUST ALL EQUIPMENT AND VERIFY ALL MECHANICAL

REFER TO SPECIFICATIONS FOR ANY ADDITIONAL REQUIREMENTS.

SYSTEMS IN OPERATE IN ACCORDANCE WITH THEIR INTENDED

PURPOSES. SUBMIT BALANCE AND START UP REPORTS TO THE A/E.

REQUIRED BY AHJ. COORDINATE WITH OTHER TRADES.

REQUIRING ACCESS SHALL BE PROVIDED WITH ACCESS DOORS

MEETING ANY FIRE REQUIREMENTS OF THE WALL/CEILING THEY ARE

A SMOKE DETECTOR TO SHUT DOWN THE UNIT PER IMC 606 AS

LATEST ADOPTED VERSION OF THE INTERNATIONAL MECHANICAL CODE,

INDICATED ON ELECTRICAL PLANS. ANY ADDITIONAL LINE VOLTAGE

OR LOW VOLTAGE POWER REQUIRED BY THE M/C OR

SUBCONTRACTORS TO HAVE A FULLY FUNCTIONING SYSTEM SHALL BE

3. PROVIDE CLEANOUTS IN THE FOLLOWING LOCATIONS: 3.1. IN ALL HORIZONTAL DRAINS (WITHIN THE BUILDING) NOT MORE THAN 100 FEET APART.

3.2. IN BUILDING SEWERS LOCATED NO MORE THAN 100 FEET APART MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT. 3.3. EACH CHANGE OF DIRECTION OF THE BUILDING DRAIN OR HORIZONTAL WASTE OR SOIL LINES GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A RUN OF PIPING, ONLY ONE CLEANOUT SHALL BE REQUIRED FOR

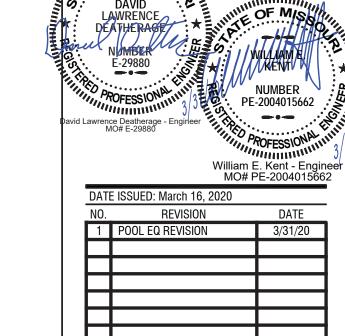
EACH 40 FEET OF DEVELOPED LENGTH OF THE DRAINAGE PIPING. 3.4. AT THE BASE OF EACH WASTE OR SOIL STACK. 3.5. NEAR THE JUNCTION OF THE BUILDING DRAIN AND BUILDING

GENERAL ELECTRICAL NOTES

1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. COORDINATE LOCATIONS OF RECEPTACLES, SWITCHES, ETC. WITH ARCHITECTURAL CASEWORK AND ELEVATIONS. 3. REFER TO MOUNTING HEIGHTS DETAIL FOR MOUNTING HEIGHTS OF ALL DEVICES NOT INDICATED OTHERWISE. 4. PROVIDE ALL EMPTY CONDUITS WITH PULL STRINGS AND BUSHED 5. CONTRACTOR SHALL CONCEAL ALL CONDUIT, FITTINGS, AND DEVICES FROM VIEW WHERE REASONABLY POSSIBLE.

1. COORDINATE REQUIREMENTS FOR INSTALLATION OF SYSTEMS AND

SOME ROOM NAMES MAY NOT BE SHOWN FOR PURPOSE OF



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PHELPS ENGINEERING, INC

Designe Author Checker

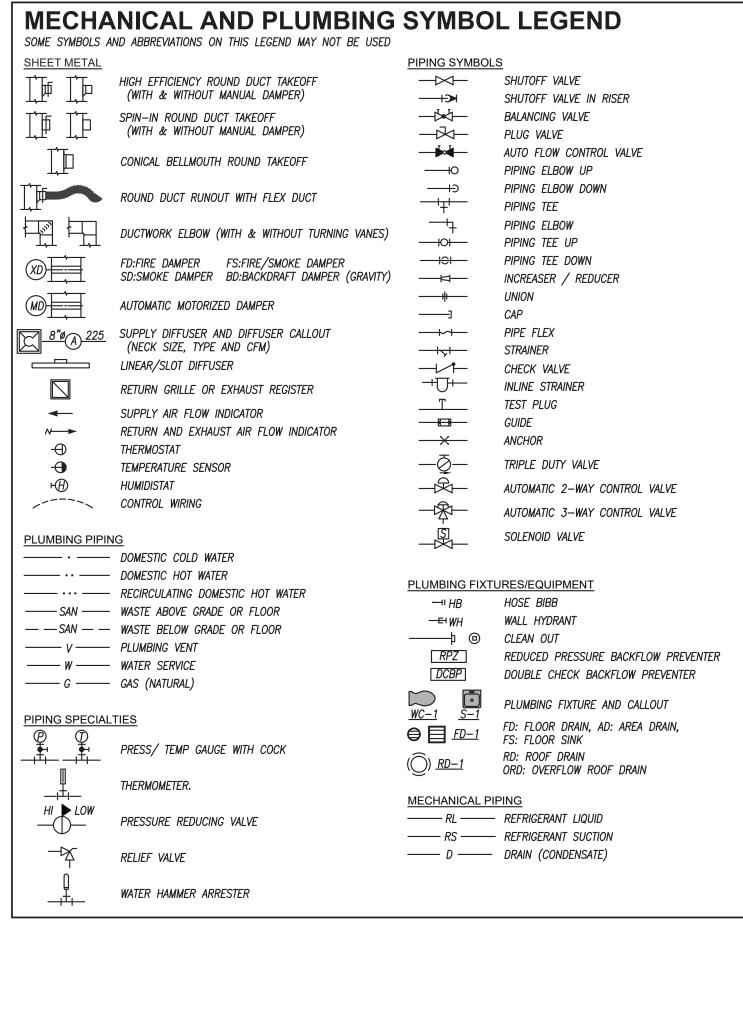
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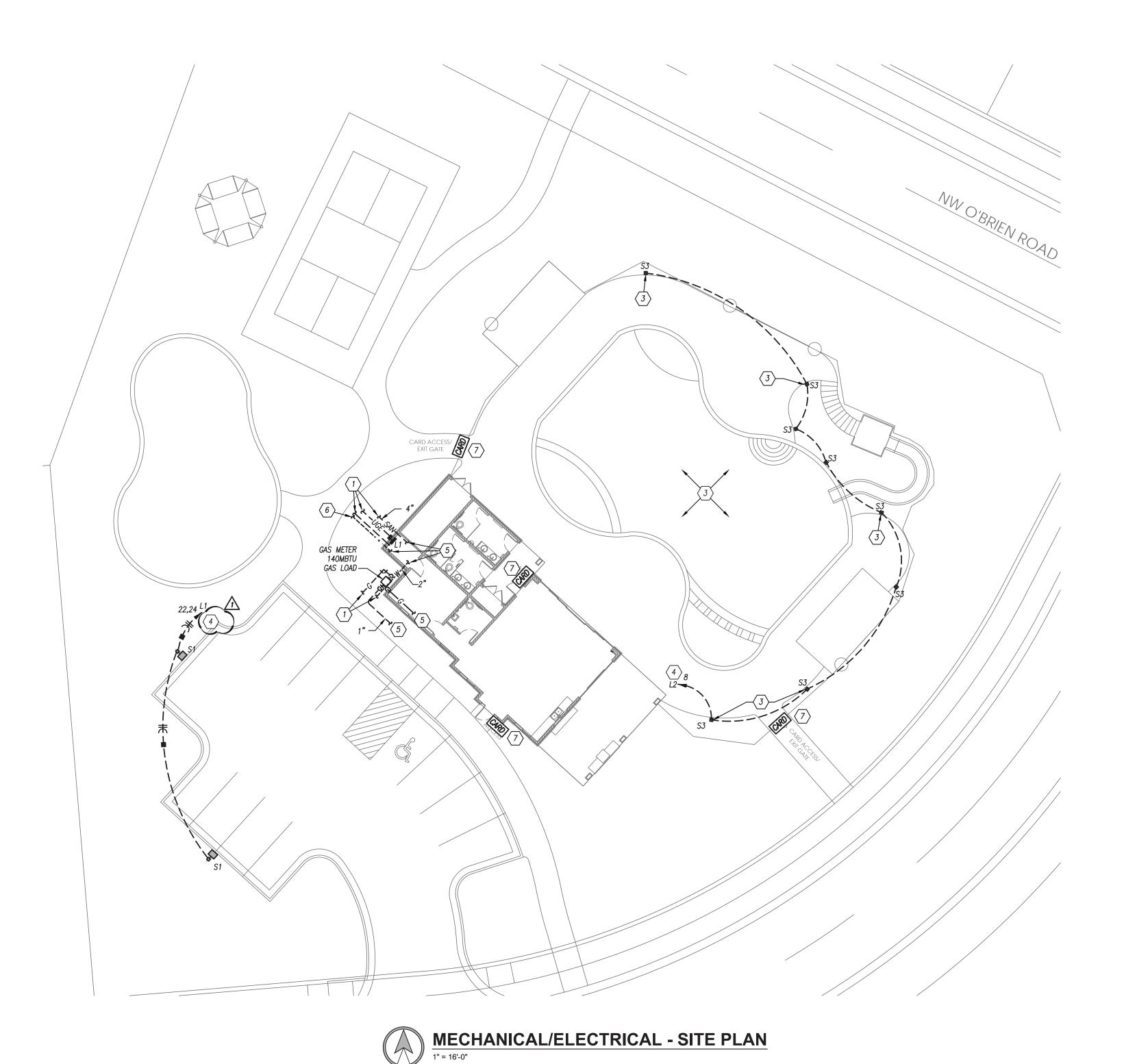
COVER SHEET

ONLY. CONTRACTOR SHALL CAREFULLY REVIEW ALL DIMENSIONS AND CONDITIONS SHOWN HEREON AND AT ONCE REPORT TO THE

RCHITECT ANY ERROR INCONSISTENCY OR OMISSION DISCOVERE

PEARSON KENT MCKINLEY RAAF ENGINEERS LL 13300 W 98TH STREET LENEXA, KS 66215 913.492.2400 WWW.PKMRENG.COM MO State Certificate of Authority #E-2002020886





GENERAL SITE PLAN NOTES

- REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. REFER TO CIVIL PLANS FOR CONTINUATION OF SERVICES BEYOND 5'-0" FROM BUILDING UNLESS OTHERWISE SHOWN.
- 3. REFER TO RESPECTIVE FLOOR PLANS FOR CONTINUATION OF SERVICES INSIDE
- CONTACT UTILITY LOCATING SERVICE TO LOCATE EXACT LOCATION OF ALL EXISTING UTILITIES BELOW GRADE.

SITE PLAN KEYED NOTES

BUILDING AND/OR EXACT LOCATIONS OF EQUIPMENT.

- 1 REFER TO CIVIL DRAWINGS FOR CONTINUATION.
- 2 REFER TO FLOOR PLAN(S) FOR EXACT EQUIPMENT LOCATIONS.

 3 CONTRACTOR TO PROVIDE ELECTRICAL CONNECTION TO IN-POOL LIGHTING. REFER TO PROVIDER PLANS FOR LOCATIONS OF IN-POOL LIGHTING, ROUGH-IN REQUIREMENTS, JUNCTION BOXES, CONDUIT ROUTING, ETC. COORDINATE EXACT REQUIREMENTS AND ROUGH-IN LOCATIONS WITH POOL DRAWINGS. (TYPICAL). CIRCUITING FOR IN-POOL LIGHTING SHALL ROUTE THROUGH TIME CONTROL AND CONNECT TO GFCI PROTECTED CIRCUIT
- 4 ROUTE THROUGH TIMER CONTROL. REFERENCE NOTE #8 ON SHEET E201.
- $\overline{\left\langle 5\right\rangle }$ REFER TO FLOOR PLAN(S) FOR CONTINUATION.
- 6 TO IRRIGATION SYSTEM. COORDINATE SIZE, LOCATION, AND CONTINUATION WITH IRRIGATION CONTRACTOR OR ARCHITECT.
- 7 CARD READER. COORDINATE EXACT LOCATION AND ALL CONNECTION REQUIREMENTS WITH OWNER SPECIFIED SYSTEM. PROVIDE ROUGH—IN AND 1" CONDUIT BACK TO STORAGE ROOM.



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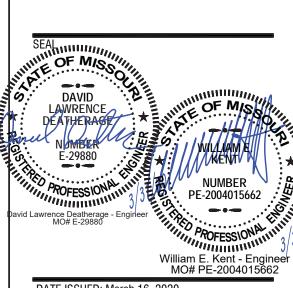
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DATE ISSUED: March 16, 2020

NO. REVISION DATE

1 POOL EQ REVISION 3/31/20

Designer Author Checker

Checker

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MEP101

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<u>APPLICABILITY</u>

A. These general requirements apply to all divisions (21, 22, 23, 26, 27, 28). Refer to individual divisions as included for specific information regarding each trade or scope of

GENERAL REQUIREMENTS A.Furnish & install all labor & materials required for complete, functioning, mechanical & plumbing systems w/ all associated equipment & apparatus as shown on plans.

B. Obtain & pay for all permits required for execution of this work & shall make arrangements for modifications to water, gas & sewer connections to building as

C. All materials shall be new & shall bare UL label where applicable. D. Visit site & observe conditions under which work will be done. Any discrepancies shall

be called to architect's attention. No subsequent allowance will be made in contract for any error or negligence on contractor's part. E. Final acceptance of work shall be subject to condition that all systems, equipment, apparatus & appliances operate satisfactorily as designed & intended. Work shall

include required adjustment of systems & control equipment installed under these specifications. F. Warrant to owner quality of materials, equipment, workmanship & operation of equipment provided under these specifications for one year from & after completion of building &

acceptance of mechanical systems by owner. G.All materials installed in plenums shall be noncombustible or have flame/smoke index of no more than 25/50 in accordance w/ ASTM e 84.

H.Requirements under Division one & general & supplementary conditions of these specifications shall be part of this section. Contractor shall become thoroughly acquainted w/ its contents as to requirements that affect this Division of work required under this section includes material. Equipment, appliances, Transportation, Services, & labor required to complete entire system as required by drawings & specifications.

I. The specifications & drawings for project are complementary, & portions of work described in one, shall be provided as if described in both. In event of discrepancies, notify engineer & request clarification prior to proceeding w/ work involved.

A.Provide MEP systems indicated on drawings, specified or reasonably implied. In addition to specific equipment called out in plans and specifications, provide every device, component, programming, interlocking and accessory necessary for proper operation and completion of totally functional MEP systems.

B. In no case will claims for "Extra Work" be allowed for work about which Contractor could have been informed before bids were taken.

C. Contractor shall become familiar with equipment provided by other contractors that require plumbing connections and controls.

D. Electrical work required to install and control plumbing equipment, which is not shown on plans or specified under Division 26, shall be included in Contractor's base bid proposal. E. All automatic temperature control devices shall be mounted as indicated in automatic temperature control section of specifications.

F. The cost of larger wiring, conduit, control and protective devices resulting from installation of equipment which was not used for basis of design as outlined in specifications shall be paid for by the supplying Contractor at no cost to Owner or Architect Engineer.

G.Contractor shall be responsible for providing supervision to other trade Contractors to insure that required connections, interlocking and interconnection of MEP equipment is made to attain intended control sequences and system operation

H. Contractor shall obtain complete MEP data on shop drawings and shall list this data on an approved form that shall be presented on request, to other trade Contractors. Data shall be complete with wiring diagrams received to date and shall contain necessary data on electrical components of plumbing equipment such as HP, voltage, amperes, watts. locked rotor current to allow other trade Contractors to order support or other equipment coordinated as required in his contract.

. DEFINITIONS

EXTENT OF CONTRACT WORK

A. Whenever used in these specifications or drawings, following terms shall have indicated

B. Furnish: term "Furnish" is used to mean "supply & deliver to project site. Ready for unloading, unpacking, assembly. Installation & similar operations. C.Install: term "Install" is used to describe operations at project site including actual

"unloading, unpacking. Assembly. Erection. Placing. Anchoring. Applying, working to dimension. Finishing, curing, protecting, cleaning. & similar operations." D.Provide: term "Provide" means "to Furnish & Install. Complete & ready for intended use." furnished by owner or furnished by others: item will be furnished by owner or others. It is to be installed & connected under requirements of this Division, complete & ready for

operation, including items incidental to work, including services necessary for proper installation & operation. Installation shall be included under guarantee required by this E. Engineer: where referenced in this Division, "Engineer" is engineer of record & design

professional for work under this Division, & is consultant to, & an authorized representative of, architect. As defined in general &/or supplementary conditions. When used in this Division. It means increased involvement by. & obligations to, engineer, in addition to involvement by. & obligations to, "Architect".

F. AHJ: local code &/or inspection agency (authority) having jurisdiction over work. G. The terms "Approved equal", "Equivalent". Or "Equal" are used synonymously & shall mean "accepted by or acceptable to engineer as equivalent to item or manufacturer

H. The term "approved" shall mean labeled, listed. Or both. By nationally recognized testing laboratory (e.g. UL. ETL. CSA). & acceptable to AHJ over this project.

PREBID SITE VISIT

A.Prior to submitting bid. Visit site of proposed work & become fully informed as to conditions under which work is to be done. Failure to do so will not be considered sufficient justification to request or obtain extra compensation over & above contract

MATERIAL & WORKMANSHIP

A. Provide new material, equipment. & apparatus under this contract unless otherwise stated herein. Of best quality normally used for purpose in good commercial practice & free from defects. Model numbers listed in specifications or shown on drawings are not necessarily intended to designate required trim, written descriptions of trim govern model

B. Pipe, fittings, specialties & valves shall be manufactured in USA. Work performed under this contract shall provide neat & "workmanlike" appearance when completed to satisfaction of architect & engineer. Workmanship shall be finest possible by experienced mechanics. Installations shall comply w/ applicable codes & laws. Complete installation shall function as designed & intended w/ respect to efficiency, capacity, noise level. etc. Abnormal noise caused by rattling equipment, piping, ducts, air devices & squeaks in rotating components will not be acceptable. In general materials & equipment shall be of commercial specification grade in quality. Light duty & residential equipment is not

C.Remove from premises waste material present from work, including cartons, crating, paper, stickers, &/or excavation material not used.

D. Clean equipment installed under this contract to present neat & clean installation at

E. Repair or replace public & private property damaged as result of work performed under this contract to satisfaction of authorities & regulations having jurisdiction. COORDINATION

A. Coordinate work w/ other trades so various components of systems will be installed at proper time will fit available space & will allow proper service access for maintenance. Components which are installed without regard to above shall be relocated at no additional cost to owner.

B. Unless otherwise indicated, general contractor will provide chases & openings in building construction required for installation of systems specified herein. Contractor shall furnish general contractor w/ information where chases & openings are required.

C.Keep informed as to work of other trades engaged in construction of project & execute work in manner as to not interfere w/ or delay work of other trades. Figured dimensions shall be taken in preference to scale dimensions.

D. Contractor shall take his own measurements at building, as variations may occur. Contractor will be held responsible for errors that could have been avoided by proper checking & inspection.

E. Provide materials w/ trim that will properly fit types of ceiling, wall. Or floor finishes actually installed. Model numbers listed in specifications or shown on drawings are not intended to designate required trim.

F. Obtain equipment submittal information for all pieces of equipment to be connected to from other trades that clearly indicates all connection requirements, locations, sizes, and similar requirements. Obtain this information in ample time to coordinate other trade submittals and equipment coordination. Where requirements differ from that on plans or differs from provisions made in the work, immediately notify the architect/engineer. Do not proceed with work that is incompatible with equipment provided.

G.Coordinate construction operations included in different sections of the specifications to ensure efficient and orderly installation of each part of the work. Coordinate construction operations, included in different sections, that depend on each other for proper installation, connection, and operation.

H.Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the work. Each contractor shall coordinate its operations with operations, included in different sections, that depend on each other for proper installation, connection, and

. Schedule construction operations in sequence required to obtain the best results where installation of one part of the work depends on installation of other components, before or

J. Coordinate installation of different components with other contractors to ensure maximum

accessibility for required maintenance, service, and repair.

K. Make adequate provisions to accommodate items scheduled for later installation. L. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and

M.Prepare coordination drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities. Content: project-specific information, drawn accurately to scale. Do not base coordination drawings on reproductions of the contract documents or standard printed data. Include the following information, as applicable:

1) Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.

2) Indicate required installation sequences. 3) Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the contract.

N. Meetings: conduct project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1) Attendees: each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with project and authorized to conclude matters relating to the work. Notify architect of meeting.

2) Agenda: review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. 3) Combined contractor's construction schedule: review progress since the last coordination meeting. Determine whether each contractor is on time, ahead or behind schedule, in relation to construction schedule. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the contract time. Discuss impact of various contractor schedules upon other contractors and how to remedy impacts.

4) Review present and future needs of each contractor present O. After shop drawings have been reviewed and approved by all parties, transmit a set of submittals to each other trade (eg Plumbing, Mechanical, Electrical, Controls, etc) that will interface with installation. Each other contractor shall review the submittal for coordination and return a stamped submittal indicating they have reviewed the submittal

for coordination purposes ARCHITECTURAL VERIFICATION AND RELATED DOCUMENTS

A. Contractor shall consult all Architectural Drawings and specifications in their entirety incorporating and certifying all millwork, furniture, and equipment rough-in including utility characteristics such as voltage, phase, amperage, pipe sizes, duct sizes, including height, location and orientation. Shop drawings incorporating these requirements should be submitted to the Architect for approval prior to installation or rough in.

9. ORDINANCES & CODES A. Work performed under this contract shall. At minimum, be in conformance w/ applicable

national, state & local codes having jurisdiction. B. Installation work performed under this contract shall be in strict compliance w/ current applicable codes adopted by local AHJ including any amendments & standards as set forth by National Fire Protection Association (NFPA). Underwriters Laboratories (UL), Occupational Safety & Health Administration (OSHA), American Society of Mechanical Engineers (ASME), American Society of Heating, Refrigeration, & Air Conditioning Engineers (ASHRAE). American national standards institute (ANSI), American Society of Testing Materials (ASTM) & other national standards & codes where applicable.

C. Where contract documents exceed requirements of referenced codes. Standards, etc. contract documents shall take precedence.

D. Procure & pay for permits & licenses required for accomplishment of work herein described. Where required, obtain. Pay for & furnish certificates of inspection to owner. Contractor will be held responsible for violations of law.

0. STANDARDS

A.Drawings and specifications indicate minimum construction standard. Should any work indicated be sub standard to any ordinances, laws, codes, rules or regulations bearing on work, Contractor shall promptly notify Architect Engineer in writing before proceeding with work so that necessary changes can be made. However, if the Contractor proceeds with work knowing it to be contrary to any ordinances, laws, rules, and regulations, Contractor shall thereby have assumed full responsibility for and shall bear all costs required to correct non complying work.

1. PROTECTION OF EQUIPMENT & MATERIALS

A. Store & protect from damage equipment & materials delivered to job site. Cover as required to protect from dirt & damage. Plug or cap open ends of ductwork & piping systems while stored & installed during construction when not in use to prevent entrance of debris into systems. Equipment & material that has been damaged by construction activities will be rejected. & contractor is obligated to furnish new equipment & material of like kind. Keep premises broom clean from foreign material created during work performed under this contract. Piping, equipment, etc. Shall have neat & clean appearance at completion.

A. The base bid shall include only products from manufacturers specifically named in drawings & specifications. No substitution will be considered prior to receipt of bids unless written request for approval to bid has been received by engineer at least ten calendar days prior to date for receipt of bids. Request shall include name of material or equipment for substitution & complete description of proposed substitute including drawings, cuts, performance & test data & other information for evaluation. Statement setting forth changes in other materials, equipment or other work that incorporation of

substitute would require shall be included. B. The intent of these specifications is to allow ample opportunity for Contractor to use his ingenuity and abilities to perform the work to his and the Owner's best advantage, and to permit maximum competition in bidding on standards of materials and equipment

C.Material and equipment installed under this contract shall be first class quality, new, unused and without damage.

D.In general, these specifications identify required materials and equipment by naming one or more manufacturer's brand, model, catalog number and/or other identification. The first named manufacturer or product is used as the basis for design; other manufacturers named must furnish products consistent with specifications of first named product as determined by Engineer. Base bid proposal shall be based only on materials and equipment by manufacturers named, except as hereinafter provided.

E. Where materials or equipment are described but not named, provide required items of first quality, adequate in every respect for intended use. Such items shall be submitted to Architect Engineer for review prior to procurement.

F. Materials and equipment proposed for substitutions shall be equal to or superior to that specified in construction, efficiency, utility, aesthetic design, and color as determined by Architect Engineer whose decision shall be final and without further recourse. Physical size of substitute brand shall be no larger than space provided including allowances for access for installation and maintenance. Requests must be accompanied by complete descriptive and technical data including manufacturer's name, model and catalog number, photographs or cuts, physical dimensions, operating characteristics and any other information needed for comparison.

G.The burden of proof of merit of proposed substitute is upon proposer. Engineer's decision of approval or disapproval to bid of proposed substitution shall be final. Terms approved". "approved equal", & "equal" refer to approval by engineer as an acceptable alternate bid. No substitutions will be considered that are not bid as an alternate.

H.No material substitutions shall be considered for approval after to award of contract. Coordinate & verify w/ other trades whether or not substituted equipment can be installed as shown on construction drawings without modification to associated systems or architectural or engineering design. Include additional costs for architectural & engineering design fees in bid if drawing modifications are required because of

substituted equipment. 13. SHOP DRAWINGS

A. Equipment to be furnished under this contract, items requiring coordination between contractors & sheet metal ductwork fabrication drawings. Before submitting shop drawings verify equipment submitted is mutually compatible & suitable for intended use & will fit available space & allow ample room for maintenance. Engineer's checking & subsequent approval of such shop drawings will not relieve contractor from responsibility for errors in dimensions, details, size of members, quantities, omissions of components or fittings; coordination of electrical requirements; or for coordinating items w/ actual building conditions. Proceed w/ procurement & installation of equipment only after receiving approved shop drawings relative to each item.

B. Submittal data shall be neatly organized, identified & indexed. Each item or model number shall be clearly marked & accessories indicated. Label catalog data w/ equipment identification acronym or number as used on drawings & include performance curves, capacities, sizes, materials, finishes, wiring diagrams & deviations from specified equipment or materials. Mark out inapplicable items. Shop drawings will be returned without review if above mentioned requirements are not met.

C.Requirements shall be met electronically & submitted as pdf in files less than 10mb. D. Contractor's stamp, which shall certify that stamped drawings have been checked by contractor, comply w/ drawings & specifications, & have been coordinated w/ other E. Transmit submittals as early as required to support project schedule. Allow for two weeks

a/e review time, plus duplication of this time for resubmittals, if required. Transmit

submittals as soon as possible after notice to proceed & before construction starts. Fngineer's submittal reviews will not relieve contractor from responsibility for errors in dimensions, details, size of members, or quantities; or for omitting components or fittings; or for not coordinating items w/ actual building conditions. F. Final copies shall be furnished to owner as part of O&M documents in hard & electronic

repair of all components, including mechanical and electrical.

14. OPERATION & MAINTENANCE INSTRUCTIONS

A. Collect & compile complete brochure of equipment furnished & installed on this project. Include operational & maintenance instructions, manufacturer's catalog sheets, wiring diagrams, parts lists, approved shop drawings, test & balance reports, & descriptive literature as furnished by equipment manufacturer. Include an inside cover sheet that lists project name, date, owner, architect, consulting engineer, general contractor, sub-contractor, & an index of contents. Submit three copies of literature bound in 3-ring binders w/ index & tabs separating equipment types to architect at termination of work. Final approval of plumbing systems will be withheld until manual is received & deemed complete by architect & engineer. Provide "as-built" drawings (see Division 1 & general

B. These requirements may shall also be provided to the owner in a well organized pdf electronic submission & delivered on a DVD or USB thumbdrive.

A. Provide factory trained & authorized representative to train owner's designated personnel

on operation & maintenance of equipment provided for this project. Provide training to include but not be limited to an overview of system &/or equipment as it relates to facility as whole; operation & maintenance procedures & schedules related to startup & shutdown, troubleshooting, servicing, preventive maintenance & appropriate operator intervention; & review of data included in operation & maintenance manuals. Submit certification letter to architect stating that owner's designated representative has been trained as specified herein. Letter shall include date, time, attendees & subject of training. Contractor & owner's representative shall sign certification letter indicating agreement that training has been provided. Schedule owner training w/ at least 7 days' advance notice.

6. SPARE PARTS A. Furnish to owner, w/ receipt one set of spare filters of each type required for each unit. In addition to spare set of filters, install new filters prior to testing, adjusting, & balancing work & before turning system over to owner

B. Furnish one complete set of belts for each fan. 17. <u>EQUIPMENT LABELS:</u>

18. WARRANTIES

A.Material and thickness: multilayer, multicolor, plastic labels for mechanical engraving, 1/16 inch thick, and having predrilled holes for attachment hardware. Black letters on B. Minimum label size: length and width vary for required label content, but not less than

2-1/2 by 3/4 inch. C.Minimum letter size: 1/4" for name of units if viewing distance is less than 24 inches, 1/2" for viewing distances up to 72" & proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal

A. Warrant each system & each element thereof against all defects due to faulty workmanship design or material for period of 12 months from date of substantial completion unless specific items are noted to carry longer warranty in construction documents or manufacturer's standard warranty exceeds 12 months. Remedy all defects, occurring within warranty period(s) stated in general conditions & Division 1. Warranties shall include labor & material. Make repairs or replacements without any additional costs to owner. Perform remedial work promptly, upon written notice from engineer or owner. B. At time of substantial completion, deliver to owner all warranties in writing & properly executed including term limits for warranties extending beyond one year period. Each warranty instrument being addressed to owner & stating commencement date & term.

9. CUTTING & PATCHING A.Perform cutting of walls, floors, ceilings, etc. As required to install work under this section. Obtain permission from architect prior to cutting. Do not cut or disturb structural members without prior approval from architect. Cut holes as small as possible. General contractor shall patch walls, floors, etc. As required by work under this section. Patching shall match original material & construction. Repair & refinish areas disturbed by work to condition of adjoining surfaces in manner satisfactory to architect.

20. EXCAVATION AND BACKFILL A. Perform necessary excavation to receive work. Provide necessary sheathing, shoring, cribbing, tarpaulins, etc. For this operation, and remove it at completion of work. Perform excavation in accordance with appropriate section of these specifications, and in compliance with osha safety standards.

B. Excavate trenches of sufficient width to allow ample working space, and no deeper than necessary for installation work. C. Conduct excavations so no walls or footings are disturbed or injured. Backfill excavations made under or adjacent to footing with selected earth or sand and tamp to compaction required by architect engineer. Mechanically tamp backfill under concrete

and pavings in six inch layers to 95% standard density, reference Division 2. D.Backfill trenches and excavations to required heights with allowance made for settlement. Tamp fill material thoroughly and moistened as required for specified compaction density. Dispose of excess earth, rubble and debris as directed by architect.

E. When available, refer to test hole information on architectural or civil drawings or specifications for types of soil to be encountered in excavations.

A. Coordinate rough-in w/ general construction & other trades. Conceal piping & conduit rough-in except in unfinished areas & where otherwise shown.

23. <u>ACCESS DOORS</u> V.Provide access doors in ceilings, walls, etc. Where indicated or required for access or maintenance to concealed valves & equipment installed under this section. Provide concealed hinges, screwdriver-type lock, anchor straps; manufactured by Milcor, Zurn, Titus, or equal. Obtain architect's approval of type, size, Location & color before ordering. 24.PENETRATIONS

A. Seal mechanical floor, exterior wall & roof penetrations watertight & weathertight. Seal around mechanical penetrations w/ 3M CP-25 fire barrier caulk (thickness as required & recommended by manufacturer) to maintain resistance rating of fire-rated assemblies. Provide prefabricated roof curbs manufactured by Custom Curb, Pate, Thycurb or approved equal. Provide roof curb w/ factory installed wood nailer; welded, 18 gauge galvanized steel shell, base plate & flashing; 1-1/2" thick, 3 pound rigid insulation; fully mitered 3-inch raised cant; cover of weather-resistant, weather-proof material & pipe collar of weather-resistant material w/ stainless steel pipe clamps. Make roof penetrations by authorized roofing contractor when required.

25. MOTORS & STARTERS A. Provide motors & starting equipment where not furnished w/ equipment package. Motors shall have copper windings, class b insulation, & standard squirrel cage w/ starting torque characteristics suitable for equipment served. Motors for air handling equipment shall be selected for quiet operation. Each motor shall be checked for proper rotation after electrical connection has been completed. Provide dripproof enclosure for locations protected from weather & not in air stream of fan; & totally enclosed fan cooled enclosure for motors exposed to weather. Motors shall be manufactured by Century, GE, Westinghouse, or approved equal, Provide every motor, except fractional horsepower single phase motors w/ an approved type of "built-in" thermal overload protection, w/ motor starter. Each starter shall be provided w/ overload heaters sized to motor rating, & every three phase motor starter shall have overload heaters in each phase. Ambient compensated heaters shall be installed wherever necessary. Unless noted otherwise, motor starters shall be furnished by Division 22/23 contractor for installation & connection by Division 26 contractor. Starters shall be Allen-Bradley, Clark, Furnas, Square D, or

approved equal.

26. ELECTRICAL WIRING A.Line voltage wiring shall be provided by Division 26. Line voltage control & interlock wiring for mechanical systems shall also be provided by Division 26 contractor. Low voltage control wiring shall be provided by Division 22/23 contractor. Furnish wiring diagrams to Division 26 contractor as required for proper equipment hookup. Coordinate w/ Division 26 contractor actual wire sizing amps for submitted mechanical equipment to ensure proper installation

'.DISCONNECT SWITCHES A. Provide heavy-duty horsepower rated safety switches rated in accordance with NEMA enclosed switch standard KS 1_1969 and I98 standard.

B. Each piece of electrical equipment shall be provided with a disconnecting means. C.Equivalents by: GE, Eaton, Siemens, Square D.

28. REFRIGERANT & OIL A. Provide full refrigerant & oil charge in refrigeration systems. Maintain for full term of warranty.

29. FINAL TESTING & ADJUSTMENTS

A.Final system testing. Balancing & adjustments shall be performed by contractor certified by NEBB, AABC or other approved agency. Perform test readings on fans, units, coils. etc. & adjust equipment to deliver specified amounts of air or water. Prepare testing & balancing report log showing air supply quantities, air entering & leaving temperatures & pressures, fan & unit test readings, motor voltage & amp draws. etc., & submit PDF of final compilation of data to architect for evaluation & approval before final inspection of project. Balance air systems to within plus or minus 10 percent for terminal devices & branch lines & plus or minus 5 percent for main ducts & air handling equipment of amount of air shown on drawings. Further adjustments shall be made to obtain uniform temperature in spaces. Adjust equipment to operate as intended by specification. Align bearings & replace bearings that have dirt or foreign material in them w/ new bearings without additional cost to owner. Balance contractor shall include in report any improperly installed or missing balancing devices that would negatively impact system operation. Adjust thermostats & control devices to operate as intended. Adjust burners, pumps, fans, etc. For proper & efficient operation. Certify to architect that adjustments have been made & that system is operating satisfactorily. Further adjustments shall be made to obtain uniform temperature in spaces. Calibrate, set, & adjust automatic temperature controls. Check proper sequencing of interlock systems, & operation of safety controls. 0. EQUIPMENT FURNISHED BY OTHERS

A. Provide necessary equipment & accessories that are not provided by equipment supplier or owner to complete installation of cooking equipment, washing equipment, etc., thru wall or ceiling of finished rooms. furnished by others, in locations as indicated on drawings &/or described in general notes

to this contractor. Equipment & accessories not provided by equipment supplier may include flues, vents, intakes, associated roof jacks & caps to outdoors, dampers. In-line fans, roof fans, control interlocks, etc. As required for proper operation of complete system in accordance w/ manufacturer's instructions. Contractor shall be responsible for correct rough-in dimensions, & shall verify same w/ architect &/or equipment supplier

prior to service installations. 31. SETTING, ADJUSTMENT AND EQUIPMENT SUPPORTS

A. Work shall include mounting, alignment and adjustment of systems and equipment. Set equipment level on adequate foundation and provide proper anchor bolts and isolation as shown, specified or required by manufacturers in installation instructions. Level, shim and grout equipment bases as recommended by manufacturer. Mount motors, align and adjust drive shafts and belts according to manufacturer's instructions.

B. Equipment failures resulting from improper installation or field alignment shall be repaired or replaced by Contractor at no cost to Owner. C.Floor or pad mounted equipment shall not be held in place solely by its own dead weight.

Include anchor fastening in all cases. D. Provide floor or slab mounted equipment with 3 1/2" high concrete bases unless specified otherwise. Individual concrete pad shall be no less than 4" wider and 4" longer than equipment, and shall extend no less than 2" from each side of equipment.

E. Provide each piece of equipment or apparatus suspended from ceiling or mounted above floor level with suitable structural support, platform or carrier in accordance with best-recognized practice. Verify that structural members of buildings are adequate to support equipment and unless otherwise indicated on plans or specified, arrange for their inclusion and attachment to building structure. Provide hangers with vibration isolators. F. Submit details of hangers, platforms and supports together with total weights of mounted equipment to Architect_Engineer for review before proceeding with fabrication or

34. FIRE BARRIERS AF. General: for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of

maintain original fire-resistance rating of construction penetrated.

END OF GENERAL MEP REQUIREMENTS

DIVISION 220000 - PLUMBING

1. PLUMBING GENERAL REQUIREMENTS AI. Refer to GENERAL MECHANICAL. ELECTRICAL AND PLUMBING requirements

fire according to requirements indicated, resist passage of smoke and other gases, and

2. PIPING & INSULATION

A. Water service piping shall be copper type K tubing, ductile iron with mechanical joints or PVC AWWA C900 piping properly bedded and supported. B. Water piping - all water piping shall be 95-5 tin-antimony joined type L copper. Insulate

C. Waste & vent piping - CI bell & spigot below grade or hubless CI w/ neoprene gasket fittings w/ stainless steel bands above grade. Sched 40 PVC w/ solvent welds may be used where allowed by local code. PVC not allowed in plenums.

w/ fiberglass w/ ASJ & PVC covers. Thickness in accordance w/ ASHRAE 90.1.

D. Gas piping - Provide Sched 40 cont. Weld carbon steel w/ corresponding fittings. Provide threaded fittings. Provide iron body-brass plug gas stops. Provide 2 coats paint on exterior gas piping.

3. PIPING IDENTIFICATION A. Provide pipe markers and flow direction arrows at 10'_0" maximum spacing to identify

piping in mechanical rooms and 20'_0" maximum spacing in all other areas B. Pipe marker nomenclature/colors shall meet applicable ANSI standard and OSHA requirements from Seaton or equal. Submit for approval list of colors and wording prior to purchase of pipe markers.

4. <u>VALVES</u> A. Equivalent valves listed on current comparison charts of specified valve manufacturers by Milwaukee, Stockham, Powell, Red-White, Crane, Apollo, Mueller, Muessco, Watts, Hays, Rockwell-Nordstrom.

B. Ball valves - 2" & under - bronze full port w/ teflon seats, bronze ball & insulated handle.

C.Check valves - 2" & smaller screwed or solder bronze check valve, 200 psi-wog/125 psi-wsp, teflon or bronze disc & seat ring. 2-1/2" & larger flanged, ASTM 126 iron body, bronze trimmed, 200psi-wog/125 psi-wsp. D.Plug valves - 1" & smaller iron body gas cock, 175 PSI_WOG bronze plug

E. Installation 1) Install necessary valves within piping systems to provide required flow control, to allow isolation for inspection, maintenance and repair of each piece of equipment

2) Each valve shall be installed so that it is easily accessible for operation, visual inspection, and maintenance and wherever possible, gate, check and ball valves shall be installed on a horizontal run with the handle upright and within 15 degrees of vertical. Butterfly valves shall be installed with the stem in the horizontal position and the handle at 90 degrees from vertical.

3) Valves installed in piping systems shall be compatible with system maximum test pressure, pipe materials, pipe joining method, and fluid or gas conveyed in system.

A.See schedules for further requirements and specific fixtures. B. Fixtures: American Standard, Kohler, Crane, Zurn, Toto.

or fixture, and on each main and branch service loop.

D. Fittings & supports: Josam, Smith, Wade, Zurn, Or Jonespec. E. Seats: Church, Olsonite, Bemis Or Beneke

C. Stainless steel fixtures: Elkay, Just, Moen Commercial

F. Drinking fountains: Halsey Taylor, Elkay, Oasis, Or Haws. G.Trim by Moen, Delta, Eljer, Kohler, American St&Ard, Crane, Sloan. H.Flushvalves: Sloan, Zurn, Toto

I. Drains by Wade, Zurn, Woodford, Smith, Josam. J. Wall hydrants Josam series 71000 w/ connections for ¾" pipe & hose. Non-freezing w/ key, vacuum breaker, locking cover. Equivalent by J.R. Smith, Wade, Woodford or Zurn. K. Downspout nozzels - Wade series 3940 cast bronze downspout nozzles w/ threaded

outlet & flange to secure nozzle to wall. PLUMBING EQUIPMENT

A. See schedules for further requirements and specific equipment.

B. Tankless water heaters as scheduled by State, Rheem, Rinnai, Noritz, A.O. Smith, Bosch. Refer to schedule for capacities and characteristics. Standard: ANSI Z21.10.3/CSA 4.3 for gas-fired, instantaneous, domestic-water heaters for indoor application. Construction: Copper piping or tubing complying with NSF 61 barrier materials for potable water, without storage capacity

C.Provide gas pressure regulators with internal relief and low pressure cut off as manufactured by Fisher Controls or Equimeter. Units shall be of size capable of capacities and pressures as shown on plans or as required for proper service. Verify capacities and pressures with each piece of equipment served.

D.Backflow preventers provide where shown on plans the following types of backflow preventers. Provide isolation valve ahead of backflow preventers. Equivalent backflow prevents by Watts, Febco, Lawler

backflow preventer complete with strainers and valves. 2) Reduced pressure zone principle (3/4"-10"): watts series 909 reduced pressure backflow preventer complete with strainers and valves. Provide isolation valve ahead of backflow preventers. Provide with air gap fitting and pipe to floor drain.

3) Pressure vacuum breakers (1/2"-2"): watts series 800m4qt pressure vacuum

1) Reduced pressure zone principle (1/4"-1/2"): watts series 009 reduced pressure

breaker with integral ball valve shut offs. 4) Pressure vacuum breakers (3/8"-1/2"): watts series 008qt pressure vacuum breaker for anti-spill applications, with integral ball valve shut offs.

breaker in plain brass finish. 6) Hose bibb vacuum breakers vacuum breakers for hose end connections shall be Watts series 8 non-removable type. E. Provide thermometers and wells at all water heaters. Provide pressure test plugs and

gauges at water/fire services, booster pumps, etc. so that proper testing/ balancing &

5) Atmospheric vacuum breaker (1/4"-3"): watts series 288a atmospheric vacuum

trouble shooting can be accomplished. PLUMBING EXECUTION

A. Provide unions or flanged joints in each pipe line preceding connections to equipment to allow removal for repair or replacement. Provide all screwed & control valves w/ unions adjacent to each connection. Provide screwed end valves w/ union adjacent to valve unless valve can be otherwise easily removed from line

B. All piping shall be properly supported with hangers and supports specifically intended for that purpose. Provide clevis hangers, unistrut brackets and pipe clamps and similar systems. Protect integrity of insulation and provide rigid insulation inserts or pipe saddles as necessary.

C. After piping is in place test lines to insure no leaks. D. All piping & equipment shall be supported properly from structure. E. Escutcheons - provide nickel-brass or chrome plated on all exposed pipes when passing F. Verify floor materials used from architectural plans & provide proper cleanout tops, where they occur in carpet, quarry tile, vinyl tile or ceramic tile

G.Provide water hammer arrestors for all plumbing banks w/ fixtures utilizing flush valves in any capacity. Locate arrester between last two fixtures served on branch line.

END OF DIVISION 22000

DIVISION 230000 - MECHANICAL

MECHANICAL GENERAL REQUIREMENTS

A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements SHEET METAL WORK

A.HVAC ductwork shall be galv sheet metal of gauges & joint types specified in SMACNA manual. Provide turning vanes in elbows. B. Coordinate routing of ductwork w/ other contractors such that piping, electrical conduit, & associated supports are not routed through ductwork. Construct supply ducts to meet SMACNA positive pressure of 3" WG. Construct return, outdoor & exhaust ductwork

ductwork downstream of fans to meet SMACNA positive pressure of 1" WG. C.Exposed ductwork to be field painted shall have galvanized metal primer applied in shop after fabrication & prior to shipping.

upstream of fans to meet SMACNA negative pressure of 1" WG. construct exhaust

D. Seal ductwork w/ heavy liquid sealant, Hardcast Irongrip 601, Design Polymer DP 1010, United McGill duct sealer or approved equal, applied according to sealant manufacturer's instructions.

E. Exposed spiral duct shall be Lindab or approved equal gasketed style. F. Ducts shall be connected to fans, fan casings & fan plenums by means of flexible connectors. Flexible connectors shall be neoprene coated glass cloth canvas connections, Duro-Dyne, Elgen, Ventfabric or equal. Flexible connectors shall have flame spread of 25 or less & smoke developed rating not higher than 50. Make airtight joints & install w/ minimum 1-1/2" slack.

G. All ductwork must be supported properly from structure.

3. DUCTWORK SPECIALTIES

A.Flexible ducts - Thermaflex or equal sound rated type G-KM insulated. (duct w/o published acoustical attenuation ratings not acceptable). Take off fitting shall be hi-eff style w/ locking damper. Maximum length of flexible ductwork shall be 5'-0".

B. Diffusers & grilles - see schedule. Equivalent by Price, Tuttle & Bailey, Titus, Metal-Aire, Krueger. Coordinate color, mounting w/ duct, ceilings, architect. Select air devices to limit room noise level to no higher than NC-30 unless otherwise shown. Provide devices w/ soft plastic gasket to make an airtight seal against mounting surface. Coordinate final location, frame, & mounting type of air devices w/ architectural reflected ceiling plans. Submit complete shop drawings including information on noise level, pressure drop, throw, cfm for each air device, styles, borders, etc. Clearly marked w/ specified equipment number. Provide ceiling supply air diffusers & return air grilles of lay-in or surface mounted type as required to be compatible w/ ceiling construction. Provide ceiling diffusers & grilles w/ white enamel finish unless noted otherwise. Provide slot plenums by diffuser manufacturer. Plenums shall be internally insulated by manufacturer.

C.Louvers - Greenheck type FSK-400 fabricated galvanized steel louver w/ trim flange. Equivalent by Ruskin, Louvers & Dampers, Greenheck, American Warming & Ventilating, Industrial Louvers, Acme, Coordinate finish w/ architect.

D. Provide balancing dampers, manufactured by Ruskin, Greenheck, Nailor Industries, Cesco, Louvers & Dampers, Pottorff or approved equal, where 'shown on drawings & wherever necessary for complete control of air flow. Splitter dampers shall be controlled by locking quadrants; provide young regulator or ventlok end bearings for damper rod. Rectangular volume dampers shall be opposed blade interlocking type. Round volume dampers shall be butterfly type consisting of circular blade mounted to shaft.

E. Damper leakage for outside air dampers shall not exceed 6.5 cfm/square foot in full closed position at 4" wg pressure differential across damper. Reference manufacturer & model number for outside air dampers is Ruskin model CD-50. 4. DUCT INSULATION WORK

A.Duct insulation & wraps shall meet flame/smoke rating of 25/50 per ASTM E 84. B. Line all low pressure supply & return air ductwork w/ 1/2" liner. Line all medium pressure

supply w/ 1" liner. C.Line all transfer boots w/ ½" liner. D.Do no wrap exposed spiral ducts. Provide pre-manufactured 1/2" or 1" round liner for all

exposed round ducts. Contractor has the option to use double wall perforated lined

round spiral ducts for exposed ducts. Wrap all concealed round supply HVAC ductwork

w/ Certainteed 1-1/2" thick insulation w/ vapor barrier in concealed locations or in unfinished shell spaces. E. Wrap all outside air HVAC ductwork w/ Certainteed 1-1/2" thick insulation w/ vapor barrier in concealed locations. Exposed installations shall use 1-1/2" thick rigid board

insulation or lined with 1" liner. A.Refrigerant piping - copper tube type acr, hard temper nitrogenized refrigerant tube,

ASTM b-88. Type L or K. Brazed joints. Insulate w/ Armaflex in thickness per ASHRAE 90.1. Provide UV stabilized exterior rated or coated Armaflex outdoors.

EXHAUST FANS F. Equivalent by Cook, Penn, Acme, Greenheck, Jennaire.

G.Provide w/ 14" min. Curb. Provide grease trim & ventilated curb extensions for grease H. Bearings shall be designed for 200,000 hours operation. Variable pitch motor sheaves I. Fans shall be furnished with acceptable electrical disconnect & birdscreen. Provide

equipped fans with magnetic motor starter. Provide local disconnect means for all fans. Coordinate location of starter & disconnects with other trades.

8. FURNACES, EVAPORATORS, & CONDENSING UNITS A Furnace - Min 90% eff natural gas, AGA cert, Aluminized steel HX, multi-speed direct drive blower motor. Provide 2" or 3" plastic C/A & flue piping complete w/ concentric termination kits. 2" MERV 7 filters. Mount filter in slide rack w/ hinged door & latch in R/A duct work. Coil - blow-thru D/X module, fully insulated metal casing w/ drain pan &

single phase motor equipped fans with motor rated start relay. Provide multiphase motor

duct flanges, copper tubes w/ aluminum fins, w/ TXV. B. Condensing unit - heavy gauge base, scroll compressor(s). Rated seer not less than 10.3. (1) yr parts & labor system warranty & additional 4 yr compressor only warranty. Anti-short cycle prevention controls. Provide liquid line anti-migration valve for all systems with lines longer than 100 feet. Provide unit with suction line accumulators where condensing units are located below evaporator coils. Louvered coil hail guards. 30

A. Stages of cooling & heating as required by stages on specified equipment. 7-day programming capability w/ 2 occ/unocc periods/day. Auto heat/cool change over. Locking

9. PROGRAMMABLE THERMOSTATS

C.Equivalent by Trane, Lennox, York, Carrier.

deg low ambient.

B. Thermostats by Honeywell, Johnson Controls, White-Rogers, Trane, Carrier or approved 10. WALL & CEILING HEATERS A. Nickel-chromium heating wire, free from expansion noise & hum, mounted in ceramic inserts in a galvanized-steel housing; with fuses in terminal box for overcurrent protection

& limit controls for high-temperature protection. Terminate elements in stainless-steel

setpoints to prevent tampering. Provide w/ all interfaces to other equipment as required.

machine-staked terminals secured with stainless-steel hardware. Manufacturers: Berko, Chromalox, Indeeco, Markel, Marley, QMark.

electrical specifications.

. MECHANICAL EXECUTION A. Coordinate w/ e/c to provide all wiring between equipment, dampers, thermostats & all other required controls & devices. M/C is responsible for all control & interlock wiring unless specifcally shown on electrical drawings. All electrical work shall comply w/

B. All piping shall be properly supported with hangers & supports specifically intended for that purpose. Provide clevis hangers, unistrut brackets & pipe clamps & similar systems. Protect inetgrity of insulation & provide rigid insulation inserts or pipe saddles as

D. Provide ground-mounted units on 4", reinforced concrete base, 6" larger than unit on

E. Provide factory-authorized service start up on equipment. Train owner's maintenance personnel on startup, shutdown, troubleshooting, servicing, preventive maintenance.

12. STARTUP SERVICE A.Engage a factory-authorized service representative to perform startup service for all equipment & systems.

B. Complete installation & startup checks according to manufacturer's written instructions &

3) Inspect for visible damage to compressor, air-cooled outside coil, & fans.

1) Inspect for visible damage to unit casing. 2) Inspect for visible damage to furnace combustion chamber.

C. All exterior control wiring shall be in conduit.

5) Verify that labels are clearly visible. 6) Verify that clearances have been provided for servicing. 7) Verify that controls are connected & operable

4) Inspect internal insulation.

8) Verify that filters are installed.

9) Clean outside coil & inspect for construction debris.

10)Clean furnace flue & inspect for construction debris.

13)Inspect operation of barometric dampers

11)Connect & purge gas line. 12) Adjust vibration isolators.

14)Lubricate bearings on fan. 15)Inspect fan-wheel rotation for movement in correct direction without vibration & binding.

16) Adjust fan belts to proper alignment & tension.

17) Start unit according to manufacturer's written instructions. 18)Start refrigeration system in summer only.

19) Complete startup sheets & attach copy with contractor's startup report.

20)Inspect & record performance of interlocks & protective devices; verify 21)Operate unit for an initial period as recommended or required by

manufacturer. 22)Perform the following operations for both minimum & maximum firing & adjust burner for peak efficiency. Adjust pilot to stable flame.

23)Measure gas pressure on manifold. 24)Measure combustion-air temperature at inlet to combustion chamber.

25)Measure flue-gas temperature at furnace discharge.

26)Calibrate thermostats. 27)Adjust & inspect high-temperature limits.

28)Inspect outside-air dampers for proper stroke & interlock with return-air 29)Start refrigeration system & measure & record the following:

30)Coil leaving-air, dry- & wet-bulb temperatures. 31)Coil entering-air, dry- & wet-bulb temperatures.

32)Outside-air, dry-bulb temperature. 33)Outside-air-coil, discharge-air, dry-bulb temperature. 34)Inspect controls for correct sequencing of heating, mixing dampers,

refrigeration, & normal & emergency shutdown. 35)Measure & record the following minimum & maximum airflows. Plot fan volumes on fan curve.

36)Supply-air volume. 37)Return-air volume.

38)Relief-air volume. 39)Simulate maximum cooling demand & inspect the following:

41) Verify operation of remote panel, including pilot-light operation & failure modes. Inspect the following:

42) High-limit heat exchanger. 43) Warm-up for morning cycle.

Alarms.

44)

C. Adjusting

operation of power vents. 46) Provide one spare set of clean filters & deliver to owner.

1) Adjust initial temperature & humidity set points. 2) Set field-adjustable switches & circuit-breaker trip ranges as indicated. 3) Occupancy adjustments: when requested within 12 months of date of substantial completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to site outside normal occupancy hours for this

40) Short circuiting of air through outside coil or from outside coil to outside-air

After startup & performance testing, change filters, vacuum heat exchanger

& cooling & outside coils, lubricate bearings, adjust belt tension, & inspect

purpose, without additional cost. D. Demonstration E. Engage a factory-authorized service representative to train owner's maintenance

personnel to adjust, operate, & maintain all HVAC equipment & systems. END OF DIVISION 23000

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DATE ISSUED: March 16, 2020

REVISION

Author

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SCALES AS STATED HEREON ARE VALID ON THE ORIGINAL DRAWING

ONLY. CONTRACTOR SHALL CAREFULLY REVIEW ALL DIMENSIONS AND CONDITIONS SHOWN HEREON AND AT ONCE REPORT TO THE

MECHANICAL SPECIFICATIONS

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SECTION 26000 - ELECTRICAL

GENERAL ELECTRICAL REQUIREMENTS

A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements. B. Wiring of Mechanical Equipment

1) Provide all raceways & power wiring for all division 23 equipment requiring electrical connections, including, but not limited to, pumps, water heaters, & HVAC equipment, & all line voltage control & interlock wiring not provided under division 23. Connect per manufacturers' wiring diagrams. Coordinate with division 23 for disconnects furnished w/ equipment, & provide all disconnect switches as required. After installing wiring, verify that each motor load has correct phase rotation.

2) Verify actual "maximum overcurrent protection" (MOCP) device ratings & "minimum circuit ampacity" (MCA) conductor sizing for mechanical equipment from equipment nameplate. Base electrical installations on actual required amperages, which may vary somewhat from conductor & equipment sizes shown on drawings; however, in no case, reduce size of conductors indicated on drawings without authorization from engineer. Provide properly sized electrical wiring & equipment without extra cost to owner. Notify engineer of all changes required in electrical installation due to equipment variances so that effects on feeders, branch circuits, panelboards, fuses & circuit breakers can be checked prior to purchasing & installation. Be responsible for coordinating w/ division 23 to verify actual ampacities & correct sizes of all conductors & overcurrent protective devices for all equipment. & correct overload heaters for all motors, when starters are provided under division 26.

C. Wiring of Thermostats. Time, & Temperature Controls

1) Provide all raceways, power wiring, & line-voltage control and interlock wiring not provided under division 23, for all thermostats, temperature control devices, & controls, including, but not limited to, night-stats, water heater interlocks, time switches & override timers. See mechanical drawings for locations & temperature control diagrams. Low-voltage conductors for thermostats & temperature control system may be run exposed above finished accessible ceilings, if approved & listed for this purpose, but shall be installed in conduit within walls & where exposed in work areas.

. CONDUIT & CONDUCTORS

A.Follow circuiting shown on plans. Use no conduit smaller than 3/4" & no conductors smaller than #12 ga. Unless noted otherwise.

B. Conductors #10 and smaller shall be solid. C.If no conductor size is indicated on drawings for branch circuit, provide

conductors & conduit sized per NFPA 70 & based on indicated branch circuit overcurrent protective device (OCPD) rating & number of poles.

D. Wire shall be in non-flexible metallic conduit (EMT, IMC or RMC) for: 1) All circuits & feeders greater than 30A.

2) Kitchen circuits. Home runs.

E.MC cable acceptable for branch convenience circuits & lighting circuits. Do not daisy chain light fixtures. Provide cable whips of sufficient lengths to allow for relocating each light fixture within 5-foot radius of its installed location, but not exceeding 6 feet in unsupported lengths.

1) Do not use MC cable for following: homeruns to panelboards, where exposed to view or damage, hazardous locations, in concrete, block walls or wet locations, & when disallowed by local AHJ or landlord.

2) Provide health care rated MC for patient care areas (as defined by the NEC) when not in conduit. F. Conduit installed below grade shall be schedule 80 PVC heavy wall plastic

conduit meeting NEMA standards & UL listed for underground & exposed use. Provide GRS radius bends & risers as conduits rise above grade or above floor

G.Lighting & receptacle circuit conductors shall be copper THHN-THWN-2 600 volt, 75 deg c, color coded as described under applicable codes. No romex, plastic flex tubing etc permitted. Light fixture wire insulation shall have temp rating not less than individual fixture manufacturers recommended rating.

H. Circuits w/ no. 8 or larger conductors, motor circuits, power & feeder circuits & building service feeders shall be copper THHN-THWN-2 600 volt, 75 deg c. I. All materials used to terminate, splice or tap conductors: designed for, properly sized for, & UL listed for specific application & conductors involved, & installed in strict accordance w/ manufacturer's recommendations, using the manufacturer's

recommended tools. J. Where wiring is indicated as installed, but connection is indicated "future" or "by other division, trades, or contracts", leave minimum 3-foot "pigtail" at box, tape

K. Number of conductors in specific raceway "home run" is indicated w/ cross lines (tick marks) on each "circuit run" on drawings. In general, direction of branch circuit "home run" routing is indicated on drawings, complete w/ circuit numbers & panelboard designation. Continue all such "home run" wiring to designated

panelboard, as though "circuit runs" were indicated in their entirety. L. Wiring shall have insulation of proper color to match NEC color code. In larger sizes, where properly colored insulation is not available, use vinyl plastic electrical tape of appropriate color around each conductor at all termination

points, junction & pull boxes. GROUNDING

ends of conductors, & cover box.

A. Supplement grounded neutral of secondary distribution system w/ equipment grounding system, installed so that metallic structures, enclosures, raceways, iunction boxes, outlet boxes, cabinets, machine frames, portable equipment & other conductive items operate continuously at ground potential & provide low

impedance path for ground fault currents. B. System shall comply w/ national electrical code, drawings & as specified. C. Provide equipment ground bus in base of low voltage, switchgear brazed or

otherwise adequately connected by an approved method to ground rods. D. Provide in conduit green insulated copper ground conductor to main metallic water service entrance & connect by means of adequate ground clamps.

E. Equipment grounding conductors for branch circuit home runs shown on drawings shall indicate an individual & separate ground conductor for that branch circuit which shall be terminated at branch circuit panelboard, switchboard, or other distribution equipment.

F. Provide low voltage distribution system w/ separate green insulated equipment grounding conductor for each single or three-phase feeder. Single phase 120 volt branch circuits for lighting & power shall consist of phase & neutral conductors & green ground conductor installed in common conduit which shall serve as grounding conductor.

G.Grounding conductors shall be as shown on plans or if not specifically shown shall be no smaller than that required by NEC.

RACEWAY INSTALLATION

A.Install all conductors & cable in raceways continuous without taps or splices. Splice or tap only in approved boxes & enclosures w/ approved solderless connectors, or crimp connectors & terminal blocks for control wiring, & keep to minimum required. Insulate all splices, taps, & joints as required by codes.

B. Install all circular raceways concealed above suspended ceilings or concealed in walls or floors wherever possible except where otherwise indicated. 1) All conduit, junction boxes, etc. Above ceilings shall be supported from

structure. Pipe sleeves, hangers & supports shall be furnished & set & contractor shall be responsible for proper & permanent locations. 2) Support all conductors & cables in vertical installations, as required by NFPA 70, by installing cable supports or plug-type conduit riser supports, or wire-mesh safety grips.

C.Provide GRS for all conduits run underground, exposed to weather, or exposed to other hazardous conditions. Provide GRS installed below grade w/ corrosion resistant bonded-plastic or approved mastic coating. This shall include 90-degree

elbow below grade & entire vertical transition to above grade. D. Provide interlocking spacers for multiple runs of UG conduits in same trench. E. All other raceway may be EMT where approved by local code. Use compression type fittings for EMT, w/ all fittings UL listed for environment in which they are

F. Use FMC for final connection to each motor & transformer, & to any device that would otherwise transmit motion, vibration, or noise. Use LFMC where exposed to liquids, vapors or sunlight.

1) Provide all FMC & LFMC w/ an insulated bonding conductor.

G.Install raceways parallel & perpendicular to building lines.

H.Install raceways to requirements of structure & to requirements of all other work on project. Install raceway to clear all openings, depressions, pipes, ducts, reinforcing steel, & other immovable obstacles. Install raceways set in forms for concrete structure in such manner that installation will not affect strength of

. Install raceways continuous between connections to outlets, boxes & cabinets w/ minimum possible number of bends & not more than equivalent of four 90-degree bends between connections. Use manufactured elbows for all 45- & 90-degree bends, unless approved by engineer in advance. Make other bends smooth & even & without flattening raceway or flaking galvanizing or enamel. Radii of bends shall be as long as possible & never shorter than corresponding

trade elbow. Use long radius elbows where necessary, indicated, or both. J. Securely fasten raceways in place w/ approved straps, hangers & steel supports as required. Attach raceway supports to building structure. Hang single raceways for feeders w/ malleable split ring hangers w/ rod & turnbuckle suspension from inserts spaced not over 10 feet apart in construction above.

K. Clamp groups of horizontal feeder raceways to steel channels that are suspended from inserts spaced not over 10 feet apart in construction above. Securely clamp vertical feeder raceways to structural steel members attached to structure. Install cable clamps for support of vertical feeders where required. Add raceway supports within 12 inches of all bends, on both sides of bends. Do not support raceways from suspended ceiling components.

L. Ream raceway ends, thoroughly clean raceways before installation, & keep clean after installation. Plug or cover openings & boxes as required to keep raceways clean during construction & fish all raceways clear of obstructions before pulling conductors wires. Provide raceways of ample size for pulling of wire & not smaller than code requirements & not less than 3/4", unless indicated otherwise on drawings.

M.Protect all raceway installations against damage during construction. Repair all raceways damaged or moved out of line after roughing-in to meet engineer's approval without additional cost to owner

N. Align & install true & plumb all raceway terminations at panelboards, switchboards, motor control equipment & junction boxes.

embedded) or across (if exposed) expansion joints P. Install pull wire in each empty raceway that is left for installation of conductors or cables under other divisions or contracts. Use polypropylene or monofilament

O.Install approved expansion/deflection fittings where raceways pass through (if

plastic line. Leave min. 24" slack at each end. Q.Make all joints & connections in manner that will ensure mechanical strength &

R. Effectively seal raceways, by installing conduit fitting at boundary of two spaces, & filling it w/ an approved pliable material, after conductors or cables have been installed & tested, whenever raceways pass from non-cooled to cooled spaces or transition from outside facility or enclosure to inside, whether buried or exposed.

. BUSHINGS & LOCKNUTS A.Rigidly terminate conduits entering sheet metal enclosures to enclosure w/ bushing & locknut on inside & locknut or an approved hub on outside. Conduit

shall enter enclosure squarely. B. Provide bushings & locknuts made of galvanized malleable iron w/ sharp, clean-cut threads. Where EMT enters box, provide approved EMT compression

C.Use insulated, grounding, or combination, bushings wherever connection is subject to vibration or moisture when required by NFPA 70, or both.

6. JUNCTION & OUTLET BOXES

A. All boxes including light fixture, switch, receptacle, & similar outlet boxes: National Electrical, Appleton, Steel City, Raco, or approved equal, galvanized steel knockout boxes, suitable in design to purpose they serve & space they occupy. Size as required for specific function or as required by NFPA 70, whichever is larger.

1) Lighting fixture boxes in ceilings shall not be less than 4" octagonal knockout type.

B. Set all outlet boxes in walls, columns, floors, or ceilings so they are flush w/ finished surface, accurately set, & rigidly secured in position. Provide plaster rings, extension rings &/or masonry rings as req'd for flush mounting. Provide approved cast outlet boxes, w/ hubs & weatherproof covers, in all areas subject to damp, wet, or harsh conditions.

C. Coordinate locations of outlet boxes. Outlets are only approx located on small scale drawings. Use great care in actual location by consulting various large scale detailed drawings used by other division trades, & by securing definite locations from architect.

D. All outlets, shall be mounted w/ bottom at 18" AFF & switches w/ bottom at 44" AFF floor unless noted otherwise on plans. Refer to arch for other required elevations & cabinetry coordination.

ELECTRICAL IDENTIFICATION

A. Manufactured labels for each panelboard & transformer. Typewritten panel schedules mounted in panels

B. Printed tape style label for each receptacle indicating panel & circuit #. C.Manufactured labels for all disconnect switches indicating equipment served. D.Branch circuits - identify each circuit w/ wire markers when enclosure label & wire colors do not provide enough information to identify each circuit without

tracing. Feeders & branch circuit home runs w/ wire marker w/ panel & ckt #. Box covers above lay-in ceilings neatly marked w/ indelible marker. E. Fire alarm - nameplate on each fire alarm terminal cabinet. Label all wiring. 8. <u>DIGITAL LIGHTING CONTROLS</u>

A.Provide DLM systems consisting of lighting control panels, room controllers, motion sensors, daylight sensors, & other other controls as necessary to achieve lighting switching & dimming control indicated on the drawings. B. Provide all interconnecting wiring, controls, programming & owner training for the

C. Provide systems by: Cooper, Hubbell, Leviton, Phillips, Sensor Switch, Watt

Stopper, Lutron. D.Execution: 1) Calibrate all sensor time delays & sensitivity for proper detection of

occupants & energy savings. Adjust time delays. 2) Provide documentation of room by room system configuration including: sensor parameters, time delays, sensitivities, & daylighting setpoints, sequence of operation, load parameters. 3) Post start-up tuning - 30 days after occupancy contractor shall adjust

sensors to meet the owner's requirements. Provide a detailed report to the architect / owner of post start-up activity.

9. PANELBOARDS

A.Branch circuit 208/240v panels shall be capacity shown w/ tin plated copper bussing & braced for minimum of 10 000a aic or as otherwise noted or required (series rated acceptable). Bolt on circuit breakers. 480v panels same except 14,000a aic min. or as otherwise noted. Minimum 20" wide w/ galv steel enclosure w/ hinged door & keyed lock. Coord trim w/ mounting location. Typewritten card directory.

B. Equivalent by Square D, Siemens, Cutler Hammer, Or GE.

A. Color of devices as directed by architect.

B. Convenience outlets:

1) Spec grade 20 amp duplex w/ ground & SS wall plates. Other outlets shall be verified w/ equipment suppliers for proper NEMA configurations. Provide GFCI rated devices where indicated & as req'd per code. 2) Equivalent devices by Cooper/Eaton, Hubbell, Leviton, Pass &

Seymour/Legrand C. Switches:

1) Light switches - spec grade 20 amp toggle switches w/ SS wall plates.

3) Ceiling motion switches - spec grade, dual technology, model as req'd by room configuration, all necessary power packs & relays.

2) Wall motion switches - spec grade, pir, override.

4) Wall motion switches (bathroom) - dual relay, spec grade, PIR, 2nd relay for operation of exhaust fan delay.

5) Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on-off switches, with audible frequency and EMI/RFI suppression filters. Continuously adjustable slider; with single-pole or three-way switching. Comply with UL 1472. 600W or 1200W as required by load. Incandescent Lamp Dimmers: 120 V; control shall follow square-law

dimming curve. On-off switch positions shall bypass dimmer module. LED Dimmers: Modular; compatible with dimming drivers in fixture(s); if other than 0-10V dimming is provided, verify dimmer is compatible with driver for full range of dimming (100-10%). 6) Equivalent devices by Leviton, Bryant, Hubbell, Wattstopper, Lithonia,

D. Weatherproof cover plates:

1) Provide GFCI receptacles for weatherproof receptacles. 2) For wet locations: in-use NEMA 3R, UL-labeled plates die cast metal and

3) For damp locations: UL-listed for wet locations w/ cover(s) closed; die-cast aluminum or type 302 SS; single-cover for switches & vertically mounted receptacles; double-cover for horizontally mounted receptacles; self-closing

11. DISCONNECT (SAFETY) SWITCHES

A.Disconnect (safety) switches: Square D, Siemens, Cutler Hammer, or General Electric fused or non-fused (as indicated on drawings or required) NEMA KS1, heavy duty, externally operated, visible-blade safety switches; NEMA enclosure type indicated on drawings or suitable for environment in which installed. Based on fusible switch & fuse sizes indicated, include class R, J, or L fuse provisions as applicable.

B. Where indicated, provide fusible switches permanently labeled as suitable for use as service entrance equipment, w/ integral & separate neutral & ground assemblies, suitable for sizes of conductors indicated. Do not double-lug any terminations not specifically listed as suitable for more than one conductor.

C. Provide switches where not furnished w/ starting equipment, at all other points required by NFPA 70, & where indicated on drawings.

12. <u>LUMINAIRES</u>, <u>LAMPS</u> & BALLASTS

A.Refer to lighting fixture schedule plans for fixture types. B. Equivalent luminaires by Hubbell, Infinity, Lithonia, Williams, Eaton [Cooper]. C.LED Fixtures

1) Lamps & modules: Philips, General Electric, Osram/Sylvania, Cree, Nichia. 2) LED components, lamps, drivers, and fixtures shall comply with: PCC 47 CFR Part 15; UL 8750; ANSI/NEMA Standards C78.377, NEMA SSL-1, C82.77, IESNA Standards TM-16-05, RP-16, LM-79, LM-80 and TM-21.

3) Drivers shall be integral to the fixture unless otherwise shown or specified. D. Emergency ballasts/drivers/batteries/inverters - shall be Bodine, lota. Coordinate voltages and outputs for min. 90 minute operation with fixtures scheduled and controls indicated and provided. E. Execution:

1) Provide lighting fixtures w/ lamps & accessories req'd for hanging. Coord mounting of lighting fixtures w/ architect & G/C. Additional fixture supports shall be provided by E/C. Supports shall comply w/ latest edition of NEC. Provide lighting fixture securing clips as required. Consult arch plans for ceiling types & provide surface & recessed lighting fixtures w/ appropriate mounting components & accessories.

2) Fixtures mounted in fire rated ceilings shall be provided & installed w/ fire rated enclosures to maintain ceiling integrity.

3) Poles & support components: comply w/ AASHTO LTS-4. Provide steel poles in color as specified or selected by architect. Provide bolt covers. Provide concrete base for pole & ground rod. 13. ADJUSTING. ALIGNING & TESTING

A. Adjust, align, & test all electrical equipment on this project provided under this division & all electrical equipment furnished by others for installation or wiring under this division for proper operation. Test all systems & equipment according to requirements in NETA ATS (latest edition) & all additional requirements

B. In following sections. Maintain following on project premises at all times: true

resistance tester. Provide test data readings as requested or as required by

RMS reading voltmeter, true RMS reading ammeter, & megohmmeter insulation

14. SYSTEM START UP

A.Prior to starting up electrical systems:

1) Check all components & devices.

2) Lubricate items accordingly. 3) Tighten screws & bolts for connectors & terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486a & UL 486b.

4) Check & record building's service entrance voltage, grounding conditions, grounding resistance, & proper phasing.

B. Replace all burned-out lamps & lamps used for temporary construction lighting in permanent light fixtures.

C. After all systems have been inspected & adjusted, confirm all operating features required by drawings & specifications & make final adjustments as necessary.

END OF DIVISION 26000

SECTION 27000 - COMMUNICATIONS

1. GENERAL ELECTRICAL REQUIREMENTS

A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements.

2. TELECOMMUNICATIONS SYSTEMS PROVISIONS

A.Provide incoming telephone and/or data service raceways as indicated on

drawings or as required by serving telecommunications company. B. Provide 3/4-inch thick plywood board, fire-retardant- treated & stamped FRT, securely anchored to wall, at location & of size as indicated on drawings.

C.Provide flush mounted telephone and/or data outlet boxes w/ 3/4-inch EMT stub-up concealed to accessible ceiling space at locations as indicated on

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ELECTRICAL SPECIFICATIONS

GENERAL HVAC NOTES

- 1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. ROUND BRANCH DUCT RUNOUTS AND FLEXIBLE DUCT SHALL BE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.
- 3. MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-0".
- 4. ALL AIR DISTRIBUTION DEVICES SHALL HAVE LOCKABLE VOLUME CONTROL
- 5. ALL 90 DEGREE TURNING ELBOWS SHALL BE SMOOTH ROUND OR SQUARE WITH TURNING VANES.
- 6. DUCT SIZES SHOWN ON PLANS ARE INSIDE FREE AREA.
- 7. PROVIDE ACCESS DOORS IN DUCTS AHEAD OF ALL AUTOMATIC, FIRE, AND SMOKE DAMPERS.
- 8. FOR BALANCING THE OUTSIDE AIRFLOW QUANTITIES, REFER TO HVAC

HVAC PLAN KEYED NOTES

- 1 ROUTE INTAKE AND EXHAUST DUCT UP THROUGH ROOF. TERMINATE WITH CONCENTRIC ROOF CAP. REFER TO DETAIL.
- 2 INSTALL CU-1 ON A 4" CONCRETE HOUSEKEEPING PAD.
- 3 ROUTE CONDENSATE DRAIN TO JANITOR'S SINK. REFER TO PLUMBING PLANS FOR EXACT LOCATION.
- 4 TERMINATE EXHAUST DUCT WITH 6" ROOF CAP AND MAINTAIN 10' CLEARANCE FROM ALL O.A. INLETS.
- 5 INSTALL O.A. LOUVER 12" BELOW CEILING, MAINTAIN 10' CLEARANCE FROM ALL EXHAUST TERMINATIONS, AND INTERLOCK DAMPER ACTUATOR WITH FAN
- 6 10" OUTSIDE AIR DUCT. TERMINATE 12"x18" WALL LOUVER.
- 7 INSTALL RETURN AIR TRANSFER ABOVE DOOR. PROVIDE WITH SOUND ATTENUATION DEVICE BY TAMARACK OR SIMILAR.
- 8 ROUTE REFRIGERANT LINES THRU ATTIC TO F-1.
- 9 INSTALL PACKAGED WALL FAN 12" BELOW CEILING AND MAINTAIN 10' CLEARANCE FROM ALL O.A. INLETS.
- 10 INSTALL RETURN GRILLE LOW ON DOOR 12" A.F.F.



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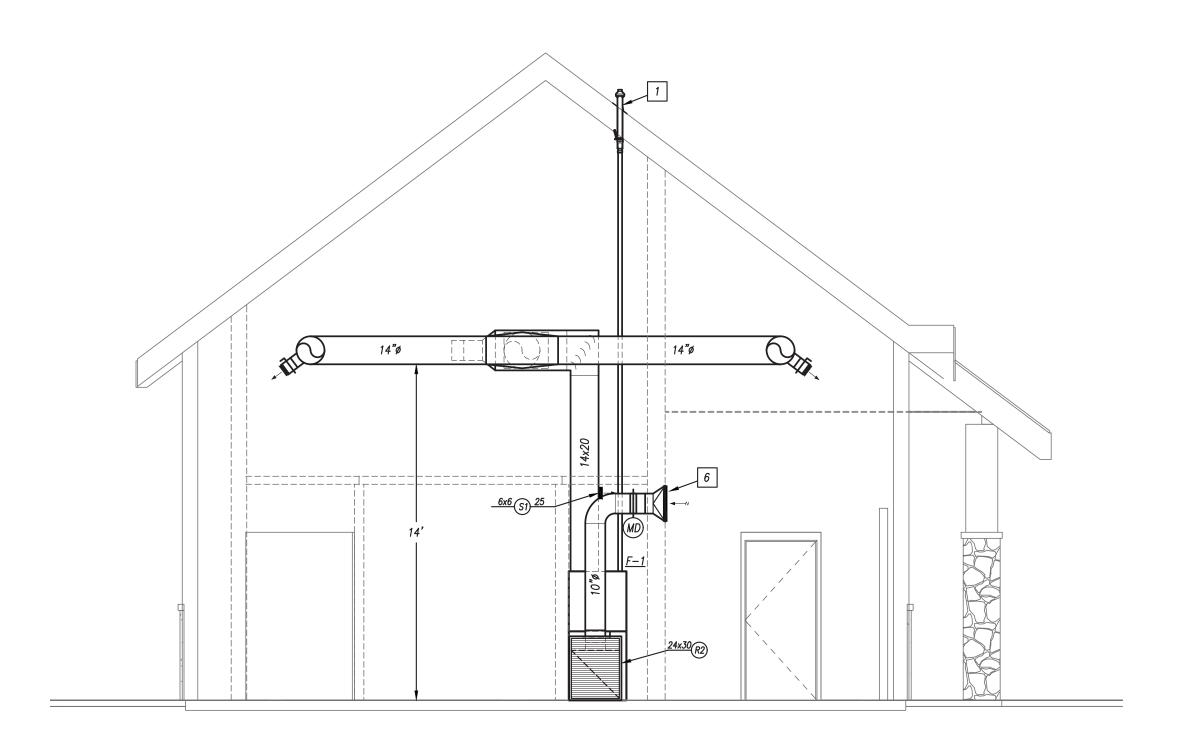
> CLUBHOUSE **WOODSIDE RIDGE**

NW AMBERSHAM DR, S SUMMIT MO 64081

DATE ISSUED: March 16, 2020 REVISION

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HVAC - SECTION VIEW A

1/4" = 1'-0"

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WOODSIDE

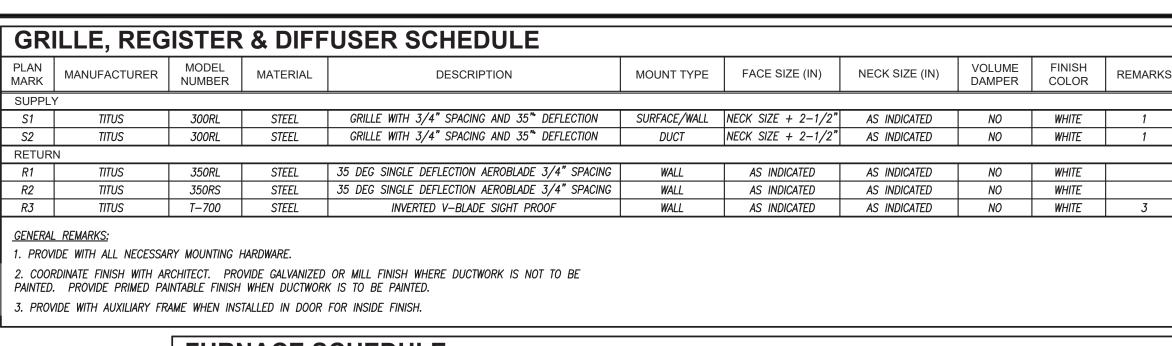
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> MECHANICAL SCHEDULES AND DETAILS



FURNACE SCHEDULE

PLAN MANUEACT	MANUFACTURER	MODEL	CEM	O.A.	FAN DAT	ГΑ	C	OOLING		HEATING		ELECTRICAL	REMARK	
MARK MARK		NUMBER	CFM	CFM	E.S.P. (IN)	HP	COIL MODEL	CAPACITY (MBH)	INPUT (MBH)	OUTPUT (MBH)	EFF.	ELECTRICAL	KEWAKK	
F-1	DAIKIN	DM92SS0805	1,990	300	0.5"	1/2	CAPF4860	60.0	80.0	73.6	92.0%	120V / 1PH	1	

1. HIGH EFFICIENCY FURNACE.

HVAC PIPING MATERIAL SCHEDULE

PIPING					FIELD TEST	ALLOWABLE IN	INSULA	ATION
SYSTEM	SIZE	TYPE/SCHED	MATERIAL	ACCEPTABLE FITTINGS	PRESSURE/TIME	PLENUMS	TYPE	THICKNESS
CONDENSATE DRAIN INTERIOR	1/2" - 2"	L	COPPER	SOLDER, PRO-PRESS	10 FT - 1/2HR	YES	FIBERGLASS W/ ASJ	1/2" (PLENUM ONLY)
REFRIGERANT LINES	1/2" - 2"	ACR	COPPER	BRAZED		YES	ELASTOMERIC	3/4"

NOTES:

- 1. ALL PIPING AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50.
- 2. ALL INSULATION THICKNESSES SHALL MEET ASHRAE 90.1 2007 REQUIREMENTS AT A MINIMUM.
- 3. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

EXH	EXHAUST FAN SCHEDULE												
PLAN	MANUFACTURER	MODEL	TYPE	SERVICE			AN DAT			ELECTRICAL	CONTROL	REMARKS	
MARK		NUMBER			CFM	E.S.P. (IN)	HP	DRIVE	RPM				
EF-1	COOK	GC-148	CEILING CABINET	BATHROOM	132	0.250	46W	DIRECT	1,075	120V / 1PH	THERMOSTAT	2	
EF-2	COOK	10XP24D133	WALL FAN	POOL EQUIP.	400	0.125	1/2	DIRECT	1,300	120V / 1PH	THERMOSTAT	2	
EF-3	COOK	GC-128	CEILING CABINET	BATHROOM	63	0.250	30W	DIRECT	750	120V / 1PH	THERMOSTAT	1	

REMARKS:

1. UNIT OPERATION SHALL BE INTEGRATED WITH LIGHT SWITCH.

2. PROVIDE WITH LINE VOLTAGE THERMOSTAT.

DUCT	WORK INSU	LATION SCHED	JLE				
		DUCT			INSULATION		
PURPOSE	DUTY	LOCATION	STYLE	MATERIAL	APPLICATION	THICKNESS	NOT
SUPPLY		CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"	
	LOW PRESSURE/VELOCITY	CONCEALED	ROUND	MINERAL FIBER	WRAPPED	1-1/2"	
		EXPOSED	ROUND	FIBERGLASS	LINED	1"	3
	ALL	UNCONDITIONED ATTICS	ALL	MINERAL FIBER	WRAPPED	1-1/2"	4
RETURN	LOW PRESSURE/VELOCITY	CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"	
	LOW PRESSURE/ VELOCITI	CONCEALED	ROUND	MINERAL FIBER	WRAPPED	1-1/2"	
	ALL	UNCONDITIONED ATTICS	ALL	MINERAL FIBER	WRAPPED	1-1/2"	4
EXHAUST	LOW PRESSURE/VELOCITY	CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"	
	LOW FRESSORE/ VELOCITI	CONCEALED	ROUND	FIBERGLASS	LINED	1/2"	1
OUTSIDE AIR	ALL	CONCEALED OR MECH. SPACE	ROUND	MINERAL FIBER	WRAPPED	1-1/2"	

NOTES:

- 1. PROVIDE LINER ONLY WITHIN 10' OF FAN FOR ACCOUSTICS.
- 2. THICKNESS SHALL ENCAPSULATE DUCT CONSTRUCTION.
- 3. CONTRACTOR OPTION TO USE ROUND DUCT LINER OR PROVIDE PERFORATED LINER DOUBLE WALL DUCT (SOLID LINER FOR OUTSIDE AIR DUCTS).
- 4. IN ADDITION TO OTHER SCHEDULED INSULATION.

GENERAL REMARKS (APPLICABLE TO ALL TYPES):

- 1) ALL DUCTWORK, INSULATION AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50.
- 2) ALL INSULATION THICKNESSES SHALL MEET ASHRAE 90.1 2010 REQUIREMENTS AT A MINIMUM. 3) REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION FOR INSULATION PRODUCTS AND SYSTEMS.

PLAN	MANUFACTURER	MODEL		MINIMUM	AMBIENT	ELECTRICAL			REMARKS
MARK	WANT ACTORER	NUMBER	(MBH)	SEER	TEMP. (°F)	VOLTS / PH	M.C.A.	M.O.C.P.	INLIVIATOR
CU-1	DAIKIN	DX14SN060	60.0	14.0	105°	230V / 1PH	32.8	50	1,2

1. COOLING CAPACITY BASED ON A SUCTION TEMPERATURE OF 49°F.

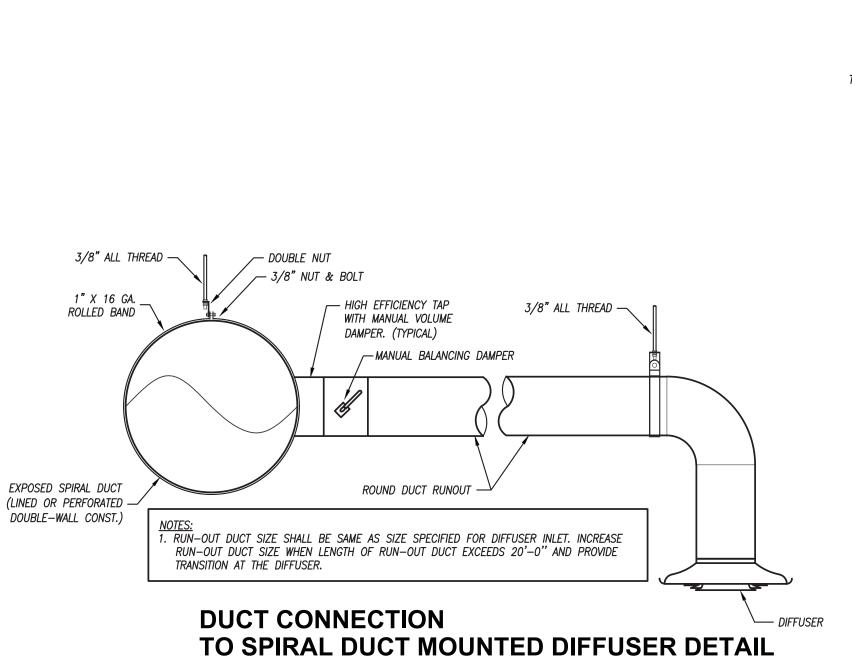
2. PROVIDE WITH 4" CONCRETE PAD.

FLECTRIC			
	HEAIEI	K SCHED	JL
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EH-1 QMARK	CDF-SE	CEILING HEATER	300	2.0	240	1,2,3

<u>REMARKS:</u>

- . PROVIDE WITH INTEGRAL THERMOSTAT AND DISCONNECT.
- 2. PROVIDE WITH ALL NECESSARY SUPPORTS, HANDERS, ETC.
- 3. INSTALL WITH CLEARANCES PER MANUFACTURER'S RECOMMENDATIONS.



1" FOR EACH 1" OF

SMOKE DETECTOR.

OUTSIDE AIR DUCT

PROVIDE 120V RATED CURRENT SWITCH TO OPERATE —

MOTORIZED DAMPER ANY TIME FAN IS OPERATING.

HVAC UNIT OR A NEARBY CONVENIENCE RECEPTACLE

CIRCUIT. ALL WORK TO CONFORM TO ELECTRICAL

MOUNT INTERNAL TO UNIT OR EXTERNAL IN AN

CONNECT TO NEAREST 120V POWER FROM UNIT -

APPROPRIATE ELECTRICAL ENCLOSURE.

CODES AND DIV. 26 SPECIFICATIONS.

OUTSIDE AIR DAMPER WIRING SCHEMATIC

NOT TO SCALE

RE: ELECTRICAL PLANS

120V NORMALLY CLOSED OUTSIDE AIR —

DOWNSTREAM OF ANY SMOKE DETECTOR.

NOT TO SCALE

DAMPER LOCATED IN OUTSIDE AIR DUCTWORK. DUCTWORK SHALL CONNECT

MAXIMUM NEGATIVE

STATIC PRESSURE

DRAW THRU UNITS

BLOW THRU UNITS

CONDENSATE TRAP DETAIL

ROUTE (2)#12 WIRES FOR MOTOR

1/2" CONDUIT OR MC CABLE.

- SPLIT SYSTEM UNIT WITH FAN

ACTUATOR AND (1)#12 GROUND IN

· INTEGRAL MOTOR

PACKAGED UNIT

STARTER/RELAY WITH

COMBUSTION AIR -

MAIN SUPPLY DUCT

1/4 X "W" - 4"MIN - 45°

BRANCH DUCT ----

SEE PLAN FOR

TURNING VANES —

SUPPLY REGISTER -

OR BRANCH DUCT

MAIN SUPPLY DUCT

NOT TO SCALE

SPLIT DIMENSION

-1/2" PLUS MAX.

TOTAL STATIC PRESSURE

ROOF BOOT

FLASHING -

CONCENTRIC ROOF VENT

PROVIDE VOLUME DAMPER

└─ PROVIDE VOLUME DAMPER

SQUARE ELBOW SHOWN.

PROVIDE ROUND ELBOW

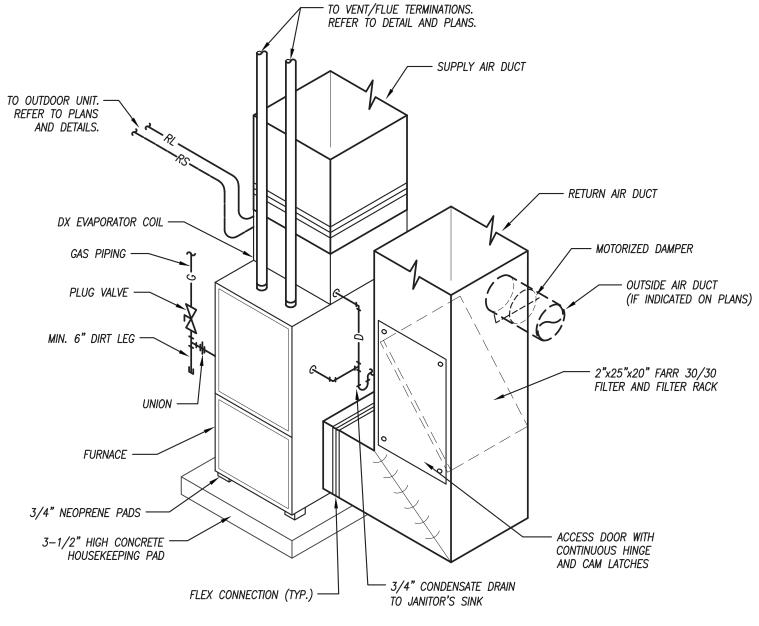
WHEN SHOWN ON PLANS

PROVIDE VOLUME DAMPER

PLAN VIEW
AIR SPLIT TYPE DUCT TAKE-OFF

BRANCH DUCT TAKE-OFF

DUCTWORK TAKEOFFS



- IRON CHANNEL FRAME

REMOVABLE SCREEN

– PROPELLER EXHAUST FAN BELT DRIVEN

— CEILING EXHAUST FAN

- SCREWS. NUMBER, SPACING, AND SIZE PER

MANUFACTURER'S RECOMMENDATIONS

- HANGING VIBRATION ISOLATOR

NOT TO SCALE

GUARD

CABINET EXHAUST FAN MOUNTING DETAIL

ALL 4 SIDES

-DAMPER MOTOR

PROPELLER EXHAUST FAN DETAIL

STRUCTURAL MEMBER —

1/4" X 20 ALL THREAD ___

FACTORY GRILLE -

EXHAUST DUCT PER PLANS —

IF SPECIFIED

—12" MIN CLEARANCE ABOVE

HIGHEST ANTICIPATED SNOW

LEVEL. MAX. 24" ABOVE ROOF.

LOUVER -

AIR CUSHION AT END OF RUN BEYOND LAST TAP OR

"D" EQUAL TO GREATER OF

WIDTH OR MAIN DUCT WIDTH

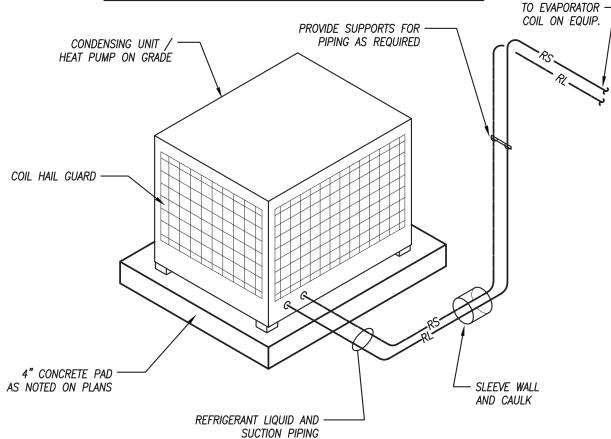
BRANCH. CUSHION DEPTH

6" OR 1/2 MAIN DUCT

NOT TO SCALE

FLOW

HIGH-EFFICIENCY FURNACE DETAIL NOT TO SCALE



<u>NOTES:</u> 1. CONDENSING UNIT MANUFACTURER TO SIZE ALL REFRIGERANT LINES

AND PROVIDE ALL ACCESSORIES FOR VERTICAL RUNS AS REQUIRED.

2. INSULATE REFRIGERANT SUCTION LINES — REFER TO SPECIFICATIONS

CONDENSING UNIT / HEAT PUMP DETAIL

PEARSON KENT MCKINLEY RAAF ENGINEERS LL 13300 W 98TH STREET LENEXA, KS 66215 913.492.2400 WWW.PKMRENG.COM MO State Certificate of Authority #E-2002020886

GENERAL PLUMBING NOTES

- 1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. REFER TO PLUMBING FIXTURE / DRAIN SCHEDULES FOR PIPING SIZES FOR INDIVIDUAL CONNECTIONS TO FIXTURES AND RISERS NOT SHOWN ON PLANS.
- 3. NO SANITARY OR VENT PIPING BELOW GRADE SHALL BE LESS THAN 2".
- 4. NO DOMESTIC WATER PIPING SHALL BE SMALLER THAN 3/4" UNLESS NOTED
- 5. ALL VENT PIPING SHOWN IS DIAGRAMMATIC. USE APPROPRIATE FITTINGS FOR VENT PIPING BELOW FLOOD RIM OF FIXTURE.
- 6. NOT ALL INTERIOR CLEANOUTS ARE SHOWN FOR DRAWING CLARITY. CONTRACTOR SHALL INSTALL ALL CODE—REQUIRED CLEANOUTS (RE: GENERAL NOTES ON COVER SHEET). COORDINATE EXACT LOCATIONS OF CLEANOUTS WITH ARCHITECT.
- 7. PROVIDE 1/2" TRAP PRIMER PIPING FOR ALL FLOOR DRAINS TO NEAREST TRAP PRIMER VALVE. PIPING SHALL BE TYPE "K" SOFT COPPER SEAMLESS WITH NO JOINTS FROM VALVE TO DRAIN.

PLUMBING PLAN KEYED NOTES

- 1) REFER TO CIVIL PLANS FOR CONTINUATION, COORDINATE EXACT LOCATION WITH PLANS
- 2) 3/4" POOL WATER MAKE-UP LINE. REFER TO POOL PLANS FOR CONNECTION.
- 3) INSTALL TANKLESS WATER HEATER UNDER COUNTER. ROUTE HOT WATER TO SINK BELOW COUNTER.

4) ROUTE DCW SUPPLY TO EWC-1 UNDER COUNTER TO AND LOCATE

EXTERIOR DRINKING FOUNTAIN WINTERIZATION.

SHUT-OFF VALVE IN AN ACCESSIBLE LOCATION UNDER COUNTER TOP FOR

- 5) EXTEND 1" NG PIPING DOWN TO FURNACE. REFER TO MECHANICAL PLANS FOR EXACT LOCATION OF FURNACE.
- 6) 1" GAS LINE UP THROUGH SLAB WITH SHUT OFF VALVE CONCEALED IN GRILL STATION. 7) INSTALL WATER HEATER ON SHELF ABOVE JANITOR'S SINK. SHOWN HERE FOR CLARITY.
- (8) DCW STUB UP THRU FLOOR TO SERVE S-1 AND TWH-1.
- 9 TO IRRIGATION SYSTEM. COORDINATE SIZE, LOCATION, AND CONTINUATION WITH IRRIGATION CONTRACTOR OR ARCHITECT.
- (10) PROVIDE COMPRESSED AIR QUICK CONNECT FOR WINTERIZATION.



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PLUMBING PLAN

NOT TO SCALE

NOT TO SCALE

ИARK	FIXTURE MODEL	FIXTURE DESCRIPTION		FITTINGS AND TRIM	REMARKS		/BING FIXT		SIZES
			FITTINGS MODEL	FITTINGS AND DESCRIPTION	TALIWI (TATO	WASTE	VENT	DCW	DH
EWC-1	HALSEY—TAYLOR HAC8FSBLQ	ADA—COMPLIANT, DUAL—HEIGHT, BARRIER—FREE, ELECTRIC WATER COOLER. PROVIDES 8.0 GPM OF 50°F WATER AT 90°F AMBIENT. ADA—COMPLIANT FRONT AND SIDE PUSHBARS. LEAD FREE. MOUNT WITH MIN. 27" KNEE CLEARANCE AND SPOUT AT NO MORE THAN 36" A.F.F.			4	2"	2"	1/2"	
WH-1	ZURN Z1310	EXPOSED, AUTOMATIC DRAINING, NON-FREEZE, ANIT-SIPHON WALL HYDRANT COMPLETE WITH INTEGRAL BACKFLOW PREVENTER. BRASS CASING, ALL-BRONZE INTERIOR PARTS. NON-TURNING OPERATING ROD WITH FREE-FLOATING COMPRESSION CLOSURE VALVE. REPLACEABLE BRONZE SEAT AND SEAT WASHER. COMBINATION 3/4" FEMALE AND 1" MALE IP INLET CONNECTION STANDARD. INCLUDES OPERATING KEY.						3/4"	_
JS-1	FIAT MSB-2424	JANITORS SINK: 24"x24"x10", WHITE, ONE—PIECE MOLDED STONE MOP BASIN. UNIT SHALL BE ONE HOMOGENOUS PIECE. STAINLESS STEEL INTEGRAL DRAIN BODY WITH CAULKED CONNECTION FOR 3" PIPE. PROVIDE STAINLESS STEEL BUMPER AND WALL GUARDS, MOP BRACKETS, HOSE RACK.	CHICAGO FAUCET 897—CP	C.P. SERVICE SINK FITTING WITH VACUUM BREAKER, 3/4" HOSE THREAD ON SPOUT, ADJUSTABLE WALL BRACE, PAIL HOOK, AND 1/2" FLANGED FEMALE ADJUSTABLE ARMS WITH INTEGRAL STOPS. CAULK BETWEEN WALL AND FLANGE WITH GE SILICONE SEALANT. 3" C.I. "P" TRAP.		<i>3</i> "	2"	1/2"	1,
L-1	AMERICAN STANDARD 0475.028 "AQUALYN"	ADA—COMPLIANT, COUNTER TOP—MOUNTED LAVATORY. 16" OVAL, WHITE VITREOUS CHINA, SELF—RIMMING BASIN WITH FAUCET HOLES ON 4" CENTERS. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.	CHICAGO 2200-4-2300-4KABCP	FAUCET: SINGLE HANDLE CHROME PLATED CAST BRASS MIXING FAUCET, 4" CENTERS, 4–3/4" SPOUT, 2.2GPM VANDAL PROOF AERATOR, 4–5/8" METAL LEVER HANDLE. CERAMIC VOLUME CONTROL & HOT WATER LIMIT STOP CARTRIDGE. NO POP UP.	1,2,7	2"	2"	1/2"	1
L-2	AMERICAN STANDARD 0355.012	ADA—COMPLIANT WALL—HUNG LAVATORY. 20"x18" WHITE VITREOUS CHINA BOWL WITH 4" BACK FOR USE WITH CONCEALED ARM HANGER. FAUCET HOLES COORDINATED WITH FAUCET AND TRIM. PROVIDE CONCEALED ARM CARRIER. MOUNT TOP OF RIM AT 34" A.F.F.	CHICAGO 2200-4-2300-4KABCP	FAUCET: SINGLE HANDLE CHROME PLATED CAST BRASS MIXING FAUCET, 4" CENTERS, 4-3/4" SPOUT, 2.2GPM VANDAL PROOF AERATOR, 4-5/8" METAL LEVER HANDLE. CERAMIC VOLUME CONTROL & HOT WATER LIMIT STOP CARTRIDGE. NO POP UP.	1,2,3,4,5	2"	1-1/2"	1/2"	1
S-1	ELKAY LR–3322	33" X 22" DOUBLE COMPARTMENT STAINLESS STEEL SINK. EACH BOWL DIMENSIONS ARE 13-1/2L X 16W X 8-1/8D SELF-RIMMING WITH 1-3/4 IN. RADIUS COVED CORNERS. SEAMLESS #18 GAUGE, TYPE 302 NICKEL-BEARING STAINLESS STEEL. LK-6K-H SATIN FINISH. FULLY UNDERCOATED. FAUCET HOLES COORDINATED WITH FAUCET AND TRIM. MINIMUM 36" CABINET SIZE REQUIRED	CHICAGO 200–AL8ABCP	DECK-MOUNTED FAUCET WITH 9-1/2" SWING L-TYPE SPOUT. 2-3/4" METAL LEVER HANDLES WITH QUATURN CARTRIDGE. POLISHED CHROME FINISH. PROVIDE WITH SIDE SPRAY. 2.2GPM. PROVIDE BASKET STRAINER	2,3,5,8	2"	2"	1/2"	1,
	IN—SINK—ERATOR BADGER 5	GARBAGE DISPOSAL. 1/2 HP MOTOR, STAINLESS STEEL GALVANIZED STEEL CONSTRUCTION AND GRINDING ELEMENTS, PERMANENTLY LUBRICATED BEARINGS. PROVIDE WITH STAINLESS STEEL SINK FLANGE AND STOPPER.							
UR-1	AMERICAN STANDARD 6561.017	WALL—HUNG URINAL. WHITE VITREOUS CHINA. 3/4" TOP SPUD. 1.0 GALLON SIPHON JET FLUSHING ACTION. MOUNT FIXTURE RIM AT 24" A.F.F.	SLOAN G2 8186–1	EXPOSED URINAL FLUSH VALVE. BATTERY POWERED CHROME—PLATED, 3/4" I.P.S. SCREWDRIVER BACK—CHECK ANGLE STOP WITH PROTECTIVE CAP. ADJUSTABLE TAILPIECE. 1.0 GALLON, VACUUM BREAKER FLUSH CONNECTION AND SPUD COUPLING FOR 3/4" TOP SPUD. PROVIDE WALL AND SPUD FLANGES. MAXIMUM	6	2"	2"	1"	-
		PROVIDE FLOOR—MOUNTED, HEAVY—DUTY TUBULAR STEEL UPRIGHTS, ADJUSTABLE CARRIER, PLATED HANGER, AND ALL OTHER REQUIRED MOUNTING HARDWARE.		HANDLE HEIGHT PER ADA STANDARDS.					
WC-1	AMERICAN STANDARD MADERA 2234.001 CHURCH	1.6 GALLON, FLOOR-MOUNTED FLUSH VALVE WATER CLOSET. TOP SPUD AND FLAT BOLT COVERS. WHITE VITREOUS CHINA ELONGATED BOWL. 15" HIGH. WHITE, SOLID PLASTIC, OPEN-FRONT SEAT FOR ELONGATED BOWL.	SLOAN G2 8111	EXPOSED WATER CLOSET FLUSH VALVE. BATTERY POWERED CHROME—PLATED. HANDS FREE OPERATION. 1" I.P.S. SCREWDRIVER BACK—CHECK ANGLE STOP WITH PROTECTIVE CAP. ADJUSTABLE TAILPIECE. 1.6 GPF, VACUUM BREAKER FLUSH CONNECTION AND SPUD COUPLING FOR 1—1/2" TOP SPUD. PROVIDE WALL AND SPUD FLANGES. MOUNTING HEIGHT PER	6	4"	2"	1-1/4"	_
	9500C	INTEGRAL BUMPERS. EXTERNALCHECK HINGES WITH STAINLESS STEEL POSTS.	OLOW!	MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH ADA GUIDELINES.		. 10			
NC-2	AMERICAN STANDARD MADERA 3043.001	ADA—COMPLIANT, 1.6 GALLON, FLOOR—MOUNTED FLUSH VALVE WATER CLOSET. TOP SPUD AND FLAT BOLT COVERS. WHITE VITREOUS CHINA ELONGATED BOWL. 16—1/2" HIGH.	SLOAN G2 8111	EXPOSED WATER CLOSET FLUSH VALVE. BATTERY POWERED CHROME—PLATED. HANDS FREE OPERATION. 1" I.P.S. SCREWDRIVER BACK—CHECK ANGLE STOP WITH PROTECTIVE CAP. ADJUSTABLE TAILPIECE. 1.6 GPF, VACUUM BREAKER FLUSH CONNECTION AND SPUD COUPLING FOR 1—1/2" TOP SPUD.	6	4"	2"	1-1/4"	-
	CHURCH 9500C	WHITE, SOLID PLASTIC, OPEN—FRONT SEAT FOR ELONGATED BOWL. INTEGRAL BUMPERS. EXTERNALCHECK HINGES WITH STAINLESS STEEL POSTS.		PROVIDE WALL AND SPUD COUPLING FOR 1-172 TOP SPUD. PROVIDE WALL AND SPUD FLANGES. MOUNTING HEIGHT PER MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH ADA GUIDELINES.					

- 2. PROVIDE CHROME-PLATED BRASS P-TRAP. 3. PROVIDE LOOSE KEY STOPS AND FLEXIBLE RISERS.
- 4. PROVIDE CONCEALED ARM TYPE CARRIER WITH SQUARE, TUBULAR STEEL UP-RIGHTS AND BLOCK TYPE BASES.
- 5. INSULATE EXPOSED TAILPIECE, P—TRAP, AND WATER RISERS. REFER TO SPECIFICATIONS FOR INSULATION METHODS.
- 6. PROVIDE FLUSH VALVE HANDLE ON WIDE SIDE OF STALL. 7. PROVIDE HANDLE STOPS AND FLEXIBLE RISERS.
- 8. PROVIDE CHROME-PLATED BRASS TAILPIECE AND BASKET STRAINER.

GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

1) ALL PUBLIC LAVATORIES AND SINKS SHALL BE PROVIDED WITH ANTI-SCALD ASSE 1070 LISTED VALVE ON HOT WATER SUPPLY.

PIPING					FIELD TEST	ALLOWABLE IN	INSULA	ATION
SYSTEM	SIZE	TYPE/SCHED	MATERIAL	ACCEPTABLE FITTINGS	PRESSURE/TIME	PLENUMS	TYPE	THICKNESS
DOMESTIC COLD WATER	1/2"-2-1/2"	L	COPPER	SOLDER, PRO-PRESS	130 PSI — 1/2HR	YES	FIBERGLASS W/ ASJ	1/2"
DOMESTIC HOT WATER & HW RETURN	1/2"-2-1/2"	L	COPPER	SOLDER, PRO-PRESS	130 PSI — 1/2HR	YES	FIBERGLASS W/ ASJ	1"
DOM. HOT & COLD BELOW GRADE	1/2"-1-1/4"	К	COPPER	CONTINUOUS TUBING, BRAZED	130 PSI – 1/2HR	YES	ELASTOMERIC	3/4" (HOT ONL
NATURAL GAS - ABOVE GRADE	1/2"-2"	SCH. 40	STEEL- SEEMLESS	THREADED IRON	75 PSI – 1HR	YES		
NATURAL GAS BELOW GRADE	ALL	SDR-11	POLYETHYLENE	FUSION JOINTS	100 PSI – 1HR	NO		
SOIL & WASTE BELOW GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO		
DRINKING FOUNT. DRAIN	ALL					YES	ELASTOMERIC	1/2"
RPZ AND SIMILAR EXPOSED DRAIN LINES	ALL	L	COPPER	SOLDER, PRO-PRESS	10 FT - 1/2HR	YES		
CONDENSATE DRAIN INTERIOR	1/2"-2"	L	COPPER	SOLDER, PRO-PRESS	10 FT — 1/2HR	YES	FIBERGLASS W/ ASJ	1/2" (PLENUM O
DOM. WATER SERVICE BELOW GRADE	1"-3"	K	COPPER	CONTINUOUS TUBING, BRAZED	130 PSI - 1/2HR	YES		

1. ALL PIPING AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50.

- 2. ALL INSULATION THICKNESSES SHALL MEET ASHRAE 90.1 2007 REQUIREMENTS AT A MINIMUM.
- 3. REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

2. MOUNT ON SHELF. REFER TO DETAIL

WATER HEATER SCHEDULE - ELECTRIC											
PLAN MARK	MANUFACTURER	MODEL NUMBER	GALLONS	USE	STYLE	HT (IN)	# HTG. ELEMENTS	WATTS	RECOVERY @ 90°F RISE	VOLTAGE/ PHASE	REMARKS
EWH-1	STATE	EN6	28	RESIDENTIAL	LOW BOY	30	2	4,500	21	240V / 1PH	1,2
<u>REMARKS</u> 1. "LOWE	<u>S:</u> BOY"—TYPE WATER HEAT	ER.									

FLO	FLOOR / ROOF DRAIN SCHEDULE											
PLAN MARK	MANUFACTURER	MODEL NUMBER	SERVICE	TOP/GRATE SIZE	WASTE SIZE	REMARKS						
FD-1	WATTS	FD-100L-6-2	FLOOR DRAIN	6 " Ø	2"	1						
FD-2	WATTS	FD-100L-8-4	FLOOR DRAIN	8 " Ø	4"	1						
FS-1	WATTS	FS-714	FLOOR SINK	8"x8"	2"	1						
REMARKS:												

TANKLESS WATER HEATER SCHEDULE - ELECTRIC											
PLAN MARK	MANUFACTURER	MODEL NUMBER	USE	STYLE	# HTG. ELEMENTS	WATTS	RECOVERY @ 90°F RISE	VOLTAGE/ PHASE	REMARKS		
TWH-1	EEMAX	MT010240	LIGHT COMM.	TANKLESS	1	9500	0.73 GPM	240V / 1PH	1		

<u>REMARKS:</u>

1. INSTANTANEOUS—TYPE WATER HEATER. MOUNT BELOW CABINETRY AND INSTALL 0.5 GPM AERATOR PROVIDED WITH HEATER ON SINK FAUCET.

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DATE ISSUED: March 16, 2020 REVISION 1 POOL EQ REVISION

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PLUMBING SCHEDULES AND

DETAILS

GENERAL LIGHTING NOTES

- 1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. LIGHT FIXTURES INDICATED AS EMERGENCY FIXTURES ARE TO FUNCTION AS NIGHT LIGHTS UNLESS SPECIFICALLY SHOWN SWITCHED.
- 3. ALL CIRCUITING SHOWN ON THIS PLAN IS DIAGRAMMATIC.
- 3.1. ALL FIXTURES SHALL BE FED FROM JUNCTION BOXES WITH LIGHT FIXTURE WHIPS (<6'). DAISY—CHAINING OF FIXTURES IS NOT ALLOWED. 3.2. SWITCH BOX LOCATIONS SHALL BE WIRED SO THAT A NEUTRAL WIRE IS AVAILABLE AT THE SWITCH BOX LOCATION, EITHER IN THE BOX OR
- AVAILABLE TO BE ADDED VIA RACEWAY OR AN ACCESSIBLE WALL CAVITY. 3.3. WALL SWITCHES FOR SEPARATE LOAD TYPES (EM/NORMAL, 120/277V, ETC.) SHALL NOT BE IN A SINGLE BOX.
- 3.4. REFÉR TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

LIGHTING PLAN KEYED NOTES

- 1) ROUTE HOMERUN TO PANEL VIA PHOTOCELL.
- (2) TO EXHAUST FAN.
- (3) 3-BLADE CEILING FAN, WITH VARIABLE SPEED CONTROLLER. MOUNT BELOW DUCTWORK. MAINTAIN MINIMUM 6" CLEARANCE.
- (4) PROVIDE SPEED CONTROLLER FOR FANS.
- (5) PHOTOCELL(TORK 2001 SERIES) ORIENT TO NORTH.
- (6) LOCATE TRANSFORMERS FOR LOW VOLTAGE POOL LIGHTING IN STORAGE

- WALL SWITCH VACANCY SENSOR: PASSIVE INFRARED, 120/277V, WALL SWITCH DECORA STYLE SENSOR. (WATTSTOPPER PW-101, OR EQUAL)
- WALL SWITCH MOTION SENSOR (DUAL TECHNOLOGY): PASSIVE INFRARED AND ULTRASONIC, 120/277V, DECORA STYLE SENSOR. (WATTSTOPPER
- (WATTSTÓPPER LMSW SÉRIES, OR EQUAL)
- FACEPLATE. (WATTSTOPPER LMDM-101)
- DIGITAL MOTION SENSOR FOR CORNER MOUNT: DUAL TECHNOLOGY (PASSIVE INFRARED AND ULTRASONIC), DIGITAL CORNER MOUNT SENSOR WITH WALL BRACKET. (WATTSTOPPER LMDX-100)
- ASTRONOMICAL TIME CLOCK: DIGITAL ON/OFF CONTROLLER.

 PROGRAMMABLE FOR ASTRONOMICAL AND SCHEDULED CONTROL. 120V INPUT. (WATTSTOPPER RT-200 OR EQUAL)
- (WATTSTOPPER LVSW-100 SERIËS, OR EQUAL)
- WATTSTOPPER "LP24-PEANUT PLUS" OR APPROVED EQUAL. PANEL SHALL BE CAPABLE OF SCHEDULED ON/OFF CONTROL WITH AFTER HOUR OVERRIDE CAPABILITY AND SHUTOFF. REFER TO CONTROL PANEL SCHEDULE FOR ADDITIONAL INFORMATION. COORDINATE SCHEDULING OF EACH CONTROL ZONE WITH OWNER.

OWNER TRAINING: PROVIDE FACTORY REPRESENTATIVE TRAINING TO OWNER FOR EACH LIGHTING CONTROL SYSTEM UTILIZED, INCLUDING PROGRAMMING FOR SCHEDULING AND OPERATION OF EACH ROOM PER OWNER DIRECTION. PROVIDE RECORD OF TIME

OPERATE TYPICALLY IN MANUAL ON/AUTO OFF MODE. SET WALL MOUNTED MOTION SENSOR TO MANUAL ON MODE. SET POWER PACKS CONTROLLED BY CEILING MOTION SENSORS TO MANUAL ON AND CONTROL WITH MOMENTARY WALL SWITCH. PROVIDE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS. LOW VOLTAGE WIRING NOT SHOWN ON PLANS FOR CLARITY. PROVIDE FINAL SETTINGS/ADJUSTMENTS PER OWNER'S DIRECTION.







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RIDGI

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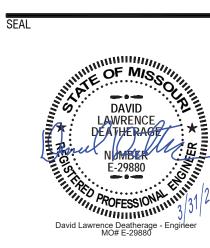
LIGHTING CONTROLS

- DSW-100, OR EQUAL)
- WALL SWITCH MOTION SENSOR (MULTI-WAY DUAL TECHNOLOGY): PASSIVE MALL SWITCH MUTION SENSUR (MULTI-WAT DUAL TECTINOLOGY). TROOTS.

 INFRARED AND ULTRASONIC, 120/277V, MULTI-WAY DECORA STYLE SENSOR. (WATTSTOPPER DW-103, OR EQÚAL)
- WALL SWITCH MOTION SENSOR (DUAL RELAY): PASSIVE INFRARED, DUAL RELAY, 120V, DECORA STYLE SENSOR. (WATTSTOPPER PW-201, OR EQUAL)
- ROOM CONTROLLER LOW VOLTAGE SWITCHES: PUSHBUTTON SWITCHES WITH LED PILOT LIGHT. SINGLE GANG IN DECORA STYLE FACEPLATE WITH UP TO EIGHT (8) CONTROLS. # REFERS TO QUANTITY OF SWITCHES ON FACE.
- ROOM CONTROLLER LOW VOLTAGE DIMMING SWITCHES: PUSHBUTTON SWITCHES WITH LED INDICATING LIGHTS. SINGLE GANG IN DECORA STYLE
- RC# ROOM CONTROLLER: DIGITAL ON/OFF ROOM CONTROLLER. 120/277V INPUT. # INDICATES NUMBER OF RELAYS (STD 1-2, UNITS SHALL BE GANGED FOR MORE THAN 2 RELAYS/ZONES) (WATTSTOPPER LMRC-100 SERIES, OR EQUAL)
- RCD# ROOM CONTROLLER: DIGITAL ON/OFF 0-10V DIMMING ROOM CONTROLLER. 120/277V INPUT. # INDICATES NUMBER OF RELAYS (STD 1-3, UNITS SHÁLL BE GANGED FOR MORE THAN 3 RELAYS/ZONES) (WATTSTOPPER LMRC-200 SERIES OR EQUAL)
- DIGITAL CEILING—MOUNTED MOTION SENSOR: DUAL TECHNOLOGY (PASSIVE INFRARED AND ULTRASONIC), DIGITAL, CEILING SENSOR. (WATTSTOPPER LMDC-100, OR EQUAL)
- <u>LIGHTING CONTROL PANEL LOW VOLTAGE SWITCHES:</u> PUSHBUTTON SWITCHES WITH LED PILOT LIGHT. SINGLE GANG IN DECORA STYLE FACEPLATE WITH UP TO EIGHT (8) CONTROLS. REFER TO LIGHTING CONTROL SWITCH SCHEDULE FOR ADDITIONAL INFORMATION. # REFERS TO SWITCH IDENTITY ON SCHEDULE.
- LCP-X
 LIGHTING CONTROL PANEL: PROVIDE LIGHTING CONTROL PANEL FOR MAIN
 AREA LOADS. PANEL SHALL CONSIST OF RELAY/CONTACTOR PANELS
 CONTROL SWITCHES, PHOTOCELLS AND OTHER CONTROLLING DEVICES.

DELAY SETTINGS ON ALL SENSOR DEVICES FOR OWNER USE.

SENSOR ADJUSTMENTS AND SETTINGS: SYSTEMS SHALL BE SET/PROGRAMMED TO



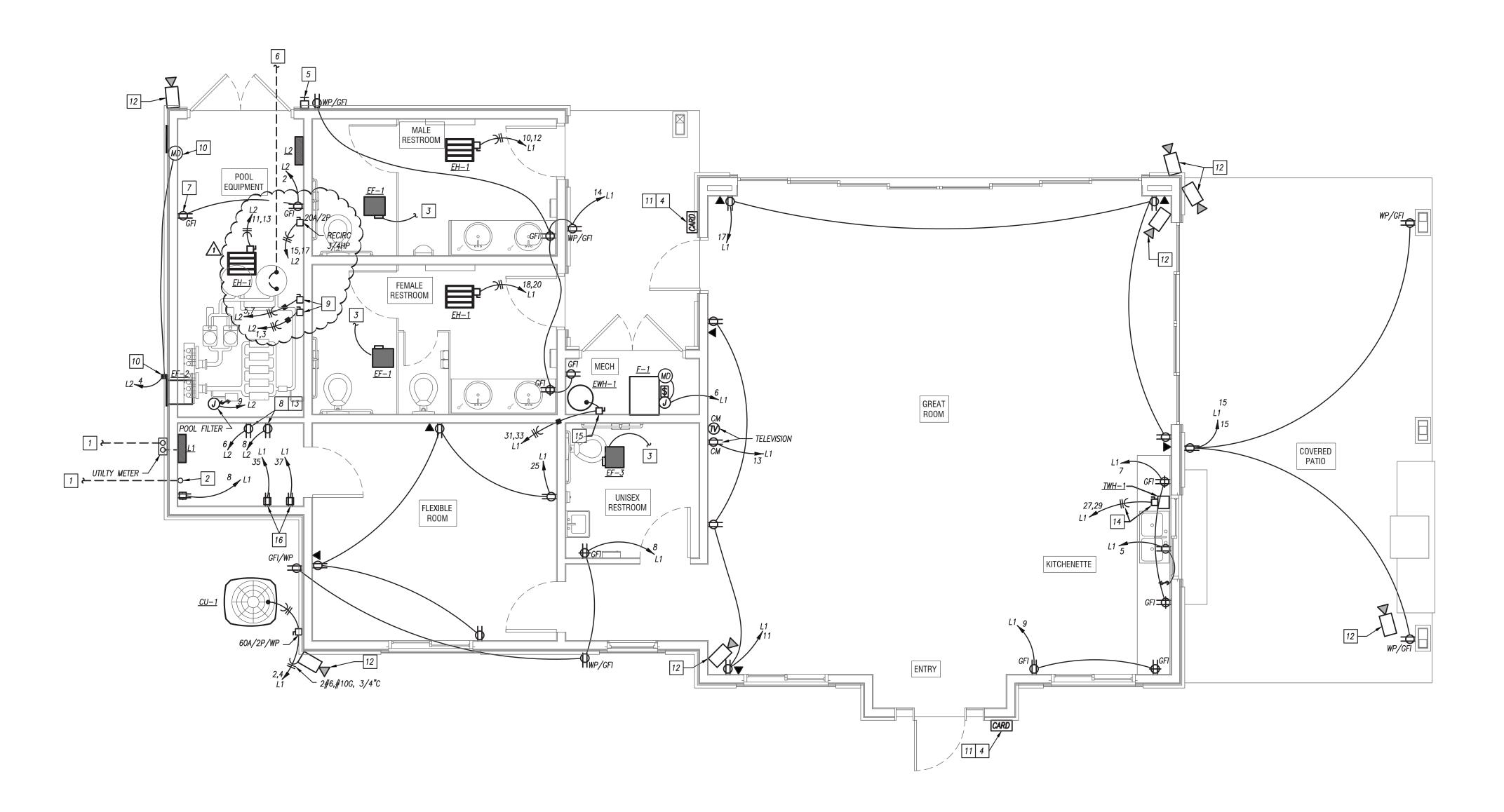
DAT	E ISSUED: March 16, 2020	
NO.	REVISION	DATE
1	POOL EQ REVISION	3/31/20

Designer Author Checker

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LIGHTING PLAN

ARCHITECT ANY ERROR INCONSISTENCY OR OMISSION DISCOVERE





GENERAL POWER NOTES

- 1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
- 2. COORDINATE EXACT NEMA CONFIGURATIONS OF RECEPTACLES SERVING EQUIPMENT WITH EXACT EQUIPMENT BEING FURNISHED.
- REFER TO THE SPECIFICATIONS FOR ADDITIONAL LOCATIONS/REQUIREMENTS FOR RECEPTACLES, INCLUDING GFCI, WEATHER—RESISTANT, HOSPITAL—GRADE, AND TAMPER—RESISTANT RECEPTACLES.
- 4. EXACT MECHANICAL EQUIPMENT LOCATIONS MAY NOT BE SHOWN FOR CLARITY. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT, DUCT DETECTORS, ETC. WITH MECHANICAL DRAWINGS AND CONTRACTOR.
- 5. COORDINATE EXACT LOCATIONS OF SMOKE DETECTORS WITH CEILING FANS, HVAC DIFFUSERS, SPRINKLER HEADS, ETC. PER NFPA REQUIREMENTS.

POWER PLAN KEYED NOTES

- 1 REFER TO SITE PLAN FOR CONTINUATION.
- 2 2" CONDUIT FOR COMMUNICATIONS SERVICE(S).
- 3 CONNECT TO SWITCHED LIGHTING CIRCUIT IN ROOM.
- 4 PROVIDE JUNCTION BOX CONCEALED ABOVE ACCESSIBLE CEILING (OR FLUSH MOUNTED IN HARD CEILING) WITH 3/4" CONDUIT TO A 4X4 RECESSED WALL MOUNTED JUNCTION BOX WITH SINGLE GANG TRIM RING FOR CARD READER AND 3/4" CONDUIT STUBBED INTO DOOR FRAME FOR ACCESS CONTROL WIRING. COORDINATE EXACT ROUGH-IN AND POWER REQUIREMENTS WITH SECURITY CONTRACTOR.
- 5 PROVIDE RED MUSHROOM STYLE PUSH BUTTON IN WATERPROOF ENCLOSURE WITH THE FOLLOWING INSCRIPTION, "POOL EQUIPMENT SHUT DOWN." PROVIDE CONTROL WIRING TO MAIN BREAKER IN PANEL 'L2'.
- 6 EXTEND POOL BONDING GRID TO CIRCULATION PUMP ENCLOSURE, PER NEC. REFER TO POOL BONDING DRAWING FOR ADDITIONAL INFORMATION.
- 7 PROVIDE RECEPTACLE FOR CHEMICAL CONTROLLER. VERIFY EXACT LOCATION WITH POOL EQUIPMENT PROVIDER.
- 8 PROVIDE 120V CIRCUIT TO POOL DECK LIGHTING. ROUTE TO HOMERUN PANEL VIA TIMECLOCK CONTROL. TIMER SHALL BE TWO CHANNEL, 7—DAY DIGITAL HOLIDAY TYPE, WITH 20A RATED CONTACTS, 120V CONTROL POWER. 9 PROVIDE ELECTRICAL CONNECTION TO POOL PUMPS. STARTERS BY POOL EQUIPMENT PROVIDER. BASE BID SHALL BE BASED ON 3 HP PUMPS. COORDINATE EXACT HORSEPOWER REQUIREMENTS WITH SUBMITTED
- 10 PROVIDE ELECTRICAL CONNECTION TO FAN AND INTERLOCK WITH MOTORIZED DAMPER.
- CARD READER. COORDINATE EXACT LOCATION AND ALL CONNECTION REQUIREMENTS WITH OWNER SPECIFIED SYSTEM. PROVIDE ROUGH—IN AND 1" CONDUIT BACK TO STORAGE ROOM.
- 12 CAMERA. COORDINATE EXACT LOCATION AND ALL CONNECTION REQUIREMENTS WITH OWNER SPECIFIED SYSTEM. PROVIDE ROUGH—IN AND 1" CONDUIT BACK TO STORAGE ROOM.
- 13 LOCATE TRANSFORMERS FOR LOW VOLTAGE POOL LIGHTING IN STORAGE ROOM.
- 14 TWH-1. PROVIDE A 60A 2P DISC. SWITCH, FUSE PER MANUFACTURER REQUIREMENTS. 2 #6, #10G, 3/4" C.
- 15 EWH-1. PROVIDE A 30A/2P DISC. SWITCH.
- PROVIDE 120 VOLT POWER TO SECURITY SYSTEM EQUIPMENT. COORDINATE [16] EXACT LOCATION WITH OWNER.



ARCHITECT B+A ARCHITECTURE 100 W 31ST STREET, SUITE 100 KANSAS CITY, MO 64108 PH: 816-753-6100

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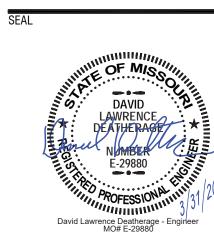
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DEVELOPER SUMMIT HOMES 120 SE 30TH STREET

LEE'S SUMMIT, MO 64082 PH: 816-326-2909

> **CLUBHOUS** NW AMBERSHAM DR, S SUMMIT MO 64081 WOODSIDE RIDGE



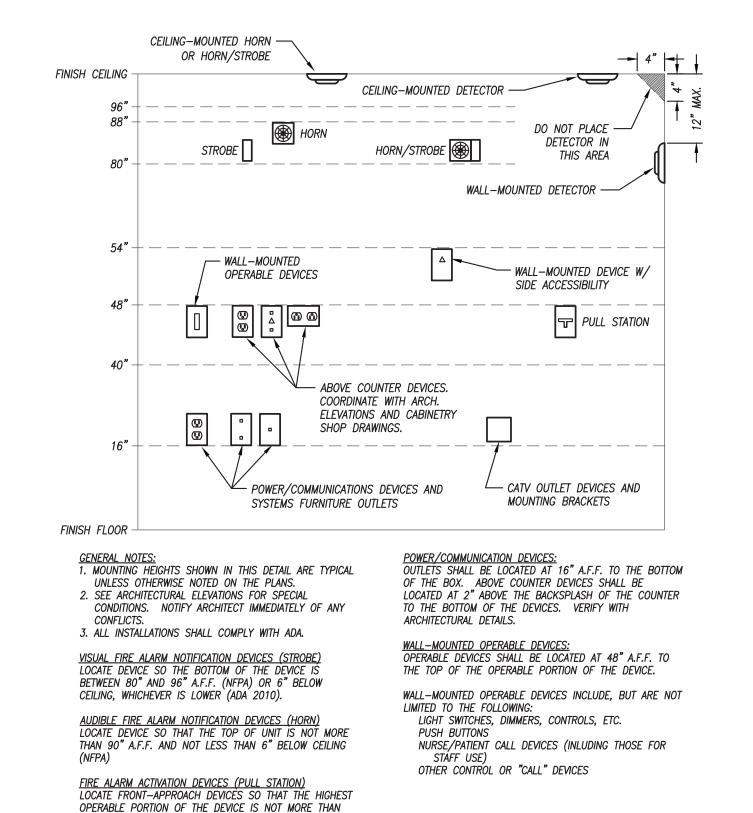
DATE IS	SUED: March 16, 2020	
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PEARSON KENT MCKINLEY RAAF ENGINEERS LLC LENEXA, KS 66215 WWW.PKMRENG.COM 13300 W 98TH STREET 913.492.2400 MO State Certificate of Authority #E-2002020886

TYPICAL PANELBOARD INSTALLATION DETAIL NOT TO SCALE



MOUNTING HEIGHTS FOR WALL-MOUNTED DEVICES

48" A.F.F (ADA 2010) AND NOT LESS THAN 42" A.F.F.

NOT TO SCALE

PANEL DESIGNATION: MOUNTING: LOCATION: DESCRIPTION								MAIN	LUUA	· O. /	00		
LOCATION:] :	#		MAIN		KER: 3			
	MOUNTING: SURFACE					CIRCUIT					40/120		
DESCRIPTION] }	380			HASE/M	/IRE: 16			
		ASE		/B	┤ `	J		C/B	_	PHAS		DESCRIF	PTION
PANELBOARD L2	7420	В	TRIP	POLE 2	1	2	POLE	TRIF 50	31	_	В	CON	IDENSING
_	7120	7420	-	_	3	4		 	1 0	15	3149	00/1	DENSING
DISPOSAL	1200	7 120	20	1	5	6	1	20	11.	30	0110		FURNAC
REC - KITCHEN	1200	360	20	1	7	8	1	20			360	REC - S	
REC - KITCHEN	360		20	1	9	10	2	20	10	00			
REC - GREAT ROOM		540	20	1	11	12	_	-			1000		
REC - GREAT ROOM TV	1080		20	1	13	14	1	20	90	20		REC -	RR/EXT
REC - COVERED PATIO		540	20	1	15	16	1	20			420		BLDG LIG
REC - GREAT ROOM	540		20	1	17	18	2	20	10	00			
SPARE		_	20	1	19	20	_	† <u>-</u>			1000		
LTG - INTERIOR	1080		20	1	21	22	2	20	14	41		PARKING	LOT LIG
LTG - GREAT ROOM		720	20	1	23	24	_	† <u>-</u>			141		
REC - FLEXIBLE ROOM	720		20	1	25	26	1	20	┿	-			
TWH-1		4750	50	2	27	28	1	20			-		,
_	4750		-	-	29	30	1	20	-	-			
WH-1		2250	30	2	31	32	1	20			_		
-	2250		-	-	33	34	1	20	T -	-			
CAMERA SYSTEM		360	20	1	35	36	1	20			-		
CARD READER	360		20	1	37	38	1	20	Τ-	-			
CEILING FANS		800	20	1	39	40	1	20			_		
SPACE	800		_	1	41	42	1	20		-			,
TOTALS	20560	17740							73	20	6070	TOTALS	
PAN	JEL BOAI	RD SIZIN	IG I OA	D					٦	Г	000	NECTED PHASI	FIOAI
LOAD DESCRIPTION	CONNI			IAND	Т	СОГ	DE MIN	L (VA)	\dashv		PHASE	VA	L LOAI
LIGHTS		772		25			4,964		4	F	A	27,880	23
RECEPTACLES			OKVA +		dT		8,520		\dashv	\vdash	В	23,810	19
MOTORS	12,		x LARGEST		-		12,820		\dashv		OTALS	51,690	21
AIR CONDITIONING		298		00	1.20		6,298		\dashv		OTALO	01,000	
SPACE HEATING		000		00	+		0		┨	R	EMARKS:		
CONTINUOUS)		25	+		0		┨			NO TYPE PANELBOA	ARD OR
NON-CONTINUOUS)		00	+		0		┨	_		GFCI TYPE BREAKER.	
MISC. LOADS 1		000		00	+		14,000	 ງ	┪		. 0	or or the breaker.	
MISC. LOADS 2)		00	t				┪				
			SIZINO	LOAD			46,60	2	┪				
		SIZINO	3 LOAD		_		194		┪				
				,					_				
SINGLE-SECT	ION	PAN	ELB	OA	R	D	SC	HEI	JUI	_E			
											PS: 125		
PANEL DESIGNATION	: L2						.	'			ER: 100		
MOUNTING	S: -					}	_				GE: 240,	/120	
LOCATION		QUIP RM					j				RE: 10,		
		HASE		C/B		λ $\frac{1}{2}$	5	C/B			PHASE		
DESCRIPTION▲	<u>.</u>			۔ تخشت				٠, ٥					ESCRIP

	PANEL DESIGNATION: L2									UG AMPS: BREAKER:		
	MOUNTING:	_				٦.	- 1			VOLTAGE:		
	LOCATION:	POOL EQUI	P RM						PHA	ASE/WIRE:	1Ø, 3W	
	DESCRIPTION	PH/	ASE		;/B	\mathcal{M}_{\circ}	5 [C	/B	PHA	ASE	DESCRIPTION
	DESCRIPTION	Α	В	TRIŘ	POLE	\sum		POLE	TRIP	А	В	DESCRIPTION
G	POOL PUMP (3 HP)	2040		40	2)1	2	1	20	1200		CHEMICAL CONTROLL
	-		2040	(–	_	3	4	1	20		1130	EF
G	POOL PUMP (3 HP)	2040		40	2	 ₹	6	1	20	500		IN-POOL LIGHTI
	-		1440	> -	_)	8	1	20		100	POOL DECK LIGHT
G	POOL FILTER	1200		20	سر 1 بـ	√ 9	10	1	20	69		POOL ROOM LIGHT
	EH—1		1000	20	2	11	12	1	20		_	SPA
Λ	مَم	1000		حَم		13	14	1	20	-		SPA
\mathcal{T} G	RÉCIRC PUMP 3/4HP		840	20	2	15	16	1	20		_	SPA
7	_	840		-	-)	17	18	1	-	-		SPA
(SPACE		-	_	1)	19	20	1	-		_	SPA
	SPACE				1	21	22	1	-	-		SP/
	SPACE		-	_	1	23	24	1	_		_	SPA
	TOTALS	7120	5320							1769	1230	TOTALS

	PA			
	LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)
Ī	LIGHTS	669	1.25	836
	RECEPTACLES	1,200 1	DKVA + 50% RES	T 1,200
	MOTORS	11,570 1.25	x LARGEST + SUM OF I	REST 12,590
	AIR CONDITIONING	0	0.00	0
	SPACE HEATING	2,000	1.00	2,000
	CONTINUOUS	0	1.25	0
	NON-CONTINUOUS	0	1.00	0
	MISC. LOADS 1	0	1.00	0
	MISC. LOADS 2	0	1.00	0
			SIZING LOAD:	16,626
		SIZING	G LOAD (AMPS):	69

SCA

18,980 22,000

11,498 22,000

AIC

CONNECTED PHASE LOADS						
PHASE	VA	AMPS				
Α	8,889	74.1				
В	6,550	54.6				
TOTALS	15,439	64.3				

LIGHT FIXTURE SCHEDULE

MANUFACTURER

BARN LIGHT

BARN LIGHT

DMF LIGHTING

DMF LIGHTING

DMF LIGHTING

DMF LIGHTING

KUZCO LIGHTING

WILLIAMS

UC1 WAC LIGHTING

DMF LIGHTING

MCGRAW EDISON

GARDEN LIGHT

ELECTRIC

ELECTRIC

TYPE

CF2

CL2A

CL4

CATALOG NUMBER

DCD1 SERIES

DRD3 SERIES

DCD1 SERIES

DRD3 SERIES

CHARLIE FM6012

SERIES 75R

DLM SERIES

WA-LED SERIES

GALLEON LED

DCC2 SERIES

SLCD SERIES

DLM SERIES

1. FURNISH WITH AND INSTALL ALL NECESSARY HARDWARE AND MOUNTING BRACKETS.

SERIES

AF-02-LED-E1-T4FT

WW (WALL WASHER)

DCD1

DESCRIPTION

52" DIAMETER 4-BLADE CEILING FAN. VARIABLE SPEED MOTOR, NICKEL FINISH HOUSING, FOUR (4)

MAPLE REVERSIBLE BLADES. FURNISH WITH OPTIONAL 36" DOWNROD SUSPENSION. FURNISH WITH

52" DIAMETER 3-BLADE CEILING FAN. VARIABLE SPEED MOTOR. BRUSHED ALUMINUM HOUSING.

THREE (3) ALUMINUM REVERSIBLE BLADES. 12" DOWNROD SUSPENSION. FURNISH WITH SOLID

6" ROUND RECESSED DOWNLIGHT. DIE—CAST ALUMINUM FRAME WITH ADJUSTABLE—HEIGHT

BUTTERFLY MOUNTING BRACKETS AND INTEGRAL GALVANIZED STEEL JUNCTION BOX. COORDINATE

REFLECTOR WITH MEDIUM BEAM ANGLE/DISTRIBUTION. UL LISTED FOR WET LOCATIONS. INTEGRAL

SIMILAR TO TYPE CL1, EXCEPT PROVIDED WITH SLOPED CEILING ADAPTOR AND IC-RATED FOR

SAME AS FIXTURE TYPE 'CL1' EXCEPT FURNISH WITH 4" TRIM RING DIFFERENT LED MODULE.

SIMILAR TO TYPE CL2. EXCEPT PROVIDED WITH SLOPED CEILING ADAPTOR AND IC-RATED FOR

DIRECT CONTACT WITH INSULATION. 360 DEGREE DIRECTIONAL AIM, 40 DEGREE ADJUSTABLE TILT.

4'-0" LONG STRIP FIXTURE. SURFACE MOUNT. FURNISH WITH ROUNDED ACRYLIC LENS. ALL PARTS

LOW-PROFILE EMERGENCY LIGHTING UNIT. FLAME-RATED, UV-STABLE THERMOPLASTIC HOUSING.

MAINTENANCE-FREE BATTERY FOR 90 MINUTE OPERATION OF LAMPS. INTEGRAL TEST SWITCH AND

2-3/4" X 1" X 24" UNDERCABINET LIGHT FIXTURE. EXTRUDED ALUMINUM HOUSING WITH ACRYLIC

LENGS. WHITE POWER COAT FINISH. FURNISH WITH INTERCONNECTING CABLING AND CONNECTORS.

LED POLE MOUNT AREA LIGHT FIXTURE. DARK BRONZE FINISH. IES TYPE 4 FORWARD THROW

COMBINATION EMERGENCY LIGHTING UNIT / EXIT LIGHT. UV-STABLE THERMOPLASTIC HOUSING,

FINISH WHITE. ADJUSTABLE EYEBALL STYLE LIGHTING HEADS WITH GLASS LENS FOR EMERGENCY LIGHT. EXIT SIGN TO HAVE RED LETTERS WITH DIRECTIONAL ARROWS AS INDICATED ON THE

PLANS. MAINTENANCE-FREE NICKEL-CADMIUM BATTERY FOR 90 MINUTE OPERATION OF LAMPS

AND EXIT SIGN. FULLY AUTOMATIC, SOLID-STATE CHARGER WITH TEST SWITCH AND AC-ON LIGHT. FURNISH WITH REMOTE CAPACITY WHERE INDICATED. BLACK REMOTE WEATHERPROOF HEAD.

DISTRIBUTION. PROVIDE 15' POLE. POLE SHALL INCLUDE GROUND LUG, HAND HOLE, AND BOLT

ARCHITECT. FLOOD DISTRIBUTION. GROUND STAKE INCLUDED. UL 1838 LISTED. PROVIDE REMOTE

TWO (2) SEMI-RECESSED, ADJUSTABLE "EYEBALL" HEADS WITH GLASS LENS. WHITE FINISH.

PAINTED WHITE AFTER FABRICATION. ELECTRONIC DRIVER PRE-WIRED FOR NON-DIMMING

FLUSH ARCHITECTURAL FIXTURE. 11.5" DIAMETER X 3.5" TALL. WHITE OPAL ACRYLIC DIFFUSER WITH \ ONE (1) 19 WATT, 1300 LUMEN,

4.2" W, 5.0" T YOKE MOUNT WALL WASHER FIXTURE. ALUMINUM/BRASS AND FINISH SELECTION BY 6W/11VA, 280 LUMEN MODULE,

DIRECT CONTACT WITH INSULATION. 360 DEGREE DIRECTIONAL AIM, 40 DEGREE ADJUSTABLE TILT.

MOUNTING TYPE WITH CEILING. SELF-FLANGED, SEMI-SPECULAR LOW IRIDESCENT FINISH ALUMINUM

STATE WALL SPEED CONTROLLER. SUITABLE FOR EXTERIOR LOCATIONS UNDER CANOPY.

LED DRIVER PRE-WIRED FOR 0-10V DIMMING APPLICATIONS.

BRUSHED NICKEL TRIM RING. ELECTRONIC DRIVER DIMMABLE VIA ELV.

SAME AS FIXTURE TYPE 'CL2' EXCEPT FURNISH WITH BLACK TRIM RING.

AC-ON INDICATOR. FURNISH WITH REMOTE CAPACITY WHERE INDICATED.

EXTERNAL DRIVER. COORDINATE EXACT LOCATION FOR DRIVER WITH OWNER.

JADE 2 C - 38279 GLASS AND CHROME WALL MOUNT INTERIOR VANITY LIGHT

EXTERIOR WALL-MOUNTED LED CYLINDER., WET LOCATION, DARK BRONZE FINISH.

SOLID STATE WALL SPEED CONTROLLER.

1. SQUARE D NQ PANELBOARD OR EQUAL ACTUATION BY MUSHROOM PUSHBUTTON ON

	UTUT
NOTES	UTILIT LOC
1	
2	

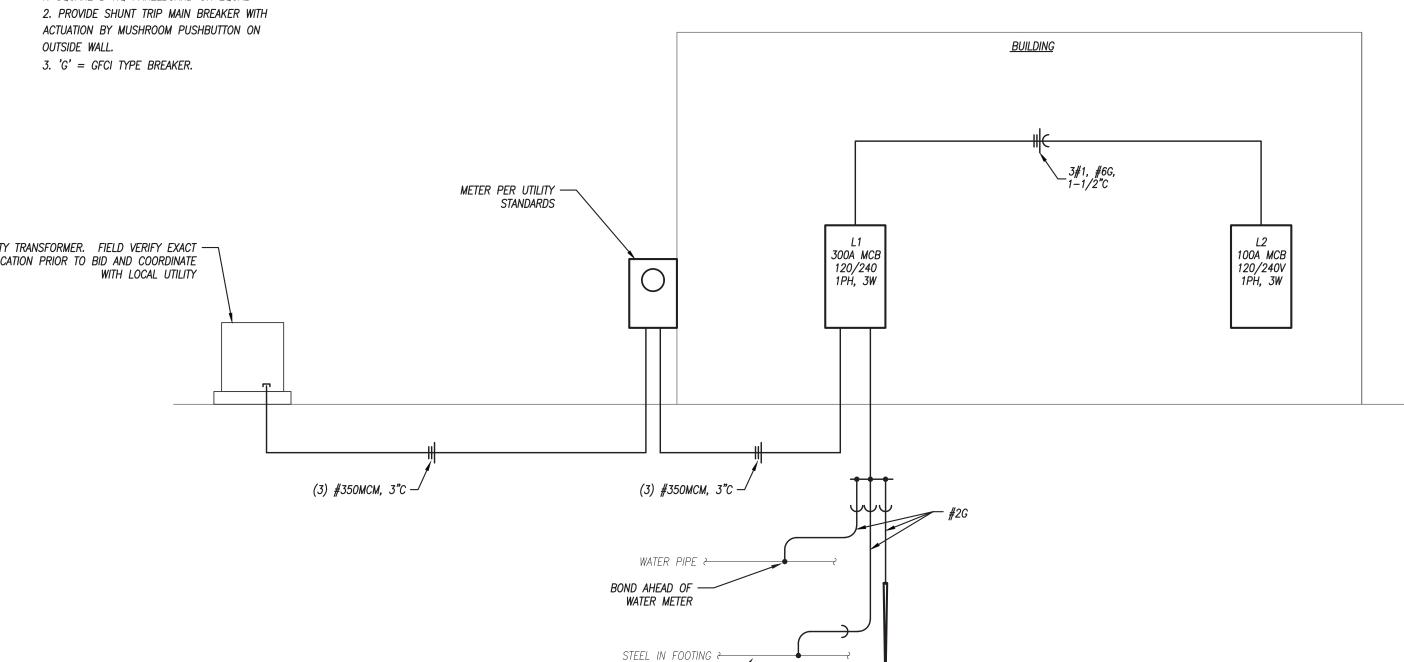
1. RATING BASED ON A FAULT AT UTILITY CO. TRANSFORMER OF 25,000 AIC, PER KCPL. 2. CALCULATIONS PERFORMED USING BUSSMANN POINT-TO-POINT METHOD.

EQUIPMENT FAULT CURRENT RATING SCHEDULE

EQUIPMENT

PANELBOARD L1

PANELBOARD L2



MAKE ELECTRICALLY — CONTINUOUS

> 8'-0" LONG 5/8" COPPER -CLAD DRIVEN GROUND ROD

> > NOT TO SCALE

ELECTRICAL RISER DIAGRAM

13300 W 98TH STREET



ARCHITECT B+A ARCHITECTURE 100 W 31ST STREET, SUITE 100 KANSAS CITY, MO 64108 PH: 816-753-6100

LAMP NUMBER / DESCRIPTION VOLTAGE

ONE (1) 29 WATT, 2000 LUMEN,

LED MÓDULE. 3000K CCT.

ONE (1) 19.5 WATT, 1500

LED MODULE. 3000K CCT.

LED MÓDULE. 3000K CCT.

ONE (1) 19.5 WATT, 1500 LUMEN. LED MODULE. 3000K

TWO (2) 1 WATT LED

ONE (1) 12.7 WATT, 700

113W, 12533 LUMEN LED

MODULE 4000K

LUMEN, LED MODULE. 3000K

19.5 WATT, 1500 LUMEN, 3000K

9 WATT, 1500 LUMEN, 3000K

TOTAL POWER CONSUMPTION:

EXIT: FOUR (4) HIGH-OUTPUT

EMERGENCY: HIGH OUTPUT LEDS

5.25 WATTS.

ONE (1) 23 WATT, 3200 LUMEN,

LUMEN, LED MODULE. 3000K

REMARKS

CIVIL ENGINEER PHELPS ENGINEERING, INC 1270 N. WINCHESTER OLATHE, KS 66061 PH: 913-393-1155

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MEP ENGINEER PKMR ENGINEERS 13300 W. 98TH STREET LENEXA, KS 66215 PH: 913-312-0151

DEVELOPER SUMMIT HOMES 120 SE 30TH STREET LEE'S SUMMIT, MO 64082 PH: 816-326-2909

CLUBHOUS DGE IW AMBEF SUMMIT 342 LEE' WOODSIDE

DATE ISSUED: March 16, 2020 REVISION Designer

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ELECTRICAL RISER DIAGRAM

PEARSON KENT MCKINLEY RAAF ENGINEERS LL LENEXA, KS 66215 913.492.2400 WWW.PKMRENG.COM

MO State Certificate of Authority #E-2002020886

STRUCTURE

- 1. PROVIDE A NON-SLIP FINISH TO THE POOL BOTTOM.
- 2. THE SLOPE OF THE POOL BOTTOM (LESS THAN 5 FEET DEEP) SHALL BE NO GREATER THAN 1" PER FOOT AND NOT LESS THAN .2" PER FOOT.
- EXCEPTION: IN POOLS SMALLER THAN 800 SQUARE FEET, THE SLOPE OF THE FLOOR IN THE SHALLOW PORTION SHALL NOT EXCEED 1 FOOT IN 12 FEET.
- 3. THE FRONT SLOPE OF THE DEEP END OF THE POOL BOTTOM (GREATER THAN 5 FEET DEEP) SHALL BE NO GREATER THAN 4" PER FOOT. OTHER SLOPES OF THE DEEP END OF THE POOL
- 4. THE MAXIMUM DEPTH AT THE SHALLOW END SHALL NOT EXCEED 42".
- 5. PROVIDE RECESSED DEVICE FOR FASTENING SAFETY ROPES AT TRANSITION POINTS IN THE POOL OR WHERE THE WATER DEPTH REACHES 5 FEET. LOCATE FASTENING DEVICES 1 FEET TOWARD THE SHALLOW SIDE.
- PROVIDE COVE RADIUM OF 1" MINIMUM TO 8" MAXIMUM WHERE THE WATER DEPTH IS 6 FEET

- 1. PROVIDE SOUTHERN GROUTS AND MORTARS, INC / SGM DIAMOND BRITE (TM) EXPOSED AGGREGATE FINISH, MADE WITH 100% QUARTZ AGGREGATE AND POLYMER MODIFIED
- 2. COLOR TO BE SELECTED BY OWNER, COLOR SHALL BE LIGHT REFLECTIVE MEETING CITY OF LEE'S SUMMIT, MISSOURI STANDARDS. COLOR SELECTED BY OWNER IS SUPER BLUE.
- 3. INSTALL PLASTER SYSTEM PER MANUFACTURERS REQUIREMENTS BY AN EXPERIENCED

WALKWAYS & DECKS

- 1. PROVIDE A CLEAR, UNOBSTRUCTED WALK OR DECK AROUND THE ENTIRE PERIMETER OF THE
- 2. SLOPE THE DECK AWAY FROM THE POOL A MINIMUM OF $\frac{1}{4}$ " PER FOOT.
- 3. WHERE DECK DRAINS ARE USED, THE TRIBUTARY AREA SHALL NOT EXCEED 400 SQUARE FEET OF DECK SURFACE.
- 4. USE CLASS A CONCRETE (AE) THROUGHOUT. F'C = 4,000 PSI, BROOM FINISH SURFACE,
- 5. EXPANSION AND CONTRACTION JOINTS TO BE SPACED AT A MAXIMUM 10' ON CENTER, UNLESS SHOWN OTHERWISE.

POOL LADDERS AND STAIRS

- 1. PROVIDE 2 MEANS OF EGRESS LOCATED AT OPPOSITE ENDS OF THE POOL.
- 2. PROVIDE 4 MEANS OF EGRESS WHERE POOL WIDTHS ARE 30 OR GREATER.
- 3. THE DISTANCE FROM ANY POINT IN THE SWIMMING POOL TO A MEANS OF EGRESS SHALL NOT EXCEED 50 FEET.
- 4. STEPS OR LADDER TREADS SHALL BE NON-SLIP.
- 5. STEPS SHALL HAVE 12" MINIMUM TREADS AND HAVE10" MAXIMUM RISERS IN ACCORDANCE WITH ANSI/APSP-1 2003 STANDARD FOR PUBLIC SWIMMING POOLS.
- 6. STEPS SHALL BE PROVIDED WHERE THE WATER DEPTH IS 42 INCHES OR LESS.
- 7. PROVIDE ONE HANDRAIL PER 12 FEET OF STEP WIDTH OR FRACTION THEREOF.

ELECTRICAL

- 1. ALL ELECTRICAL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE,
- 2. UNDERWATER LIGHTING SHALL PROVIDE 0.5 WATTS PER SQUARE FOOT OF POOL SURFACE AREA, LIGHTING ALL PORTIONS OF THE POOL. LIGHTING CIRCUIT TO BE GFIC.
- 3. PROVIDE DECK LIGHTING OF 0.6 WATTS PER SQUARE FOOT OF DECK AREA IF POOL LIGHTING IS USED AND 2.0 WATTS PER SQUARE FOOT OF DECK ARE IF POOL LIGHTING IS NOT USED.
- 4. ALL ELECTRICAL LIGHTING FIXTURES, RECEPTACLES, SWITCHES, ETC. SHALL COMPLY WITH SECTION 680-6 OF NEC, 2011.
- 5. UNDERWATER LIGHTING FIXTURES SHALL COMPLY WITH SECTION 680-6 OF NEC, 2011.
- 6. GROUND SHALL COMPLY WITH SECTION 680-24 AND 680-25 OF NEC, 2011.
- 7. A RECEPTACLE THAT PROVIDES POWER FOR POOL OR ASSOCIATED EQUIPMENT SHALL BE PERMITTED BETWEEN 5 FEET AND 10 FEET FROM THE INSIDE WALL OF THE POOL OR HOT TUB, AND WHERE SO LOCATED, SHALL BE OF THE LOCKING (TWIST-LOCK) AND GROUNDING TYPES AND SHALL BE PROTECTED BY A GROUND FAULT CIRCUIT INTERRUPTER (GFCI). ALL OTHER RECEPTACLES SHALL BE AT LEAST 10 FEET FROM THE INSIDE WALL OF THE POOL OR HOT
- AN ADDITIONAL 125-VOLT GFCI CONVENIENCE RECEPTACLE IS REQUIRED TO BE INSTALLED WITHIN 20 FEET BUT NOT CLOSER THAN 10 FEET TO THE INSIDE WALL OF A POOL OR HOT TUB. CORD LENGTHS FOR PERMANENT POOLS SHALL NOT BE LONGER THAN 3 FEET IN LENGTH.
- 9. A DISCONNECTING MEANS SHALL BE PROVIDED AND BE ACCESSIBLE (LOCATED WITHIN SIGHT FROM ALL POOLS AND HOT TUB EQUIPMENT) AND SHALL NOT BE LOCATED WITHIN 5 FEET FROM THE INSIDE WALL OF THE POOL OR HOT TUB.
- 10. ELECTRICAL INSTALLATIONS OVER THE TOP OF A POOL OR HOT TUB OR OVER THE AREA EXTENDING 5 FEET FROM THE EDGE OF THE POOL OR HOT TUB INCLUDING UTILITIES SHALL BE REVIEWED WITH AN ELECTRICAL INSPECTOR PRIOR TO ISSUANCE OF THE PERMIT. ELECTRICAL INSTALLATIONS (INCLUDING UNDERGROUND) ARE NOT ALLOWED WITHIN 5 FEET

BONDING

- 1. BONDING OF THE POOL SHALL COMPLY WITH SECTION 680-022 OF NEC, 2011.
- 2. ALL METAL PARTS OF A POOL AND ITS ASSOCIATED METALLIC EQUIPMENT, METAL PIPING, RACEWAYS, FIXED METAL LADDERS, TOWERS, PLATFORMS, DIVING STRUCTURES, DOOR FRAMES, ETC. THAT ARE NOT SEPARATED FROM THE POOL BY A PERMANENT BARRIER AND LOCATED WITHIN 5 FEET OF THE POOL, MUST BE BONDED WITH A #8 SOLID COPPER CONDUCTOR. THIS CONDUCTOR IS NOT REQUIRED TO BE EXTENDED OR ATTACHED TO ANY REMOTE PANEL BOARD, SERVICE EQUIPMENT OR ELECTRODE (GROUND ROD) IT IS ONLY INTENDED TO BOND THESE METALLIC PIECES TOGETHER.

POOL OUTLETS

- 1. POOL OUTLETS OPENINGS MUST BE COVERED BY GRATING THAT CAN ONLY BE REMOVED WITH THE USE OF A TOOL. COMPLYING WITH ANSI/APSP-7 2006, STANDARD FOR SUCTION ENTRAPMENT AVOIDANCE AND THE VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT (VGB ACT) AND CURRENT CONSUMER PRODUCT SAFETY COMMISSION (CPSC) INTERPRETATIONS.
- MAIN DRAIN DISCHARGE PIPING SHALL BE SUFFICIENT FOR REMOVAL OF THE WATER THROUGH IT AT A RATE OF AT LEAST 50% OF THE SWIMMING POOL DESIGN RECIRCULATION FLOW RATE.

- 3. PROVIDE VALVES IN THE PIPING SYSTEM TO PERMIT FLOW ADJUSTMENT.
- 4. PROVIDE ADJUSTABLE DIRECTION SKIMMERS.
- 5. PROVIDE A MINIMUM OF 1 SKIMMER FOR EVERY 400 SQUARE FEET OF POOL SURFACE AREA.
- 6. THE VELOCITY OF FLOW THROUGH SKIMMERS SHALL BE IN THE RANGE OF 10-15 FEET/SECOND.

POOL INLETS

- PROVIDE ADJUSTABLE FLOW INLETS.
- 2. THE VELOCITY OF FLOW THROUGH ANY INLET ORIFICE SHALL BE IN THE RANGE OF 5-15
- 3. LOCATE INLETS A MINIMUM OF 12 INCHES BELOW THE DESIGNED WATER LEVEL IF LOCATED ON THE POOL WALL.
- 4. PROVIDE A MINIMUM OF 1 INLET FOR EVERY 300 SQUARE FEET OF POOL SURFACE AREA.

PUMPING EQUIPMENT

- 1. PUMPS SHALL BE CAPABLE OF SUPPLYING A MINIMUM BACKWASH RATE OF 15 GALLONS PER SQUARE FOOT OF FILTER AREA PER MINUTE.
- 2. THE RECIRCULATING PUMP AND MOTOR SHALL HAVE SUFFICIENT CAPACITY TO PROVIDE THE TURNOVER REQUIRED AGAINST THE MAXIMUM HEAD LOSS WHICH MAY DEVELOP UNDER NORMAL OPERATING CONDITIONS.
- 3. PROVIDE A SELF-PRIMING PUMP WHERE THE PUMP IS LOCATED AT AN ELEVATION HIGHER
- 4. PROVIDE A STRAINER BASKET AT THE PUMP TO FILTER HAIR AND LARGE PARTICLES.

FILTERS

- 1. PROVIDE REMOVABLE FILTER HEADS FOR INSPECTION AND REPLACEMENT OF FILTER MEDIA.
- 2. THE MAXIMUM SHUT-OFF HEAD OF THE PUMP SHALL NOT BE LESS THAT 50 POUNDS PER SQUARE INCH.
- MARK VALVES FOR EASY IDENTIFICATION.
- 4. VALVE FILTER PIPING TO ALLOW FOR REPAIRS WHILE OTHER UNITS ARE IN SERVICE.
- 5. PROVIDE CARTRIDGE FILTER SYSTEM.

PIPING SYSTEM

- 1. ALL POOL PIPING SHALL BE OF MATERIAL APPROVED FOR POTABLE WATER USE BY THE AMERICAN WATER WORKS ASSOCIATION.
- 2. BRANCH WATER UTILITY SERVICE LINES 2" AND SMALLER SHALL CONFORM TO THE LATEST FEDERAL SPECIFICATIONS FOR TYPE "K" FLEXIBLE COPPER TUBING.
- 3. POOL SERVICE LINES LARGER THAN 2" SHALL BE SCHEDULE 80 PVC
- 4. ALL WATER INSTALLATIONS INCLUDING BACKFLOW DEVISES ARE SUBJECT TO FIELD VERIFICATION AND APPROVAL BY THE WATER DEPARTMENT OR BUILDING INSPECTOR.
- 5. PIPING SHALL HAVE THE ABILITY TO WITHSTAND FOUR TIMES THE OPERATING PRESSURE.
- 6. PIPING SHALL BE PROPERLY SLOPED FOR ADEQUATE DRAINAGE AND SUPPORTED AN INTERVALS TO PREVENT SAGGING BETWEEN SUPPORTS.
- 7. PROVIDE FOR EXPANSION OF PIPES.
- PROVIDE FOR CLEANOUTS IN THE CIRCULATION SYSTEM.
- 9. ALL PLASTIC (PVC) PIPING MUST HAVE THE NATIONAL SANITATION FOUNDATION (HSF) SEAL IMPRINTED ON IT.
- 10. USE FLANGE JOINTS OR UNION FOR EXPOSED PIPING IN THE FILTER ROOM.
- 11. COLOR CODE PIPING AS FOLLOWS: POTABLE WATER LINES: DARK BLUE RECIRCULATION FILTERED AQUA SKIMMER OLIVE GREEN MAIN DRAIN
- WASTE LINES BACKWASH WASTE DARK BROWN DARK GRAY SEWER
- 9. MAKEUP WATER SHALL BE ADDED TO THE POOL BY FREE-FALL DISCHARGE DIRECT TO THE POOL WITH AN AIR GAP OF TWO TIMES THE PIPE DIAMETER OR 6 INCHES MINIMUM ABOVE THE COPING. THE DISCHARGE SHALL BE THROUGH PIPING WITH AN APPROVED VACUUM BREAKER PROTECTION.

DISINFECTANT SYSTEMS

- 1. PROVIDE A MECHANICAL UNIT FOR FEED OF A CHEMICAL FOR PH CONTROL.
- 2. PROVIDE A POSITIVE DISPLACEMENT TYPE CHEMICAL FEEDER TO MAINTAIN PH OF POOL WATER WITHIN THE RANGE OF 7.2 TO 7.6.

SIGNAGE

- 1. RULES AND REGULATIONS: POST INSTRUCTIONS TO BATHERS AT ENTRANCE TO DRESSING ROOMS PROVIDING THE FOLLOWING:
- ADMISSION TO THE POOL IS REFUSED TO ALL PERSONS HAVING ANY CONTAGIOUS DISEASE, INFECTIOUS CONDITION SUCH AS COLDS, FEVER, RINGWORM, FOOT INFECTIONS, SKIN LESIONS, CARBUNCLES, BOILS, INFLAMED EYES, EAR DISCHARGES OR ANY OTHER CONDITION WHICH HAS THE APPEARANCE OF BEING INFECTIOUS, PERSONS WITH EXCESSIVE SUNBURN, ABRASIONS THAT HAVE NOT HEALED, CORN PLASTERS BUNION PADS, ADHESIVE TAPE, RUBBER BANDAGES OR BANDAGES OF ANY KIND MAY NOT BE PERMITTED, A PERSON UNDER THE INFLUENCE OF ALCOHOL OR EXHIBITING ERRATIC BEHAVIOR SHALL NOT BE PERMITTED IN THE POOL AREA.
- NO FOOD, DRINK, GUM OR TOBACCO WILL BE ALLOWED IN OTHER THAN SPECIFICALLY DESIGNATED AND CONTROLLED SECTIONS OF THE POOL AREA.
- PERSONAL CONDUCT WITHIN THE POOL FACILITY MUST BE SUCH THAT THE SAFETY OF SELF AND OTHERS IS NOT JEOPARDIZED, NO RUNNING, BOISTEROUS OR ROUGH PLAY, EXCEPT SUPERVISED WATER SPORTS, IS PERMITTED.
- SPITTING, SPOUTING OF WATER, BLOWING THE NOSE OR OTHERWISE INTRODUCING CONTAMINANTS INTO THE POOL IS NOT PERMITTED.
- GLASS, SOAP, LOTION OR OTHER MATERIAL, WHICH MIGHT CREATE HAZARDOUS CONDITIONS OR INTERFERE WITH EFFICIENT OPERATION OF THE SWIMMING POOL SHALL NOT BE PERMITTED IN THE SWIMMING POOL OR ON THE POOL DECK.
- ALL APPAREL WORN IN THE POOL SHALL BE CLEAN AND SANITARY. STREET ATTIRE OR CUTOFFS ARE NOT ALLOWED IN THE POOL.
- CHILDREN WHO ARE NOT TOILET TRAINED SHALL WEAR TIGHT FITTING PLASTIC UNDERWEAR OR SWIM DIAPERS.
- DIVING IS NOT PERMITTED IN SHALLOW WATER.

- ALL ANIMALS, BIRDS AND DOMESTIC FOUL ARE PROHIBITED FROM ENTERING THE POOL
- THE POOL SHALL CLOSE AT 10:00 PM. CHILDREN UNDER THE AGE OF 12 WITHOUT ADULT SUPERVISION WILL NOT BE ALLOWED.
- THE POOL LIFELINE SHALL NOT BE REMOVED WITHOUT PERMISSION FROM THE POOL
- 2. BATHER LOAD POST A SIGN IN A CONSPICUOUS LOCATION WITHIN THE POOL ENCLOSURE

ADDITIONAL SIGNS

WARNING - NO LIFE GUARD ON DUTY

STATING: "BATHER LOAD: 216

- NO DIVING (SIGN TO BE POSTED ON WALL AND DECK)
- EMERGENCY USE ONLY (SIGN TO BE POSTED ABOVE SAFETY EQUIPMENT)
- 911 (SIGN POSTED ABOVE EMERGENCY TELEPHONE)
- POOL PERMIT

HOURS OF OPERATION:

- ADDITIONAL SIGNAGE MAY BE REQUIRED BY THE OWNER, COORDINATE ALL SIGNAGE WITH THE OWNER PRIOR TO FABRICATION
- DEPTH MARKERS
- a. DEPTH MARKERS SHALL BE IN NUMERALS FOLLOWED BY THE LETTERS "FT" TO INDICATED FEET. MARKERS SHALL BE 4" MINIMUM IN HEIGHT AND BE A COLOR CONTRACTING WITH THE BACKGROUND.
- b. DEPTH MARKERS SHALL BE SET IN INLAID TILE.
- c. Markers shall be located on both sides and both ends of the pool.
- d. MARKERS SHALL BE LOCATED AT OR ABOVE THE WATER LINE ON THE POOL WALL AND ON THE COPING.
- MARKERS SHALL BE LOCATED AT MAXIMUM AND MINIMUM DEPTH POINTS OF THE POOL AND AT THE POINTS OF BREAK BETWEEN THE DEEP AND SHALLOW PORTIONS AT INTERMEDIATE INCREMENTS OF DEPTH, SPACE AT NOT MORE THAN 25 FOOT INTERVALS, OR AS NOTED ON PLANS.

CONDUIT

FOR FLEXIBLE CONNECTIONS TO SWIMMING POOL, SPA, AND HOT TUB MOTORS PER NEC680.21(A)(3) & 680.42(A)(1)

TITAN TYPE CB IS MANUFACTURED WITH A SPIRAL-WOUND STRIP OF HEAVY GAUGE, CORROSION RESISTANT, HOT-DIPPED GALVANIZED STEEL. FOR 3/8" THROUGH 1-1/4" TRADE SIZES, THE CORE IS CONSTRUCTED WITH A SQUARE-LOCKED STEEL STRIP WITH AN INTEGRAL COPPER-BONDING STRIP ENCLOSED WITHIN THE STEEL CONVOLUTIONS. FOR 1-1/2" THROUGH 4" TRADE SIZES, THE CORE IS CONSTRUCTED WITH A FULLY-INTERLOCKED STEEL STRIP. A RUGGED, FLAME-RETARDANT, FLEXIBLE PVC JACKET IS EXTRUDED OVER THE STEEL CORE. THE BLUE JACKET RESISTS OILS, MILD ACIDS, AND EXPOSURE TO SUNLIGHT. OTHER JACKET COLORS ARE AVAILABLE.

- BLUE COLOR, A PROTECTIVE THERMOPLASTIC OUTER JACKET WHICH SEALS OUT WATER, LIQUIDS, ABRASIVES, ALCOHOL, COOLANTS, CORROSIVE FUMES AND GASES, DIRT, GREASE, MINERAL ACIDS, NON-CONCENTRATED FIXED ALKALINES, PETROLEUM OILS, SALT AIR AND SPRAY, AND WEATHER.
- SMOOTH METAL INTERIOR FOR EASY WIRE PULLING
- UV SUNLIGHT-RESISTANT JACKET
- RATED FOR TEMPERATURE RANGE OF -30°C TO +80°C, 60°C OIL (-22°F TO +176°F,
- ACCEPTS STANDARD METALLIC LIQUID TIGHT FITTINGS
- RATED FOR DIRECT BURIAL APPLICATIONS

STANDARDS

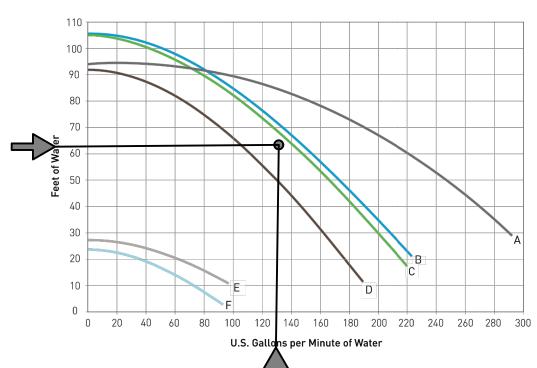
- NEC TYPE DESIGNATION TYPE LFMC (LIQUID TIGHT FLEXIBLE METAL CONDUIT)
- ANSI/NFPA-70, NEC ARTICLE 350

SECTION 12-1300

• UL LISTED TO UNDERWRITERS LABORATORIES STANDARD ANSI/UL-360 FOR LIQUID TIGHT FLEXIBLE STEEL CONDUIT

• CSA LISTED TO CSA 22.2 NO.56 FOR USE PER THE CANADIAN ELECTRICAL CODE C22.1

PERFORMANCE CURVES



Performance Curve	Model	Description
Α	XFE-20	5 HP, High Efficiency
Α	XFK-20	5 HP, 3-Phase, TEFC Motor
В	XFE-12	3 HP, High Efficiency
С	XF-12	3 HP, Standard Efficiency
B,E	XFDS-12	3 HP, 2-Speed
В	XFK-12	3 HP, 3-Phase, TEFC Motor
D	XFE-8	2 HP, High Efficiency
D	XF-8	2 HP, Standard Efficiency
D,F	XFDS-8	2 HP, 2-Speed
D	XFE-30	2.5 HP, High Efficiency, Uprated
D	XF-30	2.5 HP, Standard Efficiency, Uprated
D,F	XFDS-30	2.5 HP, 2-Speed, Uprated
D	XFK-8	2 HP, 3-Phase, TEFC Motor

OCCUPANCY GROUP/POO OCCUPANCY GROUP/POOL HOUSE RE: BUILDING PLANS OCCUPANT LOAD FOR POOL: RE: POOL CALCULATIONS ALLOWABLE NUMBER OF STORIES ACTUAL NUMBER OF STORIES REQUIRED NUMBER OF EXITS ACTUAL NUMBER OF EXITS E: BUILDING PLANS ALLOWABLE BUILDING HEIGH ACTUAL BUILDING HEIGHT ALLOWABLE EXIT TRAVEL DISTANCE ACTUAL TRAVEL DISTANCE: REQUIRED EXIT WIDTH: ACTUAL EXIT WIDTH: SEPARATED OR NON-SEPARATED DESIGN SPRINKLERED: FIRE SEPARATION DISTANCE PLUMBING FIXTURES REQUIRED RE: POOL CALCULATIONS <u>IOTE: REFER TO BUILDING PLANS FOR LOCATION AND SIZE OF RESTROOMS</u>

CODE ANALYSIS

POOL FINISHES

BUILDING DATA

AND ORDINANCES

PROJECT DESCRIPTION: SWIMMING POOL

INTERNATIONAL BUILDING CODE, 2018 EDITION

INTERNATIONAL MECHANICAL CODE, 2018 EDITION

• INTERNATIONAL PLUMBING CODE, 2018 EDITION

INTERNATIONAL FIRE CODE, 2018 EDITION

NATIONAL ELECTRICAL CODE, 2017 EDITION

INTERNATIONAL FUEL GAS CODE, 2018 EDITION

• INTERNATIONAL ENERGY CONSERVATION CODE, 2018 EDITION

ANSI/APSP-1 2003 STANDARD FOR PUBLIC SWIMMING POOLS

PHYSICALLY HANDICAPPED PEOPLE, 2017 EDITION.

ICC/ANSI-A117.1: PROVIDING ACCESSIBILITY AND USABILITY FOR

• CITY OF LEE'S SUMMIT, MISSOURI APPLICABLE CODES, STANDARDS

WATER LINE TILE SELECTION : 6" X 6" FROST PROOF , COLOR SELECTED BY OWNER TOTAL STEP TILE: 2" X 2" COLOR SELECTED BY OWNER TOTAL COPING PERIMETER: 248 L.F. PRECAST CONCRETE RACING LANES: 4

TILE: 6" X 6" COLOR SELECTED BY OWNER

PLUMBING / POOL EQUIPMENT (NSF APPROVED)

NOTE: ALL EQUIPMENT WILL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. INLETS: STA-RIGHT- 08417-0000 SKIMMERS: STA-RIGHT - 08650-1403 VACUUM CLEANING SYSTEM: MANUAL VACCUM CLEANING SYSTEM

CONNECTED TO THE SKIMMERS CHLORINATOR: PENTAIR INTELLICHLOR, COMSYS-16 ACID FEEDER: PENTAIR INTELLICHEM

TEST KIT: LAMOTTE 2056 COLORQ PRO 7 POOL FILTER: PENTAIR CLEAN AND CLEAR PLUS CARTRIDGE FILTER SYSTEM - CCP520 CARTRIDGE (PROVIDE SECONDARY CARTRIDGE TO ENSURE PROMPT

REPLACEMENT WHEN NECESSARY VALVES: (TELEDYNE LAARS -JANDY VALVE - 2 1/2 X 2") FLOW METER: 4" FLOW METER #3040P, 125-500 GMP MAX, NSF-50 LISTED

POOL PUMP: PENTAIR WHISPERFLO XFE-12, 3 HP POOL HEATER: NOT PROVIDED MAIN DRAIN POOL: AQUASTAR Model # WAV9WRxxxB

HYDROSTATIC RELIEF VALVE: PENTAIR - 542020 LIGHTS: 500 WATT, 12 VOLT, 50FT CORD (PENTAIR INTELLIBRITE - 601306) WHITE POOL LIGHTS 300 WATT, 12 VOLT, 100FT CORD (PENTAIR GLOBRITE - 602106) WHITE LED LIGHTS HANDRAILS: (S.R.SMITH - 3HR-6-065)

HANDRAIL ANCHOR: (S.R.SMITH - AS-100C 3" BRONZE ANCHOR) LADDER: S.R.SMITH - LF-24-3B SEALED STEEL SALTWATER FRIENDLY ESCUTCHEON PLATES: (6) (S.R.SMITH,INC. - EP-100F) BACKWASH TO: <u>NOT REQUIRED</u>, <u>CARTRIDGE FILTERS ARE USED</u> FRESHWATER SOURCE: IN-LINE FILL WITH USC APPROVED RPZ BACKFLOW PREVENTER DELUXE CLEANING KIT: (1) - (TAILOR - COMPLETE (K-2005)

LIFE HOOK: (1) - (RAINBOW - R221026) PERMANENTLY ATTACHED TO 16' POLE RING BOUY: (1) - WITH 50 FT LINE (CAL-JUNE - #GW 20) FIRST AID KIT: (1) (E.R.B ADVANCED SAFETY - #25EP)

LIFE SAVING EQUIPMENT:

IRRIGATION SLEEVES (4"): N/A

DECKING

POOL PUMP

SCALE: NTS

NOTE: THE POOL DECK WILL BE NON-SLIP AND SLOPE 1/4" PER FOOT AWAY FROM THE POOL. DECK TYPE: CONCRETE WITH LIGHT BROOM FINISH STRIP DRAIN: NIC - RE: CIVIL DRAWINGS FOR LOCATION AND TYPE DRAIN PIPE: SDR 80 PVC (4")

			OCCUPANT LOAD AND I
		BATHER LOAD	Area (SF)
		Deep area (>5')	0
		Shallow Area (<=5')	3,236
	cription	Total Bather Load	
	, High Efficiency	OCCUPANT LOAD	Area (SF)
5 HF	P, 3-Phase, TEFC Motor		. ,
3 HP, H	igh Efficiency	In Pool	3,236
3 HP, S	itandard Efficiency	In Deck	5,309
3 HP, 2-S	peed	Total Occupant Load	
3 HP, 3	3-Phase, TEFC Motor	Occupant Load per Sex	
	2 HP, High Efficiency	EXIT WIDTH	Occupant Load
	2 HP, Standard Efficiency	LAII WIDIII	•
	2 HP, 2-Speed		172
2	.5 HP, High Efficiency, Uprated		
2.	5 HP, Standard Efficiency, Uprated		
	2.5 HP, 2-Speed, Uprated		
	2 HP, 3-Phase, TEFC Motor		

POOL CALCULATIONS -WOODSIDE RIDGE POOL MEASUREMENTS

	I OUL MEASUREME	1110	
Description	Area (SF)	Depth (FT)	Volume (GAL)
eep Pool	2618.86	4.5	88,386.53
(id Pool	242.752	1.5	2,730.96
Sun Shelf - REEF	374.348	1	2,807.61
otal Area (SF)			3,236
otal Volume (GAL)			93,925
otal Volume (cubic FT)			12,523
Perimeter (LF)			247
	POOL PLUMBING	ì	
Pool Capacity (GAL)			93,925
verage Turnover Rate (min)			240
Clean Rate			360
/lin. Flow Rate (GPM)			261
RETURN INLETS	Inlet Rate	(gpm)	No. Inlets
	25		11
KIMMERS	Skimmer Ra	te (gpm)	No. Skimmers
based on gpm	35		8
pased on sf of surface area	400	8	
ESTI	MATED HEAD CALCU	LATIONS	
LOW RATE (GPM)	261	Friction Loss	
PIPE LENGTH AND RISE	/100 FT		
eet of Head			5
3" Pipe - LF*	7.96	1.9	15.12

Bacca on gpin			
based on sf of surface area	400	8	
ESTIN	NATED HEAD CALCU	ILATIONS	
FLOW RATE (GPM)	261	Friction Loss	
PIPE LENGTH AND RISE	/100 FT		
Feet of Head			5
3" Pipe - LF*	7.96	1.9	15.12
VALVES AND TURNS	QTY		
90deg Elbow*	28	1.3	36.40
45deg Elbow*	49	0.35	17.15
Gate Valve*	7	4.5	31.50
Tee*	10	0.4	4.00
CARTRIDGE FILTER	2	7.5	15.00
HEATER	0	7.5	0.00
* estimated count		TOTAL	124.17
PUMPS	2	PER PUMP	62.09
	POOL EQUIPMEN	T	
POOL PUMP	Pump Rate	(GPM)	No. Pumps

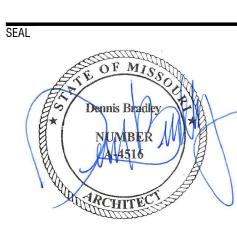
I LIVITAII I AI L 12, OI II	170		
FILTER TYPE	Filtration R	Filter Area-Min.	
Cartridge Filter	0.375		696.00
PENTAIR CCP - 520	520	sf of area	2
CHLORINATOR	MODEL	LBS	Lbs Required
PENTAIR INTELLICHLOR	COMSYS-16	16	
	COMSYS-16	16	
		32	30
	POOL LIGHTING		
FIXTURE	WATTS	QTY	
PENTAIR INTELLIBRITE	500	3	1500
PENTAIR GLOBRITE	300	9	2700
		WATTS/SF	1.30
	OCCUPANT LOAD AND EX	ITING	

PENTAIR XFE-12. 3HP

(OCCUPANT LOAD AND EX	ITING	
BATHER LOAD	Area (SF)	Ratio	Bather Loa
Deep area (>5')	0	1/30	0
Shallow Area (<=5')	3,236	1/15	216
Total Bather Load			216
OCCUPANT LOAD	Area (SF)	SF/person	Occ. Load
In Pool	3,236	50	65
In Deck	5,309	50	107
Total Occupant Load			172
Occupant Load per Sex			86
EXIT WIDTH	Occupant Load	in/Person	Exit Width (
	172	0.2	34.4

POOL DESIGNER: **B&A ARCHITECTURE** 100 W 31ST STREET, SUITE 100 KANSAS CITY, MO 64108 PH: 816-753-6100

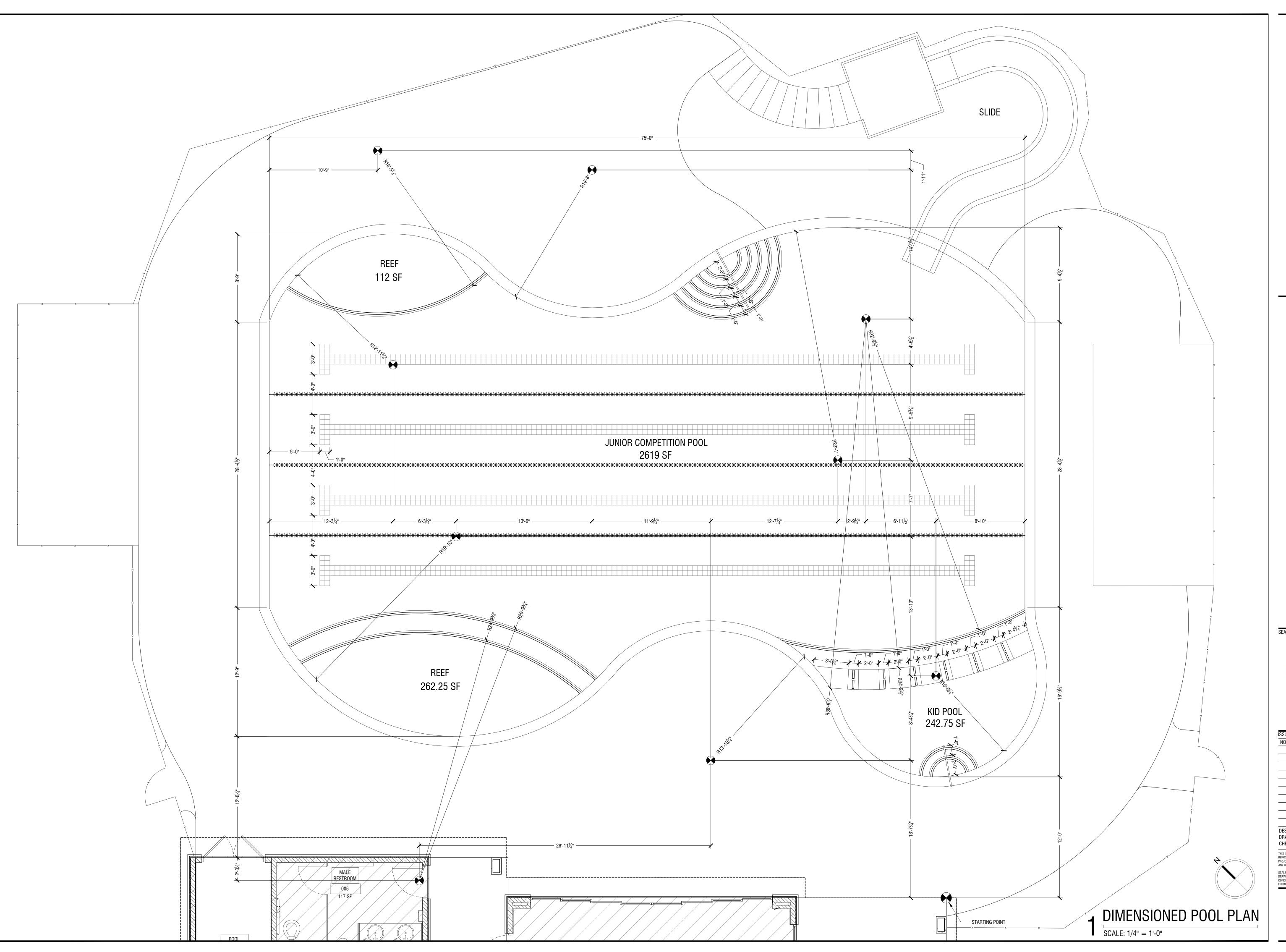
CLIENT: SUMMIT HOMES



NO.	MARCH 17, 2020 REVISION	DA
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DRAWING ONLY. CONTRACTOR SHALL CAREFULLY REVIEW ALL DIMENSIONS AND CONDITIONS SHOWN HEREON AND AT ONCE REPORT TO THE ARCHITECT ANY ERROR INCONSISTENCY OR OMISSION DISCOVERED.





POOL DESIGNER:

B&A ARCHITECTURE

100 W 31ST STREET, SUITE 100

KANSAS CITY, MO 64108

PH: 816-753-6100

CLIENT: SUMMIT HOMES

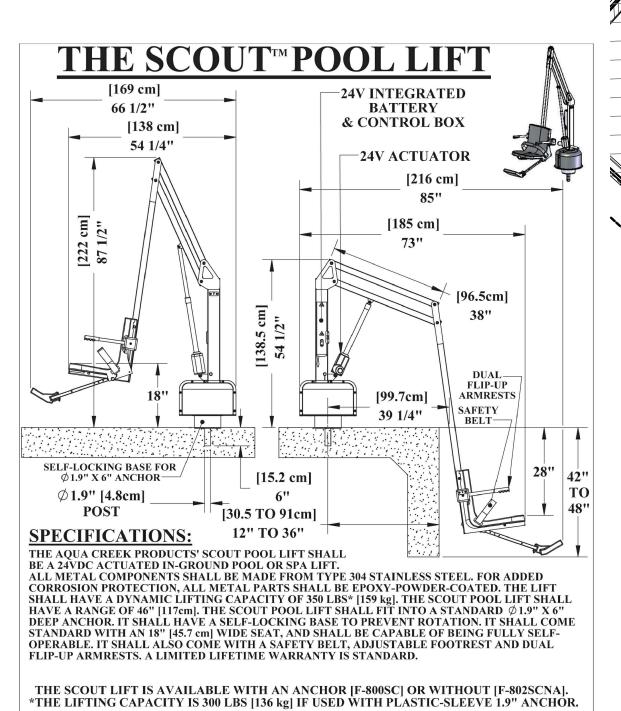
NO.	REVISION	DA

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PL101

- THE WORK SHALL CONFORM TO THE APPLICABLE BUILDING CODE, AND OTHER ORDINANCES, CODES AND REGULATIONS LISTED IN THE SPECIFICATIONS OR ON THE DRAWINGS, AND REQUIRED BY LOCAL BUILDING AUTHORITIES. THE GOVERNING CODES, RULES AND REGULATIONS ARE COLLECTIVELY REFERRED TO AS 'THE CODE'. THE CONTRACTOR SHALL REPORT ANY INCONSISTENCIES, CONFLICTS OR OMISSIONS THEY MAY DISCOVER TO THE ARCHITECT FOR INTERPRETATION PRIOR TO PERFORMING THE WORK.
- THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL PROVIDE PUBLIC PROTECTION AS NECESSARY AND REQUIRED BY GOVERNING CITY AGENCIES.
- THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE WORK OF ALL SUB-CONTRACTORS AND SHALL PERFORM SUCH MISCELLANEOUS WORK AS MAY BE NECESSARY FOR THEM TO COMPLETE THEIR WORK.
- 4. THE GENERAL CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS ON THE JOB SITE AND REPORT ANY AND ALL DISCREPANCIES AND/OR UNUSUAL CONDITIONS TO THE ARCHITECT PRIOR TO FINALIZING BIDS OR COMMENCEMENT OF ANY CONSTRUCTION.
- 5. ALL REQUIRED PERMITS MUST BE OBTAINED FROM THE PUBLIC WORKS, BUILDING, AND HEALTH DEPARTMENTS PRIOR TO START OF CONSTRUCTION.
- 6. THE GENERAL CONTRACTOR SHALL OBTAIN ALL PERMITS FOR ALL SITE DEVELOPMENT WORK, PAY ALL FEES FOR PERMITS, AND CHECK ALL OVERNING AUTHORITIES' SPECIFICATIONS FOR GUTTERS, SIDEWALKS, POLES, AND OTHER STRUCTURES, INCLUDING REMOVAL OR RELOCATION OF EXISTING UTILITIES OR OTHER PHYSICAL OBJECTS SHOWN ON PLANS OR OTHERWISE NOTED OR REQUIRED.
- 7. DO NOT SCALE THESE DRAWINGS, SHOULD ANY DIMENSIONAL DISCREPANCIES BE ENCOUNTERED, CLARIFICATIONS SHALL BE OBTAINED FROM THE ARCHITECT.
- 8. UNLESS OTHERWISE NOTED ON THESE DRAWINGS OR IN THE SPECIFICATIONS AS BEING N.I.C. OR EXISTING, ALL ITEMS, MATERIALS, ETC., AND THE INSTALLATION OF SAME ARE A PART OF THE CONTRACT DEFINED BY THESE DRAWINGS AND SPECIFICATIONS.
- 9. THE SITE AND BUILDINGS SHALL BE ACCESSIBLE TO AND FUNCTIONAL FOR THE PHYSICALLY HANDICAPPED.
- 10. ALL RAMPS SHALL HAVE A NON-SLIP FINISH.
- 11. DETAILS ARE INTENDED TO SHOW THE INTENT OF THE DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT THE FIELD DIMENSIONS OF CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK OF THE CONTRACT.
- 12. THE CLIENT, ARCHITECT, CONSULTANTS AND ALL INSPECTIONS FROM PERTINENT AGENCIES SHALL BE PERMITTED ACCESS TO THE JOB SITE AT ALL TIMES DURING NORMAL WORKING HOURS.
- 13. THE CONTRACTOR SHALL VERIFY INSERTS AND EMBEDDED ITEMS WITH ALL APPLICABLE DRAWINGS BEFORE POURING CONCRETE.
- 14. REFER MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DRAWINGS FOR UTILITY SERVICES AND SITE DEVELOPMENT WORK.



9889 GARRYMORE LANE MISSOULA, MT 59808

Aqua Creek Products

3. POOL STEPS

4. SKIMMERS

6. 12" LED 120V

8. HANDI-CAP LIFT

7. PENTAIR LED GLO-BRITES

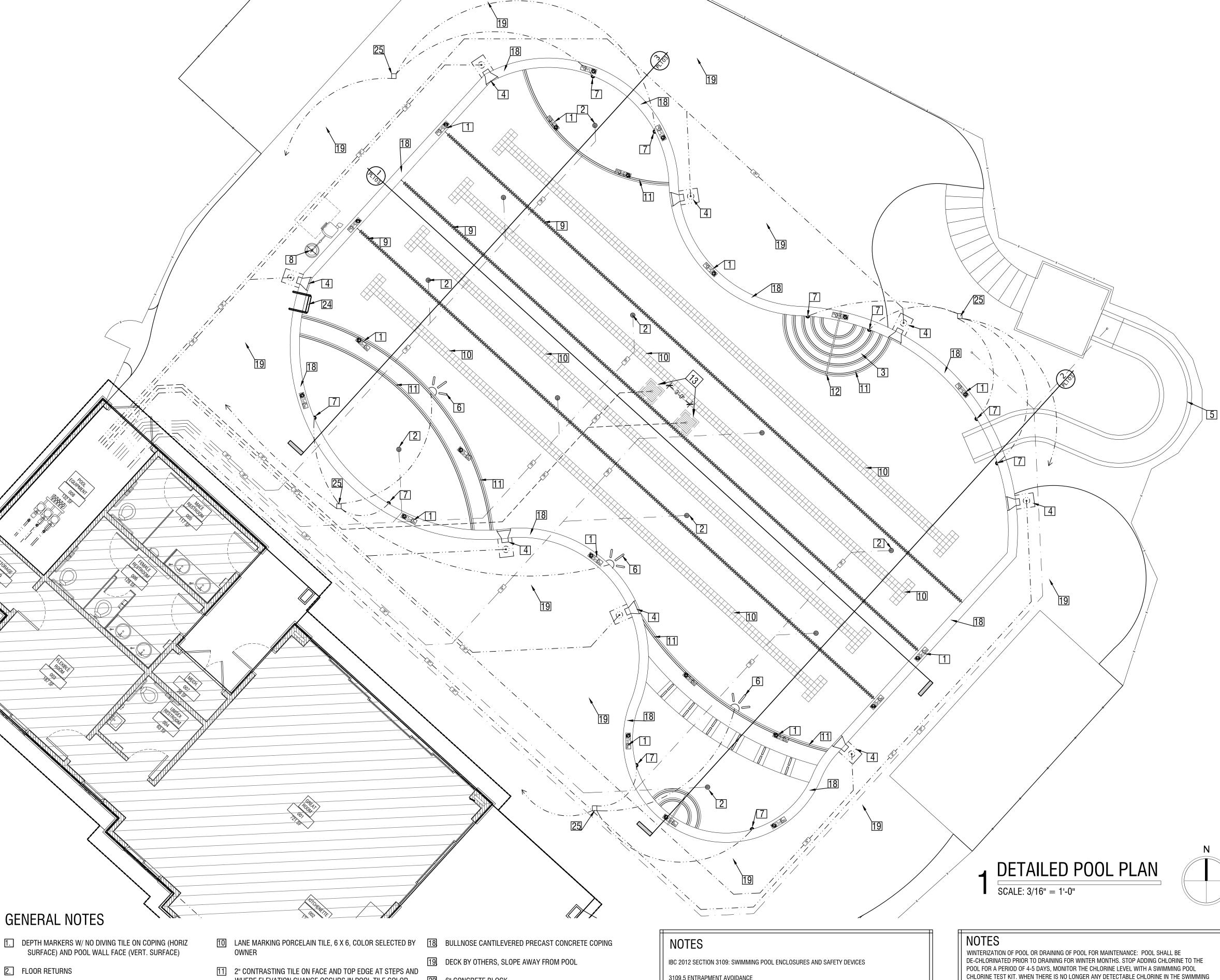
5. FIBERGLASS POOL SLIDE w/ LADDER, BY OTHERS

9. LANE LINE W/ CUP ANCHORS AT EACH END

F-800SC-1

7/27/11

1:24



WHERE ELEVATION CHANGE OCCURS IN POOL TILE COLOR

SELECTED BY OWNER FROM STANDARD NON-SLIP COLORS

12 STAINLESS STEEL HANDRAIL WITH PVC SLEEVES

BOND BEAM 12" X 20", MIN. UNLESS NOTED OTHERWISE

13 ANTI-VORTEX DUAL FLOOR DRAINS

14 #4 REBAR AT 12" O.C.E.W.

15 12" OF $\frac{1}{2}$ " CLEAN GRAVEL

16 6X6 WATER LINE TILE

20. 6" CONCRETE BLOCK

23. HYDROSTATIC RELIEF VALVE

25. J-BOX FOR POOL LIGHTING

24. STAINLESS STEEL POOL LADDER

22. WATER TARGET AT EACH END OF SWIMMING LANES

21. POOL PLASTER

3109.5 ENTRAPMENT AVOIDANCE

SWIMMING POOLS

MEET THE REQUIREMENTS OF A SAFE AND CLEAN POOL

SUCTION OUTLETS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH ANSI/APSP-7.

THE POOL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING, VERIFYING, SUPPLYING

AND INSTALLING THE EQUIPMENT, INCLUDING PUMPS, FILTERS, PIPING, INLETS, SKIMMERS,

DRAINS, APPROPRIATELY SIZED FOR THE SIZE OF POOL DESIGNED. THE EQUIPMENT SHALL BE

SIZED TO OPTIMIZE THE LIFE OF THE EQUIPMENT AND EFFICIENCY OF THE SYSTEM AND STILL

THE POOL CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT, MISSOURI; JACKSON COUNTY HEALTH DEPARTMENT, AND THE

STATE OF MISSOURI ORDINANCES AND CODES REGARDING THE CONSTRUCTION OF PUBLIC



POOL DESIGNER: **B&A ARCHITECTURE** 100 W 31ST STREET, SUITE 100 KANSAS CITY, MO 64108 PH: 816-753-6100

> CLIENT: SUMMIT HOMES

JED: MAR	CH 17, 2020	
	REVISION	DAT

DESIGNED BY DMB DRAWN BY DMB CHECKED BY DMB

POOL IT IS SAFE TO DISCHARGE THE WATER. USING A SUBMERSIBLE PUMP, DRAIN POOL TO

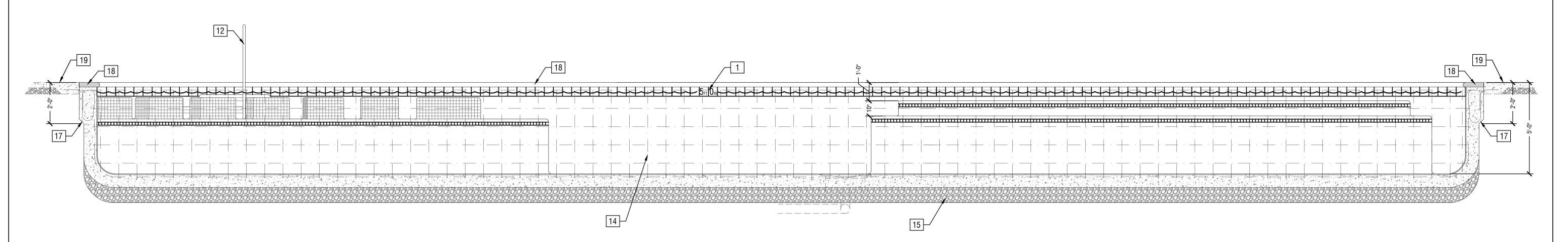
LANDSCAPED AREAS. THE DISCHARGE AREA SHALL BE IDENTIFIED ON THE CIVIL SITE DRAWINGS.

NOTE: THE POOL LIFT WILL BE REQUIRED TO BE INSTALLED BY

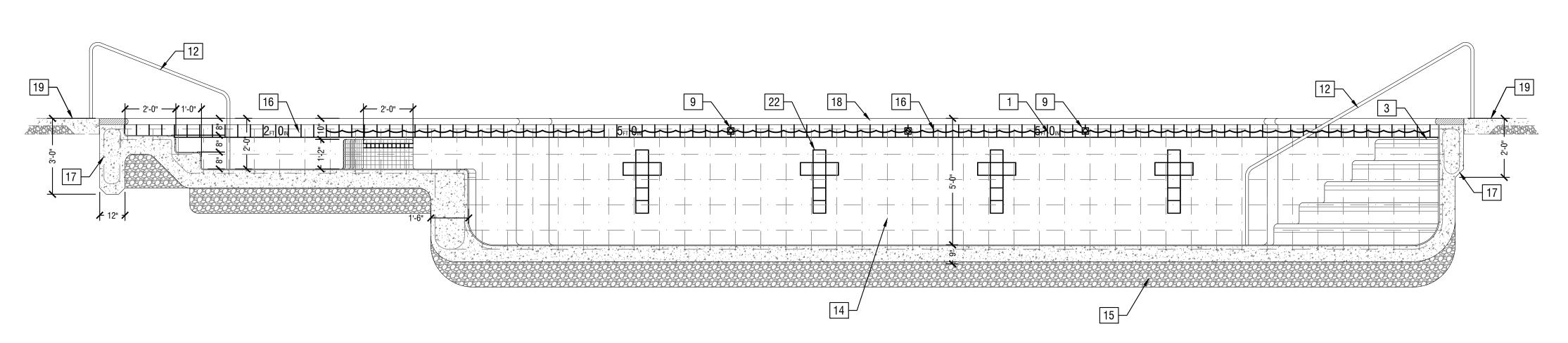
TEMPORARY CERTIFICATE OF OCCUPANCY (TCO) RELEASE.

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CONDITIONS SHOWN HEREON AND AT ONCE REPORT TO THE ARCHITECT ANY ERROR INCONSISTENCY OR OMISSION DISCOVERED.

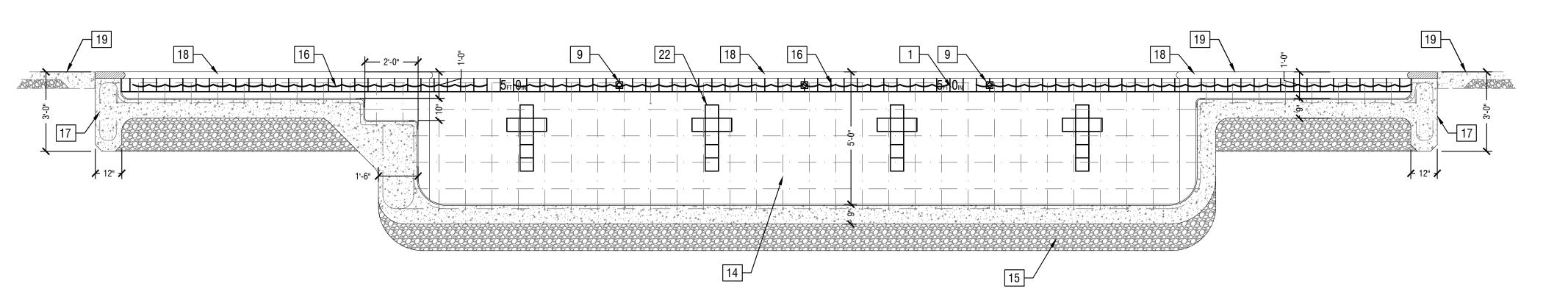


- 1. DEPTH MARKERS W/ NO DIVING TILE ON COPING (HORIZ SURFACE) AND POOL WALL FACE (VERT. SURFACE)
- 2. FLOOR RETURNS
- 3. POOL STEPS
- 4. SKIMMERS
- 5. FIBERGLASS POOL SLIDE w/ LADDER, BY OTHERS
- 6. 12" LED 120V
- 7. PENTAIR LED GLO-BRITES
- 8. HANDI-CAP LIFT
- 9. LANE LINE W/ CUP ANCHORS AT EACH END
- 10 LANE MARKING PORCELAIN TILE, 6 X 6, COLOR SELECTED BY OWNER
- 2" CONTRASTING TILE ON FACE AND TOP EDGE AT STEPS AND WHERE ELEVATION CHANGE OCCURS IN POOL TILE COLOR SELECTED BY OWNER FROM STANDARD NON-SLIP COLORS
- 12 STAINLESS STEEL HANDRAIL WITH PVC SLEEVES
- 13 ANTI-VORTEX DUAL FLOOR DRAINS
- 14 #4 REBAR AT 12" O.C.E.W.
- 15 12" OF $\frac{1}{2}$ " CLEAN GRAVEL
- 16 6X6 WATER LINE TILE
- 17 BOND BEAM 12" X 20", MIN. UNLESS NOTED OTHERWISE
- 18. BULLNOSE CANTILEVERED PRECAST CONCRETE COPING
- 19. DECK BY OTHERS, SLOPE AWAY FROM POOL
- 20. 6" CONCRETE BLOCK
- 21. POOL PLASTER
- 22. WATER TARGET AT EACH END OF SWIMMING LANES
- 23. HYDROSTATIC RELIEF VALVE
- 24. STAINLESS STEEL POOL LADDER
- 25. J-BOX FOR POOL LIGHTING
- $\frac{3}{4}$ " WATER SOURCE FOR SLIDE
- $\frac{3}{4}$ " WATER SOURCE TO ROCK OUTCROPPING WATER FALL



2 POOL SECTION SCALE: 3/8" = 1'-0"

POOL SECTION



3 POOL SECTION SCALE: 3/8" = 1'-0"



POOL DESIGNER:

B&A ARCHITECTURE

100 W 31ST STREET, SUITE 1

KANSAS CITY, MO 64108

PH: 816-753-6100

CLIENT: SUMMIT HOMES

> WOODSIDE KIDGE SWIMMING POOL 342 NW AMBERSHAM DR

SEAL

OF MISSO

Dennis Bradley

NUMBER

A 4516

ISSUED: MARCH 17, 2020

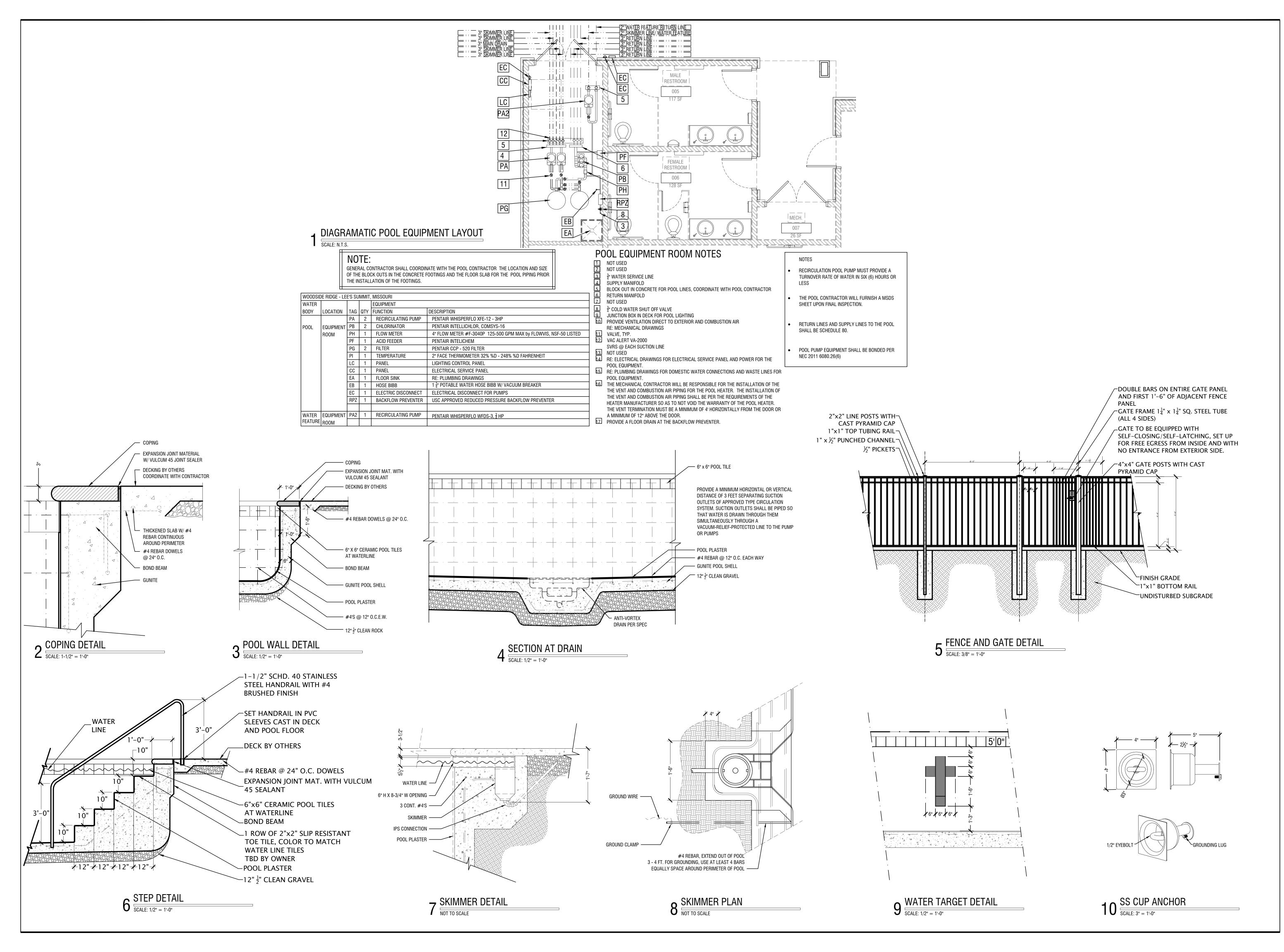
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POOL SECTIONS PL103





POOL DESIGNER:

B&A ARCHITECTURE

100 W 31ST STREET, SUITE 100

KANSAS CITY, MO 64108

PH: 816-753-6100

CLIENT: SUMMIT HOMES

> WOODSIDE RIDGE SWIMMING POOL 342 NW AMBERSHAM DR



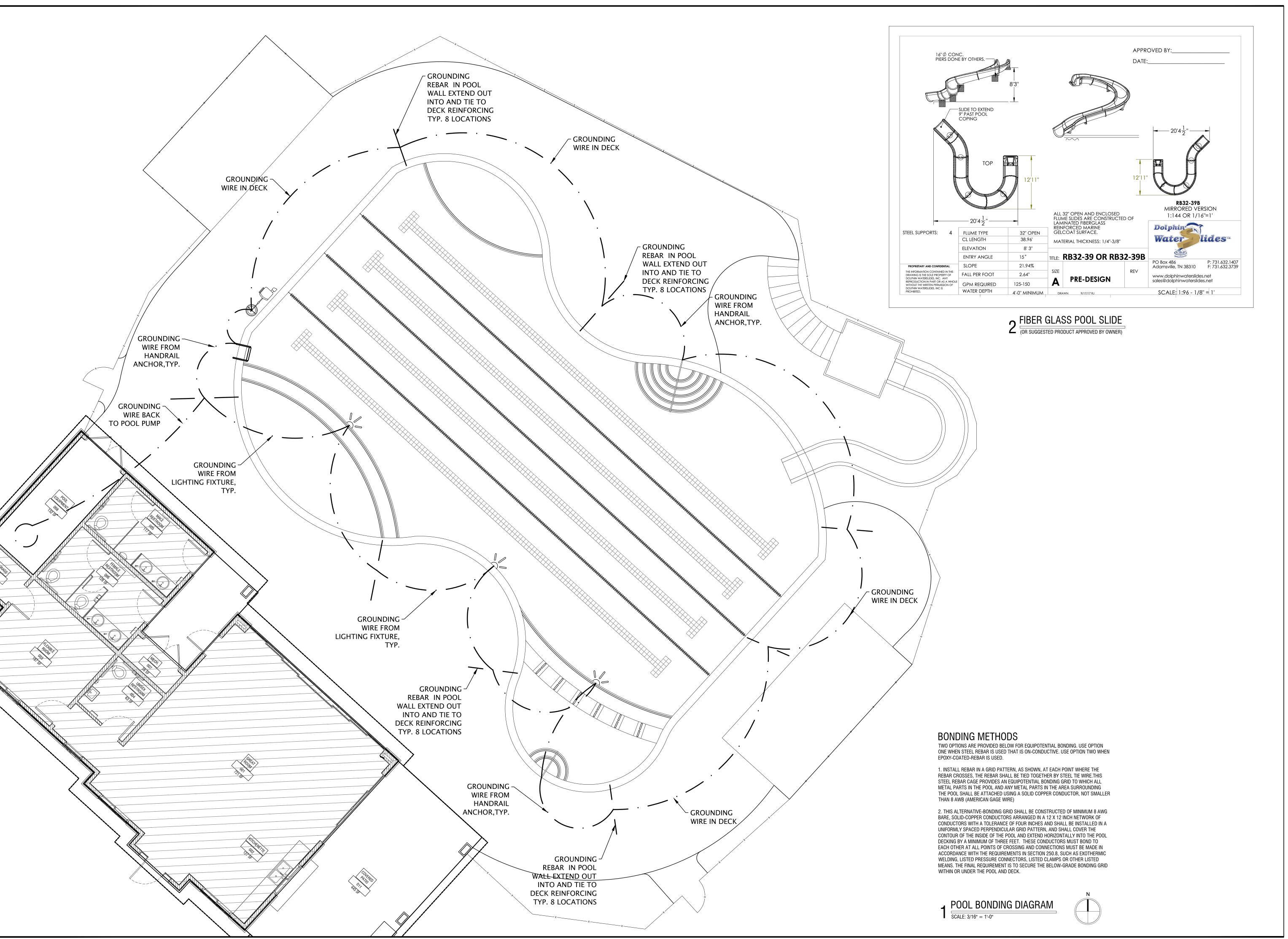
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POOL DETAILS PL 104





POOL DESIGNER:

B&A ARCHITECTURE

100 W 31ST STREET, SUITE 100

KANSAS CITY, MO 64108

PH: 816-753-6100

CLIENT: SUMMIT HOMES

VOUDSIDE KIDGE SWIMMING POOL 342 NW AMBERSHAM DR



NO.	MARCH 17, 2020	5.475
NO.	REVISION	DATE

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PL105