VICINITY MAP NOT TO SCALE

GENERAL NOTES

1. ALL CONSTRUCTION WITHIN THE STATE RIGHT OF WAY WILL REQUIRE COMPLIANCE TO TXDOT STANDARD SPECIFICATIONS, STANDARD PLANS, STATE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. SPECIFICATIONS ADOPTED BY THE. TX DEPARTMENT OF TRANSPORTATION AND SUBSEQUENT AMENDMENTS, AND SPECIFICATION ITEMS LISTED AND DATED AS PER THE CIVIL DRAWINGS SHALL GOVERN ON THIS PROJECT. FOR ALL WORK WITHIN THE STATE RIGHT OF WAY.

DRAWING SYMBOLS

ENTRY	ROOM NAME
101	ROOM NUMBER
D1	DOOR MARK
D	WINDOW MARK
3	DRAWING NOTE
A	COLUMN LINE MARK
	DATUM MARK
3	REVISION NUMBER CLOUD AT LAST REV. ONLY

PROJECT DATA

STORIES	BUILDING	FLOOR AREA	CONSTR. TYPE	SPRINKLER SYSTEM	OCCUPANCY
ONE STORY	RESTAURANT LEASE SPACE	5400 SQ.FT	TYPE VB	YES	277

LEGAL DESCRIPTION

LOT 3, BLOCK 110, NCB 16386 PLAT: DOMINION RETAIL (VOL. 9720, PG. 159–160, D.P.R.)

CODES AND STANDARDS

1. THE FOLLOWING CRITERIA HAS BEEN USED IN THE PREPARATION OF THESE DOCUMENTS.
   ADA ACCESSIBILITY STANDARDS
   DATE: AS APPLICABLE
2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES. PROJECT INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING LIST:
   BUILDING CODE: IBC AS APPLICABLE
   NATIONAL ENERGY CODE : AS APPLICABLE
   BUILDING CODES / LAW / ORDINANCES:
   COUNTY, CITY OF SAN ANTONIO 2021 IBC.STATE BUILDING CODES AND AS AMMENDED, CITY ORDINANCES

GENERAL NOTES

1. THESE NOTES SHALL APPLY UNLESS OTHERWISE INDICATED BY DRAWINGS OR SPECIFICATIONS.
2. ALL WORK INCLUDING CIVIL, MECHANICAL, PLUMBING, & ELECTRICAL SHALL BE PERFORMED IN STRICT COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, & LOCAL CODE REQUIREMENTS, AND IN ACCORDANCE WITH ACCEPTED CONSTRUCTION INDUSTRY STANDARDS.
3. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL APPLICABLE PERMITS, INSPECTIONS AND APPROVALS, INCLUDING THOSE RELATED TO BUILDING AND CONTRACTOR SIGNAGE.
4. PRIOR TO TURNING BUILDING OVER TO OWNER, REPAIR OR REPLACE ALL MATERIALS, GLASS, OR ASSEMBLIES DAMAGED OR BROKEN DURING CONSTRUCTION.
5. SMOKE DETECTORS SHALL BE HARDWIRED INTO AN AC ELECTRICAL POWER SOURCE AND SHALL BE EQUIPPED WITH BATTERY BACK-UP. SMOKE DETECTORS SHALL BE TESTED FOR COMPLIANCE UPON COMPLETION OF WORK.
6. AT ALL RATED WALLS, FLOORS AND RATED CEILINGS, ALL PLUMBING, ELECTRICAL & HVAC PENETRATIONS SHALL BE SEALED WITH APPROVED FIRESTOPPING MATERIAL.
7. SEAL ALL PENETRATIONS THRU FLOOR DECK.
8. FRAMER SHALL PROVIDE IN-WALL BLOCKING AS REQUIRED AT TOILET ACCESSORIES.

CODE INFORMATION

1.0 APPLICABLE CODES	
BUILDING CODE	2021 INTERNATIONAL BUILDING CODE (IBC)
FIRE CODE	2021 INTERNATIONAL FIRE CODE (IFC)
ELECTRICAL CODE	2020 NATIONAL ELECTRICAL CODE (NEC)
MECHANICAL CODE	2021 INTERNATIONAL MECHANICAL CODE (IMC)
PLUMBING CODE	2021 INTERNATIONAL PLUMBING CODE (IPC)
FUEL GAS CODE	2021 INTERNATIONAL FUEL GAS CODE (IFGC)
ENERGY CODE	2021 INTERNATIONAL ENERGY CONSERVATION CODE (IEC)
LIFE SAFETY CODE	2012
ACCESSIBILITY CODE	TAS 2012

RESTROOM DESIGN

NUMBER OF PEOPLE

142 inside
36 covered patio
5 covered outside bar
45 north patio
Up to 48 west patio
277

138 female & male
Male
1 urinal per 75 = 2 urinals
1 wc per 200 = 1 wc
Female = 3 wc
Changing tables x2

PARKING

REFERENCE CIVIL

INDEX OF DRAWINGS

ARCHITECTURAL

STRUCTURAL

CIVIL

MEP

LANDSCAPE

SUBMITTALS:

The FOLLOWING SUBMITTALS AS A MINIMUM ARE TO BE SUBMITTED TIMEOUSLY:
0. CONCRETE MIX & REBAR SPEC
1. ROOF TRUSS DESIGN
2. PLUMBING FIXTURES
3. ELECTRICAL PANELS AND GEAR
4. LIGHT FIXTURES
5. ROOF TOP AC UNITS, CURBS AND DIFFUSERS
6. WALL WEATHERIZATION SYSTEM+ROOFING INSULATION SYSTEM
7. DOORS AND HARDWARE
8. STORE FRONTS
9. RESTROOM ACCESSORIES
10.FRP,TILE AND LAMINATE SAMPLES
11.BRICK, STONE AND MORTAR SAMPLES
12.MILLWORK
13.LOT LIGHTING
14.ACOUSTIC CEILING TILES

CONTRACTOR TO REVIEW AND STAMP AS HAVING BEEN REVIEWED AND IN COMPLIANCE WITH SPECIFICATIONS. SUBMITTALLS WILL BE RETURNED WITHOUT THE REVIEW STAMP AND SIGNATURE FROM THE GENERAL CONTRACTOR.
PROVIDE AND OR COURIER 2 SUBMITTALS TO THE ARCHITECT FOR ALL ITEMS, 2 COPIES OF ITEMS 2,3,4,5,&13 TO THE MEP ENGINEER AND 2 COPIES OF ITEM 1 TO THE STRUCTURAL ENGINEER.

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REGISTERED ARCHITECT MICHAEL GREGORY LEGG STATE OF TEXAS

02.21.2023

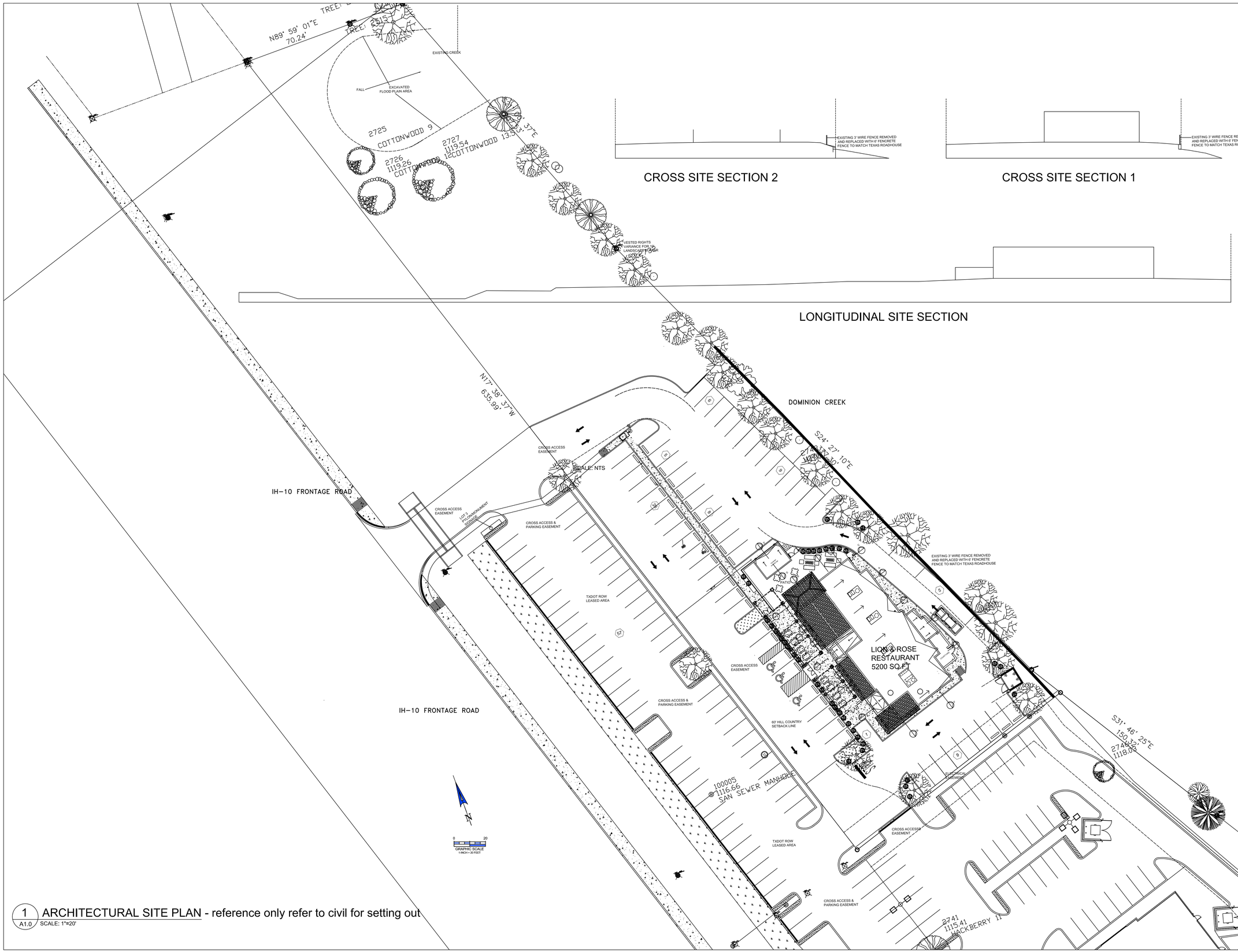
DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

COVER SHEET
LION & ROSE RESTAURANT
23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
CS



1 A1.0 ARCHITECTURAL SITE PLAN - reference only refer to civil for setting out
SCALE: 1"=20'

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MICHAEL GREGORY LEGG
26116
STATE OF TEXAS
02.21.2023

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ARCHITECTURAL SITE PLAN

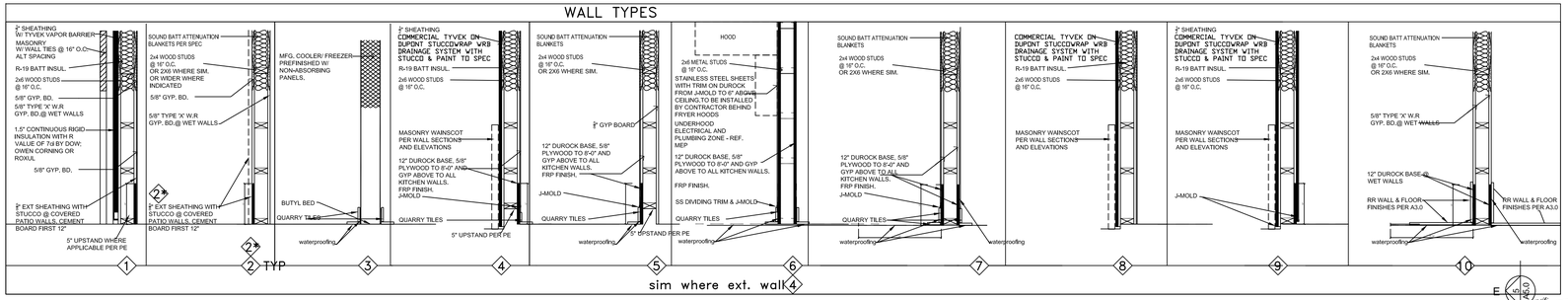
23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

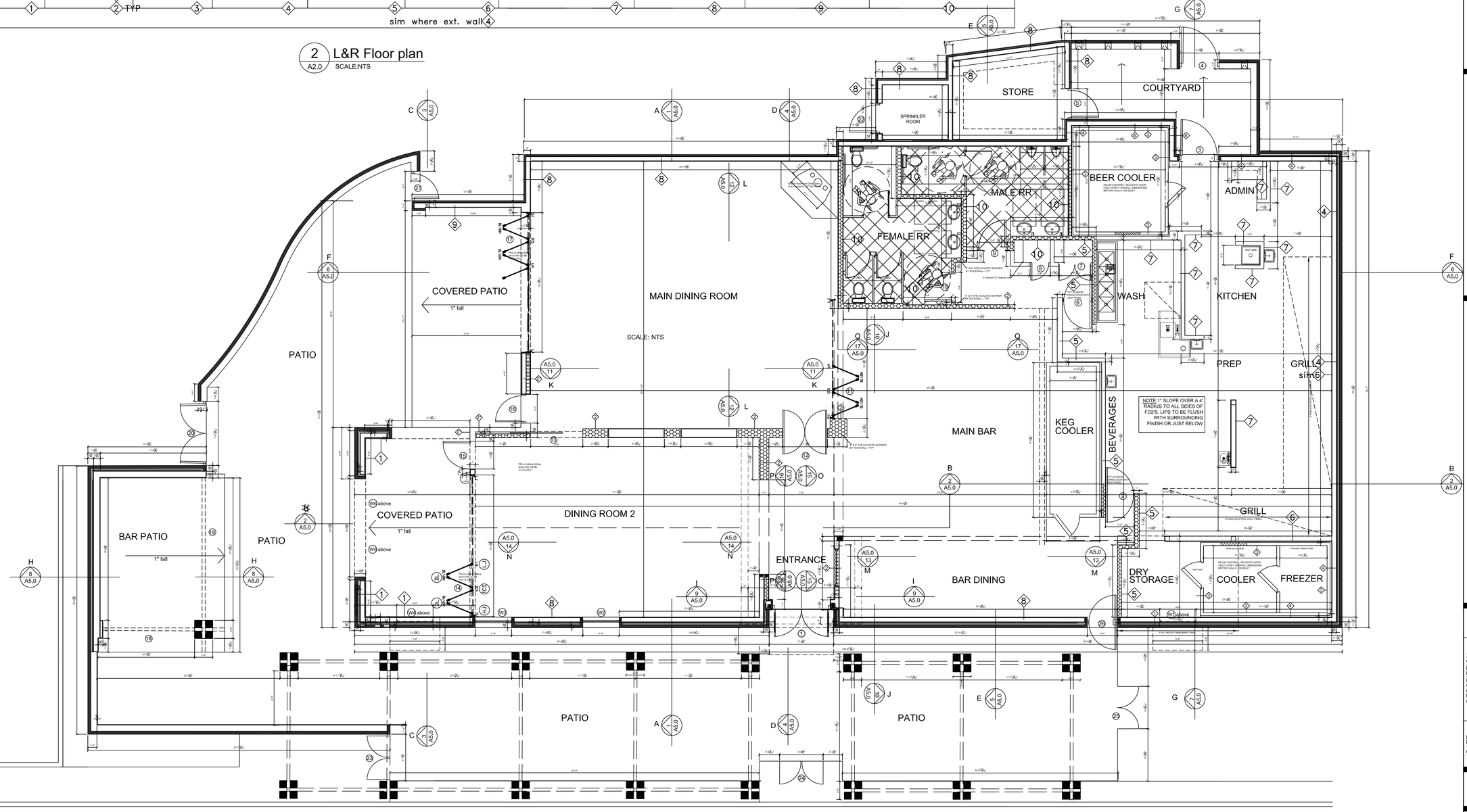
PROJECT NO.
05-05-22

SHEET NO.
A1.0

WALL TYPES



2 L&R Floor plan
A2.0 SCALE:NTS



1 L&R Floor plan
A2.0 SCALE: 1/8"=1'-0"

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02.21.2023

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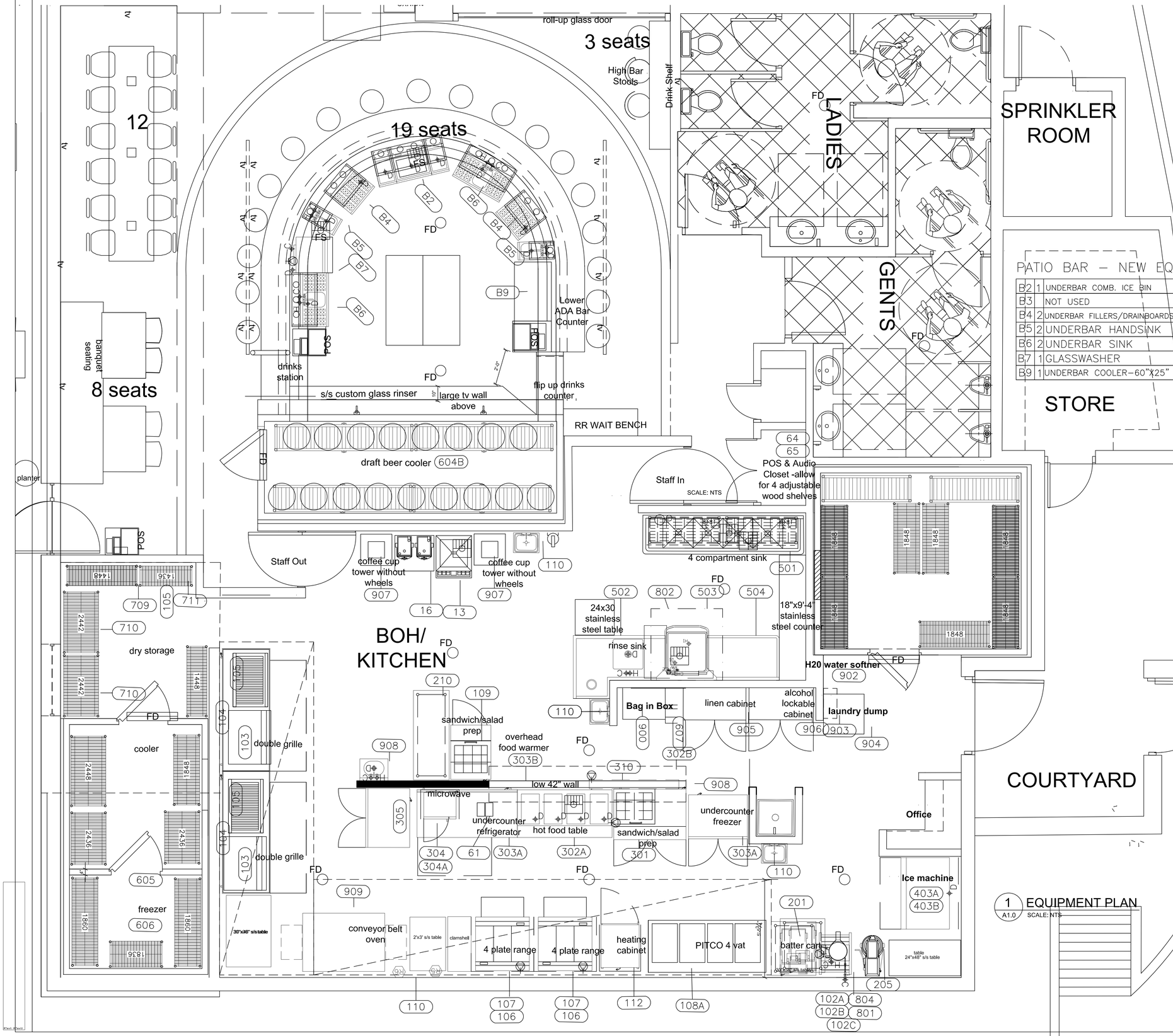
L&R Floor Plan

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A2.0



1 EQUIPMENT PLAN
A1.0 SCALE: NTS

EQUIPMENT SCHEDULE

* DENOTES ITEMS TO BE SUPPLIED AND INSTALLED BY THE MAIN CONTRACTOR

ALL OTHER EQUIPMENT UNLESS OTHERWISE DENOTED WILL BE BY OWNER/KITCHEN EQUIPMENT SUPPLIER. BY OWNER REFERENCES EXISTING EQUIPMENT

ITEM#	QTY	EQUIPMENT CATEGORY	NOTES
13	1	ICE DRINK DISPENSER	BY OWNER
16	1	TABLE, 24" X 27"	BY OWNER
60	6	POS REGISTER(2 NEW BOTH BARS)	BY OWNER
61	6	POS PRINTER(2 NEW BOTH BARS)	BY OWNER
64	LOT	TV & AUDIO SYSTEM	BY OWNER
65	1	WIFI SYSTEM	BY OWNER
102A	1	KETTLE, STEAM JACKETED, ELEC, TILT	BY OWNER
102B	1	STAND, KETTLE, ELECTRIC	BY OWNER
102C	1	FAUCET, POT FILLER, WALL MOUNT	BY OWNER
103	2	GRIDDLE,COUNTERTOP(1NEW VulcanVCRG48)	BY OWNER/KES Email 11.16.22 s
104	2	REFRIGERATOR, SHORTY(1NEW TRUE REFRIGERATION)	BY OWNER/KES Email 11.16.22 s
105	2	CHARBROILER,RADIANT(1NEW MoTakMBR48)	BY OWNER/KES Email 11.16.22 s
106	2	6 BURNER RANGE, GAS (1NEW C36S-6B	BY OWNER/KE Email 11.16.22 s
107	2	SALAMANDER BROILER(1NEW WolfC363S-6B	BY OWNER/K Email 11.16.22
108A	1	PITCO MEGAFRYER, 4 DEEP FAT, GAS	BY OWNER Email 11.15.22 sp
908	1	GARLAND CLAM SHELL GRILL(11/15 email)	BY OWNER
109	1	REFRIGERATOR, SANDWICH/SALAD PREP	BY OWNER
110	4	SINK, HAND, WALL MOUNT	BY OWNER
112	1	HEATING CABINET	BY OWNER
201	1	BATTER CART	BY OWNER
203	1	NOT USED	
205	1	MIXER, COUNTER	BY OWNER
210	2	TABLE, WORK	BY OWNER
909	1	Marshall DZ55II–1S Conveyer belt oven	BY OWNER Email 11.16.22 sp
301	1	REFRIGERATOR, SANDWICH/SALAD PREP	BY OWNER
302A	1	TABLE, HOT FOOD	BY OWNER
302B	1	WARMER, FOOD OVERHEAD	BY OWNER
303A	1	REFRIGERATOR, UNDERCOUNTER	BY OWNER
303B	1	WARMER, FOOD OVERHEAD	BY OWNER
304	1	OVEN, MICROWAVE	BY OWNER
304A	1	SHELF, MICROWAVE	BY OWNER
305	1	FREEZER, REACH–IN	BY OWNER
310	1	PASS–THRU SHELF, DOUBLE	BY OWNER
403A	1	ICE MAKER	BY OWNER
403B	1	BIN, ICE	BY OWNER
501	1	SINK, SCULLERY, 4 COMPARTMENTS	BY OWNER
502	1	DISHTABLE, STRAIGHT	BY OWNER
503	1	WAREWASHER, DOOR TYPE, HIGH TEMP	BY OWNER
504	1	DISHTABLE, STRAIGHT	BY OWNER
601	1	WALK–IN CLOOLER/FREEZER COMBO – ADAPT EX. TO SUIT NEW CONFIGURATION	
602	1	BEER COOLER – relocate door	BY OWNER
604A	2	SHELVING, BEER KEGS	BY OWNER
603–711	1	SHELVING, WIRE	BY OWNER
801	1	HOOD	BY OWNER
802	1	CONDENSATE HOOD	BY OWNER
804	1	ANSUL FIRE PROTECTION SYSTEM	BY OWNER/KES
900	1	BAG AND BOX	BY OWNER
*901	1	MOP SINK	BY GC
*902	1	WATER HEATER	BY GC
*903	1	H2O SOFTENER	BY GC
904	1	LAUNDRY RECEIVE/DUMP	BY OWNER
905	1	104-SS - LOCKABLE STAINLESS STEEL LIQUOR/LAUNDRY CABINETS BY SECURALL	BY OWNER
906	1		BY OWNER
907	2	GLASS/COFFEE TOWER CUP STAND	BY OWNER
*908	2	STAINLESS CAP TO LOW WALL	BY GC
B2	1	UNDERBAR COMB. ICE BIN	BY OWNER
B3		NOT USED	
B4	2	UNDERBAR FILLERS & DRAINBOARDS	BY OWNE
B5	2	UNDERBAR HANDSINK	BY OWNER
B6	2	UNDERBAR SINK	BY OWNER
B7	1	GLASSWASHER	BY OWNER
B9	1	UNDERBAR COOLER – 60"X25"	BY OWNER

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02.21.2023

DRAWING COORDINATION
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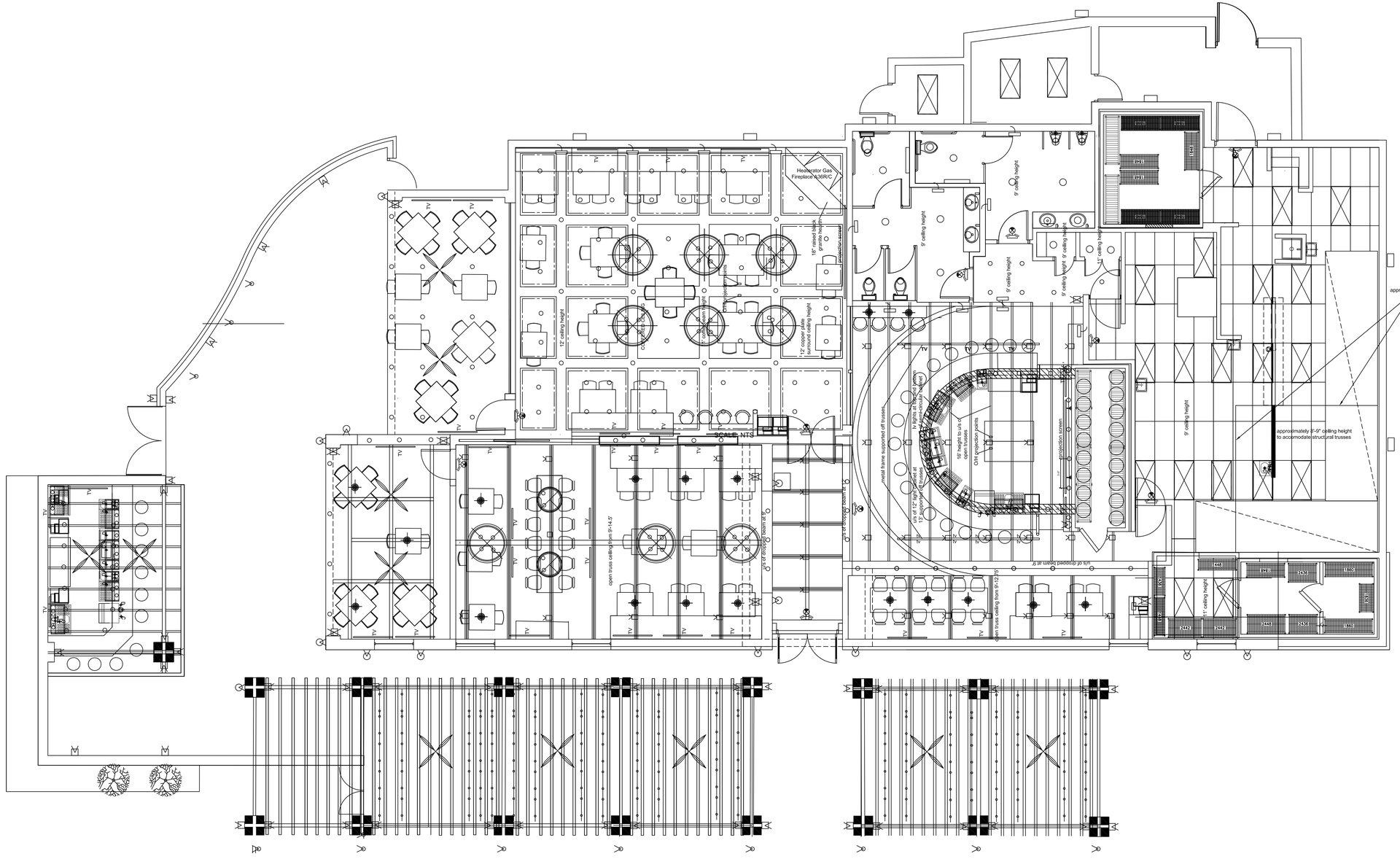
EQUIPMENT PLAN

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

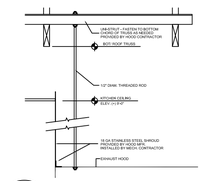
BY	DESCRIPTION	DATE

PROJECT NO.
05-05-22

SHEET NO.
A2.1



1 A2.2 RCP PLAN
SCALE: 1/8"=1'-0"



2 A2.2 HANGAR DTL.
SCALE: 1/8"=1'-0"

GAS LAMP 7' - 0" AFF TO U/S OF LAMP INTERNALLY. Gas Lamps supplied by owner. External gas lamps to suit exterior elevations

Lucca Iron Indoor/Outdoor Chandelier 50" Pottery Barn. Dimmer. Height at 7'-0"

LV FIXED RECESSED COPPER DOWNLIGHTERS - WARM COLOR RANGE. DIMMER.

LV UPLIGHTERS - WARM COLOR RANGE DIMMER. FIXED ON TOP OF TRUSSES

Rosswood Metal Chandelier 31"- Pottery Barn. Dimmer. Ht at 6'-8"

Remington Iron Round Chandelier, Bronze 41.5" dia. - Pottery Barn Dimmer. Height at 7'-0"

2x4 CEILING GRID LIGHTING

2x4 CEILING GYPSUM ACOUSTICAL TILE
1. Size: 24 x 48 inches .
2. Thickness: 1/2 inches.
3. Surface Finish: Vinyl faced.
4. Edge: Square.

CAN CEILING LIGHT FIXTURE

EXIT LIGHT/EMERGENCY EXIT LIGHT

PAINTED GYP CEILING BOARD FIXED TO U/S OF JOISTS TO RR'S; MAIN DINING ROOM;STORE & SPRINKLER RM

OVERHEAD FAN

ROPE LIGHT - WARM LUMENS

PARTY LIGHT FIXTURE- light bulb every 48" housed under 4" beam to comply with code

WALL SCONCE LIGHT FIXTURE

DOWNWARD WALL SCONCE LIGHT FIXTURE

2.5-3" BLACK PENDENT LIGHT FIXTURE

PICTURE LAMP LIGHT FIXTURE 6' - 8" AFF TO U/S OF LAMP

SECURITY LIGHT

LANDSCAPE GROUND LIGHT

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02.21.2023

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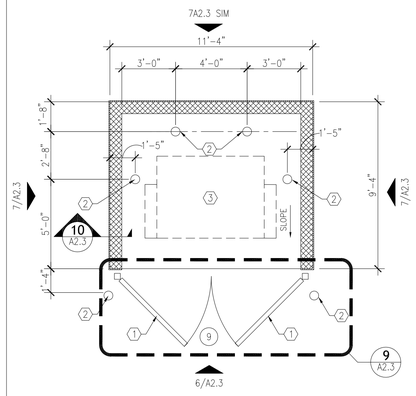
RCP PLAN

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

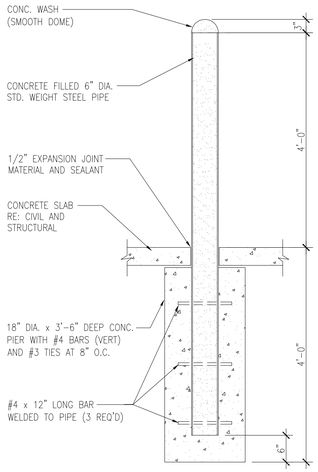
DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

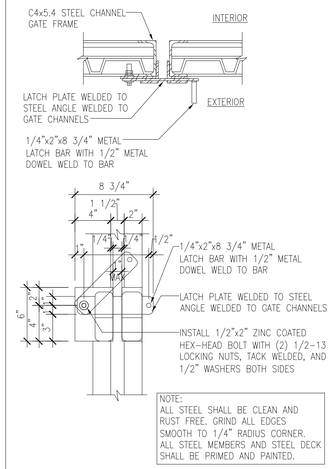
SHEET NO.
A2.2



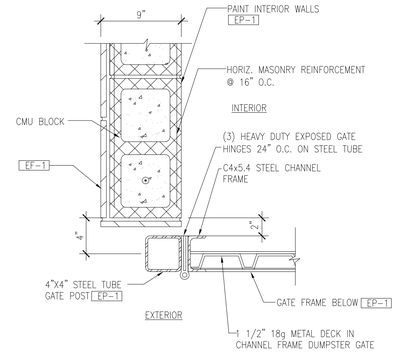
ENLARGED DUMPSTER ENCLOSURE PLAN 1
1/4"=1'-0"



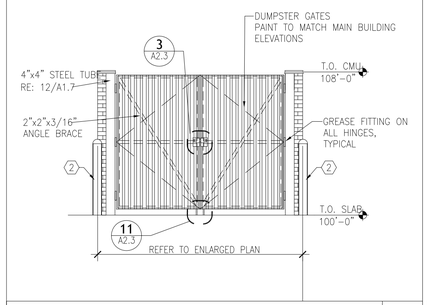
BOLLARD DETAIL 2
3/4"=1'-0"



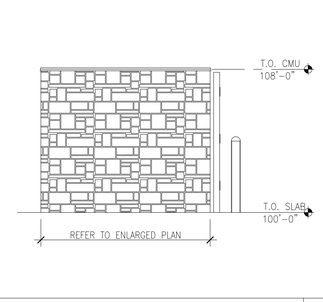
GATE CLOSURE DETAIL 3
1-1/2"=1'-0"



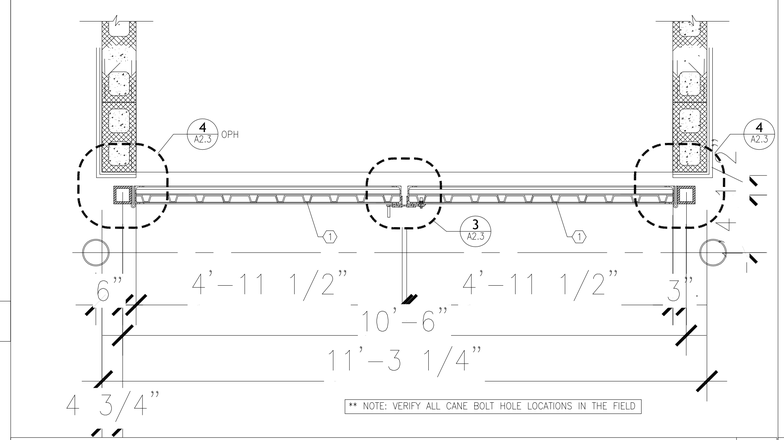
GATE HINGE DETAIL 4
1-1/2"=1'-0"



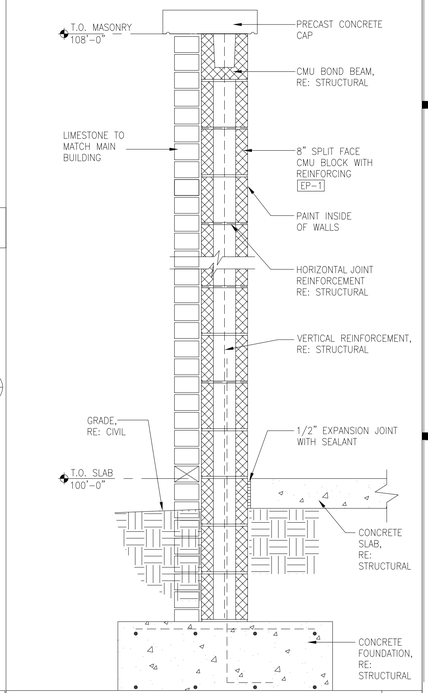
DUMPSTER ELEVATION 6
1/4"=1'-0"



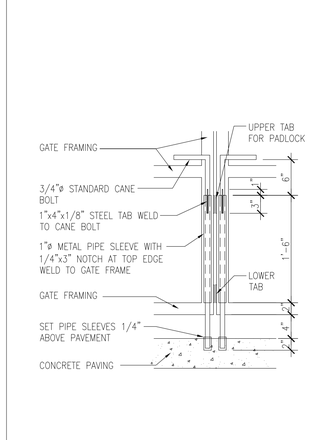
DUMPSTER BACK AND SIDE ELEVATIONS 7
1/4"=1'-0"



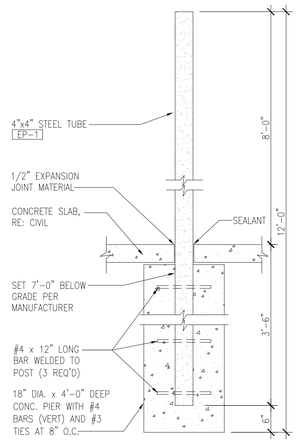
PLAN SECTION AT GATES 9
3/4"=1'-0"



COURTYARD & DUMPSTER WALL SECTION DETAIL 10
1"=1'-0"



CANE BOLT DETAIL 11
1"=1'-0"



GATE POST DETAIL 12
3/4"=1'-0"

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02.21.2023

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ENLARGED DUMPSTER WITH DETAILS

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A2.3

ROOFING NOTES.

Ludowici's tile Straight Barrel Mission Clay 14-1/4" Mission Roof Tile per manufacturers specification

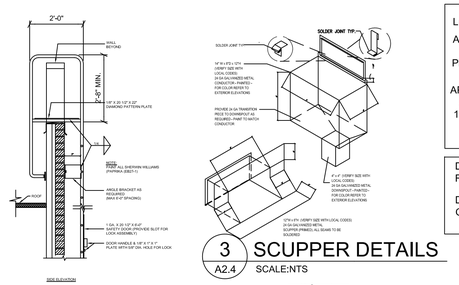
All decks must be covered with a starter sheet of 1 layer of Ice and Water Shield underlayment per manufacturer's instructions.

Plywood deck - use ring shank copper nails of the specified length to assure good penetration through underside of deck

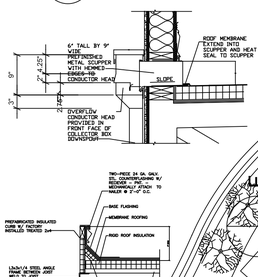
APA rated plywood is required for aminimum of 3/4" thick wood decking and must be rated for structural use as roof sheathing. The expansion crack between panels shall be at least 1/16" but no greater than 1/8". H-clips are to be used when rafters are spaced greater than 16" on center to hold the side joints of the plywood together between supports. Unsupported end joints must be blocked.

DURO-LAST MEMBRANE ROOFING.

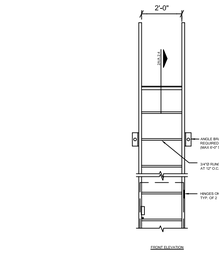
DURALAST ON BUILDING PAPER ON EXTERIOR SHEATHING. EXTEND OVER PARAPET THROUGHOUT CANT AND COUNTERFLASHING AS PER MANUF. SPEC REF. A7.0 DETAIL 19



3 A2.4 SCALE:NTS
SCUPPER DETAILS



4 A2.4 SCALE:NTS
CURB DTL.



2 A2.4 SCALE:NTS
ROOF LADDER

ROOF MOUNTED EQUIPMENT NOTES:

1. SITE VERIFY ALL EQUIPMENT LOCATIONS PRIOR TO INSTALLATION OF EQUIPMENT RAILS.
2. COORDINATE WITH ROOFING CONTRACTOR AND HVAC/REFRIGERATION CONTRACTOR PRIOR TO INSTALLATION.
3. SEE ROOF PLAN SHEET AND MECHANICAL PLAN SHEET, FOR EQUIPMENT RAIL DETAILS AND ROOF FLASHING DETAILS. WOOD MOUNTING BLOCKS TO RUN IN DIRECTION OF FALL.
4. EXHAUST AND MAKEUP AIR EQUIPMENT CURBS TO BE PROVIDED & INSTALLED BY GC. WOOD MOUNTING BLOCKS TO RUN IN DIRECTION OF FALL.
5. PRE-FABRICATED PIPE PORTALS & OPENINGS FOR SAME SHALL BE PROVIDED & INSTALLED BY GENERAL CONTRACTOR.

1 A2.4 SCALE: 3/16"=1'-0"
ROOF PLAN

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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

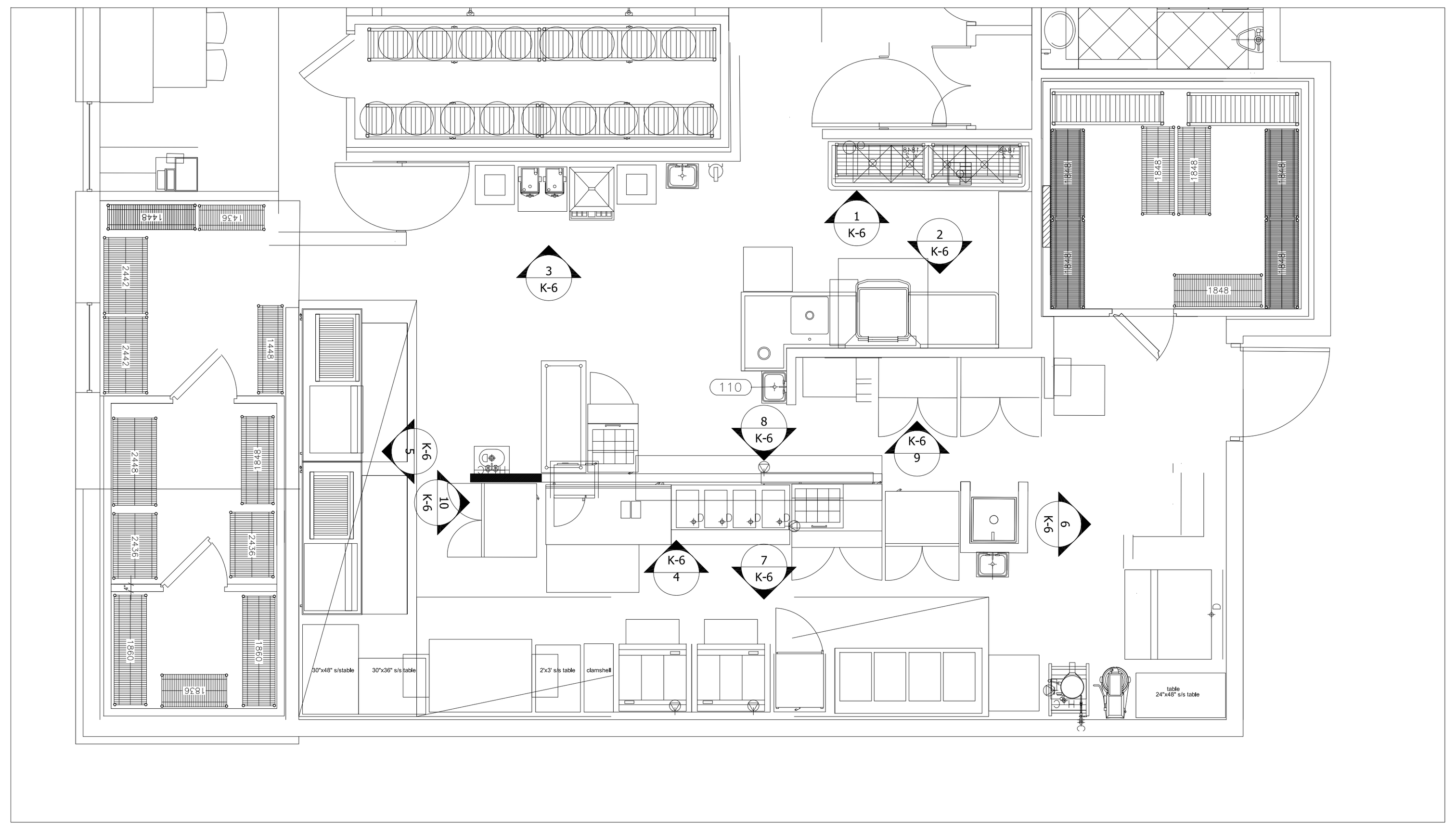
ROOF PLAN

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

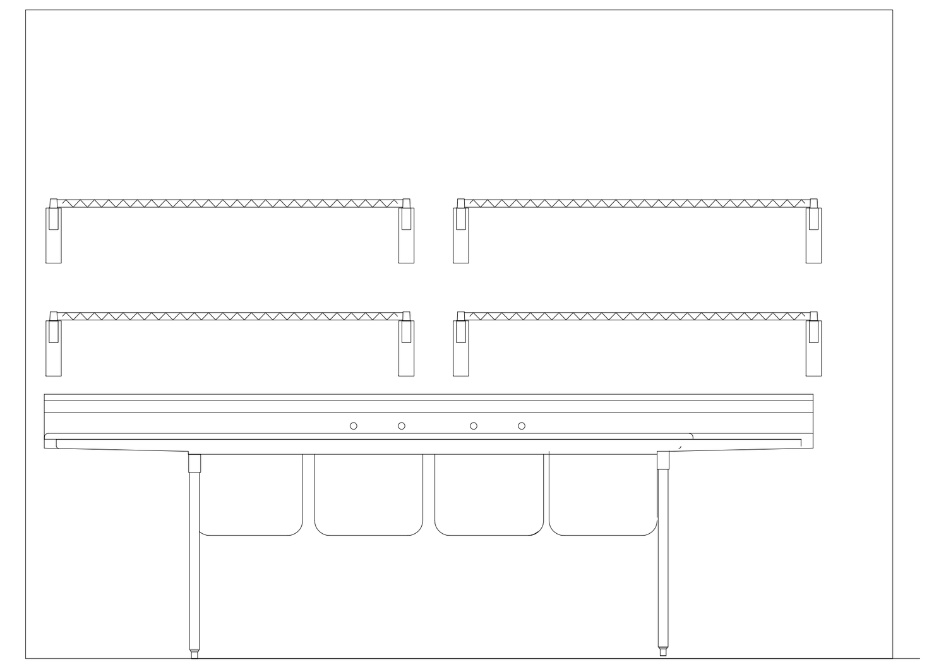
PROJECT NO.
05-05-22

SHEET NO.
A2.4

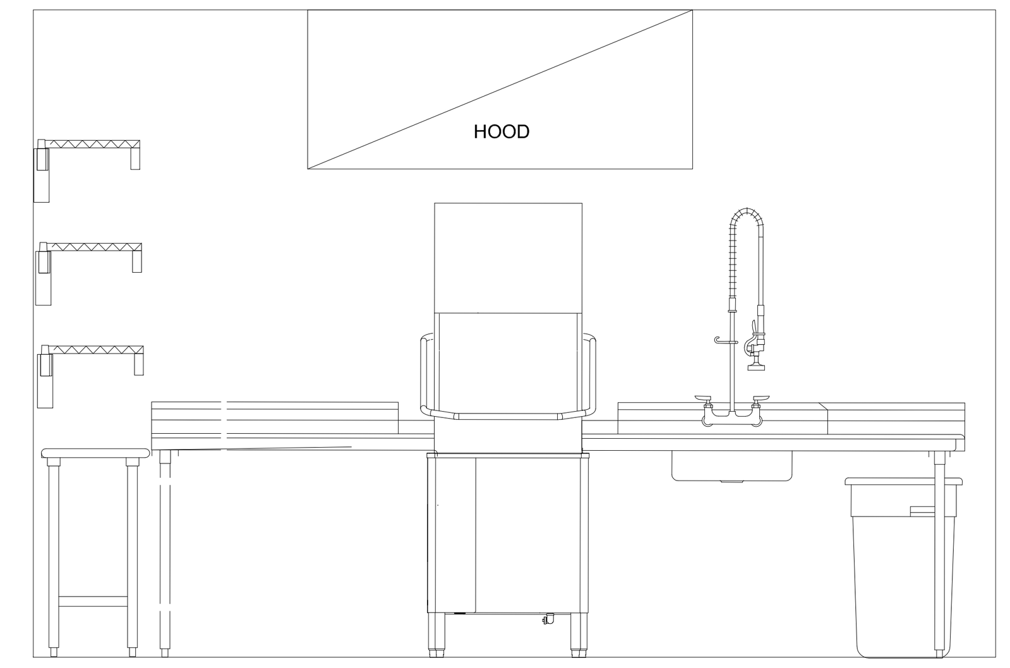


PLAN

VPSCALE



1 ELEVATION
Scale: 3/8" = 1'-0"



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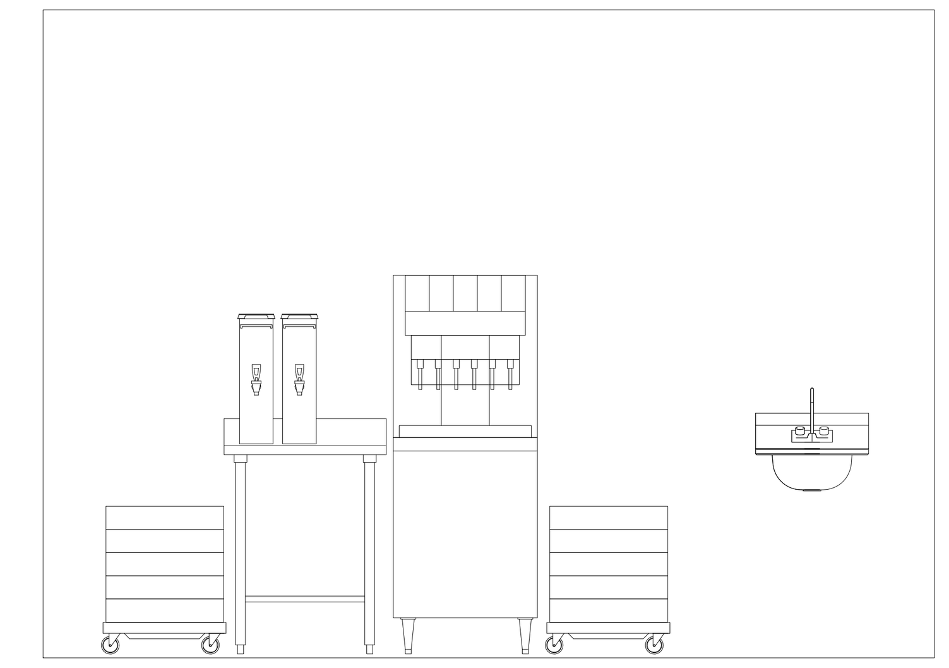

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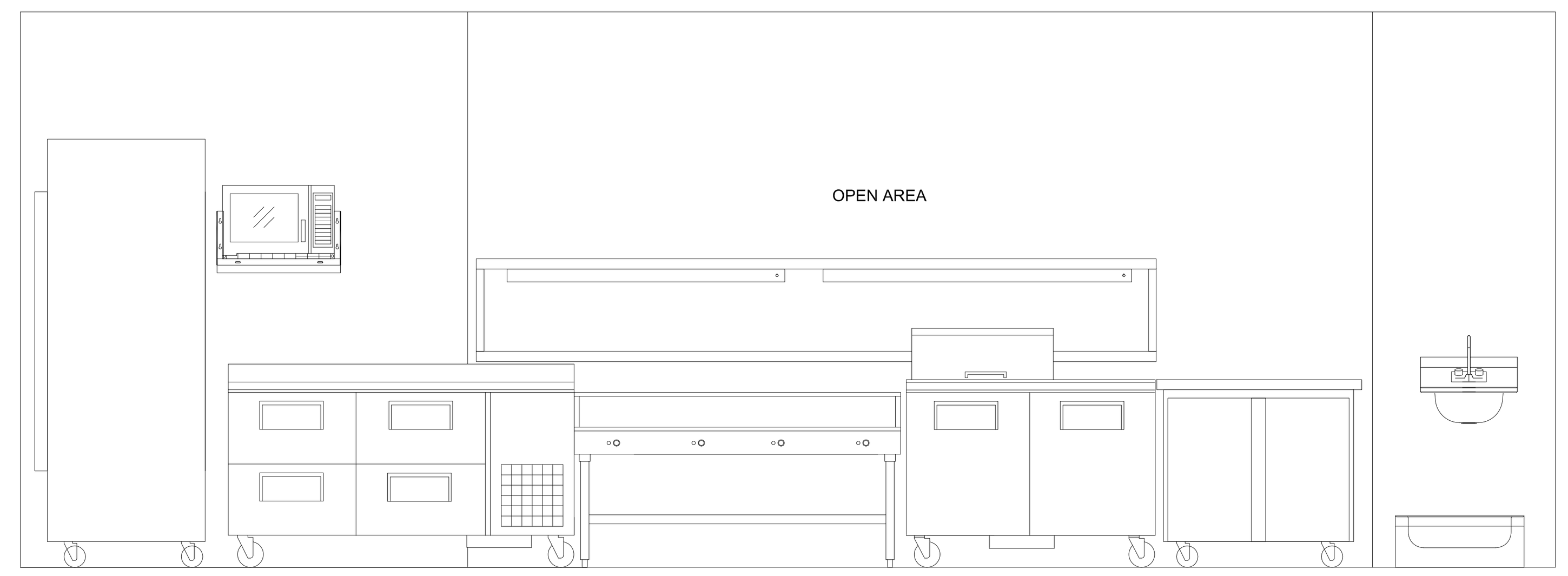

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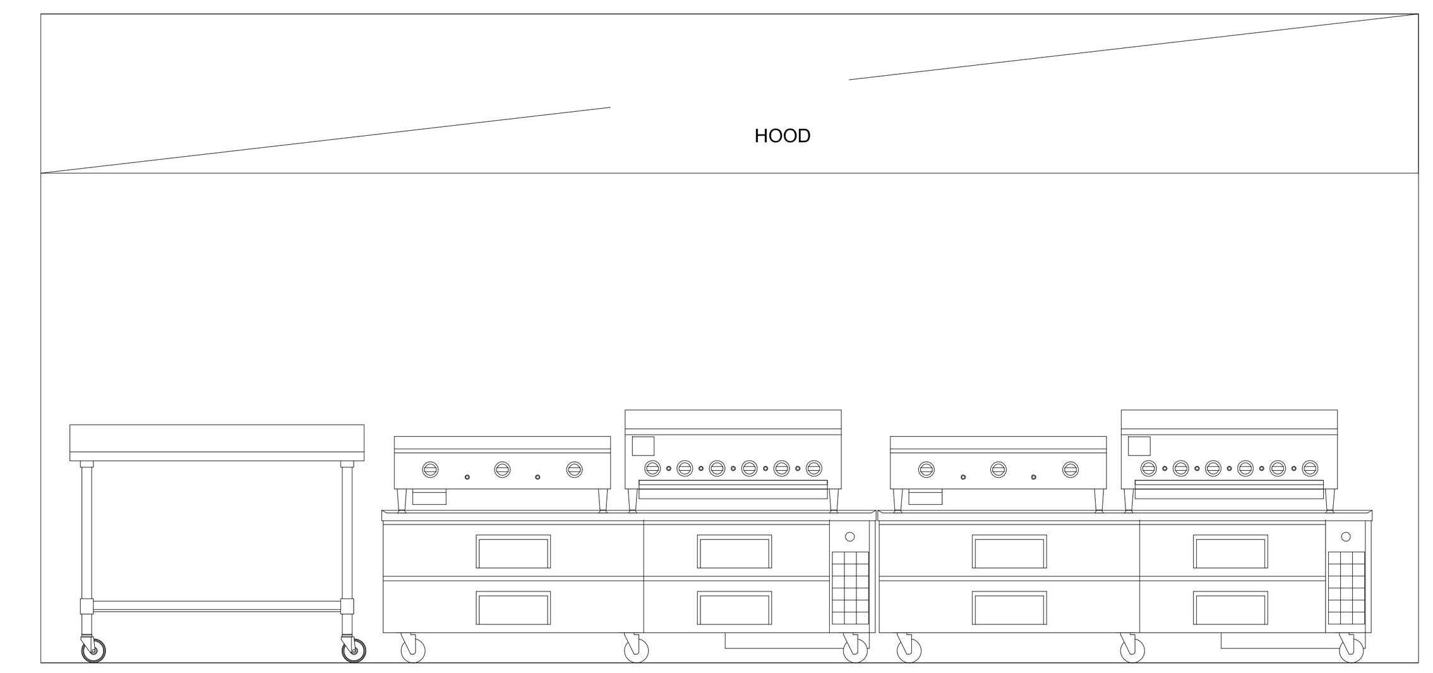
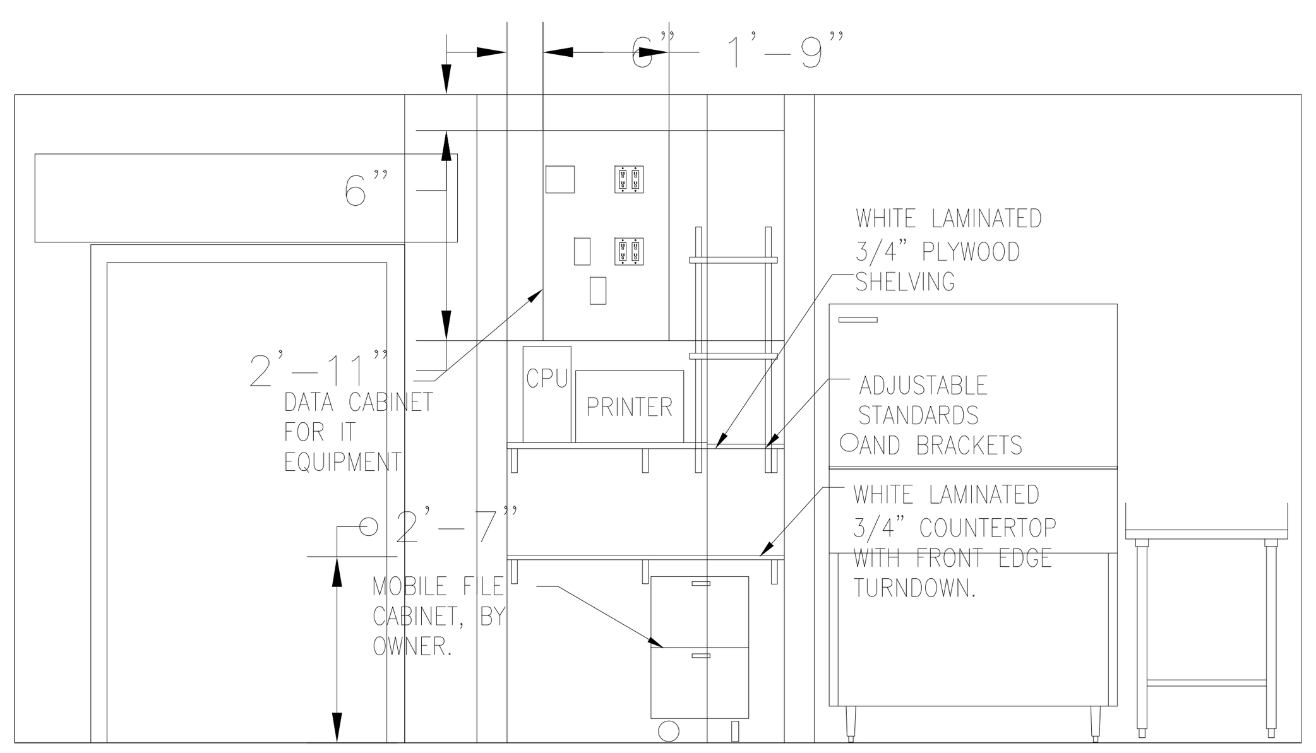
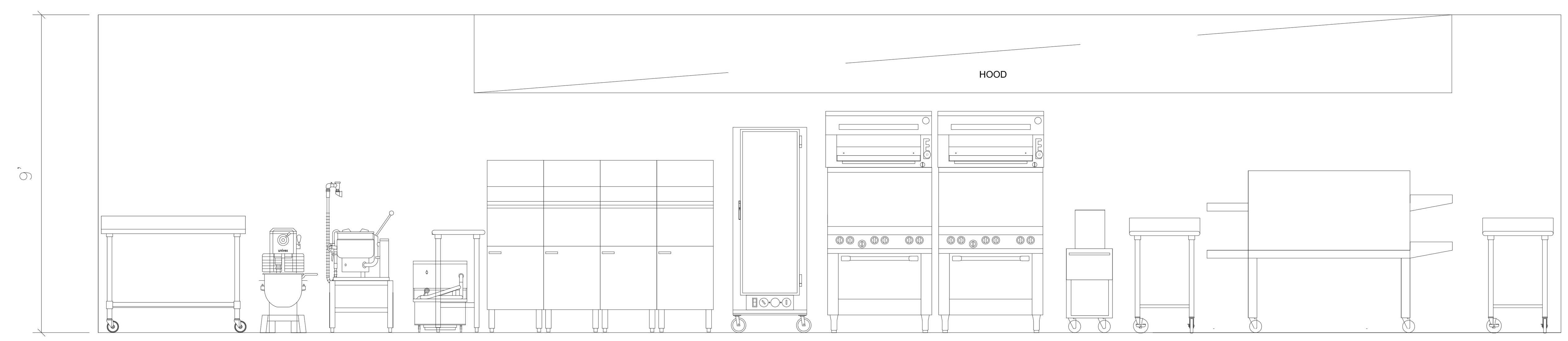


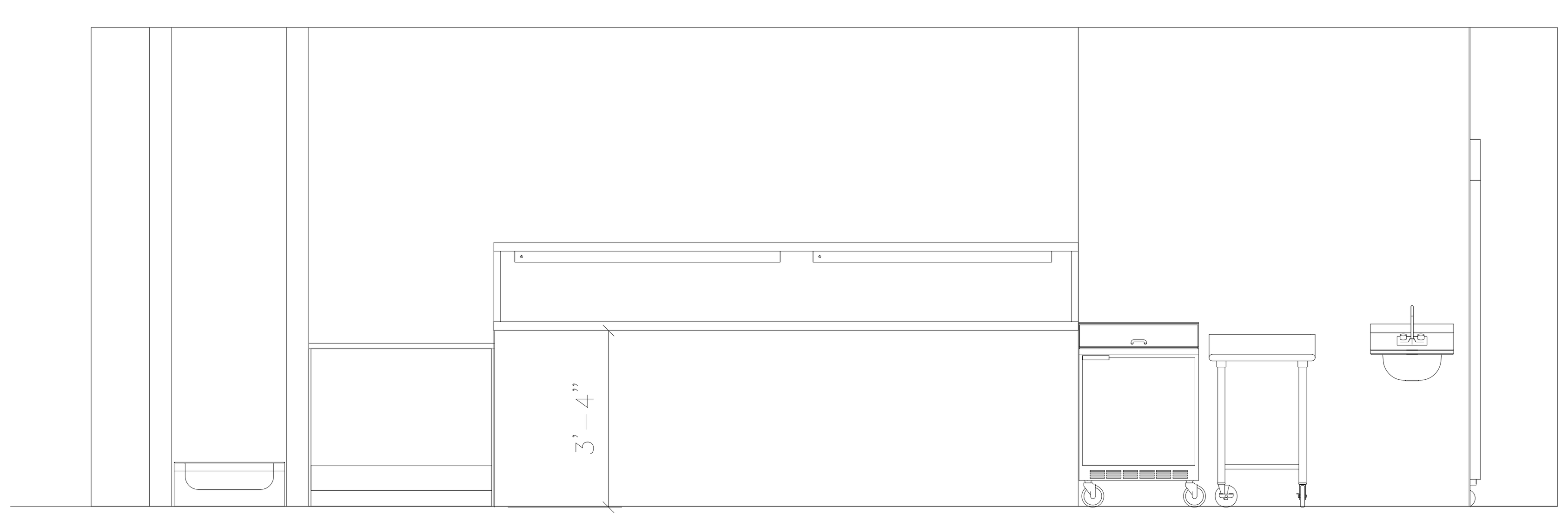
5 ELEVATION
Scale: 3/8" = 1'-0"



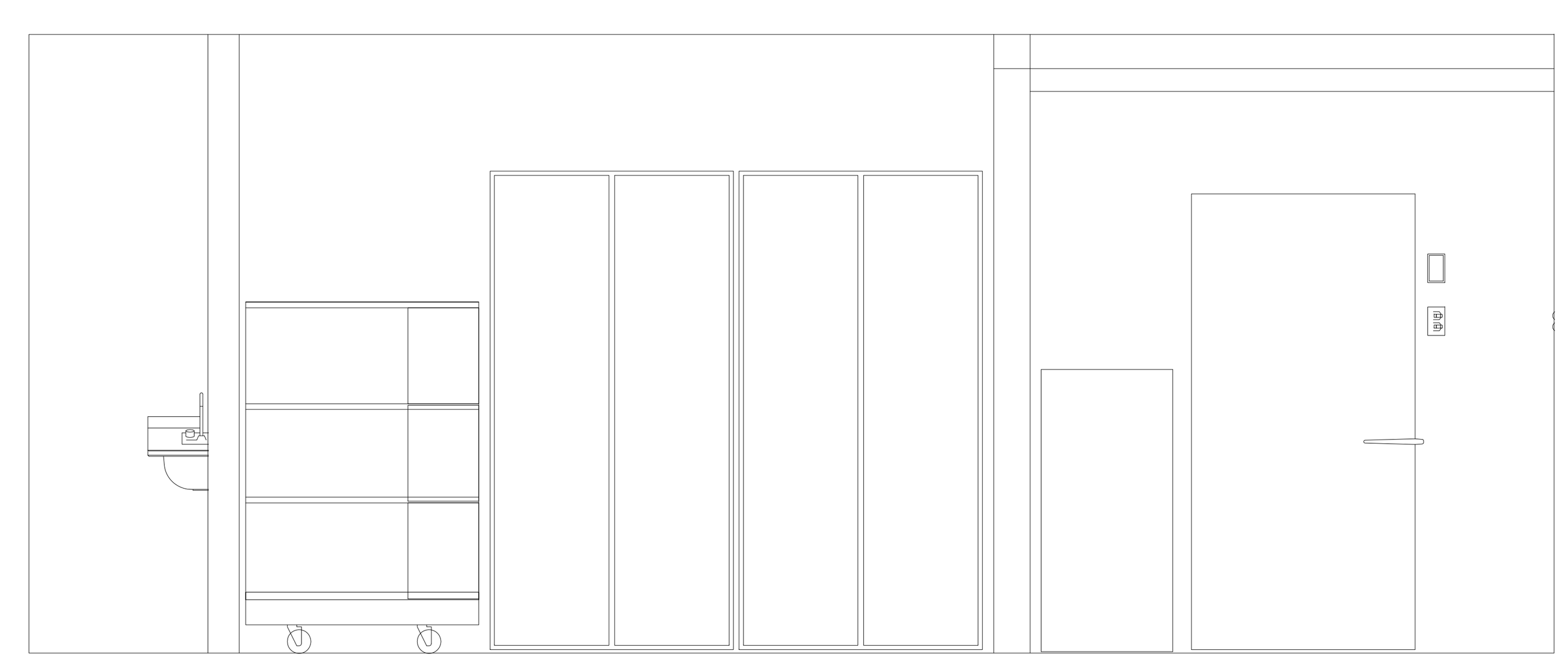
6 ELEVATION
Scale: 3/8" = 1'-0"



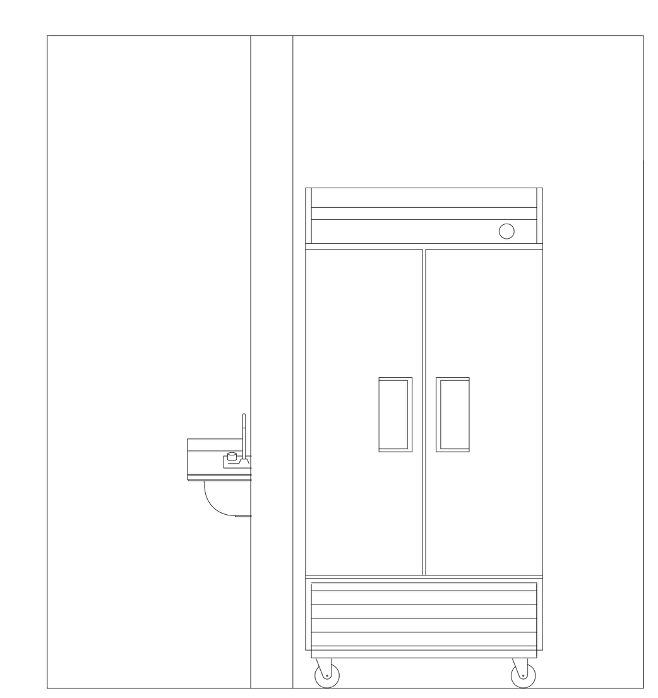
7 ELEVATION
Scale: 3/8" = 1'-0"



8 ELEVATION
Scale: 3/8" = 1'-0"



9 ELEVATION
Scale: 3/8" = 1'-0"



10 ELEVATION
Scale: 3/8" = 1'-0"

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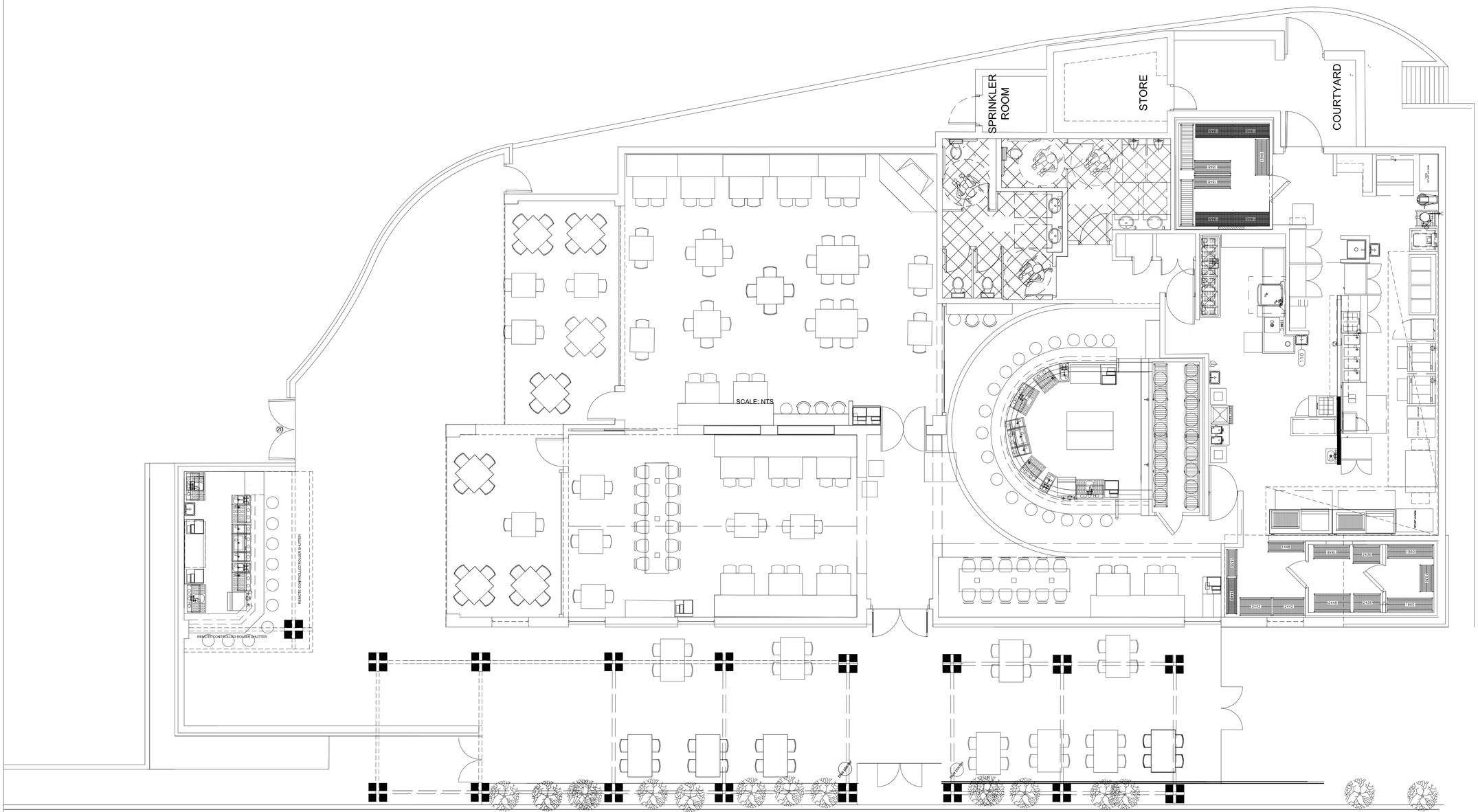
KITCHEN EQUIPMENT ELEVATIONS

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A2.5



1 A2.6 Furniture Plan
SCALE: 1/8"=1'-0"

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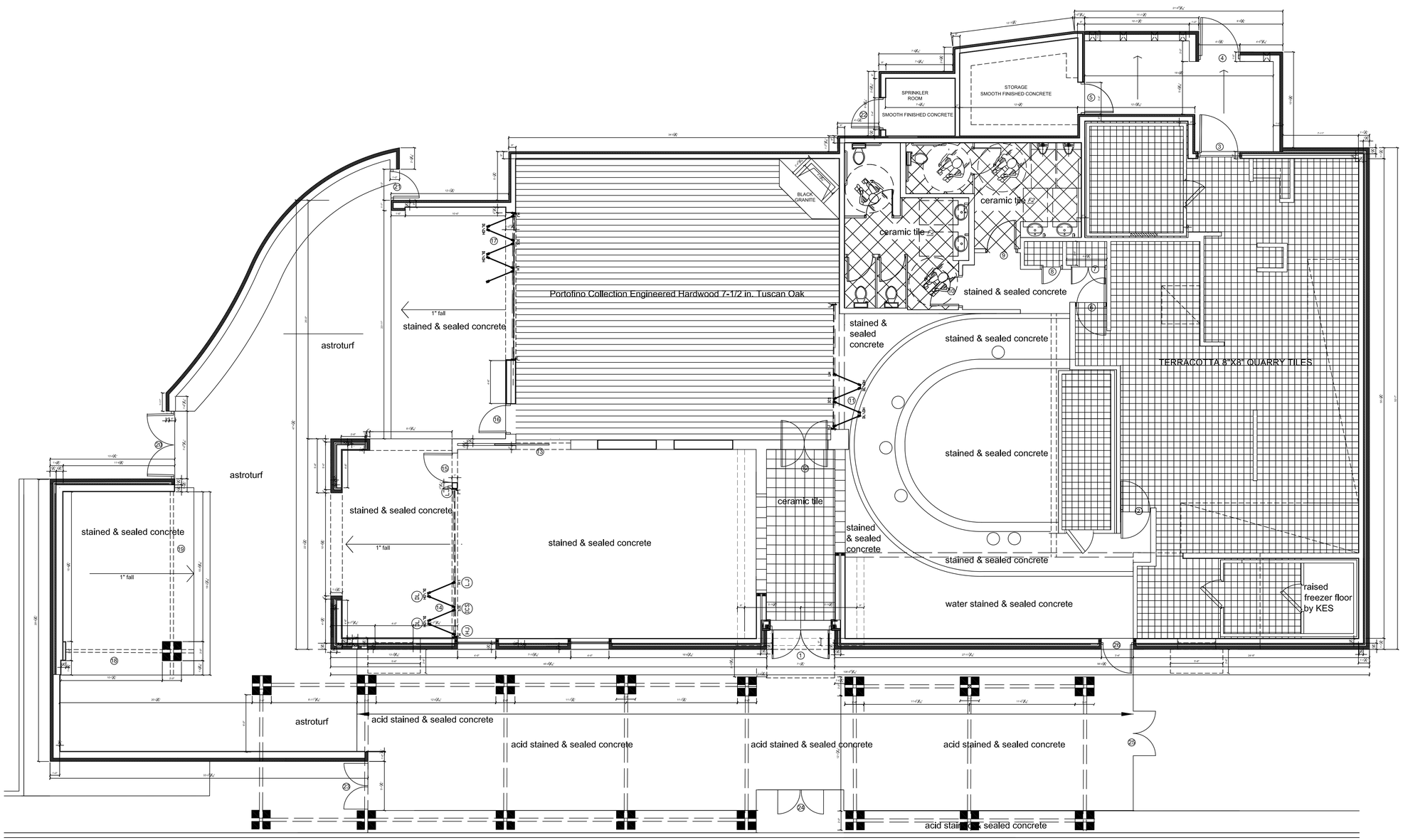
Furnishing Plan

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A2.6



1 A2.7 FLOOR FINISHES PLAN
SC: 3/16"=1"

FLOOR FINISH LEGEND

TERRACOTTA 8"X8" QUARRY TILES

Portofino Collection Engineered Hardwood
7-1/2 in. Tuscan Oak

Floor & Decor
Festival
BLACK AND WHITE BASKET WEAVE
PORCELAIN MOSAIC
Mapei 27 Silver Ultracolor Plus FA Grout
SKU: 100831817

Silk Black Ceramic Tile is 13 x 13 with matte finish

E2 Porcelain tiles - American Tile and Stone
Micron 12"x12" Grey
Laticrete 1/8" Spectralock grout as per manufactu
Color - TBD

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02.21.2023

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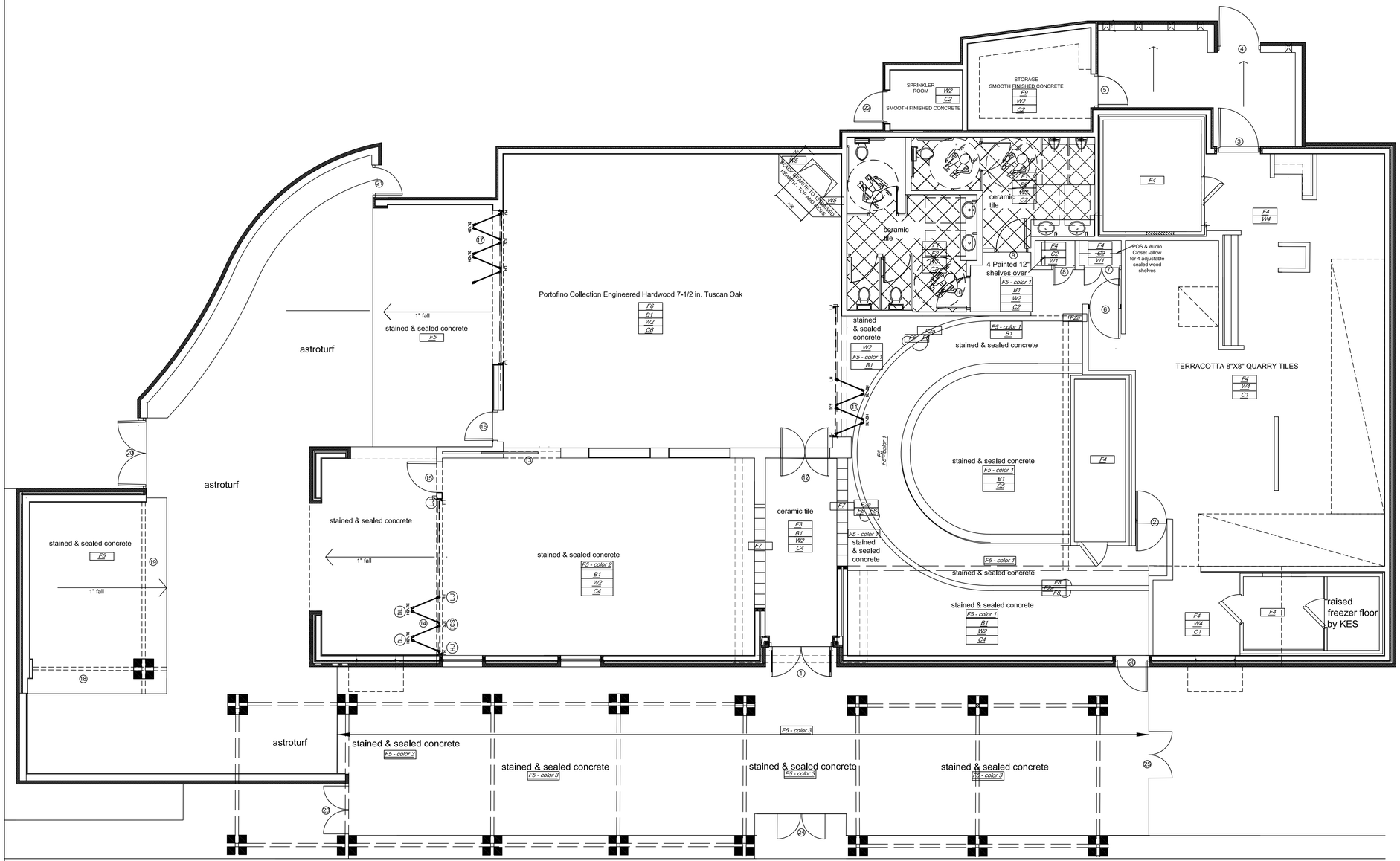
FLOOR FINISHES LAYOUT
23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A2.7



1 A2.7 FLOOR FINISHES PLAN
SC: 1/8"=1"

ROOM FINISH LEGEND

ROOM FINISH MATERIALS SCHEDULE

Furring, framing, and blocking shall be of non-combustible materials meeting codes.

FLOOR

F1 Porcelain tiles - American Tile and Stone Stonepeak, Parkland collection, 12"x24" Arctic tile forwall infill 12"x24" Redwood tile border and 6"x24" skirting tile Laticrete 1/8" Spectralock grout as per manufacturers spec. Color - TBD

F2 Porcelain tiles - American Tile and Stone Micron 12"x12" Grey floor tiles Laticrete 1/8" Spectralock grout as per manufacturers spec. Color - TBD

F2# Stained and sealed concrete - gray color stain

F3 Porcelain black and white intricate tile pattern

F4 Terracotta 8"x8" quarry tiles & coved base from

F5 Stained and sealed concrete - allow for 3 earthy color stains. Allow for two 10'x10' trials per color.

F6 Portofino hardwood flooring Installed by floating method with rubber mat base. Base and transition strips to be stained oak to match the flooring or as close as possible with all trim as required.

F7 Silk Black Ceramic Tile is 13 x 13 with matte finish

F8 NOTE: 1"X¼" Brass insert separator

F9 TNEMEC Epoxy OEA

NOTE: SUPPLY AND INSTALL SEALED HARDWOOD TRANSITION STRIP BETWEEN STAINED AND SEALED FLOOR FINISH AND CERAMIC TILES

BASE

B1 WB 222 Oak Stained and sealed OEA with Sherwin Williams Waterbourne Polyurethane Satin Varnish. Allow for 3 stain color samples

WALLS

W1 Paint - Sherwin Williams (provide 3 sample colors 4'x4') One coat primer and 2 coats latex eggshell paint

W2 Gell Stained and sealed birch veneer on subframe with KB242 trim and edge trim to suit. Ref A5.0/7

W3 Porcelain tiles - American Tile and Stone Stonepeak, Parkland collection, 12"x24" Arctic tile for general infill 12"x24" Redwood tile border and 6"x24" skirting tile Laticrete 1/8" Spectralock grout as per manufacturers spec. Color - TBD

W4 MARLITE P-106 BEIGE WITH TRIM PEEBLE FINISH

W5 Brazos River dry stack by Capitol Products

CEILING All ceiling material to be class A

C1 Kitchen - Armstong OEA vinyl covered 2'x4' ceiling tile, White 9/16 metal grid to match

C2 Gypboard ceiling. Paint - Sherwin Williams (provide 3 sample colors 4'x4').One coat primer and 2 coats latex eggshell paint

C3 Exposed area - No ceiling. Apply decorative 'Midnite Blue' paint color and primer to u/s of deck and prefab trusses as per manufacturers specification.

C4 Gell Stained and sealed birch veneer on subframe with KB242 trim and edge trim to suit. Ref A5.0

C5 Exposed HVAC Ducts and grilles - Kawneer Permaflucr paint color as per manufacturers specification - TBD., Duct layout as per MEP

C6 Gypboard coffered ceiling. Paint - Sherwin Williams (provide 3 sample colors 4'x4').One coat primer and 2 coats latex eggshell paint, Copper sheet edge surround. Ref. A6.2/1

LC *lavatory counter*
Black Galaxy granite slab from Young Stone with chamfered edges and splash back

EXTERIOR AWNINGS

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ROOM FINISHES LAYOUT

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A2.8

Section 325200 SYNTHETIC TURF
Artificial Turf – Sit in Sport 50

PART 1 – GENERAL

1.01 WORK

A. Furnishing, delivery, installation and warranty of a complete synthetic turf system including under field drainage, field turf, field markings and resilient infill material.

1.02 RELATED SECTIONS

A. Section 02300 – Earthwork
B. Section 321123 – Aggregate subbase

1.03 REFERENCES

A. ATSM Standard Test Methods
- **D1577** – Standard Test Method for Linear Density of Textile Fiber
- **D5848** – Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Covering
- **D418** – Standard Test Method for Testing Pile Yarn Floor Covering Construction
- **D1338** – Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
- **D1682** – Standard Method of Test for Breaking Load and Elongation of Textile Fabrics
- **D5034** – Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test)
- **F1015** – Standard Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces
- **F1551** – Standard Test Methods for Water Permeability
- **D1557** – Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

B. National Federation of High School (NFHS) Rules, as applicable. FIFA Rules of the Game or NCAA Soccer Rules, as applicable.
C. STC Suggested Guidelines for the Essential Elements of Synthetic Turf Systems

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WM

Section 325200 SYNTHETIC TURF
Artificial Turf – Sit in Sport 50

1.04 SITE EXAMINATION

A. The Contractor shall verify clearing and grubbing operations were adequate prior to repairing subgrade.
B. The Contractor, along with the Engineer, Grading Subcontractor (if applicable) and Synthetic Turf Subcontractor (if applicable), shall attend a joint inspection of the completed sub-base assembly for the purpose of determining the acceptability of that surface prior to installing the synthetic turf product and to confirm actual site dimensions.
C. The inspection shall include a check for planarity. The finished surface shall not vary from a true plane more than 1/4" in 10 feet when measured in any direction. The Contractor shall provide all required tools and materials needed for the planarity check, which may include but not be limited to, a laser level, string line, straight edge and/or other assessment materials. The Contractor shall mark in the field any deviations from grade in excess of those specified above, as well as provide a marked up plan locating the deviations. The Contractor shall correct any deviations to the satisfaction of the Engineer and Synthetic Turf installer.
D. The compaction of aggregate base shall be 95% to Standard Proctor and surface tolerances shall not exceed ½" over 10 feet.
E. The Contractor shall have a state registered surveyor conduct an elevation survey of the field area in a 25' grid to determine and verify that subgrade elevations and slopes are within previously specified tolerances. This elevation survey may require further verification of smaller areas within the 25' grid if determined necessary by the Engineer.
F. When any or all corrective procedures have been completed, the finished sub-base surface must be re-inspected, with the same representatives attending as the initial inspection. If required, additional repair and inspections are to be conducted until the subbase surface is deemed acceptable by the Engineer and Synthetic Turf installer
G. Once the sub-base surface has been deemed acceptable, the Contractor shall submit a written certificate indicating the acceptance of work:
1. The sub-base construction finished surface as totally suitable for the application of the selected synthetic turf system, and
2. The sub-base construction as totally suitable for work under this section to proceed with the final installation and fully warrant the athletic surface installation for the period and conditions specified herein.
H. Commencement of work under this section shall constitute acceptance of the work completed under other sections by the Contractor, acceptance of dimensions of the

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Section 325200 SYNTHETIC TURF
Artificial Turf – Sit in Sport 50

subbase, and hence, no claims for extra work based upon these conditions will be permitted.

1.05 ENVIRONMENTAL CONDITIONS

A. Install synthetic turf surfacing only when ambient air temperature is 35 F or above and the relative humidity is below 35% or as specified by the product manufacturer. Installation will not proceed if rain is imminent.
B. Install product only when prepared base is suitably free of dirt, dust, and petroleum products, is moisture free and sufficiently secured to prevent unwanted pedestrian and vehicular access.

1.06 QUALITY CONTROL

A. **Manufacturer Qualifications:** Company specializing in manufacturing products specified in this section. The Turf Manufacturer:
1. Basis of design shall be "Sit In Sport 50" synthetic turf system as manufactured by Controlled Products, LLC. (800) 562-4487, www.cptturf.com
2. Materials other than those listed must be approved 15 days prior by written addendum. Materials from non-approved manufacturers will not be accepted.
3. Must be experienced in the manufacturing of tall pile synthetic infill grass systems with the same fiber as specified.
4. Source Limitations: Obtain synthetic turf fiber through one source from a single manufacturer and provide fiber manufacturer's warranty.
5. Manufacturer must be a member in good standing with the STC.
6. Manufacturer must be FIFA approved manufacturer.
7. Manufacturer must utilize best practices as certified by ISO-9001 and ISO-14001.
8. Manufacturer must be owned and operated in the U.S.A.
9. Manufacturer must have no periods of insolvency over the last 25 years.

B. **Installer Qualifications:** Company specializing in performing the work of this section.
1. The Synthetic Turf Installer must provide competent workmen skilled in this type of synthetic grass installation. All technicians must have installed tall pile synthetic turf.
2. The designated Supervisory Personnel on the project must be certified, in writing by the Turf Manufacturer, as competent in the installation of this material, including seaming and proper installation of the infill mixture.

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Section 325200 SYNTHETIC TURF
Artificial Turf – Sit in Sport 50

C. Prior to the beginning of installation, the Synthetic Turf Installer shall inspect the subbase. The installer will accept the sub-base in writing when the general contractor provides test results for compaction, planarity and permeability that are in compliance with the synthetic turf manufacturer's recommendations and as stated herein.
D. The Synthetic Turf Installer shall provide the necessary testing data to the Owner that the finished field meets the required initial shock attenuation, as per ASTM F1936.
E. Remove defective Work, whether the result of poor workmanship, defective products or damage, which has been rejected by the Engineer as unacceptable. Replace defective work in conformance with the Contract Documents.

1.07 SUBMITTALS

A. **Submit the following with Proposal:**
1. Submit the exact product name/description as well as the name and location of the manufacturers and suppliers of each component. Manufacturers and suppliers must not be changed after the contract is awarded unless approved by the Owner in writing.
2. Submit two (2) samples, 12"x12" minimum size, illustrating details of finished product as bid, including full cross section of subbase, turf, and infill material.
3. Product Literature: Submit two (2) copies of manufacturer's recommended installation and maintenance information, including any technical criteria for evaluation of the installed product. Descriptions of all equipment recommended for the maintenance and repair of turf product, as well as a list of any activities not recommended relative to the warranty.
4. Submit a 1-lb sample of the selected bid infill material(s).
5. A letter and specification sheet certifying that the products of this section meet or exceed requirements.
6. Certified copies of independent (third-party) laboratory reports on ASTM tests as follows:
a. Pile Height, Face Width & Total Fabric Weight, ASTM D418 or D5848
b. Primary & Secondary Backing Weights, ASTM D418 or D5848
c. Tuft Bind, ASTM D1335
d. Grab Tear Strength, ASTM D682 or D5034
7. ASTM test submittals may vary by no more than ¼" and 6 oz. of the specified product to bid. Bid winner must show NEW ASTM TESTS with contract submittals.
8. Name and experience of the designated supervisory personnel assigned to this project shall be submitted with the proposal. Changes to this assignment after

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Section 325200 SYNTHETIC TURF
Artificial Turf – Sit in Sport 50

contract can only be made if approved in writing by the Owner. Include a listing of other on-site personnel and their experience.
9. The Synthetic Turf Installer and Turf Manufacturer shall provide evidence that the turf system does not violate any other manufacturer's patents, patents allowed or patents pending.
10. The Synthetic Turf Installer and the Turf Manufacturer shall provide complete information on its warranty/insurance policy and coverage, as noted in Section 1.08. Provide a complete sample copy of all warranty documentation.

B. **Prior to ordering of materials:**
1. The Contractor shall submit Shop Drawings indicating:
a. Field Layout.
b. Field Marking Plan and details for Soccer, Men's Lacrosse, and Women's Lacrosse if required.
c. Mid-field emblem layout with color samples.
d. Roll/Seaming Layout.
e. Methods of attachment, field openings and perimeter conditions.
2. The Turf Manufacturer must submit the fiber manufacturer's name, type of fiber and composition of fiber.
3. **Shop Drawings:** Shop drawings are to be submitted for review by the Engineer prior to manufacture of product and are to contain information regarding locations of seams, anchorage details, goal post/insert details, line and event marking locations and dimensions, turf roll widths and dimensions.

C. **Prior to Final Acceptance, the Contractor shall submit to the Owner:**
1. Two (2) copies of Maintenance Manuals, which will include all necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and markings. Also address remedial measures for graffiti removal.
2. Written verification of a suitable training session for the Owner's maintenance staff on how to maintain the completed installation.
3. Project Record Documents: Record actual locations of seams, drains or other pertinent information.
4. Enter into a contract with the Owner to provide annual operations and maintenance assistance for one (1) year. Provide contract, contact information and schedule first visit. Quarterly each year provide operations and maintenance that includes:
a. On-site inspection analysis of seams, infill, inlay, edge, and field inserts.
b. The contractor shall sweep and groom the field at each quarterly visit.

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Section 325200 SYNTHETIC TURF
Artificial Turf – Sit in Sport 50

c. Synthetic turf report with results of inspection analysis, photos, results of cleaning process, recommendations for future cleaning/maintenance.
d. The Contractor must execute an annual operations and maintenance assistance contract before substantial completion can be approved.
5. Test Results: Test certifications issued by an independent testing agency that the synthetic surface meets with the requirements of the ASTM tests noted herein are to be submitted.

Base Conditions Acceptance: Prior to installation of the synthetic turf system, the Contractor is to submit in writing an acceptance of the compacted base and sub-base system as being acceptable by the turf manufacturer and suitable for the successful installation of the proprietary synthetic turf system.

1.08 WARRANTY

A. The Contractor shall provide a minimum eight (8) year, 3rd party insured warranty policy by the manufacturer, against defects in materials and workmanship. Defects shall include, but not be limited to ultraviolet ray fading, degradation, or excessive wear of fiber.
B. Warranty must be backed by a surety licensed to do business in the State of Georgia.
C. Submit information confirming that a 3rd Party Insurance Policy, non-cancelable, non-prorated, and pre-paid for the entire duration of the warranty is in effect covering this installation, and underwritten by a Best A Rated insurance Carrier.
D. Warranty shall be for full replacement of any damaged product within the warranty period. Warranty shall be comprehensive and sufficient to replace entire field if necessary.
E. Warranty shall become effective from the date of substantial completion.
F. The Warranty shall contain no usage limits for warranted field.
G. Submit Manufacturer Warranty and ensure that forms have been completed in Owner's name and registered with Manufacturer.
H. Supply Warranty Insurance Certificate with complete information on contacting the Insurance Carrier should a claim need to be made. Warranty insurance policy shall have the Owner listed as insured.

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Section 325200 SYNTHETIC TURF
Artificial Turf – Sit in Sport 50

PART 2 PRODUCTS

2.01 SUPPLIER QUALIFICATIONS

A. The Owner has conducted an extensive review of synthetic turf products, including visiting installed sites and review of other agencies' review criteria. Based upon their research, they have established the following criteria for acceptance of a synthetic turf product. No variation from these criteria shall be allowed. The Owner's review is considered final.
B. The Synthetic Turf Installer shall have minimum experience of at least 5 years, actively selling, installing and maintaining in-fill synthetic turf project of similar size.
C. The Respondent must have installed a minimum of 50 full size (50,000 sf or larger) in-filled synthetic turf fields.
D. The Synthetic Turf Installer must provide a list of references based on previous installations.
E. The Respondent must be a member in good standing with the ASBA (Athletic Sports Builders Association) and STC (Synthetic Turf Council).
F. Installation team shall be established, insured installation firm experienced as a premium turf installer with suitable equipment and supervisory personnel, with a minimum of 5 years' experience with 15 foot wide tufted materials.
G. Installation team shall be trained and certified, in writing, by the turf manufacturer, as competent in the installation of the specified material, including seaming and proper installation of the infill mixture.

2.02 TURF SYSTEM

A. **Turf Fiber:**
1. The turf fiber must be tufted to the backing with a minimum tuft bind of 10 pounds.
2. The tufted fiber weight shall be a minimum of 40 ounces per square yard.
3. The turf fiber shall be 100% polyethylene.
4. The turf fiber shall be non-abrasive and a minimum of 100 microns thick.
5. The turf fiber must contain less than 100 ppm of lead in all colors.
6. The turf fibers must be from the same dye lots.
7. The turf fibers must be from a single source.
8. The turf fibers must be guaranteed for a period of Eight Years not to fade or fall (as distinguished from a change in texture) or have a pile height decrease to 50% of pile height as result of UV degradation.
9. The infill must be within ¼" of the tips of the fibers upon completion of the install.

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Section 325200 SYNTHETIC TURF
Artificial Turf – Sit in Sport 50

10. The turf fiber must retain a minimum of 75% of its original fibril width after 10,000 cycles on the Lisport Studded Roll Test Machine.
11. The pile fiber shall possess the following characteristics:

Characteristic	Value	Test
Linear Density (Denier)	10,800 Combined	ASTM D 1577
Yarn Thickness	310 Microns (mono)	ASTM D 3218
Tensile Strength	135 N (mono)	ASTM D 2256
Pile Weight*	40 oz./yd2	ASTM D 5848
Fiber manufacturer must be from the same source		
The above specifications are nominal. *Values are +/-5%.		

12. The pile fabric shall possess the following physical characteristics:

Characteristic	Value	Test
Finished Pile Height*	2" (50mm)	ASTM D 5823
Product Weight (total)*	68 oz./yd2	ASTM D 3218
Primary Backing Weight**	7.4 oz./yd2	ASTM D 2256
Secondary coating Weight**	22 oz./yd2	ASTM D 5848
Fabric Width	15' (4.57m)	ASTM D 5793
Tuft Gauge	1/2"	ASTM D 5793
Grab Tear Strength	200-lb-F	ASTM D 5034
Tuft Bind	>10-lb-F	ASTM D 1335
Infill (Sand)	3.6 lb Silica Sand	None
Infill (Rubber)	2 lbs. SBR Rubber	None
Underlayment Pad	Trocellen Progame 5015XC	
Except where noted as a minimum, the above specifications are nominal.		
* Values are +/-5%. **All values are +/-3 oz./yd2.		

B. **Backing Material**
a. **Primary Backing:**
i. Primary backing must be a dual layered woven polypropylene material.
ii. Primary backing system weight must be a minimum of 7.0 ounces/square yard.
b. **Secondary Backing:**
i. Secondary backing system weight must be a minimum of 22 ounces/ square yard.

Revision 3.0 June 2014
WM

Section 325200 SYNTHETIC TURF
Artificial Turf – Sit in Sport 50

ii. Secondary backing shall saturate the primary backing and effectively lock the fiber tufts in place to the primary backing.
iii. Secondary backing must be a heat activated polyurethane coating with **no vegetable based polyols.**
iv. Secondary backing system shall have minimum tuft bind strength of 10 pounds.
v. Secondary backing must have Drainage Perforations: 3/16" to ¼" diameter at 4 inches or less on center each way. Non-perforated backing is not acceptable.

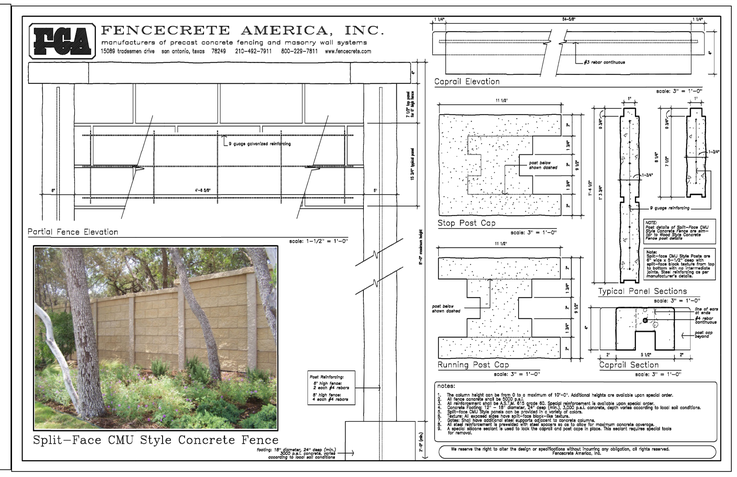
C. **Turf roll seams:** to be sewn or glued on site so that no openings larger than the porous backing mat openings are created. Roll width to coincide with tufted-in sports line markings where possible. All turf fabric edges to be securely bound as per the perimeter detail design. Adhesives for joining seams of turf together shall be Nordot 34G, Mapei 2K, Turf Claw, hot melt technology or equivalent. No substitutions.
D. **Fabric surface:** shall be constructed and installed in minimum widths of 15 feet with no longitudinal or transverse seams, except for inlaid lines with a finish roll assembly. Seams shall be 15'-0" apart. Rolls that do not comply with the proper length or conform to the seaming diagram, as approved prior to installation, shall be rejected from the site. No fitted pieces shall be allowed to true alignment. Parallel seams only are acceptable in the main playing areas. No head seams are acceptable on the sports fields.
E. The entire system shall be resistant to weather, including ultra-violet light and heat degradation; insects, rot, mildew and fungus growth and be non-allergenic and non-toxic.
F. **Fiber Colors:** Submit samples of the full available color palette for owner approval prior to placing order for turf including at a minimum the below listed colors: (Specified)
- Color 1: Grass, green in standard color, as selected by the Owner
- Color 2: White for soccer lines and markings
- Additional colors as needed.

G. The Mid-field Center Logo shall be provided by the owner in a standard PDF or EPS file to the selected contractor. Contractor shall submit a shop drawing of Logo to include colors and dimensions for approval by the owner prior to ordering. (Specify or Delete)

2.03 LINES, MARKINGS AND IN-LAID TURF

A. All line material is to be identical dimensionally and of the same material to that used for the main playing field fiber system.
B. Inlaid material as indicated on the drawings to be identical, except for fiber color, as the main turf field.

Revision 3.0 June 2014
WM



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REGISTERED ARCHITECT MICHAEL GREGORY LEGG STATE OF TEXAS
02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

Astroturf specs & Fencecrete specs

2311O WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A2.8A

RESPONSIBILITY MATRIX					
NOTE:UNLESS OTHERWISE NOTED, ALL ITEMS ILLUSTRATED IN THESE DRAWINGS ARE PROVIDED BY THE GENERAL CONTRACTOR					
SITE ITEMS	SUPPLIED BY OWNER	SUPPLIED BY GC	INSTALLED BY OWNER	INSTALLED BY GC	DESCRIPTION
SITE PYLON	X		X		VERIFY / COORDINATE EXACT LOCATION PRIOR TO ELECTRICAL ROUGH-IN AND INSTALLATION
SITE PYLON SIGN FOUNDATION	X		X		VERIFY / COORDINATE EXACT LOCATION PRIOR TO ELECTRICAL ROUGH-IN AND INSTALLATION
DRAINAGE SYSTEM		X		X	
REAR BOUNDARY FENCE		X		X	PAINT SW – BALANCE BEIGE
ASTROTURF		X		X	
PERGOLA/REMOTE BLINDS/FENCING		X		X	
DUMPSTER ENCLOSURE		X		X	REFER TO STRUCTURAL DETAILS
LANDSCAPING		X		X	COORDINATE INSTALLATION – ATTACH FENCE METAL PLANTER FRAMES SUPPLIED BY OWNER
IRRIGATION SYSTEM		X		X	COORDINATE INSTALLATION WITH THIRD PARTY CONTRACTOR. GENERAL CONTRACTOR RESPONSIBLE FOR WATER TAP, METER, AND BACKFLOW DEVICE.
IRRIGATION SLEEVES		X		X	LOCATION OF SLEEVES SHALL BE COORDINATED WITH IRRIGATION CONTRACTOR AND ARCHITECT
BUILDING EXTERIOR	SUPPLIED BY OWNER	SUPPLIED BY GC	INSTALLED BY OWNER	INSTALLED BY GC	DESCRIPTION
EXTERIOR BUILDING SIGNAGE	X		X		VERIFY / COORDINATE EXACT LOCATION PRIOR TO ELECTRICAL ROUGH-IN AND INSTALLATION REFER TO VENDOR BRAND BOOK FOR SIGN LOCATIONS
PERGOLA		X		X	
PERGOLA –REMOTE DROP DOWN BLINDS		X		X	
AWNINGS/BLINDS		X		X	PROVIDE UTILITIES FOR NOTED ITEMS
PATIO FURNITURE	X			X	PROVIDE POWER AS REQUIRED
BUILDING INTERIOR	SUPPLIED BY OWNER	SUPPLIED BY GC	INSTALLED BY OWNER	INSTALLED BY GC	DESCRIPTION
FIXED STAINLESS STEEL COUNTERS, PANELS, WALL CAPS; CORNER GUARDS)		X		X	COORDINATE INSTALLATION WITH FOOD SERVICE CONTRACTOR, INSTALLATION OF STAINLESS STEEL WALL PANELS (INCLUDING INSULATED PANELS BELOW HOOD) BY GENERAL CONTRACTOR
KITCHEN EQUIPMENT	X		X		COORDINATE INSTALLATION WITH FOOD SERVICE CONTRACTOR / ROUGH-INS AND FINAL CONNECTIONS BY GENERAL CONTRACTOR
WALK-IN COOLER/FREEZER AND REFRIGERATION EQUIPMENT	X		X		COORDINATE INSTALLATION WITH FOOD SERVICE CONTRACTOR / ROUGH-INS AND FINAL CONNECTIONS BY GENERAL CONTRACTOR
KITCHEN EXHAUST HOOD (FANS AND CURBS)		X		X	
FIRE SPRINKLER & SUPPRESSION SYSTEM,		X		X	PROVIDE SHOP DRAWINGS FOR FIRE MARSHAL APPROVAL.
FURNITURE (BENCHES, COUNTERS BOOTHS, TABLES AND CHAIRS)	X			X	COORDINATE INSTALLATION WITH FOOD SERVICE CONTRACTOR, TABLES AND CHAIRS INSTALLED BY GENERAL CONTRACTOR
ARTWORK	X			X	
TV'S	X		X		GC TO ASSIST WITH TRUSS HUNG TV'S & PROVIDE ADEQUATE BLOCKING FOR WALL HUNG
SECURITY SYSTEM	X		X		COORDINATE INSTALLATION WITH SUPPLIER
POS AND LOW VOLTAGE WIRING	X		X		COORDINATE EXACT LOCATIONS WITH VENDOR, IT/KDS/AUDIO CONDUIT AND PULL STRING BY GENERAL CONTRACTOR
SOUND SYSTEM	X		X		COORDINATE INSTALLATION WITH SUPPLIER, POWER BY GENERAL CONTRACTOR
MILLWORK BAR COUNTER		X		X	
MILLWORK BAR UPPER CABINET	X	X		X	COORDINATE INSTALLATION WITH MILLWORK CONTRACTOR / ROUGH-INS AND FINAL CONNECTIONS BY GENERAL CONTRACTOR
RESTROOM LAVATORIES, SINKS AND MIRRORS		X		X	COORDINATE INSTALLATION WITH FOOD SERVICE CONTRACTOR / ROUGH-INS AND FINAL CONNECTIONS BY GENERAL CONTRACTOR FAUCET BY OWNER
R.O. SYSTEM	X			X	COORDINATE ROUGH-IN LOCATIONS WITH VENDOR, STARTUP BY OWNER
SCHEDULE AND INSTALLATION NOTES:					
1.	FOR OWNER FURNISHED ITEMS, THE CONTRACTOR SHALL BE RESPONSIBLE TO RECEIVE, UNLOAD AS REQUIRED, STORE, INVENTORY, AND BE RESPONSIBLE TO THE EXTENT OF CARRYING NECESSARY INSURANCE TO COVER ITEMS IN CASE OF THEFT, FIRE LOSS OR MALICIOUS DAMAGE. IN ADDITION, THE CONTRACTOR SHALL BE EXPECTED TO PROVIDE PROTECTION ACCEPTABLE TO OWNER OF ALL OWNER FURNISHED ITEMS FROM CONSTRUCTION ACTIVITIES.				
2.	THE OWNER WILL PROVIDE THE CONTRACTOR WITH A LISTING OF SUPPLIERS / VENDORS AND RELATED CONTACT INFORMATION FOR ALL OWNER–FURNISHED / CONTRACTOR–INSTALLED ITEMS.				
3.	THE CONTRACTOR SHALL PROVIDE ALL ROUGH–IN SERVICES AND MAKE ALL FINAL CONNECTIONS. THE CONTRACTOR SHALL BE REQUIRED TO REQUEST SHOP DRAWINGS, CATALOG CUTS, SCHEDULES, ETC., FROM THE OWNER OR OWNER'S VENDORS AS NECESSARY TO PROPERLY COORDINATE UTILITY CONNECTIONS, PREPARATIONS, ROOF OPENINGS, AND EQUIPMENT SUPPORTS TO ACCOMMODATE ACTUAL FURNISHED ITEMS AND EQUIPMENT, WHERE NOTED.				
4.	THE CONTRACTOR SHALL DESIGNATE A COMPETENT INDIVIDUAL ON HIS STAFF AS HIS AUTHORIZED REPRESENTATIVE FOR OWNER–FURNISHED ITEMS WHO WILL BE RESPONSIBLE FOR THE COLLECTION AND DISTRIBUTION OF INFORMATION RELATIVE TO DELIVERY SCHEDULES, PROPER RECEIPT AND REPORTING OF ALL SHIPMENTS AS DESCRIBED WITHIN THESE DOCUMENTS, INCLUDING PROPER STORAGE AND HANDLING OF EQUIPMENT AT ALL TIMES.				

ABOVE ALL AWNINGS 1101 S Grand Ave #A Santa Ana, CA 92705 - (714) 556-1151

Spear Awning over entrance Doors(#1 & #26) & Windows x6 Ref:A2.0 & A4.0. Sizes to suit drawings.

Drop Roll Sunscreen X5 per front plan pergola

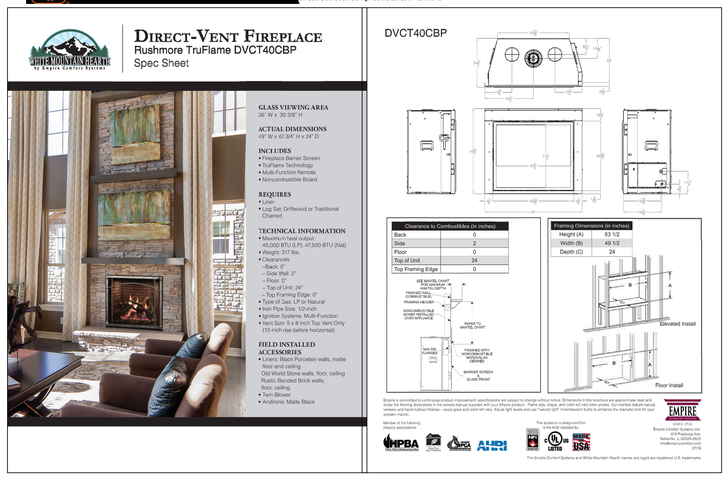
Ref: A1.0 (North side pergola bay near gates & patio bar not required)

Commercial Sun Screens with side frame and remote operation for use at front pergola between each bay. Sizes to suit drawings.

SolarFix PTFE thread

WOODLANDDIRECT

Lynden Nugteren | Technical Sales Representative
lynden.nugteren@woodlanddirect.com | www.woodlanddirect.com
direct: 586.803.7354 **p**: 800.919.1904 **ext**. 349



PELLA SLIDING FOLDING DOORS

Maribel Zimmerman | Architectural Rep
Pella Architectural Solutions
Pella Windows & Doors
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6510 Blanco Rd. San Antonio, TX 78216
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SECTION08 14 76.13

BIFOLDING WOOD PATIO DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Bifold wood patio doors with aluminum-clad exterior.

1.2 RELATED REQUIREMENTS

A. Section 07 27 00 – Air Barriers: Water-resistant barriers.

B. Section 07 92 00 – Joint Sealants: Sealants.

1.3 REFERENCE STANDARDS

A. American Architectural Manufacturers Association (AAMA):
1. AAMA 2604 – Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
2. AAMA 2605 – Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. ASTM International (ASTM):
1. ASTM C 1048 – Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.
2. ASTM E 330 / E 330M – Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
3. ASTM F 842 – Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact.

C. Window and Door Manufacturers Association (WDMA):
1. AAMA/WDMA/CSA 101/I.S.2/A440 – North American Fenestration Standard/Specification for Windows, Doors, and Skylights.
2. WDMA I.S. 4 – Industry Specification for Preservative Treatment for Millwork.

1.4 SUBMITTALS

A. Submittals: Comply with Division 01.

B. Product Data: Submit manufacturer's product data, including installation instructions.

C. Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, tolerances, materials, components, fabrication, fasteners, weatherstripping, hardware, finish, options, and accessories.

D. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.

E. Manufacturer's Project References: Submit manufacturer's list of 10 successfully completed bifold patio door projects of similar size and scope to this Project, including project name and location, name of architect, and type and quantity of bifold patio doors furnished.

F. Cleaning and Maintenance Instructions: Submit manufacturer's cleaning and maintenance instructions.

G. Warranty Documentation: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Manufacturer regularly engaged in the manufacturing of bifold patio doors of similar type to that specified for a minimum of 10 years.

B. Installer's Qualifications:
1. Installer regularly engaged in installation of bifold doors of similar type to that specified for a minimum of 5 years.
2. Use persons trained for installation of bifold doors.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery Requirements:
1. Deliver materials to site undamaged in manufacturer's original, unopened containers and packaging, with labels clearly identifying manufacturer and product name.
2. Include installation instructions.

B. Storage and Handling Requirements:
1. Store and handle materials in accordance with manufacturer's instructions.
2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
3. Store doors off floor or ground.
4. Provide full support under framework when storing, handling, and installing doors.
5. Allow sufficient spacing between doors during storage for ventilation.
6. Do not lift doors by head member only.
7. Protect doors from weather, direct sunlight, and construction activities.
8. Protect materials and finish during storage, handling, and installation to prevent damage.

1.7 AMBIENT CONDITIONS

A. Do not install patio doors under ambient conditions outside manufacturer's limits.

1.8 WARRANTY

A. Warranty Period: 10 years with 20-year nonlaminated insulating glass.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Pella Corporation, 102 Main Street, Pella, Iowa 50219. Local branch: Pella South Texas, LLC, 6510 Blanco Road, San Antonio, TX 78216. Local phone 210-735-2030.

B. Substitutions: [Not permitted]

C. Single Source: Provide materials from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Performance with manufacturer's Standard Sill:
1. Out-Swing Door: Meet or exceed AAMA/WDMA/CSA 101/I.S.2/A440 ratings, SHD-R15, WDMA Hallmark Certified.
2. Unit Assembly: Withstand both positive and negative uniform static air pressure difference without damage, ASTM E 330.
3. Air Infiltration, 1.57 psf wind pressure: 0.15 cfm/ft2 of frame.
4. Design Pressure: 15 psf.
5. Water Resistance: 2.92 psf.

B. Forced Entry Resistance, ASTM F 842, Minimum Security Grade: 10.

C. Meets U.S. ENERGY STAR guidelines.

2.3 BIFOLD PATIO DOORS

A. Bifold Patio Doors: Pella Reserve Series bifold wood patio doors with aluminum "EnduraClad Plus" exterior.

B. Frame:
1. Head and Jamb: Select softwood, immersion treated with "EnduraGuard" wood protection formula in accordance with WDMA I.S. 4 for protection against effects of moisture, decay, stains from mold and mildew, and protection against termite damage.
2. Interior Exposed Surfaces: Pine, edge-banded on straight members.
3. Exterior Surfaces: Thermally broken, clad with aluminum at head and jambs.
4. Out-Swing Wall Depth: 4-9/16 inches with frame depth of 6 inches.
5. Factory-Finished Jamb Extensions: Ordered separately from unit and field applied.
6. Sill:
a. Profile: Flush
b. Material and Finish: Thermally broken, extruded aluminum with bronze anodized finish.
7. Frame Width: Less than 240 Inches: Receive 1 piece for head and 1 piece for sill.

C. Door Panels:
1. Material: Select softwood, immersion treated with "EnduraGuard" wood protection formula in accordance with WDMA I.S. 4 for protection against effects of moisture, decay, stains from mold and mildew, and protection against termite damage.
2. Interior Exposed Surfaces: Clear pine veneer.
3. Exterior Surfaces: Clad with extruded aluminum.

4. Panel Stiles and Rails: Three-ply construction, randomly finger-jointed blocks laminated with water-resistant glue and veneered on both sides.
5. Units over 8 Feet High: Panel stiles constructed with LVL core with finger-jointed edge bands on both sides and veneered on both faces.
6. Corners: Urethane-silicone hybrid, sealed and secured with metal fasteners.
7. Panel Thickness: 2-1/16 inches.
8. Panel Exterior Profile: Ogee.
9. Panel Interior Profile: Ogee.

D. Weatherstripping:
1. Foam Leaf Seal:
a. Along jambs, head, and sill of frame.
b. Along astragal.
c. Along stiles of panel.
2. Mohair: Along head of frame.
3. Bristle Rainscreen: Along bottom of panel.
4. Neoprene Foam Strips: Between off-set panel hinges.

E. Glazing System:
1. Fully Tempered Float Glass: ASTM C 1048.
2. Insulating Glass: Urethane-glazed, 13/16-inch, dual-seal insulating glass.
a. SunDefense Low-E with argon.

F. Exterior:
a. Clean and etch aluminum surface of oxides.
b. Pre-treat with chrome phosphate conversion coating.
c. Pre-treat with chromic acid sealer/rinse.
d. Top coat with baked-on 70 percent fluoropolymer-based enamel.
e. Color: To be selected by Architect.
f. Performance Requirements of Exterior Aluminum Finishes: All performance requirements of AAMA 2605.

G. Interior: Factory-prefinished stain
1. Color: To be selected by Architect.

H. Hardware:
1. Hinges:
a. Doors: Top-pivot hinge, middle-pivot hinge, and bottom-pivot hinge connecting a panel to jamb where appropriate.
b. Doors Over 8'-7/8" Frame Height: Top hinge, bottom hinge, and 2 middle hinges connecting adjacent panels.
c. Finish Where Hinge Barrel Faces Interior: Baked Enamel Satin Nickel.
d. Finish Where Hinge Barrel Faces Exterior: Baked Enamel Satin Nickel.
2. Passive Panel Locks:
a. Hardware Style: Dualpoint lock handle, on applicable panels not adjacent to passage panel.
b. Handle Height: 36 inches from bottom of panel.
c. Mortised multipoint locking system with shootbolts at head and sill shall engage simultaneously.
3. Passive Panel Finish:

a. Hardware Finish: Plated Satin Nickel.

2.4 ACCESSORIES

A. Grilles:
1. Integrail Light Technology Grilles:
a. Interior Grilles:
1) Ogee Profile: 7/8 inch.
2) Material: Solid pine
3) Interior Surface Finish: To match panel interior.
b. Exterior Grilles:
1) Ogee Profile: 7/8 inch.
2) Material: Extruded aluminum.
c. Pattern: 9-Lite Prairie design.
d. Insulating Glass: Non-glare spacer between panes of glass.
e. Grilles: Adhered to both sides of insulating glass with VHB acrylic adhesive tape and aligned with spacer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine rough openings to receive bifold patio doors.
1. Verify rough openings are plumb, level, square, and of proper dimensions.
2. Verify a minimum of 1-1/2 inches of solid wood blocking is installed around perimeter of rough openings.

B. Notify Architect of conditions that would adversely affect installation or subsequent use.

C. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install bifold patio doors in accordance with manufacturer's instructions.

B. Install doors plumb, level, square, and without distortion.

C. Maintain alignment with adjacent work.

D. Install doors weathertight.

E. Install doors to be freely operating.

F. Verify proper operation of operating hardware.

G. Integrate door installation with exterior weather-resistant barrier using flashing/sealant tape.
1. Apply and integrate flashing/sealant tape with weather-resistant barrier using watershed principles in accordance with door manufacturer's instructions.

H. Seal doors to exterior wall cladding with sealant and related backing materials at perimeter of assembly.

I. Place interior seal around door perimeter to maintain continuity of building thermal and air barrier using insulating-foam sealant.

J. Leave doors closed and locked.

3.3 ADJUSTING

A. Adjust bifold patio doors for proper operation in accordance with manufacturer's instructions.

B. Adjust operating hardware to operate smoothly without binding.

C. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

D. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.4 CLEANING

A. Clean bifold patio doors in accordance with manufacturer's instructions.

B. Do not use harsh cleaning materials or methods that could damage finish, glass, or hardware.

C. Remove labels and visible markings.

D. Keep door tracks clear of dirt and debris.

E. Keep weep holes open and clear of obstructions.

3.5 PROTECTION

A. Protect installed bifold patio doors to ensure that, except for normal weathering, doors will be without damage or deterioration at time of Substantial Completion.

END OF SECTION

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REGISTERED ARCHITECT MICHAEL GREGORY LEGG STATE OF TEXAS

02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

Responsibility Matrix; Awnings; Fireplace &PELLA Folding Door Specs;

23110 WEST I-10 LOT 3 Dominion Creek, San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A2.8B

WATER STAINED CONCRETE SPECS – REF A2.8 (INTERIORS; COVERED PATIOS & BAR)

westcoat SPECIALTY COATING SYSTEMS — MADE IN THE USA | SINCE 1981 — 4007 Lockridge Street • San Diego, CA 92102 — 800.255.4159 • westcoat.com

SECTION 099726

CEMENTITIOUS COATINGS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Provide a complete acrylic based cementitious coating system for concrete surfaces that meet the requirements for specific use indicated in the contract documents. Include all applicable substrate testing, surface preparation, and detail work.

1.02 RELATED SECTIONS

A. Section 033000 – Cast-In-Place Concrete
B. Section 090000 – Finishes

1.03 SUBMITTALS

A. Submit under provisions of Section 013300.
B. Product Data: Submit manufacturer's product data sheets on each product and system to be used including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements.
   3. Installation methods.
   4. Maintenance requirements.
C. Selection Samples: For each system specified, provide two sets of samples and color charts, representing manufacturer's full range of colors and patterns.

1.04 QUALITY ASSURANCE

A. All materials used in the cementitious coating system shall be manufactured and provided by a single manufacturer to ensure compatibility and proper bonding.
B. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this section.
C. Contractor shall have a minimum of three years experience installing cementitious coatings similar to that which is required for this project and who is acceptable to the manufacturer.
   1. Applicator shall designate a single individual as project foreman who shall be on site at all times during installation.
   2. Contractor must show and have QCA Qualified Contractor/Applicator paperwork from the manufacturer of the coating system, as required to obtain a long-term jobsite specific warranty.
D. Convene a pre-application meeting before the start of application of coating system. Require attendance of parties directly affecting work of this section, including: architect, contractor, applicator, and authorized representative of the coating system manufacturer and interfacing trades. Review the following:
   1. Drawings and specifications affecting work of this section.
   2. Protection of adjacent surfaces.
   3. Surface preparation and substrate conditions.
   4. Application.
   5. Field quality control.
   6. Protection of coating system.

7. Repair of coating system.
8. Coordination with other work.

1.05 DELIVERY, STORAGE & HANDLING

A. Delivery: Materials shall be delivered to the job site in sealed, undamaged containers. Each container shall be clearly marked with manufacturer's label showing type of material, color, and lot number.
B. Storage: Store all materials in a clean, dry place with a temperature range in accordance with manufacturer's instructions.
C. Handling: Handle products carefully to avoid damage to the containers. Read all labels and material safety data sheets prior to use.

1.06 PROJECT SITE CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within the limits recommended by the manufacturer.
B. All concrete should be tested for moisture before applying a seamless coating. If moisture emissions exceed 5 lbs/1000 square feet (ASTM F1869) or if the relative humidity (RH) exceeds 75% (ASTM F2170), see EC-15 Moisture Vapor Barrier product specification.
C. Concrete must be at least 2500 psi.
D. Concrete must be cured for a minimum of 28 days before coating is applied.
E. Schedule coating work to avoid excessive dust and airborne contaminates. Protect work areas from excessive dust and airborne contaminates during coating application.
F. Before any work is started, the applicator shall examine all surfaces for any deficiencies. Should any deficiencies exist, the architect, owner or general contractor shall be notified in writing and any corrections necessary shall be made.

1.07 WARRANTY

A. Upon completion of the work in this section provide a written warranty from the manufacturer against defects of materials for a period of 5 (five) years. To obtain project specific warranty the coating system applicator must be a Westcoat Qualified Contractor/ Applicator and apply for warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable manufacturer: Westcoat Specialty Coatings; 4007 Lockridge Street, San Diego, CA 92102. Telephone 800-250-4519. Fax 619-285-7187. Website: www.westcoat.com.

2.02 MATERIALS

A. As basis of design Westcoat Texture Crete Custom Finish (no substitutions will be accepted): A series of polymer modified cementitious coatings bonded to concrete and has a variety of optional finishes and sealers.

2.03 COMPONENTS

A. Texture Crete Custom Finish: Decorative cementitious coating designed for concrete resurfacing.
   1. Primer: EC-11 Water-Based Epoxy, 2 parts A to 1 part B by volume). Primer applied at 250-350 square feet per gallon.
   3. Slurry Grout Coat: Combine and mix one 50 pound bag of TC-5 Grout Coat Cement or TC-2 Smooth Texture Cement with TC-40 Liquid Colorant (1 to 4 ounces), 1 gallon of WP-81 Cement Modifier, and up to ½ gallon of water. Apply at 150-200 square feet per batch.
   4. Optional Flagstone Pattern Installation: CA-50 Stone Stripe applied to the grout coat in a simulated flagstone pattern.
   5. Optional Tile Pattern: CA-60 Grout Tape applied to grout coat in a simulated tile pattern.

6. Texture Coat: Combine and mix one 50 pound bag of TC-2 Smooth Texture Cement, 1 gallon of WP-81 Cement Modifier, up to ½ gallon of water, and TC-40 Liquid Colorant (1 to 4 ounces). Apply by troweling texture at 150 to 200 square feet per batch.
7. Optional Cement: TC-5 Grout Texture Cement or TC-4 Fine Texture Cement for interior smooth applications may be used in place of TC-2.
8. Water-Based Stain: Apply SC-35 Water-Based Stain at a rate of 150-400 square feet per gallon.
10. Sealer: SC-70 Acrylic Lacquer Sealer applied by spraying, brushing, or rolling at a rate of 200-300 square feet per gallon.

2.04 ACCESSORIES

A. Supplemental Materials:
   1. Patching materials: EC-72 Epoxy Patch Gel.
   2. Concrete repairs can be made with TC-23 Mortar Mix as needed.
   3. WP-47-3 Seam Tape for crack repairs.
   4. Optional aggregate: CA-30 Small Safe Grip, CA-31 Large Safe Grip, or other sand designed to meet the owners skid resistance requirements.
   5. Optional primer: WP-81 Cement Modifier or EC-12 Epoxy Primer can be used in place of EC-11 Water-Based Epoxy.

Optional Topcoats:
6. SC-65G WB Gloss Polyurethane may be used in place of SC-70 when a low odor, solvent free, mar and chemical resistant gloss finish is required.
7. SC-65SG WB Semi-Gloss Polyurethane may be used in place of SC-70 when a low odor, solvent free, mar and chemical resistant semi-gloss finish is required.
8. SC-65F WB Flat Polyurethane may be used over the SC-65G Gloss or SC-65SG Semi-Gloss, when low odor, solvent free, mar and chemical resistant flat finish is required.
9. EC-95G Gloss Polyurethane Topcoat may be used in place of SC-70 when a gloss, solvent-based polyurethane is required.
10. EC-95F Flat Polyurethane Topcoat may be used over EC-95G when a flat, solvent-based polyurethane topcoat is required

2.05 SOURCE QUALITY CONTROL

A. Verification of Performance
   1. Physical Properties: The finish Texture-Crete Custom System shall have the following approximate performance characteristics:

a.	Bond Strength to concrete (ASTM C297)	278 PSI
b.	Bond Strength after accelerated aging (ASTM C756)	248 PSI
c.	Abrasion Test (ASTM D1242)	11% reduction
d.	Freeze thaw on concrete (ASTM C67)	171 PSI
e.	Concentrated load (AC39)	No apparent damage
f.	Water absorption (ASTM D570)	6.5%
g.	Percolation test (AC39 Sec. 4 G)	85 inches
h.	Tensile Strength (ASTM C190-85)	855 PSI
i.	Compressive Strength (ASTM C109-88)	5682 PSI
j.	Flexural Strength	1835 PSI
k.	Impact Strength	22 in/lbs.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions.
   1. Inspect all surfaces to receive cementitious coating. Verify that surfaces are dry, clean, and free of contaminates that would prevent epoxy flooring from properly adhering to the surface.
   2. Conduct calcium chloride testing according to ASTM F1869.

3. Conduct surface profile inspection according to ICRI Technical Guideline No.03732.
4. Before starting work, report in writing to the authority having jurisdiction any unsatisfactory conditions.

3.02 SURFACE PREPARATION

A. Prepare surfaces using methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
B. Create a surface profile equal to CSP 3 as specified ICRI.
C. Clean Surfaces thoroughly prior to installation.
D. Rout and clean moving cracks and joints: fill with manufacturer's recommended flexible epoxy filler material.
E. Repair any non-moving surface deviations with manufacturers recommended patching material.

3.03 INSTALLATION

A. Install coatings in accordance with manufacturer's instructions.
B. Mix all materials in accordance with manufacturer's instructions.
C. Use application equipment, tools, and techniques in accordance with manufacturer's instructions.
D. Uniformly apply coatings at spread rates and in number of coats to achieve specified coverage.
E. Adhere to all limitations, instructions, and cautions for cementitious coating as stated in the manufacturer's published literature.

3.04 FIELD QUALITY CONTROL

A. Verify coatings and other materials are as specified.
B. Verify coverages and finish of the system as work progresses.
C. Manufacturer's representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

3.05 PROTECTION AND CLEAN-UP

A. Installation areas must be kept free from traffic and other trades during the application procedure and cure time.
B. Protect finished surfaces of coating system from damage during construction.
C. Touch-up, repair or replace damaged flooring system after substantial completion.
D. Clean area and remove all debris upon completion of work. Dispose of empty containers properly according to current local, state and federal regulations.
E. Allow material to cure 4 to 8 hours before light pedestrian traffic is permitted, 24 hours before heavy traffic and an additional 72 hours before vehicular traffic is permitted.

3.06 MAINTENANCE

A. Contractor shall provide to owner, maintenance and cleaning instructions for the cementitious coating system upon completion of work. Owner is required to clean and maintain the surfaces to maintain manufacturer's warranty.

END OF SECTION

This guide specification has been prepared by Westcoat Specialty Coating Systems to assist design professionals in developing a project specific specification. This guide is a template that must be reviewed and adapted by specifiers to comply with project requirements. This guide specification is not to be copied directly into a project specification manual without review.

WATER STAINED contin.

7. Repair of coating system.
8. Coordination with other work.

1.05 DELIVERY, STORAGE & HANDLING

A. Delivery: Materials shall be delivered to the job site in sealed, undamaged containers. Each container shall be clearly marked with manufacturer's label showing type of material, color, and lot number.
B. Storage: Store all materials in a clean, dry place with a temperature range in accordance with manufacturer's instructions.
C. Handling: Handle products carefully to avoid damage to the containers. Read all labels and material safety data sheets prior to use.

1.06 PROJECT SITE CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within the limits recommended by the manufacturer.
B. All concrete should be tested for moisture before applying a seamless coating. If moisture emissions exceed 5 lbs/1000 square feet (ASTM F1869) or if the relative humidity (RH) exceeds 75% (ASTM F2170), see EC-15 Moisture Vapor Barrier product specification.
C. Concrete must be at least 2500 psi.
D. Concrete must be cured for a minimum of 28 days before coating is applied.
E. Schedule coating work to avoid excessive dust and airborne contaminates. Protect work areas from excessive dust and airborne contaminates during coating application.
F. Before any work is started, the applicator shall examine all surfaces for any deficiencies. Should any deficiencies exist, the architect, owner or general contractor shall be notified in writing and any corrections necessary shall be made.

1.07 WARRANTY

A. Upon completion of the work in this section provide a written warranty from the manufacturer against defects of materials for a period of 5 (five) years. To obtain project specific warranty the coating system applicator must be a Westcoat Qualified Contractor/ Applicator and apply for warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable manufacturer: Westcoat Specialty Coatings; 4007 Lockridge Street, San Diego, CA 92102. Telephone 800-250-4519. Fax 619-285-7187. Website: www.westcoat.com.

2.02 MATERIALS

A. As basis of design Westcoat Texture Crete Custom Finish (no substitutions will be accepted): A series of polymer modified cementitious coatings bonded to concrete and has a variety of optional finishes and sealers.

2.03 COMPONENTS

A. Texture Crete Custom Finish: Decorative cementitious coating designed for concrete resurfacing.
   1. Primer: EC-11 Water-Based Epoxy, 2 parts A to 1 part B by volume). Primer applied at 250-350 square feet per gallon.
   3. Slurry Grout Coat: Combine and mix one 50 pound bag of TC-5 Grout Coat Cement or TC-2 Smooth Texture Cement with TC-40 Liquid Colorant (1 to 4 ounces), 1 gallon of WP-81 Cement Modifier, and up to ½ gallon of water. Apply at 150-200 square feet per batch.
   4. Optional Flagstone Pattern Installation: CA-50 Stone Stripe applied to the grout coat in a simulated flagstone pattern.
   5. Optional Tile Pattern: CA-60 Grout Tape applied to grout coat in a simulated tile pattern.

6. Texture Coat: Combine and mix one 50 pound bag of TC-2 Smooth Texture Cement, 1 gallon of WP-81 Cement Modifier, up to ½ gallon of water, and TC-40 Liquid Colorant (1 to 4 ounces). Apply by troweling texture at 150 to 200 square feet per batch.
7. Optional Cement: TC-5 Grout Texture Cement or TC-4 Fine Texture Cement for interior smooth applications may be used in place of TC-2.
8. Water-Based Stain: Apply SC-35 Water-Based Stain at a rate of 150-400 square feet per gallon.
10. Sealer: SC-70 Acrylic Lacquer Sealer applied by spraying, brushing, or rolling at a rate of 200-300 square feet per gallon.

2.04 ACCESSORIES

A. Supplemental Materials:
   1. Patching materials: EC-72 Epoxy Patch Gel.
   2. Concrete repairs can be made with TC-23 Mortar Mix as needed.
   3. WP-47-3 Seam Tape for crack repairs.
   4. Optional aggregate: CA-30 Small Safe Grip, CA-31 Large Safe Grip, or other sand designed to meet the owners skid resistance requirements.
   5. Optional primer: WP-81 Cement Modifier or EC-12 Epoxy Primer can be used in place of EC-11 Water-Based Epoxy.

Optional Topcoats:
6. SC-65G WB Gloss Polyurethane may be used in place of SC-70 when a low odor, solvent free, mar and chemical resistant gloss finish is required.
7. SC-65SG WB Semi-Gloss Polyurethane may be used in place of SC-70 when a low odor, solvent free, mar and chemical resistant semi-gloss finish is required.
8. SC-65F WB Flat Polyurethane may be used over the SC-65G Gloss or SC-65SG Semi-Gloss, when low odor, solvent free, mar and chemical resistant flat finish is required.
9. EC-95G Gloss Polyurethane Topcoat may be used in place of SC-70 when a gloss, solvent-based polyurethane is required.
10. EC-95F Flat Polyurethane Topcoat may be used over EC-95G when a flat, solvent-based polyurethane topcoat is required

2.05 SOURCE QUALITY CONTROL

A. Verification of Performance
   1. Physical Properties: The finish Texture-Crete Custom System shall have the following approximate performance characteristics:

a.	Bond Strength to concrete (ASTM C297)	278 PSI
b.	Bond Strength after accelerated aging (ASTM C756)	248 PSI
c.	Abrasion Test (ASTM D1242)	11% reduction
d.	Freeze thaw on concrete (ASTM C67)	171 PSI
e.	Concentrated load (AC39)	No apparent damage
f.	Water absorption (ASTM D570)	6.5%
g.	Percolation test (AC39 Sec. 4 G)	85 inches
h.	Tensile Strength (ASTM C190-85)	855 PSI
i.	Compressive Strength (ASTM C109-88)	5682 PSI
j.	Flexural Strength	1835 PSI
k.	Impact Strength	22 in/lbs.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions.
   1. Inspect all surfaces to receive cementitious coating. Verify that surfaces are dry, clean, and free of contaminates that would prevent epoxy flooring from properly adhering to the surface.
   2. Conduct calcium chloride testing according to ASTM F1869.

3. Conduct surface profile inspection according to ICRI Technical Guideline No.03732.
4. Before starting work, report in writing to the authority having jurisdiction any unsatisfactory conditions.

3.02 SURFACE PREPARATION

A. Prepare surfaces using methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
B. Create a surface profile equal to CSP 3 as specified ICRI.
C. Clean Surfaces thoroughly prior to installation.
D. Rout and clean moving cracks and joints: fill with manufacturer's recommended flexible epoxy filler material.
E. Repair any non-moving surface deviations with manufacturers recommended patching material.

3.03 INSTALLATION

A. Install coatings in accordance with manufacturer's instructions.
B. Mix all materials in accordance with manufacturer's instructions.
C. Use application equipment, tools, and techniques in accordance with manufacturer's instructions.
D. Uniformly apply coatings at spread rates and in number of coats to achieve specified coverage.
E. Adhere to all limitations, instructions, and cautions for cementitious coating as stated in the manufacturer's published literature.

3.04 FIELD QUALITY CONTROL

A. Verify coatings and other materials are as specified.
B. Verify coverages and finish of the system as work progresses.
C. Manufacturer's representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

3.05 PROTECTION AND CLEAN-UP

A. Installation areas must be kept free from traffic and other trades during the application procedure and cure time.
B. Protect finished surfaces of coating system from damage during construction.
C. Touch-up, repair or replace damaged flooring system after substantial completion.
D. Clean area and remove all debris upon completion of work. Dispose of empty containers properly according to current Local, State and Federal regulations.
E. Allow material to cure 4 to 8 hours before light pedestrian traffic is permitted, 24 hours before heavy traffic and an additional 72 hours before vehicular traffic is permitted.

3.06 MAINTENANCE

A. Contractor shall provide to owner, maintenance and cleaning instructions for the cementitious coating system upon completion of work. Owner is required to clean and maintain the surfaces to maintain manufacturer's warranty.

END OF SECTION

This guide specification has been prepared by Westcoat Specialty Coating Systems to assist design professionals in developing a project specific specification. This guide is a template that must be reviewed and adapted by specifiers to comply with project requirements. This guide specification is not to be copied directly into a project specification manual without review.

ACID STAINED CONCRETE SPECS – REF A2.0 (EXTERIOR PATIO

westcoat SPECIALTY COATING SYSTEMS — MADE IN THE USA | SINCE 1981 — 4007 Lockridge Street • San Diego, CA 92102 — 800.255.4159 • westcoat.com

SECTION 098119

CONCRETE FLOOR STAINING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Provide a complete stained concrete floor system that meet the requirements for specific use indicated in the contract documents. Include all applicable substrate testing, surface preparation, and detail work.

1.02 RELATED SECTIONS

A. Section 033000 – Cast-In-Place Concrete
B. Section 099723 – Concrete Sealers and Coatings
C. Section 03530 – Maintenance of Cast-in-Place Concrete
D. Section 099723 – Concrete Sealers

1.03 SUBMITTALS

A. Submit under provisions of Section 013300.
B. Product Data: Submit manufacturer's product data sheets on each product and system to be used including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements.
   3. Installation methods.
   4. Maintenance requirements.
C. Selection Samples: For each system specified, provide two samples, representing manufacturer's full range of colors.

1.04 QUALITY ASSURANCE

A. All materials used on the stained concrete floor system shall be manufactured and provided by a single manufacturer to ensure compatibility and proper bonding.
B. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this section.
C. Contractor shall have a minimum of 3 years experience installing concrete floor coatings similar to that which is required for this project and who is acceptable to the manufacturer.
   1. Applicator shall designate a single individual as project foreman who shall be on site at all times during installation.
   2. Contractor must show and have QCA Qualified Contractor/Applicator paperwork from the manufacturer of the coating system, as required to obtain a long-term jobsite specific warranty.
D. Convene a pre-application meeting before the start of application of coating system. Require attendance of parties directly affecting work of this section, including: Architect, contractor, applicator, and authorized representative of the coating system manufacturer and interfacing trades. Review the following:
   1. Drawings and specifications affecting work of this section.
   2. Protection of adjacent surfaces.
   3. Surface preparation and substrate conditions.
   4. Application.
   5. Field quality control.
   6. Protection of coating system.

6. Cleaning.
7. Protection of coating system.
8. Recoat of coating system.
9. Coordination with other work.

1.05 DELIVERY, STORAGE & HANDLING

A. Delivery: Materials shall be delivered to the job site in sealed, undamaged containers. Each container shall be clearly marked with manufacturer's label showing type of material, color, and lot number.
B. Storage: Store all materials in a clean, dry place with a temperature range in accordance with manufacturer's instructions
C. Handling: Handle products carefully to avoid damage to the containers. Read all labels and Material Safety Data Sheets prior to use.

1.06 PROJECT SITE CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within the limits recommended by the manufacturer.
B. All concrete should be tested for moisture before applying a seamless coating. If moisture emissions exceed 5 lbs/1000 square feet (ASTM F1869) or if the relative humidity (RH) exceeds 75% (ASTM F2170), contact the manufacturer before application.
C. Concrete must be at least 2500 psi.
D. Concrete must be cured for a minimum of 28 days before coating is applied
E. Schedule coating work to avoid excessive dust and airborne contaminates. Protect work areas from excessive dust and airborne contaminates during coating application.
F. Before any work is started, the applicator shall examine all surfaces for any deficiencies. Should any deficiencies exist, the architect, owner or general contractor shall be notified in writing and any corrections necessary shall be made.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable manufacturer: Westcoat Specialty Coatings; 4007 Lockridge Street, San Diego, CA 92102. Telephone 800-250-4519. Fax 619-285-7187. Website: www.westcoat.com.

2.02 MATERIALS

A. As basis of design Westcoat Acid Stain Prep and Seal System (no substitutions will be accepted): A process of preparing exterior concrete and applying acid based stain and sealer.

2.03 COMPONENTS

A. Acid Stain Prep and Seal System: Acid-based concrete stain and seal.
   1. Stain: SC-30 Acid Stain 200 to 400 square feet per gallon.
   2. Rinse: Once surface is reacted to your satisfaction, neutralize and rinse with water to remove residue. Repeat rinse on stained surface 2-3 times until all residue is removed.
   3. Topcoat: SC-70 Acrylic Lacquer Sealer 200-300 square feet per gallon.

2.04 ACCESSORIES

A. Supplemental Materials:
   1. Concrete repairs can be made with TC-23 Mortar Mix as needed.
   2. Optional aggregate shall be CA-30 Small Safe Grip, CA-31 Large Safe Grip or other sand designed to meet the owners skid resistance requirements.

Optional Topcoats:
5. SC-65F WB Flat Polyurethane may be used OVER the SC-65G Gloss or SC-65SG Semi-Gloss when low odor, solvent free, mar and chemical resistant flat finish is required.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions.
   1. Inspect all surfaces to receive stained concrete flooring. Concrete must be clean, dry and free of grease, paint, oil, dust, curing agents, laitance or any foreign material that will prevent proper adhesion.
   2. Before starting work, report in writing to the authority having jurisdiction any unsatisfactory conditions.

3.02 SURFACE PREPARATION

A. Prepare surfaces using methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
B. Power wash and power scrub the concrete to obtain a clean uniform surface with a surface profile equal to a CSP of 3 as specified by ICRI;
C. Clean surface as needed with TSP and/or degreaser then rinse completely and scrub several times with clean water.
D. Rout and clean moving cracks and joints: patch with manufacturer's recommended concrete patch material.
E. Repair any non-moving surface deviations with manufacturer's recommended patching material.

3.03 INSTALLATION

A. Install stain & topcoat in accordance with manufacturer's instructions.
B. Mix multi-component materials in accordance with manufacturer's instructions.
C. Use application equipment, tools, and techniques in accordance with manufacturer's instructions.
D. Uniformly apply coatings at spread rates and in number of coats to achieve specified coverage rates recommended by the manufacturer.
E. Broadcast aggregates in accordance with the specified system and manufacturer's instructions.
F. Adhere to all limitations, instructions, and cautions for stained concrete floor coating as stated in the manufacturer's published literature.

3.04 FIELD QUALITY CONTROL

A. Verify coatings and other materials are as specified.
B. Verify coverages of the system as work progresses. Areas found not to meet the required coverage rates shall receive additional material until specified coverage is attained.
C. Manufacturer's representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

3.05 PROTECTION AND CLEAN-UP

A. Installation areas must be kept free from traffic and other trades during the application procedure and cure time.
B. Protect finished surfaces of coating system from damage during construction.
C. Touch-up, repair or replace damaged flooring system after substantial completion.
D. Clean area and remove all debris upon completion of work. Dispose of empty containers properly according to current Local, State and Federal regulations.

3.06 MAINTENANCE

A. Contractor shall provide to owner, maintenance and cleaning instructions for the floor system upon completion of work. Owner is required to clean and maintain the surfaces to maintain manufacturer's warranty.

END OF SECTION

This guide specification has been prepared by Westcoat Specialty Coating Systems to assist design professionals in developing a project specific specification. This guide is a template that must be reviewed and adapted by specifiers to comply with project requirements. This guide specification is not to be copied directly into a project specification manual without review.

3. SC-65G WB Gloss Polyurethane may be used IN LIEU of SC-70 when a low odor, solvent free, mar and chemical resistant gloss finish is required.
4. SC-65SG WB Semi-Gloss Polyurethane may be used IN LIEU of SC-70 when a low odor, solvent free, mar and chemical resistant semi-gloss finish is required.
5. SC-65F WB Flat Polyurethane may be used OVER the SC-65G Gloss or SC-65SG Semi-Gloss, when low odor, solvent free, mar and chemical resistant flat finish is required.
6. EC-95G Gloss Polyurethane Topcoat may be used IN LIEU of SC-70 when a low odor, solvent free, mar and chemical resistant gloss finish is required.
7. EC-95 Satin Polyurethane Topcoat may be used OVER EC-95 when a low gloss, solvent-based polyurethane topcoat is required

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions.
   1. Inspect all surfaces to receive stained concrete flooring. Concrete must be clean, dry and free of grease, paint, oil, dust, curing agents, laitance or any foreign material that will prevent proper adhesion.
   2. Before starting work, report in writing to the authority having jurisdiction any unsatisfactory conditions.

3.02 SURFACE PREPARATION

A. Prepare surfaces using methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
B. Power wash and power scrub the concrete to obtain a clean uniform surface with a surface profile equal to a CSP of 2-3 as specified by ICRI.
C. Clean Surfaces as needed with TSP and/or degreaser then rinse completely and scrub several times with clean water.
D. Rout and clean moving cracks and joints: patch with manufacturer's recommended concrete patch material.
E. Repair any non-moving surface deviations with manufacturers recommended patching material.

3.03 INSTALLATION

A. Install coatings in accordance with manufacturer's instructions.
B. Mix all materials in accordance with manufacturer's instructions.
C. Use application equipment, tools, and techniques in accordance with manufacturer's instructions.
D. Uniformly apply coatings at spread rates and in number of coats to achieve specified coverage rates recommended by the manufacturer.
E. Broadcast aggregates in accordance with the specified system and manufacturer's instructions.
F. Adhere to all limitations, instructions, and cautions for stained concrete floor coating as stated in the manufacturer's published literature.

3.04 FIELD QUALITY CONTROL

A. Verify coatings and other materials are as specified.
B. Verify coverages of the system as work progresses. Areas found not to meet the required coverage rates shall receive additional material until specified coverage is attained.
C. Manufacturer's representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

3.05 PROTECTION AND CLEAN-UP

A. Allow 12-24 hours at 70 degrees between coats and 24 hours before light foot traffic. Normal foot traffic may be permitted after 24-48 hours. For vehicular traffic, allow a minimum of 72 hours.
B. Protect finished surfaces of coating system from damage during construction.
C. Touch-up, repair or replace damaged flooring system after substantial completion.
D. Clean area and remove all debris upon completion of work. Dispose of empty containers properly according to current Local, State and Federal regulations.

3.06 MAINTENANCE

A. Contractor shall provide to owner, maintenance and cleaning instructions for the floor system upon completion of work. Owner is required to clean and maintain the surfaces to maintain manufacturer's warranty.

END OF SECTION

This guide specification has been prepared by Westcoat Specialty Coating Systems to assist design professionals in developing a project specific specification. This guide is a template that must be reviewed and adapted by specifiers to comply with project requirements. This guide specification is not to be copied directly into a project specification manual without review.

WATER STAINED CONCRETE SPECS – REF A2.8 (INTERIORS; COVERED PATIOS & BAR)

SECTION 09 97 23
CONCRETE AND MASONARY COATINGS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Provide a complete a concrete floor system that meet the requirements for specific use indicated in the contract documents. Include all applicable substrate testing, surface preparation, and detail work.

1.02 RELATED SECTIONS

A. Section 033000 – Cast-In-Place Concrete
B. Section 030130 – Maintenance of Cast-In-Place Concrete
C. Section 099656 – Epoxy Coatings

1.03 SUBMITTALS

A. Submit under provisions of Section 013300.
B. Product Data: Submit manufacturer's product data sheets on each product and system to be used including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements.
   3. Installation methods.
   4. Maintenance requirements.
C. Selection Samples: For each system specified, provide two samples, representing manufacturer's full range of colors.

1.04 QUALITY ASSURANCE

A. All materials used on the stained concrete floor system shall be manufactured and provided by a single manufacturer to ensure compatibility and proper bonding.
B. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this section.
C. Contractor shall have a minimum of 3 years experience installing concrete floor coatings similar to that which is required for this project and who is acceptable to the manufacturer.
   1. Applicator shall designate a single individual as project foreman who shall be on site at all times during installation.
   2. Contractor must show and have QCA Qualified Contractor/Applicator paperwork from the manufacturer of the coating system.
D. Convene a pre-application meeting before the start of application of coating system. Require attendance of parties directly affecting work of this section, including: Architect, contractor, applicator, and authorized representative of the coating system manufacturer and interfacing trades. Review the following:
   1. Drawings and specifications affecting work of this section.
   2. Protection of adjacent surfaces.
   3. Surface preparation and substrate conditions.
   4. Application.
   5. Field quality control.
   6. Protection of coating system.

8. Repair of coating system.
9. Coordination with other work.

1.05 DELIVERY, STORAGE & HANDLING

A. Delivery: Materials shall be delivered to the job site in sealed, undamaged containers. Each container shall be clearly marked with manufacturer's label showing type of material, color, and lot number.
B. Storage: Store all materials in a clean, dry place with a temperature range in accordance with manufacturer's instructions
C. Handling: Handle products carefully to avoid damage to the containers. Read all labels and Material Safety Data Sheets prior to use.

1.06 PROJECT SITE CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within the limits recommended by the manufacturer.
B. All concrete should be tested for moisture before applying a seamless coating. If moisture emissions exceed 5 lbs/1000 square feet (ASTM F1869) or if the relative humidity (RH) exceeds 75% (ASTM F2170), see EC-15 Moisture Vapor Barrior product specification.
C. Concrete must be at least 2800 psi.
D. Concrete must be cured for a minimum of 28 days before coating is applied
E. Schedule coating work to avoid excessive dust and airborne contaminates. Protect work areas from excessive dust and airborne contaminates during coating application.
F. Before any work is started, the applicator shall examine all surfaces for any deficiencies. Should any deficiencies exist, the architect, owner or general contractor shall be notified in writing and any corrections necessary shall be made.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable manufacturer: Westcoat Specialty Coatings; 4007 Lockridge Street, San Diego, CA 92102. Telephone 800-250-4519. Fax 619-285-7187. Website: www.westcoat.com.

2.02 MATERIALS

A. As basis of design Westcoat 11-10 System (no substitutions will be accepted): A process of preparing exterior concrete and applying nano, water-based stain and sealer.

2.03 COMPONENTS

A. 11-10 System: Acrylic concrete color and seal.
   1. Primer: EC-11 Water Based Epoxy 500 to 800 square feet per gallon.
   2. Topcoat: SC-10 Acrylic 200-400 square feet per gallon.
   3. WB Stain: SC-36 Water Based Stain 400-600 square feet per gallon.
   4. WB Polyurethane Sealer: SC-65SG Semi-Gloss Water Based Polyurethane 400-650 square feet per gallon.

2.04 ACCESSORIES

A. Supplemental Materials:
   1. Patching materials shall be TC-29 Concrete Patch.
   2. Concrete repairs can be made with TC-23 Mortar Mix as needed.
   3. Optional aggregate shall be CA-28 Mini Safe Grip, CA-30 Small Safe Grip, CA-31 Large Safe Grip, or other sand designed to meet the owners skid resistance requirements.

Optional Topcoats:
4. SC-65G WB Gloss Polyurethane may be used IN LIEU of SC-65SG Semi-Gloss when a low odor, solvent free, mar and chemical resistant gloss finish is required.

5. SC-65F WB Flat Polyurethane may be used OVER the SC-65G Gloss or SC-65SG Semi-Gloss when low odor, solvent free, mar and chemical resistant flat finish is required.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions.
   1. Inspect all surfaces to receive stained concrete flooring. Concrete must be clean, dry and free of grease, paint, oil, dust, curing agents, laitance or any foreign material that will prevent proper adhesion.
   2. Before starting work, report in writing to the authority having jurisdiction any unsatisfactory conditions.

3.02 SURFACE PREPARATION

A. Prepare surfaces using methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
B. Power wash and power scrub the concrete to obtain a clean uniform surface with a surface profile equal to a CSP of 3 as specified by ICRI;
C. Clean surface as needed with TSP and/or degreaser then rinse completely and scrub several times with clean water.
D. Rout and clean moving cracks and joints: patch with manufacturer's recommended concrete patch material.
E. Repair any non-moving surface deviations with manufacturer's recommended patching material.

3.03 INSTALLATION

A. Install stain & topcoat in accordance with manufacturer's instructions.
B. Mix multi-component materials in accordance with manufacturer's instructions.
C. Use application equipment, tools, and techniques in accordance with manufacturer's instructions.
D. Uniformly apply coatings at spread rates and in number of coats to achieve specified coverage rates recommended by the manufacturer.
E. Broadcast aggregates in accordance with the specified system and manufacturer's instructions.
F. Adhere to all limitations, instructions, and cautions for stained concrete floor coating as stated in the manufacturer's published literature.

3.04 FIELD QUALITY CONTROL

A. Verify coatings and other materials are as specified.
B. Verify coverages of the system as work progresses. Areas found not to meet the required coverage rates shall receive additional material until specified coverage is attained.
C. Manufacturer's representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

3.05 PROTECTION AND CLEAN-UP

A. Installation areas must be kept free from traffic and other trades during the application procedure and cure time.
B. Protect finished surfaces of coating system from damage during construction.
C. Touch-up, repair or replace damaged flooring system after substantial completion.
D. Clean area and remove all debris upon completion of work. Dispose of empty containers properly according to current Local, State and Federal regulations.

3.06 MAINTENANCE

A. Contractor shall provide to owner, maintenance and cleaning instructions for the floor system upon completion of work. Owner is required to clean and maintain the surfaces to maintain manufacturer's warranty

DOOR SCHEDULE

(SUR–LOCK OEA – 2000L PANIC BAR)

DOOR NUMBER	HARDWARE SET	DOOR TYPE	DOOR OPENING SIZE	DOOR THICKNESS	MATERIALS: DOOR: SOLID HARDWOOD PAINTED WOOD & GLAZED	DOOR: SOLID WOOD STAINED & SEALED	DOOR: SOLID CORE WOOD - STAINED	DOOR: SOLID HARDWOOD STAINED WOOD & GLAZED	DOOR: SOLID WOOD LOUVERED & STAINED	FRAME: SOLID WOOD PAINTED - 3" PROFILED ARCHITRAVE SURROUND TO JAMB/HEAD	FRAME: METAL FRAMED AND PAINTED	FRAME: METAL PAINTED BLACK	FRAME: ALUMINUM WITH S/S FINISH	FRAME: HOLLOW METAL PAINTED	REMARKS
1	H3	1	3'-0" X 8'-0" PAIR	2 1/4	●					●					(1)PANIC BARS & CLOSERS FOR DOUBLE DOORS
2	H2	5	3'-0" X 7'-0"	1									●		ELIASON ALUMINION DOUBLE SWING DOOR
3	H1	7	4'-0" X 7'-0"	1 3/4										●	
4	H6	6	4'-0" X 7'-0"	1							●				
5	H4	4	3'-0" X 7'-0"	1 3/4							●				
6	H2	5	3'-0" X 7'-0"	1									●		ELIASON ALUMINION DOUBLE SWING DOOR
7	H7	10	2'1" X 8'-0" pair	1 3/4					●						LOUVERED double door stained and sealed
8	H8	9	2'-0" X 8'-0"	1 3/4			●								
9	-	3	3'-0" X 7'-0"	1 3/4		●									owner provided doors - GC to install & provide
10	-	3	3'-0" X 7'-0"	1 3/4		●									ADA signs and 4 black hinges per door
11	-		PELLA SLIDING FOLDING DOORS PER SEPARATE SPECIFICATION												HARDWARE BY MANUFACTURER
12	-		EXISTING PIVOT DOUBLE DOORS SUPPLIED BY OWNER												
13	-		EXISTING SLIDING POCKET DOOR SUPPLIED BY OWNER												
14	-		PELLA SLIDING FOLDING DOORS PER SEPARATE SPECIFICATION												HARDWARE BY MANUFACTURER
15	H5	2	3'-0" X 8'-0"					●							(1)PANIC BAR & CLOSER FOR DOOR
16	H5	2	3'-0" X 8'-0"					●							(1)PANIC BAR & CLOSER FOR DOOR
17	-		PELLA SLIDING FOLDING DOORS PER SEPERATE SPECIFICATION												HARDWARE BY MANUFACTOR
18	-		ALUMATEC S-2 SOLID ROLLER SHUTTER - COLOR BEIGE												LOCKABLE HARDWARE BY MANUFACTURER
19	-		ALUMATEC S-2 SOLID ROLLER SHUTTER - COLOR BEIGE												LOCKABLE HARDWARE BY MANUFACTURER
20			6'-8" X 6'-2"varies											●	ADA LATCH AND SELF CLOSING HINGES TO COMPLY WITH IBC SECTIONS 1008.2 AND 1008.1.10, TO BE LOCKABLE
21			3'-3" X 7'-0"											●	ADA LATCH AND SELF CLOSING HINGES TO COMPLY WITH IBC SECTIONS 1008.2 AND 1008.1.10, TO BE LOCKABLE
22	H4	4	3'-0" X 7'-0"								●				
23			4'-8" X 30"											●	ADA LATCH AND SELF CLOSING HINGES TO COMPLY WITH IBC SECTIONS 1008.2 AND 1008.1.10
24			4'-8" X 30"											●	ADA LATCH AND SELF CLOSING HINGES TO COMPLY WITH IBC SECTIONS 1008.2 AND 1008.1.10
25			4'-8" X 30"											●	ADA LATCH AND SELF CLOSING HINGES TO COMPLY WITH IBC SECTIONS 1008.2 AND 1008.1.10
26		6	3'-0" X 8'-0"		●										

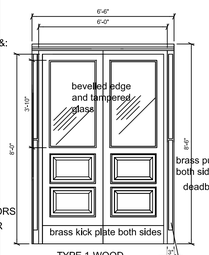
owner provided ex. doors with hardware: #9#10#12#13

GENERAL NOTES

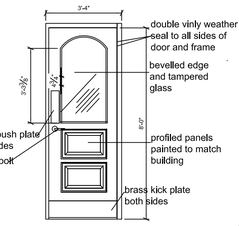
1. UNDERCUT ALL INTERIOR DOORS 1" FROM FINISH FLOOR
2. PANIC BAR: SUR-LOCK - 2000L (REQUIRED AT ALL EMERGENCY EXITS) &:
   (1)CAL - ROYAL 4400 RIM TYPE EXIT DEVICE
   (2)CAL - ROYAL 5000 TYPE EXIT DEVICE
3. RR PARTITION DOORS - BRADLEY PARTITION SYSTEM WITH COAT HOOKS AND ADA LATCHES
4. FENCE GATE HARDWARE FOR D20;21;23;24 & 25; BY FENCE MANUFACTURER
   panic hardware to comply with section 1008.1.10

REMARKS

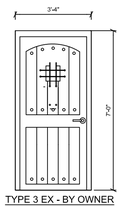
DOOR TYPES



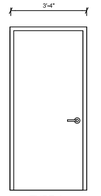
TYPE 1-WOOD ENTRANCE DOORS PAINTED
profiled panels & doors & frames painted #DA291C



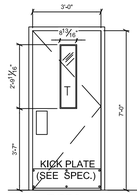
TYPE 2 - BAR EXT DOOR
SOLID WOOD
STAINED & SEALED



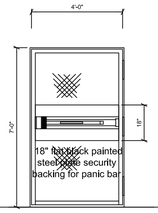
TYPE 3 EX - BY OWNER
SOLID WOOD-TOILETS
RUSTIC MAHOGANY STAINED SOLID WOOD V-GROOVE
SPEAKEASY DOOR - HOME DEPOT MODEL



TYPE 4
SOLID WOOD
STAINED & SEALED



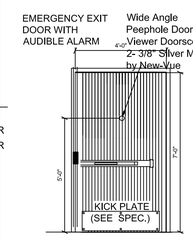
TYPE 5
LIGHT WEIGHT ELIASON ALUMINUM DOOR - S/S FINISH W/ M FRAME



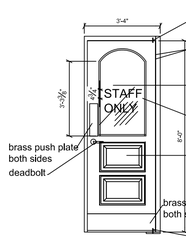
TYPE 6
TYPE 6 - GATE TO REAR EXTERIOR COURT YARD. BLACK PAINTED EXTRUDED METAL 4'X7'GATE. HEAVY DUTY SELF CLOSING HINGES

EMERGENCY EXIT DOOR WITH AUDIBLE ALARM

Wide Angle Peephole Door Viewer Doorscope 2- 3/8" Silver MetaL by New-Vue



TYPE 7
HOLLOW METAL
(EXIT DOOR)



TYPE 8- DOUBLE SWING
WOOD DOOR PAINTED

TYPE 9
S.C. WOOD
STAINED & SEALED

TYPE 10
SOLID WOOD
STAINED & SEALED

9' HIGH PELLA STAINED WOOD SLIDING FOLDING DOORS PER SEPARATE SPECIFICATION REFERENCE A2.8B; A2.0;A5.0 contact: Maribel Zimmerman 210-440 7885

Maribel Zimmerman | Architectural Rep
Pella Architectural Solutions
Pella Windows & Doors
Ph 210.735.2010 Cell 210.440.7885
Fax 866.313.1010 mzimmerman@pellaarchitectural.com

DOOR HARDWARE

Nichcolas.Malmberg@spectrumbrands.com

HARDWARE SET: H–1

18g HOLLOW METAL SECURITY DOOR – PAINT COLOR BALANCED BEIGE
PROVIDE ALARMED PANIC BAR
(SUR–LOCK OEA – 2000L PANIC BAR)
DOOR CLOSER – HEAVY DUTY ANSI GRADE "1"
4 HEAVY DUTY HINGES
1/2" LEXAN WINDOW
40" W x 24" HIGH STAINLESS STEEL KICK PLATE WRAP AROUND DOOR BOTTOM (PRECUT)
THRESHOLD (PRECUT)
RAIN DIVERTER (PRECUT)

HARDWARE SET: H–2

ELIASON LWP–3 COMPLETE WITH HARDWARE, KICK PLATES AND HINGES., INSTALL WITHIN STANDARD METAL FRAME.
H-3 (1)CAL - ROYAL 4400 RIM TYPE EXIT DEVICE FOR DOUBLE DOOR
Deadbolt 8031,050 for 1 5/8" Door Prep
2598,050 Bristol Pull for outside exit doors
Kickplate x2 2000,050,.0834 8'x34", .05 thick brass or 2000,050,0634 6"x34"
BRASS RECESSED FLUSH BOLTS & FLOOR DOOR STOPS
H-4 DEADBOLT 1-5/8" DOOR PREP MODEL NUMBER: 8031,056
STANDARD STAINLESS STEEL PULL HANDLE
H-5 (1)CAL - ROYAL 4400 RIM TYPE EXIT DEVICE FOR SINGLE DOOR
Deadbolt 8031,050 for 1 5/8" Door Prep
2598,050 Bristol Pull for outside exit doors
Kickplate x2 2000,050,.0834 8'x34", .05 thick brass or 2000,050,0634 6"x34"
FLOOR DOOR STOP

H6 - HOOVER SUPERIOR PANIC BAR + EXT LOCK KIT D6045
BLACK PAINTED METAL FRAME TO SUIT WITH SELF CLOSING HINGES TO EXPANDED METAL GATE PORTION

H-7 Door 7: 5447v,050,MR x2 R027,050,PS
R027,050,FD X2 0511,004 spindle
Latch for Passage lever 5513,050,FLS for 2,375" backset
x 4 1041,050 4"x4" ball bearing hinges
H-8 Door 8: 5447v,050,LMR R027,050,IDM
x 4 1041,050 4"x4" ball bearing hinges

H-9 DOOR 26 Heavy duty pivot door system
Deadbolt 8031,050 for 1 5/8" Door Prep
HEAVY DUTY COMMERCIAL ROLLER BEARING PIVOT - MAX. 264 LBS - STAINLESS STEEL - MOD, MOL
Base material: Stainless Steel,
MOL120LS
FINISH SATIN US32DSATIN BR
Brass Kickplate x2 2000,050,.0834 8"x34", .05 thick brass or 2000,050,0634 6"x34"

WINDOW NOTES

INTERIOR BLINDS - W1;W2;W3;W4

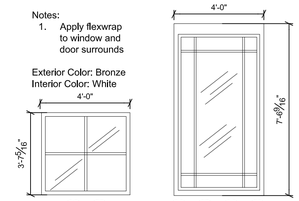
AUTOMATIC PLUG IN SOLAR SHADES - PROVIDE UV PROTECTION, FADE PREVENTION AND GLARE REDUCTION WITH SIMPLE REMOTE CONTROL.
THE SHADE STORE
Alamo Quarry Market, 255 E Basse Road, Suite 908,San Antonio, TX 78209
726,226,2240 / Email design@theshadestore.com

WINDOW & DOOR AWNINGS: W1-W6 & D1;D26

ABOVE ALL AWNINGS - 1101 S Grand Ave #A Santa Ana, CA 92705 - (714) 556-1151
Spear Solarfix PTFE thread awnings over all windows & doors #1 & #26

Notes:
1. Apply flexwrap to window and door surrounds

Exterior Color: Bronze
Interior Color: White



JELDWEN Flat Casing Vinyl Window:
Picture Fixed
SunResist™ Low-E Insulating Glass
Gray Tinted

RESTROOM/ACCESSORY SCHEDULE

MARK	DESCRIPTION	MFR / MODEL	FURN, INST.	FINISH	REMARKS
R1	WITC004-LED 3" FROSTED ALL 4 SIDES WITH FINGERPRINT PROOF PROTECTION		CONTR	FRAMED MIRROR	
R2	GRAB BARS	BOBRICK B–6206	CONTR	36" REAR / 42" SIDES X 1 1/2" DIA. BARS SHALL NOT ROTATE IN THEIR FITTINGS – STRENGTH SHALL COMPLY WITH SUB–SECTION 4.26.3 ADA–TAS	STAINLESS STEEL TEXTURE GRIP
R3	TISSUE DISPENSER CONTINUOUS FLOW	BOBRICK B–2888	CONTR	SURFACE MOUNTED. MULTI ROLL CONTINUOUS FLOW ADA–TAS	STAINLESS STEEL
R5	AUTOMATIC SOAP DISPENSER	BOBRICK B–828 SUREFLO	CONTR	FEMALE RR – AUTOMATIC TOUCHLESS PLUS ACCESSORIES AS REQUIRED	STAINLESS STEEL
R6	PAPER TOWEL DISPENSER	BOBRICK B–29744	CONTR	6V – AUTOMATIC/TOUCHLESS SEMI–RECESSED ADA–TAS	STAINLESS STEEL
R7	Koala Kare KB200-00 Horizontal Baby Changing Station / Table - Cream				
R8	AUTOMATIC SOAP DISPENSER	BOBRICK B–8263.18	CONTR	MALE RR – AUTOMATIC TOUCHLESS PLUS ACCESSORIES AS REQUIRED	

GENERAL NOTES

1. ALL CONSTRUCTION IS TO CONFORM TO LOCAL AND STATE BUILDING CODES & ORDINANCES,AND SHALL COMPLY WITH ANSI 117.1 & ADA ACCESSIBILITY GUIDELINES.
2. ALL EXCLUSIONS AND CLARIFICATIONS SHOULD BE APPROVED IN WRITING SEVEN (7) WORKING DAYS PRIOR TO BID OR BID MAY BE DAYS PRIOR TO BID OR BID MAY BE DISQUALIFIED.
3. G.C. TO PROVIDE & INSTALL THREE (3) FIRE EXTINGUISHERS AT LOCATIONS DIRECTED BY FIRE OFFICIAL.
4. G.C. IS RESPONSIBLE FOR PROPER LOCATION OF ALL REQUIRED NONCOM WOOD & MISC. STEEL FRAMING AND ANY ADDITIONAL FRAMING AS REQUIRED.
5. ALL CONSTRUCTION, INSTALLATION, ETC. SHALL BE PER INDUSTRY AND MANUFACTURER'S STANDARDS. G.C. TO PROVIDE TURNKEY PROJECT.

FIXTURE MOUNTING HEIGHT SCHEDULE

LAVATORIES (MEASURED FROM FLOOR TO RIM)
- ADULTS = 32" (29" MIN. KNEESPACE)
- HANDICAPPED = 34" MAX.

WATER CLOSETS (MEASURED FROM FLOOR TO TOP OF SEAT)
- ADULTS = 15"
- HANDICAPPED = 17" TO 19"

HANDICAPED GRAB BARS (MEASURED FROM FLOOR TO CENTERLINE OF BAR)
- ADULTS = 34"

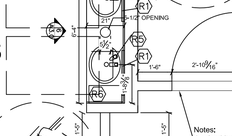
PAPER TOWEL DISPENSERS (MEASURED FROM FLOOR TO TOWEL SLOT)
- ADULTS = 40"

TOILET TISSUE DISPENSER (MEASURED FROM FLOOR TO CENTERLINE OF ROLL)
- ADULTS = 20"

SOAP DISPENSER (MEASURED FROM FLOOR TO CENTERLINE OF PUSH BUTTON)
- ADULTS = 38"
- HANDICAPPED = 38"

MIRRORS (MEASURED FROM FLOOR TO BOTTOM OF MIRROR)
- ADULTS = 40"

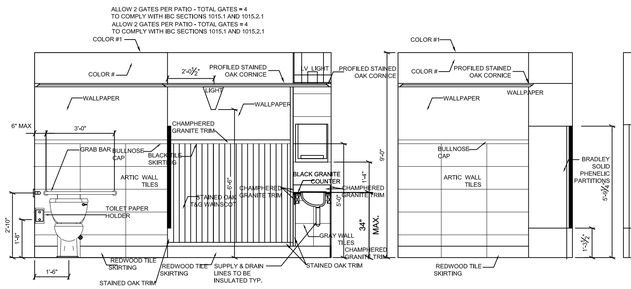
RESTROOM SIGNAGE

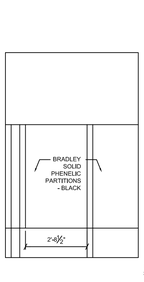


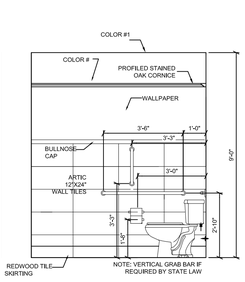
RESTROOM SIGNS:
RAISED IMAGE: BLUE
BACKGROUND: ALMOND
8" X 8" ACRYLIC PLASTIC
(1) MEN, (1) WOMEN

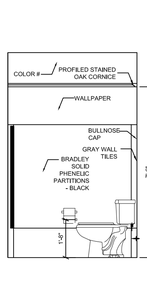
(SIGNAGE TO MEET ADA REQUIREMENTS)

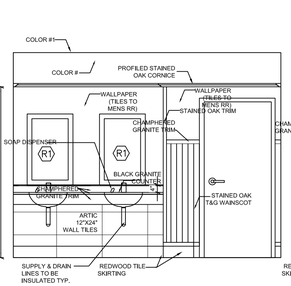
ALLOW 2 GATES PER PATIO - TOTAL GATES = 4
TO COMPLY WITH IBC SECTIONS 1015.1 AND 1015.2.1
ALLOW 2 GATES PER PATIO - TOTAL GATES = 4
TO COMPLY WITH IBC SECTIONS 1015.1 AND 1015.2.1

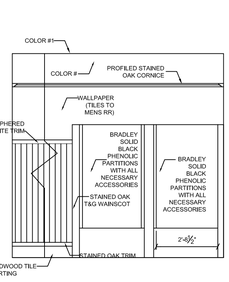


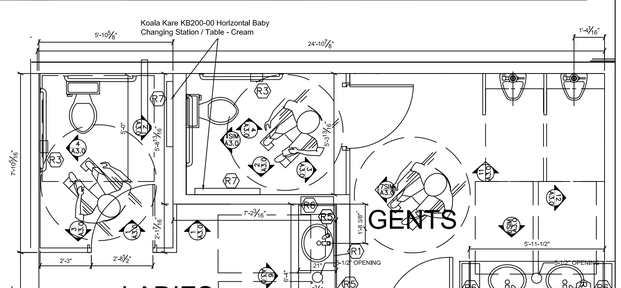






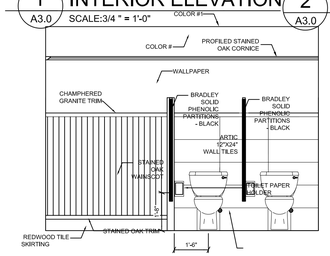




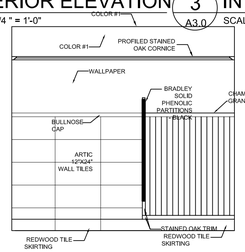


10 A3.0 ENLARGED PLAN
SCALE:3/4 " = 1'-0"

1 A3.0 INTERIOR ELEVATION
SCALE:3/4 " = 1'-0"

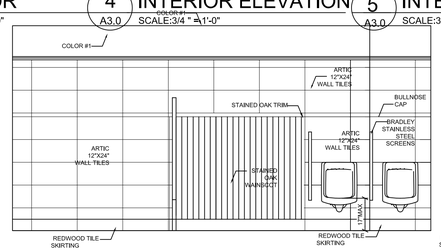


2 A3.0 INTERIOR ELEVATION
SCALE:3/4 " = 1'-0"



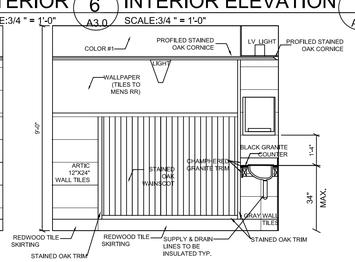
3 A3.0 INTERIOR
SCALE:3/4 " = 1'-0"

4 A3.0 INTERIOR ELEVATION
SCALE:3/4 " = 1'-0"



5 A3.0 INTERIOR
SCALE:3/4 " = 1'-0"

6 A3.0 INTERIOR ELEVATION
SCALE:3/4 " = 1'-0"



7 A3.0 INTERIOR ELEVATION
SCALE:3/4 " = 1'-0"

8 A3.0 INTERIOR ELEVATION
SCALE:3/4 " = 1'-0"

9 A3.0 INTERIOR ELEVATION
SCALE:3/4 " = 1'-0"

11 A3.0 INTERIOR ELEVATION
SCALE:3/4 " = 1'-0"

12 A3.0 INTERIOR ELEVATION
SCALE:3/4 " = 1'-0"

MLA
MICHAEL LEGG ARCHITECTURE
Michael Gregory Legg
NCARB, AIA, RIBA, SACAP
26116 High Timber Pass St
San Antonio, Texas 78260
ph. 210-416 4935
michael@mlaarchitecture.info
www.michaellaggarchitecture.com

REGISTERED ARCHITECT MICHAEL GREGORY LEGG STATE OF TEXAS 23810

02.21.2023

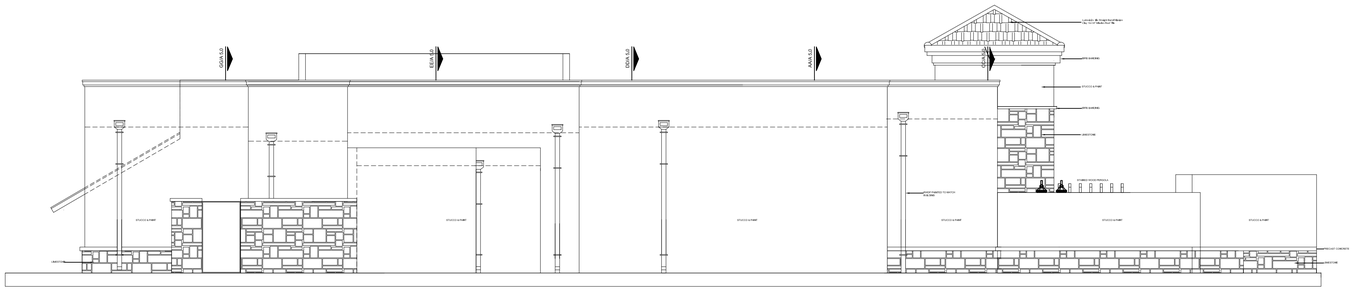
DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

ROOM FINISH & DOOR WINDOW SCHEDULE
23110 WEST I-10 LOT 3 Dominion Creek, San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

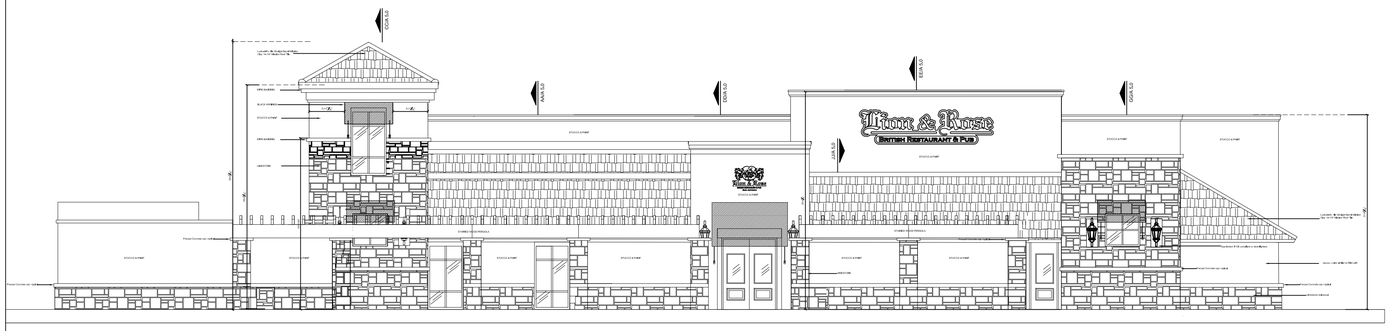
PROJECT NO.
05-05-22

SHEET NO.
A3.0

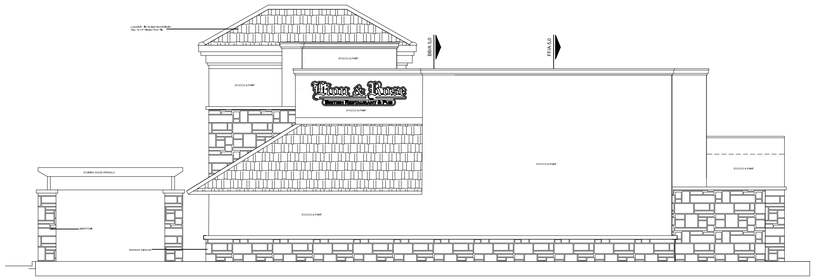


4 East Elevation
A4.0 SCALE: 1/8"=1'-0"

3 North Elevation
A4.0 SCALE: 1/8"=1'-0"



1 West Elevation
A4.0 SCALE: 1/8"=1'-0"



2 South Elevation
A4.0 SCALE: 1/8"=1'-0"

MLA
MICHAEL LEGG ARCHITECTURE
Michael Gregory Legg
NCARB, AIA, RIBA, SACAP

26116 High Timber Pass St
San Antonio, Texas 78260
ph. 210-416-4935
michael@mlarchitecture.info
www.michaelleggarchitecture.com

REGISTERED ARCHITECT
MICHAEL GREGORY LEGG
23241
STATE OF TEXAS

02.1.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

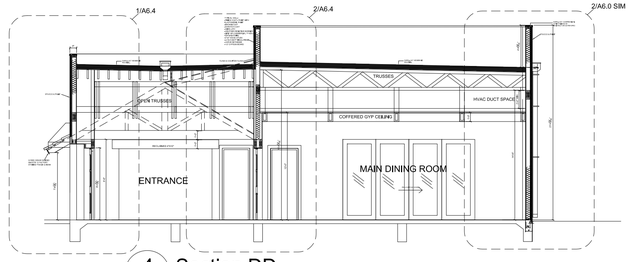
Exterior Elevations

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

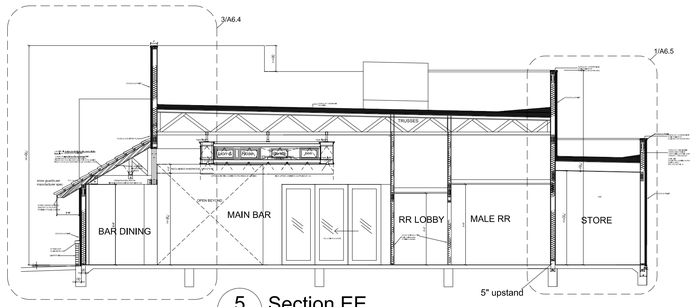
DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

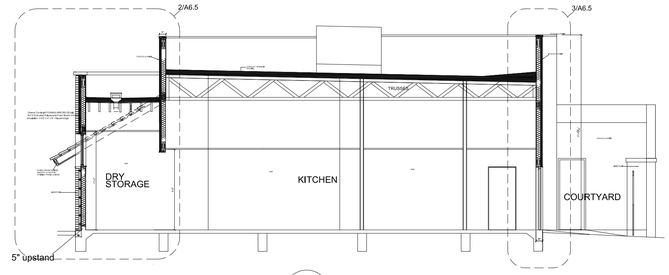
SHEET NO.
A4.0



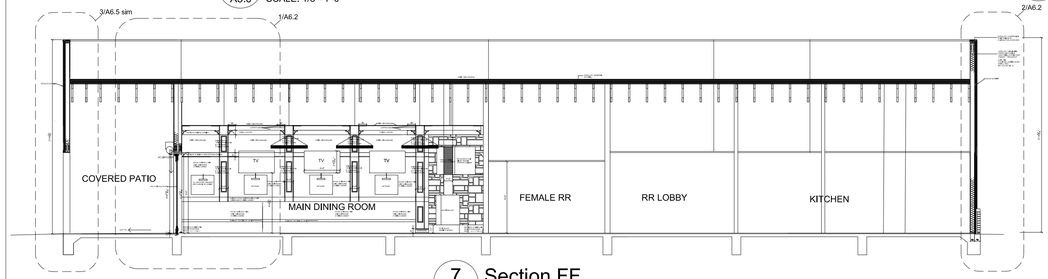
4 Section DD
A5.0 SCALE: 1/8"=1'-0"



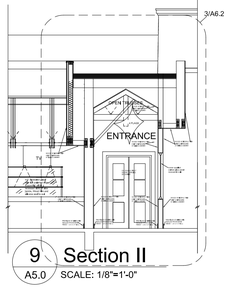
5 Section EE
A5.0 SCALE: 1/8"=1'-0"



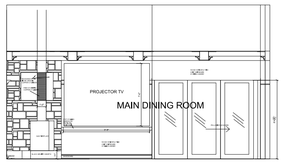
6 Section GG
A5.0 SCALE: 1/8"=1'-0"



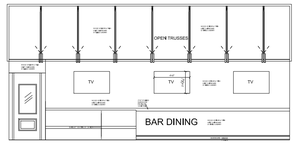
7 Section FF
A5.0 SCALE: 1/8"=1'-0"



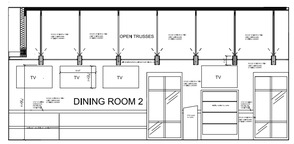
9 Section II
A5.0 SCALE: 1/8"=1'-0"



12 Section LL
A5.0 SCALE: 1/8"=1'-0"

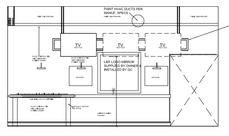


13 Section MM
A5.0 SCALE: 1/8"=1'-0"

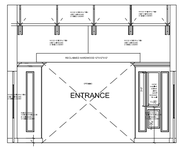


14 Section NN
A5.0 SCALE: 1/8"=1'-0"

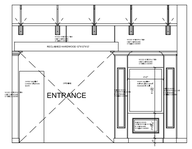
MILLWORK NOTE: ALLOW FOR DIFFERENT COLOR STAIN TO 3 MAIN SPACES



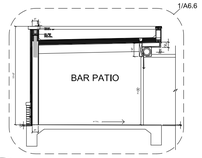
17 Section QQ
A5.0 SCALE: 1/8"=1'-0"



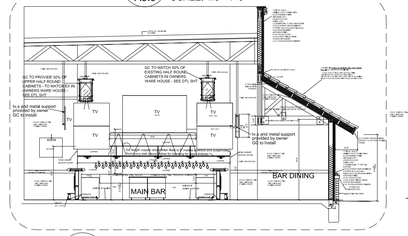
16 Section PP
A5.0 SCALE: 1/8"=1'-0"



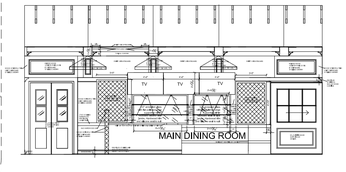
15 Section OO
A5.0 SCALE: 1/8"=1'-0"



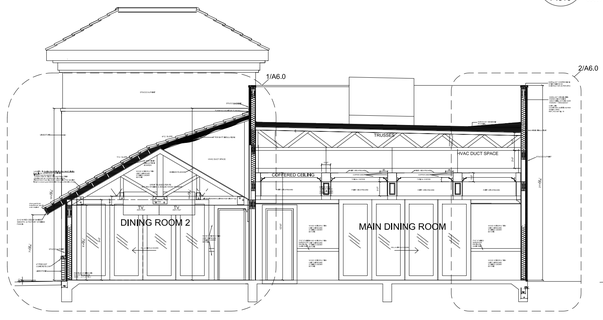
8 Section HH
A5.0 SCALE: 1/8"=1'-0"



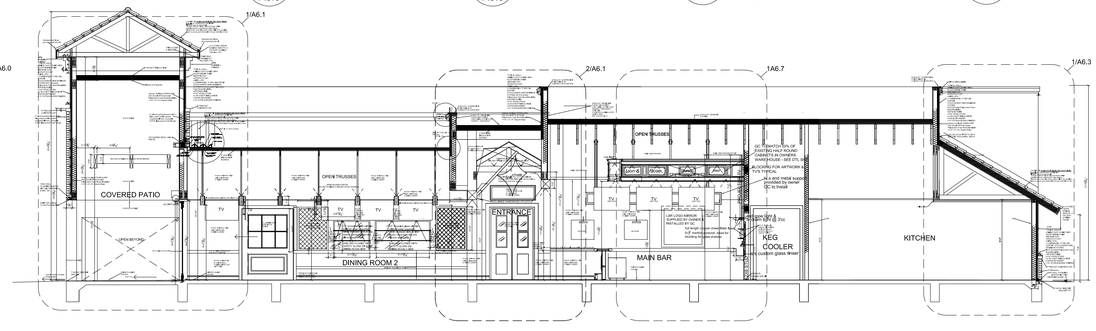
10 Section JJ
A5.0 SCALE: 1/8"=1'-0"



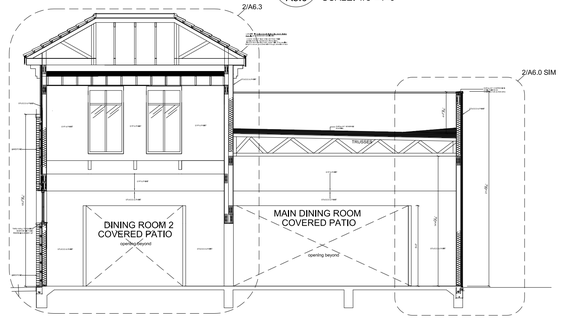
11 Section KK
A5.0 SCALE: 1/8"=1'-0"



1 Section AA
A5.0 SCALE: 1/8"=1'-0"



2 Section BB
A5.0 SCALE: 1/8"=1'-0"



3 Section CC
A5.0 SCALE: 1/8"=1'-0"

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REGISTERED ARCHITECT
STATE OF OREGON
STATE OF TEXAS
02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

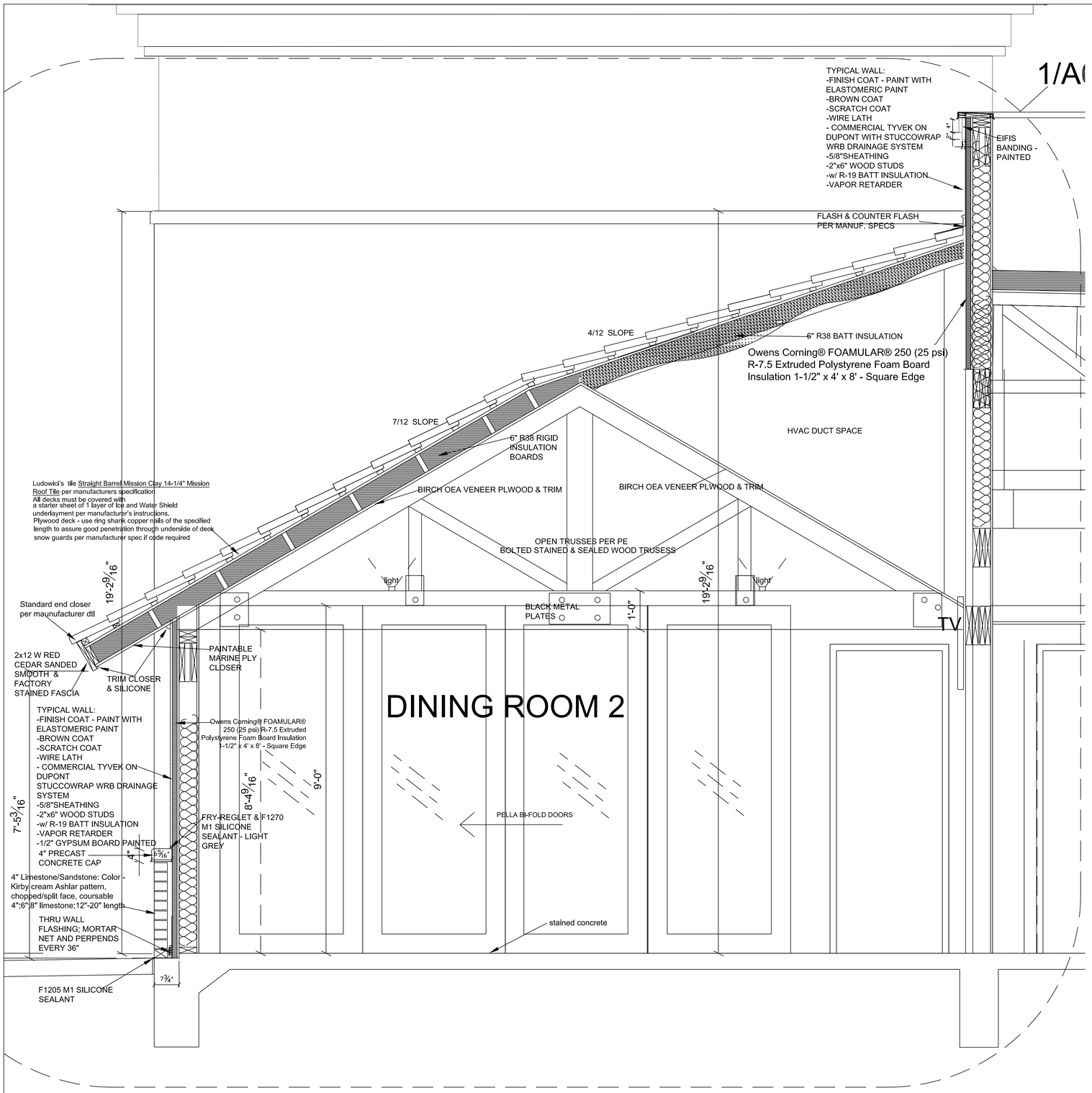
Building Sections & Interior Elevations

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A5.0



1 Wall Section
A6.0 SCALE: 3/4"=1'-0"

2 Wall Section
A6.0 SCALE: 3/4"=1'-0"

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REGISTERED ARCHITECT MICHAEL GREGORY LEGG STATE OF TEXAS

02.21.2023

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Wall Sections

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A6.0

1/A6

Ludowici's tile Straight Barrel Mission Clay 14-1/4" Mission Roof Tile per manufacturers specification
All decks must be covered with a starter sheet of 1 layer of Ice and Water Shield underlayment per manufacturer's instructions.
Plywood deck - use ring shank copper nails of the specified length to assure good penetration through underside of deck

Standard end closer per maunufacturer dtl

Standard end closer per maunufacturer dtl

2x12 W RED CEDAR SANDED SMOOTH & FACTORY STAINED FASCIA - TYP.

TRIM CLOSER & SILICONE

PAINTABLE MARINE PLY CLOSER TYP.

EIFIS BANDING - PAINTED

EIFIS BANDING - PAINTED
TYPICAL WALL:
-FINISH COAT - PAINT WITH ELASTOMERIC PAINT
-BROWN COAT
-SCRATCH COAT
-WIRE LATH
- COMMERCIAL TYVEK ON DUPONT STUCCOWRAP WRB DRAINAGE SYSTEM
-5/8"SHEATHING
-2"x6" WOOD STUDS
-w/ R-19 BATT INSULATION
-VAPOR RETARDER
-1/2" GYPSUM BOARD PAINTED

6" R38 BATT INSULATION

PAINTED GYP BOARD

Owens Corning® FOAMULAR® 250 (25 psi) R-7.5 Extruded Polystyrene Foam Board Insulation 1-1/2" x 4' x 8' - Square Edge

4" PRECAST CONCRETE CAP

4" Limestone/Sandstone: Color - Kirby cream Ashlar pattern, chopped/split face, coursable 4";6";8" limestone;12"-20" length

STUCCO & PAINT

4" Limestone/Sandstone: Color - Kirby cream Ashlar pattern, chopped/split face, coursable 4";6";8" limestone;12"-20" length

STAGGERED METAL ANGLE PER PE

DETAIL 'X'

THRU WALL FLASHING; MORTAR NET AND PERPENDS EVERY 36"

16 OZ COPPER COUNTER FLASHING

HIGH TEMP. SELF-ADHERING MODIFIED BITUMEN MEMBRANE

16 OZ COPPER DRIPEDGE FLASHING

14-1/4" STRAIGHT BARREL MISSION COVER

14-1/4" STRAIGHT BARREL MISSION PAN

RECD FASTENERS

3/4" PLYWOOD

2" X 4" FOUNDATION GRADE STRINGERS

ICE & WATER SHIELD UNDERLAYMENT

6" R38 RIGID INSULATION BOARDS

BOLTED STAINED & SEALED WOOD BEAMS

WOOD VENEER ON ¾" CHIPBOARD - STAINED BIRCH OEA

COVERED PATIO

AC DIFFUSER

TV

TV

PELLA BI-FOLD DOORS

WOOD VENEER ON ¾" CHIPBOARD - STAINED BIRCH OEA

2"X5" STAINED HARDWOOD PROFILED CHAIR RAIL

WOOD VENEER ON ¾" CHIPBOARD - STAINED BIRCH OEA WITH TRIM

stained concrete

1-1/4" FALL

stained concrete

ASTROTURF TO BAR PATIO AREA

F1205 M1 SILICONE SEALANT

30'-0 5/16"
25'-0 9/16"
19'-2 9/16"
2'-7 3/8"
10'
2'
8"
4"
3 1/4"
3"
6"
6 5/16"
4"
7 3/4"
1'-11 3/8"
4"
3'-8 1/16"
1'-6"
1'-0"
14'-10"
12'-7 1/4"
8'-9 13/16"
8'-9 13/16"
8'-4 13/16"
1 1/4"

1 Wall Section
A6.1 SCALE: 3/4"=1'-0"

TYPICAL WALL:
-FINISH COAT - PAINT WITH ELASTOMERIC PAINT
-BROWN COAT
-SCRATCH COAT
-WIRE LATH
- COMMERCIAL TYVEK ON DUPONT STUCCOWRAP WRB DRAINAGE SYSTEM
-5/8"SHEATHING
-2"x6" WOOD STUDS
-w/ R-19 BATT INSULATION
-VAPOR RETARDER
-1/2" GYPSUM BOARD PAINTED

DURO-LAST COMPRESSION STRIP PAINTED BY CONTRACTOR AS PER SPEC

ETAIL 'Z'

DURO-LAST COMPRESSION STRIP PAINTED BY CONTRACTOR AS PER SPEC

EIFIS BANDING - PAINTED

DURALAST ON BUILDING PAPER ON EXTERIOR SHEATHING, EXTEND OVER PARAPET THROUGHOUT

Owens Corning® FOAMULAR® 250 (25 psi) R-7.5 Extruded Polystyrene Foam Board Insulation 1-1/2" x 4' x 8' - Square Edge

MILAR TO DETAIL 'X' N 1/A6.1
DETAIL 'Y'

6" R38 RIGID INSULATION BOARDS

WOOD VENEER ON ¾" CHIPBOARD - STAINED BIRCH OEA

OPEN TRUSSES PER PE BOLTED STAINED & SEALED WOOD TRUSESS

4 FLAGS
PROVIDE & INSTALL 4X 7' ALUMINUM POLES WITH GB; ENGLAND SCOTLAND & WALES FLAGS

ENTRANCE

PAINTED GYP BOARD

RECLAIMED WOOD 4"X12"

WOOD VENEER ON ¾" CHIPBOARD - STAINED BIRCH OEA

2"X5" STAINED HARDWOOD PROFILED CHAIR RAIL

PAINTED GYP BOARD

WOOD VENEER ON ¾" CHIPBOARD - STAINED BIRCH OEA WITH TRIM

2"X5" STAINED HARDWOOD PROFILED CHAIR RAIL

WOOD VENEER ON ¾" CHIPBOARD - STAINED BIRCH OEA WITH TRIM

2 Wall Section
A6.1 SCALE: 3/4"=1'-0"

1'-11 7/16"
1'-1"
17'-11 13/16"
11'-2 7/16"
12'-1 1/16"
9'-0"
9'-0"
8'-4 9/16"

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REGISTERED ARCHITECT MICHAEL GREGORY LEGG STATE OF TEXAS 23813

02.21.2023

DRAWING COORDINATION
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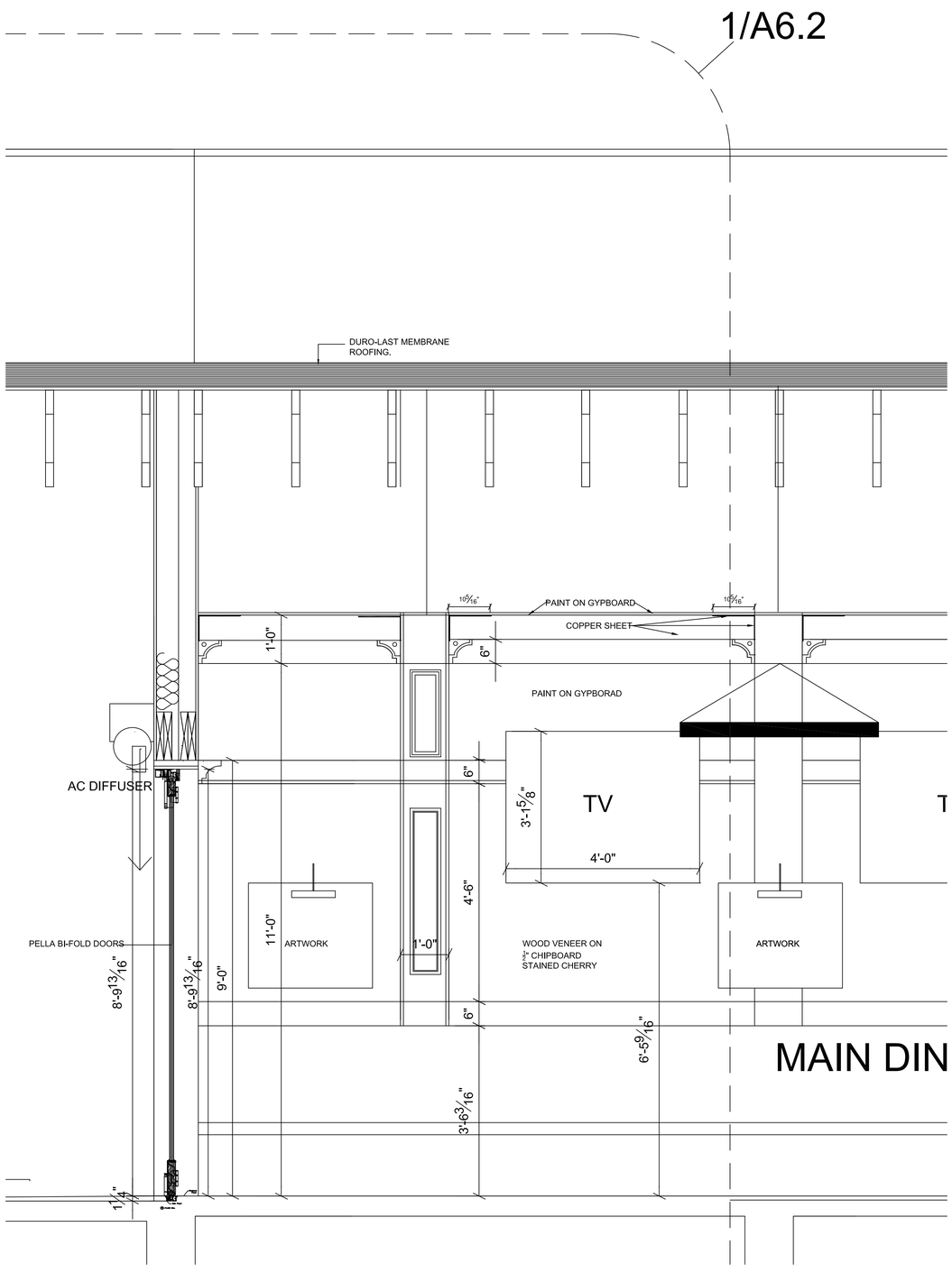
Wall Sections

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

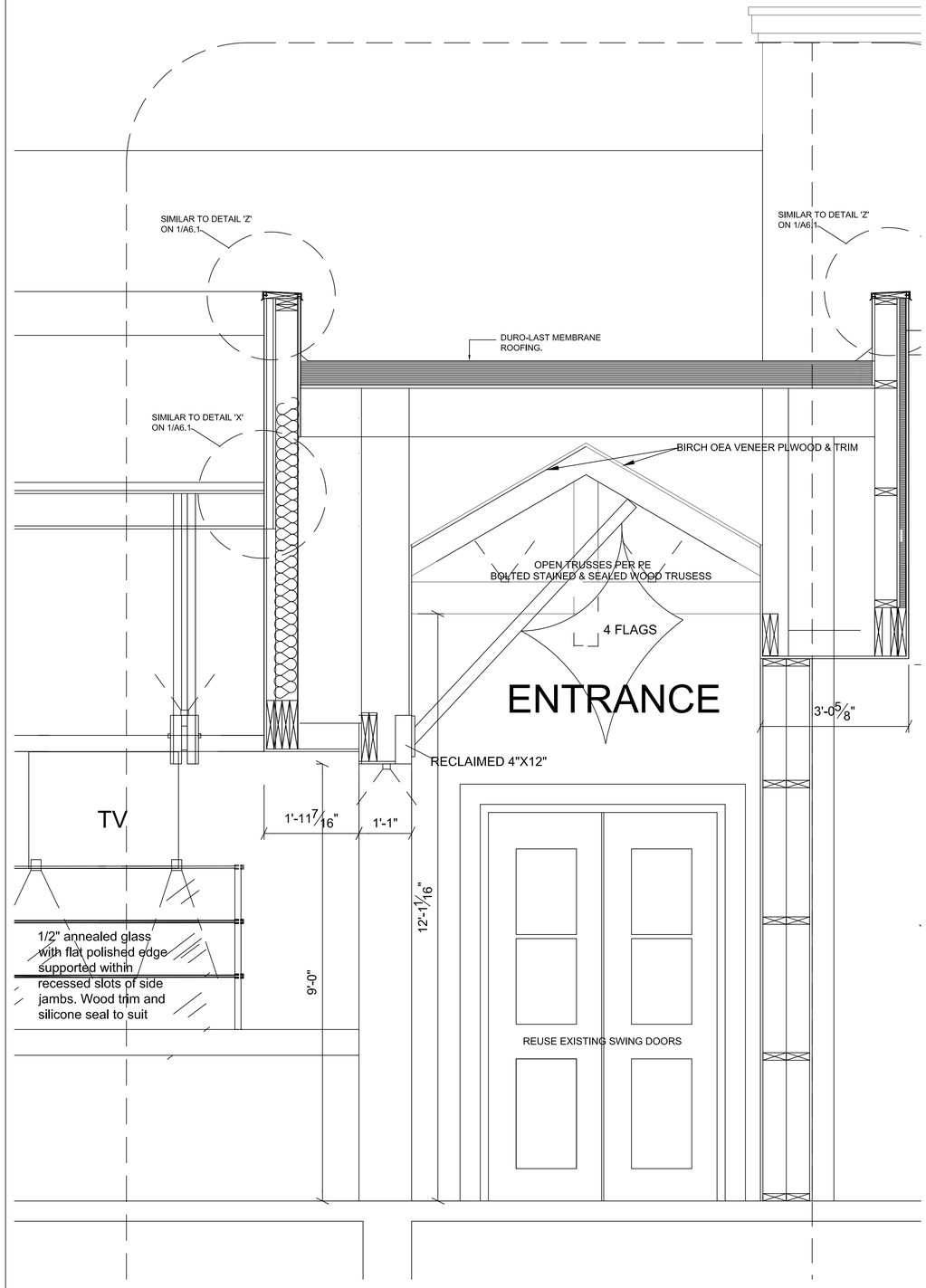
DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A6.1



1 Wall Section
A6.2 SCALE: 3/4"=1'-0"



2 Wall Section - SIM to 2/A6.0
A6.2 SCALE: 3/4"=1'-0"

3 Wall Section
A6.2 SCALE: 3/4"=1'-0"

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REGISTERED ARCHITECT MICHAEL GREGORY LEGG 32843 STATE OF TEXAS

02.21.2023

DRAWING COORDINATION
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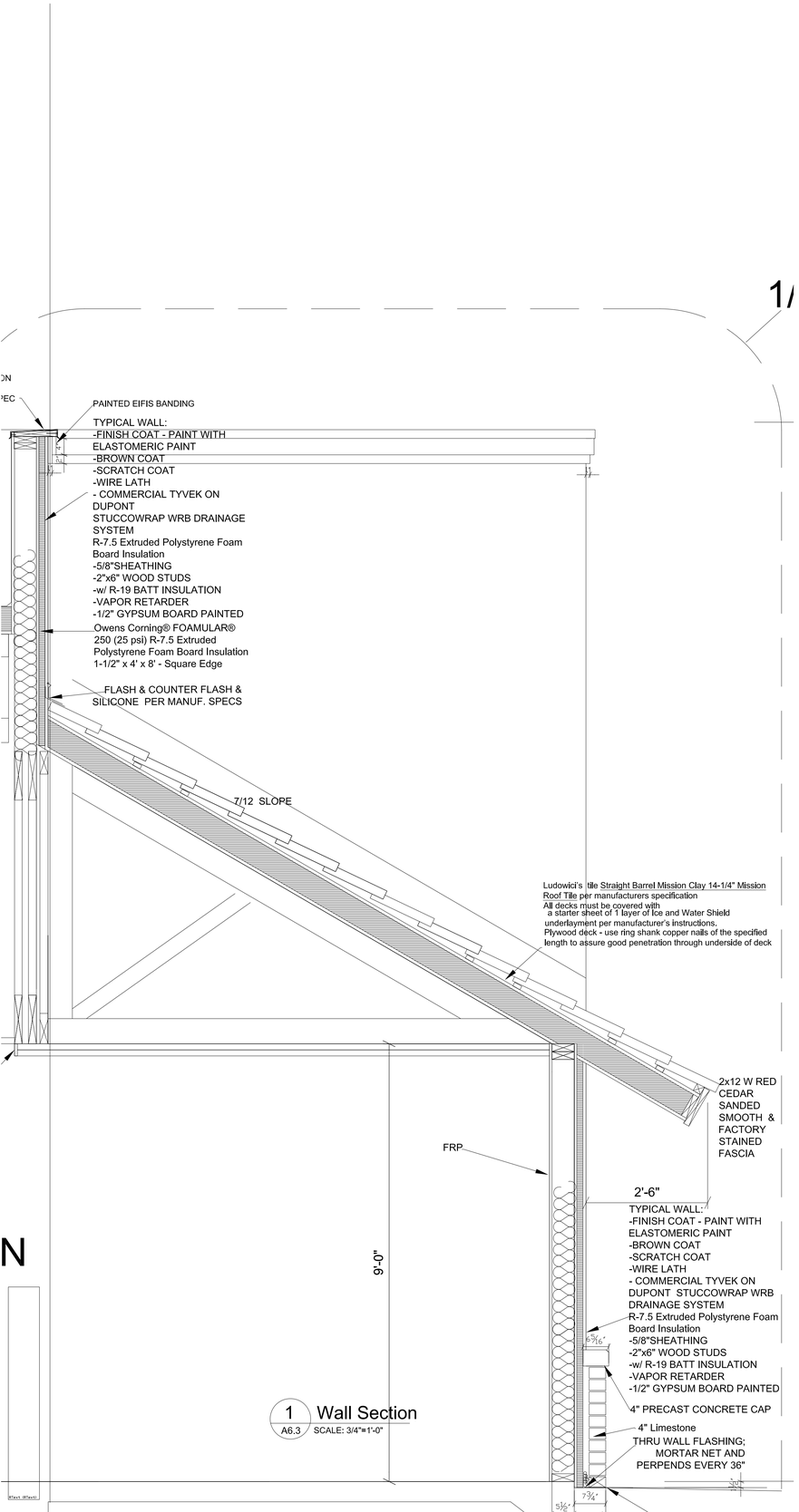
Wall Sections

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

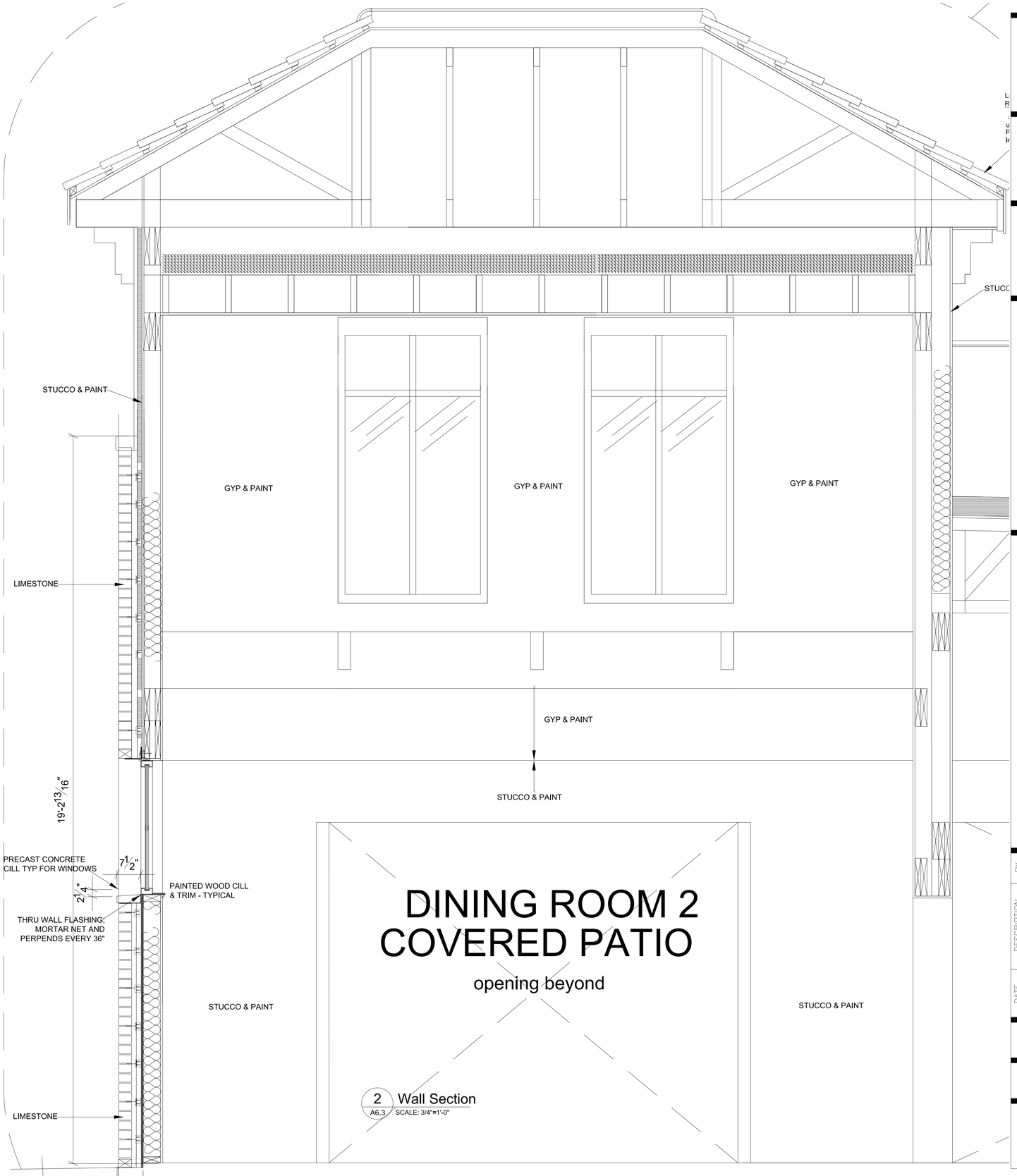
DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A6.2



1 Wall Section
A6.3 SCALE: 3/4"=1'-0"



2 Wall Section
A6.3 SCALE: 3/4"=1'-0"

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22643
STATE OF TEXAS

02.21.2023

DRAWING COORDINATION
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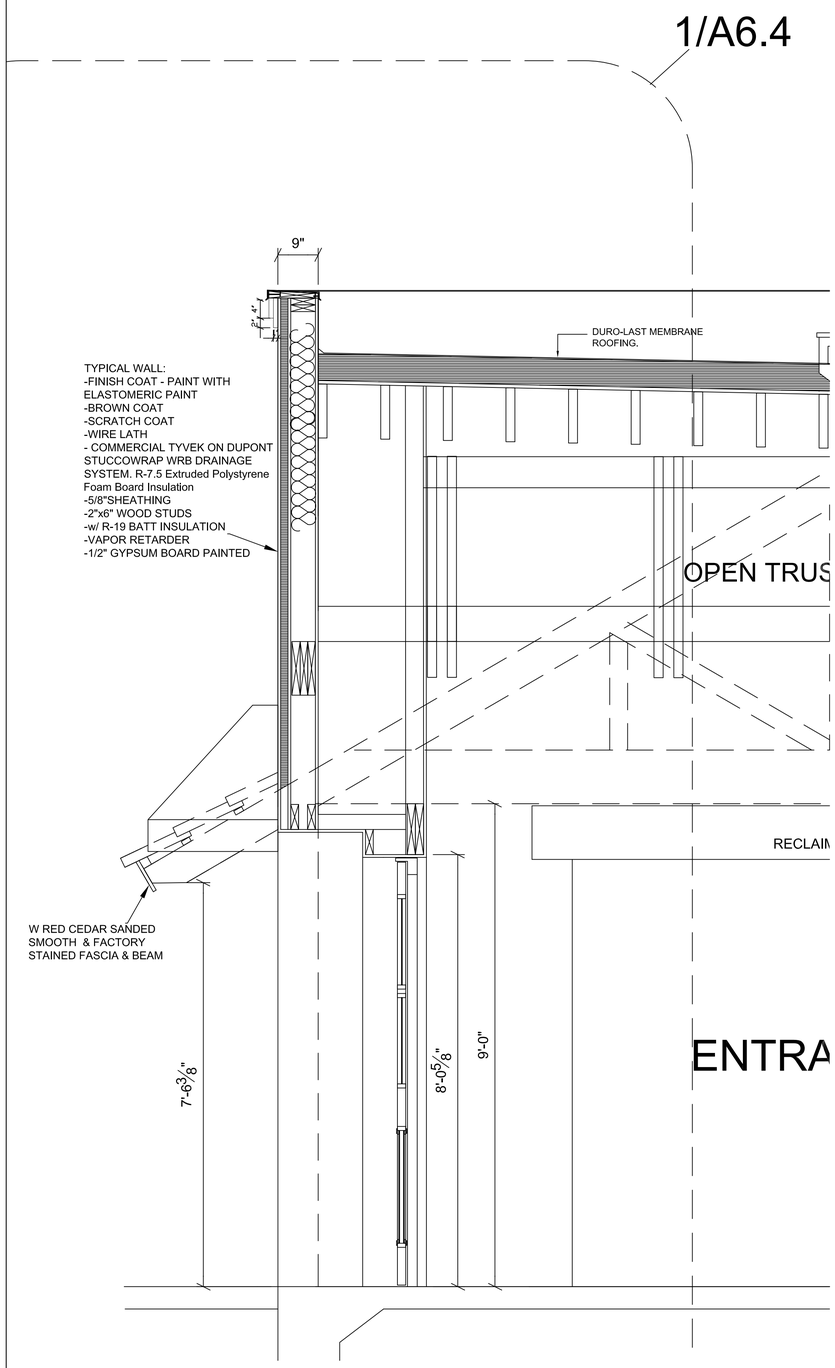
Wall Sections

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

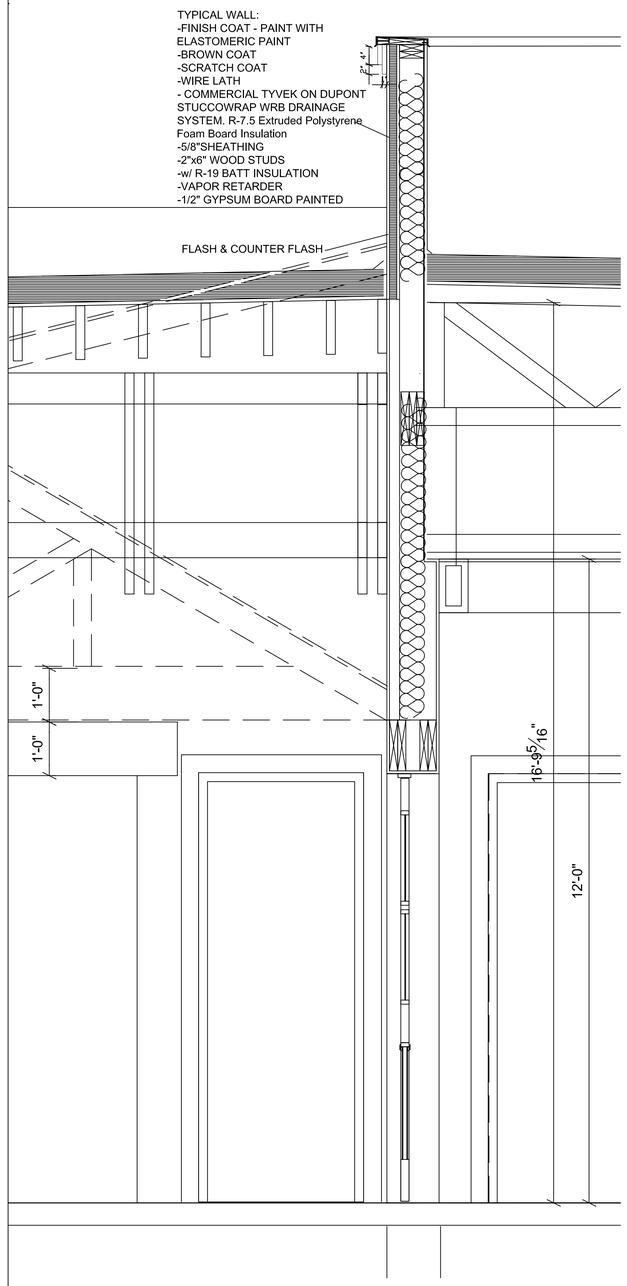
DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

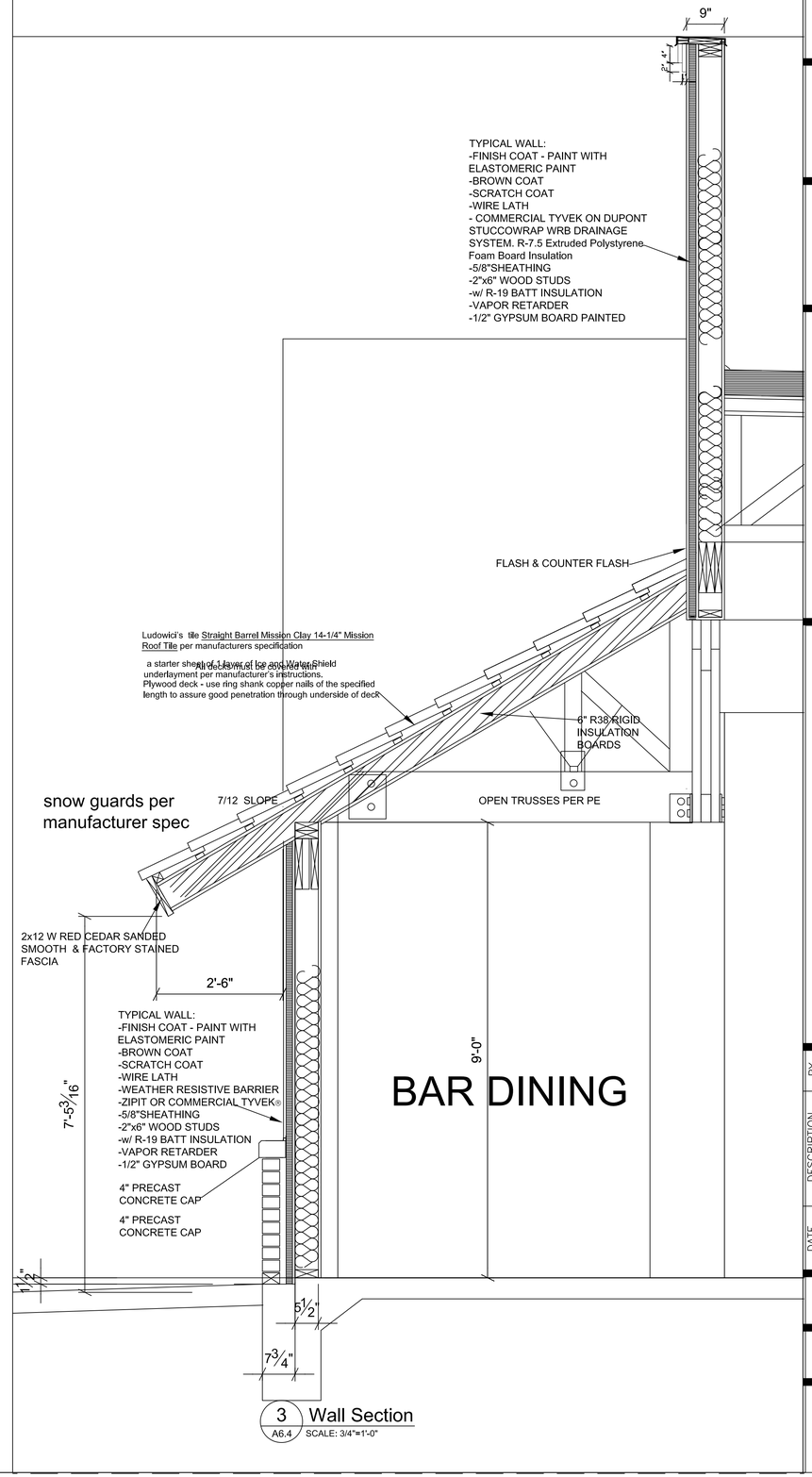
SHEET NO.
A6.3



1 A6.4 Wall Section
SCALE: 3/4"=1'-0"



2 A6.4 Wall Section
SCALE: 3/4"=1'-0"



3 A6.4 Wall Section
SCALE: 3/4"=1'-0"

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REGISTERED ARCHITECT MICHAEL GREGORY LEGG 23880 STATE OF TEXAS

02.21.2023

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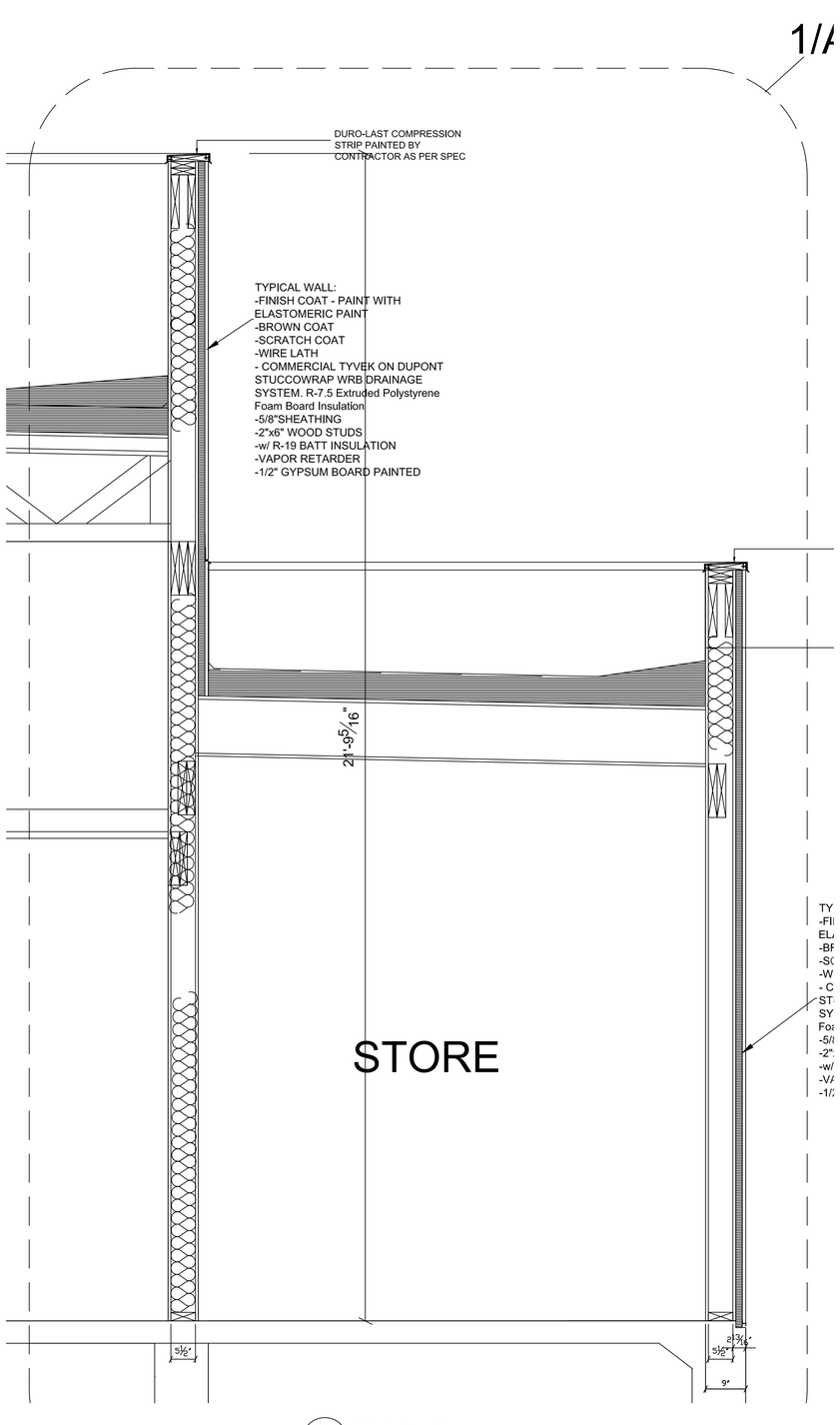
Wall Sections

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

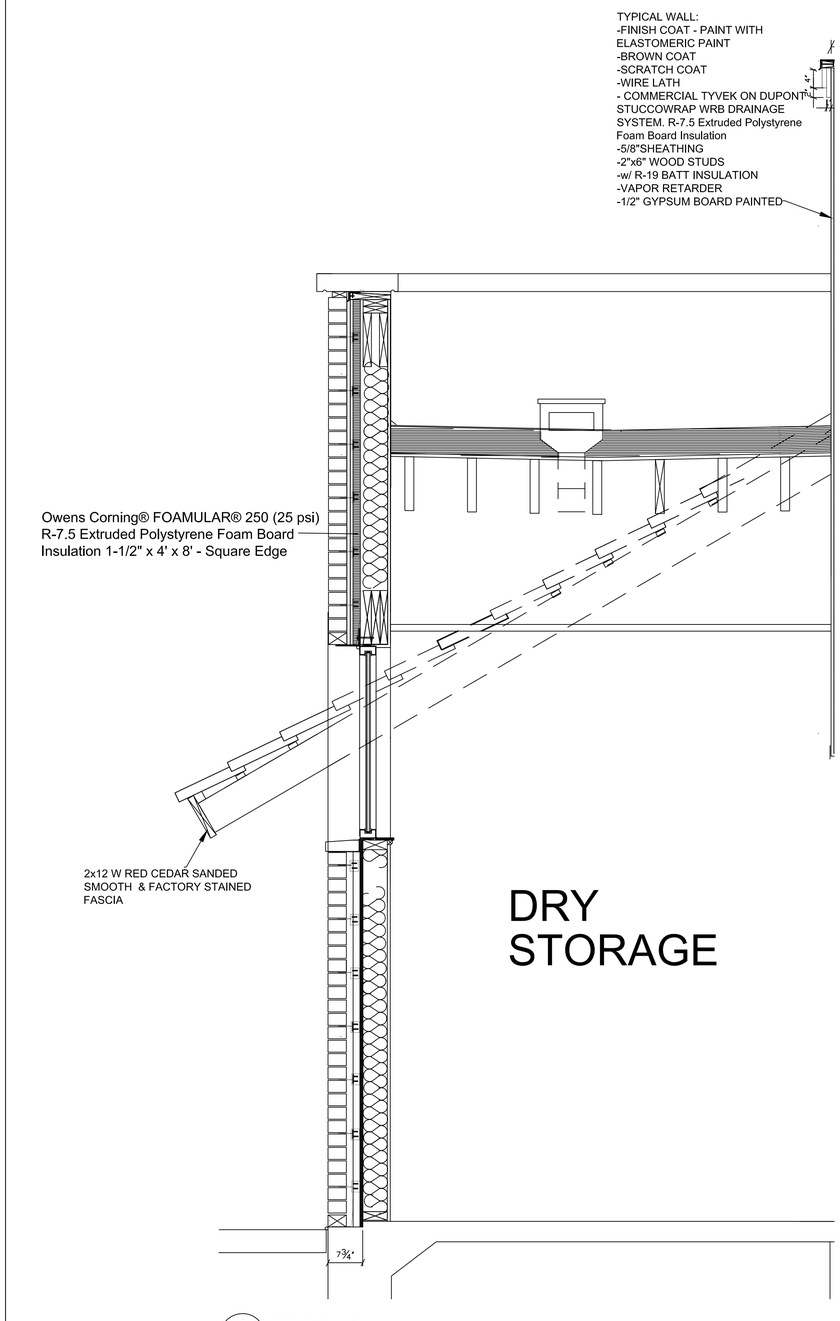
DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

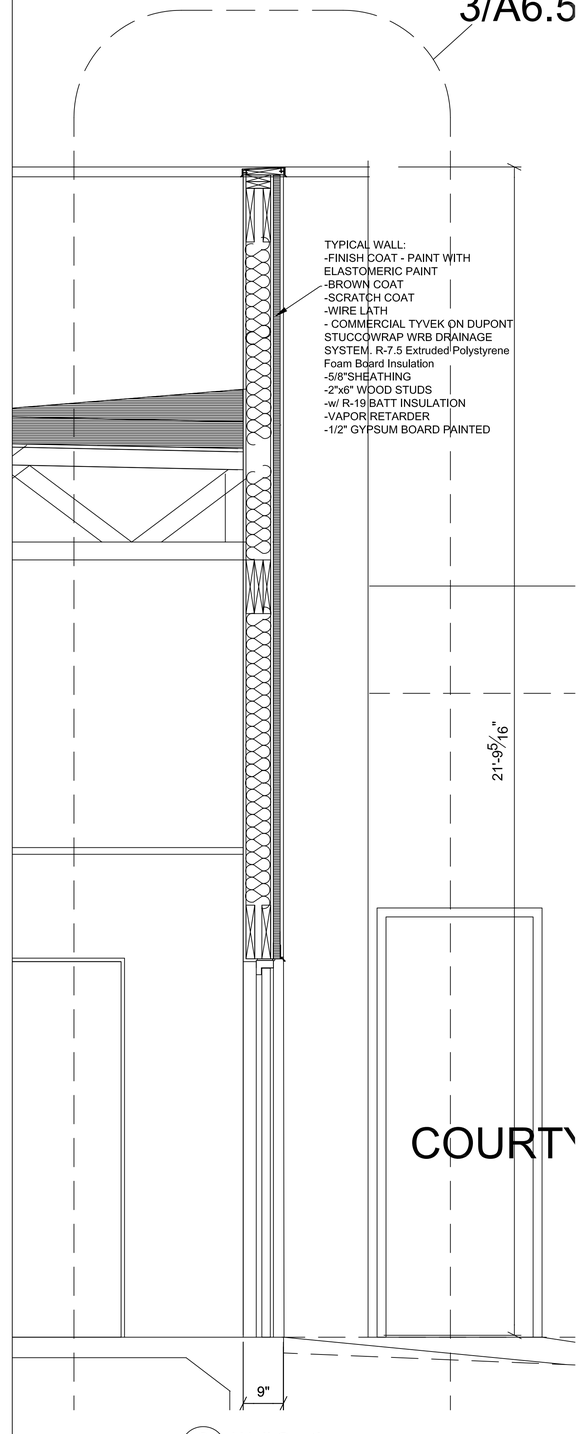
SHEET NO.
A6.4



1 A6.5 Wall Section
SCALE: 3/4"=1'-0"



2 A6.5 Wall Section
SCALE: 3/4"=1'-0"



3 A6.5 Wall Section
SCALE: 3/4"=1'-0"

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REGISTERED ARCHITECT MICHAEL GREGORY LEGG 23444 STATE OF TEXAS

02.21.2023

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Wall Sections

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

Rev

PROJECT NO.
05-05-22

SHEET NO.
A6.5

1A6.6

DURO-LAST MEMBRANE ROOFING.

TYPICAL WALL:
-FINISH COAT - PAINT WITH ELASTOMERIC PAINT
-BROWN COAT
-SCRATCH COAT
-WIRE LATH
- COMMERCIAL TYVEK ON DUPONT STUCCOWRAP WRB DRAINAGE SYSTEM. R-7.5 Extruded Polystyrene Foam Board Insulation
-5/8"SHEATHING
-2"x6" WOOD STUDS
-w/ R-19 BATT INSULATION
-VAPOR RETARDER
-1/2" GYPSUM BOARD PAINTED

PAINT ON GYPBOARD

GC TO PROVIDE 50% OF UPPER HALF ROUND CABINETS - TO MATCH EX IN OWNERS WARE HOUSE - SEE DTL SHT

rope light

LV Light

PAINT ON GYPBOARD

GC TO MATCH 50% OF EXISTING HALF ROUND CABINETS IN OWNERS WARE HOUSE - SEE DTL SHT

rope light

LV Light

PAINT ON GYPBOARD

FLASH & COUNTER FLASH

7/12 SLOPE

Ludowici's tile Straight Barrel Mission Clay 14-1/4" Mission Roof Tile per manufacturers specification

a starter sheet of 1 layer of Ice and Water Shield underlayment per manufacturer's instructions. Plywood deck - use ring shank copper nails of the specified length to assure good penetration through underside of deck

6" R38 RIGID INSULATION BOARDS

PAINT ON GYPBOARD

WOOD VENEER & TRIM ON ¾" CHIPBOARD STAINED CHERRY

OPEN TRUSSES PER PE BOLTED STAINED & SEALED WOOD TRUSESS

all metal brackets painted matt black - typ

tv,s and metal support provided by owner GC to install

TV

TV

86"x50"

TV

48.5"x 30.5"

48.5"x 30.5"

TV

TV

TV

1'-0"

2'-7"

tv,s and metal support provided by owner GC to install

WOOD VENEER & TRIM ON ¾" CHIPBOARD STAINED CHERRY

ARTWORK

9'-8"

COPPER

5'-0"

full length copper sheet finish fixed to $\frac{5}{8}$" marine plywood and suspended from pony wall above. Allow for blocking for glass shelves

wrap copper around corner

17'-0 3/4"

COPPER

COPPER

COPPER

COPPER

wrap copper around corner

PAINT ON GYPBOARD

WOOD VENEER & TRIM ON ¾" CHIPBOARD STAINED CHERRY

9'-0"

7'-0"

2"X5" STAINED HARDWOOD PROFILED CHAIR RAIL

6'-0"

6'-0"

FRP

STAINLESS STEEL SPILL TROUGH

STAINLESS STEEL SPILL TROUGH BY CONTRACTOR

FRP

2"X5" STAINED HARDWOOD PROFILED CHAIR RAIL

BAR DINING

WOOD VENEER & TRIM ON ¾" CHIPBOARD STAINED CHERRY

1'-0"

WOOD VENEER & TRIM ON ¾" CHIPBOARD STAINED CHERRY

WOOD VENEER & TRIM ON ¾" CHIPBOARD STAINED CHERRY

stained & sealed

FRP

2'-10 7/16"

MAIN BAR

FRP

stained & sealed concrete

pressure treated 2x6 sill plate

pressure treated 2x6 sill plate

KB107
3/4" x 3-1/2"

2x12 W RED CEDAR SANDED SMOOTH & FACTORY STAINED FASCIA

2'-6"

TYPICAL WALL:
-FINISH COAT - PAINT WITH ELASTOMERIC PAINT
-BROWN COAT
-SCRATCH COAT
-WIRE LATH
- COMMERCIAL TYVEK ON DUPONT STUCCOWRAP WRB DRAINAGE SYSTEM. R-7.5 Extruded Polystyrene Foam Board Insulation
-5/8"SHEATHING
-2"x6" WOOD STUDS
-w/ R-19 BATT INSULATION
-VAPOR RETARDER
-1/2" GYPSUM BOARD PAINTED

7-5 3/16"

4" PRECAST CONCRETE CAP

LIMESTONE PER SPEC

5½"

7¾"

9"

1 Wall Section
A6.6 SCALE: 3/4"=1'-0"

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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

Wall Sections

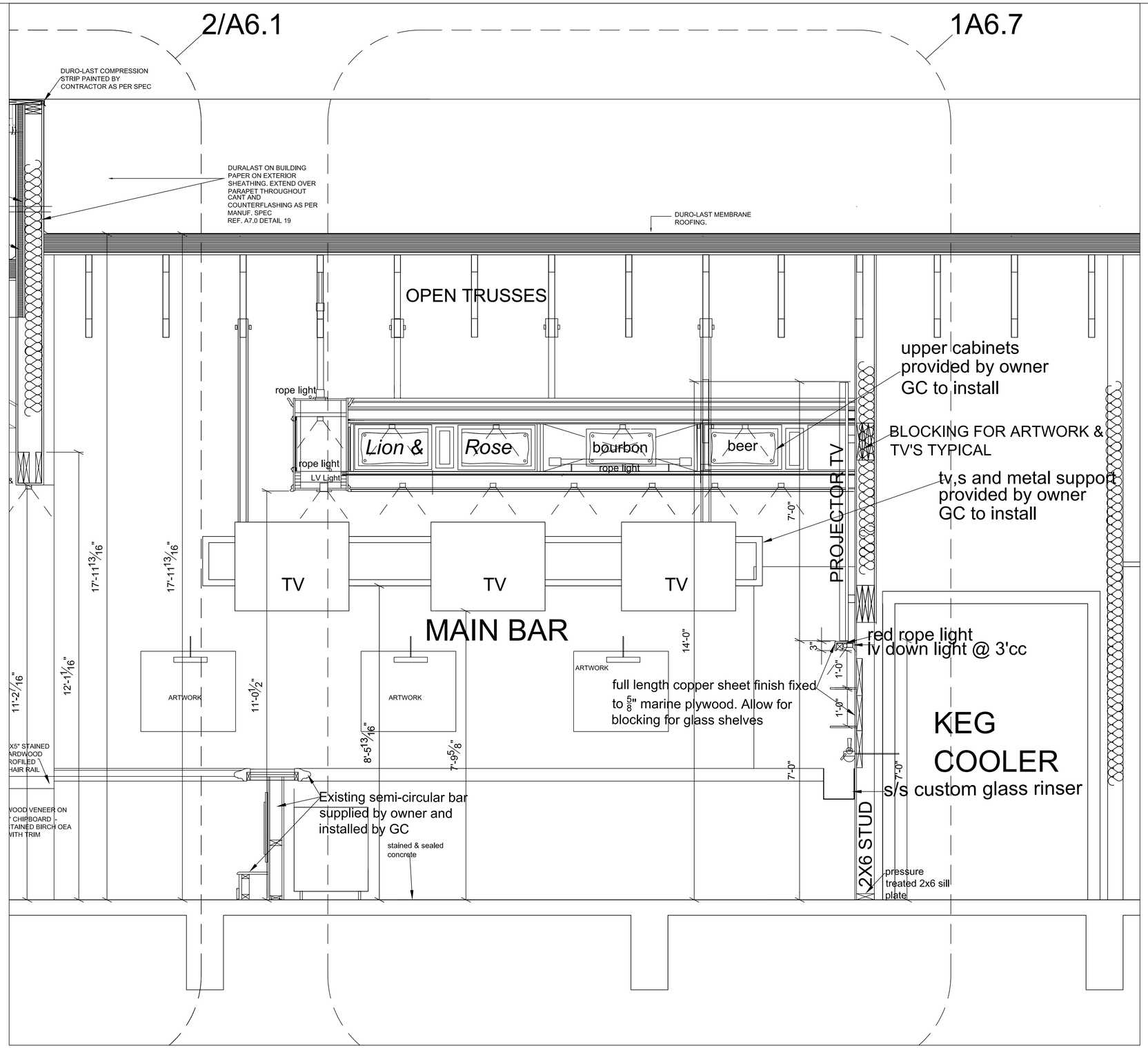
23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

Rev

PROJECT NO.
05-05-22

SHEET NO.
A6.6



1 A6.7 Wall Section
SCALE: 3/4"=1'-0"

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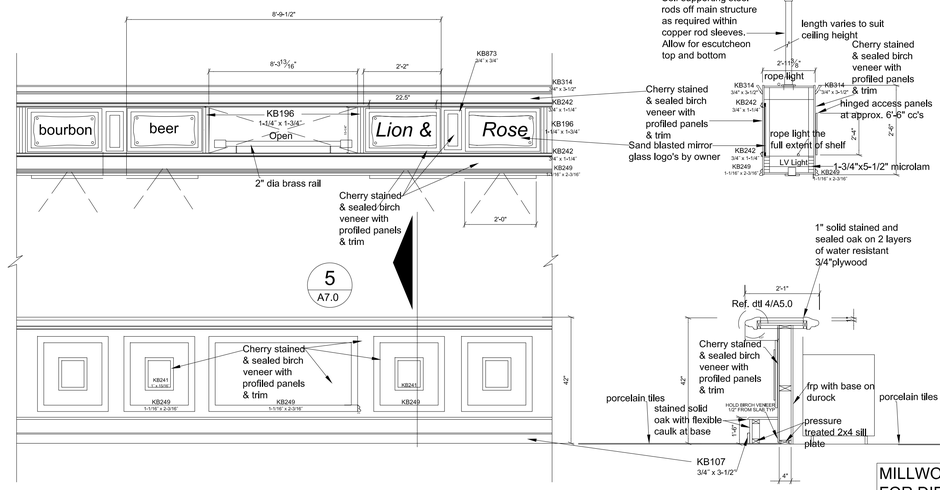
23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

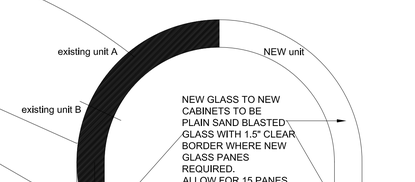
Rev

PROJECT NO.
05-05-22

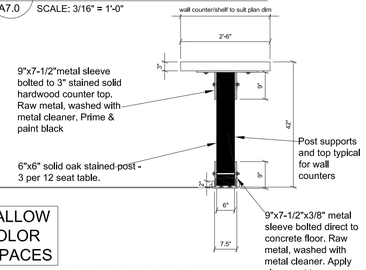
SHEET NO.
A6.7

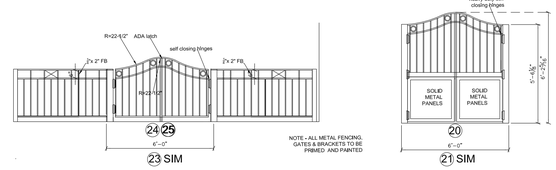


5
A7.0



MILLWORK NOTE: ALLOW FOR DIFFERENT COLOR STAIN TO 3 MAIN SPACES





6 A7.0 PART ELEVATION - BAR & UPPER CABINET
SCALE: 3/16" = 1'-0"

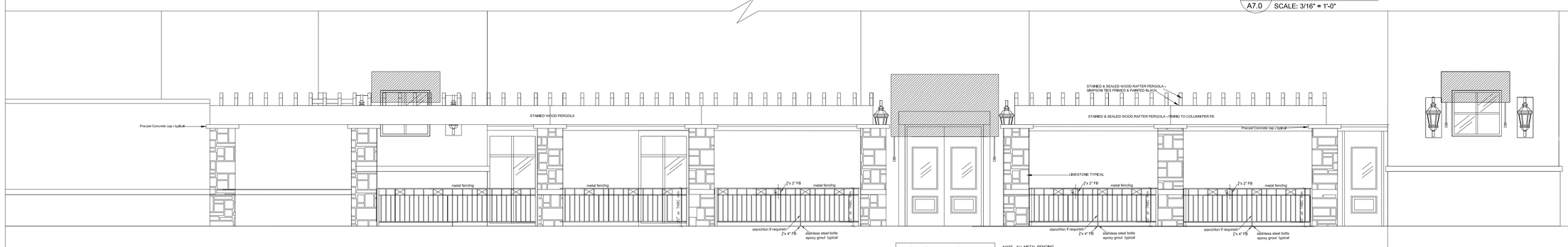
5 A7.0 SECTION THROUGH BAR & UPPER CABINET
SCALE: 3/16" = 1'-0"

7 A7.0 PHOTOS OF EXISTING PART UPPER CABINET
SCALE: 3/16" = 1'-0"

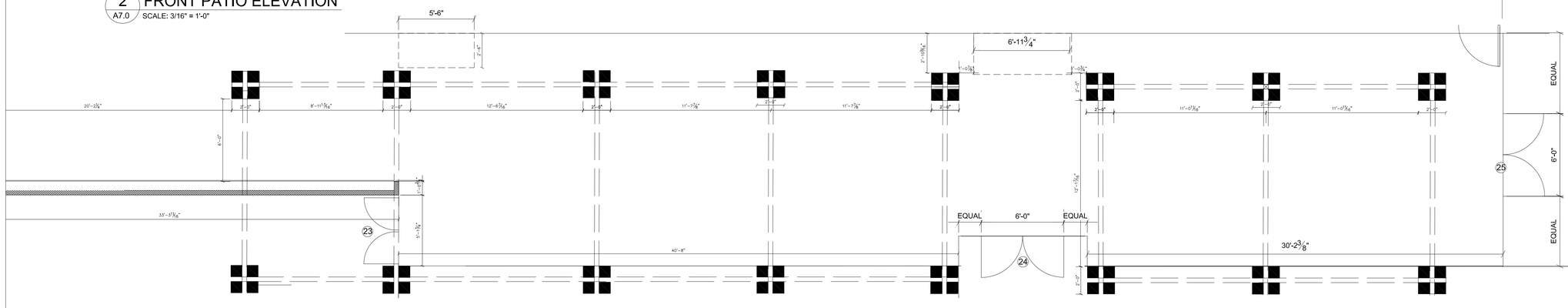
4 A7.0 TABLE AND BAR SHELF SUPPORTS
SCALE: 3/16" = 1'-0"

8 A7.0 PLAN INDICATING EXISTING PORTION OF UPPER CABINET
SCALE: 3/16" = 1'-0"

3 A7.0 FENCE GATES
SCALE: 3/16" = 1'-0"



2 A7.0 FRONT PATIO ELEVATION
SCALE: 3/16" = 1'-0"



1 A7.0 FRONT PATIO PLAN
SCALE: 3/16" = 1'-0"

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02.21.2023

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PATIO, FENCE & MILLWORK DETAILS

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
A7.0

DIVISION 6 - WOODS AND PLASTICS (CONTINUED)

SECTION 06410 - CUSTOM CABINETS

1. SECTION INCLUDES
   A. Specially fabricated cabinet units and hardware.

2. REFERENCES
   A. ANSI A135.4 – American National Standard for Basic Hardboard; 2004.
   B. ANSI A208.1 – American National Standard for Particleboard; 1999.
   C. AWI/AWMAC (QSI) – Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2006, 8th Ed., Version 2.0.
   D. GSA CID A-A-1936 – Adhesive, Contact, Neoprene Rubber; Federal Specifications and Standards; Revision A, 1996.
   E. NEMA LD 3 – High-Pressure Decorative Laminates; National Electrical Manufacturers Association; 2005.
   F. PS 1 – Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce); 1995.

3. QUALITY ASSURANCE
   A. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality, unless other quality is indicated for specific items.

4. LUMBER MATERIALS
   A. Hardwood Lumber: NHLA; Graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Grade I/Premium; average moisture content of 5–10 percent; species as follows:
      3. Exposed Surfaces: As specified on the drawings.
      4. Semi-Exposed Surfaces: As specified on the drawings.
      5. Concealed Surfaces: Species poplar.

5. PANEL MATERIALS
   A. Exposed Surfaces: NIST PS 1; APA A-A Grade, plain-sliced face veneer as indicated on drawings.
   B. Hardboard: AHA A135.4; Pressed wood fiber with resin binder, Class 1 – Tempered, 1/4 inch thick, smooth two sides (S2S); use for drawer bottoms, dust panels, and other components indicated on drawings.

6. ACCESSORIES
   A. Adhesive: Type recommended by fabricator to suit application.
   B. Fasteners: Size and type to suit application.
   C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel, or chrome-plated finish in exposed locations.
   D. Concealed Joint Fasteners: Threaded steel.
   E. Grommets: Standard plastic, painted metal, or rubber grommets for cut-outs, in color to match adjacent surface.

7. HARDWARE
   A. Adjustable Shelf Supports: Standard back-mounted system using surface mounted metal shelf standards and coordinated cantilevered shelf brackets, satin chrome finish, for nominal 1 inch spacing adjustments.
   B. Drawer and Door Pulls: Top Knobs M1165 Nouveau III Square Black Knobs
   C. Cabinet Locks: First Watch 1385-VB, Keyed cylinder, master keyed, steel with oil rubbed bronze finish.
   D. Catches: L-EP592-P, 15 lb Double Magnetic Catch, Bronze.
   E. Drawer Slides:
      1. Type: Standard extension.
      2. Static Load Capacity: Commercial grade.
      3. Mounting: Side mounted.
      4. Stops: Integral type.
   F. Hinges: Wurth FE12-STB 1 ½" Piano Hinge, Statuary Bronze.

8. FABRICATION
   A. Cabinet Style: Flush overlay.
   B. Drawer Construction Technique: Dovetail joints.
   C. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
   D. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
   E. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
   F. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
      1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
      2. Cap exposed plastic laminate finish edges with material of same finish and pattern.
   G. Matching Wood Grain: Comply with requirements of quality standard for specified Grade and as follows:
      1. Provide center matched panels at each elevation.
      2. Provide sequence matching across each elevation.
      3. Carry figure of cabinet fronts to toe kicks.
   H. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

9. INSTALLATION
   A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
   B. Use fixture attachments in concealed locations for wall mounted components.
   C. Use concealed joint fasteners to align and secure adjoining cabinet units and countertops.
   D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
   E. Secure cabinets to floor using appropriate angles and anchorages.
   F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

10. ADJUSTING
    A. Adjust installed work.
    B. Adjust moving or operating parts to function smoothly and correctly.

SECTION 06620 - SOLID NON-POROUS SHEET AND SHAPE PRODUCT

1. REFERENCE STANDARDS
   A. American Society of Testing Materials (ASTM): ASTM E84
   B. Underwriter's Laboratories (UL)

2. SUBMITTALS
   A. Submit Shop Drawings to Architect, based on details shown on the Drawings. Show design load parameters, dimensions, adjacent construction, materials, thicknesses, fabrication details, required clearances, tolerances, colors, finishes, methods of support, integration of components, and anchorages. Detail to serve as installation drawings. Architect's acceptance is required prior to start of fabrication and/or shipment.

3. WARRANTY
   A. Provide manufacturer's standard ten-year warranty against manufacturing defects.

4. PRODUCTS
   A. Sheet Products (countertops): Manufacturer noted on finish schedule in drawings; 3/8 inch thick sheets, continuous length with bull-nose edge with integral back and side splash, and 3/4 inch exterior grade APA Fir plywood backing.
   B. Patterns and Colors: As noted on finish schedule in drawings.

5. INSTALLATION
   A. Contractor is responsible for dimensions, detailing, fabrication, fitting, and alignment of work of this section.
   B. Protect components during shipping and delivery by appropriate boxing, crating, etc. Protect components from storage damage by retaining shipping protection in place until installation.
   C. Verify that substrate is ready to receive work and dimensions are as indicated on the Drawings prior to fabrication. Beginning of fabrication means dimensions have been verified and acceptance of substrates.
   D. Install fabrications in accord with accepted shop drawings and fabricator's instructions.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 07212 - BOARD AND BATT INSULATION

1. SECTION INCLUDES
   A. Board insulation at cavity wall construction and perimeter foundation wall.
   B. Batt insulation in exterior wall and ceiling construction.
   C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

2. REFERENCES
   A. ASTM C 578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2005a.
   B. ASTM C 665 – Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2001.
   C. ASTM C 1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2006.
   D. ASTM D 2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2001.
   E. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.
   F. ASTM E 136 – Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2004.

3. BOARD INSULATION MATERIALS
   A. Foundation Insulation: Expanded Polystyrene Board Insulation: ASTM C 578; with the following characteristics:
      1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E 84.
      2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E 84.
      3. Board Size: 48 x 96 inch.
      4. Board Thickness: 1 inch.
      5. Water Absorption: 4 percent by volume, maximum, when tested in accordance with ASTM D 2842.
      6. Board Density: 0.7 lb/cu ft.
      7. Compressive Resistance: 5 psi.
      8. Thermal Conductivity (k factor) at 25 degrees F: 0.28.
      9. Approved manufacturers:
         a. AFM Corp: www.r-control.com.
         b. Diversifoam Products: www.diversifoam.com.
         c. Grace Construction Products: www.na.graceconstruction.com.

4. BATT INSULATION MATERIALS
   A. Batt Insulation: ASTM C 665; preformed batt; friction fit, conforming to the following:
      1. Combustibility: Non-combustible, when tested in accordance with ASTM E 136, except for facing, if any.
      2. Thermal Resistance:
         a. Walls: R-21 High Density Fiberglass & R-7.5 CONTINUOUS EXT. RIGID BOARD PER DRAWINGS
         b. Roof: R-38
      3. Facing: aluminum foil or kraft-paper faced one side.
      4. Approved manufacturers:
         a. CertainTeed Corporation: www.certainteed.com.
         b. Johns Manville Corporation: www.jm.com.
         c. Owens Corning Corp: www.owenscorning.com.

5. ACCESSORIES
   A. Tape: Bright aluminum self-adhering type, mesh reinforced, 2 inch wide.
   B. Insulation Fasteners: Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.
   C. Adhesive: Type recommended by insulation manufacturer for application.

6. BOARD INSTALLATION AT FOUNDATION PERIMETER
   A. Install boards vertically on foundation perimeter.
   B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

7. BATT INSTALLATION
   A. Install insulation in accordance with manufacturer's instructions.
   B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
   C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
   D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
   E. Install insulation in walls with faced side facing the building interior.
   F. Tape insulation batts in place.
   G. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.

SECTION 07240 - EXTERIOR INSULATION AND FINISH SYSTEMS

1. SECTION INCLUDES
   A. Manufacturer's requirements for the proper design, use, and installation of a Class PB Water-Drainage Exterior Insulation and Finish System.

2. REFERENCES
   A. ASTM E84: Test Method for Surface Burning Characteristics of Building Materials.
   B. ASTM E119: Standard Test Method for Fire Tests of Building Construction and Materials.
   C. ASTM E331: Test Method for Water Penetration by Uniform Static Air Pressure Difference.
   D. ASTM E2430: Standard Specification For Expanded Polystyrene ("EPS") Thermal Insulation Boards For Use In Exterior Insulation and Finish Systems ("EIFS")
   E. ASTM E2486: Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)

3. ASSEMBLY DESCRIPTION
   A. Standard WaterMaster LCR – GX : Exterior Insulation and Finish System (EIFS) with drainage consisting of Grooved Expanded Polystyrene Insulation (EPS) Board, Mechanical Fasteners, Base Coat with embedded Reinforcing Fabric Mesh, [Primer], and Finish Coat. This system is installed over a code compliant water-resistive barrier.
   B. Functional Criteria:
      1. General:
         a. Insulation Board: At system termination, completely encapsulate insulation board edges by mesh reinforced base coat, substrate or drainage track (limited to terminations at foundation). The use of and maximum thickness of insulation board shall be in accordance with applicable building codes and EIFS manufacturer's requirements.
         b. Flashing: Flashing shall be continuous and watertight. Flashing shall be designed and installed to prevent water infiltration behind the cladding. Refer to Division 07 Flashing Section for specified flashing materials.
         c. The configuration of the water-resistive barrier, drainage plane and flashing and EIFS materials, must allow for the egress of incidental moisture.
      2. Impact Resistance Classification:
         a. Standard Impact Resistance, 25–49 in-lbs (2.8 – 5.6 J) Impact Range
         b. Medium Impact Resistance, 50–89 in-lbs (5.7–10.1 J) Impact Range
         c. High Impact Resistance, 90–150 in-lbs (10.2–17.0 J) Impact Range
         d. Ultra High Impact Resistance, >150 in-lbs (> 17.0 J) Impact Range
      3. Expansion Joints: Continuous expansion joints shall be installed at the following locations in accordance with manufacturer's recommendations:
         a. At substrate expansion joints.
         b. Where EIFS abuts other materials.
         c. Where significant structural movement occurs, such as at
            (1) Changes in roof line.
            (2) Changes in building shape and/or structural system.
         d. Where substrate changes occur
      4. Manufacturer's Detail:
         a. EIFS most current published information shall be followed for standard detail treatments.
         b. Non-standard detail treatments shall be as recommended by manufacturer, approved by Project Designer and be part of the Contract Documents.
      5. Building Code Conformance: EIFS shall be acceptable for use on this project under the building code having jurisdiction.
      6. In Florida locations, install complete system in complete accordance with FL-8605.1, NOA No. 15-0609.13, to include all detailing, composition, impact mesh and fastening system.

4. SUBMITTALS
   A. General: Submit Samples, Evaluation Reports, Warranties and Certificates in accordance with Division 01 General Requirements Submittal Section.
   B. Samples: Submit samples for approval. Samples shall be of materials specified and of suitable size as required to accurately represent each color and texture used on project. Prepare each sample using same tools and techniques for actual project application. Maintain and make available, at job site, approved samples.

5. QUALITY ASSURANCE
   A. Qualifications:
      1. All EIFS assembly materials must be manufactured or sold by a single-source manufacturer and must be purchased direct from the manufacturer or its authorized distributor.
      2. Manufacturer: Shall have marketed Exterior Insulation and Finish Systems in United States for at least ten (10) years and be an active member in good standing of EIMA.
      3. Applicator:
         a. Must possess a current manufacturer's certificate of education.
         b. Must be experienced and competent in installation of plaster-like materials.
   B. Regulatory Requirements:
      1. Insulation Board: Shall be produced and labeled under a third party quality program as required by applicable building code.

6. DELIVERY, STORAGE, AND HANDLING
   A. Delivery: Deliver materials in original packaging with manufacturer's identification.
   B. Store materials in a cool, dry location, out of sunlight, protected from weather and other harmful environment, and at a temperature above 40F (4C) and below 110F (43C) in accordance with manufacturer's instructions.

7. PROJECT / SITE CONDITIONS
   A. Installation Ambient Air Temperature: Minimum of 40F (4C) and rising, and remain so for 24 hours thereafter.
   B. Substrate Temperature: Do not apply materials to substrates whose temperature are below 40F (4C) or contain frost or ice.
   C. Inclement Weather: Do not apply materials during inclement weather unless appropriate protection is employed.
   D. Sunlight Exposure: Avoid, when possible, installation of the materials in direct sunlight. Application of Acrylic Finishes in direct sunlight in hot weather may adversely affect aesthetics.
   E. Materials shall not be applied if ambient temperature exceeds 120F (49C) or falls below 40F (4C) within 24 hours of application. Protect materials from uneven and excessive evaporation during hot, dry weather.
   F. Prior to installation, the substrate shall be inspected for surface contamination, or other defects that may adversely affect the performance of the materials and shall be free of residual moisture.

8. WARRANTY
   A. Warranty: Upon request, at completion of installation, provide manufacturer's Standard Limited Warranty and Colorfast Technology fade-resistant warranty.

9. MANUFACTURERS
   A. Manufacturer: Parex USA, Inc., 4125 E. La Palma Ave., Suite 250, Anaheim, CA 92807. Technical Support (800.226.2424).
   B. Components: Obtain components from authorized distributors. No substitutions or additions of other materials are permitted without prior written permission from the EIFS manufacturer for this project.

10. MATERIALS
    A. Secondary Water-Resistive Barrier
       1. A code compliant water-resistive barrier and means of drainage.
    B. Grooved Insulation Board: In compliance with manufacturer's requirements for Standard System EIFS.
       1. Produced and labeled under a third party quality program as required by applicable building code; and produced by a manufacturer approved by Parex USA.
       2. Shall conform to ASTM C578 and ASTM E2430, Type I and the Parex USA specification for Molded Expanded Polystyrene Insulation board.
       3. Thickness: 1.5 in, minimum (38 mm) after rasping.
       4. Profile: Minimum 1/4 inch wide by 1/8 inch deep vertical grooves spaced a maximum of 12 inches on the back face of the board.
    C. Base Coats:
       1. Parex 121 Dry HI: High Impact basecoat & adhesive. Copolymer based, blend of cement and proprietary ingredients, requires the addition of water.
    D. Reinforcing Mesh:
       1. 355 Standard Mesh: Weight 4.5 oz. per sq. yd. (153 g/sq m); coated for protection against alkali. Standard reinforcement of Parex EIFS, or for use with High Impact 358.14 Mesh, or Ultra High Impact 358.20 Mesh.
       2. 356 Short Detail Mesh: Reinforcing mesh used for backwrapping and details.
       3. 352 Self Adhesive Detail Mesh: Reinforcing mesh used for complex details.
       4. 358.20 Ultra High Impact 20 Mesh: Weight 20 oz. per sq. yd. (678 g/sq m) Reinforcing mesh used with a Standard System; to achieve ultra-high impact strength.
       5. 357 Corner Mesh: Reinforcing mesh used as corner reinforcement; required when using Ultra-High Impact 20 Mesh.
       6. Locations: From Ground level to 7'-0" aff use 358.20 Ultra High Impact 20 Mesh; from 7'-0" aff to top of parapet use 355 Standard Mesh, unless required otherwise by Florida product approval requirements.
    E. Primer:
       1. 310 Primer: 100% acrylic based coating to prepare surfaces for acrylic or elastomeric finishes.
    F. Finish
       1. Parex AquaSol: 100% acrylic polymer based finish, enhanced DPR acrylic finish with hydrophobic and photocatalytic properties. Finish type, texture and color as noted on the drawings.
    G. Water: Clean, cool, potable water
    H. Portland Cement: ASTM C150, Type I or Type I–II.

11. ACCESSORIES
    A. Mechanical fasteners and washers:
       1. Wind-lock Wind Devil 2 fasteners, non-thermal bridging polypropylene plastic plates and corrosion-resistant screws.
    B. Sealant System:
       1. Sealant for expansion joints between panelized EIFS sections shall be ultra-low modulus designed for minimum 100% elongation and minimum 50% compression and as selected by Project Designer.
       2. Sealant for perimeter seals around window and door frames and other wall penetrations shall be low modulus, designed for minimum 50% elongation and minimum 25% compression, and as selected by Project Designer.
       3. Sealants shall conform to ASTM C 920, Grade NS.
       4. Perimeter seal joints shall be a minimum width of 1/2 in (12.7 mm).
       5. Sealant backer rod shall be closed-cell polyethylene foam.
       6. Apply sealant to tracks or base coat of EIFS.
       7. Refer to EIFS manufacturer's current bulletin for listing of sealants which have been tested and have been found to be compatible with EIFS materials.
       8. Color shall be as noted on the drawings.

12. EXAMINATION
    A. Compliance: Comply with manufacturer's instructions for installation.
    B. Substrate Examination: Examine prior to installation of EIFS assembly materials per manufacturer's written instructions.
    C. Sealants and Backer Rod: To be installed, where required, in accordance with the sealant manufacturer's specifications and published literature, and using the sealant manufacturer's recommended primers.
    D. Advise Contractor of discrepancies preventing proper installation of the EIFS materials. Do not proceed with the work until unsatisfactory conditions are corrected.

13. MIXING
    A. Mix materials in accordance with manufacturer's instructions.

14. APPLICATION
    A. General: Installation shall conform to this specification and manufacturer's written instructions.
    B. Drainage Accessories and Water-Resistive Barrier
       1. Install drainage tracks back-wrap mesh, or edge-wrap mesh at system terminations.
       2. Install water-resistive barrier in accordance with manufacturer's instructions making all laps weatherboard fashion to provide continuity of watershedding.
    C. Insulation Board
       1. Install Wind-lock fasteners to secure insulation board to the wall in accordance with Wind-lock Corporation instructions. For exterior grade gypsum sheathing and glass mat gypsum sheathing minimum screw penetration of framing members shall be 3/4 in (19 mm) into wood and three full threads through steel. Minimum eight (8) fasteners per 2' x 4' (610 mm x 1219 mm) piece of insulation board.
       2. Install insulation board without gaps in a running bond pattern and interlocked at corners.
       3. Rasp irregularities off insulation board.
    D. Apply primer to base coat after drying. Primer may be omitted if it is not required by the manufacturer's product data sheets for the specified finish coat or otherwise specified for the project.
    E. Reinforcing Mesh: Embed into the wet base coat, abutting edges tight, to completely conceal mesh.
    F. Finish Coat: Apply finish coat to match specified finish type, texture, and color. Do not apply finish coat to surfaces to receive sealant. Keep finish out of sealant joint gaps.

SECTION 07260 - WEATHER BARRIERS

1. SECTION INCLUDES
   A. Vapor Barrier must have all of the following qualities:
      1. Permeance of less than 0.01 Perms [grains/(ft^2 *hr * in.Hg)] per ASTM F 1249 or ASTM E 96
      2. ASTM E 1745 Class A
   B. Air Barriers: Materials to stop passage of air through exterior walls, joints between exterior walls and roof, and joints around frames of openings in exterior walls to comply with ICC-ES Acceptance Criteria AC-38.

2. SHEET SEAL MATERIALS
   A. Vapor Retarder: Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC for underslab applications.
   B. Air Barrier: Commercial Wrap as manufactured by Dupont Tyvek for vertical wall applications.
   C. Moisture Barrier: 30 lb felt for horizontal applications.
   D. Ice Shield for clay roof tiles per manufacturer specification.

3. ACCESSORIES
   A. Vapor Retarder Seam Tape:
      1. Permeance less than 0.3 perms per ASTM F 1249 or ASTM E 96
      2. Stego Tape by Stego Industries LLC
   B. Air Barrier Seam Tape:
      1. Permeance less than 0.3 perms per ASTM F 1249 or ASTM E 96
      2. Tyvek Seam Tape
   C. Pipe Boots
      1. Construct pipe boots from vapor barrier material, pressure sensitive tape and/or mastic per manufacturer's instructions.

4. INSTALLATION
   A. Install materials in accordance with manufacturer's instructions.

SECTION 07530 - ELASTOMERIC MEMBRANE ROOFING

1. SECTION INCLUDES
   A. Elastomeric roofing membrane, mechanically fastened conventional application.
   B. Insulation, flat and tapered.
   C. Prefabricated flashings, corners, parapets, stacks, vents, and related details.
   D. Fasteners, adhesives, and other accessories required for a complete roofing installation.
   E. Traffic Protection.

2. REFERENCES
   A. ASTM C 1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2006.
   B. NRCA ML104 – The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association; Fifth Edition, with interim updates.
   C. UL (RMSD) – Roofing Materials and Systems Directory; Underwriters Laboratories Inc.; current edition.

3. QUALITY ASSURANCE
   A. Perform work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's instructions.

4. SUBMITTALS
   A. Submit under provisions of Section 01330.
   B. Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance requirements.
   C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
   D. Installer Certification: Certification from the roofing system manufacturer that Installer is approved, authorized, or licensed by manufacturer to install roofing system having the status of Master or Elite designation.
   E. Manufacturer's warranties.

5. ENVIRONMENTAL REQUIREMENTS
   A. Do not apply roofing membrane during unsuitable weather.
   B. Do not apply roofing membrane when ambient temperature is below 40 degrees F or above 110 degrees F.
   C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
   D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

6. WARRANTY
   A. Provide manufacturer's standard written full roofing system repair and/or replacement 15-year NDL warranty at no additional cost, covering materials and labor. Warranty shall include loss of consequential damages due to failure of the roof system and contain no exclusions for ponding water or biological growth. Upon warranty inspection and acceptance of the roof, the warranty shall be turned over to the Contractor on behalf of Owner by a Manufacturer's Quality Assurance Specialist.
   B. Notice of Award: Contractor shall submit a "Notice of Award" to Manufacturer at least (10) ten days prior to the beginning of a particular roof application. Contractor will then provide to Owner a copy of the filed Notice of Award which has been signed and conditionally accepted by Manufacturer prior to the start of work under this section.

7. APPROVED MANUFACTURERS
   A. Duro-Last Roofing, Inc., 525 Morley Dr. P. O. Box 3301 ; Saginaw, MI 48601; Toll Free Tel: 800-248-0280; Contact: Jim Miller, Email: corporateaccounts@duro-last.com; Web: www.duro-last.com

8. ROOFING
   A. Elastomeric Membrane Roofing Systems:
   1. Duro-Last Roofing Membrane conforming to ASTM D 4434, Type III or IV, fabric reinforced, PVC.
   2. Properties:
      a. 50 mil nominal thickness at roof deck. No exceptions
      b. 50 mil nominal thickness at parapets. No exceptions.
      c. Exposed Face Color: White on all Horizontal roof surfaces and Duro-Tuff Light Tan on vertical surfaces. No exceptions
   B. Roofing Assembly Requirements:
   1. Roof Covering External Fire-Resistance Classification: UL Class A.
   2. Insulation Thermal Value (R), minimum: R-38; provide insulation of thickness required.
   C. Acceptable Insulation Types:
   1. Two layers of 3.0-inch thick EnergyGuard oea roof insulation, glass fiber reinforced polyisocyanurate foam roof insulation (Total R value Min. R-38). Run second layer perpendicular to the first layer to minimize joint overlap. Provide tapered insulation, crickets, and saddles to form counter slopes indicated on Drawings.

9. ACCESSORIES
   A. Sheet Flashing: Duro-Last white 40-mil reinforced PVC Duro-Last Parapet Flashing membrane with 28" tabs.
   B. Prefabricated Flashing: Prefabricated white stack flashings for pipes, wind screen support pipes, and curbs, corners of Duro-Last white 40-mil reinforced PVC sheet membrane. Stack flashings to be installed using stainless steel Panduit bands and Duro-Caulk Plus.
   C. Prefabricated inside and outside corner of Duro-Last white 40-mil reinforced PVC sheet membrane.
   D. Pillow block to be supplied by Install 'Roof Top Blox' adjustable piping support under all gas and condensate piping, Ph: (860) 979-0345; www.rooftopblox.com.
   E. New 4" x 4" wolmanized block support to be installed underneath condensing unit. A slipsheet should be to be installed under the womanized block. High wind locations to have metal support rack. See roof plan.
   F. Sealants and Adhesives: Duro-Caulk Plus, pitch pocket filler, Sure Bond 240 mastic as supplied by Duro-Last Roofing Inc.
   G. Slip Sheet and Cover Boards: Slip sheet or cover boards, of type required by roof membrane manufacturer for the application.
   H. Termination Bars: Standard rigid exterior vinyl bar, 1.5 inches (38 mm) wide with slotted holes 6 inches (152 mm) on center.
   I. Scuppers: Prefabricated Duro-Last® Vinyl-Coated Metal Flange Scuppers with single skirt.
   J. Dome Strainer: See Plumbing Fixture Schedule in Drawings. Proper sized drain boot should also be installed using Duro-Caulk Plus and CDR ring.
   K. Edge Detail: Exceptional Metals Fascia bar and cover, prefabricated Drip Edge, prefabricated Gravel Stop, 2-Piece Snap-On Compression LG Metal Edge. Aluminum 40 Gauge – Finish and Size as indicated on drawings.
   L. Vinyl Coated Metal: 24 gauge, hot-dipped galvanized, grade 90 metal with a minimum of 17 mil of Duro-Last membrane laminated to one side.
   M. ATR hub: made of 24 gauge Vinyl coated metal to be installed around refrigeration lines
   N. Fasteners: #14 Heavy-Duty factory-coated steel fasteners and metal and plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate.
   O. Two-Way Roof Vents: As recommended by roof membrane manufacturer and installed with a minimum of 1 vent for each 1,000 square-feet of roof area. Vents will be white.
   P. Roof Trac III walkway pads by Duro-Last Roofing – 30" x 60" and 60 "x 60 "gray, non-skid, maintenance-free Roof Trac III walkway pads to be installed at mechanical equipment, roof hatch and roof ladder as shown on roof plan.
   Q. Duro-Guard plenum vent.

10. SUBSTRATE BOARD (NOTED ON DRAWINGS AS PROTECTION BOARD):
    A. Duro-Guard "DEXCELL" Glass Mat ¼" thick as manufactured by Duro-Last.

11. EXAMINATION
    A. Verify that surfaces and site conditions are ready to receive work.
    B. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
    C. Verify deck surfaces are dry and free of snow or ice.
    D. Verify that roof openings, curbs, and penetrations through roof are solidly set.

12. INSULATION – UNDER MEMBRANE
    A. Roof insulation shall be installed with approved fasteners and distribution plates placed according to the manufacturer's most recent published specifications for the use under the manufacturer's system and for issuance of the warranty.
    B. Attachment of Insulation:
    1. Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions.
    C. Stagger insulation boards 50% from row to row.
    D. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
    E. Separation Layer: Install substrate board directly over the roofing insulation in accordance with roof membrane manufacturer's requirements.
    F. Do not apply more insulation than can be covered with membrane in same day.

13. MEMBRANE APPLICATION
    A. Install the roofing system to comply with manufacturer's most recent published specifications.
    B. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
    C. Mechanical Attachment: Apply membrane and mechanical attachment devices in accordance with manufacturer's instructions.
    D. On all parapet locations, wrap parapet with new pre-manufactured parapet flashings by manufacturer and terminate on exterior of wall.
    E. Around roof penetrations, seal flanges and flashings with flexible flashing.

14. WALKWAYS
    A. Install walkways in accordance with roof membrane manufacturer's requirements.
    B. Install at roof hatches, access doors, rooftop ladders and all other traffic concentration points regardless of traffic frequency. Provided in areas receiving regular traffic to service rooftop units or where a passageway over the surface is required.
    C. Do not install walkways over flashings or fields seams until field inspections by roof membrane manufacturer have been completed.

15. FASCIA/DRIP EDGE/GRAVEL STOP
    A. Provide fascia bar and cover, drip edge and gravel stop.
    B. Seal joints between individual sections.
    C. Manufactured Roof Specialties: Coordinate installation of copings, counter flashing systems, gutters, downspouts, and roof expansion assemblies specified in Section 07600.

16. PILLOWBLOCKS
    A. Install "Pillowblock" stackable pipe support under all gas and condensate piping.
    B. Install Pillowblock units on top of a compatible slipsheet membrane.

17. PARAPET WALLS
    A. Contractor shall encapsulate all parapet walls using 50 mil Duro-Tuff 'Charcoal Gray' single ply membrane roofing system and a 6" white skirt that is fabricated of a weft inserted, low-shrink, anti-wicking polyester fabric and has a thermoplastic coating of PVC material laminated to both sides as manufactured by Duro-Last Roofing, Inc. in accordance with Duro-Last Roofing, Inc. published specifications.

18. PROTECTION
    A. Protect installed roofing and flashings from construction operations.
    B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

MLA
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REGISTERED ARCHITECT MICHAEL GREGORY LEGG 22547 STATE OF TEXAS

02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

DATE	DESCRIPTION	BY

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.6

L&R MASTER SPECIFICATIONS

TABLE OF CONTENTS

DIVISION 0 - CONTRACT AND BID INFORMATION

SECTION 00100 - INSTRUCTIONS TO BIDDERS

1. AIA Document A701, latest Edition, "Instructions to Bidders" are included as part of these specifications as if herein reprinted in full.
   a. A copy of AIA A701, latest edition may be obtained from Owner, Architect, or directly from: The American Institute of Architects 1735 New York Avenue, N.W. Washington, D.C. 20006.

2. Contractor shall utilize the following documents, latest edition, in the negotiation and execution of the project:
   a. AIA Document A701 – Instructions to Bidders
   b. AIA Document G702 – Application and Certificate for Payment
   c. AIA Document G703 – Continuation Sheet
   d. AIA Document G701 – Change Order
   e. AIA Document G705 – Certificates of Insurance
   f. AIA Document G706 – Contractor's Affidavit of Payment of Debts and Claims
   g. AIA Document A706 – Contractor's Affidavit of Release of Liens
   h. AIA Document A201 – General Conditions of the Contract for Construction
   i. AIA Document A101 – Owner Contractor Agreement Form – Stipulated Sum

5.3 Interest rate shall be prevailing market rate

SECTION 00300 - BID FORM

1. The form of proposal will be furnished separately by the Architect.

SECTION 00700 - GENERAL CONDITIONS

1. AIA Document A201, Latest Edition, "General Conditions of the Contract for Construction" are included as part of these specifications same as if herein reprinted in full.
   a. A copy of AIA A201, may be obtained from Owner; Architect, or directly from: The American Institute of Architects 1735 New York Avenue, N.W. Washington, D.C. 20006.

The liability insurance purchased and maintained by Contractor in the minimum amounts as follows:

(a) Workman's Compensation

(i) Workers' or workman's compensation – maximum permitted by statue,
(j) – Employer's Liability – $1 million.

(b) Comprehensive General Liability

Bodily injury and property damage having a combined single limit of $2 Million and including the following coverage's:
(i) Comprehensive Form
(ii) Premises – Operations
(iii) Explosion and Collapse Hazard
(iv) Underground Hazard
(v) Products – Completed Operations. Hazard (which must be maintained for 2 years commencing with issuances of the final Certificate of Payment)
(vi) Broad Form Contractual Insurance
(vii) Broad Form Property Damage (extended to apply to completed operations)
(viii) Independent Contractors
(ix) Personal Injury (with employees and contractual exclusions deleted)

(c) Automobile Liability (Comprehensive Form) insuring contractor for operations of all owned, hired, and non-owned vehicle limit of $2 Million.

(d) Umbrella Excess Liability: $3 Million per occurrence / aggregate.

The Contractor shall furnish Builders Risk Insurance, including the perils of fire, extended coverage, vandalism, and malicious mischief in an amount of not less than 100% of the insurable value of all the work, and the coverage written on Builders Risk Coverage Form CP0020, Including Causes of Loss Basic Form CP1010 or Causes of Loss – Broad Form CP1020 or Causes of Loss – Special Form CP1030 or an acceptable inland Marine "All Risk" installation floater form, with a company authorized to do business in the state in which the project is located.
12.2.2.1(a) If during the Contractors one (1) year warranty after completion the Owner requests that tests be performed to determine if corrections in the Work need to be made, the expense of such tests shall be borne by (a) the Owner, if the results of the tests indicate that no corrections are necessary, or (b) the Contractor, if the results of the test indicate that corrections are necessary.

1. Article 13, paragraph 13.6.1:

13.6.1 Interest rate shall be at prevailing market rate

DIVISION 1 - GENERAL REQUIREMENTS

1.

SECTION 01100 - SUMMARY OF WORK

3. WORK RESPONSIBILITY

A. Not In Contract (NIC): Items shown or noted "(NIC)" on the drawings and/or in the specifications shall be furnished and installed by Owner under separate contract, except as described hereinafter. The Contractor shall receive, unload as required, store, coordinate and accommodate the Owner's contractors during the Work and be responsible to the extent of carrying necessary insurance to cover items in case of theft, fire, loss, malicious damage and other miscellaneous damage. Contractor shall provide all conduits, boxes, chases, etc. as indicated on the drawings for a complete installation. Included, but not inclusive, in this category are:
   1. Food Service Equipment:
      a. Owner shall furnish, and Owner's vendor shall install food service equipment shown on food service drawings including, but not limited to the following:
         1) Kitchen equipment
         2) Stainless steel tables and shelves
         3) Remote refrigeration units. All refrigeration unit lines, power supply, calibration, etc. shall be installed and performed by the Contractor. The foodservice suppliers will not furnish pre-charged lines.
      b. Soda System: Contractor is responsible for pipe chases, plumbing and electrical services per plan.
      c. Music, Intercom and A/V Systems: Contractor shall supply electrical service and wire chases with pull strings per plans and coordinate installation with Owner's agent. Contractor to provide adequate wood backing to install all necessary equipment.
      d. Point of Sale and Back Office Systems: All system equipment shall be provided by Owner, including computer cable. All equipment shall be installed by Owner's agent. All cable and wiring shall be installed in conduit installed by General Contractor as per plans. Contractor to provide 4 hours of carpentry and 4 hours of electrician labor on installation day for any changes that may arise.
      e. Security video System: Contractor shall supply electrical service and wire chases with pull strings per plans and coordinate installation with Owner's agent. Contractor to provide adequate wood backing to install all necessary equipment.
      f. Furnishings and decor shown on architectural drawings including, but not limited to, stools, chairs, booths, tables, and decor. Note: All millwork items shown on architectural drawings including, but not limited to, cabinets, shelving and vanities shall be the responsibility of the Contractor. Contractor shall submit shop drawings of same for approval.
      g. Water Softener: Contractor shall install and plumb all soft water lines and stub-out for unit hook-up.

B. By Owner: Items shown or noted "By Owner" on the drawings and/or in the specifications shall be furnished by Owner to Contractor(GC)/subcontractor for installation by Contractor/subcontractor as part of the construction contract. Contractor shall furnish all labor, material, equipment, and tools required to receive, unload, store, protect, move from storage, uncrate, assemble, install, and level these items and shall carry necessary insurance to cover items in case of theft, fire, loss, malicious damage and other miscellaneous damage. Included, but not inclusive, in this category are:
   1. Food Service Equipment:
      a. Owner shall furnish food service equipment shown on food service drawings including, but not limited to the following:
         1) Remote refrigeration units. All refrigeration unit lines, power supply, calibration, etc. shall be installed and performed by the Contractor. The foodservice suppliers will not furnish pre-charged lines.
         2) GC shall furnish exhaust hoods with integral fire suppression, associated exhaust fans, curbs, and MUA units.
            (a)All ductwork (type 1 and type 2 hoods), flue caps and duct wrap shall be provided and installed by the Contractor.
         3) Stainless Steel Wall Paneling (GC) at cook line, prep line, and dish wash area.
         4) Stainless Steel Corner Guards. (GC)
      b. Contractor is responsible for coordination, delivery, handling, storage, installation, leveling, silicone sealing (where applicable), set-up, start-up, start-up, and calibration of all Owner provided equipment.
   2. Receiving and unloading of Owner furnished items:
      a. Prior to delivery and installation of the Owner's kitchen equipment, the following must be completed:
         1) Tile must be set and clean; Fiberglass Reinforced Panels (FRP) and/or tile shall be hung and trimmed; acoustical ceiling grid complete with all light fixtures, ductwork and diffusers installed; acoustical ceiling tile shall be installed; and all gypsum wall board ceilings shall be finished.
         2) Contractor shall provide motorized, hydraulic forklift at site to assist in the offloading of Owner provided kitchen equipment. The Contractor shall inventory the Owner furnished items delivered to the job site and check each item to ensure that the correct type and model number per the food service plans and kitchen equipment brochure provided at the beginning of the project has been delivered. The Contractor shall notify the Owner immediately if any discrepancies are found.
         3) Contractor to provide copies of all delivery tickets, bills of lading, etc. certifying receipt of the Owner furnished items.
         4) Inspection of all Owner furnished items upon delivery for evidence of damage is the responsibility of the Contractor. The Contractor shall repair or replace, at no cost to the Owner, any damaged equipment received at the job site and not noted on the bill of lading.
         5) The Contractor is solely responsible for care of the Owner furnished items once received until completion of the contract. Any lost or damage during his possession will be repaired or replaced at no cost to the Owner.
   3. Foodservice equipment installation:
      a. The Contractor shall off load, uncrate and store all food service equipment not installed by Owner's agent, set in place, level and scribe to walls, floor and base as required. Pull equipment tight and secure field joints and properly dispose of all packing material.
      b. Properly anchor or fasten to walls, floor, ceiling, and base as per installation recommendations of the food service equipment manufacturer.
      c. Provide silicone bead where equipment joins together or abuts wall surfaces. Color of silicone to be clear.
      d. Assemble and secure in place all loose components such as, but not limited to, the following examples: tops of base units, shelves, legs, dispensers, etc.
      e. Mounting of equipment: Equipment which is not provided with legs or casters meeting the applicable requirements should be mounted by the following method: Equipment designed and constructed to be mounted directly to the floor, without legs or casters, should be sealed around the entire perimeter of the equipment.
      f. Installation of all food service equipment shall comply with all applicable codes and standards required by the local health department.
      g. The Contractor shall provide rough in water, drainage, and other service piping adjacent to food service equipment requiring same, capping drain outlets with suitable plugs and terminating water and other service with shut-off valves and cocks. After installation of food service equipment, Contractor shall make all final connections.
      h. The Contractor shall supply one 14-inch diameter loop of soft copper coil at each water line for all applicable food service equipment and related cabinetry that may need to be repositioned for maintenance or repair.
      i. The Contractor shall provide rough-in electrical wiring terminated in outlet boxed adjacent to food service equipment and, after installation of equipment, shall make all final connections. This includes supplying devices, cord and plugs, etc, as required to complete installation.
      j. Sealing of Penetrations:
      1) Contractor shall adequately seal with escutcheons and/or sealant all utility and service piping and other required openings through walls and floors.
      2) Contractor shall seal conduit/outlet penetrations with approved foam insulation.
      k.
      3) Contractor shall place protective coverings on all equipment after cleaning until final acceptance of building then shall remove protective coverings.
      k. Workmanship:
         1) Graining: Where two metal surfaces are butt welded, grain shall run in the same direction.
         2) Cove all intersections of vertical and horizontal sheet metal on a 5/8" radius unless otherwise indicated.
      l. Fastening:
         1) Provide nuts, bolts, and screws of American Standard unified screw thread design in stainless steel, only when sanitary fastenings are impossible. In all instances, use counter-sunk, flat, or oval head fasteners. round head fasteners are not acceptable.
         2) Wherever bolt threads are exposed, or may come in contact with a wiping cloth, use stainless steel acorn nuts.
      m. Welding: All welding shall be per AWS standards by electric arc method with rod of same composition as parts welded. make welds complete, strong, and ductile with rubble ground off and joints finished smooth, polished, and re-grained. Welds shall not be visible on continuous appearance. All welding shall be of a non-toxic nature when used on surfaces exposed to unpackaged food.
      n. Grinding, Polishing, and Finishing: Any material sunken or depressed by welding operation shall be hammered and peened flush with adjacent surfaces and, if necessary, ground again to eliminate low spots. Surfaces showing evidence of warpage and/or burn discoloration will not be accepted. in all cases, textures from rough grinding shall be removed by successive finer polishing operations until the grain of the entire surface is homogeneous.
      o. Equipment Adjustment: Contractor shall operate all food service equipment, test for leaks, proper connections, inadequate or faulty performance, calibrate and correct and adjust for proper operation. All thermostatically controlled equipment and equipment with automatic features shall be operated for a sufficient length of time to prove controls are functioning as intended. all food service plans, shop drawings, and equipment brochures are to remain at the store and be handed over to the Owner for future reference.
      p. Testing: Contractor shall test all water and gas piping built within the food service equipment for leaks using approved testing procedures.
      q. Completion:
         1) Contractor shall remove all protective coverings, tags, labels, and tape from equipment.
         2) Contractor shall thoroughly clean and polish Owner furnished items.
         3) Contractor shall place protective coverings on all equipment after cleaning until final acceptance of building then shall remove protective coverings.

5. MISCELLANEOUS PROVISIONS

6. NOTE: Dominion ACC Builder Agreement to be signed and ACC Construction rules complied with.

A. Accessibility Compliance:
1. Full compliance with Uniform Federal Accessibility Standards (UFAS), and Americans with Disabilities Act (ADA), prohibiting discrimination on basis of disability by public accommodations, is required for Work of this Project.
2. This Project has been designed to and requires full compliance with ADA regulations, whether or not specific references or notes to regulations are made on Drawings or in Specifications.

6. PROJECT GENERAL NOTES

A. Unless noted otherwise, all work in these drawings and specifications shall be performed by the Contractor.
B. The Contractor shall field verify all conditions and dimensions prior to any work and shall be responsible for all work and materials including those furnished by subcontractors. Contractor shall accept premises as found, Owner assumes no responsibility for the condition of the existing site or existing structures at the time of bidding or thereafter.
C. The Contractor is responsible for correcting any errors after the start of construction which has not been brought to the attention of the architect. The means of correcting any error shall first be approved by the Architect and Owner.
D. Dimensions take precedence over drawings. DO NOT SCALE DRAWINGS TO DETERMINE ANY LOCATIONS. The architect shall be notified if any discrepancy occurs prior to continuing with work.
E. All plan dimensions are from face of stud or face of masonry unless noted otherwise.
F. The Contractor shall report to the Owner and Architect any errors, inconsistencies, or omissions discovered.
G. All construction shall comply with the applicable building codes and local restrictions. The Contractor must comply with the Contractor registration requirements of all governing authorities.
H. The general building permits shall be paid for by the Owner. All other permits shall be secured and paid for by the subcontractor directly responsible. All required city, county, and/or state licenses shall be acquired and paid for by the individual subcontractor.
I. It shall be the responsibility of the Contractor to locate all existing utilities whether shown herein or not and to protect them from damage. The Contractor shall bear all expense of repair or replacement of utilities or other property damaged by operations in conjunction with the prosecution of the work.
J. The Contractor shall be responsible for and shall replace or remedy any faulty, improper, or inferior materials or workmanship which shall appear within one year or as otherwise specified for a specific component after the completion and acceptance of the wok under this contract.
K. The Contractor is to provide blocking as required for mounting of booth tables, wall mounted shelves, cabinets, HC grab bars and partition braces, in addition to other requirements specified herein.

7. CONTRACTOR USE OF SITE AND PREMISES

A. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.
B. Utility Outages and Shutdown:
   1. Prevent accidental disruption of utility services to other facilities.

SECTION 01110 - WORK COVERED BY CONTRACT DOCUMENTS

1.INTENT OF DRAWINGS AND SPECIFICATIONS

A.The Contractor shall complete all Work as provided for in Contract Documents including Drawings and Specifications. Anything mentioned in the Specifications and not shown on the Drawings or shown on the Drawings and not mentioned in the Project Manual, shall be furnished and installed as if shown and mentioned in both. The Contractor shall furnish all materials or labor required to complete Work shown on the Drawings and called out in the specifications, to include labor and material requirements reasonably inferable therefrom as being necessary to complete the work, whether each and every single item necessary to completion is specified or detailed or not.

2.CONTRACTOR RESPONSIBILITY FOR WORK REQUIRED

A.The organization of the Specifications into Divisions, Sections and Paragraphs and the arrangement of the Drawings are not intended to control the Contractor in dividing the Work among Subcontractors or to establish the limits and extent of work to be performed by a particular trade. The Contractor alone is responsible for the completion of the entire work as drawn and specified, complete in place and in functional or operating conditions. The division of the specifications into sections and paragraphs is for convenience only and not for the purpose of limiting or restricting the performance of any portion of the Work to any particular trade.

DIVISION 1 - GENERAL REQUIREMENTS (CONTINUED)

SECTION 01300 - ADMINISTRATIVE REQUIREMENTS

SITE MOBILIZATION MEETING

A. Owner's Project Coordinator will schedule a meeting at the Project site prior to Contractor occupancy.
B. Attendance Required:
   1. Contractor and Superintendent.
   2. Owner's Project Coordinator.
   3. Major Subcontractors.
C. Agenda:
   Use of premises by Owner and Contractor. (Comply with Dominion ACC Construction Rules)
   4. Owner's requirements and partial occupancy prior to completion.
   5. Construction facilities and controls provided by Owner.
   6. Survey and building layout.
   7. Security and housekeeping procedures.
   8. Schedules.
   9. Application for payment procedures.
   10. Procedures for testing.
   11. Procedures for maintaining record documents.
   12. Requirements for start-up of equipment.
   13. Inspection and acceptance of equipment put into service during construction period.

PROGRESS MEETINS(2-3 weeks)

A. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
B. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner,as appropriate to agenda topics for each meeting.
C. Agenda:
   1. Review minutes of previous meetings.
   2. Review of Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems which impede planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Maintenance of progress schedule.
   7. Corrective measures to regain projected schedules.
   8. Planned progress during succeeding work period.
   9. Maintenance of quality and work standards.
   10. Effect of proposed changes on progress schedule and coordination.
   11. Other business relating to Work.
D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect/Engineer, Owner, participants, and those affected by decisions made.

5. CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after joint review, submit complete schedule.
B. Submit updated schedule with each Application for Payment.

6. PROGRESS PHOTOGRAPHS

A. Submit each photographic application for payment, taken not more than 3 days prior to submission of application for payment.
B. Provide photographs of site and construction throughout progress of Work produced by an experienced photographer, acceptable to Architect/Engineer.
C. In addition to periodic, recurring views, take photographs of each of the following events:
   1. Completion of site clearing.
   2. Excavations in progress.
   3. Foundations in progress and upon completion.
   4. Structural framing in progress and upon completion.
   5. Enclosure of building, upon completion.
   6. Final completion, minimum of ten (10) photos.

7. SUBMITTALS FOR REVIEW
   7.
A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Shop drawings.
   3. Samples for selection.
B. Submit to Architect/Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
C. Samples will be reviewed only for aesthetic, color, or finish selection.
D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES and for record documents purposes described in Section 01780 – CLOSEOUT SUBMITTALS.

8. SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

9. SUBMITTALS FOR PROJECT CLOSEOUT

A. When the following are specified in individual sections, submit them at project closeout:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Other types as indicated.

11.

SUBMITTAL PROCEDURES
A. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
B. For each submittal for review, allow 7 days excluding delivery time to and from the Contractor.
C. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
D. When revised for resubmission, identify all changes made since previous submission.
E. Submittals not requested will not be recognized or processed.
F. Do not make requests for deviations from contract documents via shop drawings, product data, or samples. Deviations will not be valid unless specifically approved under specified modification procedures.

SECTION 01400 - QUALITY REQUIREMENTS

1. REFERENCES AND STANDARDSFor products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the current standard, except when more rigid requirements are specified or are required by applicable codes.
   A. Should specified reference standards conflict with Contract Documents, request clarification from Owner's Project Coordinator before proceeding.

2. TESTING AND INSPECTION AGENCIES

A. General Contractor shall employ services of an, Owner-approved, independent testing agency to perform specified testing. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

4. CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
B. Comply with manufacturers' instructions, including each step in sequence.
C. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
D. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

5. TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Owner's Project Coordinator before proceeding.

6. TESTING AND INSPECTION

A. Testing Agency Duties:
1. Provide qualified personnel at site. Cooperate with Owner's Project Coordinator and Contractor in performance of services.
2. Perform specified sampling and testing of products in accordance with specified standards.
3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
4. Promptly notify Owner's Project Coordinator and Contractor of observed irregularities or non-conformance of Work or products.
5. Perform additional tests and inspections required by Owner's Project Coordinator.
6. Submit reports of all tests/inspections specified.
   B. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the Work, may not assume any duties of Contractor and has no authority to stop the Work.
   C. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
3. Provide incidental labor and facilities:
   a. To obtain and handle samples at the site or at source of Products to be tested/inspected.
   b. To facilitate tests/inspections.
   c. To provide storage and curing of test samples.
4. Notify Owner's Project Coordinator and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
   D. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Owner's Project Coordinator.

7. DEFECT ASSESSMENT

A. Replace Work or portions of the Work not conforming to specified requirements.
B. If, in the opinion of Owner's Project Coordinator, it is not practical to remove and replace the Work, Owner's Project Coordinator will direct an appropriate remedy or adjust payment.

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

1. TEMPORARY UTILITIES
   A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.
2. TEMPORARY SANITARY FACILITIES
   A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization. Maintain daily in clean and sanitary condition.
10. FIELD OFFICES
   A. Office: Weather tight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack and drawing display table.
   B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.
4. SUBSTITUTION PROCEDURES
   A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
   B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
   C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
   D. A request for substitution constitutes a representation that the submitter:
1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
   E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
7. STORAGE AND PROTECTION
   A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
   B. Store and protect products in accordance with manufacturers' instructions with labels intact and legible.
   C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
   D. For exterior storage of fabricated products, place on sloped supports above ground.
   E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
   F. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.1

DIVISION 1 - GENERAL REQUIREMENTS (CONTINUED)

SECTION 01700 - EXECUTION REQUIREMENTS

1. EXAMINATION
   - A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
   - B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
   - C. Verify that utility services are available, of the correct characteristics, and in the correct locations.
   - D. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

2. PREPARATION
   - A. Clean substrate surfaces prior to applying next material or substance.
   - B. Seal cracks or openings of substrate prior to applying next material or substance.
   - C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3. LAYING OUT THE WORK
   - A. Verify locations of survey control points prior to starting work. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
   - B. Promptly report to Owner the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
   - C. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
2. Grid or axis for structures.
3. Building foundation, column locations, ground floor elevations, and plumbing.

   - D. Maintain a complete and accurate log of control and survey work as it progresses.

4. CUTTING AND PATCHING
   - A. Execute cutting and patching including excavation and fill to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.
   - B. Execute work by methods to avoid damage to other work, and which will provide appropriate surfaces to receive patching and finishing.
   - C. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
   - D. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
   - E. Restore work with new products in accordance with requirements of Contract Documents.
   - F. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
   - G. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material to full thickness of the penetrated element.
   - H. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

5. PROGRESS CLEANING
   - A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
   - B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
   - C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
   - D. Collect and remove waste materials, debris, and trash/rubbish from site weekly and dispose off-site; do not burn or bury.

6. PROTECTION OF INSTALLED WORK
   - A. Protect installed work from damage by construction operations.
   - B. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
   - C. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

7. SYSTEMS STARTUP
   - A. Coordinate schedule for start-up of various equipment and systems.
   - B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
   - C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
   - D. Verify that wiring and support components for equipment are complete and tested.
   - E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
   - F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

9. FINAL CLEANING
   - A. Use cleaning materials that are non-hazardous.
   - B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
   - C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
   - D. Clean filters of operating equipment.
   - E. Clean debris from roofs, gutters, downspouts, and drainage systems.
   - F. Clean site; sweep paved areas, rake clean landscaped surfaces.
   - G. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

10. CLOSEOUT PROCEDURES
   - A. Accompany Owner on preliminary inspection to determine items to be listed for completion or correction in Contractor's Notice of Substantial Completion.
   - B. Notify Owner when work is considered ready for Substantial Completion.
   - C. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.
   - D. Notify Owner when work is considered finally complete.

11. PROJECT SUPERVISION AFTER SUBSTANTIAL COMPLETION
   - A. Project superintendent shall remain on site through completion of punch list.
   - B. Project superintendent shall be present on site for one week prior to store opening.

SECTION 01720 - CONSTRUCTION LAYOUT

1. SUMMARY
   - A. Section Includes:
     1. Layout of work.
     2. Land-survey work.

2. SUBMITTALS
   - A. Certificates: Submit a certificate signed by the land surveyor certifying the location and elevation of improvements – Form survey required by Dominion ACC prior to pouring.
   - B. Final Property Survey: Submit 5 copies of the final property survey along with electronic files; both AutoCAD and PDF formats.
   - C. Project Record Drawings: Submit a record of work performed and record survey data as required under provisions of Sections 01300 and 01780.

3. QUALITY ASSURANCE
   - A. Surveyor Qualifications: Engage a land surveyor registered in the state where the Project is located to perform required land-surveying services.
   - B. Do not begin construction until layout of work is reviewed by the land surveyor.

4. EXAMINATION
   - A. Identify existing control points and property line corner stakes.
   - B. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks, before proceeding to lay out the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
     1. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points or requirements to relocate reference points because of necessary changes in grades or locations.
     2. Promptly replace lost or destroyed Project control points. Base replacements on the original survey control points.
   - C. Establish and maintain a minimum of 2 permanent benchmarks on the site, referenced to data established by survey control points.
     1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
   - D. Existing Utilities and Equipment: Before beginning site construction, investigate and verify the existence and location of underground utilities and other construction. Verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping.

5. PERFORMANCE
   - A. Work from lines and levels established by the property survey. Establish benchmarks and markers to set lines and levels as needed to locate each element of the Project. Do not scale Drawings to determine dimensions.
     1. Advise sub-contractors of marked lines and levels provided for their use.
     2. As construction proceeds, check each major element for line, level, and plumb.
   - B. Surveyor's Log: Maintain a surveyor's log of control and other survey work. Make this log available for reference.
     1. Record deviations from required lines and levels, and advise the Owner when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
   - C. Building Lines and Levels: Locate and lay out batter boards for structures, building foundations, column grids and locations, floor levels, and control lines and levels required for mechanical and electrical work.
   - D. Site Improvements: Locate and lay out site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes, and invert elevations.
   - E. Existing Utilities: Furnish information necessary to adjust, move, or relocate existing structures, utility poles, lines, services, or other appurtenances located in or affected by construction. Coordinate with local authorities having jurisdiction.
   - F. Final Property Survey: Prepare a final property survey showing significant features (real property) for the Project. Include on the survey a certification, signed by the surveyor, that principal metes, bounds, lines, and levels of the Project are accurately positioned as shown on the survey.

SECTION 01780 - CLOSEOUT SUBMITTALS

1. SUBMITTALS
   - A. Project Record Documents: Submit documents to Owner with claim for final Application for Payment.
   - B. Operation and Maintenance Data:
     1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Owner will review draft and return one copy with comments.
     2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
     3. Submit two sets of revised final documents in final form within 10 days after final inspection.
   - C. Warranties and Bonds:
     1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
     2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
     3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

2. PROJECT RECORD DOCUMENTS
   - A. Maintain on site one set of the following record documents; record actual revisions to the Work:
     1. Drawings.
     2. Specifications.
     3. Addenda.
     4. Change Orders and other modifications to the Contract.
     5. Reviewed shop drawings, product data, and samples.
     6. Manufacturer's instruction for assembly, installation, and adjusting.
   - B. Ensure entries are complete and accurate, enabling future reference by Owner.
   - C. Store record documents separate from documents used for construction.
   - D. Record information concurrent with construction progress.
   - E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
     1. Manufacturer's name and product model and number.
     2. Product substitutions or alternates utilized.
     3. Changes made by Addenda and modifications.
   - F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
     1. Measured depths of foundations in relation to finish first floor datum.
     2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
     3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
     4. Field changes of dimension and detail.
     5. Details not on original Contract drawings.

3. OPERATION AND MAINTENANCE DATA
   - A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
   - B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
   - C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
   - D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

4. OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES
   - A. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

5. OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS
   - A. For Each Item of Equipment and Each System:
     1. Description of unit or system, and component parts.
     2. Identify function, normal operating characteristics, and limiting conditions.
     3. Complete nomenclature and model number of replaceable parts.
   - B. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
   - C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
   - D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
   - E. Include manufacturer's printed operation and maintenance instructions.
   - F. Include sequence of operation by controls manufacturer.
   - G. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
   - H. Provide framed information as follows. All information shall be framed in black metal frames.
     1. Subcontractor list and service company contact information (to be located in office)
     2. All warranty information (located in office)
     3. Legend and locations of labels on valves and knobs in mechanical room (located in mechanical room)
     4. Map of zones for irrigation system located with irrigation controls.

6. OPERATION AND MAINTENANCE MANUALS
   - A. Prepare instructions and data by personnel experienced in maintenance and operation of described products in the form of an instructional manual.
   - B. Binders: Commercial quality, 8-1/2 x 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
   - C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
   - D. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.
   - E. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
   - F. Contents: Prepare a Table of Contents for each volume, with each product or system description identified with tabbed dividers, in three parts as follows:
     1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
     2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
        - a. Significant design criteria.
        - b. List of equipment.
        - c. Parts list for each component.
        - d. Operating instructions.
        - e. Maintenance instructions for equipment and systems.
        - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
     3. Part 3: Project documents and certificates, including the following:
        - a. Shop drawings and product data.
        - b. Certificates.

7. WARRANTIES AND BONDS
   - A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
   - B. Verify that documents are in proper form, contain full information, and are notarized.
   - C. Co-execute submittals when required.
   - D. Manual: Bind in commercial quality 8-1/2 x 11 inch three D side ring binders with durable plastic covers.
   - E. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
   - F. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
   - G. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principals.

DIVISION 2 - SITEWORK

SECTION 02010 - SUBSURFACE INVESTIGATION

1. SUBSURFACE INVESTIGATION
   - A. Geotechnical investigation (subsurface soil tests) for the project site has been performed and a report of that investigation has been completed. The consultants report presents his conclusions on subsurface conditions, based on his interpretations of the data obtained in the investigation. The Contractor acknowledges that he has reviewed the consultants report and any addenda thereto, and that his Bid for excavation operations, including all necessary rock removal, is based on subsurface condition as described in that report. It is recognized that a subsurface investigation may not disclose all conditions, as they actually exist between the time of a subsurface investigation and the time of excavation operations. In recognition of these facts, this clause is entered in the Contract to provide a means of equitable additional compensation for the Contractor if adverse unanticipated conditions are encountered, and to provide a means of rebate to the Owner if the conditions are more favorable than anticipated.
   - B. Requirements:

1. Contractor shall refer to all recommendation and findings as set forth in soils geotechnical report. The Owner and/or Architect accept no responsibility for the accuracy of the findings or for the final recommendations. Existing elevations and locations to be joined shall be verified by the contractor before construction. Contractor shall notify the Owner so that modifications can be made before proceeding with the work.
2. At any point in time during excavation operations that the Contractor encounters conditions that are different than those anticipated by the foundation consultants report, he shall immediately (within 24 hours) bring this fact to the Owners attention. Once a fact of unanticipated conditions has been brought to the attention of the Owner, and the consultant has concurred, immediate negotiations will be undertaken between the Owner and the Contractor to arrive at a change in contract price for additional work or reduction in work because of the unanticipated conditions. The Contractor agrees that his stated unit price would apply for additional or reduced work under the Contract.

SECTION 02072 - SITE DEMOLITION

1. SECTION INCLUDES
   - a. Removal of existing construction indicated on Drawings and/or required by work specified in other Sections of these Specifications.
   - b. Capping and Identifying Utilities
   - c. Protection of persons and property.
2. COORDINATION: Contractor is solely responsible for coordination of work of this Section with work of subcontractors and Tenant's staff for work of other Sections of these Specifications.
3. GENERAL
   - a. Maintain protected access at all times. Use of explosives is prohibited.
   - b. General: Erect and maintain weatherproof closures for exterior openings. Erect and maintain temporary partitions to prevent spread of dust, fumes, noise, and smoke.
   - c. Protect existing items, which are not indicated to be altered.
   - d. Existing Utilities: Disconnect, remove, and cap designated utility services within demolition areas. Mark locations of disconnected utilities. Identify and indicate capping locations on Project Record Documents.
   - e. Persons: Erect and maintain fences, planking, bracing, shoring, lights, barricades, warning signs and guards required for protection of workmen and the public.
   - f. Property: Use care and appropriate means to protect construction and property which is not part of Work of Contract. Repair, refinish and/or replace damaged construction and property at no additional cost to Tenant.
   - g. Demolish in orderly and careful manner with least possible disturbance to public and to adjacent property.
   - h. Except where noted otherwise, immediately remove and dispose of demolished materials away from site. Do not burn or bury materials on site.
   - i. The General Contractor, immediately following demolition shall measure the space to confirm the overall dimensions match those shown in the architectural drawings. If discrepancies occur, the Contractor shall immediately inform the architect.
4. SITE CLEARING
   - a. Remove and legally dispose of above and below grade improvements and structures if any and/or not indicated to remain, within the project limits.
   - b. Remove trees, vegetation, etc, within project limits.
   - c. Strip topsoil within building and pavement area and stockpile for re-use in landscape and green areas; excess shall be removed from site.
   - d. Provide protection to improvements to remain.

SECTION 02100 - SITE CLEARING

1. GENERAL
   - a. Remove and legally dispose of above and below grade improvements and structures if any and/or not indicated to remain, within the project limits.
   - b. Remove trees, vegetation, etc, within project limits.
   - c. Strip topsoil within building and pavement area and stockpile for re-use in landscape and green areas; excess shall be removed from site.
   - d. Provide protection to improvements to remain.

SECTION 02200 - EXCAVATION, BACKFILLING, COMPACTION, AND GRADING

The following are general guidelines for excavation, backfilling, compaction and grading. The contractor shall follow the specific recommendations made in the soils Geotechnical report and/or Civil construction documents. When not specifically addressed in the construction documents, contractor shall comply with the provisions herein.

1. Excavate for footings; foundations structures, utilities, etc. to indicated depth. All excavation shall be assumed as earth.
   - A. Trim bottoms to leave solid, undisturbed base for concrete placement. See Soils Report for bearing capacity.
   - B. All foundation excavation shall be kept dry, and protected from freezing.
   - C. Correct unauthorized excavation in a manner acceptable to Owner.
2. Excess earth not required for backfill shall be removed from site. General Contractor responsible for topsoil placement and roking to grade.
3. Compact backfill to density of adjacent soil, as follows, whichever is greater: (Refer to Soils Report for other recommendations).
   - A. Compact soil to not less than the following percentages of maximum density for soils, which exhibit a well-defined moisture density relationship (cohesive soils) determined in accordance with ASTM D1557: and not less than the following percentages of relative density, determined in accordance with ASTM D2049, for soils which will not exhibit a well-defined moisture-density relationship (cohesionless soils).
   - B. Under Buildings and Paved Areas: Compact top 8 inches of existing surface and each layer of backfill of fill material to 95 percent maximum density (Standard Proctor) for cohesive soil or 98 percent relative density (Standard Proctor) for cohesionless soils.
   - C. Other Areas: Compact 8 inches of existing ground surface and each layer of backfill of fill material to 90 percent maximum density (Standard Proctor) for cohesive soils or 85 percent relative density (Standard Proctor) for cohesionless soils.
   - D. Where soil materials must be moisture conditioned before compaction, uniformly apply water to surface, Prevent free water from appearing on surface of soil materials during or subsequent to compaction operation.
   - E. Remove and replace, or scarify and air dry soil material that is too wet to permit compaction to specified density.
4. Backfill and fill materials
   - A. Sand or sand on gravel at engineered (clean) earth fill shall be used under floor slabs on-grade, to underside of crushed stone underlayment.
   - B. Earth materials taken from the excavation operations and stockpiled on site as acceptable fill material, capable of meeting the specified compaction requirements, may be used as fill material in areas outside the building pad.
     1). Only 1-inch washed gravel, pea gravel or sand shall be used in utility trenches in paved areas, to top of subgrade.
   - C. Existing paving, organic material or existing soils shall not be used for filling under building slabs or for filling under pavement.
   - D. Granular fill under slabs on grade shall be No. 57, 6, or 67 crushed stone per ASTM D448.
   - E. Remove rock or gravel larger than 2 inches in any dimension, debris, waste, obstructions, and deleterious matter from ground surface prior to placement of fills.
5. Grade site to establish required elevations. Maintain proper drainage ways to direct water away from building in final grading.
   - A. Storm drainage shall be provided as indicated on Civil plan(s) and installed in accordance with state and local codes and ordinances.
6. Grade areas to smooth finished surfaces free from irregular surface changes. Compact with uniform levels or slopes between points and existing perimeter grades

SECTION 02361 - TERMITE CONTROL

1. SUMMARY
   - A. This Section includes the following:
     Adjust list below to suit Project.
2. Soil treatment with termiticide.
3. REFERENCES
   - A. Title 7, United States Code, 136 through 136y – Federal Insecticide, Fungicide and Rodenticide Act; United States Code; 1947 (Revised 2001).
4. REGULATORY REQUIREMENTS
   - A. Conform to applicable code for requirements for application and comply with EPA regulations.
   - B. Provide certificate of compliance from authority having jurisdiction indicating approval of toxicants.
5. SEQUENCING AND REPORTING
   - A. Apply toxicant immediately prior to installation of vapor barrier under slabs-on-grade.
   - B. Soil Treatment Application Report: Include the following:

1. Date and time of application.
2. Moisture content of soil before application.
3. Brand name and manufacturer of termiticide.
4. Quantity of undiluted termiticide used.
5. Dilutions, methods, volumes, and rates of application used.
6. Areas of application.
7. Water source for application.

6. WARRANTY
   - A. Provide five-year installer's warranty against damage to building caused by termites.

1. Include coverage for repairs to building and to contents damaged due to building damage. Repair damage and, if required, re-treat.
2. Inspect annually and report in writing to Owner. Provide inspection service for three (3) years from Date of Substantial Completion.

6. MANUFACTURERS
   - A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Termiticides:
   - a. Aventis Environmental Science USA LP; Termidor.
   - b. Bayer Corporation; Premise 75.
   - c. Dow AgroSciences LLC; Dursban TC or Equity.
   - d. FMC Corporation, Agricultural Products Group; Talstar, Prevail FT, or Torpedo.
   - e. Syngenta; Demon TC.

7. MIXES
   - A. Toxicant Chemicals: EPA approved; synthetically color dyed to permit visual identification of soil treatment.
   - B. Diluent: Recommended by toxicant manufacturer.
   - C. Mix toxicant to manufacturer's instructions.
8. EXAMINATION
   - A. Verify that soil surfaces are unfrozen, sufficiently dry to absorb toxicant, and ready to receive treatment.
   - B. Verify final grading is complete.
9. SOIL TREATMENT
   - A. Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to product's EPA-Registered Label.
   - B. Preparation:

1. General: Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.
2. Delete paragraph below if no soil treatment.
2. Soil Treatment Preparation: Loosen, rake, and level soil to be treated except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.
   - C. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute treatment evenly.

Revise five subparagraphs below to suit Project.

1. Slabs-on-Grade: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
2. Foundations: Adjacent soil including soil along the entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating the slab, and around interior column footers, piers, and chimney bases; also, along the entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.
3. Crawlspaces: Soil under and adjacent to foundations as previously indicated. Treat adjacent areas including around entrance platform, porches, and equipment bases. Apply overall treatment only where attached concrete platform and porches are on fill or ground.

Examples of masonry voids are the insides of hollow masonry units and behind masonry veneer.

4. Masonry: Treat voids.
5. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.
   - D. Insert requirements here for crawlspaces used as plenum spaces only after seeing Evaluations for cautionary information.
   - B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.
   - E. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.
   - F. Post warning signs in areas of application.
   - G. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.
   - H. Apply extra treatment to structure penetration surfaces such as pipe or ducts, and soil penetrations such as grounding rods or posts.
   - I. Do not permit soil grading over treated work.

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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.2

DIVISION 2 - SITEWORK (CONTINUED)

SECTION 02505 - CONCRETE PAVING, WALKS, CURBS, GUTTERS AND APPROACHES

1. SECTION INCLUDES

A. Concrete pedestrian traffic surfaces (walks, ramps, etc.)
B. Concrete vehicular traffic surfaces
C. Concrete curbs and gutters
D. Concrete traffic approaches

2. REFERENCE PUBLICATIONS AND STANDARDS

A. Governing Authority: Applicable standards and regulations of state and municipal agencies having governing authority over the work specified in this section shall take priority over items specified herein and shown on the drawings unless the requirements set forth herein require a superior quality work.
B. Material Standards: American Society for Testing Materials (ASTM)
C. Concrete Standards: American Concrete Institute (ACI): ACI_617 "Standard Specifications for Concrete Pavement and Bases" ACI_395 "Manual of Standard Practice for Detailing Reinforced Concrete"

3. SUBMITTALS

A. Testing Laboratory Reports: Furnish three copies of the test reports to the Owner indicating results of the cylinder test.

4. BASIC MATERIALS

A. Concrete and Reinforcing Steel: As Specified in CAST_IN_PLACE CONCRETE

5. MISCELLANEOUS MATERIALS

A. Air Entraining Agent: ASTM C0260, Master Builders or equal.
B. Dispersing Admixture: ASTM C_494, Master Builders or equal.
C. Curing Compound: ASTM C_309, No. 40W by A. C. Horn Company or equal.
D. Joint Filler: ASTM D1751, pre-molded fiber filler, unless shown otherwise on the drawings.
E. Joint Sealer: ASTM D_1190, Code 2351.

6. CONCRETE MIX DESIGN

A. Contractor shall employ and pay for, as a part of the contract price, the services of an Owner approved independent testing laboratory to determine actual design mix to be used, based on the following: All concrete: 3000 psi at 28 days, unless noted otherwise.

7. INSPECTION OF SUBGRADE

A. Inspect subgrades prepared as specified elsewhere in these Specifications and report any deficiencies to the Owner before beginning work. Commencement of work shall indicate acceptance of subgrades by this Contractor.

8. CONSTRUCTION

A. General: Deliver and place concrete as specified in CAST_IN_PLACE CONCRETE.
B. Curbs and Gutters:
1. Configurations: Construct to cross_sectional details shown on drawings and at indicated locations. Curbs may be fully formed or pulled and troweled to configurations shown on the drawings.
2. Reinforcement: Reinforce as indicated on the drawings with continuous reinforcing bars lapped 30 bar diameters and securely tied at all splices. Metal chairs shall be used to hold the reinforcing steel in the proper plane.
3. Expansion Joints: Construct ½" wide expansion joints with joint filler across lengths of curb at all tangent points and at not more than twenty foot intervals. Construct one inch wide expansion joints with joint filler between curbs and concrete paving. All fixed objects, such as buildings, poles, pipes, catch basins, etc., within or abutting the concrete shall be separated from the concrete by expansion joints.
4. Finishing: Finish surfaces with dense uniform texture equal to burlap drag and cross_score with 1/4" deep cross joints at ten foot intervals with edges smoothed 1/8".
5. Joints: Fill expansion joints with joint filler except for space 3/4" deep at surface. After concrete has set, clean the open joint above filler and fill with joint sealer in accordance with instructions of sealer manufacturer.

C. Traffic Approaches and Vehicular Traffic Surfaces:
1. Configuration: Construct to cross-sectional details shown on drawings and at indicated locations.
2. Reinforcement: Reinforce with #3 minimum size reinforcing bars 18 inches on center both ways, unless otherwise indicated or noted on the drawings.
3. Expansion and Construction Joints: At intentional points for stoppage of concrete placing, use expansion joints. At unintentional points of stoppage of concrete placing, use continuation of reinforcing through joints. Construct ½ inch wide expansion joints with joint filler at locations shown on the drawings or at not more than twenty foot intervals each way if not shown. Construct ½ inch wide expansion joints with joint filler between curbs and concrete paving. All fixed objects, such as buildings, poles, pipes, catch basins, etc., within or abutting the concrete shall be separated from the concrete by expansion joints.
4. Joint Filling and Sealing: Fill expansion joints with joint filler except for space 3/4" deep at surface. After concrete has set, clean the open joint above filler and fill with joint sealer in accordance with instructions of sealer manufacturer.
5. Finishing: Vibrate, screed and float concrete to level and test the surface, which shall not vary over 1/4" in ten feet when tested with ten foot straight edge. Finish surface to gritty texture with burlap drag or straight continuous strokes with a stiff bristle push broom. Finish all edges smooth with 1/8" or 1/4" radius.

D. Walks:
1. Configurations: Construct to cross-sectional details shown on drawings and at indicated locations.
2. Sand Cushion: Concrete shall be placed over a sand cushion placed on the stabilized subgrade as shown on the drawings or a minimum of 4" thick if not shown on the drawings.
3. Reinforcing: Reinforce with 6 x 6 x W1.4, WWF, minimum reinforcing unless otherwise indicated or noted on the drawings.
4. Expansion Joints: Construct expansion joints as detailed in locations shown on the drawings.
5. Finishing: Finish surfaces not noted on the drawings to be finished otherwise to a "broom" or "burlap drag" gritty surface. Tool all joints and all edges to provide a smooth border to each section or division of the walk. Finish all vertical surfaces in a manner that leaves the exposed surfaces free of "honeycombing" and form marks. Any damaged surfaces shall be repaired and stone-rubbed to match adjacent finished surfaces.

9. CURING CONCRETE

A. Apply a white_pigmented type curing compound at a uniform rate of approximately 200 sq. ft./ gallon, or as recommended by curing compound manufacturer as soon as the finishing operation has been completed and the concrete has lost its water sheen. The curing procedure must protect the concrete, including all exposed surfaces against loss of moisture and rapid temperature change for a period of not less than four days from the beginning of the curing operation and without damage to, or marking of the finished concrete surface. Traffic shall not be allowed on finished concrete for a minimum period of seven days.

10. TESTING

A. Independent Testing Laboratory: Contractor shall employ and pay for, as a part of the contract price, the services of an Owner_ approved independent testing laboratory to perform concrete cylinder testing. Test cylinders shall be taken and cured by the Contractor and tested by the testing laboratory for each different class of concrete poured in any one day. Cylinders shall be taken in accordance with ASTM C31, and cured and tested in accordance with ASTM C39. One set of three cylinders is required for each 50 cubic yards of concrete or less, placed in any one day. One cylinder shall be tested at 7 days, one cylinder shall be tested at 28 days and one cylinder shall be held as a spare from each set of three cylinders as specified above.

B. Contractor Tests:
1. Slump Tests: Slump tests shall be taken by the Contractor when cylinders are taken, and shall show maximum slump 5" and minimum slump 3".
2. Air Entrainment: Air content by volume: 5% to 7% based on measurements made in concrete mixtures at point of discharge at job site at time slump tests are made. Air content by volume shall be determined in accord with ASTM C231.

11. CLEANING CONCRETE

A. Concrete approaches, sidewalks and related work shall be hosed down with water, scrubbed with fiber brushes, allowed to dry and be left broom clean and in condition acceptable to the Owner.

SECTION 02511 - ASPHALTIC CONCRETE PAVING - not used

SECTION 02580 - PAVEMENT MARKING

1. GENERAL
a. Marking paint shall conform to AASHTO M248 (chlorinated rubber-alkyd), Type III. Apply as 4" wide stripes (or symbols as indicated) in one coat of 125 sq. ft. per gallon. Color shall be white. Handicapped details shall comply with the latest provisions of the Americans with Disabilities Act and local accessibility standards.
b. Dust, clay, silt, and excess sand shall be removed by sweeping from pavement to be marked prior to application of paint.

SECTION 02854- PARKING BUMPERS (WHEEL STOPS)

1. SECTION INCLUDES
A. Parking bumper (wheel stop)

2. WHEEL STOPS
A. Precast concrete, semi_circular or beveled square in cross_section, 8'_0" long X 6" high X 8" wide, with holes for three dowels cast through each unit, and two 6 inch x 3/4 inch drainage slots.

3. DOWELS
A. Not less than 2 – 3/4" round X 12" long (minimum) steel dowels as recommended by wheel stop manufacturer.

4. GENERAL
A. Install wheel stops in locations and in accord with details shown on the drawings.

5. INSTALLATION
A. Countersink steel dowels to a point 1/2" to 3/4" below the top surface of the wheel stop and set in such a manner as to avoid chipping or cracking the concrete during installation, and seal reveal with silicone caulking flush.

6. CLEAN_UP
A. Upon completion of work of this section, remove related debris from premises.

SECTION 02930- SITE FURNISHINGS

1. SECTION INCLUDES

A. Bollards
B. Bicycle Racks

2. RELATED REQUIREMENTS

A. Section 03300 – Cast-in-Place Concrete: Bollard infill and underground encasement.
B. Section 05500 – Metal Fabrications: Anchors to attach site furnishings to mounting surfaces.

3. SUBMITTALS

A. See Section 01300 – Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate plans for each unit or groups of units, elevations with model number, overall dimensions; construction, and anchorage details.

4. WARRANTY

A. See Section 01780 – Closeout Submittals, for additional warranty requirements.

5. MANUFACTURERS

A. Steel Pipe Bollards:
1. FairWeather Site Furnishings: www.fairweathersf.com.OEA
2. Huntco Supply, LLC: www.huntco.com.OEA
3. Substitutions: See Section 01600 – Product Requirements.

B. Outdoor Bicycle Racks: The Wagner Companies – Serpentine Rack Model SR9G; www.wagnercompanies.com OEA

6. METAL FURNISHINGS

A. Metal Furnishings, General:
1. Steel components: Plates, bars, and shapes complying with ASTM A36/A36M and tubing complying with ASTM A500/A500M; cleaned, treated, and powder coated.
a. Color: As shown on drawings.

7. BOLLARDS

A. Steel Pipe Bollards: Concrete filled steel pipe.
1. Shape: Round.
2. Model: B-40220-Schedule 40.
3. Diameter: 5 inches.
4. Height above grade: 42 inches.
5. Materials:
a. Steel Pipe: ASTM A53/A53M, standard weight.
b. Factory Finish: Primed.
c. Color: As selected by Architect from manufacturer's standard range.
6. Mounting: Permanent Embed.

8. BICYCLE RACKS

A. Exterior Bicycle Racks: Device allows user provided lock to simultaneously secure one wheel and part of the frame on each bicycle parked or racked.
1. Style: Serpentine rack formed from a continuous round pipe.
2. Capacity:(As shown on drawings) bicycles.
3. Mounting, Ground: Surface flange.
4. Finish: Hot-dipped galvanized, maintenance-free, and weather-resistant.
5. Color: As selected by Architect from manufacturer's standard range.
6. Accessories: Surface flange cover.

9. EXAMINATION

A. Verify that mounting surfaces, preinstalled anchor bolts, or other mounting devices are properly installed and ready to receive site furnishing items.
B. See Section 05500 – Metal Fabrications for anchors to attach site furnishings to mounting surfaces.
C. Do not begin installation until unacceptable conditions are corrected.

10. INSTALLATION

A. Install site furnishings in accordance with approved shop drawings, and manufacturer's instructions.
B. See Section 03300 – Cast-In-Place Concrete for bollard infill and underground encasement.
C. Provide level mounting surfaces for site furnishing items.
D. Install bicycle racks level, plumb, square, and correctly located as indicated on the drawings.
E. Surface Flange Installation: Anchor bicycle racks securely in place with ½ inch by 4-inch anchor bolts through flange holes.

DIVISION 3 - CONCRETE

SECTION 03300 - CAST-IN-PLACE CONCRETE

1. SCOPE

A. The Contractor shall furnish labor, materials, and equipment necessary to install all items of cast-in-place concrete, and all necessary items as shown on the drawings, including anchor bolts for columns, items specified herein, and items required for a complete installation.

2. REFERENCES:

A. The ACI "Manual of Concrete Practice" and the CRSI "Manual of Standard Practice" shall apply unless modified herein.

3. MATERIALS

A. Cement: The cement used shall be Portland Cement, conforming to ASTM C 150, Type 1. One brand shall be used for the complete project.

B. High early strength concrete may be used at General Contractor's discretion.

C. Aggregates:
1. Coarse aggregate shall conform to ASTM C-33 specifications with maximum size No. 57. The material shall consist of crushed stone, gravel, or other hard, strong, durable, uncoated pieces.
2. Fine aggregate shall conform to ASTM C-33 and may be natural sand or manufactured sand.

D. Admixtures:
1. Air entrainment agents conforming to ASTM C-260 shall be used in concrete exposed to weather and may be used in all concrete on this project. Air entraining admixtures shall be used to produce 3% to 6% air by volume in the concrete.
2. High-range water reducing admixture (Super Plasticizer) meeting requirements of ASTM C 494 may be used at the discretion of the Contractor.

E. Concrete Sealers:
1. Materials:
a. Base Sealer: Micro Guard Concrete Clear Waterproofing Sealer, # AD702.

F. Water: Water used for mixing of concrete shall be potable.

G. Reinforcing Bars: All reinforcing bars shall conform to ASTM A615 – Grade 60. All bars shall be free of loose and/or excessive rust or other materials which will prevent bond.

H. Expansion Joint Material: Expansion joint material shall conform to ASTM D1751.

I. Mill Tests: Reports may be required on any and all material at the Engineer's discretion and direction. Costs of these reports shall be borne by the Contractor.

J. No fly ash or calcium chloride shall be used on this project.

4. CONCRETE QUALITY

A. Strength: All cast-in-place concrete shall have a maximum weight of 150 pounds per cubic foot and minimum strength at 28 days (ultimate strength of 3000 psi).

B. Proportioning of the Concrete Mixture:
1. The proportion of the aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement with the method of placing employed on the work, but without permitting the materials to segregate or excess free water to collect on the surface.
2. The materials used for the concrete shall be measured by weight. Maximum slump shall be 4".
3. Measure, batch, mix and deliver concrete with pigments, where noted, in accordance with manufacturer's written instructions.

C. Tests:
1. The Contractor shall assist testing laboratory to receive, mark, cure, and test cylinders in accordance with ASTM C-39. The test report by the laboratory shall identify the location of the concrete sampled, date, slump, air content and other necessary information. The laboratory shall send electronic copies of the reports to the Owner and Contractor.
2. Routine tests of concrete shall consist of:
a. Slump test for each load of ready-mixed concrete.
b. Compressive strength test for each day's pour and/or each 50 cubic yards of concrete poured. This test shall conform to ASTM C-31 and consist of 4 cylinders.

5. INSPECTIONS

A. Owner's Approval: The Contractor shall notify the Owner 48 hours prior to schedule placement of concrete. The forms, steel and other conditions must be approved prior to placement of concrete.

6. MIXING AND PLACING CONCRETE

A. All concrete for this project shall be from an approved central mixing plant. Mixing and delivery shall conform to ASTM C-94.

B. Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent the separation or loss of materials.

C. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to re-handling or flowing. When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or section is completed.

D. Concrete shall be maintained in a moist condition for seven (7) days after placing by one of the following methods:
a. Wet coverings
b. Spraying
c. Curing compound
1. Curing method shall be compatible with floor coatings or coverings.
2. Ashford formula may be used in lieu of curing compound (Part 3). This material shall be applied according to manufacturer's recommendations.

F. Adequate precautions shall be taken for cold weather or hot weather concreting. (ACI 306 or ACI 305).

3. FORM WORK AND CONSTRUCTION DETAILS

A. Forms
1. Forms shall conform to shapes, lines and dimensions of the members as called for on the plans and shall be sufficiently tight to prevent the leakage of mortar. They shall be properly braced or tied together so as to maintain position and shape.
2. Form material shall be of:
a. Plywood: APA Plyform conforming to PS 174
b. Metal Forms
3. Before placing the concrete and reinforcing steel, the contact surfaces of all forms shall be thoroughly wetted with water or coated with approved form oil. The form oil shall be applied with a brush or spray so as to cover the form evenly without excess drip. Form coating material used to coat formwork to facilitate the removal thereof shall not cause softening or permanent staining of the concrete surface.

B. Removal of Forms: Forms not required for structural support may be removed as soon as concrete has hardened sufficiently to resist damage during removal of forms.

8. FINISHES

A. Steel trowel finish shall be applied to all floor slabs in the building, unless otherwise noted.

B. Light broom finish perpendicular to traffic shall be applied to all exterior walkways. A 3/4" transverse contraction joint shall be formed with a tool designed for that purpose at equal intervals not exceeding the width of the walkway. All edges adjoining the final ground line shall be rounded with a 1/4" edger. Expansion joints shall not exceed 20'.

C. Concrete Sealer:

1. Concrete Clear Sealer:
a. Concrete to be sealed must have aged a minimum of 28 days prior to sealer installation.
b. Immediately prior to applying concrete sealer, the concrete must be thoroughly cleaned. The surface should be swept then scrubbed using rotary floor machine. The surface must be rinsed after cleaning until the rinse water is completely clean. After drying, it should be inspected closely, and additional or spot cleaning should be performed if necessary.
c. Surfaces must be properly prepared as prescribed in manufacturer's instructions. Surrounding areas and adjacent surfaces must be masked or protected from overspray, spills, tracking, and equipment contact. The work area should be roped off and closed to traffic.
d. Immediately prior to use, the liquid material must be thoroughly power mixed as described in manufacturer's instructions. Application must be made full strength (un-thinned) at the coverage rate recommended and with equipment recommended by manufacturer's instructions.
e. Sealer must be applied thinly and uniformly. A wet edge should be maintained and overlap controlled. Material should not be over-applied or allowed to puddle or collect in joint indentations.
f. Sealer must be allowed to dry completely, normally a minimum of 12 to 48 hours, before it is subjected to temperatures below 42 degrees Fahrenheit or to water from any source.

D. Variation in concrete slabs shall not exceed 1/8" in ten feet from true grade.

E. All exposed concrete, except walkways and floor slabs, shall have a rubbed finish, satisfactory to the Owner's Project Coordinator. "White Washing" by use of separately mixed grout will not be permitted.

9. SHOP DRAWINGS

A. The Contractor shall prepare and submit for review shop drawings according to the requirements of the General Conditions.

10. REINFORCEMENT

A. Reinforcement shall be accurately placed and securely supported on metal or plastic chairs.

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DRAWING COORDINATION
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23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.3

SECTION 04220 - CONCRETE UNIT MASONRY

1. SECTION INCLUDES
   A. Concrete unit masonry
   B. Horizontal masonry wall reinforcement.
   C. Building in bolts, anchors, nailers, angles, inserts, conduits, piping, flashings, etc. furnished and located by other trades.

2. REFERENCE STANDARDS
   A. American Society for Testing Materials (ASTM)
   B. International Masonry Industry All-Weather Council (IMIAC)

3. MOCK-UP
   A. Construct masonry mock-up, 4 feet long by 4 feet wide, which includes masonry anchor accessories, sill flashings, and corner condition.
   B. Locate where directed by Owner.
   C. Mock-up may remain as part of the Work.

4. MATERIALS
   A. Masonry Units: High pressure steam cured (air dried units will NOT be acceptable), load bearing, hollow units conforming to ASTM C90, Type I, medium weight; load bearing solid units conforming to ASTM C90, Type 1, medium weight. Testing of lightweight aggregates for drying shrinkage shall be as stipulated in ASTM C331. Units shall be of dimensions that will lay up to 8_inch modules. Units shall include special finishes, shapes and sizes as shown on the drawings and/or required to complete the work.
   B. Masonry Unit Sizes: Standard 8 x 8 x 16 inch and 4 x 8 x 16 inch units as shown on the drawings.

5. ACCESSORIES
   A. Joint Reinforcement: Hohmann & Bernard, Inc., Fort Worth, Texas, "Lox-All truss mesh", 3/16" side rods and galvanized No. 9 cross rods. Provide special shapes as required for intersections. Widths shall be 2" less than total masonry thickness.
   B. Polyethylene tubing, ¼ inch diameter with internal screen.
   C. Miscellaneous: As shown on the drawings or as required to provide masonry installations which are well tied (anchored) to building frame. Consult with Architect prior to bidding if clarification of this requirement is needed.

6. MORTAR
   A. Type: ASTM C270 with minimum compressive strength of 1800 p.s.i., Type M or S; color – standard gray to match block. Masonry cement will not be allowed.
   B. Materials:
1.Portland Cement: ASTM C150, Type 1, one brand only.
2.Hydrated Lime: ASTM C207, Type S
3.Sand: Well screened, clean, hard, siliceous particles free from loam, alkali, salt, organic matter and other impurities and shall be composed of grains of varying sizes, all of which shall pass an eight-mesh screen, and shall be uniformly graded from coarse to fine.
4.Water: City tap water.

7. GROUT (if shown on the drawings)
   A. Grout Mix for reinforced masonry: ASTM C476 with minimum compressive strength of 3000 psi at 28 days. Provide coarse aggregate conforming to ASTM C404 (max. size 3/8") for coarse grout mix. Grout shall have slump of 10-1/2 to 11 inches at the time of placement.

8. PRODUCT DELIVERY, STORAGE AND HANDLING
   A. Store mortar materials on dunnage in a dry place. Masonry units stores above ground on level platforms. Cover and protect units and accessories as necessary from elements.

9. CONDITIONS
   A. Hot_Weather Installation: Masonry erected when the ambient air has a temperature of more than 90 F., in the shade, and has a relative humidity of less than 50 percent shall be protected from direct exposure to wind and sun for 48 hours after installation, and rain for 12 hours after installation. Masonry surfaces shall be kept moist with water gently spraying the surface, covering work with burlap, which is kept wet, or by other approved means. Such protection shall be continued until mortar has set for 3 days or until lowering temperatures or increased humidity in the air make such protection unnecessary.
   B. Cold_Weather Installation: No frozen work shall be built upon. Before erecting masonry during temperatures below 40 F., a written statement shall be submitted, and approval received of the methods proposed to heat the masonry materials and protect the masonry from freezing as required below. No masonry shall be laid at temperatures below 35 F. unless authorized in writing. Cold-weather installation shall be in accordance with IMIAC recommended practices and guide specifications for masonry construction.

10. PREPARATION (MORTAR)
   A. Mortar materials shall be accurately measured and mixed with as much water as may be necessary to produce the wettest workable consistency possible. Mortar shall be placed in final position within 2_1/2 hours after mixing. Mortar not used or that has started to set within this time interval shall be discarded. Mortar that has stiffened within the above time interval, because of evaporation of moisture from the mortar, shall be re-tempered to restore its workability.

11. SCAFFOLDING
   A. Provide scaffolding necessary for masonry work and make same available to other trades required to execute work in conjunction with masonry work.
   B. Design and engineering of formwork and scaffolding as well as its construction shall be the responsibility of the Contractor. Adequately shore block beams, and similar members to safely support all loads and lateral pressures liable to come on the construction. Provide clean-out openings at each vertical bar at bottom course or in foundation wall when wall is erected in more than 5-foot lifts.

12. MASONRY CONSTRUCTION
   A. General: No unit having film of water or frost on its surfaces shall be laid. Masonry shall be laid plumb, true to line, with level courses accurately spaced. Bond pattern shall be kept plumb throughout. Corners and reveals shall be plumb and true. Vertical joints shall be shoved tight. Each unit shall be adjusted to final position while mortar is still soft and plastic. Any unit that is disturbed after mortar has stiffened shall be removed and re-laid with fresh mortar.
   B. Laying Units: Do not wet before laying. Cut units with power masonry saws, either dry or wet cut. Lay units in a ½ running bond so that vertical joints between units will be located over the center of the units in the next course below and in alignment from bottom to top of wall. Units shall be full bedded in mortar under both face shells. Fill all head-joints solidly with mortar for a distance in from the face of the unit or wall not less than the thickness of the longitudinal face shell. No cells shall be left open in the face surfaces.
   C. Grouting (if shown on the drawings): Where shown on the drawings, pour interior grout spaces, except those blocked out with wood in order to provide the openings through wall, full of grout. Grout lifts shall not exceed 4'0". Slushing with mortar is not permitted. Grout shall be caused to flow into all voids and surround rebar. Puddle with sticks _ not trowel blades. Except at finishing course, stop all grout pours approximately 1" below top of the last course. Where it is necessary, for construction purposes to stop a longitudinal run of masonry, stop by racking back according to bond. Provide a suitable dam to retain grout. After grout has set, remove wood blocking at openings.
   D. Cutting and Fitting: Wherever possible, full units of the proper size shall be used in lieu of cut units. Cut edges shall be clean, true, and sharp. Openings shall be carefully cut, formed, or otherwise neatly made by masonry mechanic for recessed items and for electrical, plumbing, or other mechanical installations so that wall plates, cover plates, or escutcheons required by the installation will completely conceal the openings and will have bottoms in alignment with lower edge of masonry joints.
   E. Reinforcement:
1.All CMU walls shall be reinforced horizontally with reinforcing spaced 16" o.c. vertically, maximum. Lay reinforcing on wall and cover with mortar, then bed unit as herein specified. At corners, reinforcing is to be provided in every horizontal course, with inside rod cut and bent to form corner. Provide reinforcing one course above and below all openings. Reinforcement placed as to assure a 5/8" mortar cover measured from the outside face of the joint. Side rods shall be lapped at least 6" at splices.
2.Intersecting and butting walls shall be bonded together by metal anchors spaced 2'-0" o.c. vertically. Interlocking of units not permitted.
   F. Control Joints: Make adequate provisions throughout the masonry work for expansion and contraction. Install control joint filler as required, extending from top of bearing surface to top of wall, reinforcing shall not run through. Control joints shall be watertight at exterior joints.
   G. Embedded Items: Openings around flush_mounted electrical outlet boxes in wet locations shall be pointed flush with mortar including flush joint above the box. Anchors, ties, wall plugs, accessories, flashings, pipe sleeves, and other items required to be built in shall be built in as the masonry work progresses. Anchors, ties and joint reinforcement shall be fully embedded in mortar.
   H. Stopping and Resuming Work: Step back ½ masonry unit length in each course; DO NOT TOOTH. Clean exposed surfaces of set masonry and remove loose masonry units and mortar prior to laying fresh masonry.
   I. Jointing:
1.Type: Tool slightly concave; mortar thoroughly compacted and pressed against edges of units. Tool when mortar is thumbprint hard. Finish tooled joints to uniformly straight and true lines and surfaces, smooth and free of tool marks.
2.Width: Equal to the difference between the actual and nominal dimensions of the units in either height or length, but in no case shall the average width of any three adjacent joints be less than 1/4 nor more than ½ inch. Vertical joints shall be of the same width except for inconspicuous variations required to maintain bond.

13. POINTING AND CLEANING
   A. Completely remove mortar daubs or splashings from masonry surfaces that will be exposed before setting or hardening. All defects in joints of masonry to be exposed shall be raked out as necessary, filled with mortar, and tooled concave. Masonry surfaces shall not be cleaned, other than removing excess surface mortar, until mortar in joints has hardened. Leave masonry surfaces clean, free of mortar daubs and dirt, and with tight mortar joints throughout.

14. PROTECTION OF WORK
   A. Protect surfaces of masonry not being worked on at all times. When rain or snow is imminent, cover the tops of exposed masonry with a strong non_staining waterproof membrane well secured in place and in a manner that will prevent moisture from accumulating within the unfinished wall. Make adequate provisions during construction to prevent damage by wind.

DIVISION 5 - METALS

SECTION 05500 - METAL FABRICATIONS

1. SUMMARY

   A. Section Includes: Work of this Section consists of installing all materials furnished under this Section, including all equipment, labor, services, and incidental items required to complete Work as shown on Drawings and specified in this Section.
      1. Miscellaneous Framing and Supports for Work in other Sections to include applications where framing and supports are not specified in other Sections.
      2. Steel Pipe Bollards for Site.
      3. Chain Support.
      4. Gates at Dumpster Area.

2. SUBMITTALS

   A. Welder certificates signed by Contractor certifying welders comply with requirements of this Section

3. QUALITY ASSURANCE

   A. Qualifications:
1. Welding and Welders:
      a. Qualify welding processes and welding operators in accordance with AWS Dl .1, Structural Welding Code – Steel; Dl .3, Structural Welding Code Sheet Steel; and Dl .2, Structural Welding Code – Aluminum.
      b. Certify each welder has satisfactorily passed AWS qualification tests for welding processes involved and if pertinent, has undergone recertification.

4. MATERIALS

   A. Ferrous Metals:
1. Metal Surfaces – General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names, and roughness.
2. Steel Plates, Shapes and Bars: ASTM A36.
3. Steel Tubing: Cold-formed, ASTM A500: Grade A, unless otherwise indicated or required for design loading.
4. Steel Tubing: Hot-formed, ASTM A501 for exterior installations and where indicated, provide with hot-dip galvanized coating per ASTM A53.
5. Brackets, Flanges and Anchors: Cast or formed metal of same type material and finish as supported rails, unless otherwise indicated.
6. Concrete Inserts:
      a. Threaded or wedge-type; galvanized ferrous castings, either malleable iron, ASTM A47, or cast steel, ASTM ~7.
      b. Provide bolts, washers and shims as required, hot dip galvanized, ASTM Al 53.
   B. Chain: 3/4 in. proof coil chain.

   C. Grout:
1. Non shrink Nonmetallic Grout:
      a. Premixed, factory packaged, non-staining, non-corrosive, non-gaseous grout complying with CE CRD-C621.
      b. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this Section.

   D. Fasteners:
1. General:
      a. Provide hot-dipped galvanized fasteners for exterior use or where built into exterior walls.
      b. Select fasteners for type, grade, and class required.
2. Bolts and Nuts: Regular hexagon-head-type, ASTM A307, Grade A.
3. Lag Bolts: Square-head-type, FS FF-B-561
4. Machine Screws: Cadmium plated steel, FS FF-S-92.
5. Wood Screws: Flat head carbon steel, FS FF-S-I 11.
6. Plain Washers: Round, carbon steel, FS FF-W-92.
7. Drilled-In Expansion Anchors: Comply with FS FF-S-325, Group III (anchors, expansion, non-drilling), Type I (internally threaded tubular expansion anchor); and machine bolts complying with FS FF-B-575, Grade 5.
8. Toggle Bolts: Tumble-wing-type, FS FF-B-588, type, class, and style as required.
9. Lock Washers: Helical-spring-type carbon steel, FS FF-W-84.

5. FABRICATION

   A. General:
1. Form metal fabrications from materials of size, thickness, and shapes indicated, but not less than that needed to comply with performance requirements indicated.
2. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support.
3. Use type of materials indicated or specified for various components of each metal fabrication
4. Form exposed Work true to line and level with accurate angles and surfaces and straight sharp edges.
5. Shear and punch metals cleanly and accurately; remove burrs.
6. Ease exposed edges to radius of approximately 1/32 in.
7. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing Work.
8. Remove sharp or rough areas on exposed traffic surfaces.
9. Welding:
      a. Weld corners and seams continuously, complying with AWS recommendations.
      b. Exposed Connections: Grind exposed welds smooth and flush to match and blend with adjoining surfaces.
10. Anchorage:
      a. Provide for anchorage of type indicated, coordinated with supporting structure.
      b. Fabricate and space anchoring devices to provide adequate support for intended use.

   B. Miscellaneous Framing and Supports:
1. Provide miscellaneous steel framing and supports which are not part of structural steel framework, as required to complete Work.
2. Fabricate miscellaneous units to sizes, shapes, and profiles indicated or, if not indicated, of required dimensions to receive adjacent other Work to be retained by framing.
3. Except as otherwise indicated, fabricate from structural steel shapes. plates, and steel bars of welded construction using mitered joints for field connection.
4. Cut, drill and tap units to receive hardware and similar items.

   C. Pipe Bollards: Fabricate pipe bollards from Schedule 80 steel pipe.

6. INSTALLATION

   A. General:
1. Fastening to In-Place Construction:
      a. Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction.
      b. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors as required.
2. Cutting, Fitting, and Placement:
   a. Perform as required for installation of miscellaneous metal fabrications.
   b. Set Work accurately in location, alignment, and elevation, level. true and free of rack. measured from established lines and levels.
   c. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry, or similar construction.
   d. Fit exposed connections accurately together to form tight hairline joints.
   e. Weld connections which are not to be left as exposed joints but cannot be shop welded because of shipping size limitations.
   f. Grind exposed joints smooth and touchup shop paint coat.
   g. Do not weld, cut, or abrade surfaces of exterior units which have been hot dip galvanized after fabrication and are intended for bolted or screwed field connections.
3. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with heavy coat of bituminous paint or zinc chromate primer.

7. ADJUSTING AND CLEANING

A. Touch-Up Painting.
1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting.
2. Apply by brush or spray to provide mm. 2.0 mit DFT.

MLA
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REGISTERED ARCHITECT MICHAEL GREGORY LEGG STATE OF TEXAS

02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.

SP.4

Xref ..\3.20 X-Ref\x-tb.dwg

DIVISION 5 - METALS (CONTINUED)

SECTION 05514 - METAL LADDER

1. SECTION INCLUDES
   A. Aluminum fixed vertical ladder and Security Door

2. RELATED SECTIONS
   A. Section 05120 – Structural Steel: Roof structure and opening support.
   B. Section 05550 – Metal Fabrications: Miscellaneous metal supports.
   C. Section 06100 – Rough Carpentry: Roof framing and opening support.
   D. Section 07542 – TPO Roofing: Roof curb flashing.

3. REFERENCES
   A. ANSI A14.3: Ladders – Fixed – Safety Requirements.
   B. OSHA 1910.27: Fixed Ladders.

4. SUBMITTALS
   A. Submit under provisions of Section 01300.
   B. Product Data: Manufacturer's data sheets on each product to be used, including:
      1. Preparation instructions and recommendations.
      2. Storage and handling requirements and recommendations.
      3. Installation methods.
   C. Shop Drawings for Ladders:
      1. Plan and section of ladder installation.

5. DELIVERY, STORAGE, AND HANDLING
   A. Store products in manufacturer's unopened packaging until ready for installation.
   B. Store products until installation inside under cover. If stored outside, under a tarp or suitable cover.

6. WARRANTY
   A. Limited Warranty: Five years against defective material and workmanship, covering parts only, no labor or freight. Defective parts, if deemed so by the manufacturer, will be replaced at no charge, freight excluded, upon inspection at manufacturer's plant which warrants same.

7. MANUFACTURER
   Acceptable Manufacturer: Precision Ladders, LLC, which is located at: P. O. Box 2279; Morristown, TN 37816–2279; Toll Free Tel: 800–225–7814; Tel: 423–586–2265; Email: info@PrecisionLadders.com; Web: www.PrecisionLadders.com

8. ALUMINUM FIXED VERTICAL LADDER
   A. Aluminum Fixed Vertical Ladder and Components: Ladder, rest platform, mounting brackets, security door, walk–thru, and side rails.
      1. Model: Model FL – Aluminum Fixed Vertical Ladder with walk through as manufactured by Precision Ladders LLC. Verify Vertical Height with Drawings.
      2. Capacity: Unit shall support a 1500 lb (680 kg) loading without failure, and individual treads shall withstand a 3,000 lb (1361 kg) loading without failure.
      3. Performance Standard: Units designed and manufactured to meet or exceed ANSI A14.3 and OSHA 1910.27.
   B. Components:
      1. Ladder Stringer: 2–1/2 inch by 1–1/16 inch by 1/8 inch (64 mm by 27 mm by 3 mm) extruded 6005–T5 aluminum channel. Pitch: 90 degrees.
      2. Ladder Tread: 2–1/4 inch by 3/4 inch by 1/4 inch (57 mm by 19 mm by 6 mm) extruded 6005–T5 aluminum with deeply serrated top surface.
      3. Ladder Mounting Bracket: 8–1/2 inch by 2 inch by 3 inch by 1/4 inch thick (216 mm by 51 mm by 76 mm by 6 mm) aluminum angle.
      4. Walk–Thru:
         a. Hand Rails: 1–1/4 inch (32 mm) aluminum square tube with rounded edges.
         b. Mounting Brackets: 4 inch by 4 inch by 1/4 inch (102 mm by 102 mm by 6 mm) aluminum.
         c. Side Rails: 42 inch (1067 mm) side rail extension for through ladder exits.
      5. Security Gate: Hinged gate at bottom of cage with padlock provision.
      6. Floor Brackets: Floor bracket at foot of each stringer, 3 by 2 by 1/4 inch.
      7. Finishes: Powder Coated – Color as noted on Drawings.

9. FABRICATION
   A. Completely fabricate ladder ready for installation before shipment to the site.
   B. Completely fabricate handrail components and ship to site ready for field assembly and attachment to ladder.

10. EXAMINATION
   A. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   B. Examine materials upon arrival at site. Notify the carrier and manufacturer of any damage.

11. INSTALLATION
   A. Install in accordance with manufacturer's instructions.

DIVISION 6 - WOOD AND PLASTICS

SECTION 06100 - ROUGH CARPENTRY

1. SECTION INCLUDES
   A. Structural wall, and roof framing and sheathing.
   B. Preservative and Fire Retardant treatment of wood.
   C. Miscellaneous framing and concealed wood blocking for support of toilet and bath accessories, wall cabinets, wood trim, and tables.

2. REFERENCES
   A. AWPA C20 – Structural Lumber –– Fire Retardant Treatment by Pressure Processes; American Wood–Preservers' Association; 2002.
   B. AWPA U1 – Use Category System: User Specification for Treated Wood; American Wood–Preservers' Association; 2005.
   C. PS 1 – Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce); 1995.
   D. PS 20 – American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); 2005.
   E. SPIB (GR) – Grading Rules; Southern Pine Inspection Bureau, Inc.; 2002.
   F. WCLB (GR) – Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau; 2004.
   G. WWPA G–5 – Western Lumber Grading Rules; Western Wood Products Association; 2005.

3. QUALITY ASSURANCE
   A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.
   B. Exposed–to–View Rough Carpentry: Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.
   C. Preservative–Treated Wood: Provide lumber and plywood marked or stamped by an ALSC–accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

4. DIMENSION LUMBER FOR CONCEALED APPLICATIONS
   A. Sizes: Nominal sizes as indicated on drawings, S4S unless rough lumber is specifically indicated otherwise.
   B. Moisture Content: S–dry or MC19.
   C. Stud Framing (2 x 2 through 2 x 6):
      2. Species: Douglas Fir, Southern, Western Cedars, or Sitka Spruce.
      3. Grade: No. 2.
   D. Joist, Rafter, and Small Beam Framing (2 x 6 through 4 x 16):
      1. Species: Douglas Fir, Southern Pine, Spruce–Pine–Fir (south), Western Cedars, or Western Woods.
      2. Grade: No. 2.
   E. Miscellaneous Blocking, Furring, and Nailers:
      1. Lumber: S4S, No. 2 or Standard Grade.

5. EXPOSED DIMENSION LUMBER
   A. Sizes: Nominal sizes as indicated on drawings, S4S.
   B. Moisture Content: S–dry or MC19.
   C. Post, Ledger, Joist, Rafter, and Small Beam Framing (2 x 6 through 4 x 16),:
      1. Species: Southern Pine.
      2. Grade: No. 1.

6. CONSTRUCTION PANELS
   A. Concealed Performance–Rated Structural Use Panels:
      1. General: where structural use panels are indicated for the following concealed types of applications, provide APA performance–rated panels complying with requirements designated under each application for grade, span rating, exposure–durability classifications, edge detail, where applicable.
      2. Wall Sheathing: APA RATED SHEATHING, exterior with span rating to suit stud spacing.
      3. Roof Sheathing: APA RATED STRUCTURAL 1 RATED SHEATHING, exterior with span rating to suit rafter spacing.
      4. Exposed Roof Decking: Western Red Cedar, T1–11 panels with grooves 6 inches on center; face grooves down for interior exposure wood roof decking locations.
   B. Other Applications:
      1. Concealed Plywood: PS 1, C–C Plugged, exterior grade.
      2. Exposed Plywood: PS 1, A–D, interior grade.
      3. Electrical Component Mounting: APA rated sheathing, fire retardant treated.

7. ACCESSORIES
   A. Fasteners and Anchors:
      1. Metal and Finish: Hot–dipped galvanized steel per ASTM A 153/A 153M for high humidity and preservative–treated wood locations, unfinished steel elsewhere.
      2. Nails, Wire, Brads, and Staples: FS FF–N–105.
      3. Power Driven Fasteners: National Evaluation Report NER–272
      4. Wood Screws: ANSI B18.6.1.
      5. Lag Bolts: ANSI B18.2.1
      6. Bolts: Steel bolts complying with ASTM A307, Grade A; with ASTM A563 hex nuts and, where indicated, flat washers.
   B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.

8. FACTORY WOOD TREATMENT
   A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 – Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   B. Fire Retardant Treatment: AWPA Treatment C20, Exterior Type, chemical treatment pressure impregnated; capable of providing a maximum flame spread/smoke development rating of 25 / 30 minute duration.
   C. Preservative Pressure Treatment of Lumber Above Grade: AWPA Use Category UC3B, Commodity Specification A (Treatment C2) using waterborne preservative to 0.25 lb/cu ft retention.
      1. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
      2. Treat lumber in contact with roofing, flashing, or waterproofing.
      3. Treat lumber in contact with masonry or concrete.
   D. Pressure Treatment of Lumber in Contact with Soil and Concrete: AWPA Treatment C2 using preservative to 0.4 lb/cu ft retention.
      1. Preservative for Field Application to Cut Surfaces: As recommended by manufacturer of factory treatment chemicals for brush–application in the field.

9. FRAMING INSTALLATION
   A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
   B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
   C. Install structural members full length without splices unless otherwise specifically detailed.
   D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AFPA Wood Frame Construction Manual.
   E. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
   F. Frame openings with two or more studs at each jamb; support headers on cripple studs.

SECTION 06160 - SHEATHING (ZIP SYSTEM)

1. SUMMARY
   A. Section Includes
      1. Wall sheathing with integral water–resistive barrier and air barrier.

2. REFERENCES
   A. ASTM International (ASTM):
      1. ASTM A153/A153M – Standard Specification for Zinc Coating (Hot–Dip) on Iron and Steel Hardware
      2. ASTM E96/E96M – Standard Test Methods for Water Vapor Transmission of Materials
      3. ASTM E119 – Standard Test Methods for Fire Tests of Building Construction and Materials
      4. ASTM E2357 – Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
   B. International Code Council (ICC):
      1. ICC IBC – International Building Code
   C. ICC Evaluation Service, Inc. (ICC–ES):
      1. AC38 – Acceptance Criteria for Weather Resistive Barriers
      2. ICC–ES AC116 – Acceptance Criteria for Nails and Spikes
      3. ICC–ES AC148 – Acceptance Criteria For Flexible Flashing Materials
      4. ICC–ES AC310 – Acceptance Criteria for Water–Resistive Membranes Factory–bonded to Wood–based Structural Sheathing, Used as Water–Resistive Barriers
      5. ICC–ES ESR–1539 – Power Driven Staples and Nails for Use in Engineered and Non–Engineered Connections
      6. ICC–ES NER–272 – Power Driven Staples and Nails for Use in All Types of Building Construction

3. SUBMITTALS
   A. Product Data: For each type of sheathing product specified.
   B. Evaluation Reports: From ICC–ES, for wood sheathing and seam tape.
   C. Product Certifications: From manufacturer, indicating that sheathing products comply with ICC–ES AC310.
   D. Florida Building Code Supplement: Submit documentation indicating that products comply with requirements of Florida Building Code for projects in that state.
   E. Warranty: Executed copy of manufacturer special warranties.

4. QUALITY ASSURANCE
   A. Provide wall sheathing products meeting requirements for water–resistive barrier in accordance with ICC–ES AC310.
   B. Florida Building Code Compliance: Provide sheathing complying with Florida Building Code product and installation requirements for locations in Florida and outside of high velocity wind zone.

5. DELIVERY, STORAGE, AND HANDLING
   A. Comply with manufacturer's written instructions for protection of sheathing products from weather prior to installation.

6. WARRANTY
   A. Special Manufacturer's Warranty: Manufacturer's standard 30 year warranty following date of Substantial Completion.

7. MANUFACTURERS
   A. Basis–of–Design Product: Provide sheathing products manufactured by Huber Engineered Woods LLC, Charlotte NC; Phone: (800) 933–9220; Website: www.zipsystem.com.

8. PERFORMANCE REQUIREMENTS
   A. Fire–Test–Response Characteristics:
      1. Exterior Fire–Test Exposure: ASTM E108, Class A, when covered with approved Class A coverings.
      2. Fire–Resistance Ratings: Where indicated, provide assemblies tested for fire resistance per ASTM E119.
   B. Air–Barrier Assembly Air Leakage: Less than 0.04 cfm/sq. ft. at 1.57 lbf/sq. ft. per ASTM E2375.
   C. Water–Vapor Permeance, Facer: Minimum 12 perms, ASTM E96/E96M.
   D. Weather Exposure: Manufacturer warranty applies for maximum allowable exposure period of 180 days.

9. WOOD PANEL PRODUCTS
   A. Single Source Limitations: Provide wall sheathing by a single manufacturer.
   B. Oriented Strand Board: DOC PS 2, made with binder containing no added urea formaldehyde.

10. WALL SHEATHING WITH INTEGRAL WATER–RESISTIVE BARRIER AND AIR BARRIER
   A. Oriented–Strand–Board Wall Sheathing: Exposure 1 sheathing with factory–laminated water–resistive barrier facer with printed fastener location symbols.
      1. Basis–of–Design Product: Provide Huber Engineered Woods LLC; ZIP System Sheathing.
      2. Span Rating, Panel Grade and Performance Category: Not less than 32/16; Structural 1; 1/2 Performance Category.
      3. Edge Profile: Square edge.
      4. Facer: Medium–density, phenolic–impregnated sheet material qualifying as a Grade D weather–resistive barrier in accordance with ICC AC38.
         a. Provide fastener spacing symbols on facer for 16–inch and 24–inch on center spacing.

11. FASTENERS
   A. Fasteners, General: Size and type complying with manufacturer's written instructions for Project conditions and requirements of authorities having jurisdiction.
   B. Corrosion Resistance: Hot–dip zinc coating, ASTM A153/A153M.
   C. Nails, Brads, and Staples: ICC AC116 and ICC AC201.
   D. Power–Driven Fasteners: ICC–ES–1539 or NER–272.
   E. Wood Screws: ASME B18.6.1.

12. SHEATHING JOINT–AND–PENETRATION TREATMENT MATERIAL
   A. Self–Adhering Seam and Flashing Tape: Pressure–sensitive, self–adhering, cold–applied, seam tape consisting of polyolefin film with acrylic adhesive, meeting ICC–ES AC148, and tested as part of an assembly meeting performance requirements.
      1. Basis–of–Design Product: Provide Huber Engineered Woods; ZIP System Tape.
      2. Thickness: 0.012 inch.
   B. Liquid–Applied Flashing Membrane: Gun–grade, cold–applied, silyl–terminated polyether (STPE) liquid flashing membrane compatible with sheathing/weather barrier and self–adhering seam and flashing tape, and tested as part of an assembly meeting performance requirements. Follow manufacturer's recommendation for integration with ZIP System Tape.
      1. Basis–of–Design Product: Provide Huber Engineered Woods; ZIP System Liquid Flash.
      2. Hardness, Shore A, ASTM C 661: 40 to 45.

13. EXAMINATION
   A. Examine framing spacing and alignment to determine if work is ready to receive sheathing. Proceed with sheathing work once conditions meet requirements.

14. SHEATHING INSTALLATION
   A. Install sheathing panels in accordance with manufacturer's written instructions, requirements of applicable Evaluation Reports, and requirements of authorities having jurisdiction.
   B. Air and Moisture Barrier: Coordinate sheathing installation with flashing and joint sealant sequencing and installation and with adjacent building air and moisture barrier components to provide complete, continuous air– and moisture– barrier.
   C. Do not bridge expansion joints; allow joint spacing equal to spacing of structural supports.
   D. Install panels with laminated facer to exterior. Stagger end joints of adjacent panel runs. Support all panel edges. Space square–edged panels 0.125 inch (3 mm).
   E. Attach sheathing panels securely to substrate with manufacturer–approved fasteners in compliance with the following:
      1. ICC–ES ESR–1539 or ICC–NES NER–272 for power–driven fasteners.
      2. IBC: Table 2304.9.1 Fastening Schedule.
      3. Structural General Notes and Wood Shear Wall Schedule.
   F. Apply ZIP System Tape at all panel seams, penetrations, and facer defects or cracks to form continuous weathertight surface. Apply tape according to manufacturer's written instructions and requirements of ICC–ES applicable to tape application.
   G. Apply liquid–applied flashing membrane at penetrations, gaps, and cracks to form continuous weather tight surface. Apply liquid membrane according to manufacturer's written instructions. Follow manufacturer's recommendation for integration with ZIP System Tape.

SECTION 06170 - LAMINATED VENEER STRUCTURAL TIMBER

1. SECTION INCLUDES
   A. Laminated Veneer Lumber (LVL) framing members.
   B. Hardware and connectors

2. QUALITY ASSURANCE
   A. Manufacturer Qualifications: Manufacturer experienced in Laminated Veneer Structural Timber production, and capable of providing field service representation during construction.

3. REFERENCE STANDARDS
   A. ASTM D2559 Standard Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions.
   B. ASTM D5456 Specification for Evaluation of Structural Composite Lumber Products.
   C. National Design Specification for Wood Construction (NDS).
   D. Materials shall comply with ESR Report #ESR–2993.

4. SUBMITTALS
   A. Submit per SUBMITTALS Section for acceptance prior to start of fabrication. Show lumber combinations (AITC and AWPA combination symbols for identification), details, methods and sequences of assembly, erection diagrams and instructions for use in field.
   B. Manufacturer's Product and Material Safety Data Sheets, for all specified products.
   C. Shop Drawings: Submit data showing product components, including finish.

5. MATERIALS
   A. Basis for Design: RedBuild RedLam Timber.
   B. Douglas Fir, Larch or Hemlock, touch sanded, E = 2.0E6 psi, Fb = 2900 psi; sizes, shapes and profiles as indicated in Contract Documents.
   C. Grade Stamps: All RedLam LVL materials shall comply with NES Report No. NER–481 or CCMC Report No. 11161–R.
   D. Hardware: Furnish connections for joining members to each other and/or supports.

6. FABRICATION
   A. LVL shall be manufactured in a plant listed in the above referenced reports under the supervision of an approved third–party inspection agency. It shall be manufactured in a continuous process with all grain parallel with the length of the members.
   B. LVL shall be manufactured in a continuous process from wood fiber with all strands oriented to the length of the member and then fed into a press. All members are to be free of finger or scarf joints.
   C. Adhesives shall be of waterproof type conforming to the requirements of ASTM D2559.
   D. Preservative Treatment: Pressure treat members or portions of members in contact with concrete or exterior to conform to AWPA standard C–28; retention 0 .3 lb/cu ft. of wood.
   E Protection: Individually wrap each member

7. STORAGE AND PROTECTION OF MATERIALS
   A. Contractor receive, unload and store materials. Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.

8. ERECTION
   A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.
   B. General: Handle with non–marking slings. Erect in accord with accepted shop drawings.
      1. Minor Misfits: Correction of minor misfits by moderate use of drift pins, and moderate amount of reaming, chipping or cutting is considered part of erection. Immediately report errors which prevent proper assembly of parts by these measures to Architect for authorization of corrective measures prior to assembly.
   C. Install per the Contract Documents and manufacturer's recommendations. Holes, cuts or notches not shown on the contract documents shall not be permitted.

9. PROTECTION OF COMPLETED WORK
   A. Keep protective wrappings in place until members are enclosed within building. Gradually bring initial building heat or cooling to desired level. To minimize checking, do not reduce relative humidity of building rapidly.

SECTION 06176 - METAL PLATE CONNECTED WOOD TRUSSES

1. SECTION INCLUDES
   A. Shop fabricated wood trusses for roof framing.
   B. Bridging, bracing, and anchorage.

2. SYSTEM DESCRIPTION
   A. Design roof live and dead load: as indicated on drawings with deflection limited to 1/240; minimum cord size of 2 inches x 6 inches nominal.

3. SUBMITTALS
   A. Shop Drawings: Indicate framing system, sizes and spacing of trusses, loads and truss camber, and framed openings. Submit design calculations.
   B. Product Data: Provide truss configurations, bearing and anchor details, and bridging and bracing.
   C. Calculations: Provide structural calculations by a registered professional engineer experienced in design of this Work and licensed in the state of the project.

4. QUALITY ASSURANCE
   A. Perform Work in accordance with the following agencies:
      1. Lumber Grading Agency: Certified by ALSC.
      2. Plywood Grading Agency: Certified by APA.
   B. Truss Design, Fabrication, and Installation: In accordance with Truss Plate Institute BWT–76, HET–80, PCT–80 including Supplement, TPI–85 including Supplement, QST–88.
   C. Design joists under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the state of the project.

5. PLATE CONNECTED WOOD TRUSSES
   A. Lumber Grading Rules: NFPA
   B. Wood Members: No. 2 KD Southern Yellow Pine, 15 percent maximum and 7 percent minimum moisture content; single top and bottom chord. Finger scarfing not permitted.
   C. Steel Connectors: ASTM A446 steel, Grade B, hot dip galvanized.
   D. Truss Bridging: Type, size and spacing recommended by truss manufacturer.

6. ACCESSORIES
   A. Wood Framing for Openings: In accordance with Section 06100.
   B. Fasteners: Galvanized steel, type to suit application.
   C. Bearing Plates: Galvanized.

7. FABRICATION
   A. Fabricate trusses to achieve structural requirements specified.
   B. Brace wood trusses in accordance with TPI BWT–76.

8. ERECTION
   A. Install trusses in accordance with manufacturer's instructions. Set members level and plumb, in correct position.
   B. Make provisions for erection loads and temporary bracing.
   C. Do not field cut or alter structural members without approval of Architect/Engineer.
   D. Place headers and supports to frame openings required.
   E. Frame openings between trusses with lumber in accordance with Section 06110.

SECTION 06200 - FINISH CARPENTRY

1. SECTION INCLUDES
   A. Finish carpentry items.

2. REFERENCES
   A. AWI/AWMAC (QSI) – Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2006, 8th Ed., Version 2.0.
   B. AWPA C2 – Lumber, Timber, Bridge Ties and Mine Ties –– Preservative Treatment by Pressure Processes; American Wood–Preservers' Association; 2002.

3. QUALITY ASSURANCE
   A. Perform work in accordance with AWI Architectural Woodwork Quality Standards Illustrated, Custom grade.

4. DELIVERY, STORAGE, AND HANDLING
   A. Protect work from moisture damage.

5. LUMBER MATERIALS
   A. Softwood Lumber:
      4. Southern Yellow Pine #2, C&BTR
      5. Texture: Surfaced smooth, both sides.
   B. Hardwood Lumber:
      1. Poplar or White Oak, or as indicated on the drawings
      2. Texture: Surfaced smooth, both sides.

6. ADHESIVE
   A. Adhesive: Type recommended by laminate manufacturer to suit application.

7. FASTENERS
   A. Hot dipped galvanized for exterior and high humidity locations, untreated steel elsewhere.
   B. Concealed Joint Fasteners: Threaded steel.

8. WOOD TREATMENT
   A. Wood Preservative by Pressure Treatment (PT Type): AWPA Treatment C2 using water borne preservative with 0.25 percent retainage.

9. FABRICATION
   A. Shop assemble work for delivery to site, permitting passage through building openings.
   B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

10. INSTALLATION
   A. Set and secure materials and components in place, plumb and level.
   B. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

11. ERECTION TOLERANCES
   A. Maximum Variation from True Position: 1/16 inch.
   B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

12. SCHEDULE
   A. Exterior:
      1. Standing and Running Trim:
         a. Species and Grade: Western Red Cedar, WWPA or WCLIB, B & Better – 1 & 2 Clear Vertical Grain
         b. Texture: Surfaced
         c. Furnish surfaced lumber for trim indicated to receive painted or stained finish.
   B. Interior:
      1. Standing and Running Trim and Rails – Transparent Finish:
         a. Quality Standard: Comply with AWI 300 Premium Grade
         b. Backs: Back out or groove backs of flat trim members, kerf backs of other wide flat members except for members with ends exposed in finished work.
         c. Casings: Assemble in plant except where limitation of access to place of installation requires field assembly.
         d. Moldings:
            1) Assemble in plant to maximum extent possible
            2) Miter corners in plant and prepare for field assembly with bolted fittings designed to pull connections together.
         e. Wood Species: White Oak
      2. Interior Standing and Running Trim and Rails – Opaque Finish:
         a. Quality Standard: Comply with AWI 300 Custom Grade
         b. Backs: Back out or groove backs of flat trim members, kerf backs of other wide, flat members except for members with ends exposed in finished work.
         c. Casings: Assemble in plant except where limitation of access to place of installation requires field assembly.
         d. Moldings:
            1) Assemble in plant to maximum extent possible.
            2) Miter corners in plant and prepare for field assembly with bolted fittings designed to pull connections together.
         e. Wood Species: Poplar
      3. Wood Shelves:
         a. Solid wood for opaque finish (lumber boards, edge–glued where required to produce widths indicated):
            1) Grade: Custom
            2) Lumber Species: Poplar
         b. Panel product for transparent finish (wood veneer laminated over various cores):
            1) Grade: Premium
            2) Lumber Species: White Oak
            3) Matching of adjacent veneer leaves: Book Match
            4) Veneer matching within panel face: Running Match
            5) Edge Treatment: Lumber matching wood veneer face for species and cut.
            6) Edge Treatment: Wood veneer matching veneer face for species and cut.
         c. High Pressure Decorative Laminate:
            1) Grade: Premium
            2) Laminate Cladding – Horizontal Surfaces: High pressure decorative laminate, provide materials and products resulting in colors and textures of exposed laminate surfaces matching Architect's samples.
            3) Grade: GP–50
            4) Grain Direction: Parallel to longest dimension
            5) Edge Treatment: Same as laminate cladding on horizontal surfaces.
            6) Edge Treatment: Lumber edge for transparent finish matching wood species and cut on cabinet surfaces.

MLA
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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.5

DIVISION 6 - WOODS AND PLASTICS (CONTINUED)

SECTION 06410 - CUSTOM CABINETS

1. SECTION INCLUDES
   A. Specially fabricated cabinet units and hardware.

2. REFERENCES
   A. ANSI A135.4 – American National Standard for Basic Hardboard; 2004.
   B. ANSI A208.1 – American National Standard for Particleboard; 1999.
   C. AWI/AWMAC (QSI) – Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2006, 8th Ed., Version 2.0.
   D. GSA CID A-A-1936 – Adhesive, Contact, Neoprene Rubber; Federal Specifications and Standards; Revision A, 1996.
   E. NEMA LD 3 – High-Pressure Decorative Laminates; National Electrical Manufacturers Association; 2005.
   F. PS 1 – Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce); 1995.

3. QUALITY ASSURANCE
   A. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality, unless other quality is indicated for specific items.

4. LUMBER MATERIALS
   A. Hardwood Lumber: NHLA; Graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Grade I/Premium; average moisture content of 5–10 percent; species as follows:
      3. Exposed Surfaces: As specified on the drawings.
      4. Semi-Exposed Surfaces: As specified on the drawings.
      5. Concealed Surfaces: Species poplar.

5. PANEL MATERIALS
   A. Exposed Surfaces: NIST PS 1; APA A-A Grade, plain-sliced face veneer as indicated on drawings.
   B. Hardboard: AHA A135.4; Pressed wood fiber with resin binder, Class 1 – Tempered, 1/4 inch thick, smooth two sides (S2S); use for drawer bottoms, dust panels, and other components indicated on drawings.

6. ACCESSORIES
   A. Adhesive: Type recommended by fabricator to suit application.
   B. Fasteners: Size and type to suit application.
   C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel, or chrome-plated finish in exposed locations.
   D. Concealed Joint Fasteners: Threaded steel.
   E. Grommets: Standard plastic, painted metal, or rubber grommets for cut-outs, in color to match adjacent surface.

7. HARDWARE
   A. Adjustable Shelf Supports: Standard back-mounted system using surface mounted metal shelf standards and coordinated cantilevered shelf brackets, satin chrome finish, for nominal 1 inch spacing adjustments.
   B. Drawer and Door Pulls: Top Knobs M1165 Nouveau III Square Black Knobs
   C. Cabinet Locks: First Watch 1385-VB, Keyed cylinder, master keyed, steel with oil rubbed bronze finish.
   D. Catches: L-EP592-P, 15 lb Double Magnetic Catch, Bronze.
   E. Drawer Slides:
      1. Type: Standard extension.
      2. Static Load Capacity: Commercial grade.
      3. Mounting: Side mounted.
      4. Stops: Integral type.
   F. Hinges: Wurth FE12-STB 1 ½" Piano Hinge, Statuary Bronze.

8. FABRICATION
   A. Cabinet Style: Flush overlay.
   B. Drawer Construction Technique: Dovetail joints.
   C. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
   D. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
   E. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
   F. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
      1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
      2. Cap exposed plastic laminate finish edges with material of same finish and pattern.
   G. Matching Wood Grain: Comply with requirements of quality standard for specified Grade and as follows:
      1. Provide center matched panels at each elevation.
      2. Provide sequence matching across each elevation.
      3. Carry figure of cabinet fronts to toe kicks.
   H. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

9. INSTALLATION
   A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
   B. Use fixture attachments in concealed locations for wall mounted components.
   C. Use concealed joint fasteners to align and secure adjoining cabinet units and countertops.
   D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
   E. Secure cabinets to floor using appropriate angles and anchorages.
   F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

10. ADJUSTING
    A. Adjust installed work.
    B. Adjust moving or operating parts to function smoothly and correctly.

SECTION 06620 - SOLID NON-POROUS SHEET AND SHAPE PRODUCT

1. REFERENCE STANDARDS
   A. American Society of Testing Materials (ASTM): ASTM E84
   B. Underwriter's Laboratories (UL)

2. SUBMITTALS
   A. Submit Shop Drawings to Architect, based on details shown on the Drawings. Show design load parameters, dimensions, adjacent construction, materials, thicknesses, fabrication details, required clearances, tolerances, colors, finishes, methods of support, integration of components, and anchorages. Detail to serve as installation drawings. Architect's acceptance is required prior to start of fabrication and/or shipment.

3. WARRANTY
   A. Provide manufacturer's standard ten-year warranty against manufacturing defects.

4. PRODUCTS
   A. Sheet Products (countertops): Manufacturer noted on finish schedule in drawings; 3/8 inch thick sheets, continuous length with bull-nose edge with integral back and side splash, and 3/4 inch exterior grade APA Fir plywood backing.
   B. Patterns and Colors: As noted on finish schedule in drawings.

5. INSTALLATION
   A. Contractor is responsible for dimensions, detailing, fabrication, fitting, and alignment of work of this section.
   B. Protect components during shipping and delivery by appropriate boxing, crating, etc. Protect components from storage damage by retaining shipping protection in place until installation.
   C. Verify that substrate is ready to receive work and dimensions are as indicated on the Drawings prior to fabrication. Beginning of fabrication means dimensions have been verified and acceptance of substrates.
   D. Install fabrications in accord with accepted shop drawings and fabricator's instructions.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 07212 - BOARD AND BATT INSULATION

1. SECTION INCLUDES
   A. Board insulation at cavity wall construction and perimeter foundation wall.
   B. Batt insulation in exterior wall and ceiling construction.
   C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

2. REFERENCES
   A. ASTM C 578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2005a.
   B. ASTM C 665 – Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2001.
   C. ASTM C 1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2006.
   D. ASTM D 2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2001.
   E. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.
   F. ASTM E 136 – Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2004.

3. BOARD INSULATION MATERIALS
   A. Foundation Insulation: Expanded Polystyrene Board Insulation: ASTM C 578; with the following characteristics:
      1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E 84.
      2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E 84.
      3. Board Size: 48 x 96 inch.
      4. Board Thickness: 1 inch.
      5. Water Absorption: 4 percent by volume, maximum, when tested in accordance with ASTM D 2842.
      6. Board Density: 0.7 lb/cu ft.
      7. Compressive Resistance: 5 psi.
      8. Thermal Conductivity (k factor) at 25 degrees F: 0.28.
      9. Approved manufacturers:
         a. AFM Corp: www.r-control.com.
         b. Diversifoam Products: www.diversifoam.com.
         c. Grace Construction Products: www.na.graceconstruction.com.

4. BATT INSULATION MATERIALS
   A. Batt Insulation: ASTM C 665; preformed batt; friction fit, conforming to the following:
      1. Combustibility: Non-combustible, when tested in accordance with ASTM E 136, except for facing, if any.
      2. Thermal Resistance:
         a. Walls: R-21 High Density Fiberglass & R-7.5 CONTINUOUS EXT. RIGID BOARD PER DRAWINGS
         b. Roof: R-38
      3. Facing: aluminum foil or kraft-paper faced one side.
      4. Approved manufacturers:
         a. CertainTeed Corporation: www.certainteed.com.
         b. Johns Manville Corporation: www.jm.com.
         c. Owens Corning Corp: www.owenscorning.com.

5. ACCESSORIES
   A. Tape: Bright aluminum self-adhering type, mesh reinforced, 2 inch wide.
   B. Insulation Fasteners: Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.
   C. Adhesive: Type recommended by insulation manufacturer for application.

6. BOARD INSTALLATION AT FOUNDATION PERIMETER
   A. Install boards vertically on foundation perimeter.
   B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

7. BATT INSTALLATION
   A. Install insulation in accordance with manufacturer's instructions.
   B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
   C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
   D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
   E. Install insulation in walls with faced side facing the building interior.
   F. Tape insulation batts in place.
   G. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.

SECTION 07240 - EXTERIOR INSULATION AND FINISH SYSTEMS

1. SECTION INCLUDES
   A. Manufacturer's requirements for the proper design, use, and installation of a Class PB Water-Drainage Exterior Insulation and Finish System.

2. REFERENCES
   A. ASTM E84: Test Method for Surface Burning Characteristics of Building Materials.
   B. ASTM E119: Standard Test Method for Fire Tests of Building Construction and Materials.
   C. ASTM E331: Test Method for Water Penetration by Uniform Static Air Pressure Difference.
   D. ASTM E2430: Standard Specification For Expanded Polystyrene ("EPS") Thermal Insulation Boards For Use In Exterior Insulation and Finish Systems ("EIFS")
   E. ASTM E2486: Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)

3. ASSEMBLY DESCRIPTION
   A. Standard WaterMaster LCR – GX : Exterior Insulation and Finish System (EIFS) with drainage consisting of Grooved Expanded Polystyrene Insulation (EPS) Board, Mechanical Fasteners, Base Coat with embedded Reinforcing Fabric Mesh, [Primer], and Finish Coat. This system is installed over a code compliant water-resistive barrier.
   B. Functional Criteria:
      1. General:
         a. Insulation Board: At system termination, completely encapsulate insulation board edges by mesh reinforced base coat, substrate or drainage track (limited to terminations at foundation). The use of and maximum thickness of insulation board shall be in accordance with applicable building codes and EIFS manufacturer's requirements.
         b. Flashing: Flashing shall be continuous and watertight. Flashing shall be designed and installed to prevent water infiltration behind the cladding. Refer to Division 07 Flashing Section for specified flashing materials.
         c. The configuration of the water-resistive barrier, drainage plane and flashing and EIFS materials, must allow for the egress of incidental moisture.
      2. Impact Resistance Classification:
         a. Standard Impact Resistance, 25–49 in-lbs (2.8 – 5.6 J) Impact Range
         b. Medium Impact Resistance, 50–89 in-lbs (5.7–10.1 J) Impact Range
         c. High Impact Resistance, 90–150 in-lbs (10.2–17.0 J) Impact Range
         d. Ultra High Impact Resistance, >150 in-lbs (> 17.0 J) Impact Range
      3. Expansion Joints: Continuous expansion joints shall be installed at the following locations in accordance with manufacturer's recommendations:
         a. At substrate expansion joints.
         b. Where EIFS abuts other materials.
         c. Where significant structural movement occurs, such as at
            (1) Changes in roof line.
            (2) Changes in building shape and/or structural system.
         d. Where substrate changes occur
      4. Manufacturer's Detail:
         a. EIFS most current published information shall be followed for standard detail treatments.
         b. Non-standard detail treatments shall be as recommended by manufacturer, approved by Project Designer and be part of the Contract Documents.
      5. Building Code Conformance: EIFS shall be acceptable for use on this project under the building code having jurisdiction.
      6. In Florida locations, install complete system in complete accordance with FL-8605.1, NOA No. 15-0609.13, to include all detailing, composition, impact mesh and fastening system.

4. SUBMITTALS
   A. General: Submit Samples, Evaluation Reports, Warranties and Certificates in accordance with Division 01 General Requirements Submittal Section.
   B. Samples: Submit samples for approval. Samples shall be of materials specified and of suitable size as required to accurately represent each color and texture used on project. Prepare each sample using same tools and techniques for actual project application. Maintain and make available, at job site, approved samples.

5. QUALITY ASSURANCE
   A. Qualifications:
      1. All EIFS assembly materials must be manufactured or sold by a single-source manufacturer and must be purchased direct from the manufacturer or its authorized distributor.
      2. Manufacturer: Shall have marketed Exterior Insulation and Finish Systems in United States for at least ten (10) years and be an active member in good standing of EIMA.
      3. Applicator:
         a. Must possess a current manufacturer's certificate of education.
         b. Must be experienced and competent in installation of plaster-like materials.
   B. Regulatory Requirements:
      1. Insulation Board: Shall be produced and labeled under a third party quality program as required by applicable building code.

6. DELIVERY, STORAGE, AND HANDLING
   A. Delivery: Deliver materials in original packaging with manufacturer's identification.
   B. Store materials in a cool, dry location, out of sunlight, protected from weather and other harmful environment, and at a temperature above 40F (4C) and below 110F (43C) in accordance with manufacturer's instructions.

7. PROJECT / SITE CONDITIONS
   A. Installation Ambient Air Temperature: Minimum of 40F (4C) and rising, and remain so for 24 hours thereafter.
   B. Substrate Temperature: Do not apply materials to substrates whose temperature are below 40F (4C) or contain frost or ice.
   C. Inclement Weather: Do not apply materials during inclement weather unless appropriate protection is employed.
   D. Sunlight Exposure: Avoid, when possible, installation of the materials in direct sunlight. Application of Acrylic Finishes in direct sunlight in hot weather may adversely affect aesthetics.
   E. Materials shall not be applied if ambient temperature exceeds 120F (49C) or falls below 40F (4C) within 24 hours of application. Protect materials from uneven and excessive evaporation during hot, dry weather.
   F. Prior to installation, the substrate shall be inspected for surface contamination, or other defects that may adversely affect the performance of the materials and shall be free of residual moisture.

8. WARRANTY
   A. Warranty: Upon request, at completion of installation, provide manufacturer's Standard Limited Warranty and Colorfast Technology fade-resistant warranty.

9. MANUFACTURERS
   A. Manufacturer: Parex USA, Inc., 4125 E. La Palma Ave., Suite 250, Anaheim, CA 92807. Technical Support (800.226.2424).
   B. Components: Obtain components from authorized distributors. No substitutions or additions of other materials are permitted without prior written permission from the EIFS manufacturer for this project.

10. MATERIALS
    A. Secondary Water-Resistive Barrier
       1. A code compliant water-resistive barrier and means of drainage.
    B. Grooved Insulation Board: In compliance with manufacturer's requirements for Standard System EIFS.
       1. Produced and labeled under a third party quality program as required by applicable building code; and produced by a manufacturer approved by Parex USA.
       2. Shall conform to ASTM C578 and ASTM E2430, Type I and the Parex USA specification for Molded Expanded Polystyrene Insulation board.
       3. Thickness: 1.5 in, minimum (38 mm) after rasping.
       4. Profile: Minimum 1/4 inch wide by 1/8 inch deep vertical grooves spaced a maximum of 12 inches on the back face of the board.
    C. Base Coats:
       1. Parex 121 Dry HI: High Impact basecoat & adhesive. Copolymer based, blend of cement and proprietary ingredients, requires the addition of water.
    D. Reinforcing Mesh:
       1. 355 Standard Mesh: Weight 4.5 oz. per sq. yd. (153 g/sq m); coated for protection against alkali. Standard reinforcement of Parex EIFS, or for use with High Impact 358.14 Mesh, or Ultra High Impact 358.20 Mesh.
       2. 356 Short Detail Mesh: Reinforcing mesh used for backwrapping and details.
       3. 352 Self Adhesive Detail Mesh: Reinforcing mesh used for complex details.
       4. 358.20 Ultra High Impact 20 Mesh: Weight 20 oz. per sq. yd. (678 g/sq m) Reinforcing mesh used with a Standard System; to achieve ultra-high impact strength.
       5. 357 Corner Mesh: Reinforcing mesh used as corner reinforcement; required when using Ultra-High Impact 20 Mesh.
       6. Locations: From Ground level to 7'-0" aff use 358.20 Ultra High Impact 20 Mesh; from 7'-0" aff to top of parapet use 355 Standard Mesh, unless required otherwise by Florida product approval requirements.
    E. Primer:
       1. 310 Primer: 100% acrylic based coating to prepare surfaces for acrylic or elastomeric finishes.
    F. Finish
       1. Parex AquaSol: 100% acrylic polymer based finish, enhanced DPR acrylic finish with hydrophobic and photocatalytic properties. Finish type, texture and color as noted on the drawings.
    G. Water: Clean, cool, potable water
    H. Portland Cement: ASTM C150, Type I or Type I–II.

11. ACCESSORIES
    A. Mechanical fasteners and washers:
       1. Wind-lock Wind Devil 2 fasteners, non-thermal bridging polypropylene plastic plates and corrosion-resistant screws.
    B. Sealant System:
       1. Sealant for expansion joints between panelized EIFS sections shall be ultra-low modulus designed for minimum 100% elongation and minimum 50% compression and as selected by Project Designer.
       2. Sealant for perimeter seals around window and door frames and other wall penetrations shall be low modulus, designed for minimum 50% elongation and minimum 25% compression, and as selected by Project Designer.
       3. Sealants shall conform to ASTM C 920, Grade NS.
       4. Perimeter seal joints shall be a minimum width of 1/2 in (12.7 mm).
       5. Sealant backer rod shall be closed-cell polyethylene foam.
       6. Apply sealant to tracks or base coat of EIFS.
       7. Refer to EIFS manufacturer's current bulletin for listing of sealants which have been tested and have been found to be compatible with EIFS materials.
       8. Color shall be as noted on the drawings.

12. EXAMINATION
    A. Compliance: Comply with manufacturer's instructions for installation.
    B. Substrate Examination: Examine prior to installation of EIFS assembly materials per manufacturer's written instructions.
    C. Sealants and Backer Rod: To be installed, where required, in accordance with the sealant manufacturer's specifications and published literature, and using the sealant manufacturer's recommended primers.
    D. Advise Contractor of discrepancies preventing proper installation of the EIFS materials. Do not proceed with the work until unsatisfactory conditions are corrected.

13. MIXING
    A. Mix materials in accordance with manufacturer's instructions.

14. APPLICATION
    A. General: Installation shall conform to this specification and manufacturer's written instructions.
    B. Drainage Accessories and Water-Resistive Barrier
       1. Install drainage tracks back-wrap mesh, or edge-wrap mesh at system terminations.
       2. Install water-resistive barrier in accordance with manufacturer's instructions making all laps weatherboard fashion to provide continuity of watershedding.
    C. Insulation Board
       1. Install Wind-lock fasteners to secure insulation board to the wall in accordance with Wind-lock Corporation instructions. For exterior grade gypsum sheathing and glass mat gypsum sheathing minimum screw penetration of framing members shall be 3/4 in (19 mm) into wood and three full threads through steel. Minimum eight (8) fasteners per 2' x 4' (610 mm x 1219 mm) piece of insulation board.
       2. Install insulation board without gaps in a running bond pattern and interlocked at corners.
       3. Rasp irregularities off insulation board.
    D. Apply primer to base coat after drying. Primer may be omitted if it is not required by the manufacturer's product data sheets for the specified finish coat or otherwise specified for the project.
    E. Reinforcing Mesh: Embed into the wet base coat, abutting edges tight, to completely conceal mesh.
    F. Finish Coat: Apply finish coat to match specified finish type, texture, and color. Do not apply finish coat to surfaces to receive sealant. Keep finish out of sealant joint gaps.

SECTION 07260 - WEATHER BARRIERS

1. SECTION INCLUDES
   A. Vapor Barrier must have all of the following qualities:
      1. Permeance of less than 0.01 Perms [grains/(ft^2 *hr * in.Hg)] per ASTM F 1249 or ASTM E 96
      2. ASTM E 1745 Class A
   B. Air Barriers: Materials to stop passage of air through exterior walls, joints between exterior walls and roof, and joints around frames of openings in exterior walls to comply with ICC-ES Acceptance Criteria AC-38.

2. SHEET SEAL MATERIALS
   A. Vapor Retarder: Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC for underslab applications.
   B. Air Barrier: Commercial Wrap as manufactured by Dupont Tyvek for vertical wall applications.
   C. Moisture Barrier: 30 lb felt for horizontal applications.
   D. Ice Shield for clay roof tiles per manufacturer specification.

3. ACCESSORIES
   A. Vapor Retarder Seam Tape:
      1. Permeance less than 0.3 perms per ASTM F 1249 or ASTM E 96
      2. Stego Tape by Stego Industries LLC
   B. Air Barrier Seam Tape:
      1. Permeance less than 0.3 perms per ASTM F 1249 or ASTM E 96
      2. Tyvek Seam Tape
   C. Pipe Boots
      1. Construct pipe boots from vapor barrier material, pressure sensitive tape and/or mastic per manufacturer's instructions.

4. INSTALLATION
   A. Install materials in accordance with manufacturer's instructions.

SECTION 07530 - ELASTOMERIC MEMBRANE ROOFING

1. SECTION INCLUDES
   A. Elastomeric roofing membrane, mechanically fastened conventional application.
   B. Insulation, flat and tapered.
   C. Prefabricated flashings, corners, parapets, stacks, vents, and related details.
   D. Fasteners, adhesives, and other accessories required for a complete roofing installation.
   E. Traffic Protection.

2. REFERENCES
   A. ASTM C 1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2006.
   B. NRCA ML104 – The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association; Fifth Edition, with interim updates.
   C. UL (RMSD) – Roofing Materials and Systems Directory; Underwriters Laboratories Inc.; current edition.

3. QUALITY ASSURANCE
   A. Perform work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's instructions.

4. SUBMITTALS
   A. Submit under provisions of Section 01330.
   B. Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance requirements.
   C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
   D. Installer Certification: Certification from the roofing system manufacturer that Installer is approved, authorized, or licensed by manufacturer to install roofing system having the status of Master or Elite designation.
   E. Manufacturer's warranties.

5. ENVIRONMENTAL REQUIREMENTS
   A. Do not apply roofing membrane during unsuitable weather.
   B. Do not apply roofing membrane when ambient temperature is below 40 degrees F or above 110 degrees F.
   C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
   D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

6. WARRANTY
   A. Provide manufacturer's standard written full roofing system repair and/or replacement 15-year NDL warranty at no additional cost, covering materials and labor. Warranty shall include loss of consequential damages due to failure of the roof system and contain no exclusions for ponding water or biological growth. Upon warranty inspection and acceptance of the roof, the warranty shall be turned over to the Contractor on behalf of Owner by a Manufacturer's Quality Assurance Specialist.
   B. Notice of Award: Contractor shall submit a "Notice of Award" to Manufacturer at least (10) ten days prior to the beginning of a particular roof application. Contractor will then provide to Owner a copy of the filed Notice of Award which has been signed and conditionally accepted by Manufacturer prior to the start of work under this section.

7. APPROVED MANUFACTURERS
   A. Duro-Last Roofing, Inc., 525 Morley Dr. P. O. Box 3301 ; Saginaw, MI 48601; Toll Free Tel: 800-248-0280; Contact: Jim Miller, Email: corporateaccounts@duro-last.com; Web: www.duro-last.com

8. ROOFING
   A. Elastomeric Membrane Roofing Systems:
   1. Duro-Last Roofing Membrane conforming to ASTM D 4434, Type III or IV, fabric reinforced, PVC.
   2. Properties:
      a. 50 mil nominal thickness at roof deck. No exceptions
      b. 50 mil nominal thickness at parapets. No exceptions.
      c. Exposed Face Color: White on all Horizontal roof surfaces and Duro-Tuff Light Tan on vertical surfaces. No exceptions
   B. Roofing Assembly Requirements:
   1. Roof Covering External Fire-Resistance Classification: UL Class A.
   2. Insulation Thermal Value (R), minimum: R-38; provide insulation of thickness required.
   C. Acceptable Insulation Types:
   1. Two layers of 3.0-inch thick EnergyGuard oea roof insulation, glass fiber reinforced polyisocyanurate foam roof insulation (Total R value Min. R-38). Run second layer perpendicular to the first layer to minimize joint overlap. Provide tapered insulation, crickets, and saddles to form counter slopes indicated on Drawings.

9. ACCESSORIES
   A. Sheet Flashing: Duro-Last white 40-mil reinforced PVC Duro-Last Parapet Flashing membrane with 28" tabs.
   B. Prefabricated Flashing: Prefabricated white stack flashings for pipes, wind screen support pipes, and curbs, corners of Duro-Last white 40-mil reinforced PVC sheet membrane. Stack flashings to be installed using stainless steel Panduit bands and Duro-Caulk Plus.
   C. Prefabricated inside and outside corner of Duro-Last white 40-mil reinforced PVC sheet membrane.
   D. Pillow block to be supplied by Install 'Roof Top Blox' adjustable piping support under all gas and condensate piping, Ph: (860) 979-0345; www.rooftopblox.com.
   E. New 4" x 4" wolmanized block support to be installed underneath condensing unit. A slipsheet should be to be installed under the womanized block. High wind locations to have metal support rack. See roof plan.
   F. Sealants and Adhesives: Duro-Caulk Plus, pitch pocket filler, Sure Bond 240 mastic as supplied by Duro-Last Roofing Inc.
   G. Slip Sheet and Cover Boards: Slip sheet or cover boards, of type required by roof membrane manufacturer for the application.
   H. Termination Bars: Standard rigid exterior vinyl bar, 1.5 inches (38 mm) wide with slotted holes 6 inches (152 mm) on center.
   I. Scuppers: Prefabricated Duro-Last® Vinyl-Coated Metal Flange Scuppers with single skirt.
   J. Dome Strainer: See Plumbing Fixture Schedule in Drawings. Proper sized drain boot should also be installed using Duro-Caulk Plus and CDR ring.
   K. Edge Detail: Exceptional Metals Fascia bar and cover, prefabricated Drip Edge, prefabricated Gravel Stop, 2-Piece Snap-On Compression LG Metal Edge. Aluminum 40 Gauge – Finish and Size as indicated on drawings.
   L. Vinyl Coated Metal: 24 gauge, hot-dipped galvanized, grade 90 metal with a minimum of 17 mil of Duro-Last membrane laminated to one side.
   M. ATR hub: made of 24 gauge Vinyl coated metal to be installed around refrigeration lines
   N. Fasteners: #14 Heavy-Duty factory-coated steel fasteners and metal and plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate.
   O. Two-Way Roof Vents: As recommended by roof membrane manufacturer and installed with a minimum of 1 vent for each 1,000 square-feet of roof area. Vents will be white.
   P. Roof Trac III walkway pads by Duro-Last Roofing – 30" x 60" and 60 "x 60 "gray, non-skid, maintenance-free Roof Trac III walkway pads to be installed at mechanical equipment, roof hatch and roof ladder as shown on roof plan.
   Q. Duro-Guard plenum vent.

10. SUBSTRATE BOARD (NOTED ON DRAWINGS AS PROTECTION BOARD):
    A. Duro-Guard "DEXCELL" Glass Mat ¼" thick as manufactured by Duro-Last.

11. EXAMINATION
    A. Verify that surfaces and site conditions are ready to receive work.
    B. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
    C. Verify deck surfaces are dry and free of snow or ice.
    D. Verify that roof openings, curbs, and penetrations through roof are solidly set.

12. INSULATION – UNDER MEMBRANE
    A. Roof insulation shall be installed with approved fasteners and distribution plates placed according to the manufacturer's most recent published specifications for the use under the manufacturer's system and for issuance of the warranty.
    B. Attachment of Insulation:
    1. Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions.
    C. Stagger insulation boards 50% from row to row.
    D. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
    E. Separation Layer: Install substrate board directly over the roofing insulation in accordance with roof membrane manufacturer's requirements.
    F. Do not apply more insulation than can be covered with membrane in same day.

13. MEMBRANE APPLICATION
    A. Install the roofing system to comply with manufacturer's most recent published specifications.
    B. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
    C. Mechanical Attachment: Apply membrane and mechanical attachment devices in accordance with manufacturer's instructions.
    D. On all parapet locations, wrap parapet with new pre-manufactured parapet flashings by manufacturer and terminate on exterior of wall.
    E. Around roof penetrations, seal flanges and flashings with flexible flashing.

14. WALKWAYS
    A. Install walkways in accordance with roof membrane manufacturer's requirements.
    B. Install at roof hatches, access doors, rooftop ladders and all other traffic concentration points regardless of traffic frequency. Provided in areas receiving regular traffic to service rooftop units or where a passageway over the surface is required.
    C. Do not install walkways over flashings or fields seams until field inspections by roof membrane manufacturer have been completed.

15. FASCIA/DRIP EDGE/GRAVEL STOP
    A. Provide fascia bar and cover, drip edge and gravel stop.
    B. Seal joints between individual sections.
    C. Manufactured Roof Specialties: Coordinate installation of copings, counter flashing systems, gutters, downspouts, and roof expansion assemblies specified in Section 07600.

16. PILLOWBLOCKS
    A. Install "Pillowblock" stackable pipe support under all gas and condensate piping.
    B. Install Pillowblock units on top of a compatible slipsheet membrane.

17. PARAPET WALLS
    A. Contractor shall encapsulate all parapet walls using 50 mil Duro-Tuff 'Charcoal Gray' single ply membrane roofing system and a 6" white skirt that is fabricated of a weft inserted, low-shrink, anti-wicking polyester fabric and has a thermoplastic coating of PVC material laminated to both sides as manufactured by Duro-Last Roofing, Inc. in accordance with Duro-Last Roofing, Inc. published specifications.

18. PROTECTION
    A. Protect installed roofing and flashings from construction operations.
    B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

MLA
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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

DATE	DESCRIPTION	BY

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.6

DIVISION 7 - THERMAL AND MOISTURE PROTECTION (CONTINUED)

SECTION 07620 - SHEET METAL FLASHING AND TRIM

1. SECTION INCLUDES
   A. Fabricated sheet metal items, including flashings, counter flashings, gutters, and downspouts

2. REFERENCES
   A. AAMA 611 – Voluntary Specification for Anodized Architectural Aluminum; American Architectural Manufacturers Association; 1998.
   B. ASTM A 653/A 653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2005a.
   C. ASTM B 209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2004.
   D. ASTM B 209M – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric); 2004.
   E. ASTM D 226 – Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2005.
   F. ASTM D 4586 – Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2000.
   G. SMACNA (ASMM) – Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; 2003.

3. SHEET MATERIALS
   A. Galvanized Steel: ASTM A 653/A 653M, with G90/Z275 zinc coating; minimum 0.02 inch thick base metal.

4. ACCESSORIES
   A. Fasteners: Same material and finish as flashing metal, with soft neoprene washers.
   B. Primer: Zinc chromate type.
   C. Plastic Cement: ASTM D 4586, Type I.

5. FABRICATION
   A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
   B. Fabricate cleats of same material as sheet, minimum 4 inches wide, interlocking with sheet.
   C. Form pieces in longest possible lengths.
   D. Hem exposed edges on underside 1/2 inch; miter and seam corners.
   E. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
   F. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
   G. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.

6. GUTTER AND DOWNSPOUT FABRICATION
   A. Gutters: Profile as indicated.
   B. Downspouts: Profile as indicated.
   C. Gutters and Downspouts: Size for rainfall intensity determined by a storm occurrence of 1 in 5 years in accordance with SMACNA Architectural Sheet Metal Manual. All gutters and downspouts shall be seamless.
   D. Twenty (20) gauge
   E. Accessories: Profiled to suit gutters and downspouts.
   1. Anchorage Devices: In accordance with SMACNA requirements.
   2. Gutter Supports: Brackets.
   3. Downspout Supports: Brackets.
   F. Finish: Powder coated, pre-finished to match metal roofing.
   G. Seal metal joints.

7. INSTALLATION
   A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
   B. Apply plastic cement compound between metal flashings and felt flashings.
   C. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
   D. Secure gutters and downspouts in place using concealed fasteners.
   E. Slope gutters 1/4 inch per foot minimum.

SECTION 07900 - JOINT SEALERS

1. SECTION INCLUDES
   A. Sealants and joint backing.

2. ENVIRONMENTAL REQUIREMENTS
   A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

3. SEALANTS
   A. Sealants and Primers – General: Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168.
   B. General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; single component.
      1. Color: Standard colors matching finished surfaces.
      2. Applications: Use for:
         a. Control, expansion, and soft joints in masonry.
         b. Joints between concrete and other materials.
         c. Joints between metal frames and other materials.
         d. Under exterior door sills.
         e. Other exterior joints for which no other sealant is indicated.
   C. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.
      1. Color: Standard colors matching finished surfaces.
      2. Applications: Use for:
         a. Interior wall and ceiling control joints.
         b. Joints between door and window frames and wall surfaces.
         c. Other interior joints for which no other type of sealant is indicated.
   D. Restroom/Tile Sealant: White silicone; ASTM C 920, Uses I, M and A; single component, mildew resistant.
      1. Applications: Use for:
         a. Joints between plumbing fixtures and floor and wall surfaces.
   E. Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Grade P, Class 25, Uses T, M and A; single component.
      1. Color: Standard colors matching finished surfaces.
      2. Applications: Use for:
         a. Expansion joints in floors.
   F. Silicone Sealant: ASTM C 920, Grade NS, Class 25, Uses NT, A, G, M, O; single component, solvent curing, non-sagging, non-staining, fungus resistant, non-bleeding.
      1. Color: Clear.
      2. Applications: Use for:
         a. Equipment sealant in Food Service areas.

4. ACCESSORIES
   A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
   B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
   C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
   D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

5. PREPARATION
   A. Remove loose materials and foreign matter which might impair adhesion of sealant.
   B. Clean and prime joints in accordance with manufacturer's instructions.
   C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.
   D. Protect elements surrounding the work of this section from damage or disfigurement.

6. INSTALLATION
   A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
   B. Perform installation in accordance with ASTM C 1193.
   C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
   D. Install bond breaker where joint backing is not used.
   E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
   F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
   G. Tool joints concave.

DIVISION 8 - DOORS AND WINDOWS

SECTION 08110 - STEEL DOORS AND FRAMES

1. SECTION INCLUDES
   A. Steel doors and frames.
2. REFERENCES
   A. ANSI/ICC A117.1 – American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2003.
   B. ANSI A250.3 – Test Procedure and Acceptance Criteria for Factory-Applied Finish Painted Steel Surfaces for Steel Doors and Frames; 1999.
   C. ANSI A250.8 – SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 2003.
   D. ANSI A250.10 – Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 1998 (R2004).
   E. ASTM A 653/A 653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2005a.
   F. DHI A115 Series – Specifications for Steel Doors and Frame Preparation for Hardware; Door and Hardware Institute; 2000 (ANSI/DHI A115 Series).
   G. NAAMM HMMA 840 – Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 1999.
   H. UL (BMD) – Building Materials Directory; Underwriters Laboratories Inc.; current edition.
   I. UL 10C – Standard for Positive Pressure Fire Tests of Door Assemblies; 1998.
3. SUBMITTALS
   A. See Section 01300 – Administrative Requirements for submittal procedures.
   B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.
4. MANUFACTURERS O.E.A
   A. Steel Doors and Frames:
   1. Assa Abloy Ceco: www.assaabloydss.com.
   2. Steelcraft: www.steelcraft.com.
5. DOORS AND FRAMES
   A. Requirements for All Doors and Frames:
   1. Accessibility: Comply with ANSI/ICC A117.1.
   2. Door Top Closures: Flush with top of faces and edges.
   3. Door Edge Profile: Beveled on both edges.
   4. Door Texture: Smooth faces.
   5. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
   6. Hardware Preparation: In accordance with DHI A115 Series, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
   7. Finish: Factory primed, for field finishing.
6. STEEL DOORS
   A. Interior Doors, Non-Fire-Rated:
   1. Grade: ANSI A250.8 Level 2, physical performance Level B, Model 1, full flush.
   2. Thickness: 1-3/4 inches.
7. STEEL FRAMES
   A. General:
   1. Comply with the requirements of grade specified for corresponding door.
      a. Frames for Steel Doors: Comply with frame requirements specified in ANSI A250.8 for Level 1, 16 gage.
   2. Finish: Same as for door.
   B. Door Frames: Fully welded.
8. FINISH MATERIALS
   A. Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.
9. INSTALLATION
   A. Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.
   B. Coordinate frame anchor placement with wall construction.
   C. Coordinate installation of hardware.

SECTION 08211 - FLUSH WOOD DOORS

1. SECTION INCLUDES
   A. Flush wood doors; flush configuration; non-rated and acoustical.

2. REFERENCES
   A. AWI/AWMAC (QSI) – Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2006, 8th Ed., Version 2.0.

3. DELIVERY, STORAGE, AND HANDLING
   A. Package, deliver and store doors in accordance with specified quality standard.
   B. Accept doors on site in manufacturer's packaging. Inspect for damage.
   C. Protect doors with resilient packaging. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

4. WARRANTY
   A. Interior Doors: Provide manufacturer's warranty for the life of the installation.
   B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

5. MANUFACTURERS – O.E.A.
   A. Wood Veneer Faced Doors:
   1. Assa Abloy Graham: www.grahamdoors.com.
   2. Eggers Industries: www.eggersindustries.com.
   3. Substitutions: See Section 01600 – Product Requirements.

6. DOORS AND PANELS
   A. All Doors: See drawings for locations and additional requirements.
   1. Quality Level: Premium Grade, in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Section 1300.
   2. Wood Veneer Faced Doors: Species Noted on Drawings, plain-sliced., 5-ply unless otherwise indicated.
   B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at all locations.

7. DOOR FACINGS
   A. Wood Veneer Facing for Transparent Finish: Species as specified above, veneer grade as specified by quality standard, plain sliced, book veneer match, running assembly match; unless otherwise indicated.
   1. Vertical Edges: Any option allowed by quality standard for grade.

8. DOOR CONSTRUCTION
   A. Fabricate doors in accordance with door quality standard specified.
   B. Fit door edge trim to edge of stiles after applying veneer facing.
   C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
   D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
   1. Exception: Doors to be field finished.
   E. Provide edge clearances in accordance with AWI Quality Standards Illustrated Section 1700.

9. INSTALLATION
   A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   B. Use machine tools to cut or drill for hardware.
   C. Coordinate installation of doors with installation of frames, hardware and glazing.

10. INSTALLATION TOLERANCES
   A. Conform to specified quality standard for fit and clearance tolerances.
   B. Conform to specified quality standard for maximum diagonal distortion.

SECTION 08214 - METAL FACED FLUSH WOOD DOORS (ELIASON)

1. SCOPE OF WORK
   A. Metal faced flush solid core wood doors
   B. Hardware for doors

2. RELATED SECTIONS
   A. Finish Carpentry: SECTION 06200
   B. Standard Steel Frames: SECTION 08113
   C. Finish Hardware: SECTION 08710

3. SUBMITTALS
   A. General: Submit per SUBMITTALS Section.
   B. Shop Drawings: Show configuration and dimensions of door components, hardware types and locations and finishes. Include product data and manufacturer's installation instructions. Detail to serve as installation drawings. Owner's acceptance is required prior to start of fabrication and/or shipment.
   C. Operation and Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

4. MAINTENANCE MATERIALS
   A. Provide special wrenches and tools applicable to each different or special hardware component along with maintenance tools and accessories supplied by hardware component manufacturer.

5. COORDINATION OF WORK
   A. After acceptance of Shop Drawings, furnish Contractor with templates required for preparation of frames at place of manufacture.

6. WARRANTY
   A. Manufacturer's standard one year warranty.

7. MANUFACTURER
   A. The Drawings were prepared, and this Specification written on the basis of using the products of Eliason Corporation, Easy Swing Door Division, Kalamazoo, Michigan. Such is intended to establish minimum quality standards, not to limit competitive bidding. Products with equal or superior characteristics by other manufacturers are acceptable under conditions of the Specifications.

8. DOOR TYPE
   A. Easy Swing, Model EHH-3, medium weight, dual swing doors.

9. MATERIALS
   A. Core: Manufacturer's standard 7-ply exterior grade plywood
   B. Face Finish: Full length 20-gauge Stainless Steel panel, both faces.
   C. Edge Caps and Base Plates: 304 #4 stainless steel.
   D. Hardware: Manufacturer's standard "Hidden Hardware".
   E. Window: 9" x 30" flush acrylic ADA vision panel.

10. DELIVERY STORAGE AND HANDLING
   A. Scheduling: Deliver to job site at least two weeks prior to date scheduled for installation, but not before building is enclosed and proper conditions of temperature and humidity are being maintained.
   B. Packaging: Crate or package doors and hardware to protect them during transit, delivery and storage, each package marked or tagged with corresponding door number as it appears on Door Schedule.

Storage: Store doors and hardware at building site under cover. Place doors on at least 4-inch wood sills or on floors in manner that will prevent damage. Do not use non_vented plastic or canvas shelters. Remove wet cartons immediately. Provide 1/4-inch space between doors to promote air circulation.

11. INSTALLATION
   A. Install in accord with manufacturer's instructions. Conform to AWI requirements for fit tolerances.

12. ADJUSTING
   A. Adjust for smooth and balanced door movement.

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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SHEET TITLE:
SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.7

DIVISION 8 - DOORS AND WINDOWS (CONTINUED)

SECTION 08710 - DOOR HARDWARE

1. SECTION INCLUDES
   A. Hardware for wood and hollow steel doors.
2. REFERENCES
   A. ANSI/ICC A117.1 – American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2003.
   B. BHMA A156.1 thru 156.21 – Builders Hardware Manufacturers Association, Inc.; 2006
   C. DHI A115 Series – Specifications for Steel Doors and Frame Preparation for Hardware; Door and Hardware Institute; 2000.
   D. DHI A115W Series – Specifications for Wood Door and Frame Preparation for Hardware; Door and Hardware Institute; 2000.
   E. DHI (LOCS) – Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; Door and Hardware Institute; 2004.
   F. DHI WDHS.3 – Recommended Locations for Architectural Hardware for Flush Wood Doors; Door and Hardware Institute; 1996.
3. SUBMITTALS
   A. See Section 01300 – Administrative Requirements, for submittal procedures.
   B. Shop Drawings:
      1. Indicate locations and mounting heights of each type of hardware, schedules, catalog cuts, electrical characteristics, and connection requirements.
      2. Submit manufacturer's parts lists and templates.
   C. Samples:
      1. Submit 1 sample of hinge, latch set, lockset, closer, and closer illustrating style, color, and finish.
      2. Samples will be returned to supplier.
   D. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
   E. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.
   F. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
4. COORDINATION
   A. Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware.
5. GENERAL REQUIREMENTS FOR DOOR HARDWARE PRODUCTS
   A. Provide products that comply with the following:
      1. Applicable provisions of Federal, State, and local codes.
      2. Provide products from the manufacturers and finish listed in the schedule located in the construction documents. No substitution allowed without written approval.
   B. Finishes: Identified in schedule located in the construction documents.
6. KEYING
   A. Door Locks: Master keyed.
      1. Include construction keying and control keying with removable core cylinders.
   B. Supply keys in the following quantities:
      1. 4 master keys.
         a. Stamp all permanent master keys with a set number and "DO NOT DUP"
      2. 4 construction keys.
      3. 4 control keys and 4 extra cylinder cores.
      4. 2 change keys for each lock.
      5. Identify permanent keys in envelopes and deliver to the Owner.
      6. Re-key entire building per Owner's direction.
7. KEY CABINET
   A. Cabinet Construction: Sheet steel construction, piano hinged door with cylinder type lock master keyed to building system.
   B. Cabinet Size: Size for project keys plus 50 percent growth.
   C. Hooks for 100 keys.
   D. Horizontal plastic strips for key hook labelling with clear plastic strip cover over labels.
   E. Finish: Baked enamel, color as selected.
8. EXAMINATION
   A. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.
9. INSTALLATION
   A. Install hardware in accordance with manufacturer's instructions and applicable codes.
   B. Use templates provided by hardware item manufacturer.
   C. Mounting heights for hardware from finished floor to center line of hardware item:
      1. For steel doors and frames: Comply with DHI "Recommended Locations for Architectural Hardware for Steel Doors and Frames."
      2. For wood doors: Comply with DHI "Recommended Locations for Architectural Hardware for Wood Flush Doors."
10. ADJUSTING
   A. Adjust work under provisions of Section 01700.
   B. Adjust hardware for smooth operation.

SECTION 08800 - GLAZING

1. SECTION INCLUDES
   A. Glass.
   B. Glazing compounds and accessories.
2. REFERENCES
   A. 16 CFR 1201 – Safety Standard for Architectural Glazing Materials; current edition.
   B. ASTM C 864 – Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005.
   C. ASTM C 920 – Standard Specification for Elastomeric Joint Sealants; 2005.
   D. ASTM C 1036 – Standard Specification for Flat Glass; 2001.
   E. ASTM C 1048 – Standard Specification for Heat-Treated Flat Glass--Kind HS, Kind FT Coated and Uncoated Glass; 2004.
   F. ASTM C 1193 – Standard Guide for Use of Joint Sealants; 2005a.
   G. ASTM E 2190 – Standard Specification for Insulating Glass Unit Performance and Evaluation; 2002.
3. PERFORMANCE REQUIREMENTS
   A. Provide glass and glazing materials for continuity of building enclosure vapor retarder and air barrier:
      1. In conjunction with vapor retarder and joint sealer materials described in other sections.
      2. To maintain a continuous air barrier and vapor retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.
4. SUBMITTALS
   A. See Section 01300 – Administrative Requirements, for submittal procedures.
   B. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
   C. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.
   D. Certificates: Certify that products meet or exceed specified requirements.
5. QUALITY ASSURANCE
   A. Perform Work in accordance with GANA Glazing Manual and FGMA Sealant Manual for glazing installation methods.
6. FLAT GLASS MATERIALS
   A. Clear Float Glass: Clear, fully tempered.
      1. Comply with ASTM C 1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select).
      2. Comply with ASTM C 1048.
      3. 6 mm minimum thick.
   B. Safety Glass: Clear; fully tempered with horizontal tempering.
      1. Comply with ASTM C 1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select) and ASTM C 1048.
      2. Comply with 16 CFR 1201 test requirements for Category II.
7. SEALED INSULATING GLASS MATERIALS
   A. Insulated Glass Units: Double pane, Low E, with glass to elastomer edge seal.
      1. Durability: Certified by an independent testing agency to comply with ASTM E 2190.
      2. Purge interpane space with dry hermetic air.
      3. Total unit thickness of 1 inch minimum.
8. GLAZING COMPOUNDS
   A. Butyl Sealant: Single component; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; Shore A hardness of 10 to 20; black color; non-skinning.
   B. Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C 920, Type S, Grade NS, Class 25, Uses M, A, and G; cured Shore A hardness of 15 to 25; color as selected.
9. GLAZING ACCESSORIES
   A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C 864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
   B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
   C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; size as recommended by glass manufacturer; black color.
      8. Manufacturers:
         a. Pecora Corporation: www.pecora.com.
         b. Tremco, Inc: www.tremcosealants.com.
         c. Substitutions: Refer to Section 01600 – Product Requirements.
   D. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C 864 Option I; black color.
   E. Glazing Clips: Manufacturer's standard type.
10. PREPARATION
   A. Prime surfaces scheduled to receive sealant.
   B. Install sealants in accordance with ASTM C 1193 and FGMA Sealant Manual.
   C. Install sealant in accordance with manufacturer's instructions.
11. INSTALLATION – EXTERIOR WET/DRY METHOD (PREFORMED TAPE AND SEALANT)
   A. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with butyl sealant.
   B. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.
   C. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
   D. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.
   E. Install removable stops, with spacer strips inserted between glazing and applied stops, 1/4 inch below sight line. Place glazing tape on glazing pane or unit with tape flush with sight line.
   F. Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.
   G. Apply cap bead of sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.
12. INSTALLATION – INTERIOR DRY METHOD (TAPE AND TAPE)
   A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.
   B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
   C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
   D. Place glazing tape on free perimeter of glazing in same manner described above.
   E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
   F. Knife trim protruding tape.
13. CLEANING
   A. Remove glazing materials from finish surfaces.
   B. Remove labels after Work is complete.
   C. Clean glass and adjacent surfaces.
14. PROTECTION
   A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

DIVISION 9 - FINISHES

SECTION 09260 - GYPSUM BOARD ASSEMBLIES

1. SECTION INCLUDES
   A. Metal stud wall framing.
   B. Fire rated walls.
   C. Acoustic insulation.
   D. Tile / Base backer board.
   E. Cementitious backer unit a hood wall.
   F. Gypsum wallboard.
   G. Joint treatment and accessories.
2. REFERENCES
   A. ANSI A108.11 – American National Standard for Interior Installation of Cementitious Backer Units; 1999 (R2005).
   B. ANSI A118.9 – American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (R2005).
   C. ASTM C 475/C 475M – Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002.
   D. ASTM C 645 – Standard Specification for Nonstructural Steel Framing Members; 2004a.
   E. ASTM C 754 – Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2004.
   F. ASTM C 840 – Standard Specification for Application and Finishing of Gypsum Board; 2005.
   G. ASTM C 1002 – Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2004.
   H. ASTM C 1047 – Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2005.
   I. ASTM C 1396/C 1396M – Standard Specification for Gypsum Board; 2004.
   J. ASTM E 72 – Standard Test Methods of Conducting Strength Tests of Panels for Building Construction; 2005.
3. METAL FRAMING MATERIALS
   A. Non-Loadbearing Framing System Components: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
      1. Exception: The minimum metal thickness and section properties requirements of ASTM C 645 are waived provided steel of 40 ksi minimum yield strength is used, the metal is continuously dimpled, the effective thickness is at least twice the base metal thickness, and maximum stud heights are determined by testing in accordance with ASTM E 72 using assemblies specified by ASTM C 754.
      2. Studs: "C" shaped with flat or formed webs with knurled faces.
      3. Runners: U shaped, sized to match studs.
      4. Ceiling Channels: C shaped.
   B. Furring Channels: USG furring channels, 7/8" deep, roll formed, hat_shaped sections of galvanized steel.
   C. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.
   D. Partition Head to Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.
4. GYPSUM BOARD MATERIALS
   A. Manufacturers:
      1. BPB America Inc: www.bpb-na.com.
      2. G-P Gypsum Corporation: www.gp.com/gypsum.
      3. National Gypsum Company: www.nationalgypsum.com.
      4. USG: www.usg.com.
   B. Gypsum Wallboard: ASTM C 1396/C 1396M. Sizes to minimize joints in place; ends square cut.
      1. Regular Type:
         a. Application: Use for vertical surfaces, unless otherwise indicated.
         b. Edges: Tapered.
      2. Fire Resistant Type: Complying with Type X requirements; UL or WH rated.
         a. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X.
         b. Thickness: 5/8 inch.
         c. Edges: Tapered.
      3. Ceiling Board: Special sag-resistant type.
         a. Application: Ceilings, unless otherwise indicated.
         b. Thickness: 1/2 inch.
         c. Edges: Tapered.
   C. Water-Resistant Gypsum Backing Board: ASTM C 1396/C 1396M; ends square cut.
      1. Application: Vertical surfaces behind thinset tile and pre-finished fiberglass panels in wet areas.
      2. Core Type: Regular and Type X, as indicated.
      3. Thickness: 5/8 inch.
      4. Edges: Tapered.
5. TILE / BASE BACKER BOARD
   A. Tile backer board panels: 5/8" thick, non-structural, fiberglass-faced, silicone treated moisture barrier, mold resistant gypsum core panel, "DensShield" tile backer board.
   B. Joint Reinforcement: 2-inch-wide, coated fiberglass mesh tape.
   C. Fasteners: Screws, 1-1/4-inch corrosion, resistant; type specified by panel manufacturer for system used.
6. CEMENTITIOUS BACKER BOARD AT HOOD WALLS
   A. Cementitious Backer Board: ANSI A118.9, aggregated portland cement panels with glass fiber mesh embedded in front and back surfaces, 5/8 inch thick.
7. ACCESSORIES
   A. Acoustic Insulation: ASTM C 665; preformed glass fiber, friction fit type, unfaced.
   B. Finishing Accessories: ASTM C 1047, galvanized steel, unless otherwise indicated.
      1. Types: As detailed or required for finished appearance.
   C. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer for project conditions.
      1. Tape: 2-inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
      2. Tape: 2-inch wide, creased paper tape for joints and corners, except as otherwise indicated.
      3. Ready-mixed vinyl-based joint compound.
   D. Screws: ASTM C 1002; self-piercing tapping type.
8. EXAMINATION
   A. Verify that project conditions are appropriate for work of this section to commence.
9. FRAMING INSTALLATION
   A. Metal Framing: Comply with ASTM C 754 and manufacturer's instructions.
   B. Studs: Space studs as indicated.
      1. Extend partition framing as indicated.
      2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
      3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
   C. Wall Furring, Direct Attachment: Install asphalt felt protection strip between each furring channel and wall. Attach 7/8" hat channel horizontally to wall at 18"/24" o.c. with concrete stub nails spaced 18"/24" o.c. staggered on alternate wing flanges.
   D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
10. ACOUSTIC ACCESSORIES INSTALLATION
   A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
   B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
11. GYPSUM BOARD INSTALLATION
   A. Comply with ASTM C 840 and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
   B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   C. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of listing authority.
   D. Cementitious Backing Board: Install over steel framing members at exhaust hood walls as indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
   E. Installation on Metal Framing: Use screws for attachment of all gypsum board.
   F. Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For non-rated assemblies, install as follows:
      1. Single-Layer Applications: Screw attachment.
   G. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board with sealant.
12. INSTALLATION OF TRIM AND ACCESSORIES
   A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
      1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
   B. Corner Beads: Install at external corners, using longest practical lengths.
13. JOINT TREATMENT
   A. Finish all gypsum board in accordance with ASTM C 840 "Level 4" finish.
   B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
      1. Feather coats of joint compound so that camber is maximum 1/32 inch.
      2. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile and fixed cabinetry.
14. TOLERANCES
   A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

SECTION 09300 - TILE

1. SECTION INCLUDES
   A. Tile for floor applications.
   B. Tile for wall applications.
   C. Backer board as tile substrate.
   D. Waterproofing membrane
   E. Ceramic trim.
2. REFERENCES
   A. ANSI A108 Series/A118 Series/A136.1 – American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2005.
   B. TCA (HB) – Handbook for Ceramic Tile Installation; Tile Council of North America, Inc.; 2006.
3. QUALITY ASSURANCE
   A. Maintain one copy of TCA Handbook and ANSI A108 Series/A118 Series on site.
4. DELIVERY, STORAGE, AND HANDLING
   A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.
5. EXTRA MATERIALS
   A. Provide 10 sq. ft of each size, color, and surface finish of tile specified.
6. TILE
   A. Refer to finish schedule on the construction documents for material selections.
7. TRIM AND ACCESSORIES
   A. Trim: Matching bullnose, surface bullnose, cove base, and cove ceramic shapes as scheduled in sizes coordinated with field tile.
      1. Applications: Use in the following locations:
         a. Open Edges: Bullnose.
         b. Inside Corners: Jointed.
         c. Floor to Wall Joints: Cove base.
      2. Manufacturer: Same as for tile.
8. ADHESIVE MATERIALS
   A. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.
   B. Epoxy Adhesive: ANSI A118.3, thinset bond type.
9. MORTAR MATERIALS
   A. Mortar Bed Materials: Portland cement, sand, latex additive and water.
   B. Mortar Bond Coat Materials:
      1. Dry-Set Portland Cement type: ANSI A118.1.
      2. Latex-Portland Cement type: ANSI A118.4.
      3. Epoxy: ANSI A118.3.
10. GROUT MATERIALS
   A. Standard Grout: Any type specified in ANSI A118.6 or A118.7.
   B. Furan Grout: ANSI A118.5, furan resin type.
11. ACCESSORY MATERIALS
   A. Cleavage Membrane: 4 mil thick polyethylene film.
   B. Reinforcing Mesh: 2 x 2 inch size weave of 16/16 wire size; welded fabric, galvanized.
   C. Waterproofing:
      1. Install under tile at all wet locations – Nobleseal 30 mil membrane waterproofing conforming to ANSI A118-10.
12. EXAMINATION
   A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.
   B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
   C. Verify that sub-floor surfaces are dust-free and free of substances which would impair bonding of setting materials to sub-floor surfaces.
   D. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.
13. PREPARATION
   A. Protect surrounding work from damage.
   B. Vacuum clean surfaces and damp clean.
   C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
   D. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.
   E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.
14. INSTALLATION – GENERAL
   A. Install waterproofing membrane at all wet areas in accordance with manufacturer's instructions and TCA Handbook recommendations.
   B. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and TCA Handbook recommendations.
   C. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
   D. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
   E. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
   F. Form internal angles square and external angles bullnosed.
   G. Sound tile after setting. Replace hollow sounding units.
   H. Keep expansion joints free of adhesive or grout. Apply sealant to joints.
   I. Allow tile to set for a minimum of 48 hours prior to grouting.
   J. Grout tile joints. Use standard grout unless otherwise indicated.
   K. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.
15. INSTALLATION – FLOORS – THIN-SET METHODS
   A. Over interior concrete substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-portland cement bond coat, with standard grout, unless otherwise indicated.
      1. Where epoxy bond coat and grout are indicated, install in accordance with TCA Handbook Method F131.
16. INSTALLATION – FLOORS – MORTAR BED METHODS
   A. Over interior concrete substrates, install in accordance with TCA Handbook Method F111, with cleavage membrane, unless otherwise indicated.
   B. Cleavage Membrane: Lap edges and ends.
   C. Mortar Bed Thickness: 1-1/4 inch.
17. INSTALLATION – WALL TILE
   A. Over tile backer board units install in accordance with TCA Handbook Method W223, organic adhesive.
18. CLEANING
   A. Clean tile and grout surfaces.

SECTION 09511 - SUSPENDED ACOUSTICAL CEILINGS

1. SECTION INCLUDES
   A. Suspended metal grid ceiling system.
   B. Acoustical units.
2. REFERENCES
   A. ASTM C 635 – Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2004.
   B. ASTM C 636 – Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 2004.
   C. ASTM E 580 – Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint; 2002.
   D. ASTM E 1264 – Standard Classification for Acoustical Ceiling Products; 1998 (Reapproved 2005).
3. EXTRA MATERIALS
   A. See Section 01600 – Product Requirements, for additional provisions.
   B. Provide five percent of total acoustical unit area of each type of acoustical unit for Owner's use in maintenance of project.
4. ACOUSTICAL UNITS
   A. Manufacturers:
      1. Refer to Finish Schedule on drawings for various product manufacturers.
   B. Acoustical Units – General: ASTM E 1264, Class A.
      1. Models as scheduled on the construction documents.
5. SUSPENSION SYSTEM(S)
   A. Manufacturers:
      1. USG; Product Donn DX: www.usg.com.
   B. Suspension Systems – General: ASTM C 635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.
6. ACCESSORIES
   A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
   B. Perimeter Moldings: Same material and finish as grid.
      1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.
7. INSTALLATION – SUSPENSION SYSTEM
   A. Install suspension system in accordance with ASTM C 636, ASTM E 580, and manufacturer's instructions and as supplemented in this section.
   B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
   C. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
   D. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
   E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
   F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
   G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
   H. Do not eccentrically load system or induce rotation of runners.
   I. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
      1. Use longest practical lengths.
      2. Overlap and rivet corners.
8. INSTALLATION – ACOUSTICAL UNITS
   A. Install acoustical units in accordance with manufacturer's instructions.
   B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
   C. Fit border trim neatly against abutting surfaces.
   D. Install units after above-ceiling work is complete.
   E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
   F. Cutting Acoustical Units:
      1. Make field cut edges of same profile as factory edges.

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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.

SP.8

DIVISION 9 - FINISHES (CONTINUED)

SECTION 09610 - GRANITE

1. SECTION INCLUDES

A. Granite slabs
B. Adhesive
C. Protection of completed work

2. REFERENCE STANDARDS

A. American National Standards Institute (ANSI): A136.1 Organic adhesives for installation of ceramic tile.
B. American Society of Testing Materials (ASTM): ASTM C615 Granite building stone.
C. Tile Council of America (TCA): Handbook for ceramic tile installation.

3. SAMPLES

A. Submit two 12–inch x 12–inch samples to the Architect for acceptance.

4. MANUFACTURER

A. The drawings were prepared, and portions of this specification written on the basis of using the products distributed by company noted on finish schedule in the drawings.

5. MATERIALS

A. Granite: ASTM C615, fine rubbed, slab, color specified on Finish Schedule of the drawings.
B. Adhesives: Water resistive type as recommended by granite manufacturer; thinset bond type.
C. Grout: Non–sanded, Latex–Portland Cement Grout; color – to be selected by Owner.
D. Sealer: Multi–Seal "Marble Sealer" as distributed by Dal–Tile Corporation, Richardson, Texas.
E. Cleaning Solution: Type recommended by granite manufacturer which will not harm stone, sealer, or adjacent surfaces.
F. Extra Materials: Provide 20 of each size and type of stone unit specified.

6. ENVIRONMENTAL REQUIREMENTS

A. Maintain materials and surrounding air to a minimum 50 degrees F prior to, during, and 48 hours after completion of work.

7. SURFACE PREPARATION

A. Use filler to patch cracks, small holes, and for minor leveling in substrate.
B. Apply conditioner/sealer to surfaces as recommended by adhesive manufacturer.

8. EXAMINATION

A. Verify that surfaces are ready to receive work of this section. Beginning of installation means acceptance of substrate.

9. INSTALLATION

A. Preparation: Establish lines, levels, and pattern; protect from disturbance.
B. Adhesive: Apply to prepared substrate in accord with manufacturer's instructions and the TCA Handbook for Ceramic Tile Installation. Ensure full adhesive contact for permanent bond to substrate.
C. Slabs: Clean stone prior to installation. Lay in slabs as large as possible, in patterns and/or directions shown on Drawings. Fit neatly to vertical interruptions. Place units with 1/16 inch joints. Provide expansion space at walls and other obstructions. Remove excessive adhesive from surface as work progresses. Sound units after setting. Replace hollow sounding units. Joints must be free of any debris or foreign matter before grouting. Joints shall be thoroughly filled and wiped flush.
D. Sealer: Allow tile to set 72 hours after grouting prior to application of sealant. Apply two coats of sealer in accord with manufacturer's printed specifications and instructions.

10. PROTECTION AND CLEANING

A. Protect work, adjacent work, and materials by suitable covering. Upon completion of work, remove spots from floors and other surfaces.

SECTION 09900 - PAINTS AND COATINGS

1. SECTION INCLUDES
   A. Surface preparation.
   B. Field application of paints, stains, varnishes, and other coatings.
2. DELIVERY, STORAGE, AND HANDLING
   A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
   B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
   C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.
3. ENVIRONMENTAL REQUIREMENTS
   A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
   B. Provide lighting level of 80 ft candles measured mid–height at substrate surface.
4. SUBMITTALS
   A. Prepare two (2) color/texture samples for each color for each type of substrate to be painted or stained per SUBMITTALS.
   B. Make samples not less than twelve inches (12") square.
   C. Submit manufacturer's printed literature on each coating system to be used.
5. EXTRA MATERIALS
   A. Supply 1 gallon of each color; store where directed.
   B. Label each container with color in addition to the manufacturer's label.
6. MANUFACTURERS
   A. Paint and Coating manufactures shall be as scheduled herein and on the drawings.
7. PAINTS AND COATINGS – GENERAL
   A. Paints and Coatings: Ready mixed, except field–catalyzed coatings. Prepare pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
   B. Volatile Organic Compound (VOC) Content:
1. Provide coatings that comply with the most stringent requirements specified in 40 CFR 59, Subpart D––National Volatile Organic Compound Emission Standards for Architectural Coatings.

8. EXAMINATION
   A. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
   B. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Wood: 15 percent, measured in accordance with ASTM D 4442.
9. PREPARATION
   A. Surfaces: Correct defects and clean surfaces which affect work of this section.
   B. Marks: Seal with shellac those which may bleed through surface finishes.
   C. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra–sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
   D. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair. Gypsum ceiling surfaces in all Public areas are required to have a Level 5 finish surface; do not start painting until surface finish level is verified. Beginning of painting gypsum indicates acceptance of surface.
   E. Aluminum Surfaces to be Painted: Remove surface contamination by steam or high–pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
   F. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
   G. Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Prime paint entire surface; spot prime after repairs.
   H. Interior Wood Items to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
   I. Interior Wood Items to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.
   J. Wood Doors to be Field Finished: Seal wood door top and bottom edge surfaces with clear sealer.
   K. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.
10. APPLICATION
   A. Apply products in accordance with manufacturer's instructions.
   B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
   C. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
   D. Sand wood and metal surfaces lightly between coats to achieve required finish.
   E. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
   F. Coverage coats noted herein are minimum requirements. Contractor shall provide additional coats as needed for complete coverage.
11. FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT
   A. Painting mechanical and electrical work is limited to items exposed in occupied spaces unless noted otherwise.
   B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

12. SCHEDULE – SURFACES TO BE FINISHED
   A. Do Not Paint or Finish the Following Items:
1. Items fully factory–finished unless specifically noted.
2. Fire rating labels, equipment serial number and capacity labels.
   B. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
1. Paint all insulated and exposed pipes, conduit, boxes, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment occurring in finished areas, unless otherwise indicated.
2. Paint shop–primed items occurring in finished areas.
3. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
4. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
   C. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.

13. TENTATIVE PAINT LIST: Where any particular application is not mentioned in this list, Contractor shall figure on application of manufacturer's specification for application which is consistent with types and qualities listed herein. Colors are indicated on drawings.

EXTERIOR SURFACES

14. Natural Woods – "Stained"
   Sherwin Williams:
   1st Coat: S–W WoodScapes House Stain Exterior Polyurethane SemiTransparent Stain, A15T5
   2nd Coat: Same as 1st Coat
   3rd Coat: Marine Varnish, Satin finish
   Glidden Professional:
   1st Coat: Glidden Professional 2710 WOODPRIDE Exterior Oil/AlkydSemi–Transparent Deck & Siding Stain
   2nd Coat: Same as 1st Coat
   3rd Coat: Glidden Professional 1907 WOODPRIDE Spar Urethane

15. Ferrous Metals and Exposed Gas Lines
   Sherwin Williams:
   1st Coat: S–W) 0 VOC Acrylic Satin, B66–660 Series
   2nd Coat: Same as 1st Coat
   Glidden Professional:
   1st Coat: Devoe Coatings 4212 DEVFLEX HP Eggshell
   2nd Coat: Same as 1st Coat

16. Unit Masonry
   Sherwin Williams:
   1st Coat: S–W Loxon Concrete & Masonry Interior/Exterior Latex Primer, A24W8300
   2nd Coat: S–W DTM Acrylic Semi–Gloss, B66–200 Series
   3rd Coat: Same as 2nd Coat
   Glidden Professional:
   1st Coat: Fill with Glidden Professional Concrete Coatings Block Filler 3010–1200 to DFT of 9.0 to 13.6 Mils. Ensure coverage is consistent.
   2nd Coat: Finish with Glidden Professional Fortis 450 Exterior 100% Acrylic Satin 6403
   3rd Coat: Same as 2nd Coat

17. Pre–Painted Equipment (Rooftop Equipment, Transformers, Etc.)
   Sherwin Williams:
   1st Coat: S–W DTM Acrylic Semi–Gloss, B66–200 Series
   2nd Coat: Same as 1st Coat
   Glidden Professional:
   1st Coat: Devoe Coatings 4216.DEVFLEX HP Semi–Gloss
   2nd Coat: Same as 1st Coat

18. Pre–Primed Metal Doors and Frames
   Sherwin Williams:
   1st Coat: S–W DTM Acrylic Semi–Gloss, B66–200 Series
   2nd Coat: Same as 1st Coat
   Glidden Professional:
   1st Coat: Devoe Coatings 4216.DEVFLEX HP Semi–Gloss
   2nd Coat: Same as 1st Coat

19. Stucco & EIFS
   Sherwin Williams:
   1st Coat: S–W Loxon Concrete & Masonry Interior/Exterior Latex Primer A24W8300
   2nd Coat: S–W ConFlex High Build Coating, A5–400 Series
   3rd Coat: Same as 2nd Coat
   Glidden Professional:
   1st Coat: Glidden Professional Hydrosealer 6001 primecoat
   2nd Coat: Glidden Professional Fortis 450 Exterior 100% Acrylic Satin 6403
   3rd Coat: Same as 2nd Coat

INTERIOR SURFACES

1. Wood Trim – "Painted"
   Sherwin Williams:
   1st Coat: S–W Multi–Purpose Interior/Exterior Latex Primer B51W8020 Series
   2nd Coat: S–W DTM Acrylic, Semi–Gloss, B666–200 Series
   3rd Coat: Same as 2nd Coat
   Glidden Professional:
   1st Coat: Glidden Professional 3210 Gripper Multi–Purpose Primer
   2nd Coat: Devoe Coatings 4216 HP Semi–Gloss
   3rd Coat: Same as 2nd Coat

2. Wood Trim – "Stained"
   Sherwin Williams:
   1st Coat: Minwax Pre–Stain Wood Conditioner, 154–8866
   2nd Coat: S–W WoodClassics Oil Stain, A49 Series
   3rd Coat: S–W WoodClassics Waterborne Polyurethane Varnish, A68F90 Series, Satin
   Glidden Professional:
   1st Coat: Minwax Pre–Stain Wood Conditioner, 154–8866
   2nd Coat: Glidden Professional 1700 WOODPRIDE Interior Wood Finishing Stain
   3rd Coat: Glidden Professional 1902 WOODPRIDE Interior Polyurethane Satin Varnish

3. Gypsum Wallboard
   Sherwin Williams:
   1st Coat: S–W ProMar 200 Interior Latex Primer, B28W8200
   2nd Coat: S–W ProMar 200 Latex Semi–Gloss, B31W2200 Series
   3rd Coat: Same as 2nd Coat
   Glidden Professional:
   1st Coat: 1000 Hi–Hide water –Based Primer–Sealer
   2nd Coat: Glidden Professional Ultra Hide 150 Latex Eggshell 1412
   3rd Coat: Same as 2nd Coat

4. Ferrous Metal and Exposed Gas Lines, Doors, Door Frames
   Sherwin Williams:
   1st Coat: S–W DTM Acrylic Semi–Gloss, B66–200 Series
   2nd Coat: Same as 1st Coat
   Glidden Professional:
   1st Coat: Devoe Coatings DEVFLEX 4216 HP Semi–Gloss
   2nd Coat: Same as 1st Coat

5. At Dissimilar Metals
   Sherwin Williams:
   1st Coat: SW Hi–Mil Sher–Tar Epoxy, B60B40 / B60V40
   Glidden Professional:
   1st Coat: Devoe Coatings Tru–Glaze 4508 Chemical Resistant Epoxy Coating, 4508–XXXXH/ 4508–9999H

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2311O WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.9

DIVISION 10 - SPECIALTIES

SECTION 10410 - ENTRY KEY CABINET

1. SECTION INCLUDES
   A. Knox Rapid Entry System

2. SUBMITTALS
   A. See Section 01300 – Administrative Requirements, for submittal procedures.
   B. Product Data: Provide descriptions, applications, installation instruction.
   C. Shop Drawings: Indicate sizes, shapes and types of materials; finishes, anchors and connections.
   D. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

3. DELIVERY, STORAGE, AND HANDLING
   A. Order key boxes from manufacturer using original authorization/order form signed by authority having jurisdiction.
   B. Deliver key boxes to site in good condition, in original unopened packaging, and with labels intact. Inspect materials upon delivery and replace damaged or contaminated materials.
   C. Key boxes shall be shipped to contractor. Keys shall be shipped directly to authority having jurisdiction.

4. MANUFACTURERS
   A. The Knox Company, Phoenix, AZ; (800)522-566; 3200 Series–Surface Mounted Hinged Door Model; www.knoxbox.com

5. MANUFACTURED UNITS
   A. Basis of Design Manufacturer: Knox–Box Model 3200 Surface Mounted heavy duty with tamper switch, 1/2" solid plate door and 1/4" steel case in aluminum finish, or as required by authority having jurisdiction.
   B. Assembly:
      1. Factory assemble.
      2. Shop fabricate to the greatest extent possible.

6. INSTALLATION
   A. Install in accordance with manufacturer's instructions.
   B. Locate Key Box as shown on drawings.

SECTION 10523 - FIRE EXTINGUISHERS, CABINETS AND ACCESSORIES

1. SECTION INCLUDES
   A. Fire extinguishers and cabinets.
   B. Accessories.

2. REFERENCES
   A. NFPA 10 – Standard for Portable Fire Extinguishers; National Fire Protection Association; 2007.
   B. UL (FPED) – Fire Protection Equipment Directory; Underwriters Laboratories Inc.; current edition.

3. MANUFACTURERS
   A. Fire Extinguishers, Cabinets and Accessories:
      1. Larsen's Manufacturing Co: www.larsensmfg.com.

4. FIRE EXTINGUISHERS
   A. Fire Extinguishers – General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
      1. Provide extinguishers labeled by Underwriters Laboratories Inc. for the purpose specified and indicated.
   B. Dry Chemical Type Fire Extinguishers: Stainless steel tank, with pressure gage.
      1. Class B:C.
      2. Size 10.
      3. Size and classification as scheduled.
      4. Model: MP10
      5. Bracket: B2
      6. Quantity: 1, as located on drawings.
   C. Wet Chemical Type
      1. Class K
      2. Size 2.5 Gallon
      3. Model: WC 2 1/2
      4. Bracket: 864
      5. Quantity: 2, locate per local Fire Official direction

5. ACCESSORIES
   A. Cabinets: Larsen's #2409–R2, Vertical Duo Clear, #4 Stainless Steel for public locations.
   B. Extinguisher Brackets: Formed steel, chrome–plated, for kitchen locations.

6. INSTALLATION
   A. Install in accordance with manufacturer's instructions.
   B. Secure rigidly in place.

SECTION 10800 - TOILET ACCESSORIES

1. All toilet accessories are furnished and installed by Contractor. Coordinate rough–in, openings and wood blocking.
2. Install fixtures, accessories and items in accordance with manufacturer's instructions, and where affected, at heights or locations for the handicapped as indicated or specified herein.
3. Install true, plumb and level, securely and rigidly anchored to substrate.
4. See Schedule on drawings for acce:

DIVISION 11 - EQUIPMENT

SECTION 11400 - FOOD SERVICE EQUIPMENT (INSTALLATION)

1. SECTION INCLUDES
   A. Installation of Owner provided food service equipment.
   B. Equipment shall be furnished, assembled, and set in place under separate contract, with final utility connection by General Contractor.

2. RELATED SECTIONS
   A. Mechanical and Electrical services and final connections to equipment.

3. OWNER / CONTRACTOR RESPONSIBILITIES
   A. Owner will provide equipment manufacturer's installation instructions for Contractor's use.
   B. Owner will provide equipment manufacturer's operation and maintenance data for Contractor's use.
   C. Coordinate size of access and route to place of installation.
   D. Owner Provided (By Owner):
      1. Equipment scheduled on the drawings.
      2. Mechanical refrigeration systems, including compressor units, condensers, evaporator coils, and control valves.
      3. Motor starters.
      4. Walk–in refrigerator/freezer thermostats.
      5. Stainless steel trim strips, supports and connections, attachment devices, and accessories.
   E. Contractor Provided: Refrigerant System Installation
      1. Refrigerant Lines: Type "L" hard copper tubing.
      2. Fittings: Wrought copper or brass designed for use with high temperature solder.
      3. Piping Joints: Made with silver solder (Sil–Fos).
      4. Piping: Properly suspended from an anchor to the structure with adjustable hangers 6' o.c. maximum.
      5. Suction Lines: Size to have maximum pressure drop of two pounds in medium temperature systems, one pound in low temperature system.
      6. Liquid Lines: Sized to give maximum pressure to prevent trapping of oil. Rigid insulation on all suction lines to be Armaflex insulation by Armstrong – 1" thick at medium temp., 1–1/2" thick at low temp. Refrigerant lines in PVC or EMT conduit to be sealed at both ends with Dow Corning 3–6548 silicone RTV foam.
      7. Evacuation and Charging: After completion of the pressure test, the system shall be evacuated using an approved auxiliary vacuum pump. Connections for evacuations to be in accordance with manufacturer's recommendations.

4. DELIVERY, HANDLING AND STORAGE
   A. Delivery: Upon receiving equipment, check crates/cartons identification labels with receiving P.O.; assure correct item has been received.
   B. Handling: Uncrate equipment in organized manner. Take care not to misplace loose parts, accessories, assembly and operating instructions, and warranty cars. Keep utility hookup notes and tags on equipment until after connections are made. Assemble in workmanship manner in accord with manufacturer's directions, taking care to make sure fasteners are tight and components are aligned and square.
   C. Storage: Store equipment clear of floor in manner to prevent warping, twisting, or sagging.

5. INSTALLATION
   A. Install items in accord with manufacturer's instructions and fabricator's shop drawings. Install in accord with local governing Health, Building, and Safety, and Fire Protection Codes and Regulations and NEMA, UL, AGA, ASME and NFPA.
   B. Electrolysis: Insulate to prevent electrolysis between dissimilar metals. Provide sealant to achieve clean joint without crevices.
   C. Equipment
      1. General: Set in place and position per kitchen equipment plan; ready for utility hook up. After utility hookups are made, level and secure dish tables to slope toward dishwasher. Completely close and seal gaps, joints and seams between fixtures/equipment and walls, ceilings and floors with stainless steel trim strips and/or clear silicone sealant. Do not use sealant in joints or seams over 3/16 inch wide.
      2. Refrigerant Piping: Install copper tubing and fittings. Cut with pipe cutters and reshape with sizing tool. Expose piping to view as required by American Standard Safety Code for Mechanical Refrigeration. For exposed areas or accessible furred ceiling spaces, use hard copper tubing. Run exposed tubing in such manner as to prevent damage from activities in areas; otherwise run tubing in pipe or conduit.
      a. Suction Lines: Size to give max pressure drop from evaporator to machine of 2 lb. For high temp system and 1 lb. For freezer system, allowing gas velocities of not less than 750 rpm in horizontal runs and 1500 rpm in vertical risers. Size liquid lines to give max pressure drop of 3 lbs. from receiver to evaporator.
      b. Tubing Runs: Grade to prevent trapping of oil.
      c. Ties: Secure suction and liquid lines for each system together, except when run through conduit; 24 inch intervals with black plastic electrical tape.
      d. Insulation: Insulate refrigerant suction lines outside of refrigerated compartments back to compressors.
      e. Hangers and Supports: Provide adjustable hangers, anchors or straps required for proper support of piping not run in conduit. Space hangers not to exceed 10 feet o.c. and closer where required for proper support of small piping. Provide insulated refrigerant piping with approved type sleeves at hanger points.
   3. Walk–In Cooler Freezer Boxes: Transit level floor screens prior to wall and ceiling panel erection. Seal wall and/or ceiling penetrations for electrical conduits and refrigeration lines, etc., to prevent frost and condensate build–up. Electrical conduits; on exterior of box.
   4. Oil Separators: Provide low temperature operations of system, return line connected to top of crankcase above oil level. Provide exposed oil return lines with shut–off valves of packless stem type.
   5. Evaporator Coils: Support by hangers utilizing fish plates on top of walk–in unit a full 4 inches clear from underside of ceiling panels.

DIVISION 15 - MECHANICAL SYSTEMS

SECTION 15100 - GENERAL MECHANICAL REQUIREMENTS

1. Scope of Work:
   a. The work to be accomplished under this Section of Specifications includes the furnishing of and equipment for the complete installation of air conditioning, heating, ventilating, plumbing, fire protection together with all the necessary auxiliaries and appurtenances. Generally the work shall consist of, but is not limited to, items listed in the following paragraphs.
   b. Air Conditioning and Heating: Factory built air conditioning and heating units of the single zone roof top and split system units, filters, fans, motors, drives, hoods, etc.
   c. Air Distribution System: Sheet metal ductwork, volume dampers, splitter dampers, turning vanes, air control devices, grilles, registers, diffusers, flexible duct, install per SMACNA Standards. Fiberglass duct board is not an acceptable alternative.
   d. Plumbing: Soil, waste and vent piping, domestic hot and cold water distribution, hot water generators, fixtures, grease traps, vents, condensate lines of HVAC and miscellaneous equipment, underfloor or overhead soda, refrigerant line conduit and/or roof leaders.
   e. Miscellaneous: Supply and exhaust fans, make–up air units, temperature controls, thermal insulation, apparatus foundations and supports, pipe hangers and supports and all necessary tools, accessories and appliances as required to make all systems complete and operative.

2. Products and Execution:
   a. Electrical Provisions for Mechanical Work: Except for such items as are normally wired up at their point of manufacture and so delivered, and unless specifically noted to the contrary herein, the Electrical Subcontractor will do all electric wiring of every character for power supply. Control wiring shall be furnished and installed by the Electrical Subcontractor. This Subcontractor shall erect all motors in place ready for connection. Except for such items as are normally supplied with starters installed (HVAC units, dishwashers, etc) at their point of manufacture. All other starters not furnished with equipment to be furnished and installed by Electrical Contractor. The Electrical Subcontractor will mount all such starters, as directed, furnishing supporting structures where necessary. The Owner and other Contractors shall furnish with each item requiring electrical connections, the necessary instructions and wiring diagrams to the Electrical Subcontractor. The Electrical Subcontractor shall refer to the specifications to determine the scope of the work
   b. Chases and Openings: Various divisions, however, the locations of all inserts and openings shall be determined and coordinated with other divisions in ample time to avoid cutting new construction.
   c. Roof Flashing of Ducts and Curbs: Division 7, however, plumbing vent flashing and counter flashing shall be provided under this Division and per roof manufacturer recommendations.
   d. Openings in Roof Deck: Where piping, ducts, vents or any other mechanical apparatus penetrates roof deck and opening is not specifically shown on structural drawings, obtain Architect's approval of location and size. Have roof deck installer do cutting and pay installer cost of cutting opening.

3. Permits, Fees and Code Regulations:
   a. Permits: Obtain all permits required to do this work and pay any fees required to such permits.
   b. Regulations: Conform to all State and Local Ordinances and Rulings applicable to this work and in effect at the time the work is performed. Approval of various insuring and inspection authorities shall be obtained. When requested, competent evidence of compliance, with applicable codes, shall be furnished.
   c. Conflicts: If a conflict exists between the drawings and/or specifications and any above mentioned authority, the Contractor shall advise the Architect/Engineer in writing five (5) days prior to presenting Proposal or stand any cost required to meet regulations.

4. Structural and Space Condition:
   a. The specifications and accompanying drawings are intended to encompass a system that will not interfere with the structural, electrical and architectural design of the building, and which will fit into the several available spaces. As it is not within the scope of the drawings to show all necessary offsets and obstructions of structural conditions, it shall be the responsibility of the Contractor to install his work in such a manner that it will conform to the structure, avoid obstructions and interferences with other trades, preserve headroom, and keep openings and passageways clear.
   b. Do not run piping or ductwork, or locate equipment (with respect to switchboards, panelboards, power panels, motor control centers or dry type transformers) within 42" in front of equipment, over equipment or within 36" horizontally of same space.

5. Drawings:
   a. The drawings as prepared are diagrammatic but shall be followed as closely as actual construction of the project and the work of the trades will permit. Changes from the drawings necessary to fit the work of various trades, to conform to equipment actually being installed, or to conform to the rules of authorities having jurisdiction shall be made without additional cost to the Owner.

6. As–built Drawings:
   a. Provide and keep up–to–date, a complete record set of blue line prints which shall be corrected daily with dated notations, and shall show every change from the original Contract drawings. This set of prints shall be kept on the job site and shall be used only as a record set.

7. Protection of Materials:
   a. Take such precautions as are necessary to protect all equipment and materials from damage.

8. Workmanship:
   a. Labor shall be performed in a workmanlike manner by mechanics skilled in their particular trades.

9. Materials and Equipment:
   a. All materials shall be new and of the best quality. Where manufacturer's names and model numbers are mentioned in the specifications, it is intended to set a standard of quality and shall not be construed to limit competition unless specifically stated in drawings or to discriminate against "equal" products of other manufacturer. The words "or approved equal" are to follow each material specification where a substitution will be considered. Any proposed substitution must be submitted for comparison and it is understood that the Engineer shall be the sole Judge in the matter.

10. Vibrations and Noise:
   a. Each of the various pieces of equipment shall operate without objectionable vibration or noise. All rotating equipment shall be in static and dynamic balance and shall be mounted, supported and fastened so that no equipment vibration will be transmitted to the building. The specific size of vibration isolation shall be in accordance with manufacturer's recommendation and shall be submitted to the Architect for approval. If, in the opinion of the Architect, objectionable vibration or transmission thereof to the building occurs, the Contractor shall execute remedial measures as may be necessary to eliminate such unsatisfactory operating conditions at the Contractor's expense.

11. Operating Instructions:
   a. Brochures: Written instructions, assembled and bound in brochures, shall be furnished in triplicate for operating and maintaining all equipment furnished under this Division of the Specifications. Instructions shall include all normal adjustments, a list of lubricating points with the type and frequency of lubrication required. Parts lists shall be furnished.
   b. Demonstration: Upon completion and acceptance of work by the Owner, the Contractor shall be provided to instruct the operating personnel in the operation of the entire installation. Two sessions shall be held, one for summer operation and one for winter operation, both in the respective seasons.
   c. Equipment location and Use: Provide, in triplicate, suitably bound operating book containing all equipment, its location, use and description, and building schematics. Submit to Architect for approval before printing in final form.
   d. Contractor shall instruct manager on the programming of all thermostats. This shall be a hands–on explanation. Contactor shall also provide manager with booklet showing programming instructions.

12. Final Inspections:
   a. Schedule: Upon completion of Contract, there shall be a final inspection of the completed installation. Prior to this inspection, all work under this Division shall have been completed, tested, balanced, and adjusted and in final operating condition.
   b. Personnel: A qualified person representing the Contractor must be present at this final inspection to demonstrate the system and prove the performance of the equipment.

13. Cutting and Patching:
   a. Where cutting and patching becomes necessary to permit the installation of any work under this Contract, or should it become necessary to repair any defects that may appear in patching up to the expiration of the guarantee, such cutting shall be done under the supervision of the Owner by the trade of Subcontractor whose work is to be disturbed. After the necessary work has been completed, the trade of Subcontractor whose work has been disturbed shall repair damage. The cost of all cutting and patching shall be paid by the trade of Subcontractor requiring it to be done.

14. Excavations and Backfilling:
   a. Provide necessary excavating and backfilling for the installation of work specified in this Division. Trenches for underground piping and conduits shall be excavated to required depths with bell holes provided as necessary to ensure uniform bearing. Care should be taken to excavate below depth, and any excavation below depth shall be refilled with sand or gravel firmly compacted. Where rock or hard objects are encountered, they shall be excavated to a grade size inches (6") below as specified. After the pipe has been installed, tested and approved, the trenches shall be backfilled to grade with approved material, well–tamped or paddled compactly in place. Do not proceed with backfill operations until piping has been inspected by the Owner or by the local inspector of the municipality in which the work is being performed. Do not perform backfilling operations except in the presence of the Owner or inspector. All piping outside the building shall be installed below the frost line. Where streets, sidewalks, etc. are disturbed, cut or damaged by this work, the expense of repairing same in a manner approved by the Owner shall be of part of this Contract.

15. Guarantee:
   a. The guarantee provision of this specification requires prompt replacement of all defective workmanship and materials occurring within one year of job acceptance. This includes all work required to remove and replace the defective item and to make all necessary adjustments to restore the entire installation to its original specified operating condition and finish at the time of acceptance.

SECTION 15400 - PLUMBING

1. Scope of Work:
   a. Furnishing of all labor, materials, tools, transportation services, etc. necessary to complete the installation of the plumbing system and as described in these specifications, as illustrated on the accompanying drawings, or as directed by the Architect.
   b. All hot and cold water systems with complete connections from the water meter to all plumbing fixtures and equipment requiring water connections. These systems will be complete with controls, valves, equipment, devices and insulation.
   c. All soil, waste, and vent systems outside and inside the building and sewer connections to Municipal system as indicated on drawings.
   d. Furnish and set plumbing fixtures, including all the required trim and supports.
   e. Trenching, pipe bedding and backfilling.
   f. All rough–in and final connection to equipment in the Kitchen and Service areas, if indicated on the drawings, including necessary traps and miscellaneous items as required. Coordinate w/ Owner and K.E.C.
   g. Furnish all final plumbing connections to heating and air conditioning equipment, and kitchen equipment including condensate drains, indirect waste and gas piping. See Food Service drawings for requirements.
   h. Meters and Utility Connections:
1. Water: Coordinate work with the Landlord and the local water company. Furnish all labor and/or material (not furnished by the water company), which is required to connect to existing line and/or set meter. Install all permanent water supply lines from the point of connection and complete the work as shown, all in accordance with the requirements of the local water utility. Owner shall pay tap fees. (If required) Plumbing Contractor shall pay all work related inspection fees by authority having jurisdiction.
2. Sewer Connections: Coordinate work with the Landlord and/or local utility company. All work and materials shall be in strict accordance with the requirements of the local governing authority. Tap fees shall be paid by Owner (if required). Plumbing Contractor shall pay all work related inspection fees by authority having jurisdiction (if required).
3. Gas: Coordinate work with local utility and furnish all labor and/or materials (not furnished by utility) which is required to provide a working utility for Owner, inclusive of meter and/or regulator. Furnish system from tapping point to and in the building as required and shown on drawings. Owner shall pay tap fees. Plumbing Contractor shall pay all work related inspection fees.
   a. Gas piping to heating, ventilating and air conditioning equipment, and cookline appliances.

4. Shop Drawings:
   a. Within 15 days after award of Contract, and before any plumbing materials are delivered to the job site, submit to the Owner complete digital shop drawings in accordance with the provisions of Section 01300 of these specifications, including all plumbing fixtures, trim, drains, cleanouts, piping, valves, insulation, hangers, supports, equipment and devices proposed to be furnished and installed. Shop drawings shall not be reviewed unless they bear the review stamp of the General Contractor.

3. Product Handling:
   a. In the event of damage, immediately make all repairs and replacements necessary to the approval of, and at no additional cost to the Owner.

4. Examination of the Site:
   a. All Contractors submitting proposals for this work shall first examine the site and all conditions, including Local rules and regulations, thereon and /or therein. All proposals shall have taken into consideration all conditions that may affect the work under this Contract. Lack of this information will not be considered as justification for extra cost or allowances to the Contract price.

5. Guarantee:
   a. All work performed under this section shall be guaranteed to be free of defective materials and workmanship for a period of one year after final acceptance of the work by the Owner.
   b. Upon notice received from the Owner, Architect or Engineer, of failure of any part of the guaranteed equipment during the guaranty periods, the Contractor, at no additional cost to the Owner, shall promptly replace the affected part or parts with new parts. All labor required to perform guaranteed shall be included as part of the complete warranty.

6. Products:
   a. Description

1. Soil, Waste and Vent Piping: See plans for specifications.

2. Soda Sleeves: See plans for specifications.

3. Hot and Cold Water Piping: See plans for specifications.

4. Condensate Drain Piping:
   a. See plans for specifications.
   b. Contractor shall furnish and install line sized condensate drains on cooler/freezer evaporator coils; with trap assembly and 2" air gap above drain as shown on the drawings. Freezer condensate piping shall be wrapped with heat tape with a minimum rating of 10 watts per lineal foot for its entire length within the freezer compartment.

5. Direct and Indirect Waste Piping: See plans for specifications.

6. Gas Piping:
   a. Gas piping including tap and service shall be included. Coordinate meter location with local authority.
   b. Underground gas piping shall be Schedule 40 black steel pipe with long radius steel welding fittings. Protect pipe and fittings with manufacturer available wrapping tape applied in accordance with the manufacturer's recommendation. Other type of pipe protection of equivalent quality will be optional with this Contractor. Installation of gas service piping and material shall meet with local gas company's approval.
   c. Gas piping above ground: See plans for specifications.
   d. Gas piping shall supply HVAC units and kitchen equipment if indicated on drawings by this Contractor.
   e. Moisture traps shall be installed on each piping drop for HVAC units, water heater and kitchen equipment.
7. Insulation
   a. All Water Pipes, Rain Leaders and etc, shall be insulated. Piping shall be insulated to prevent excessive heat loss and to prevent condensation and sweating.
   b. See plans for specifications.
   c. As much of the insulation as possible shall be slipped on to the piping as the piping is being connected in order to avoid cutting the insulation. All butt ends and any necessary longitudinal joints shall be sealed with rubber based adhesive.

7. Fixtures:
   a. See plans for specifications.

8. Flashings:
   a. All piping and vents passing through roof shall be flashed watertight with six pound to the square foot lead using sleeve flashing with base extending at least 12 inches in each direction beyond the outside diaphragm of the pipe. Turn sleeve down a minimum of 1–1/2" into top of vent pipe with lead fitting snugly inside of pipe. All gas vent caps shall be fitted with lead fitting snugly inside of pipe. All vent caps shall be vandal proof. Verify approved flashing material and methods with roofing contractor to ensure a complete job. See details on architectural sheets.

9. Cleanouts:
   a. See plans for specifications.

10. Equipment:
   a. Water Heater, Furnished and installed by Plumbing Contractor:
1. Size, capacity, type and manufacturer as indicated by drawings.
2. The water heater shall be provided with all temperature and safety controls including ASME and ANSI Z21.22 rated temperature and pressure relief valve, gas pressure regulator (if required), drain valve, expansion tank, etc.
3. Plumber shall make water, gas and relief line connections with cutoff valves and dielectric unions in water and gas lines.
   b. Valves, Cocks and Faucets:
1. Unless specifically indicated elsewhere, the valves shall be designed for not less than 126 lbs. working pressure. The valves shall have suitable valve body patterns for connection to the pipe for which they will operate. All valves with rising stems shall have back seats for packing under pressure.
2. Cutoff valves underneath lavatories, tank type water closets, sanitary sinks and water coolers shall be chrome plated angle stop valves with soft annealed chrome plated copper connection pipes and chrome plated escutcheon plates.
3. Gas Cocks for all Equipment: See drawings for requirements.
4. Water cutoff valve shall be bronze solder joint, 125 lb. WOG with rising stems.
5. Exterior hose cocks and valve fixtures to be non–freeze type, supply shut–off valves if indicated on plans.

11. Execution:
   a. Piping:
1. All piping shall be run concealed except where shown otherwise on drawings.
2. Valves, traps, cleanouts and other apparatus shall be installed in an inconspicuous location.
3. Soil, waste and vent offsets and house drains shall be installed with a minimum, uniform grade of 1/4" to the foot, unless otherwise indicated or required by local codes.
4. Hot and cold water lines shall be at least 6" apart where piping is parallel.
5. All water lines shall be run overhead and down partition walls unless no wall is provided; then run lines under slab to point of termination. All lines shall be concealed unless noted otherwise on plans.
   b. Hangers and Supports:
1. PEX piping shall be supported at intervals not to exceed 6'–0" and at each change in horizontal or vertical direction. Hanger attachment to structure shall be as required by the manufacturer.
2. Copper piping shall be supported at intervals not to exceed 7'–0" and at each change in horizontal or vertical direction. Hanger attachment to structure shall be as required.
3. Gas piping shall be supported at intervals not to exceed 8'–0" and at each change in horizontal or vertical direction. Attachment to structure to be as required.
4. Hanger rods shall be standard bolt steel with machine screw threads, 3/8" diameter minimum.
5. All piping underground shall be firmly bedded on the body of the pipe, and bell holes provided at each bell. All piping shall be installed in graded trench. Excavate, backfill and support piping as herein before specified.
   c. Plumbing Fixtures:
1. Furnish and install all plumbing fixtures complete with all equipment fittings, trimmings and accessories, as specified.
2. All fixtures shall be Grade A. The name or trademark of the manufacturer shall be printed or pressed on all closets and lavatories, and a label, which cannot be removed without destroying it, containing the manufacturer's name or trademark and the quality or class of the fixtures, shall be affixed to all fixtures and not removed until after the work has been accepted.
3. Exposed piping to fixtures shall be a product of the fixture manufacturer or approved equal and shall be:
   a. Water: Chromium plated iron pipe size red brass.
   b. Waste: Chromium plated tubing, except waste connections to kitchen or scullery sinks.
4. Stops as manufactured by the fixture manufacturer, with metal–to–metal seat, shall be provided for all fixtures and equipment. Refer to schedule on drawings for manufacturers and model numbers used as guide specifications. Numbers ns listed represent the complete workable outfits with all brass trim as necessary.
5. Fixtures shall be white unless otherwise noted.
6. Fixtures furnished by this Contractor or by the Owner shall be fitted with necessary water supplies, stops and traps with cleanout plugs under this section of the specifications.
   d. Tests:
1. The plumbing system and associated system shall be subject to constant inspection and final approval of the code authorities having jurisdiction. Tests, in addition to these included in this section, required to show code compliance, shall be performed as directed.
2. The soil, waste and vent lines of the sanitary systems shall be subjected to a water pressure test of not less than 10 feet of water head pressure or 5# pounds of air pressure for a duration of not less than 2 hours. During the pressure tests each joint shall be inspected for leaks. The lines shall be tested as an entire system, but all the underground and concealed lines shall be given the above test and approved before the lines are covered.
3. The domestic water piping system shall be subjected to a water pressure test of not less than 150 PSI for duration of not less than 2 hours. The water piping shall be tested as an entire system, but all underground and concealed lines shall be given the above test and approved before the lines are covered.
4. The gas system, from the meter connection and throughout the new work, shall be subjected to an air pressure test of not less than 50 PSI for a duration of not less than 4 hours and at the same time each joint and connection shall be tested by applying soap suds to each joint. The gas piping shall be tested as an entire system, but all underground and concealed lines shall be given the above test and approved before being covered. Further, each exposed joint shall be tested with soapsuds after the gas has been admitted into the system.
5. Should the Contractor refuse or neglect to make any tests necessary to satisfy the Owner, his representative or coding officials, that he has carried out the true intent and meaning of the specifications, the Owner may take such tests and charge the expense thereof to the Contractor.
   e. Cleaning and Protection:
1. The Contractor shall remove from the job site all debris and leftover materials for which he is responsible, clean all fixtures and equipment and repair any blemishes in the finish. The Contractor shall be held responsible for replacing fixtures where damage results from failure to provide protection during installation.
2. Flush Out Pipes: After the plumbing piping has been installed, inspected and approved, the piping system shall be flushed to remove any foreign matter from the pipes with chlorine or HTH solution to sanitize the new piping or as required by the local authorities.
   f. Maintenance:
1. The Contractor, throughout the guarantee period, shall maintain all parts of the plumbing fixtures and associated equipment. One month after final acceptance of the building by the Owner, the Contractor shall go over all the fixtures and test all working parts end put everything in good working order. All fixtures, including traps, shall be thoroughly cleaned and all parts put in good working order.

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REGISTERED ARCHITECT
MICHAEL GREGORY LEGG
STATE OF TEXAS
02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.10

DIVISION 15 - MECHANICAL SYSTEMS (CONTINUED)

SECTION 15700 - HEATING, VENTILATING AND AIR CONDITIONING

1. Work Included:

A. Heating, ventilating and air conditioning work required, including hoisting of equipment to the specified locations and setting it in place, includes, but not necessarily limited to:
1. Package heating, ventilating and air conditioning units.
2. Installation of Owner furnished exhaust hood(s).
3. All HVAC & hood exhaust ducts, dampers, grills, registers and diffusers.
4. Insulation of ducts and piping.
5. Installation of exhaust fans, make-up air fans and gravity vents.
6. HVAC controls and remote temperature sensors.

B. Gas Connections (if required see drawings): Plumbing Contractor will bring Gas to heating, ventilating and air conditioning and final tie-in to HVAC by Plumbing Contractor.

2. Intent of Drawings:

A. The drawings are diagrammatic to the extent that they may not indicate all offsets, bends, special fittings and exact locations.

B. Piping, ductwork, apparatus and equipment shall be installed to avoid obstructions, preserve headroom, keep openings and passageways clear, and make all operating equipment accessible for maintenance.

C. Governing Codes and Standards:
1. Install all work in accordance with the rules and regulations of the Standards of Safety, adopted and approved by the Insurance Underwriters and the latest standards recognized by ASHRAE and SMACNA and in accordance with local code.
2. In case of conflict between said codes and the drawings, the codes shall govern in all cases; however, notify Owner, before making such change.

3. Examinations of Drawings and Site:

A. Before commencing the work, the Contractor shall carefully study the drawings, specifications and site. He shall definitely determine in advance the methods of installing and connecting the apparatus, the means for getting the equipment into place, and shall make himself similar with all of the requirements of the Contract. Equipment shall physically fit the area allocated with ample access for service.

B. The Contractor shall refer any discrepancies to the Architect for decision before proceeding with the work

4. Submittals:

A. Materials List: The Contractor shall submit a digital submittal of equipment brochures in index form within fifteen (15) days after contract is signed. All equipment and material submittals shall be submitted at one time. The drawings submitted shall bear the stamp of approval of the Contractor as evidence that the drawings have been checked by the Contractor and comply with the requirements of the Contract drawings and specifications.

5. Guarantee:

A. Furnish written certified guarantee, in acceptable form, to the Owner, against defective workmanship, materials, and operating equipment; further, guarantee to rebalance and adjust entire system or any part thereof, as required for perfect operation for a period of at least one (1) year after acceptance, including cost of refrigerant charge. Repair, replace and make satisfactorily operative any and all defective items and, work holding Owner free from any cost and liability in connection therewith for the term of guarantee. The manufacturer shall provide a warranty on his unit compressors for a period of five (5) years.

6. Coordination of Other Trades:

A. The work under this section shall be coordinated with other trades to maintain a rapid and smooth construction progress with a minimum of interference.

7. Painting:

A. Apply one (1) coat of Zinc Chromate, or Rustoleum to bare metal surfaces of supports, etc. color to match unit's color or as directed by Architect or Owner.

8. Clean-up:

A. All equipment and exposed surfaces shall be left smooth and clean. All plate work shall be polished and the entire premises shall be cleaned of unused materials, rubbish, and debris and grease spots.

9. Products:

A. General
1. All Equipment shall be the capacity and type shown on the Equipment Schedule on the drawings and shall as manufactured by one of the manufacturers designated on that schedule or shall be an equal approved in advance by the Architect.

B. Sheetmetal Work
1. Sheetmetal: Prime steel sheets, hot dipped galvanized of the following gauges:
(a) Up to 12" wide or diameter, #26
(b) 13" to 30" wide or diameter, #24
(c) 31" to 60" wide or diameter, #22
(d) Partitions forming plenum or suction chambers, #18 gauge with 1-1/2" x 1-1/2" x 3/16" galvanized iron angle and rivets for seam connection and stiffening.
(e) Exposed round duct shall be dual wall insulated pipe manufactured of spiral lock seams, with minimum gage per the appropriate SMACNA Tables and per manufacturer's recommendations.
2. Duct Construction:
(a) Longitudinal Joints: Pittsburgh corner seams or snap lock.
(b) Transverse Joints: Government locks riveted at corners, constructed of metal one gauge heavier than that jointing duct sections. Ducts under 20" may be jointed with transverse capstrips.
(c) Supports: Except as otherwise specified, all duct hangers shall be constructed of 3/4" No. 16 galvanized strap, spacing not to exceed eight foot intervals. Where duct hangers exceed six feet in length, provide adequate sway bracing. All vertical ducts shall be supported on angle iron brackets.
(d) Elbows: Made for an easy flow of air for minimum friction, inside radius equal to width of duct. Provide elbows with approved duct turns where indicated on plans or where space does not permit required radius.
(e) Flexible Connection: At all fans, connections shall be Neoprene coated glass fiber cloth ends which are to be turned into abutting ends of sheetmetal or angle iron frames so as to form a gasket to form an air tight joint.
3. Workmanship and construction shall meet and exceed the standards as set forth by SMACNA

C. Grilles, Registers and Diffusers:
1. Sizes: As indicated on drawings.
2. Supply diffusers: As indicated on drawings.
3. Return Air Registers: As indicated on drawings.

D. Duct Insulation:
1. Insulate all supply, make-up air and return air ducts with foil-faced blanket, see plans for additional Information. (Not required for exposed Spiral, Round duct).
2. Maximum 25 flame spread 50 smoke developed.

11. Execution:

A. Installation of Equipment:
1. General:
(a) Install all equipment where indicated on the approved Contract drawings.
(b) Avoid interference with structure and the work of other trades: do not cut into load carrying members without the specific approval of the Architect.
(c) Temperature control system shall be as shown on the drawings.

B. Acceptance:
1. The system shall not be considered for acceptance until the Mechanical Subcontractor has completed work and demonstrated to the representative of the Owner, proper operation of the system and strict compliance with the specifications, particularly in reference to the following articles of these specifications,
(a) Testing
(b) Cleaning
(c) Instructions and Operating Manuals
(d) Training of Operating Personnel
(e) As-Built Drawings
(f) Guarantee Certificates
(g) Start up and Test Document
(h) Independent Air Balance Report

C. Air Conditioning Unit Start-up and Test:
1. All air conditioning equipment shall be started and checked by the manufacturer's factory service personnel. The manufacturer shall correct any problems arising with the equipment. The manufacturer shall provide a checklist or report on the operation of the equipment, which shall be forwarded to the Architect.

D. Guarantee:
1. The guarantee provision of this specification requires prompt replacement of all defective workmanship and materials occurring within one year of job acceptance. This includes all work required to remove and replace the defective item and to make all necessary adjustments to restore the entire installation to its original specified operating condition and finish at the time of acceptance.

12. Exhaust Hood and Fan System:

A. Kitchen hoods and fans complete with roof mounting curbs; collars and dampers will be furnished, to the job site by the Owner. Kitchen supply and exhaust, all complete with roof mounting curbs; collars and dampers will be furnished with the kitchen equipment package and installed as part of the General Contract. The Contractor will hang the hoods, set fan curbs and fans, and furnish and install all interconnecting sheet metal ductwork as, required by code and per hood manufacturer's cut sheets.

13. Testing, Adjusting and Balancing:

A. The testing, adjusting and balancing of the air conditioning and hood system will be performed by an independent technical firm employed directly by the Owner and shall not be part of the Mechanical Contractor's scope of work. The Air Conditioning Contractor shall provide and coordinate the services of qualified responsible mechanics and other personnel as required to correct, repair or replace all deficient items or conditions found during the testing and balancing period.

DIVISION 16 - ELECTRICAL SYSTEMS

SECTION 16050 - BASIC METHODS AND REQUIREMENTS

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 specification sections, apply to work of this section.

B. Furnish and install all electrical wiring, systems, equipment and accessories in accordance with the specifications and drawings. Capacities and ratings of motors, cable, panelboards, etc., and arrangement for specified items in general are shown on drawings.

C. All ampacities herein specified or indicated on the drawings are based on copper conductors, with the conduit and raceways accordingly sized. Aluminum conductors are not permitted.

2. MINIMUM REQUIREMENTS

A. References to the National Electrical Code (NEC), Underwriters Laboratories, Inc. (UL), and National Fire Protection Association (NFPA) are a minimum installation requirement standard. Design drawings and other specification sections shall govern in those instances where requirements are greater than those specified in NEC.

B. The rules and regulations of the Federal, State, local, civil authorities and utility companies in force at the time of execution of the contract shall become a part of this specification.

C. No work shall be done unless the Superintendent of the Contractor is on the job site. Work shall be properly protected, all rubbish removed promptly, and exposed work shall be carefully cleaned prior to final acceptance.

D. The term "provide" shall include labor, materials, and equipment necessary to furnish and install, complete and operable, the item or system indicated.

E. In decisions arising from discrepancies, interpretation of Drawings and Specifications, substitutes, and other pertinent matters, the decision of the Owner's representative's approval shall be final.

3. SPECIFICATIONS AND DRAWINGS

A. Plans show location of fixtures and equipment and are intended to depict the general intent of the work in scope, layout and quality of workmanship. They are not intended to show in minute detail every or all accessories intended for the purpose of executing the work, but it is understood that such details are a part of this work.

B. Where Drawings and Specifications conflict, it shall be the responsibility of this Contractor to bring such conflict to the attention of the Architect/Engineer for clarification. In general, the Architectural Drawings shall take precedence over the Mechanical Drawings with reference to building construction. All changes from the Drawings necessary to make the work conform with the building as constructed and to fit the work of other trades or to conform to the rules of authorities having jurisdiction, shall be made by the Contractor at his own expense.

C. Keep a record of the locations of concealed work and of any field changes in Contract Drawings and Specifications for each trade and, upon completion of the job, supply "As-Built" Drawings and Specifications showing in pencil on sepia reproducibles, any deviations from the original Drawings, indicating in the Specifications each manufacturer's name underlined or inserted whose product was used on the job. These Drawings shall indicate dimensions of buried utility lines from building walls. One set of sepia reproducibles of the original tracings will be furnished upon request for this purpose.

4. STANDARDS

A. All material and equipment shall be listed, labeled or certified by Underwriters Laboratories, Inc., where such standards have been established. Equipment and material which are not covered by UL Standards will be accepted provided equipment and material is listed, labeled, certified or otherwise determined to meet safety requirements of a nationally recognized testing laboratory. Equipment of a class which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, will be considered if inspected or tested in accordance with national industrial standards, such as NEMA, or ANSI. Evidence of compliance shall include certified test reports and definitive shop drawings.

B. Definitions:

1. Listed: Equipment is "listed" if of a kind mentioned in a list which:
a. Is published by a nationally recognized laboratory which makes periodic inspection of production of such equipment.
b. States that such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.
2. Labeled: Equipment is labeled if:
a. It embodies a valid label, symbol, or other identifying mark of a nationally recognized testing laboratory such as Underwriters Laboratories, Inc.
b. The laboratory makes periodic inspections of the production of such equipment.
c. The labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner.
3. Certified: Equipment is "certified" if:
a. Equipment has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner.
b. Production is periodically inspected by a nationally recognized testing laboratory.
c. It bears a label, tag, or other record of certification.

4. Nationally recognized Testing Laboratory: A testing laboratory which is approved, in accordance with OSHA regulations, by the Secretary of Labor.

5. QUALIFICATIONS (PRODUCTS AND SERVICES)

A. Manufacturers Qualifications: The manufacturer shall regularly and presently produce, as one of the manufacturer's principal products, the equipment and material specified for this project, and shall have manufactured the item for at least five years, unless otherwise noted elsewhere in the specifications or on the drawings.

B. Product Qualification:

1. Manufacturer's product shall have been in satisfactory operation on three installations of similar size and type, as this project, for approximately three years.

2. The Owner reserves the right to require the contractor to submit a list of installations where the products have been in operation before approval of said products.

C. Service Qualifications: There shall be a permanent service organization maintained or trained by the manufacturer which will render satisfactory service to this installation within four hours of receipt of notification that service is needed. Submit name and address of service organizations.

6. MANUFACTURED PRODUCTS

A. Materials and equipment furnished shall be of current production by manufacturers regularly engaged in the manufacture of such items, for which replacement parts should be available. Items not meeting this requirement, but which otherwise meet technical specifications, and merits of which can be established through reliable test reports or physical examination of representative samples, will be considered.

B. When more than one unit of the same class of equipment is required, such units shall be the product of a single manufacturer.

C. Equipment Assemblies and Components:

1. All components of an assembled unit need not be products of the same manufacturer, however, the assembled unit shall be the responsibility of a single manufacturer and warranted as such.

2. Manufacturers of equipment assemblies, which include components made by others, shall assume complete responsibility for the final assembled unit.

3. Components shall be compatible with each other and with the total assembly for the intended service.

4. Constituent parts which are similar shall be the product of a single manufacturer.

D. All factory wiring shall be identified on the equipment being furnished and on all wiring diagrams.

7. EQUIPMENT REQUIREMENTS

A. Equipment voltage ratings shall be in accordance with the requirements indicated on the drawings or as specified.

B. Prior to bid, written approval shall be obtained by the Contractor for any equipment that differs from those specified on the drawings and specifications. The Contractor shall be prepared to submit samples of the equipment when requested at no cost to the Architect/Engineer.

1. The Contractor shall furnish drawings showing all installation details, shop drawings, technical data and other pertinent information as required to determine that the equipment is equivalent in quality and function to the equipment specified.

2. Approval by the Architect/Engineer of the equal equipment does not relieve the Contractor of the responsibility of furnishing and installing the equipment at no additional cost to the Owner.

3. Any other items required for the satisfactory installation of the equal equipment shall be furnished and installed at no additional cost to the Owner. This includes but shall not be limited to additions or changes to branch circuits, circuit protective devices, conduits, wire, feeders, controls, panels and correlation with other work, subject to the jurisdiction and approval of the Architect/Engineer.

C. Catalogue numbers, where given, are intended to give a basis for design, quality and function. Any other incidental equipment needed for a complete and functional installation shall be provided at no additional cost.

D. EQUIPMENT PROTECTION: Equipment and material shall be protected during shipment and storage against physical damage, dirt, moisture, cold and rain.

E. During installation, equipment, controls, controllers, circuit protective devices, etc., shall be protected against entry of foreign matter; and be vacuum cleaned both inside and outside before testing, operating and painting.

F. Damaged equipment shall be, as determined by the Architect/Engineer, placed in first class operating condition or be returned to the source of supply for repair or replacement.

G. Painted surfaces shall be protected with factory installed removable heavy kraft paper, sheet vinyl or equal.

H. Damaged paint on equipment and materials shall be refinished with the same quality of paint and workmanship as used by the manufacturer so repaired areas are not obvious.

8. WORK PERFORMANCE

A. Arrange, phase and perform work to assure electrical service for other buildings at all times.

B. New work shall be installed and connected to existing work neatly and carefully. Disturbed or damaged work shall be replaced or repaired to its prior conditions.

C. Coordinate location of equipment and conduit with other trades to minimize interferences.

D. Obtain and pay for all required installation inspections and deliver certificates approving installations to the Owner unless directed otherwise.

9. EQUIPMENT INSTALLATION AND REQUIREMENTS

A. Equipment location shall be as close as practical to locations shown on the drawings. Where architectural features govern location of work, refer to architectural drawings.

B. Working spaces shall not be less than specified in the National Electrical Code for all voltages specified.

C. Inaccessible Equipment:

1. Where the Owner/Architect/Engineer determines that the Contractor has installed equipment not conveniently accessible for operation and maintenance, equipment shall be removed and reinstalled as directed at no additional cost to the Owner.

2. "Conveniently accessibility" is defined as being capable of being reached without the use of ladders, or without climbing or crawling under or over obstacles such as motors, pumps, belt guards, transformers, piping, and duct work.

D. Equipment and Material:

1. New equipment and material shall be installed, unless otherwise specified.

2. Equipment and material shall be designed to assure satisfactory operation and operating life for environmental conditions where being installed. NEC and other code requirements shall apply to the installation in areas requiring special protection such as explosion-proof, watertight and weatherproof construction.

E. Utility Services:

1. Determine utility connection requirements and include in the base bid all costs to the Owner for utility service.

2. Include all costs for temporary service, temporary routing of service or any other requirements of a temporary nature associated with the utility service.

F. Continuity of Service:

1. No service shall be interrupted or changed without permission from the Architect and the Owner. Written permission shall be obtained before any work is started.

2. When interruption of services is required, all persons concerned shall be notified and a prearranged time agreed upon.

G. Concrete Work:

1. Provide all cast-in-place concrete shown on the documents unless noted otherwise. Concrete work shall conform to all applicable Division 2 and 3 specification sections.

2. Provide all anchor bolts, metal shapes and templates required to be cast in concrete or used to form concrete for support of electrical equipment.

10. EQUIPMENT IDENTIFICATION

A. In addition to the requirements of the National Electrical Code, install an identification nameplate which will clearly indicate information required for use and maintenance of items such as switchboard, panelboards, cabinets, safety switches, separately enclosed circuit breakers, motor starters, communications systems cabinets, control devices and other significant equipment.

B. Nameplates shall be laminated white phenolic resin with a black core with engraved lettering, a minimum of 3/16-inch high. Nameplates that are furnished by manufacturer as a standard catalog item, or where other method of identification is herein specified, are exceptions. Hand written marker is not acceptable.

11. SHOP AND ERECTION DRAWINGS AND SAMPLES

A. The Architect/Engineer's approval shall be obtained for all equipment and material before delivery to the job site. Delivery, storage or installation of equipment or material which has not had prior approval will not be permitted at the job site. Submittals shall be made for all equipment and systems as indicated in the respective specification section.

B. All submittals shall include adequate descriptive literature, catalog cuts, shop drawings and other data necessary for the Architect/Engineer to ascertain that the proposed equipment and materials comply with specification and drawing requirements. Catalog cuts submitted for approval shall be legible and clearly identify equipment being submitted.

C. Shop and erection drawing submittals shall conform to the requirements of the General Conditions and Division-1 specifications except as modified herein.

D. Submit required and/or requested shop and erection drawings, for review by Architect/Engineer before ordering or installing any equipment or material. Equipment or material ordered or installed before Architect/Engineer review may not be accepted and may have to be removed from the project if deemed unacceptable.

E. Shop drawings shall consist of manufacturer's scale drawings, cuts or catalogs, including descriptive literature which shall clearly indicate the construction, material, physical dimensions, wiring diagrams and complete operating data clearly marked for each item. Data of general nature will not be accepted.

F. Shop drawings shall be digitally submitted no later than 60 days after the contract has been awarded.

1. Coordination drawings shall show major elements, components, and systems of mechanical equipment and materials in relationship with other building components. Prepare drawings to an accurate scale of 1/4"=1'-0" or larger. Indicate the locations of all equipment and materials, including clearances for installing and maintaining insulation, servicing and maintaining equipment, valve stem movement, and similar requirements. Indicate movement and positioning of large equipment into the building during construction.

G. Submittals for individual systems and equipment assemblies which consist of more than one item or component shall be made for the system or assembly as a whole. Partial submittals will not be considered for approval. Submittals shall be submitted for all applicable products and materials specified in each individual section of these specifications.

H. Make submittals for the equipment and materials in accordance with the following:

1. Mark the submittals, "SUBMITTED UNDER SECTION_____".

2. Submittals shall be marked to show specification reference including the section and paragraph numbers.

3. The submittals shall include the following:

a. Information that confirms compliance with contract requirements. Include the manufacturer's name, model or catalog numbers, catalog information, technical data sheets, shop drawings, pictures, nameplate data and test reports as required. Provide any additional information specifically requested in the individual specification section or on the drawings.

b. Elementary and interconnection wiring diagrams for fire alarm, sound system, TV system and other communication systems and equipment assemblies. All terminal points and wiring shall be identified on wiring diagrams.

c. Parts list which shall include those replacement parts recommended by the equipment manufacturer, quantity of parts, current price and availability of each part.

I. A Fee will be charged for Engineering review of drawings received after the time allotted as described in "D" above or for plans that have been rejected two or more times due to non-compliance or incompleteness. The fee will be determined by the Architect/Engineer and will accompany the re-submittal in the form of a cashiers check or money order made payable to the Engineer.

J. The General Contractor will certify that all mechanical shop drawings are in conformance with the plans and specifications. Deviations from the plans and specifications shall be noted, and the specific area of the deviation clouded and in contrasting color (green) with a complete explanation for the reasons for the deviation. Any redesign of the system shall be Certified by a Professional Engineer, and will be accompanied by the fees as described in "I" above.

K. Carefully examine all shop drawings and mark-up as necessary before submitting to the Architect/Engineer for review. The consultant will only consider shop drawings bearing the contractor's stamp of approval.

L. The engineer's review shall not relieve the contractor from the responsibility for deviations from drawings and specifications. The engineer's review shall be construed to apply only to general arrangement and shall not relieve the contractor from the responsibility for the correctness of details and dimensions and provision of the correct equipment.

M. The contractor shall retain copies of all reviewed shop drawings on the job site for reference.

N. In addition to the requirement of SUBMITTALS, the Owner reserves the right to request the manufacturer to arrange for the Owner's representative(s) to see typical active systems in operation, when there has been no prior experience with the manufacturer or the type of equipment being submitted.

12. CUTTING, PATCHING, EXCAVATION, BACKFILL, AND LAYOUT

A. Provide openings and excavation required for the installation of the electrical work. Patch work and backfill as required. Finished work shall match the existing adjoining work.

B. Verify all conditions affecting the work to be performed under this contract.

C. Carefully verify measurements at the site, determine the exact location of chases and openings required. Provide sleeves, inserts, and hangers as required. No columns, beams, joists, building foundations nor any other structural building component shall be cut, drilled or disturbed in any way. Conflicts shall immediately be brought to the attention of the Architect/Engineer.

D. All excavation on sites containing existing buildings and existing services, shall be done with hand shovel to avoid damage to existing services. Where hand shovel is not practical extreme caution shall be taken when performing excavation. The contractor will be responsible for locating any existing utilities. Any damage incurred by the Contractor shall be repaired by the Contractor in a manner approved by the Architect/Engineer at no cost to the Owner and with no extension of time limitation.

13. EXPERIENCE

A. The Contractor performing this work shall be a licensed, reputable firm, regularly performing the type of work incorporated in this project and who also maintains, as part of the firm, a service department with qualified personnel who regularly perform this type of work. The Contractor shall, upon request, show evidence of at least three jobs of similar character and size installed within the preceding two years.

14. ELECTRICAL WORK FOR MECHANICAL SYSTEMS

A. Factory installed starters, controllers, and control equipment mounted in manufactured mechanical equipment necessary for mechanical equipment operation shall be furnished under Division 15 Mechanical.

B. Power wiring for motors and installation of starters shall be under Division 16 Electrical.

C. Temperature, humidity, pressure and similar controls essential to the operation of mechanical systems, and wiring and conduit thereof, including interlock wiring, shall be under Division 15 of Specifications, installed in accordance with requirements of Division 16.

D. Motors shall be furnished under Division 15 Mechanical of capacity required to operate equipment specified, but shall not be less than that specified.

E. All low voltage (120V and under) temperature control wiring for Division 15 equipment shall be provided under by Division 15, installed in accordance with requirements of Division 16.

F. Division 15 shall provide conduit when required for control wiring, installed in accordance with Division 16 requirements.

15. MOTORS

A. All motors shall be furnished and installed under Division 15 Mechanical and shall be wired under Division 16 Electrical.

16. REMOVAL OF RUBBISH

A. Contractor shall keep premises free from accumulations of waste material or rubbish caused by his employees or work. At completion of work, he shall remove all his tools, scaffolding, surplus materials, and rubbish from building and site. He shall leave premises and his work in a clean orderly condition acceptable to the Architect/Engineer.

17. QUIET OPERATION AND VIBRATION

A. All equipment provided under this section shall operate under all conditions of load free of objectionable sound and vibration. Sound and vibration conditions considered objectionable shall be corrected in an approved manner.

B. Vibration and sound control shall be by means of approved vibration eliminators or sound attenuators in a manner as specified and as recommended by the manufacturer.

18. CLEANING AND ADJUSTMENTS

A. Upon completion of the work, Contractor shall clean and re-lamp all light fixtures, clean and identify all equipment, adjust and test all equipment and apparatus which he has installed and make certain such apparatus and mechanisms are in proper working order and ready to test.

B. During construction protect all conduit and equipment from damage and dirt. Cap the open ends of all conduit and equipment.

19. STORAGE OF MATERIALS

A. All materials stored on site shall be properly protected from injury or deterioration. Materials shall not be stored in contact with ground or floor.

B. Do not remove manufacturer's packing materials until ready to install. Materials showing signs of corrosion, improper handling or storage shall be replaced at no cost to the Owner.

C. Provide continuous protection for all equipment already installed.

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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.11

DIVISION 16 - ELECTRICAL SYSTEMS (CONTINUED)

SECTION 16050 - BASIC METHODS AND REQUIREMENTS (CONTINUED)

20. WATERPROOFING

A. Where any work pierces waterproofing including waterproof concrete, the method of installation shall be as approved by the Owner before the work is done.

B. Provide all necessary sleeves, caulking and flashing required to make openings absolutely watertight. Waterproof flashing materials shall be compatible with base materials.

21. TESTS

A. Contractor shall make all tests required to establish the adequacy, quality, safety, completed status and satisfactory operation of all systems to the satisfaction of the Architect/Engineer. Provide all instruments, labor and services necessary to conduct tests.

22. INSTRUCTIONS

A. Fully instruct Owner's personnel in the care and operation of electrical systems, including all communications, sound and fire alarm systems and furnish a letter to the Architect/Engineer advising the particular person(s) who have received such instruction.

23. GUARANTEE

A. Equipment shall be started, tested, adjusted, and placed in satisfactory operating condition. Furnish a letter addressed to the Architect/Engineer advising that the completed systems have been installed in accordance with the Plans and Specifications and that they are in proper operating condition. The Owner shall receive a written guarantee covering all defects in workmanship and material for a period of one year from date of final acceptance. Any defects appearing within this year period shall be repaired without additional cost to the Owner.

24. ACCEPTANCE

A. Before requesting final inspection:

1. Complete all work required. If any items are held in abeyance as incomplete for final inspection, list such items together with explanation for delay.

2. Submit statement that equipment is properly installed, adjusted, tested and operation is satisfactory.

3. Certify in writing to the Architect/Engineer that the Owner's representative has been instructed as to the care and operation of the system and that catalog service and maintenance information has been turned over to the Architect/Engineer.

4. Submit copy of written guarantee.

5. Submit copy of other data as may be outlined in these specifications.

B. Copies of the above data shall be submitted to the Architect/Engineer prior to requesting final inspection.

25. SINGULAR NUMBER

A. Where any device or part of equipment is referred to in these specifications in the singular number (such as "the switch"), such reference shall be deemed to apply to as many such devices as are required to complete the installation as shown on the drawings.

SECTION 16110 - RACEWAYS

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 specification sections, apply to work of this section.

B. This section is a Division-16 Basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to electrical raceways specified herein.

2. DESCRIPTION OF WORK

A. Extent of raceway work is indicated by drawings and schedules. Types of raceways specified in this section include the following:

1. Electrical metallic tubing (EMT).

2. Liquid tight flexible metal conduit.

3. Rigid metal conduit.

4. Flexible metal conduit.

5. Rigid non-metallic conduit.

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of raceway systems of types and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer's Qualifications: Firm with at least 3 years of successful installation experience on projects with electrical raceway work similar to that required for this project.

C. Codes and Standards:

1. NEMA Compliance: Comply with applicable requirements of NEMA Standards Publications pertaining to raceways.

2. UL Compliance and Labeling: Comply with applicable requirements of UL safety standards pertaining to electrical raceway systems. Provide raceway products and components which have been UL-listed and labeled.

3. NEC Compliance: Comply with applicable requirements of NEC pertaining to construction and installation of raceway systems.

4. SUBMITTALS

A. Product Data: Submit manufacturer's technical product data, including specifications and installation instructions, for each type of raceway system required. Include data substantiating that materials comply with requirements.

5. METAL CONDUIT AND TUBING

A. General: Provide metal conduit, tubing, and fittings of types, grades, sizes, and weights (wall thicknesses) for each service indicated.

B. Rigid Steel Conduit: Provide rigid steel, zinc-coated, threaded type conforming to FS WW-C-581, ANSI C80.1 and UL 6.

C. Rigid Metal Conduit Fittings: Cast malleable iron, galvanized or cadmium plated, conforming to FS W-F-408, ANSI C80.4.

1. Use compression type fittings for connections.

2. Use compression type fittings for other miscellaneous connections.

D. Electrical Metallic Tubing (EMT): FS WW-C-563, ANSI C80.3 and UL 797.

E. EMT Fittings: FS W-F-408, ANSI C80.4. Die cast or malleable iron.

1. Use compression fittings for raintight connections.

2. Use compression type for concrete type connections.

3. Use compression type fittings for miscellaneous connections.

F. Liquid-Tight Flexible Metal Conduit: Provide liquid-tight flexible metal conduit; construct of single strip, flexible, continuous, interlocked, and double-wrapped steel; galvanized inside and outside; coat with liquid-tight jacket of flexible polyvinyl chloride (PVC). Shall be Sealtite or equal.

G. Liquid-Tight Flexible Metal Conduit Fittings: FS W-F-406, Type 1, Class 3, Style G. Provide cadmium plated, malleable iron fittings with compression type steel ferrule and neoprene gasket sealing rings, with insulated, or non-insulated throat.

H. Flexible Metal Conduit: FS WW-C-566 and UL 1. Formed from continuous length of spiral wound, interlocked zinc-coated strip steel.

I. Flexible Metal Conduit Fittings: Provide conduit fittings for use with flexible steel conduit of threadless hinged clamp type.

1. Straight Terminal Connectors: One piece body, female end with clamp and deep slotted machine screw for securing conduit, and male threaded end provided with locknut.

2. 45o or 90o Terminal Angle Connectors: Two-piece body construction with removable upper section, female end with clamp and deep slotted machine screw for securing conduit, and male threaded end provided with locknut.

6. NONMETALLIC CONDUIT

A. General: Provide nonmetallic conduit, ducts, and fittings of types, sizes, and weights for each service indicated. Where types and grades are not indicated, provide proper selection determined by Installer to fulfill wiring requirements which comply with provisions of NEC for raceways.

B. Electrical Plastic Conduit:

1. Heavy Wall Conduit: Schedule 40, 90 C, UL-rated, construct of polyvinyl chloride and conforming to NEMA TC-2, for direct burial, or normal above ground use, UL-listed and in conformity with NEC Article 347, ANSI C33.91.

C. PVC Conduit and Tubing Fittings: NEMA TC 3, mate and match to conduit or tubing type and material.

7. MANUFACTURERS

A. Subject to compliance with requirements, provide conduit bodies of one of the following:

Appleton Electric; Div of Emerson Electric Co.

Arrow-Hart Div; Crouse-Hinds Co.

Bell Electric Div; Square D Co.

Gould, Inc.

Killark Electric Mfg. Co.

O-Z/Gedney Div; General Signal Co.

Spring City Electrical Mfg. Co., or equivalent.

8. INSPECTION

A. Examine areas and conditions under which raceways are to be installed, and substrate which will support raceways. Notify Contractor in writing of conditions detrimental to proper completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

9. INSTALLATION OF RACEWAYS

A. General: Install raceways as indicated; in accordance with manufacturer's written installation instructions, and in compliance with NEC, and NECA's "Standards of Installation". Install units plumb and level, and maintain manufacturer's recommended clearances.

B. Coordinate with other work including wires/cables, boxes, and panel work, as necessary to interface installation of electrical raceways and components with other work.

10. INSTALLATION OF CONDUITS

A. General: Install concealed conduits in new construction work, either in walls, slabs, or above hung ceilings. Run conduits concealed in existing work where practical or specifically indicated on the drawings.

1. Mechanically fasten together metal conduits, enclosures, and raceways for conductors to form continuous electrical conductor. Connect to electrical boxes, fittings, and cabinets to provide electrical continuity and firm mechanical assembly.

2. Avoid use of dissimilar metals throughout system to eliminate possibility of electrolysis. Where dissimilar metals are in contact, coat surfaces with corrosion inhibiting compound before assembling.

3. Install miscellaneous fittings such as reducers, chase nipples, 3-piece unions, split couplings, and plugs that have been specifically designed and manufactured for their particular application. Install expansion fittings in raceways every 200' linear run or wherever structural expansion joints are crossed.

B. Conduit Installation: Follow minimum requirements in all areas as follows:

1. Use rigid steel galvanized conduit in service splines, where exposed to weather or subject to saturation with liquids, or subject to possible physical damage from vehicles or heavy machinery.

2. Use steel EMT above hung ceilings in offices, corridors, toilets, and lab areas, and in spaces with exposed ceilings.

3. Use rigid steel conduit or PVC heavy wall (Schedule 40) when raceways run below grade, under floors on grade or in concrete. All bends and elbows greater than 45 degrees shall be galvanized rigid steel conduit or schedule 80 pvc. All risers to cabinets and boxes when conduit is to be exposed shall be rigid steel conduit.

4. Conduit in walls to recessed panels and boxes shall be in accordance with NEC. PVC up to first point of termination with 4'-0" maximum in wall and EMT above 4'-0".

5. Use flexible conduit in movable partitions and from outlet boxes to lighting fixtures, and final 24" of connection to motors, control items or any equipment subject to movement or vibration, and in cells of precast concrete panels.

6. Use liquid-tight flexible conduit where subjected to one or more of the following conditions:

a. Exterior location.
b. Moist or humid atmosphere where condensate can be expected to accumulate.
c. Corrosive atmosphere.
d. Subjected to water spray or dripping oil, water, or grease, including kitchen areas.

7. Use hot-dipped galvanized conduit where conduit is routed outdoors or in anyway exposed to weather.

8. Electrical contractor will be responsible for the following for all underground conduits:

a. Trenching and Excavation
b. Backfill
c. Compaction

9. MC cable may be used only where approved for use by the owner, approved by the local authority having jurisdiction and approved by the Engineer. Where used, MC cable shall be concealed and supported in accordance with NEC.

C. Cut conduits straight, properly ream, and cut threads for heavy wall conduit deep and clean.

D. Field bend conduit with benders designed for purpose so as not to distort nor vary internal diameter.

E. Minimum conduit size shall be 1/2" unless noted otherwise. Homeruns shall be a minimum 3/4".

F. Fasten conduit terminations in sheet metal enclosures by two (2) locknuts, and terminate with bushings. Install locknuts inside and out side enclosure.

G. Conduits are not to cross pipe shafts, or ventilating duct openings.

H. Keep conduits a minimum distance of 6" from parallel runs of flues, hot water pipes or other sources of heat. Wherever possible, install horizontal raceway runs above water and steam piping.

I. Use of running threads at conduit joints and terminations is prohibited. Where required, use 3-piece union or split coupling.

J. Complete installation of electrical raceways before starting installation of cables/wires within raceways.

K. Install conduits so as not to damage or run through structural members. Avoid horizontal or cross runs in building partitions or side walls.

L. Exposed Conduits:

1. In no case shall conduit be exposed to view in areas accessible to the public nor in any kitchen or other food services areas. The contractor shall be responsible for obtaining written approval for all and any exposed conduit routing prior to installation. Any non-approved exposed conduit will be subject to removal and re-routing by the contractor at no additional expense to the owner. The contractor shall be responsible for coordinating all conduit installation with structural members, sprinkler piping, ductwork, lighting, etc.

2. Install any approved exposed conduits and extensions from concealed conduit systems neatly, parallel with, or at right angles to walls of building.
3. Install exposed conduit work as not to interfere with ceiling inserts, lights or ventilation ducts or outlets.
4, Support all conduits by use of hangers, clamps, or clips. Support conduits on each side of bends and on spacing not to exceed following: up to 1": 6'-0"; 1-1/4" and over: 8'-0". All conduits shall be adequately supported to prevent any noticable deflection, vibration or rattle.

M. Conduit Fittings:

1. Construct locknuts for securing conduit to metal enclosure with sharp edge for digging into metal, and ridged outside circumference for proper fastening.

2. Bushings for terminating conduits smaller than 1- 1/4" are to have flared bottom and ribbed sides, with smooth upper edges to prevent injury to cable insulation.

3. Install insulated type bushings for terminating conduits 1-1/4" and larger. Bushings are to have flared bottom and ribbed sides. Upper edge to have phenolic insulating ring molded into bushing.

4. All bushings of standard or insulated type to have screw type grounding terminal.

5. Miscellaneous fittings such as reducers, chase nipples, 3-piece unions, split couplings, and plugs to be specifically designed for their particular application.

N. Concealed Conduits:

1. Metallic raceways installed underground or in floors below grade, or outside are to have conduit threads painted with corrosion inhibiting compound before couplings are assembled. Draw up coupling and conduit sufficiently tight to ensure watertightness.

2. Conduit in concrete slabs: Separate conduits by not less than diameter of largest conduit to ensure proper concrete bond. Conduits must have a minimum of three-quarter inch (3/4") concrete cover.

3. Embedded conduit diameter is not to exceed one-third (1/3) of slab thickness. Conduit shall not be run in slabs less than 3 inches thick.

O. Underground Duct Banks and Underground Conduits: All underground conduits shall be installed per the National Electrical Code, in accordance with standard industry practices and in accordance with other sections of these specifications. Conduits in duct banks shall be neatly and securely installed in straight lines with manufactured elbows used for all turns and bends. Provide all required trenching, excavation, backfill, compaction, supports, manholes, etc. for a complete installation. Trenching, excavation, backfill and compaction shall be performed in accordance with applicable Division 2 and Division 3 sections of these specifications.

P. Low Voltage Control:

1. Mechanical contractor (Division 15) to provide and install all necessary wire and raceway (EMT conduit) for low voltage control such as thermostats, timers etc., unless specifically shown otherwise on the drawings. Raceways shall be installed in accordance with Division 16 sections. Final wire connections shall be by mechanical contractor.

11. INSTALLATION OF RACEWAYS AND WIREWAYS

A. General: Mechanically assemble metal enclosures, and raceways for conductors to form continuous electrical conductor, and connect to electrical boxes, fittings and cabinets as to provide effective electrical continuity and rigid mechanical assembly.

1. Avoid use of dissimilar metals throughout system to eliminate possibility of electrolysis. Where dissimilar metals are in contact, coat all surfaces with corrosion inhibiting compound before assembling.

2. Install expansion fittings in all raceways wherever structural expansion joints are crossed.

3. Make changes in direction of raceway run with proper fittings, supplied by raceway manufacturer. No field bends of raceway sections will be permitted.

4. Properly support and anchor raceways for their en tire length by structural materials. Raceways are not to span any space unsupported. Supporting conduits from ceiling grid, other conduits, ductwork or other non-structural members will not be permitted.

5. Use boxes as supplied by raceway manufacturer wherever junction, pull or devices boxes are required. Standard electrical "handy" boxes, etc. shall not be permitted for use with surface raceway installations.

12. COMMUNICATIONS SYSTEMS RACEWAY

A. Communications systems raceways shall be provided for each telephone, data, security, sound, ITV, and fire alarm outlet or device indicated on the drawings. Conduit shall be as indicated on the drawings and as required for each system.

SECTION 16120 - WIRES AND CABLES

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. This section is a Division-16 Basic Electrical Materials and Methods section, and is part of each Division-15 and -16 section making reference to electrical wires and cables specified herein.

2. DESCRIPTION OF WORK

A. Extent of electrical wire and cable work is indicated by drawings and schedules.

B. Types of electrical wire, cable, and connectors specified in this section include the following:

1. Copper conductors.

2. Fixture wires.

3. Flexible cords and cables.

4. Wirenut connectors.

C. Applications of electrical wire, cable, and connectors required for project are as follows:

1. For motor-branch circuits.

2. For power distribution circuits

3. For lighting circuits

4. For appliance and equipment circuits

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of electrical wire and cable products of types, sizes, and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer's Qualifications: Firm with at least 3 years of successful installation experience with projects utilizing electrical wiring and cabling work similar to that required for this project.

C. NEC Compliance: Comply with NEC requirements as applicable to construction, installation and color coding of electrical wires and cables.

D. UL Compliance: Comply with applicable requirements of UL Std 83, "Thermoplastic-Insulated Wires and Cables", and Std 486A, "Wire Connectors and Soldering Lugs for Use with Copper Conductors".

E. UL Compliance: Provide wiring/cabling and connector products which are UL-listed and labeled.

F. NEMA/ICEA Compliance: Comply with NEMA/ICEA Std Pub/ No.'s WC 5, "Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy", and WC-30, "Color Coding of Wires and Cables", pertaining to electrical power type wires and cables.

G. IEEE Compliance: Comply with applicable requirements of IEEE Stds 82, "Test Procedures for Impulse Voltage Tests on Insulated Conductors", and Std 241, "IEEE Recommended Practice for Electric Power Systems in Commercial Buildings" pertaining to wiring systems.

H. ASTM Compliance: Comply with applicable requirements of ASTM B1, 2, 3, 8, and D-753. Provide copper conductors with conductivity of not less than 98% at 20oC (68oF).

4. AVAILABLE MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

1. Wire and Cable:

a. American Wire and Cable Co.
b. Anaconda-Ericsson Inc; Wire and Cable Div.
c. Belden Div; Cooper Industries

2. Connectors:

a. AMP, Inc.
b. Appleton Electric Co.
c. Burndy Corporation
d. Thomas and Betts Corp.

3. WIRES, CABLES, AND CONNECTORS

A. General: Provide electrical wires, cables, and connectors of manufacturer's standard materials, as indicated by published product information; designed and constructed as recommended by manufacturer, for a complete installation, and for application indicated. Except as otherwise indicated, provide copper conductors with conductivity of not less than 98% at 20oC (68oF).

B. Building Wires: Provide factory-fabricated wires of sizes, ampacity ratings, and materials for applications and services indicated. Where not indicated, provide proper wire selection as determined by Installer to comply with project's installation requirements, NEC and NEMA standards. Select from the following UL types, those wires with construction features which fulfill project requirements:

1. Type THW, THHN, THWN, THHW, THHN/THWN: Unless otherwise indicated, all conductors for dry locations requiring a conductor temperature rating 75oC (167oF) or less. Insulation shall be flame retardant, moisture and heat resistant, thermoplastic. Conductor shall be annealed copper.

2. Type THWN, THHW, THHN/THWN: Unless otherwise indicated, all conductors for wet or dry locations requiring a conductor temperature rating of 75oC (167oF) or less. Insulation shall be flame retardant, moisture and heat resistant thermoplastic. Conductor shall be annealed copper.

3. Type THHN, THHW: Unless otherwise indicated, all conductors for dry locations requiring a conductor temperature rating of 90oC (194oF) or less. Insulation shall be flame retardant, moisture and heat resistant thermoplastic. Conductor shall be annealed copper.

4. Conductors for use at 600 volts or below shall be 600 volt rated. Wire No. 12 and smaller may be solid or stranded and wire No. 10 and larger shall be stranded only. Stranded conductors shall terminate in crimp type lugs.

5. Motor circuit branch wiring and associated control wiring: Provide type THHN insulation in dry and damp locations. Provide type THHW insulation in wet locations. All motor wiring to be stranded copper.

6. Wiring in fluorescent fixture channels: Provide conductors with a 90C temperature rating, type THHN or TFFN insulation.

C. Cables: Provide UL-type factory-fabricated cables of sizes, ampacity ratings, and materials and jacketing/sheathing as indicated for services indicated. Where not indicated, provide proper selection as determined by Installer to comply with installation requirements, NEC and NEMA standards.

D. Connectors:

1. General: Provide UL-type factory-fabricated, metal connectors of sizes, ampacity ratings, materials, types and classes for applications and for services indicated. Where not indicated, provide proper selection as determined by Installer to comply with project's installation requirements, NEC and NEMA standards. Select from the following, those types, classes, kinds, and styles of connectors to fulfill project requirements:

a. Type: Pressure.
b. Class: Insulated.
c. Kind: Copper (for Cu to Cu connection).
d. Style: Butt connection.
e. Style: Elbow connection.
f. Style: Combined "T" and straight connection.
g. Style: "T" connection.
h. Style: Split-bolt parallel connection.
i. Style: Tap connection.
j. Style: Pigtail connection.
k. Style: Wirenut connection.

2. All connectors shall be rated 75c.

6. INSTALLATION OF WIRES AND CABLES

A. General: Install electrical cables, wires, and wiring connectors as indicated, in compliance with applicable requirements of NEC, NEMA, UL, and NECA's "Standard of Installation", and in accordance with recognized industry practices.

B. Coordinate wire/cable installation work including electrical raceway and equipment installation work, as necessary to properly interface installation of wires/cables with other work.

C. Pull conductors simultaneously where more than one conductor is being installed in the same raceway.

D. Use pulling compound or lubricant, where necessary; compound used must not deteriorate conductor or insulation.

E. Use pulling means including, fish tape, cable, rope and basket weave or wire/cable grips which will not damage cables or raceway. Any cable damaged during installation shall be completely replaced.

F. Keep conductor splices to minimum. No joints shall be made in conductor except at outlet boxes or splice boxes. Newly installed conductors shall not be spliced unless specifically noted on the drawings.

G. Install splices and tapes which possess equivalent-or-better mechanical strength and insulation ratings than conductors being spliced.

H. Use splice and tap connectors which are compatible with conductor material.

I. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Std 486A and B.

J. At least eight inches (8") of slack wire shall be left in every outlet box whether it be in use, or left for future use.

K. Color code wiring as follows:

1. 120/208 volt, 3 phase, 4 wire: phase A-black, phase B-red, phase C-blue, neutral-white; ground conductor-green.

L. Wire and cable boxes and reels shall bear the date of manufacture and must not bear dates by more than one year preceeding contract date.

M. Minimum conductor sizes, except as specifically identified on the drawings, shall be as follows:

1. No. 12 - Branch circuits of any kind, except as specified otherwise below.

2. No. 14 - Signal systems, fire alarm system, unless specifically noted otherwise.

3. No. 10 - Exit light circuits, emergency circuits, security lighting, security systems circuits and exterior light circuits.

7. FIELD QUALITY CONTROL

A. Prior to energization, test wires and cables for electrical continuity and for short-circuits.

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02.21.2023

DRAWING COORDINATION

Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.

SP.12

SECTION 16135 - ELECTRICAL BOXES AND FITTINGS

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. This section is a Division-16 Basic Electrical Materials and Methods section, and is a part of each Division-16 section making reference to electrical wiring boxes and fittings specified herein.

2. DESCRIPTION OF WORK

A. Extent of electrical box and associated fitting work is indicated by drawings and schedules.

B. Types of electrical boxes and fittings specified in this section include the following:

1. Outlet boxes
2. Junction boxes
3. Pull boxes
4. Floor boxes
5. Bushings
6. Locknuts
7. Knockout closures
8. Manholes and handholes

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of electrical boxes and fittings, of types, sizes, and capacities required, whose products have been in satisfactory use in similar service for not less than 3 years.

B. Installer's Qualifications: Firm with at least 3 years of successful installation experience on projects utilizing electrical boxes and fittings similar to those required for this project.

C. NEC Compliance: Comply with NEC as applicable to construction and installation of electrical wiring boxes and fittings.

D. UL Compliance: Comply with applicable requirements UL 50, UL 514-Series, and UL 886 pertaining to electrical boxes and fittings. Provide electrical boxes and fittings which are UL-listed and labeled.

E. NEMA Compliance: Comply with applicable requirements of NEMA Stds/Pub No.'s OS1, OS2, and Pub 250 pertaining to outlet and device boxes, covers, and box supports.

4. FABRICATED MATERIALS

A. Outlet Boxes: Provide galvanized coated flat rolled sheet-steel outlet wiring boxes, of shapes, cubic inch capacities, and sizes, including box depths as indicated, suitable for installation at respective locations. Construct outlet boxes with mounting holes, and with cable and conduit-size knockout openings in bottom and sides. Provide boxes with threaded screw holes, with corrosion-resistant cover and grounding screws for fastening surface and device type box covers, and for equipment type grounding.

1. Outlet Box Accessories: Provide outlet box accessories as required for each installation, including box supports, mounting ears and brackets, wallboard hangers, box extension rings, fixture studs, cableclamps and metal straps for supporting outlet boxes, which are compatible with outlet boxes being used to fulfill installation requirements for individual wiring situations. Choice of accessories is Installer's code-compliance option.

B. Device Boxes: Provide galvanized coated flat rolled sheet-steel non-gangable device boxes, of shapes, cubic inch capacities, and sizes, including box depths as indicated, suitable for installation at respective locations. Construct device boxes for flush mounting with mounting holes, and with cable-size knockout openings in bottom and ends, and with threaded screw holes in end plates for fastening devices. Provide cable clamps and corrosion-resistant screws for fastening cable clamps, and for equipment type grounding.

1. Device Box Accessories: Provide device box accessories as required for each installation, including mounting brackets, device box extensions, switch box supports, plaster ears, and plaster board expandable grip fasteners, which are compatible with device boxes being utilized to fulfill installation requirements for individual wiring situations. Choice of accessories is Installer's code-compliance option.

C. Available Manufacturers: Subject to compliance with requirements, manufacturers offering outlet boxes which may be incorporated in the work include, but are not limited to, the following:

1. Appleton Electric;
2. Bell Electric;
3. Eagle Electric Mfg. Co.; Inc.
4. Midland-Ross Corp.
5. OZ/Gedney; General Signal Co.
6. Pass and Seymour, Inc.
7. RACO Div.; Harvey Hubbell Inc.
8. Thomas & Betts Co.

D. Raintight Outlet Boxes: Provide corrosion-resistant cast-metal raintight outlet wiring boxes, of types, shapes and sizes, including depth of boxes, with threaded conduit holes for fastening electrical conduit, cast-metal face plates with spring hinged watertight caps suitably configured for each application, including face plate gaskets and corrosion-resistant plugs and fasteners.

E. Available Manufacturers: Subject to compliance with requirements, manufacturers offering raintight outlet boxes which may be incorporated in the work include, but are not limited to, the following:

1. Appleton Electric;
2. Crouse-Hinds Co.
3. Bell Electric;
4. Harvey Hubbell, Inc.
5. OZ/Gedney; General Signal Co.
6. RACO Div.

F. Junction and Pull Boxes: Provide galvanized code-gage sheet steel junction and pull boxes; with screw-on covers; of types, shapes and sizes, to suit each respective location and installation; with welded seams and equipped with stainless steel nuts, bolts, screws, and washers.

G. Available Manufacturers: Subject to compliance with requirements, manufacturers offering junction and pull boxes which may be incorporated in the work include, but are not limited to, the following:

1. Appleton Electric; Emerson Electric Co.
2. Arrow-Hart Div.; Crouse-Hinds Co.
3. Bell Electric; Square D Company
4. OZ/Gedney; General Signal Co.
5. Spring City Electrical Mfg. Co.

H. Available Manufacturers: Subject to compliance with requirements, manufacturers offering floor boxes which may be incorporated in the work include, but are not limited to, the following:

1. Arrow-Hart Div.; Crouse-Hinds Co.
2. Harvey Hubbell, Inc.
3. Midland-Ross Corp.
4. Spring City Electrical Mfg. Co.

I. Bushings, Knockout Closures, and Locknuts: Provide corrosion-resistant box knockout closures, conduit locknuts and malleable iron conduit bushings, offset connections, of types and sizes, to suit respective installation requirements and applications.

J. Available Manufacturers: Subject to compliance with requirements, manufacturers offering bushings, knockout closures, locknuts, and connectors which may be incorporated in the work include, but are not limited to, the following:

1. Arrow-Hart Div.; Crouse-Hinds Co.
2. Appleton Electric Co.; Emerson Electric Co.
3. Bell Electric; Square D Co.
4. Midland-Ross Corp.
5. OZ/Gedney Co.; General Signal Co.

K. Manholes and Handholes: Manholes and handholes for exterior use shall be pre-cast concrete with steel traffic rated covers, as manufactured by Brooks or equal. Manholes and handholes shall be the size necessary for the number of conduits and conductors indicated on the drawings which will enter the enclosure, plus the necessary capacity for the spare conduits and the associated estimated conductor fill. Provide manholes with the appropriate drainage and knockouts for conduits and other necessary access. Traffic covers shall be engraved with the appropriate identification, such as "ELECTRIC".

5. INSTALLATION OF ELECTRICAL BOXES AND FITTINGS

A. General: Install electrical boxes and fittings as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and NECA's "Standard of Installation", and in accordance with recognized industry practices to fulfill project requirements.

B. Coordinate installation of electrical boxes and fittings with wire/cable, wiring devices, and raceway installation work.

C. Provide weathertight boxes and fittings for interior and exterior locations exposed to weather or moisture.

D. Provide knockout closures to cap unused knockout holes where blanks have been removed.

E. Install electrical boxes in those locations which ensure ready accessibility to enclosed electrical wiring.

F. Avoid installing boxes back-to-back in walls. Provide not less than 24" (600 mm) separation.

G. Position recessed outlet boxes accurately to allow for surface finish thickness.

H. Fasten electrical boxes firmly and rigidly to substrates, or structural surfaces to which attached, or solidly embed electrical boxes in concrete or masonry.

I. Each circuit in pull box shall be marked with a tag guide denoting panels which they connect to.

J. Manholes and handholes shall be installed for all underground conduit installations. The minimum number of manholes and handholes shall be as indicated on the drawings. The contractor shall provide any additional handholes or manholes necessary for ease of installation, code compliance or due to voluntary or required re-routing of the underground conduits at no additional cost to the Owner.

SECTION 16142 - ELECTRICAL CONNECTIONS FOR EQUIPMENT

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. This section is a Division-16 Basic Electrical Materials and Methods section, and is part of each Division-15 and 16 section making reference to electrical connections for equipment specified herein.

2. DESCRIPTION OF WORK

A. Extent of electrical connections for equipment is indicated by drawings and schedules. Electrical connections are hereby defined to include connections used for providing electrical power to equipment.

B. Applications of electrical power connections specified in this section include the following:

1. From electrical source to motor starters.
2. From motor starters to motors.
3. To lighting fixtures.
4. To grounds including earthing connections.
5. To equipment of communication, CCTV and alarm systems.

C. Electrical connections for equipment, not furnished as integral part of equipment, are specified in Division-15 and other Division-16 sections, and are work of this section.

D. Motor starters and controllers, not furnished as integral part of equipment, are specified in applicable Division-16 sections, and are work of this section.

E. Refer to Division-15 specification sections and drawings for motor starters and controllers furnished integrally with equipment; not work of this section. Connections to this equipment is work of this section.

F. Junction boxes and disconnect switches required for connecting motors and other electrical units of equipment are specified in applicable Division-16 sections, and are work of this section.

G. Raceways and wires/cables required for connecting motors and other electrical units of equipment are specified in applicable Division-16 sections, and are work of this section.

H. Refer to other Division-16 and Division-15 sections for low voltage control system wiring; not work of this section.

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of electrical connectors and terminals, of types and ratings required, and ancillary connection materials, including electrical insulating tape, soldering fluxes, and cable ties, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer's Qualifications: Firm with at least 2 years of successful installation experience with projects utilizing electrical connections for equipment similar to that required for this project.

C. NEC Compliance: Comply with applicable requirements of NEC as to type products used and installation of electrical power connections (terminals and splices), for junction boxes, motor starters, and disconnect switches.

D. IEEE Compliance: Comply with Std 241, "IEEE Recommended Practice for Electric Power Systems in Commercial Buildings" pertaining to connections and terminations.

E. ANSI Compliance: Comply with applicable requirements of ANSI/NEMA and ANSI/EIA standards pertaining to products and installation of electrical connections for equipment.

F. UL Compliance: Comply with UL Std 486A, "Wire Connectors and Soldering Lugs for Use with Copper Conductors", including, but not limited to, tightening of electrical connectors to torque values indicated. Provide electrical connection products and materials which are UL-listed and labeled.

G. ETL Compliance: Provide electrical connection products and materials which are ETL-listed and labeled.

4. ACCEPTABLE MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

1. AMP Incorporated
2. Appleton Electric Co.
3. Arrow-Hart Div., Crouse-Hinds Co.
4. Burndy Corporation
5. General Electric Co.
6. Gould, Inc.
7. Harvey Hubbell Inc.
8. Square D Company
9. Thomas and Betts Corp.

5. MATERIALS AND COMPONENTS

A. General: For each electrical connection indicated, provide complete assembly of materials, including but not necessarily limited to, pressure connectors, terminals (lugs), electrical insulating tape, electrical solder, electrical soldering flux, heat-shrinkable insulating tubing, cable ties, solderless wirenuts, and other items and accessories as needed to complete splices and terminations of types indicated.

B. Metal Conduit, Tubing, and Fittings:

1. General: Provide metal conduit, tubing, and fit tings of types, grades, sizes, and weights (wall thicknesses) indicated for each type service. Where types and grades are not indicated, provide proper selection as determined by Installer to fulfill wiring requirements and comply with NEC requirements for raceways. Provide products complying with Division-16 basic electrical materials and methods section "Raceways", and in accordance with the following listing of metal conduit, tubing, and fittings:

a. Rigid steel conduit.
b. Rigid metal conduit fittings.
c. Electrical metallic tubing.
d. EMT fittings.
e. Liquid-tight flexible metal conduit.
f. Liquid-tight flexible metal conduit fittings.
g. Flexible metal conduit.
h. Flexible metal conduit fittings.

C. Wires, Cables, and Connectors:

1. General: Provide wires, cables, and connectors complying with Division-16 basic electrical materials and methods section "Wires and Cables".

2. Wires/Cables: Unless otherwise indicated, provide wires/cables (conductors) for electrical connections which match, including sizes and ratings, of wires/cables which are supplying electrical power. Provide copper conductors with conductivity of not less than 98% at 20oC (68oF).

3. Connectors and Terminals: Provide electrical con nectors and terminals which mate and match, including sizes and ratings, with equipment terminals and are recommended by equipment manufacturer for intended applications.

6. INSPECTION

A. Inspect area and conditions under which electrical connections for equipment are to be installed and notify Contractor in writing of conditions detrimental to proper completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

7. INSTALLATION OF ELECTRICAL CONNECTIONS

A. Install electrical connections as indicated; in accordance with equipment manufacturer's written instructions and with recognized industry practices, and complying with applicable requirements of UL, NEC, and NECA's "Standard of Installation", to ensure that products fulfill requirements.

B. Coordinate with other work, including wires/cables, raceway and equipment installation, as necessary to properly interface installation of electrical connections for equipment with other work.

C. Connect electrical power supply conductors to equipment conductors in accordance with equipment manufacturer's written instructions and wiring diagrams. Mate and match conductors of electrical connections for proper interface between electrical power supplies and installed equipment.

D. Provide the following electrical work as work of this section, complying with requirements of Division 15 sections:

1. Power supply wiring from power source to power connection on chiller, fans, air handling units, pumps, duct heaters, water heaters, air compressor, air dryer, and unit control panels. Include starters, disconnects, time clocks, receptacles and required electrical devices, except where specified as furnished, or factory-installed, by manufacturer. Make all final electrical connections.

E. Maintain existing electrical service and feeders to occupied areas and operational facilities, unless otherwise indicated, or when authorized otherwise in writing by Owner, or Architect/Engineer. Provide temporary service during interruptions to existing facilities. When necessary, schedule momentary outages for replacing existing wiring systems with new wiring systems. When that "cutting-over" has been successfully accomplished, remove, relocate, or abandon existing wiring as indicated.

F. Cover splices with electrical insulating material equivalent to, or of greater insulation resistivity rating, than electrical insulation rating of those conductors being spliced. No new conductors shall be spliced unless specifically noted on the drawings.

G. Prepare cables and wires, by cutting and stripping covering armor, jacket, and insulation properly to ensure uniform and neat appearance where cables and wires are terminated. Exercise care to avoid cutting through tapes which will remain on conductors. Also avoid "ringing" copper conductors while skinning wire.

H. Trim cables and wires as short as practicable and arrange routing to facilitate inspection, testing, and maintenance.

I. Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturers published torque tightening values for equipment connectors. Accomplish tightening by utilizing proper torquing tools, including torque screwdriver, beam-type torque wrench, and ratchet wrench with adjustable torque settings. Where manufacturer's torquing requirements are not available, tighten connectors and terminals to comply with torquing values contained in UL's 486A.

J. Provide flexible conduit for motor connections, and other electrical equipment connections, where subject to movement and vibration.

K. Provide liquid-tight flexible conduit for connection of motors and other electrical equipment where subject to movement and vibration, and also where connections are subjected to one or more of the following conditions:

1. Exterior location.
2. Moist or humid atmosphere where condensate can be expected to accumulate.
3. Corrosive atmosphere.
4. Water spray.
5. Dripping oil, grease, or water, including kitchen areas.

8. FIELD QUALITY CONTROL

A. Upon completion of installation of electrical connections, and after circuitry has been energized with rated power source, test connections to demonstrate capability and compliance with requirements. Ensure that direction of rotation of each motor fulfills requirement. Correct malfunctioning units at site, then retest to demonstrate compliance.

SECTION 16143 - WIRING DEVICES

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. This section is a Division-16 Basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to wiring devices specified herein.

2. DESCRIPTION OF WORK

A. The extent of wiring device work is indicated by drawings and schedules. Wiring devices are defined as single discrete units of electrical distribution systems which are intended to carry but not utilize electric energy.

B. Types of electrical wiring devices in this section include the following:

1. Receptacles, including surge suppression type if applicable.
2. Ground-fault circuit interrupters
3. Switches
4. Wallplates
5. Plugs and connectors
6. Time Switches / Time Clocks

3. QUALITY ASSURANCE

A. Installer's Qualifications: Firm with at least 2 years of successful installation experience on projects utilizing wiring devices similar to those required for this project.

B. NEC Compliance: Comply with NEC as applicable to installation and wiring of electrical wiring devices.

C. UL Compliance: Comply with applicable requirements of UL 20, 486A, 498, and 943 pertaining to installation of wiring devices. Provide wiring devices which are UL-listed and labeled.

D. IEEE Compliance: Comply with applicable requirements of IEEE Std 241, "Recommended Practice for Electric Power Systems in Comercial Buildings", pertaining to electrical wiring systems.

E. NEMA Compliance: Comply with applicable portions of NEMA Stds Pub/No. WD 1, "General-Purpose Wiring Devices", WD 2, "Semiconductor Dimmers for Incandescent Lamps", and WD 5, "Specific,-Purpose Wiring Devices".

F. FS Compliance: Comply FS W-C-596 (Series) and FS W-S-896 (Series) pertaining to electrical power connectors and toggle switches.

4. SUBMITTALS

A. Product Data: Submit manufacturer's data on electrical wiring devices.

5. ACCEPTABLE MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide wiring devices of one of the following (for each type and rating of wiring device):

1. Hubbell
2. Arrow-Hart Div.
3. General Electric Co.
4. Eagle Electric Co.
5. Leviton
6. Pass - Seymour
7. Time Switches: Tork, Intermatic or Paragon

6. FABRICATED WIRING DEVICES

A. General: Provide factory-fabricated wiring devices, in types, colors, and electrical ratings for applications indicated and which comply with NEMA Stds Pub/No. WD 1. Provide bone color devices and bone colored nylon, impact resistant coverplates, except as other wise indicated; color selection shall be verified prior to ordering by Contractor with Architect/Engineer.

B. Receptacles:

1. Heavy-Duty Duplex: Provide specification grade duplex receptacles, 2-pole, 3-wire, grounding, 20-amperes, 125-volts, with metal plaster ears, design for side and back wiring with spring loaded, screw activated pressure plate, with NEMA configuration 5-20R unless otherwise indicated. Hubbell or equal. 15 amp rated receptacles may be used on circuits with two or more receptacles in accordance with NEC.

2. Ground-Fault Interrupters: Provide "feed-thru" type ground-fault circuit interrupters, with heavy-duty duplex receptacles, capable of protecting connecting downstream receptacles on single circuit, and of being installed in a 2-3/4" deep outlet box without adapter, grounding type UL-rated Class A, Group 1, rated 20 amperes, 120-volts, 60 Hz; with solid-state ground-fault sensing and indication; with 5 milliamperes ground-fault trip level; equip with NEMA configuration 5-20R. Device must have a positive trip identification and reset. Provide bone color device.

3. Special Receptacles: Special configuration receptacles shall be standard NEMA plug configuration as specified on the drawings or as required. Provide heavy duty, specification grade receptacles, with black nylon face and brushed satin stainless steel cover plate.

C. Switches:

1. Snap: Provide general-duty flush single-pole, quiet type toggle switches, 20-amperes, 120-277 volts AC, with mounting yoke insulated from mechanism, equip with plaster ears, switch handle, and side-wired screw terminals.

2. 2-way: Provide general-duty flush double-pole AC quiet switches, 20-amperes, 120-277 volts AC, with mounting yoke insulated from mechanism, equip with plaster ears, switch handles, side-wired screw terminals, with break-off tab features, which allows wiring with separate or common feed.

3. Three-way: Provide general-duty flush 3-way AC quiet type switches, 20-amperes, 120-277 volts AC, with mounting yoke insulated from mechanism, equip with plaster ears, lock type switch handles, sidewired screw terminals, with break-off tab features, which allows wiring with separate or common feed.

4. Four-way: Provide general-duty flush 4-way AC quiet switches, 20-amperes, 120-277 volts AC, with mounting yoke insulated from mechanism, equip with plaster ears, switch handles, side-wired screw terminals, with break-off tab features, which allows wiring with separate or common feed.

5. Touch Snap: Provide soft-touch snap switches, cap able of effortless-fingertip operation; single-pole AC quiet, with lighted rocker switch hangles; sidewired screw terminals for connecting copper-clad aluminum wire, 20-amperes, 120-277 volts rating. Equip with plaster ears.

6. Switches to be bone color with bone colored nylon, impact resistant coverplate.

D. Combination Devices: Provide general-duty 3-way quiet switch, 20-amperes, 120-277 volts AC, with toggle switch handle, and 3-wire grounding receptacle, 20 amperes, 120-volts, equip with plaster ears, and with break-off tab feature which allows wiring with separate or common feed, with NEMA configuration 5-20R.

E. Incandescent Lamp Dimmers: Provide branch lighting solid-state AC dimmer controls for incandescent fixtures; wattage as indicated.

F. Time Switches, Time Clocks: Unless otherwise specifically noted on the drawings provide electro-mechanical 24 hour dial type time switch with day omitting capability and 24 hour reserve timing motor. Provide with a positive manual on-off switch, voltage as required or specified on the drawings, minimum 40 amps per pole, minimum double pole, double throw. Provide additional poles as required or specified on the drawings. Time switches shall be Tork or equal by Intermatic or Paragon.

7. WIRING DEVICE ACCESSORIES

A. Wallplates: Provide wallplates for single and combination wiring devices, of types, sizes, and with ganging and cutouts as required. Select plates which mate and match wiring devices to which attached. Construct with metal screws for securing plates to devices; screw heads colored to match finish of plates. Provide plates possessing the following additional construction features:

1. Material and Finish: Bone colored nylon, impact resistant.

B. Floor Service Outlets: Provide flush type floor service receptacle outlets and fittings of types and ratings indicated. Construct of die cast aluminum, satin finish and of the size necessary for the slab thickness provided. Provide one or two gang box as indicated on the drawings with 20-ampere, 125-volt, duplex receptacle, NEMA configuration 5-20R for power, unless indicated otherwise. Provide data or telephone outlets as indicated with a 3/4" diameter bushed hole for data and a standard telephone outlet for telephone. Boxes shall be sized as required for the number of outlets and number of conductors to enter and leave the box. Provide brass cover plate with snap cover which shall be a protective cover which will prevent breakage of the installed wiring devices. Provide brass tile or carpet flange as required.

8. TELEPHONE/DATA OUTLETS

A. Provide blank bone colored nylon, impact resistant wallplate for all indicated unused telephone/data outlets.

9. INSTALLATION OF WIRING DEVICES

A. Install wiring devices as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and NECA's "Standard of Installation", and in accordance with recognized industry practices to fulfill project requirements.

B. Coordinate with other work, including painting, electrical boxes and wiring work, as necessary to interface installation of wiring devices with other work.

C. Install wiring devices only in electrical boxes which are clean; free from excess building materials, dirt, and debris.

D. Install galvanized steel wallplates on any exposed surface mounted devices.

E. Install wallplates after painting work is completed.

F. Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for wiring devices. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Stds 486A and B. Use properly scaled torque indicating hand tool.

G. Contractor to provide ground fault protective type receptacles for any location within 2'-0" of sinks or other source of water. Feed through protection from one ground fault protected receptacle on a circuit is not acceptable.

H. Mounting height of boxes for devices as shown on legend, unless otherwise noted on the plan. Refer to architectural drawings to avoid interferences with millwork. Where two or more devices are shown at the same location, use gang box and one face plate. Verify all device locations with Owner prior to rough-in. Exact device locations may be adjusted by the Owner to avoid interferences or for general convenience at no additional cost to the Owner.

I. Floor boxes shall be installed flush with the slab and shall strictly follow manufacturer's installation instructions. Boxes shall be installed at right angles to the building lines and multiple boxes shall be in-line straight and even. Boxes observed to be installed crooked shall be removed and reinstalled.

10. PROTECTION OF WALLPLATES AND RECEPTACLES

A. Upon installation of wallplates and receptacles, advise Contractor regarding proper and cautious use of convenience outlets. At time of Substantial Completion, replace those items which have been damaged, including those burned and scored by faulty plugs.

11. GROUNDING

A. Provide equipment grounding connections for wiring devices, unless otherwise indicated. Tighten connections to comply with tightening torques specified in UL Std 486 A to assure permanent and effective grounds.

12. TESTING

A. Prior to circuitry, test wiring for electrical continuity, for short-circuits and for grounding. Ensure proper polarity of connections is maintained. Subsequent to energization, test wiring devices to demonstrate compliance with requirements.

13. WARRANTY

A. All wiring devices, including any dimmers or dimming systems, shall have a minimum one year parts and labor warranty.

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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.13

DIVISION 16 - ELECTRICAL SYSTEMS (CONTINUED)

SECTION 16150 - MOTOR CONTROLLERS AND CONTACTORS

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract including General and Division 1 Specification Sections, apply to work of this section.

2. SCOPE

A. The work, apparatus and materials which shall be furnished under these specifications and accompanying drawings shall include all items specified hereinafter and shown on the drawings. All other materials necessary for the complete installation shall be furnished and installed by the Contractor to provide complete electrical systems as indicated on the drawings and as specified herein.

B. Coordinate all required interlocks with Division 15. Motor starters shall contain the necessary auxiliary contacts and control coil voltage to interface with the HVAC temperature control system and fire alarm control system.

3. DESCRIPTION OF WORK

A. Extent of motor controller work is indicated by drawings and schedules. Types of motor controllers specified in this section include the following:

1. Manual motor starters.
2. Combination disconnect/FVNR motor starters.

4. QUALITY ASSURANCE

A. Manufacturers: General Electric, Square D, Allen Bradley.

B. Installer's Qualifications: Firm with at least 3 years of successful installation experience on projects with electrical motor controller work similar to that required for this project.

C. Codes and Standards:

1. NEMA Compliance: Comply with applicable requirements of NEMA Standards Publications pertaining to motor controllers.
2. UL Compliance and Labeling: Comply with applicable requirements of UL safety standards pertaining to motor controllers. Provide motor controllers and components which have been UL-listed and labeled.
3. NEC Compliance: Comply with applicable requirements of NEC pertaining to construction and installation of motor controllers.

5. SUBMITTALS

A. Product Data: Submit manufacturer's technical product data, including specifications and installation instructions, for each type of motor controller required. Include data substantiating that materials comply with requirements.

6. INDIVIDUAL MOTOR CONTROLLERS

A. Manual motor starters for 115 volts, single phase motors one horsepower and smaller, shall be single pole, horsepower rated switches with thermal overload units and heaters. Starters shall be Allen-Bradley Bulletin 609, General Electric CR-101 or Square D Class 2510 with stainless steel cover plates.

B. Magnetic full voltage starters for three phase motors shall be three pole, horsepower rated, magnetically operated with three thermal overload units and heaters. Starters shall be Allen-Bradley Bulletin 509, General Electric CR-306 or Square D Class 8536. Provide Hand-Off-Auto selector switch, pilot lights to indicate starter's position (Amber – Red – Green), a minimum of two normally open and two normally closed auxiliary contacts, control power transformer fused on primary and secondary, control coil, and three overload heaters with reset button. Provide control power and coil voltage as required for interlock with the HVAC temperature control system and fire alarm system. Starters shall be the Nema size indicated on the drawings but shall be a minimum size one.

C. Combination magnetic, full voltage starters for three phase motors shall be three pole horsepower rated, magnetically operated contacts, with three thermal overload units and heaters. A three pole horsepower rated, fusible disconnect switch shall also be included integral within the enclosure. Provide fuses sized as recommended by the motor manufacturer. Starters shall be Allen-Bradley Bulletin 512, General Electric CR-308 or Square D Class 8538. Provide Hand-Off-Auto selector switch, pilot lights to indicate starter's position (Amber – Red – Green), a minimum of two normally open and two normally closed auxiliary contacts, control power transformer fused on primary and secondary, control coil, and three overload heaters with reset button. Provide control power and coil voltage as required for interlock with the HVAC temperature control system and fire alarm system. Starters shall be the Nema size indicated on the drawings but shall be a minimum size one.

D. Provide enclosure type suitable for the environment in which it is installed. Enclosure shall be interlocked so the door cannot be opened without turning the unit off. This interlock shall be capable of being defeated by properly trained personnel.

7. MOTOR CONTROLLERS, CONTACTORS AND ASSOCIATED CONTROLS

A. Unless otherwise indicated, motor controllers shown on the drawings shall be furnished and installed under this section. The full load current and starting characteristics of each motor shall be verified for proper selection of motor over load devices. The Contractor shall furnish and install all steel shapes, etc., necessary for a support of all motor controllers.

B. Unless otherwise indicated, all control devices, such as thermostats, firestats, etc., shall be installed in place and wired under other sections of the specifications. Coordinate required starter auxiliary contacts and coil voltages for a properly operational system.

C. Motor controllers shall be installed in accordance with all applicable NEC installation requirements.

8. IDENTIFICATION OF EQUIPMENT

A. Identification shall be provided for all motor controllers installed by the Contractor. Identification shall consist of white laminated plastic plates with black engraved letters.

SECTION 16170 - CIRCUIT AND MOTOR DISCONNECTS

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. Division-16 Basic Electrical Materials and Methods section, apply to work of this section.

2. DESCRIPTION OF WORK

A. Extent of circuit and motor disconnect switch work is indicated by drawings and schedules.

B. Types of circuit and motor disconnect switches in this section include the following:

2. Equipment disconnects.
3. Appliance disconnects.
4. Motor-circuit disconnects.

C. Wires/cables, raceways, and electrical boxes and fittings required in connection with circuit and motor disconnect work are specified in other Division-16 Basic Electrical Materials and Methods sections.

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of circuit and motor disconnect switches of types and capacities required whose products have been in satisfactory use in similar service for not less than 3 years.

B. Installer's Qualifications: Firm with at least 3 years of successful installation experience with projects utilizing circuit and motor disconnect work similar to that required for this project.

C. NEC Compliance: Comply with NEC requirements pertaining to construction and installation of electrical circuit and motor disconnect devices.

D. UL Compliance: Comply with requirements of UL 98, "Enclosed and Dead-Front Switches". Provide circuit and motor disconnect switches which have been UL-listed and labeled.

E. NEMA Compliance: Comply with applicable requirements of NEMA Stds Pub No. KS 1, "Enclosed Switches" and 250, "Enclosures for Electrical Equipment (1000 Volts Maximum)".

4. SUBMITTALS

A. Product Data: Submit manufacturer's data on circuit and motor disconnect switches.

B. Wiring Diagrams: Submit power and control wiring diagrams for circuit and motor disconnects including connections to power and control panels, and feeders.

5. ACCEPTABLE MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering circuit and motor disconnects which may be incorporated in the work include the following:

4. General Electric Co.
5. Square D Company
6. ITE/Seimens

6. FABRICATED SWITCHES

A. Heavy-Duty Safety Switches: Provide surface-mounted, heavy-duty type, sheet-steel enclosed safety switches, of types, sizes and electrical characteristics indicated; fusible or non-fusible type as indicated, amperes as indicated, 60 Hz, 3-blades, 4-poles, solid neutral; and incorporating quick-make, quick-break type switches; construct so that switch blades are visible in OFF position with door open. Equip with operating handle which is integral part of enclosure base and whose operating position is easily recognizable, and is padlockable in OFF position; construct current carrying parts of high-conductivity copper, with silver-tungsten type switch contacts, and positive pressure type reinforced fuse clips. Provide NEMA Type 3R enclosures, where applicable. Provide grounding kit. Provide 240 volt rated switches for 208Y/120 volt systems and 600 volt rated switches for 277Y/480 volt systems.

1. Fuses: Provide fuses for safety switches, as recommended by the manufacturer of the equipment to be protected, of classes, types, and ratings needed to fulfill electrical requirements for service indicated. Provide R-clips for all fuse holders.

7. INSTALLATION OF CIRCUIT AND MOTOR DISCONNECT SWITCHES

A. Install circuit and motor disconnect switches as indicated, complying with manufacturer's written instructions, applicable requirements of NEC, NEMA, and NECA's "Standard of Installation", and in accordance with recognized industry practices.

B. Coordinate circuit and motor disconnect switch installation work with electrical raceway and cable work, as necessary for proper interface.

C. Install disconnect switches for use with motor-driven appliances, and motors and controllers within sight of controller position unless otherwise indicated.

D. Provide a nameplate indicating the equipment served and protected.

8. GROUNDING

A. Provide equipment grounding connections, sufficiently tight to assure a permanent and effective ground, for electrical disconnect switches where indicated.

9. FIELD QUALITY CONTROL

A. Subsequent to completion of installation of electrical disconnect switches, energize circuitry and demonstrate capability and compliance with requirements. Where possible, correct malfunctioning units at project site, then retest to demonstrate compliance; otherwise remove and replace with new units and retest.

B. Painting: repair all scratches to factory painted and primed finish with factory supplied touch-up paint.

SECTION 16180 - OVERCURRENT PROTECTIVE DEVICES

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. This section is a Division-16 Basic Electrical Materials and Methods section, and is part of each Division-16 section making reference to overcurrent protective devices specified herein.

2. DESCRIPTION OF WORK

A. Extent of overcurrent protective device work is indicated by drawings and schedules.

B. Types of overcurrent protective devices in this section include the following:

1. Circuit Breakers:
   a. Air, molded-case, for installation in panels.
   b. Air, molded-case, for individual, separately enclosed mounting.
   c. For installation in existing panels.
2. Fuses:
   a. Class RK5, dual-element time-delay.

C. Refer to other Division-16 sections for cable/wire and connector work required in conjunction with overcurrent protective devices; not work of this section.

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of overcurrent protective devices, of types, sizes, and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer: Qualified with at least 5 years of successful installation experience on projects with electrical installation work similar to that required for project.

C. NEC Compliance: Comply with NEC requirements as applicable to construction and installation of overcurrent protective devices.

D. UL Compliance: Comply with applicable requirements of UL 489, "Molded-Case Circuit Breakers and Circuit-Breaker Enclosures", and UL 198D, "High-Interrupting-Capacity Class K Fuses". Provide overcurrent protective devices which have been UL-listed and labeled.

E. NEMA Compliance: Comply with applicable requirements of NEMA Std Pub Nos. AB 1, AB 2, and SG 3 pertaining to molded-case and low-voltage power type circuit breakers.

F. FS Compliance: Comply with Federal Specification W-C-375B/GEN pertaining to molded-case circuit breakers.

4. SUBMITTALS

A. Product Data: Submit manufacturer's data on overcurrent protective devices, including: amperes, voltages and current ratings, interrupting ratings, current limitations, internal inductive and non-inductive loads, time-current trip characteristics curves, and mounting requirements.

B. Maintenance Stock, Fuses: For types and ratings required, furnish additional fuses, amounting to one unit for every 5 installed units, but not less than one unit of each.

5. ACCEPTABLE MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

1. Circuit Breakers: General Electric Co, Square D Co., ITE/Seimens
2. Fuses:Bussmann Div.; McGraw-Edison Co., Gould, Inc., Cefco

6. CIRCUIT BREAKERS

A. General: Except as otherwise indicated, provide circuit breakers and ancillary components, of types, sizes, ratings, and electrical characteristics indicated, which comply with manufacturer's standard design, materials, components, and construction in accordance with published product information, and as required for a complete installation.

B. Molded-Case Circuit Breakers: Provide factory assembled, molded-case circuit breakers of frame size indicated; rated 600 volts or 240 volts as required, 60 Hz, 3-poles with interrupting ratings as shown on drawings. Provide breakers with permanent thermal and instantaneous magnetic trips in each pole, and with fault-current limiting protection, ampere ratings as indicated. Construct with overcenter, trip-free, toggle-type operating mechanisms with quick-make, quick-break action and positive handle trip indication. Handle ties are not permitted. Provide push-to-trip button on cover for mechanical tripping circuit breakers. Construct breakers for mounting and operating in any physical position and operating in an ambient temperature of 40oC. Provide breakers with mechanical screw type removable connector lugs, AL/CU rated. Circuit breakers shall have the short circuit interrupting rated indicated on the drawings or as required for the short circuit current available.

C. Molded-Case Circuit Breakers for Installation in Panelboards: Shall meet the same specifications as in Part B above. Shall be manufactured by the same manufacturer as the panelboard.

D. Provide all accesories indicated on the drawings, including accesories indicated on the panel schedules, such as shunt trips, ground fault protection, undervoltage trips, etc. Accessories shall be manufactured by the same manufacturer as the circuit breaker.

E. All circuit breakers used to protect heating, ventilation or air conditioning circuits shall be listed HACR type.

7. FUSES

A. General: Except as otherwise indicated, provide fuses of types, sizes, ratings, and average time/current and peak let-through current characteristics indicated, which comply with manufacturer's standard design, materials, and construction in accordance with published product information, and with industry standards and configurations.

B. Class RK5 Dual-Element Time-Delay Fuses: Provide UL Class RK-5 dual element time-delay fuses rated 600 V, 60 Hz, amperes as required by the manufacturer of the equipment being protected, with 200,000 RMS symmetrical interrupting current rating for protecting motors.

8. INSTALLATION OF OVERCURRENT PROTECTIVE DEVICES

A. Install overcurrent protective devices as indicated, in accordance with manufacturer's written instructions and with recognized industry practices to ensure that protective devices comply with requirements. Comply with NEC and NEMA standards for installation of overcurrent protective devices.

B. Coordinate with other work, including electrical wiring work, as necessary to interface installation of overcurrent protective devices with other work.

C. Fasten circuit breakers without causing mechainical stresses, twisting or misalignment being exerted by clamps, supports, or cabling.

D. Set field-adjustable circuit breakers for trip settings as indicated, subsequent to installation of units.

E. Install fuses, if any, in fused circuit breakers.

9. ADJUST AND CLEAN

A. Inspect circuit-breaker operating mechanisms for malfunctioning and, where necessary, adjust units for free mechanical movement.

10. FIELD QUALITY CONTROL

A. Prior to energization of overcurrent protective devices, test devices for continuity of circuitry and for short-circuits. Correct malfunctioning units, and then demonstrate compliance with requirements.

SECTION 16190 - SUPPORTING DEVICES

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. This section is a Division-16 Basic Electrical Materials and Methods section, and is a part of each Division-16 section making reference to electrical supporting devices specified herein.

2. DESCRIPTION OF WORK

A. Extent of supports, anchors, sleeves, and seals is indicated by drawings and schedules and/or specified in other Division-16 sections.

B. Types of supports, anchors, sleeves, and seals specified in this section include the following:

2. Clevis hangers
3. C-clamps
4. I-beam clamps
5. One-hole conduit straps
6. Round steel rods
7. Lead expansion anchors
8. Toggle bolts
9. Wall and floor seals

C. Supports, anchors, sleeves, and seals furnished as part of factory-fabricated equipment, are specified as part of that equipment assembly in other Division-16 sections.

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of supporting devices, of types, sizes, and ratings required, whose products have been in satisfactory use in similar service for not less than 3 years.

B. NEC Compliance: Comply with NEC requirements as applicable to construction and installation of electrical supporting devices.

4. MANUFACTURED SUPPORTING DEVICES

A. General: Provide supporting devices which comply with manufacturer's standard materials, design and construction in accordance with published product information, and as required for complete installation; and as herein specified. Where more than one type of supporting device meets indicated requirements, selection is Installer's option.

B. Supports: Provide supporting devices of types, sizes, and materials indicated; and having the following construction features:

1. Clevis Hangers: For supporting 2" rigid metal con duit; galvanized steel; with 1/2" dia. hole for round steel rod; approximately 54 pounds per 100 units.
2. Reducing Couplings: Steel rod reducing coupling, 1/2" x 5/8"; black steel; approximately 16 pounds per 100 units.
3. C-Clamps: Black malleable iron; 1/2" rod size; approximately 70 pounds per 100 units.
4. I-Beam Clamps: Black steel, 1-1/4" x 3/16" stock; 3/8" cross bolt; flange width 2"; approximately 52 pounds per 100 units.
5. One-Hole Conduit Straps: For supporting 3/4" rigid metal conduit; galvanized steel; approximately 7 pounds per 100 units.
6. Hexagon Nuts: For 1/2" rod size; galvanized steel; approximately 4 pounds per 100 units.
7. Round Steel Rod: Black steel; 1/2" dia.; approximately 67 pounds per 100 feet.
8. Offset Conduit Clamps: For supporting 2" rigid metal conduit; black steel; approximately 200 pounds per 100 units.

C. Anchors: Provide anchors of types, sizes, and materials indicated, with the following construciton features:

1. Lead Expansion Anchors: 1/2", approximately 38 pounds per 100 units.
2. Toggle Bolts: Springhead; 3/16" x 4", approximately 5 pounds per 100 units.

D. Available Manufacturers: Subject to compliance with requirements, manufacturers offering anchors which may be incorporated in the work include, but are not limited to, the following:

1. Abbeon Cal Inc.
2. Ackerman Johnson Fastening Systems, Inc.
3. Elcen Metal Products Co.
4. Ideal Industries, Inc.
5. Joslyn Mfg. and Supply Co.
6. McGraw Edison Co.
7. Rawlplug Co., Inc.
8. Star Expansion Co.
9. Expansion Bolt Co.

E. Sleeves and Seals: Provide sleeves and seals, of types, sizes, and materials indicated, with the following construction features:

1. Wall and Floor Seals: Provide factory-assembled watertight wall and floor seals, of types and sizes indicated; suitable for sealing around conduit, pipe, or buting passing through concrete floors and walls. Construct seals with steel sleeves, malleable iron body, neoprene sealing grommets and rings, metal pressure rings, pressure clamps, and cap screws.

F. U-Channel Strut Systems: Provide U-channel strut system for supporting electrical equipment, 12-gage hot-dip galvanized steel, of types and sizes indicated; construct with 9/16" dia. holes, 8" o.c. on top surface, with standard finish, and with the following fittings which mate and match U-channel.

1. Fixture hangers
2. Channel hangers
3. Thinwall conduit clamps
4. Rigid conduit clamps
5. Conduit hangers
6. U-bolts

G. Available Manufacturers: Subject to compliance with requirements, manufacturers offering channel systems which may be incorporated in the work include, but are not limited to, the following:

1. Greenfield Mfg. Co.; Inc.
2. Midland-Ross Corp.
3. OZ/Gedney Div.; General Signal Corp.
4. Power-Strut Div.; Van Huffel Tube Corp.
5. Unistrut Div.; GTE Products Corp.

H. Pipe Sleeves: Provide pipe sleeves of one of the following:

1. Sheet Metal: Fabricate from galvanized sheet metal; round tube closed with snaplock joint, welded spiral seams, or welded longitudinal joint. Fabricate sleeves from the following gage metal: 3" and smaller, 20-gage; 4" to 6", 16-gage; over 6", 14-gage.
2. Steel Pipe: Fabricate from Schedule 40 galvanized steel pipe; remove burrs.
3. Iron Pipe: Fabricate from cast-iron or ductile-iron pipe; remove burrs.
4. Plastic Pipe: Fabricate from Schedule 80 PVC plas tic pipe; remove burrs.

I. Sleeve Seals: Provide sleeves for piping which penetrates foundation walls below grade, or exterior walls. Calk between sleeve and pipe with non-toxic, UL-classified calking material to ensure watertight seal.

5. INSTALLATION OF SUPPORTING DEVICES

A. Install hangers, anchors, sleeves, and seals as indicated, in accordance with manufacturer's written instructions and with recognized industry practices to insure supporting devices comply with requirements. Comply with requirements of NECA and NEC for installation of supporting devices.

B. Coordinate with other electrical work, including raceway and wiring work, as necessary to interface installation of supporting devices with other work. Coordinate support locations with other structural and mechanical trades. Supports shall not be attached to mechanical or electrical piping, conduit, ductwork, ceiling grid system or any other non-structural member.

C. Install hangers, supports, clamps, and attachments to support piping properly from building structure. Arrange for grouping of parallel runs of horizontal conduits to be supported together on trapeze type hangers where possible. Install supports with spacings indicated and in compliance with NEC requirements.

SECTION 16195 - ELECTRICAL IDENTIFICATION

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. Division-16 Basic Electrical Materials and Methods section apply to work specified in this section.

2. DESCRIPTION OF WORK

A. Extent of electrical identification work is indicated by drawings and schedules.

B. Types of electrical identification work specified in this section include the following:

1. Electrical power, control, and communication conductors.
2. Operational instructions and warnings.
3. Equipment/system identification signs.

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of electrical identification products of types required, whose products have been in satisfactory use in similar service for not less than 3 years.

B. NEC Compliance: Comply with NEC as applicable to installation of identifying labels and markers for wiring and equipment.

C. UL Compliance: Comply with applicable requirements of UL Std 969, "Marking and Labeling Systems", pertaining to electrical identification systems.

4. ACCEPTABLE MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering electrical identification products which may be incorporated in the work include, but are not limited to, the following:

1. Brady, W.H. Co.

5. ELECTRICAL IDENTIFICATION MATERIALS

A. General: Except as otherwise indicated, provide manufacturer's standard products of categories and types required for each application. Where more than single type is specified for an application, selection is Installer's option, but provide single selection for each application.

6. ENGRAVED PLASTIC-LAMINATE SIGNS

A. General: Provide engraving stock melamine plastic laminate, complying with FS L-P-387, in sizes and thicknesses indicated, engraved with engraver's standard letter style of sizes and wording indicated, white face and black core plies (letter color) except as otherwise indicated, punched for mechanical fastening except where adhesive mounting is necessary because of substrate.

1. Thickness: 1/8", except as otherwise indicated.
2. Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate substrate.

7. LETTERING AND GRAPHICS

A. General: Coordinate names, abbreviations and other designations used in electrical identification work, with corresponding designations shown, specified or scheduled. Provide numbers, lettering, and wording as indicated or, if not otherwise indicated, as recommended by manufacturer or as required for proper identification and operation/maintenance of electrical systems and equipment.

8. APPLICATION AND INSTALLATION

A. General Installation Requirements:

1. Install electrical identification products as indicated, in accordance with manufacturer's written instructions and requirements of NEC.
2. Coordination: Where identification is to be applied to surfaces which require finish, install identification after completion of painting.
3. Regulations: Comply with governing regulations and requests of governing authorities for identification of electrical work.

9. OPERATIONAL IDENTIFICATION AND WARNINGS

A. General: Wherever reasonably required to ensure safe and efficient operation and maintenance of electrical systems, and electrically connected mechanical systems and general systems and equipment, including prevention of misuse of electrical facilities by unauthorized personnel, install self-adhesive plastic signs or similar equivalent identification, instruction or warnings on switches, outlets and other controls, devices and doors of electrical enclosures. Where detailed instructions or explanations are needed, provide plasticized tags with clearly written messages adequate for intended purposes.

10. EQUIPMENT/SYSTEM IDENTIFICATION

A. General: Install engraved plastic-laminate sign on each major unit of electrical equipment in building; including central or master unit of each electrical system including communication/ control/signal systems, unless unit is specified with its own self-explanatory identification or signal system. Except as otherwise indicated, provide single line of text, 1/2" high lettering, on 1-1/2" high sign (2" high where 2 lines are required), black lettering in white field. Provide text matching terminology and numbering of the contract documents and shop drawings. Provide signs for each unit of the following categories of electrical work:

1. Switchboard, panelboards, electrical cabinets, disconnect switches and enclosures
2. Access panel/doors to electrical facilities
3. Transformers
4. Intercom system master station
5. TV/audio monitoring master station
6. Fire alarm master station
7. Each switch in main switchboard
8. Communications systems terminal cabinets; sound, CCTV, clock, telephone, etc.

B. Install signs at locations indicated or, where not otherwise indicated, at location for best convenience of viewing without interference with operation and maintenance of equipment. Secure to substrate with fasteners, except use adhesive where fasteners should not or cannot penetrate substrate.

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02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.14

DIVISION 16 - ELECTRICAL SYSTEMS (CONTINUED)

SECTION 16445 - PANELBOARDS, DISTRIBUTION AND BRANCH CIRCUIT

PART 1 GENERAL

1.01 WORK INCLUDED

A. Furnish and install distribution and branch circuit panel- boards.

B. Related Work and Specifications: Section 16010: Electrical General Provisions.

1.02 QUALITY ASSURANCE

A. Referenced Standards:
1. UL 50 – Cabinets and Boxes.
2. UL 67 – Electric Panelboards.
3. NEMA AB 1 – Molded Case Circuit Breakers.
4. NEMA AB 2 – Procedures for Verifying the Performance of Molded Case Circuit Breakers.
5. NEMA FU 1 – Low Voltage Cartridge Fuses.
6. NEMA KS 1 – Enclosed Switches.
7. NEMA PB 1 – Panelboards.

1.03 SUBMITTALS

A. The following information shall be submitted to the Engineer:
1. Breaker layout drawing with dimensions indicated and nameplate designation
2. Component list
3. Conduit entry/exit locations
4. Assembly ratings including:
a. Short-circuit rating
b. Voltage
c. Continuous current
5. Cable terminal sizes

PART 2 PRODUCTS

2.01 ENCLOSURE

A. Cabinet:
1. Construct cabinets in accordance with UL 50. Use painted galvanized sheet steel 16-gauge or more.
2. Provide a minimum 4-inch gutter wiring space on each side.
3. Reinforce cabinets and securely support bus bars and over-current devices to prevent vibration and breakage in handling.
4. Provide standard conduit knockouts in cabinet ends.
5. Finish cabinets of surface-mounted panelboards to match doors and trim as specified below.
6. Panelboards mounted outdoors shall be weatherproof, and shall have a door behind door type construction.
7. Panelboards mounted in wet or corrosive areas shall have NEMA 4X stainless steel enclosures.
8. Panelboards mounted shall be NEMA 12 enclosures for areas classified as NEMA 12.

B. Doors and Trim:
1. Fabricate doors and trim from cold-rolled sheet steel.
2. Equip doors with flush-type combination catch and key lock.
3. Key all locks alike. Fasten trim for flush-mounted panelboards to cabinets by an approved means which permits both horizontal and vertical adjustment.
4. Trim for surface-mounted panelboards must fit the cabinet with no overhang.
5. Apply a finish to trim and doors consisting of two coats of enamel over a rust-inhibiting prime coat.

2.02 BUS

A. Material:
1. Provide tin plated, copper bus bars, 98 percent IACS conductivity, full-sized throughout their length.
2. Use buses with silver-plated contact surfaces.
3. Include a tin plated copper bus bar ground bus in panelboard rated not less than 25 percent of the main bus capacity.
4. Full size (100% rated) insulated neutral bus shall be included in the panel board, shown with neutral. 200% rated neutral bus shall be supplied for panels designated on the drawings.
5. The ground and neutral bus shall be at least one terminal screw for each circuit.
6. Provide through feed or sub feed lugs where indicated.
7. Provide lugs and connection points on phase, neutral and ground bus suitable for copper conductors.
8. Spaces for future circuit breakers shall be bussed for the maximum devices that can be fitted.

B. Size bars as indicated and brace them to withstand the available symmetrical short circuit current.

C. Installation:
1. Install buses in allotted spaces so that devices can be added without additional machining, drilling or tapping.
2. Mount neutral bars, as required, on the opposite end of the main lugs.

2.03 PROTECTIVE DEVICES

A. Circuit Breakers: Provide circuit breakers for the specified service with the number of poles and ampere ratings indicated.
1. Provide breakers which are quick-make and quick-break on both manual and automatic operation.
2. Use a trip-free trip indicating breaker.
3. Incorporate inverse time characteristic by bimetallic overload elements and instantaneous characteristic by magnetic trip. Where indicated, provide ground fault circuit breakers (GFCB).
4. For 2-pole and 3-pole breakers, use the common-trip type so that an overload or fault on one pole will trip all poles simultaneously. Handle ties are not acceptable.
5. Unless otherwise indicated, provide circuit breakers with the following interrupting ratings:
a. Each circuit breaker used in 120/208 Volt panelboards shall have an interrupting capacity of not less than 10,000 Amps, RMS symmetrical.
b. Each circuit breaker used in 120/240 Volt panelboards shall have an interrupting capacity of not less than 10,000 Amps, RMS symmetrical.
c. Each circuit breaker used in 277/480 Volt and 480 Volt panelboards shall have an interrupting capacity of not less than 22,000 Amps, RMS symmetrical.
d. GFCI (ground fault circuit interrupter) shall be provided for circuits where shown on the drawings. GFCI units shall be 1 Pole, 120 Volt, molded case, bolt-on breakers, incorporating a solid state ground fault interrupter circuit insulated and isolated from the breaker mechanism. The unit shall be UL listed Class A Group I device (5 milliamp sensitivity, 25 millisecond trip time) and an interrupting capacity of 10,000 Amps, RMS.
e. Circuit breakers shall be as manufactured by the panelboard manufacturer.
6. Connect breakers to the main bus by means of a solidly bolted connection.
7. Use breakers which are interchangeable, capable of being operated in any position within the panel.
8. Independently mount breakers so that a single unit can be removed from the front of the panel without disturbing or removing main bus, other units or other branch circuit connections.
9. Provide individual breaker handle lock for all circuits that supply exit signs, emergency lights, and fire alarm panels.
10. Provide GFI circuit breakers for heat trace circuit. The rating shall be as per NEC.

B. Surge Suppressor
1. The panelboard shall be provided with externally mounted, transient voltage surge suppression.

C. Service Entrance
1. The panelboard shall have a connection for housing and grounding neutral conductor.
2. Provide a UL label for the panelboard.

2.04 CIRCUIT IDENTIFICATION

A. Directory:
1. For each panelboard, provide a directory frame mounted inside the door with a heat-resistant transparent face and a directory card for identifying the load served.
2. Type directory as specified in Section 16010.

B. Nameplate:
1. Provide a black on white nameplate on the face of the panelboard using the following as an example:

Panel HA
277/480V, 3Ø, 4W
Feeder from MCC-B/Section

2. The nameplate shall have a minimum thickness of 1/8".

2.05 LISTING

A. UL 67 – Electric Panelboards.

2.06 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers are Culter Hammer, Square-D, General Electric, Siemens.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install panelboards in the locations as shown and as recommended in NEMA PB1.1.

B. In wet and corrosive areas, including outdoor locations, install panelboard enclosures on unistrut support to provide clearance behind the mounting surface.

C. In wet and corrosive areas, including outdoor locations, connect conduits to the bottom of the enclosure and to the lower 30 percent of the sides.

D. All conduit connections shall be by use of Myers hub.

3.02 MOUNTING HEIGHT

A. Install the panelboards such that the center of the switch or circuit breaker in the highest position will not be more than 6-1/2 feet above the floor or working platform.

3.03 SPECIAL REQUIREMENTS

A. All copper items, including wiring, terminal blocks, lugs, connectors, bus, etc., shall be tin plated copper.

B. All steel shall be primed and painted as specified. Galvanized items shall also be painted.

C. All hardware, including nuts, bolts, washers, screws, anchor bolts, door hinges, etc., shall be made of 316 stainless steel.

D. The minimum requirements of painting procedure shall be followed:
1. Surface preparation per SSPC-SP6.
2. Primer: Tnemec 66, Epoxoline – one coat 4 dry mils.
3. Finish Coat: Tnemec Series 72, Edura Shield – one coat 1.5 dry mils (ANSI 61 light gray).
4. Undercoat Finish: Tnemec Tar 46-413-2 coats 40 dry mils total.

SECTION 16450 - GROUNDING

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. Division-16 Basic Electrical Materials and Methods section apply to work of this section.

2. DESCRIPTION OF WORK

A. Extent of grounding work is indicated by drawings and schedules.

B. Types of grounding specified in this section include the following:
1. Solid grounding

C. Applications of grounding work in this section including the following:
1. Underground metal water piping
2. Metal building frames
3. Grounding electrodes
4. Grounding rods
5. Service equipment
6. Enclosures
7. Equipment

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of electrical connectors, terminals and fittings, of types and ratings required, and ancillary grounding materials, including stranded cable, copper braid and bus, ground rods and plate electrodes, whose products have been in satisfactory use in similar service for not less than 3 years.

B. Installer: Qualified with at least 3 years of successful installation experience on projects with electrical grounding work similar to that required for project.

C. NEC Compliance: Comply with NEC requirements as applicable to materials and installation of electrical grounding systems, associated equipment and wiring. Provide grounding products which are UL-listed and labeled.

D. UL Compliance: Comply with applicable requirements of UL Standards Nos. 467 and 869 pertaining to electrical grounding and bonding.

E. IEEE Compliance: Comply with applicable requirements of IEEE Standard 142 and 241 pertaining to electrical grounding.

4. SUBMITTALS

A. Product Data: Submit manufacturer's data on grounding systems and and accessories.

B. Shop Drawings: Submit layout drawings of grounding systems and accessories including, but not limited to, ground wiring, copper braid and bus, ground rods, and plate electrodes.

5. ACCEPTABLE MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering grounding products which may be incorporated in the work include, but not limited to, the following:
1. Burndy Corp.
2. Crouse-Hinds Co.
3. Electrical Components Div.; Gould Inc.
4. Thomas and Betts Corp.

6. GROUNDING SYSTEMS

A. Materials and Components:

1. General: Except as otherwise indicated, provide electrical grounding systems indicated; with assembly of materials, including, but not limited to, cables/wires, connectors, terminals (solderless lugs), grounding rods/electrodes and plate electrodes, bonding jumper braid, surge arresters, and additional accessories needed for complete installation. Where more than one type unit meets indicated requirements, selection is Installer's option. Where materials or components are not indicated, provide products complying with NEC, UL, IEEE, and established industry standards for applications indicated.

B. Conductors: Unless otherwise indicated, provide electrical grounding conductors for grounding connections matching power supply wiring materials and sized according to NEC.

C. Ground Rods: Solid copper or copper clad steel, minimum 3/4" dia. x 10'. Provide longer rods if necessary for required resistivity.

D. Electrical Grounding Connection Accessories: Provide electrical insulating tape, heat-shrinkable insulating tubing, welding materials, bonding straps, as recommended by accessories manufacturers for type services indicated.

7. INSPECTION

A. Installer must examine areas and conditions under which electrical grounding connections are to be made and notify Contractor in writing of conditions detrimental to proper completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

8. INSTALLATION OF ELECTRICAL GROUNDING

A. General: Install electrical grounding systems where shown, in accordance with applicable portions of NEC, with NECA's "Standard of Installation", and in accordance with recognized industry practices, to ensure that products comply with requirements and serve intended functions.

B. Coordinate with other electrical work as necessary to interface installation of electrical grounding system work with other work.

C. Install clamp-on connectors only on thoroughly cleaned metal contact surfaces, to ensure electrical conductivity and circuit integrity.

D. All ground connections to water service entrance shall be installed to be exposed and visible for inspection at all times. Insulation shall not be installed over ground connections.

E. A water pipe, by itself, is not an adequate grounding electrode and must be supplemented by dual grounding electrodes, a minimum of 8 feet apart, and effectively bonded together. The supplemental ground shall be per Code with the "Footing type electrode" taking precedence when possible.

F. All ground connections shall be made on surfaces which have been cleaned of all paint, dirt, oil, etc., so that connections are bare metal to bare metal contact. All ground connections shall be tight and shall be made with U.L. listed grounding devices, fittings, bushings, etc.

G. Duplex receptacles of any amperage shall be grounding type and shall have a separate grounding contact. A separate jumper shall be installed between the grounding terminal on the device and the metallic box. The Contractor may provide U.L. listed self-grounding receptacles in lieu of providing the separate jumper.

H. Single and duplex receptacles shall have all grounded metal mechanically bonded together. Pressure bonding only is not acceptable.

I. Single and duplex receptacles will be installed with the grounding contacts down.

J. Hospital grade or high abuse type which will be installed with the ground contacts up.

1. Shop equipment receptacles shall be installed with the ground contacts up.

K. In all cases where flexible metallic conduit, nonmetallic rigid conduit or liquid tight flexible conduit is used, a green wire ground conductor shall be used to provide ground continuity between the equipment of device and the conduit raceway system.

L. Provide a separate green wire ground conductor for each branch circuit originating from each panelboard. This ground shall be used to ground the device or load fed, and shall be bonded to components of the raceway system, such as junction boxes, starter or disconnect switch enclosures, equipment cases, etc. The green wire ground conductor shall terminate in the panelboard at the green wire ground bus. Ground conductors for branch circuits shall be of size indicated in NEC, except minimum size ground conductor shall be No. 12 AWG.

M. Each branch feeder originating at the switchboard(s) shall have a green wire ground conductor originating at the ground bus in the switchboard and terminating at the green wire ground bus in the panelboard. This green wire ground conductor shall be of size indicated in NEC except in no instance smaller than No. 8 AWG.

N. The green wire ground conductor is in addition to the neutral conductor and in no case shall the neutral conductor serve as the grounding means.

O. Multiple conductors in a single lug not permitted. Each grounding conductor shall terminate in its own terminal lug.

SECTION 16510 - INTERIOR BUILDING LIGHTING

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. Division-16 Basic Electrical Materials and Methods section apply to work specified in this section.

2. DESCRIPTION OF WORK

A. Extent of interior lighting fixture work is indicated by drawings and schedules.

B. Types of interior lighting fixtures in this section include the following:
1. Fluorescent
2. Incandescent
3. High Intensity Discharge
4. LED

C. Applications of interior lighting fixtures required for project including the following:
1. General lighting
2. Supplementary lighting
3. Task lighting
4. Emergency lighting

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of interior lighting fixtures of types and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer: Qualified with at least 3 years of successful installation experience on projects with interior lighting fixture work similar to that required for project.

C. NEC Compliance: Comply with NEC as applicable to installation and construction of interior building lighting fixtures.

D. NEMA Compliance: Comply with applicable requirements of NEMA Std Pub Nos. LE 1 and LE 2 pertaining to lighting equipment.

E. ANSI/IES Compliance: Comply with ANSI 132.1 pertaining to interior lighting fixtures.

F. ANSI/UL Compliance: Comply with ANSI/UL standards pertaining to interior lighting fixtures for hazardous locations.

G. UL Compliance: Provide interior lighting fixtures which have been UL-listed and labeled.

H. CBM Labels: Provide fluorescent-lamp ballasts which comply with Certified Ballast Manufacturers Association standards and carry the CBM label.

4. SUBMITTALS

A. Product Data: Submit manufacturer's data on interior building lighting fixtures, lamps and ballasts. Lighting fixtures shall be in strict accordance with the fixture schedule. Substitutions will not be accepted without formal written prior approval. Requests for review of substitutions shall be submit a minimum of 10 days prior to bid. Any other requests will be rejected.

B. Shop Drawings: Submit fixture shop drawings in booklet form with separate sheet for each fixture, assembled in luminaire "type" alphabetical order, with proposed fixture and accessories clearly indicated on each sheet.

5. ACCEPTABLE MANUFACTURERS

A. Manufacturers/Catalog Numbers: Subject to compliance with requirements, provide fixtures manufactured by manufacturers as indicated on the fixture schedule. Catalog numbers given on the fixture schedule are intended to provide the general description of the required fixture and its quality. Additional accessories, mounting hardware, options, etc., not specifically described by the catalog number but required for a properly operating and installed fixture or as described by additional notation on the drawings or in the specifications, shall be provided.

6. INTERIOR LIGHTING FIXTURES

A. General: Provide lighting fixtures, of sizes, types, and ratings indicated; complete with, but not necessarily limited to, housings, lamps, lamp holders, reflectors, ballasts, starters and wiring.

1. Fluorescent-Lamp Ballasts: Provide energy saving high frequency electronic fluorescent-lamp ballasts, capable of operating 32 watt, octic, T-8 lamp types; with high power factor, rapid-start, and low-noise features; Type 1; Class P; sound-rated A, and with internal thermal protection. All flourescent fixture ballasts shall be of the same manufacturer and type. Ballasts shall also meet the following requirements:

2. Operate lamps at 20 KHZ or higher with no detectable flicker.

3. Ballast manufacturer shall have been producing electronic ballasts in the U.S. for more than five years with a low failure rate.

4. Ballasts shall be approved and listed by UL.

5. Ballasts shall comply with all applicable state and federal efficiency standards.

6. Ballasts shall comply with FCC and NEMA limits governing electromagnetic and radio frequency interference and shall not interfere with operation of other normal electrical equipment.

7. Ballasts shall meet all applicable ANSI and IEEE standards regarding harmonic distortion and surge protection, but in no case shall have total harmonic distortion exceeding 20%.

8. Ballasts shall not be affected by lamp failure and shall yield normal published expected lamp life.

9. Lamp current crest factor shall not exceed 1.7.

10. Ballasts shall operate at an input frequency of 60 HZ and an input voltage of that indicated on the drawings for the fixture voltage.

11. Ballasts shall have a power factor above 0.95.

12. Ballasts shall operate as a parallel circuit allowing remaining lamps to maintain full output if companion lamps fail.

13. Ballasts shall carry a minimum three year warranty, including labor allowance.

14. Ballasts shall be manufactured by Magnetek, Motorola or approved equal.

C. Fusing all fluorescent ballasts shall be fused. Fuses may be deleted if the ballast is supplied with automatically resetting thermal overloads internal to the ballast.

D. H.I.D. Lamp Ballasts: Provide energy saving ballasts, capable of operating lamp types indicated; with high power factor, fixture to have quartz restrike where indicated and low-noise feature and with internal thermal protection, class H insulation. H.I.D. ballasts shall be manufactured by Advanced, Valmont, Magnetek or approved equal.

E. Lamps: Provide lamps of the wattage and types specified on the drawings. Coordinate lamp type with ballast for a complete operational, energy saving lighting system which will operate for the expected lamp and ballast life. Lamps shall be as manufactured by General Electric, Phillips, or Osram/Sylvania.

1. Fluorescent lamps shall be rapid start, T-8, medium bi-pin, 32 watt, 3500K, 85 CRI, 3,000 lumens, 20,000 average rated hours.

2. Lamp and ballast combinations shall have no noticeable flicker or delayed starting. Lamps shall start instantaneously and illuminate immediately. Any delay in starting will not be acceptable and the lamp and/or ballast shall be replaced.

3. All lamp types and color shall be verified with the lighting consultant prior to ordering.

7. INSTALLATION OF INTERIOR LIGHTING FIXTURES

A. Install interior lighting fixtures at locations and heights as indicated, in accordance with fixture manufacturer's written instructions, applicable requirements of NEC, NECA's "Standard of Installation", NEMA standards, and with recognized industry practices to ensure that lighting fixtures fulfill requirements.

B. Coordinate with other electrical work as appropriate to properly interface installation of interior lighting fixtures with other work.

C. Fasten fixtures securely to building structural support; and ensure that pendant fixtures are plumb and level. Provide all required mounting hardware and steel channel to supplement structural support where necessary. Fixtures shall not be supported from ductwork, piping, conduits, ceiling grid or any other non-structural building member.

D. Coordinate fixture installation with mechanical duct work, diffusers, return grilles, communication systems devices, etc., to avoid any interferences.

8. ADJUST AND CLEAN

A. Clean interior lighting fixtures of dirt and debris upon completion of installation

B. Protect installed fixtures from damage during remainder of construction period.

9. FIELD QUALITY CONTROL

A. Upon completion of installation of interior lighting fixtures, and after building circuitry has been energized, apply electrical energy to demonstrate capability and compliance with requirements. where possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and proceed with retesting.

B. At the time of Substantial Completion, replace lamps in interior lighting fixtures which are observed to be noticeably dimmed after Contractor's use and testing, as judged by Architect/Engineer.

C. Refer to Division-1 sections for the replacement/restoration of lamps in interior lighting fixtures, where used for temporary lighting prior to time of Substantial Completion.

10. GROUNDING

A. Provide tight equipment grounding connections for each interior lighting fixture installation.

SECTION 16520 - EXTERIOR BUILDING LIGHTING

1. RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. Division-16 Basic Electrical Materials and Methods section apply to work specified in this section.

2. DESCRIPTION OF WORK

A. Extent of exterior lighting fixture work is indicated by drawings and schedules.

B. Types of exterior lighting fixtures in this section include the following:

1. LED
2. High Intensity Discharge
3. Fluorescent

C. Applications of exterior lighting fixtures required for project including the following:

1. Outdoor supplementary lighting
2. Site Lighting

3. QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of exterior lighting fixtures of types and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer: Qualified with at least 3 years of successful installation experience on projects with exterior lighting fixture work similar to that required for project.

C. NEC Compliance: Comply with NEC as applicable to installation and construction of exterior building lighting fixtures.

G. UL Compliance: Provide exterior lighting fixtures which are UL-listed and labeled.

H. CBM Labels: Provide ballasts which comply with Certified Ballast Manufacturers Association standards and carry the CBM label.

4. SUBMITTALS

A. Product Data: Submit manufacturer's data on exterior lighting fixtures, lamps, BUG rating, and ballasts to Architect.

B. Shop Drawings: Submit dimensioned drawings of exterior lighting fixture. Submit fixture shop drawings in booklet form with separate sheet for each fixture, assembled in luminaire "type" alphabetical order, with proposed fixture and accessories clearly indicated on each sheet to Architect. Provide photometric data for each fixture type. Clearly indicate fixture lamp and ballast type and manufacturer.

5. ACCEPTABLE MANUFACTURERS

A. Manufacturers/Catalog Numbers: Subject to compliance with requirements, provide fixtures manufactured by manufacturers as indicated on the fixture schedule. Catalog numbers given on the fixture schedule are intended to provide the general description of the required fixture and its quality. Additional accessories, mounting hardware, options, etc., not specifically described by the catalog number but required for a properly operating and installed fixture or as described by additional notation on the drawings or in the specifications, shall be provided.

6. EXTERIOR LIGHTING FIXTURES

A. General: Provide lighting fixtures, of sizes, types, and ratings indicated; complete with, but not necessarily limited to, housings, lamps, lamp holders, reflectors, ballasts, starters and wiring.

B. H.I.D.-Lamp Ballasts: Provide energy saving high intensity discharge lamp type ballasts, capable of operating the associated lamp type for its rated life; with high power factor, and low-noise features; Type 1; Class P; sound-rated A, and with internal thermal protection. All HID fixture ballasts shall be of the same manufacturer and type. Provide quartz restrike feature where indicated on the drawings. Ballasts shall operate the lamp at full brightness and shall be suitable for the exterior environment, including the appropriate temperature rating.

C. LED: Provide internal driver, lamps dimmable from 100% to 0%, Refer to Light Fixture Schedule for distribution types, and voltage.

D. Emergency Lighting: Provide emergency battery pack with minimum 90 minutes and wired ahead of lighting controls.

7. LIGHTING POLES AND STANDARDS

A. EPA: Equivalent for projected area.

B. Provide brackets for mounting luminaire.

C. Refer to Lighting Fixture Schedule for pole height, thickness, color and type.

D. Provide handhole with minimum clear opening of 2 1/2-inches by 5-inches with gasketed cover (w/matching finish) secured with stainless steel screws.

8. INSTALLATION OF EXTERIOR LIGHTING FIXTURES

A. Install exterior lighting fixtures at locations and heights as indicated, in accordance with fixture manufacturer's written instructions, applicable requirements of NEC, NECA's "Standard of Installation", NEMA standards, and with recognized industry practices to ensure that lighting fixtures fulfill requirements.

B. Coordinate with other electrical work as appropriate to properly interface installation of exterior lighting fixtures with other work.

C. Fasten fixtures securely to required structural supports; and check to ensure that solid pendant fixtures are plumb.

9. ADJUST AND CLEAN

A. Clean exterior lighting fixtures of dirt and debris upon completion of installation.

B. Protect installed fixtures from damage during remainder of construction period.

10. FIELD QUALITY CONTROL

A. Upon completion of installation of exterior lighting fixtures, and after building circuitry, apply electrical energy to lighting fixtures to demonstrate capability and compliance with requirements. Where possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and proceed with retesting.

B. At the time of Substantial Completion, replace lamps in exterior lighting fixtures which are observed to be noticeably dimmed after Contractor's use and testing, as judged by Owner. Furnish stock or replacement lamps amounting to 15% (but not less than one lamp in each case) of each type and size lamp used in each type fixture. Deliver replacement stock as directed to Owner's storage space.

C. Refer to Division-1 sections for the replacement/restoration of lamps in exterior lighting fixtures, where used for temporary lighting prior to time of Substantial Completion.

D. Inspect each installed luminaire for damage. Replace damaged luminaires and components.

11. GROUNDING

A. Provide tight equipment grounding connections for each exterior lighting fixture installation.

B Ground steel poles per NEC 250.

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02.21.2023

DRAWING COORDINATION
Architecural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.
SP.15

DIVISION 21
- FIRE SPRINKLER SYSTEMS - GC TO SUPPLY & INSTALL

Design and Construction Standards

Design Criteria

Division 21 Fire Suppression Systems

The issuance and revision history of this Section is tabulated below. Please destroy any previous copy in your possession.

Rev Date	Pages Remarks	Documents Referenced
7/1/2016	All New Design Guideline created	21.00.00 Fire Sprinkler Systems - 01-09-2013.docx; 21.00.10 Standplpe Systems - 01-09-2013.docx; 21.20.00 FIre Extlngulshing Systems - 01-09-2013.docx; 21.30.00 Fire Pumps - 01-09-2013.docx
Rev Date	Pages Remarks	Documents Referenced
12/1/2016	All Replaced existing document with revised outline per Fire Protection Services. (See bottom of document for 7/1/2016 version of file along with original comments (shown as deleted in tracked changes). Note: Under the “Show Markup” flyout menu select “Show all revisions inline”.	21.00.00 Fire Sprinkler Systems - 01-09-2013.docx; 21.00.10 Standplpe Systems - 01-09-2013.docx; 21.20.00 Fire Extlngulshing Systems - 01-09-2013.docx; 21.30.00 Fire Pumps - 01-09-2013.docx
4/24/2017	All Comments and tracked changes removed for publication.	
3/17/2021 1	Guideline revised to Criteria.	

1.1 GENERAL

A. This standard is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. The responsibility of the engineer is to apply the principles of this section and the ones that follow so that the University may achieve a level of quality and consistency in the fire suppression design of their facilities. Deviations from these must be justified through LCC analysis and submitted to the University for approval.

1.2 CODES (THE EDITIONS REFERENCED IN THE ADOPTED EDITION OF NFPA 101 SHALL BE USED):

A. NFPA 1 – Fire Code

B. NFPA 13 – Installation of Sprinkler Systems

C. NFPA 14 – Standard for the Installation of Standplpe and Hose Systems.

D. NFPA 16 – Foam Water Spray Systems for Fire Protection

E. NFPA 17 – Standard for Dry Chemical Extlngulshing Systems.

F. NFPA 17A – Standard for Wet Chemlcal Extlngulshing Systems.

G. NFPA 20 – Standard for the Installation of Stationary Pumps for Fire Protection.

H. NFPA 24 – Standard for Installation of Private Fire Service Mains and Their Appurtenances

I. NFPA 25 – Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.

J. NFPA 45 – Standard on Fire Protection for Laboratories Using Chemicals

K. NFPA 72 – National Fire Alarm and Signaling Code.

L. NFPA 101 – Life Safety Code.

M. NFPA 2001 – Standard on Clean Agent Extinguishing Systems.

N. International Building Code

O. UL300 – Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas.

1.3 SCOPE OF DESIGN:

A. It is the preference of the University to provide fire protection with automatic wet pipe sprinkler systems and standpipe systems.

B. Alternative fire suppression systems such as dry or wet chemical suppression systems or clean agent fire suppression systems shall be provided where required by the applicable code(s).

C. Non-required alternative fire suppression systems may be used to provide supplemental protection where approved by the University Fire Marshal.

D. Use of alternative fire suppression systems in lieu of automatic sprinkler protection will only be allowed as part of an engineered design that provides an equivalent level of protection and is approved by the University Fire Marshal.

1.4 GENERAL DESIGN REQUIREMENTS

A. Fire protection designs shall be provided on dedicated sheets (i.e. FP plans).

B. Work that may impact existing systems must include impairment planning for any system outages (must comply with NFPA 101, 1, 25, and other applicable standards).

C. Plans should identify where fire protection systems interface or interact with other building systems or components and must reference the appropriate plans for such interconnections.

D. Plans should indicate the specific edition of codes and standards to be followed by the Contractor.

1.5 AS-BUILT DRAWINGS AND CLOSE-OUT DOCUMENTATION

A. The design engineer shall review and certify that As-Built drawings and Close-Out documentation is complete and correct.

1.6 WATER BASED FIRE PROTECTION SYSTEMS

A. Water Supplies for Water Based Fire Protection Systems

1. The preference is for the building to be supplied fire water from the Campus fire water distribution System. If this is not possible, then fire water should be supplied to the building from the Campus domestic water system. If this is not possible, then fire water should be supplied to the building from the Clty water supply.

2. The design engineer is required to verify the adequacy of the water pressure and other pertinent water supply data from either the campus Fire Water Distribution System (FWDS) or the City of Austin water distribution system, depending on which system will be utilized to supply the new sprinkler and/or standplpe system. The design engineer shall immediately notify the UT Fire Marshal and Project Manager of the need for testing or results from previous flow tests in order to base the design of the preliminary design of the system on. The following information shall be provided in the project specifications as a basis of design:

a. Building Name and flange elevation (ft).

b. Test hydrants (hydrant numbers and location) and hydrant elevations (ft).

c. Flow rate (gpm), static pressure (psi), and residual pressure (psi).

3. Portions of the campus have been provided with a dedicated Fire Water Distribution System (FWDS) supplied by existing fire pumps to supply standpipe and sprinkler systems. If the building may be connected to the FWDS, a water flow pump test shall be performed by the contractor with FSSS providing labor to run the test (FSSS will NOT be responsible for the test readings and the contractor shall supply all equipment necessary to obtain the readings including pressure gauges, pitot tubes, etc.) calculations must be provided to the University utililzing the existing FWDS fire pumps to provide the highest pressure and flow demand required for the sprinkler or standpipe system planned for the building, prior to the design and installation of a new building fire pump system. Upon University approval of the calculations and fire pump product data, if the FWDS fails to meet the highest calculated demand, design and procurement of the fire pump system components may be initiated. If the calculations indicate the FWDS fire pumps can provide the required flow and pressure for the building standpipe and/or sprinkler systems, a new fire pump is not required and the system may be connected to the campus FWDS.

4. The specifications for the project should indicate that the hydraulic calculations should include a safety factor at the point of supply to the building of 10% or 10 psi, whichever is greater.

5. The Incomlng water service for new systems shall be provided with a llsted post Indicator gate valve with a tamper switch to be monitored by the building fire alarm panel.

B. Fire Sprinkler System Requirements

1. Fire Sprinkler System Design

a. Fire sprinkler systems shall be wet pipe systems unless the area protected cannot be maintained above 40 degrees F, as required per NFPA 13. In such areas a dry pipe system must be provided, antifreeze systems are not permitted.

b. In areas where It Is not desired to have water filled plplng dry or pre-actlon type systems may be provided. Use of such systems must be approved by the University Fire Marshal.

c. Multi-story buildings should be configured so that each story has its own system, with a floor control assembly for each story, or multiple floor control assemblies per story where required by NFPA 13. A remote express drain and inspectors test should also be provided. The floor control assembly supplying the sprinkler system is required to have a check valve per NFPA 14. A secondary drain in the most remote stairwell shall be installed in addition to the drain of the floor control assembly.

d. Corrosion Prevention:

1) Steel piping used for fire sprinkler systems should have an internal anti-microbial coating.

2) Corrosion resistant sprinkler heads should be used where exposed to corrosive vapors and environments.

3) Automatic air vents and corrosion monitoring stations shall be provided.

4) Corrosion Monitoring Stations:

a) Potter Model PMCS-RM (stock #1119546 PMSCS-RM for wet or dry pipe systems) monitoring station with PCMPK-1 monitoring probe option (stock # 0090180) wired to the fire alarm panel.

b) Engineered Corrosion Solutions (ECS) model ICMS-W (WET PIPE) OR icms-d (dry pipe) monitoring station, with DCMP-1 monitoring probe option wired to fire alarm panel.

5) Automatic Air Vents: Air ejectors are required on every floor to be sprinklered and at the top of each standpipe as required by NFPA 14. All air ejectors located on each floor are to be located at the remote test drain assemblies or at the highest point of the sprinkler system. These are to be piped into the remote express drain or closest suitable drain termination point when required by the manufacturer’s installation instructions. Air ejectors on the top of standpipes that have main and express drains located next to them are to be pipe into the drains when required by the manufacturer’s installation instructions. The remaining air ejectors are to be installed per the manufacturer’s installation instructions. If the area of installation is constructed of materials or located so as to subject stairwell or surrounding spaces to extensive damage, should the ejectors fail and discharge water, it may be necessary to pipe the ejector to the nearest drain source. UT PMCS and/or OFPC to determine the need for this equipment. Specify the following:

a) Engineered Corrosion Solutions (ECS) Model PAV-W.

b) Potter Equipment Model PAV (stock #1119720) air vents and components.

e. Fire protection system maintenance points, such as valves, drains, etc., shall not be located in secure and/or sensitive locations such as Telecom Rooms, PTS Cashlers Offices and Janitor’s Closets.

2. Fire Sprinkler Design Documents

a. Fire protection plans must include the design criteria for all areas protected by the system (NFPA 13 hazard classification, density/area requirements, or specialized design criteria from NPFA 13 or other standards).

3. The Fire Protection Plans should indicate the location of the fire water entry point(s) into the building(s), and the location of key system infrastructure including risers, control valves, test connections, corrosion prevention equipment, etc.

4. The Fire Protection Plans should indicate the sprinkler types, such as concealed heads, upright heads, semi-recessed heads, dry pendant heads, sidewall heads, etc. for the various spaces.

5. Details should be provided for key infrastructure or areas with specialized installations.

C. Standpipe Systems:

1. Standpipe System Design

a. Standpipe systems shall be designed as Class I or Class III, automatic-wet or manual-wet standpipes, as required by NFPA 1, NFPA 101, and the International Fire Code as adopted and amended by the Austin Fire Department. In areas where the temperature cannot be maintained above 40 degrees F a manual-dry standpipe system shall be provided.

b. Each standpipe shall be provided with listed 2½ inch NST hose valves with caps located on the intermediate stairwell landings as required by the City of Austin Fire Code, unless an alternate location is approved by the Austin Fire Department. Additional hose connections shall be provided where the most remote portion of a floor or story exceeds the minimum distances allowed by the City of Austin Fire Code.

c. A hose connection shall be provided at the roof level where required by the City of Austin Fire Code.

d. An additional hose connection shall be provided at the top of the most hydraulically remote standpipe to facilitate testing.

e. Standpipe isolation valves shall be located within stairwells and shall be exposed and accessible unless otherwise approved by the University.

f. Fire protection system maintenance points, such as valves, drains, etc., shall not be located in secure and/or sensitive locations such as Telecom Rooms, PTS Cashlers Offices and Janitor’s Closets.

2. Standpipe Design Documents

a. Fire protection plans must include the design criteria for all standpipe systems, including required flow rates and minimum pressures.

b. Fire protection plans should show the location of all key system infrastructure including hose valves, risers, control valves, test connections, corrosion prevention equipment, etc.

c. Details should be provided for key infrastructure or areas with specialized installations.

d. A piping diagram should be provided of the standpipe system, indicating valves, supervisory switches, fire department hose valve locations such as in stairwells and other required locations, building fire department connection, post indicating valve, roof manifold, etc.

e. The specifications for the project should indicate that the hydraulic calculations should include a safety factor at the point of supply to the building of 10% or 10 psi, whichever is greater.

D. Fire Department Connections:

1. Each fire department connection shall be flush wall-mounted type or free-standing type. Each fire department connection shall consist of 2-1/2–inch inlets with clappers compatible with equipment utilized by the Clty of Austin Flre Department and equipped with UL listed Knox caps keyed for the Clty of Austin Fire Department. The fire department connection shall be labeled as required by the City of Austin and the University. The fire department connection shall not be less than two feet and not more than 3 feet 6 lnches In elevation, measured from the ground level to the centerline of the lnlets.

E. Fire Pump Assemblies:

1. Fire pumps shall be single stage, centrifugal horizontal split-case pumps specifically labeled for fire protection use.

2. The controller shall be of the combined manual and automatic type designed for across-the-line type starting. Variable Frequency Drive controllers are not acceptable.

3. The minimum withstand rating of the controller shall not be less than 30,000 Amps RMS Symmetrical at 480 volts.

4. The controller shall include a motor rated combination disconnect switch/circuit breaker, mechanically interlocked and operated with a single externally mounted handle. When moving the handle from "OFF" to "ON", the interlocking mechanism shall sequence the isolating disconnect switch "ON" first and then the circuit breaker. When the handle is moved from "ON" to "OFF" the interlocking mechanism shall sequence the circuit breaker open first, and then the isolating disconnect switch.

5. The controller shall have externally mounted, individual, visible indicators for "Power Available", "Phase Reversal", “Pump Running”, and “Run Time On”.

6. The controller shall be wired so that the fire pump can be shut down automatically utilizing pump run-timer.

7. Individual "Power Failure", "Phase Reversal" and "Pump Running" alarm contacts shall be wired for connection to the Main Fire Alarm Control Panel, and the FCMS.

8. Where required by NFPA 20, the controller shall be equipped with an automatic transfer switch. Power to the transfer switch shall be supplied by one of the NFPA 20 required power sources.

1.7 ALTERNATIVE FIRE SUPPRESSION SYSTEMS

A. Alternative Fire Suppression System Design

1. Alternative suppression systems shall be selected based on the hazard(s) being protected. A hazard analysis of the area being protected should be included with the system design.

2. Any limitations on the use of the space or equipment protected related to the fire suppression system must be clearly identified in the design documents.

3. If the suppression system has any limitations on leakage from the protected area, openings into/from the protected area, or other requirements for the construction of the protected area they must be clearly identified in the design documents. The engineer is responsible for coordinating with the project architect to ensure that the architectural design and construction is adequate.

B. Alternative Fire Suppression System Design Documents

1. Fire protection plans must include the design criteria for fire suppression systems, including flow/application rates and application time.

2. Fire protection plans should show the location of all key system infrastructure including nozzles, agent storage, releasing equipment, and controls.

3. Fire Protection Plans should indicate any special interface requirements with other trades.

4. Details should be included for key components and infrastructure.

END OF STANDARD

MLA
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REGISTERED ARCHITECT
MICHAEL GREGORY LEGG
STATE OF TEXAS
02.21.2023

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

SPECIFICATIONS

PROJECT NO.
05-05-22

SHEET NO.

SP.16

GENERAL CONDITIONS

1. BUILDING AND DESIGN CODES:

   A. INTERNATIONAL BUILDING CODE 2021
   B. AISC 360-16 SPECIFICATION FOR STEEL BUILDINGS
   C. AWS D1.4-2018 - STRUCTURAL WELDING CODE - STEEL REINFORCING BARS
   D. ACI 318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   E. STRUCTURAL WELDED WIRE REINFORCEMENT MANUAL OF STANDARD PRACTICE, WIRE REINFORCEMENT INSTITUTE
   F. TMS 402-16 AND MS 602-16 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES

2. DESIGN LOADS:

   A. LIVE LOADS: UNIFORM
      ROOF 20
      SLAB ON GRADE 100
      ROOF LIVE LOADS ARE PERMITTED TO BE REDUCED PER SECTION 1607.10
   B. DEAD LOADS:
      ROOF DEAD LOAD 20
   C. WIND LOADS:
      ULTIMATE WIND SPEED: 107 MPH
      EXPOSURE: C
      INTERNAL PRESSURE COEFFICIENT: Gcp=+/- 0.18
      COMPONENTS AND CLADDING

ROOF		
	ZONE 1	10 SF = +7.4/-18.3 100 SF = +5.9/-16.8
	ZONE 2	10 SF = +7.4/-30.7 100 SF = +5.9/-19.9
	ZONE 3	10 SF = +7.4/-46.2 100 SF = +5.9/-19.9
WALL		
	ZONE 4	10 SF = +18.3/-19.9 100 SF = +15.2/-16.8
	ZONE 5	10 SF = +18.3/-24.5 100 SF = +15.2/-19.9

      RISK CATEGORY II

   D. SNOW LOADS
      Pg= 5 PSF
   E. SEISMIC LOADS:
      SEISMIC RISK CATEGORY II
      SITE COEFFICIENT
      Fa = 1.3
      Fv = 1.5
      Ss= 0.048
      S1=0.02
      Sds: 5% DAMPED DESIGN SPECTRAL RESPONSE ACC. FOR SHORT PERIODS =0.041
      SD1: 5% DAMPED DESIGN SPECTRAL RESPONSE ACC. FOR 1-SECOND PERIOD = 0.02
      BASIC SEISMIC-FORCE-RESISTING SYSTEM:
      ORDINARY PLYWOOD SHEAR WALLS
      SEISMIC DESIGN CATEGORY = A
      SITE CLASS C

3. GENERAL REQUIREMENTS:

   A. VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK OR FABRICATING MATERIALS. NOTIFY A/E OF DISCREPANCIES BEFORE PROCEEDING WITH ANY PHASE WORK.
   B. VERIFY THE LOCATION OF CHASES, INSERTS, OPENINGS, SLEEVES, FINISHES, DEPRESSIONS, PADS, AND WALL OPENINGS.
   C. DO NOT SCALE DRAWINGS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS.
   D. DETAILS LABELED "TYPICAL DETAILS" ON DRAWINGS APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT DETAILS ARE REFERENCED AT EACH LOCATION. NOTIFY ENGINEER OF CONFLICTS REGARDING APPLICABILITY OF "TYPICAL DETAILS".
   E. DO NOT LOAD THE SLAB ON GRADE OR SUPPORTED SLAB WITH ERECTION CRANES OR ERECTION EQUIPMENT. THE SLABS HAVE NOT BEEN DESIGNED FOR CRANE LOADS AND WILL REQUIRE AN INCREASE IN THICKNESS AND/OR REINFORCEMENT. OBTAIN A/E APPROVAL ON PROPOSED CRANE SUPPORT PLAN FOR SLABS PRIOR TO COMMENCING WORK.
   F. DO NOT STORE OR STACK CONSTRUCTION MATERIALS ON POURED OR ERECTED FLOORS/ROOFS IN EXCESS OF 80 PERCENT OF LIVE LOAD. GENERAL CONTRACTOR WILL ENSURE THAT ALL SUB-CONTRACTORS ARE INFORMED OF LOADING RESTRICTIONS. AVOID IMPACT WHEN PLACING MATERIALS ON POURED OR ERECTED FLOORS OR ROOF.
   G. THE CONTRACT STRUCTURAL DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURE, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION; INCLUDING BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, FORMS AND SCAFFOLDING, SHORING OF RETAINING WALLS AND OTHER TEMPORARY SUPPORTS AS REQUIRED. COMPLY WITH APPLICABLE REQUIREMENTS OF OSHA AND OTHER GOVERNING BODIES HAVING JURISDICTION AT THE SITE.
   H. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON DRAWINGS. EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR THE REQUIRED OPENINGS AND PROVIDE FOR REQUIRED OPENINGS WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT, VERIFY SIZE AND LOCATION OF OPENINGS WITH THE MECHANICAL CONTRACTOR. DEVIATIONS FROM THE OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED PRIOR TO IMPLEMENTING THE CHANGES.
   I. LOADINGS FOR MECHANICAL EQUIPMENT ARE BASED ON THE UNITS SHOWN ON THE MECHANICAL DRAWINGS AND ROUNDED UP FOR FUTURE EXPANSION CAPACITY. ANY CHANGES IN TYPE, SIZE, OR NUMBER OF PIECES OF EQUIPMENT SHALL BE REPORTED TO THE ARCHITECT FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO THE PLACEMENT OF SUCH EQUIPMENT.
   J. SEE ARCHITECTURAL DRAWINGS FOR ELEVATIONS NOT SHOWN AND FOR EXACT LOCATIONS OF ALL SLAB DEPRESSIONS. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL SECTIONS WITH ARCHITECTURAL SECTIONS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATING OR INSTALLING STRUCTURAL MEMBERS.

FOUNDATION

1. FOUNDATION DESIGN IS BASED UPON THE GEOTECHNICAL ENGINEERING REPORT ENTITLED "PROPOSED DOMINION CREEK DEVELOPMENT, IH-10 FRONTAGE ROAD, LEON SPRINGS, TEXAS," BY ECS SOUTHWEST, LLP DATED OCTOBER 4, 2022. PROJECT NO. 20:1519.
2. CONTRACTOR TO PROVIDE FOUNDATION & FOOTING AS REQUIRED FOR PYLON OR MONUMENTAL SIGN. SEE ELECTRICAL DRAWINGS FOR DETAIL.
3. COORDINATE STRUCTURAL PLANS AND DETAILS WITH REQUIREMENTS OF GEOTECHNICAL REPORT. FOUNDATION DESIGN IS BASED ON 2500 PSF ALLOWABLE BEARING CAPACITY.
4. CONTRACTOR SHALL TREAT SOIL BELOW SLAB FOR TERMITES.
5. REFER TO THE GEOTECHNICAL REPORT FOR GENERAL REQUIREMENTS OF EARTHWORK, OVEREXCAVATION, SUBGRADE PREPARATION, FILL AND COMPACTION, WATERPROOFING AND OTHER PERTINENT REQUIREMENTS AND INFORMATION.
6. PROTECT PIPES AND CONDUITS RUNNING THROUGH WALLS AND SLABS WITH 1/2 INCH EXPANSION MATERIAL. LOWER CONTINUOUS FOOTINGS AND GRADE BEAMS PERPENDICULAR TO PIPE RUNS TO ALLOW PIPES TO PASS ABOVE THE FOOTINGS OR THROUGH THE GRADE BEAMS. ALTERNATIVELY, PROVIDE A CONCRETE JACKET IF PIPES ARE LOW ENOUGH TO BE PLACED BELOW THE FOOTINGS AND GRADE BEAMS. LOWER FOOTINGS AND GRADE BEAMS PARALLEL TO PIPE RUNS TO AVOID SURCHARGE ONTO ADJACENT TRENCH EXCAVATIONS.
7. MAINTAIN SUBGRADE AND FILL MOISTURE CONTENT UNTIL FOUNDATIONS ARE PLACED.
8. ARRANGE FOR OWNER'S INDEPENDENT TESTING AGENCY TO MONITOR CUT AND FILL OPERATIONS AND PERFORM FIELD DENSITY AND MOISTURE CONTENT TESTS TO VERIFY COMPACTION AND APPROVE FOOTING SUBGRADES PRIOR TO PLACING CONCRETE.
9. DO NOT PLACE FOOTINGS OR SLABS AGAINST SUBGRADE CONTAINING FREE WATER, FROST, OR ICE.
10. MAINTAIN PROPER SITE DRAINAGE DURING CONSTRUCTION TO ENSURE SURFACE RUNOFF AWAY FROM STRUCTURES AND TO PREVENT PONDING OF SURFACE RUNOFF NEAR THE STRUCTURES.

SUBGRADE PAD PREPARATION RECOMMENDATIONS

1. THESE SUMMARY RECOMMENDATIONS ARE PROVIDED FROM THE GEOTECHNICAL INVESTIGATION.
2. UNLESS SPECIFICALLY INDICATED OTHERWISE IN THE DRAWINGS AND/OR SPECIFICATIONS, THE LIMITS OF THIS SUBSURFACE PREPARATION ARE CONSIDERED TO BE THAT PORTION OF THE SITE DIRECTLY BENEATH THE BUILDING. BUILDING IS REFERRING TO AND INCLUDES ALL AREAS AS SHOWN ON SHEET S-1.1. THE 10 MIL VAPOR RETARDER DOES NOT EXTEND BEYOND THE LIMITS OF THE ACTUAL BUILDING.
3. ALL VEGETATION, CONCRETE, STUMPS, BRUSH, ABANDONED STRUCTURES, ROOTS, RUBBISH, AND ANY OTHER UNDESIRABLE MATTER SHOULD BE REMOVED AND STRIPPED TO A DEPTH OF 12 INCHES.
4. THE EXPOSED SUBGRADE SHOULD BE PROOF-ROLLED TO LOCATE ANY SOFT OR LOOSE AREAS IN ACCORDANCE WITH ITEM 216 OF TxDOT SPECIFICATIONS. SOILS THAT ARE OBSERVED TO RUT OR DEFLECT UNDER THE MOVING LOAD SHOULD BE UNDERCUT. THE PROOF ROLLING AND UNDERCUTTING ACTIVITIES SHOULD BE WITNESSED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER.
5. AFTER PROOFROLLING, THE UPPER 8 INCHES OF THE SUBGRADE SHOULD BE SCARFIED, MOISTURE CONDITIONED TO A RANGE BETWEEN OPTIMUM TO +4 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE VALUE, AND COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698.
6. AFTER SUBGRADE PREPERATION IS COMPLETE, THE PLACEMENT OF STRUCTURAL FILL TO FINISH PAD ELEVATION MAY BEGIN. THE STRUCTURAL FILL MATERIALS SHOULD BE FREE OF ORGANICS OR OTHER DELETERIOUS MATERIALS AND SHOULD HAVE A MAXIMUM PARTICLE LESS THAN 3-INCHES. THE STRUCTURAL FILL MATERIAL SHOULD HAVE A LIQUID LIMIT LESS THAN 35 AND A PLASTICITY INDEX BETWEEN 5 AND 20. THE FILL SHOULD BE PLACED IN COMPACTION CONTROLLED EIGHT INCH HORIZONTAL LIFTS AND SHOULD BE MOISTURE CONDITIONED WITHIN THE RANGE OF -1 TO +3 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT VALUE, AND COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. EACH LIFT OF STRUCTURAL FILL SHOULD BE TESTED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER.
7. THE EXPOSED SUBGRADE SHALL BE PROTECTED AGAINST EXCESSIVE DRYING OR EXPOSURE TO MOISTURE. THE SITE SHALL BE GRADED TO PREVENT PONDING OF WATER WITHIN EXCAVATED AREAS. ACCUMULATED WATER SHALL BE REMOVED IMMEDIATELY. EXCAVATIONS FOR FOUNDATIONS SHOULD BE FILLED WITH CONCRETE BEFORE THE END OF THE WORKDAY OR SOONER IF NECESSARY TO PREVENT DETERIORATION OF THE BEARING SURFACE. IF DELAYS OCCUR, THE EXCAVATION SHOULD BE DEEPENED AS NECESSARY AND CLEANED, IN ORDER TO PROVIDE A FRESH BEARING SURFACE. IF MORE THAN 24 HOURS OF EXPOSURE OF THE BEARING SURFACE IS ANTICIPATED IN THE EXCAVATIONS, A MUD SLAB SHOULD BE USED TO PROTECT THE BEARING SURFACES. IF A MUD SLAB IS USED, THE FOUNDATION EXCAVATIONS SHOULD INITIALLY BE OVER-EXCAVATED BY APPROXIMATELY 4 INCHES AND A LEAN CONCRETE MUD SLAB OF APPROXIMATELY 4 INCHES IN THICKNESS IS PLACED IN THE BOTTOM OF THE EXCAVATIONS IMMEDIATELY FOLLOWING EXPOSURE OF THE BEARING SURFACE.
8. THIS PAD PREPARATION DOES NOT CONSTITUTE A COMPLETE SITE WORK SPECIFICATION. REFER TO THE GEOTECHNICAL REPORT FOR SPECIFIC INFORMATION NOT COVERED IN THIS PREPARATION.

CONCRETE

1. PROVIDE BATCH MIXING, TRANSPORTATION, PLACING AND CURING OF CONCRETE IN ACCORDANCE WITH RECOMMENDATIONS OF ACI 301 AND ACI 318. USE TYPE II PORTLAND CEMENT UNLESS NOTED OTHERWISE. PROVIDE ADMIXTURES AND SPECIAL REQUIREMENTS AS SPECIFIED.

   A. ALL CONCRETE SHALL BE NORMAL WEIGHT (150 PCF) CONCRETE: f'c=3,000 PSI AT 28 DAYS
   B. MAXIMUM WATER/CEMENT RATIO OF 0.57 BY WEIGHT.
   C. MAXIMUM FLY ASH REPLACEMENT OF 20% OF CEMENTITIOUS MATERIALS.
   D. AIR ENTRAINMENT SHALL BE BETWEEN 3%-5% FOR INTERIOR SLAB AND SHALL BE BETWEEN 4%-7% FOR EXTERIOR SLAB.

2. PROVIDE CONCRETE MIXES DESIGNED BY A QUALIFIED TESTING LABORATORY FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER.
3. PROVIDE CONSTRUCTION AND CONTROL JOINTS AS INDICATED ON DRAWINGS. HORIZONTAL CONSTRUCTION JOINTS ARE NOT ALLOWED UNLESS SPECIFICALLY NOTED OR APPROVED BY STRUCTURAL ENGINEER. NOTIFY STRUCTURAL ENGINEER OF PROPOSED CONSTRUCTION JOINT OR CONTROL JOINT LOCATIONS THAT ARE DIFFERENT OR IN ADDITION TO JOINTS INDICATED ON DRAWINGS.
4. SAWN JOINTS SHALL BE CUT AS SOON AS THE OPERATOR CAN STAND ON THE SLAB OR WITHIN 24 HOURS OF INITIAL POUR.
5. CONTROL JOINTS SHALL BE CUT AS SOON AS THE CONCRETE IS CURED ENOUGH TO WALK ON. CONTROL JOINTS SHALL BE CUT NO LATER THAN 8 HOURS AFTER THE CONCRETE IS POURED.
6. PROVIDE A 10 MIL VAPOR BARRIER BELOW SLAB.
7. WIRE BRUSH AND CLEAN CONSTRUCTION JOINTS PRIOR TO POURING NEW CONCRETE.
8. REFERENCE THE APPROPRIATE DISCIPLINE DRAWINGS FOR SUBSLAB PIPING, FLOOR DRAINS AND SLAB AND WALL PENETRATIONS.
9. PROVIDE ADEQUATE STRUCTURAL FRAMING AS APPROVED BY STRUCTURAL ENGINEER FOR MECHANICAL OPENINGS THROUGH THE SLABS, WALLS AND FLOOR DECK. OPENINGS WILL NOT BE PERMITTED THROUGH BEAMS UNLESS SPECIFICALLY DETAILED.

REINFORCING STEEL

1. PROVIDE DETAILING, FABRICATION, AND INSTALLATION OF REINFORCING AND ACCESSORIES IN ACCORDANCE WITH ACI 315 AND ACI 318.
2. PROVIDE NEW BILLET STEEL REINFORCING BARS IN ACCORDANCE WITH ASTM A 615, GRADE 60.
3. COORDINATE PLACEMENT OF CAST-IN-PLACE EMBEDS AND ANCHOR RODS. SET ANCHOR RODS WITH A TEMPLATE. SECURELY ATTACH EMBED ITEMS TO FORMWORK OR REINFORCING.
4. PROVIDE CLASS "B" REINFORCEMENT SPLICES FOR CONTINUOUS REINFORCEMENT. PROVIDE STANDARD 90-DEGREE HOOKS IN ACCORDANCE WITH ACI 318, UNLESS NOTED OTHERWISE.
5. MAINTAIN THE FOLLOWING CONCRETE COVERAGE FOR REINFORCING STEEL UNLESS NOTED OTHERWISE:

   A. CONCRETE CAST AGAINST EARTH:
      3 INCHES
   B. CONCRETE EXPOSED TO WEATHER:
      NO. 6 AND LARGER: 2 INCHES
      NO. 5 AND SMALLER: 1-1/2 INCHES
   C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND:
      SLABS AND WALLS
      NO. 14 AND NO. 18: 1-1/2 INCHES
      NO. 11 AND SMALLER: 3/4 INCHES

6. DO NOT WELD OR BEND REINFORCEMENT IN THE FIELD UNLESS SPECIFICALLY SHOWN OR APPROVED BY STRUCTURAL ENGINEER.
7. WHEN SPECIFICALLY APPROVED, PROVIDE WELDED REINFORCEMENT ACCORDANCE WITH ASTM A 706 GRADE 60. USE LOW HYDROGEN ELECTRODES FOR WELDING OF REINFORCEMENT IN CONFORMANCE WITH "RECOMMENDED PRACTICES FOR WELDING REINFORCING STEEL", AMERICAN WELDING SOCIETY, AWS D12.1. PROVIDE ASTM GRADE 40 REINFORCING BARS WHERE DETAILED BARS ARE TO BE WELDED TO A STEEL SECTION.
8. WHERE REQUIRED, PROVIDE DOWELS TO MATCH SIZE AND SPACING OF MAIN REINFORCING.
9. PROVIDE CONTINUOUS HORIZONTAL WALL AND FOOTING REINFORCEMENT WITH 90-DEGREE BENDS AND 2'-0" EXTENSIONS AT CORNERS AND INTERSECTIONS.

MASONRY

1. REINFORCED MASONRY WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES: TMS402-16/TMS 602-16.
2. REINFORCED MASONRY TO CONFORM TO THE SPECIFICATIONS FOR MASONRY STRUCTURES: ACI 530.1/ASCE 6/TMS 602 (WITH THE EXCEPTIONS NOTED IN JOB SPECIFICATIONS).
3. PROVIDE CONCRETE MASONRY UNITS (CMU) OF NORMAL WEIGHT (125 PCF MINIMUM), GRADE N, TYPE I OR II, CONFORMING TO THE LATEST EDITION OF ASTM C 90. LAY UNITS IN RUNNING BOND UNLESS NOTED OTHERWISE.
4. PROVIDE MASONRY ASSEMBLAGES WITH MINIMUM PRISM STRENGTH (f'm) OF 1,500 PSI, TESTED IN ACCORDANCE WITH ASTM C 140.
5. PROVIDE CONCRETE MASONRY UNITS IN ACCORDANCE ASTM C 426 LIMITS FOR DRYING SHRINKAGE OF CONCRETE BLOCKS.
6. PROVIDE GROUT IN ACCORDANCE WITH ASTM C 476 AND ASTM C 150 WITH f'c = 3,000PSI
7. PROVIDE MORTAR IN ACCORDANCE WITH ASTM C 270 AND ASTM C 91 WITH f'c = 1,500PSI
8. PROVIDE VERTICAL REINFORCEMENT IN CMU WALLS AS SHOWN IN DRAWINGS. FILL THE REINFORCED CELLS SOLID WITH GROUT. MAXIMUM HEIGHT OF GROUT POURS TO BE AS PER IBC.
9. LAY HOLLOW UNITS WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. PROVIDE FULL MORTAR COVERAGE FOR WEBS WHEN ADJACENT TO GROUTED CELLS.
10. ALIGN VERTICAL CELLS TO BE FILLED WITH GROUT TO PROVIDE CONTINUOUS UNOBSTRUCTED VERTICAL CELLS. REMOVE OVERHANGING MORTAR OR OTHER OBSTRUCTION AND DEBRIS FROM THE INSIDES OF CELL WALLS. PROVIDE GROUT WITH 8 INCH SLUMP AND CONSOLIDATE BY MEANS OF HAND TAMPING TO ENSURE COMPLETE FILLING OF CELLS.
11. INSTALL ANCHORS, ACCESSORIES, AND OTHER ITEMS TO BE BUILT IN AS WORK PROGRESSES.
12. PERFORM CUTTING AND FITTING OF MASONRY WITH MASONRY SAWS PROVIDING CUT FINISHED UNITS.
13. GROUT CELLS AT OR BELOW FINISHED GRADE ARE TO BE GROUTED SOLID.
14. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL CORE, DOWEL SHALL BE SLOPED NO MORE THAN ONE HORIZONTAL TO SIX VERTICAL.
15. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL WALL IS PERMANENTLY BRACED BY ROOF.

STRUCTURAL STEEL

1. DESIGN, DETAIL AND ERECT STRUCTURAL STEEL ELEMENTS IN ACCORDANCE WITH THE FOLLOWING:

   A. AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
   B. AISC MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN.
   C. AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
   D. AWS STRUCTURAL WELDING CODE, D1.1.

2. PROVIDE STRUCTURAL STEEL OF THE FOLLOWING ASTM DESIGNATIONS UNLESS NOTED OTHERWISE:

   A. EDGE ANGLES, BENT PLATES, HANGERS AND BRACES: ASTM A 36
   B. HOLLOW STRUCTURAL SHAPES: ASTM A 500, GRADE B
   C. BASE PLATES AND MISCELLANEOUS STEEL PLATES: ASTM A 36
   D. ANCHOR RODS: ASTM F 1554, GRADE 36

3. WELD MINIMUM SIZE AND STRENGTH:

   A. PROVIDE MINIMUM SIZE OF FILLET WELDS AS SPECIFIED IN TABLE J2.4 OF THE AISC MANUAL.
   B. PROVIDE MINIMUM EFFECTIVE THROAT THICKNESS OF PARTIAL PENETRATION GROOVE WELDS AS SPECIFIED IN TABLE J2.3 OF THE AISC MANUAL.
   C. DEVELOP THE FULL TENSILE STRENGTH OF THE MEMBER ELEMENT JOINED, ON ALL SHOP AND FIELD WELDS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
   D. WHERE CONNECTIONS ARE NOTED ON DRAWINGS AS MOMENT CONNECTIONS, PROVIDE WELDS TO DEVELOP FULL FLEXURAL CAPACITY OF THE LESSER MEMBER.
   E. PROVIDE ELECTRODES FOR FIELD OR SHOP WELDING THAT CONFORM TO ASTM A 233 (CLASS 70).

4. PROVIDE MINIMUM OF TWO BOLTS PER CONNECTION. PROVIDE MINIMUM BOLT DIAMETER OF 3/4-INCH.
5. PROVIDE SIMPLE SHEAR CONNECTIONS FOR STEEL CONNECTIONS NOT SPECIFIED OTHERWISE UTILIZING HIGH STRENGTH BEARING BOLTS IN SINGLE OR DOUBLE SHEAR. PROVIDE DOUBLE ANGLE OR SINGLE PLATE SHEAR TAB BOLTED CONNECTIONS.

   A. UNLESS LARGER REACTION IS SHOWN ON DRAWINGS, PROVIDE MINIMUM DESIGN FORCES AS FOLLOWS: NONCOMPOSITE BEAMS: BEAM-TO-BEAM OR BEAM-TO COLUMN CONNECTION TO DEVELOP THE REACTION OF CONNECTED BEAM. OBTAIN END REACTION USING 55% OF TABULATED MAXIMUM TOTAL UNIFORM LOAD FROM ALLOWABLE UNIFORM LOAD TABLES IN PART 3 OF THE AISC MANUAL OF STEEL CONSTRUCTION. PROVIDE MINIMUM SHEAR CAPACITY OF 12,000 POUNDS FOR BEAMS 8 INCHES AND 10 INCHES DEEP. PROVIDE MINIMUM SHEAR CAPACITY OF 8,000 POUNDS FOR BEAMS LESS THAN 8 INCHES DEEP.

6. STEEL FABRICATION:

   A. FABRICATE AND ASSEMBLE STRUCTURAL MEMBERS/ASSEMBLIES IN SHOP TO GREATEST EXTENT POSSIBLE.
   B. SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL BY THE ENGINEER.
   C. FABRICATOR SHALL BE RESPONSIBLE FOR ALL ERRORS OF DETAILING ON THE SHOP DRAWINGS, ERRORS IN FABRICATION, AND THE CORRECT FITTING OF STRUCTURAL STEEL MEMBERS.
   D. CONFORM TO THE AISC CODE OF STANDARD PRACTICE, FOR ERECTION TOLERANCES. FIELD MODIFICATION TO STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR APPROVAL BY THE ENGINEER.
   E. CLEAN STEEL OF RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS WHERE REQUIRED FOR FABRICATION, FITTING UP, OR WELDING.
   F. DO NOT CUT STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADESWITHOUT PRIOR REVIEW AND APPROVAL OF THE ENGINEER.

7. PROVIDE GROUT FOR BASE PLATES THAT IS NON-SHRINK, NON-METALLIC GROUT WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 6000 PSI. COMPLETE GROUT WORK PRIOR TO PLACING ROOF CONCRETE OF A SINGLE STORY BUILDING OR PRIOR TO PLACING SECOND FLOOR CONCRETE OF A MULTIPLE STORY BUILDING.
8. SUBMIT CALCULATIONS FOR CONNECTION DESIGNS NOT DETAILED ON DRAWINGS. DESIGN CONNECTIONS UNDER SUPERVISION OF REGISTERED PROFESSIONAL ENGINEER, REGISTERED IN THE STATE WHERE PROJECT IS BEING CONSTRUCTED, EMPLOYED BY THE STEEL FABRICATOR. DESIGN CALCULATIONS TO BE SEALED BY FABRICATOR'S REGISTERED PROFESSIONAL ENGINEER. SHOP DRAWINGS SUBMITTED WITHOUT COMPLETE DESIGN CALCULATIONS WILL NOT BE REVIEWED. WHERE PREDESIGNED CONNECTIONS ARE TAKEN DIRECTLY FROM TABLES IN AISC MANUAL, CALCULATIONS NEED NOT BE SUBMITTED PROVIDED JOB DESIGN CONDITIONS PRECISELY MATCH THOSE ASSUMED IN THE AISC MANUAL.
9. FURNISH STEEL SHOP DRAWINGS FOR ARCHITECT'S AND STRUCTURAL ENGINEERS REVIEW PRIOR TO FABRICATION. INCLUDE WELDING PROCEDURES, TESTING PROGRAMS FOR WELDING AND HIGH STRENGTH BOLTING, COATING MATERIAL AND ERECTION SEQUENCE ON SHOP DRAWINGS.
10. MILL STEEL COLUMN ENDS TO FIT FLUSH WITH BASE PLATE, CAP PLATE AND END PLATES. FIELD ASSEMBLY OF THESE STEEL ELEMENTS TO THE COLUMNS IS PROHIBITED.
11. HEADED STUDS (SHEAR AND ANCHOR) AND DEFORMED ANCHORS:

    A. PROVIDE HEADED STUDS (SHEAR AND ANCHOR) MADE OF MATERIAL CONFORMING TO ASTM A 108.
    B. PROVIDE DEFORMED ANCHORS MADE OF MATERIAL CONFORMING TO ASTM A 496.
    C. WELD STUDS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. MANUAL ARC (STICK) WELDING OF HEADED STUDS AND/OR DEFORMED ANCHORS IS NOT ALLOWED.

12. PROVIDE TEMPORARY SHORING OR BRACING DURING CONSTRUCTION PHASE, PRIOR TO COMPLETING CONNECTIONS AND POURING OF FLOOR SLAB. TEMPORARY CONSTRUCTION BRACING OF THE STRUCTURAL STEEL FRAME IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL REMAIN IN PLACE UNTIL AFTER THE PERMANENT BRACING SYSTEM HAS BEEN COMPLETED.
13. WELDS SHALL BE CONSIDERED TO BE CONTINUOUS UNLESS NOTED OTHERWISE.
14. ALL WELDING SHALL BE PERFORMED BY AN AWS CERTIFIED WELDER. SUBMIT WELDING CERTIFICATE TO THE BUILDING INSPECTOR.

WOOD

1. DIMENSION LUMBER SHALL BE SOUTHERN PINE #2 OR BETTER, WITH A MAXIMUM MOISTURE CONTENT OF 19% (MINIMUM Fb=1400 PSI FOR REPETITIVE USE) UNLESS NOTED OTHERWISE ON PLAN.
2. TOP PLATES, SILL PLATES AND SOLE PLATES SHALL BE #3 GRADE SOUTHERN PINE OR DFL.
3. SILL PLATE ANCHORS TO CONCRETE SHALL HAVE A PROJECTION OF 4" AND THE REMAINING LENGTH SPECIFIED IN THE DETAILS SHALL BE THE EMBEDMENT.
4. ALL PLATES IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED (USE CATEGORY 2 AS SPECIFIED BY AWPA) FOR MOISTURE PROTECTION. ALL WOOD EXPOSED TO WEATHER SHALL BE PRESSURE TREATED (USE CATEGORY 3B AS SPECIFIED BY AWPA) OR WESTERN RED CEDAR.
5. CONNECTORS FOR WOOD TRUSS, RAFTER AND JOIST CONNECTIONS SHALL BE SIMPSON STRONG-TIE CO., INC'S PRODUCT OR BETTER. SUBSTITUTIONS MUST BE PRE-APPROVED IN WRITING BY THE ENGINEER OF RECORD.
6. PROVIDE SOLID BLOCKING FOR ROOF TRUSSES ALONG RIDGES, HIPS AND VALLEYS THAT ARE NOT FORMED BY A TRUSS.
7. PARALAM PSL BEAMS SHALL BE PROVIDED FROM TRUS-JOIST WEYERHAEUSER OR EQUIVALENT WITH 2.0 E SPECIFICATION AND Fb=2,900 PSI.
8. MICROLAM LVL BEAMS SHALL BE PROVIDED FROM TRUS-JOIST WEYERHAEUSER OR EQUIVALENT WITH 1.9 E SPECIFICATION AND Fb=2,600 PSI. MULTIPLE BEAMS SHALL BE CONNECTED TOGETHER BY NAILS OR BOLTS PER MANUFACTURERS SPECIFICATIONS.
9. WOOD TRUSSES SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH THE LATEST T.P.I. SPECIFICATIONS.
10. PLYWOOD SHALL MEET A.P.A. SPECIFICATIONS.

PRE-FABRICATED TRUSSES

1. PROVIDE ENGINEERED, STAMPED TRUSS SHOP DRAWINGS, INSTALLATION DRAWINGS AND CALCULATIONS PREPARED BY THE TRUSS COMPANY MANUFACTURER IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, ETC…
2. NO MORE THAN 10 PSF DEAD LOAD SHALL BE PLACED ON THE BOTTOM CHORD. REMAINING DEAD LOAD AND ALL LIVE LOAD SHALL BE PLACED ON THE TOP CHORD.
3. PROVIDE ROOF TRUSSES AND BLOCKING PANELS AS SHOWN ON THE ROOF FRAMING PLANS AND SHOP DRAWINGS.
4. REVIEW THE SHOP DRAWINGS, CONFIRM THE WORK REQUIREMENTS AND MATERIAL LIST IS IN CONFORMANCE WITH THE APPROVED PLANS. NOTIFY ENGINEER OF RECORD IMMEDIATELY OF ANY CONFLICTS OR DISCREPANCIES.
5. CONTINUOUSLY BRACE AND SUPPORT TRUSSES DURING UNLOADING TO PREVENT EXCESSIVE STRESS ON THE JOINTS. DO NOT PERMIT TRUSSES TO DROP, SAG, OR BE SUPPORTED IN A DIRECTION PERPENDICULAR TO THE TRUSS PLANE.
6. PROTECT TRUSSES FROM MOISTURE, WARPAGE, AND DISTORTION DURING STORAGE. STORE TRUSSES IN A VERTICAL POSITION RESTING ON BEARING ENDS ABOVE GROUND.
7. PROVIDE FRAMING ANCHORS AND/OR TRUSS HANGERS AS REQUIRED AND AS SHOWN ON THE DRAWINGS.
8. INSTALL TRUSSES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, INCLUDING PROPER HANDLING, SAFETY PRECAUTIONS, TEMPORARY BRACING DURING ERECTION AND ALL OTHER SAFEGUARDS.
9. INSTALL ALL PERMANENT CHORD BRACING REQUIRED BY TRUSS SHOP DRAWINGS.
10. INSPECT TRUSSES AFTER INSTALLATION FOR DAMAGE. NOTIFY ENGINEER OF RECORD IMMEDIATELY OF DAMAGED TRUSSES. REMOVE AND REPLACE ALL DAMAGED TRUSSES.
11. TRUSSES SHALL BE DESIGNED TO SUPPORT THE DESIGN LOADS LISTED IN THESE GENERAL NOTES. AS WELL AS LOADS LISTED ON THE FRAMING PLANS AND PLAN NOTES.WIND AND SNOW LOADS SHALL BE CALCULATED IN ACCORDANCE WITH THE LATEST ACCEPTED EDITION OF ASCE 7. LOAD DIAGRAMS SHALL BE PROVIDED BY THE TRUSS MANUFACTURER AS PART OF THE SHOP DRAWINGS.
12. TRUSSES ARE A DEFERRED SUBMITTAL ITEM, CONTRACTOR IS REQUIRED TO COMPLETE THE FOLLOWING:
    a. TRUSS PLANS AND CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW BEFORE SUBMITTING THEM TO THE BUILDING DEPARTMENT.
    b. SUBMIT THE SHOP DRAWINGS WITH A NOTATION INDICATING THAT THE DEFERERED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED BY THE ENGINEER AND HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE TRUSS DESIGN SHALL BE APPROVED BY THE BUILDING DEPARTMENT BEFORE TRUSSES ARE FABRICATED.
    c. THE GENERAL CONTRACTOR SHOULD PLAN FOR REVIEW TIME BY BOTH THE ENGINEER AND THE BUILDING OFFICIAL IN THE CONSTRUCTION SCHEDULE.

DEFERRED SUBMITTALS

STRUCTURAL DESIGN FOR THE FOLLOWING ITEMS IS DELEGATED TO A SPECIALTY ENGINEER WHO SHALL DESIGN AND DETAIL THE COMPONENTS AND SUBMIT FOR REVIEW. THE DELEGATED DESIGN ITEMS WILL NOT BE SUBMITTED AT THE TIME OF PERMIT APPLICATION. WHEN RECEIVED AND REVIEWED, THESE DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL BY THE CONTRACTOR:

1. METAL PLATE CONNECTED WOOD TRUSSES

SPECIAL INSPECTION

SPECIAL INSPECTION SHALL MEET THE REQUIREMENTS OF IBC SECTION 1704. SPECIAL INSPECTOR(S) SHALL BE HIRED BY THE OWNER TO PERFORM THE REQUIRED SPECIAL INSPECTIONS. THE NAMES OF PERSONS OR FIRMS WHO ARE TO PERFORM THE SPECIAL INSPECTIONS SHALL BE FORWARDED TO THE BUILDING OFFICIAL FOR APPROVAL. THE SPECIAL INSPECTOR(S) SHALL COMPLETE AND SUBMIT ALL FORMS REQUIRED BY SAN ANTONIO, TEXAS.

1. THE SPECIAL INSPECTOR(S) SHALL:

   A. OBSERVE THE WORK ASSIGNED FOR CONFORMANCE TO THE APPROVED DRAWING AND SPECIFICATIONS.
   B. FURNISH INSPECTION REPORTS TO THE ENGINEER OF RECORD AND BUILDING DEPARTMENT. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF NOT CORRECTED TO THE ENGINEER AND THE BUILDING DEPARTMENT.
   C. SUBMIT TO THE ENGINEER OF RECORD AND THE BUILDING DEPARTMENT A SIGNED FINAL REPORT STATING THAT THE WORK WAS IN CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE IBC.

2. SPECIAL INSPECTION NOTES:

   A. CONTINUOUS SPECIAL INSPECTION IS ALWAYS REQUIRED DURING THE PERFORMANCE OF THE WORK UNLESS SPECIFICALLY NOTED BELOW.
   B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE THE SPECIAL INSPECTOR(S) WITH ADVANCE NOTICE, NO LESS THAN ONE WORKING DAY, OF THE INITIATION OF ANY WORK REQUIRED TO HAVE SPECIAL INSPECTIONS. ALL WORK PERFORMED WITHOUT REQUIRED SPECIAL INSPECTION WILL BE SUBJECT TO REMOVAL.

3. TYPES OF WORK REQUIRING SPECIAL INSPECTION ARE:

   A. SUBGRADE SOIL COMPACTION.
   B. CONCRETE: DURING PREPARATION OF REQUIRED TEST SPECIMENS. DURING PLACEMENT OF REINFORCED CONCRETE EXCEPT AS ALLOWED IN IBC SECTION 1705.3.
   C. BOLTS INSTALLED IN CONCRETE:
      DURING SETTING OF BOLTS.
      DURING PLACEMENT OF CONCRETE AROUND BOLTS.
   D. REINFORCING STEEL IN CONCRETE: DURING PLACEMENT OF REINFORCING STEEL FOR CONCRETE EXCEPT AS ALLOWED IN IBC SECTION 1705.3.
   E. STRUCTURAL WELDING: DURING FIELD WELDING AT ANY MEMBER OR CONNECTION EXCEPT AS ALLOWED BY AISC 360,OR IN IBC SECTION 1705.2.2.1 AND DURING FIELD WELDING OF REINFORCING STEEL EXCEPT AS ALLOWED IN IBC SECTION 1702.2.1.2.
   F. OPEN-ENDED, HOLLOW UNIT, STRUCTURAL MASONRY: DURING PREPARATION OF REQUIRED PRISMS OR TEST SPECIMENS. DURING THE LAYING OF MASONRY UNITS. DURING PLACEMENT OF REINFORCING STEEL. GROUT SPACES PRIOR TO CLOSING OF CLEANOUTS AND GROUTING. DURING ALL GROUTING OPERATIONS.
   G. ALL ANCHORS AND/OR CONNECTIONS INSTALLED IN CONCRETE MASONRY UNIT WALLS.
   H. STEEL COLUMN CONSTRUCTION
   I. WOOD FRAMING IN GENERAL COFORMANCE WITH CONTRACT DOCUMENTS

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DRAWING COORDINATION
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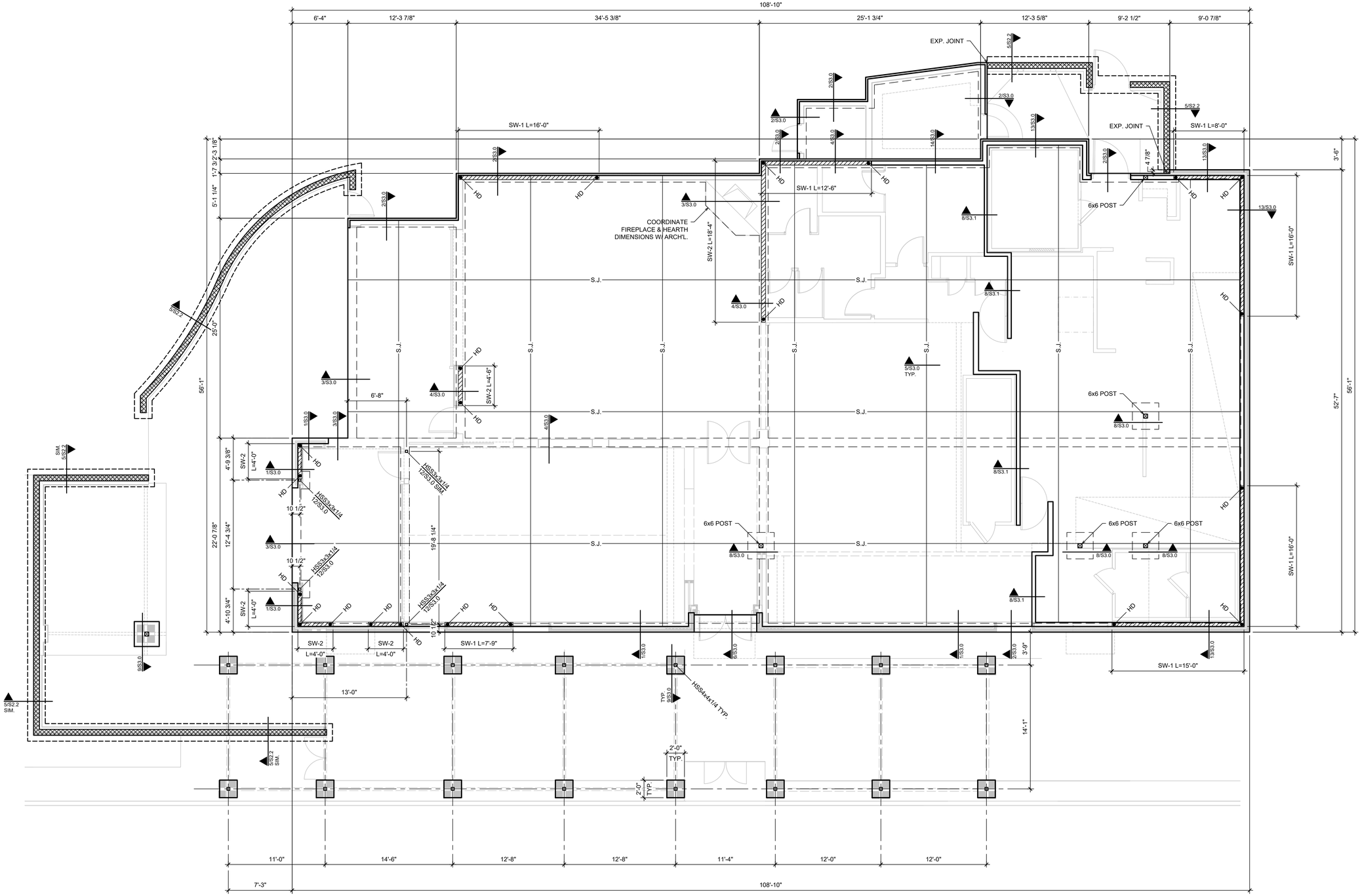
GENERAL NOTES

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
S1.0



SHEAR WALL SCHEDULE				
MARK	PANEL	BOUNDRY & EDGE NAILING	HOLDOWN EACH END	POST EACH END
SW-1	15/32" STR-1	10d AT 4" O.C.	SIMPSON HDU5-SDS2.5 W/ 5/8"Ø HILTI HY200 ADHESIVE ANCHOR W/ 16" EMBEDMENT	2-2x POST
SW-2	15/32" STR-1 BOTH SIDES	10d AT 3" O.C.	(2) SIMPSON HDU8 W/ 7/8"Ø HILTI HY200 ADHESIVE ANCHOR W/ 17" EMBEDMENT	2-2x6 POST (2 POSTS EA. SIDE)

NOTES:
1. FIELD NAILING IS 10d AT 12" O.C. TYP.
2. (NON SHEAR WALLS) SHALL BE 1/2" NOMINAL PLYWOOD WITH 8d AT 6" O.C. EDGE NAILING.
3. ALL PANEL JOINTS SHALL BE BLOCKED W/ 2x BLOCKING.
4. 5/8"Ø x8" SILL BOLTS AT 24" O.C. AT SHEAR WALLS, 48" O.C. OTHERWISE, REF. GENERAL NOTES.
5. REFER TO 2/S4.2, 3/S4.2 & 4/S4.2 FOR ADDITIONAL SHEAR WALL INFORMATION.

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

FOUNDATION PLAN NOTES:
1. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL PLANS AND DETAILS.
2. REFERENCE SHEET S1.0 FOR GENERAL NOTES.
3. SLAB SHALL BE 5" THICK CONCRETE REINFORCED WITH #4 AT 16" O.C.E.W.
4. REFER TO ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS FOR SLAB PENETRATION AND DRAIN LOCATIONS.

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DATE	DESCRIPTION	BY

FOUNDATION PLAN

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LOT 3 Dominion Creek,
San Antonio, 78257 Texas

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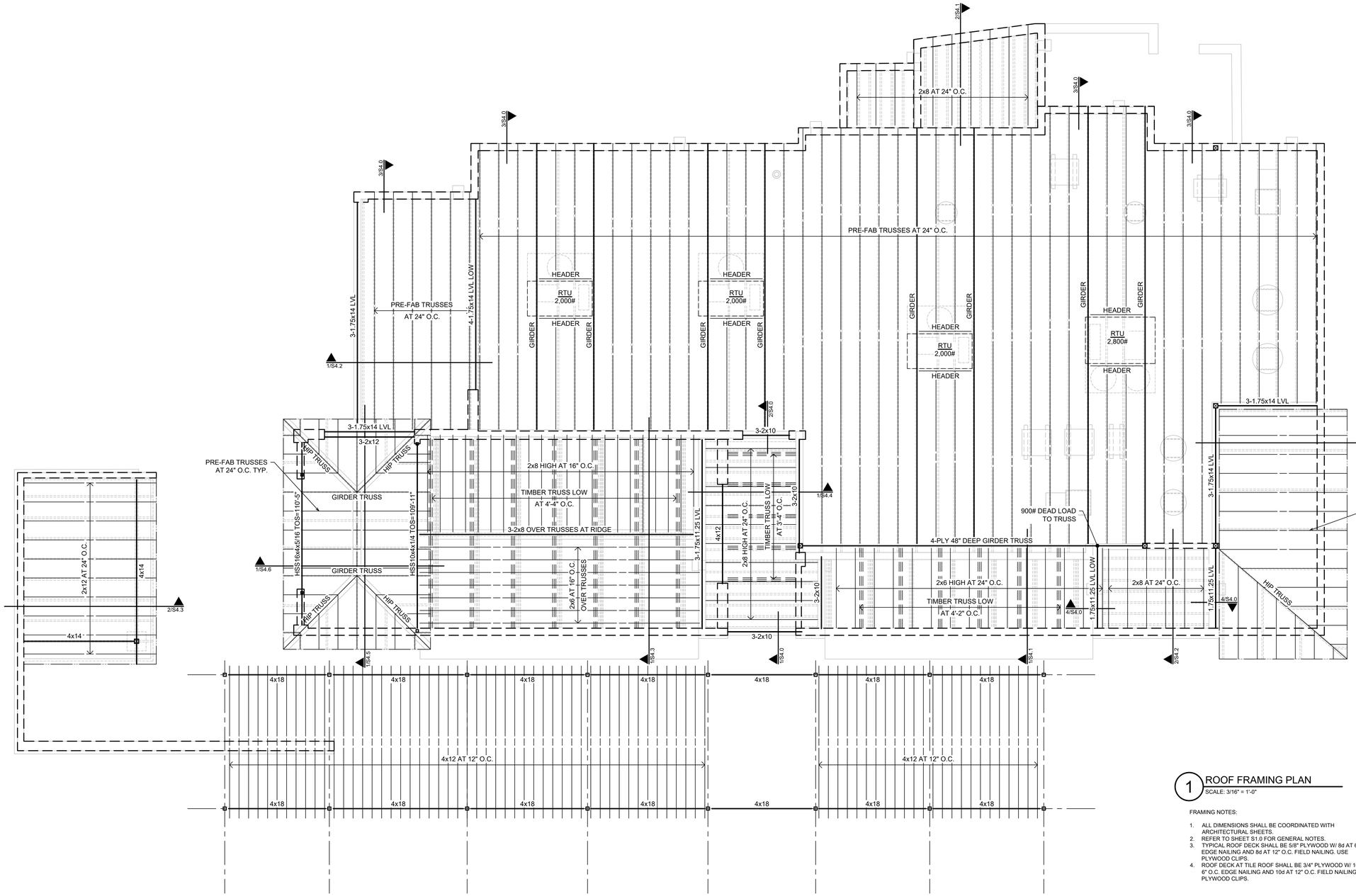
PROJECT NO.
05-05-22

SHEET NO.
S2.0



1 ROOF FRAMING PLAN

SCALE: 3/16" = 1'-0"

FRAMING NOTES:

1. ALL DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL SHEETS.
2. REFER TO SHEET S1.0 FOR GENERAL NOTES.
3. TYPICAL ROOF DECK SHALL BE 5/8" PLYWOOD W/ 8d AT 6" O.C. EDGE NAILING AND 8d AT 12" O.C. FIELD NAILING. USE PLYWOOD CLIPS.
4. ROOF DECK AT TILE ROOF SHALL BE 3/4" PLYWOOD W/ 10d AT 6" O.C. EDGE NAILING AND 10d AT 12" O.C. FIELD NAILING. USE PLYWOOD CLIPS.

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ROOF FRAMING PLAN

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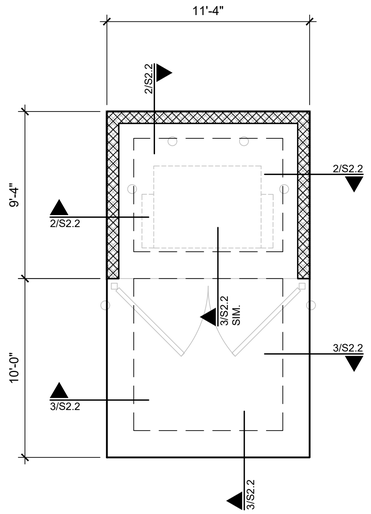
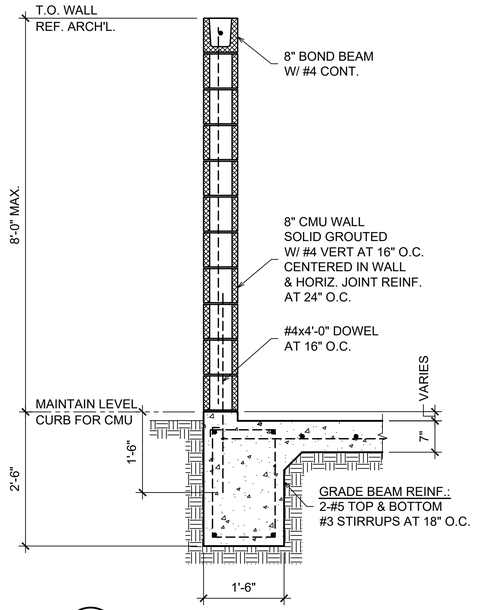
PROJECT NO.
05-05-22

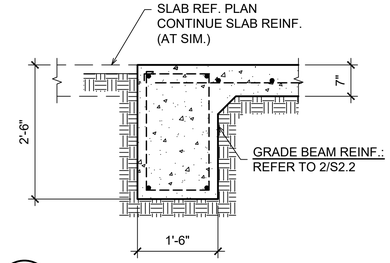
SHEET NO.
S2.1



1 DUMPSTER FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



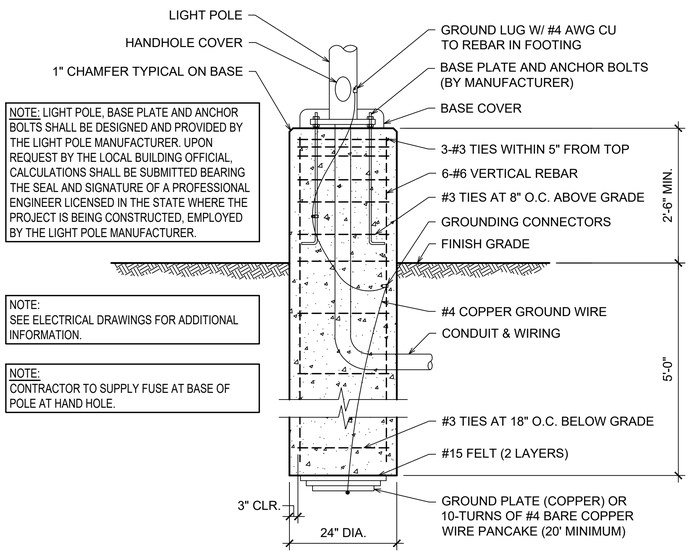
2 DUMPSTER PAD WALL SECTION
SCALE: 3/4" = 1'-0"



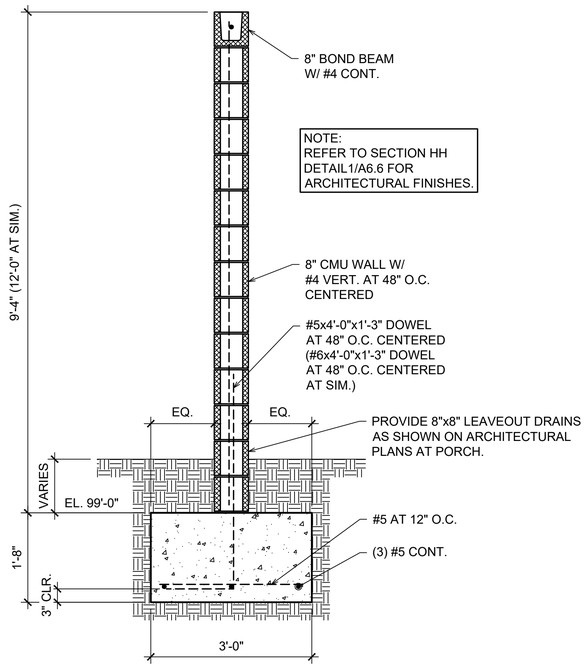
3 DUMPSTER EDGE SECTION
SCALE: 3/4" = 1'-0"

FOUNDATION PLAN NOTES:

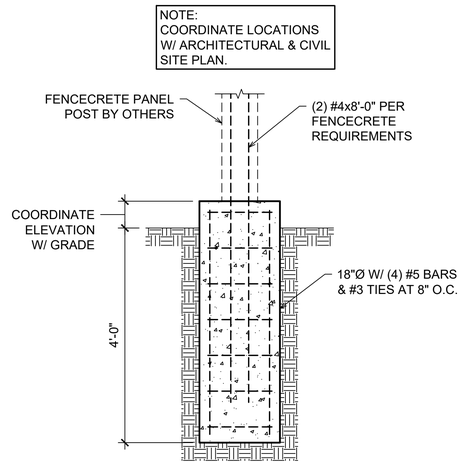
1. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL PLANS AND DETAILS.
2. REFERENCE CIVIL FOR ALL SIDEWALKS AND STOOPS.
3. REFERENCE SHEET S1.0 FOR GENERAL NOTES.
4. SLAB SHALL BE 7" CONCRETE REINFORCED WITH #4 AT 18" O.C.E.W. CENTERED IN SLAB.
5. SLOPE DUMPSTER FOUNDATION 1/4 INCH PER FOOT.



4 SITE LIGHTING BASE DETAIL
SCALE: 3/4" = 1'-0"



5 SECTION AT SCREEN WALL
SCALE: 3/4" = 1'-0"



6 FENCECRETE FOOTING
SCALE: 3/4" = 1'-0"

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DUMPSTER PAD
AND SITE DETAILS

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LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

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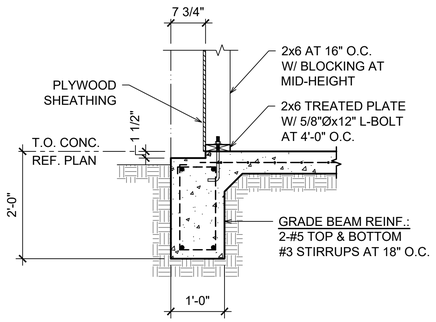
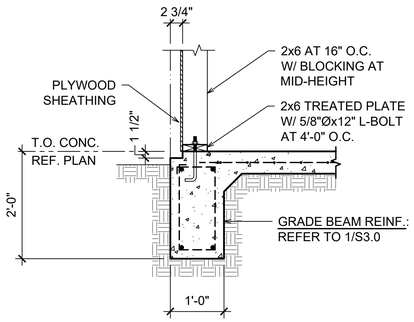
LEI PROJECT - 23110T

PROJECT NO.
05-05-22

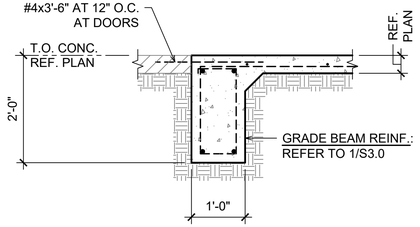
SHEET NO.
S2.2



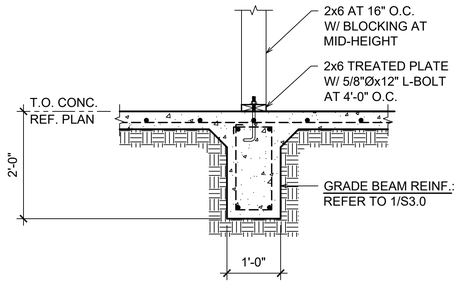
1 PERIMETER GRADE BEAM
SCALE: 3/4" = 1'-0"



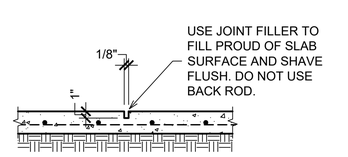
2 PERIMETER GRADE BEAM
SCALE: 3/4" = 1'-0"



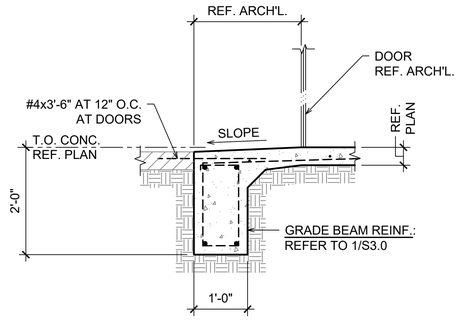
3 PERIMETER GRADE BEAM
SCALE: 3/4" = 1'-0"



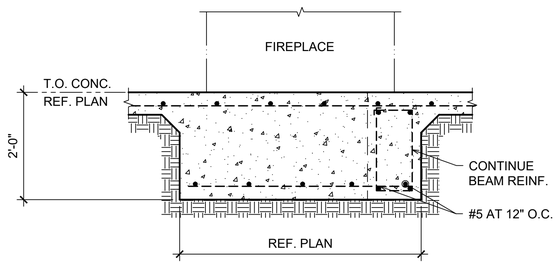
4 INTERIOR GRADE BEAM
SCALE: 3/4" = 1'-0"



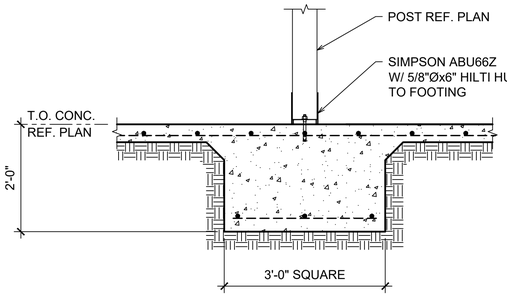
5 SAWN JOINT DETAIL
SCALE: 3/4" = 1'-0"



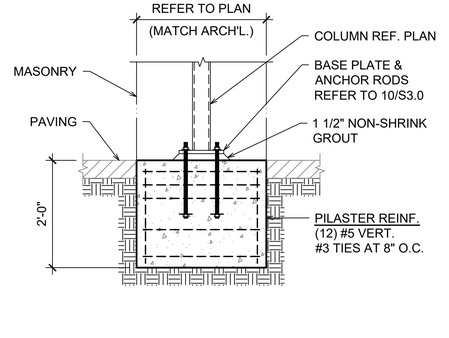
6 GRADE BEAM AT ENTRY
SCALE: 3/4" = 1'-0"



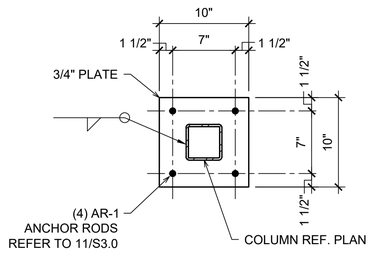
7 GRADE BEAM AT FIREPLACE
SCALE: 3/4" = 1'-0"



8 INTERIOR POST FOOTING
SCALE: 3/4" = 1'-0"

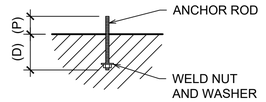


9 TYPICAL PIER CAP DETAIL
SCALE: 3/4" = 1'-0"



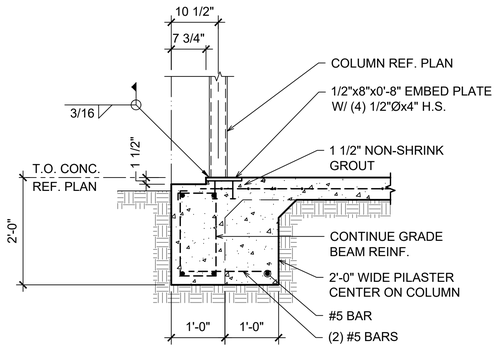
PLAN VIEW

10 BASE PLATE DETAIL (BP-1)
SCALE: 1 1/2" = 1'-0"

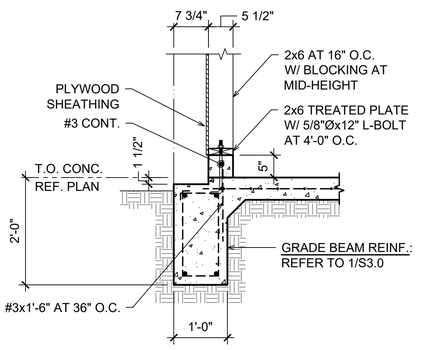


ANCHOR ROD SCHEDULE			
MARK	DIA x LENGTH	DEPTH (D)	PROJ. (P)
AR-1	3/4"Ø x 1'-4"	12"	4"

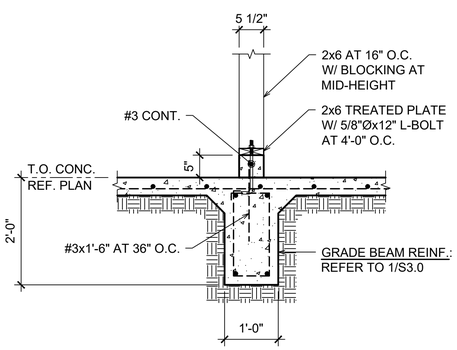
11 ANCHOR ROD SCHEDULE
SCALE: 1 1/2" = 1'-0"



12 PERIMETER COLUMN
SCALE: 3/4" = 1'-0"



13 PERIMETER GRADE BEAM
SCALE: 3/4" = 1'-0"



14 INTERIOR GRADE BEAM
SCALE: 3/4" = 1'-0"

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THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PHILIPPE J. LALONDE, P.E. 89364 (COA F-7978) ON MAR. 29, 2023.

DRAWING COORDINATION
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FOUNDATION DETAILS

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

PROJECT NO.
05-05-22

SHEET NO.
S3.0

LALONDE
ENGINEERING, INC.
CONSULTING STRUCTURAL
ENGINEERS
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FORT WORTH, TX 76135
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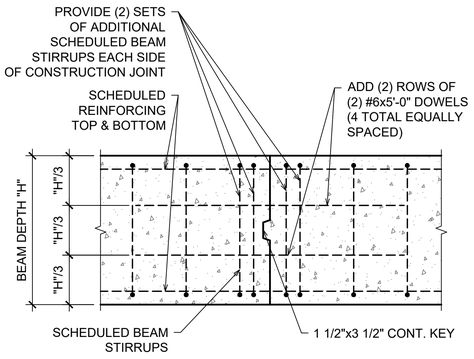
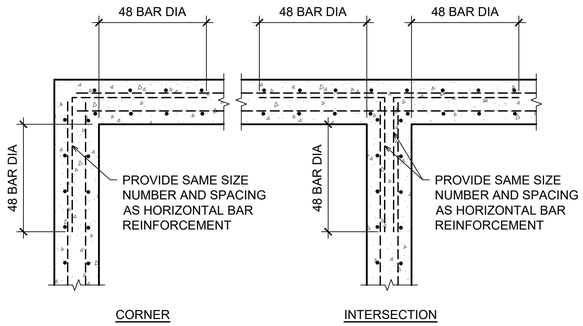
FAX 817-238-1520
COA# F-7978
LEI PROJECT - 23110



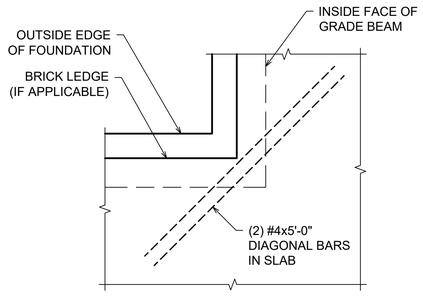
1 TYPICAL GRADE BEAM CONSTRUCTION JOINT

SCALE: N.T.S.



2 TYPICAL GRADE BEAM REINFORCING

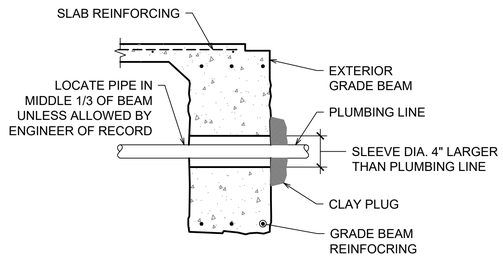
SCALE: N.T.S.



NOTE: USE THIS DETAIL AT EACH INTERIOR CORNER OF THE FOUNDATION.

3 TYPICAL SLAB DIAGONALS

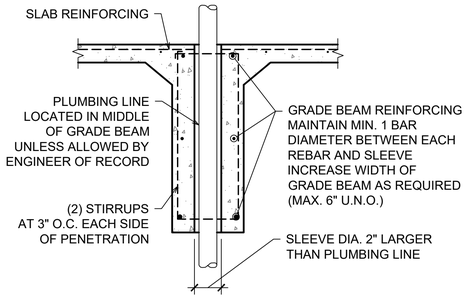
SCALE: N.T.S.



4 TYPICAL PLUMBING LINE PENETRATION DETAIL

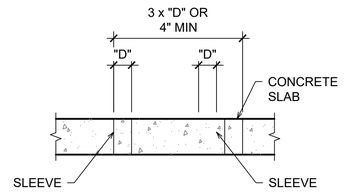
SCALE: N.T.S.

NOTE: DO NOT BEND PLUMBING LINES INSIDE GRADE BEAM. BENDS MUST OCCUR A MINIMUM OF 12" BELOW BOTTOM OF GRADE BEAM OR ABOVE FINISH FLOOR. LINES THAT BEND INSIDE GRADE BEAM SHALL BE REJECTED.



5 TYPICAL VERTICAL PLUMBING LINE PENETRATION DETAIL

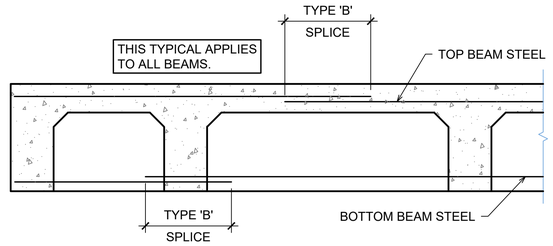
SCALE: N.T.S.



NOTES:
1. ALUMINUM SHALL NOT EMBED INTO CONCRETE.
2. NO SLEEVES SHALL BE INSTALLED IN SLAB WITHIN 48" OF A COLUMN WITHOUT APPROVAL FROM THE ENGINEER OF RECORD.

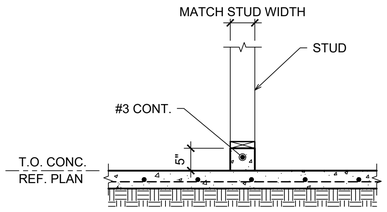
6 TYPICAL SLAB SLEEVE PENETRATION SECTION

SCALE: N.T.S.



7 TYPICAL BAR SPLICE DETAIL

SCALE: N.T.S.



8 INTERIOR CURB

SCALE: 3/4" = 1'-0"

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LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

LALONDE ENGINEERING, INC.
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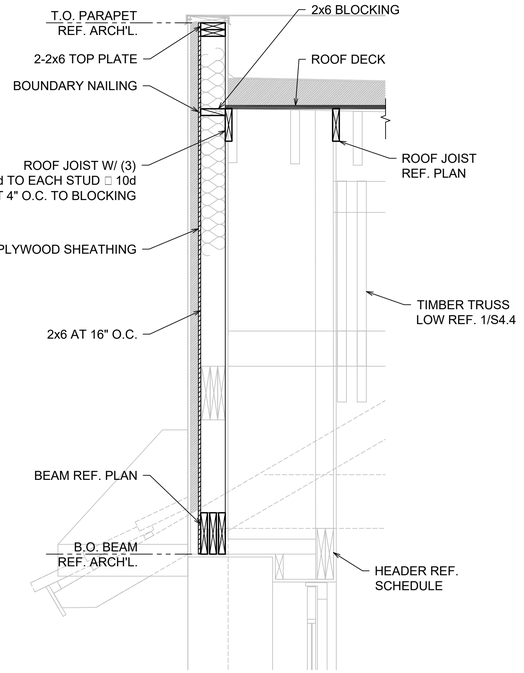
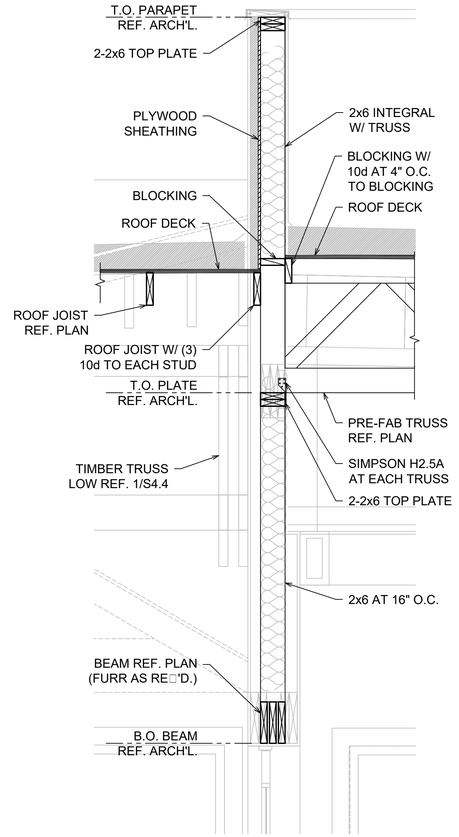
CO# F-7978
LEI PROJECT - 23110T

PROJECT NO.
05-05-22

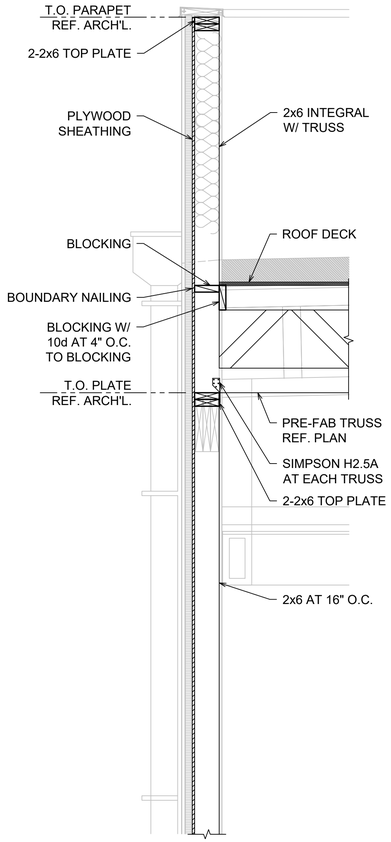
SHEET NO.
S3.1



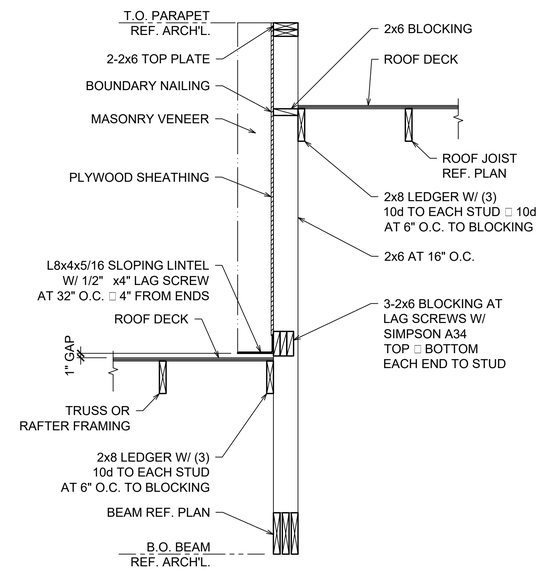
1 ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"



2 ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"



3 ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"



4 ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"

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23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

Lalonde Engineering, Inc.
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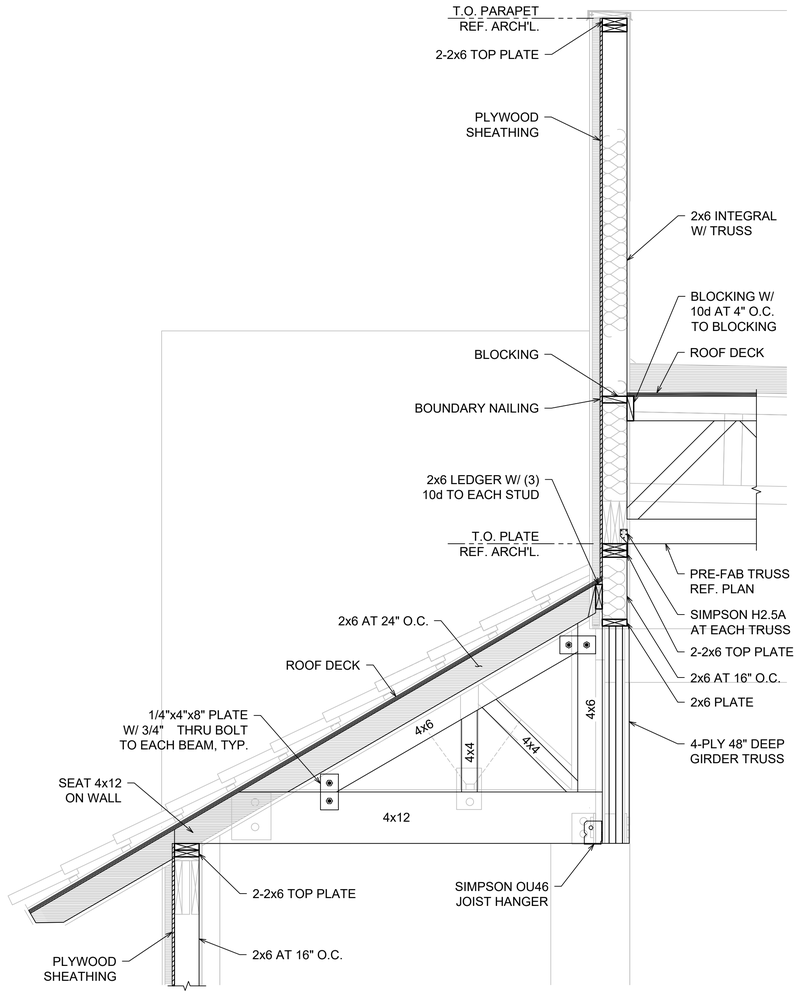
PHONE: 817.307.8290
FAX: 817.238.1520
COA # 7578
lei project - 231101

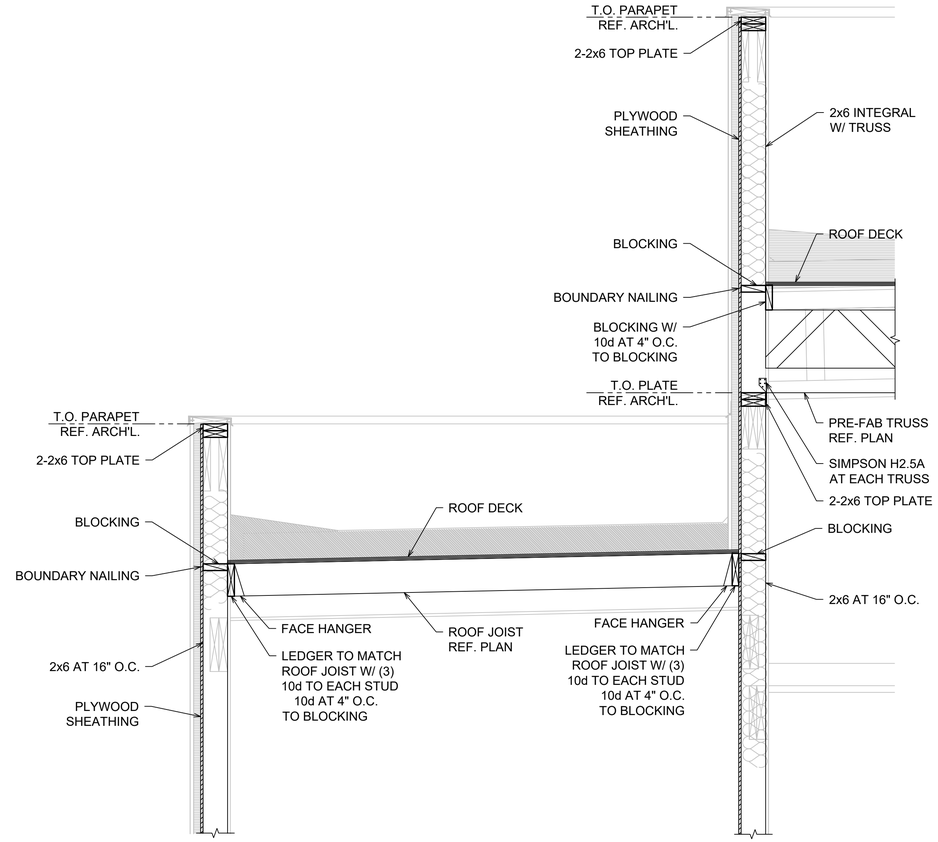
PROJECT NO.
05-05-22

SHEET NO.
S4.0



1 ROOF FRAMING SECTION

SCALE: 3/4" = 1'-0"



2 ROOF FRAMING SECTION

SCALE: 3/4" = 1'-0"

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23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

LALONDE
ENGINEERING, INC.
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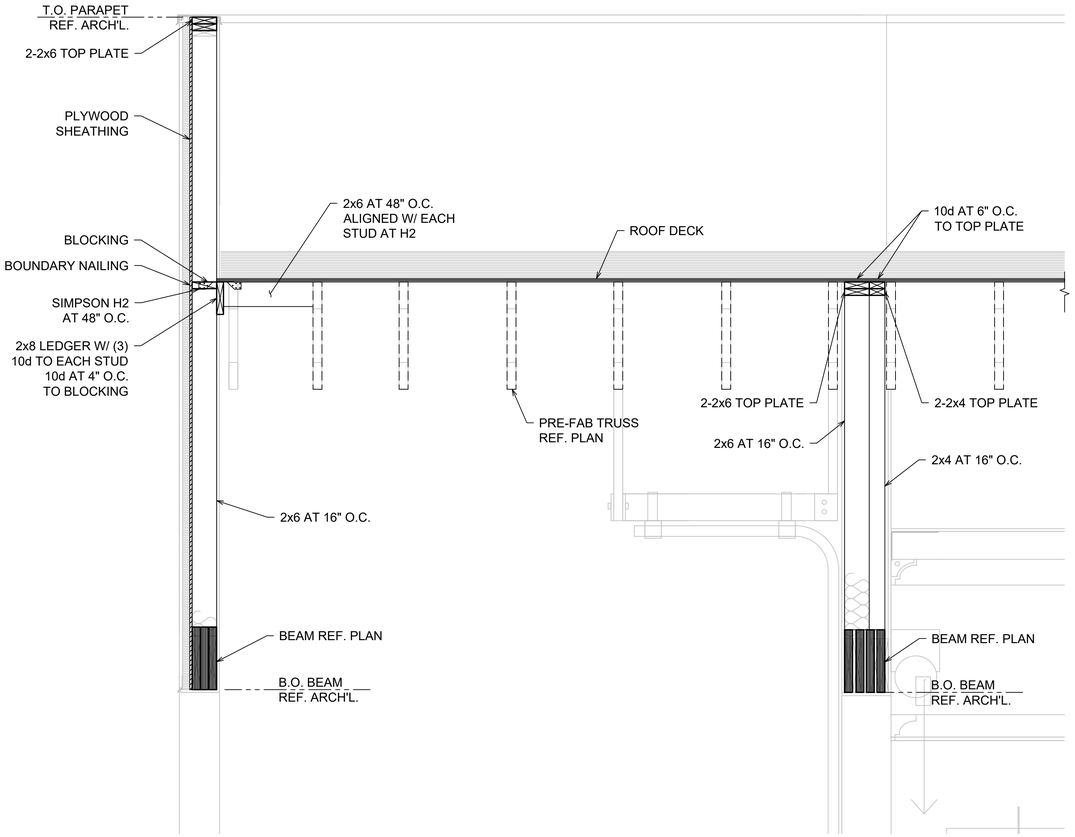
CO# F-7978
LEI PROJECT - 23110

PROJECT NO.
05-05-22

SHEET NO.
S4.1



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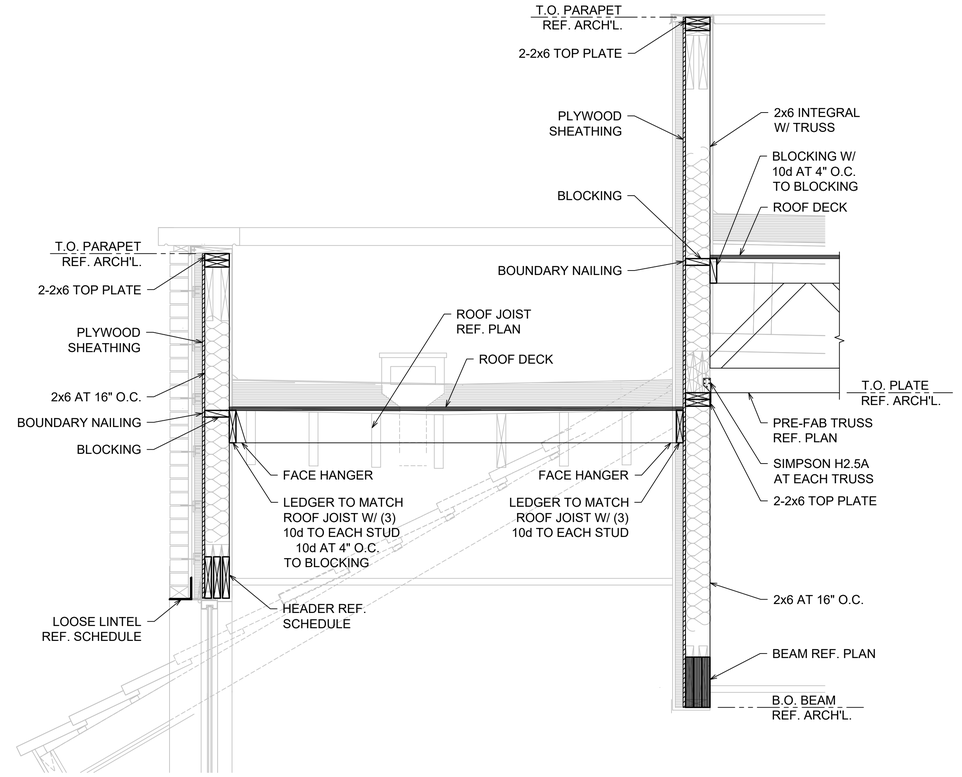
1 ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"



(REF. ARCH'L. 2/A6.5)
2 ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"

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DATE	DESCRIPTION	BY

LALONDE
ENGINEERING, INC.
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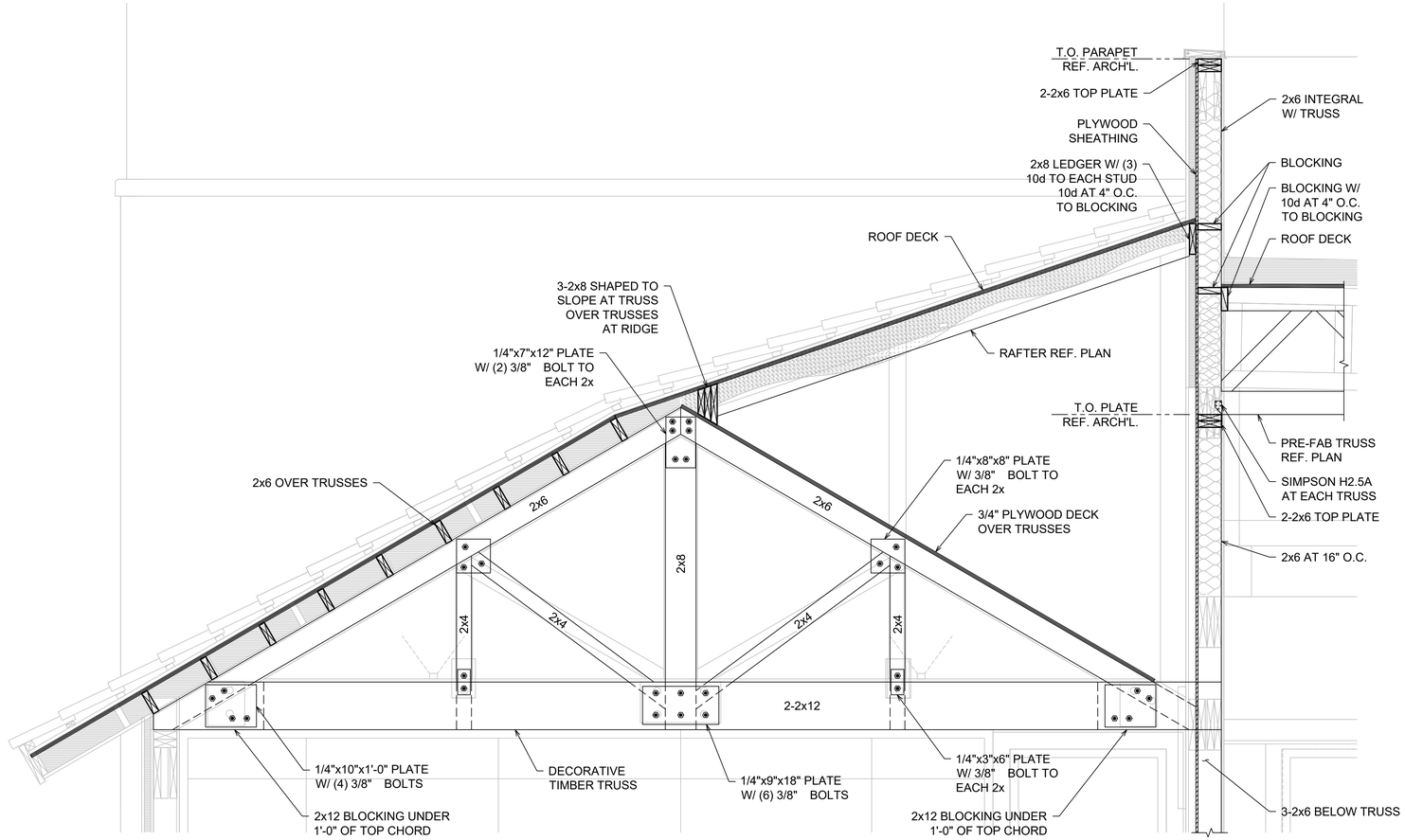
COA F-7978
LEI PROJECT - 231101

PROJECT NO.
05-05-22

SHEET NO.
S4.2



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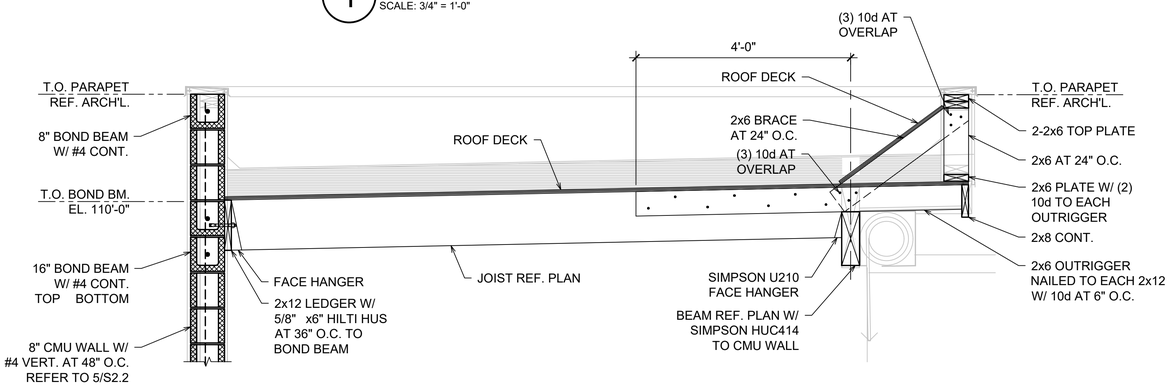
ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"



2 SECTION AT OUTDOOR BAR
SCALE: 3/4" = 1'-0"

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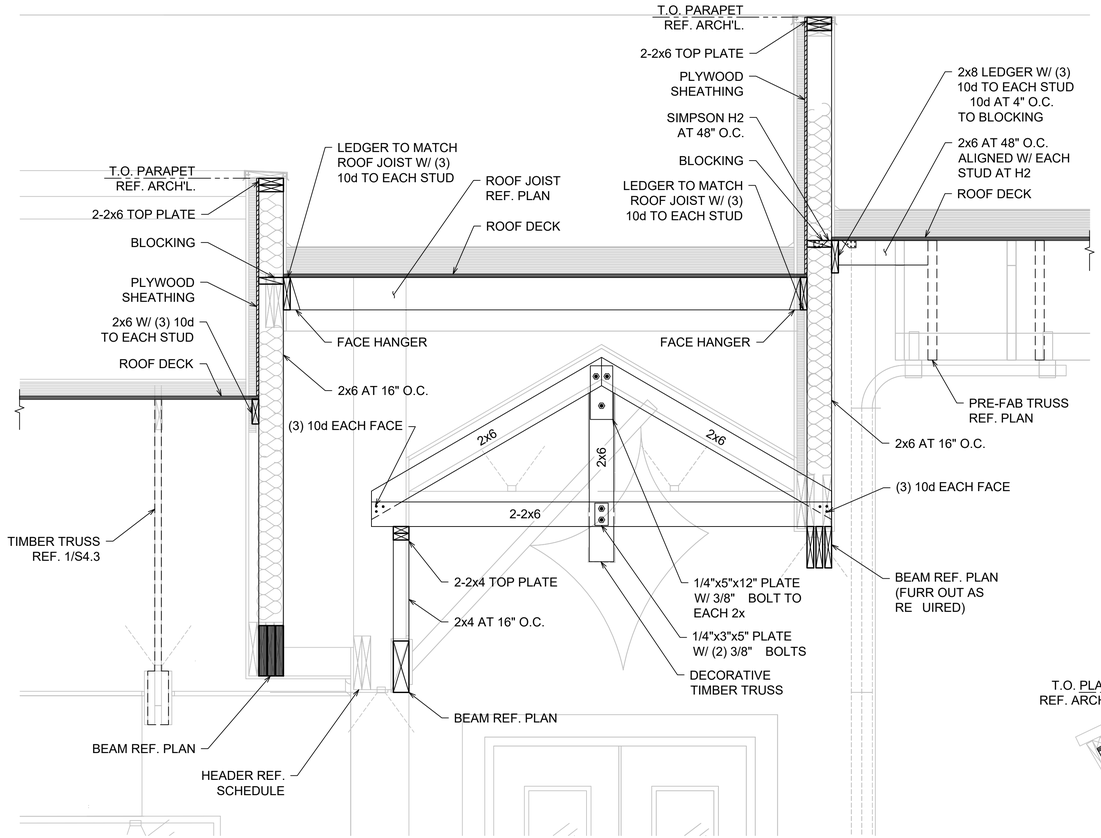
COA# F-7978
LEI PROJECT - 23110T

PROJECT NO.
05-05-22

SHEET NO.
S4.3



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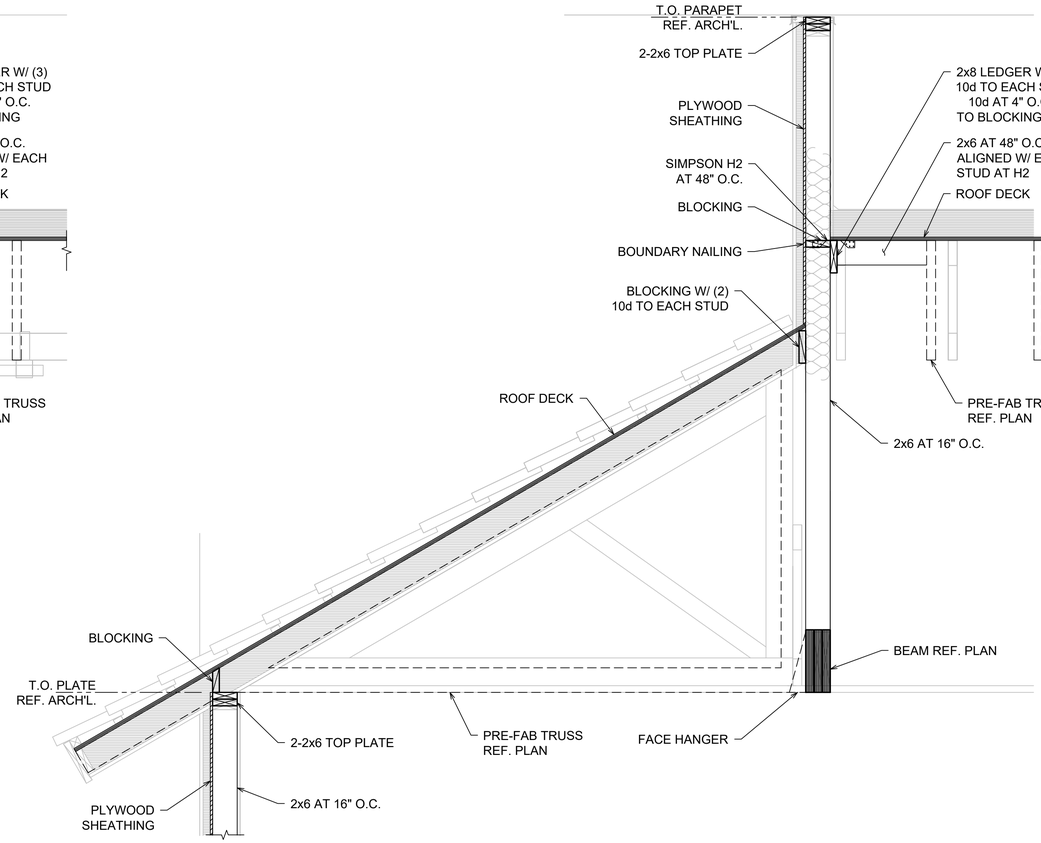

(REF. ARCH'L. 1/A6.3)
2 ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"

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ENGINEERING, INC.
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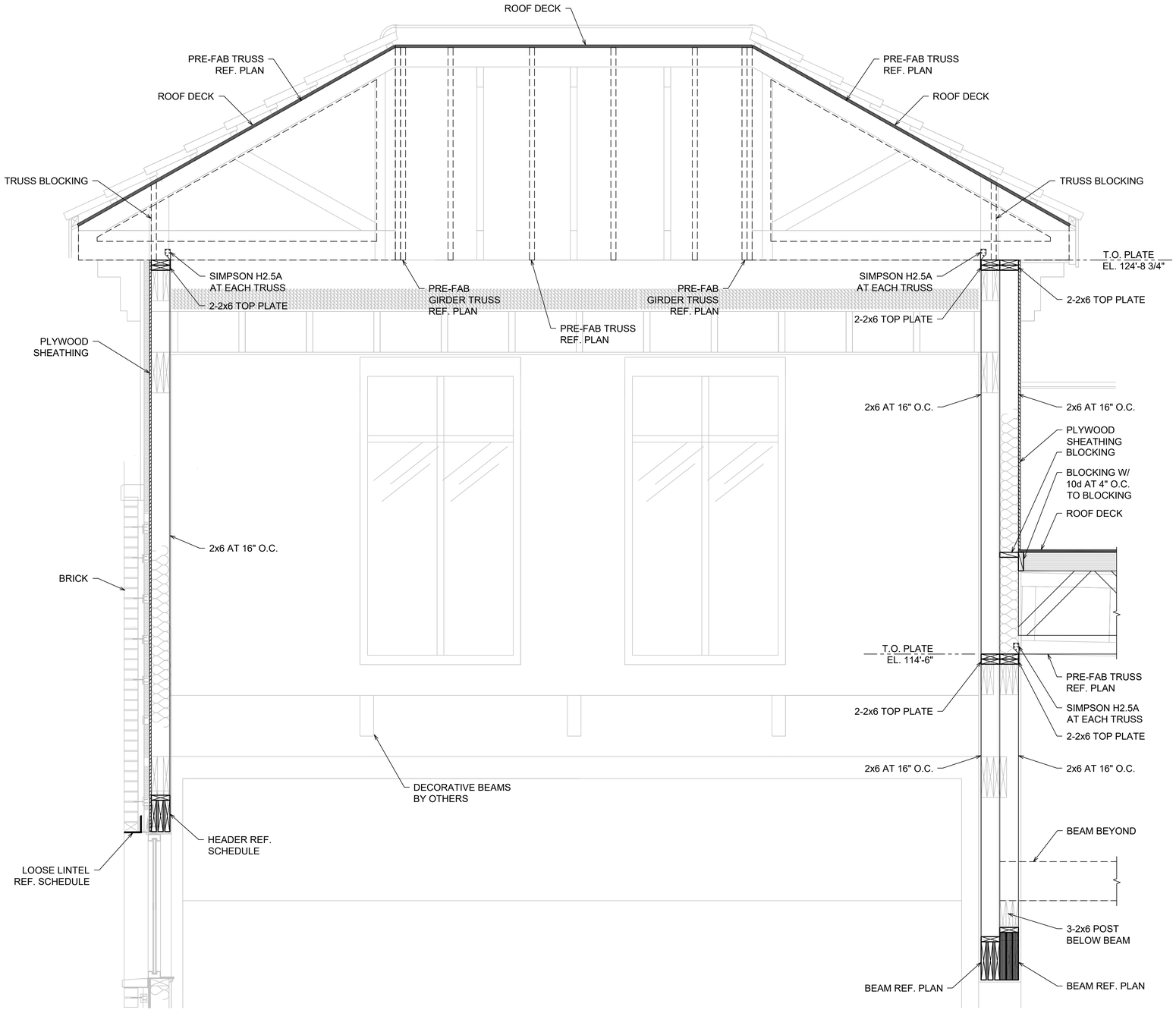
CO# F-7978
LEI PROJECT - 231101

PROJECT NO.
05-05-22

SHEET NO.
S4.4



1 (REF. ARCH'L. 2/A6.3)
ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"

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CONSULTING STRUCTURAL ENGINEERS
6617 RED BUD ROAD
FORT WORTH, TX 76135
PHONE: 817.367.8206
FAX: 817.238.1520
COA# F-7978
LEI PROJECT - 23110

PROJECT NO.
05-05-22

SHEET NO.
S4.5

FASTENER SCHEDULE FOR STRUCTURAL MEMBERS		
DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING OF FASTENERS
Joist to sill or girder, toe nail	3-8d	N/A
1x6 subfloor or less to each joist, face nail	2-8d (2- 1 3/4" staples)	N/A
2" subfloor to joist or girder, blind nail and face nail	2-16d	N/A
Sole plate to joist or blocking, face nail	16d	16" o.c.
Top or sole plate to stud, end nail	2-16d	N/A
Stud to sole plate, toe nail	3-8d or 2-16d	N/A
Double studs, face nail	10d	24" o.c.
Double top plates, face nail	10d	24" o.c.
Sole plate to joist or blocking at braced wall panels	3-16d	16" o.c.
Double top plates, min. 24" offset of end joints, face nail in lapped area	8-16d	N/A
Blocking between joists or rafters to top plate, toe nail	3-8d	N/A
Rim joist to top plate, toe nail	8d	6" o.c.
Top plates, laps at corners and intersections, face nail	2-10d	
Built-up header, two pieces with 1/2" spacer	16d	16" o.c. along each edge
Continued header, two pieces	16d	16" o.c. along each edge
Ceiling joists to plate, toe nail	3-8d	N/A
Continuous header to stud, toe nail	4-8d	N/A
Ceiling joist, laps over partitions, face nail	3-10d	N/A
Ceiling joist to parallel rafters, face nail	3-10d	N/A
Rafter to plate, toe nail	2-16d	N/A
1" brace to each stud and plate, face nail	2-8d (2- 1.75" staples)	N/A
1x6 sheathing to each bearing, face nail	2-8d (2- 1.75" staples)	N/A
1x8 sheathing to each bearing, face nail	2-8d (3- 1.75" staples)	N/A
Wider than 1x8 sheathing to each bearing, face nail	3-8d (4- 1.75" staples)	N/A
Built-up corner studs	10d	24" o.c.
Built-up girders and beams, 2" lumber layers	10d	Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice.
2" planks	2-16d	At each bearing
Roof rafters to ridge, valley or hip rafters: toe nail, face nail	4-16d, 3-16d	N/A
Rafter ties to rafters, face	3-8d	N/A

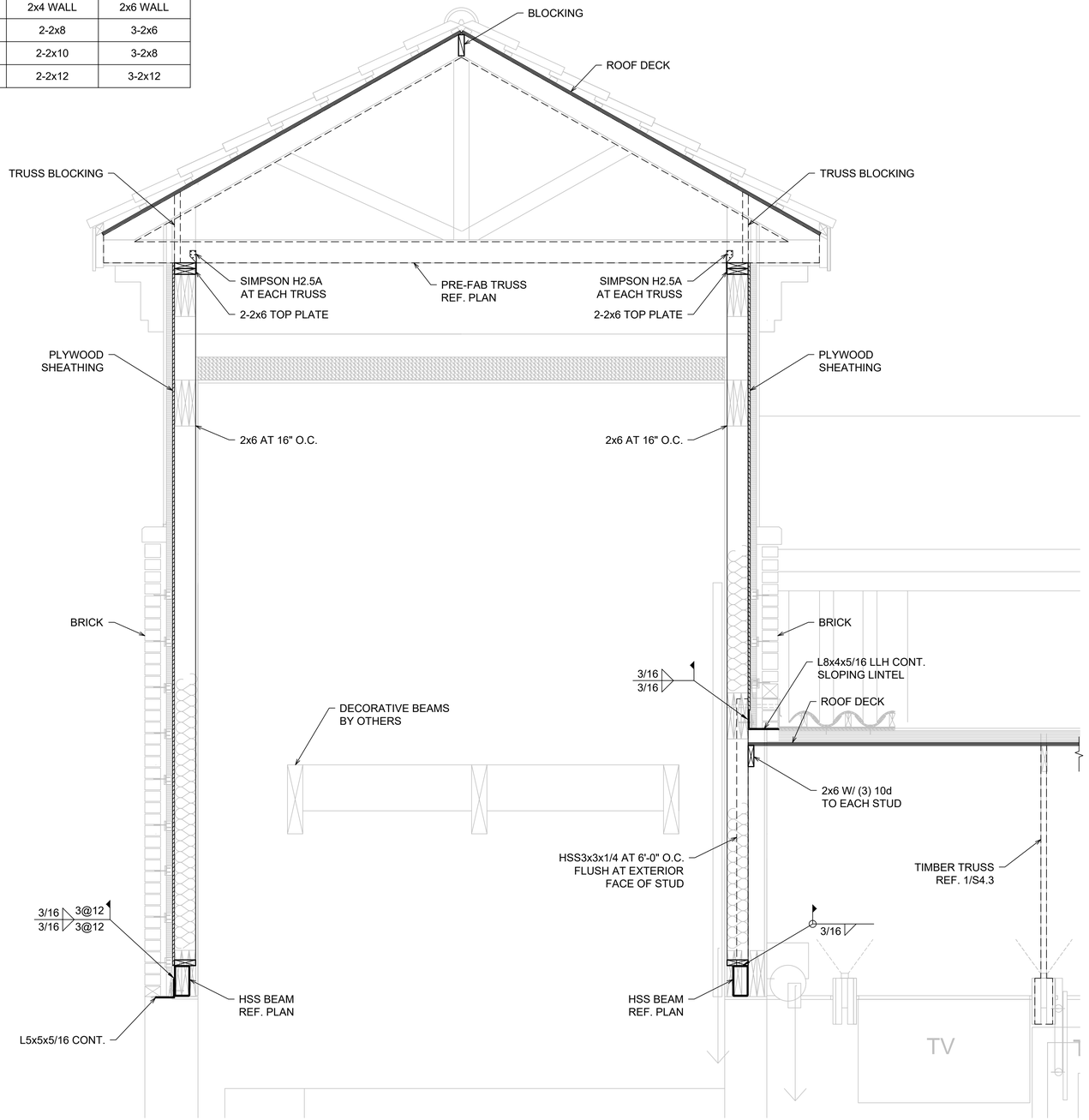
FASTENER SCHEDULE FOR STRUCTURAL MEMBERS			
DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER	SPACING OF FASTENERS	
		EDGES	INTERMEDIATE SUPPORTS
Wood structural panels, subfloor, roof, and wall sheathing to framing, and particleboard wall sheathing to framing			
5/16" to 1/2"	6d common nail (subfloor, wall) 8d common nail (roof)	6" o.c.	12" o.c.
19/32" to 1"	8d common nail	6" o.c.	12" o.c.
1 1/8" to 1 1/4"	10d common nail or 8d deformed nail	6" o.c.	12" o.c.
Other wall sheathing			
1/2" regular cellulosic fiberboard sheathing	1 1/2" galvanized roofing nail, 6d common nail, or 1.5" 16 ga. staple	3" o.c.	6" o.c.
1/2" structural cellulosic fiberboard sheathing	1 1/2" galvanized roofing nail, 8d common nail, or 1.5" 16 ga. staple	3" o.c.	6" o.c.
25/32" structural cellulosic fiberboard sheathing	1 3/4" galvanized roofing nail, 8d common nail, or 1.75" 16 ga. staple	3" o.c.	6" o.c.
1/2" gypsum sheathing	1 1/2" galvanized roofing nail, 6d common nail, 1.5" 16 ga. staple, or 1.25" screw type W or S	4" o.c.	8" o.c.
5/8" gypsum sheathing	1 3/4" galvanized roofing nail, 8d common nail, 1.625" 16 ga. staple, or 1.625" screw type W or S	4" o.c.	8" o.c.
Wood structural panels, combination subfloor underlayment to framing			
3/4" and less	6d deformed nail or 8d common nail		
7/8" to 1"	8d common nail or 8d deformed nail		
1 1/8" to 1 1/4"	10d common nail or 8d deformed nail		

LOOSE STEEL ANGLE LINTEL FOR VENEER MASONRY

CLEAR SPAN	EXTERIOR ANGLES FOR 4" MASONRY	GENERAL NOTES
< 4'-0"	3 1/2 x 3 1/2 x 5/16	1. PROVIDE 8" MINIMUM BEARING FOR ALL STEEL ANGLE LINTELS. PROVIDE CONTINUOUS LINTEL ANGLES BETWEEN ADJACENT EXTERIOR OPENINGS SEPARATED BY 2'-0" OR LESS. 2. THIS TABLE APPLIES ONLY TO NON-LOAD BEARING WALLS. 3. MEMBER SIZES INDICATED WITHIN THIS TABLE SHALL ONLY SUPPLEMENT INFORMATION FOUND ELSEWHERE IN THIS SET OF PLANS AND SHALL NOT SUPERSEDE MEMBER SIZES EXPLICITLY NOTED ON SECTIONS, DETAILS OR STRUCTURAL DRAWINGS. 4. ALL LINTEL ANGLES SHALL BE INSTALLED WITH LONG LEG VERTICAL.
5'-0"	3 1/2 x 3 1/2 x 5/16	
6'-0"	4 x 3 1/2 x 5/16	
7'-0"	4 x 3 1/2 x 5/16	
8'-0"	5 x 3 1/2 x 5/16	
9'-0"	5 x 3 1/2 x 3/8	
10'-0"	6 x 3 1/2 x 3/8	

WOOD HEADER SCHEDULE

SPAN	2x4 WALL	2x6 WALL
0'-0"-3'-0"	2-2x8	3-2x6
3'-1"-6'-0"	2-2x10	3-2x8
6'-1"-10'-0"	2-2x12	3-2x12



1 (REF. ARCH'L. 1/A6.1)
ROOF FRAMING SECTION
SCALE: 3/4" = 1'-0"

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PHILIPPE J. LALONDE
89364
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PHILIPPE J. LALONDE, P.E. 89364 (COA F-7978) ON MAR. 29, 2023.

DRAWING COORDINATION
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FRAMING DETAILS

23110 WEST I-10
LOT 3 Dominion Creek,
San Antonio, 78257 Texas

DATE	DESCRIPTION	BY

LALONDE ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
6617 RED BUD ROAD
FORT WORTH, TX 76135
PHONE: 817.307.8266
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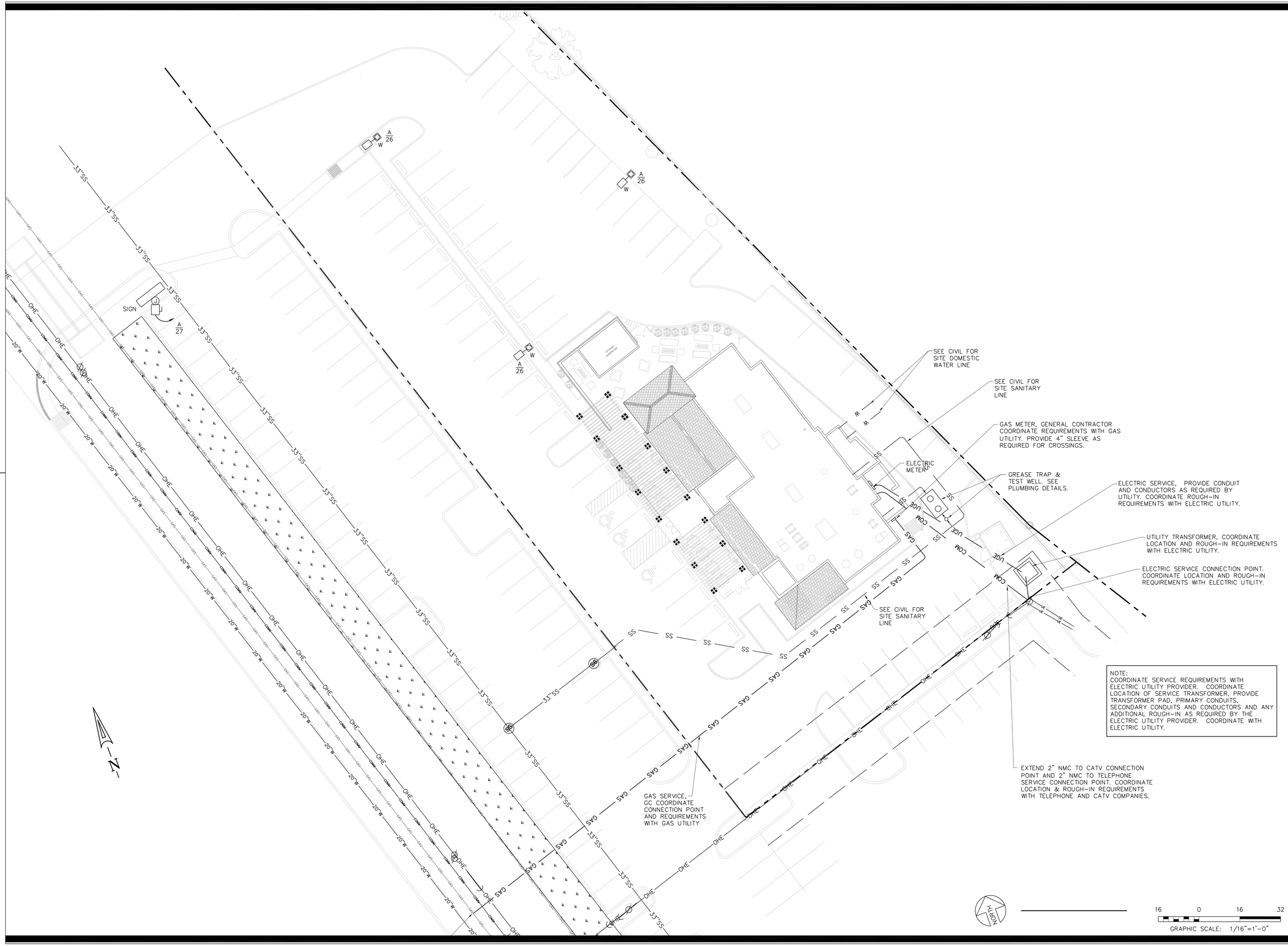
LEI PROJECT - 23110

PROJECT NO.
05-05-22

SHEET NO.
S4.6



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DRAWING COORDINATION

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17 March 2023

STATE OF TEXAS · G.G. MALONEY JR. · 63180 · REGISTERED PROFESSIONAL ENGINEER

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CONSULTING ENGINEERS, INC
F-1400

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HURST, TEXAS 76053
(817) 280-0888

MALONEY-ENG.COM

SITE MEP PLAN

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

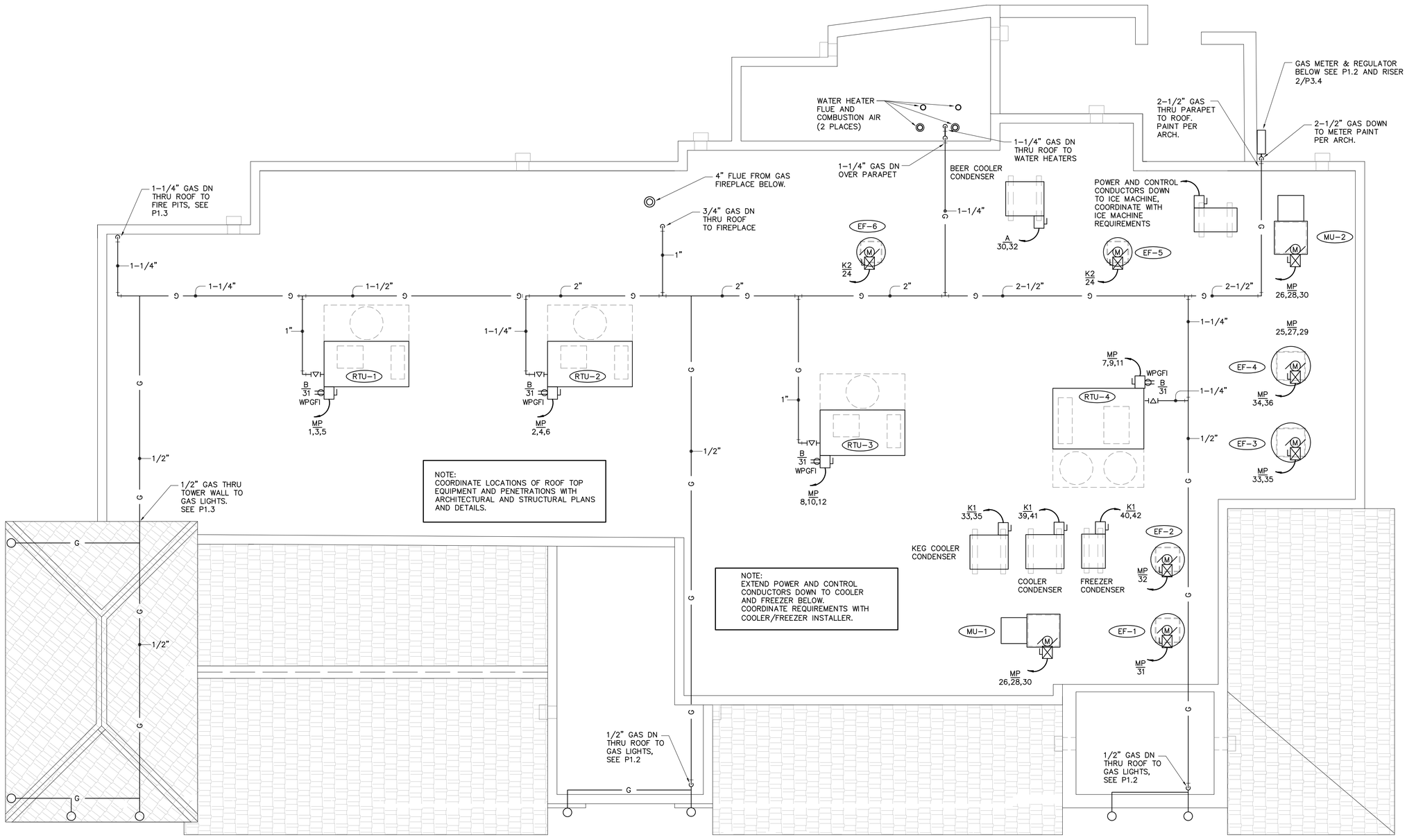
DATE	DESCRIPTION	BY

SCALE:
AS NOTED

PROJECT NO.
05-05-22

SHEET NO.
ME1.1

Mar 17,2023 - 3:16pm
00-1511-ME1.1-Mech Elec site Plan.dwg



1 MECHANICAL/ELECTRICAL ROOF PLAN
SCALE: 1/4"=1'-0"

GRAPHIC SCALE: 1/4"=1'-0" (4' 0 4' 8')

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17 March 2023
STATE OF TEXAS
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MECHANICAL/ELECTRICAL ROOF PLAN

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY

SCALE: AS NOTED

PROJECT NO. 05-05-22

SHEET NO. ME1.2

Mar 17,2023 - 3:17pm
00-1511-ME1.2-Mech Elec roof Plan.dwg

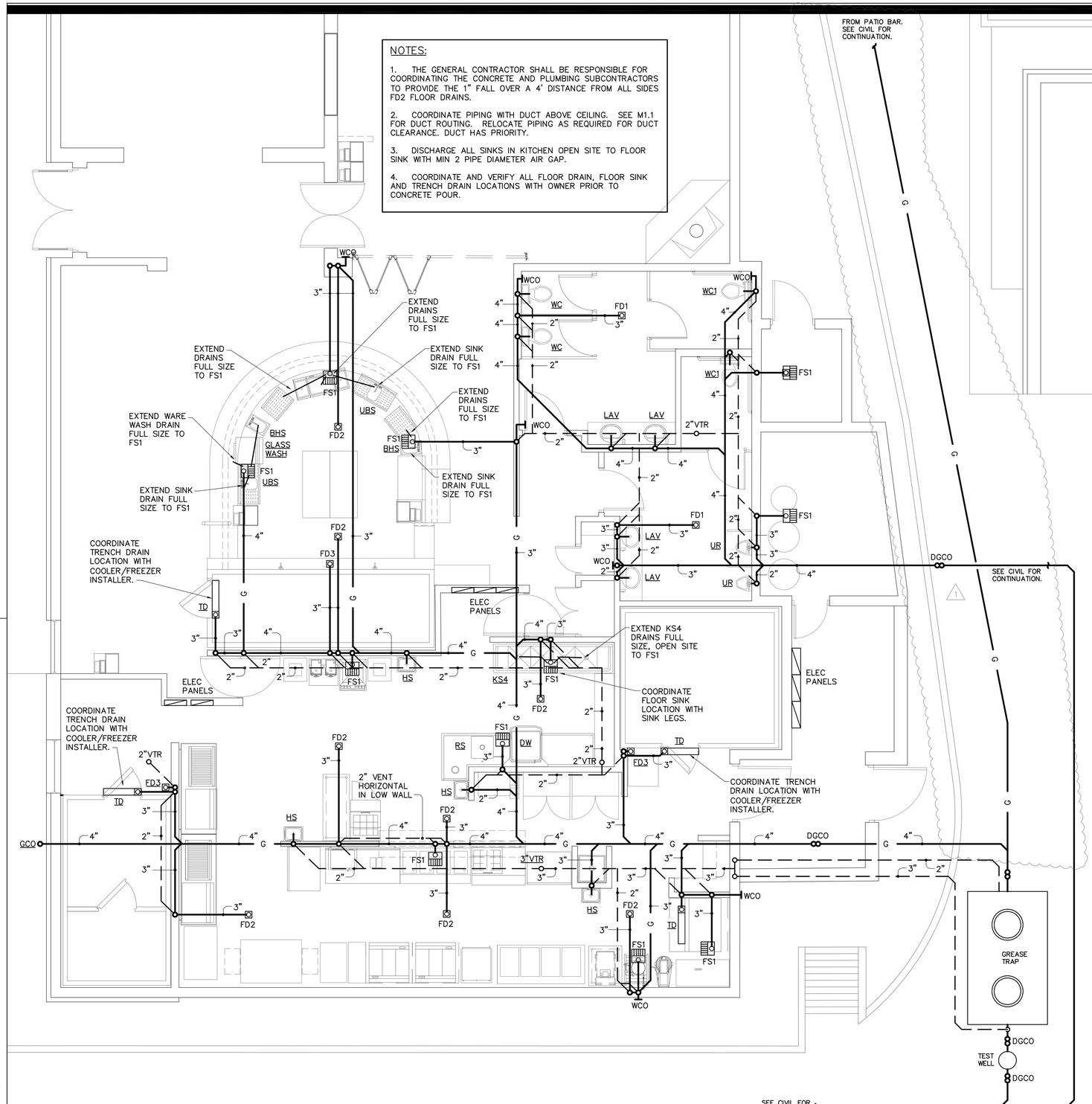
NOTES:

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONCRETE AND PLUMBING SUBCONTRACTORS TO PROVIDE THE 1" FALL OVER A 4' DISTANCE FROM ALL SIDES FD2 FLOOR DRAINS.

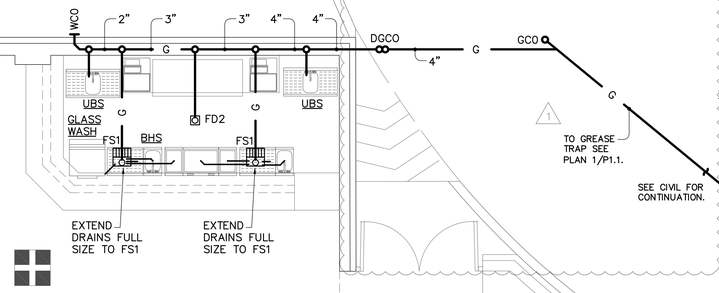
2. COORDINATE PIPING WITH DUCT ABOVE CEILING. SEE M1.1 FOR DUCT ROUTING. RELOCATE PIPING AS REQUIRED FOR DUCT CLEARANCE. DUCT HAS PRIORITY.

3. DISCHARGE ALL SINKS IN KITCHEN OPEN SITE TO FLOOR SINK WITH MIN 2 PIPE DIAMETER AIR GAP.

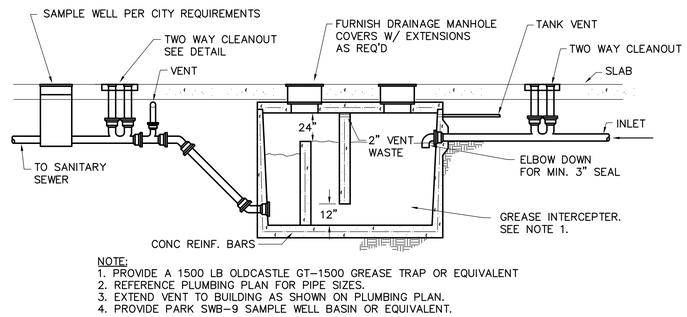
4. COORDINATE AND VERIFY ALL FLOOR DRAIN, FLOOR SINK AND TRENCH DRAIN LOCATIONS WITH OWNER PRIOR TO CONCRETE POUR.



1 PLUMBING WASTE PLAN
SCALE: 1/4"=1'-0"



2 PATIO BAR PLUMBING WASTE PLAN
SCALE: 1/4"=1'-0"



NOTE:
1. PROVIDE A 1500 LB OLDCASTLE GT-1500 GREASE TRAP OR EQUIVALENT
2. REFERENCE PLUMBING PLAN FOR PIPE SIZES.
3. EXTEND VENT TO BUILDING AS SHOWN ON PLUMBING PLAN.
4. PROVIDE PARK SWB-9 SAMPLE WELL BASIN OR EQUIVALENT.

SECTION

3 GREASE TRAP DETAIL
SCALE: NTS

Lion & Rose

17-Apr-23 2:25 PM

	Quan	*GPM ea	Ttl GPM			
Hand Sink (FS1)	4	7.5	30.0			
Floor Sink (FS1)	9	22	198.0			
4 comp sink (FS1)	1	24.4	24.4			
3" drain (FD1)	8	37.5	300.0			
Mop Sink	1	37.5	37.5			
TrenchDrain(TD)	4	22	88.0			
			0.0			
			0.0			
			677.9	**gpm**		

**** GPM ea taken from PDI-G101, Table A1.7***

677.9 gpm
2 lbs grease/gpm
1355.8 lbs grease capacity

Above is interpreted from PDI-G101, Article 7.9 and Table A1.2 showing 2lbs grease capacity per gpm of flow rate.

4' 0 4' 8'
GRAPHIC SCALE: 1/4"=1'-0"

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17 March 2023

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PLUMBING WASTE PLAN

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY
4/17/23	MEP CHANGES	1

SCALE:
AS NOTED

PROJECT NO.
05-05-22

SHEET NO.
P1.1

Apr 17,2023 - 2:25pm
01-1511-P1.1-Plumbing Waste Plan.dwg

MATCH LINE

3/4" CW DN IN WALL TO FPWH

FPWH

3/4"

GAS LAMP

1-1/4"

1/2" DN IN WALL TO GAS LAMP

GAS LAMP

1/2" GAS UP TO ROOF, SEE ME1.2

1-1/4"

1-1/4"

1-1/4" H&C ROUTED IN MILLWORK BELOW BAR

1-1/4"

1"

UBS

1"

BHS

GLASS WASH

BHS

3/4"

UBS

1-1/4" H&C BELOW FLOOR TO RISE UP AT BAR

1-1/4"

1/2" CW DN IN WALL TO LAV

1"

1/2" CW DN IN WALL TO COFFEE & TEA MAKERS

1/2" H&C DN IN WALL TO HS

1-1/4"

3/4" CW DN IN WALL TO FPWH

FPWH

3/4"

HS

3/4"

3/4" H&C DN IN WALL TO SINK

KS4

1-1/4"

3/4" H&C DN TO RINSE SINK

RS

DW

1-1/4"

1/2" H&C DN IN WALL TO HS

3/4"

HS

3/4"

1-1/4"

1"

1"

1-1/2"

SEE E1.1 AND E3.1 FOR GAS LAMPS. SEE ARCH ELEVATIONS FOR MOUNTING HEIGHTS. (TYP)

GAS LAMP

1/2" DN IN WALL TO GAS LAMP

GAS LAMP

1/2" GAS UP TO ROOF, SEE ME1.2

1-1/2"

HS

1-1/4"

1"

MS

1"

HOT WELLS

1/2" H&C DN IN WALL TO HS

1/2" CW DN IN WALL TO HOT WELLS

3/4" H&C DOWN TO MOP SINK AND HAND SINK

HS

1-1/2"

1/2" CW DN TO WC

1"

WCB

WCB

1-1/2"

1/2" CW DN TO WC

WCA

1-1/2"

WCA

1/2" CW DN IN WALL TO LAV

1-1/2"

2-1/2"

RPZBFP

SEE CIVIL FOR CONTINUATION

FDC

FP

SEE CIVIL FOR CONTINUATION

LAV

LAV

3/4"

3/4"

1-1/2"

3/4"

3/4" HW DN TO CHASE AT LAVS

WATER SOFTENER

2"

2-1/2"

LAV

1" HW DN TO CHASE AT LAVS

1"

UR

3/4"

2"

WH

1-1/2"

1-1/2"G TO ROOF

LAV

UR

WH

1-1/2"

1-1/2"

3/4" CW DN IN WALL TO UR

1-1/2"

1-1/2"

1/2" CW DN TO ICE MACHINE

2-1/2" GAS UP OVER PARAPET TO ROOF. PAINT PER ARCH. SEE 1/P2.2

FPWH

3/4"

3/4"

3/4"

GAS METER & REGULATOR, COORDINATE REQUIREMENTS WITH GAS UTILITY. GAS LOAD = 2485 CFH AT 1/2 PSI DELIVERY.

1/2"

AUTOMATIC GAS VALVE

1/2"

G

G

G

1-1/2"

2"

2"

2-1/2"

GAS LINE DOWN TO 36"AFF AND ROUTE ALONG WALL BEHIND EQUIPMENT

2-1/2" GAS UP ABOVE CEILING AND THRU WALL. PAINT PER ARCH. SEE 1/P2.2

SEE CIVIL FOR CONTINUATION

NORTH

1 KITCHEN PLUMBING WATER SUPPLY PLAN

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

4' 0 4' 8'

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

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PLUMBING WATER SUPPLY PLAN

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

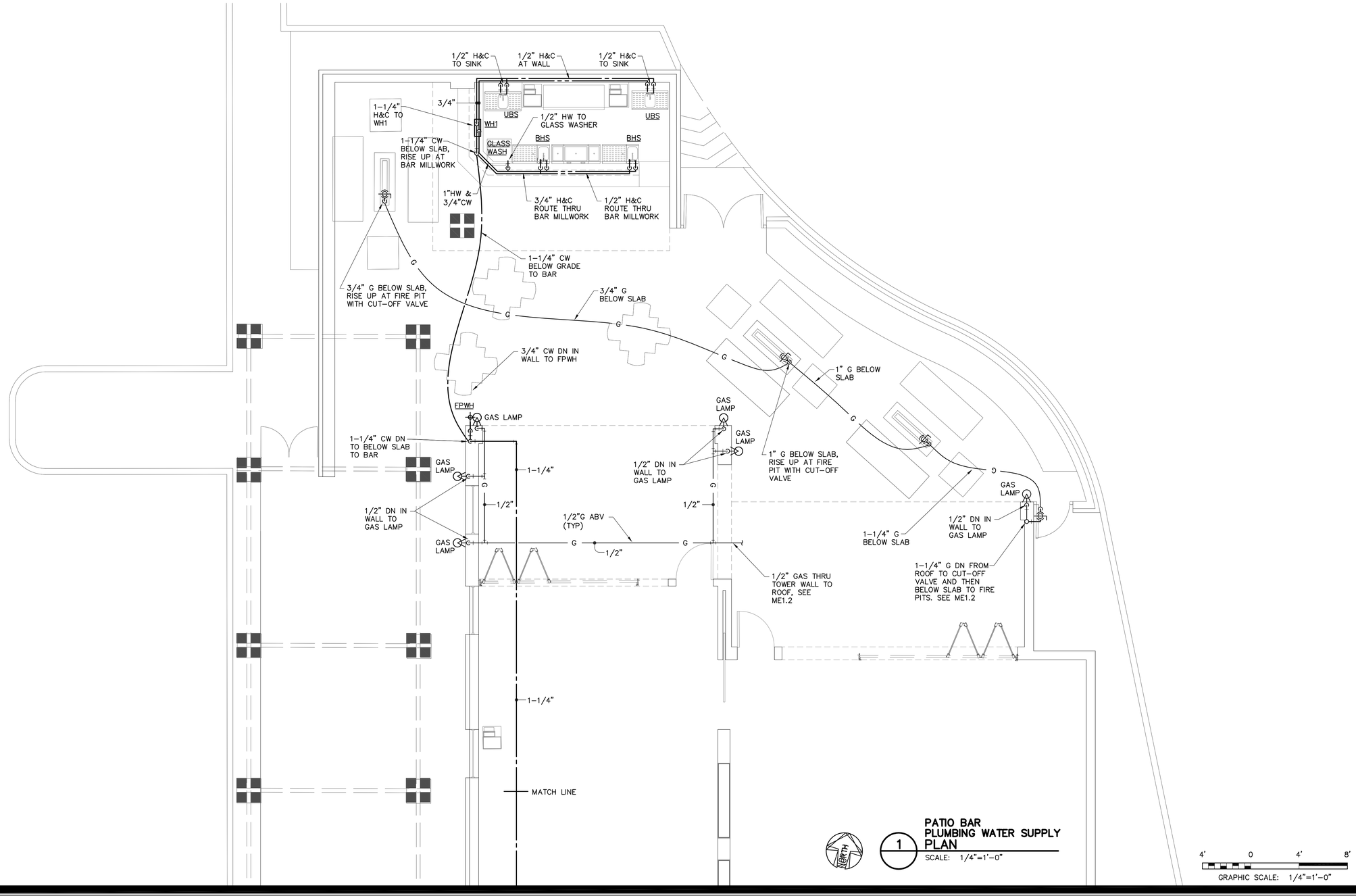
DATE	DESCRIPTION	BY

SCALE: AS NOTED

PROJECT NO. 05-05-22

SHEET NO. P1.2

Mar 17,2023 - 3:30pm
02-1511-P1.2-Plumbing Supply Plan.dwg



1 PATIO BAR PLUMBING WATER SUPPLY PLAN
SCALE: 1/4"=1'-0"

GRAPHIC SCALE: 1/4"=1'-0" (4' 0 4' 8')

Mar 17,2023 - 3:19pm
02-1511-P1.2-Plumbing Supply Plan.dwg

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17 March 2023

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PLUMBING WATER SUPPLY PLAN

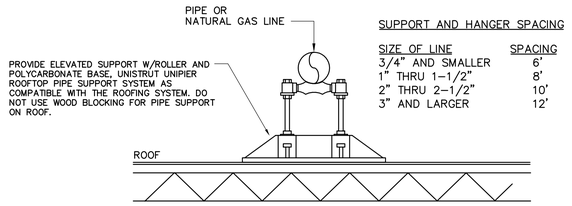
Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY

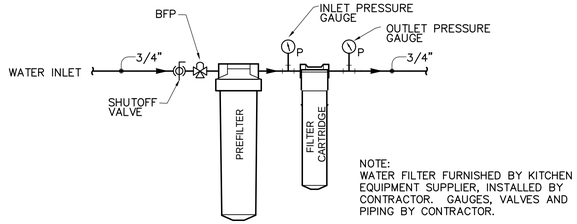
SCALE: AS NOTED

PROJECT NO. 05-05-22

SHEET NO. P1.3



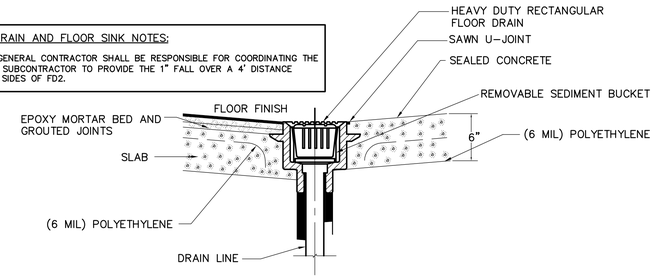
8 **PIPE SUPPORT DETAIL**
NO SCALE



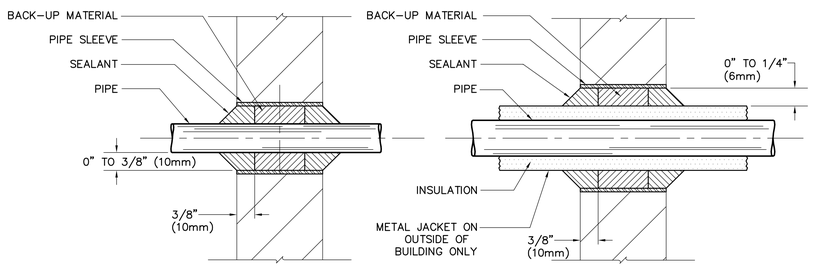
9 **WATER FILTER DETAIL**
NO SCALE

FLOOR DRAIN AND FLOOR SINK NOTES:

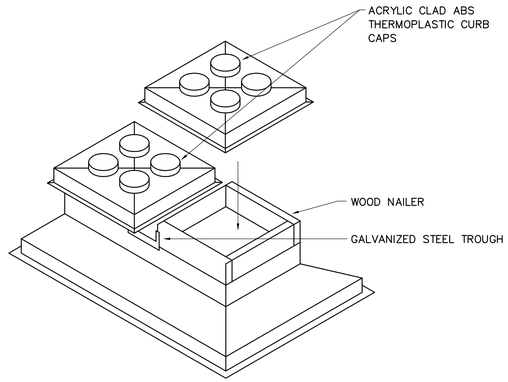
1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONCRETE SUBCONTRACTOR TO PROVIDE THE 1" FALL OVER A 4' DISTANCE FROM ALL SIDES OF FD2.



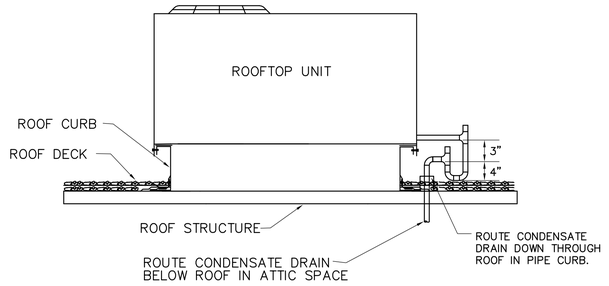
10 **FLOOR DRAIN KITCHEN AREA DETAIL**
NO SCALE



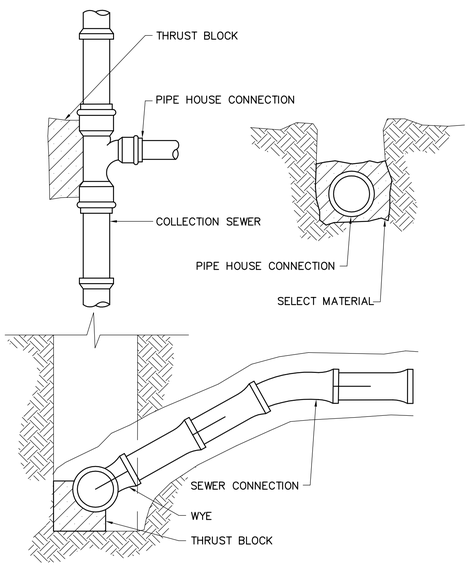
5 **THRU WALL PIPING (ABOVE GRADE) DETAIL**
NO SCALE



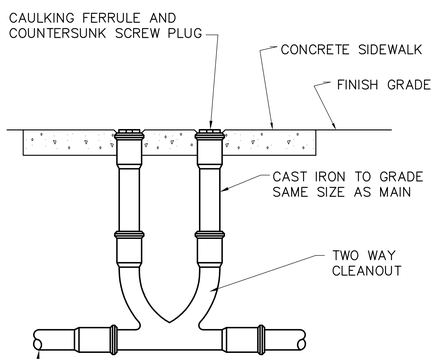
6 **PIPE CURB (TYPICAL) DETAIL**
NO SCALE



7 **RTU CONDENSATE DRAIN DETAIL**
NO SCALE

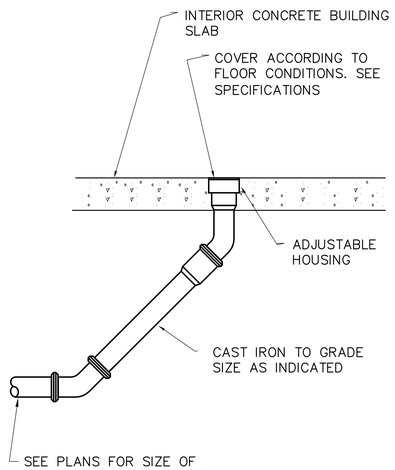


1 **SANITARY SEWER CONNECTION DETAIL**
NO SCALE



FOR USE WITH PEDESTRIAN TRAFFIC

2 **2-WAY GRADE CLEAN-OUT DETAIL**
NO SCALE



FOR USE WITH PEDESTRIAN TRAFFIC

3 **BUILDING CLEAN-OUT DETAIL**
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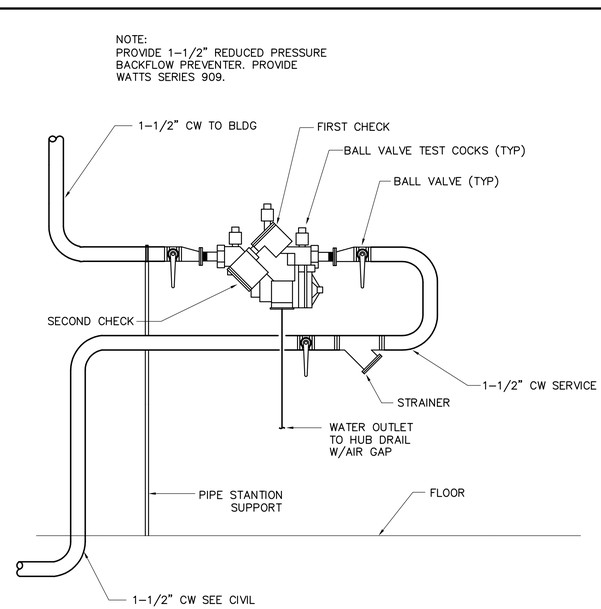

4 **BACK FLOW PREVENTER DETAIL**
NO SCALE

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17 March 2023

STATE OF TEXAS · G.G. MALONEY, JR. · REG. 63180 · REGISTERED PROFESSIONAL ENGINEER

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PLUMBING DETAILS

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

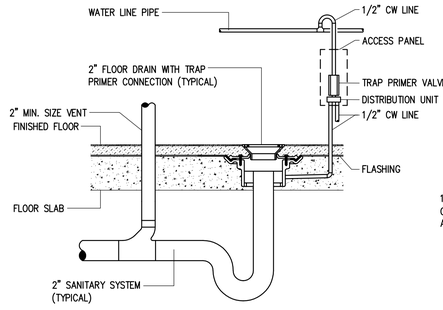
DATE	DESCRIPTION	BY

SCALE:
AS NOTED

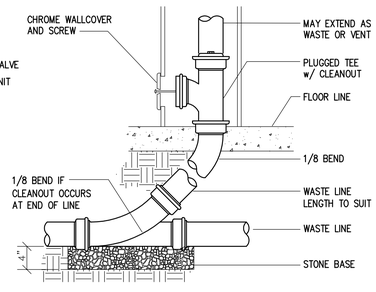
PROJECT NO.
05-05-22

SHEET NO.
P2.1

Mar 17,2023 - 3:20pm
03-1511-P2.1-Plumbing Details.dwg



3 **RR FLOOR DRAIN DETAIL**
NO SCALE

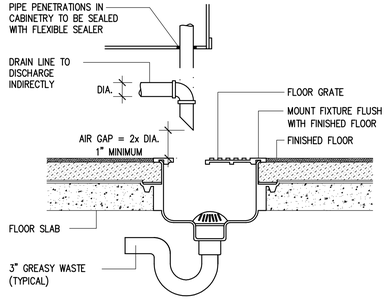


5 **WALL CLEANOUT DETAIL**
NO SCALE

FLOOR DRAIN AND FLOOR SINK NOTES:

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONCRETE AND PLUMBING SUBCONTRACTORS TO PROVIDE THE 1/4" FALL OVER A 4' DISTANCE FROM ALL SIDES FD1 FLOOR DRAINS.

2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONCRETE AND PLUMBING SUBCONTRACTORS TO PROVIDE THE 1" FALL OVER A 4' DISTANCE FROM ALL SIDES FD2 FLOOR DRAINS AND FS1 FLOOR SINKS.



4 **FLOOR SINK DETAIL**
NO SCALE

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17 March 2023

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PLUMBING DETAILS

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

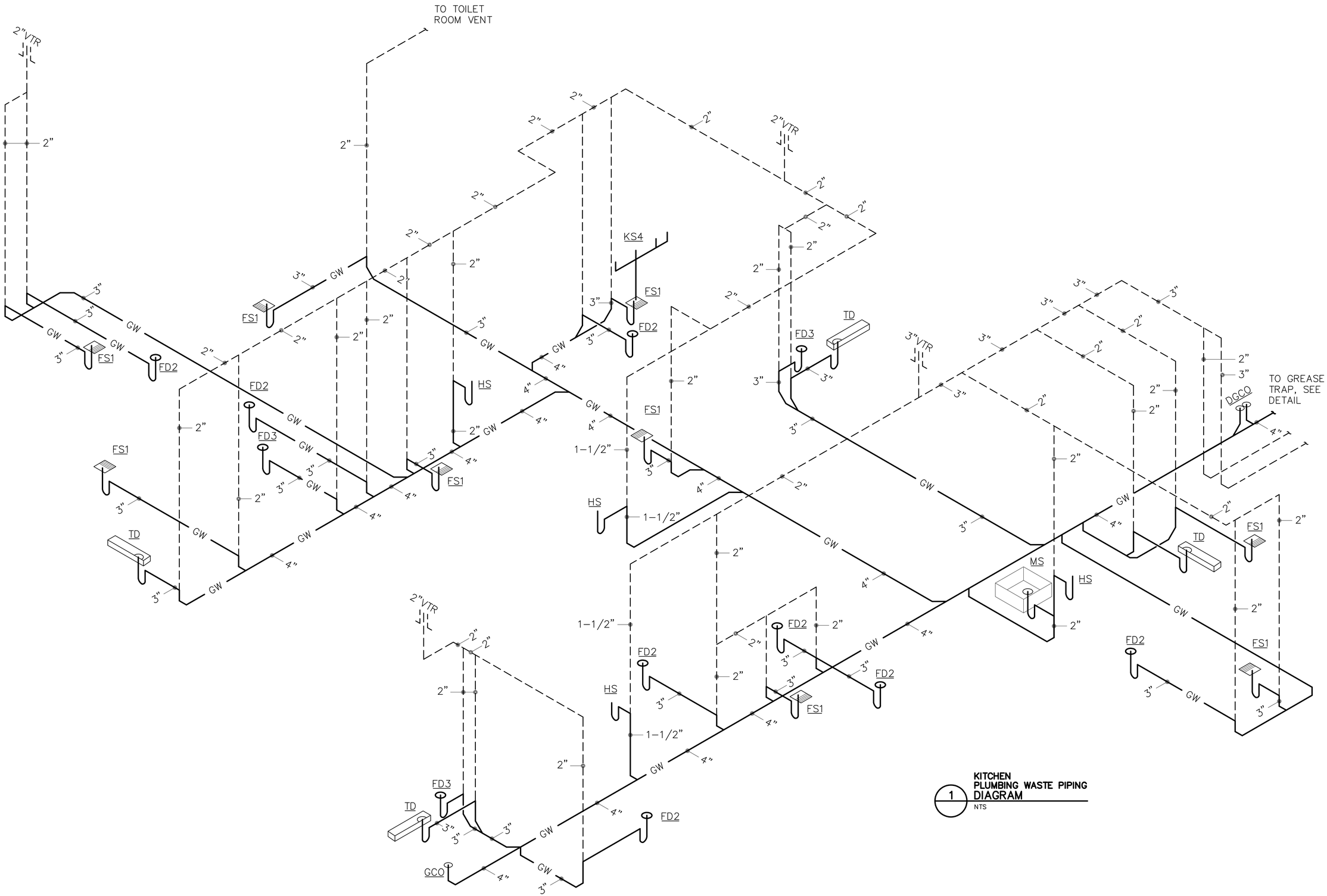
DATE	DESCRIPTION	BY

SCALE:
AS NOTED

PROJECT NO.
05-05-22

SHEET NO.
P2.3

Mar 17,2023 - 3:21pm
04-1511-P2.3-Plumbing Details.dwg



1 KITCHEN PLUMBING WASTE PIPING DIAGRAM
NTS

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PLUMBING RISERS AND DETAILS

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

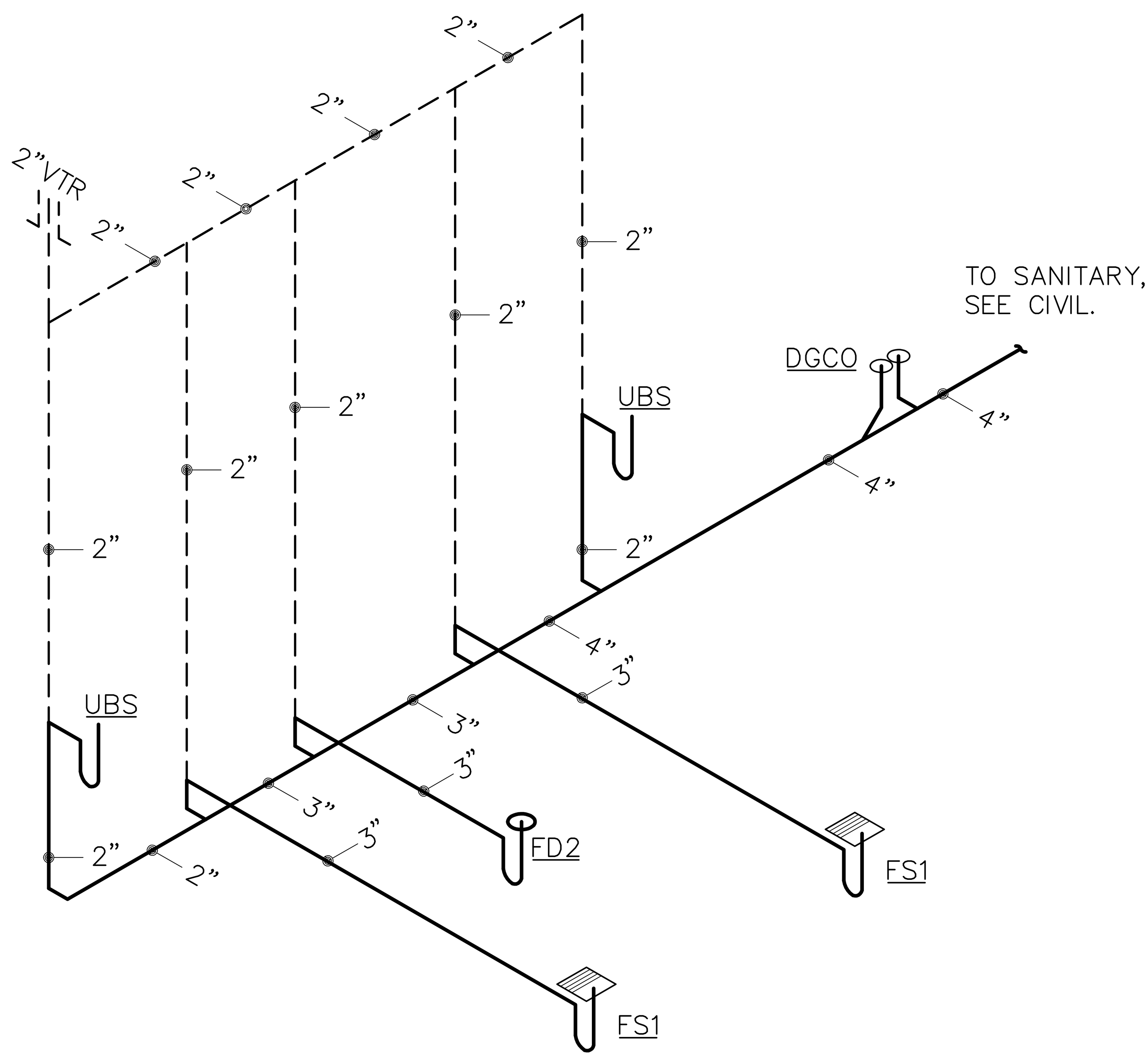
DATE	DESCRIPTION	BY

SCALE: AS NOTED

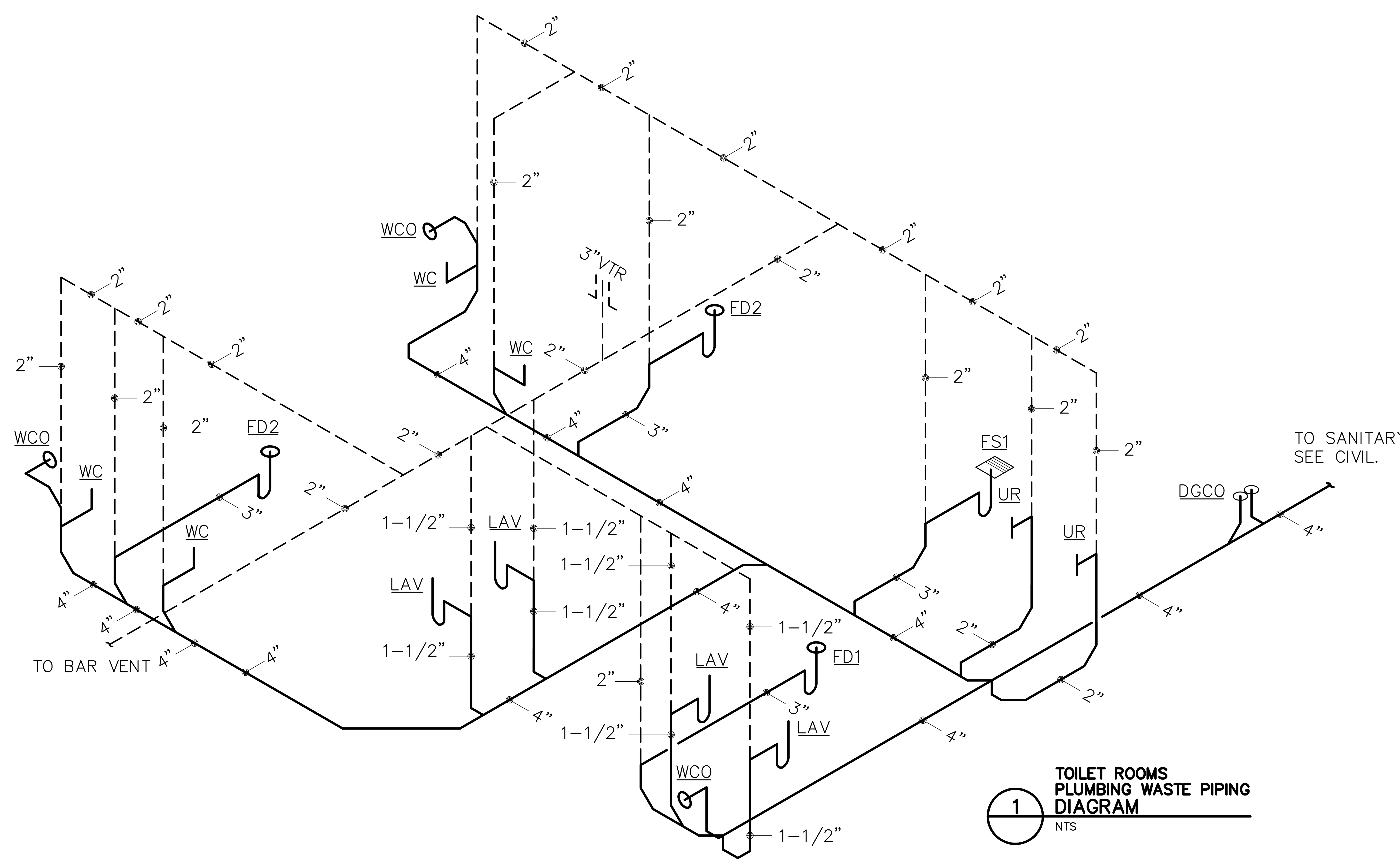
PROJECT NO. 05-05-22

SHEET NO. P3.1

Mar 17,2023 - 3:22pm
05-1511-P3.1-Plumbing Risers & Details.dwg



2 PATIO BAR
PLUMBING WASTE PIPING
DIAGRAM
NTS



1 TOILET ROOMS
PLUMBING WASTE PIPING
DIAGRAM
NTS

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17 March 2023
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PLUMBING RISERS AND DETAILS
Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

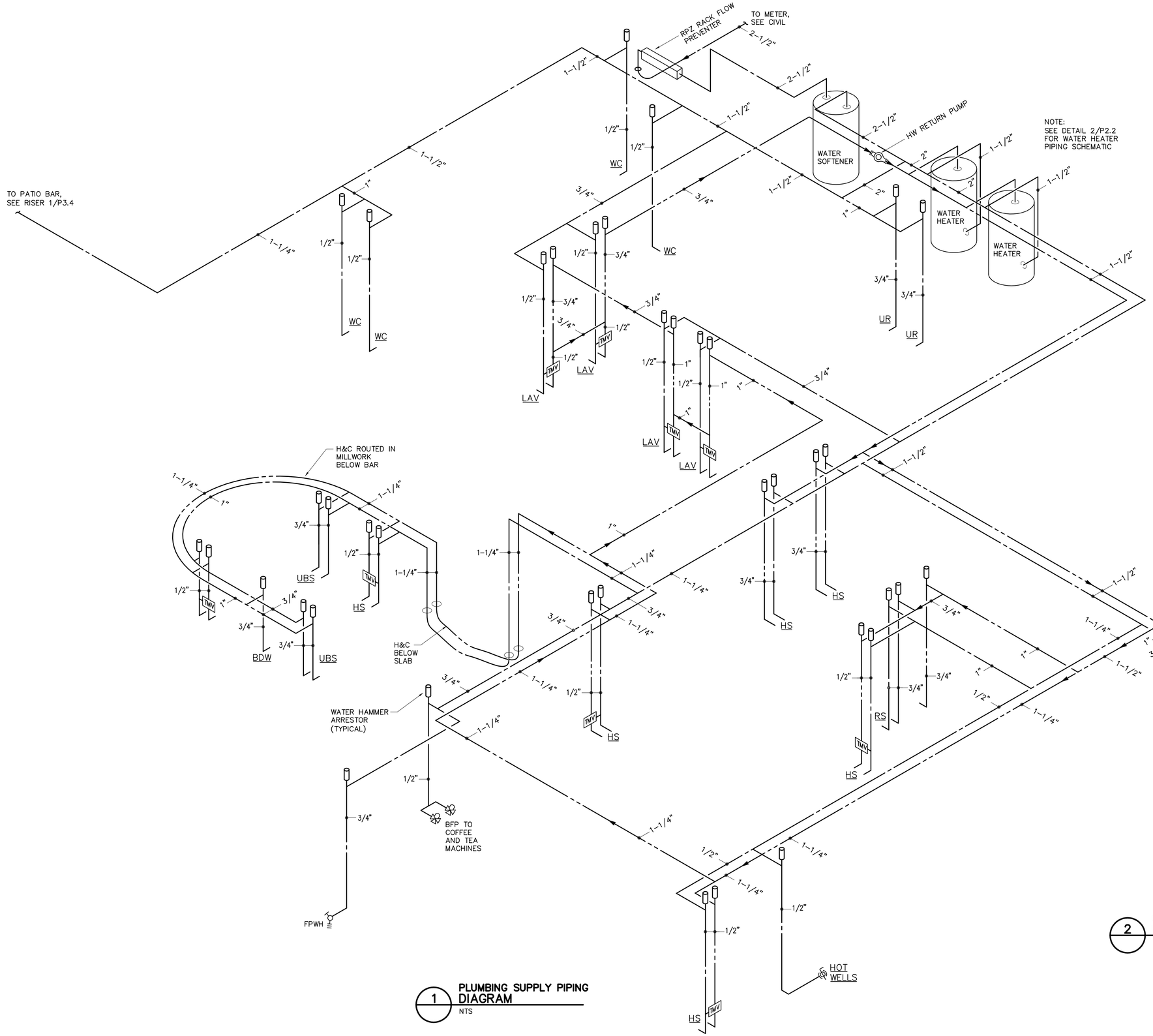
DATE	DESCRIPTION	BY

SCALE:
AS NOTED

PROJECT NO.
05-05-22

SHEET NO.
P3.2

Mar 17,2023 - 3:23pm
05-1511-P3.1-Plumbing Risers & Details.dwg



1 PLUMBING SUPPLY PIPING DIAGRAM
NTS

2 GAS PIPING DIAGRAM
NTS

Mar 17,2023 - 3:24pm
06-1511-P3.3-Plumbing Risers & Details.dwg

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17 March 2023

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KITCHEN PLUMBING SUPPLY RISERS

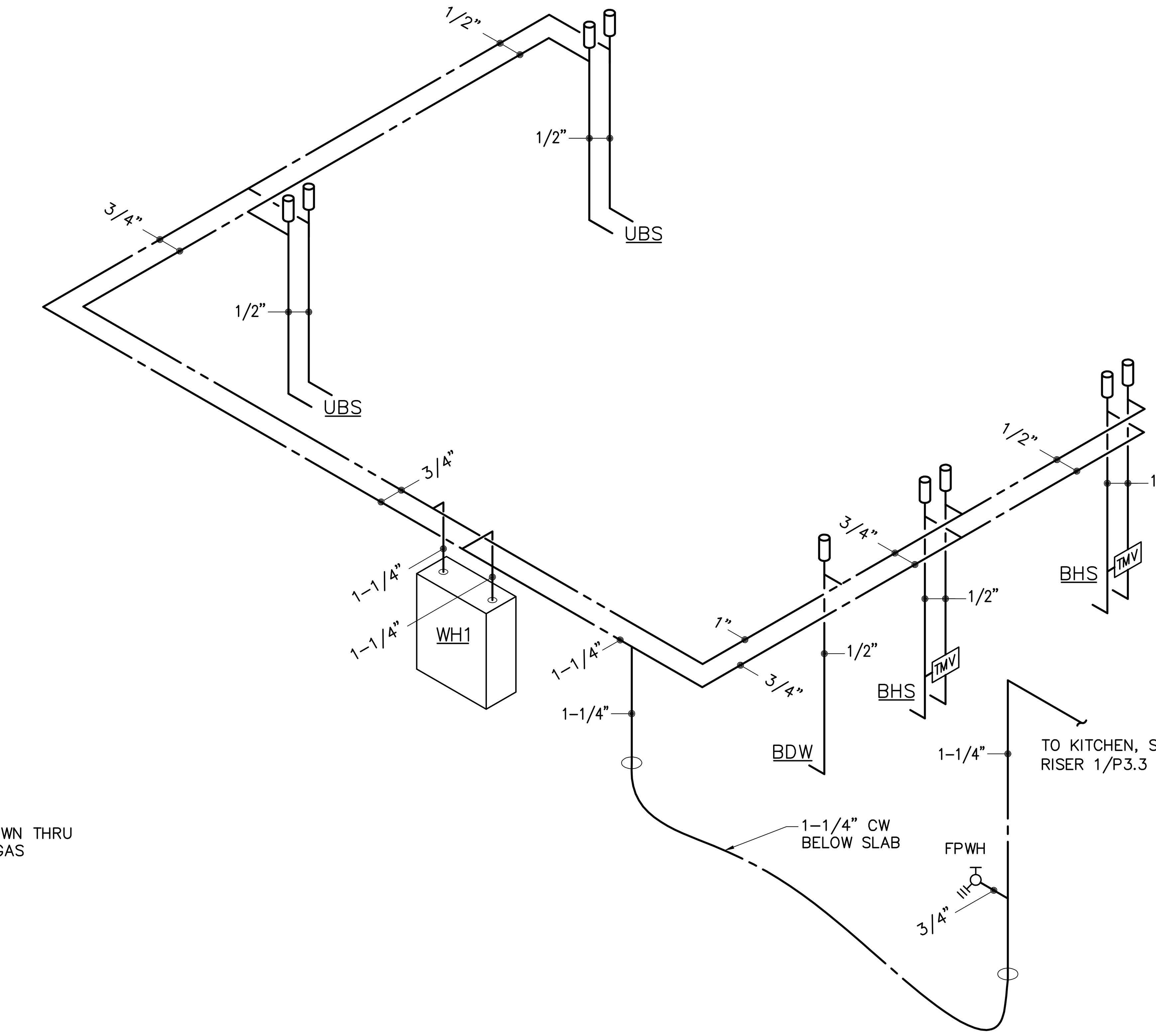
Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY

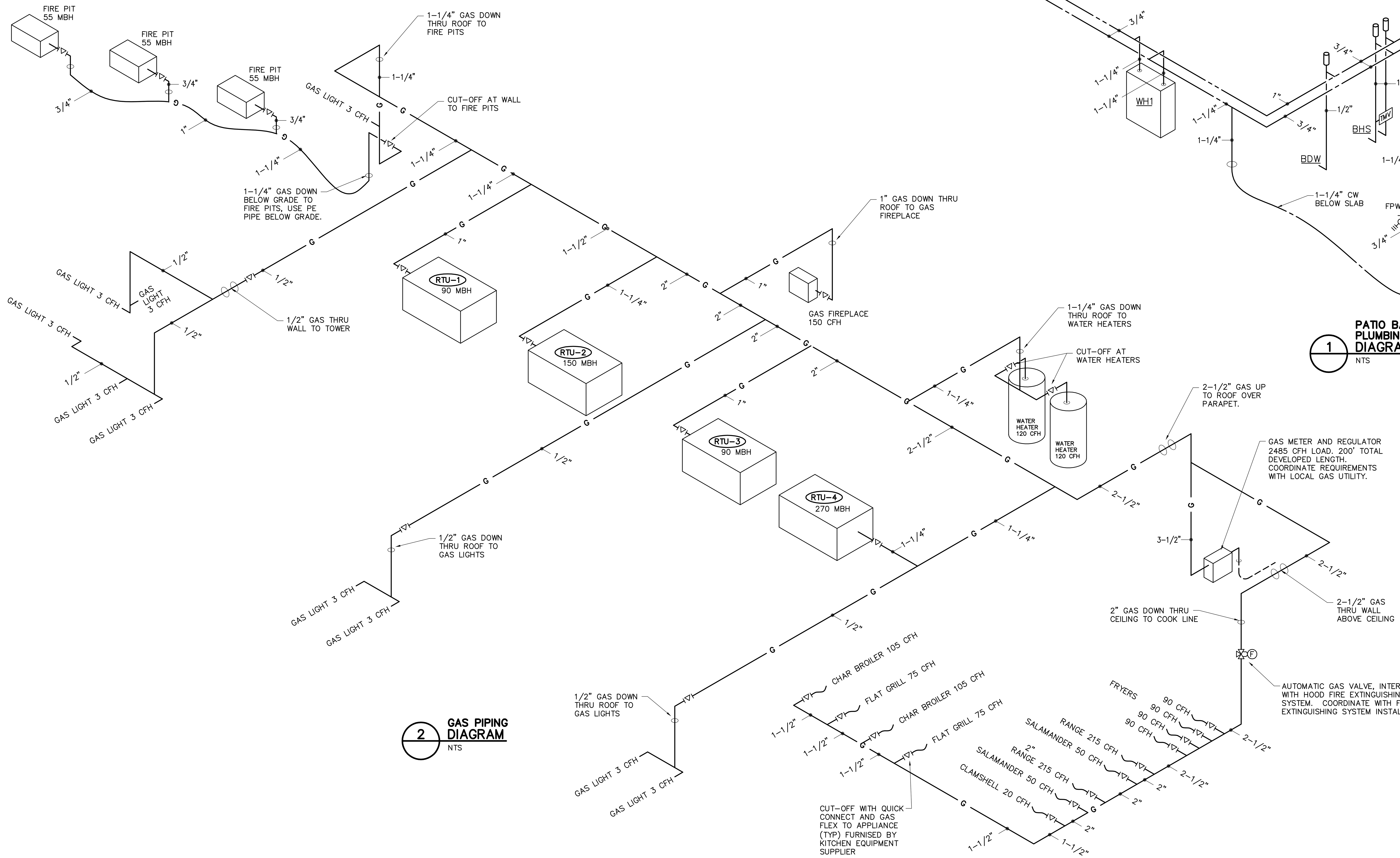
SCALE: AS NOTED

PROJECT NO. 05-05-22

SHEET NO. P3.3



1 **PATIO BAR PLUMBING SUPPLY PIPING DIAGRAM**
NTS



2 **GAS PIPING DIAGRAM**
NTS

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17 March 2023
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PLUMBING SUPPLY AND GAS RISERS

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

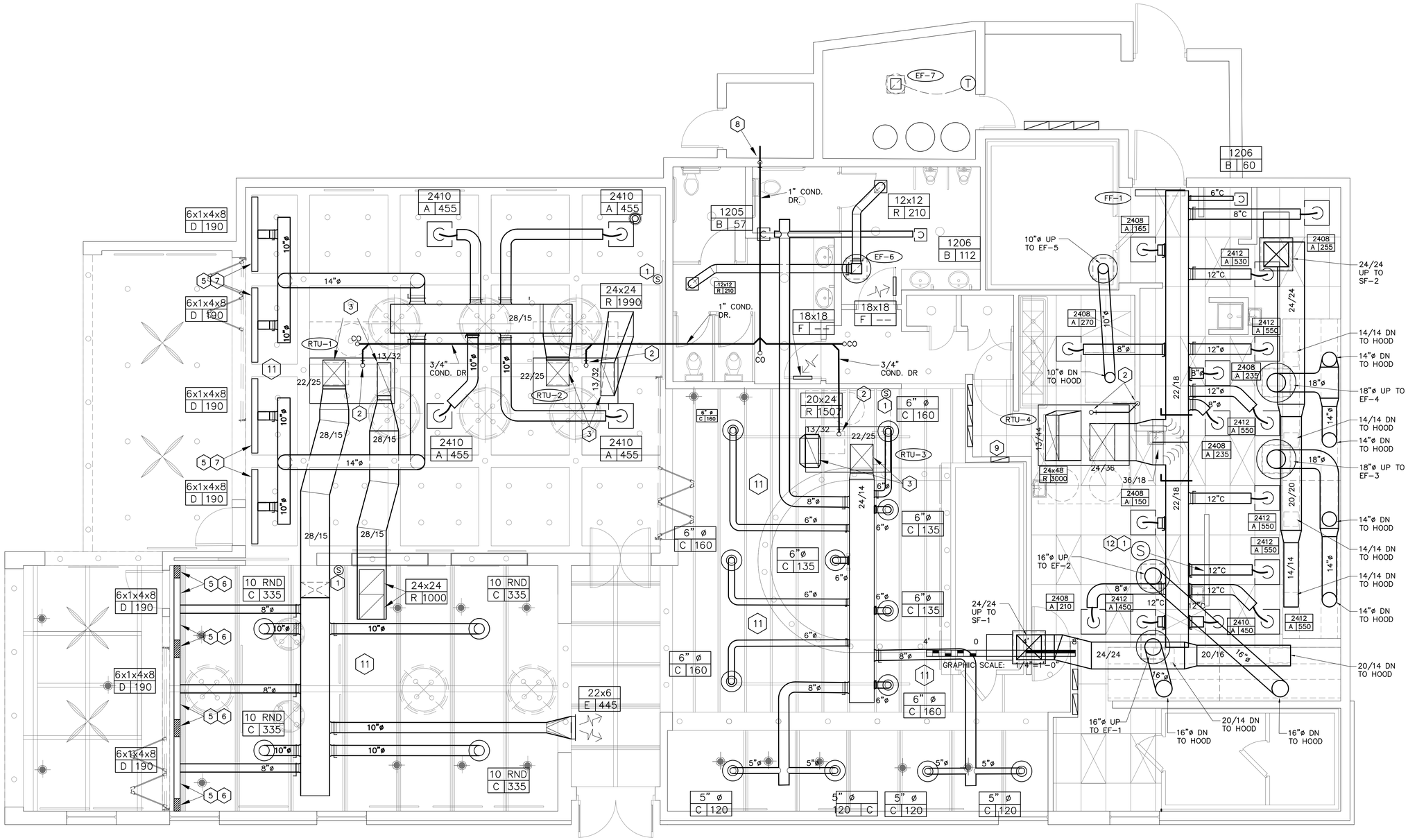
DATE	DESCRIPTION	BY

SCALE: **AS NOTED**

PROJECT NO. **05-05-22**

SHEET NO. P3.4

Mar 17,2023 - 3:29pm
06-1511-P3.3-Plumbing Risers & Details.dwg



NOTES BY SYMBOL

1. SET THERMOSTAT SENSORS 54 INCHES AFF.
2. 3/4 INCH CONDENSATE DRAIN FROM INSIDE CURB OF RTU, OVERHEAD TO WALL, DOWN IN WALL AND OUT TO FLOOR SINK AT DISHWASHER.
3. SUPPLY AND RETURN UP TO RTU ON ROOF.
4. VERTICAL DUCT SIZE OF EXH FAN INTAKE UP TO FAN ON ROOF.
5. SET SLOTS WITH UNDERSIDE SAME ELEVATION AS UNDERSIDE OF ADJACENT COFFER OR BEAM.
6. PROVIDE SLOTS THAT ARE CONTINUOUS WALL TO WALL. LENGTH INDICATED IS FOR THE ACTIVE SECTION. PROVIDE BLANK-OFF FOR INACTIVE SECTION.
7. PROVIDE SLOTS THAT ARE CONTINUOUS WITHIN COFFER. LENGTH INDICATED IS FOR THE ACTIVE SECTION. PROVIDE BLANK-OFF FOR INACTIVE SECTION.
8. 1 INCH CONDENSATE DRAIN FROM OVERHEAD IN ATTIC, DOWN IN WALLM AND OUT TO FLOOR SINK.
9. HVAC MASTER CONTROLS. SENSORS ARE IN THEIR RESPECTIVE SPACES. SET POINT CONTROLS ARE HERE.
10. THERMOSTAT, SENSOR ONLY. CONTROLS ARE INDICATED BY NOTE 9. COORDINATE LOCATION WITH LIGHT SWITCHES AND DIMMERS.
11. DUCTWORK WITHIN THIS ROOM IS PARTIALLY OR ENTIRELY EXPOSED TO OCCUPANT'S VIEW. SEE "EXPOSED DUCT NOTES" ON SHEET M-2 AND SEE ARCHITECTURAL CROSS SECTIONS, REFLECTED CEILING PLAN, AND OTHER ARCHITECTURAL DRAWINGS TO DETERMINE EXTENT OF EXPOSED DUCTWORK.
12. SET CLEAR OF HAND SINK BELOW.

NORTH

4' 0 4' 8'

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

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17 March 2023

STATE OF TEXAS · G.G. MALONEY · 23319 · REGISTERED · PROFESSIONAL ENGINEER

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MECHANICAL PLAN

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY

SCALE: AS NOTED

PROJECT NO. 05-05-22

SHEET NO. M1.1

Mar 17,2023 - 4:33pm
07-1511-M1.1-Mechanical Plan.dwg

ROOF TOP UNIT (RTU) SCHEDULE

DOMION LION & ROSE — 4/17/2023 14:26

MARK	MFR	MODEL	NOM TONS	SUPPLY CFM	EXT SP	OA CFM	RA	COOLING KBH NET	COOLING SENS KBH	GAS IN KBTU/HR	HEAT OUT KBTU/HR	UNIT VOLTS	PH	UNIT MCA	UNIT MOCP	SEER IEER	WGHT LBS	ZONE SERVED	REMARKS
RTU-1	AAON	RN-008	8	2530	2.2	530	2,000	85.19	60.01	90	72.9	208	3	49	70	16.5	1524	DINING	SEE NOTES 5,7,8,10,11,12,14,15
RTU-2	AAON	RN-010	10	2700	2.2	715	1,985	106.68	71.73	150	120	208	3	56	80	15.2	1699	PRIVATE	SEE NOTES 1,2,5,9,8,9,12,13,14,16
RTU-3	AAON	RN-007	7	2090	2.2	583	1,507	77.65	55.35	90	73	208	3	36	50	19.1	1543	BAR	SEE NOTES 5,7,8,10,11,12,14,15
RTU-4	AAON	RN020	20	5760	2.2	1990	3,770	222.73	164.96	270	219	208	3	105	125	17.5	3153	KITCHEN	SEE NOTES 5,7,8,10,11,12,14,15

AIR BALANCE

SUB TOTAL	13080		3818	9262	KITCHEN IS NET NEGATIVE BY	-1060 CFM
OA FROM FAN SCHEDULE	9000					
EXH FROM FAN SCHEDULE	-12470					
BLDG NET	348				BLDG IS NET POSITIVE BY	348 CFM

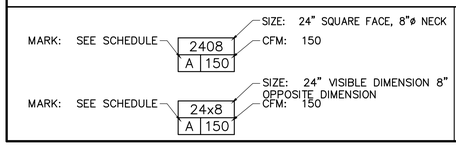
THERE IS OPEN PASSAGE WAY FROM BAR AND DINING AREAS SERVED BY RTU-1, RTU-2, AND RTU-3 TO KITCHEN FOR HOOD MAKEUP AIR. KITCHEN IS SERVED BY RTU-4.

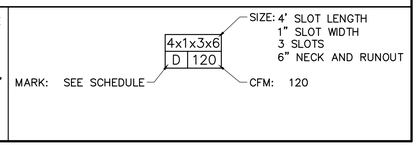
RTU NOTES:
1. PROVIDE 2 SETS PLEATED MIRV 13 FILTERS, 2 SET INSTALLED, THE OTHER DELIVERED IN THEIR CARTONS TO THE OWNER..
2. PROVIDE RTU MFR'S APPROVED 14" ROOF CURBS.
3. PROVIDE ECONOMIZER.
4. PROVIDE SINGLE POINT POWER CONNECTION.
5. ROUTE ALL PLUMBING AND ELEC CONNECTIONS WITHIN CONFINES OF ROOF CURB.
6. PROVIDE LOW AMBIENT KIT.
7. PROVIDE AUTOMATIC CHANGEOVER, 7-DAY PROGRAMMABLE NIGHT SETBACK THERMOSTATS. PROVIDE REMOTE SENSORS IN THE OCCUPIED SPACE WITH GROUPED CONTROL AT LOCATION INDICATED.
8. UNIT WEIGHT EXCLUDES CURB WEIGHT.
9. PROVIDE 120V GFI RECEPTACLE WITH UNIT, CIRCUITED SEPARATELY FROM RTU POWER, WEATHER PROOF COVER, WIRED, READY FOR USE.
10. PROVIDE SMOKE DETECTION CONTROL SYSTEM PER CURRENT IMC SECTION 606.
11. PROVIDE MANUFACTURER'S STANDARD HAIL GUARDS FOR CONDENSER COILS.
12. PROVIDE UNIT WITH CO2 INDOOR AIR QUALITY SENSOR AND CONTROLS. MINIMUM O.A. SETTING @ 25% SCHEDULED VENTILATION.
14. **ENERGIZE RTU-4 WHENEVER EF-1, 2, 3, OR 4 HOOD EXHAUST IS ENERGIZED.**
15. **PROVIDE WITH INTEGRATED PART LOAD PERFORMANCE OF 14.7.**

GRILLE, REGISTER, DIFFUSER SCHEDULE

MARK	A	B	C	D	E	F	R
SERVICE	SUPPLY	SUPPLY	SUPPLY	SUPPLY	SUPPLY	INTAKE	INTAKE
TYPE	DIFFUSER	DIFFUSER	DIFFUSER	SLOT	REGISTER	DOOR GRILL	REGISTER
DEFLECTION	4-WAY	4-WAY	4-WAY	2-WAY	DBL DEFL	70 DEGREE	35 DEGREE
PANEL SIZE	24 X 24	12 X 12	ROUND	AS INDICATED	N/A	N/A	24 X 24
MOUNT	LAY-IN, DUCT FLANGE	LAY-IN OR FLANGE	DUCT MTD. --	LAY-IN OR FLANGE	DUCT FLANGE	FLANGE BOTH SIDES	LAY-IN OR FLANGE
MANUFACTURER	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS
MODEL	TMS-AA	TMS-AA	TMRA-AA	FL-10	350FS	CT-700S	350FL
DAMPER	NO	NO	YES	YES	YES	NO	NO
MATERIAL	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
REFERENCE NOTES	1,2,3	1,2,3	1,2,3	1,2,3,6	1,4,5	1	1,5

REFERENCE NOTES:
1. INSTALL APPROPRIATE MOUNT FOR INSTALLED SUBSTRATE. SCREW ONLY THRU MFR'S COUNTERSUNK HOLES IN DEVICE.
2. DAMPER IN SUPPLY DUCT.
3. RUNOUT SAME SIZE AS DIFFUSER NECK SIZE.
4. DAMPER BEHIND FACE OF DEVICE OR AS NOTED.
5. BOOT SAME SIZE AS REGISTER/GRILL.
6. TITUS ENGINEERED INSULATED BOOT PLENUM, SIZED TO LENGTH & WIDTH OF SLOT.





GENERAL HVAC NOTES

1. EMPLOY COMPETENT INSTALLERS WITH FAMILIARITY AND EXPERIENCE INSTALLING SIMILAR PRODUCTS AND SYSTEMS, INCLUDING BOTH PLANNING AND EXECUTING THE WORK.
2. EXECUTE WORK IN COMPLIANCE WITH IMC 2021, IECC 2021, AND OTHER LOCAL CODES, AS AMENDED BY LOCAL CODES.
3. WHEREVER THE WORD "CODE" IS USED, IT MEANS THE IECC, IMC, IFGC, ALL AS AMENDED BY LOCAL AUTHORITY.
4. FOLLOW MANUFACTURER'S REQUIREMENTS, RECOMMENDATIONS, AND INSTRUCTIONS FOR THE INSTALLATION OF THEIR PRODUCTS.
5. COORDINATE WITH OTHER INSTALLERS TO AVOID SPATIAL CONFLICT.
6. MAINTAIN A SEPARATE PAPER COPY OF DRAWINGS AND MARK AS RECORD DRAWINGS OF THE WORK AS INSTALLED. DELIVER RECORD DRAWINGS TO OWNER AT COMPLETION OF PROJECT.
7. DUCT DIMENSIONS ARE INSIDE CLEAR.
8. PROVIDE ACOUSTICAL DUCT LINER IN FIRST 20 FEET OF BOTH SUPPLY AND RETURN DUCTWORK, BOTH ROUND AND RECTANGULAR.
9. WHERE DUCT IS IN NON-CONDITIONED SPACE, ADD INSULATION TO OUTSIDE OF LINED DUCT TO ACHIEVE R-8.
10. PROVIDE INSULATION WITH "R" VALUE MEETING IECC AND IMC STANDARDS.
11. ADD EXTERNAL INSULATION TO LINED DUCT TO ACHIEVE TOTAL "R" REQUIREMENT.
12. PROVIDE EXTERNALLY OR INTERNALLY INSULATED FLEXIBLE DUCTWORK MEETING IECC AND IMC STANDARDS.
13. ADHERE FOAMED RUBBER INSULATION TO THE ATTIC SIDE OF DIFFUSERS MINIMUM OF R-6 OR OF A THICKNESS TO PREVENT CONDENSAATION.
14. FABRICATE AND INSTALL DUCTWORK IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
15. COORDINATE DUCT ROUTE WITH JOIST, CEILING T-BAR, AND LIGHT FIXTURE LOCATIONS AND OTHER IN AND ABOVE CEILING OBSTRUCTIONS. ADJUST DUCT ROUTE AS REQUIRED. ADJUST DUCT SIZE USING EQUIVALENT PRESSURE DROP FOR RE-SIZING.
16. COORDINATE LOCATIONS OF ROOF TOP EQUIPMENT AND PENETRATIONS WITH ARCHITECTURAL, STRUCTURAL, PLUMGING, AND ELECTRICAL DRAWINGS.
17. INSULATE BOTH SUPPLY AND RETURN DUCTS WITH R6 INSULATION. PROVIDE VAPOR BARRIER FOR SUPPLY DUCTS.
18. PROVIDE VIBRATION ISOLATION AND CONTROL FOR MECHANICAL EQUIPMENT AND VIBRATING PIPING, INCLUDING SPRING HANGERS AND SUPPORTS AND WAFFLE PAD SUPPORTS.
19. PROVIDE TEST AND BALANCE ACCORDING TO AABC OR NEBB STANDARDS, USING AABC OR NEBB TRAINED PERSONNEL FOR TAB WORK. USE AABC OR NEBB PROCEDURES AND REPORT FORMS.
20. ASSEMBLE MANUFACTURER'S WARRANTIES, INSTRUCTIONS, AND OTHER DATA, AND PRESENT IN PDF FORMAT ON A USB THUMB DRIVE.
21. DEFINITION OF "PROVIDE": TO PROCURE, ASSEMBLE, SET IN PLACE, SUPPORT, CONNECT, AND OTHERWISE LEAVE COMPLETED, OPERATING UNITS, SYSTEMS, PARTS, OR DEVICES IN A FUNCTIONING CONDITION, HAVING FOLLOWED MANUFACTURER'S INSTRUCTIONS, REQUIREMENT, AND RECOMMENDATIONS
22. CONDENSATE DRAINS: PROVIDE ARMSTRONG ARMAFLEX PIPIN INSULATION, VAPOR SEALED, MINIMUM 3/6" THICK WALLS.
23. ALL DUCT SYSTEMS ARE LOW PRESSURE DUCT SYSTEMS. SEAL AGAINST AIR LEAKAGE AS REQUIRED BY CODE.

EXPOSED DUCT NOTES

DUCT THAT IS EXPOSED AND WITHIN VIEW OF ROOM OCCUPANTS: PROVIDE SPIRAL ROUND METAL DUCT, LINED, FOR ALL ROUND DUCT DESIGNATED (ø). MAINTAIN SURFACE OF EXPOSED SPIRAL METAL DUCT IN UNBLEMISHED CONDITION. REPLACE ANY DAMAGED OR BLEMISHED SPIRAL METAL DUCT.

PAINT EXPOSED SPIRAL METAL DUCT AS DIRECTED BY ARCHITECT.

1

MINIMUM OUTSIDE AIR CALCULATION BASED ON IMC 2021 SECTION 403.3.1.1:

Vbz=RpPz+RaAz

WHERE:

Az = ZONE FLOOR AREA

Pz = ZONE POPULATION

Rp = PEOPLE OUTDOOR RATE FROM TABLE IMC 403.3 (7.5 CFM/PERSON)

Ra = AREA OUTDOOR RATE FROM TABLE IMC 403.3 (0.18)

SUBMITTAL

SUBMIT 4 COPIES OF DATA FOR REVIEW AND COMMENT BY OWNER PRIOR TO ORDERING. INCLUDE MANUFACTURER'S STANDARD SUBMITTAL DATA WITH MANUFACTURER'S NAME AND MODEL NUMBERS AND ALL OPTIONS CLEARLY MARKED.

PROVIDE SUBMITTAL DATA FOR:

1. ROOF TOP UNITS, INCLUDE UNIT CAPACITY INFORMATION FOR CONDITIONS SCHEDULED, UNIT DIMENSIONS AND WEIGHT, UNIT CURB WITH DIMENSINS AND WEIGHT.

2. GRILLS REGISTERS AND DIFFUSERS

3. EXHAUST AND SUPPLY FANS (FURNISHED BY KITCHEN EQUIPMENT SUPPLIER) INCLUDE FAN CFM AT SCHEDULED CONDITIONS, ELECTRICAL DATA AND MOTOR SIZE.

FAN SCHEDULE

4/17/2023 14:26

MARK	AREA SERVED	MFR	MODEL	CFM	EXTERNAL S.P.	TYPE	MOTOR HP	MOTOR VOLTS	PHASE	OPER. WT	REF NOTES	REMARKS
EF-1	KITCHEN HOOD 1	HOODMASTER	28B	-2375	0.5	CENT					1,2,3	INTERLOCK WITH RTU-4 AND SF-1
EF-2	KITCHEN HOOD 1	HOODMASTER	28D	-2375	0.5	CENT					1, 2, 3	INTERLOCK WITH RTU-4 AND SF-1
EF-3	KITCHEN HOOD 2	HOODMASTER	36B	-3250	0.5	CENT	1	208	1		1, 2, 3	INTERLOCK WITH RTU-4 AND SF-2
EF-4	KITCHEN HOOD 2	HOODMASTER	36B	-3250	0.5	CENT	1	208	1		1, 2, 3	INTERLOCK WITH RTU-4 AND SF-2
EF-5	DISHWASH HOOD 3	HOODMASTER	20D-DB	-800	0.5	CENT	1/4	120	1		1, 2, 3, 4	PROVIDE WITH EPOXY COATING. INTERLOCK WITH DISHWASHING MACHINE.
EF-6	TOILETS	GREENHECK	G-090-VG	-420	0.35	CENT	1/10	120	1	41	2, 3, 4	INTERLOCK WITH RTU-3
EF-7	WATER HEATERS	GREENHECK	G-070-VG	-200	0.25	CENT	1/15	120	1	36	2, 3, 4, 6	
SF-1	KIT HOOD 1 MAKEUP	HOODMASTER	SF10	3800	0.25	CENT	1-1/2	208	1		1, 2, 3, 4	INTERLOCK WITH RTU-4, EF-1 AND EF-2
SF-2	KIT HOOD 2 MAKEUP	HOODMASTER	SF11	5200	0.25	CENT	3	208	1		1, 2, 3, 4	INTERLOCK WITH RTU-4, EF-3, AND EF-4
FF-1	AIR CURTAIN FAN	MARS	STD248-1UA-OB	--	--	CENT	1/2	120	1	55	2, 5	48" WIDE x 7' OPENING, WITH UV LAMPS, NO HEAT

REFERENCE NOTES:
1. SEE 1/M1.2 FOR DETAILS.
2. PROVIDE WITH NEC DISCONNECT.
3. PROVIDE WITH MFR. APPROVED ROOF CURB.

REFERENCE NOTES: CONTINUED
4. PROVIDE WITH BIRD ACREEN AND BACKDRAFT DAMPER.
5. PROVIDE WITH AUTOMATIC DOOR PLUNGER SWITCH.

REFERENCE NOTES: CONTINUED
6. PROVIDE WITH THERMOSTAT CONTROL, ON ABOVE 85° OFF BELOW 75°, ON-OFF-AUTO SWITCH

GENERAL NOTES:
1. INTEGRAL BACKDRAFT DAMPER
2. ALL ALUMINUM CONSTRUCTION.
3. INSTALL UNIT ON MANUFACTURERS ROOF CURB.
4. SWITCH EXHAUST FAN WITH RESPECTIVE ROOM LIGHT.
5. FURNISH BIRD SCREEN
6. FURNISH WITH VENTED CURB EXTENSION & GREASE TRAP
7. FURNISH WITH HINGING KIT
8. PROVIDE LOCAL SWITCH.
9. PROVIDE INTAKE EXTENSION ON ROOF.
10.
11. PROVIDE INTERLOCK AND SINGLE POINT CONTROL LOCAL SWITCH HOOD EXHAUST AND MAKE-UP FANS.
12. ALL DUCTWORK PROVIDED BY MECHANICAL CONTRACTOR.
13. PROVIDE VARIABLE SPEED FOR ADJUSTABLE FAN THROW.
14. FURNISH WITH MANUFACTURER'S STANDARD CURB.

1

MLA
MICHAEL LEGG ARCHITECTURE
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26116 High Timber Pass
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michael@mlarchitecture.info

DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY G.G. MALONEY, P.E. 23319 ON MAR 17, 2023 ALTERATION OF SEALED DOCUMENTS WITHOUT PROPER NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

17 March 2023

STATE OF TEXAS · G.G. MALONEY · 23319 · REGISTERED · PROFESSIONAL ENGINEER

MALONEY ASSOCIATES CONSULTING ENGINEERS, INC F-4440
1229 TRAILWOOD DR HURST, TEXAS 76053 (817) 284-0033
MALONEY-ENG.COM

MECHANICAL DETAILS AND SCHEDULES

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

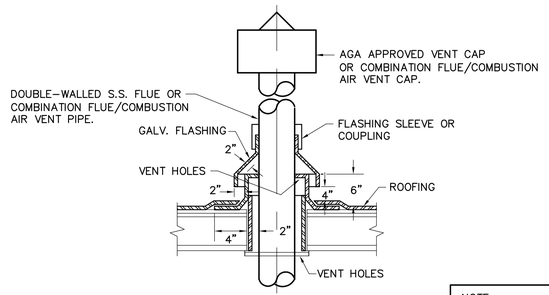
DATE	DESCRIPTION	BY
4/17/23	MEP CHANGES	1

SCALE: AS NOTED

PROJECT NO. 05-05-22

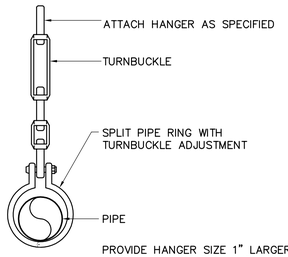
SHEET NO. M2.1

Apr 17,2023 - 2:26pm
08-1511-M2.1-Mechanical Details & Schedules.dwg



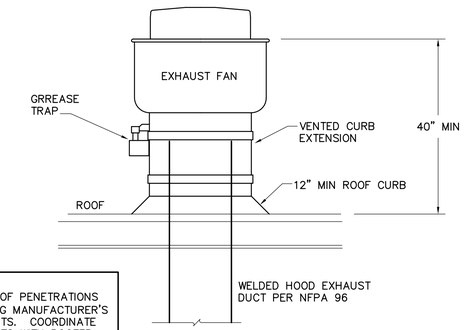
NOTE:
PROVIDE ROOF PENETRATIONS PER ROOFING MANUFACTURER'S REQUIREMENTS. COORDINATE REQUIREMENTS WITH ROOFER.

7 FLUE THRU ROOF DETAIL
NO SCALE



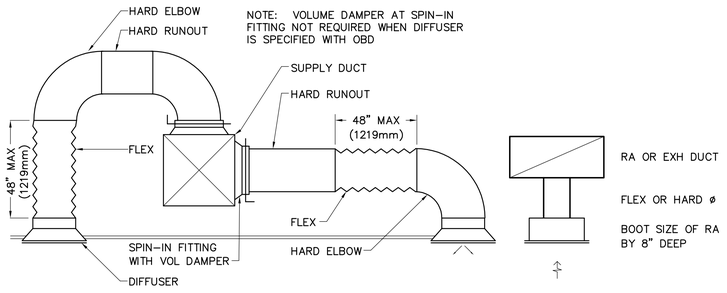
PROVIDE HANGER SIZE 1" LARGER THAN OUTSIDE DIA. OF PIPE AND INSULATION.

8 PIPE HANGER DETAIL
NO SCALE

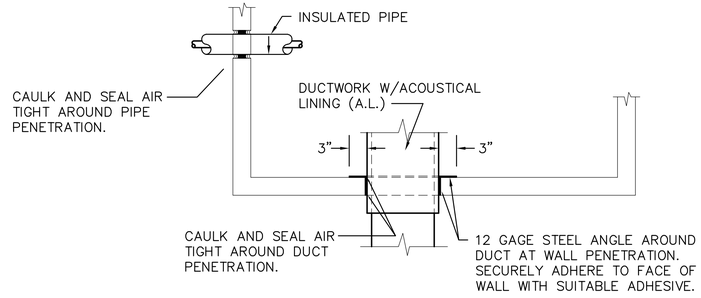


NOTE:
PROVIDE ROOF PENETRATIONS PER ROOFING MANUFACTURER'S REQUIREMENTS. COORDINATE REQUIREMENTS WITH ROOFER.

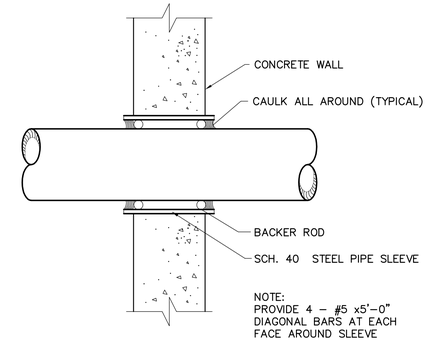
9 GREASE EXHAUST FAN DETAIL
SCALE: NTS



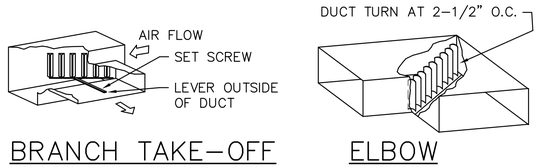
4 SUPPLY, RA, EXH DUCT TAPS DETAIL
NO SCALE



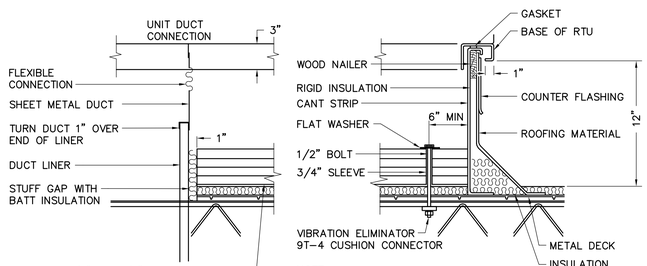
5 MECH. RM. WALL PENETRATION DETAIL
NO SCALE



6 PIPE SLEEVE THRU WALL DETAIL
NO SCALE



1 TYPICAL DUCT CONSTRUCTION DETAIL
NO SCALE



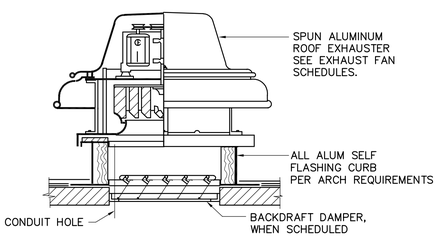
NOTE:
ALL ROOF CURBS MIN 12" HIGH WITH MIN 8" COUNTER FLASHING.

NOTE:
PROVIDE ROOF PENETRATIONS PER ROOFING MANUFACTURER'S REQUIREMENTS. COORDINATE REQUIREMENTS WITH ROOFER.

2 ROOF TOP UNIT (RTU) SUPPORT DETAIL
NO SCALE

NOTE:
ALL ROOF CURBS MIN 12" HIGH WITH MIN 4" COUNTER FLASHING.

NOTE:
PROVIDE ROOF PENETRATIONS PER ROOFING MANUFACTURER'S REQUIREMENTS. COORDINATE REQUIREMENTS WITH ROOFER.



NOTE: 1. PROVIDE WITH INSECT SCREEN
2. PROVIDE ANCHOR BOLTS AT EACH CORNER AND THRU BASE OF VENTILATOR CURB AND ROOF STRUCTURE.

3 EXHAUST FAN DETAIL
NO SCALE

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MICHAEL LEGG ARCHITECTURE
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michael@mlarchitecture.info

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17 March 2023
STATE OF TEXAS
G.G. MALONEY
23319
REGISTERED
PROFESSIONAL ENGINEER

MALONEY ASSOCIATES CONSULTING ENGINEERS, INC F-1440
1228 TRAILWOOD DR
HURST, TEXAS 76053
(817) 268-4333
MALONEY-ENG.COM

MECHANICAL DETAILS

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY

SCALE:
AS NOTED

PROJECT NO.
05-05-22

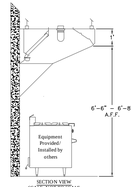
SHEET NO.
M3.1

Mar 17,2023 - 4:35pm
09-1511-M3.1-Mechanical Details.dwg

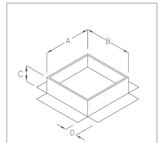
1

NOTE:

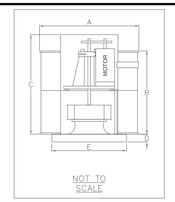
PROVIDE ANSUL HOOD FIRE EXTINGUISHING SYSTEM AT EACH GREASE HOOD. INTERLOCK WITH FAN CONTROLS, GAS SUPPLY VALVE, AND EQUIPMENT ELECTRICAL SHUNT TRIP CONTROLS.



SECTION VIEW
SCALE: NOT TO SCALE

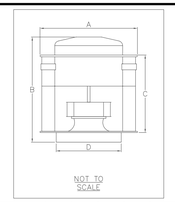

NOT TO SCALE

FAN MODEL	A	B	C	D
28B	22½" - 22½"		18"	4"
28D	17½" - 17½"		24"	4"
SF10	31½" - 31½"		10"	4"

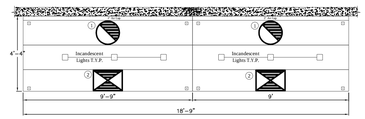


NOT TO SCALE

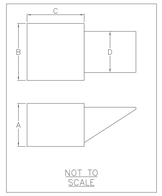
FAN MODEL	A	B	C	D	E	WT. LBS.
28B	33⅜"	22⅜"	27⅞"	2"	24" SQ.	135 LBS.


NOT TO SCALE

FAN MODEL	A	B	C	D	WT. LBS.
28D	26⅛"	20⅜"	16⅛"	19" SQ.	60 LBS.



PLAN VIEW
SCALE: NOT TO SCALE


NOT TO SCALE

FAN MODEL	A	B	C	D	WT. LBS.
SF10	32"	32"	32"	25"	140 LBS.

*IT IS THE RESPONSIBILITY OF THE ARCHITECT/OWNER TO ENSURE THAT THE HOOD CLEARANCE FROM LIMITED-COMBUSTIBLE MATERIALS IS IN COMPLIANCE WITH LOCAL CODE REQUIREMENTS

ALL EQUIPMENT IS UL LISTED COMPONENTS HOODMART HOODS ARE BUILT IN COMPLIANCE WITH : NFPA #96 & UL710 AND ARE RECOGNIZED BY ONE OR MORE OF THE FOLLOWING: – NSF INTERNATIONAL –UL

–OPENINGS ARE RECOMMENDED SIZES, DUCT OPENINGS TO BE CUT AND DUCTS INSTALLED IN FI

LISTED Safety Certified MH29547

HOOD NO.	MODEL	LENGTH	MAX. COOKING TEMP.	TOTAL EXH. CFM	① EXHAUST PLENUM(ER)S DIA.	QTY.	CFM.	S.P.	TOTAL SUP. CFM	② SUPPLY PLENUM(ER)S WIDTH	LENG.	QTY.	CFM.	S.P.	HOOD CONSTRUCTION
1	LBMUA	225"NOM 225"OD	700 DEG.	4750	16"	2	2375	0.50	3800	14"	20"	2	1900	0.25	STAINLESS ALUMINIZED UTILITY CABINET(S)

HOOD NO.	FILTER(S) TYPE	QTY.	HEIGHT	LENGTH	LIGHT(S) TYPE	QTY.	WIRE GUARD	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	SWITCHES LOCATION	EST. HOOD WEIGHT
1	S.S BAFFLE W/ HANDLES	5	20"	16"	INCANDESCENT LIGHT	6	-	KIDDE	19'	-	-	-	750 LBS.
		7	20"	20"									

FAN UNIT NO.	FAN UNIT MODEL #	EXHAUST FAN MODEL	TAG	CFM	S.P.	RPM	H.P.	ø	VOLT	FLA	SUPPLY FAN BLOWER	HOUSING	TAG	CFM	S.P.	RPM	H.P.	ø	VOLT	FLA
1	28B EF-1	28B	EF-1	2375	0.50	1785	3/4	1	115/230	11.0/5.5	-	-	-	-	-	-	-	-	-	-
2	28D EF-2	28D	EF-2	2375	0.50	1625	1/2	1	115	5.6	-	-	-	-	-	-	-	-	-	-
3	SF10 SF-1	-	-	-	-	-	-	-	-	-	-	SF10	SF-1	3800	0.25	593	1-1/2	1	115/230	-

REVISIONS

REV	DATE	CHK'D	REMARKS

DATE 03/02/2023 DRAWN BY AMO | SCALE AS NOTED APPROVED BY

DWG# 145153 SHT 1 OF 5

HOODMART. YOUR ONE STOP HOOD SHOP

172 REASER COURT ELYRIA, OHIO 44035 TOLL FREE : 1–800–715–1014 FAX: 1–800–716–1214

EQUIPMENT SCHEDULE

18'9" X 52" LBMUA

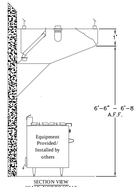
CONTRACT NO145153 ITEM NO. –

JOB: THE LION & ROSE RESTAURANT LOC: – SAN ANTONIO, TX CUST:SUNNY GANDHI CUST# –

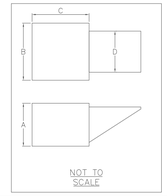
1

NOTE:

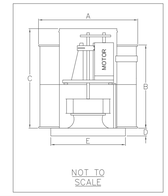
PROVIDE ANSUL HOOD FIRE EXTINGUISHING SYSTEM AT EACH GREASE HOOD. INTERLOCK WITH FAN CONTROLS, GAS SUPPLY VALVE, AND EQUIPMENT ELECTRICAL SHUNT TRIP CONTROLS.



SECTION VIEW
SCALE: NOT TO SCALE

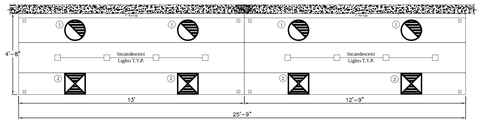

NOT TO SCALE

FAN MODEL	A	B	C	D	WT. LBS.
SF11	32"	32"	32"	25"	140 LBS.

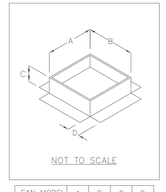


NOT TO SCALE

FAN MODEL	A	B	C	D	E	WT. LBS.
36B	38"	22⅝"	25⅞"	2"	28" SQ.	165 LBS.



PLAN VIEW
SCALE: NOT TO SCALE


NOT TO SCALE

FAN MODEL	A	B	C	D
36B	26½" - 26½"		18"	4"
SF11	31½" - 31½"		10"	4"

*IT IS THE RESPONSIBILITY OF THE ARCHITECT/OWNER TO ENSURE THAT THE HOOD CLEARANCE FROM LIMITED-COMBUSTIBLE MATERIALS IS IN COMPLIANCE WITH LOCAL CODE REQUIREMENTS

ALL EQUIPMENT IS UL LISTED COMPONENTS HOODMART HOODS ARE BUILT IN COMPLIANCE WITH : NFPA #96 & UL710 AND ARE RECOGNIZED BY ONE OR MORE OF THE FOLLOWING: – NSF INTERNATIONAL –UL

–OPENINGS ARE RECOMMENDED SIZES, DUCT OPENINGS TO BE CUT AND DUCTS INSTALLED IN FI

LISTED Safety Certified MH29547

HOOD NO.	MODEL	LENGTH	MAX. COOKING TEMP.	TOTAL EXH. CFM	① EXHAUST PLENUM(ER)S DIA.	QTY.	CFM.	S.P.	TOTAL SUP. CFM	② SUPPLY PLENUM(ER)S WIDTH	LENG.	QTY.	CFM.	S.P.	HOOD CONSTRUCTION
2	LBMUA	309"NOM 309"OD	700 DEG.	6500	14"	4	1625	0.50	5200	14"	14"	4	1300	0.25	STAINLESS ALUMINIZED UTILITY CABINET(S)

HOOD NO.	FILTER(S) TYPE	QTY.	HEIGHT	LENGTH	LIGHT(S) TYPE	QTY.	WIRE GUARD	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	SWITCHES LOCATION	EST. HOOD WEIGHT
2	S.S BAFFLE W/ HANDLES	8	20"	16"	INCANDESCENT LIGHT	8	-	KIDDE	26'	-	-	-	1170 LBS.
		9	20"	20"									

FAN UNIT NO.	FAN UNIT MODEL #	EXHAUST FAN MODEL	TAG	CFM	S.P.	RPM	H.P.	ø	VOLT	FLA	SUPPLY FAN BLOWER	HOUSING	TAG	CFM	S.P.	RPM	H.P.	ø	VOLT	FLA
4	36B EF-3	36B	EF-3	3250	0.50	1346	1	1	115/230	13.0/6.50	-	-	-	-	-	-	-	-	-	-
5	36B EF-4	36B	EF-4	3250	0.50	1346	1	1	115/230	13.0/6.50	-	-	-	-	-	-	-	-	-	-
6	SF11 SF-2	-	-	-	-	-	-	-	-	-	-	-	SF11	SF-2	5200	0.25	888	3	1	208/230	-

REVISIONS

REV	DATE	CHK'D	REMARKS

DATE 03/02/2023 DRAWN BY AMO | SCALE AS NOTED APPROVED BY

DWG# 145153 SHT 2 OF 5

HOODMART. YOUR ONE STOP HOOD SHOP

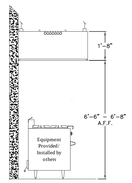
172 REASER COURT ELYRIA, OHIO 44035 TOLL FREE : 1–800–715–1014 FAX: 1–800–716–1214

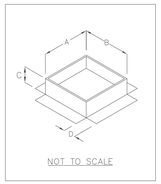
EQUIPMENT SCHEDULE

25'9" X 56" LBMUA

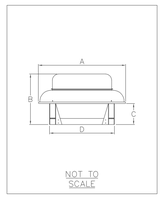
CONTRACT NO145153 ITEM NO. –

JOB: THE LION & ROSE RESTAURANT LOC: – SAN ANTONIO, TX CUST:SUNNY GANDHI CUST# –

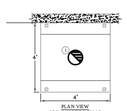



NOT TO SCALE

FAN MODEL	A	B	C	D
20D–DB	19½"	19½"	12"	4"


NOT TO SCALE

FAN MODEL	A	B	C	D	WT. LBS.
20D–DB	27¾" -	16⅜"	4⅛"	21" SQ.	49 LBS.



PLAN VIEW
SCALE: NOT TO SCALE

*IT IS THE RESPONSIBILITY OF THE ARCHITECT/OWNER TO ENSURE THAT THE HOOD CLEARANCE FROM LIMITED-COMBUSTIBLE MATERIALS IS IN COMPLIANCE WITH LOCAL CODE REQUIREMENTS

ALL EQUIPMENT IS UL LISTED COMPONENTS HOODMART HOODS ARE BUILT IN COMPLIANCE WITH : NFPA #96 & UL710 AND ARE RECOGNIZED BY ONE OR MORE OF THE FOLLOWING: – NSF INTERNATIONAL –UL

–OPENINGS ARE RECOMMENDED SIZES, DUCT OPENINGS TO BE CUT AND DUCTS INSTALLED IN FI

LISTED Safety Certified MH29547

HOOD NO.	MODEL	LENGTH	MAX. COOKING TEMP.	TOTAL EXH. CFM	① EXHAUST PLENUM(ER)S DIA.	QTY.	CFM.	S.P.	TOTAL SUP. CFM	② SUPPLY PLENUM(ER)S WIDTH	LENG.	QTY.	CFM.	S.P.	HOOD CONSTRUCTION
3	CONDENSATE	48"NOM 48"OD	700 DEG.	800	10"	1	800	0.50	–	–	–	–	–	–	STAINLESS STEEL

HOOD NO.	FILTER(S) TYPE	QTY.	HEIGHT	LENGTH	LIGHT(S) TYPE	QTY.	WIRE GUARD	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	SWITCHES LOCATION	EST. HOOD WEIGHT
3	ALUMINUM MESH FILTER	-	14"	14"	INCANDESCENT LIGHT	-	-	-	-	-	-	-	210 LBS.
		1	12"	12"									

FAN UNIT NO.	FAN UNIT MODEL #	EXHAUST FAN MODEL	TAG	CFM	S.P.	RPM	H.P.	ø	VOLT	FLA	SUPPLY FAN BLOWER	HOUSING	TAG	CFM	S.P.	RPM	H.P.	ø	VOLT	FLA
7	20D-DB EF-5	20D-DB	EF-5	800	0.50	1300	1/4	1	115	6.00	-	-	-	-	-	-	-	-	-	-

REVISIONS

REV	DATE	CHK'D	REMARKS

DATE 03/02/2023 DRAWN BY AMO | SCALE AS NOTED APPROVED BY

DWG# 145153 SHT 3 OF 5

HOODMART. YOUR ONE STOP HOOD SHOP

172 REASER COURT ELYRIA, OHIO 44035 TOLL FREE : 1–800–715–1014 FAX: 1–800–716–1214

EQUIPMENT SCHEDULE

4' X 48" CONDENSATE

CONTRACT NO145153 ITEM NO. –

JOB: THE LION & ROSE RESTAURANT LOC: – SAN ANTONIO, TX CUST:SUNNY GANDHI CUST# –

Hinge Kit Installation and Grease Exactor Details

Parts

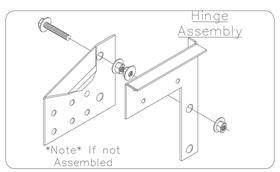
2 – Fan Plates (Left & Right)
2 – Curb Plates (Left & Right)
2 – Whiz Bolt
6 – Whiz Nut

Sheet Metal Screws
12 – Short (1/2" L.G)
12 – Long (3/4" L.G)

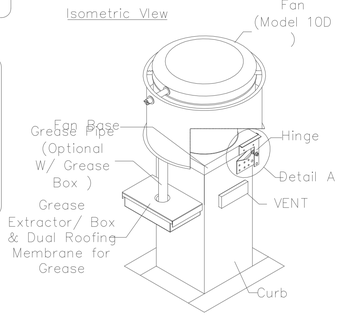
Tools Needed

1. Cordless
2. 1/4" Drill
3. 5/16" DrillBit
4. Sharpie/Marker
5. MeasuringTool(Optional)
6. 1/2" Open EndWrench (2)

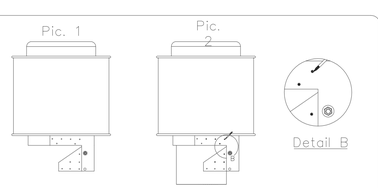
Hinge Assembly

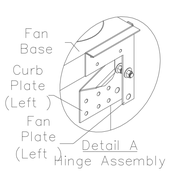

Note If not Assembled

Isometric View

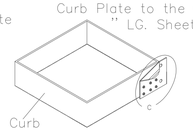


Step 1 – Line up the Fan Plate with the Fan Base as shown in picture 1. Step 2 – After lined up with the Fan Base, Mark out where you want your holes with a marker as shown in picture 2 (do the same for the Curb Plate)

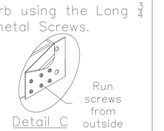


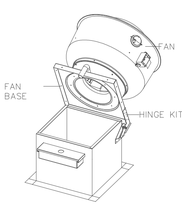


Step 3 – Once Holes Are Marked and Drilled, You Can Screw The Fan Plate to The Fan Base Using The Short 1/2" LG. Sheet Metal Screws.
Note If screw hits the curb, cut the screw shorter or use a shorter screw.



Step 4 – Last step is to screw the Curb Plate to the Curb using the Long 1/2" LG. Sheet metal Screws.





OPEN POSITION HINGE KIT & GREASE EXTRACTOR

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LISTED Safety Certified MH29547

REVISIONS

REV	DATE	CHK'D	REMARKS

DATE 03/02/2023 DRAWN BY AMO | SCALE AS NOTED APPROVED BY

DWG# 145153 SHT 4 OF 5

HOODMART. YOUR ONE STOP HOOD SHOP

172 REASER COURT ELYRIA, OHIO 44035 TOLL FREE : 1–800–715–1014 FAX: 1–800–716–1214

EQUIPMENT SCHEDULE

HINGE KIT

CONTRACT NO145153 ITEM NO. –

JOB: THE LION & ROSE RESTAURANT LOC: – SAN ANTONIO, TX CUST:SUNNY GANDHI CUST# –

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DRAWING COORDINATION

Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY G.G. MALONEY, P.E. 23319 ON MAR 17, 2023 ALTERATION OF SEALED DOCUMENTS WITHOUT PROPER NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

17 March 2023

STATE OF TEXAS · G.G. MALONEY · 23319 · LICENSED PROFESSIONAL ENGINEER

MALONEY ASSOCIATES CONSULTING ENGINEERS, INC F-1400
1229 TRAILWOOD DR HURST, TEXAS 76053 (817) 282-6333
MALONEY-ENG.COM

HOOD DETAILS

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

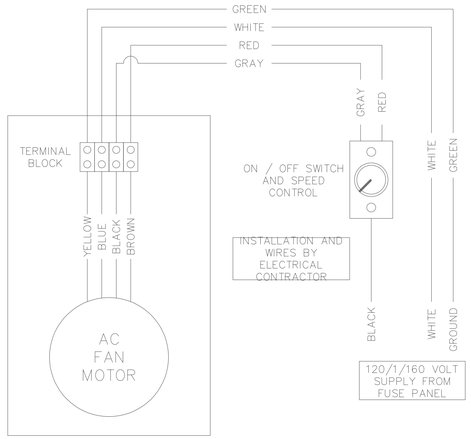
NO.	DESCRIPTION	DATE	BY
1	MEP CHANGES	4/17/23	

SCALE: AS NOTED

PROJECT NO. 05-05-22

SHEET NO. M3.2

Apr 17,2023 - 2:24pm
09-1511-M3.2-Mechanical Details.dwg



VARIABLE SPEED CONTROL DIAGRAM

NOT TO SCALE

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REVISIONS

NO	DATE	CHK	APP	REMARKS

HOODMART.
YOUR DFW STOP HOOD SHOP

172 REASER COURT
ELYRIA, OHIO 44035

TOLL FREE : 1-800-715-1014
FAX: 1-800-716-1214

EQUIPMENT SCHEDULE

VARIABLE SPEED CONTROL

CONTRACT NO145153 ITEM NO. –

JOB: THE LION & ROSE RESTAURANT
LOC: –
SAN ANTONIO, TX
CUST:SUNNY GANDHI
CUST# –

DATE	SCALE	DWG#	SHT
03/02/2023	AS NOTED	145153	5 OF 5

DRAWN BY: MG
APPROVED BY:

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Michael Gregory Legg
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DRAWING COORDINATION
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17 March 2023

STATE OF TEXAS
G.G. MALONEY
REG. 23319
REGISTERED
PROFESSIONAL ENGINEER

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1228 TRAILWOOD DR
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(817) 282-0888
MALONEY-ENG.COM

HOOD DETAILS

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY

SCALE:
AS NOTED

PROJECT NO.
05-05-22

SHEET NO.
M3.3

Mar 17,2023 - 4:35pm
09-1511-M3.2-Mechanical Details.dwg

CONTROL TRANSFORMER FOR TYPE U FIXTURES

VARIABLE SPEED FAN CONTROL

CONTROL STATION

CONTROL STATION

CONTROL STATION

MASTER LIGHTING CONTROL STATION

MASTER LIGHTING CONTROL STATION

LONDON BUS

NOTE:
MOUNT STRING LIGHT WPGFI OUTLET ON COLUMN. PROVIDE ANCHOR POINTS ON PERGOLA FOR STRING LIGHTS. PROVIDE APPROX 250' OF TYPE S STRING LIGHT AND FESTOON AS SHOWN.

NORTH

1 LIGHTING PLAN
SCALE: 1/4"=1'-0"

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

4' 0 4' 8'

Apr 17,2023 - 2:29pm
10-1511-E1.1-Lighting Plan.dwg

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17 March 2023

STATE OF TEXAS
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63180
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PROFESSIONAL ENGINEER

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LIGHTING PLAN

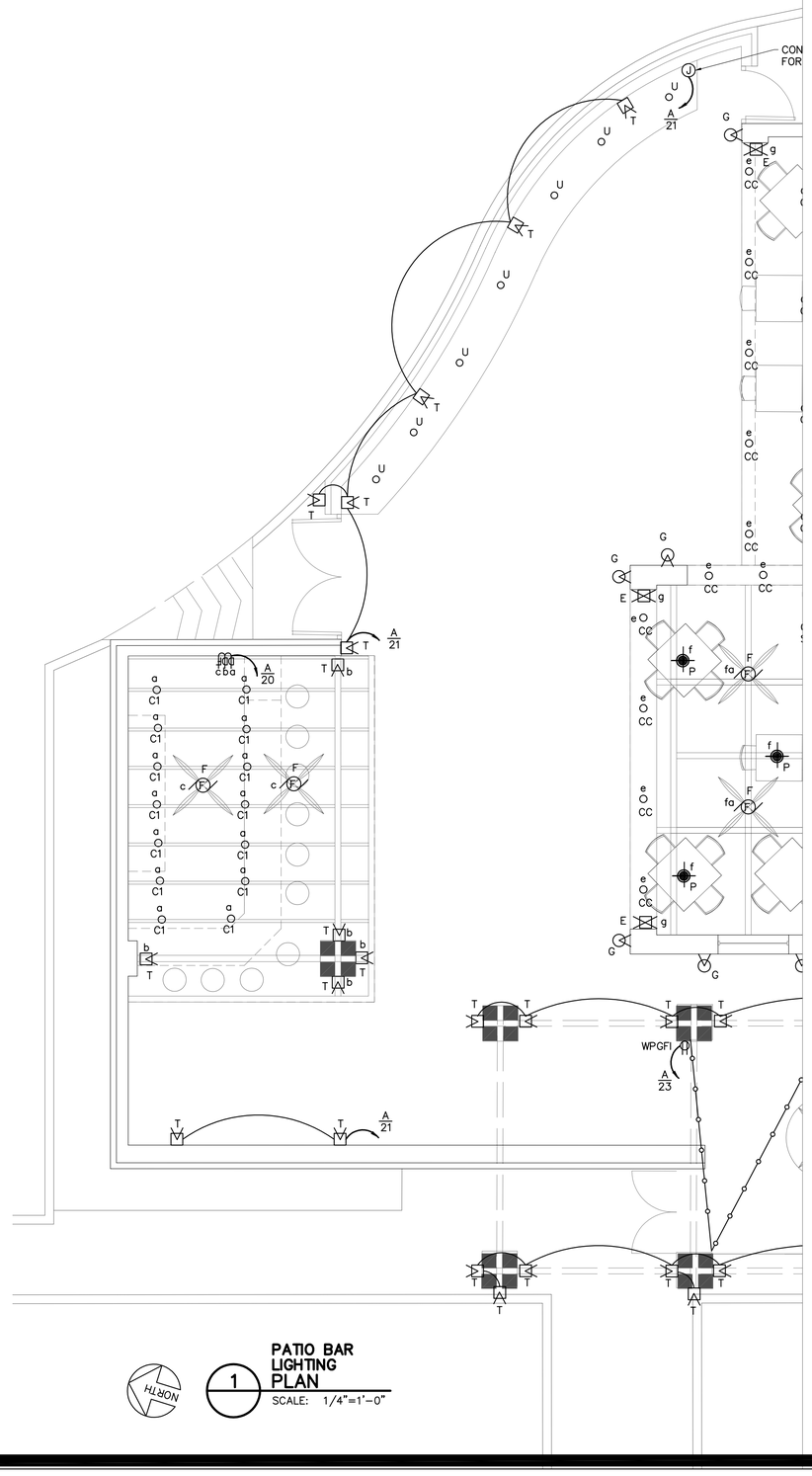
Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY
4/17/23	MEP CHANGES	

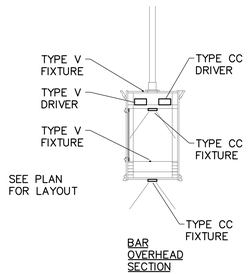
SCALE:
AS NOTED

PROJECT NO.
05-05-22

SHEET NO.
E1.1

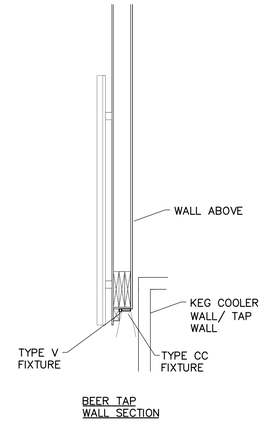


PATIO BAR LIGHTING PLAN
SCALE: 1/4"=1'-0"



BAR OVERHEAD SECTION

BAR OVERHEAD LIGHTING SECTION
SCALE: 1/2"=1'-0"



BEER TAP WALL SECTION

BAR TAP WALL LIGHTING SECTION
SCALE: 1/2"=1'-0"

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

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

MLA
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17 March 2023

STATE OF TEXAS
G.G. MALONEY, JR.
63180
REGISTERED
PROFESSIONAL ENGINEER

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LIGHTING PLAN

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

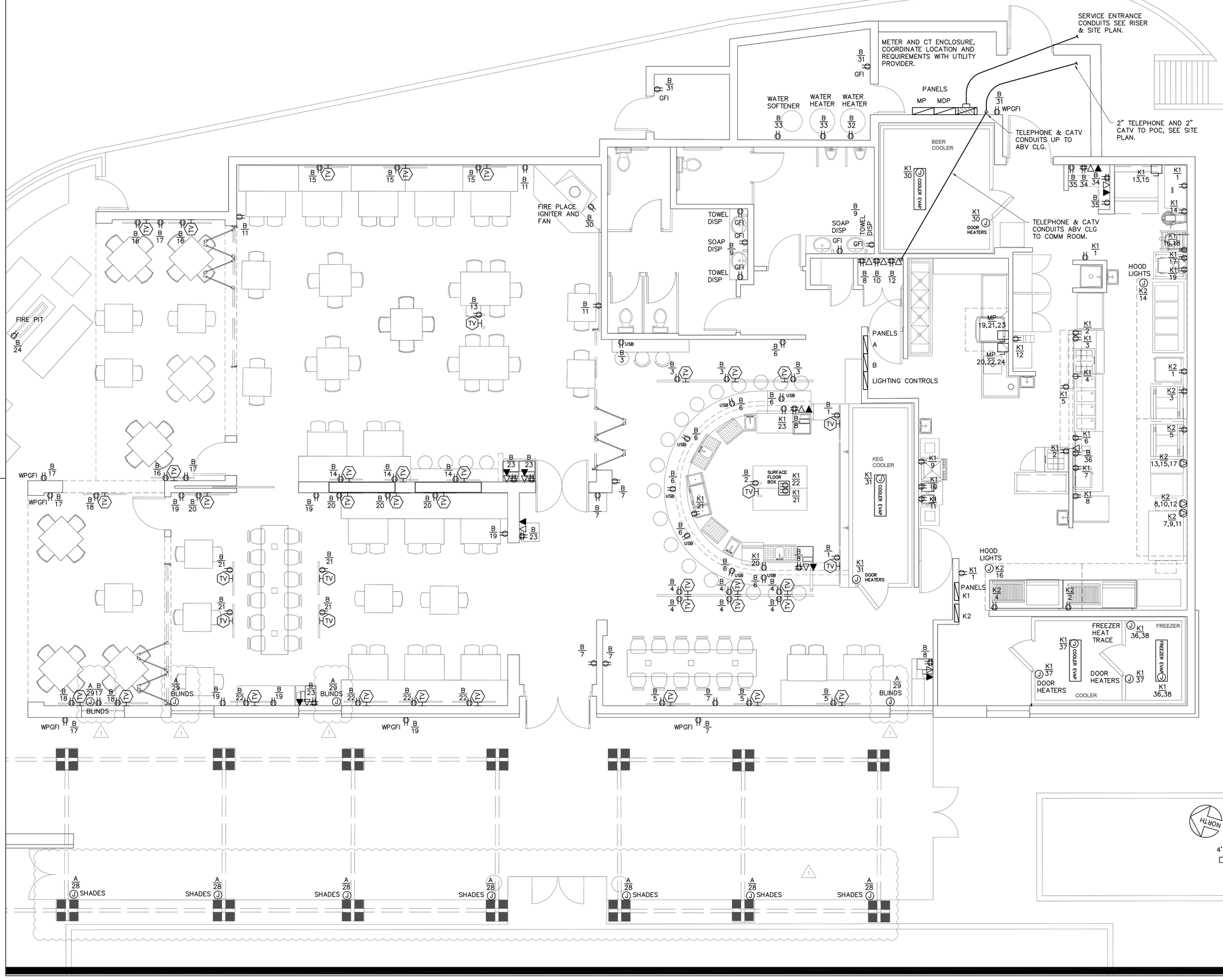
DATE	DESCRIPTION	BY

SCALE:
AS NOTED

PROJECT NO.
05-05-22

SHEET NO.
E1.2

Mar 17,2023 - 4:37pm
10-1511-E1.1-Lighting Plan.dwg



1 ELECTRICAL PLAN PLAN
SCALE: 1/4"=1'-0"

NOTE:
SEE ARCH ELEVATIONS AND PLANS FOR ELECTRICAL ROUGH-IN LOCATIONS IN KITCHEN. COORDINATE OUTLET MOUNTING HEIGHTS WITH EQUIPMENT REQUIREMENTS FOR KITCHEN EQUIPMENT.

NOTE:
PROVIDE GFI PROTECTION FOR ALL OUTLETS IN KITCHEN. COORDINATE OUTLET MOUNTING HEIGHTS WITH EQUIPMENT REQUIREMENTS FOR KITCHEN EQUIPMENT. SEE ARCH ELEVATIONS

NOTE:
PROVIDE WATER TIGHT FLEX CONNECTION TO OVENS. COORDINATE DISCONNECT LOCATIONS WITH EQUIPMENT FOR PROPER ACCESS.

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17 March 2023

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ELECTRICAL PLAN

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

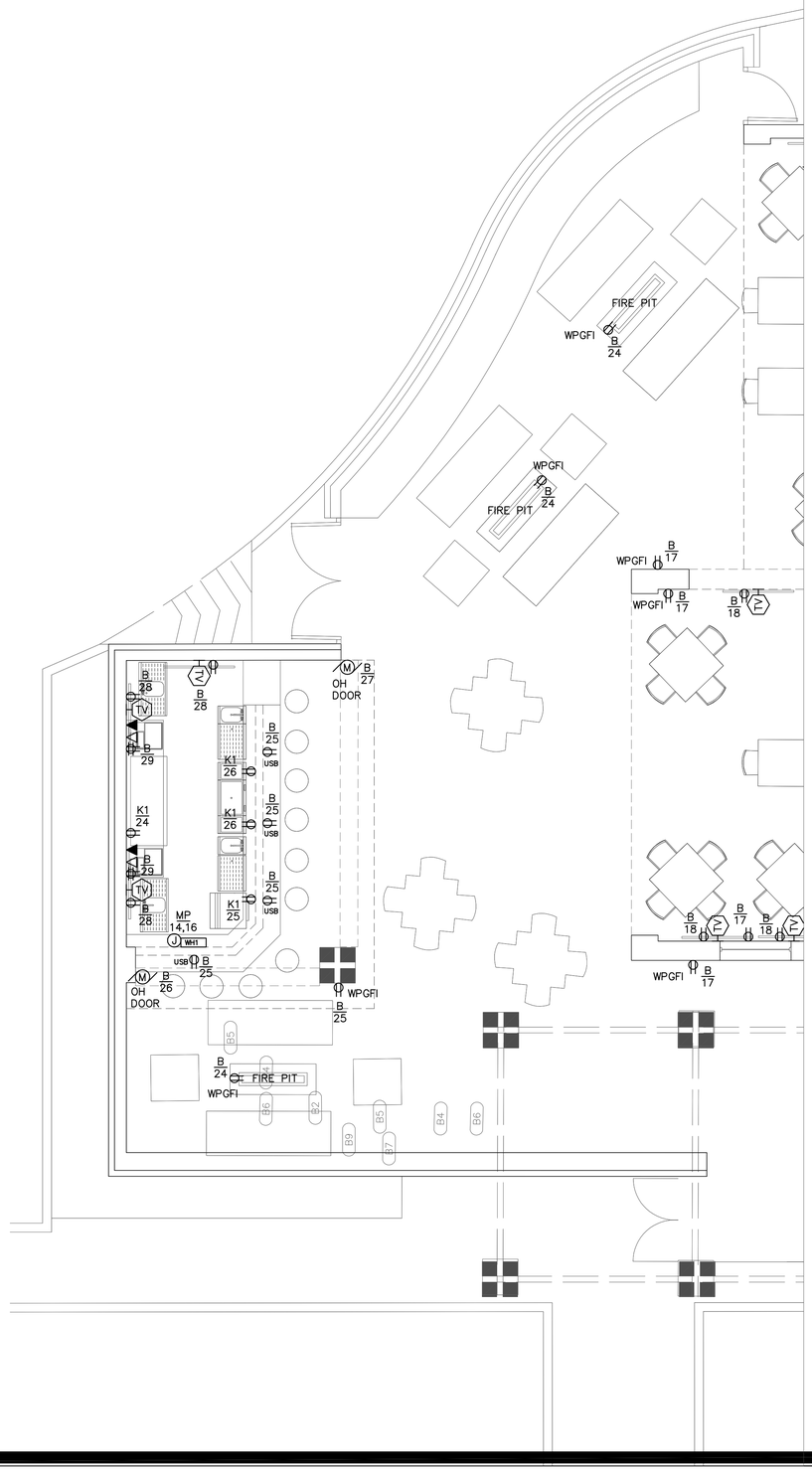
BY	DESCRIPTION	DATE
1	MEP CHANGES	4/17/23

SCALE:
AS NOTED

PROJECT NO.
05-05-22

SHEET NO.
E2.1

Apr 17,2023 - 2:28pm
11-1511-E2.1-Electrical Plan.dwg



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17 March 2023

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ELECTRICAL PLAN

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY

SCALE: AS NOTED

PROJECT NO. 05-05-22

SHEET NO. E2.2

NORTH

1 PATIO ELECTRICAL PLAN
PLAN SCALE: 1/4"=1'-0"

4' 0 4' 8'
GRAPHIC SCALE: 1/4"=1'-0"

Mar 17,2023 - 4:38pm
11-1511-E2.1-Electrical Plan.dwg

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	LAMPS NO	LAMPS TYPE	MAX INPUT W	LENS	MOUNTING	MANUFACTURER	NOTES
A	2X4 TROFFER	1	4200 LUMEN LED	40	PMMA DIFFUSER	RECESSED	SYLVANIA PANELF 1A 040 UNV 835 24G WH	PROVIDE WITH SYLVANIA QHE3X32T8/UNV ISL-SC BALLAST
B	8" DOWNLIGHT	1	1640 LUMEN LED 27K/30K Adjustable	19	INTEGRAL	RECESSED	JUNO WF8 SWW5 90CRI MW	DIMMING DRIVER, WHITE TRIM, PROVIDE MOUNTING ACCESSORIES.
C	6" COPPER DOWNLIGHT	1	970 LUMEN LED 27K/30K Adjustable	13	INTEGRAL	RECESSED	JUNO WF6 SWW5 90CRI ORB	DIMMING DRIVER,OILED BRONZE TRIM, PROVIDE MOUNTING ACCESSORIES.
C1	DOWNLIGHT CYLINDER	1	1500 LUMEN LED 2700K	15	INTEGRAL	PENDANT	HALO HCC6S15D010BZ - HM6C0525927 - 61MDC	DIMMING DRIVER 12" PENDANT
CC	CABINET PUCK	1	280 LUMEN LED 2700K / 3000K / 4000K Adjustable	4	INTEGRAL	SURFACE OR RECESSED	AMERICAN LIGHTING OMNI SLIM 3CCT 24VDC PUCK LIGHT	DIMMING DRIVER, PROVIDE ACCESSORIES AND POWER SUPPLY
D	ADJUSTABLE UP LIGHT	1	1000 LUMEN LED 2700K	23	INTEGRAL	SURFACE	PALOMA – MO-4023-827-BK	DIMMING DRIVER, BLACK
E	WALL SCONCE	1	E26 BASE FILLIMENT LED EDISON BULB 450 LUMEN 3000K	5	GLASS	WALL	KICHLER Marchesa -TRZ 45131TRZ (Terrene Bronze)	DIMMABLE LAMP
F	WET LOCATION CEILING FAN	-	5500CFM	56W	NO LIGHT	CEILING	HUNTER Jetty Outdoor 52 inch	WET LOCATION, 52" FAN, PROVIDE WALL BOX SPEED CONTROL
G	GAS LIGHT	1	GAS	5MBH	TEMPERED GLASS	WALL	FURNISHED BY OWNER	
GE	ELECTRIC GAS LIGHT	1	E26 BASE FILLIMENT LED EDISON BULB 450 LUMEN 3000K	5	TEMPERED GLASS	WALL	FURNISHED BY OWNER	DIMMABLE LAMP
H	CHANDELIER	6	B11 E12 BASE 3000K LED CANDELABERA	4	NONE	CEILING	Lucca Iron Indoor/Outdoor Chandelier 50" Pottery Barn	DIMMABLE LAMP
J	CHANDELIER	9	E26 BASE FILLIMENT LED EDISON BULB 450 LUMEN 3000K	5	NONE	CEILING	Rosswood Metal Chandelier 31"- Pottery Barn	DIMMABLE LAMP
K	CHANDELIER	12	B11 E12 BASE 3000K LED CANDELABERA	4	NONE	CEILING	Remington Iron Round Chandelier, Bronze 41.5" dia. - Pottery Barn	DIMMABLE LAMP
L	4' STRIP LIGHT	1	3000 LUMEN LED 3500K	28	ACRYLIC	SURFACE	LITHONIA CSS L48 ALO3 MVOLT 35K	ELECTRONIC DRIVER
LL	2' COOLER STRIP LIGHT	1	2000 LUMEN LED	18	ACRYLIC	SURFACE	LITHONIA DMW2 L24 2000LM ACL MD MVOLT GZ10 40K 80CRI	ELECTRONIC DRIVER WET LOCATION
M	MIRROR LIGHT	1	4766 LUMEN LED 3000K	48	DIFFUSER	WALL	WITC VANITY MIRROR AS SPECIFIED BY ARCHITECT	DIMMING DRIVER
N	EXTERIOR WALL PACK	1	1693 LUMEN LED	16W	CUT-OFF	WALL	LITHONIA ARC2 LED P2 40K MVOLT DDBXD	COORDINATE MOUNTING HEIGHT WITH ARCH. ELEVATIONS. BUG RATING B0-U0-G1
P	PENDANT	1	410 LUMEN LED 2700K	5	NONE	PENDANT	LUMENART UME2074275	2.25" DIAMETER, DIMMING DRIVER
R	PICTURE LIGHT	1	595 LUMEN LED 2700K	9	INTEGRAL	SURFACE	WAC PL-LED14-27-RB	DIMMING DRIVER RUBBED BRONZE
S	CANTINA LIGHTS	1	AMERICAN LIGHTING PS14-E26-UWW	1.4	NONE	FESTOON	AMERICAN LIGHTING LS-MS-24-48-BK	UL WET LOCATION, PROVIDE 300' STRING LIGHT WITH MULTIPLE PLUGS.
T	EXTERIOR WALL SCONCE CYLINDER	1	484 LUMEN LED 3000K	16.9	INTEGRAL	WALL	PROGRESS P5674-20/30K	ANTIQUE BRONZE
U	LANDSCAPE LIGHT	1		3	INTEGRAL	GROUND	HYDREL JENSON BR 3LED16 AMB 12 PMBR60C S24BR DDB	PROVIDE CONTROL TRANSFORMERS AND ACCESSORIES, BRASS
V	LED TAPE LIGHT COLOR CHANGING	1	2700-5000K, R/G/B 323 lm/ft	6W/FT	DIFFUSE provide mounting channel	SURFACE	WAC INVISILED RGBWW T24-CC1-0X-WT	PROVIDE REMOTE CONTROLS FOR COLOR, LENGTH AS REQUIRED, PROVIDE ALL ACCESSORIES REQUIRED.control with wallbox LED-WCT-WT, and WAC mobile App
W	PARKING LOT	1	15,000 LUMEN LED, 4000K COLOR TEMPERATURE	109	INTEGRAL	20' POLE	LED AREA LUMINAIRE, TYPE 3 DISTRIBUTION, LITHONIA RSX1 LED P3 40K R3 MVOLT SPA DDBXD EGFV, DARK BRONZE POLE #SSS 4C DM19AS DDBXD	20FT STRAIGHT SQUARE STEEL POLE, EXTERNAL 360° FULL VISOR, BUG RATING B2-U0-G1
X	EXIT/EGRESS	2	LED	4.3	RED	WALL OR CEILING	COMPASS LIGHTING CCR	WITH 90 MIN EMERGENCY BATTERY, 2 LAMP HEADS
Y	EGRESS	2	LED	4	REFRACTOR	WALL	COMPASS LIGHTING CU2	WITH 90 MIN EMERGENCY BATTERY, 2 LAMP HEADS
Z	EXTERIOR EGRESS	2	LED	10.8	REFRACTOR	WALL	DUAL LITE PGZ-HTR	UL WET LOCATION, BATTERY RATED FOR -22degF TO 122degF, 90 MIN OPERATION

NOTES:
1. VERIFY TRIM MATCHES CEILING OR SURFACE TYPE FOR RECESSED FIXTURES.
2. VERIFY FIXTURE VOLTAGE PRIOR TO ORDERING FIXTURES.
3. PROVIDE 3500K COLOR TEMP LAMPS OR AS NOTED IN ALL AREAS.

MASTER DIMMING AND SWITCHING CONTROL PANEL SCHEDULE

PANEL	CIRCUIT	SWITCH LETTER	AREA DESCRIPTION		LOAD TYPE	NOTES
LIGHTING CONTROLS						LOCATE CONTROL PANEL ON 1ST FLOOR
A	3	a	BACK DINING DOWNLIGHTS		LED	DIMMER
A	4	b	BACK DINING CHANDELIERS		LED	DIMMER
A	5	c	PICTURE LIGHTS		LED	DIMMER
A	6	d	PATIO DINING DOWNLIGHTS		LED	DIMMER
A	7	e	PATIO DINING PUCK LIGHTS		LED	DIMMER
A	8	f	DINING PENTDANT LIGHTS		LED	DIMMER
A	9	g	SCONCES		LED	DIMMER
A	10	h	FRONT DINING CHANDELIERS		LED	DIMMER
A	11	j	TRUSS UPLIGHTS		LED	DIMMER
A	12	k	BAR PENDANT LIGHTS		LED	DIMMER
A	13	m	BAR TRUSS LIGHTS		LED	DIMMER
A	14	n	BAR CABINET PUCK LIGHTS		LED	DIMMER
A	15	p	BAR TAPE LIGHTS		LED	DIMMER
A	16	q	DINIING CABINET LIGHTS		LED	DIMMER
A	16	r	BAR PUCK LIGHTS		LED	DIMMER
A	17	s	BAR DOWNLIGHTS		LED	DIMMER
A	18	fa	PATIO DINING FANS		FAN	SPEED CONTROL
A	29		WINDOW BLINDS		M	UP/DN
A	21		PATIO LIGHTS		LED	SWITCH
A	22		PATIO FANS		FAN	SPEED CONTROL
A	23		STRING LIGHTS		LED	SWITCH
A	24		STRING LIGHTS		LED	SWITCH
A	25		EXTERIOR BUILDING LIGHTS		LED	PHOTOCELL ON-TIME OFF
A	26		PARKING LOT LIGHTS		LED	PHOTOCELL ON-TIME OFF
A	28		PATIO SHADES		M	UP/DN

PROVIDE LIGHTOLIER LYTEMODE DIMMING AND CONTROL SYSTEM WITH DIMER/SWITCHING RACK, 2 FOUR BUTTON STATIONS AND 2 MASTER CONTROL STATIONS. PROVIDE COMMISSIONING ANS START-UP BY A LIGHTOLIER FACTORY AUTHORIZED AND TRAINED FIELD TECHNICIAN.

1

SUBMITTAL

SUBMIT 4 COPIES OF DATA FOR REVIEW AND COMMENT BY OWNER PRIOR TO ORDERING. INCLUDE MANUFACTURER'S STANDARD SUBMITTAL DATA WITH MANUFACTURER'S NAME AND MODEL NUMBERS, COLOR, FINISH, SIZE AND ALL OPTIONS CLEARLY MARKED.

PROVIDE SUBMITTAL DATA FOR LIGHT FIXTURES, POLES, CEILING FANS AND ELECTRICAL PANELS AND GEAR.

SUBMIT PHOTOMETRIC CALCULATIONS AND REPORT FOR SITE LIGHTING. SHOW STATISTICS AND LIGHTING LEVELS ON 10' GRID, INCLUDE BUILDING MOUNTD LIGHTING FIXTURES.

ELECTRICAL INSTALLATION REQUIREMENTS:

1. SCOPE

1.1 PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO EXECUTE WORK.

1.2 THIS WORK INCLUDES, BUT IS NOT LIMITED TO: ELECTRICAL SERVICE AND DISTRIBUTION SYSTEMS, PANELBOARDS, DISCONNECT SWITCHES, LIGHTING FIXTURES, POWER AND CONTROL WIRING WITH FINAL CONNECTIONS TO ALL EQUIPMENT REQUIRED FOR A COMPLETE SYSTEM.

1.3 ELECTRICAL CONTRACTOR TO VERIFY TYPE OF POWER SERVICE AVAILABLE (UNDERGROUND OR OVERHEAD) UTILITY CABLE, CONDUIT AND TRANSFORMER PAD INSTALLATION REQUIREMENTS, COST FROM UTILITY TO PROVIDE SERVICE AND MAXIMUM SHORT CIRCUIT CURRENT PRIOR TO SUBMITTING A PROPOSAL. INCLUDE COST FOR UTILITY ROUGH–IN, CONDUIT, CABLE, XFMR PADS AND CONNECTIONS NOT PROVIDED BY THE UTILITY.

1.4 ELECTRICAL CONTRACTOR TO VERIFY TYPE OF TELEPHONE SERVICE AVAILABLE (UNDERGROUND OR OVERHEAD) PRIOR TO SUBMITTING A PROPOSAL.

1.5 ELECTRICAL CONTRACTOR VERIFY METERING, IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS.

1.6 ELECTRICAL CONTRACTOR SHALL PROVIDE LABELS 3/16 INCH HIGH, FOR DESCRIPTION OF MAIN SWITCHBOARD, PANEL BOARD AND ALL BRANCH CIRCUITS.

1.7 SUBMIT MANUFACTURER'S CATALOG SHEETS, BROCHURES, DIAGRAMS, SCHEDULES, PERFORMANCE CHARTS, ILLUSTRATIONS AND OTHER STANDARD DESCRIPTIVE DATA. CLEARLY MARK EACH COPY TO IDENTIFY PERTINENT MATERIALS, PRODUCTS OR MODELS. SHOW DIMENSIONS AND CLEARANCES REQUIRED. SHOW PERFORMANCE CHARACTERISTICS AND CAPACITIES. SHOW ELECTRICAL RATINGS, WIRING DIAGRAMS AND CONTROLS.

1.8 PROVIDE IVORY DEVICES WITH STAINLESS STEEL PLATES FOR OUTLETS LOCATED IN KITCHEN. PROVIDE BLACK DEVICES WITH BLACK COVERPLATES FOR OUTLETS LOCATED IN THE DINING AREA.

2. INSTALLATION

2.1 THE INSTALLATION SHALL COMPLY WITH CURRENT NEC.

2.2 THE CLEARANCE TO ALL ELECTRICAL EQUIPMENT SHALL COMPLY WITH CURRENT NEC.

2.2 CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED ELECTRICAL CONDUIT AND WIRING FOR ALL MOTORS, STARTERS AND ELECTRICAL CONTROLS. HE SHALL MAKE ALL LINE VOLTAGE ELECTRICAL CONNECTIONS AS REQUIRED FOR HVAC SYSTEMS.

2.3 ELECTRICAL CONTRACTOR SHALL COMPLETE THE CONNECTIONS TO ALL RECEPTACLES, EQUIPMENT AND FINAL CONNECTIONS TO ALL FIXTURES AFTER FIXTURES ARE IN PLACE.

2.4 WIRING

2.4.1 WIRE SIZES ARE TO COMPLY WITH CURRENT NEC.

2.4.2 ALL WORK SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER.

2.4.3 ALL WIRING SHALL BE RUN IN APPROVED METALLIC RACEWAY OR CONDUIT AND SHALL BE UNIFORMLY COLOR CODED THROUGHOUT THE ENTIRE SYSTEM. SPLICES, TAPS, AND TERMINALS SHALL BE MAKE ONLY IN "J" BOXES , OUTLETS AND PANEL BOARDS.

2.4.4 ALL CONDUCTORS SHALL BE COPPER WITH A MINIMUM WIRE SIZE OF #12 AWG. THE CONTRACTOR SHALL ENSURE THE CONDUCTORS UTILIZED ARE IN KEEPING WITH GOOD PRACTICE FOR THE CIRCUIT/PROTECTIVE DEVICES EMPLOYED. THE NEUTRAL CONDUCTOR (WHERE USED) SHALL HAVE THE SAME AMPACITY AS THE ASSOCIATED PHASE CONDUCTORS (I.E. NEUTRAL REDUCTION SHALL NOT BE PERMITTED).

2.4.5 THE CONTRACTOR SHALL SIZE ALL CONDUCTOR AND CONDUIT IN ACCORDANCE WITH NEC AND ENSURE THAT CIRCUIT AMPACITY AND SHORT CIRCUIT/OVERLOAD PROTECTION IS APPROPRIATE FOR THE EQUIPMENT BEING INSTALLED. UL LISTING CONDITIONS SHALL BE OBSERVED.

2.4.6 WIRE SIZES LISTED ARE MINIMUM. CONDUCTORS SHALL BE SELECTED SUCH THAT THE MAXIMUM VOLTAGE DROP BETWEEN THE PANELBOARD AND LOAD (AT FULL LOAD AMPS) DOES NOT EXCEED 2% FOR MOTOR LOADS (AIR CONDITIONING, REFRIGERATION, ETC.) AND 5% FOR ALL OTHER LOADS

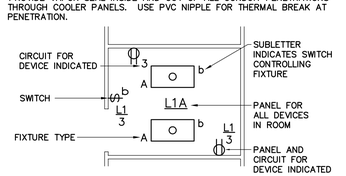
2.5 GROUNDING – PROVIDE GROUNDING OF ELECTRICAL SERVICE ENTRANCE, PANELS, EQUIPMENT AND DEVICES IN ACCORDANCE WITH CURRENT NEC.

2.6 MAINTAIN SERVICE CLEARANCE TO ELECTRICAL PANELS AND EQUIPMENT IN ACCORDANCE WITH CURRENT NEC.

ELECTRICAL SYMBOL LEGEND

- A — 2X4 FLUORESCENT FIXTURE, LETTER INDICATES TYPE
- E — 1X4 FLUORESCENT FIXTURE, LETTER INDICATES TYPE
- SHADED FIXTURES WITH EMERGENCY BATTERY PACK
- B — RECESSED FIXTURE, LETTER INDICATES TYPE.
- E — WALL MOUNTED FIXTURE, LETTER INDICATES TYPE.
- P — CEILING MOUNTED OR PENDANT FIXTURE, LETTER INDICATES TYPE.
- WALL MOUNTED EXIT SIGN, FIXTURE TYPE X.
- CEILING MOUNTED EXIT SIGN, FIXTURE TYPE X.
- EGRESS LIGHTING, FIXTURE TYPE Y
- SWITCH
- A — SWITCH WITH AUTOMATIC OCCUPANCY SENSING (PIR TYPE)
- 3 — 3–WAY SWITCH, 4 INDICATES 4–WAY SWITCH
- VARIABLE SPEED FAN CONTROL SWITCH
- 20A, 120V DUPLEX OUTLET, NEMA 5–20
- 20A, 120V 4PLEX OUTLET, (2) NEMA 5–20
- FV — GFI OUTLET BELOW SINK FOR AUTOMATIC FAUCET VALVE POWER SUPPLY
- EWC — ELECTRIC WATER COOLER, SET HEIGHT BY COOLER TEMPLATE, CONCEAL OUTLET.
- WP — WEATHER PROOF
- GFI — GROUND FAULT INTERRUPTED OUTLET.
- C — ABOVE CEILING RECEPTACLE
- * — OUTLET OR DEVICE ABOVE COUNTER SPLASH OR AT 42". COORDINATE LOCATION WITH ARCH ELEVATIONS, EQUIPMENT REQUIREMENTS AND MILLWORK DETAILS.
- 120/208V 1ø OUTLET, PROVIDE SO CORD AND PLUG
- SIMPLEX OUTLET
- J — J–BOX
- CIRCUIT, HASH MARKS INDICATE # OF WIRES IF GREATER THAN 2. LONG MARKS ARE SWITCHED OR HOT, SHORT ARE NEUTRAL.
- CIRCUIT HOMERUN
- M — MOTOR LOAD
- F — DISCONNECT SWITCH, F=FUSED OTHERWISE NON FUSED. DISCONNECT SIZED TO MATCH OR EXCEED CIRCUIT SIZE.
- COMBINATION STARTER DISCONNECT COORDINATE SIZE WITH EQUIPMENT FURNISHED
- PANELBOARD, SURFACE MOUNTED IN MECH ROOMS AND OTHER UNFINISHED AREAS, SEE SCHEDULES.
- DATA OUTLET, DUAL RJ–45 OUTLET W/ COVERPLATE AND 1" C AND CAT–6 DATA CABLE IN GREEN JACKET TO TELEPHONE BOARD AT COMM ROOM.
- 1 — TELEPHONE/DATA OUTLET, DUAL RJ–45 OUTLET W/ COVERPLATE AND 1"C WITH CAT–6 DATA CABLE IN GREEN JACKET AND CAT–6 TELEPHONE CABLE IN GRAY JACKET TO TELEPHONE BOARD AT COMM ROOM.
- TV — CATV OUTLET, PROVIDE F–TYPE COAX CONNECTOR IN COMMON BOX WITH 120V OUTLET. PROVIDE DOUBLE GANG BOX WITH DIVIDER AND DUAL COVERPLATE. PROVIDE 1" C AND COAX CABLE TO TELEPHONE BOARD AT COMM ROOM.

NOTES:
1. VERIFY ALL OUTLET LOCATION WITH MILLWORK DRAWINGS.
2. IF NO SUBLETTER ON SWITCHES OR FIXTURES IS INDICATED, ALL FIXTURES IN ROOM ARE SWITCHED TOGETHER.
3. MULTIPLE SWITCHING IS INDICATED BY 2 SUBLETTERS AT FIXTURES. OR BY SWITCH–LEG.
4. CONCEAL CONDUITS IN ALL AREAS WITH FINISHED WALLS OR CEILINGS, EXCEPT FOR COOLERS, MECHANICAL, BOILER, TELEPHONE, AND ELECTRICAL ROOMS, CONCEAL CONDUITS IN THESE AREAS WHERE PRACTICAL.
5. MOUNT SWITCHES AND CONTROLS AT 48" AFF AND OUTLETS AT 18" AFF IN COMPLIANCE WITH TAS/ADA REQUIREMENTS UNLESS NOTED OTHERWISE.
6. PROVIDE VAPOR SEAL INSIDE AND OUT OF ALL CONDUIT PENETRATIONS THROUGH COOLER PANELS. USE PVC NIPPLE FOR THERMAL BREAK AT PENETRATION.



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DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY G.G. MALONEY, JR. P.E. 63180 ON MAR 17, 2023 ALTERATION OF SEALED DOCUMENTS WITHOUT PROPER NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

17 March 2023

STATE OF TEXAS · G.G. MALONEY, JR. · 63180 · REGISTERED · PROFESSIONAL ENGINEER

MALONEY ASSOCIATES CONSULTING ENGINEERS, INC F-9440
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ELECTRICAL SCHEDULES

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY
4/17/23	MEP CHANGES	1

SCALE: AS NOTED

PROJECT NO. 05-05-22

SHEET NO. E3.1

Apr 17,2023 - 2:33pm
12-1511-E3.1-Electrical Riser and Schedules_1_1_6179.DWG

PANEL MDP — SURFACE NEMA 3R

LOAD CONT	LOAD N - CONT	LOCATION	CKT DEVICE	CKT # PH CKT #	CKT DEVICE	LOCATION	LOAD N - CONT	LOAD CONT
	53,184	PANEL MP	3 P 200	1 A 2	3 P 200	PANEL A / B	53,184	
		/ / / / /	/ /	3 B 4	/ /	/ / / / /		
		/ / / / /	/ /	5 C 6	/ /	/ / / / /		
	33,850	PANEL K1	3 P 150	7 A 8	3 P 200	PANEL K2	54,196	
		/ / / / /	/ /	9 B 10	/ /	/ / / / /		
		/ / / / /	/ /	11 C 12	/ /	/ / / / /		
		SPACE	3 P	13 A 14	3 P	SPACE		
		/ / / / /	/ /	15 B 16	/ /	/ / / / /		
		/ / / / /	/ /	17 C 18	/ /	/ / / / /		
		FUTURE EV CHARGE	3 P	19 A 20	3 P	FUTURE EV CHARGE		
		/ / / / /	/ /	21 B 22	/ /	/ / / / /		
		/ / / / /	/ /	23 C 24	/ /	/ / / / /		
			/ /	25 A 26	/ /			
			/ /	27 B 28	/ /			
			/ /	29 C 30	/ /			
			/ /	31 A 32	/ /			
			/ /	33 B 34	/ /			
			/ /	35 C 36	/ /			
			/ /	37 A 38	/ /			
			/ /	39 B 40	/ /			
			/ /	41 C 42	/ /			

540 PANEL AMPERES — PANEL VOLTAGE 120/208, 3PH, 4W — 800A MCB
800 PANEL MINIMUM BUS SIZE — 10,000 AIC

194 PANEL CONTINUOUS KVA
PANEL NON-CONTINUOUS KVA

PANEL MP — SURFACE NEMA 3R

LOAD CONT	LOAD N - CONT	LOCATION	CKT DEVICE	CKT # PH CKT #	CKT DEVICE	LOCATION	LOAD N - CONT	LOAD CONT
15,131		RTU - 1	3 P 70	1 A 2	3 P 80	RTU - 2		17,293
		/ / / / /	/ /	3 B 4	/ /	/ / / / /		
		/ / / / /	/ /	5 C 6	/ /	/ / / / /		
11,168		RTU - 3	3 P 50	7 A 8	3 P 125	RTU - 4		34,946
		/ / / / /	/ /	9 B 10	/ /	/ / / / /		
		/ / / / /	/ /	11 C 12	/ /	/ / / / /		
		SPARE	3 P	13 A 14	2 P 70	PATIO BAR WH1	14,000	
		/ / / / /	/ /	15 B 16	/ /	/ / / / /		
		/ / / / /	/ /	17 C 18	1 P	SPARE		
	24,900	DISH WSHER	3 P 70	19 A 20	3 P 60	DW BOOSTER	20,400	
		/ / / / /	/ /	21 B 22	/ /	/ / / / /		
		/ / / / /	/ /	23 C 24	/ /	/ / / / /		
2,071		SF - 1	3 P 20	25 A 26	3 P 20	SF - 2		3,824
		/ / / / /	/ /	27 B 28	/ /	/ / / / /		
		/ / / / /	/ /	29 C 30	/ /	/ / / / /		
1,587		EF - 1	1 P 25	31 A 32	1 P 25	EF - 2		1,587
1,840		EF - 3	2 P 20	33 B 34	2 P 20	EF - 4		1,840
		/ / / / /	/ /	35 C 36	/ /	/ / / / /		
		SPARE	1 P	37 A 38	1 P	SPARE		
		SPARE	1 P	39 B 40	1 P	SPARE		
		SPARE	1 P	41 C 42	1 P	SPARE		

393 PANEL AMPERES — PANEL VOLTAGE 120/208, 3PH, 4W — 400A MLO
400 PANEL MINIMUM BUS SIZE — 10,000 AIC

91 PANEL CONTINUOUS KVA
59 PANEL NON-CONTINUOUS KVA

PANEL A — RECESSED

LOAD CONT	LOAD N - CONT	LOCATION	CKT DEVICE	CKT # PH CKT #	CKT DEVICE	LOCATION	LOAD N - CONT	LOAD CONT
1,000		KITCHEN LIGHTS	1 P 20	1 A 2	1 P 20	LIGHTS		600
500		DINING LIGHTS	1 P 20	3 B 4	1 P 20	DINING LIGHTS		500
500		DINING LIGHTS	1 P 20	5 C 6	1 P 20	DINING LIGHTS		500
500		DINING LIGHTS	1 P 20	7 A 8	1 P 20	DINING LIGHTS		500
500		DINING LIGHTS	1 P 20	9 B 10	1 P 20	DINING LIGHTS		500
500		DINING LIGHTS	1 P 20	11 C 12	1 P 20	DINING LIGHTS		500
500		DINING LIGHTS	1 P 20	13 A 14	1 P 20	DINING LIGHTS		500
500		DINING LIGHTS	1 P 20	15 B 16	1 P 20	DINING LIGHTS		500
500		DINING LIGHTS	1 P 20	17 C 18	1 P 20	CEILING FANS		200
		SPACE	1 P	19 A 20	1 P 20	PATIO BAR LIGHTS		500
500		PATIO LIGHTS	1 P 20	21 B 22	1 P 20	PATIO FANS		500
500		STRING LIGHTS	1 P 20	23 C 24	1 P 20	STRING LIGHTS		500
500		BUILDING LIGHTS	1 P 20	25 A 26	1 P 20	PARKING LIGHTS		500
1,000		POLE SIGN	1 P 20	27 B 28	1 P 20	SHADES	500	
	500	BLINDS	1 P 20	29 C 30	1 P	SPACE		
		SPACE	1 P	31 A 32	1 P	SPACE		
		SPACE	1 P	33 B 34	1 P	SPACE		
		SPACE	1 P	35 C 36	1 P	SPACE		
		SPACE	1 P	37 A 38	1 P	SPACE		
		SPACE	1 P	39 B 40	1 P	SPACE		
		SPACE	1 P	41 C 42	1 P	SPACE		

148 PANEL AMPERES — PANEL VOLTAGE 120/208, 3PH, 4W — 200A MLO
200 PANEL MINIMUM BUS SIZE — 10,000 AIC

1 PANEL CONTINUOUS KVA — PANEL B SUB-FEED
66 PANEL NON-CONTINUOUS KVA

PANEL B — RECESSED

LOAD CONT	LOAD N - CONT	LOCATION	CKT DEVICE	CKT # PH CKT #	CKT DEVICE	LOCATION	LOAD N - CONT	LOAD CONT
	360	BAR TV RECEPTACLE	1 P 20	1 A 2	1 P	BAR PROJECTOR TV		
	1,080	BAR TV RECEPTACLE	1 P 20	3 B 4	1 P 20	BAR TV RECEPTACLE	540	
	540	BAR TV RECEPTACLE	1 P 20	5 C 6	1 P 20	BAR USD RECEPTACLE	1,080	
	540	BAR POS RECEPTACLE	1 P 20	7 A 8	1 P 20	IT RECEPTACLE	720	
	360	TR DISPENSERS	1 P 20	9 B 10	1 P 20	IT RECEPTACLE	720	
	720	RECEPTACLES	1 P 20	11 C 12	1 P 20	IT RECEPTACLE	720	
	500	PROJECTOR TV	1 P 20	13 A 14	1 P 20	TV RECEPTACLES	540	
	540	TV RECEPTACLES	1 P 20	15 B 16	1 P 20	TV RECEPTACLES	540	
	540	RECEPTACLES	1 P 20	17 C 18	1 P 20	TV RECEPTACLES	540	
	540	RECEPTACLES	1 P 20	19 A 20	1 P 20	TV RECEPTACLES	540	
	540	TV RECEPTACLES	1 P 20	21 B 22	1 P 20	TV RECEPTACLES	540	
	720	DINING POS	1 P 20	23 C 24	1 P 20	FIRE PIT CONTROLS	500	
	720	RECEPTACLES	1 P 20	25 A 26	1 P 20	OH DOOR		667
667		OH DOOR	1 P 20	27 B 28	1 P 20	TV RECEPTACLES	540	
	540	PATIO BAR POS	1 P 20	29 C 30	1 P 20	FIRE PILACE CONTROLS	500	
	900	RECEPTACLES	1 P 20	31 A 32	1 P 20	WATER HEATER	600	
	600	WATER HEATER	1 P 20	33 B 34	1 P 20	OFFICE RECEPTACLES	720	
	720	OFFICE RECEPTACLES	1 P 20	35 C 36	1 P	SPARE		
		SPARE	1 P	37 A 38	1 P	SPARE		
		SPARE	1 P	39 B 40	1 P	SPARE		
		SPARE	1 P	41 C 42	1 P	SPARE		

108 PANEL AMPERES — PANEL VOLTAGE 120/208, 3PH, 4W — 200A MLO
200 PANEL MINIMUM BUS SIZE — 10,000 AIC

1 PANEL CONTINUOUS KVA
65 PANEL NON-CONTINUOUS KVA

PANEL K1 — RECESSED

LOAD CONT	LOAD N - CONT	LOCATION	CKT DEVICE	CKT # PH CKT #	CKT DEVICE	LOCATION	LOAD N - CONT	LOAD CONT
	720	RECEPTACLES	1 P 20	1 A 2	1 P 20	UC REFRIGERATOR	1,224	
	1,032	SANDWICH PREP	1 P 20	3 B 4	1 P 25	HOT WELLS	3,000	
	1,100	GLO RAY HEATER	1 P 20	5 C 6	1 P 20	SANDWICH PREP	1,032	
	1,200	MICROWAVE	1 P 20	7 A 8	1 P 20	RI FREEZER	1,320	
	600	DRINK DISPENSER	1 P 20	9 B 10	1 P 20	COFFEE MAKER	1,680	
	1,680	TEA MAKER	1 P 20	11 C 12	1 P 20	BAG-N-BOX	500	
	2,808	ICE MACHINE	2 P 20	13 A 14	1 P 20	MIXER	1,032	
		/ / / / /	/ /	15 B 16	2 P 20	KETTLE	3,000	
	600	BATTER TABLE	1 P 20	17 C 18	/ /	/ / / / /		
	600	OIL FILTER	1 P 20	19 A 20	1 P 20	BAR WARE WASH	1,440	
	864	BAR BEVERAGE REFR	1 P 20	21 B 22	1 P 20	BAR BEVERAGE REFR	864	
	864	BAR BEVERAGE REFR	1 P 20	23 C 24	1 P 20	PATIO BAR BEV REFR	864	
	1,440	PATIO BAR WWASH	1 P 20	25 A 26	1 P 20	PATRIO BAR RECEPTLS	360	
	200	FIRE SUPPRESSION	1 P 20	27 B 28	1 P	SPARE		
		SPARE	1 P	29 C 30	1 P 20	BEER COOLER EVAP		276
276		KEG COOLER EVAP	1 P 20	31 A 32	2 P 20	BEER COOLER COND		2,787
2,766		KEG COOLER CONDSER	2 P 20	33 B 34	/ /	/ / / / /		
		/ / / / /	/ /	35 C 36	2 P 20	FREEZER EVAP		1,206
276		COOLER EVAP/HTRS	1 P 20	37 A 38	/ /	/ / / / /		
2,787		COOLER CONDENSER	2 P 20	39 B 40	2 P 20	FREEZER CONDENSER		2,766
		/ / / / /	/ /	41 C 42	/ /	/ / / / /		

94 PANEL AMPERES — PANEL VOLTAGE 120/208, 3PH, 4W — 200A MLO
200 PANEL MINIMUM BUS SIZE — 10,000 AIC

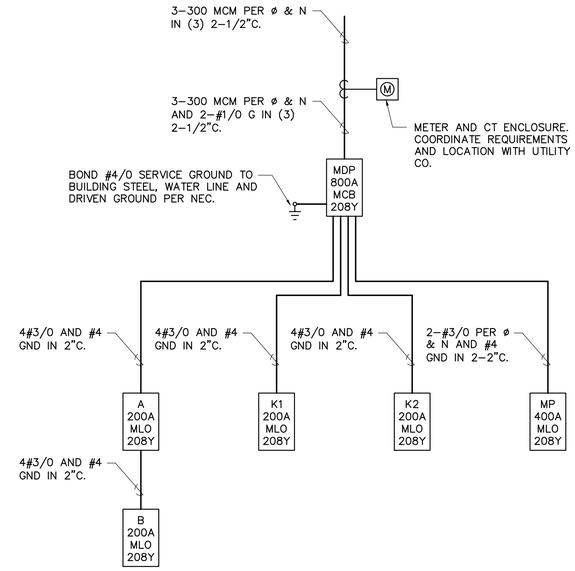
13 PANEL CONTINUOUS KVA
30 PANEL NON-CONTINUOUS KVA

PANEL K2 — RECESSED

LOAD CONT	LOAD N - CONT	LOCATION	CKT DEVICE	CKT # PH CKT #	CKT DEVICE	LOCATION	LOAD N - CONT	LOAD CONT
	1,920	SMOKER	1 P 20	1 A 2	1 P 20	SHORTY REFR	1,236	
	600	RANGE	1 P 20	3 B 4	1 P 20	SHORTY REFR	1,236	
	600	RANGE	1 P 20	5 C 6	1 P	SPARE		
	20,000	PIZZA OVEN	3 P 100	7 A 8	3 P 100	PIZZA OVEN	20,000	
		/ / / / /	/ /	9 B 10	/ /	/ / / / /		
		/ / / / /	/ /	11 C 12	/ /	/ / / / /		
	3,500	CLAM SHELL	3 P 20	13 A 14	1 P 20	HOOD LIGHTS		1,000
		/ / / / /	/ /	15 B 16	1 P 20	HOOD LIGHTS		1,000
		/ / / / /	/ /	17 C 18	1 P	SPARE		
		SPARE	1 P	19 A 20	1 P	SPARE		
		SPARE	1 P	21 B 22	1 P	SPARE		
		SPARE	1 P	23 C 24	1 P	SPARE		
			1 P	25 A 26	1 P			
			1 P	27 B 28	1 P			
			1 P	29 C 30	1 P			
			1 P	31 A 32	1 P			
			1 P	33 B 34	1 P			
			1 P	35 C 36	1 P			
			1 P	37 A 38	1 P			
			1 P	39 B 40	1 P			
			1 P	41 C 42	1 P			

150 PANEL AMPERES — PANEL VOLTAGE 120/208, 3PH, 4W — 200A ST/MCB
200 PANEL MINIMUM BUS SIZE — 10,000 AIC

PANEL CONTINUOUS KVA — SHUNT TRIP MAIN BREAKER
94 PANEL NON-CONTINUOUS KVA



1 ELECTRICAL RISER
SCALE: NO SCALE

MLA
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DRAWING COORDINATION
Architectural, Landscape, Civil, Structural, Mechanical and Electrical drawings are interrelated. General Contractor and all Sub Contractors shall review and coordinate the entire set of drawings and specifications

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY G.G. MALONEY, JR. P.E. 63180 ON MAR 17, 2023. ALTERATION OF SEALED DOCUMENTS WITHOUT PROPER NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

17 March 2023

STATE OF TEXAS — G.G. MALONEY, JR. — 63180 — LICENSED PROFESSIONAL ENGINEER

MALONEY ASSOCIATES CONSULTING ENGINEERS, INC F-1440
1229 TRAILWOOD DR HURST, TEXAS 76053 (817) 284-0000
MALONEY-ENG.COM

ELECTRICAL RISER AND SCHEDULES

Lion & Rose Restaurant
23110 West I-10
Lot 3 Dominion Creek
San Antonio, Texas 78257

DATE	DESCRIPTION	BY
4/17/23	MEP CHANGES	

SCALE: AS NOTED

PROJECT NO. 05-05-22

SHEET NO. E3.2

Apr 17,2023 - 2:33pm
12-1511-E3.1-Electrical Riser and Schedules_1_1_6179.DWG