RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI

Joe Frogge — Digitally signed by Joe Frogge — 04/29/2021

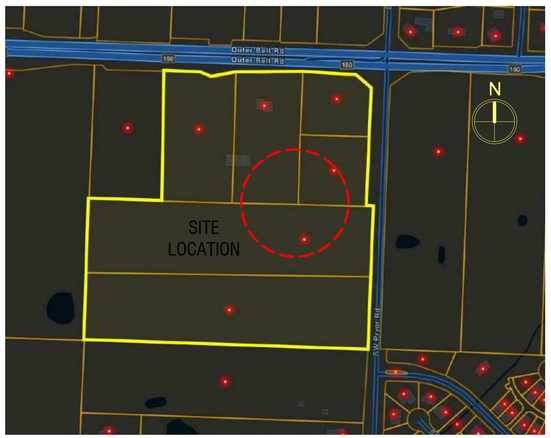
OSAGE CLUBHOUSE

2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI

PERMIT SET: AUGUST 5, 2020
REVISION #1-PLAN REVIEW COMMENTS: AUGUST 13, 2020

SUMMIT HOMES

AERIAL VIEW



SITE MAP

ARCHITECTURE

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

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

SEAL:

08.13.2020

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CODE INFORMATION

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

	REQUIRED/ALLOWED	PROVIDED
SQUARE FOOTAGE		
PER STORY	6,000 SQ.FT.	1,480 SQ.FT.
TOTAL BUILDING AREA	6,000 SQ.FT.	1,480 SQ.FT.
NUMBER OF STORY	1	1
BUILDING HEIGHT	40'	21'-5 1/4"
BUILDING ELEMENT FIRE RESISTANCE RATING		
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
FLOOR CONSTRUCTION	0 HR	0 HR
ROOF CONSTRUCTION	0 HR	0 HR
FIRE PROTECTION AND RESISTANCE REQUIREMENTS		
FIRE BARRIERS - STAIR ENCLOSURES	N/A	N/A
FIRE 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	776/15	52
(2) STORAGE	235/300	1
TOTAL		53 (A)

ADDITIONAL OCCUPANT LOADS

TYPE	SF/LOAD FACTOR	OCCUPANCY LOAD
(1) POOL	2,698/50	54
(2) POOL DECK	4,312/50	87
(3) PATIO / OUTDOOR	609 /15	41
TOTAL		182 (B)

TOTAL: 235 (A+B)

EGRESS WIDTH - STAIRS (IBC 1005.3)	N/A	N/A
EGRESS WIDTH - CLUBHOUSE (PER IBC 1005.3)	53 x 0.2" = 10.6" MIN.	72" (EXIT DOORS)
NUMBER OF EXITS - CLUBHOUSE	2 (PER IBC 1006.2.1)	2
EGRESS WIDTH - POOL DECK (PER IBC 1005.3)	182 x 0.2" = 36.4" MIN.	72" (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)	38'-0"
ROOF COVER CLASSIFICATION	B	B
ACCESSIBILITY		
ACCESSIBILITY WHEELCHAIR SPACES	N/A (PER 1108.2.2.1)	N/A

PLUMBING FIXTURES

TYPE - REQUIRED	MALE	FEMALE
WATER CLOSET	(235/2)/75=1.57 (~2)	(235/2)/75=1.57 (~2)
LAVATORIES	235/200=1.18 (~2)	
SERVICE SINK	1	
WATER FOUNTAIN	1 PER 500	

TOTAL

TYPE	REQUIRED	PROVIDED
WATER CLOSET	4	4
LAVATORIES	2	5
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
- ICC/ANSI A117.1-2009

DESIGN LOADS

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

SAFETY NOTES:

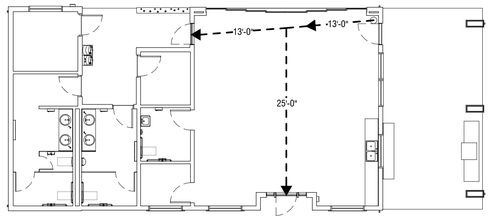
1. 2018 IFC 1004.3- POSTING OF OCCUPANT LOAD. EVERY ROOM OR SPACE THAT IS AN ASSEMBLY OCCUPANCY SHALL HAVE THE OCCUPANT LOAD OF THE ROOM OR SPACE POSTED IN A CONSPICUOUS PLACE, NEAR THE MAIN EXIT OR EXIT ACCESS DOORWAY FROM THE ROOM OR SPACE. POSTED SIGNS SHALL BE OF AN APPROVED LEGIBLE PERMANENT DESIGN AND SHALL BE MAINTAINED BY THE OWNER OR AUTHORIZED AGENT.
   - OCCUPANT LOAD SIGNS:
     - CLUBHOUSE: 53
     - POOL AREA: 182

2. 2018 IFC 407.3- IDENTIFICATION. INDIVIDUAL CONTAINERS OF HAZARDOUS 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 5003.5.
   - LABEL POOL EQUIPMENT, CHEMICALS ARE STORED ON SITE.

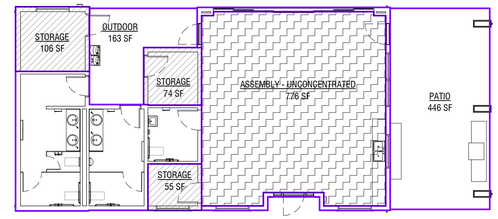
LEGEND

ASSEMBLY: 776 SQ.FT. OR 52 OCC. LOAD

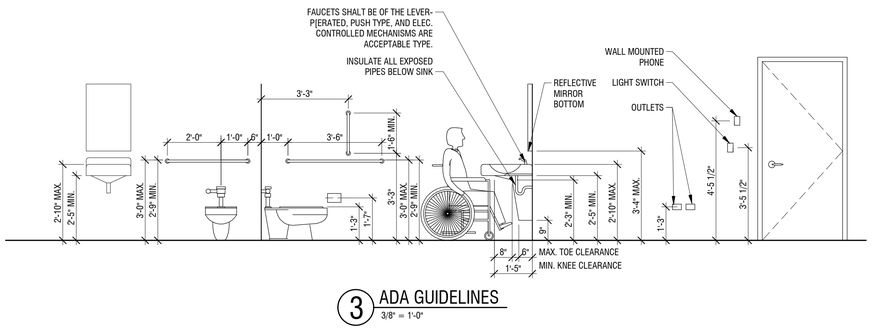
STORAGE: 235 SQ.FT. OR 1 OCC. LOAD



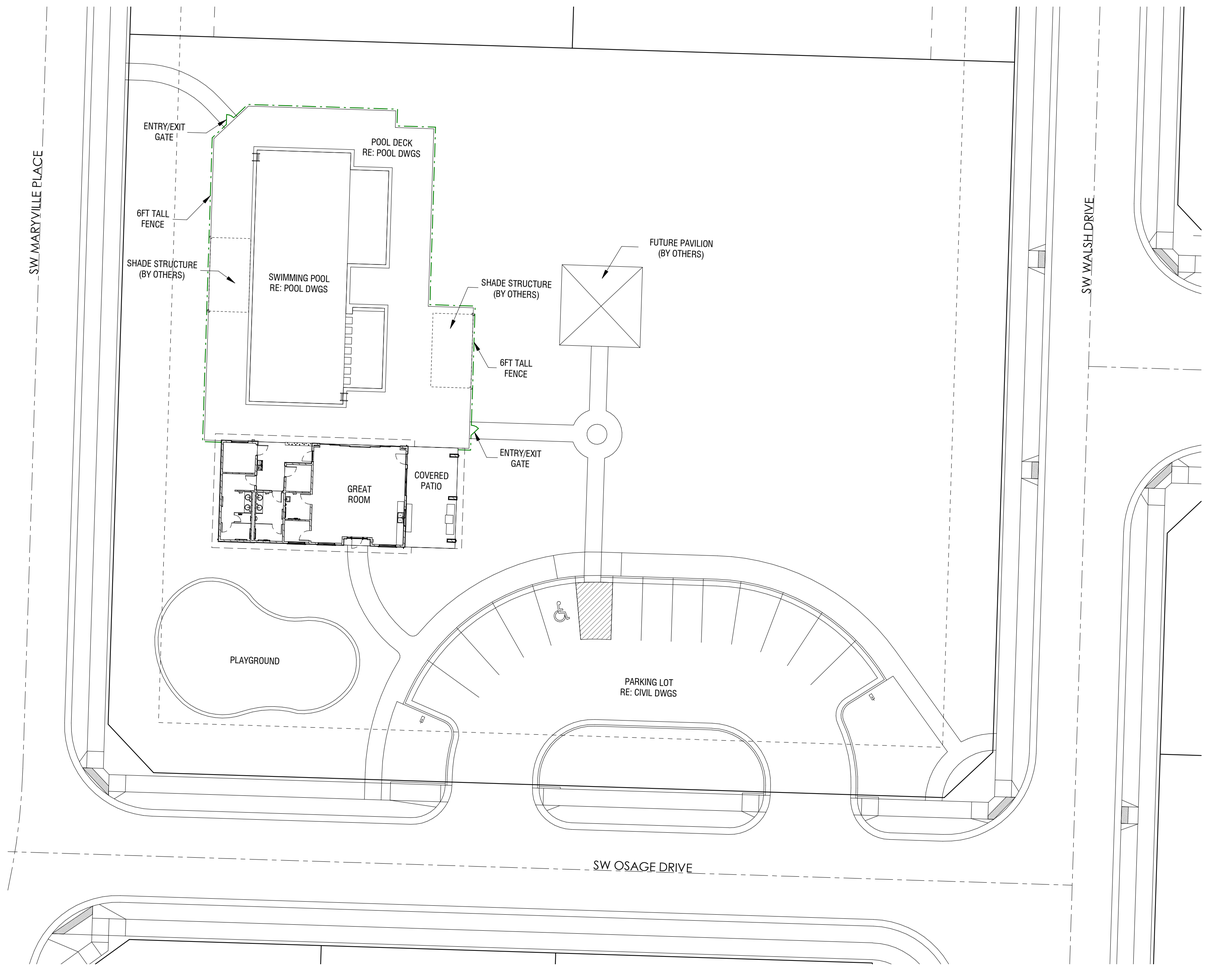
1 FIRE EXITING PLAN
3/32" = 1'-0"



2 AREA & OCCUPANT LOAD DIAGRAM
3/32" = 1'-0"



3 ADA GUIDELINES
3/8" = 1'-0"



4 SITE PLAN
3/64" = 1'-0"

N

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04/29/2021

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

OSAGE CLUBHOUSE

2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI 64082

SEAL

08.05.2020

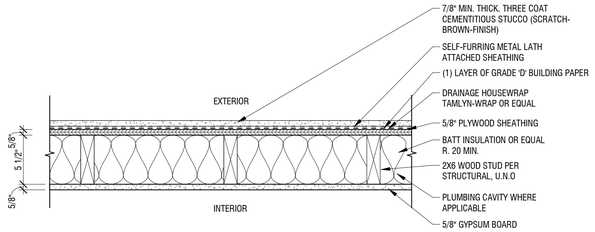
DATE ISSUED: AUGUST 05, 2020

NO.	REVISION	DATE
1	Plan Review Comments	08/13/2019

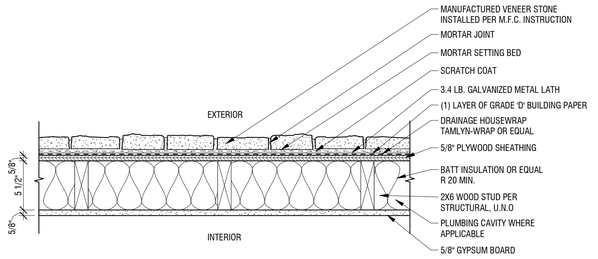
DESIGNED BY: FCR
DRAWN BY: FCR
CHECKED BY: TT/DMB

PROJECT INFORMATION

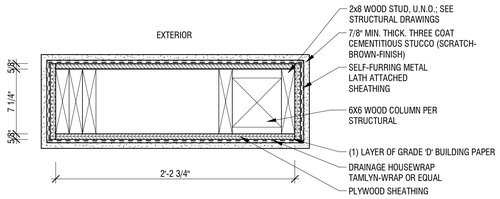
A001



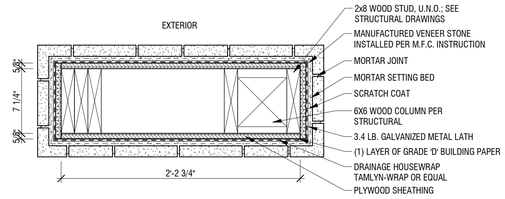
1 WALL TYPE 'E1' - EXTERIOR WALL - STUCCO
1 1/2" = 1'-0"



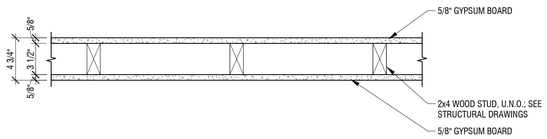
2 WALL TYPE 'E2' - EXTERIOR WALL - STONE VENEER
1 1/2" = 1'-0"



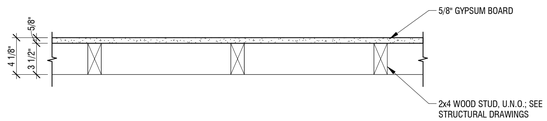
3 WALL TYPE 'E3' - PATIO WOOD COLUMN
1 1/2" = 1'-0"



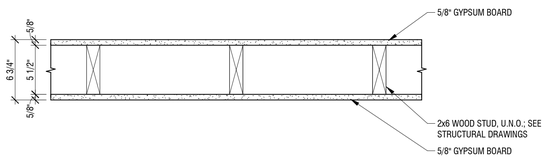
4 WALL TYPE 'E3' - PATIO WOOD COLUMN - BASE
1 1/2" = 1'-0"



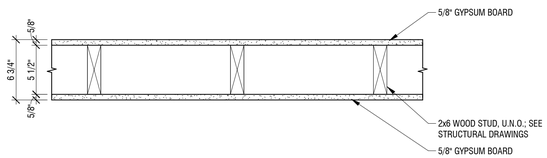
5 WALL TYPE 'P1' - INTERIOR WALL 2X4 STUD - TYPICAL
1 1/2" = 1'-0"



6 WALL TYPE 'P2' - INTERIOR WALL - ONE SIDE FINISH
1 1/2" = 1'-0"



7 WALL TYPE 'P3' - INTERIOR WALL 2X6 STUD - TYPICAL
1 1/2" = 1'-0"



8 WALL TYPE 'P4' - INTERIOR WALL 2X6 STUD - PLUMBING
1 1/2" = 1'-0"

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08.05.2020

DATE ISSUED: AUGUST 05, 2020

NO.	REVISION	DATE

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

WALL TYPES
A002

SPECIFICATIONS:

A. GENERAL NOTES

1. The Contractor shall not make any changes from these plans without the Owner's written approval prior to the start of the work.
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.
3. The Contractor shall be responsible for picking up permits required by City of Lee's Summit, Missouri.
4. The Contractor shall field verify all conditions and report any discrepancies or concerns to the Owner prior to starting construction.
5. 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.
6. The Sub-Contractor shall be responsible for all concrete testing required in the specifications.
7. 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 Lee's Summit, Missouri
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

1. Project Conditions:
   - 1.1. 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.
2. Disposal of Waste Materials:
   - 2.1. Remove waste materials from Owner's property.
   - 2.2. Burning is not permitted on Owner's property.
   - 2.3. Transport removed materials to a City approved "dump site".

C. EARTHWORK

1. 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
   - 3.2. 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.
5. Site Filling & Compacting:
   - 5.1. Prepare sub-grade ready for sod, sidewalks and paving.
   - 5.2. Provide compacted aggregate base course for paved area.
6. Finish Grading: Place and level topsoil materials prior to landscaping work.
7. 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.
8. 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.
   - 8.3. Grade excavation top perimeter to prevent surface water runoff into excavation.
9. 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 representative.
11. Excavating for Structures: In excavating for footings and foundations, take care not to disturb bottom of excavation.
    - 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 waterproofing.
    - 12.2. Inspecting, testing, approving, and recording locations of underground utilities.
    - 12.3. Removal of concrete formwork.
    - 12.4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.
    - 12.5. Removal of trash and debris.
    - 12.6. Placement of horizontal bracing on horizontally supported walls or setting of first floor joists and decking.
    - 12.7. 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.

E. CONCRETE WORK (RE: STRUCTURAL NOTES)

F. STRUCTURAL STEEL (RE: STRUCTURAL NOTES)

G. ROUGH CARPENTRY

1. 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:
   - 3.1. Plates, blocking, bracing, nailers and general utility purposes: SPF, standard or better.
   - 3.2. General framing, joists: SPF#2 or better.
   - 3.3. Rim Joist - Rimboard or approved equal
4. Plywood:
   - 4.1. 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.
   - 4.2. Exterior Soffits: Hardie board or approved equal
   - 4.3. Pressure Treated Wood: For all plates in contact with the foundation.
   - 4.4. Provide pressure treated wood (ground contact) for all wood in contact with concrete.
5. Rough Hardware:
   - 5.1. Joist Hangers: As required and as manufactured by Kant-Sag, Simpson, Teco or approved equal.
   - 5.2. Wood to Steel Beam Connectors: Power actuated fasteners; 5/32" diameter standard velocity fastening system.
   - 5.3. Post Bases: Simpson or approved equal.
6. General Framing:
   - 6.1. Install wood blocking and backing required for the work of other trades. Contractor to coordinate
   - 6.2. Fabricate headers full thickness of framing using pieces of stud material set on edge with spacers, or solid lumber of equivalent size.
   - 6.3. 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.

H. INTERIOR ARCHITECTURAL WOODWORK

1. 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:
   - 3.1. Install woodwork to comply with AWI Section 1700.
   - 3.2. 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 adjoining surface.
   - 3.3. Scribe and cut woodwork to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts.
   - 3.4. 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.

I. THERMAL INSULATION

1. 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. Installation:
   - 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.
   - 2.2. 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. ROOFING

1. Shingles:
   - 1.1. Conform to UL "Prepared Roofing Materials "Shingles Class A" and Federal Specification SSS-291d.
   - 1.2. Tamko, Heritage Premium Roofing Products, Inc. or approved equal, 50 warranty.
   - 1.3. Color to be selected
   - 1.4. Edge Trims & Flashing: Prefinished metal.
   - 1.5. Installation:
     - 1.5.1. Apply one layer 15 Lb asphalt saturated roofing felt, over sound decking with a minimum 12" headlap and a 24" minimum side lap.
     - 1.5.2. Install roofing prior to installation of guttering.
2. Standing Seam Metal Roof: Install per MFG instructions.

K. JOINT SEALERS

1. Applications:
   - 1.1. Where exterior paving abuts vertical structures.
   - 1.2. Exterior building wall joints including at windows, louvers, and exterior doors.
   - 1.3. Flashing joints.
   - 1.4. All joints between dissimilar materials.
2. General:
   - 2.1. Prime or seal the joint surfaces wherever shown or recommended by the sealant manufacturer.
   - 2.2. Install sealant to depths as recommended by the sealant manufacturer.
   - 2.3. 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

1. 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 specified.
   - 2.2. Within four days of fitting each door, seal affected area with at least two coats of water white lacquer.

M. WINDOWS AND SLIDING GLASS DOORS

Aluminum-Clad Wood Windows: Architectural Collection E-Series by Andersen or approved equal
Sliding Glass Doors: Series 7600 by Western Window System or approved equal.

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. Aluminum fixed system shall 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.
3. Installation:
   - 3.1. Use only skilled tradesman for the installation of the aluminum fixed system and components specified within this section.
   - 3.2. Bring any discrepancies between the project plans and field conditions to the attention of the General Contractor prior to the commencement of any work in the area in question.
   - 3.3. 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 maintain position and integrity of the fixed system when subjected to normal building movement and the specified wind load.
   - 3.4. Furnish and apply sealants in accordance with the manufacturer's published installation instructions

O. 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".
   - 1.2. 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.
3. Installation:
   - 3.1. Stagger the boards so that corners of any four boards will not meet at a common point except in vertical corners.
   - 3.2. Install the gypsum wallboard to studs at right angles, making end joints, where required, over framing or furring members.
   - 3.3. 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.

P. PAINTING

1. Preparation: Wood Surfaces: Clean wood surfaces to be painted of all dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand smooth those finished surfaces exposed to view, and dust off.
2. Application:
   - 2.1. 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.
   - 2.2. 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.
   - 2.4. Where spray application is used, apply each coat to provide the hiding equivalent of brush oats.
   - 2.5. Do not double back with spray equipment to build up film thickness of two coats in one pass.
3. Gypsum Drywall Systems (Walls): two (2) coats interior latex.
4. Wood Finish: by owner as selected

Q. CERAMIC/PORCELAIN TILE

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 following areas; floors, walls, shower walls and floors, countertops, decks and balconies, patios and walkways.
   - 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.
2. Materials
   - 2.1. Tile: Refer to the construction documents, see plans, finish schedule and interior elevations for areas receiving tile.
   - 2.2. Tile Backer Board: GEORGIA PACIFIC BUILDING PRODUCTS DensShield Tile Backer.
   - 2.3. Membranes: Cleavage Membrane: 15# roofing felt or approved equal; Moisture Barrier: 15# roofing felt; Waterproof Membrane: hot mopped felt, or approved equal.
   - 2.4. 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.
   - 2.5. Tile Adhesives: CUSTOM BUILDING PRODUCTS Master-Blend mixed with Custom-Flex latex.
   - 2.6. 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 adjacent grout.
   - 2.8. Tile Sealer: as recommended by CUSTOM BUILDING PRODUCTS and approved by Owner. Apply sealer per manufacturer's specifications.
   - 2.9. Preformed Shower Recesses: NOBLE Niches & Curbs #301 Square Niche, install per locations shown within the construction drawings.
3. Installation
   - 4.1. 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 per manufacturer's recommendations.
   - 4.4. Walls (Dry Locations): Thin-set over glass mesh mortar units.
   - 4.5. 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.
   - 4.7. Clean and seal tile and grout in accordance with product manufacturer's recommendations.

R. EXTERIOR SIDING

1. Stone Veneer
   - 1.1. Stone veneer by Grand Canyon stone or approved equal
   - 1.2. Installation: Cover the wall surface with a weather resistant barrier. Lap joints by applying felt horizontally with the upper layer lapped over the lower layer not less than 2" and end laps not less than 6". Barrier to be equal to U.S.C standard number 14-1. Install 2.5 lbs diamond mesh expanded metal lath. Use galvanized lath for exterior and black metal lath (non-galvanized) may be use for interior. Lap lath sides not less than 1/2" and end laps not less than 1". (It is important to attach lath with the small diamonds pointing upwards.) On inside and outside corners turn the corner 16" minimum each way. (This is an important step.) Barrier to be equal to ASTM C-847.
   - 1.3. Mortar mix designs:

Grouted joint installation

PARTS BY VOLUME	PORTLAND CEMENT OR BLENDED	MASONRY CEMENT TYPE (N)	HYDRATE LIME OR LIME PUTTY	SAND
MORTAR TYPE				
-	2	-	1	5 TO 7
S	3	-	-	5 TO 7
N	-	1	1 ½ TO 1 ¼	2 ¼ TO 3
N	-	1	-	2 ¼ TO 3

Mix for dry-stack series

PARTS BY VOLUME	PORTLAND CEMENT OR BLENDED		SAND
MORTAR TYPE			
-	3	* 2 PARTS THINSET MORTAR	7
-	2	BONDING AGENT 1 TO 1 (WITH WATER)	7
S	3	BONDING AGENT 1 TO 1 (WITH WATER)	7

* MUST BE LATEX MODIFIES THINSET FOR EXTERIOR USE MEETING ANSI A118.4

   - 1.4. Setting coat: Select mortar type to be used from mortar chart. Mix per instructions and apply to wall in areas not to exceed 10 square feet or in areas that will not setup before stone is applied. Application method is the same as scratch coat.
   - 1.5. Weather conditions: In hot weather conditions it may become necessary to moisten the wall before applying the setting coat. Weather conditions may also require moistening the back of each stone. This is best done using a fine spray of water or a wet brush. This step is important to prevent excessive absorption or moisture from the mortar. Application must be protected from freezing temperatures by sheltering the wall as mortar will not set up properly under such conditions. Do not use anti-freeze compounds to lower the freezing point of mortar.
2. Stucco
   - 2.1. Stucco system to be Dryvit systems. INC commercial Cement Plaster 3 or approved equal
   - 2.2. Description: Commercial Cement Plaster 3 consists of Dryvit Backstop NT air/water-resistive barrier, Dryvit CCP Base-Sanded or Concentrate, Dryvit acrylic primer and Dryvit acrylic coating or finish. CCP Base is applied directly to the properly installed paper backed metal lath (as required).
   - 2.3. Substrates shall comply with local code requirement and practices for use under cement plaster and shall be: Wood or metal framed wall assemblies sheathed with approved substrates.
   - 2.4. Sealant: shall meet ASTM C 190 & approved by stucco MFG.
   - 2.5. Flashing shall be provided at all roof-wall intersections, windows, doors, chimneys, decks, balconies, and other areas as necessary to prevent water penetration behind Commercial Cement Plaster 3.
   - 2.6. Project conditions: as recommended by MFG
   - 2.7. Prior to installation of Commercial Cement Plaster 3, it is the contractor's responsibility to ensure that the surfaces to receive stucco have been inspected to meet the requirement of the MFG.
   - 2.8. Installation per MFG recommendations

S. TOILET ACCESSORIES

1. 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
2. Installation: Install per manufacturer's instructions

T. PLUMBING (See sheet P101)

U. CABINETS

1. Kitchen Cabinets & Restroom Vanities:
   - 1.1. Plywood interior. 11 inch adjustable shelves in uppers. Shelves in bases.
   - 1.2. Manufacturer: Profile Cabinet or equal
   - 1.3. Stained the same color as the door. See interior finish schedule and legend

V. FINISH HARDWARE: Bright brass. See Door Hardware Schedule for details

W. ELECTRICAL (See sheet E 201)

X. EXTERIOR ACCESSORIES:

1. 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.
2. Installation: Install per manufacturer's instructions

RELEASE FOR CONSTRUCTION
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LEE'S SUMMIT, MISSOURI
04/29/2021

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OSAGE CLUBHOUSE
2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI 64082

SEAL

STATE OF MISSOURI
Dennis Bradley
NUMBER A-4516
ARCHITECT

08.05.2020

DATE ISSUED: AUGUST 05, 2020

NO.	REVISION	DATE

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

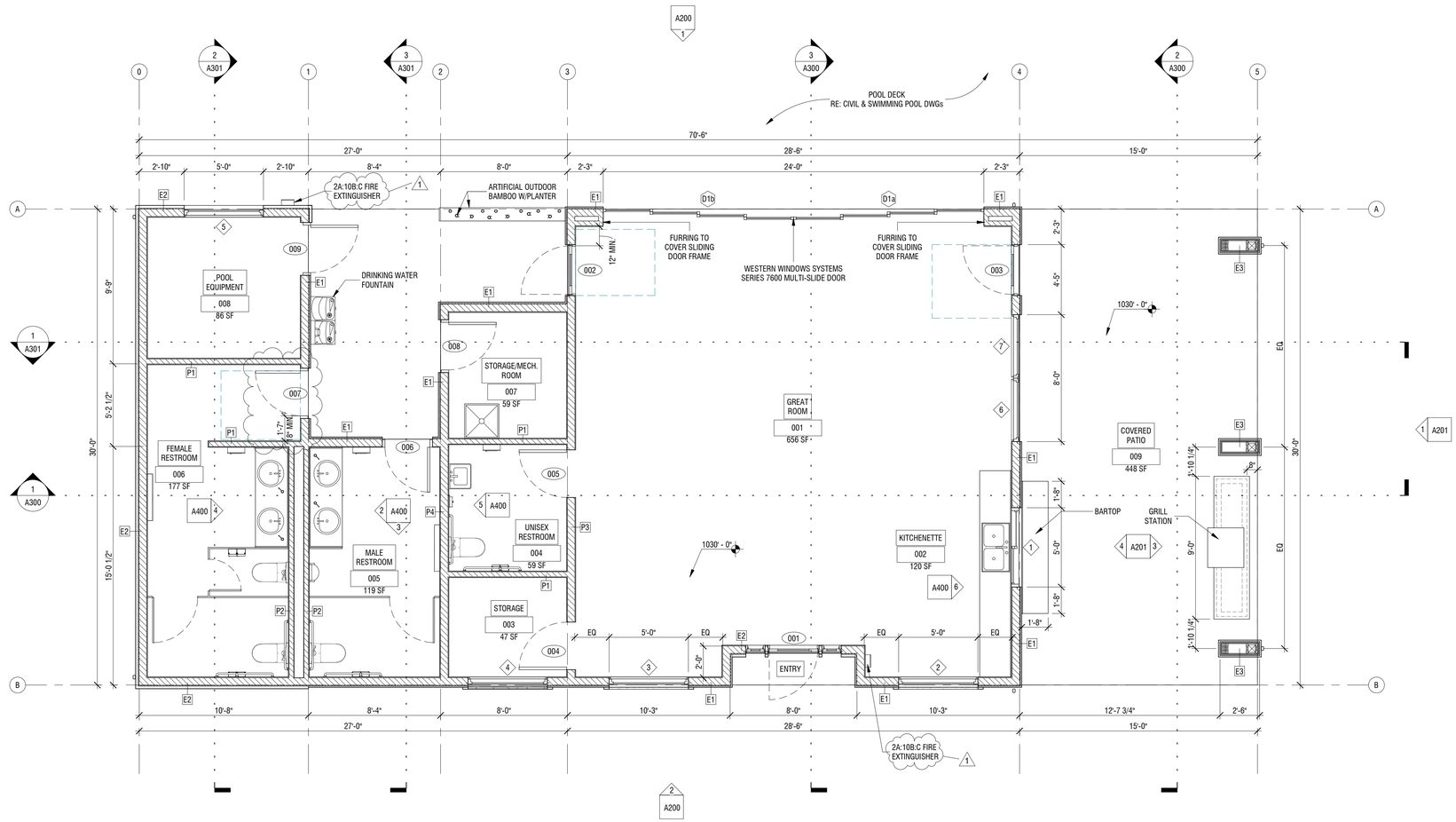
SPECIFICATIONS
A003

GENERAL NOTES

1. ALL PLAN DIMENSIONS GIVEN ARE TO FACE OF STUD OR MASONRY, U.N.O.
2. REFER TO STRUCTURAL DRAWINGS FOR FRAMING INFORMATION
3. ALL DOOR OPENINGS TO BE LOCATED 4" FROM NEAREST WALL CORNER, U.N.O.
4. SEE FINISH SCHEDULE ON SHEET A800 FOR MATERIAL INFORMATION
5. SEE DOOR/WINDOW SCHEDULE ON SHEET A600
6. SEE SHEET A400 FOR ENLARGED FLOOR PLANS

WALL TYPES

- E1 — EXTERIOR WALL, 2X6 WOOD STUD, STUCCO FINISHING, INSULATED RE: DETAIL 1 / A002
- E2 — EXTERIOR WALL, 2X6 WOOD STUD, STONE VENEER FINISHING, INSULATED RE: DETAIL 2 / A002
- E3 — EXTERIOR COLUMN WRAP, WOOD COLUMN, STUCCO FINISHING / STONE VENEER BASE RE: DETAILS 3 & 4 / A002
- P1 — TYPICAL INTERIOR WALL, 2X4 WOOD STUD, GYP. BOARD FINISHING RE: DETAIL 5 / A002
- P2 — TYPICAL INTERIOR WALL, 2X4 WOOD STUD, 1 SIDE GYP. BOARD FINISHING RE: DETAIL 6 / A002
- P3 — TYPICAL INTERIOR WALL, 2X6 WOOD STUD, GYP. BOARD FINISHING RE: DETAIL 7 / A002
- P4 — TYPICAL INTERIOR WALL, 2X6 WOOD STUD, GYP. BOARD FINISHING - PLUMBING RE: DETAIL 8 / A002



1 FLOOR PLAN
1/4" = 1'-0"

N

- SECTION: SECTION IDENTIFICATION / SHEET DESIGNATION
- DETAIL: DETAIL IDENTIFICATION / SHEET DESIGNATION
- ELEVATION: ELEVATION IDENTIFICATION / SHEET DESIGNATION
- 101 — DOOR DESIGNATION
- 1| — WALL TYPE DESIGNATION
- 1| — WINDOW/STOREFRONT DESIGNATION
- SPOT ELEVATION
- ELEVATION

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STATE OF MISSOURI
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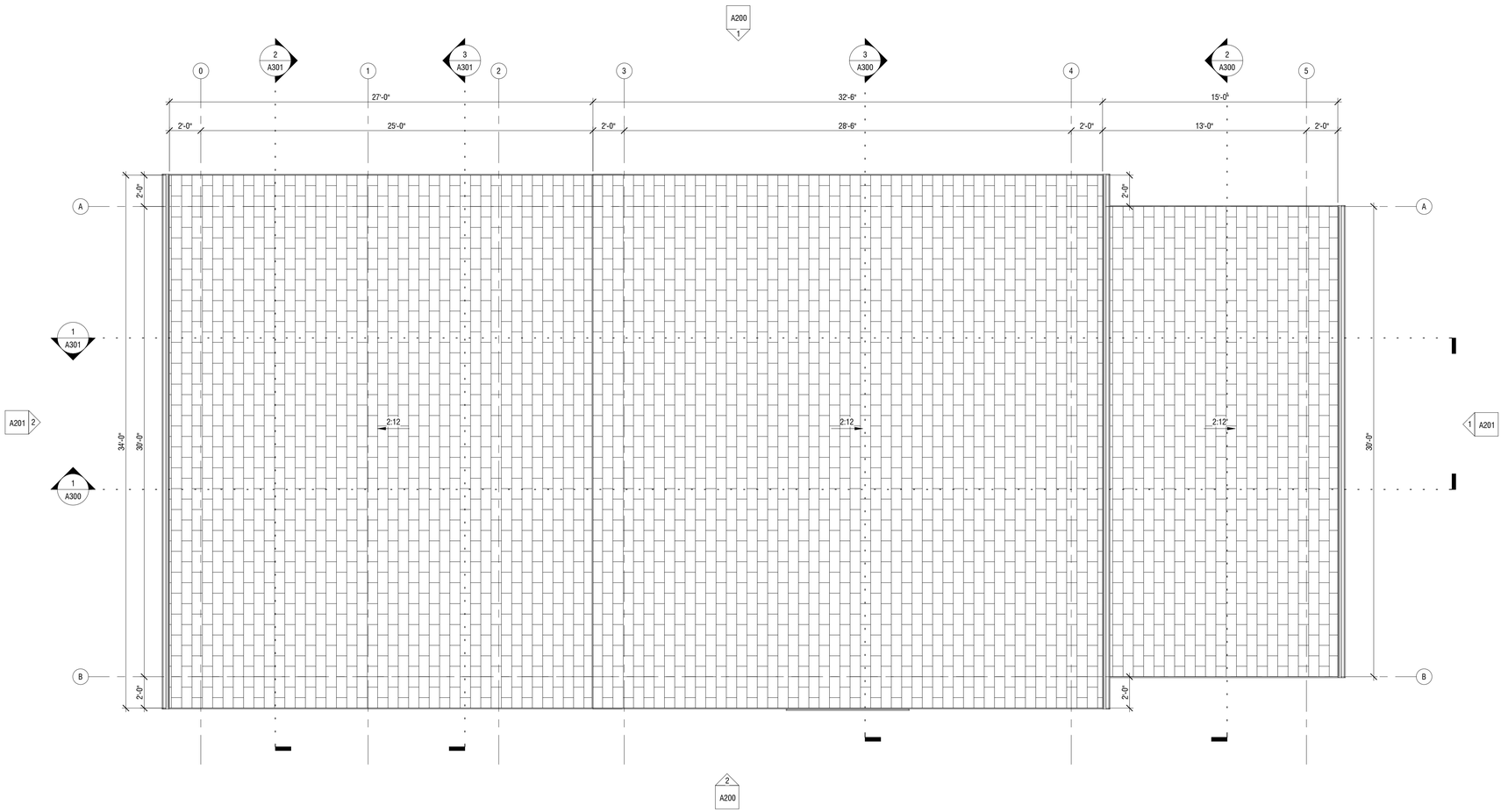
CHECKED BY: TT/DMB

FLOOR PLAN
A100

GENERAL NOTES

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



1 ROOF PLAN
1/4" = 1'-0"

N

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OSAGE CLUBHOUSE

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ROOF PLAN
A101

GENERAL NOTES

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

COMPOSITION SHINGLES

STONE VENEER

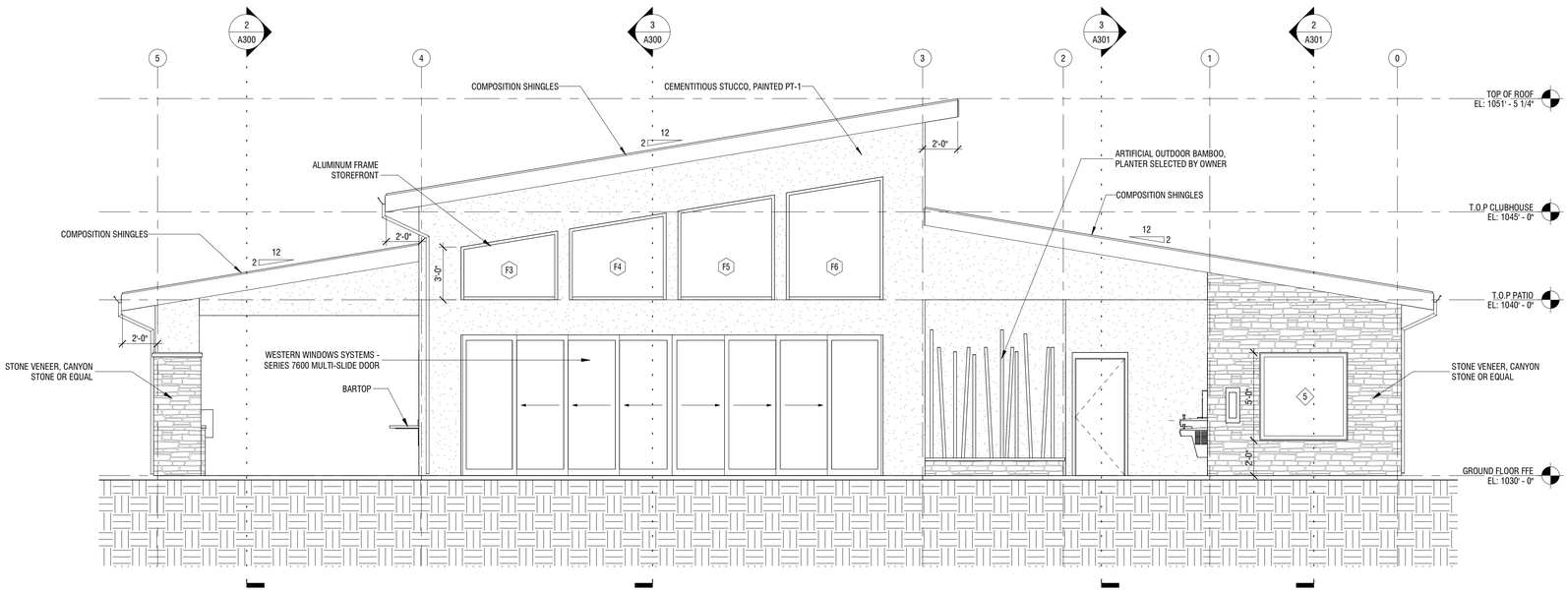
PT-1: SW9170

PT-2: SW7020

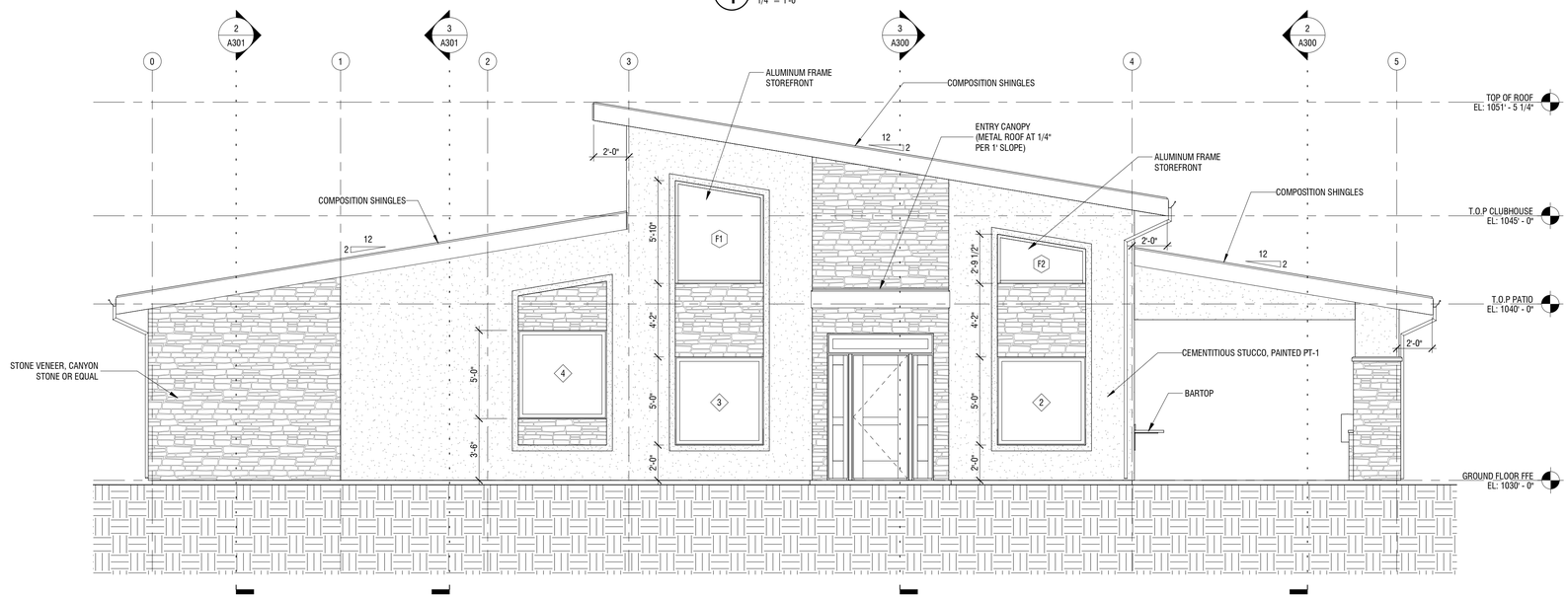
PT-3: SW7068

EXTERIOR FINISHING SCHEDULE

NO.	MATERIAL/ITEMS	DESCRIPTION	COLOR/FINISH
1	COMPOSITION SHINGLES	TAMKO, HERITAGE PREMIUM OR EQUAL	WEATHERED WOOD
2	STONE VENEER	CANYON STONE OR EQUAL	CANYON LEDGE/ COLOR: MOUNTAIN
3	CEMENTITIOUS STUCCO	DRYVIT, "OUTSULATION PLUS" OR EQUAL	PT-1: ACIER SW9170
4	FASCIA	SMART TRIM, LP OR EQUAL	PT-2: BLACK FOX SW7020
5	SOFFIT	SMART TRIM, LP OR EQUAL	COLOR: PT-2
6	TRIM	STUCCO FOAM TRIM	PT-3: GRIZZLE GRAY SW7068
7	GUTTER	24 GA. STEEL	MATCH TO WINDOW COLOR
8	WINDOWS	ANDERSEN ARCH. COLLECTION OR EQUAL	METAL - MATTE BLACK
9	EXTERIOR DOORS	METAL PANEL, PAINTED	MATCH TO WINDOW COLOR



1 NORTH ELEVATION
1/4" = 1'-0"



2 SOUTH 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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OSAGE CLUBHOUSE
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ELEVATIONS
A200

GENERAL NOTES

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

COMPOSITION SHINGLES

STONE VENEER

PT-1: SW9170

PT-2: SW7020

PT-3: SW7068

EXTERIOR FINISHING SCHEDULE

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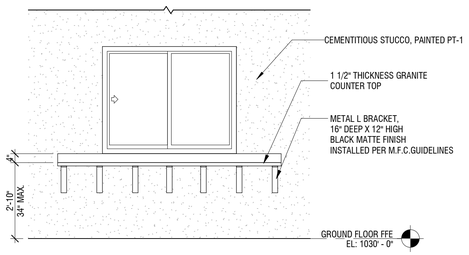
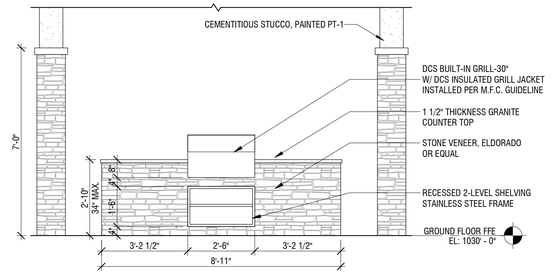
9	EXTERIOR DOORS	METAL PANEL, PAINTED	MATCH TO WINDOW COLOR

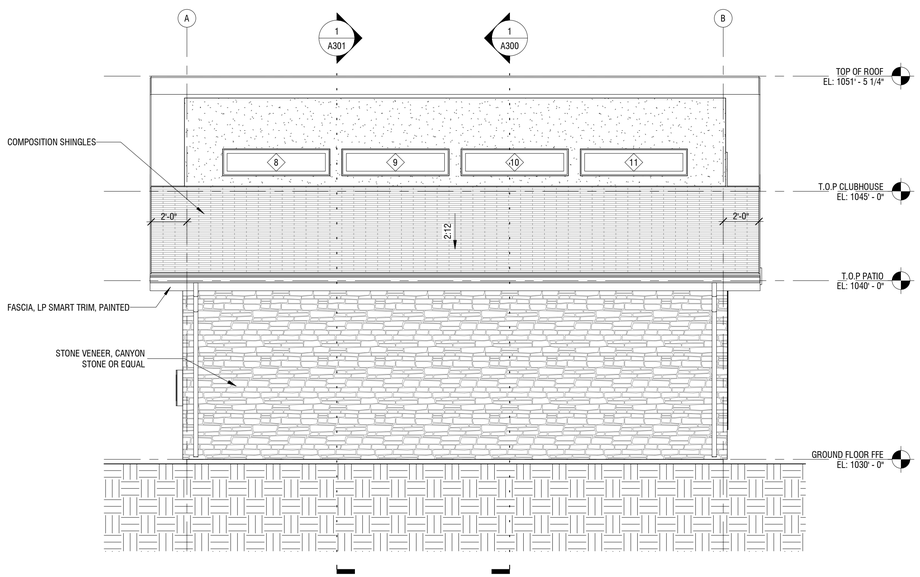


4 BAR - ELEVATION
3/8" = 1'-0"

1 EAST ELEVATION
1/4" = 1'-0"



3 GRILL STATION - ELEVATION
3/8" = 1'-0"



2 WEST ELEVATION
1/4" = 1'-0"

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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

OSAGE CLUBHOUSE

2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI 64082

SEAL

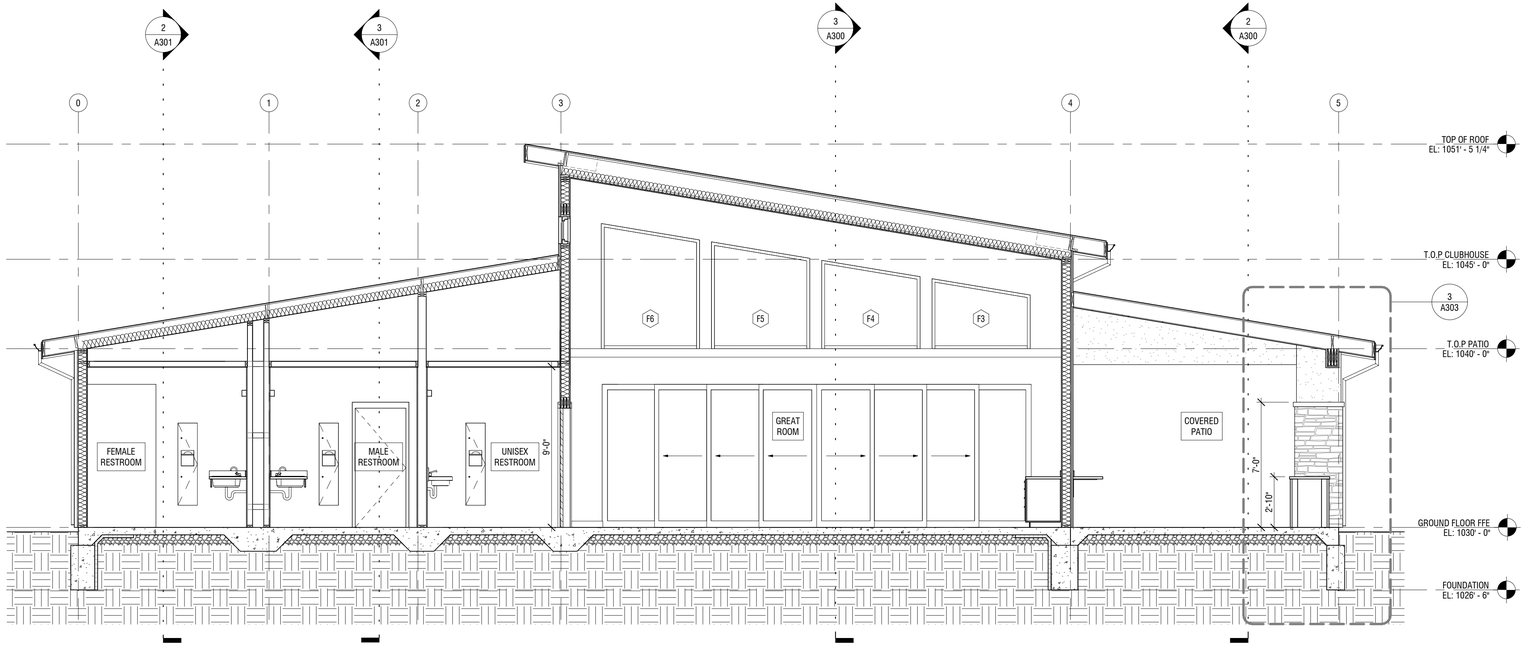
08.05.2020

DATE ISSUED: AUGUST 05, 2020

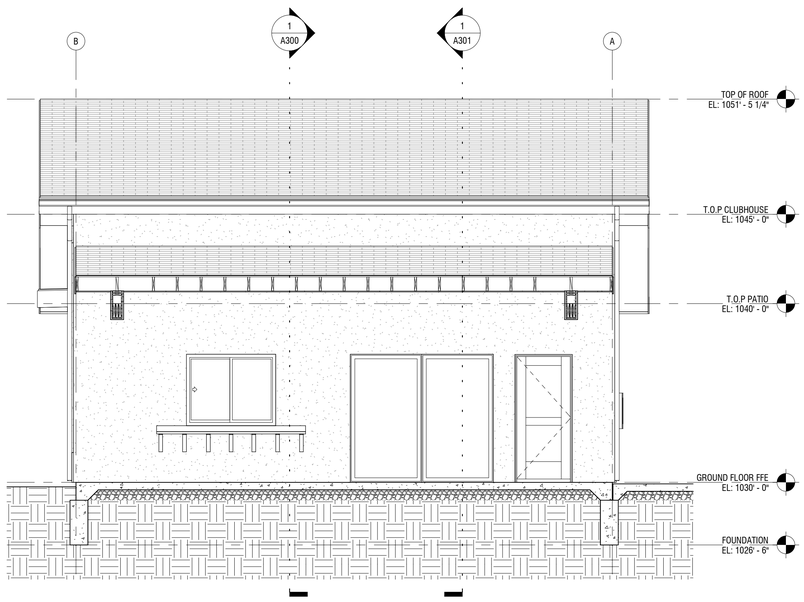
NO.	REVISION	DATE
1	Plan Review Comments	08/13/2019

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

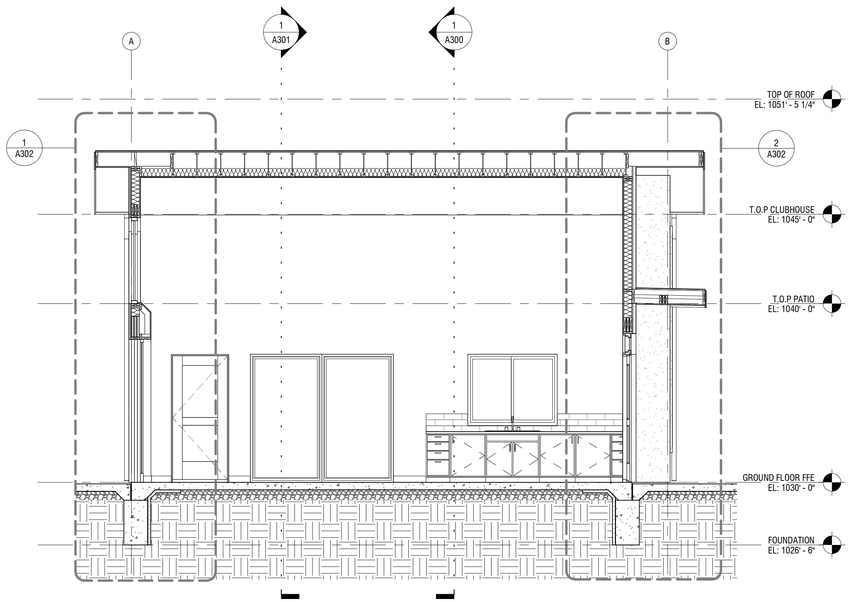
ELEVATIONS
A201



1 BUILDING SECTION 1
1/4" = 1'-0"



2 SECTION @ COVERED PATIO
1/4" = 1'-0"



3 SECTION @ GREAT ROOM
1/4" = 1'-0"

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

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
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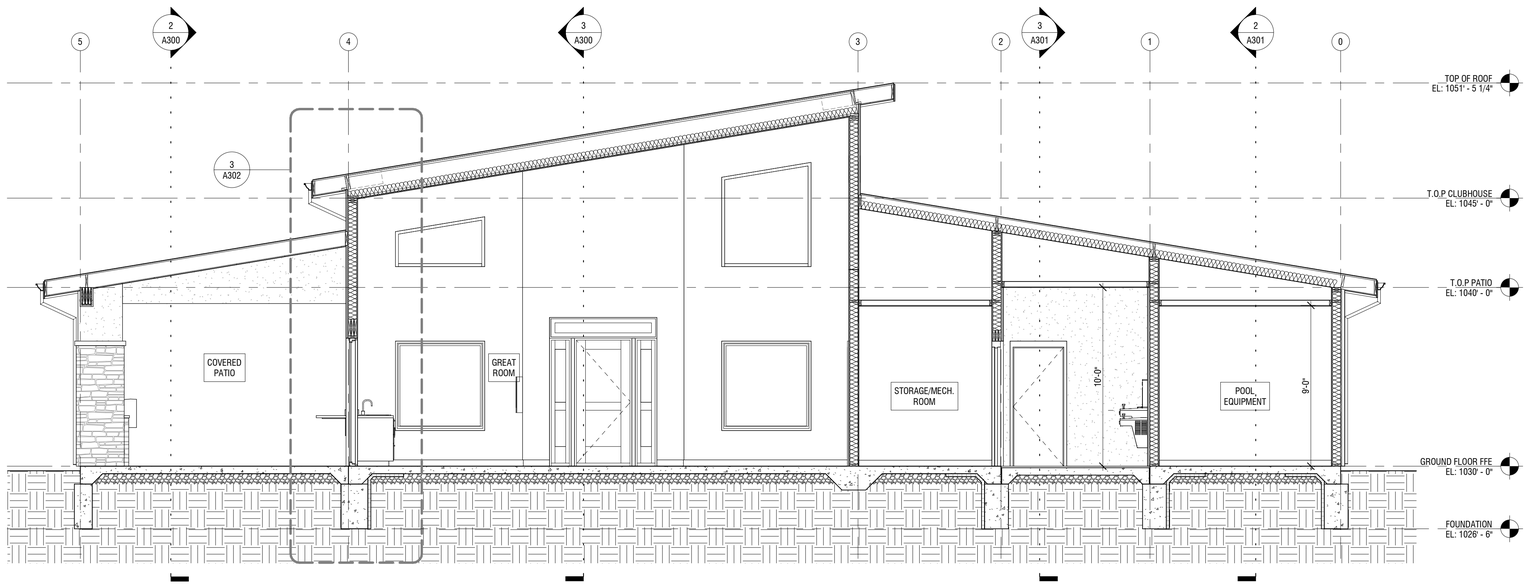
BUILDING SECTIONS
A300



1 BUILDING SECTION 2
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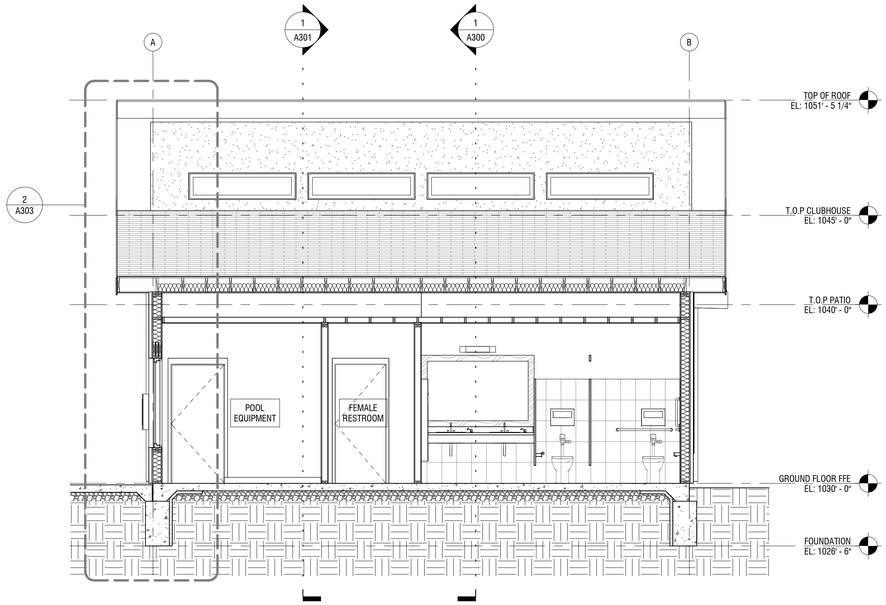
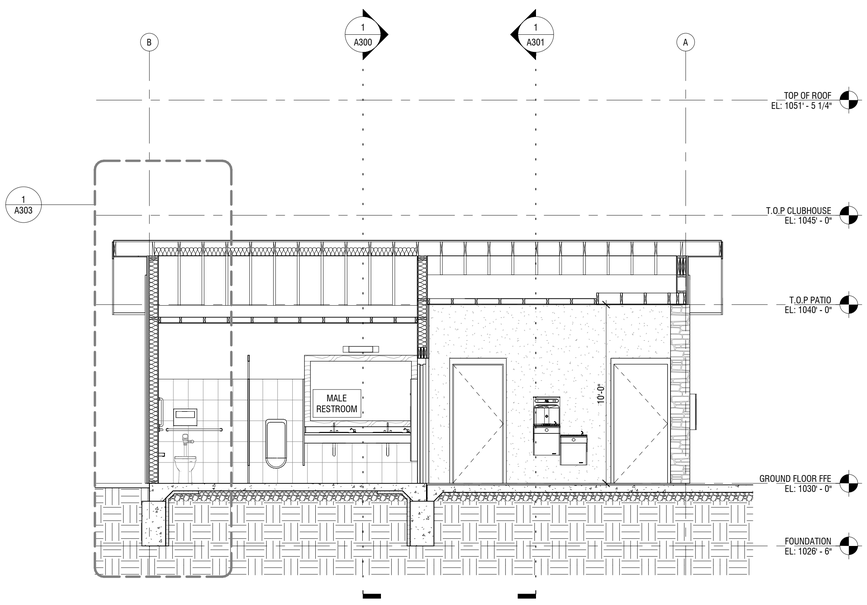


2 SECTION @ POOL EQUIPMENT
1/4" = 1'-0"



3 SECTION @ BREEZEWAY
1/4" = 1'-0"

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LEE'S SUMMIT, MISSOURI
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B+A ARCHITECTURE

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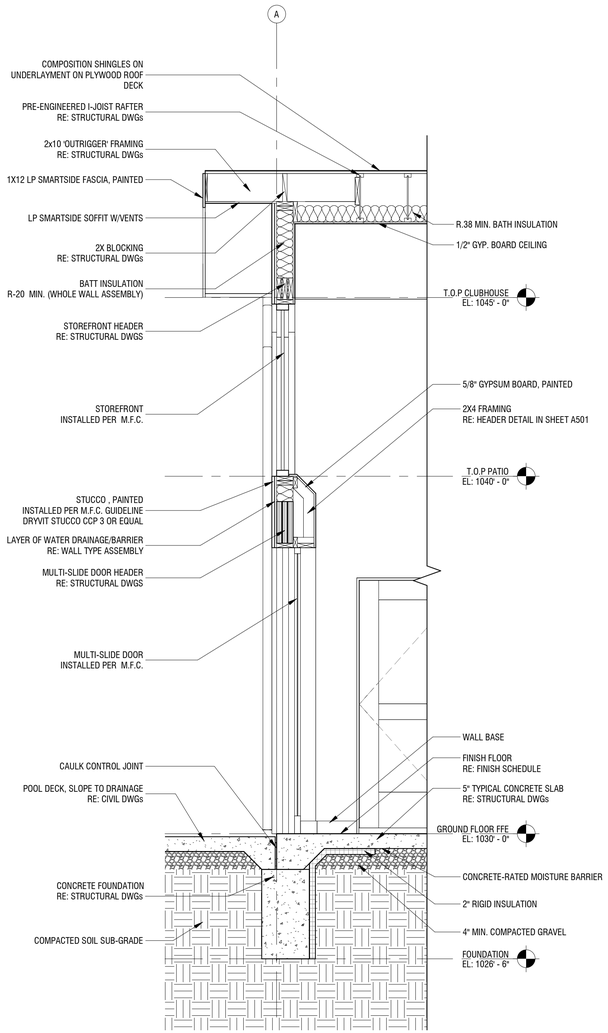
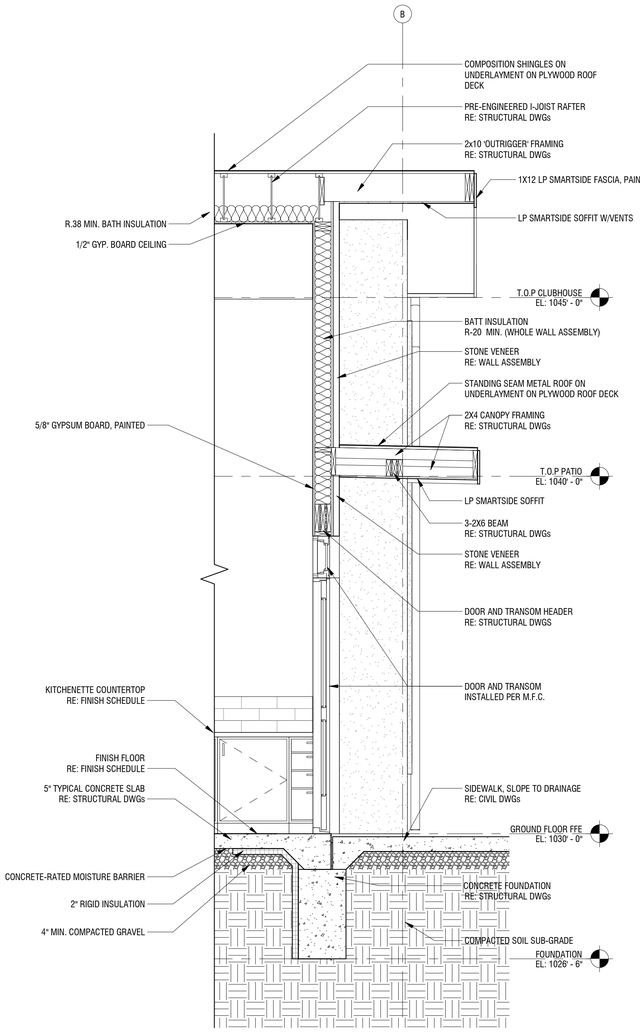
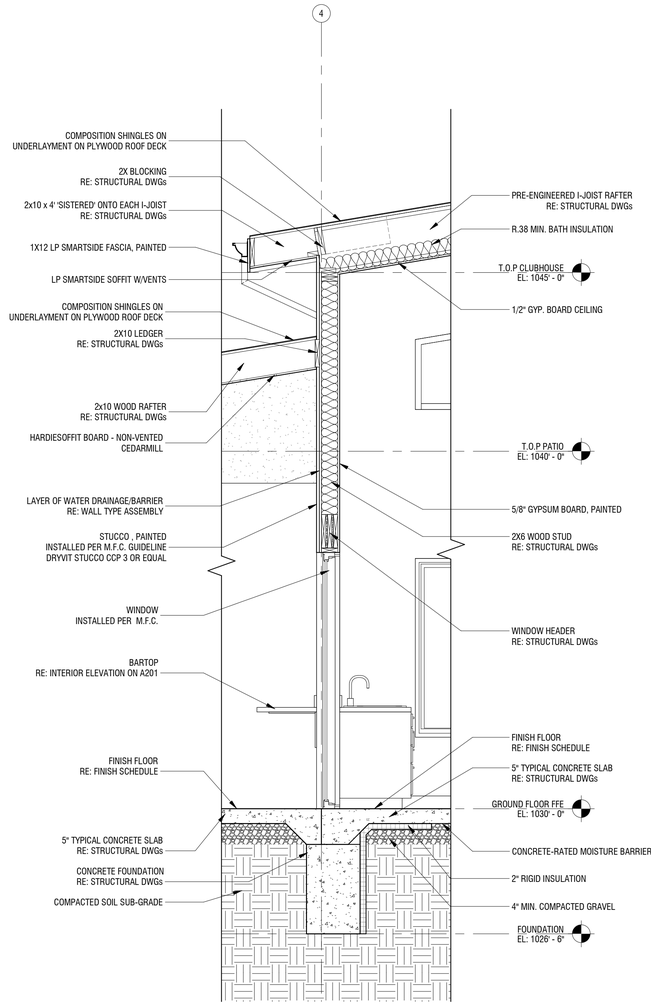
BUILDING SECTIONS
A301



1 WALL SECTION 1
1/2" = 1'-0"



2 WALL SECTION 2
1/2" = 1'-0"



3 WALL SECTION 3
1/2" = 1'-0"

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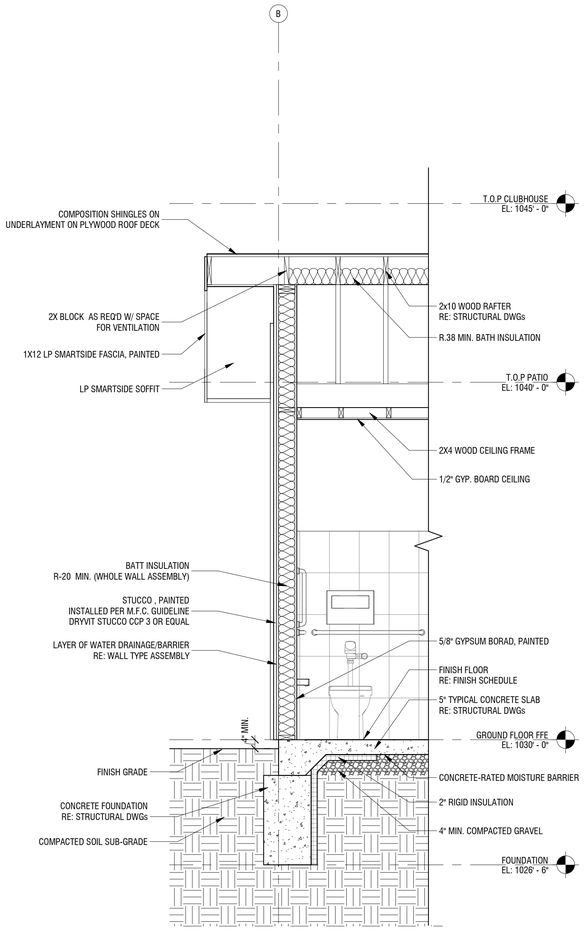
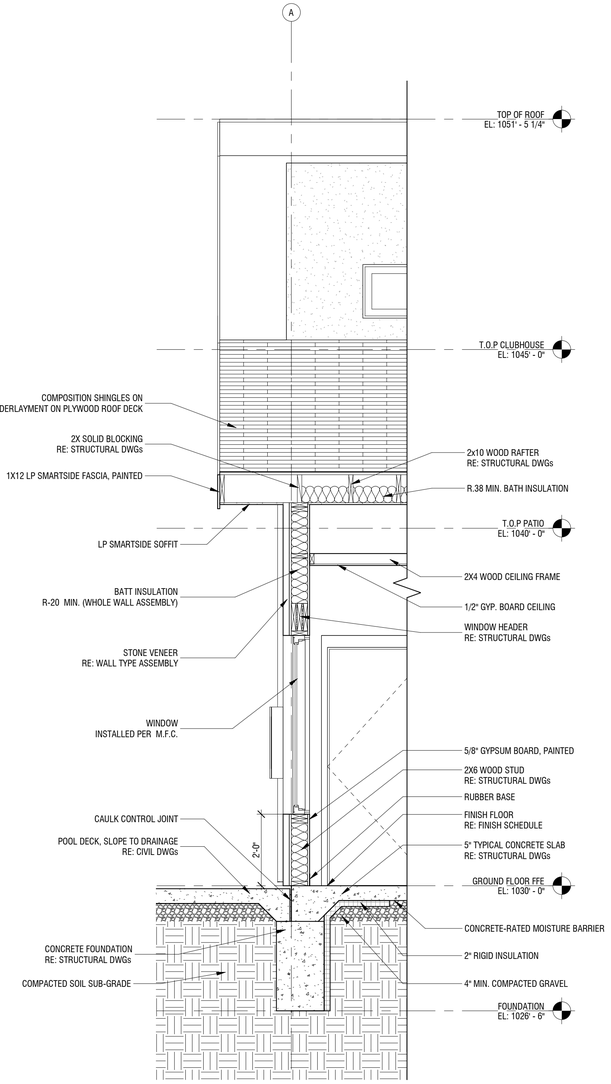
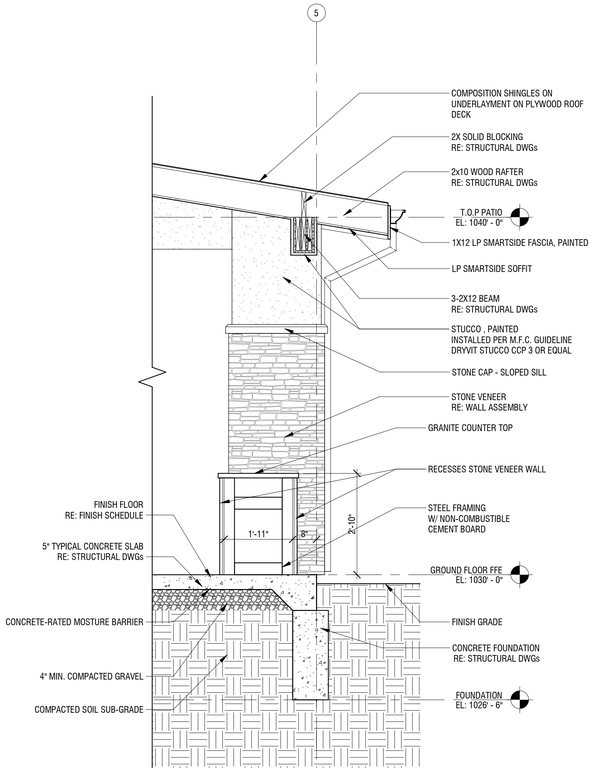
WALL SECTIONS
A302



1 WALL SECTION 4
1/2" = 1'-0"



2 WALL SECTION 5
1/2" = 1'-0"



3 WALL SECTION 6
1/2" = 1'-0"

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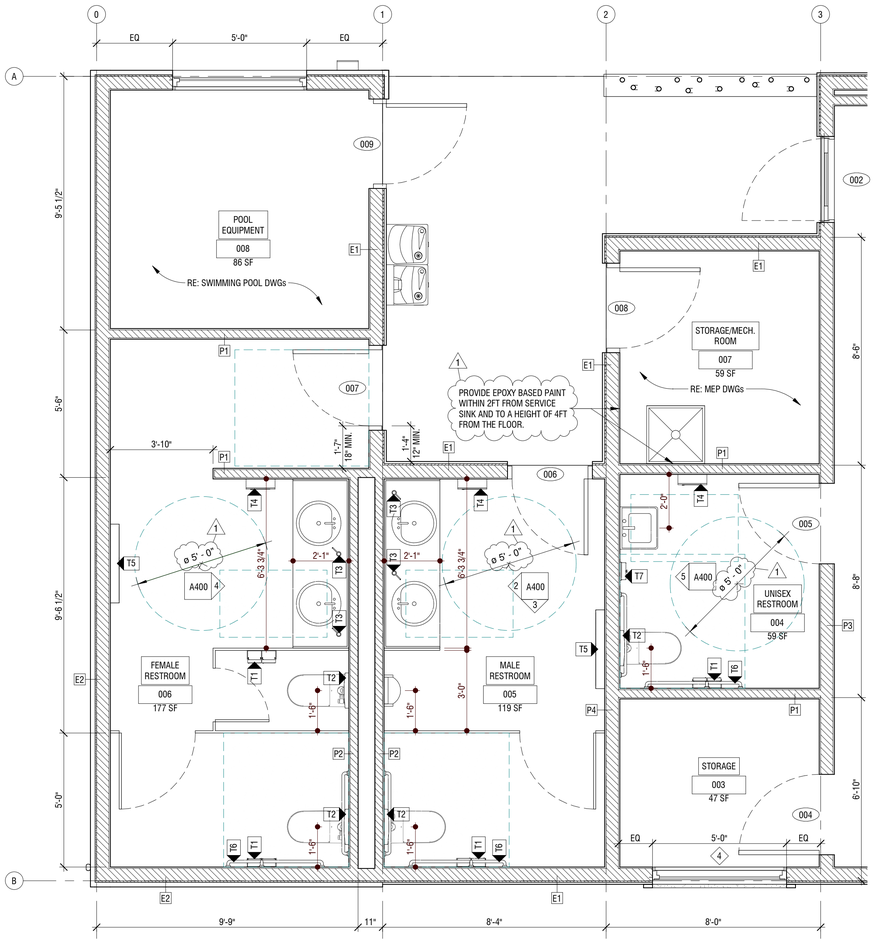
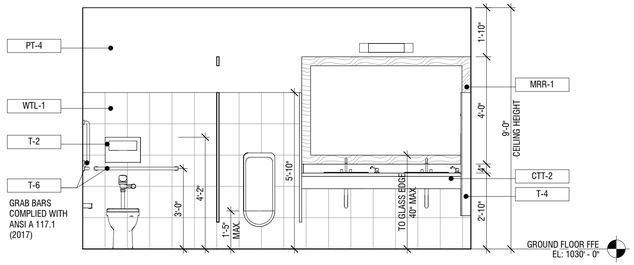
WALL SECTIONS
A303

GENERAL NOTES:

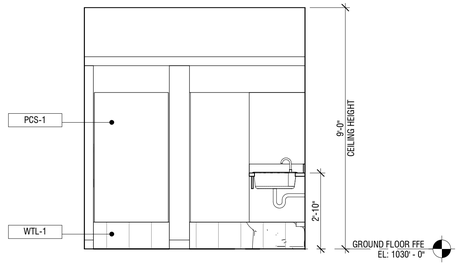
1. IN ADDITION TO BEING INSTALLED IN ACCORDANCE WITH THE PLUMBING SPECIFICATIONS AND FIXTURE MANUFACTURE'S INSTALLATION GUIDELINES
2. REFER TO FINISH SCHEDULE, FINISH LEGEND AND SPECIFICATIONS FOR UN-SHOWED MATERIALS
3. RECOMMENDATIONS, ALL UNDERMOUNT SINKS AND VANITIES ARE TO BE SUPPORTED BY HERCULES UNIVERSAL SINK HARNESS
4. WALLS AND PARTITIONS WITH 2 FEET OF SERVICE SINKS, URINALS AND WATER CLOSETS SHALL HAVE A SMOOTH, HARD, NONABSORBENT SURFACE, TO A HEIGHT OF NOT LESS THAN 4 FEET ABOVE THE FLOOR, AND EXCEPT FOR STRUCTURAL ELEMENTS, THE MATERIALS USED IN SUCH WALLS SHALL BE OF A TYPE THAT IS NOT ADVERSELY AFFECTED BY MOISTURE. (1)



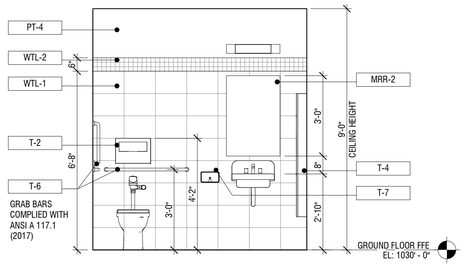
1 RESTROOMS AREA - ENLARGED FLOOR PLAN
3/8" = 1'-0"



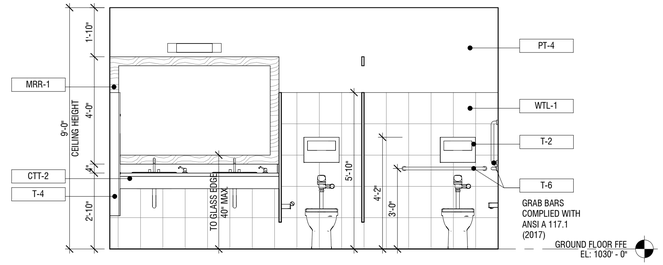
2 MALE RESTROOM - INTERIOR ELEVATION A
3/8" = 1'-0"



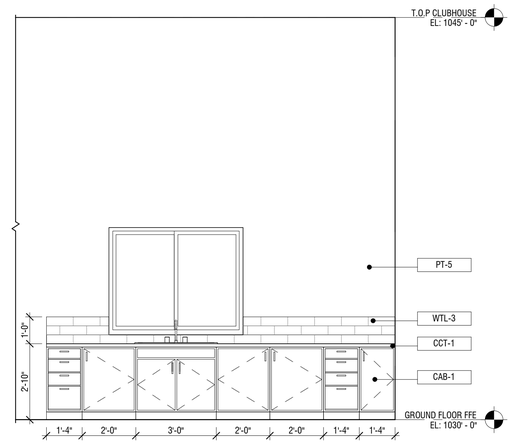
3 MALE RESTROOM - INTERIOR ELEVATION B
3/8" = 1'-0"



5 UNISEX RESTROOM - INTERIOR ELEVATION
3/8" = 1'-0"



4 FEMALE RESTROOM - INTERIOR ELEVATION
3/8" = 1'-0"



6 KITCHENETTE - INTERIOR ELEVATION
3/8" = 1'-0"

TOILET ACCESSORY SCHEDULE

CODE	TYPE	MANUFACTURER & STYLE	NOTES
T1	TOILET TISSUE DISPENSER	BOBRICK B-699	
T2	TOILET SEAT COVER DISPENSER	BOBRICK B-4221	
T3	COUNTER MOUNTED SOAP DISPENSER	BOBRICK B-823	
T4	PAPER TOWEL DISPENSER/WASTE RECEPTACLE UNIT	BOBRICK B-43699	
T5	MOUNTED BABY CHANGING STATION	KOALA KARE KB200-00	ADA COMPLIANT
T6	GRAB BARS (SET OF 3 BARS 18", 36", 48")	BOBRICK B-5806 SERRIES	
T7	SURFACE-MOUNTED SOAP DISPENSER	BOBRICK B-2111	

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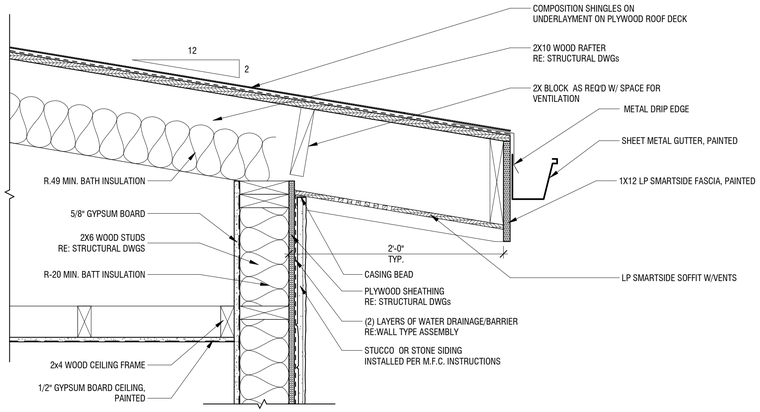
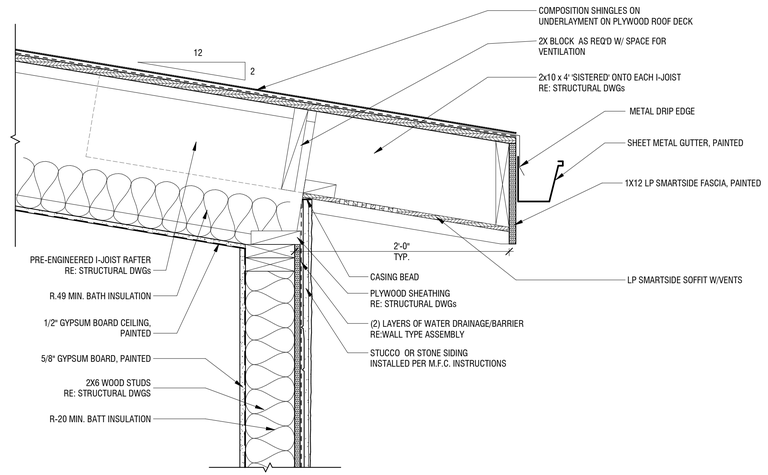
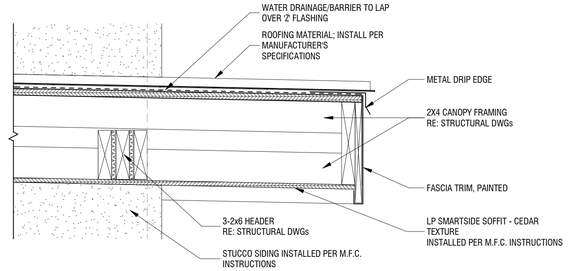
ENLARGED PLANS & INT. ELEV.
A400



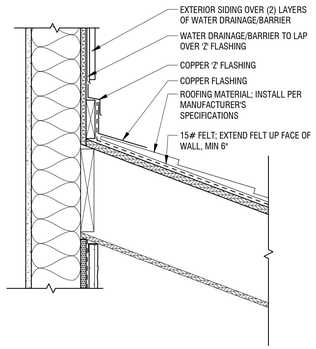
8 SECTION DETAIL - TYPICAL ROOF EAVE
1 1/2" = 1'-0"



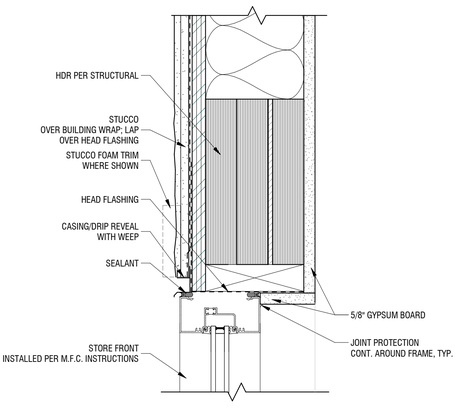
10 SECTION DETAIL - ROOF EAVE @ GREAT ROOM
1 1/2" = 1'-0"



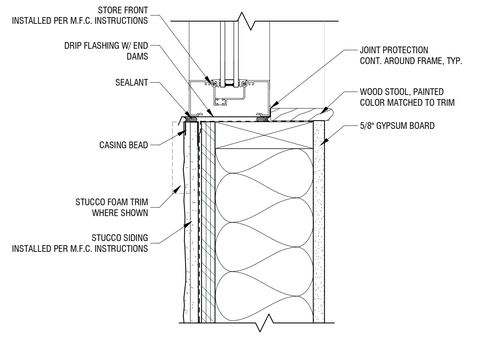
11 SECTION DETAIL - METAL ROOF @ MAIN ENTRY
1 1/2" = 1'-0"



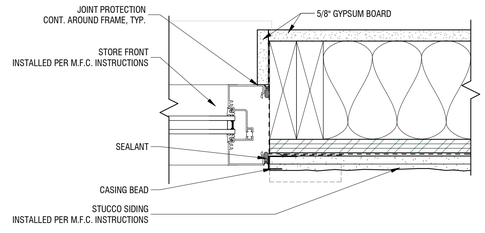
9 SECTION DETAIL - ROOF AT WALL
1 1/2" = 1'-0"



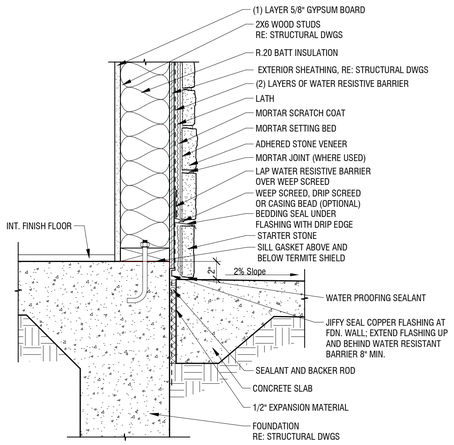
5 SECTION DETAIL - STORE-FRONT HEAD AT EXT. WALL
3" = 1'-0"



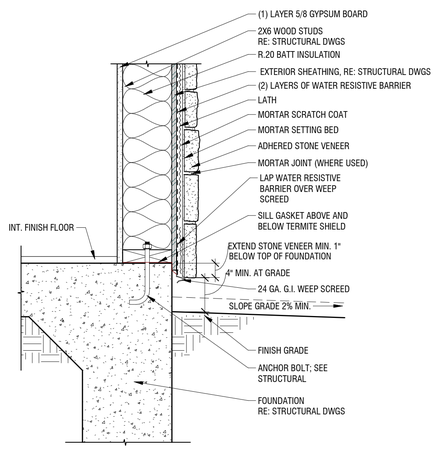
6 SECTION DETAIL - STORE-FRONT SILL AT EXT. WALL
3" = 1'-0"



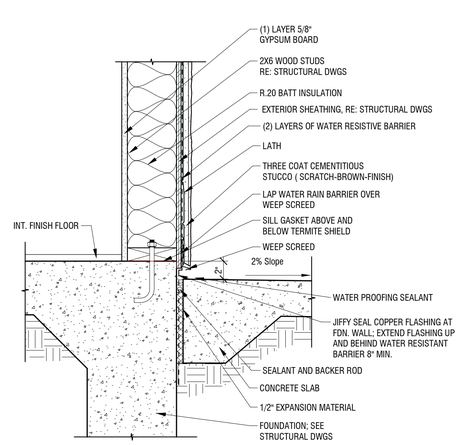
7 SECTION DETAIL - STORE-FRONT JAMB AT EXT. WALL
3" = 1'-0"



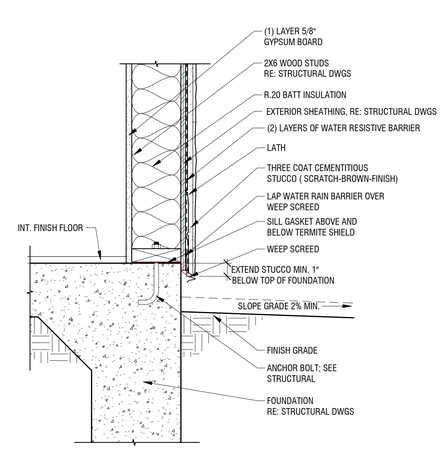
1 SECTION DETAIL - STONE WALL @ CONCRETE SLAB
1 1/2" = 1'-0"



2 SECTION DETAIL - STONE WALL @ GRADE
1 1/2" = 1'-0"



3 SECTION DETAIL - STUCCO WALL @ CONCRETE SLAB
1 1/2" = 1'-0"



4 SECTION DETAIL - STUCCO WALL @ GRADE
1 1/2" = 1'-0"

ARCHITECTURE

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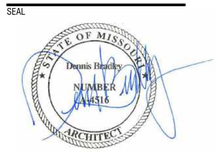

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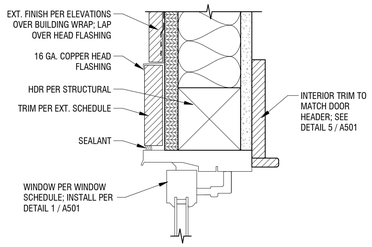
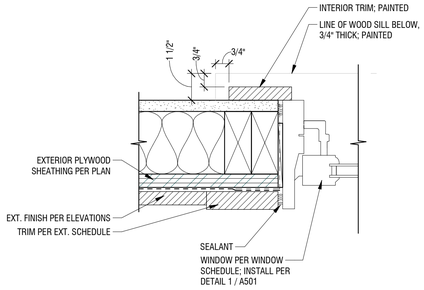
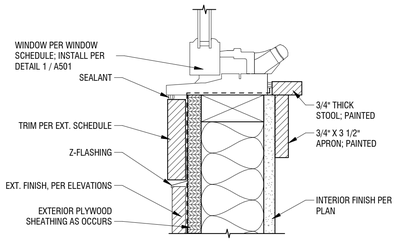
SECTION DETAILS
A500



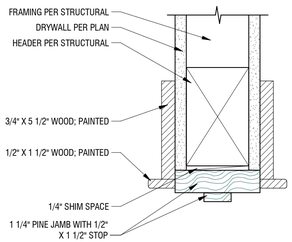
2 SECTION DETAIL - WINDOW HEAD EXT. WALL
3" = 1'-0"



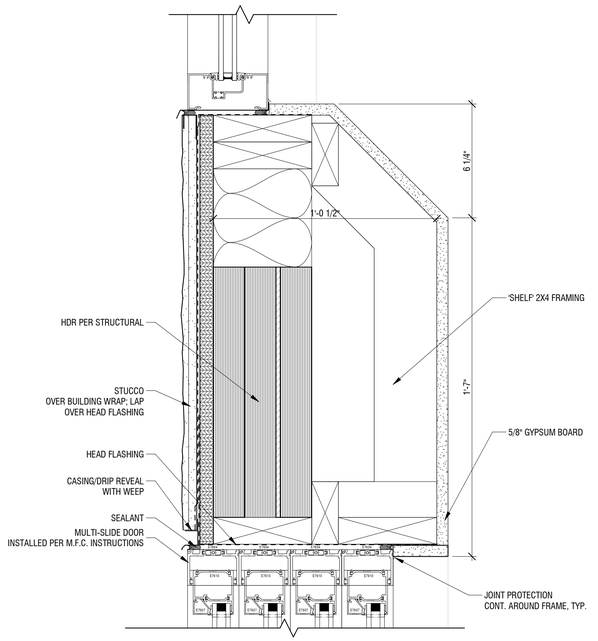
4 SECTION DETAIL - WINDOW JAMB AT EXT. WALL
3" = 1'-0"



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



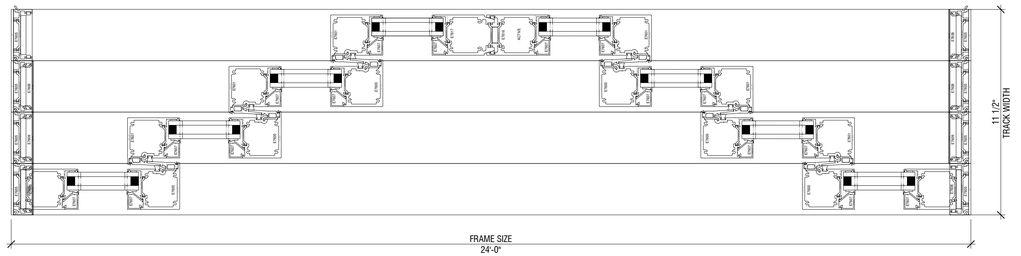
5 SECTION DETAIL - WOOD TRIM AT DOOR JAMB/HEADER
3" = 1'-0"



7 SECTION DETAIL - MULTI-SLIDE DOOR HEADER
3" = 1'-0"

1 TYPICAL WINDOW INSTALLATION
N.T.S.

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



6 MULTI-SLIDE DOOR FRAME
3" = 1'-0"

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

B+A ARCHITECTURE

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OSAGE CLUBHOUSE
2025 SW M 150 HWY
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SEAL

08.05.2020

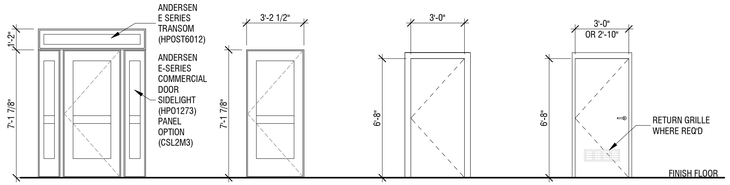
DATE ISSUED: AUGUST 05, 2020

NO.	REVISION	DATE

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

DETAILS
A501

DOOR ELEVATIONS



TYPE A
MAIN ENTRY DOOR
GREAT ROOM
(ALUMINUM-CLAD WOOD - GLASS PANEL)

TYPE B
ENTRY/EXIT DOOR
GREAT ROOM
(ALUMINUM-CLAD WOOD - GLASS PANEL)

TYPE C
UNISEX RESTROOM, STORAGE
(SOLID CORE WOOD PANEL)

TYPE D
POOL EQUIPMENT, MECH. ROOM
RESTROOMS
(HOLLOW METAL PANEL)

DOOR SCHEDULE

NO.	TYPE	SIZE		DOOR					FRAME		HARDWARE SET	REMARKS
		WIDTH	HEIGHT	OPERATION	MATERIAL	FINISH	FIRE RATING	GLASS	MATERIAL	FINISH		
001	A	3' - 2 1/2"	7' - 1 7/8"	SW	ALUM. CLAD WOOD	COLOR TO MATCH WINDOW FRAMES	-	LOW E-4 GLASS	ALUM.	COLOR TO MATCH WINDOW FRAMES	BY DOOR MANUFACTURER, INCLUDE PANIC HARDWARE	ANDERSEN DOORS, E-SERIES, COMMERCIAL DOOR (ADA SILL), CONCEALED PANIC SYSTEM (CPS) CPS3273, PANEL OPTION CP2M3, ACCESS BY AUTHORIZED CARD CREDENTIAL OR MANUAL KEY. ALWAYS FREE EGRESS.
002	B	3' - 2 1/2"	7' - 1 7/8"	SW	ALUM. CLAD WOOD	MATCH DOOR 001	-	LOW E-4 GLASS	ALUM.	* SEE REMARKS	MATCH DOOR 001	MATCH DOOR 001
003	B	3' - 2 1/2"	7' - 1 7/8"	SW	ALUM. CLAD WOOD	MATCH DOOR 001	-	LOW E-4 GLASS	ALUM.	* SEE REMARKS	BY DOOR MANUFACTURER	MATCH DOOR 001, NOT AN EGRESS DOOR.
004	C	3' - 0"	6' - 8"	SW	S.C. WOOD	* SEE REMARKS	-	-	WOOD	* SEE REMARKS	8	COLOR MATCH TO PT-5
005	C	3' - 0"	6' - 8"	SW	S.C. WOOD	* SEE REMARKS	-	-	WOOD	* SEE REMARKS	8	COLOR MATCH TO PT-5
006	D	2' - 10"	6' - 8"	SW	H.M.	* SEE REMARKS	-	-	H.M.	* SEE REMARKS	4	RE: EXTERIOR MATERIAL SCHEDULE FOR COLOR
007	D	2' - 10"	6' - 8"	SW	H.M.	* SEE REMARKS	-	-	H.M.	* SEE REMARKS	4	RE: EXTERIOR MATERIAL SCHEDULE FOR COLOR
008	D	3' - 0"	6' - 8"	SW	H.M.	* SEE REMARKS	-	-	H.M.	* SEE REMARKS	2	RE: EXTERIOR MATERIAL SCHEDULE FOR COLOR
009	D	3' - 0"	6' - 8"	SW	H.M.	* SEE REMARKS	-	-	H.M.	* SEE REMARKS	2	RE: EXTERIOR MATERIAL SCHEDULE FOR COLOR

ABBREVIATION LEGEND

SW	SWING	**H.M.**	HOLLOW METAL	**S.C. WOOD**	SOLID CORE WOOD
OH	OVERHEAD	**K.D.**	KNOCK DOWN	**ALUM.**	ALUMINUM

DOOR HARDWARE TYPES

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

DOOR NOTES

1. SEE EXTERIOR MATERIAL SCHEDULE FOR EXTERIOR DOOR FINISH COLOR
2. FOR INTERIOR DOOR COLOR, SEE DOOR SCHEDULE

POOL GATE NOTES

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

DOOR HARDWARE SCHEDULE

SET: 1.0 (NOT USED)

SET: 2.0
DOORS: 008, 009

3	HINGE (HEAVY WEIGHT)	T4A3386 NRP 4-1/2" X 4-1/2"	US32D	MK
1	STOREROOM LOCK	PBR 8805FL LC	630	YA
1	CYLINDER RIM/MORTISE	AS REQUIRED (MATCH EXISTING KEY SYSTEM)		
1	SURFACE CLOSER, HO	7500H	689	NO
1	THRESHOLD	2005AT		PE
1	GASKETING	2891AS		PE
1	RAINGUARD	346C		PE
1	SWEEP	315CN		PE

SET: 3.0 (NOT USED)

SET: 4.0
DOORS: 006, 007

3	HINGE (HEAVY WEIGHT)	T4A3386 4-1/2" X 4-1/2"	US32D	MK
1	BATHROOM LOCK	PBR 8862FL IND	630	YA
1	SURFACE CLOSER	7500	689	NO
1	DOOR STOP	441	US26D	RO
1	THRESHOLD	171A		PE
1	GASKETING	S88D		PE

SET: 5.0 (NOT USED)

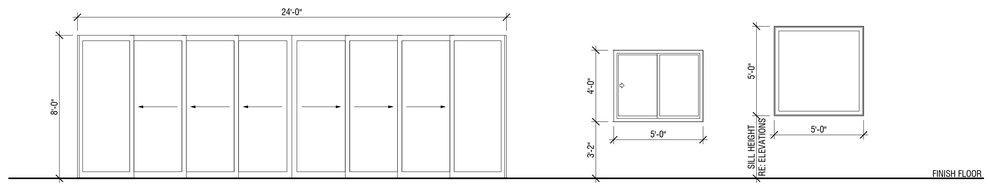
SET: 6.0 (NOT USED)

SET: 7.0 (NOT USED)

SET: 8.0
DOORS: 004, 005

3	HINGE (HEAVY WEIGHT)	T4A3786 NRP 4-1/2" X 4-1/2"	US26D	MK
1	CYLINDRICAL LOCK (CLASSROOM)	PB 5408LN LESS CORE	626	YA
1	CYLINDER KEY IN LEVER	AS REQUIRED (MATCH EXISTING KEY SYSTEM)		
1	SURFACE CLOSER	PR8501	689	NO
1	KICK PLATE	K1050 10" X 2" LDW 4BE CSK	US32D	RO
1	WALL STOP	409	US32D	RO
1	GASKETING	S88D		PE

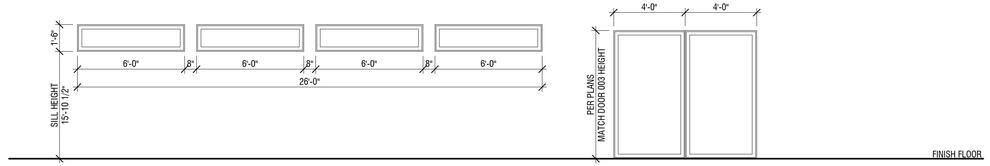
STOREFRONT/ WINDOW ELEVATIONS



TYPE SD1
ALUMINUM FRAME- GLASS SLIDING PANELS
GREAT ROOM

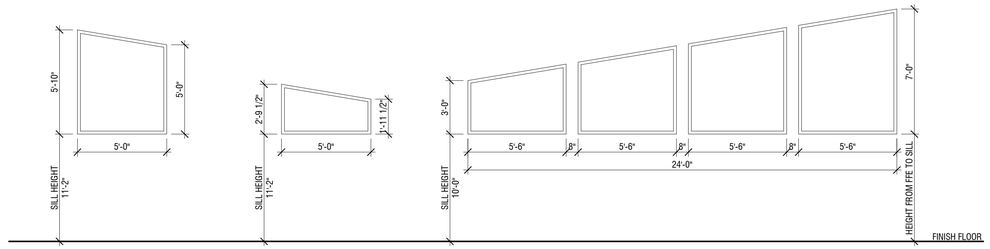
TYPE W1
ALUMINUM-CLAD WOOD FRAME
(SLIDING WINDOW)
KITCHNETTE-BAR

TYPE W2
ALUMINUM-CLAD WOOD FRAME
(CASEMENT PICTURE WINDOW)
GREAT ROOM / STORAGE / POOL EQUIPMENT



TYPE W3
ALUMINUM-CLAD WOOD FRAME
(CASEMENT PICTURE WINDOW)
GREAT ROOM CLERESTORY

TYPE W4
ALUMINUM-CLAD WOOD FRAME
(CASEMENT PICTURE WINDOW)
GREAT ROOM



TYPE SF1
ALUMINUM FRAME-GLASS PANEL
GREAT ROOM

TYPE SF2
ALUMINUM FRAME-GLASS PANEL
GREAT ROOM CLERESTORY

SLIDING DOOR SCHEDULE

NO.	TYPE	SIZE		FRAME	REMARKS
		WIDTH	HEIGHT		
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 (O6XO)
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 (O6XO)

STOREFRONT SCHEDULE

NO.	WIDTH	HEIGHT	SILL HEIGHT	TYPE MARK	GLASS	FRAME FINISH	REMARK
F1	5' - 0"	5' - 0"	11' - 2"	SF1	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME
F2	5' - 0"	2' - 9 1/2"	11' - 2"	SF1	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME
F3	5' - 6"	3' - 0"	10' - 0"	SF2	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME
F4	5' - 6"	4' - 0"	10' - 0"	SF2	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME
F5	5' - 6"	5' - 0"	10' - 0"	SF2	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME
F6	5' - 6"	7' - 0"	10' - 0"	SF2	DOUBLE PANE	ALUM./PAINTED	COLOR MATCH TO WINDOW FRAME

GENERAL NOTES

1. U-VALUES SHALL COMPY WITH TABLE 502.3 OF IECC
2. REFER TO STORE FRONT/ WINDOW/ SLIDING DOOR SPECIFICATIONS
3. GLAZING TO BE PPG SOLARBAN 60:

SOLAR HEAT GAIN COEFFICIENT	0.40
VISIBLE LIGHT TRANSMITTANCE	72%
U-VALUE	0.25
ULTRAVIOLET ENERGY	20%

WINDOW SCHEDULE

NO.	SIZE		TYPE	GLASS	FINISH	REMARKS
	WIDTH	HEIGHT				
1	5' - 0"	4' - 0"	ALUM.-CLAD WOOD GLIDING WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES - SLD5040
2	5' - 0"	5' - 0"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES - CMP5050
3	5' - 0"	5' - 0"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES - CMP5050
4	5' - 0"	5' - 0"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES - CMP5050
5	5' - 0"	5' - 0"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES - CMP5050
6	4' - 0"	7' - 2"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES
7	4' - 0"	7' - 2"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES
8	6' - 0"	1' - 6"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES
9	6' - 0"	1' - 6"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES
10	6' - 0"	1' - 6"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES
11	6' - 0"	1' - 6"	ALUM.-CLAD WOOD FIXED CASEMENT WINDOW	LOW E-4 GLASS	INTERIOR/EXTERIOR: DARK BRONZE COLOR	ANDERSEN, ARCHITECTURAL COLLECTION E-SERIES

RELEASE FOR CONSTRUCTION
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DESIGN/WORK SUBMISSION
LEE'S SUMMIT, MISSOURI
04/29/2021

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OSAGE CLUBHOUSE

2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI 64082

SEAL

08.05.2020

DATE ISSUED: AUGUST 05, 2020

NO.	REVISION	DATE

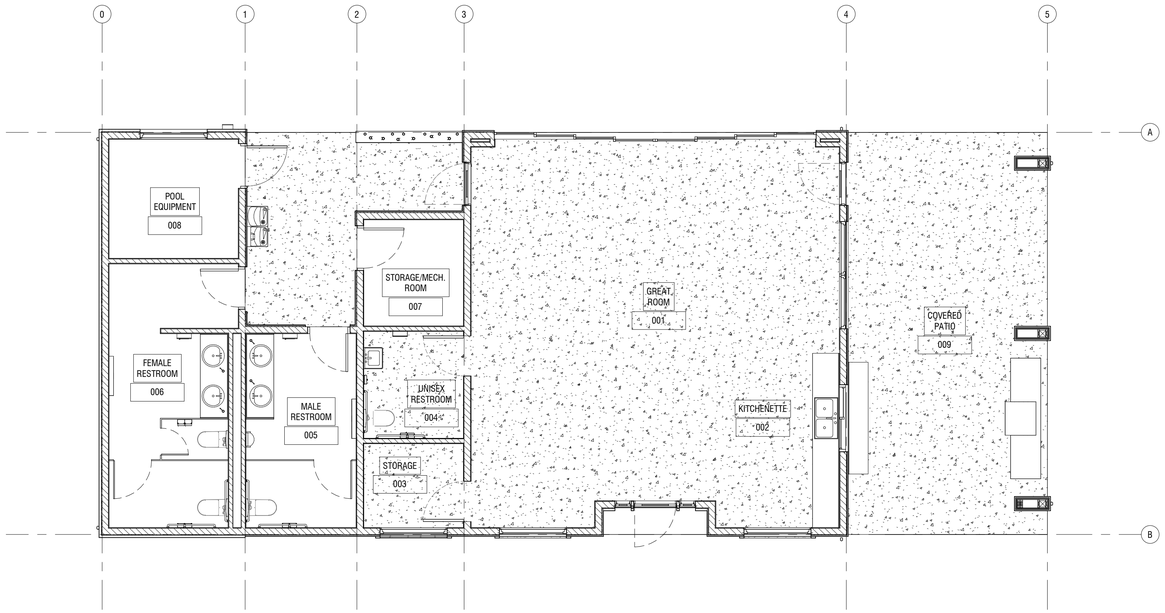
DESIGNED BY: FCR
DRAWN BY: FCR
CHECKED BY: TT/DMB

DOOR/WINDOW SCHEDULES

A600

FINISH NOTES

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



1 GROUND FLOOR - FINISH PLAN
3/16" = 1'-0"

N

MATERIAL LEGEND

STAINED CONCRETE FLOOR

EPOXY FLOOR FINISH

FINISH SCHEDULE

ROOM NUMBER	NAME	FLOORING	WALL BASE	TRIM	N-WALL	S-WALL	E-WALL	W-WALL	CEILING FINISH	REMARKS
001	GREAT ROOM	STC	WDB/PT-4	-	PT-5	PT-5	PT-5	PT-5	GB/PT-4	
002	KITCHENETTE	STC	WDB/PT-4	-	-	PT-5	PT-5	-	GB/PT-4	
003	STORAGE	STC	WDB/PT-5	-	PT-4	PT-4	PT-4	PT-4	GB/PT-4	CEILING HEIGHT: 9FT
004	UNISEX RESTROOM	STC	TLB-1	-	PT-4	WTL-1	PT-4	WTL-1	WGB/PT-4	CEILING HEIGHT: 9FT
005	MALE RESTROOM	EPX	-	-	PT-4	WTL-1	PT-4	WTL-1	WGB/PT-4	CEILING HEIGHT: 9FT
006	FEMALE RESTROOM	EPX	-	-	PT-4	WTL-1	WTL-1	PT-4	WGB/PT-4	CEILING HEIGHT: 9FT
007	STORAGE/MECH. ROOM	EPX	RB	-	PT-4	PT-4	PT-4	PT-4	GB/PT-4	CEILING HEIGHT: 9FT
008	POOL EQUIPMENT	EPX	RB	-	PT-4	PT-4	PT-4	PT-4	WGB/PT-4	CEILING HEIGHT: 9FT
009	COVERED PATIO	STC	-	-	-	-	-	STUCCO, PT-1	LP	RE: EXTERIOR MATERIALS FOR PT-1

INTERIOR FINISH LEGEND

CODE	MATERIAL	MANUFACTURER	PRODUCT	COLOR/TEXTURE	FINISH	SIZE	NOTES
FLOORING							
STC	STAINED CONCRETE						
EPX	EPOXY						
WALL-TILE							
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-OTHERS							
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-4		4 1/4"	
PAINT							
PT-4	PAINT (INTERIOR WALL/CEILING)	SHERWIN WILLIAMS	-	ALABASTER - SW 7008	FLAT	-	PROVIDE MOCK UP FOR OWNER/ ARCHITECT APPROVAL
PT-5	PAINT (BASE/TRIMS/DOOR)	SHERWIN WILLIAMS	-	REPOSE GRAY - SW 7015	SEMI-GLOSS	-	
CEILING							
GB	GYPSUM BOARD	-	-	PT-4	FLAT	-	
WGB	WATER RESISTANT GYP. BOARD	-	-	PT-4	FLAT	-	
LP	LP SMARTSIDE	LP	SOFFIT PANELS	CEDAR TEXTURE		-	
GROUT							
GR-1	GROUT	MAPEI	-	27-SILVER	-	-	PROVIDE MOCK UP FOR OWNER/ ARCHITECT APPROVAL
MILL WORK							
CAB-1	CABINETRY	PROFILE OR EQUAL	-	SHERWIN WILLIAMS STAIN COLOR NEW EBONY (SW 3135)	-	-	PROVIDE SHOP-DRAWINGS FOR 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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OSAGE CLUBHOUSE
2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI 64082

SEAL

STATE OF MISSOURI
Dennis Bradley
NUMBER A-4516
ARCHITECT

08.05.2020

DATE ISSUED: AUGUST 05, 2020

NO.	REVISION	DATE

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

FINISH PLAN & SCHEDULE
A800

GENERAL STRUCTURAL NOTES:

DESIGN LIVE LOADS: (Per 2018 International Building Code, Unfactored ASD values shown)

a. Roof———————— 20psf (min.); Ground Snow =20psf
b. Floor————————100 psf (assembly)
c. Storage & Mechanical———— 125 psf
d. Corridor, Exits & Patio——— 100 psf
e. Wind Load———————— ASD Wind Speed<93mph; Risk Cat=II; Iw=1.0; Exp. C; GCpi=0.18 (0.55 Patio)
f. Earthquake Load———————— R.C.=II; Ie=1.00; Ss = 0.1g; S1 = 0.068g; Assumed Site Class D; Sds=0.107; Sd1=0.109; 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 (vert & lateral) 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 +2 percent 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.

GROUT:

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

SHOP DRAWINGS (DEFERRED SUBMITTALS):

a. Furnish pdf copy by email of each set of shop and erection drawings for: I−Joists 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 I−Joist 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 req'd by the B.O. − ref Section N7).~~

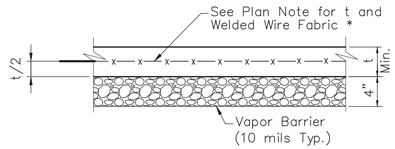
d. ~~Quality Control (QC) for structural steel fabrication and erection shall be provided per AISC 360−10, Chapter N by the respective agent/inspector for the fabricator and/or erector.~~

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.H. = Opposite Hand
O.C. = On Center	SIM = Similar
PSF = Pounds Per Square Foot	NTS = Not to Scale
O.F. = Outside Face	E.F. = Each Face
I.F. = Inside Face	

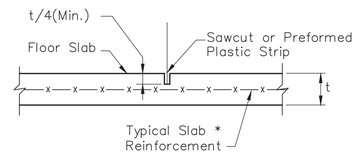
LEGEND

- INDICATES TRENCHED CONCRETE FOOTING
- INDICATES THICKENED SLAB CONCRETE FOOTING
- INDICATES COLUMN (WOOD)
- 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 BUILT−UP WOOD HEADER
- INDICATES WOOD BEAM



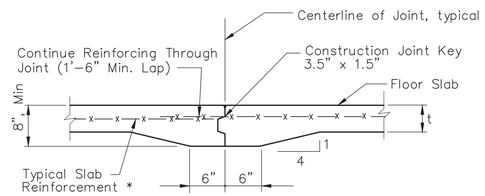
TYPICAL SLAB−ON−GRADE SECTION

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



CONTRACTION JOINT

* − WWF MUST BE PLACED AT SLAB MID−DEPTH



CONSTRUCTION JOINT

* − WWF MUST BE PLACED AT SLAB MID−DEPTH

SLAB−ON−GRADE & CONTROL JOINTS

Provide a control joint where indicated per plan, typical.

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

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OSAGE CLUBHOUSE

2025 SW M150 HIGHWAY
LEE'S SUMMIT, MISSOURI

General Structural Notes and Slab Details

SEAL (DANIEL J. PACKARD, P.E., d.b.a. PACKARD ENGINEERING)

STATE OF MISSOURI
DANIEL J. PACKARD
NUMBER PE−24486
PROFESSIONAL ENGINEER

JULY 31, 2020

ISSUED: JULY 31, 2020

NO.	REVISION	DATE

DESIGNED BY DJP
DRAWN BY DJP
CHECKED BY DJP

S001

PLAN KEY NOTES:

1. 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 TO 1'-6" WIDE. PROVIDE TYPICAL TRENCHED FOOTING HORIZONTAL REINFORCING THROUGH WIDER FOOTING.
3. PROVIDE EXTERIOR PIER OVER THE FOOTING AT THIS 'PATIO COLUMN' ELEMENT = 12" WIDE X 2'–8" LONG. SEE THE APPLICABLE DETAIL/SECTION.
4. P.T. 6X6 COLUMN w/ SIMPSON MPB66Z BASE EMBEDDED INTO PIER/FOOTING PER DETAIL.
5. APPROXIMATE LOCATIONS OF SLAB–ON–GRADE CRACK CONTROL JOINTS ARE SHOWN THUS
6. DON'T CONNECT SLAB–ON–GRADE AT PATIO TO STEM WALLS AND ENCLOSED BUILDING SLAB EDGES, TYPICAL. PROVIDE CONT 1/2" EXPANSION JOINT MATERIAL
7. 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.
8. DASHED LINE WHERE SHOWN THUS INDICATES SHEAR WALL SHEATHING AT WALL FACE ABOVE PER APPLICABLE GENERAL FRAMING NOTE. SHEATH WALL ABOVE AND BELOW ANY WINDOWS INCLUDED WITHIN THE WALL LENGTH INDICATED.
9. THICKENED SLAB FOUNDATION PER APPLICABLE DETAIL/SECTION.

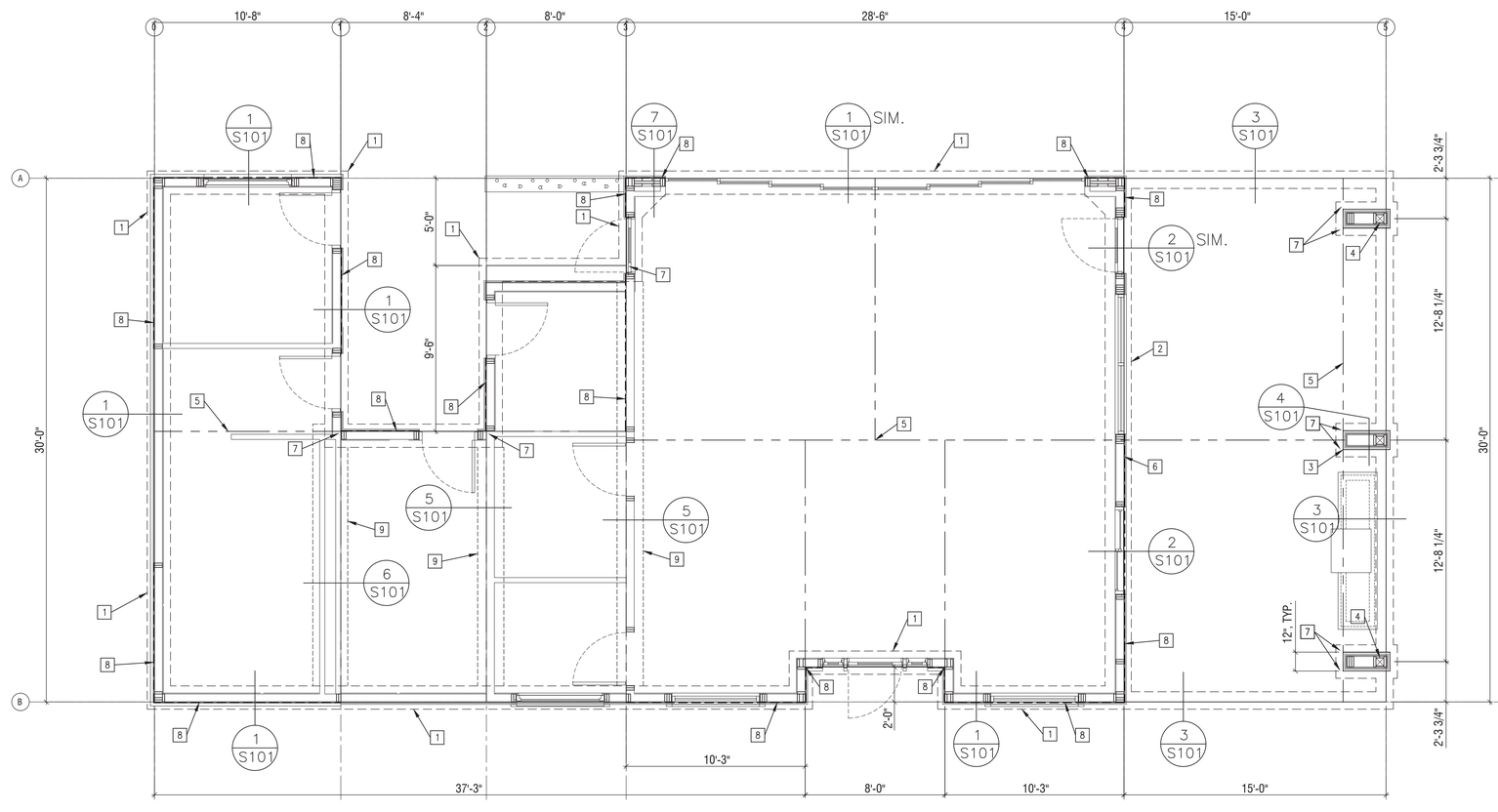
FASTEN THIS SHEAR WALL'S SHEATHING PANELS TO SUPPORTING FRAMING w/ 8d NAILS @ 4" O.C. ALONG PANEL EDGES AND @ 8" O.C. OTHERWISE.

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 DOUBLE THAT SPACING ON OTHER/INTERMEDIATE SUPPORTS, EXCEPT WHERE DETAILED OR NOTED OTHERWISE. BLOCK ALL PANEL EDGES NOT SUPPORTED BY STUDS. PROVIDE 2 – 2X6 STUDS (MIN.) AT EACH END OF EACH SHEATHED/SHEAR WALL.
6. SEE SHEET S200 FOR BUILT UP COLUMNS TO BE PROVIDED IN WALL FRAMING UNDER BEAMS AND HEADERS ABOVE, TYPICAL UNLESS NOTED OTHERWISE.

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 S001 FOR CRACK CONTROL JOINTS TO BE SAWN OR FORMED (AT CONTRACTOR'S OPTION) INTO SLAB–ON–GRADE WHERE SHOWN



1 S100 FOUNDATION AND WALL PLAN

SCALE = 1/4" = 1'–0"

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AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

B+A ARCHITECTURE

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OSAGE CLUBHOUSE
2025 SW M150 HIGHWAY
LEE'S SUMMIT, MISSOURI

Foundation and Wall Framing Plan and Notes

SEAL (DANIEL J. PACKARD, P.E., d.b.a. PACKARD ENGINEERING)

STATE OF MISSOURI · DANIEL J. PACKARD · NUMBER PE–24486 · PROFESSIONAL ENGINEER

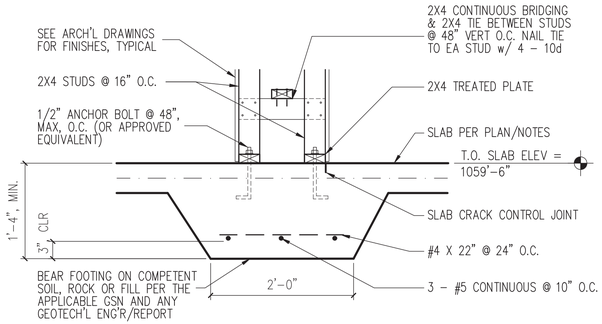
JULY 31, 2020

ISSUED: JULY 31, 2020

NO.	REVISION	DATE

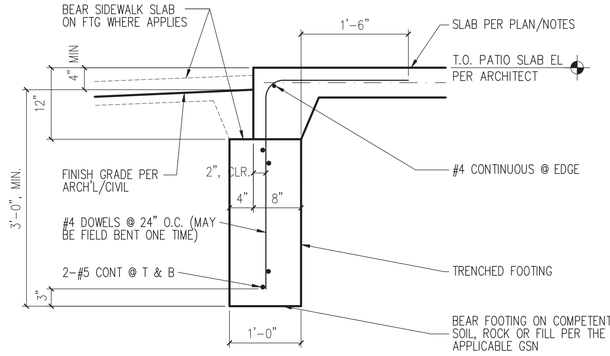
DESIGNED BY DJP
DRAWN BY DJP
CHECKED BY DJP

S100



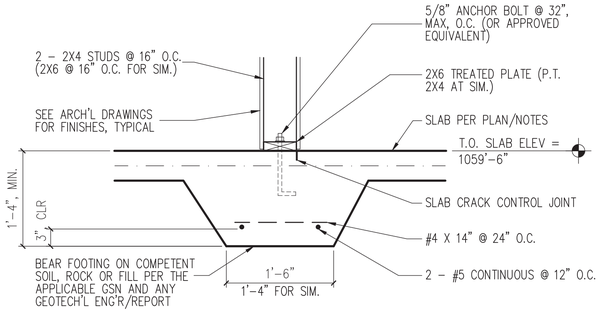
6 S101 THICKENED SLAB 2-WALL FOUNDATION SECTION

SCALE = NONE



3 S101 PATIO SLAB EDGE FOUNDATION SECTION

SCALE = NONE



5 S101 THICKENED SLAB WALL FOUNDATION SECTION

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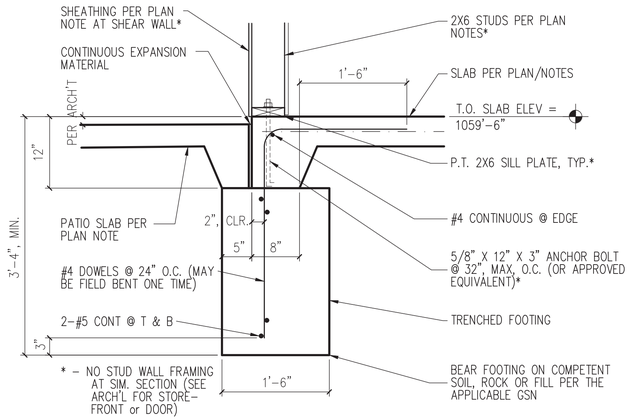
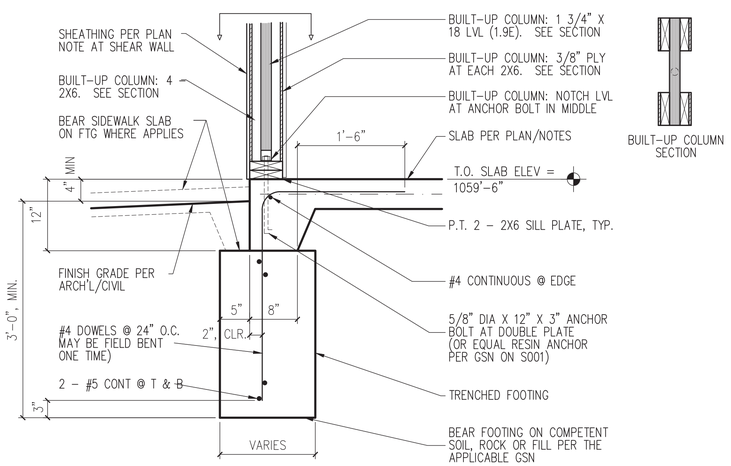


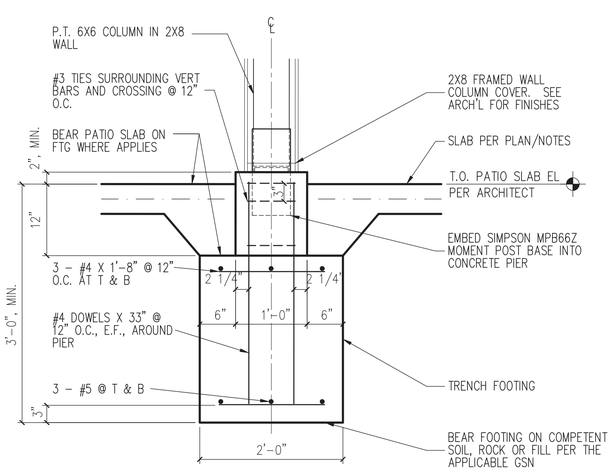
2 S101 EXT'R WALL AT PATIO FOUNDATION SECTION

SCALE = NONE



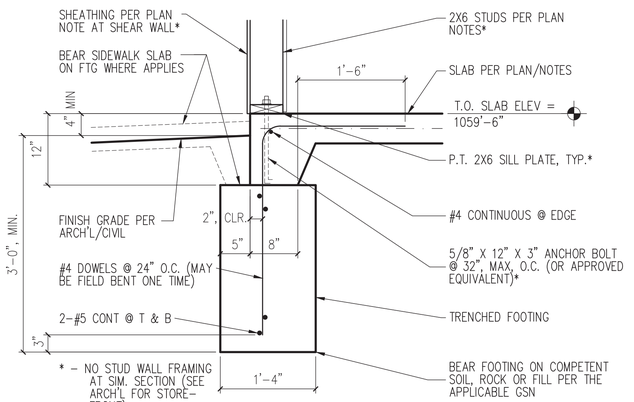
7 S101 SHEAR FRAME COLUMN FOUNDATION SECTION

SCALE = NONE



4 S101 PATIO TIMBER COLUMN FOUNDATION SECTION

SCALE = NONE



1 S101 EXTERIOR WALL FOUNDATION SECTION

SCALE = NONE

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OSAGE CLUBHOUSE

2025 SW M150 HIGHWAY
LEE'S SUMMIT, MISSOURI

Foundation Sections

SEAL (DANIEL J. PACKARD, P.E., d.b.a. PACKARD ENGINEERING)

STATE OF MISSOURI · DANIEL J. PACKARD · NUMBER PE-24486 · PROFESSIONAL ENGINEER

JULY 31, 2020

ISSUED: JULY 31, 2020

NO.	REVISION	DATE

DESIGNED BY DJP
DRAWN BY DJP
CHECKED BY DJP

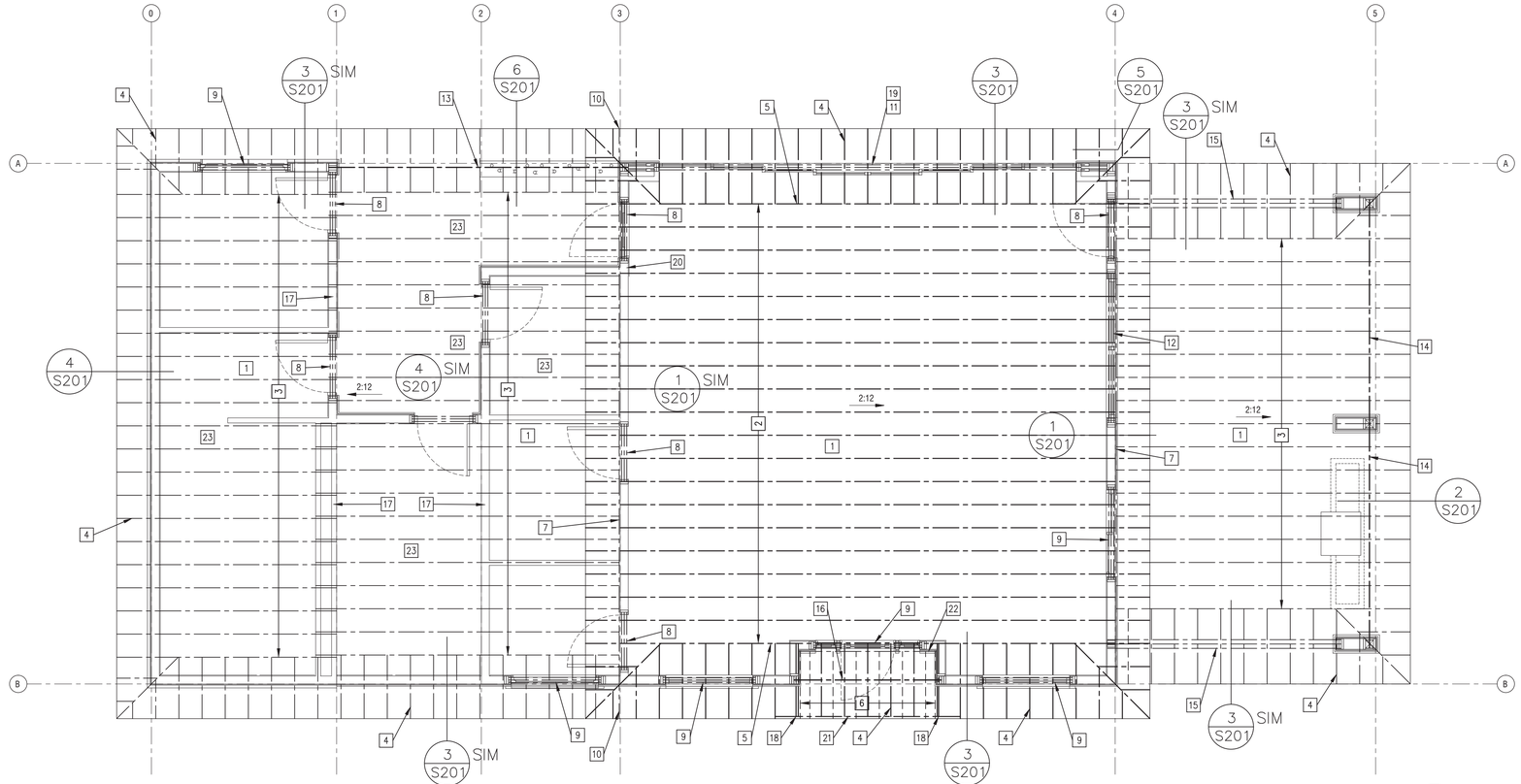
S101

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 INTERMEDIATE SUPPORTS.
2. 14" PRE-ENGINEERED WOOD I-JOIST @ 16" O.C. AT ROOF OVER GREAT ROOM. ALIGN TO BEAR DIRECTLY OVER STUD(S) AT EXTERIOR FRAMED WALLS.
3. 2X10 RAFTERS @ 16" (+/-) O.C., TYPICAL WHERE SHOWN THUS (UNLESS NOTED OTHERWISE). ALIGN TO BEAR DIRECTLY OVER STUD(S) AT EXTERIOR FRAMED WALLS, TYPICAL.
4. 2X10 'OUTRIGGER' FRAMING @ 16" O.C. TO BE USED AT MONOSLOPE SIDE OVERHANG FRAMING, TYPICAL.
5. FASTEN CONTINUOUS SOLID NAILER TO EXTERIOR SIDE OF WOOD I-JOIST WEB FOR FASTENING OF 'OUTRIGGER' FRAMING, TYPICAL.
6. 2X4 'CANOPY' FRAMING @ 16" (MAX) O.C. CANTILEVER OVER 'CANOPY' BEAM AT ENTRY ALCOVE. FASTEN EACH TO BEAM w/ SIMPSON H2.5A.
7. 2X10 LEDGER w/ LEDGERLOKS INTO STUDS @ 16" O.C. AT LOWER ROOF CONNECTION TO TALLER EXTERIOR WALL. FACE HANG RAFTERS FROM LEDGER w/ SIMPSON LUS210 AT EACH.
8. HEADER = 3 - 2X8 (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.
9. HEADER = 3 - 2X10. BEAR EACH END IN WALL ON 1 - 2X6 JACK STUD (WITH 2 - 2X6 KING STUDS). KING STUDS TO BE FULL HEIGHT OF WALL.
10. EXTEND END OF 2X10 LEDGER TO LOWER OVERHANG EDGE HERE. FASTEN 2X10 LEDGER TO WALL CORNER STUDS w/ 3 - LEDGERLOKS
11. HEADER = 3 - 1 3/4"X14" LVL (1.9E). BUILD EACH END INTO 2'-3" SHEAR FRAME COLUMN PER DETAIL.
12. HEADER = 3 - 2X12. BEAR EACH END IN WALL ON 2 - 2X6 JACK STUDS (WITH 2 - 2X6 KING STUDS). KING STUDS TO BE FULL HEIGHT OF WALL.
13. P.T. 3 - 2X12 w/ 2 - 1/2" PLYS BEAM. BEAR EACH END IN WALL ON 3 - 2X6 (MIN.) BUILT-UP STUD COLUMN. ALSO PROVIDE 2 - 2X6 FULL HEIGHT STUDS ALONGSIDE SOUTH FACE OF BEAM AT EACH BEARING (GLUE AND FACE-NAIL LAPPING 2X6 TO BEAM w/ 16d @ 2" O.C., EACH WAY).
14. P.T. 3 - 2X12 w/ 2 - 1/2" PLYS BEAM. BEAR EACH END ON TREATED 6X6 COLUMN w/ SIMPSON AC6 CAP. ALSO PROVIDE A 2X8 FULL HEIGHT STUD ALONGSIDE EAST AND WEST FACES OF COLUMN AND BEAM AT EACH BEARING (GLUE AND FACE-NAIL EACH LAPPING 2X8 TO COLUMN AND EACH BEAM w/ 16d @ 4" O.C.).
15. 3 - 2X10 HEADER OVER PATIO END OPENING. BEAR AT EAST ON 2 - 2X8 JACK STUDS (w/ 1 - 2X8 KING STUD). BEAR AT WEST IN WALL ON 3 - 2X6 (MIN.) STUDS.
16. 3 - 2X6 w/ 2 - 1/2" PLYS 'CANOPY' BEAM OVER ENTRY ALCOVE. BEAR ON 2 - 2X6, MIN., IN WALL CORNER AT EACH END. PROVIDE 2 - KING STUDS AT EACH END ALSO.
17. PROVIDE SOLID BLOCKING BETWEEN JOISTS OVER THIS BEARING WALL, TYPICAL.
18. DOUBLE 2X10 ROOF 'OUTRIGGER' OVER EACH SIDE WALL OF ENTRY ALCOVE AND FASTEN TO DOUBLED 2X10 RIM w/ INVERTED SIMPSON LUS210-2.
19. HEADERS ABOVE STOREFRONT WINDOWS = 3 - 2X8 (MIN). BEAR EACH END IN WALL ON 1 - 2X6 JACK STUD (WITH 1 - 2X6 KING STUD). KING STUDS TO BE FULL HEIGHT OF WALL ABOVE MULTI-DOOR LVL HEADER.
20. PROVIDE HEADERS OVER CLERESTORY WINDOWS AT THIS WALL (NOT SHOWN) PER KEY NOTE 9 ABOVE.
21. DOUBLE THE HIGH ROOF 2X10 RIM X 10'-6 1/2" ACROSS/OVER THE ENTRY ALCOVE.
22. 2X10 LEDGER w/ LEDGERLOKS INTO STUDS @ 16" O.C. AT CANOPY ROOF CONNECTION TO TALLER EXTERIOR WALL. FACE HANG RAFTERS FROM LEDGER w/ SIMPSON LUS24 AT EACH.
23. PROVIDE CEILING JOISTS BELOW @ 16" O.C. USING 2X4s AT SPAN UP TO 9'-0"; 2X6s AT SPAN UP TO 14'-0" AND 2X8s AT SPAN UP TO 17'-6". SEE ARCH'L DRAWINGS FOR CEILINGS.

GENERAL ROOF FRAMING NOTES:

1. WOOD 2X FRAMING AT PATIO ROOF, AND ANY TO BE LEFT EXPOSED OTHERWISE, SHALL BE PRESSURE TREATED SOUTHERN PINE #1, OR BETTER.
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/WEYERHAEUSER. I-JOISTS MAY BE PER GEORGIA PACIFIC OR WEYERHAEUSER. 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, I-JOIST, 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).



1 S200 ROOF FRAMING PLAN

SCALE = 1/4" = 1'-0"

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

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OSAGE CLUBHOUSE
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LEE'S SUMMIT, MISSOURI

Roof Framing Plan and Notes

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STATE OF MISSOURI · DANIEL J. PACKARD · NUMBER PE-24486 · PROFESSIONAL ENGINEER

JULY 31, 2020

ISSUED: JULY 31, 2020

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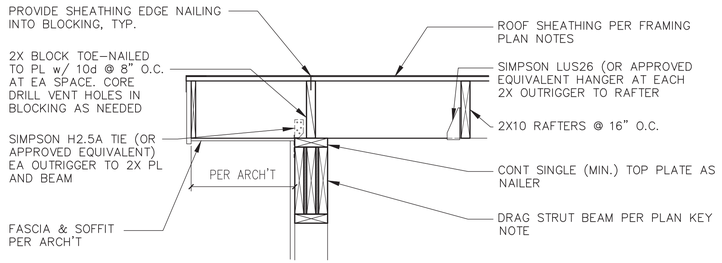
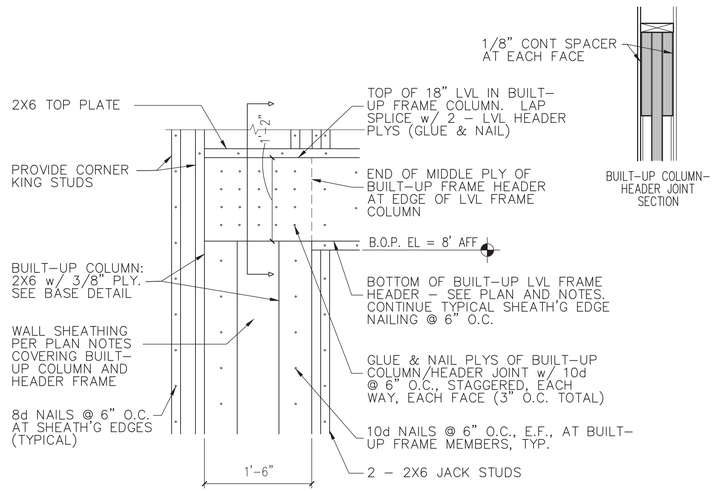
DRAWN BY DJP
CHECKED BY DJP

S200



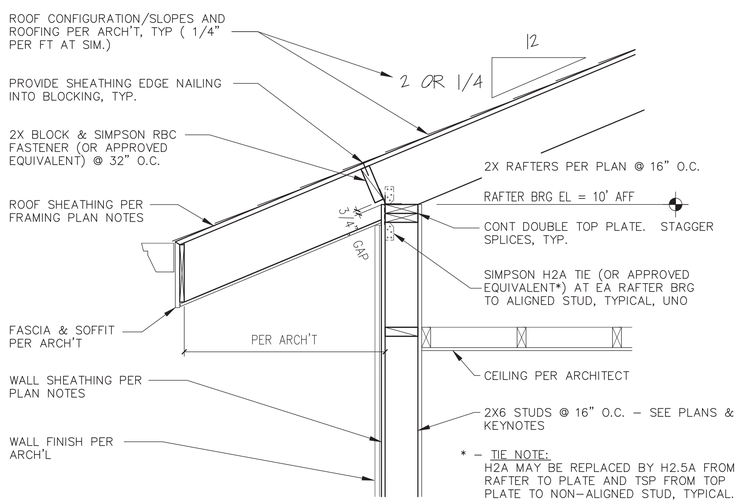
6 S201 OUTRIGGER BEARING ON DRAG STRUT BEAM SECTION

SCALE = NONE



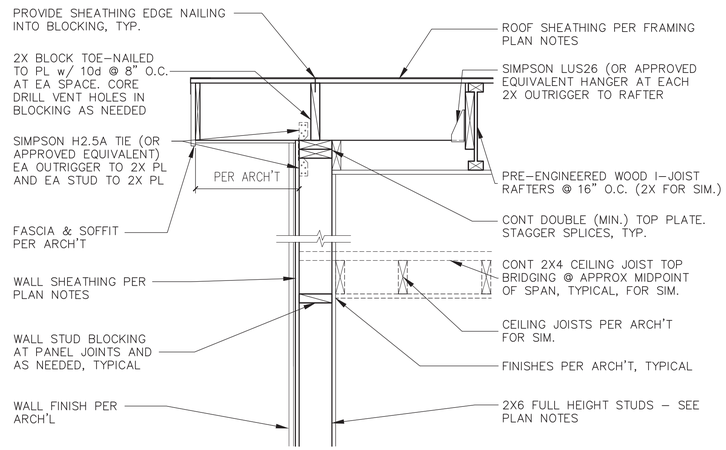
5 S201 LVL SHEAR FRAME HEADER–COLUMN JOINT DETAIL

SCALE = NONE



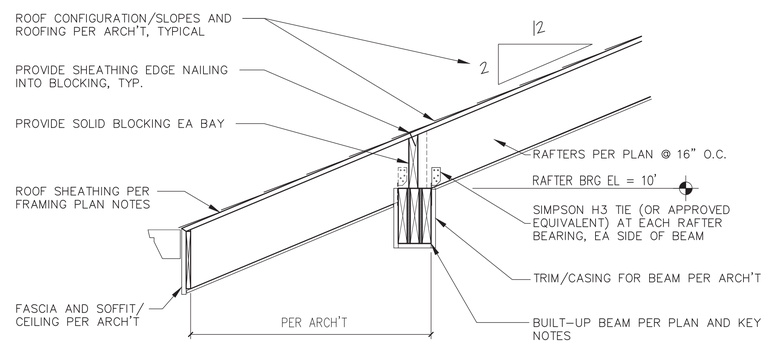
4 S201 RAFTER BEARING ON STUD WALL SECTION

SCALE = NONE



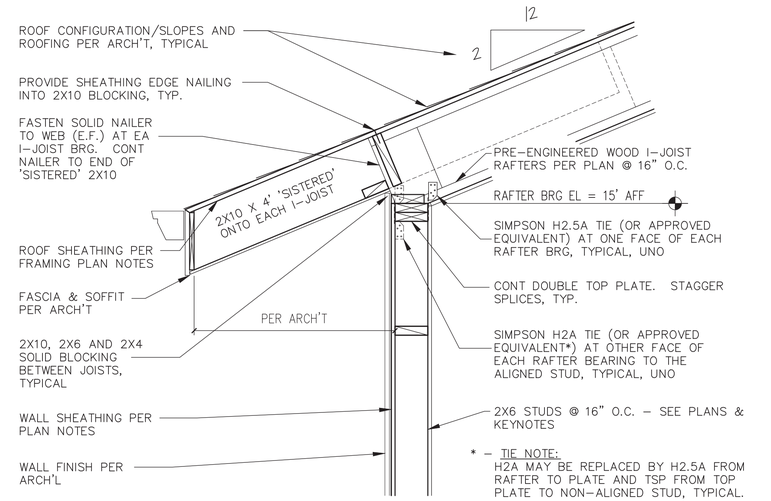
3 S201 RAFTER BEARING ON RAKE WALL SECTION

SCALE = NONE



2 S201 RAFTER BEARING ON BEAM SECTION

SCALE = NONE



1 S201 I–JOIST BEARING ON STUD WALL SECTION

SCALE = NONE

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

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OSAGE CLUBHOUSE

2025 SW M150 HIGHWAY
LEE'S SUMMIT, MISSOURI

Roof Framing Sections

SEAL (DANIEL J. PACKARD, P.E., d.b.a. PACKARD ENGINEERING)

STATE OF MISSOURI · DANIEL J. PACKARD · NUMBER PE–24486 · PROFESSIONAL ENGINEER

JULY 31, 2020

ISSUED: JULY 31, 2020

NO.	REVISION	DATE

DESIGNED BY DJP
DRAWN BY DJP
CHECKED BY DJP

S201

ELECTRICAL SYMBOL LEGEND

SOME SYMBOLS AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED

CIRCUITING

- HOME RUN (2#12 1#12G UNO)
- INDICATES 2 PHASE, 1 N, & 1 GRD CONDUCTOR
- HOME RUN: INDICATES SHARED CIRCUIT
- HOME RUN: INDICATES #10 CONDUCTORS ENTIRELY

UTILITIES

- ---- UGE --- UNDERGROUND ELECTRICAL
- —— OHE —— OVERHEAD ELECTRICAL
- —— TELE —— TELECOMMUNICATIONS CONDUIT
- ---- UGT --- UNDERGROUND TELECOMMUNICATIONS CONDUIT

LIGHTING

- GRID-MOUNTED TROFFER LIGHT FIXTURE
- STRIP LIGHT FIXTURE
- SURFACE/RECESSED LIGHT FIXTURE
- WALL-MOUNTED LIGHT FIXTURE
- POLE-MOUNTED LIGHT FIXTURE
- EXIT LIGHT
- BATTERY-OPERATED EMERGENCY LIGHT (WALL MTD)
- BATTERY-OPERATED EMERGENCY LIGHT (CEILING MTD)
- WALL-MOUNTED COMBINATION EXIT LIGHT/ BATTERY-OPERATED EMERGENCY LIGHT
- $ LIGHT SWITCH – SINGLE POLE
- $3 LIGHT SWITCH – 3-WAY
- $4 LIGHT SWITCH – 4-WAY
- $K LIGHT SWITCH – KEY
- $D LIGHT SWITCH – DIMMER
- $PL LIGHT SWITCH – PILOT LIGHT
- $2P LIGHT SWITCH – 2 POLE
- $D3 LIGHT SWITCH – 3-WAY DIMMER
- $M WALL-MOUNTED MOTION SWITCH
- M CEILING-MOUNTED MOTION SWITCH
- SB SWITCHBANK – REFER TO DETAILS
- FD1 DIMMER BOARD
- RCS-1 REMOTE CONTROL SWITCH AS SCHEDULED
- TC TIMECLOCK – REFER TO PLANS / DETAILS

EQUIPMENT

- DISCONNECT SWITCH. RE: PLANS FOR INFORMATION.
- MAGNETIC MOTOR STARTER
- COMBINATION DISCONNECT SWITCH / MOTOR STARTER
- TOGGLE-TYPE DISCONNECT. FURNISH WITH THERMAL MOTOR PROTECTION WHERE SERVING FANS/PUMPS.
- SURFACE PANELBOARD
- RECESSED PANELBOARD
- DISTRIBUTION PANELBOARD
- SWITCHBOARD. FEEDER/MAIN CIRCUIT BREAKER SECTION AND DISTRIBUTION SECTION.

GENERAL SYMBOLS

- INDICATES CONNECT TO EXISTING
- INDICATES ELEVATION
- XXX EQUIPMENT TAG. REFER TO CONNECTIONS SCHEDULE FOR ELECTRICAL CONNECTIONS AND LOAD INFO FOR KITCHEN, SHOP, ETC. EQUIPMENT

POWER DEVICES

- DUPLEX RECEPTACLE.
- LINE THRU DEVICE INDICATES ABOVE COUNTER
- GFI SPECIAL DUPLEX RECEPTACLE (GFCI, ISOLATED GROUND, ETC.)
- QUADPLEX RECEPTACLE
- 5-50R SIMPLEX RECEPTACLE W/NEMA CONFIG AS NOTED
- 5-50R MULTI-POLE RECEPTACLE W/NEMA CONFIG AS NOTED
- CEILING MOUNTED RECEPTACLE
- RECEPTACLE/DEVICE MOUNTED IN "TOMBSTONE"
- POKE-THRU WITH POWER
- POKE-THRU WITH TELECOMMUNICATIONS
- POKE-THRU W/POWER AND TELECOM
- 1G SINGLE GANG FLOOR BOX (2, 3, 4 GANG SIMILAR)
- DIVIDED POWER POLE
- C CLOCK RECEPTACLE
- PLUG MOLD / WIRE MOLD AS SPECIFIED
- J JUNCTION BOX
- T THERMOSTAT – ELECTRIC
- PUSH BUTTON
- MOTOR

TELEPHONE/DATA

- TELEPHONE OUTLET (SINGLE-GANG BOX WITH (1) 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING)
- LINE THRU DEVICE INDICATES ABOVE COUNTER
- DATA OUTLET (DOUBLE-GANG BOX WITH (2) 3/4" CONDUITS TO ABOVE ACCESSIBLE CEILING)
- TELEPHONE/DATA OUTLET (DOUBLE-GANG BOX WITH (2) 3/4" CONDUITS TO ABOVE ACCESSIBLE CLG.)
- 1V PHONE OUTLET WITH NUMBER OF PHONE JACKS AS INDICATED – SEE DETAILS FOR ADD'L INFO.
- 1D DATA OUTLET WITH NUMBER OF PHONE JACKS AS INDICATED – SEE DETAILS FOR ADD'L INFO.
- 1D/1V PHONE/DATA OUTLET WITH NUMBER OF PHONE/DATA JACKS AS INDICATED – SEE DETAILS FOR ADD'L INFO.
- W WALL-MOUNTED WIRELESS INTERNET TRANSMITTER
- W CEILING-MOUNTED WIRELESS INTERNET TRANSMITTER

AUDIO/VISUAL

- TV TELEVISION OUTLET (SINGLE GANG BOX WITH (1) 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING)
- TR REVERSE TELEVISION OUTLET – CABLE TO HEAD END
- AV RECESSED COMBINATION AV AND POWER OUTLET COORD LOCATION OF DEVICE WITH TV MOUNT
- TDC TEACHER'S DESK CONNECTIONS – RE: DETAILS
- S WALL SPEAKER
- S CEILING SPEAKER
- S WALL SPEAKER – HORN TYPE
- S CEILING SPEAKER – HORN TYPE
- S SUB CEILING SPEAKER – SUBWOOFER
- S SS CEILING SPEAKER – SOUND SYSTEM
- V VOLUME CONTROL
- I INTERCOM CALL STATION
- INTERCOM HANDSET
- SOUND SYSTEM AUDIO JACK
- RM REMOTE MICROPHONE CONTROL
- PAS PUBLIC ADDRESS SYSTEM AMPLIFIER
- IMS INTERCOM MASTER STATION

FIRE ALARM

- F MANUAL PULL STATION
- D CEILING SMOKE DETECTOR
- D DUCT SMOKE DETECTOR
- H HEAT DETECTOR
- WF WATERFLOW SWITCH
- TS TAMPER SWITCH
- 75 WALL-MOUNTED FA STROBE WITH CANDELA RATING. 15cd RATING UNLESS OTHERWISE NOTED ON PLANS.
- WALL-MOUNTED FA HORN
- WALL-MOUNTED FA SPEAKER
- 30 WALL-MOUNTED FA HORN/STROBE WITH CANDELA RATING. 15cd UNLESS OTHERWISE NOTED ON PLANS.
- 30 WALL-MOUNTED FA SPEAKER/STROBE WITH CANDELA RATING. 15cd UNLESS OTHERWISE NOTED ON PLANS.
- 75 CEILING-MOUNTED FA STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
- CEILING-MOUNTED FA SPEAKER.
- 30 CEILING-MOUNTED FA HORN/STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
- 30 CEILING-MOUNTED FA SPEAKER/STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
- R RELAY
- FACP FIRE ALARM CONTROL PANEL
- FAAP FIRE ALARM ANNUNCIATOR PANEL
- FARA REMOTE ANNUNCIATOR PANEL
- FAEC FIRE ALARM EXTENDER CABINET
- DH DOOR HOLDER
- D 120V SINGLE / MULTI-STATION 120V SMOKE ALARM
- ZAM ZONE ADDRESSABLE MODULE
- IAM INDIVIDUAL ADDRESSABLE MODULE
- HFSS KITCHEN HOOD FIRE SUPPRESSION SYSTEM PANEL
- H KITCHEN HOOD REMOTE PULL STATION
- ARA AREA OF RESCUE ASSISTANCE STATION
- ARAM AREA OF RESCUE ASSISTANCE MASTER STATION

SECURITY

- FIXED CAMERA
- PTZ PAN/TILT/ZOOM CAMERA
- PROX PROXIMITY TYPE CARD READER
- CARD SWIPE CARD READER
- ES ELECTRIC STRIKE
- KP KEYPAD / MAG LOCK
- B BUTTON / MAG LOCK

MECHANICAL AND PLUMBING SYMBOL LEGEND

SOME SYMBOLS AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED

SHEET METAL

- HIGH EFFICIENCY ROUND DUCT TAKEOFF (WITH & WITHOUT MANUAL DAMPER)
- SPIN-IN ROUND DUCT TAKEOFF (WITH & WITHOUT MANUAL DAMPER)
- CONICAL BELLMOUTH ROUND TAKEOFF
- ROUND DUCT RUNOUT WITH FLEX DUCT
- DUCTWORK ELBOW (WITH & WITHOUT TURNING VANES)
- XD FD:FIRE DAMPER FS:FIRE/SMOKE DAMPER SD:SMOKE DAMPER BD:BACKDRAFT DAMPER (GRAVITY)
- MD AUTOMATIC MOTORIZED DAMPER
- 8"ø A 225 SUPPLY DIFFUSER AND DIFFUSER CALLOUT (NECK SIZE, TYPE AND CFM)
- LINEAR/SLOT DIFFUSER
- RETURN GRILLE OR EXHAUST REGISTER
- SUPPLY AIR FLOW INDICATOR
- RETURN AND EXHAUST AIR FLOW INDICATOR
- THERMOSTAT
- TEMPERATURE SENSOR
- H HUMIDISTAT
- CONTROL WIRING

PLUMBING PIPING

- —— · —— DOMESTIC COLD WATER
- —— ·· —— DOMESTIC HOT WATER
- —— ··· —— RECIRCULATING DOMESTIC HOT WATER
- —— SAN —— WASTE ABOVE GRADE OR FLOOR
- — — SAN — — WASTE BELOW GRADE OR FLOOR
- —— V —— PLUMBING VENT
- —— W —— WATER SERVICE
- —— G —— GAS (NATURAL)

PIPING SPECIALTIES

- P T PRESS/ TEMP GAUGE WITH COCK
- THERMOMETER.
- HI LOW PRESSURE REDUCING VALVE
- RELIEF VALVE
- WATER HAMMER ARRESTER

PIPING SYMBOLS

- SHUTOFF VALVE
- SHUTOFF VALVE IN RISER
- BALANCING VALVE
- PLUG VALVE
- AUTO FLOW CONTROL VALVE
- PIPING ELBOW UP
- PIPING ELBOW DOWN
- PIPING TEE
- PIPING ELBOW
- PIPING TEE UP
- PIPING TEE DOWN
- INCREASER / REDUCER
- UNION
- CAP
- PIPE FLEX
- STRAINER
- CHECK VALVE
- INLINE STRAINER
- TEST PLUG
- GUIDE
- ANCHOR
- TRIPLE DUTY VALVE
- AUTOMATIC 2-WAY CONTROL VALVE
- AUTOMATIC 3-WAY CONTROL VALVE
- S SOLENOID VALVE

PLUMBING FIXTURES/EQUIPMENT

- HB HOSE BIBB
- WH WALL HYDRANT
- CLEAN OUT
- RPZ REDUCED PRESSURE BACKFLOW PREVENTER
- DCBP DOUBLE CHECK BACKFLOW PREVENTER
- WC-1 S-1 PLUMBING FIXTURE AND CALLOUT
- FD-1 FD: FLOOR DRAIN, AD: AREA DRAIN, FS: FLOOR SINK
- RD-1 RD: ROOF DRAIN ORD: OVERFLOW ROOF DRAIN

MECHANICAL PIPING

- —— RL —— REFRIGERANT LIQUID
- —— RS —— REFRIGERANT SUCTION
- —— D —— DRAIN (CONDENSATE)

SHEET INDEX

ABBREVIATIONS

A/E	ARCHITECT / ENGINEER	ELEV	ELEVATION	MH	MANHOLE
AFF	ABOVE FINISHED FLOOR	EM	EMERGENCY FIXTURE/DEVICE	MLO	MAIN LUGS ONLY
AFG	ABOVE FINISHED GRADE	EWT	ENTERING WATER TEMPERATURE	NFA	NET FREE AREA
AG	ABOVE GRADE	EX	EXISTING ITEM	NL	NIGHT LIGHT
AHJ	AUTHORITY HAVING JURISDICTION	FFA	FROM FLOOR ABOVE	OA	OUTSIDE AIR
AHU	AIR HANDLING UNIT	FFB	FROM FLOOR BELOW	ORD	OVERFLOW ROOF DRAIN
ARCH	ARCHITECT	FFCO	FINISHED FLOOR CLEAN OUT	P/C	PLUMBING CONTRACTOR
BFP	BACKFLOW PREVENTER	FGCO	FLUSH GRADE CLEAN OUT	PSI	POUNDS PER SQUARE INCH
BG	BELOW GRADE	FL	FLOW LINE	PVC	POLYVINYLCHLORIDE
BLDG	BUILDING	FLR	FLOOR	RA	RETURN AIR
BMS	BUILDING MANAGEMENT SYSTEM	FP	FIRE PROTECTION	RE/REF	REFER / REFERENCE
C	CONDUIT	FPM	FEET PER MINUTE	RF	RELIEF FAN
CD	CANDELA	FWCO	FLUSH WALL CLEAN OUT	RL	RELOCATED ITEM
CD	COLD DECK	G	GROUND / GANG	RPZ	REDUCED PRESSURE ZONE
CLG	COOLING	G/C	GENERAL CONTRACTOR	RR	RESTROOM
CM	COORDINATE MOUNTING HEIGHT	GFI	GROUND FAULT CIRCUIT INTERUPTER	SA	SUPPLY AIR
CO	CLEAN OUT	GFIP	GFI-PROTECTED DEVICE	SPD	SURGE PROTECTIVE DEVICE
CTE	CONNECT TO EXISTING	GPM	GALLONS PER MINUTE	ST	SHUNT TRIP
DCVA	DOUBLE CHECK VALVE ASSEMBLY	HD	HOT DECK	TA	TRANSFER AIR
DCW	DOMESTIC COLD WATER	HTG	HEATING	TFA	TO FLOOR ABOVE
DDC	DIRECT DIGITAL CONTROLS	IG	ISOLATED GROUND	TFB	TO FLOOR BELOW
DF	DRINKING FOUNTAIN	JB	JUNCTION BOX	TP	TAMPERPROOF
DHW	DOMESTIC HOT WATER	LED	LIGHT EMITTING DIODE	TYP	TYPICAL
DHWR	DOMESTIC HOT WATER RETURN	LWT	LEAVING WATER TEMPERATURE	UNO	UNLESS NOTED OTHERWISE
DIA	DIAMETER	M/C	MECHANICAL CONTRACTOR	VRF	VARIABLE REFRIGERANT FLOW
DN	DOWN	MA	MIXED AIR	VTR	VENT THROUGH ROOF
E/C	ELECTRICAL CONTRACTOR	MAU	MAKE UP AIR UNIT	WCO	WALL CLEANOUT
EA	EXHAUST AIR	MCB	MAIN CIRCUIT BREAKER	WG	WIRE GUARD
EDF	ELECTRIC DRINKING FOUNTAIN	MECH	MECHANICAL	WP	WEATHERPROOF

FIRE SEALING NOTES

1. COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE UL REQUIREMENTS.
2. COORDINATE SIZING OF SLEEVES, OPENINGS, CORE-DRILLED HOLES, OR CUT OPENINGS TO ACCOMMODATE THROUGH-PENETRATION FIRESTOP SYSTEMS.
3. DO NOT COVER UP THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATIONS UNTIL EXAMINED BY INSPECTOR, IF REQUIRED BY AUTHORITIES HAVING JURISDICTION.
4. COMPATIBILITY: PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS 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 SERVICE AND APPLICATION, AS DEMONSTRATED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
5. PROVIDE COMPONENTS FOR EACH THROUGH-PENETRATION FIRESTOP SYSTEM THAT ARE NEEDED TO INSTALL FILL MATERIALS. USE ONLY COMPONENTS SPECIFIED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOP SYSTEMS INDICATED.
6. PROVIDE SLEEVES THROUGH ALL FIRE-RATED WALLS AND FILL VOIDS SURROUNDING SLEEVES AND INTERIOR TO SLEEVES AROUND PIPING WITH FIRE STOP PUTTY WITH U.L. LISTED 3 HOUR RATING INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
7. FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED THROUGH FIRE RATED WALLS.
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 FOR CONSTRUCTION.

GEN. MECHANICAL NOTES

1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL MECHANICAL CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ.
2. ANY POWER FOR CONTROL SYSTEMS TO BE PROVIDED BY E/C IS 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 PROVIDED BY THE M/C CONTRACTOR OR SUBS.
3. ALL EQUIPMENT SHALL BE ADEQUATELY AND PROPERLY SUPPORTED AND FASTENED FROM STRUCTURE.
4. ALL EQUIPMENT AND ACCESSORIES INSTALLED IN CONCEALED SPACES REQUIRING ACCESS SHALL BE PROVIDED WITH ACCESS DOORS MEETING ANY FIRE REQUIREMENTS OF THE WALL/CEILING THEY ARE INSTALLED.
5. EACH AIR HANDLING UNIT OVER 2000CFM SHALL BE PROVIDED WITH A SMOKE DETECTOR TO SHUT DOWN THE UNIT PER IMC 606 AS REQUIRED BY AHJ. COORDINATE WITH OTHER TRADES.
6. START UP AND ADJUST ALL EQUIPMENT AND VERIFY ALL MECHANICAL SYSTEMS IN OPERATE IN ACCORDANCE WITH THEIR INTENDED PURPOSES. SUBMIT BALANCE AND START UP REPORTS TO THE A/E. REFER TO SPECIFICATIONS FOR ANY ADDITIONAL REQUIREMENTS.

GENERAL PLUMBING NOTES

1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE 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.
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 SEWER.

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 ENDS.
5. CONTRACTOR SHALL CONCEAL ALL CONDUIT, FITTINGS, AND DEVICES FROM VIEW WHERE REASONABLY POSSIBLE.

COORDINATION NOTES

1. COORDINATE REQUIREMENTS FOR INSTALLATION OF SYSTEMS AND EQUIPMENT WITH ALL OTHER TRADES.
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 SYSTEMS TO CLEAR STRUCTURE, CEILINGS, ETC AND OTHER SYSTEMS IN POTENTIAL CONFLICT WITH ROUTING.
3. COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS.
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 AND APPROVED.
5. TRANSMIT TO OTHER TRADES ALL INFORMATION REQUIRED FOR WORK TO BE PROVIDED UNDER THEIR RESPECTIVE SECTIONS IN AMPLE TIME FOR INSTALLATION.
6. WHEREVER WORK INTERCONNECTS WITH WORK OF OTHER TRADES, COORDINATE WITH THOSE TRADES TO ENSURE THAT ALL SUBCONTRACTORS HAVE THE INFORMATION NECESSARY SO THAT 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 PANELS.
7. COORDINATE, PROJECT AND SCHEDULE WORK WITH OTHER TRADES IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE.
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 SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR OF SURFACES, AREAS AND PROPERTY THAT MAY BE DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES.
10. ADJUST LOCATION OF PIPING, DUCTWORK, ETC. TO PREVENT 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 CLEARANCES AND HEADROOM.
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 WORK AND ITS RELATION TO THE WORK OF OTHER TRADES, AND BE SUBMITTED FOR REVIEW PRIOR TO COMMENCING SHOP FABRICATION OR ERECTION IN THE FIELD.
12. COORDINATE WITH LOCAL UTILITY PROVIDERS FOR THEIR REQUIREMENTS FOR SERVICE CONNECTIONS AND PROVIDE ALL NECESSARY PAYMENTS, MATERIALS, LABOR AND TESTING TO ACCOMPLISH THE WORK.
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 THESE ITEMS WHENEVER POSSIBLE.

GENERAL NOTES

1. SOME ROOM NAMES MAY NOT BE SHOWN FOR PURPOSE OF CLARIFYING PLAN. REFER TO ARCHITECTURAL PLANS FOR 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 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, 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 BE OBTAINED FROM MEP DRAWINGS.
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.

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PACKARD ENGINEERING
10417 INDIANA AVE.
KANSAS CITY, MO 64137
PH: 816-767-7222

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

OSAGE POOL CLUBHOUSE

2025 SW M 150 HWY
LEE'S SUMMIT, MO 64082

SEAL
STATE OF MISSOURI
WILLIAM E. KENT
NUMBER PE-2004015662
REGISTERED PROFESSIONAL ENGINEER
08/05/2
William E. Kent - Engineer
MO# PE-2004015662

STATE OF MISSOURI
DAVID LAWRENCE DEATHERAGE
NUMBER E-29880
REGISTERED PROFESSIONAL ENGINEER
08/05/20
David Lawrence Deatherage - Engineer
MO# E-29880

DATE ISSUED: August 05, 2020

NO.	REVISION	DATE
1	PLAN REVIEW COMMENTS	8/13/2020

Designer
Author
Checker

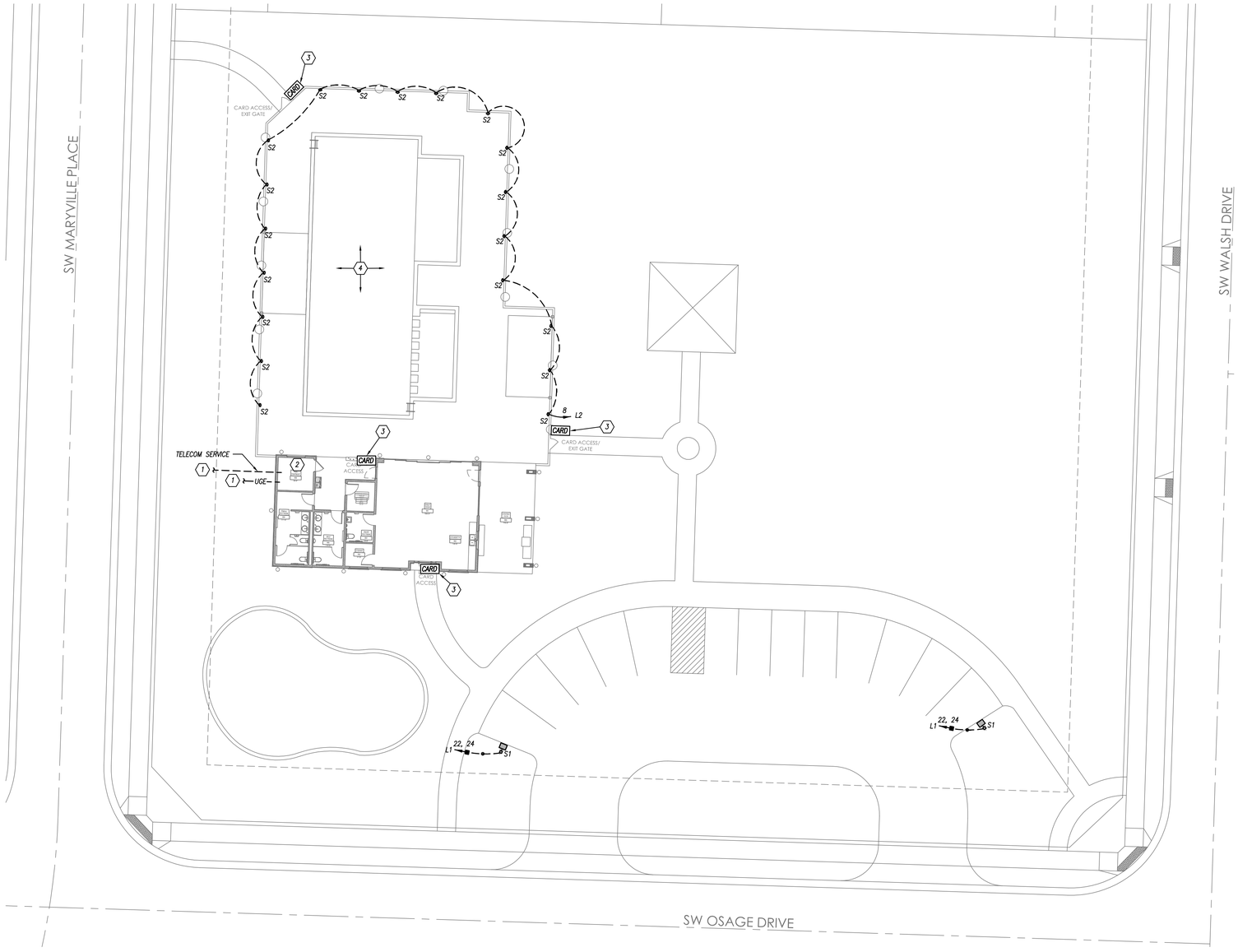
COVER SHEET
MEP001

GENERAL SITE PLAN NOTES

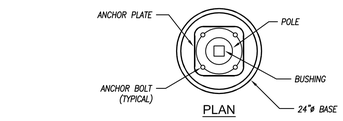
1. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.
2. REFER TO CIVIL PLANS FOR CONTINUATION OF SERVICES BEYOND 5'-0" FROM BUILDING UNLESS OTHERWISE SHOWN.
3. REFER TO RESPECTIVE FLOOR PLANS FOR CONTINUATION OF SERVICES INSIDE BUILDING AND/OR EXACT LOCATIONS OF EQUIPMENT.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

SITE PLAN KEYED NOTES

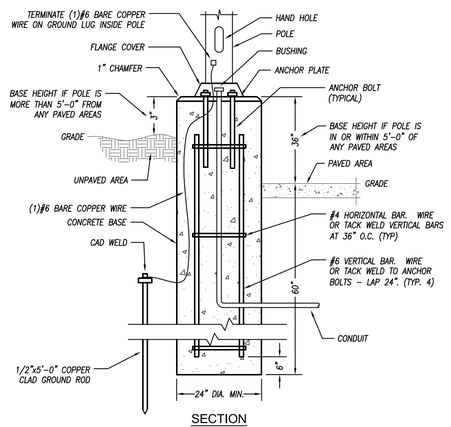
1. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
2. PROVIDE CONDUIT AND CONDUCTORS TO ROUGH-IN LOCATIONS OF POOL LIGHT & DECK FIXTURES. COORDINATE EXACT REQUIREMENTS AND ROUGH-IN LOCATIONS WITH POOL DRAWINGS. (TYPICAL)
3. CARD READER. COORDINATE EXACT LOCATION AND ALL CONNECTION REQUIREMENTS WITH OWNER SPECIFIED SYSTEM. PROVIDE ROUGH-IN AND 1" CONDUIT BACK TO STORAGE ROOM.
4. REFER TO POOL DRAWINGS FOR IN-POOL LIGHTING AND BONDING REQUIREMENTS.



MECHANICAL/ELECTRICAL - SITE PLAN
1/16" = 1'-0"



PLAN



SECTION

POLE BASE DETAIL
NOT TO SCALE

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

CIVIL ENGINEER
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OLATHE, KS 66061
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pkmr ENGINEERS
PEARSON KENT MCKINLEY RAAF ENGINEERS LLC
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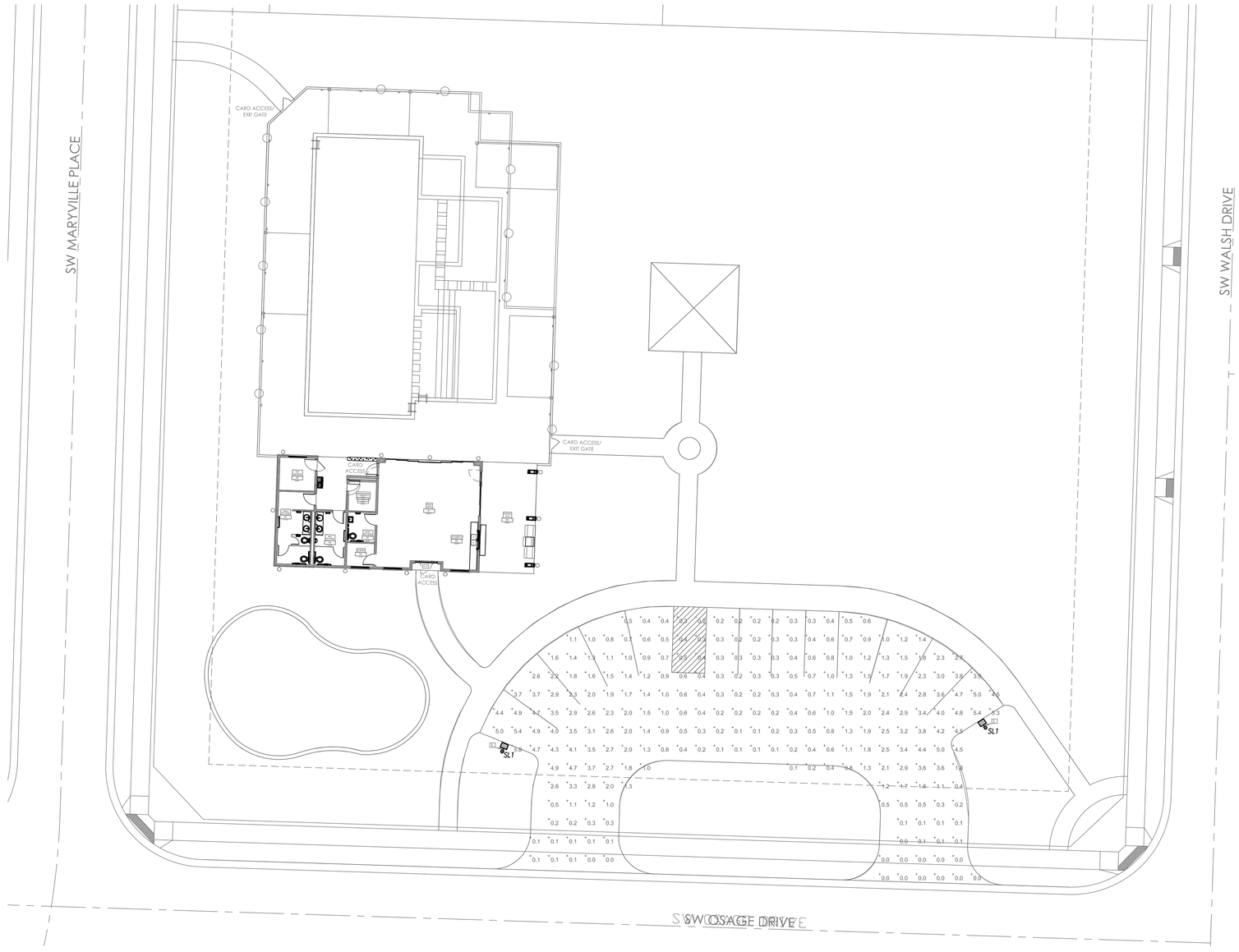
913.402.2400 WWW.PKMRENG.COM
MO State Certificate of Authority #E-2002020886

20.160

SITE PLAN
MEP101



SITE PLAN - PHOTOMETRIC

1/16" = 1'-0"

PARKING LOT STATISTICS

DESCRIPTION	MAINTAINED LIGHTING LEVELS			UNIFORMITY	
	AVG. (F.C.)	MAX. (F.C.)	MIN. (F.C.)	MAX. / MIN.	AVG. / MIN.
PARKING LOT STATISTICS	*1.3*	*7.0*	*0.0*	*N/A*	*N/A*

NOTES:

1. NUMBERS INDICATE FOOTCANDLE LEVELS AT GRADE.

2. CALCULATIONS PERFORMED USING VISUAL 2.05.

3. THERE SHALL BE NO DIRECT ILLUMINATION OF RESIDENTIAL PROPERTIES ADJACENT TO THIS PROPERTY OR ACROSS PUBLIC RIGHT-OF-WAY.

LIGHT FIXTURE SCHEDULE - SITE LIGHTING

FIXTURE TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMP NUMBER / DESCRIPTION
ST	*McGraw-Edison*	*GALLEON LED*	*GLEON-AF-02-LED-E1-SL2- GALLEON LED FIXTURE. DARK BRONZE FINISH. POLE FIXTURE AT 15'-0" AFF MOUNTING HEIGHT*	*129W, 13088 LUMEN LED MODULE 4000K*

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2022

B+A ARCHITECTURE

ARCHITECT
B+A ARCHITECTURE
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SEAL

STATE OF MISSOURI — DAVID LAWRENCE DEATHERAGE — NUMBER E-29880 — REGISTERED PROFESSIONAL ENGINEER — 08/05/20
David Lawrence Deatherage - Engineer
MO# E-29880

STATE OF MISSOURI — WILLIAM E KENT IV — NUMBER PE-2004015662 — REGISTERED PROFESSIONAL ENGINEER — 08/05/20
William E. Kent - Engineer
MO# PE-2004015662

DATE ISSUED: August 05, 2020

NO.	REVISION	DATE
1	*PLAN REVIEW COMMENTS*	*8/13/2020*

Designer
Author
Checker

SITE PLAN

MEP102

pkmr ENGINEERS

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MO State Certificate of Authority #E-2002020886

20.160

GENERAL MECHANICAL/ELECTRICAL SPECIFICATIONS/ DIVISION 220000 - PLUMBING/ DIVISION 230000 - MECHANICAL

GENERAL MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS

1. APPLICABILITY
   - 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 work.
2. 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 required.
   - 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.
3. EXTENT OF CONTRACT WORK
   - 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.
4. DEFINITIONS
   - A. Whenever used in these specifications or drawings, following terms shall have indicated meanings:
   - 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 Division.
   - 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 specified".
   - 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.
5. 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 price.
6. 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 numbers.
   - 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 acceptable.
   - 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 completion.
   - E. Repair or replace public & private property damaged as result of work performed under this contract to satisfaction of authorities & regulations having jurisdiction.
7. 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 operation.
   - I. 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 after its own installation.
   - 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 repair of all components, including mechanical and electrical.
   - 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.
8. 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.
10. 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.
11. 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.
12. SUBSTITUTIONS
    - 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 required.
    - 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 trades.
    - 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. Engineer'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 formats.
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 conditions).
    - 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.
15. TRAINING
    - 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.
16. 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. EQUIPMENT LABELS:
    - 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 white background.
    - 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 lettering.
18. WARRANTIES
    - 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.
19. 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.
21. ROUGH-IN
    - A. Coordinate rough-in w/ general construction & other trades. Conceal piping & conduit rough-in except in unfinished areas & where otherwise shown.
23. ACCESS DOORS
    - 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
27. 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.
30. 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., 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 installation.
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 fire according to requirements indicated, resist passage of smoke and other gases, and 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
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 w/ fiberglass w/ ASJ & PVC covers. Thickness in accordance w/ ASHRAE 90.1.
   - 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.
   - 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. VALVES
   - 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 or fixture, and on each main and branch service loop.
     - 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.
5. FIXTURES
   - A. See schedules for further requirements and specific fixtures.
   - B. Fixtures: American Standard, Kohler, Crane, Zurn, Toto.
   - C. Stainless steel fixtures: Elkay, Just, Moen Commercial
   - D. Fittings & supports: Josam, Smith, Wade, Zurn, Or Jonespec.
   - E. Seats: Church, Olsonite, Bemis Or Beneke.
   - 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.
6. 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.
     - 1) Reduced pressure zone principle (1/4"-1/2"): watts series 009 reduced pressure 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 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.
     - 5) Atmospheric vacuum breaker (1/4"-3"): watts series 288a atmospheric vacuum 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 & trouble shooting can be accomplished.
7. 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 thru wall or ceiling of finished rooms.
   - 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

1. MECHANICAL GENERAL REQUIREMENTS
   - A. Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements
2. 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 upstream of fans to meet SMACNA negative pressure of 1" WG. construct exhaust 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.
   - 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.
5. PIPING
   - 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.
7. EXHAUST FANS
   - F. Equivalent by Cook, Penn, Acme, Greenheck, Jennaire.
   - G. Provide w/ 14" min. Curb. Provide grease trim & ventilated curb extensions for grease fans.
   - H. Bearings shall be designed for 200,000 hours operation. Variable pitch motor sheaves shall be standard.
   - I. Fans shall be furnished with acceptable electrical disconnect & birdscreen. Provide single phase motor equipped fans with motor rated start relay. Provide multiphase motor 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 & 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 deg low ambient.
   - C. Equivalent by Trane, Lennox, York, Carrier.
9. PROGRAMMABLE THERMOSTATS
   - 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 setpoints to prevent tampering. Provide w/ all interfaces to other equipment as required.
   - B. Thermostats by Honeywell, Johnson Controls, White-Rogers, Trane, Carrier or approved equal
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 machine-staked terminals secured with stainless-steel hardware. Manufacturers: Berko, Chromalox, Indeeco, Markel, Marley. QMark.
11. 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/ electrical specifications.
    - 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 necessary.
    - C. All exterior control wiring shall be in conduit.
    - D. Provide ground-mounted units on 4", reinforced concrete base, 6" larger than unit on each side.
    - 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 & do the following:
      - 1) Inspect for visible damage to unit casing.
      - 2) Inspect for visible damage to furnace combustion chamber.
      - 3) Inspect for visible damage to compressor, air-cooled outside coil, & fans.
      - 4) Inspect internal insulation.
      - 5) Verify that labels are clearly visible.
      - 6) Verify that clearances have been provided for servicing.
      - 7) Verify that controls are connected & operable.
      - 8) Verify that filters are installed.
      - 9) Clean outside coil & inspect for construction debris.
      - 10) Clean furnace flue & inspect for construction debris.
      - 11) Connect & purge gas line.
      - 12) Adjust vibration isolators.
      - 13) Inspect operation of barometric dampers.
      - 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 sequences.
      - 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 dampers.
      - 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:
      - 40) Short circuiting of air through outside coil or from outside coil to outside-air intake.
      - 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.
      - 44) Alarms.
      - 45) After startup & performance testing, change filters, vacuum heat exchanger & cooling & outside coils, lubricate bearings, adjust belt tension, & inspect operation of power vents.
      - 46) Provide one spare set of clean filters & deliver to owner.
    - C. Adjusting
      - 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 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

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

ARCHITECTURE

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

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

STRUCTURAL ENGINEER
PACKARD ENGINEERING
10417 INDIANA AVE.
KANSAS CITY, MO 64137
PH: 816-767-7222

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

OSAGE POOL CLUBHOUSE
2025 SW M 150 HWY
LEE'S SUMMIT, MO 64082

SEAL

NUMBER PE-2004015662
08/05/20
William E. Kent - Engineer
MO# PE-2004015662

DAVID LAWRENCE DEATHERAGE
NUMBER E-29880
08/05/20
David Lawrence Deatherage - Engineer
MO# E-29880

DATE ISSUED: August 05, 2020

NO.	REVISION	DATE
1	PLAN REVIEW COMMENTS	8/13/2020

Designer
Author
Checker

pkmr ENGINEERS
20.160
PEARSON KENT MCKINLEY RAAF ENGINEERS LLC
13300 W 98TH STREET LENEXA, KS 66215
913.492.2400 WWW.PKMRENG.COM
MO State Certificate of Authority #E-2002020886

MECHANICAL SPECIFICATIONS
MEP201

ELECTRICAL SPECIFICATIONS

SECTION 26000 - ELECTRICAL

1. 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.
2. 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.
      3) 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 slab.
   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 ends of conductors, & cover box.
   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.
3. GROUNDING
   A. Supplement grounded neutral of secondary distribution system w/ equipment grounding system, installed so that metallic structures, enclosures, raceways, junction 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.
4. 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 used.
   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 structure.
   I. 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.
   O. Install approved expansion/deflection fittings where raceways pass through (if 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 plastic line. Leave min. 24" slack at each end.
   Q. Make all joints & connections in manner that will ensure mechanical strength & electrical continuity.
   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.
5. 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 connectors.
   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.
7. 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. DIGITAL LIGHTING CONTROLS
   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 system(s).
   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.
10. WIRING DEVICES
   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.
      2) Wall motion switches - spec grade, plr, overrride.
      3) Ceiling motion switches - spec grade, dual technology, model as req'd by room configuration, all necessary power packs & relays.
      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, Sensor Switch.
   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 lockable.
      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 covers.
      4)
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. LUMINAIRES, LAMPS & 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, Iota. 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 & GC. 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 specified
   B. In following sections, Maintain following on project premises at all times; true RMS reading voltmeter, true RMS reading ammeter, & megohmmeter insulation resistance tester. Provide test data readings as requested or as required by engineer
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 drawings.

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2020

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OSAGE POOL CLUBHOUSE
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08/05/20

STATE OF MISSOURI — WILLIAM E. KENT — NUMBER PE-2004015662 — REGISTERED PROFESSIONAL ENGINEER
William E. Kent - Engineer
MO# PE-2004015662
08/05/20

DATE ISSUED: August 05, 2020

NO.	REVISION	DATE
1	PLAN REVIEW COMMENTS	8/13/2020

Designer
Author
Checker

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 ARCHITECT ANY ERROR INCONSISTENCY OR OMISSION DISCOVERED.

pkmr ENGINEERS
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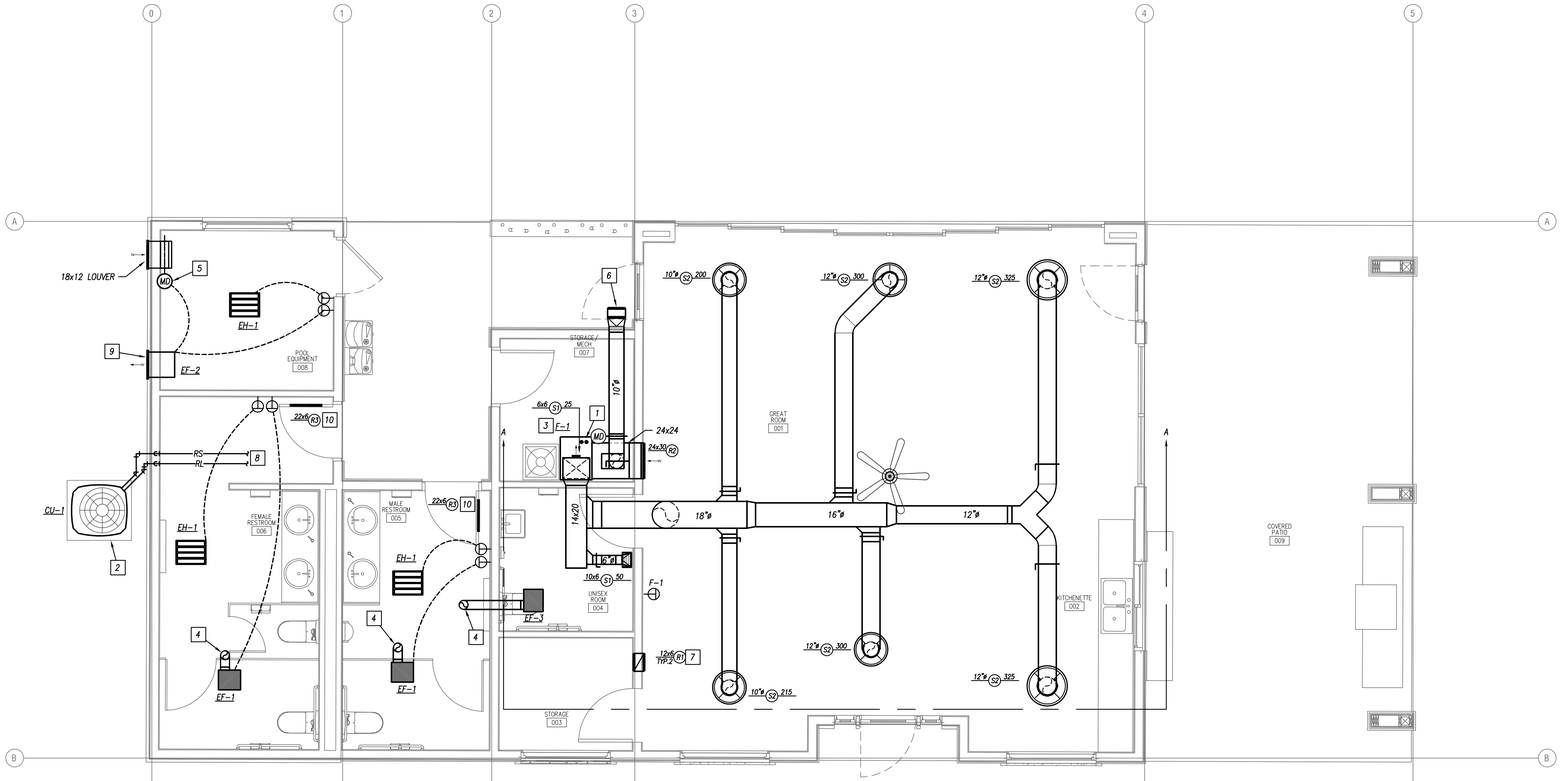
ELECTRICAL SPECIFICATIONS
MEP202



GENERAL HVAC NOTES

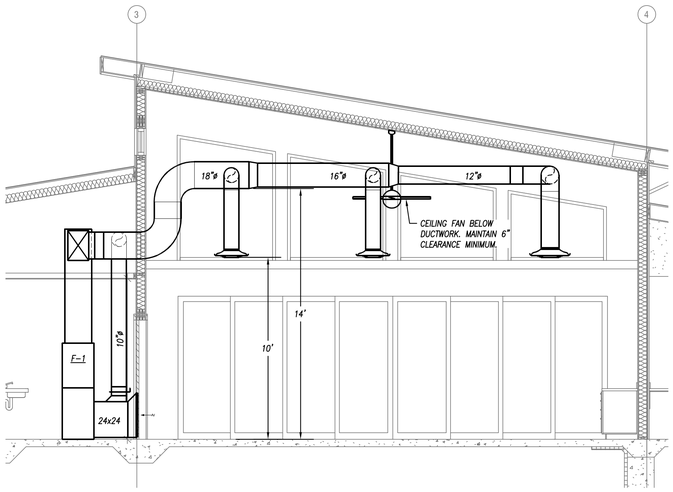
1. *REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK.*
2. *ROUND BRANCH DUCT RUNOUTS AND FLEXIBLE DUCT SHALL BE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.*
3. *MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-0".*
4. *ALL AIR DISTRIBUTION DEVICES SHALL HAVE LOCKABLE VOLUME CONTROL DEVICES.*
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 SCHEDULES.*

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 OPERATION.*
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.*

FLOOR PLAN - HVAC

1/4" = 1'-0"



HVAC - SECTION VIEW A

1/4" = 1'-0"

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RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DESELLOWDEN SCHYLER
LEE'S SUMMIT, MISSOURI
04/23/2021

OSAGE POOL CLUBHOUSE

2025 SW M 150 HWY
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David Lawrence Deatherage - Engineer
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DATE ISSUED: August 05, 2020

NO.	REVISION	DATE
1	PLAN REVIEW COMMENTS	8/13/2020

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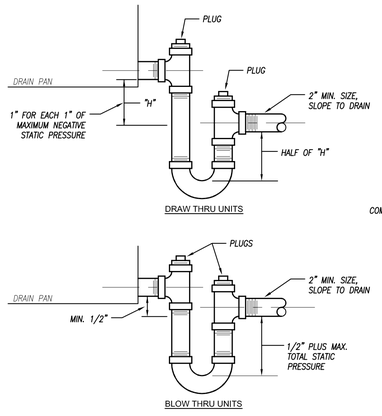
HVAC PLAN
M101



CONDENSATE TRAP DETAIL

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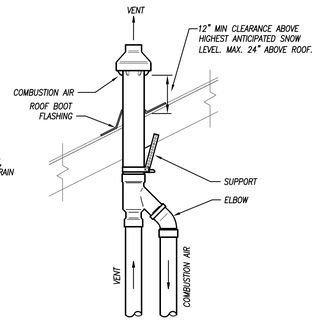

CONCENTRIC ROOF VENT

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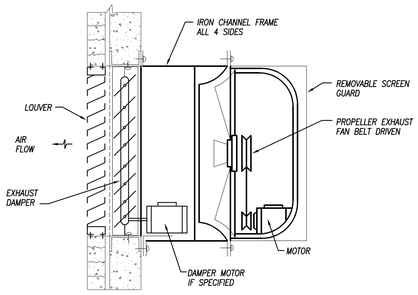

PROPELLER EXHAUST FAN DETAIL

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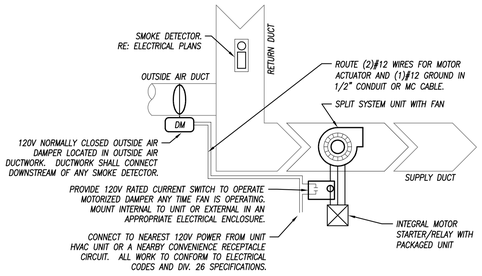

OUTSIDE AIR DAMPER WIRING SCHEMATIC

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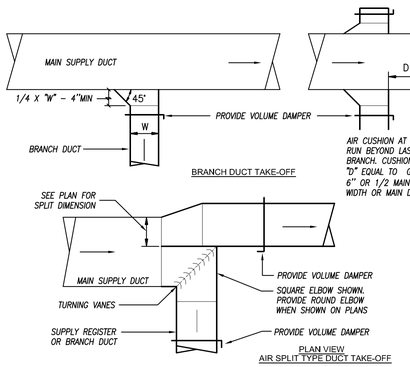

DUCTWORK TAKEOFFS

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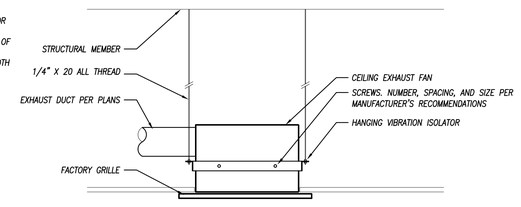

CABINET EXHAUST FAN MOUNTING DETAIL

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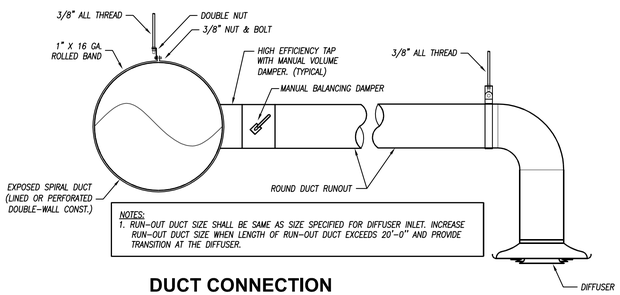

DUCT CONNECTION TO SPIRAL DUCT MOUNTED DIFFUSER DETAIL

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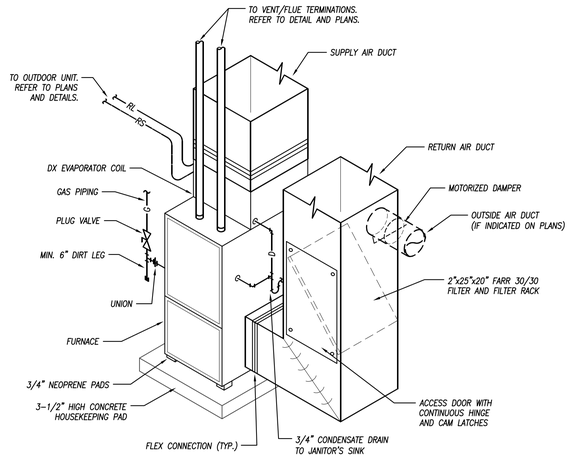
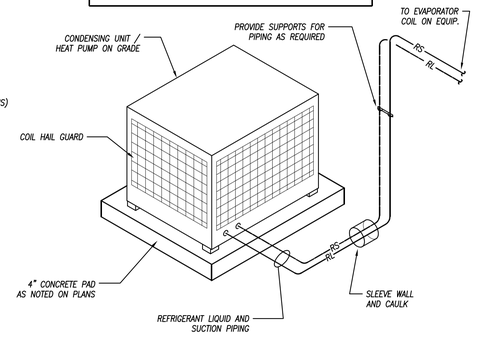


HIGH-EFFICIENCY FURNACE DETAIL

NOT TO SCALE

NOTES:
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

NOT TO SCALE

GRILLE, REGISTER & DIFFUSER SCHEDULE

PLAN MARK	MANUFACTURER	MODEL NUMBER	MATERIAL	DESCRIPTION	MOUNT TYPE	FACE SIZE (IN)	NECK SIZE (IN)	VOLUME DAMPER	FINISH COLOR	REMARKS
SUPPLY										
S1	TITUS	300RL	STEEL	GRILLE WITH 3/4" SPACING AND 35° DEFLECTION	SURFACE/WALL	NECK SIZE + 2-1/2"	AS INDICATED	NO	WHITE	1
S2	TITUS	TMRA	STEEL	ADJUSTABLE ROUND CONCENTRIC CONE DIFFUSER	DUCT	AS INDICATED	AS INDICATED	YES - O.B.	PAINTABLE	2
RETURN										
R1	TITUS	350RL	STEEL	35 DEG SINGLE DEFLECTION AEROBLADE 3/4" SPACING	WALL	AS INDICATED	AS INDICATED	NO	WHITE	
R2	TITUS	350RS	STEEL	35 DEG SINGLE DEFLECTION AEROBLADE 3/4" SPACING	WALL	AS INDICATED	AS INDICATED	NO	WHITE	
R3	TITUS	T-700	STEEL	INVERTED V-BLADE SIGHT PROOF	WALL	AS INDICATED	AS INDICATED	NO	WHITE	3

GENERAL REMARKS:
1. PROVIDE WITH ALL NECESSARY MOUNTING HARDWARE.
2. COORDINATE FINISH WITH ARCHITECT. PROVIDE GALVANIZED OR MILL FINISH WHERE DUCTWORK IS NOT TO BE PAINTED. PROVIDE PRIMED PAINTABLE FINISH WHEN DUCTWORK IS TO BE PAINTED.
3. PROVIDE WITH AUXILIARY FRAME WHEN INSTALLED IN DOOR FOR INSIDE FINISH.

FURNACE SCHEDULE

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

REMARKS:
1. HIGH EFFICIENCY FURNACE.

HVAC PIPING MATERIAL SCHEDULE

PIPING SYSTEM	SIZE	TYPE/SCHED	MATERIAL	ACCEPTABLE FITTINGS	FIELD TEST PRESSURE/TIME	ALLOWABLE IN PLENUMS	INSULATION TYPE	INSULATION 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.

EXHAUST FAN SCHEDULE

PLAN MARK	MANUFACTURER	MODEL NUMBER	TYPE	SERVICE	FAN DATA CFM	FAN DATA E.S.P. (IN)	FAN DATA HP	FAN DATA DRIVE	FAN DATA RPM	ELECTRICAL	CONTROL	REMARKS
EF-1	COOK	GC-148	CEILING CABINET	BATHROOM	132	0.250	46W	DIRECT	1,075	120V / 1PH	THERMOSTAT	2
EF-2	COOK	10XP24D1.33	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.

DUCTWORK INSULATION SCHEDULE

PURPOSE	DUCT DUTY	DUCT LOCATION	DUCT STYLE	INSULATION MATERIAL	INSULATION APPLICATION	INSULATION THICKNESS	NOTES
SUPPLY	LOW PRESSURE/VELOCITY	CONCEALED	RECTANGULAR	FIBERGLASS	LINED	1/2"	---
		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"	---
		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"	---
		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.

CONDENSING UNIT SCHEDULE

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

REMARKS:
1. COOLING CAPACITY BASED ON A SUCTION TEMPERATURE OF 49°F.
2. PROVIDE WITH 4" CONCRETE PAD.

ELECTRIC HEATER SCHEDULE

PLAN MARK	MANUFACTURER	MODEL NUMBER	TYPE	CFM	KW	VOLTAGE	REMARKS
EH-1	QMARK	CDF-SE	CEILING HEATER	300	2.0	240	1,2,3

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

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/23/2020

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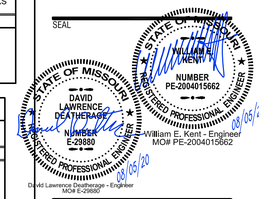
OSAGE POOL CLUBHOUSE

2025 SW M 150 HWY
LEE'S SUMMIT, MO 64082

SEAL



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NO.	REVISION	DATE
1	PLAN REVIEW COMMENTS	8/13/2020

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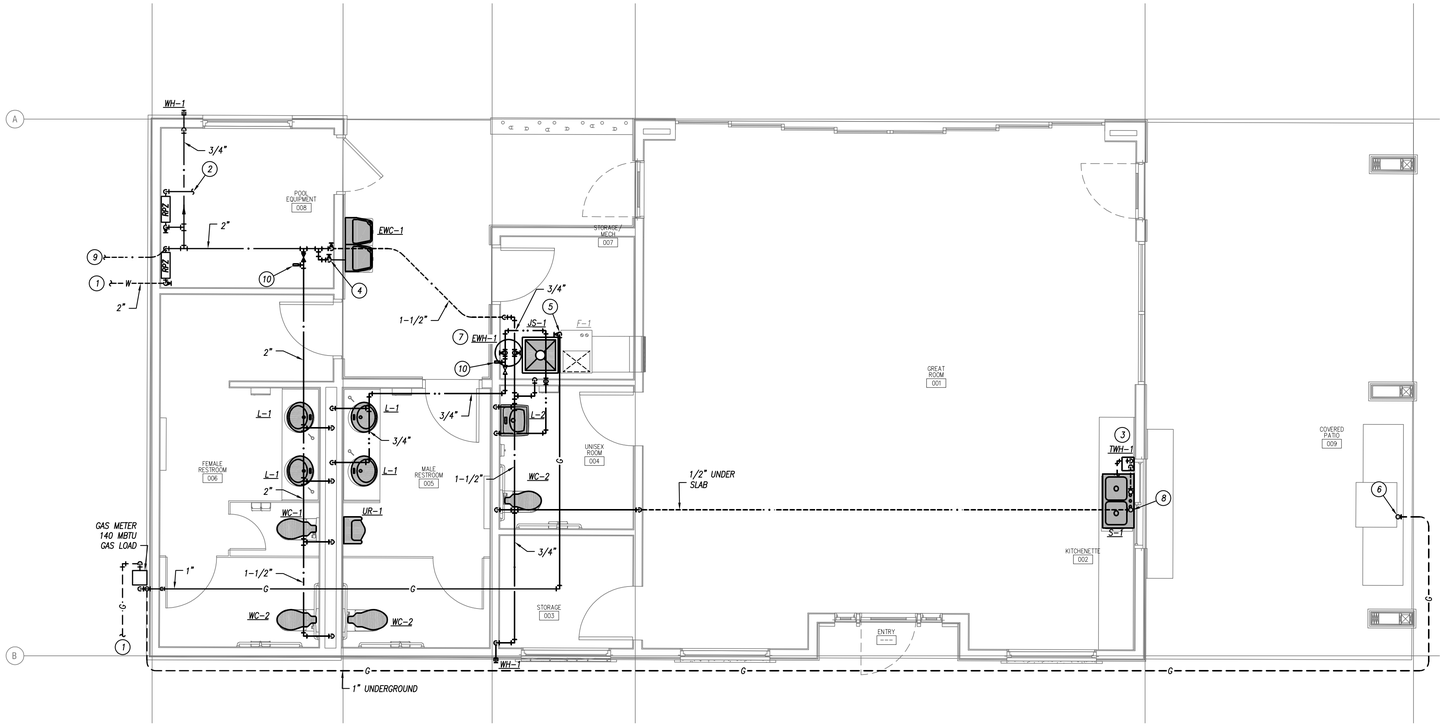
20.160

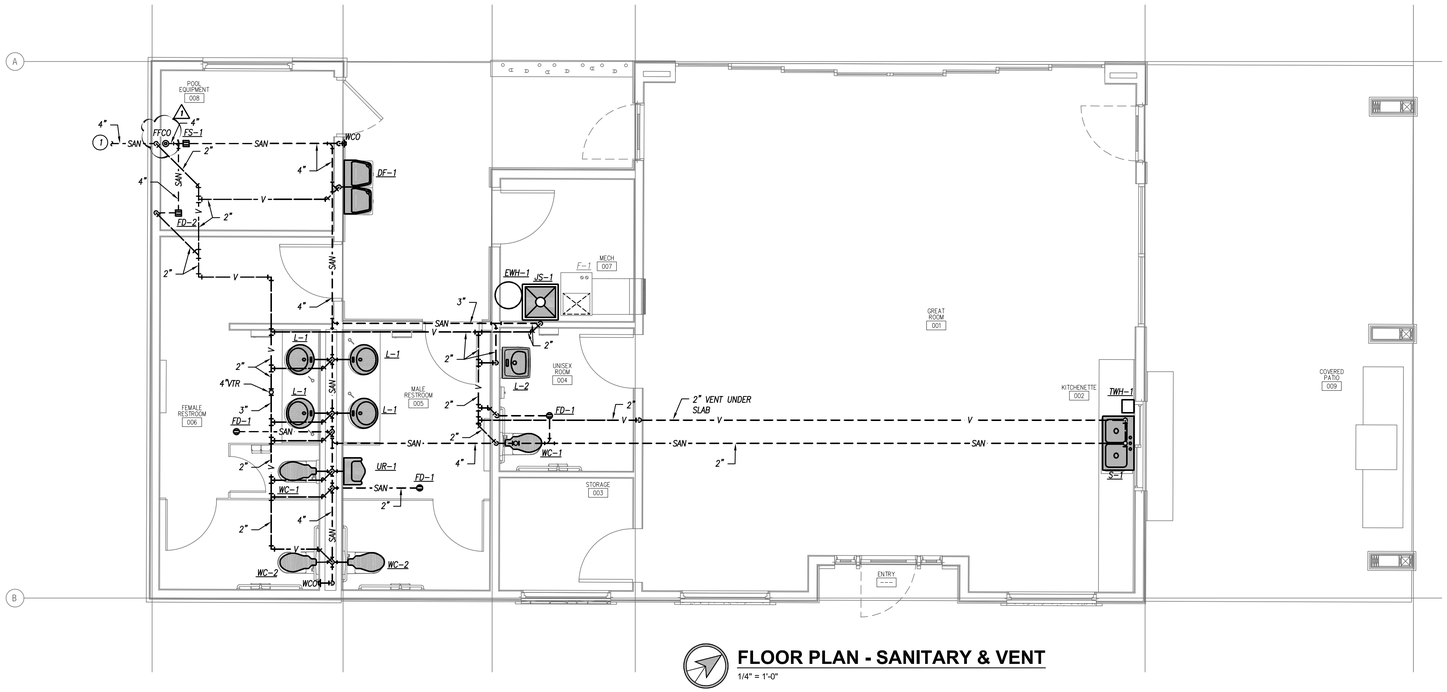
MECHANICAL SCHEDULES AND DETAILS

M201



FLOOR PLAN - DOMESTIC

1/4" = 1'-0"



FLOOR PLAN - SANITARY & VENT

1/4" = 1'-0"

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 OTHERWISE.*
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 SHUT-OFF VALVE IN AN ACCESSIBLE LOCATION UNDER COUNTER TOP FOR EXTERIOR DRINKING FOUNTAIN WINTERIZATION.*
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

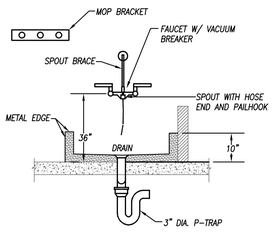
P101

PLUMBING FIXTURE SCHEDULE

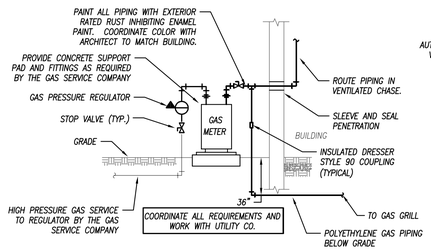
MARK	FIXTURE MODEL	FIXTURE DESCRIPTION	FITTINGS AND TRIM		REMARKS	PLUMBING FIXTURE PIPE SIZES			
			FITTINGS MODEL	FITTINGS AND DESCRIPTION		WASTE	VENT	DCW	DHW
EWC–1	HALSEY–TAYLOR HAC8FSBLQ	ADA–COMPLIANT, DUAL–HEIGHT, BARRIER–FREE, ELECTRIC WATER COOLER. PROVIDES 8.0 GPM OF 50°F WATER AT 90°F AMBIENT. 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.	---	---	---	---	---	---	---
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.	---	3"	2"	1/2"	1/2"
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"	1/2"
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"	1/2"
S–1	ELKAY LR–3322 IN–SINK–ERATOR BADGER 5	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 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.	CHICAGO 200–ALBABCP	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"	1/2"
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. PROVIDE FLOOR–MOUNTED, HEAVY–DUTY TUBULAR STEEL UPRIGHTS, ADJUSTABLE CARRIER, PLATED HANGER, AND ALL OTHER REQUIRED MOUNTING HARDWARE.	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 HANDLE HEIGHT PER ADA STANDARDS.	6	2"	2"	1"	---
WC–1	AMERICAN STANDARD MADERA 2234.001 CHURCH 9500C	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. INTEGRAL BUMPERS. EXTERNALCHECK HINGES WITH STAINLESS STEEL POSTS.	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 MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH ADA GUIDELINES.	6	4"	2"	1–1/4"	---
WC–2	AMERICAN STANDARD MADERA 3043.001 CHURCH 9500C	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. WHITE, SOLID PLASTIC, OPEN–FRONT SEAT FOR ELONGATED BOWL. INTEGRAL BUMPERS. EXTERNALCHECK HINGES WITH STAINLESS STEEL POSTS.	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 MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH ADA GUIDELINES.	6	4"	2"	1–1/4"	---

REMARKS:
1. PROVIDE CHROME–PLATED BRASS TAILPIECE AND GRID DRAIN.
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.



MOP SINK DETAIL
NOT TO SCALE



GAS SERVICE DETAIL
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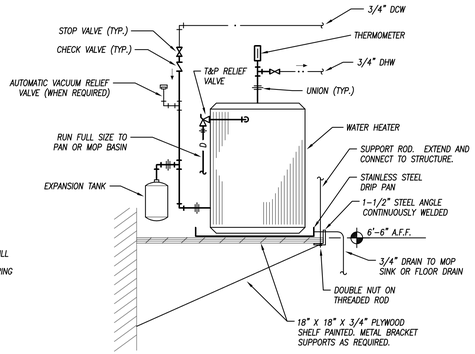

WATER HEATER ON SHELF DETAIL
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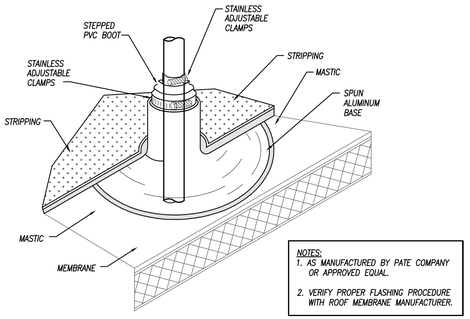
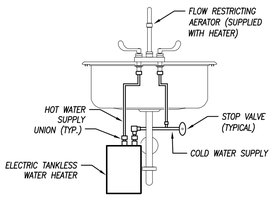
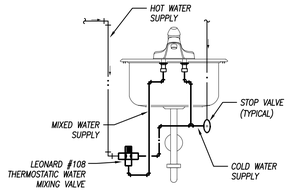


NOTES:
1. AS MANUFACTURED BY PATE COMPANY OR APPROVED EQUAL.
2. VERIFY PROPER FLASHING PROCEDURE WITH ROOF MEMBRANE MANUFACTURER.

ROOF PLUMBING VENT
NOT TO SCALE



INSTANTANEOUS ELECTRIC WATER HEATER DETAIL
NOT TO SCALE



HAND WASHING SINK/LAVATORY TEMPERED WATER SCHEMATIC
NOT TO SCALE

PIPING MATERIAL & INSULATION SCHEDULE

PIPING SYSTEM	SIZE	TYPE/SCHED	MATERIAL	ACCEPTABLE FITTINGS	FIELD TEST PRESSURE/TIME	ALLOWABLE IN PLENUMS	INSULATION TYPE	INSULATION 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"	K	COPPER	CONTINUOUS TUBING, BRAZED	130 PSI – 1/2HR	YES	ELASTOMERIC	3/4" (HOT ONLY)
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 ONLY)
DOM. WATER SERVICE BELOW GRADE	1"–3"	K	COPPER	CONTINUOUS TUBING, BRAZED	130 PSI – 1/2HR	YES	-----	—

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.

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

REMARKS:
1. "LOWBOY"–TYPE WATER HEATER.
2. MOUNT ON SHELF. REFER TO DETAIL .

TANKLESS WATER HEATER SCHEDULE - ELECTRIC

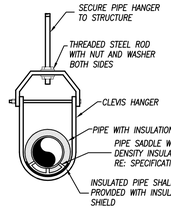
PLAN MARK	MANUFACTURER	MODEL NUMBER	USE	STYLE	# HTG. ELEMENTS	WATTS	RECOVERY @ 90°F RISE	VOLTAGE/ PHASE	REMARKS
TWH–1	EEMAX	MT010240	LIGHT COMM.	TANKLESS	1	9500	0.73 GPM	240V / 1PH	1

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

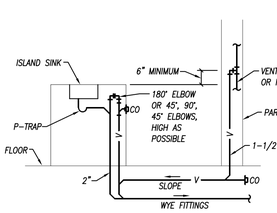
FLOOR / ROOF DRAIN SCHEDULE

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:
1. PROVIDE WITH NICKEL BRONZE TOP.



PIPE HANGER DETAIL
NOT TO SCALE



SINK VENTING DETAIL
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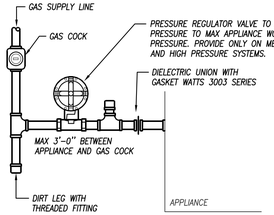
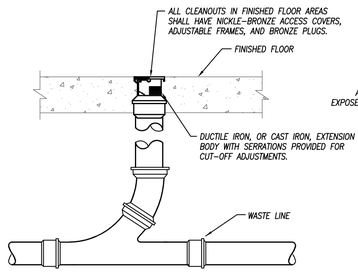
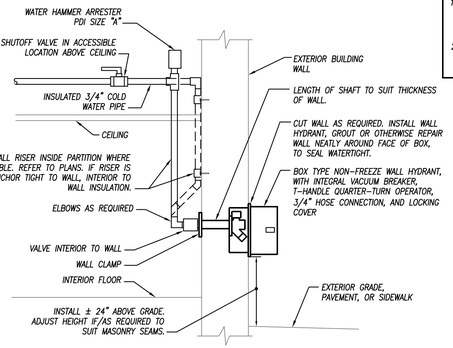


TYPICAL GAS CONNECTION
NOT TO SCALE

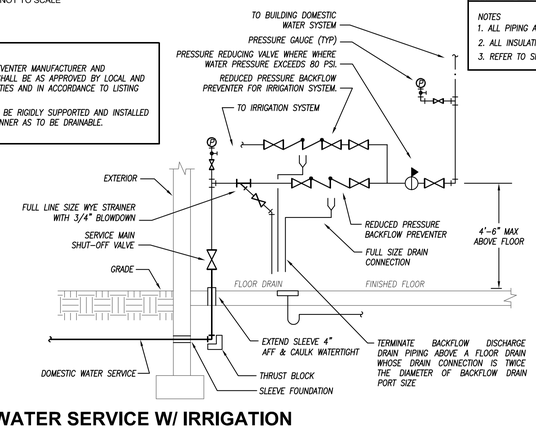


FLOOR CLEANOUT DETAIL
NOT TO SCALE



NON-FREEZE WALL HYDRANT DETAIL
NOT TO SCALE

NOTES:
1. BACKFLOW PREVENTER MANUFACTURER AND INSTALLATION SHALL BE AS APPROVED BY LOCAL AND STATE AUTHORITIES AND IN ACCORDANCE TO LISTING OF DEVICE.
2. ALL PIPING TO BE RIGIDLY SUPPORTED AND INSTALLED IN SUCH A MANNER AS TO BE DRAINABLE.



WATER SERVICE W/ IRRIGATION REDUCED PRESSURE BACKFLOW PREVENTER DETAIL
NOT TO SCALE

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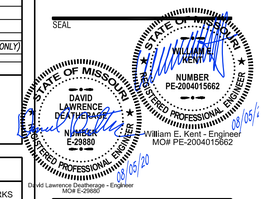

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NO.	REVISION	DATE
1	PLAN REVIEW COMMENTS	8/13/2020

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PLUMBING SCHEDULES AND DETAILS

P201

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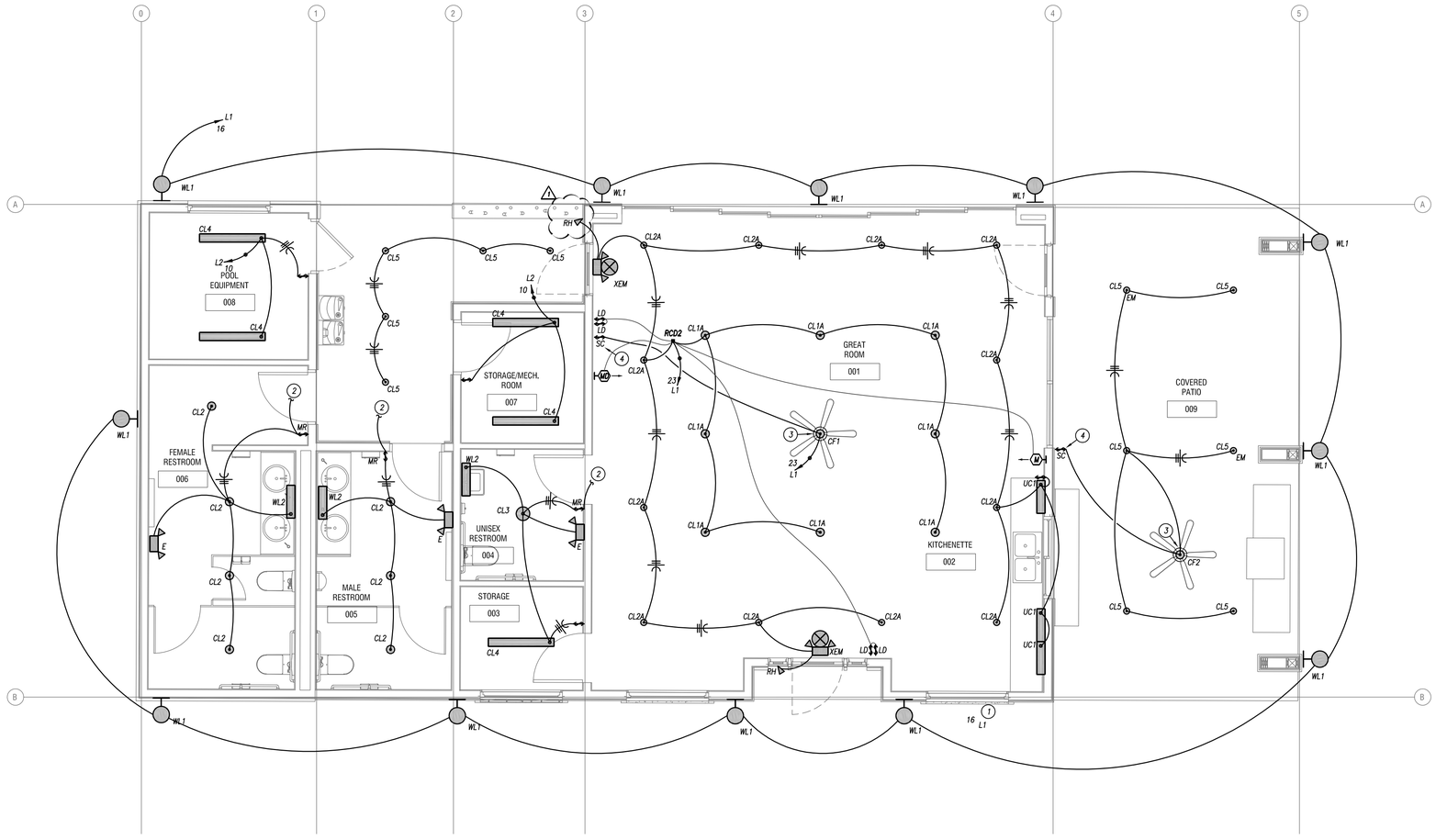
GENERAL LIGHTING NOTES

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. REFER 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 ROOM.



FLOOR PLAN - LIGHTING

1/4" = 1'-0"

LIGHTING CONTROLS

- $_M — WALL SWITCH VACANCY SENSOR: PASSIVE INFRARED, 120/277V, WALL SWITCH DECORA STYLE SENSOR. (WATTSTOPPER PW-101, OR EQUAL)
- $_M2 — WALL SWITCH MOTION SENSOR (DUAL TECHNOLOGY): PASSIVE INFRARED AND ULTRASONIC, 120/277V, DECORA STYLE SENSOR. (WATTSTOPPER DSW-100, OR EQUAL)
- $_M3 — WALL SWITCH MOTION SENSOR (MULTI-WAY DUAL TECHNOLOGY): PASSIVE INFRARED AND ULTRASONIC, 120/277V, MULTI-WAY DECORA STYLE SENSOR. (WATTSTOPPER DW-103, OR EQUAL)
- $_MR — WALL SWITCH MOTION SENSOR (DUAL RELAY): PASSIVE INFRARED, DUAL RELAY, 120V, DECORA STYLE SENSOR. (WATTSTOPPER PW-201, OR EQUAL)
- $_L# — 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. (WATTSTOPPER LMSW SERIES, OR EQUAL)
- $_LD — ROOM CONTROLLER LOW VOLTAGE DIMMING SWITCHES: PUSHBUTTON SWITCHES WITH LED INDICATING LIGHTS. SINGLE GANG IN DECORA STYLE FACEPLATE. (WATTSTOPPER LMDM-101)
- 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 SHALL BE GANGED FOR MORE THAN 3 RELAYS/ZONES) (WATTSTOPPER LMRC-200 SERIES OR EQUAL)
- MD — DIGITAL CEILING-MOUNTED MOTION SENSOR: DUAL TECHNOLOGY (PASSIVE INFRARED AND ULTRASONIC), DIGITAL, CEILING SENSOR. (WATTSTOPPER LMDC-100, OR EQUAL)
- MD — DIGITAL MOTION SENSOR FOR CORNER MOUNT: DUAL TECHNOLOGY (PASSIVE INFRARED AND ULTRASONIC), DIGITAL CORNER MOUNT SENSOR WITH WALL BRACKET. (WATTSTOPPER LMDX-100)
- $_AT — ASTRONOMICAL TIME CLOCK: DIGITAL ON/OFF CONTROLLER. PROGRAMMABLE FOR ASTRONOMICAL AND SCHEDULED CONTROL. 120V INPUT. (WATTSTOPPER RT-200 OR EQUAL)
- $_SW — LIGHTING CONTROL PANEL LOW VOLTAGE SWITCHES: 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. (WATTSTOPPER LVSW-100 SERIES, OR EQUAL)
- 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. 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 DELAY SETTINGS ON ALL SENSOR DEVICES FOR OWNER USE.

SENSOR ADJUSTMENTS AND SETTINGS: SYSTEMS SHALL BE SET/PROGRAMMED TO 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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STATE OF MISSOURI — DAVID LAWRENCE DEATHERAGE — NUMBER E-29880 — REGISTERED PROFESSIONAL ENGINEER — 08/05/20

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DATE ISSUED: August 05, 2020

NO.	REVISION	DATE
1	PLAN REVIEW COMMENTS	8/13/2020

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LIGHTING PLAN

E101

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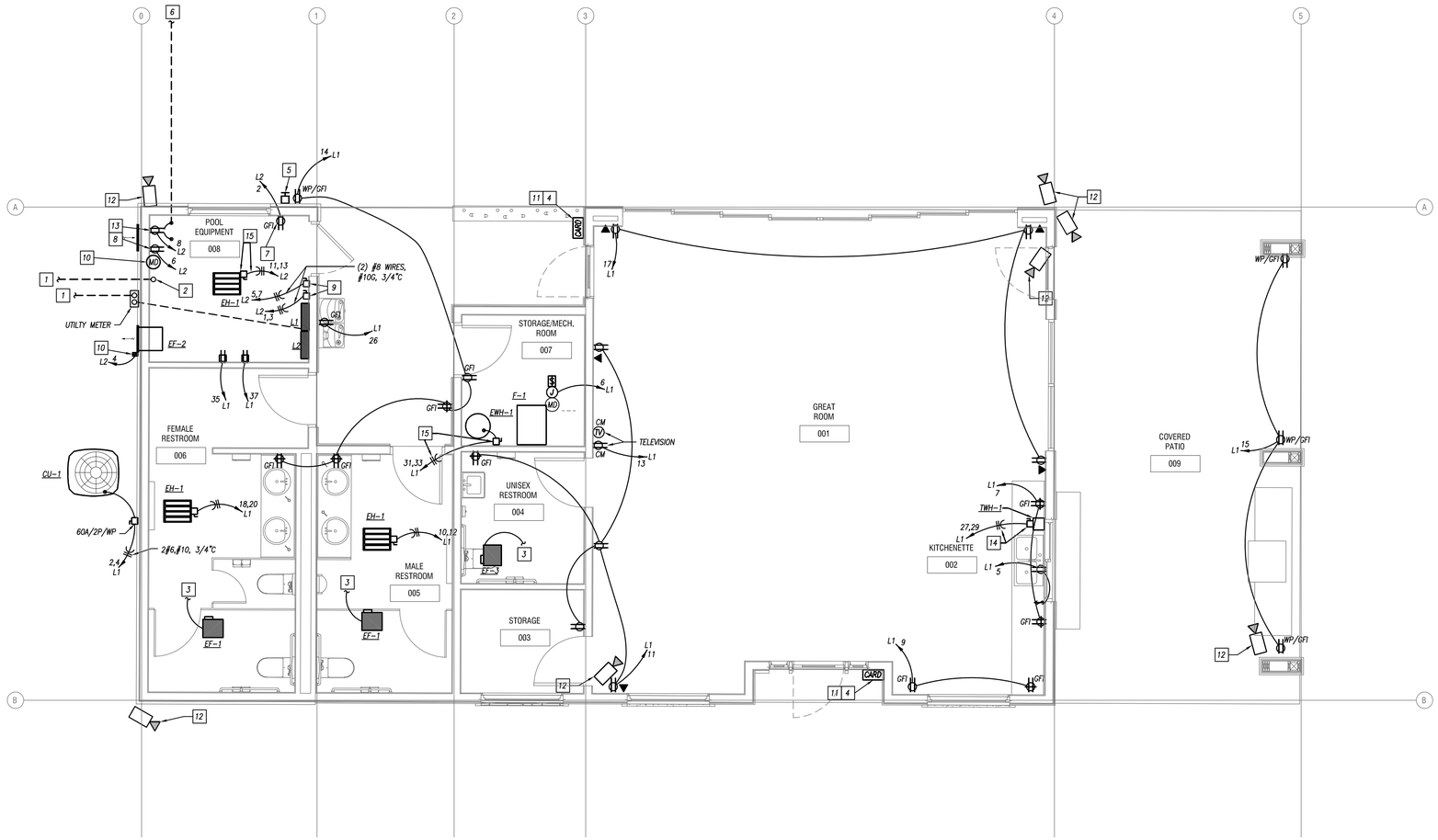
20.160

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.*
3. *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.*
10. *PROVIDE ELECTRICAL CONNECTION TO FAN AND INTERLOCK WITH MOTORIZED DAMPER.*
11. *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. 1 SET OF 3 #4, & #10 GRD. IN 1" C.*
15. *PROVIDE A 30A 2P DISC. SWITCH, FUSE PER MANUFACTURER REQUIREMENTS. 1 SET OF 3 #10, & #10 GRD. IN 3/4" C.*



FLOOR PLAN - POWER

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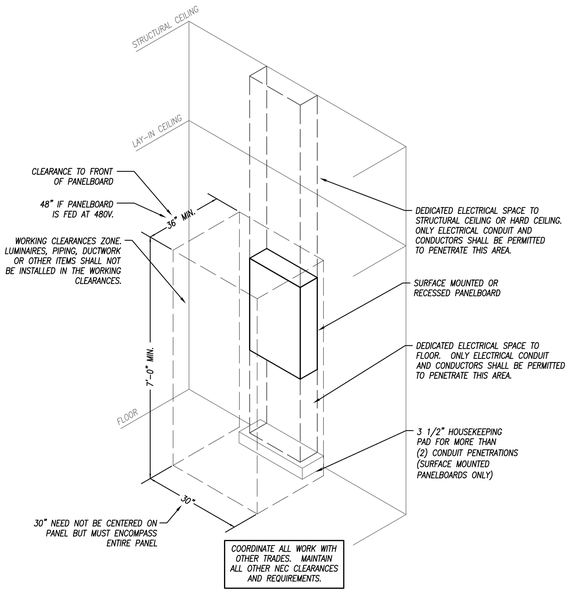
POWER PLAN

E201



TYPICAL PANELBOARD INSTALLATION DETAIL

NOT TO SCALE

SINGLE-SECTION PANELBOARD SCHEDULE

PANEL DESIGNATION: **L1**

MOUNTING: *SURFACE*
LOCATION: *MECH RM*

MAIN LUG AMPS: *400*
MAIN BREAKER: *300*
VOLTAGE: *240/120*
PHASE/WIRE: *1Ø, 3W*

DESCRIPTION	PHASE A	PHASE B	C/B TRIP	C/B POLE	CIRCUIT #		C/B POLE	C/B TRIP	PHASE A	PHASE B	DESCRIPTION
PANELBOARD L2	*7047*		*100*	*2*	1	2	*2*	*50*	*3149*		*CONDENSING UNIT*
		7047			3	4				*3149*	
DISPOSAL	*1200*		*20*	*1*	5	6	*1*	*20*	*864*		*FURNACE F-1*
REC – KITCHEN		*360*	*20*	*1*	7	8	*1*	*20*		*360*	*REC – STORAGE ROOM*
REC – KITCHEN	*360*		*20*	*1*	9	10	*2*	*20*	*1000*		*EH-1*
REC – GREAT ROOM		*540*	*20*	*1*	11	12				*1000*	
REC – GREAT ROOM TV	*1080*		*20*	*1*	13	14	*1*	*20*	*900*		*REC – RR/EXTERIOR*
REC – COVERED PATIO		*540*	*20*	*1*	15	16	*1*	*20*		*400*	*BUILDING LIGHTING*
REC – GREAT ROOM	*540*		*20*	*1*	17	18	*2*	*20*	*1000*		*EH-1*
SPARE		*–*	*20*	*1*	19	20				*1000*	
LTG – INTERIOR	*1080*		*20*	*1*	21	22	*2*	*20*	*226*		*POLE LIGHTING*
LTG – GREAT ROOM		*720*	*20*	*1*	23	24				*226*	
REC – FLEXIBLE ROOM	*720*		*20*	*1*	25	26	*1*	*20*	*950*		*REC: DRINKING FOUNTAIN*
TWH-1		*4750*	*50*	*2*	27	28	*1*	*20*		*–*	*SPARE*
	4750				29	30	*1*	*20*	*–*		*SPARE*
WH-1		*2250*	*30*	*2*	31	32	*1*	*20*		*–*	*SPARE*
	2250				33	34	*1*	*20*	*–*		*SPARE*
CAMERA SYSTEM		*360*	*20*	*1*	35	36	*1*	*–*		*–*	*SPACE*
CARD READERS	*360*		*20*	*1*	37	38	*1*	*–*	*–*		*SPACE*
SPACE		*–*	*–*	*1*	39	40	*1*	*–*		*–*	*SPACE*
SPACE	*–*		*–*	*1*	41	42	*1*	*–*	*–*		*SPACE*
TOTALS	*19387*	*16567*							*8089*	*6135*	TOTALS

PANELBOARD SIZING LOAD

LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)
LIGHTS	*3,321*	*1.25*	*4,151*
RECEPTACLES	*9,470*	*10KVA + 50% REST*	*9,470*
MOTORS	*11,088*	*1.25 x LARGEST + SUM OF REST*	*12,108*
AIR CONDITIONING	*6,298*	*1.00*	*6,298*
SPACE HEATING	*6,000*	*0.00*	*0*
CONTINUOUS	*0*	*1.25*	*0*
NON-CONTINUOUS	*0*	*1.00*	*0*
MISC. LOADS 1	*14,000*	*1.00*	*14,000*
MISC. LOADS 2	*0*	*1.00*	*0*
		SIZING LOAD:	46,027
		SIZING LOAD (AMPS):	192

CONNECTED PHASE LOADS

PHASE	VA	AMPS
A	*27,476*	*229.0*
B	*22,702*	*189.2*
TOTALS	50,177	209.1

REMARKS:
SQUARE D NQ TYPE PANELBOARD OR EQUAL.
2. 'G' = GFCI TYPE BREAKER.

SINGLE-SECTION PANELBOARD SCHEDULE

PANEL DESIGNATION: **L2**

MOUNTING: *–*
LOCATION: *POOL EQUIP RM*

MAIN LUG AMPS: *125*
MAIN BREAKER: *100*
VOLTAGE: *240/120*
PHASE/WIRE: *1Ø, 3W*

	DESCRIPTION	PHASE A	PHASE B	C/B TRIP	C/B POLE	CIRCUIT #		C/B POLE	C/B TRIP	PHASE A	PHASE B	DESCRIPTION	
G	*POOL PUMP (3 HP)*	*2040*		*40*	*2*	1	2	*1*	*20*	*1200*		*CHEMICAL CONTROLLER*	G
			2040			3	4	*1*	*20*		*864*	*EF-2*	
G	*POOL PUMP (3 HP)*	*2040*		*40*	*2*	5	6	*1*	*20*	*500*		*IN-POOL LIGHTING*	G
			2040			7	8	*1*	*20*		*100*	*POOL DECK LIGHTING*	G
G	*POOL FILTER*	*1200*		*20*	*1*	9	10	*1*	*20*	*69*		*POOL ROOM LIGHTING*	G
	EH-1		*1000*	*20*	*2*	11	12	*1*	*20*		*–*	*SPARE*	
		1000				13	14	*1*	*20*	*–*		*SPARE*	
	SPARE		*–*	*20*	*1*	15	16	*1*	*20*		*–*	*SPARE*	
	SPARE	*–*		*20*	*1*	17	18	*1*	*–*	*–*		*SPACE*	
	SPACE		*–*	*–*	*1*	19	20	*1*	*–*		*–*	*SPACE*	
	SPACE	*–*		*–*	*1*	21	22	*1*	*–*	*–*		*SPACE*	
	SPACE		*–*	*–*	*1*	23	24	*1*	*–*		*–*	*SPACE*	
	TOTALS	*6280*	*5080*							*1769*	*964*	TOTALS	

PANELBOARD SIZING LOAD

LOAD DESCRIPTION	CONNECTED	DEMAND	CODE MIN. (VA)
LIGHTS	*669*	*1.25*	*836*
RECEPTACLES	*1,200*	*10KVA + 50% REST*	*1,200*
MOTORS	*10,224*	*1.25 x LARGEST + SUM OF REST*	*11,244*
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:	15,280
		SIZING LOAD (AMPS):	64

CONNECTED PHASE LOADS

PHASE	VA	AMPS
A	*8,049*	*67.1*
B	*6,044*	*50.4*
TOTALS	14,093	58.7

REMARKS:
1. SQUARE D NQ PANELBOARD OR EQUAL
2. PROVIDE SHUNT TRIP MAIN BREAKER WITH ACTUATION BY MUSHROOM PUSHBUTTON ON OUTSIDE WALL.
3. 'G' = GFCI TYPE BREAKER.

EQUIPMENT FAULT CURRENT RATING SCHEDULE

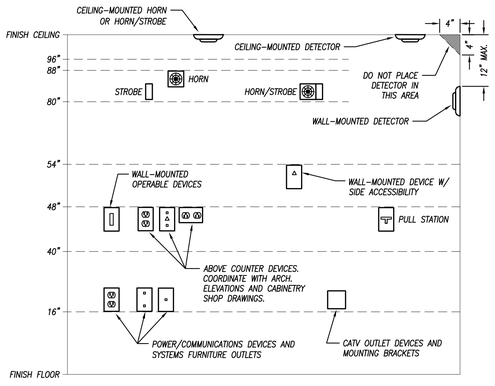
EQUIPMENT	SCA	AIC	NOTES
PANELBOARD L1	*18,980*	*22,000*	*1*
PANELBOARD L2	*11,498*	*22,000*	*2*

NOTES:
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.

LIGHT FIXTURE SCHEDULE

FIXTURE TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMP NUMBER / DESCRIPTION	VOLTAGE	REMARKS
CF1	*BARN LIGHT ELECTRIC*	*22BAL*	*52" DIAMETER 4-BLADE CEILING FAN. VARIABLE SPEED MOTORE. NICKEL FINISH HOUSING. FOUR (4) MAPLE REVERSIBLE BLADES. FURNISH WITH OPTIONAL 36" DOWNROD SUSPENSION. FURNISH WITH SOLID STATE WALL SPEED CONTROLLER.*	–	*120*	*1*
CF2	*BARN LIGHT ELECTRIC*	*22ALT*	*52" DIAMETER 3-BLADE CEILING FAN. VARIABLE SPEED MOTORE. BRUSHED ALUMINUM HOUSING. THREE (3) ALUMINUM ERVERISIBLE BLADES. 12" DOWNROD SUSPENSION. FURNISH WITH SOLID STATE WALL SPEED CONTROLLER.*	–	*120*	*1*
CL1	*DMF LIGHTING*	*DCD1*	*6" ROUND RECESSED DOWNLIGHT. DIE-CAST ALUMINUM FRAME WITH ADJUSTABLE-HEIGHT BUTTERFLY MOUNTING BRACKETS AND INTEGRAL GALVANIZED STEEL JUNCTION BOX. COORDINATE MOUNTING TYPE WITH CEILING. SELF-FLANGED, SEMI-SPECULAR LOW IRIDESCENT FINISH ALUMINUM REFLECTOR WITH MEDIUM BEAM ANGLE/DISTRIBUTION. UL LISTED FOR WET LOCATIONS. INTEGRAL LED DRIVER PRE-WIRED FOR 0-10V DIMMING APPLICATIONS.*	*ONE (1) 29 WATT, 2000 LUMEN, LED MODULE. 3000K CCT.*	*120*	*1*
CL1A	*DMF LIGHTING*	*DRD3*	*SIMILAR TO TYPE 'CL1', EXCEPT PROVIDE WITH SLOPED CEILING ADAPTOR AND IC-RATED FOR DIRECT CONTACT WITH INSULATION. 360 DEGREE DIRECTIONAL AIM, 40 DEGREE ADJUSTABLE TILT.*			
CL2	*DMF LIGHTING*	*DCD1*	*SAME AS FIXTURE TYPE 'CL1' EXCEPT FURNISH WITH 4" TRIM RING DIFFERENT LED MODULE.*	*ONE (1) 19.5 WATT, 1500 LUMEN, LED MODULE. 3000K CCT.*	*120*	*1*
CL2A	*DMF LIGHTING*	*DRD3*	*SIMILAR TO TYPE 'CL2', EXCEPT PROVIDE WITH SLOPED CEILING ADAPTOR AND IC-RATED FOR DIRECT CONTACT WITH INSULATION. 360 DEGREE DIRECTIONAL AIM, 40 DEGREE ADJUSTABLE TILT.*			
CL3	*KUZCO LIGHTING*	*CHARLIE FM6012*	*FLUSH ARCHITECTURAL FIXTURE. 11.5" DIAMETER X 3.5" TALL. WHITE OPAL ACRYLIC DIFFUSER WITH BRUSHED NICKEL TRIM RING. ELECTRONIC DRIVER DIMMABLE VIA ELV.*	*ONE (1) 19 WATT, 1300 LUMEN, LED MODULE. 3000K CCT.*	*120*	*1*
CL4	*WILLIAMS*	*SERIES 75R*	*4'-0" LONG STRIP FIXTURE. SURFACE MOUNT. FURNISH WITH ROUNDED ACRYLIC LENS. ALL PARTS PAINTED WHITE AFTER FABRICATION. ELECTRONIC DRIVER PRE-WIRED FOR NON-DIMMING APPLICATIONS.*	*ONE (1) 23 WATT, 3200 LUMEN, LED MODULE. 3000K CCT.*	*120*	*1*
CL5	*DMF LIGHTING*	*DCD1*	*SAME AS FIXTURE TYPE 'CL2' EXCEPT FURNISH WITH BLACK TRIM RING.*	*ONE (1) 19.5 WATT, 1500 LUMEN, LED MODULE. 3000K CCT.*	*120*	*1*
E	*SIMKAR*	*DLM SERIES*	*LOW-PROFILE EMERGENCY LIGHTING UNIT. FLAME-RATED, UV-STABLE THERMOPLASTIC HOUSING. TWO (2) SEMI-RECESSED, ADJUSTABLE "EYEBALL" HEADS WITH GLASS LENS. WHITE FINISH. MAINTENANCE-FREE BATTERY FOR 90 MINUTE OPERATION OF LAMPS. INTEGRAL TEST SWITCH AND AC-ON INDICATOR. FURNISH WITH REMOTE CAPACITY WHERE INDICATED.*	*TWO (2) 1 WATT LED*	*120*	*1*
UC1	*WAC LIGHTING*	*WA-LED SERIES*	*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.*	*ONE (1) 12.7 WATT, 700 LUMEN, LED MODULE. 3000K CCT.*	*120*	*1*
S1	*McGraw-Edison*	*GALLEON LED*	*GLEON-AF-02-LED-E1-SL2- GALLEON LED FIXTURE. DARK BRONZE FINISH.* *POLE FIXTURE AT 15'-0" AFF MOUNTING HEIGHT*	*129W, 13088 LUMEN LED MODULE 4000K*	*208*	*1*
S2	*GARDEN LIGHT LED*	*DL-II MICRO DECK LIGHT*	*2.4" W, 1.3" T, 1.3" D DECK LIGHT. ALUMINUM/BRASS BODY AND FINISH SELECTION BY ARCHITECT. INTERNAL DRIVER, 130 DEGREE BEAM SPREAD. UL 1838 LISTED.*	*1W/2VA, 115 LUMEN LED MODULE, 3000K*	*120*	*1*
WL1	*DMF*	*DCC2 SERIES*	*EXTERIOR WALL-MOUNTED LED CYLINDER., WET LOCATION, DARK BRONZE FINISH.*	*19.5 WATT, 1500 LUMEN, 3000K*	*120*	*1*
WL2	*GALA*	*JADE 2 C – 38279*	*GLASS AND CHROME WALL MOUNT INTERIOR VANITY LIGHT*	*9 WATT, 1500 LUMEN, 3000K*	*120*	*1*
XEM	*SIMKAR*	*SLCD SERIES*	*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.*	*TOTAL POWER CONSUMPTION: 5.25 WATTS.*	*120*	*1*
RH		*DLM SERIES*		*EMERGENCY: HIGH OUTPUT LEDS*		
				EXIT: FOUR (4) HIGH-OUTPUT LEDS.		

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



GENERAL NOTES:
1. MOUNTING HEIGHTS SHOWN IN THIS DETAIL ARE TYPICAL UNLESS OTHERWISE NOTED ON THE PLANS.
2. SEE ARCHITECTURAL ELEVATIONS FOR SPECIAL CONDITIONS. NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS.
3. ALL INSTALLATIONS SHALL COMPLY WITH ADA.

VISUAL FIRE ALARM NOTIFICATION DEVICES (STROBE)
LOCATE DEVICE SO THE BOTTOM OF THE DEVICE IS BETWEEN 80" AND 96" A.F.F. (NFPA) OR 6" BELOW CEILING, WHICHEVER IS LOWER (ADA 2010).

AUDIBLE FIRE ALARM NOTIFICATION DEVICES (HORN)
LOCATE DEVICE SO THAT THE TOP OF UNIT IS NOT MORE THAN 90" A.F.F. AND NOT LESS THAN 6" BELOW CEILING (NFPA)

FIRE ALARM ACTIVATION DEVICES (PULL STATION)
LOCATE FRONT-APPROACH DEVICES SO THAT THE HIGHEST OPERABLE PORTION OF THE DEVICE IS NOT MORE THAN 48" A.F.F. (ADA 2010) AND NOT LESS THAN 42" A.F.F. (NFPA).

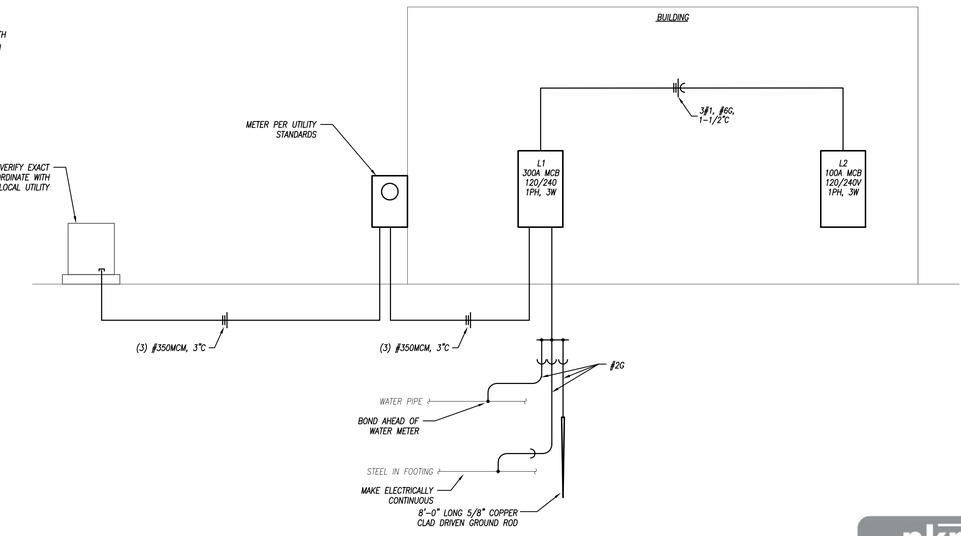
POWER/COMMUNICATION DEVICES:
OUTLETS SHALL BE LOCATED AT 16" A.F.F. TO THE BOTTOM OF THE BOX. ABOVE COUNTER DEVICES SHALL BE LOCATED AT 2" ABOVE THE BACKSPLASH OF THE COUNTER TO THE BOTTOM OF THE DEVICES. VERIFY WITH ARCHITECTURAL DETAILS.

WALL-MOUNTED OPERABLE DEVICES:
OPERABLE DEVICES SHALL BE LOCATED AT 48" A.F.F. TO THE TOP OF THE OPERABLE PORTION OF THE DEVICE.

WALL-MOUNTED OPERABLE DEVICES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
LIGHT SWITCHES, DIMMERS, CONTROLS, ETC.
PUSH BUTTONS
NURSE/PATIENT CALL DEVICES (INLUDING THOSE FOR STAFF USE)
OTHER CONTROL OR "CALL" DEVICES

MOUNTING HEIGHTS FOR WALL-MOUNTED DEVICES

NOT TO SCALE



ELECTRICAL RISER DIAGRAM

NOT TO SCALE

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DESIGNED UNDER SUPERVISION
LEE'S SUMMIT, MISSOURI
04/23/2020

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B+A ARCHITECTURE
100 W 31ST STREET, SUITE 100
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CIVIL ENGINEER
PHELPS ENGINEERING, INC
1270 N. WINCHESTER
OLATHE, KS 66061
PH: 913-393-1155

STRUCTURAL ENGINEER
PACKARD ENGINEERING
10417 INDIANA AVE.
KANSAS CITY, MO 64137
PH: 816-767-7222

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

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

OSAGE POOL CLUBHOUSE

2025 SW M 150 HWY
LEE'S SUMMIT, MO 64082

SEAL

STATE OF MISSOURI — WILLIAM E. KENT — NUMBER PE-2004015662 — REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI — DAVID LAWRENCE DEATHERAGE — NUMBER E-29880 — REGISTERED PROFESSIONAL ENGINEER
08/05/20
William E. Kent - Engineer
MO# PE-2004015662
Da-Ad Lawrence Deatherage - Engineer
MO# E-29880

DATE ISSUED: August 05, 2020

NO.	REVISION	DATE
1	*PLAN REVIEW COMMENTS*	*8/13/2020*

Designer
Author
Checker

ELECTRICAL RISER DIAGRAM
E301

pkmr ENGINEERS
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MO State Certificate of Authority #E-2002020886

20.160

GENERAL NOTES - POOL

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 SHALL NOT EXCEED 1" PER FOOT.
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.
6. PROVIDE COVE RADIUM OF 1" MINIMUM TO 8" MAXIMUM WHERE THE WATER DEPTH IS 6 FEET OR LESS.

PLASTER

1. PROVIDE SOUTHERN GROUTS AND MORTARS, INC / SGM DIAMOND BRITE (TM) EXPOSED AGGREGATE FINISH, MADE WITH 100% QUARTZ AGGREGATE AND POLYMER MODIFIED CEMENT.
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 INSTALLER

WALKWAYS & DECKS

1. PROVIDE A CLEAR,UNOBSTRUCTED WALK OR DECK AROUND THE ENTIRE PERIMETER OF THE POOL.
2. SLOPE THE DECK AWAY FROM THE POOL A MINIMUM OF ¼" 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. PC = 4,000 PSI, BROOM FINISH SURFACE, TOOLED JOINTS.
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, 2011 EDITION.
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 TUB.
8. 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 OF A POOL.

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.
2. 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

1. PROVIDE ADJUSTABLE FLOW INLETS.
2. THE VELOCITY OF FLOW THROUGH ANY INLET ORIFICE SHALL BE IN THE RANGE OF 5-15 FEET/SECOND.
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 THAN THE POOL WATER LINE.
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.
3. 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.
8. 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 BLACK
    - WASTE LINES
      - BACKWASH WASTE DARK BROWN
      - SEWER DARK GRAY
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 AREA.
   - 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 MANAGEMENT.
2. BATHER LOAD - POST A SIGN IN A CONSPICUOUS LOCATION WITHIN THE POOL ENCLOSURE STATING: "BATHER LOAD: 216

ADDITIONAL SIGNS

- WARNING - NO LIFE GUARD ON DUTY
- 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)
- HOURS OF OPERATION:
- POOL PERMIT
- 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.
  e. 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)

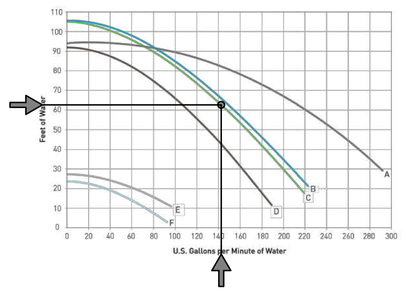
TITAN TYPE CB IS MANUFACTURED WITH A SPIRAL-WOUND STRIP OF HEAVY GAUGE, CORROSION RESISTANT, HOT-DIPPED GALVANIZED STEEL. FOR 3/8" THROUGH 1-1/4" TRADE SIZES, THE CORE IS CONSTRUCTED WITH A SQUARE-LOCKED STEEL STRIP WITH AN INTEGRAL COPPER-BONDING STRIP ENCLOSED WITHIN THE STEEL CONVOLUTIONS. FOR 1-1/2" 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, 140°F OIL)
- 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
- 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 SECTION 12-1300

PERFORMANCE CURVES



Performance Curve	Model	Description
A	XFE-20	5 HP, High Efficiency
A	XFK-20	5 HP, 3-Phase, TEFC Motor
B	XFE-12	3 HP, High Efficiency
C	XF-12	3 HP, Standard Efficiency
B,E	XFDS-12	3 HP, 2-Speed
B	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

1 POOL PUMP
SCALE: NTS

BUILDING DATA	CODE ANALYSIS	
PROJECT DESCRIPTION: SWIMMING POOL	CONSTRUCTION TYPE:	V-B
• CITY OF LEE'S SUMMIT, MISSOURI APPLICABLE CODES, STANDARDS AND ORDINANCES	OCCUPANCY GROUP/POOL:	A-2
• INTERNATIONAL BUILDING CODE, 2018 EDITION	OCCUPANCY GROUP/POOL HOUSE:	RE: BUILDING PLANS
• INTERNATIONAL MECHANICAL CODE, 2018 EDITION	OCCUPANT LOAD FOR POOL:	RE: POOL CALCULATIONS
• INTERNATIONAL PLUMBING CODE, 2018 EDITION	ALLOWABLE NUMBER OF STORIES:	N/A
• INTERNATIONAL FIRE CODE, 2018 EDITION	ACTUAL NUMBER OF STORIES:	0
• NATIONAL ELECTRICAL CODE, 2017 EDITION	REQUIRED NUMBER OF EXITS:	2
• INTERNATIONAL ENERGY CONSERVATION CODE, 2018 EDITION	ACTUAL NUMBER OF EXITS:	RE: BUILDING PLANS
• INTERNATIONAL FUEL GAS CODE, 2018 EDITION	ALLOWABLE BUILDING HEIGHT:	N/A
• ANSI/APSP-1 2003 STANDARD FOR PUBLIC SWIMMING POOLS	ACTUAL BUILDING HEIGHT:	N/A
• ICC/ANSI-A117.1: PROVIDING ACCESSIBILITY AND USABILITY FOR PHYSICALLY HANDICAPPED PEOPLE, 2017 EDITION.	ALLOWABLE EXIT TRAVEL DISTANCE:	200 FT.
	ACTUAL TRAVEL DISTANCE:	RE: BUILDING PLANS
	REQUIRED EXIT WIDTH:	RE: POOL CALCULATIONS
	ACTUAL EXIT WIDTH:	RE: BUILDING PLANS
	SEPARATED OR NON-SEPARATED DESIGN:	N/A
	SPRINKLERED:	N/A
	FIRE SEPARATION DISTANCE	N/A
	PLUMBING FIXTURES REQUIRED:	RE: POOL CALCULATIONS NOTE: REFER TO BUILDING PLANS FOR LOCATION AND SIZE OF RESTROOMS

POOL FINISHES

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

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 IC40

ACID FEEDER: PENTAIR INTELLICHEM

TEST KIT: LAMOTTE 2056 COLORQ PRO 7

POOL FILTER: PENTAIR CLEAN AND CLEAR PLUS CARTRIDGE FILTER SYSTEM - CCP420 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 - 501306) 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: NOT REQUIRED, CARTRIDGE FILTERS ARE USED

FRESHWATER SOURCE: IN-LINE FILL WITH USC APPROVED RP2 BACKFLOW PREVENTER

DELUXE CLEANING KIT: (1) - (TAILOR - COMPLETE (K-2005)

LIFE SAVING EQUIPMENT:

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)

DECKING

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")

IRRIGATION SLEEVES (4"): N/A

POOL CALCULATIONS - OSAGE			
POOL MEASUREMENTS			
Description	**Area (SF)**	**Avg Depth (FT)**	**Volume (GAL)**
Deep Pool	2100	4	63,000.00
Kid Pool	276	1.5	3,105.00
Sun Shelf	322	1	2,415.00
Total Area (SF)			**2,698**
Total Volume (GAL)			**68,520**
Total Volume (cubic FT)			**9,136**
Perimeter (LF)			**252**
POOL PLUMBING			
Pool Capacity (GAL)			**68,520**
Average Turnover Rate (min)			**240**
Clean Rate			**360**
Min. Flow Rate (GPM)			**286**
flow rate per pump	2		**143.00**
RETURN INLETS	**Inlet Rate (gpm)**		**No. Inlets**
	30		10
SKIMMERS	**Skimmer Rate (gpm)**		**No. Skimmers**
based on gpm	45		7
based on sf of surface area	400		6.745
ESTIMATED HEAD CALCULATIONS			
FLOW RATE (GPM)	**286**	**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 EQUIPMENT		
POOL PUMP	**Pump Rate (GPM)**	**No. Pumps**
PENTAIR XFE-12, 3 HP	145	2
FILTER TYPE	**Filtration Rate**	**Filter Area-Min.**
Cartridge Filter	0.375	762.67
PENTAIR CCP - 420	420 sf of area	2
CHLORINATOR	**Capacity (Gal.)**	**Cells**
PENTAIR INTELLICHLOR IC40	40,000	2
POOL LIGHTING		
FIXTURE	**WATTS**	**QTY**
PENTAIR INTELLIBRITE	500	3 **1500**
PENTAIR GLOBRITE	300	4 **1200**
		WATTS/SF **1.00**
OCCUPANT LOAD AND EXITING		
BATHER LOAD	**Area (SF)**	**Ratio** **Bather Load**
Deep area (>5')	0	1/30 0
Shallow Area (<=5')	2,698	1/15 180
Total Bather Load		**180**
OCCUPANT LOAD	**Area (SF)**	**SF/person** **Occ. Load**
In Pool	2,698	50 54
In Deck	4,312	50 87
Total Occupant Load		**141**
Occupant Load per Sex		**71**

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

B+A ARCHITECTURE

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

CLIENT:
SUMMIT HOMES

OSAGE
SWIMMING POOL
2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI

SE

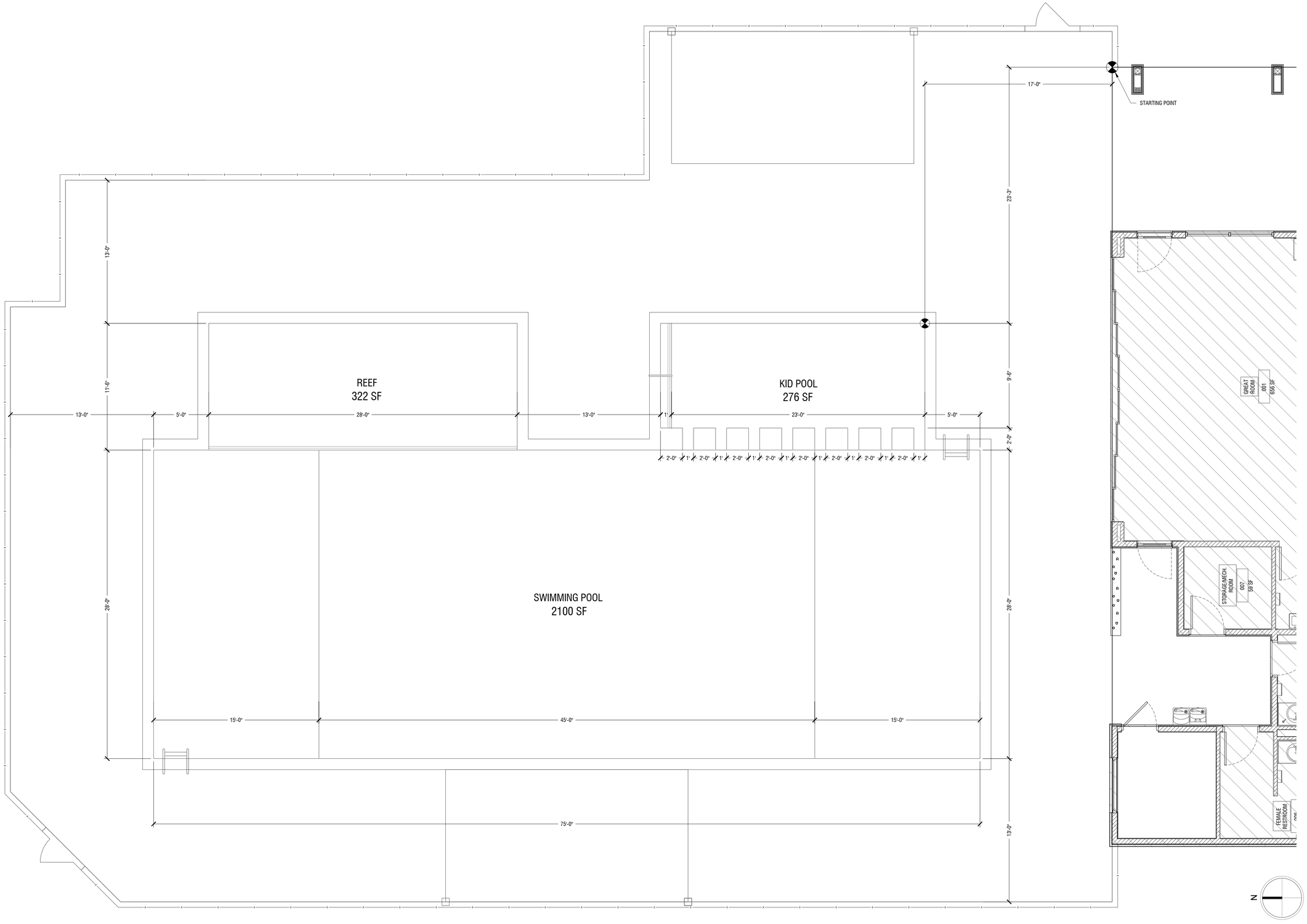
STATE OF MISSOURI
Dennis Bracley
NUMBER A-4316
ARCHITECT

ISSUED: JULY 31, 2020

NO.	REVISION	DATE

DESIGNED BY DMB
DRAWN BY DMB
CHECKED BY DMB

POOL GENERAL NOTES
PL100



1 DIMENSIONED POOL PLAN
SCALE: 1/4" = 1'-0"

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

CLIENT:
SUMMIT HOMES

OSAGE SWIMMING POOL
2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI

SE

STATE OF MISSOURI
Dennis Bradley
NUMBER A-4516
ARCHITECT

ISSUED: JULY 31, 2020

NO.	REVISION	DATE

DESIGNED BY DMB
DRAWN BY DMB
CHECKED BY DMB

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 ARCHITECT ANY ERROR INCONSISTENCY OR OMISSION DISCOVERED.

DIMENSIONED POOL PLAN
PL101

GENERAL NOTES

1. 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.

2. 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.

3. 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.

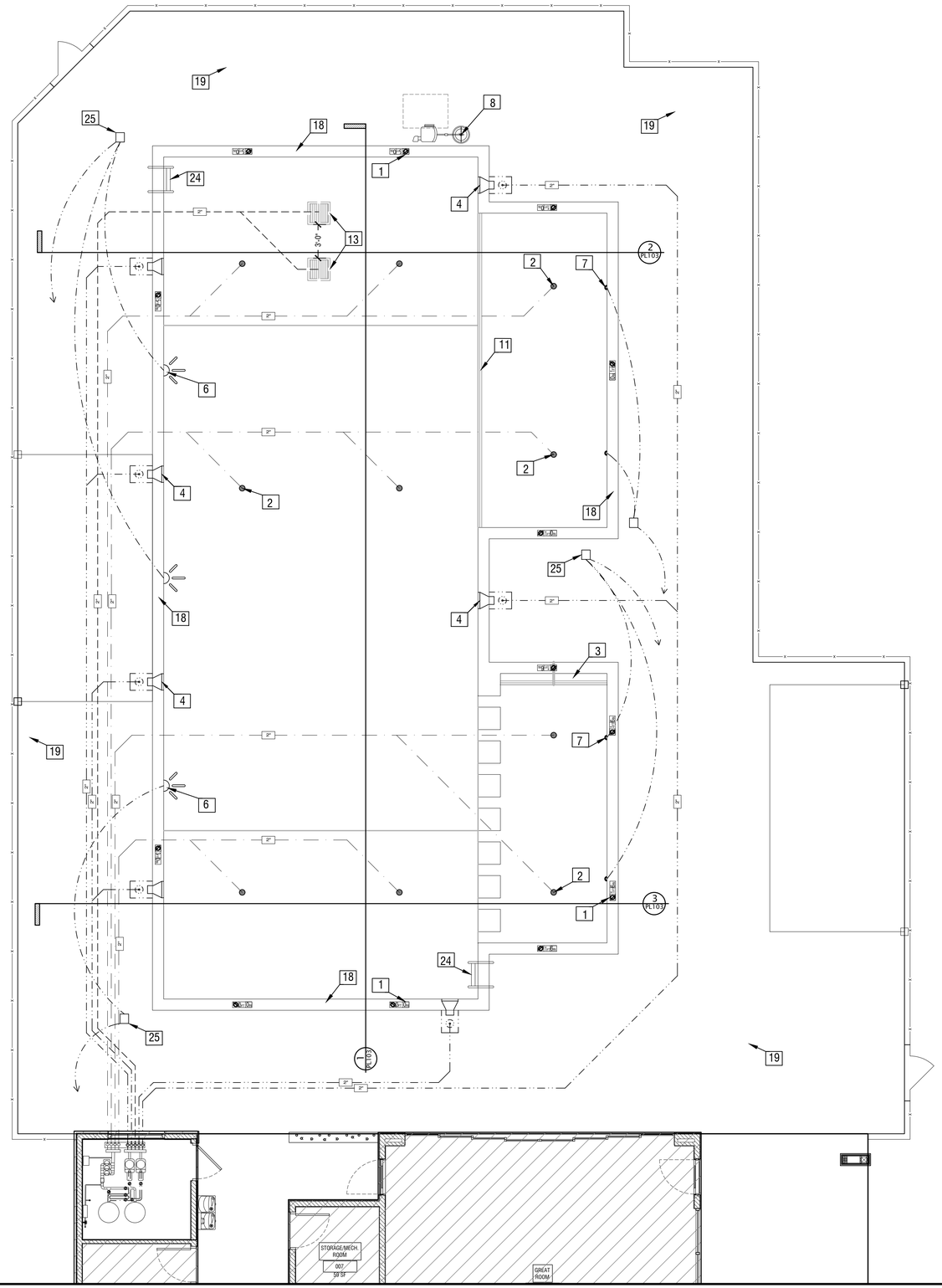
10. ALL RAMPS SHALL HAVE A NON-SLIP FINISH.

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.



GENERAL NOTES

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
11. 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 $\frac{3}{4}$" 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

NOTES

IBC 2012 SECTION 3109: SWIMMING POOL ENCLOSURES AND SAFETY DEVICES

3109.5 ENTRAPMENT AVOIDANCE
SUCTION OUTLETS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH ANSI/APSP-7.

NOTES

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 MEET THE REQUIREMENTS OF A SAFE AND CLEAN POOL.

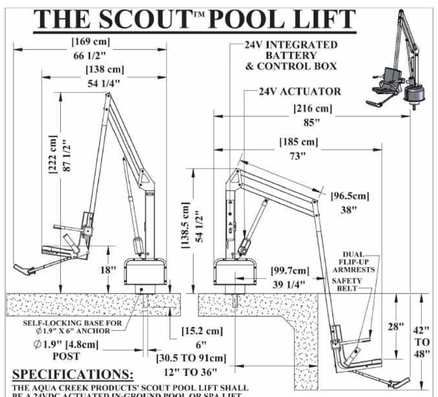
THE POOL CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT, MISSOURI; JACKSON COUNTY HEALTH DEPARTMENT, AND THE STATE OF MISSOURI ORDINANCES AND CODES REGARDING THE CONSTRUCTION OF PUBLIC SWIMMING POOLS

NOTES

WINTERIZATION OF POOL OR DRAINING OF POOL FOR MAINTENANCE: POOL SHALL BE DE-CHLORINATED PRIOR TO DRAINING FOR WINTER MONTHS. STOP ADDING CHLORINE TO THE POOL FOR A PERIOD OF 4-5 DAYS, MONITOR THE CHLORINE LEVEL WITH A SWIMMING POOL CHLORINE TEST KIT. WHEN THERE IS NO LONGER ANY DETECTABLE CHLORINE IN THE SWIMMING 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.

THE SCOUT™ POOL LIFT



SPECIFICATIONS:

THE AQUA CREEK PRODUCTS' SCOUT POOL LIFT SHALL BE A 24VDC ACTUATED IN-GROUND POOL OR SPA LIFT. ALL METAL COMPONENTS SHALL BE MADE FROM TYPE 304 STAINLESS STEEL. FOR ADDED CORROSION PROTECTION, ALL METAL PARTS SHALL BE EPOXY-POWDER-COATED. THE LIFT SHALL HAVE A DYNAMIC LIFTING CAPACITY OF 350 LBS* [159 kg]. THE SCOUT POOL LIFT SHALL HAVE A RANGE OF 46" [117cm]. THE SCOUT POOL LIFT SHALL FIT INTO A STANDARD Ø1.9" X 6" DEEP ANCHOR. IT SHALL HAVE A SELF-LOCKING BASE TO PREVENT ROTATION. IT SHALL COME STANDARD WITH AN 18" [45.7 cm] WIDE SEAT, AND SHALL BE CAPABLE OF BEING FULLY SELF-OPERABLE. IT SHALL ALSO COME WITH A SAFETY BELT, ADJUSTABLE FOOTREST AND DUAL FLIP-UP ARMRESTS. A LIMITED LIFETIME WARRANTY IS STANDARD.

THE SCOUT LIFT IS AVAILABLE WITH AN ANCHOR [F-800SC] OR WITHOUT [F-802SCNA]. *THE LIFTING CAPACITY IS 300 LBS [136 kg] IF USED WITH PLASTIC-SLEEVE 1.9" ANCHOR.

Aqua Creek Products
The Total Solution for Pool and Spa Access
9889 GARRYMORE LANE
MISSOULA, MT 59808
(406) 549-0769
FAX (406) 549-2602

PRODUCT:	F-800SC		
DWG.#:	F-800SC-1		
SCALE:	1:24	DATE:	7/27/11
DRAWN BY:	DS	REVISION:	C

NOTE: SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

1 DETAILED POOL PLAN
SCALE: 3/16" = 1'-0"

N

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

ARCHITECTURE

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

CLIENT:
SUMMIT HOMES

OSAGE SWIMMING POOL
2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI

SEAL:

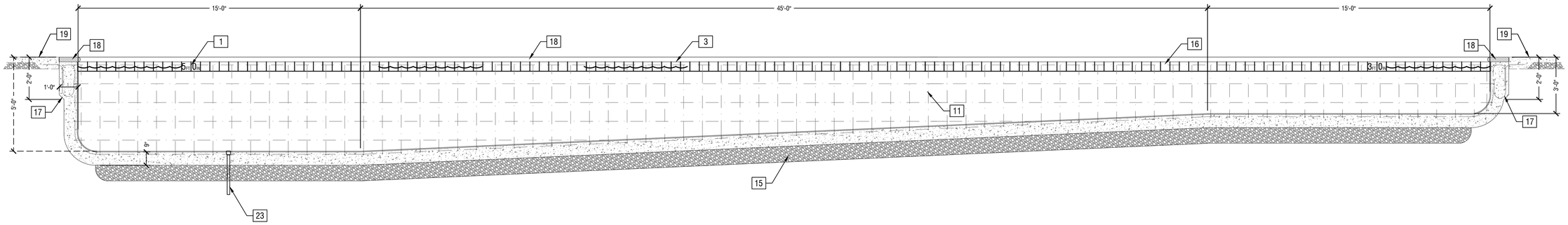
STATE OF MISSOURI
Dennis Bradley
NUMBER A-4316
ARCHITECT

ISSUED: JULY 31, 2020

NO.	REVISION	DATE

DESIGNED BY DMB
DRAWN BY DMB
CHECKED BY DMB

DETAILED POOL PLAN
PL102



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

GENERAL NOTES

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
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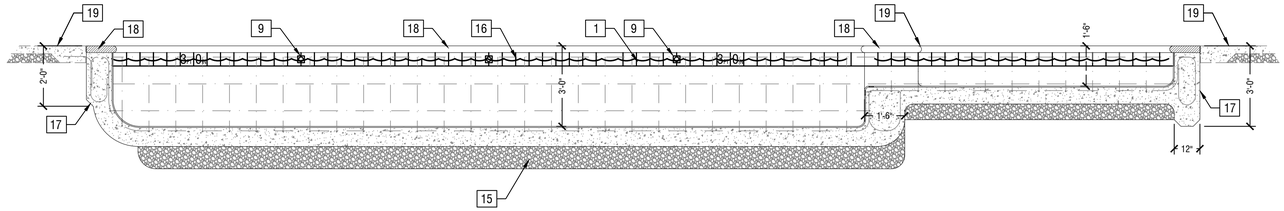
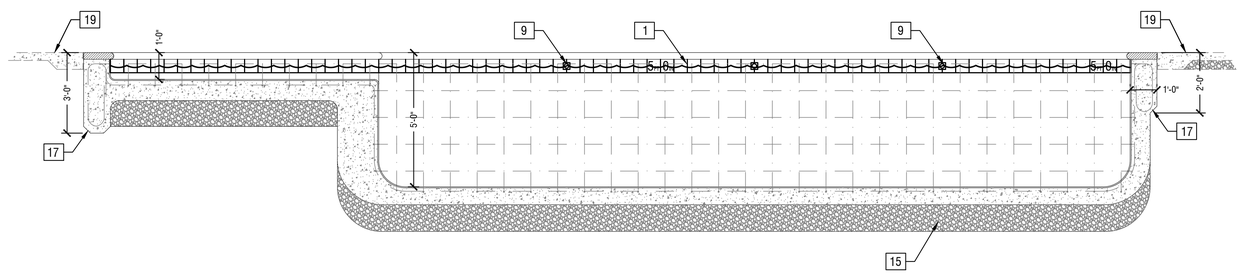
23. HYDROSTATIC RELIEF VALVE
24. STAINLESS STEEL POOL LADDER
25. J-BOX FOR POOL LIGHTING



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



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

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

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

CLIENT:
SUMMIT HOMES

OSAGE
SWIMMING POOL
2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI

SE:

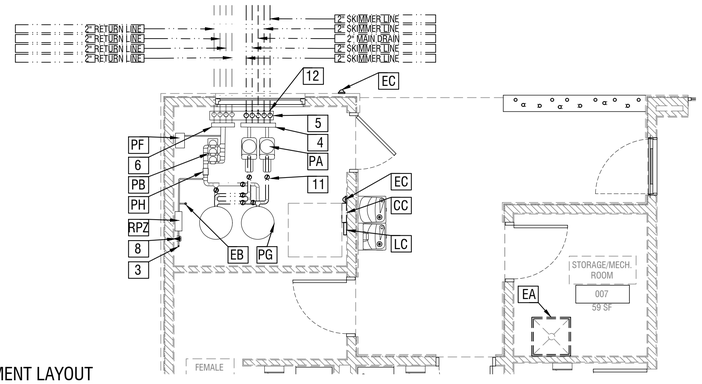
STATE OF MISSOURI
Dennis Bradley
NUMBER A-4316
ARCHITECT

ISSUED: JULY 31, 2020

NO.	REVISION	DATE

DESIGNED BY DMB
DRAWN BY DMB
CHECKED BY DMB

POOL SECTIONS
PL103



1 DIAGRAMATIC POOL EQUIPMENT LAYOUT

SCALE: N.T.S.

POOL EQUIPMENT ROOM NOTES

1. NOT USED
2. NOT USED
3. ¾" WATER SERVICE LINE
   SUPPLY MANIFOLD
4. BLOCK OUT IN CONCRETE FOR POOL LINES, COORDINATE WITH POOL CONTRACTOR
5. RETURN MANIFOLD
6. NOT USED
7. ¾" COLD WATER SHUT OFF VALVE
   JUNCTION BOX IN DECK FOR POOL LIGHTING
8. PROVIDE VENTILATION DIRECT TO EXTERIOR AND COMBUSTION AIR
   RE: MECHANICAL DRAWINGS
9. VALVE, TYP.
10. VAC ALERT VA-2000
    SVRS @ EACH SUCTION LINE
11. NOT USED
12. RE: ELECTRICAL DRAWINGS FOR ELECTRICAL SERVICE PANEL AND POWER FOR THE POOL EQUIPMENT.
13. RE: PLUMBING DRAWINGS FOR DOMESTIC WATER CONNECTIONS AND WASTE LINES FOR POOL EQUIPMENT.
14. THE MECHANICAL CONTRACTOR WILL BE RESPONSIBLE FOR THE INSTALLATION OF THE THE VENT AND COMBUSTION AIR PIPING FOR THE POOL HEATER. THE INSTALLATION OF THE VENT AND COMBUSTION AIR PIPING SHALL BE PER THE REQUIREMENTS OF THE HEATER MANUFACTURER SO AS TO NOT VOID THE WARRANTY OF THE POOL HEATER. THE VENT TERMINATION MUST BE A MINIMUM OF 4' HORIZONTALLY FROM THE DOOR OR A MINIMUM OF 12" ABOVE THE DOOR.
15. PROVIDE A FLOOR DRAIN AT THE BACKFLOW PREVENTER.

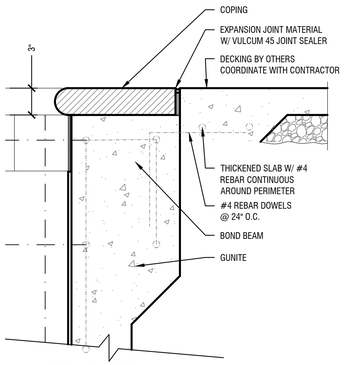
NOTES

- RECIRCULATION POOL PUMP MUST PROVIDE A TURNOVER RATE OF WATER IN SIX (6) HOURS OR LESS
- THE POOL CONTRACTOR WILL FURNISH A MSDS SHEET UPON FINAL INSPECTION.
- RETURN LINES AND SUPPLY LINES TO THE POOL SHALL BE SCHEDULE 80.
- POOL PUMP EQUIPMENT SHALL BE BONDED PER NEC 2011 6080.26(6)

NOTE:
GENERAL CONTRACTOR SHALL COORDINATE WITH THE POOL CONTRACTOR THE LOCATION AND SIZE OF THE BLOCK OUTS IN THE CONCRETE FOOTINGS AND THE FLOOR SLAB FOR THE POOL PIPING PRIOR THE INSTALLATION OF THE FOOTINGS.

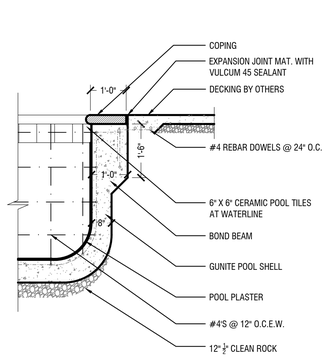
OSAGE - LEE'S SUMMIT, MISSOURI

WATER BODY	LOCATION	TAG	QTY	EQUIPMENT FUNCTION	DESCRIPTION
POOL	EQUIPMENT ROOM	PA	2	RECIRCULATING PUMP	PENTAIR WHISPERFLO XFE-12 - 3HP
		PB	2	CHLORINATOR	PENTAIR INTELLICHLOR, IC40
		PH	1	FLOW METER	4" FLOW METER #F-3040P 125-500 GPM MAX by FLOWVIS, NSF-50 LISTED
		PF	1	ACID FEEDER	PENTAIR INTELICHEM
		PG	2	FILTER	PENTAIR CCP - 420 FILTER
		PI	1	TEMPERATURE	2" FACE THERMOMETER 32% %D - 248% %D FAHRENHEIT
		LC	1	PANEL	LIGHTING CONTROL PANEL
		CC	1	PANEL	ELECTRICAL SERVICE PANEL
		EA	1	FLOOR SINK	RE: PLUMBING DRAWINGS
		EB	1	HOSE BIBB	1 ½" POTABLE WATER HOSE BIBB W/ VACUUM BREAKER
		EC	1	ELECTRIC DISCONNECT	ELECTRICAL DISCONNECT FOR PUMPS
		RPZ	1	BACKFLOW PREVENTER	USC APPROVED REDUCED PRESSURE BACKFLOW PREVENTER



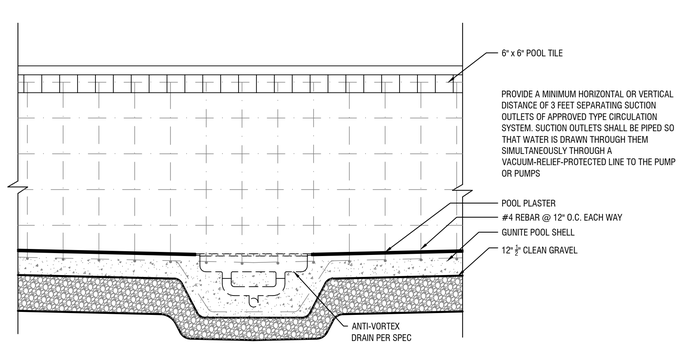
2 COPING DETAIL

SCALE: 1-1/2" = 1'-0"



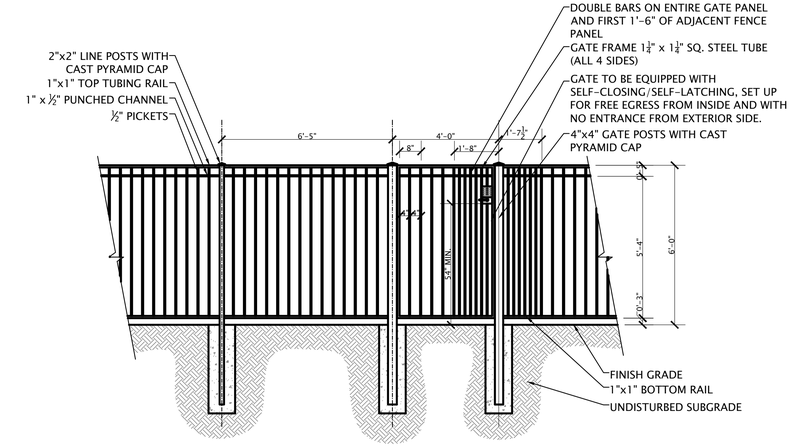
3 POOL WALL DETAIL

SCALE: 1/2" = 1'-0"



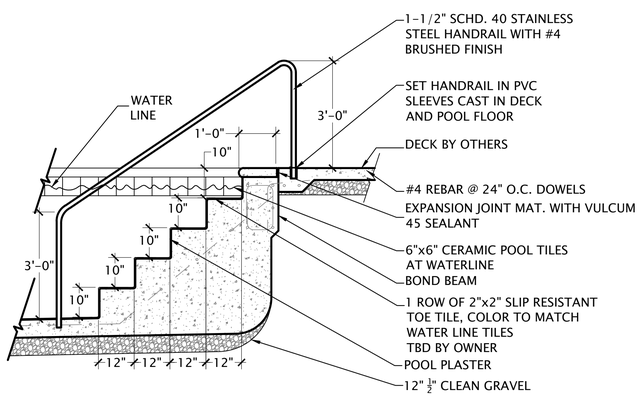
4 SECTION AT DRAIN

SCALE: 1/2" = 1'-0"



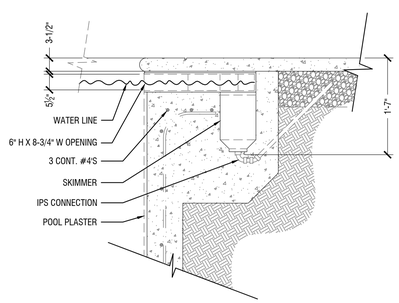
5 FENCE AND GATE DETAIL

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



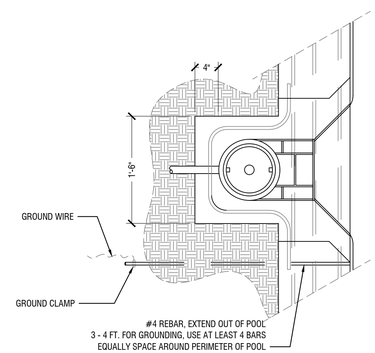
6 STEP DETAIL

SCALE: 1/2" = 1'-0"



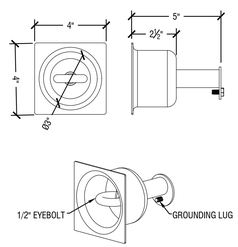
7 SKIMMER DETAIL

NOT TO SCALE



8 SKIMMER PLAN

NOT TO SCALE



10 SS CUP ANCHOR

SCALE: 3" = 1'-0"

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

ARCHITECTURE

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

CLIENT:
SUMMIT HOMES

OSAGE SWIMMING POOL

2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI

SE

STATE OF MISSOURI
Dennis Beasley
NUMBER A-4316
ARCHITECT

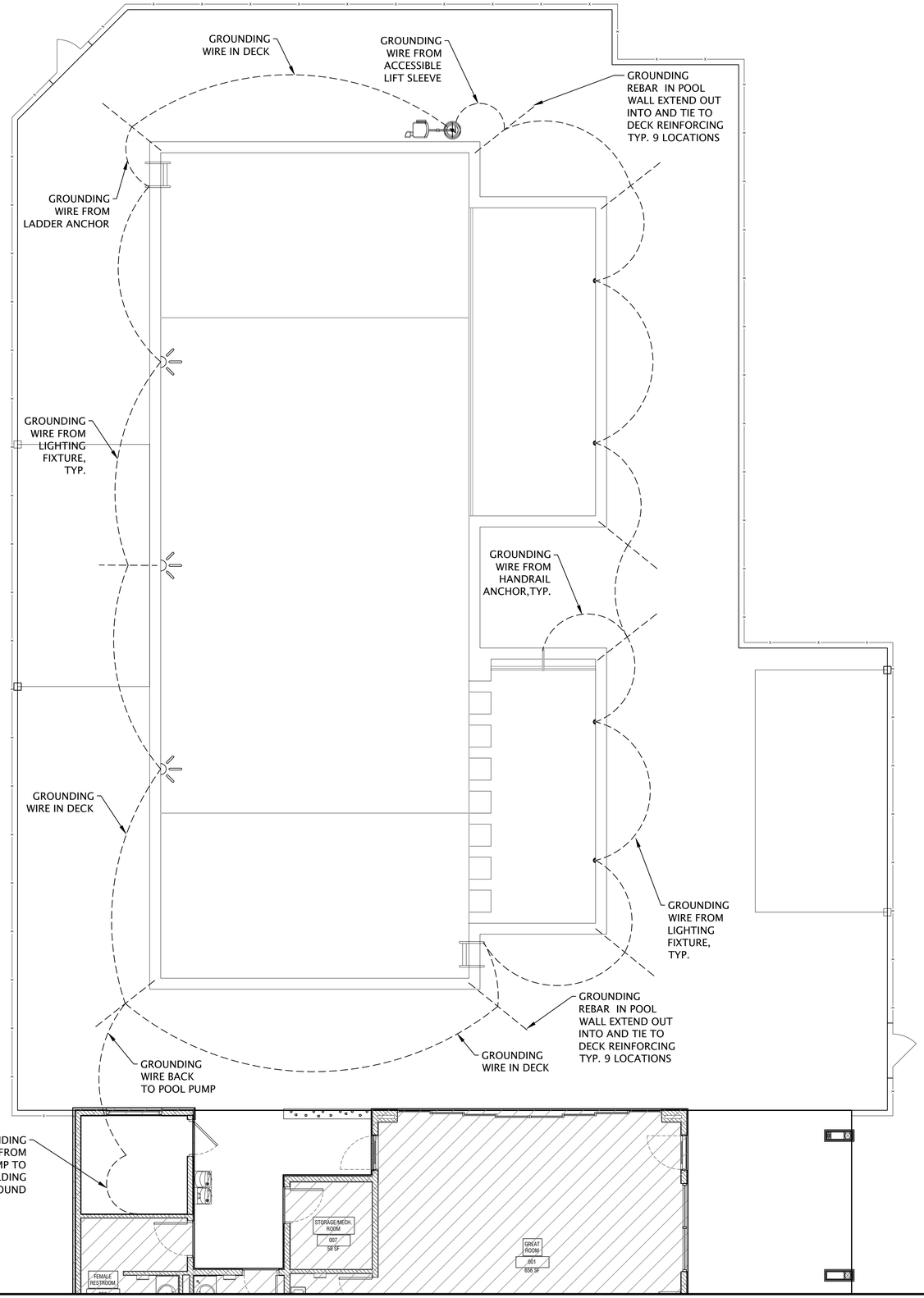
ISSUED: JULY 31, 2020

NO.	REVISION	DATE

DESIGNED BY DMB
DRAWN BY DMB
CHECKED BY DMB

POOL DETAILS

PL104



BONDING METHODS

TWO OPTIONS ARE PROVIDED BELOW FOR EQUIPOTENTIAL BONDING. USE OPTION ONE WHEN STEEL REBAR IS USED THAT IS ON-CONDUCTIVE. USE OPTION TWO WHEN EPOXY-COATED-REBAR IS USED.

1. INSTALL REBAR IN A GRID PATTERN, AS SHOWN, AT EACH POINT WHERE THE REBAR CROSSES, THE REBAR SHALL BE TIED TOGETHER BY STEEL TIE WIRE.THIS STEEL REBAR CAGE PROVIDES AN EQUIPOTENTIAL BONDING GRID TO WHICH ALL METAL PARTS IN THE POOL AND ANY METAL PARTS IN THE AREA SURROUNDING THE POOL SHALL BE ATTACHED USING A SOLID COPPER CONDUCTOR, NOT SMALLER THAN 8 AWB (AMERICAN GAGE WIRE)

2. THIS ALTERNATIVE-BONDING GRID SHALL BE CONSTRUCTED OF MINIMUM 8 AWG BARE, SOLID-COPPER CONDUCTORS ARRANGED IN A 12 X 12 INCH NETWORK OF CONDUCTORS WITH A TOLERANCE OF FOUR INCHES AND SHALL BE INSTALLED IN A UNIFORMLY SPACED PERPENDICULAR GRID PATTERN, AND SHALL COVER THE CONTOUR OF THE INSIDE OF THE POOL AND EXTEND HORIZONTALLY INTO THE POOL DECKING BY A MINIMUM OF THREE FEET. THESE CONDUCTORS MUST BOND TO EACH OTHER AT ALL POINTS OF CROSSING AND CONNECTIONS MUST BE MADE IN ACCORDANCE WITH THE REQUIREMENTS IN SECTION 250.8, SUCH AS EXOTHERMIC WELDING, LISTED PRESSURE CONNECTORS, LISTED CLAMPS OR OTHER LISTED MEANS. THE FINAL REQUIREMENT IS TO SECURE THE BELOW-GRADE BONDING GRID WITHIN OR UNDER THE POOL AND DECK.

1 POOL BONDING DIAGRAM
SCALE: 3/16" = 1'-0"

N

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2021

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

CLIENT:
SUMMIT HOMES

OSAGE SWIMMING POOL

2025 SW M 150 HWY
LEE'S SUMMIT, MISSOURI

SE

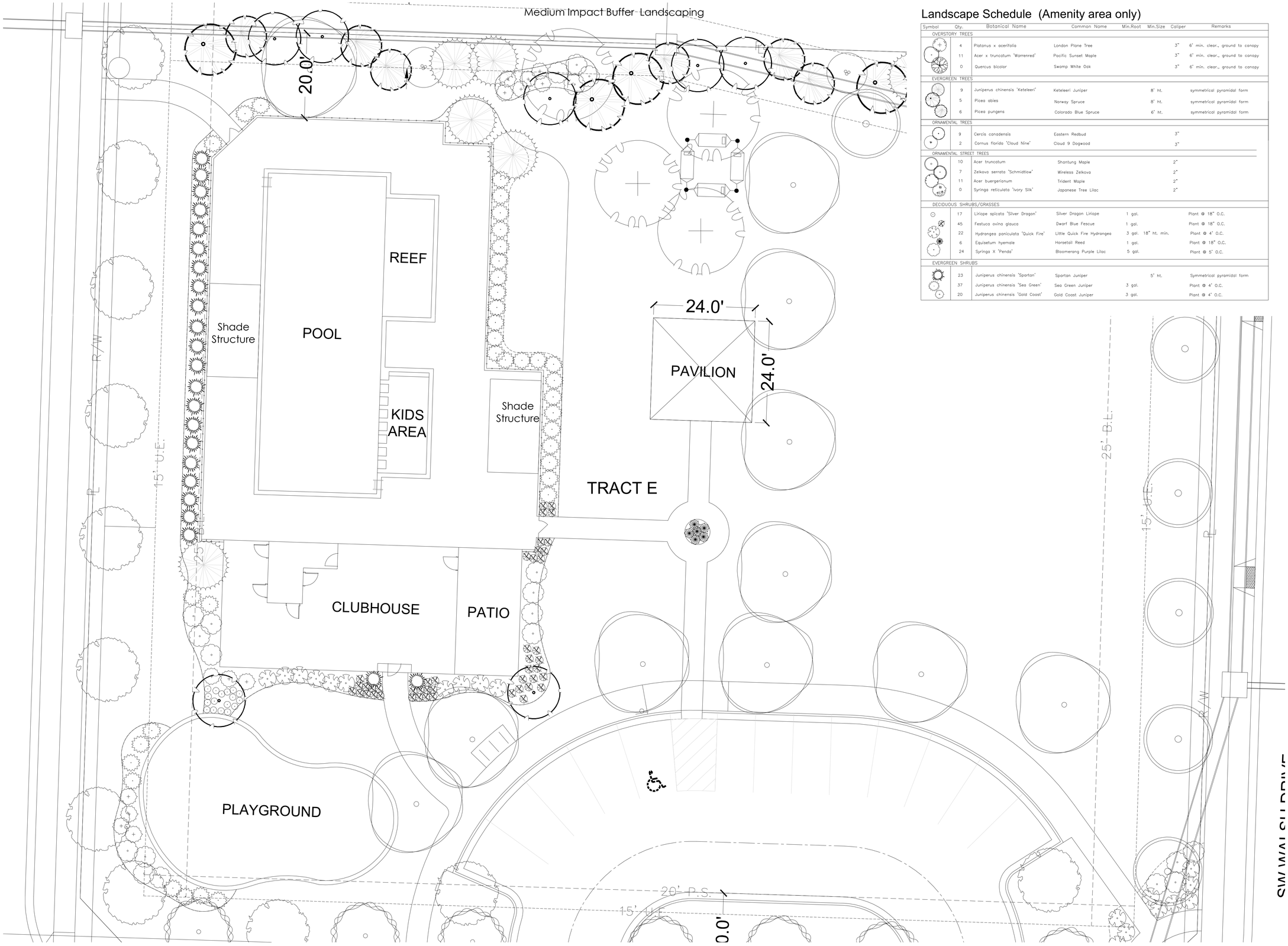
STATE OF MISSOURI
Dennis Bradley
NUMBER A-4516
ARCHITECT

ISSUED: JULY 31, 2020

NO.	REVISION	DATE

DESIGNED BY DMB
DRAWN BY DMB
CHECKED BY DMB

POOL BONDING DIAGRAM
PL105



1 POOL AREA ENLARGEMENT PLAN
SCALE: 1"=10'

Landscape Schedule (Amenity area only)

Symbol	Qty.	Botanical Name	Common Name	Min.Root	Min.Size	Caliper	Remarks
OVERSTORY TREES							
	4	Platanus x acerifolia	London Plane Tree			3"	6' min. clear., ground to canopy
	11	Acer x truncatum 'Warrenred'	Pacific Sunset Maple			3"	6' min. clear., ground to canopy
	0	Quercus bicolor	Swamp White Oak			3"	6' min. clear., ground to canopy
EVERGREEN TREES							
	9	Juniperus chinensis 'Keteleeri'	Keteleeri Juniper		8' ht.		symmetrical pyramidal form
	5	Picea abies	Norway Spruce		8' ht.		symmetrical pyramidal form
	6	Picea pungens	Colorado Blue Spruce		6' ht.		symmetrical pyramidal form
ORNAMENTAL TREES							
	9	Cercis canadensis	Eastern Redbud			3"	
	2	Cornus florida 'Cloud Nine'	Cloud 9 Dogwood			3"	
ORNAMENTAL STREET TREES							
	10	Acer truncatum	Shantung Maple			2"	
	7	Zelkova serrata 'Schmidtlow'	Wireless Zelkova			2"	
	11	Acer buergerianum	Trident Maple			2"	
	0	Syringa reticulata 'Ivory Silk'	Japanese Tree Lilac			2"	
DECIDUOUS SHRUBS/GRASSES							
	17	Liriope spicata 'Silver Dragon'	Silver Dragon Liriope	1 gal.			Plant @ 18" O.C.
	45	Festuca ovina glauca	Dwarf Blue Fescue	1 gal.			Plant @ 18" O.C.
	22	Hydrangea paniculata 'Quick Fire'	Little Quick Fire Hydrangea	3 gal.	18" ht. min.		Plant @ 4' O.C.
	6	Equisetum hyemale	Horsetail Reed	1 gal.			Plant @ 18" O.C.
	24	Syringa X 'Penda'	Bloomerang Purple Lilac	5 gal.			Plant @ 5' O.C.
EVERGREEN SHRUBS							
	23	Juniperus chinensis 'Spartan'	Spartan Juniper		5' ht.		Symmetrical pyramidal form
	37	Juniperus chinensis 'Sea Green'	Sea Green Juniper	3 gal.			Plant @ 4' O.C.
	20	Juniperus chinensis 'Gold Coast'	Gold Coast Juniper	3 gal.			Plant @ 4' O.C.

MEYER
LANDSCAPE ARCHITECTURE
15245 Metcalf Ave.
Overland Park, KS 66223
913.787.2817

STATE OF MISSOURI
JASON A. MEYER
NUMBER LA-2009014761
LANDSCAPE ARCHITECT

CLIENT
Summit Homes
120 SE 30th St
Lee's Summit, MO 64082

PROJECT
Osage
Highway 150 and
Pryor Road
Lee's Summit, MO

SCALE: 1"=10' NORTH
0 10 20 30

Date: 7.23.2020
Project #: 482
Amenity Area
Landscape Plan

L6