DESCRIPTION OF WORK
NEW GROUND UP CONSTRUCTION FOR A FUNERAL HOME AND OFFICES.

Weed Corley Fish

301 S. Bagdad Rd
Leander, TX 78641

Location Map
N.T.S.

2

Key Plan
N.T.S.

Owner:
SCI TEXAS FUNERAL SERVICES, LLC
1929 Allen Parkway
Houston, TX 77019
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Email: austin.dicks@sci-us.com

General Contractor:
TBD

Design Team:
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Austin, TX 78735
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ARCHITECTURAL

SHEET	SHEET NAME	DATE	DESCRIPTION
A000	COVER SHEET	04/25/2025	Rev 2 CITY COMMENTS
A001	CODE ANALYSIS & GENERAL NOTES	04/25/2025	Rev 2 CITY COMMENTS
A010	ACCESSIBILITY DETAILS AND NOTES	10/25/2024	Rev1 Permit Set
A020	LIFE SAFETY PLAN AND DETAILS	04/25/2025	Rev 2 CITY COMMENTS
A040	ARCHITECTURAL SITE PLAN	04/25/2025	Rev2 CITY COMMENTS
A041	ARCHITECTURAL ENLARGED PLANS	10/25/2024	Rev1 Permit Set
A042	ARCHITECTURAL ENLARGED PLANS	04/25/2025	Rev 2 CITY COMMENTS
A100	OVERALL FLOOR PLAN	10/25/2024	Rev1 Permit Set
A110	OVERALL FINISHES PLAN	10/25/2024	Rev1 Permit Set
A120	OVERALL REFLECTED CEILING PLAN	10/25/2024	Rev1 Permit Set
A130	ROOF PLAN	10/25/2024	Rev1 Permit Set
A200	ENLARGED FLOOR PLAN - QUADRANT A	10/25/2024	Rev1 Permit Set
A201	ENLARGED FLOOR PLAN - QUADRANT B	04/25/2025	Rev2 City Comments
A202	ENLARGED FLOOR PLAN - QUADRANT C	04/25/2025	Rev 2 CITY COMMENTS
A203	ENLARGED FLOOR PLAN - QUADRANT D	04/25/2025	Rev 2 CITY COMMENTS
A210	ENLARGED FINISHES PLAN - QUADRANT A	10/25/2024	Rev1 Permit Set
A211	ENLARGED FINISHES PLAN - QUANDRANT B	10/25/2024	Rev1 Permit Set
A212	ENLARGED FINISHES PLAN - QUADRANT C	10/25/2024	Rev1 Permit Set
A213	ENLARGED FINISHES PLAN - QUADRANT D	10/25/2024	Rev1 Permit Set
A220	ENLARGED REFLECTED CEILING PLAN - QUADRANT A	10/25/2024	Rev1 Permit Set
A221	ENLARGED REFLECTED CEILING PLAN - QUADRANT B	10/25/2024	Rev1 Permit Set
A222	ENLARGED REFLECTED CEILING PLAN - QUADRANT C	10/25/2024	Rev1 Permit Set
A223	ENLARGED REFLECTED CEILING PLAN - QUADRANT D	10/25/2024	Rev1 Permit Set
A300	MATERIAL SCHEDULE	04/25/2025	Rev2 CITY COMMENTS
A301	MATERIAL SCHEDULE	10/25/2024	Rev1 Permit Set
A302	DOOR, FINISH, AND HARDWARE SCHEDULES	04/25/2025	Rev2 CITY COMMENTS
A303	WINDOW SCHEDULE & WINDOW TYPES	10/25/2024	Rev1 Permit Set
A400	EXTERIOR ELEVATIONS	04/25/2025	Rev 2 CITY COMMENTS
A401	EXTERIOR ELEVATIONS	04/25/2025	Rev 2 CITY COMMENTS
A402	EXTERIOR ELEVATIONS - DUMPSTER	04/25/2025	Rev 2 CITY COMMENTS
A410	INTERIOR ELEVATIONS - PREMIER VENUE	10/25/2024	Rev1 Permit Set
A411	INTERIOR ELEVATIONS - STANDARD VENUE	10/25/2024	Rev1 Permit Set
A412	INTERIOR ELEVATIONS - BASIC VENUE, ARRANGEMENT ROOMS	10/25/2024	Rev1 Permit Set
A413	INTERIOR ELEVATIONS - MAIN CORRIDOR	10/25/2024	Rev1 Permit Set
A414	INTERIOR ELEVATIONS - RESTROOMS	10/25/2024	Rev1 Permit Set
A415	INTERIOR ELEVATIONS - BREAK ROOM, COFFEE BAR, DELIVERY, CORRIDOR	10/25/2024	Rev1 Permit Set
A420	BUILDING SECTIONS	10/25/2024	Rev1 Permit Set
A430	WALL SECTIONS	04/25/2025	Rev 2 CITY COMMENTS
A431	WALL SECTIONS	04/25/2025	Rev 2 CITY COMMENTS
A432	WALL SECTIONS	04/25/2025	Rev 2 CITY COMMENTS
A433	WALL SECTIONS	04/25/2025	Rev 2 CITY COMMENTS
A500	DETAILS	10/25/2024	Rev1 Permit Set
A600	MILLWORK DETAILS	10/25/2024	Rev1 Permit Set

CIVIL
REF. CIVIL DRAWINGS FOR SHEET LIST

STRUCTURAL

SHEET	SHEET NAME	DATE	DESCRIPTION
S1.0	STRUCTURAL GENERAL NOTES	10/24/2024	Rev1 Permit Set
S2.0	FOUNDATION PLAN	10/24/2024	Rev1 Permit Set
S3.0	FOUNDATION DETAILS	10/24/2024	Rev1 Permit Set
S4.0	ROOF FRAMING PLAN	10/24/2024	Rev1 Permit Set
S5.0	FRAMING DETAILS	10/24/2024	Rev1 Permit Set
S5.1	FRAMING DETAILS	10/24/2024	Rev1 Permit Set
S6.0	WINDBRACE PLAN	10/24/2024	Rev1 Permit Set
S7.0	WINDBRACE DETAILS	10/24/2024	Rev1 Permit Set

MECHANICAL

SHEET	SHEET NAME	DATE	DESCRIPTION
M0.01	MECHANICAL COVER SHEET	04/23/2025	City Comments
M0.02	MECHANICAL SCHEDULES	04/23/2025	City Comments
M0.03	MECHANICAL SCHEDULES	10/25/2024	Rev1 Permit Set
M0.04	MECHANICALSPECIFICATIONS	10/25/2024	Rev1 Permit Set
M0.05	MECHANICAL SPECIFICATIONS	10/25/2024	Rev1 Permit Set
M2.01	MECHANICAL PLAN	10/25/2024	Rev1 Permit Set
M2.02	MECHANIICAL PIPING PLAAN	10/25/2024	Rev1 Permit Set
M2.03	MECHANICAL ROOF PLAN	10/25/2024	Rev1 Permit Set
M3.01	MECHANICAL CEILING COORDINATION PLAN	10/25/2024	Rev1 Permit Set
M4.01	MECHANICAL VRF DIAGRAM	10/25/2024	Rev1 Permit Set
M4.02	MECHANICAL VRF DIAGRAM	10/25/2024	Rev1 Permit Set
M6.01	MECHANICAL DETAILS	10/25/2024	Rev1 Permit Set
M6.02	MECHANICAL DETAILS	10/25/2024	Rev1 Permit Set
M6.03	MECHANICAL DETAILS	10/25/2024	Rev1 Permit Set
M7.01	MECHANICAL CONTROLS	10/25/2024	Rev1 Permit Set

ELECTRICAL

SHEET	SHEET NAME	DATE	DESCRIPTION
E0.01	ELECTRICAL COVER SHEET	10/25/2024	Rev1 Permit Set
E0.02	ELECTRICAL SPECIFICATIONS	10/25/2024	Rev1 Permit Set
E0.50	ELECTRICAL SITE PLAN	01/31/2025	City Comments
E1.00	ELECTRICAL SITE PHOTMETRICS PLAN	04/23/2025	City Comments
E2.01	POWER PLAN	04/23/2025	City Comments
E2.02	POWER MECHANICAL PLAN	10/25/2024	Rev1 Permit Set
E3.01	LIGHTING PLAN	01/31/2025	City Comments
E7.00	PANEL SCHEDULES & RISER	01/31/2025	City Comments

PLUMBING

SHEET	SHEET NAME	DATE	DESCRIPTION
P0.01	PLUMBING COVER SHEET	10/25/2024	Rev1 Permit Set
P0.02	PLUMBING SCHEDULES	10/25/2024	Rev1 Permit Set
P0.03	PLUMBING SPECIFICATIONS	10/25/2024	Rev1 Permit Set
P0.04	PLUMBING SPECIFICATIONS	10/25/2024	Rev1 Permit Set
P2.00	PLUMBING UNDERFLOOR PLAN	10/25/2024	Rev1 Permit Set
P2.01	PLUMBING FLOOR PLAN	04/23/2025	City Comments
P5.01	PLUMBING RISERS	10/25/2024	Rev1 Permit Set
P5.02	PLUMBING RISERS	10/25/2024	Rev1 Permit Set
P6.01	PLUMBING DETAILS	10/25/2024	Rev1 Permit Set

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION
FORMS • ENVIRONMENTS • IMAGES

Cover Sheet
Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
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Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments

A000

CODE ANALYSIS

APPLICABLE CODES

BUILDING:	2015	INTERNATIONAL BUILDING CODE
	2021	INTERNATIONAL BUILDING CODE, TABLES 1004.1.2 AND 1004.5 FROM SECTION 2902.2
ELEC:	2014	NEC
MECH:	2015	INTERNATIONAL MECHANICAL CODE
PLUMB:	2015	INTERNATIONAL PLUMBING CODE
	2021	INTERNATIONAL PLUMBING CODE, SECTION 403.2
ACCESS:	2012	TEXAS ACCESSIBILITY STANDARDS W/TECH. MEMOS.
FIRE:	2015	INTERNATIONAL FIRE CODE
ENERGY:	2015	INTERNATIONAL ENERGY CONSERVATION CODE

OCCUPANCY GROUP - CHAPTER 3

OCCUPANCY GROUP

A-3 - FUNERAL PARLOR

DESCRIPTION OF USE:

FUNERAL HOME BUSINESS THAT PROVIDES FUNERAL SERVICES FOR FAMILIES INCLUDING SERVICE FOR A WAKE AND USE OF THE CHAPEL.

OCCUPANCY SEPARATIONS - CHAPTER 3

NONE

AREA SEPARATION REQUIREMENTS - TABLE 302.3.2:

NONE

BUILDING HEIGHT - CHAPTER 5

MAX. STORIES ALLOWED	2
PROPOSED STORIES	1
MAX. HEIGHT ALLOWED	60 FT
PROPOSED HEIGHT	27 FT

BUILDING AREAS - CHAPTER 5

MAX TABULAR A3 AREA ALLOWED 24,000 SF

ACTUAL AREA OF PROPOSED BLDG **10188** SF

OCCUPANT LOAD/AREA CALC. - TABLE 1004.5 2021 IBC

TOTAL EXITS REQ'D ON GROUND FLOOR 3

TOTAL EXITS PROVIDED ON GROUND FLOOR 3

SPACE	AREA	FACTOR	OCCUP'S	REQ'D EXITS	EGRESS CLASSIFICATION
PREMIER VENUE	2,178	7	312	2	ASSEMBLY W/OUT FIXED SEATS-CO
STANDARD VENUE	1,274	7	182	2	ASSEMBLY W/OUT FIXED SEATS-CO
LOUNGE	389	7	56	2	ASSEMBLY W/OUT FIXED SEATS-CO
ARRANGEMENT	673	150	5	1	BUSINESS AREA
BASIC VENUE	268	7	39	1	ASSEMBLY W/OUT FIXED SEATS-CO
GARAGE	809	150	6	1	BUSINESS AREA
STOR/JAN/ELEC	486	300	2	1	ACCESSORY STORAGE AREAS, MECH
OFFICE	813	150	6	1	BUSINESS AREA
DELIVERY	69	150	1	1	BUSINESS AREA
BREAK ROOM	236	150	2	1	BUSINESS AREA
CORRIDOR	2,150	150	15	1	BUSINESS AREA
DRESSING	154	150	2	1	BUSINESS AREA
COFFEE	149	150	1	1	BUSINESS AREA
RESTROOMS	540	150	4	1	BUSINESS AREA
TOTAL OCCUPANT LOAD			633	3	

CONSTRUCTION TYPE - CHAPTER 6

TYPE VB FALSE

DESCRIPTION OF CONSTRUCTION:

WOOD STUD WALLS AND WOOD TRUSS ROOF AND CONCRETE FOUNDATION

SEPARATION DISTANCE - TABLE 602

NORTH	212 FT TO PROPERTY LINE	NO RATING REQ'D
EAST	26 FT TO PROPERTY LINE	NO RATING REQ'D
SOUTH	90 FT TO PROPERTY LINE	NO RATING REQ'D
WEST	308 FT TO PROPERTY LINE	NO RATING REQ'D
AVG DIST	159	

INT. WALL & FINISH REQUIREMENTS - TABLE 803.5

GROUP	VERT. EXITS	EXIT ACCESS	ROOMS/ ENC. SPACES
A-3 - FUNERAL PARLOR	B	B	C

AUTOMATIC FIRE PROTECTION SYSTEMS - CHAPER 9

BUILDING TO BE FULLY SPRINKLERED

MANUAL FIRE ALARM SYSTEM PROVIDED

SMOKE DETECTORS NOT REQUIRED

PLUMBING FIXTURE COUNT - TABLE 2902.1

TOTAL OCCUPANT LOAD: 633 PEOPLE

316.5 MEN 316.5 WOMEN

	RATIOS	REQ'D	PROVIDED
MEN			
WATER CLOSETS	150	4	2
LAVATORIES	200	2	2
URINALS			2
*URINALS CAN REPLACE UP TO 50% OF REQ'D WATER CLOSETS			
WOMEN			
WATER CLOSETS	75	5	4 + 1 UNISEX
LAVATORIES	200	2	2 + 1 UNISEX
SERVICE SINKS REQ'D		1	1
DRINKING FOUNTAINS REQ'D	1000	1	1

EXIT SEPARATION - SECTION 1014.2.1

MAX. DIAGONAL OF OVERALL SPACE	140 FT	
MIN. DISTANCE BETWEEN EXITS	47 FT	1/3 OVERALL DIAG.
DISTANCE BETWEEN EXITS PROVIDED	78 FT	

TRAVEL DISTANCE - SECTION 1015

MAXIMUM DISTANCE ALLOWED 250 FT

MAXIMUM DISTANCE PROVIDED 78 FT

REQUIRED EGRESS WIDTH - SECTION 1005

	EGRESS FACTOR	CALC'D WIDTH	REQ'D WIDTH	WIDTH PROVIDED
STAIR	0.2	NA IN	NA IN	NA IN
OTHER	0.15	94.95 IN	94.95 IN	206 IN

Legend:

- 00/A000 — DETAIL/ELEVATION DRAWING MARKER
- 00/A000 — SECTION MARKER
- **W000** — WINDOW LABEL - REF. SCHEDULES
- **D000** — DOOR LABEL - REF. SCHEDULES
- 0'-0" — ELEVATION MARKER
- 0.0 — KEYNOTE
- CONCRETE
- WOOD FLOORING
- TILE
- CARPET
- MILLWORK
- PLYWOOD
- STEEL
- ALUMINUM
- CMU
- MASONRY
- EARTH
- RIGID INSULATION
- BATT INSULATED WALL
- 2-HOUR FIRE RATED WALL

NOTE: REF. PLANS AND SPECS FOR SPECIFIC TYPES OF DIFFERENT FINISHES

GENERAL NOTES

1. ALL NOTES ON GENERAL NOTES SHEET APPLY TO ALL DRAWINGS AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO READ, UNDERSTAND AND ADHERE TO ALL NOTES.
2. REFERENCE STRUCTURAL DRAWINGS FOR DIMENSIONS AND LOCATIONS OF ALL STRUCTURAL ELEMENTS.
3. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES ADOPTED BY LOCAL JURISDICTION. REF. CODE ANALYSIS FOR LIST OF CODES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A COPY OF A UL DESIGN MANUAL ON SITE AND TO INSURE THAT ALL DESIGN REQUIREMENTS NOT NOTED ON THE DRAWINGS ARE MET.
5. ALL PENETRATIONS INTO OR THROUGH FIRE RATED WALLS, CEILINGS, FLOORS AND ROOFS SHALL BE FIRE STOPPED PER CODE.
6. ALL WALL COVERINGS TO COMPLY WITH CODE ADOPTED BY AUTHORITY HAVING JURISDICTION. SPECIFICALLY BUT NOT LIMITED TO THE REQUIRED FIRE CLASS AND RATING.
7. FLOOR FINISH MATERIAL TRANSITIONS SHALL HAVE EDGE OR JOINT COVERS. INSURE TRANSITIONS ARE IN COMPLIANCE W/ TAS.
8. ALL BREAKS IN FLOOR FINISHES WHICH OCCUR AT DOOR OPENINGS SHALL BE CENTERED AT CENTER OF DOOR IN THE CLOSED POSITION.
9. REFER TO DOOR SCHEDULE FOR DOOR DETAILS: GASKETED, SWEEPS, KICKPLATES, PUSHPLATES, DOORSTOPS, ETC. INSTALL COMMERCIAL GRADE.
10. PROVIDE SAFETY GLASS & WALL/CEILING/FLOOR COVERINGS PER CODE ADOPTED BY LOCAL JURISDICTION.
11. PROVIDE FIRE TREATED BLOCKING IN WALLS FOR ALL MATERIALS TO BE WALL MOUNTED.
12. REFER TO FINISH & MATERIAL SCHEDULES FOR FINISHES, TYPICAL.
13. ALL REQUIRED LIFE SAFETY AND ACCESSIBILITY SIGNAGE AND GRAPHICS TO BE INSTALLED PER THE APPROPRIATE CODE PRIOR TO OCCUPYING THE BUILDING.
14. CONSULT N-VIZION PRIOR TO CONSTRUCTION IN CASES WHERE CONFLICTS EXIST BETWEEN ARCHTECTS AND ENGINEERS DRAWINGS.
15. DIMENSIONS ARE REFERENCED TO:
    A. FACE OF FRAMING
    B. FACE OF CONCRETE
    C. COLUMN STRUCTURE GRID LINE

    RESTROOM ELEVATIONS AND ACCESSIBILITY DTLS DIMENSIONS ARE REFERENCED TO:
    A. FACE OF SHEETROCK
    B. FACE OF TILE
    C. FACE OF PARTITION
16. PLANS LABELED AS "PERMIT SET" OR "BID SET" MAY BE USED FOR PRELIMINARY BIDS WHICH SHOULD BE REGARDED AS PRELIMINARY ESTIMATES. FINAL BIDS SHOULD BE BASED ON THE "CONSTRUCTION SET". FAILURE TO DO SO MAY LEAD TO UNNECESSARY ADDITIONAL EXPENSES TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
17. CONTRACTOR WILL BE HELD RESPONSIBLE FOR STUDYING DRAWINGS, TO HAVE VISITED THE SITE, AND TO HAVE SATISFIED HIMSELF REGARDING ALL EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGED TO OPERATE.
18. THE SUBMISSION OF A BID OR PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS FAMILIARIZED HIMSELF WITH THE PLANS AND EXISTING CONDITIONS OF THE BUILDING SITE. CLAIMS MADE SUBSEQUENT TO THE BID OR PROPOSAL FOR ADDITIONAL MATERIALS AND LABOR BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED IF THEY COULD HAVE BEEN FORESEEN HAD PROPER EXAMINATION BEEN MADE. AND SHALL BE PERFORMED AT THE EXPENSE OF THE CONTRACTOR.
19. CONTRACTOR IS ENCOURAGED TO MAKE COST SAVING SUGGESTIONS AS TO MATERIALS AND MEANS OF CONSTRUCTION DURING BOTH THE BID PHASE AND CONSTRUCTION PHASE. ANY SUGGESTIONS REQUIRE SUBMITTAL IN HARD COPY OR DIGITAL FORM TO N-VIZION. WRITTEN APPROVAL BY N-VIZION IS REQUIRED PRIOR TO EXECUTION IN THE FIELD. N-VIZION AND THE OWNER RESERVE THE RIGHT TO REJECT ALTERNATE SUGGESTIONS FOR ANY REASON.
20. PRIOR TO STARTING CONSTRUCTION THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PLANS AND ANY OTHER APPROVALS FROM GOVERNMENTAL AGENCIES OR OTHER REGULATORY AUTHORITIES HAVING JURISDICTION OVER THE PROJECT.
21. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A COPY OF ALL APPLICABLE CODES AND THEIR AMENDMENTS ADOPTED BY LOCAL JURISDICTION AT THE JOB SITE.
22. CONTRACTOR IS RESPONSIBLE FOR SEQUENCE AND MEANS OF CONSTRUCTION AND SHALL SUPERVISE THE WORK AND COORDINATE ALL PORTIONS THEREOF.
23. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACTS AND OMISSIONS OF ALL HIS EMPLOYEES AND SUBCONTRACTORS.
24. BEFORE PERFORMING ANY WORK OR ORDERING ANY MATERIALS, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF ANY EXISTING OR NEW WORK AND SHALL BE RESPONSIBLE FOR THEIR ACCURACY, ANY DIFFERENCES FOUND SHALL BE SUBMITTED TO N-VIZION FOR CONSIDERATION BEFORE PROCEEDING WITH THE WORK. ENLARGED SCALE DRAWINGS/DETAILS SHALL GOVERN OVER SMALLER SCALED DRAWINGS. SPECIFICATIONS SHALL GOVERN OVER ALL.
25. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE UTILITY COMPANIES AND TO VERIFY THE EXISTING LOCATION AND DEPTH OF THE UTILITIES PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL PRIVATE AND PUBLIC UTILITIES FROM DAMAGE.
26. CONTRACTOR SHALL COORDINATE ALL DELIVERIES AND ACCESSIBILITY TO THE BUILDING FOR ALL ITEMS SUCH AS, BUT NOT LIMITED TO THE FOLLOWING: FURNITURE, FIXTURES, EQUIPMENT, ACCESSORIES.
27. ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK SHALL BE NEW UNLESS OTHERWISE SPECIFIED AND ALL WORK SHALL BE OF GOOD QUALITY, FREE FROM FAULTS AND IN CONFORMANCE WITH THE PLANS.
28. ALL GLAZED OPENINGS SHALL BE FIELD VERIFIED AND COORDINATED WITH SHOP DRAWINGS BEFORE ORDERING.
29. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER/N-VIZION FOR APPROVAL PRIOR TO FABRICATION OF ANY ITEM. FAILURE TO ADHERE TO THIS PROCEDURE SHALL PLACE FULL RESPONSIBILITY FOR ANY ERRORS DIRECTLY UPON THE CONTRACTOR.
30. CONTRACTOR SHALL PROVIDE A SAMPLE IN INCONSPICUOUS LOCATIONS FOR ALL STAIN AND PAINT FINISHES, FOR APPROVAL BY N-VIZION/OWNER PRIOR TO FINAL FINISHING. FINAL FINISHING WITHOUT APPROVED SAMPLES MAY REQUIRE REFINISHING AS DIRECTED BY N-VIZION AT THE CONTRACTOR'S EXPENSE.
31. PROTECT ALL METAL IN CONTACT WITH DISSIMILAR METALS.
32. ALL GYPSUM BOARD TO BE 5/8" UNLESS NOTED OTHERWISE: IN WET AREAS MOISTURE RESISTANT GYPSUM SHALL BE USED.
33. DURING THE COURSE OF WORK IF THE CONTRACTOR OR ITS AGENTS SHOULD DAMAGE OR DESTROY ANY EXISTING WORK WHICH IS TO REMAIN THEN THE CONTRACTOR SHALL REPAIR OR REPLACE THE DAMAGED WORK TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
34. CONTRACTOR SHALL KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY HIS OPERATIONS. AT THE COMPLETION OF THE WORK HE SHALL PERFORM A FINAL CLEAN-UP INSIDE. CLEAN ALL GLASS SURFACES AND LEAVE THE WORK ROOM CLEAN.
35. DO NOT SCALE DRAWINGS. DRAWINGS ARE GENERALLY DRAWN TO SCALE HOWEVER, DIMENSIONS, LABELS AND NOTES TAKE PRECEDENCE OVER SCALE. CONTRACTOR HALL CHECK FOR DISCREPANCIES IN DIMENSIONS AND LABELS PRIOR TO BEGINNING WORK OR ORDERING MATERIALS. DISCREPANCIES SHALL BE REPORTED TO N-VIZION.
36. LOCATIONS OF MECHANICAL, ELECTRICAL OR PLUMBING EQUIPMENT AND
37. ACCESSORIES SHOWN ON PLANS ARE APPROXIMATE. THE ACTUAL LOCATION IS TO BE DETERMINED BY CONTRACTOR. LOCATION IS SUBJECT TO THE APPROVAL OF THE ARCHITECT/ENGINEER.
38. CONTRACTOR SHALL CONFINE HIS APPARATUS, STORAGE OF MATERIALS AND OPERATIONS OF HIS MATERIALS AND OPERATIONS OF HIS WORKMEN TO LIMITS INDICATED BY LAW, ORDINANCES, AND PERMITS AND SHALL ARRANGE AND MAINTAIN PARKING OF VEHICLES AND STORAGE OF MATERIALS IN AN ORDERLY MANNER LEAVING ALL WALKS, DRIVEWAYS, ROADS AND ENTRANCES UNENCUMBERED.
39. CONTRACTOR TO SUBMIT PLUMBING AND ELECTRICAL FIXTURE CUTS TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
40. THE CONTRACTOR TO VERIFY THE LOCATION OF ALL GRADES, LINES, CURBS, UTILITIES, MANHOLES, HYDRANTS, FENCES, TREES, AND OTHER PHYSICAL OBSTRUCTIONS PRIOR TO COMMENCING WORK.
41. ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK SHALL BE NEW U.N.O. AND ALL WORK SHALL BE OF GOOD QUALITY, FREE FROM FAULTS AND IN CONFORMANCE WITH THE PLANS.
42. SUBSTITUTIONS, REVISIONS, OR CHANGES MAY BE ALLOWED ONLY IF SUCH ITEMS ARE SUBMITTED TO THE OWNER IN A TIMELY MANNER IN WRITING AND SUBSEQUENTLY APPROVED BY THE ARCHITECT IN DESIGN AND PERFORMANCE. THE CONTRACTOR IS LIABLE FOR REPLACEMENT, REPAIR AND DELAYS CAUSED BY ANY UNAUTHORIZED SUBSTITUTION, AND COMPLETE SPECIFICATIONS AND DRAWINGS AS REQUIRED COMPARING ITEMS. THE OWNER RESERVES THE RIGHT TO REJECT FOR ANY REASON.
43. CONTRACTOR SHALL SUBMIT ALL WOOD STAIN AND SPECIALTY FINISHES SAMPLES TO THE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO FINAL FINISHING. IF FAILURE TO SUBMIT SAMPLES FOR APPROVAL THE CONTRACTOR WILL BE RESPONSIBLE FOR REFINISHING TO THE ARCHITECT AND OWNER'S SATISFACTION.
44. CONTRACTOR TO BALANCE SYSTEM FOR ADEQUATE AIR DISTRIBUTION WITHIN ALL CONDITIONED AREAS TO THE OWNER'S SATISFACTION. (UNLESS CERTIFIED TEST & BALANCE REPORT IS REQUIRED BY LOCAL AUTHORITY).
45. ALL WATERPROOFING PRODUCTS TO BE INSTALLED PER THE RECOMMENDATIONS OF THE MANUFACTURER. REFER TO MANUFACTURER'S DETAILS AND SPECIFICATIONS FOR REQUIREMENTS.

REGISTERED ARCHITECT STEPHEN A. HAMPTON 25489 STATE OF TEXAS

04/09/25

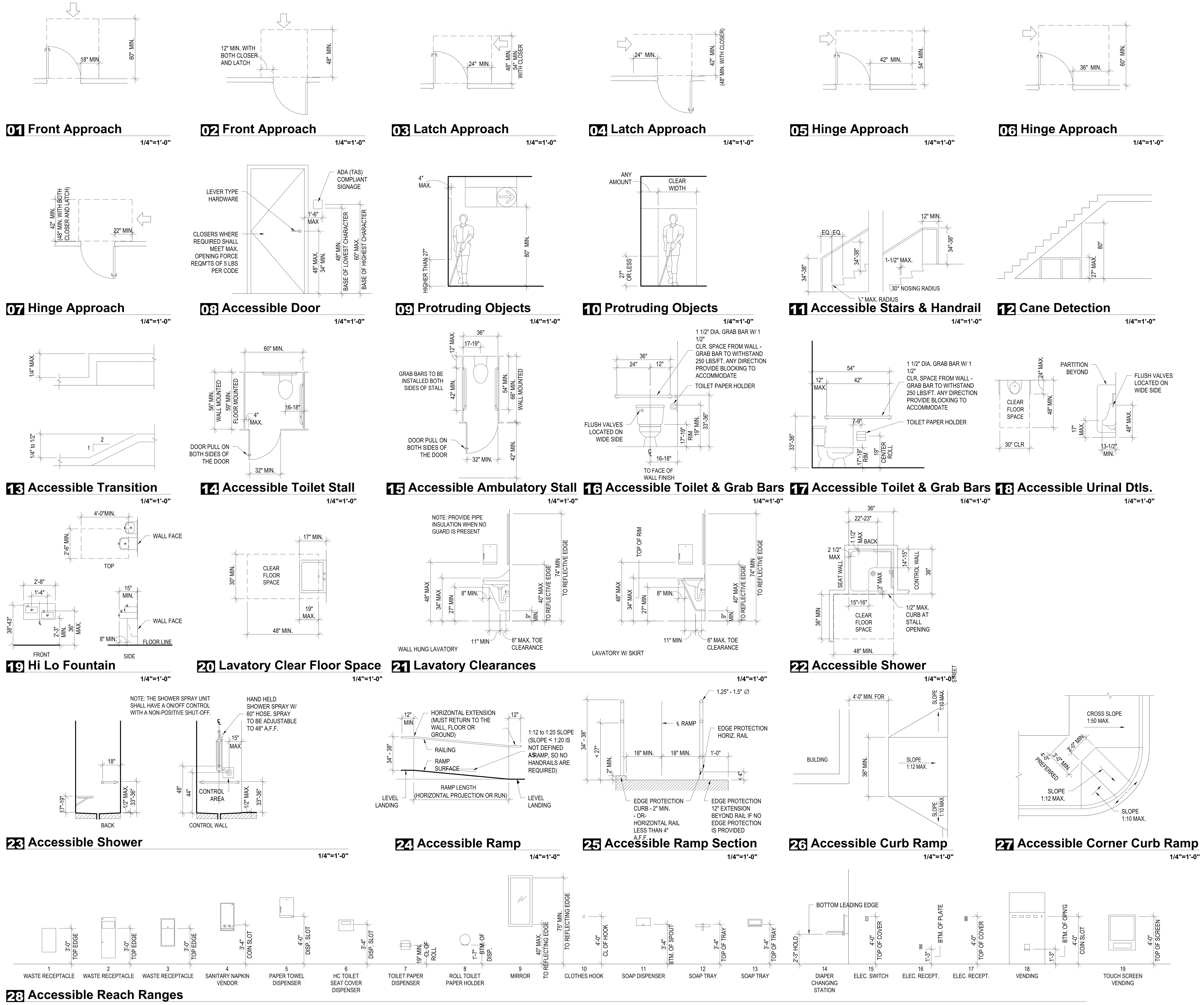
Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION
FORMS • ENVIRONMENTS • IMAGES

Code Analysis and General Note

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments



Accessibility Notes

1. ALL WORK SHALL BE IN COMPLIANCE WITH LATEST A.D.A. & LOCAL ACCESSIBILITY REGULATORY AGENCIES, AND SHALL FACILITATE HANDICAPPED ACCESSIBILITY BY ELIMINATING ARCHITECTURAL BARRIERS. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING N-VIZION OF ANY DIMENSIONAL DISCREPANCIES OR ANY UNCLEAR ITEMS SO THAT N-VIZION MAY PROVIDE AN ACCEPTABLE SOLUTION OR ALTERNATIVE.

2. CIVIL ENGINEER IS RESPONSIBLE FOR ALL SITE RELATED ACCESSIBILITY DETAILS AND ISSUES.

3. MINIMUM WIDTH OF ALL ACCESSIBLE ROUTES INCLUDING BETWEEN TABLES AND FURNITURE SHALL BE 36" EXCEPT AT DOORS WHICH SHALL BE A MINIMUM OF 32" CLEAR AND SHALL HAVE A MINIMUM CLEAR HEIGHT OF 80".

4. MAX. THRESHOLD HEIGHT 1/2". RAISED THRESHOLD AND FLOOR LEVEL CHANGES SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2. THRESHOLDS AT DOORWAYS SHALL NOT EXCEED 1/2" IN DOORS.

5. PROTRUDING OBJECTS WITH LEADING EDGE 27" TO 80" A.F.F. SHALL NOT PROTRUDE MORE THAN 4" INTO WALKS AND CORRIDORS.

6. ALL ACCESSIBLE DOORS SHALL COMPLY WITH LOCAL ACCESSIBILITY REGULATORY AGENCY REQUIREMENTS INCLUDING BUT NOT LIMITED TO CLEARANCES, OPENING FORCE, HARDWARE REQUIREMENTS AND CLOSER TIMING.

7. MANEUVERING CLEARANCES AT ALL ACCESSIBLE DOORS SHALL COMPLY WITH APPLICABLE CODES.

8. DOUBLE DOORS SHALL HAVE AT LEAST ONE ACCESSIBLE DOOR LEAF IN ACCORDANCE WITH ACCESSIBILITY REQUIREMENTS. THIS IS TO BE THE ACTIVE LEAF.

9. ALL HANDLES, PULLS, OPERATING MECHANISMS, LATCHES AND LOCKS SHALL COMPLY WITH ALL A.D.A. & LOCAL ACCESSIBILITY REGULATORY AGENCY APPLICABLE CODES .

10. ALL DOOR CLOSURES SHALL MEET A.D.A. & LOCAL ACCESSIBILITY REGULATORY AGENCY STANDARDS.

11. ALL SIGNAGE TO BE COMPLIANT WITH A.D.A. & LOCAL ACCESSIBILITY REGULATORY AGENCIES. PROVIDE HANDICAP GRAPHICS PER A.D.A. & LOCAL ACCESSIBILITY REGULATORY AGENCY REQUIREMENTS.

12. LAV. AND WATER CLOSETS TO BE LEVER TYPE CONTROL. CONTROL SHALL BE OPERABLE W/ ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBF. WATER CLOSET FLUSH CONTROL TO BE ON WIDE SIDE OF TOILET.

13. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT.

14. MIRRORS SHALL BE A MAXIMUM HEIGHT OF 40" TO BOTTOM OF MIRROR AND A MINIMUM OF 75" AT TOP EDGE.

15. GRAB BAR AND SEAT SHALL WITHSTAND AN IMPOSED LOAD OF NOT LESS THAN 250 LBS. APPLIED AT ANY POINT. PROVIDE SUFFICIENT BLOCKING AT EACH LOCATION TO WITHSTAND THESE LOADS.

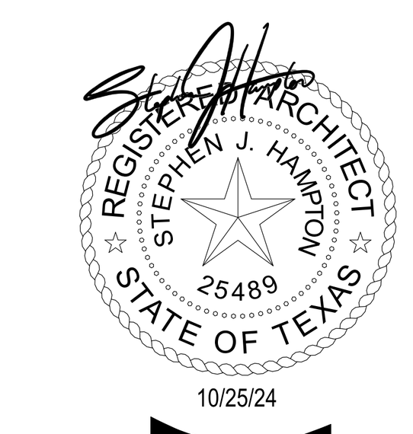
16. PROVIDE 1 1/2" CLEARANCE BETWEEN GRAB BAR AND WALL.

17. HANDRAIL GRIPPING SURFACE SHALL BE 1-1/4" TO 1-1/2" OR PROVIDE EQUAL GRIPPING SURFACE.

18. IF CLOTHES HOOKS ARE PROVIDED ENSURE COMPLIANCE WITH A.D.A. & LOCAL ACCESSIBILITY REGULATORY AGENCY REQUIREMENTS.

19. PROVIDE AUDIO/VISUAL ALARMS WHERE ALARMS ARE PROVIDED. ALARMS SHALL COMPLY WITH A.D.A. & LOCAL ACCESSIBILITY REGULATORY AGENCY REQUIREMENTS.

20. WHEN OCCUPANTS ARE PRIMARILY CHILDREN INSTALL FIXTURES, GRAB BARS AND CONTROLS AT HEIGHTS REQUIRED BY A.D.A. & LOCAL ACCESSIBILITY REGULATORY AGENCIES.



Weed Corley Fish
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Leander, TX 78641

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Accessibility Details

Project Number: 230502
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Austin, TX 78730 p:512.327.9995 www.n-vizion.net
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Date:	Description:
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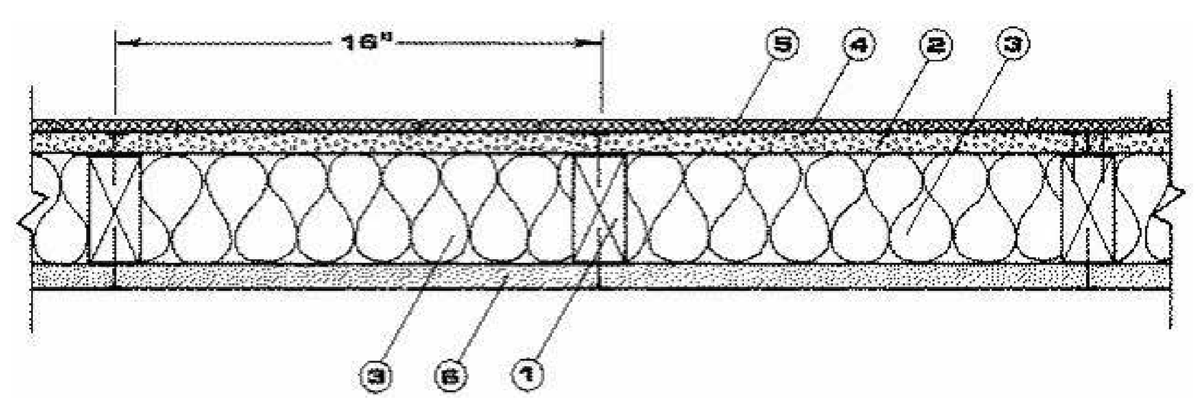
10.25.24	Rev1 Permit Set

A010



03 1 HR FIRE RATED EXTERIOR WALL --- NTS
U.L. NO. BXUV7

1. WOOD STUDS — NOMINAL 2 IN. X 4 IN., SPACED 16 IN. OC.

2. CEMENTITIOUS BACKER UNITS* — 7/16 IN., 1/2 IN., 5/8 IN., 3/4 IN., OR 1 IN. THICK, INSTALLED VERTICALLY OR HORIZONTALLY WITH VERTICAL JOINTS CENTERED OVER STUDS. FASTENED TO STUDS AND PLATES WITH CORROSION RESISTANT 1-1/4 IN. LONG, SHARP POINT CEMENT BOARD SCREWS SPACED A MAX OF 8 IN. OC STARTING WITH A 4 IN. STAGGER FROM HORIZONTAL JOINTS AND LAST SCREW 1-1/2 IN FROM EDGE OF BOARD. JOINTS COVERED WITH GLASS FIBER MESH TAPE AND LATEX MODIFIED PORTLAND CEMENT MORTAR OR TYPE I ORGANIC ADHESIVE. FINISH RATING 14 MINUTES FOR CEMENT BOARD WITH 1/4 IN. THICK TILE SET IN LATEX MODIFIED PORTLAND CEMENT MORTAR OR TYPE 1 ORGANIC ADHESIVE.

NATIONAL GYPSUM CO — TYPE DURABACKER, PERMABASE, DURABACKER PLUS, OR PERMABASE PLUS

3. BATTS AND BLANKETS* — MIN 3-1/2 IN. THICK MINERAL WOOL BATTS, FRICTION FIT BETWEEN STUDS TO FILL INTERIOR STUD CAVITY.

THERMAFIBER/OWENS CORNING — TYPE SAFB

4. BOND COAT FOR SETTING TILE — LATEX MODIFIED PORTLAND CEMENT MORTAR OR TYPE I ORGANIC ADHESIVE APPLIED WITH A NOTCHED TROWEL.

5. CERAMIC TILE — 1/4 IN. THICK, JOINTS FILLED WITH GROUT.

6. GYPSUM BOARD* — 5/8 IN. THICK, WITH SQUARE OR TAPERED EDGES, APPLIED VERTICALLY OR HORIZONTALLY WITH VERTICAL JOINTS CENTERED OVER STUDS. GYPSUM PANELS NAILED 7 IN. OC WITH 6D CEMENT COATED NAILS 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM AND 1/4 IN. DIAM HEADS. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM BOARD TO BE INSTALLED HORIZONTALLY.

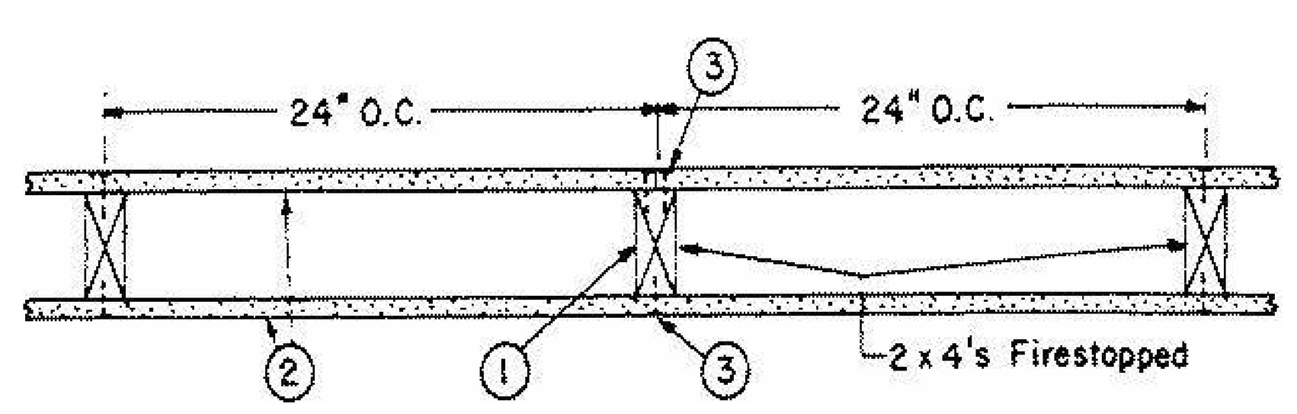
NATIONAL GYPSUM CO — TYPES FSK, FSMR-C, FSW (FINISH RATING 20 MIN.), FSW-3, FSW-6, FSW-8, FSL.

6A. GYPSUM BOARD* — (AS AN ALTERNATE TO ITEMS 6). 5/8 IN. THICK, 4 FT. WIDE, PAPER SURFACED, APPLIED VERTICALLY AND SECURED AS DESCRIBED IN ITEM 6.

NATIONAL GYPSUM CO — TYPE SBWB

7. JOINTS — (NOT SHOWN) — WHEN TAPERED EDGE GYPSUM BOARD IS USED, JOINTS COVERED WITH JOINT COMPOUND AND PAPER TAPE. AS AN ALTERNATE, GYPSUM VENEER PLASTER MAY BE APPLIED TO THE ENTIRE SURFACE OF CLASSIFIED VENEER BASEBOARD WITH JOINTS REINFORCED. WHEN SQUARE-EDGE GYPSUM BOARD IS USED, TREATMENT OF JOINTS IS OPTIONAL.

8. VAPOR RETARDER, WATER BARRIER OR WEATHER RESISTIVE BARRIER — (OPTIONAL, NOT SHOWN) — AS REQUIRED.



02 1 HR FIRE RATED INTERIOR WALL -----NTS
U.L. NO. U309

1. WOOD STUDS — NOM 2 BY 4 IN., SPACED 24 IN. OC EFFECTIVELY FIRESTOPPED.

2. GYPSUM BOARD* — 5/8 IN. THICK, 4 FT WIDE, APPLIED EITHER HORIZONTALLY OR VERTICALLY, NAILED TO STUDS AND BEARING PLATES WITH 6D CEMENT COATED NAILS MIN. 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM AND 1/4 IN. DIAM HEADS SPACED 7 IN. OC. FINISH RATING 27 MIN. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM BOARD TO BE INSTALLED HORIZONTALLY.

3. JOINTS AND FASTENER HEADS — WALLBOARD JOINTS COVERED WITH PAPER TAPE AND JOINT COMPOUND. FASTENER HEADS COVERED WITH JOINT COMPOUND. GYPSUM PLASTER NOT MORE THAN 1/8 IN. THICK MAY BE APPLIED OVER THE WALLBOARD IN ADDITION TO THE SPECIFIED JOINT TREATMENT.

4. BATTS AND BLANKETS* — (NOT SHOWN) — OPTIONAL GLASS FIBER INSULATION.

8. NON-BEARING WALL PARTITION INTERSECTION — (OPTIONAL) — TWO NOMINAL 2 BY 4 IN. STUD OR NOMINAL 2 BY 6 IN. STUD NAILED TOGETHER WITH TWO 3IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC. VERTICALLY AND FASTENED TO ONE SIDE OF THE MINIMUM 2 BY 4 IN. STUD WITH 3 IN. LONG 10D NAILS SPACED A MAX 16 IN. OC. VERTICALLY. INTERSECTION BETWEEN PARTITION WOOD STUDS TO BE FLUSH WITH THE 2 BY 4 IN. STUDS. THE WALL PARTITION WOOD STUDS ARE TO BE FRAMED BY WITH A SECOND 2 BY 4 IN. WOOD STUD FASTENED WITH 3 IN. LONG 10D NAILS SPACED A MAX. 16 IN. OC. VERTICALLY. MAXIMUM ONE NON-BEARING WALL PARTITION INTERSECTION PER STUD CAVITY. NON-BEARING WALL PARTITION STUD DEPTH SHALL BE AT A MINIMUM EQUAL TO THE DEPTH OF THE BEARING WALL.

LIFE SAFETY GENERAL NOTES

1. AT ALL FIRE RATED PARTITIONS AND SMOKE PARTITIONS, SEAL ALL PENETRATIONS AND SILL-WALL AND HEAD-WALL WITH FIRESTOPPING.
2. ALL FIRE RATED PARTITIONS SHALL BE CONSTRUCTED IN STRICT CONFORMANCE TO U.L. TESTED ASSEMBLIES AS NOTED. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE U.L. FIRE RESISTANCE DIRECTORY AND HAVING IT AVAILABLE AT THE SITE. THE MOST CURRENT U.L. FIRE RESISTANCE DIRECTORY TAKES PRECEDENCE OVER DETAILS PROVIDED IN THIS SET. WHERE DISCREPANCIES EXIST THE MOST CURRENT U.L. FIRE RESISTANCE DIRECTORY SHALL BE USED.
3. WHERE GYPSUM WALLBOARD IS NOT APPLIED TO BOTH SIDES OF PARTITION FRAMING, INSTALL HORIZONTAL BRIDGING.
4. BOTTOM OF STRUCTURE REFERS TO BOTTOM OF: METAL FLOOR DECK, METAL ROOF DECK, CONCRETE DECK, CONCRETE ROOF, OR WHICHEVER IS APPLICABLE.
5. BOTTOM OF STRUCTURAL FRAMING REFERS TO BOTTOM OF: STEEL BEAM, STEEL GIRDER, STEEL BAR JOIST, CONCRETE BEAM, CONCRETE TEE, WHICHEVER IS APPLICABLE.
6. ALL FINISH MATERIAL TO COMPLY W/ LOCALLY ADOPTED CODE. NOTE - ALL METAL STUD FRAMING TO BE SHEATHED W/ 5/8" SHEETROCK U.N.O. ALL SHEATHING TO BE APPLIED DIRECTLY TO STUDS MUST BE A COMPLYING NON-COMBUSTIBLE OR LIMITED COMBUSTIBLE MATERIAL AS ACCEPTED BY THE CODE.
7. WHERE REQUIRED, PROVIDE A FIRE ALARM SYSTEM IN ACCORDANCE W/ THE LOCALLY ADOPTED CODE - ALARM SYSTEM DRAWINGS TO BE APPROVED TO FIRE MARSHALL & N-VIZION PRIOR TO INSTALLATION. ALL NEW ALARM DEVICES INSTALLED IN PROJECT TO COMPLY WITH TAS INCLUDING BUT NOT LIMITED TO - ALL VISUAL ALARM DEVICES TO BE MOUNTED 80" ABOVE HIGHEST FINISH FLOOR HEIGHT OR 6" BELOW CEILING WHICHEVER IS LOWER.
8. ALL ELEVATED WOOD FLOORS ON SLEEPERS MUST COMPLY W/ THE LOCALLY ADOPTED CODE. THE FURRING SPACE SHALL BE FILLED WITH NON-COMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIAL OR SHALL BE FIREBLOCKED SO THAT THERE WILL BE NO OPEN SPACE OVER 100SQ FT IN AREA UNDER THE FLOORING. THE FURRING SPACE CREATED BY SLEEPERS SHALL BE FILLED SOLIDLY UNDER ALL PERMANENT PARTITIONS TO PREVENT SPREAD OF FIRE UNDER THE FLOORING.
9. WHERE REQUIRED, PROVIDE A SPRINKLER SYSTEM IN ACCORDANCE W/ THE LOCALLY ADOPTED CODE - ALARM SYSTEM DRAWINGS TO BE APPROVED TO FIRE MARSHALL & N-VIZION PRIOR TO INSTALLATION.

FIRE PROTECTION LEGEND

FIRE EXIT	REQUIRED EXIT
⊗	FIRE EXTINGUISHER
═	WOOD STUD WALL

Key Notes

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6	4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8	EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9	CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10	CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11	CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12	PROVIDE CONCRETE EXPANSION JOINT
6.6	LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
7.0	DOWNSPOUT TO DRAIN AWAY FROM FOUNDATION ONTO LAWN.
8.0	ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0	FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1	MIRROR AT LAV. REF. SHEET A010.
9.4	SCHLUTER EDGE TRIM.
10.0	SOAP DISPENSER. REF. MATERIALS SCHED.
10.1	COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2	FLOOR SPACE FOR TABLE BY OWNER.
10.4	BOLLARD REF. DETAIL 01/A503
10.5	KNOX BOX REF. MATERIAL SCHEDULE
10.9	AED - AUTOMATED EXTERNAL DEFIBRILLATOR REFERENCE MATERIALS SCHEDULE
10.10	BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11	WIRELESS INTERNET AND SERVER
11.0	SLOT DIFFUSER
11.6	DISHWASHER REF. MATERIAL SCHEDULE.
11.7	REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0	INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0	FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
21.4	1 HOUR FIRE BARRIER - REFERENCE U.L. DETAILS A020. ALL PENETRATIONS TO BE 1-HR FIRE RATED.
21.5	PROVIDE SIGNAGE AT EACH ENTRY STATING THE MAXIMUM OCCUPANT LOAD. MAX. OCC LOAD FOR PREMIER VENUE IS 312. MAX. OCC. LOAD FOR STANDARD VENUE IS 182.
22.0	ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1	ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
22.2	ACCESSIBLE URINAL. PROVIDE BLOCKING. PROVIDE ACCESS. URINAL WHERE SHOWN ON PLAN. INSTALL PER TAS REQUIREMENTS. REF. ACCESS. DETAILS.
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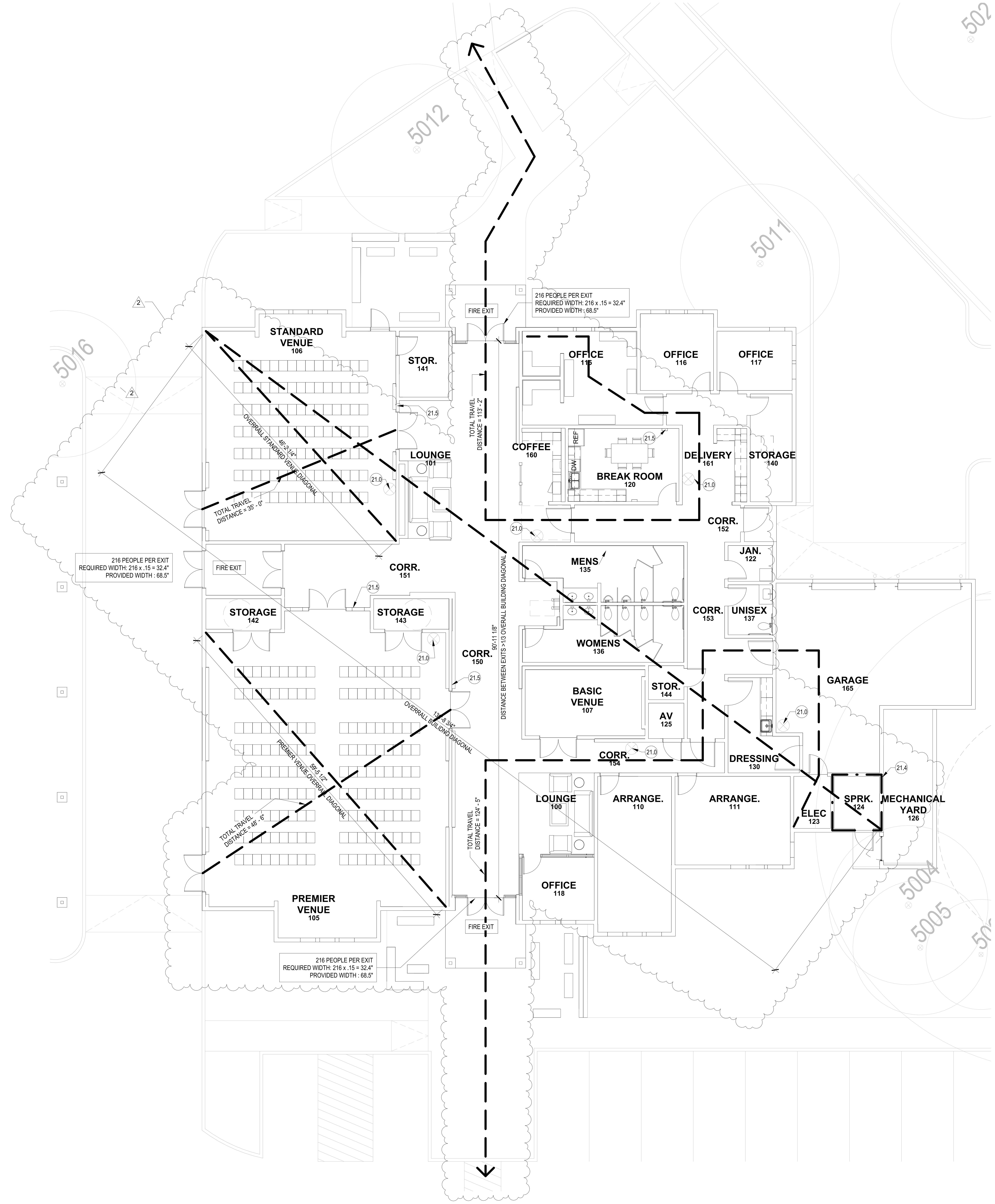
22.5	MOP SINK REF. PLUMBING DRAWINGS.
22.10	DOUBLE COMPARTMENT STAINLESS STEEL SINK REF. PLUMBING.



01 Life Safety Plan
1/8" = 1'-0"

STATE OF TEXAS
25489
04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Life Safety Plan

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
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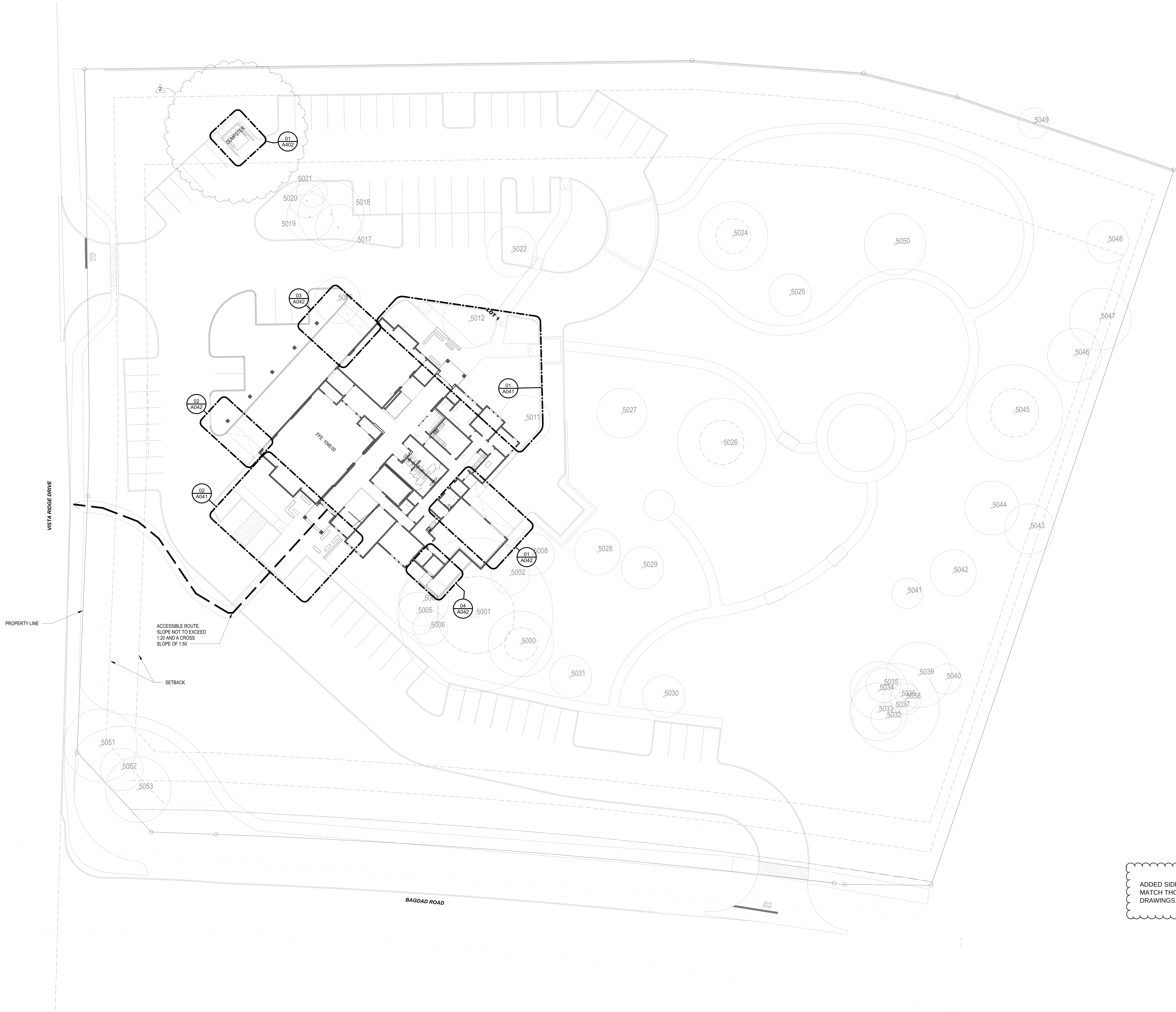
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments

A020



NOTE:
1. ALL ACCESSIBLE ROUTES TO HAVE MAX CROSS SLOPE OF 1:48. ALL RAMPS ON ACCESSIBLE ROUTE NOT TO EXCEED 1:20 SLOPE IN THE DIRECTION OF TRAVEL.
2. IF ADA SIGNS ARE PROVIDED, ENSURE PERMANENT SIGNAGE MEETS ALL REQUIREMENTS OF TAS 216.
3. REF. CIVIL DRAWINGS FOR DIMENSIONAL CONTROL OF BUILDING LOCATIONS AND OTHER SITE SPECIFIC INFORMATION

ADDED SIDEWALKS AT STREET. SHOWN TO MATCH THOSE SHOWN ON THE CIVIL DRAWINGS.

01 Architectural Site Plan
1" = 20'-0"

REGISTERED ARCHITECT STEPHEN ... HAMPTON 25489 STATE OF TEXAS
04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Architectural Site Plan

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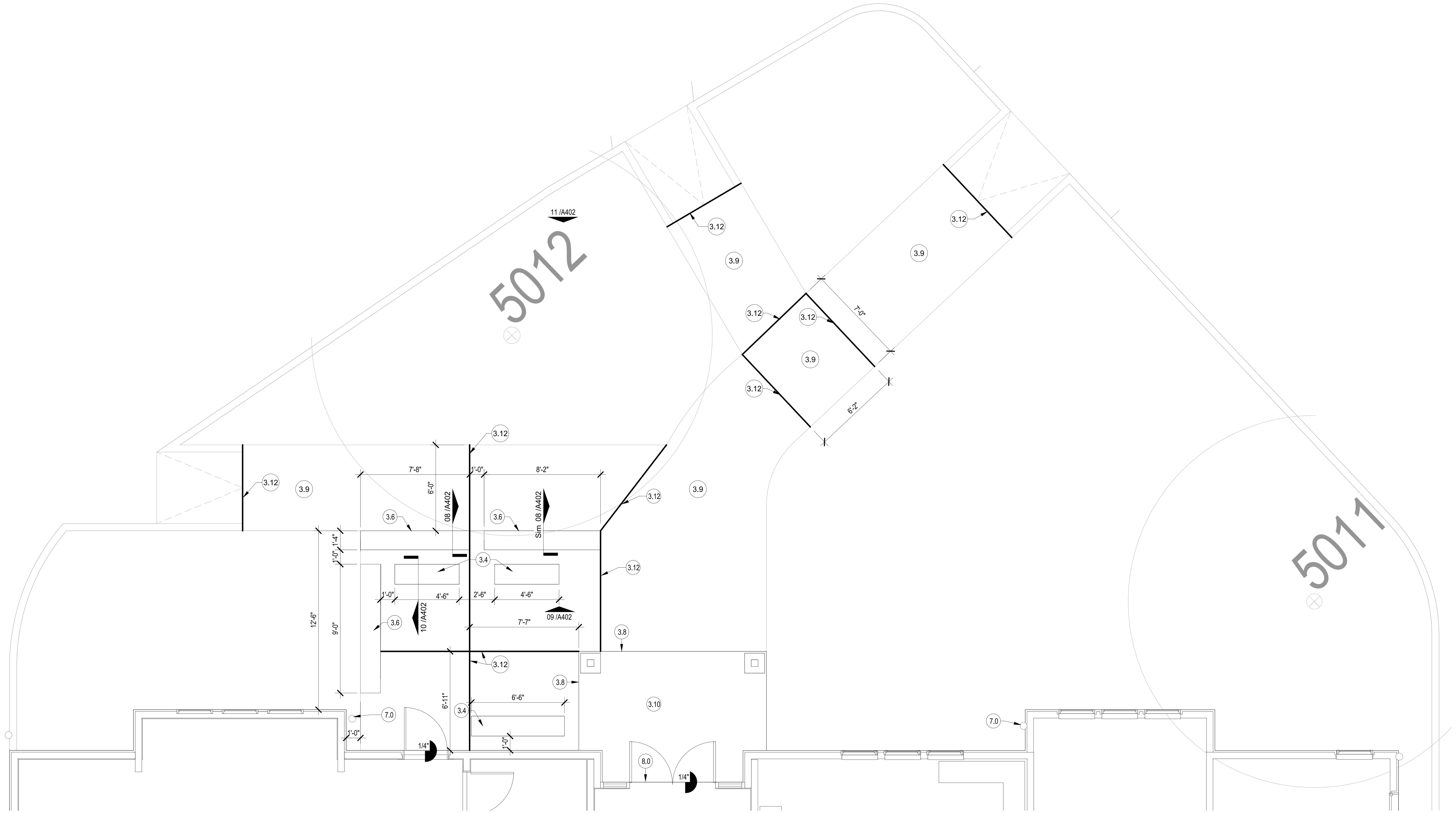
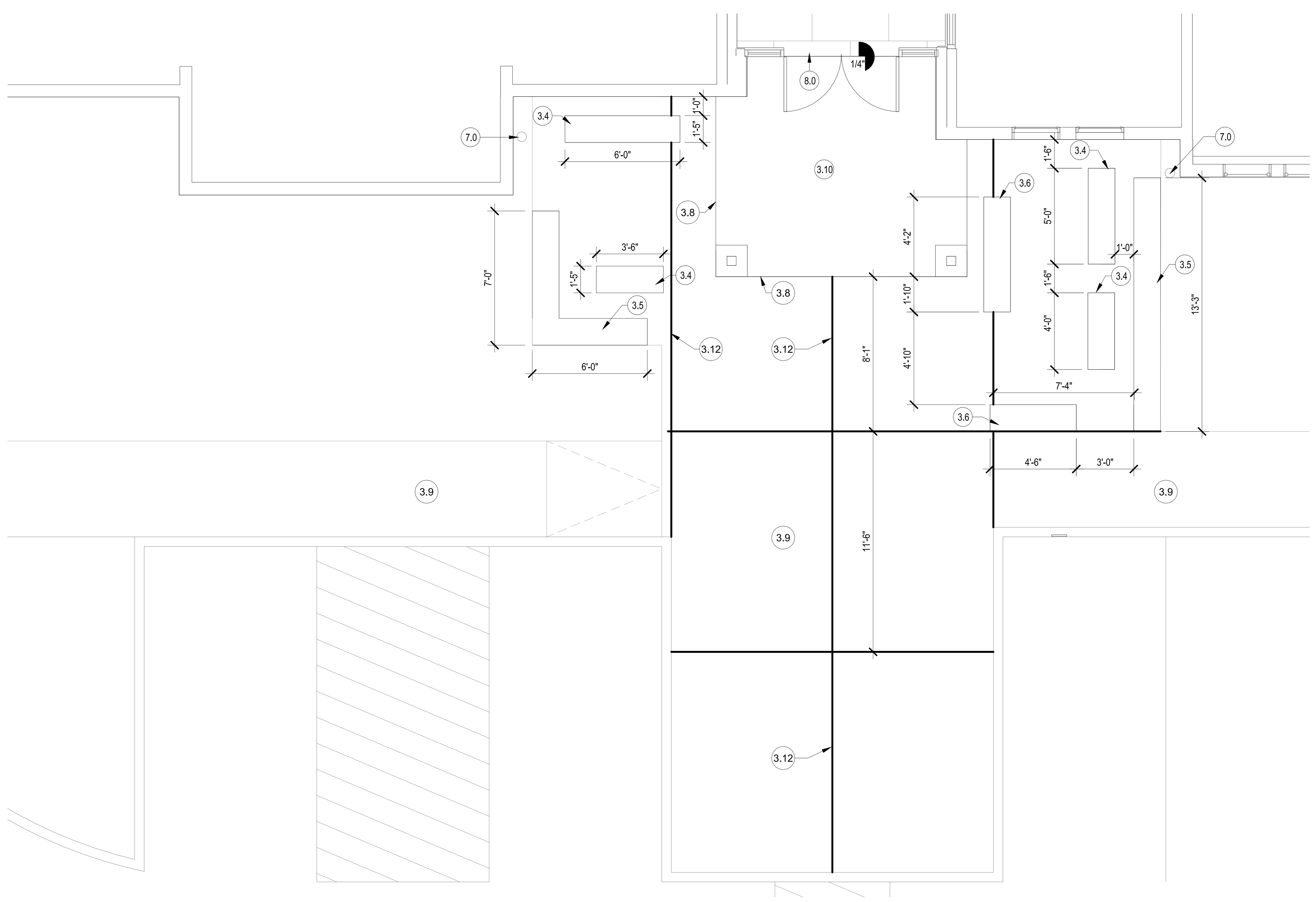


01 **Enlarged Site Plan - Rear Patio**
1/4" = 1'-0"



02 **Enlarged Site Plan - Front Patio**
1/4" = 1'-0"

Key Notes

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6	4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8	EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
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8.0	ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0	FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1	MIRROR AT LAV. REF. SHEET A010.
9.4	SCHLUTER EDGE TRIM.
10.0	SOAP DISPENSER. REF. MATERIALS SCHED.
10.1	COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2	FLOOR SPACE FOR TABLE BY OWNER.
10.4	BOLLARD REF. DETAIL 01/A503
10.5	KNOX BOX REF. MATERIAL SCHEDULE
10.10	BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11	WIRELESS INTERNET AND SERVER
11.0	SLOT DIFFUSER
11.6	DISHWASHER REF. MATERIAL SCHEDULE.
11.7	REFRIGERATOR REF. MATERIAL SCHEDULE.
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Architectural Enlarged Plans

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10.25.24	Rev1 Permit Set

A041

Key Notes

3.4 CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5 5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6 4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8 EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
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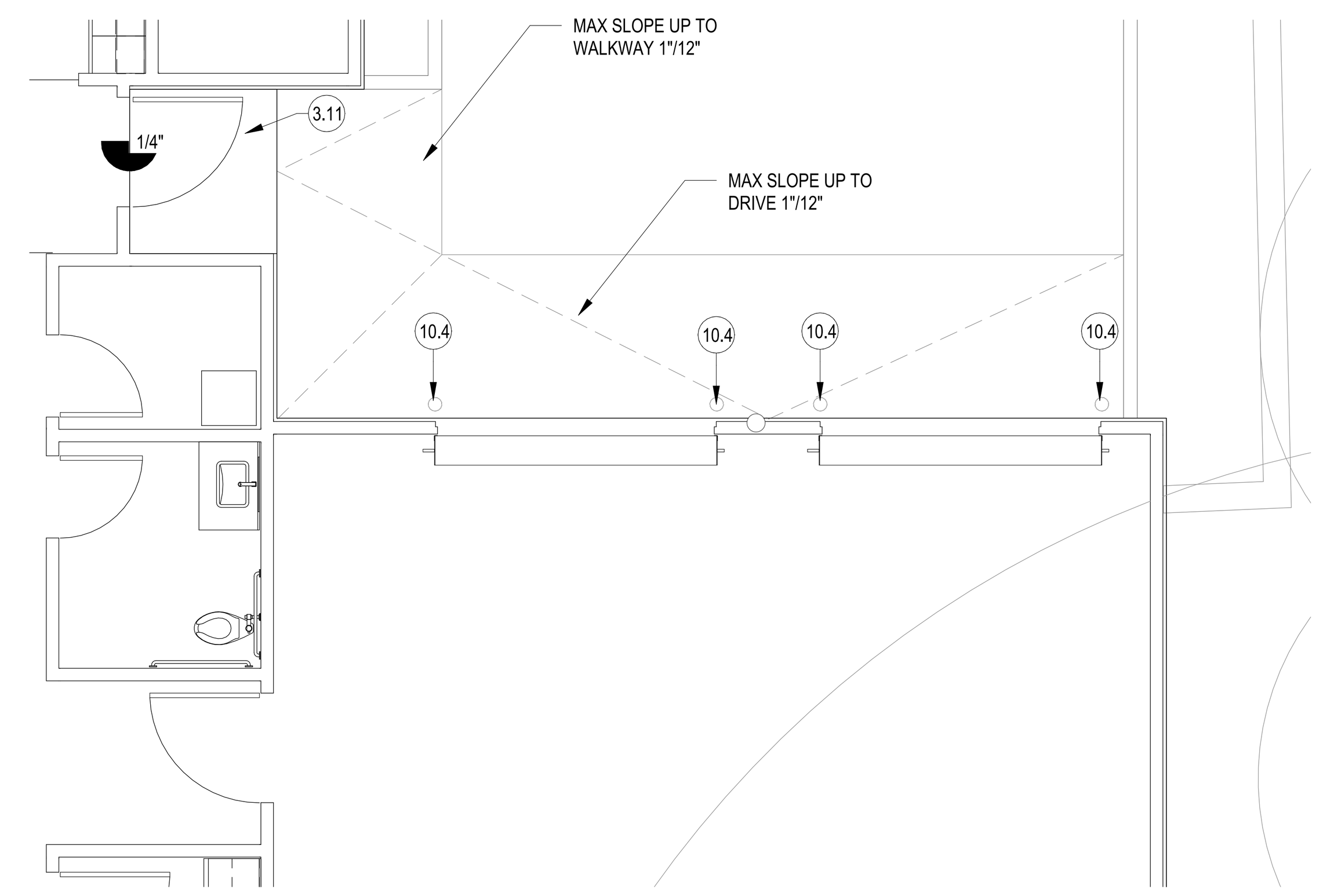
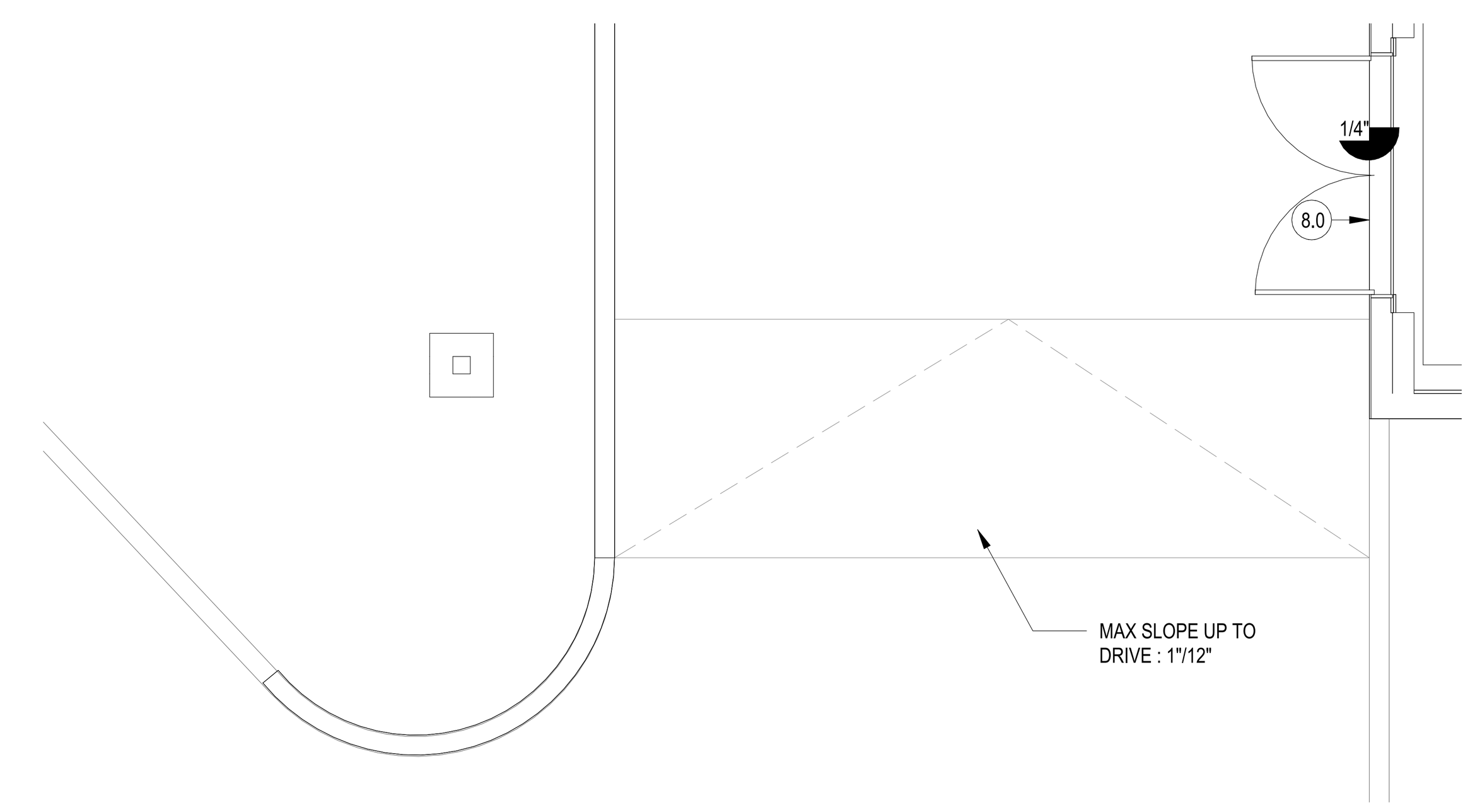
22.1 ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
22.2 ACCESSIBLE URINAL. PROVIDE BLOCKING. PROVIDE ACCESS. URINAL WHERE SHOWN ON PLAN. INSTALL PER TAS REQUIREMENTS. REF. ACCESS. DETAILS.
22.4 ACCESSIBLE TOILET ROOM. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.5 MOP SINK REF. PLUMBING DRAWINGS.
22.10 DOUBLE COMPARTMENT STAINLESS STEEL SINK REF. PLUMBING.

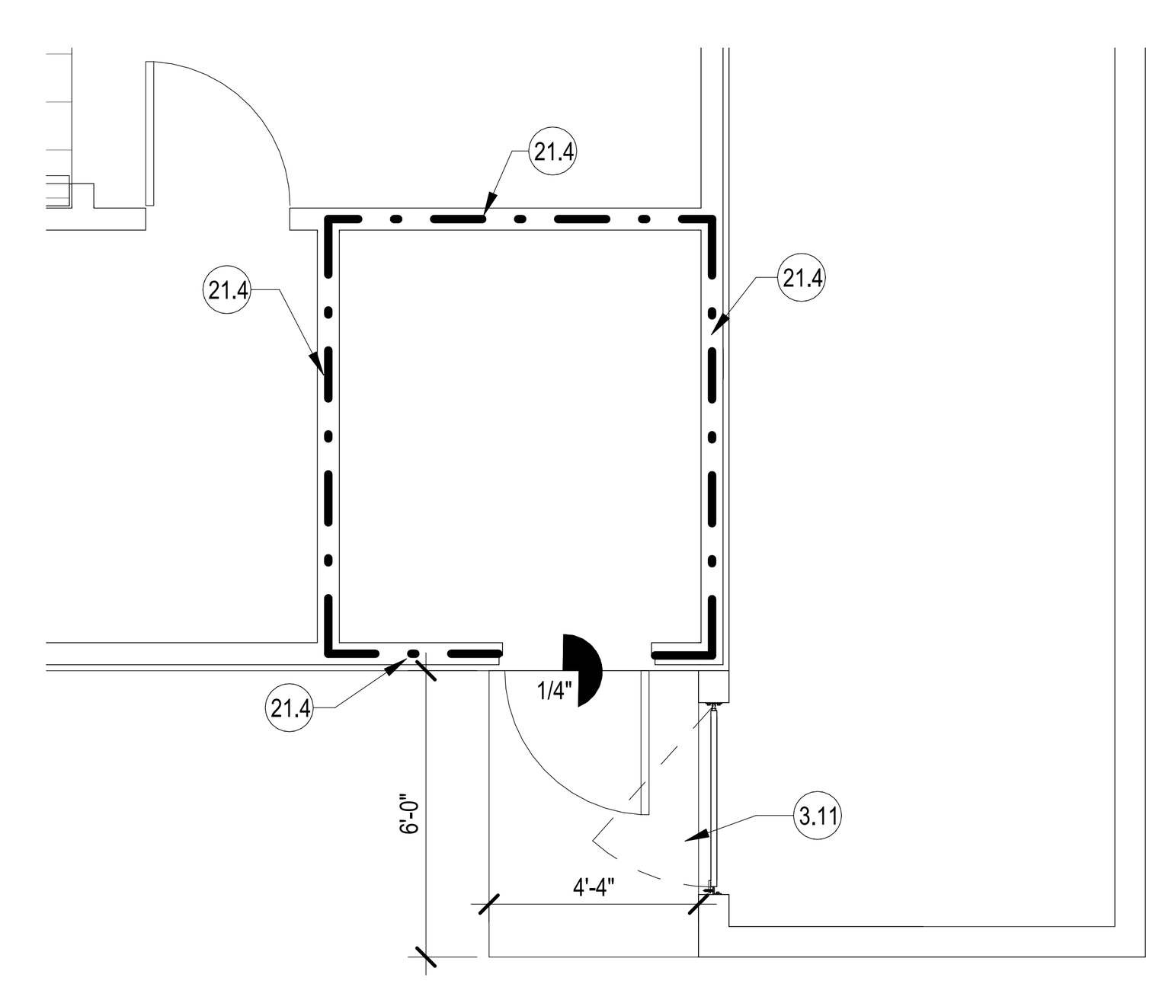


01 Architectural Enlarged Plan
3/16" = 1'-0"

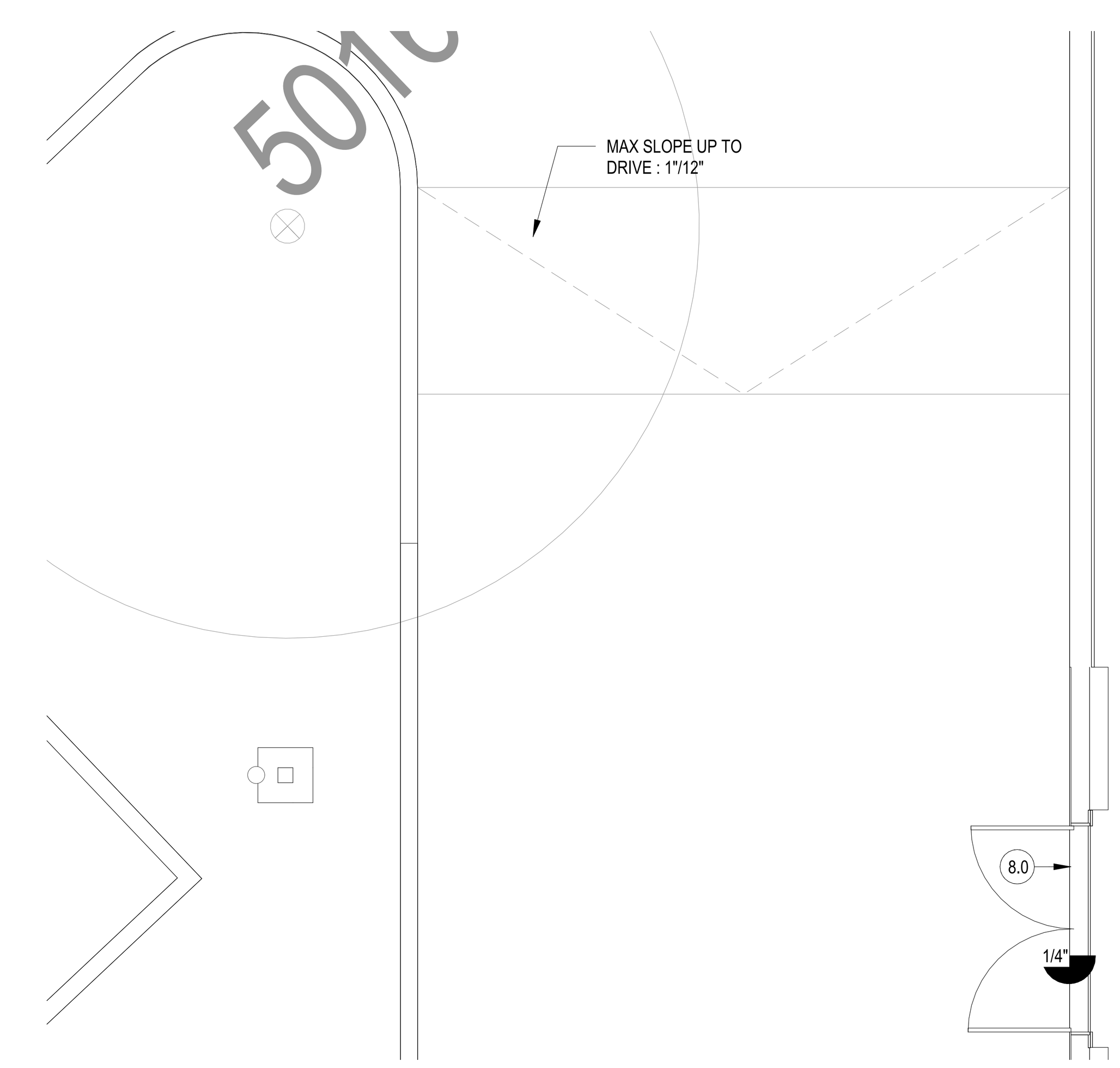


02 Architectural Enlarged Plan
1/4" = 1'-0"

2



04 Architectural Enlarged Plan
1/4" = 1'-0"



03 Architectural Enlarged Plan
1/4" = 1'-0"

04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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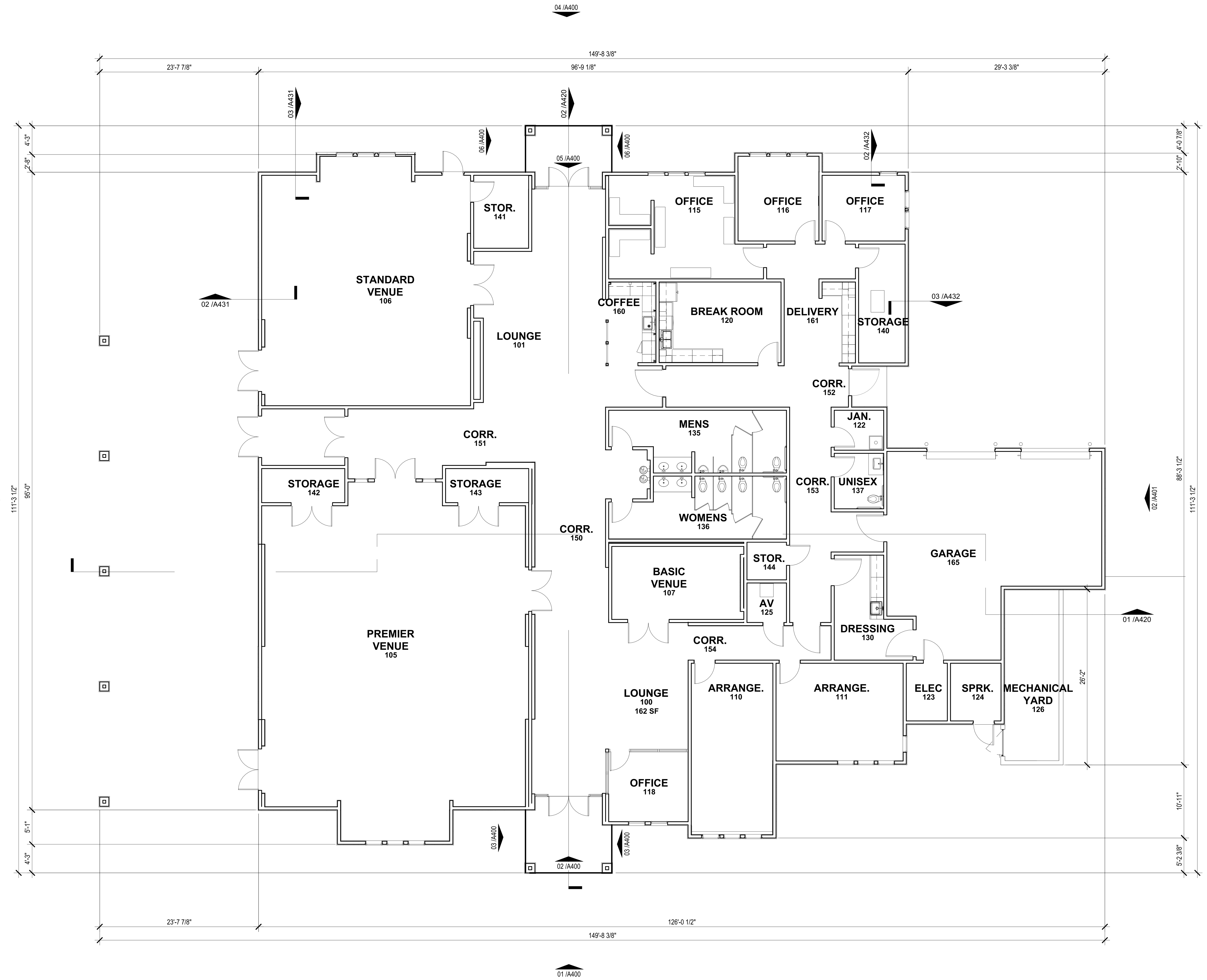
Architectural Enlarged Plans

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

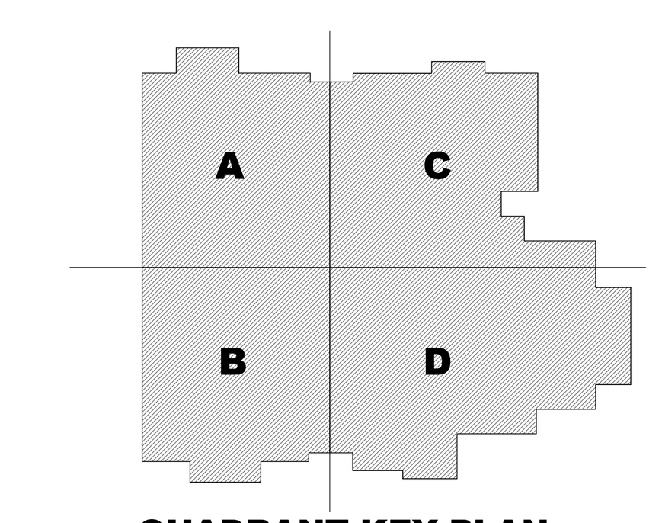
Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments



BUILDING AREAS	
CONDITIONED	9,151 SQ.FT.
UNCONDITIONED INTERIOR SPACE	872 SQ.FT.
COVERED EXTERIOR SPACE	1,948 SQ.FT.
TOTAL	11,971 SQ.FT.

01 Overall Floor Plan

1/8" = 1'-0"



QUADRANT KEY PLAN

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION
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Overall Floor Plan

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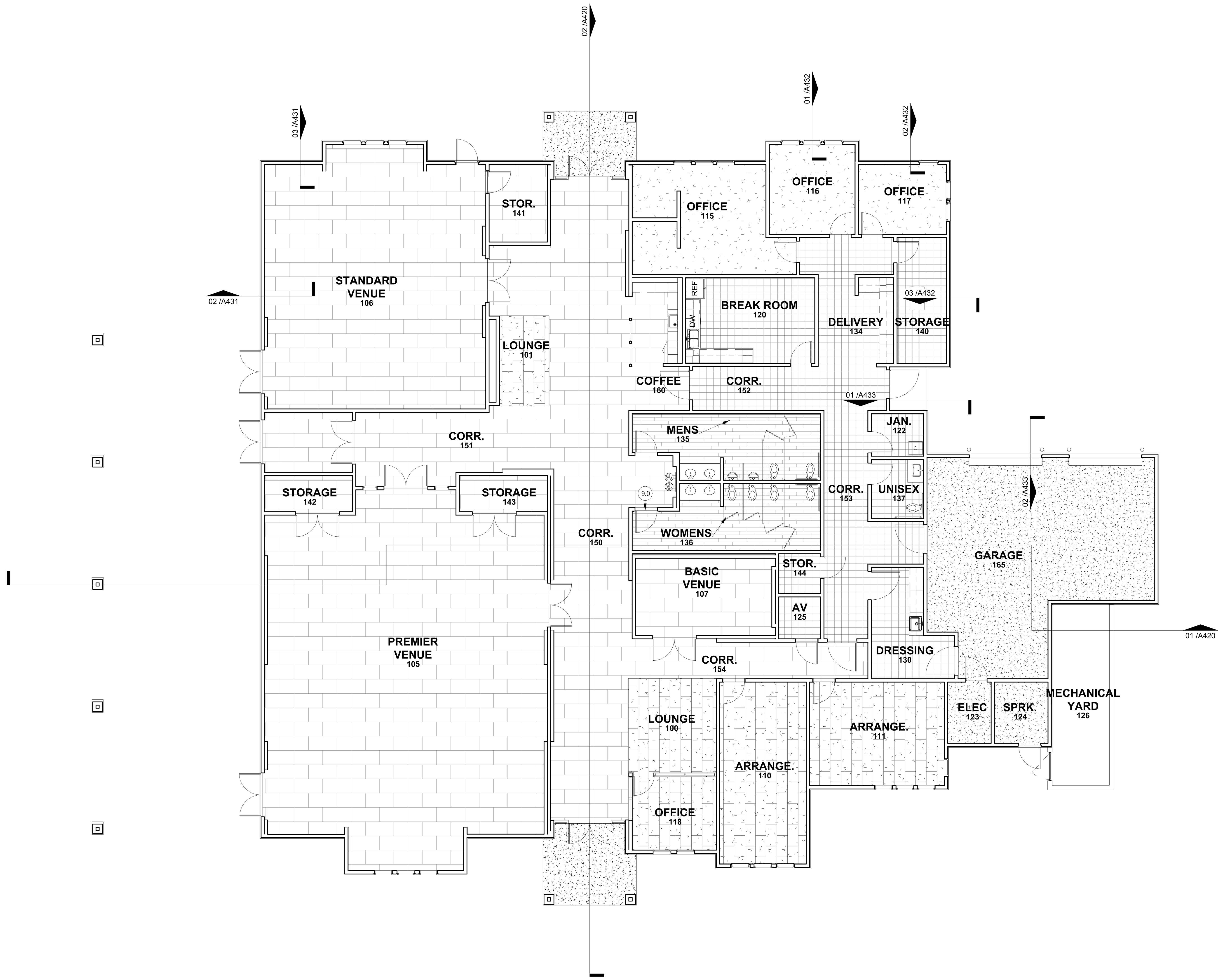
A100



01 **Overall Finishes Plan**

1/8" = 1'-0"

Key Notes4 Copy 1

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6	4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8	EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9	CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10	CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11	CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12	PROVIDE CONCRETE EXPANSION JOINT
6.6	LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
7.0	DOWNSPOUT TO DRAIN AWAY FROM FOUNDATION ONTO LAWN.
8.0	ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0	FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1	MIRROR AT LAV. REF. SHEET A010.
9.4	SCHLUTER EDGE TRIM.
10.0	SOAP DISPENSER. REF. MATERIALS SCHED.
10.1	COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2	FLOOR SPACE FOR TABLE BY OWNER.
10.4	BOLLARD REF. DETAIL 01/A503
10.5	KNOX BOX REF. MATERIAL SCHEDULE
10.10	BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11	WIRELESS INTERNET AND SERVER
11.0	SLOT DIFFUSER
11.6	DISHWASHER REF. MATERIAL SCHEDULE.
11.7	REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0	INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0	FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
22.0	ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1	ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
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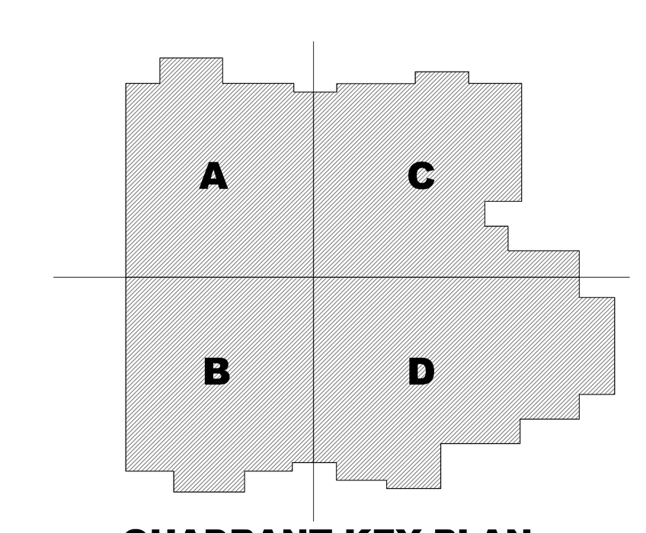

QUADRANT KEY PLAN

FINISH TYPES

REFERENCE MATERIAL SCHEDULE FOR MANUFACTURER AND PRODUCT DESCRIPTION

P = PAINT	SC = SEALED CONCRETE
T = TILE	VCT = VINYL FLOORING
CPT = CARPET	LT = LAY-IN CEILING
RB = RUBBER BASE	W = WOOD

REGISTERED ARCHITECT STEPHEN J. HAMPTON 25489 STATE OF TEXAS

10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Overall Finishes Plan

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
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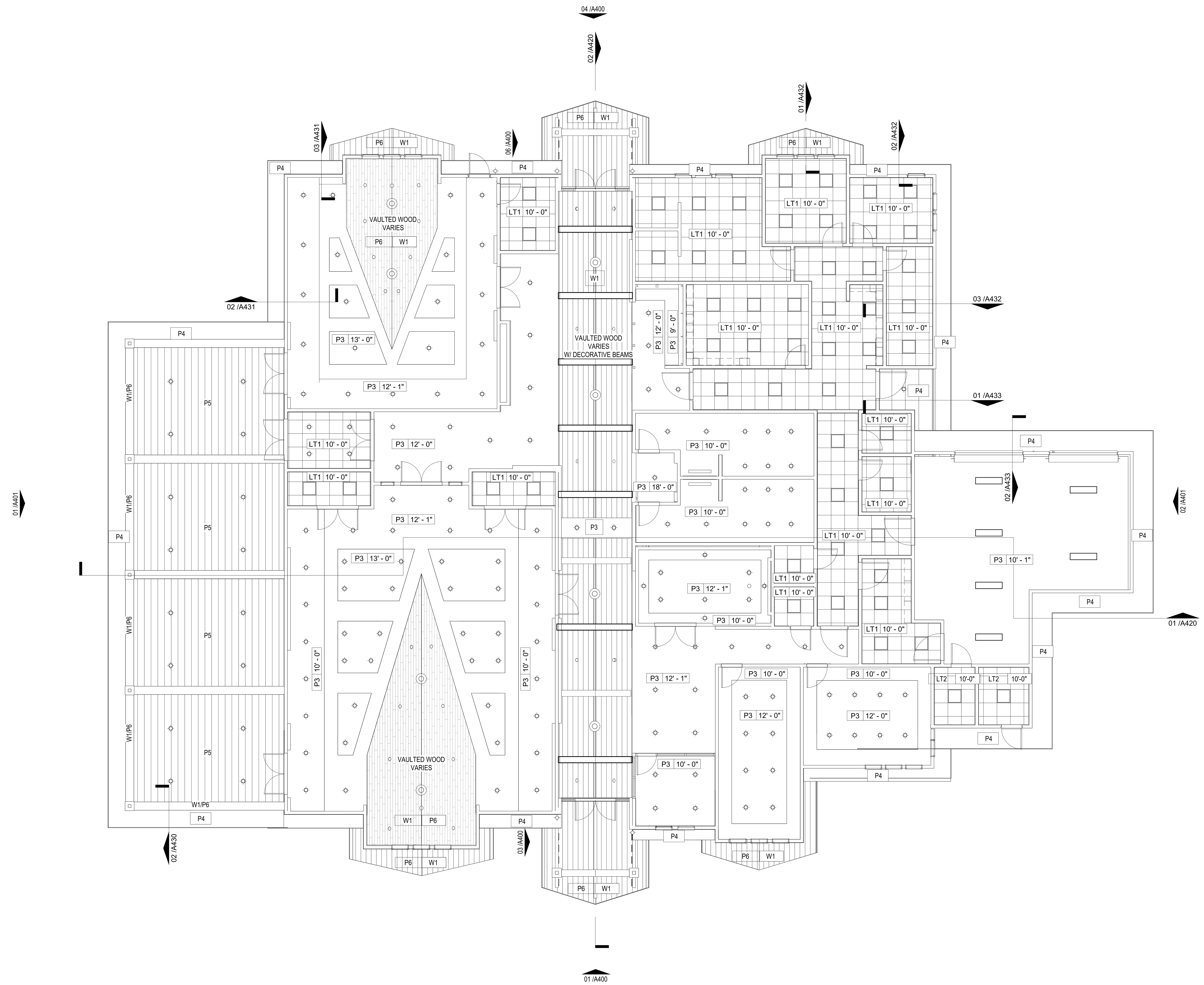
Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set

A110

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641



01 Overall Reflected Ceiling Plan

1/8" = 1'-0"

Key Notes4 Copy 1

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6	4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8	EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9	CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
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3.11	CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12	PROVIDE CONCRETE EXPANSION JOINT
6.6	LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
7.0	DOWNSPOUT TO DRAIN AWAY FROM FOUNDATION ONTO LAWN.
8.0	ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0	FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1	MIRROR AT LAV. REF. SHEET A010.
9.4	SCHLUTER EDGE TRIM.
10.0	SOAP DISPENSER. REF. MATERIALS SCHED.
10.1	COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2	FLOOR SPACE FOR TABLE BY OWNER.
10.4	BOLLARD REF. DETAIL 01/A503
10.5	KNOX BOX REF. MATERIAL SCHEDULE
10.10	BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11	WIRELESS INTERNET AND SERVER
11.0	SLOT DIFFUSER
11.6	DISHWASHER REF. MATERIAL SCHEDULE.
11.7	REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0	INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0	FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
22.0	ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
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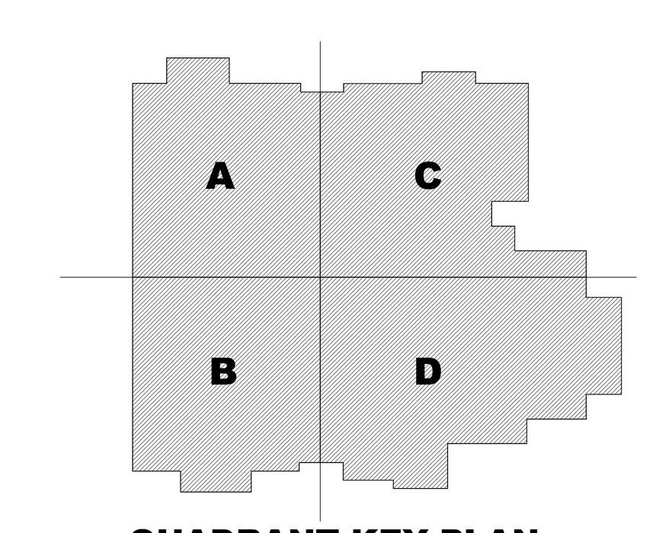
22.4	ACCESSIBLE TOILET ROOM. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.5	MOP SINK REF. PLUMBING DRAWINGS.
22.10	DOUBLE COMPARTMENT STAINLESS STEEL SINK REF. PLUMBING.

LIGHTING FIXTURES

REFERENCE FIXTURE SCHEDULE FOR MANUFACTURER AND PRODUCT DESCRIPTION

Symbol	Fixture
	2 X 2 TROFFER
	CHANDELIER
	1 X 2 LINEAR BOX
	RECESSED CAN
	RECESSED COLORED
	SCONCE
	STEP LIGHT
	UPLIGHT
	LINEAR UPLIGHT



QUADRANT KEY PLAN

FINISH TYPES

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P = PAINT	SC = SEALED CONCRETE
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Overall Reflected Ceiling Plan

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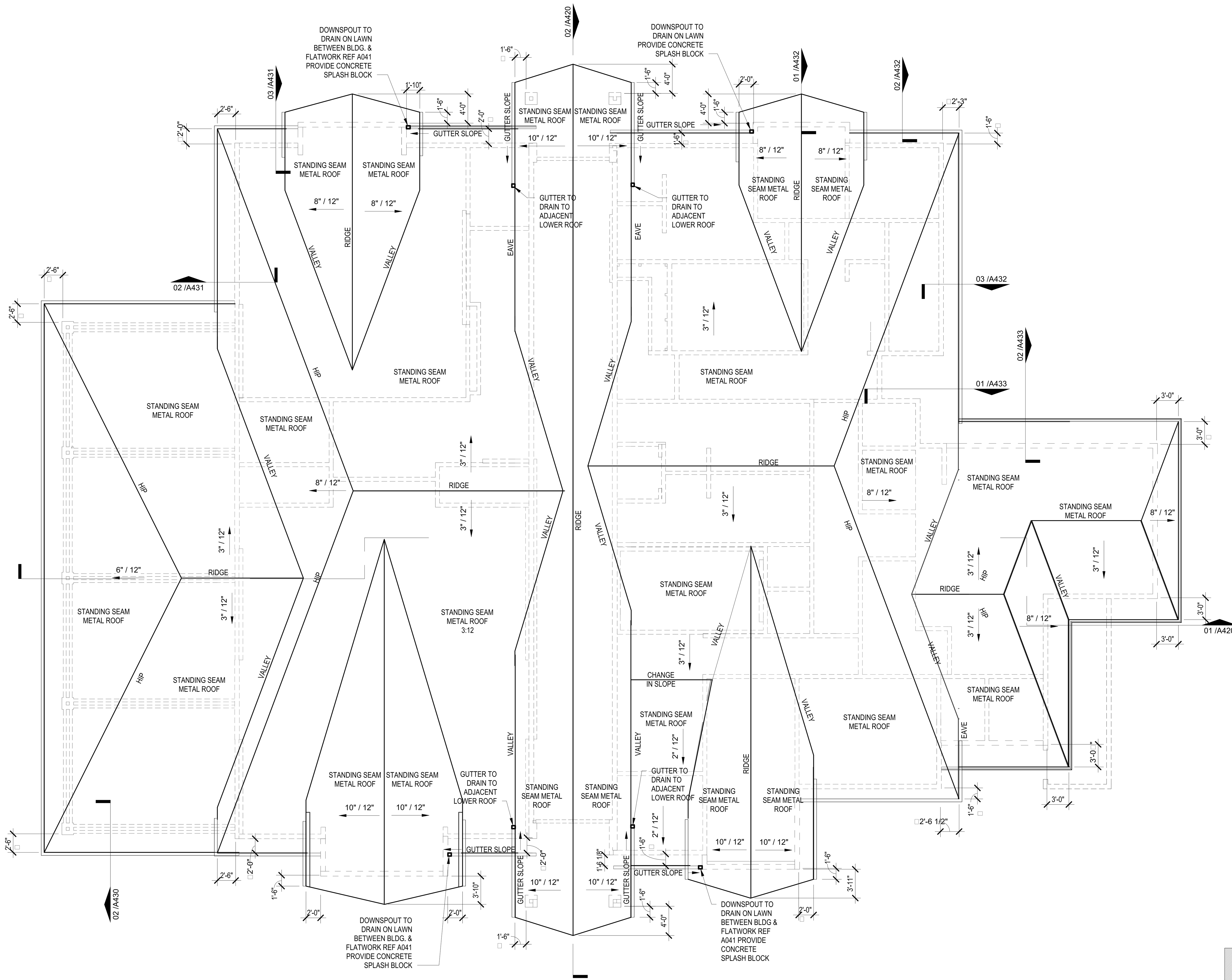
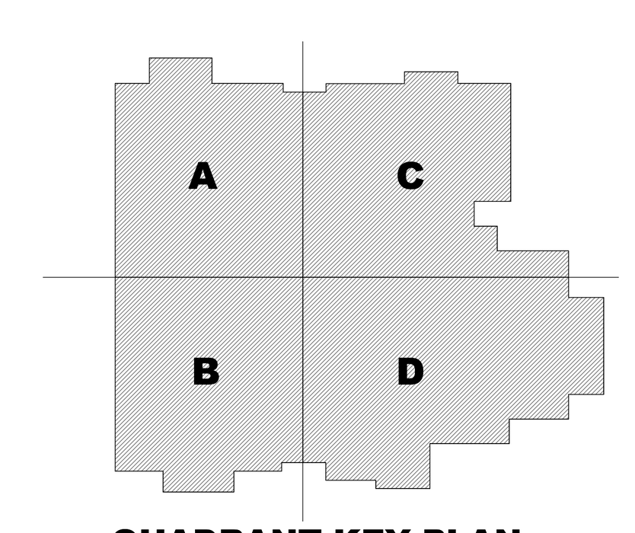
A120



01 Roof Plan

1/8" = 1'-0"



QUADRANT KEY PLAN

REGISTERED ARCHITECT STEPHEN HAMPTON 25489 STATE OF TEXAS

10/25/24

Weed Corley Fish

301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION
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Roof Plan

Project Number: 230502
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Austin, TX 78730 p:512.327.9995 www.n-vizion.net
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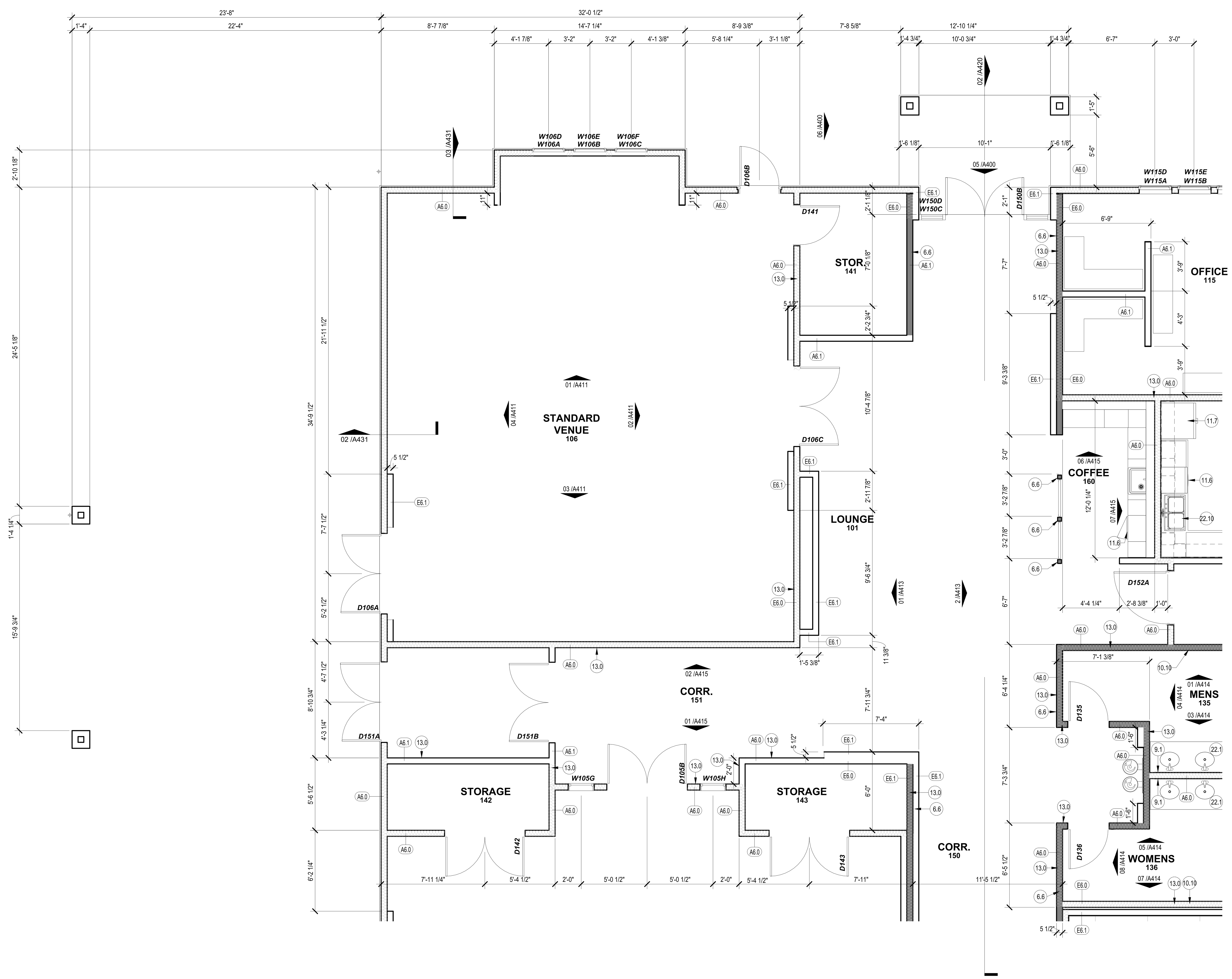
A130



01 Enlarged Floor Plan - Quadrant A

1/4" = 1'-0"

Key Notes

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6	4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8	EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9	CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10	CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11	CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12	PROVIDE CONCRETE EXPANSION JOINT
6.6	LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
7.0	DOWNSPOUT TO DRAIN AWAY FROM FOUNDATION ONTO LAWN.
8.0	ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0	FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1	MIRROR AT LAV. REF. SHEET A010.
9.4	SCHLUTER EDGE TRIM.
10.0	SOAP DISPENSER. REF. MATERIALS SCHED.
10.1	COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2	FLOOR SPACE FOR TABLE BY OWNER.
10.4	BOLLARD REF. DETAIL 01/A503
10.5	KNOX BOX REF. MATERIAL SCHEDULE
10.10	BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11	WIRELESS INTERNET AND SERVER
11.0	SLOT DIFFUSER
11.6	DISHWASHER REF. MATERIAL SCHEDULE.
11.7	REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0	INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0	FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
22.0	ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1	ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
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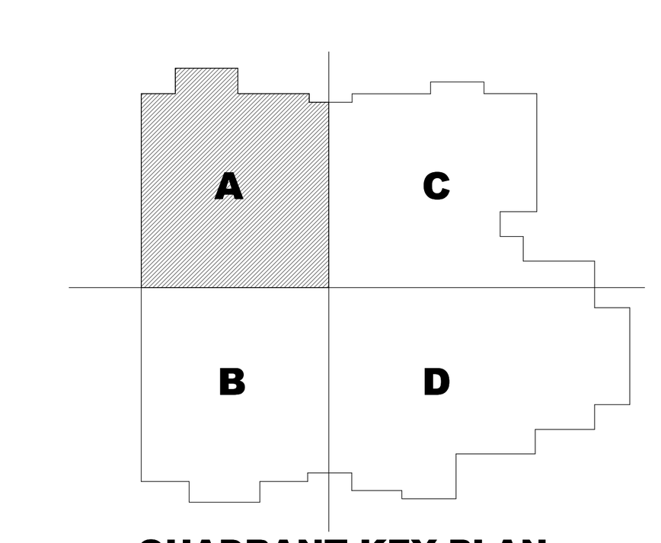

QUADRANT KEY PLAN

10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Enlarged Floor Plan - Quadrant A

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
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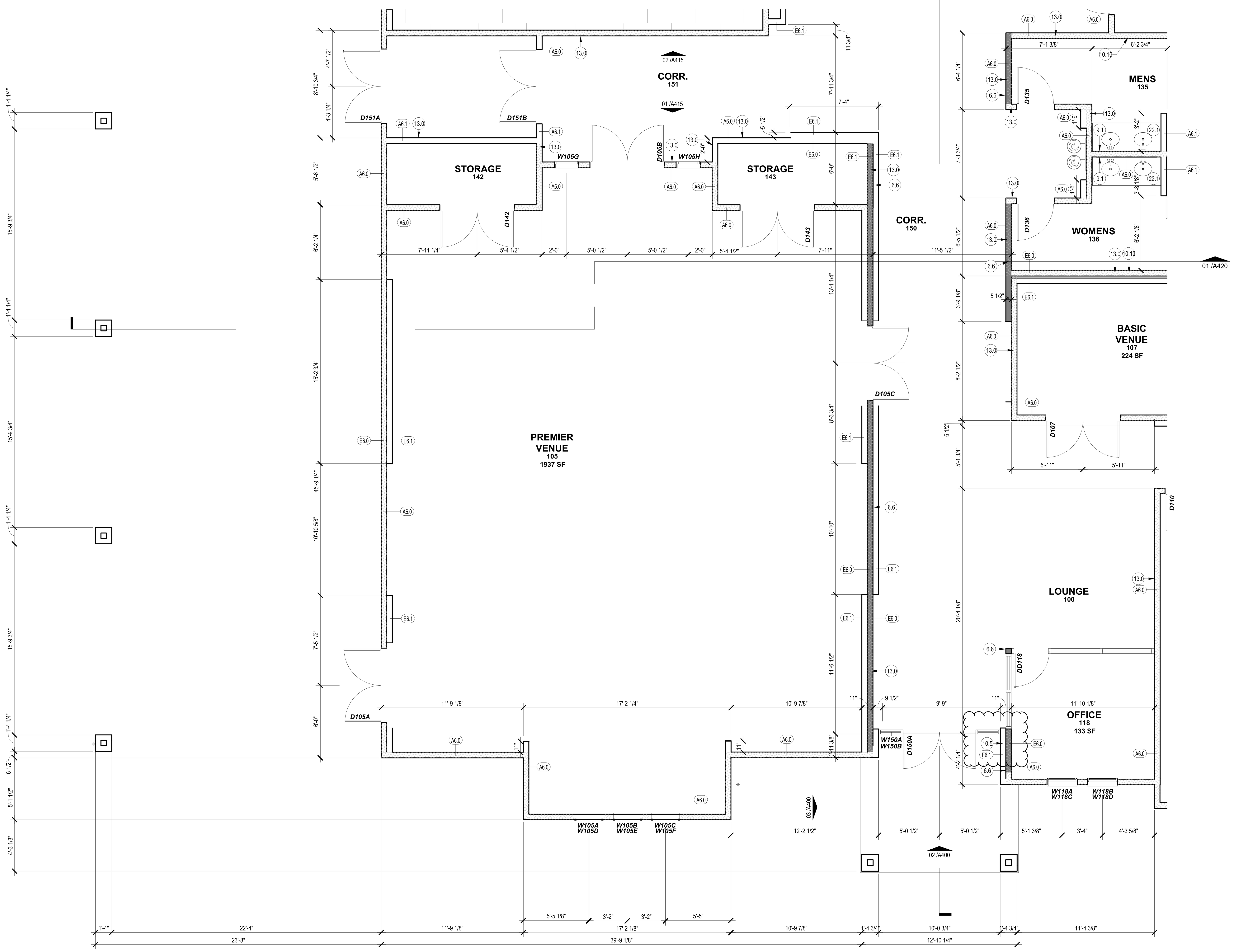
A200



2 Enlarged Floor Plan - Quadrant B

1/4" = 1'-0"

Key Notes

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6	4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8	EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9	CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10	CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11	CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12	PROVIDE CONCRETE EXPANSION JOINT
6.6	LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
7.0	DOWNSPOUT TO DRAIN AWAY FROM FOUNDATION ONTO LAWN.
8.0	ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0	FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1	MIRROR AT LAV. REF. SHEET A010.
9.4	SCHLUTER EDGE TRIM.
10.0	SOAP DISPENSER. REF. MATERIALS SCHED.
10.1	COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2	FLOOR SPACE FOR TABLE BY OWNER.
10.4	BOLLARD REF. DETAIL 01/A503
10.5	KNOX BOX REF. MATERIAL SCHEDULE
10.9	AED - AUTOMATED EXTERNAL DEFIBRILLATOR REFERENCE MATERIALS SCHEDULE
10.10	BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11	WIRELESS INTERNET AND SERVER
11.0	SLOT DIFFUSER
11.6	DISHWASHER REF. MATERIAL SCHEDULE.
11.7	REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0	INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0	FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
21.4	1 HOUR FIRE BARRIER - REFERENCE U.L. DETAILS A020. ALL PENETRATIONS TO BE 1-HR FIRE RATED.
21.5	PROVIDE SIGNAGE AT EACH ENTRY STATING THE MAXIMUM OCCUPANT LOAD. MAX. OCC LOAD FOR PREMIER VENUE IS 312. MAX. OCC. LOAD FOR STANDARD VENUE IS 182.
22.0	ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
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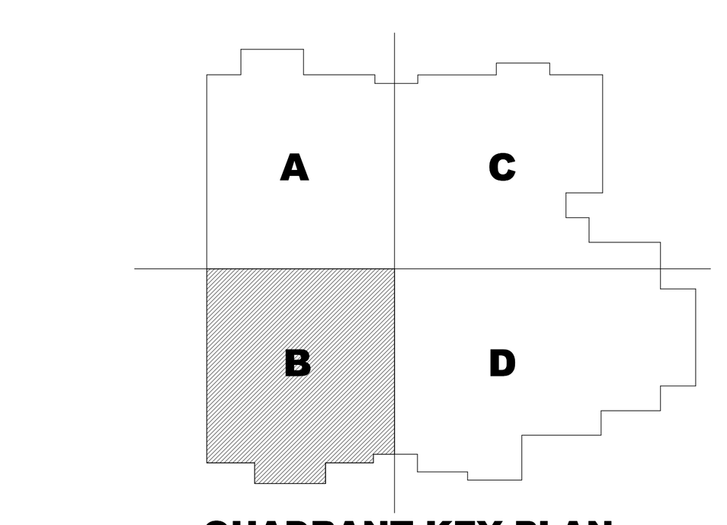


QUADRANT KEY PLAN

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments

Enlarged Floor Plan - Quadrant B

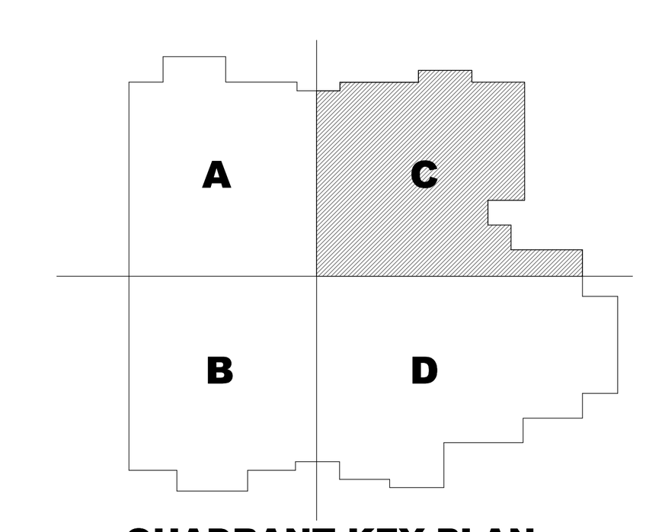
Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

01 Enlarged Floor Plan - Quadrant C

1/4" = 1'-0"

Key Notes

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6	4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8	EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9	CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10	CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11	CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12	PROVIDE CONCRETE EXPANSION JOINT
6.6	LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
7.0	DOWNSPOUT TO DRAIN AWAY FROM FOUNDATION ONTO LAWN.
8.0	ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0	FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1	MIRROR AT LAV. REF. SHEET A010.
9.4	SCHLUTER EDGE TRIM.
10.0	SOAP DISPENSER. REF. MATERIALS SCHED.
10.1	COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2	FLOOR SPACE FOR TABLE BY OWNER.
10.4	BOLLARD REF. DETAIL 01/A503
10.5	KNOX BOX REF. MATERIAL SCHEDULE
10.9	AED - AUTOMATED EXTERNAL DEFIBRILLATOR REFERENCE MATERIALS SCHEDULE
10.10	BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11	WIRELESS INTERNET AND SERVER
11.0	SLOT DIFFUSER
11.6	DISHWASHER REF. MATERIAL SCHEDULE.
11.7	REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0	INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0	FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
21.4	1 HOUR FIRE BARRIER - REFERENCE U.L. DETAILS A020. ALL PENETRATIONS TO BE 1-HR FIRE RATED.
21.5	PROVIDE SIGNAGE AT EACH ENTRY STATING THE MAXIMUM OCCUPANT LOAD. MAX. OCC LOAD FOR PREMIER VENUE IS 312. MAX. OCC. LOAD FOR STANDARD VENUE IS 182.
22.0	ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1	ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
22.2	ACCESSIBLE URINAL. PROVIDE BLOCKING. PROVIDE ACCESS. URINAL WHERE SHOWN ON PLAN. INSTALL PER TAS REQUIREMENTS. REF. ACCESS. DETAILS.
22.4	ACCESSIBLE TOILET ROOM. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.5	MOP SINK REF. PLUMBING DRAWINGS.
22.10	DOUBLE COMPARTMENT STAINLESS STEEL SINK REF. PLUMBING.



QUADRANT KEY PLAN

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

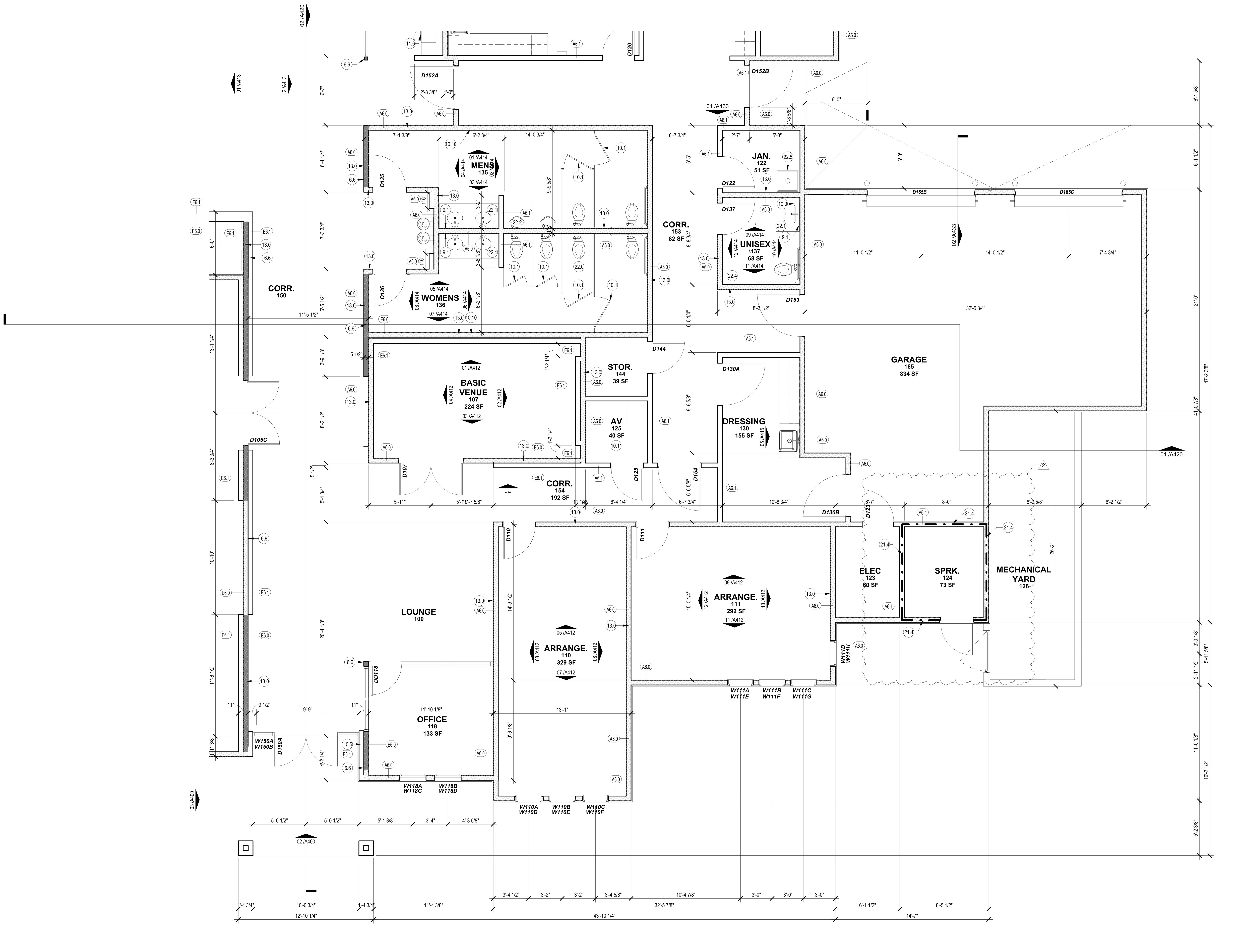
N-VIZION
FORMS - ENVIRONMENTS - IMAGES

Enlarged Floor Plan - Quadrant C

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments

A202



2 Enlarged Floor Plan - Quadrant D

1/4" = 1'-0"

Key Notes2

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6	4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8	EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9	CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10	CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11	CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12	PROVIDE CONCRETE EXPANSION JOINT
6.6	LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
8.0	ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0	FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1	MIRROR AT LAV. REF. SHEET A010.
9.4	SCHLUTER EDGE TRIM.
10.0	SOAP DISPENSER. REF. MATERIALS SCHED.
10.1	COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2	FLOOR SPACE FOR TABLE BY OWNER.
10.4	BOLLARD REF. DETAIL 01/A503
10.5	KNOX BOX REF. MATERIAL SCHEDULE
10.9	AED - AUTOMATED EXTERNAL DEFIBRILLATOR REFERENCE MATERIALS SCHEDULE
10.10	BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11	WIRELESS INTERNET AND SERVER
11.0	SLOT DIFFUSER
11.7	REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0	INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0	FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
21.4	1 HOUR FIRE BARRIER - REFERENCE U.L. DETAILS A020. ALL PENETRATIONS TO BE 1-HR FIRE RATED.
21.5	PROVIDE SIGNAGE AT EACH ENTRY STATING THE MAXIMUM OCCUPANT LOAD. MAX. OCC LOAD FOR PREMIER VENUE IS 312. MAX. OCC. LOAD FOR STANDARD VENUE IS 182.
22.0	ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1	ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
22.2	ACCESSIBLE URINAL. PROVIDE BLOCKING. PROVIDE ACCESS. URINAL WHERE SHOWN ON PLAN. INSTALL PER TAS REQUIREMENTS. REF. ACCESS. DETAILS.
22.4	ACCESSIBLE TOILET ROOM. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.5	MOP SINK REF. PLUMBING DRAWINGS.

04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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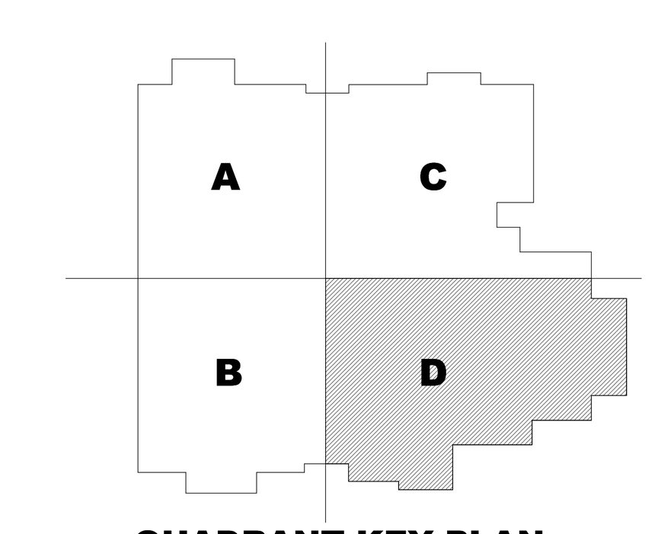


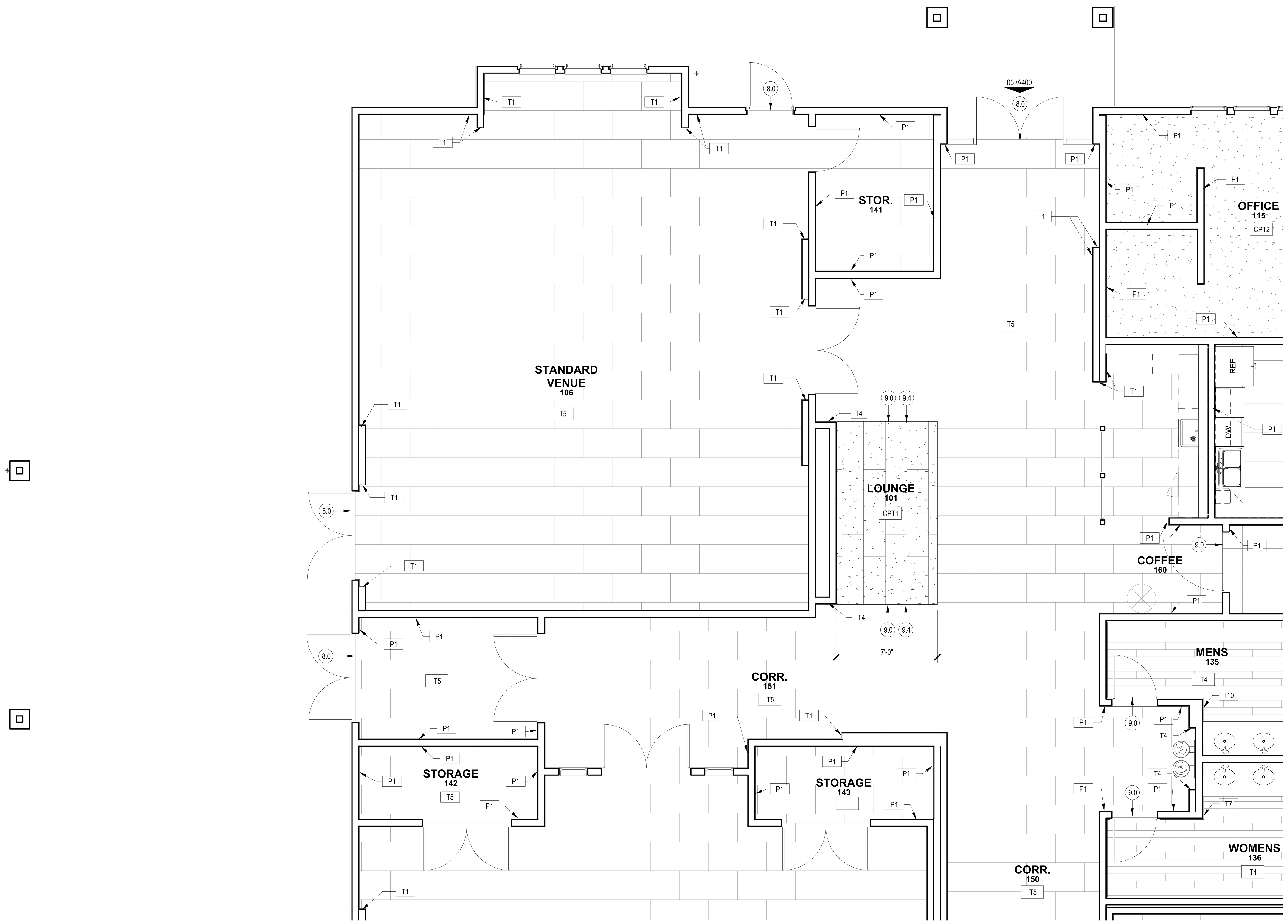
QUADRANT KEY PLAN

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments

Enlarged Floor Plan - Quadrant D

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

A203



01 Enlarged Finish Plan - Quadrant A

1/4" = 1'-0"

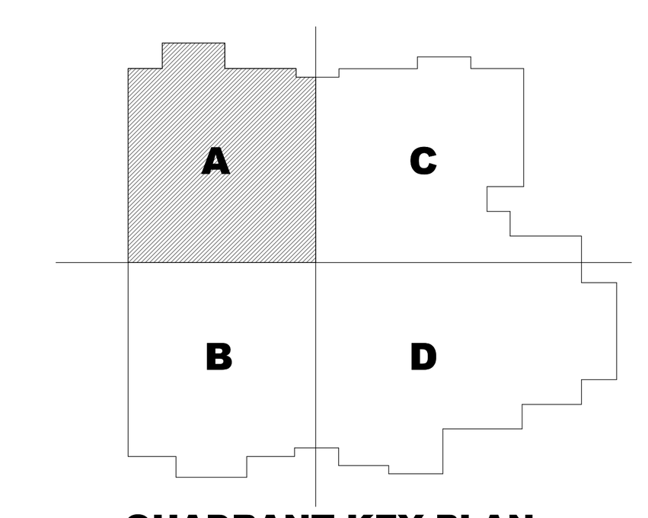
Key Notes

3.4 CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5 5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6 4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8 EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9 CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10 CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11 CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12 PROVIDE CONCRETE EXPANSION JOINT
6.6 LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
7.0 DOWNSPOUT TO DRAIN AWAY FROM FOUNDATION ONTO LAWN.
8.0 ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0 FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1 MIRROR AT LAV. REF. SHEET A010.
9.4 SCHLUTER EDGE TRIM.
10.0 SOAP DISPENSER. REF. MATERIALS SCHED.
10.1 COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2 FLOOR SPACE FOR TABLE BY OWNER.
10.4 BOLLARD REF. DETAIL 01/A503
10.5 KNOX BOX REF. MATERIAL SCHEDULE
10.10 BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11 WIRELESS INTERNET AND SERVER
11.0 SLOT DIFFUSER
11.6 DISHWASHER REF. MATERIAL SCHEDULE.
11.7 REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0 INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0 FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
22.0 ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1 ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
22.2 ACCESSIBLE URINAL. PROVIDE BLOCKING. PROVIDE ACCESS. URINAL WHERE SHOWN ON PLAN. INSTALL PER TAS REQUIREMENTS. REF. ACCESS. DETAILS.
22.4 ACCESSIBLE TOILET ROOM. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.5 MOP SINK REF. PLUMBING DRAWINGS.
22.10 DOUBLE COMPARTMENT STAINLESS STEEL SINK REF. PLUMBING.

FINISH TYPES

REFERENCE MATERIAL SCHEDULE FOR MANUFACTURER AND PRODUCT DESCRIPTION

P = PAINT	SC = SEALED CONCRETE
T = TILE	VCT = VINYL FLOORING
CPT = CARPET	LT = LAY-IN CEILING
RB = RUBBER BASE	W = WOOD



QUADRANT KEY PLAN

REGISTERED ARCHITECT STEPHEN J. HAMPTON 25489 STATE OF TEXAS

10/25/24

Weed Corley Fish

301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION

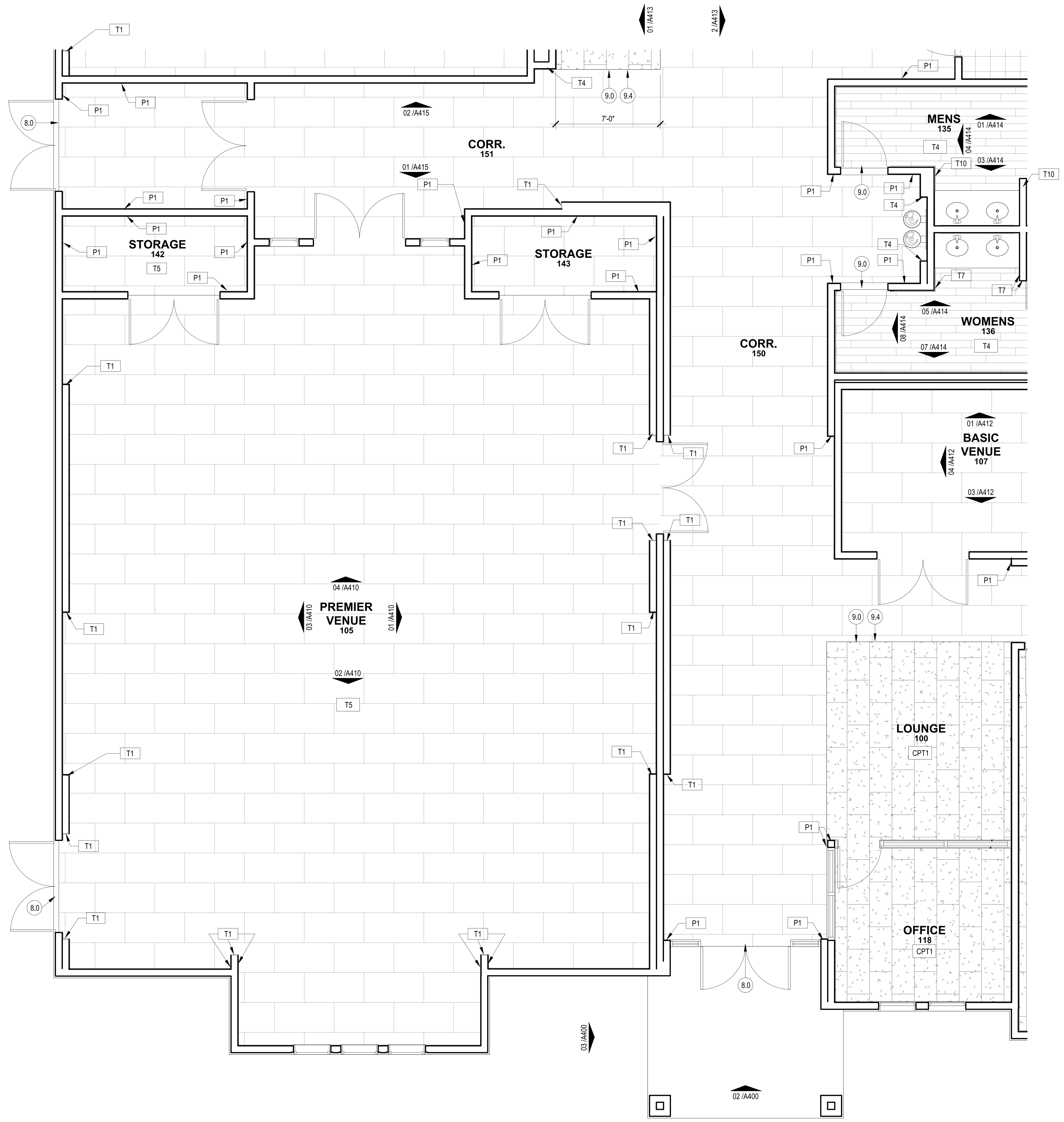
FORMS • ENVIRONMENTS • IMAGES

Enlarged Finish Plan - Quadrant A

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set

A210



01 Enlarged Finish Plan - Quadrant B

1/4" = 1'-0"

Key Notes

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6	4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8	EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9	CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10	CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11	CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12	PROVIDE CONCRETE EXPANSION JOINT
6.6	LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
7.0	DOWNSPOUT TO DRAIN AWAY FROM FOUNDATION ONTO LAWN.
8.0	ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0	FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1	MIRROR AT LAV. REF. SHEET A010.
9.4	SCHLUTER EDGE TRIM.
10.0	SOAP DISPENSER. REF. MATERIALS SCHED.
10.1	COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2	FLOOR SPACE FOR TABLE BY OWNER.
10.4	BOLLARD REF. DETAIL 01/A503
10.5	KNOX BOX REF. MATERIAL SCHEDULE
10.10	BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11	WIRELESS INTERNET AND SERVER
11.0	SLOT DIFFUSER
11.6	DISHWASHER REF. MATERIAL SCHEDULE.
11.7	REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0	INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0	FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
22.0	ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1	ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
22.2	ACCESSIBLE URINAL. PROVIDE BLOCKING. PROVIDE ACCESS. URINAL WHERE SHOWN ON PLAN. INSTALL PER TAS REQUIREMENTS. REF. ACCESS. DETAILS.
22.4	ACCESSIBLE TOILET ROOM. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.5	MOP SINK REF. PLUMBING DRAWINGS.
22.10	DOUBLE COMPARTMENT STAINLESS STEEL SINK REF. PLUMBING.

FINISH TYPES

REFERENCE MATERIAL SCHEDULE FOR MANUFACTURER AND PRODUCT DESCRIPTION

P = PAINT	SC = SEALED CONCRETE
T = TILE	VCT = VINYL FLOORING
CPT = CARPET	LT = LAY-IN CEILING
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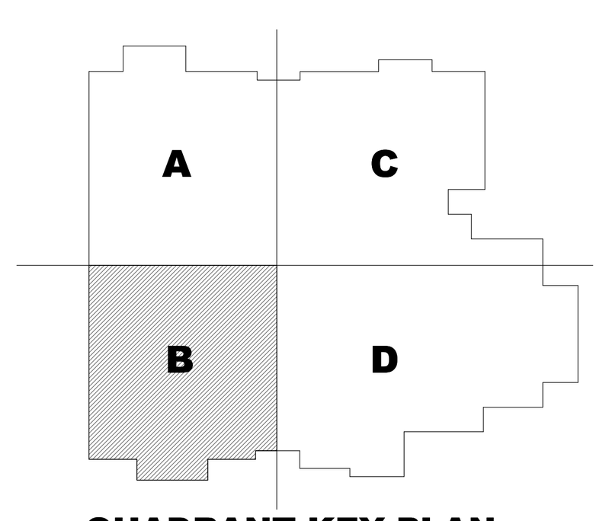


QUADRANT KEY PLAN

STATE OF TEXAS
REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION
FORMS • ENVIRONMENTS • IMAGES

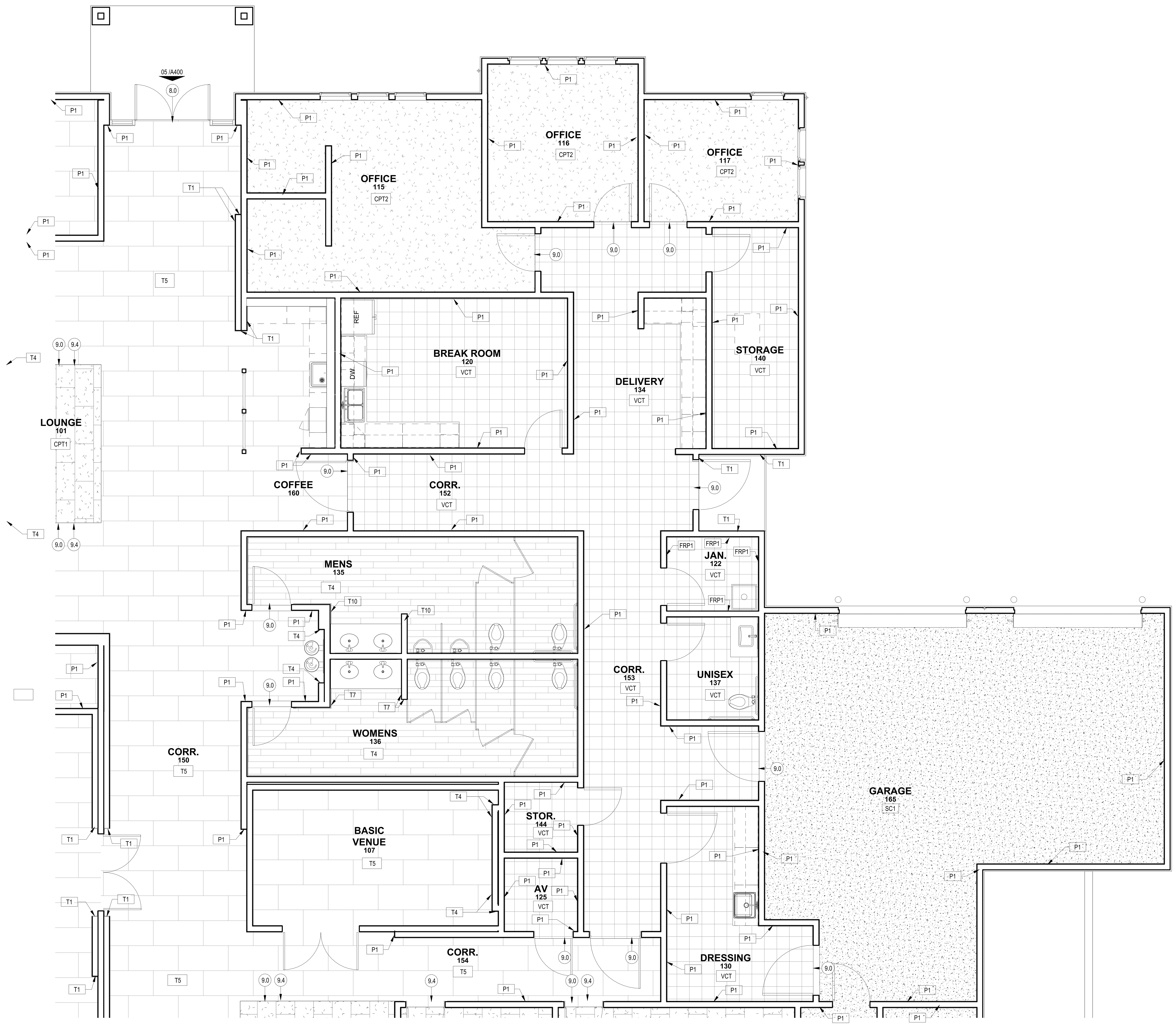
Enlarged Finish Plan - Quadrant B

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set

A211

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641



01 **Enlarged Finish Plan - Quadrant C**

1/4" = 1'-0"

Key Notes

3.4 CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5 5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6 4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8 EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9 CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
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3.12 PROVIDE CONCRETE EXPANSION JOINT
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7.0 DOWNSPOUT TO DRAIN AWAY FROM FOUNDATION ONTO LAWN.
8.0 ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0 FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1 MIRROR AT LAV. REF. SHEET A010.
9.4 SCHLUTER EDGE TRIM.
10.0 SOAP DISPENSER. REF. MATERIALS SCHED.
10.1 COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2 FLOOR SPACE FOR TABLE BY OWNER.
10.4 BOLLARD REF. DETAIL 01/A503
10.5 KNOX BOX REF. MATERIAL SCHEDULE
10.10 BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11 WIRELESS INTERNET AND SERVER
11.0 SLOT DIFFUSER
11.6 DISHWASHER REF. MATERIAL SCHEDULE.
11.7 REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0 INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0 FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
22.0 ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1 ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
22.2 ACCESSIBLE URINAL. PROVIDE BLOCKING. PROVIDE ACCESS. URINAL WHERE SHOWN ON PLAN. INSTALL PER TAS REQUIREMENTS. REF. ACCESS. DETAILS.
22.4 ACCESSIBLE TOILET ROOM. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.5 MOP SINK REF. PLUMBING DRAWINGS.
22.10 DOUBLE COMPARTMENT STAINLESS STEEL SINK REF. PLUMBING.

FINISH TYPES

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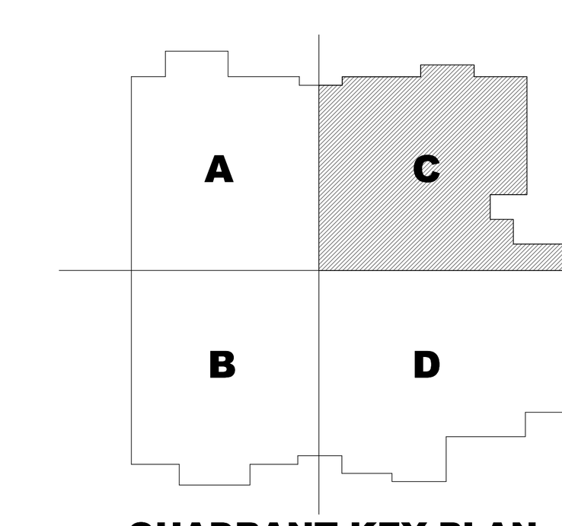
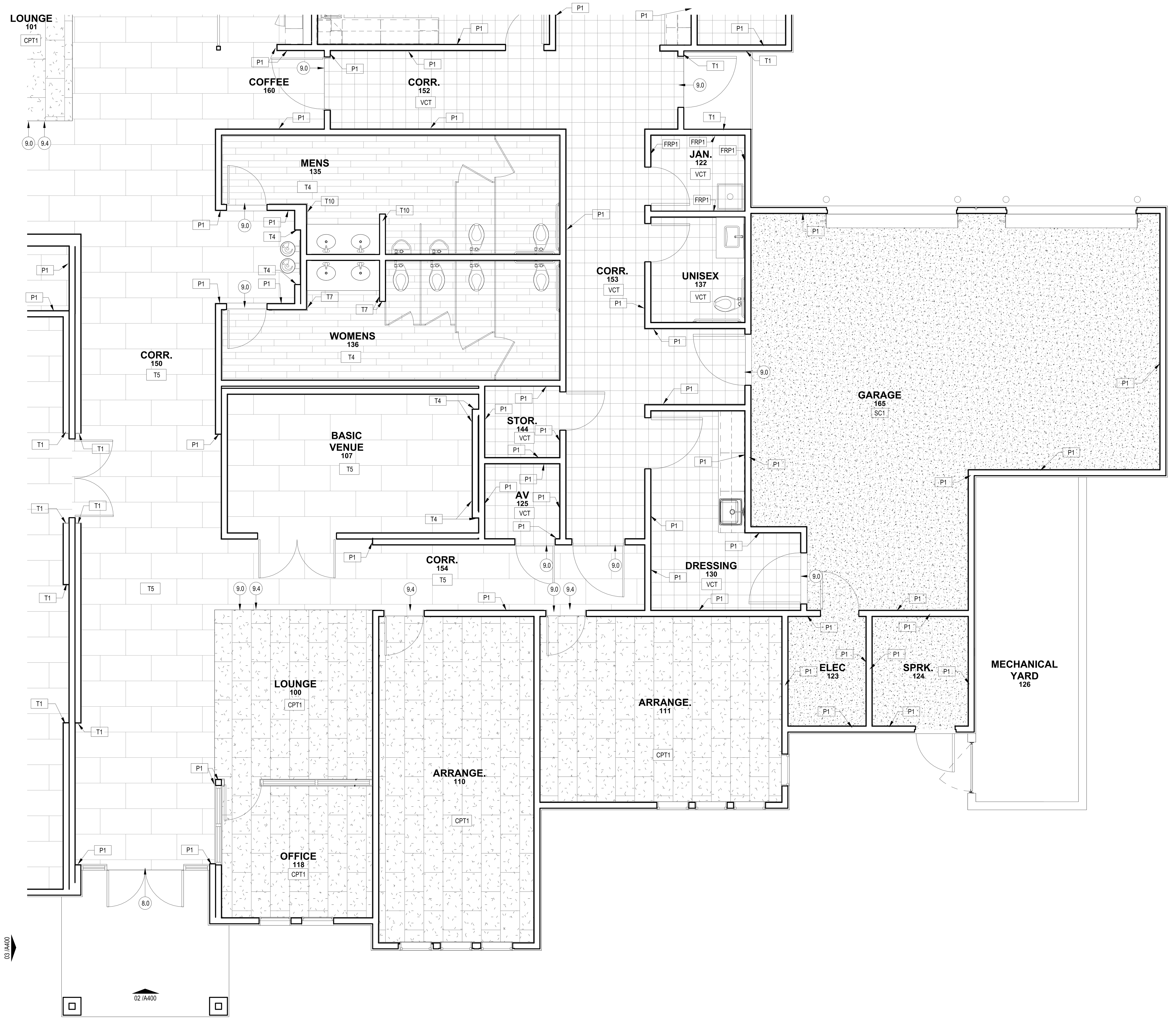


QUADRANT KEY PLAN

Enlarged Finish Plan - Quadrant C

Date	Description
08.07.24	CD Set
10.25.24	Rev1 Permit Set

A212



01 Enlarged Finish Plan - Quadrant D

1/4" = 1'-0"

Key Notes4

3.4 CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5 5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6 4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8 EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9 CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
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10.0 SOAP DISPENSER. REF. MATERIALS SCHED.
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11.0 SLOT DIFFUSER
11.7 REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0 INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0 FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
22.0 ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1 ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
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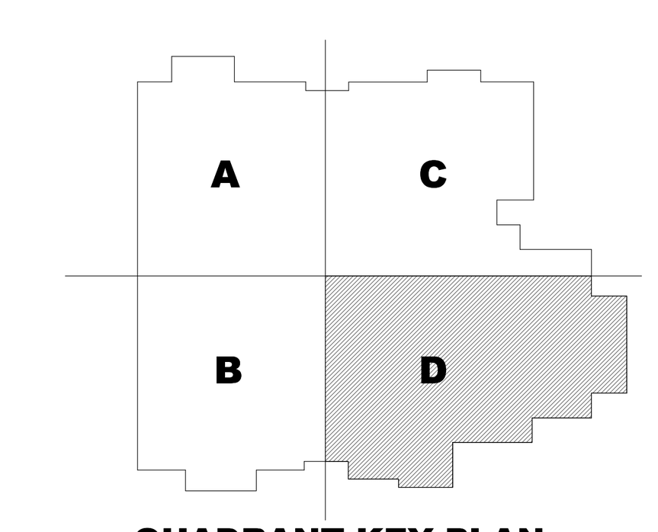
FINISH TYPES

REFERENCE MATERIAL SCHEDULE FOR MANUFACTURER AND PRODUCT DESCRIPTION

P = PAINT	SC = SEALED CONCRETE
T = TILE	VCT = VINYL FLOORING
CPT = CARPET	LT = LAY-IN CEILING
RB = RUBBER BASE	W = WOOD



QUADRANT KEY PLAN

10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION
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Enlarged Finish Plan - Quadrant D

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	CD Set
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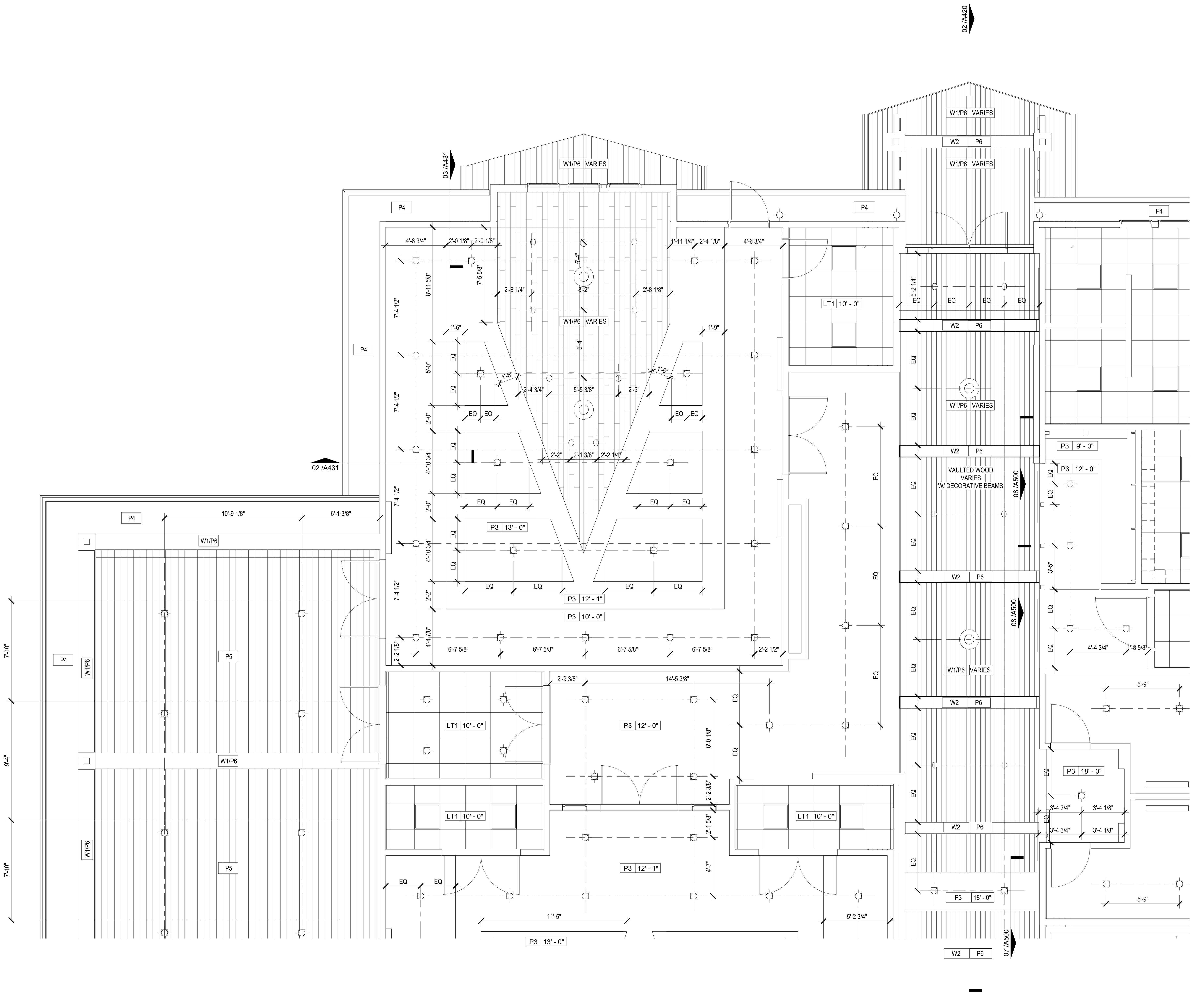
A213



01 Enlarged RCP - Quadrant A

1/4" = 1'-0"

Key Notes4

3.4 CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5 5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6 4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.8 EDGE OF FOUNDATION. PROVIDE EXPANSION JOINT BETWEEN FOUNDATION AND FLATWORK.
3.9 CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10 CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11 CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12 PROVIDE CONCRETE EXPANSION JOINT
6.6 LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
8.0 ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0 FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1 MIRROR AT LAV. REF. SHEET A010.
9.4 SCHLUTER EDGE TRIM.
10.0 SOAP DISPENSER. REF. MATERIALS SCHED.
10.1 COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
10.2 FLOOR SPACE FOR TABLE BY OWNER.
10.4 BOLLARD REF. DETAIL 01/A503
10.5 KNOX BOX REF. MATERIAL SCHEDULE
10.10 BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11 WIRELESS INTERNET AND SERVER
11.0 SLOT DIFFUSER
11.7 REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0 INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
21.0 FIRE EXTINGUISHER IN SEMI-RECESSED CABINET - FEC1 MATERIALS SCHEDULE
22.0 ACCESSIBLE TOILET STALL. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.1 ACCESSIBLE LAV. REF. DETAILS & PROVIDE INSULATING SLEEVE OVER PLUMBING.
22.2 ACCESSIBLE URINAL. PROVIDE BLOCKING. PROVIDE ACCESS. URINAL WHERE SHOWN ON PLAN. INSTALL PER TAS REQUIREMENTS. REF. ACCESS. DETAILS.
22.4 ACCESSIBLE TOILET ROOM. PROVIDE ACCESSIBLE WATER CLOSET AND GRAB BARS TO CODE. REF. ACCESSIBILITY DETAILS. PROVIDE BLOCKING AS REQUIRED FOR GRAB BARS.
22.5 MOP SINK REF. PLUMBING DRAWINGS.

LIGHTING FIXTURES

REFERENCE FIXTURE SCHEDULE FOR MANUFACTURER AND PRODUCT DESCRIPTION

	2 X 2 TROFFER
	CHANDELIER
	1 X 2 LINEAR BOX
	RECESSED CAN
	RECESSED COLORED
	SCONCE
	STEP LIGHT
	UPLIGHT
	LINEAR UPLIGHT

FINISH TYPES

REFERENCE MATERIAL SCHEDULE FOR MANUFACTURER AND PRODUCT DESCRIPTION

P = PAINT	SC = SEALED CONCRETE
T = TILE	VCT = VINYL FLOORING
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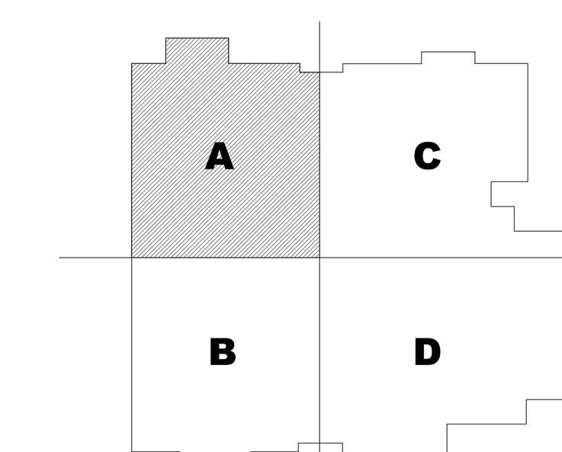

QUADRANT KEY PLAN

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION
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Enlarged RCP - Quadrant A

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

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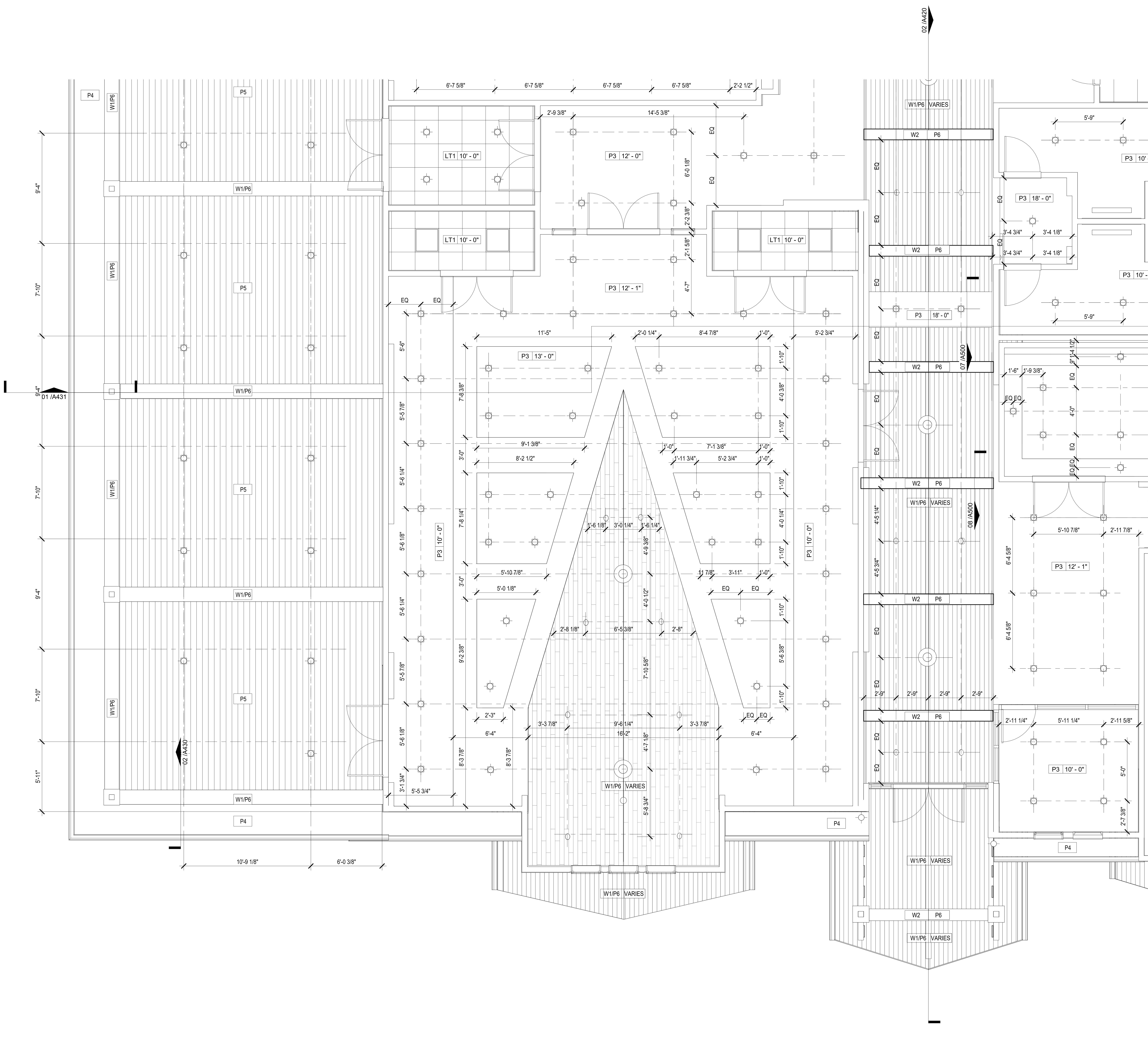

01 Enlarged RCP - Quadrant C
1/4" = 1'-0"

Key Notes4

3.4 CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5 5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
3.6 4' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
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3.9 CONCRETE FLATWORK W/ EXPOSED AGGREGATE FINISH REFERENCE CIVIL. PROVIDE SAWCUT JOINTS AND EXPANSION JOINTS AS SHOWN ON PLANS
3.10 CONCRETE FOUNDATION W/EXPOSED AGGREGATE FINISH. REF. STRUCTURAL
3.11 CONCRETE FLATWORK W/BROOM FINISH REF. CIVIL
3.12 PROVIDE CONCRETE EXPANSION JOINT
6.6 LOAD-BEARING WALL FOR CENTER CORRIDOR. REFERENCE STRUCTURAL.- IDENTIFIED BY GRAY HATCH ON PLAN
8.0 ACCESSIBLE THRESHOLD 1/4" MAX. DROP REF. A010.
9.0 FLOORING TRANSITION TO BE LESS THAN 1/4" IF SQUARE OR LESS THAN 1/2" IF BEVELED. REF. ACCESSIBILITY DETAIL 13/A010.
9.1 MIRROR AT LAV. REF. SHEET A010.
9.4 SCHLUTER EDGE TRIM.
10.0 SOAP DISPENSER. REF. MATERIALS SCHED.
10.1 COAT HOOK @ 48" A.F.F. PROVIDE BLOCKING. REF. MATERIAL SCHED.
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10.10 BABY CHANGING STATION. REF. MATERIALS SCHEDULE.-BCS1
10.11 WIRELESS INTERNET AND SERVER
11.0 SLOT DIFFUSER
11.7 REFRIGERATOR REF. MATERIAL SCHEDULE.
13.0 INSTALL SOUND ATTENUATION INSULATION REF. MATERIAL SCHED - INS3
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22.5 MOP SINK REF. PLUMBING DRAWINGS.

LIGHTING FIXTURES

REFERENCE FIXTURE SCHEDULE FOR MANUFACTURER AND PRODUCT DESCRIPTION

Symbol	Fixture
	2 X 2 TROFFER
	CHANDELIER
	1 X 2 LINEAR BOX
	RECESSED CAN
	RECESSED COLORED
	SCONCE
	STEP LIGHT
	UPLIGHT
	LINEAR UPLIGHT

FINISH TYPES

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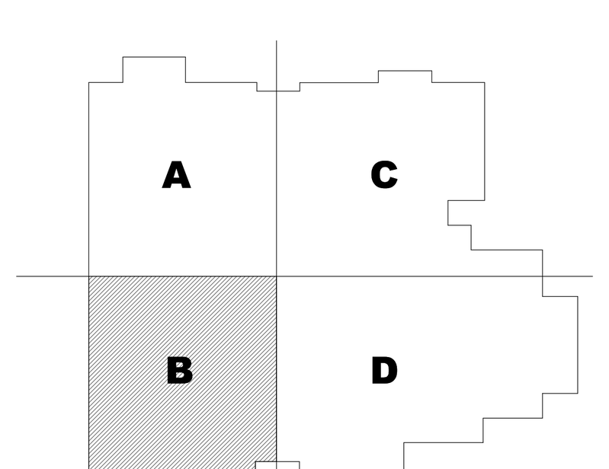

QUADRANT KEY PLAN

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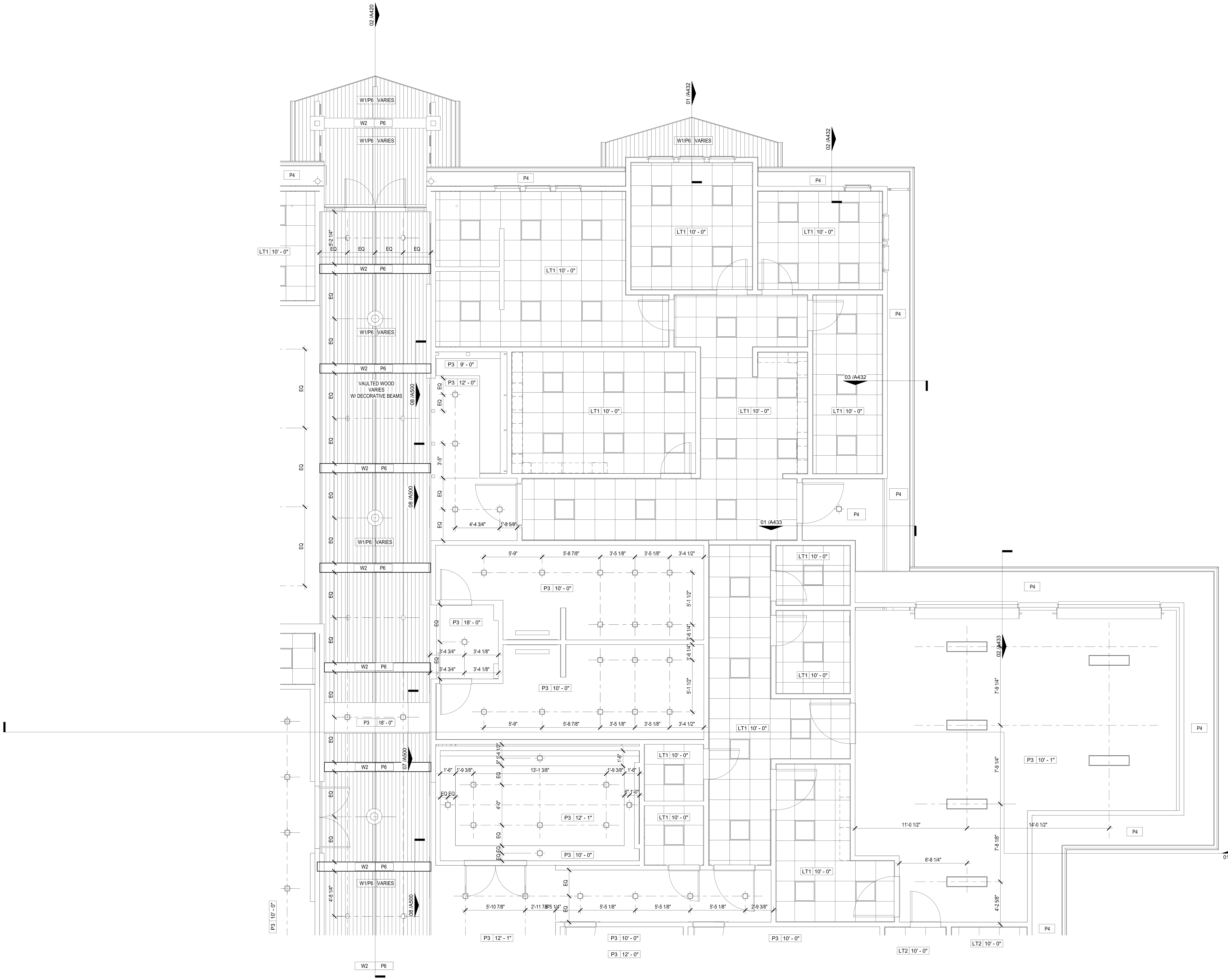
Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set

Enlarged RCP - Quadrant B

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

A221



01 Enlarged RCP - Quadrant C
1/4" = 1'-0"

Key Notes4

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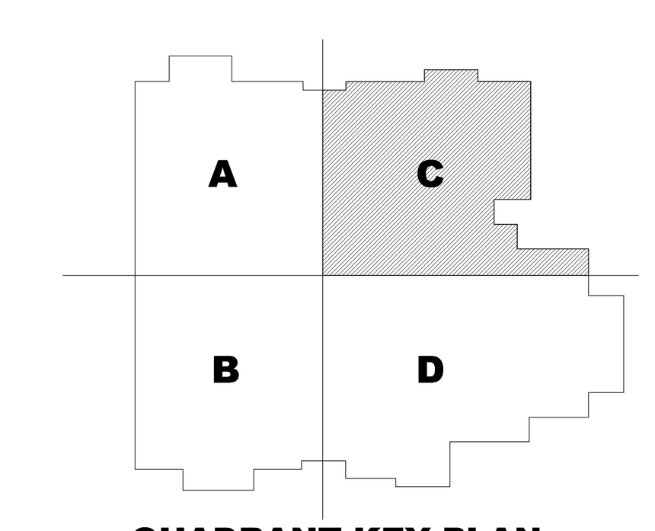

QUADRANT KEY PLAN

10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Enlarged RCP - Quadrant C

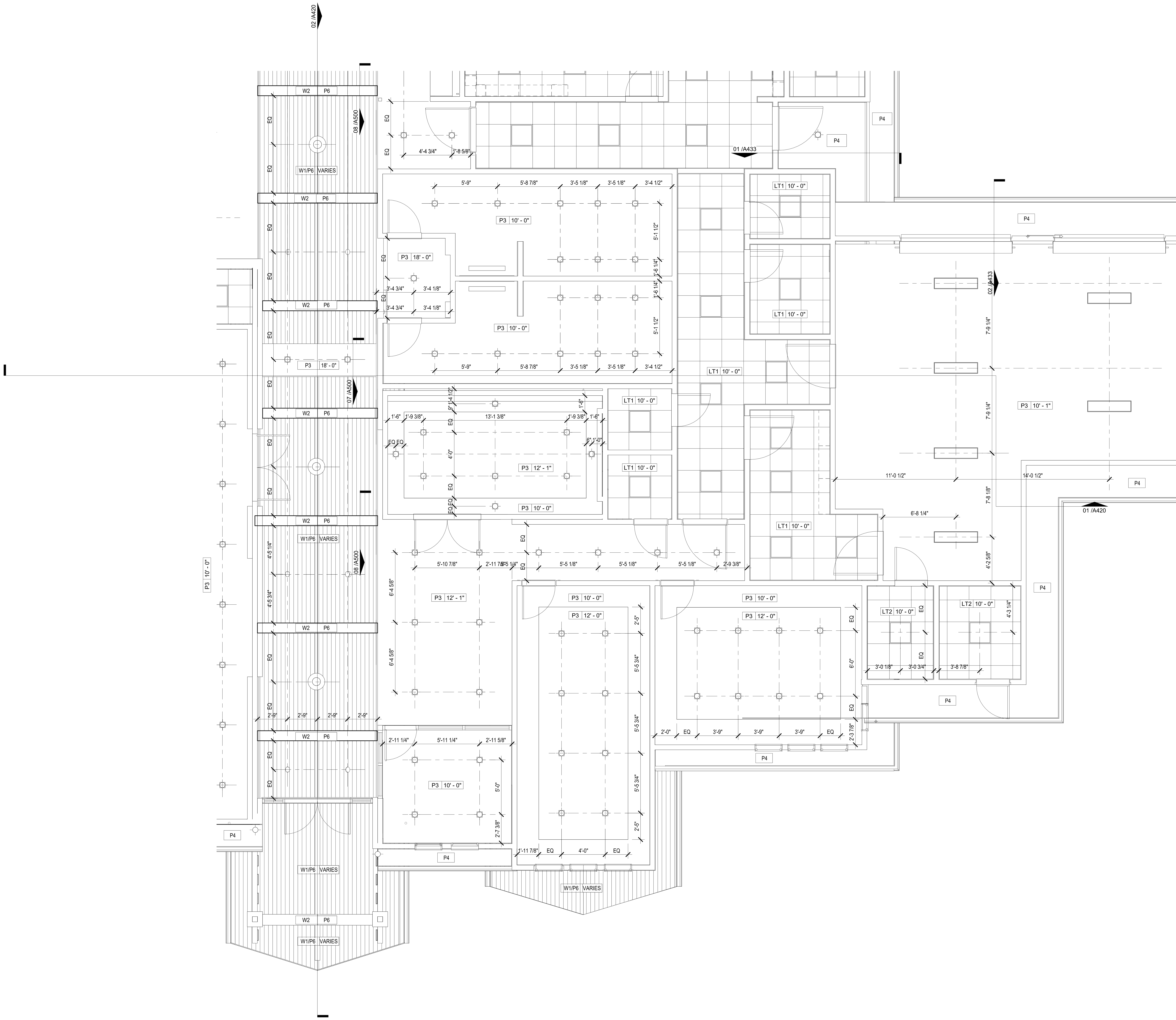
Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
08.07.24	CD Set
10.25.24	Rev1 Permit Set

A222

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641



01 **Enlarged RCP - Quadrant D**
1/4" = 1'-0"

Key Notes4

3.4	CMU BENCH. REF MATERIALS SCHEDULE AND DETAILS.
3.5	5' TALL CMU WALL WITH TILE FINISH ELEVATIONS, DETAILS, & MATERIAL SCHEDULE
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22.5	MOP SINK REF. PLUMBING DRAWINGS.

N-VIZION
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LIGHTING FIXTURES
REFERENCE FIXTURE SCHEDULE FOR MANUFACTURER AND PRODUCT DESCRIPTION

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	CHANDELIER
	1 X 2 LINEAR BOX
	RECESSED CAN
	RECESSED COLORED
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FINISH TYPES
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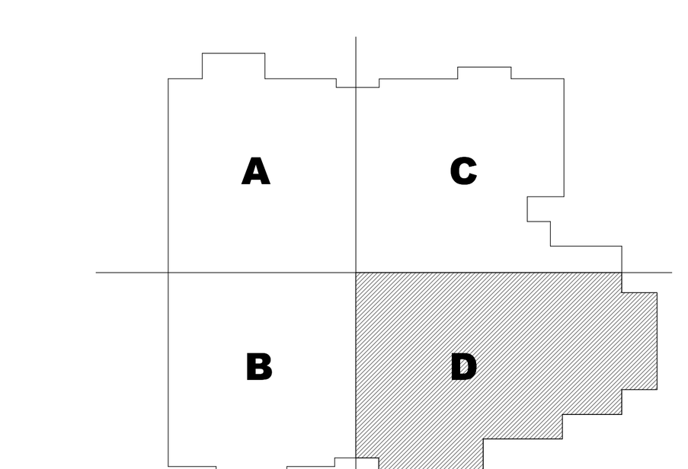

QUADRANT KEY PLAN

Enlarged RCP - Quadrant D

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MATERIAL, FINISH AND EQUIPMENT SCHEDULE

DIVISION	ITEM	ID	MANUFACTURER	PRODUCT	FINISH/COLOR	DESCRIPTION
03 CONCRETE						
04 MASONRY						
	TILE MORTAR BED	MB1	LATICRETE	3701 FORTIFIED MORTAR BED		INSTALL PER MANUFACTURER'S RECOMMENDATIONS - 1/2" THICKNESS - CONSULT ARCHITECT IF THICKNESS NEEDS TO VARY BASED ON FIELD CONDITIONS.
	SPLIT FACE CMU	CMU1	OLDCASTLE	SPLIT FACE CMU	WHITE LIMESTONE	INTALL IN RUNNING BOND PATTERN PER MANUFACTURER'S RECOMMENDATIONS
05 METALS	2X2 STEEL FRAME W/ CORRUGATED PANEL	CM1	D-MAC	1.5 " B - DECK		
06 WOOD AND PLASTICS						
	BLOCKING	BL1		2X6 SYP #3		INSTALL AT ALL GRAB BARS AND WALL MOUNTED DEVICES.
	WOOD T&G (CEILINGS & SOFFITS)	W1		1X8 WHITE OAK FLUSH JOINT T&G	P6 WITH CLEAR MATTE SEALER	STAGGER BOARDS ON INSTALL
	WOOD BEAM WRAPS	W2		1X WHITE OAK	P6 WITH CLEAR MATTE SEALER	SIZE BOARDS TO FULLY COVER BEAM OR TO MINIMIZE THE NUMBER OF BOARDS NEED PER FACE
	WOOD STUDS	ST1	STUDS			PER. STRUCT. DWGS STUDS TO BE SPACED @ 16" O.C.
07 THERMAL /MOISTURE						
	WALL CAVITY INSULATION	INS1	OWENS CORNING	R19 UNFACED INSULATION		INSTALL AT ALL WALLS TO BE INSULATED ON PLANS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS
	ROOF INSULATION	INS2	JOHNS MANVILLE	JM CORBOND III - CLOSED CELL		INSTALL PER MANUFACTURER'S RECOMMENDATIONS FOR A TOTAL OF R-49 UNDER THE ROOF DECK
	ACOUSTIC INSULATION	INS3	OWENS CORNING	QUIETZONE UNFACED BATTS		INSTALL IN INTERIOR WALLS AND ABOVE CEILINGS - REFERENCE ROOM FINISH SCHEDULE AND PLANS FOR LOCATIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS
	STANDING SEAM ROOFING	R1	MCELROY	MAXIMA - 2" SEAM - 18" WIDE PANEL	MATTE BLACK	INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
	WATER RESISTIVE BARRIER	WRB1	LATICRETE	HYDRO BAN 9255-0401-2		INSTALL PER MANUFACTURER'S RECOMMENDATIONS AT ALL EXTERIOR WALLS W/ TILE VENEER
	GYPSUM WALL BOARD	GB1	USG	5/8" SHEETROCK BRAND		INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE LEVEL 5 FINISH AT ALL WALLS EXCEPT STORAGE, MECHANICAL, ELECTRICAL OR JANITOR
	WATER RESIST. GYP. WALL BD.	GB2	USG	5/8" FIBEROCK BRAND AQUA - TOUGH		INSTALL AT PAINTED WET WALLS. PROVIDE LEVEL 5 FINISH AT ALL WALLS EXCEPT STORAGE, MECHANICAL, ELECTRICAL OR JANITOR.
	CEMENTITIOUS BACKER BOARD	CB1	USG	5/8" DUROCK CEMENT BOARD WITH EDGEGUARD		
	FIBER CEMENT SOFFIT PANEL	S01	JAMES HARDIE	NON VENTED SMOOTH	MIDNIGHT BLACK	
08 OPENINGS						
	STOREFRONT - EXTERIOR FRAMES	SF1	OLDCASTLE	SERIES 3000 THERMAL MULTIPANE	BLACK ANODIZED	INSTALL PER MANUF. REQUIREMENTS. REF. MANUF PROVIDED DRAWINGS. MAX GLASS U-VALUE = .50 MAX. SHGC = .25
	STOREFRONT - INTERIOR FRAMES	SF2	OLDCASTLE	SERIES FG2000	BLACK ANODIZED	1/4" CLEAR GLASS. PROVIDE SAFETY GLASS AS REQ'D. REF. WINDOW SCHED. & ELEVATIONS FOR LAYOUT
	STOREFRONT - EXTERIOR DOOR	SF3	OLDCASTLE	SERIES AD-375 THERMAL DOOR & FRAME, MEDIUM STILE	BLACK ANODIZED	
	STOREFRONT - CAULK	CA1	DOW CORNING	CELROY	BLACK	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
	GLAZING - EXTERIOR STOREFRONT	GZ1	PPG	1" INSULATED LOW E	JOHNS	MAX GLASS U-VALUE = 0.5 MAX. SHGC = 0.25, PROVIDE TEMPERED GLASS WHERE INDICATED, SEE WINDOW ELEVATIONS
	GLAZING - INTERIOR STOREFRONT	GZ2	PPG	1/4" GLASS	CLEAR	PROVIDE SAFETY GLASS AS REQ'D. REF. WINDOW SCHED. & ELEVATIONS FOR LAYOUT
	GLASS BRACKET AT COFFEE BAR	GB1	CRL	Z-SERIES SQUARE TYPE FLAT BASE STAINLESS CLAMP - Z934MBL	MATTE BLACK	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
	DOOR - EXTEROR STEEL PANEL	DR1	TAYLOR	CAMBRIDGE 5-PANEL HORIZONTAL DOOR	P5	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
	DOOR - EXTERIOR STEEL FLUSH	DR2	DEANSTEEL	SP SERIES FLUSH	P5	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
	DOOR - INTERIOR WOOD PANEL	DR3	KARONA	K3050 - 5 RAISED PANELS	P2	WOOD SPECIES (TDBD), 5 RAISED-PANELS. REF. DOOR SCHED. & DOOR TYPES
	DOOR - INTERIOR SOLID CORE WOOD	DR4	MOHAWK	SOLUTION II	L1	SOLID CORE, FLAT PANEL WITH PLASTIC LAMINATE VENEER - REF. DOOR SCHED.
	OVERHEAD DOOR	OHD1	OVERHEAD DOOR CORP.	MODEL 620 - 10'WX8'H	WHITE	STORMTITE ROLLING SERVICE - MOTORIZED
09 FINISHES						
	CONC. SEALER	SC1	SIKA SCOFIELD	CURESEAL-W		APPLY IN ACCORDANCE WITH MANUF. RECOMMENDATIONS
	VCT	VCT	ARMSTRONG	STANDARD EXCELON IMPERIAL FINISH	51915 CHARCOAL	INSTALL IN STACKED PATTERN. INSTALL PER MANUF RECOMMENDATIONS
	CARPET - PUBLIC AREAS	CPT1	TARKET	AIDA CLOTH	TYPESET 57203 - 18X36	VERTICAL ASHLAR PATTERN
	CARPET - EMPLOYEE AREAS	CPT2	TARKETT	INSPIRED NATURE	TUNDRA FLOWER 11663 - 18X36	VERTICAL ASHLAR PATTERN
	QUARTZ	Q1	CORIAN	QUARTZ	SNOW FLURRY - 2CM	
	QUARTZ	Q2	CORIAN	QUARTZ	COARSE PEPPER LEATHERED - 2CM	
	TILE - EXTERIOR / INTERIOR - LARGE FORMAT STONE	T1	MARAZZI	UNICHE	BIANCO UN10 - MATTE - 24X48	HORIZONTAL ASHLAR - INSTALL PER MANUF RECOMMENDATIONS - GROUT LATICRETE PERMACOLOR SELECT 2595 MINK - 1/8" JOINT
	TILE - EXTERIOR - PLANK STONE	T2	DALTILE	ARTICULO	EDITORIAL WHITE AR06 - MATTE 6X24	INSTALL PER MANUF. RECOMMENDATIONS - GROUT LATICRETE PERMACOLOR SELECT 2595 MINK - 1/8" JOINT
	NOT USED	T3	NOT USED			
	TILE - EXTERIOR / INTERIOR - WOOD PLANK	T4	MARAZZI	MERONA	NATURAL MR41 - 8X48 - MATTE	ASHLAR PATTTERN - INSTALL PER MANUF. RECOMMENDATIONS - GROUT LATICRETE PERMACOLOR SELECT 2556 DESERT KHAKI - 1/8" JOINT
	TILE - INTERIOR FLOOR - LARGE FORMAT STONE	T5	MARAZZI	HISTORIA	HERITAGE GRAY - 24X48 - MATTE	ASHLAR PATTTERN - INSTALL PER MANUF. RECOMMENDATIONS - GROUT LATICRETE PERMACOLOR SELECT 2587 STORMY GREY - 1/8" JOINT
	NOT USED	T6	NOT USED			
	TILE - INTERIOR - WOMEN'S RR - WET WALL	T7	DALTILE	INDOTERRA	WHITE DESERT RECTANGLE IN41 - MATTE 12X24	HORIZONTAL ASHLAR - INSTALL PER MANUF RECOMMENDATIONS. - GROUT LATICRETE PERMACOLOR SELECT 2590 LIGHT PEWTER - 1/8" JOINT
	TILE - INTERIOR - WOMEN'S RR - DRY WALL	T8	DALTILE	INDOTERRA	WHITE DESERT RECTANGLE WOVEN IN41 - TEXTURED - 12X24	VERTICAL ASHLAR - INSTALL PER MANUF RECOMMENDATIONS. - GROUT LATICRETE PERMACOLOR SELECT 2590 LIGHT PEWTER - 1/8" JOINT
	TILE - INTERIOR - WOMEN'S RR - DRY WALL BASE	T9	DALTILE	INDOTERRA	WHITE DESERT RECTANGLE IN41 - MATTE - 2X9	HORIZONTAL ASHLAR - INSTALL PER MANUF RECOMMENDATIONS. - GROUT LATICRETE PERMACOLOR SELECT 2590 LIGHT PEWTER - 1/8" JOINT
	TILE - INTERIOR - MEN'S RR - WET WALL	T10	DALTILE	INDOTERRA	VOLCANIC ASH RECTANGLE IN46 - MATTE 12X24	HORIZONTAL ASHLAR - INSTALL PER MANUF RECOMMENDATIONS. - GROUT LATICRETE PERMACOLOR SELECT 2545 RAVEN - 1/8" JOINT
	TILE - INTERIOR - MEN'S RR - DRY WALL	T11	DALTILE	INDOTERRA	VOLCANIC ASH RECTANGLE WOVEN IN46 -TEXTURED- 12X24	VERTICAL ASHLAR - INSTALL PER MANUF RECOMMENDATIONS. - GROUT LATICRETE PERMACOLOR SELECT 2545 RAVEN - 1/8" JOINT
	TILE - INTERIOR - MEN'S RR - DRY WALL BASE	T12	DALTILE	INDOTERRA	VOLCANIC ASH RECTANGLE IN46 - MATTE 2X9	HORIZONTAL ASHLAR - INSTALL PER MANUF RECOMMENDATIONS - GROUT LATICRETE PERMACOLOR SELECT 2545 RAVEN - 1/8" JOINT
	TILE INSTALL MORTAR	TM1	LATICRETE	3701 MORTAR ADMIX		INSTALL PER MANUFACTURER'S RECOMMENDATIONS - 3/16" THICKNESS - CONSULT ARCHITECT IF THICKNESS NEEDS TO VARY BASED ON FIELD CONDITIONS.
	EDGE TRIM - INTERIOR WALL TILE WOMEN'S RR	TR1	SCHLUTER	SCHIENE - SIZE PER T7 THICKNESS	COLOR COATED ALUMINUM - IVORY	INSTALL PER MANUF. RECOMMENDATIONS - REF DETAIL ON A500
	EDGE TRIM - INTERIOR WALL TILE MEN'S RR	TR2	SCHLUTER	SCHIENE - SIZE PER T10 THICKNESS	COLOR COATED ALUMINUM - DARK ANTHRACITE	INSTALL PER MANUF. RECOMMENDATIONS - REF DETAIL ON A500
	EDGE TRIM - INTERIOR FLOOR TILE	TR3	SCHLUTER	SCHIENE - SIZE PER T5 THICKNESS	COLOR COATED ALUMINUM - STONE GREY	PROVIDE AT INTERIOR FLOORING TRANSITIONS BETWEEN CHANGES IN TILE COLOR & TRANSITIONS BETWEEN TILE AND OTHER FLOORING MATERIALS.
	EDGE TRIM - RESTROOM WALL TILE	TR4	SCHLUTER	DECO-SG SHADOW GAP - 1/2"	ALUMINUM SATIN	INSTALL BETWEEN TILE BASE AND TILE ABOVE BASE IN WOMEN'S AND MEN'S RR. INSTALL PER MANUF. RECOMMENDATIONS.
	THRESHOLD - EXTERIOR DOORS AT TILE FLOOR	TR5	PEMKO	255 HALF SADDLE - 5" WIDE X 1/2" HIGH	MILL FINISH ALUMINUM	INSTALL PER MANUF. RECOMMENDATIONS AT EXTERIOR DOOR THRESHOLDS ADJACENT TO TILE FLOORS
	THRESHOLD - EXTERIOR DOORS AT VCT FLOOR	TR6	PEMKO	271 SADDLE THRESHOLD - 5" WIDE X 1/4" HIGH	MILL FINISH ALUMINUM	INSTALL PER MANUF. RECOMMENDATIONS AT EXTERIOR DOOR THRESHOLDS ADJACENT TO VCT FLOORS
	PLASTIC LAMINATE - COFFEE BAR	PL1	FORMICA	WHITE ASH - 8841	WOODBRUSH FINISH	
	PLASTIC LAMINATE - BACK OF HOUSE DOORS & CABINETS	PL2	FORMICA	ASHWOOD BEIGE - 5785	NATURAL GRAIN FINISH	
	PLASTIC LAMINATE - BACK OF HOUSE COUNTERTOPS	PL3	FORMICA	WHITE SHALESTONE - 9525	MATTE FINISH	
	WALL BASE MOULDING - AT TILE	WB1		1X6 HARDWOOD - FLAT PROFILE	PRIMED FOR PAINT	REFERENCE INTERIOR ELEVATIONS FOR PAINT COLOR
	WALL BASE MOULDING - AT VCT1	RB1	JOHNSONITE	TRADITIONAL WALL BASE - 4"	TA6 - BEDROCK CG - COLORMATCH	
	WALL BASE MOULDING - AT CPT2	RB2	JOHNSONITE	TRADITIONAL WALL BASE - 4"	63 - BURNT UMBER B - COLORMATCH	

04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION
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Materials Schedule

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments

MATERIAL, FINISH AND EQUIPMENT SCHEDULE (CONTINUED)

DIVISION	ITEM	ID	MANUFACTURER	PRODUCT	FINISH/COLOR	DESCRIPTION
09 FINISHES	PAINT - INTERIOR WALL	P1	SHERWIN WILLIAMS	PROMAR 200	SW7627 WHITE HERON - FLAT	APPLY IN ACCORDANCE WITH MANUF. SPEC. PROVIDE SAMPLE MOCK-UP FOR APPROVAL PRIOR TO PAINTING ENTIRE JOB.
	PAINT - INTERIOR DOORS & TRIM	P2	SHERWIN WILLIAMS	PROMAR 200	SW9165 GOSSAMER VEIL - SEMI-GLOSS	APPLY IN ACCORDANCE WITH MANUF. SPEC. PROVIDE SAMPLE MOCK-UP FOR APPROVAL PRIOR TO PAINTING ENTIRE JOB.
	PAINT - INTERIOR CEILINGS	P3	SHERWIN WILLIAMS	PROMAR 200	SW7757 HIGH REFLECTIVE WHITE - FLAT	APPLY IN ACCORDANCE WITH MANUF. SPEC. PROVIDE SAMPLE MOCK-UP FOR APPROVAL PRIOR TO PAINTING ENTIRE JOB.
	PAINT - EXTERIOR TRIM	P4	SHERWIN WILLIAMS	DURATION EXTERIOR ACRYLIC LATEX	SW6258 TRICORN BLACK - SATIN	APPLY IN ACCORDANCE WITH MANUF. SPEC. PROVIDE SAMPLE MOCK-UP FOR APPROVAL PRIOR TO PAINTING ENTIRE JOB.
	PAINT - EXTERIOR DOORS & FRAMES	P5	SHERWIN WILLIAMS	DURATION EXTERIOR ACRYLIC LATEX	SW9166 DRIFT OF MIST - SEMI-GLOSS	APPLY IN ACCORDANCE WITH MANUF. SPEC. PROVIDE SAMPLE MOCK-UP FOR APPROVAL PRIOR TO PAINTING ENTIRE JOB.
	PAINT - EXTERIOR - WOOD STAIN	P6	SHERWIN WILLIAMS	POLYURETHANE SEMI-TRANSPARENT - CLEAR MATTE SEALER	WOOD W1 & W2 TO MATCH COLOR OF TILE 4	APPLY IN ACCORDANCE WITH MANUF. SPEC. PROVIDE SAMPLE MOCK-UP FOR APPROVAL PRIOR TO PAINTING ENTIRE JOB.
	FRP	FRP1	MARLITE	STANDARD FRP, S100G	SMOOTH WHITE	PROVIDE SEALANT AS NECESSARY FOR WET AREAS.
	ACCOUSTICAL CLG TILE - CONDITIONED SPACES	LT1	USG	RADAR - 2220 - SHADOWLINE TAPERED	WHITE	INSTALL PER MANUFACTURER SPECS.
	ACCOUSTICAL CLG TILE- UNCODITIONED SPACES	LT2	USG	RADAR - 2210 - SQUARE EDGE	WHITE	INSTALL PER MANUFACTURER SPECS.
	ACCOUSTICAL CLG GRID	LG1	USG	DXL 15/16 GRID SYSTEM	WHITE	INSTALL PER MANUFACTURER SPECS.
10 SPECIALTIES						
	TOILET PARTITIONS	TP1	SCRANTON PRODUCTS	HINY HIDERS	BRONZE HAMMERED	FLOOR-MOUNTED, OVERHEAD BRACED PARTITIONS.
	GRAB BARS	GB1	BRADLEY	SERIES 812 CONCEALED MOUNTING	SATIN STAINLESS	PROVIDE BLOCKING IN WALL. INSTALL PER MANUF. SPECS.
	TOILET PAPER DISPENSERS	TPD1	MOEN	LINDOR SPOT RESISTANT PIVOTING PAPER HOLDER	BRUSHED NICKEL - MY8708BN	MOUNT TWO DISPENSERS SIDE BY SIDE IN EACH STALL. PROVIDE BLOCKING.
	SANITARY NAPKIN DISPOSAL	SN1	BOBRICK	PARTITION-MOUNTED SAN. NAPKIN DISPOSAL B-354	SATIN FINISH STAINLESS	INSTALL PER MANUF RECOMMENDATIONS. REFERENCE PLAN FOR LOCATIONS.
	BABY CHANGING STATION	BCS1	FOUNDATIONS	WALL MOUNTED 5410339 - FRAMELESS HORIZONTAL	STAINLESS STEEL	PROVIDE BLOCKING IN WALL. INSTALL PER MANUF. SPECS.
	MIRROR	MI1	BOBRICK	B-2902436		PROVIDE BLOCKING IN WALL. INSTALL PER MANUF. SPECS.
13 SPECIAL CONST.						
21 FIRE SUPPRESSION	SPRINKLER SYSTEM					REF SPRINKLER CONTRACTOR PLANS
	KNOXBOX	KB1	THE KNOX COMPANY	KNOXBOX 3200 - RECESS MOUNT	BLACK	INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND CITY OF LEANDER FIRE DEPT REQUIREMENTS
	FIRE EXTINGUISHER CABINET - SEMI-RECESSED	FEC1	JL INDUSTRIES	EMBASSY SERIES - TRIMLESS - CONCEALED PULL	PAINTED STEEL - P1	INSTALL PER MANUF. RECOMMENDATIONS. SEE LIFE SAFETY PLAN FOR LOCATIONS
	FIRE EXTINGUISHER CABINET - SURFACE MOUNT	FEC2	JL INDUSTRIES	SCHOOL SERIES - VERTICAL DUO PANEL	WHITE POWDER COAT	INSTALL PER MANUF. RECOMMENDATIONS. SEE LIFE SAFETY PLAN FOR LOCATIONS
22 PLUMBING	REFERENCE MEP DRAWINGS					
23 MECHANICAL	REFERENCE MECHANICAL DRAWINGS					
24 ELECTRICAL	REFERENCE ELECTRICAL DRAWINGS					

NOTES:

1 OWNER AND CONTRACTOR TO VERIFY ALL SCHEDULES PRIOR TO ORDERING MATERIALS AND CONSTRUCTION
2 ALL HARDWARE AND THRESHOLDS TO BE TAS COMPLIANT
3 GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF NEW WORK PRIOR TO PERFORMING ANY WORK OR ORDERING ANY MATERIALS. ANY DISCREPANCIES SHALL BE REPORTED TO ARCHITECT FOR CONSIDERATION PRIOR TO PROCEEDING WITH WORK. GC ASSUMES RESPONSIBILITY FOR UNREPORTED DISCREPANCIES.
4 ALTERNATIVES REQUIRE SUBMITTAL TO ARCHITECT AND OWNER FOR APPROVAL PRIOR TO ORDERING MATERIAL
5 CONTRACTOR TO VERIFY PROPER USE AND INSTALLATION OF MATERIALS WITH MANUFACTURER PRIOR TO CONSTRUCTION.
6 WHERE NO MATERIALS ARE SPECIFIED, CONSULT ARCHITECT AND OWNER PRIOR TO CONSTRUCTION.
7 ALL PRODUCTS INSTALLED PER MANUF. REQUIREMENTS

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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ROOM FINISH SCHEDULE

RM#	ROOM NAME	FLOOR: CARPET	FLOOR: TILE	FLOOR: VCT	FLOOR: SEALED CONCRETE	FLOOR: RUBBER	BASE: VINYL	BASE: TILE	BASE: WOOD	BASE: NONE	WALL: GYPSUM BOARD	WALL: PAINT	WALL: TILE	WALL: FRP	CEILING: LAY-IN CLG	CEILING: GYP. BOARD	CEILING: PAINT	CEILING: WOOD	CEILING HT.	ACOUSTIC: ACOUSTIC INSULATION	RM#	REMARKS
100	LOUNGE	▪							▪		▪					▪	▪		12'		100	4,5
101	LOUNGE	▪							▪		▪					▪	▪		12'		101	4,5
105	PREMIER VENUE		▪						▪		▪	▪	▪			▪	▪	▪	VARIES	▪	105	6
106	STANDARD VENUE		▪						▪		▪	▪	▪			▪	▪	▪	VARIES	▪	106	1,4,5,6
107	BASIC VENUE		▪						▪		▪	▪	▪			▪	▪		VARIES	▪	107	1,4,5,6
110	ARRANGEMENT	▪							▪		▪	▪				▪	▪		VARIES	▪	110	1,4,5,6
111	ARRANGEMENT	▪							▪		▪	▪				▪	▪		VARIES	▪	111	1,6
115	OFFICE	▪					▪				▪	▪				▪	▪		10'	▪	115	1,6
116	OFFICE	▪					▪				▪	▪			▪				10'	▪	116	1,6
117	OFFICE	▪					▪				▪	▪			▪				10'	▪	117	1,6
118	OFFICE	▪					▪				▪	▪			▪				10'	▪	118	1,6
120	BREAK ROOM			▪			▪				▪	▪			▪				10'		119	
122	JANITOR			▪			▪				▪	▪		▪	▪				10'		120	
123	ELECTRICAL				▪		▪				▪	▪				▪	▪		10'		121	
124	SPRINKLER				▪		▪				▪	▪				▪	▪		10'		122	
125	AV			▪			▪				▪	▪			▪				10'		123	
126	MECHANICAL YARD				▪														N/A		124	
130	DRESSING			▪			▪				▪				▪				10'		130	
135	MENS R.R.		▪							▪	▪	▪	▪			▪	▪		10'	▪	135	1,2,4,5,6
136	WOMENS R.R.		▪							▪	▪	▪	▪			▪	▪		10'	▪	136	1,2,4,5,6
137	UNISEX R.R.			▪			▪				▪	▪	▪		▪				10'	▪	137	1,2,3,4,5,6
140	STORAGE			▪			▪				▪	▪			▪				10'		140	
141	STORAGE		▪				▪				▪	▪			▪				10'		141	
142	STORAGE		▪				▪				▪	▪			▪				10'		142	
143	STORAGE		▪				▪				▪	▪			▪				10'		143	
144	STORAGE			▪			▪				▪	▪			▪				10'		144	
150	CORRIDOR		▪						▪		▪	▪	▪						10'		150	4,5
151	CORRIDOR		▪						▪		▪	▪	▪		▪	▪	▪		12'		151	
152	CORRIDOR			▪			▪				▪	▪			▪				10'		152	
153	CORRIDOR			▪			▪				▪	▪			▪				10'		153	
154	CORRIDOR		▪						▪		▪	▪	▪			▪	▪		12'		154	4,5
160	COFFEE		▪					▪			▪	▪	▪			▪	▪		VARIES	▪	160	6
165	GARAGE				▪		▪				▪	▪				▪	▪		10'		165	

REMARKS:

1 PROVIDE SOUND ATTENUATION INSULATION IN SURROUNDING WALLS
2 PROVIDE SOUND ATTENUATION INSULATION IN PLUMBING WALLS
3 PROVIDE WATER RESISTANT GYP. BOARD AT DAMP WALLS AND PAINTED WET WALLS
4 PROVIDE CEMENTITIOUS BACKER BOARD ON ALL WALLS WITH TILE
5 REFER TO FINISH PLANS AND REFLECTED CEILING PLANS FOR ROOMS WITH MULTIPLE FINISHES
6 INSTALL ACOUSTIC INSULATION IN INTERIOR WALLS AND ABOVE CEILING - REFERENCE MATERIALS SCHEDULE INS3

NOTES:

1 REFERENCE FIRE DETAILS AND FIRE, SHEET A020, FOR ADDITIONAL FIRE RATING INFORMATION
2 ALL FLOORING TRANSITIONS AND THRESHOLDS TO BE ACCESSIBLE REF. FLOOR FINISH PLAN AND ACCESSIBILITY DETAILS.
3 OWNER AND CONTRACTOR TO VERIFY ALL SCHEDULES PRIOR TO ORDERING MATERIALS AND STARTING CONSTRUCTION
4 GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO PERFORMING ANY WORK OR ORDERING ANY MATERIALS. ANY DISCREPANCIES SHALL BE REPORTED TO ARCHITECT FOR CONSIDERATION PRIOR TO PROCEEDING WITH WORK. GC ASSUMES RESPONSIBILITY FOR UNREPORTED DISCREPANCIES.
5 ALTERNATES REQUIRE SUBMITTAL TO ARCHITECT AND OWNER FOR APPROVAL PRIOR TO ORDERING MATERIAL
6 ALL GYP. BOARD CORNERS TO BE FINISHED SQUARE

DOOR SCHEDULE

NO	ROOM	SOURCE	DOOR SIZE	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	HRDWR	MANUF. DOOR	MANUF. FRAME	NO	REMARKS
D105A	PREMIER VENUE	NEW	(2) 3'-0" x 8'-0"	D	STEEL	PAINT	STEEL	PAINT	HW2	TAYLOR	TAYLOR	D105A	3,5
D105B	PREMIER VENUE	NEW	(2) 3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW6	KARONA	KARONA	D105B	
D105C	PREMIER VENUE	NEW	(2) 3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW6	KARONA	KARONA	D105C	
D106A	STANDARD VENUE	NEW	(2) 3'-0" x 8'-0"	D	STEEL	PAINT	STEEL	PAINT	HW2	TAYLOR	TAYLOR	D106A	3,5
D106B	STANDARD VENUE	NEW	3'-0" x 8'-0"	D	STEEL	PAINT	STEEL	PAINT	HW2.1	TAYLOR	TAYLOR	D106B	3,5
D106C	STANDARD VENUE	NEW	(2) 3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW6	KARONA	KARONA	D106C	
D107	BASIC VENUE	NEW	(2) 3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW6	KARONA	KARONA	D107	
D110	ARRANGEMENT	NEW	3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW7	KARONA	KARONA	D110	
D111	ARRANGEMENT	NEW	3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW7	KARONA	KARONA	D111	
D115	OFFICE	NEW	3'-0" x 7'-0"	B	WOOD	P-LAMINATE	ALUMINUM	BLACK ANODIZED	HW10	MOHAWK	RACO	D115	
D116	OFFICE	NEW	3'-0" x 7'-0"	B	WOOD	P-LAMINATE	ALUMINUM	BLACK ANODIZED	HW10	MOHAWK	RACO	D116	
D117	OFFICE	NEW	3'-0" x 7'-0"	B	WOOD	P-LAMINATE	ALUMINUM	BLACK ANODIZED	HW10	MOHAWK	RACO	D117	
D118	OFFICE	NEW	3'-0" x 8'-0"	A	ALUMINUM	BLACK ANODIZED	ALUMINUM	BLACK ANODIZED	HW4	OLD CASTLE	OLD CASTLE	D118	1,2,4
D120	BREAK	NEW	3'-0" x 7'-0"	B	WOOD	P-LAMINATE	ALUMINUM	BLACK ANODIZED	HW7	MOHAWK	RACO	D120	
D122	JANITOR	NEW	3'-0" x 7'-0"	B	WOOD	P-LAMINATE	ALUMINUM	BLACK ANODIZED	HW7	MOHAWK	RACO	D122	
D123	ELECTRICAL	NEW	3'-0" x 7'-0"	B	STEEL	PAINT	STEEL	PAINT	HW3	DEANSTEEL	DEANSTEEL	D123	3.5
D124	SPRINKLER	NEW	3'-0" x 7'-0"	B	STEEL	PAINT	STEEL	PAINT	HW3	DEANSTEEL	DEANSTEEL	D124	3,5
D125	AV	NEW	3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW7	KARONA	KARONA	D125	
D130A	DRESSING	NEW	4'-0" x 7'-0"	B	WOOD	P-LAMINATE	ALUMINUM	BLACK ANODIZED	HW9	MOHAWK	RACO	D130A	
D130B	DRESSING	NEW	4'-0" x 7'-0"	B	STEEL	PAINT	STEEL	PAINT	HW5	DEANSTEEL	DEANSTEEL	D130B	3,5
D135	MENS RESTROOM	NEW	3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW6	KARONA	KARONA	D150B	
D136	WOMENS RESTROOM	NEW	3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW6	KARONA	KARONA	D136	
D137	UNISEX RESTROOM	NEW	3'-0" x 7'-0"	B	WOOD	P-LAMINATE	ALUMINUM	BLACK ANODIZED	HW8	MOHAWK	RACO	D137	
D140	STORAGE	NEW	3'-0" x 7'-0"	B	WOOD	P-LAMINATE	ALUMINUM	BLACK ANODIZED	HW7	MOHAWK	RACO	D140	
D141	STORAGE	NEW	3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW7	KARONA	KARONA	D141	
D142	STORAGE	NEW	(2) 3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW7	KARONA	KARONA	D142	
D143	STORAGE	NEW	(2) 3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW7	KARONA	KARONA	D143	
D144	STORAGE	NEW	3'-0" X 7'-0"	B	WOOD	P-LAMINATE	ALUMINUM	BLACK ANODIZED	HW7	MOHAWK	RACO	D144	
D150A	CORRIDOR	NEW	(2) 3'-0" x 8'-0"	A	ALUMINUM	BLACK ANODIZED	ALUMINUM	BLACK ANODIZED	HW7	OLD CASTLE	OLD CASTLE	D150A	1,2,3
D150B	CORRIDOR	NEW	(2) 3'-0" x 8'-0"	A	ALUMINUM	BLACK ANODIZED	ALUMINUM	BLACK ANODIZED	HW7	OLD CASTLE	OLD CASTLE	D150B	1,2,3
D151A	CORRIDOR	NEW	(2) 3'-0" x 8'-0"	D	STEEL	PAINT	STEEL	PAINT	HW2	TAYLOR	TAYLOR	D151A	3,5
D151B	CORRIDOR	NEW	(2) 3'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW6	KARONA	KARONA	151B	
D152A	CORRIDOR	NEW	4'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW9	KARONA	KARONA	D152A	
D152B	CORRIDOR	NEW	4'-0" x 8'-0"	B	STEEL	PAINT	STEEL	PAINT	HW3	TAYLOR	TAYLOR	D152B	3,5
D153	CORRIDOR	NEW	4'-0" x 8'-0"	B	STEEL	PAINT	STEEL	PAINT	HW3	TAYLOR	TAYLOR	D153	3,5
D154	CORRIDOR	NEW	4'-0" x 8'-0"	D	WOOD	PAINT	WOOD	PAINT	HW9	KARONA	KARONA	D154	
D165A	GARAGE	NEW	3'-0" X 7'-0"	B	STEEL	PAINT	STEEL	PAINT	HW3	DEANSTEEL	DEANSTEEL	D165A	3,5
D165B	GARAGE	NEW	8'-0" x 10'-0"	C	STEEL	PAINT	STEEL	PAINT	N/A	OVERHD DR CO	OVERHD DR CO	D165B	3,5
D165C	GARAGE	NEW	8'-0" x 10'-0"	C	STEEL	PAINT	STEEL	PAINT	N/A	OVERHD DR CO	OVERHD DR CO	D165C	3,5

REMARKS:

1 ALL GLAZING IN DOORS TO BE TEMPERED SAFETY GLASS
2 REF. WINDOW SCHEDULE AND INTERIOR ELEVATIONS FOR ATTACHED TRANSOM AND SIDELITE
3 INSULATED DOOR FOR EXTERIOR DOORS
4 STOREFRONT DOORS - U-VALUE=0.60, SHGC=0.33
5 METAL DOOR U-VALUE=0.60

NOTES:

1 GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF ANY EXISTING CONDITIONS OR NEW WORK PRIOR TO PERFORMING ANY WORK OR ORDERING ANY MATERIALS. ANY DISCREPANCIES SHALL BE REPORTED TO ARCHITECT FOR CONSIDERATION PRIOR TO PROCEEDING WITH WORK. GC ASSUMES RESPONSIBILITY FOR UNREPORTED DISCREPANCIES.
2 OWNER AND CONTRACTOR TO VERIFY ALL SCHEDULES PRIOR TO ORDERING MATERIALS
3 ALTERNATES REQUIRE SUBMITTAL TO ARCHITECT AND OWNER FOR APPROVAL PRIOR TO ORDERING MATERIAL
4 ALL HARDWARE AND THRESHOLDS TO BE TAS COMPLIANT
5 REFERENCE DETAILS FOR ADDITIONAL FIRE RATING INFORMATION
6 REFERENCE DETAILS AND SECTIONS FOR LOCATIONS OF FIRE RATED GYP. BOARD
7 ALL WOOD DOORS TO BE SOLID CORE

HARDWARE SETS

QTY/DESCRIPTION

HW1 - EXTERIOR STOREFRONT DOORS - PAIR
ENTRANCE LOCK KEYED - PANIC WITH PULL TRIM - BLACK
2 CONTINUOUS HINGES
2 EXIT DEVICE
2 PULL
2 DOOR CLOSER
2 CYLINDER
2 DOOR SWEEP
1 THRESHOLD
1 SET WEATHER STRIP
2 FLOOR-MOUNTED DOORSTOPS

HW2 - EXTERIOR STEEL DOORS - PAIR
ENTRANCE LOCK KEYED - PANIC WITH PULL TRIM - BLACK
2 CONTINOUS HINGE
2 EXIT DEVICE
2 PULL
2 DOOR CLOSER
1 THRESHOLD
1 SET WEATHERSTRIP
2 DOOR BOTTOM SWEEP

HW2.1 - EXTERIOR STEEL DOORS - SINGLE
ENTRANCE LOCK KEYED - PANIC WITH PULL TRIM - BLACK
1 CONTINOUS HINGE
1 EXIT DEVICE
1 PULL
1 DOOR CLOSER
1 THRESHOLD
1 SET WEATHERSTRIP
1 DOOR BOTTOM SWEEP

HW3 - EXTERIOR STEEL DOOR - SINGLE
ENTRANCE LOCK KEYPAD - PANIC WITH LEVER TRIM - BLACK
1 CONTINUOUS HINGE
1 EXIT DEVICE
1 LEVER WITH KEYPAD
1 DOOR CLOSER
1 KICK PLATE
1 THRESHOLD
1 SET WEATHERSTRIP
1 DOOR SWEEP
1 FLOOR-MOUNTED DOORSTOP

HW4- INTERIOR STOREFRONT DOOR - SINGLE
PUSH-PULL - NO LATCH - BLACK
1 CONTINUOUS HINGE
1 PUSH
1 PULL
1 CLOSER
SILENCER
1 FLOOR-MOUNTED DOORSTOP

HW5- INTERIOR STEEL DOOR - SINGLE
LEVER LOCK KEYPAD- BLACK
4 HINGE 4 1/2 STD WT
1 LEVER WITH KEYPAD
1 CLOSER
1 KICK PLATE
SILENCER
1 FLOOR-MOUNTED DOORSTOP

HW6 - INTERIOR WOOD DOORS - PAIR
PUSH-PULL - NO LATCH - BLACK
8 HINGE 4 1/2 STD WT
2 PUSH
2 PULL
2 CLOSER
SILENCER

HW6.1 - INTERIOR WOOD DOORS - SINGLE
PUSH-PULL - NO LATCH - BLACK
4 EA. HINGE 4 1/2" STD.. WT.
1 PUSH
1 PULL
1 CLOSER
SILENCER
1 FLOOR-MOUNTED DOORSTOP

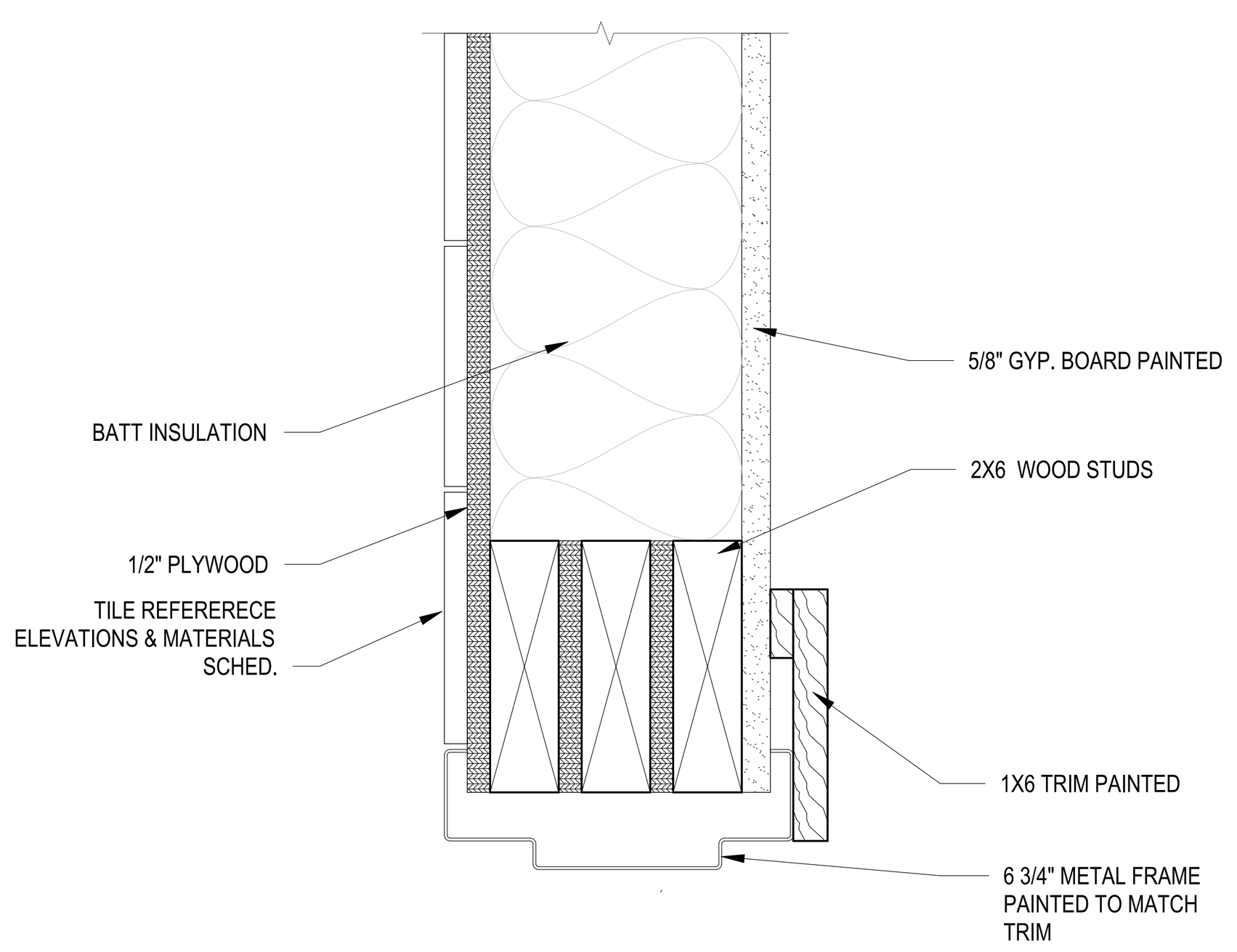
HW7 - INTERIOR WOOD DOOR - SINGLE
LEVER PASSAGE WITH LATCH - BLACK
4 EA. HINGE 4 1/2" STD.. WT.
1 LEVER
1 CLOSER
SILENCER
1 FLOOR-MOUNTED DOORSTOP

HW8 - INTERIOR WOOD DOOR - SINGLE
LEVER PRIVACY - BLACK
4 EA. HINGE 4 1/2" STD.. WT.
1 LEVER PRIVACY W/ INDICATOR
1 CLOSER
SILENCER
1 FLOOR-MOUNTED DOORSTOP

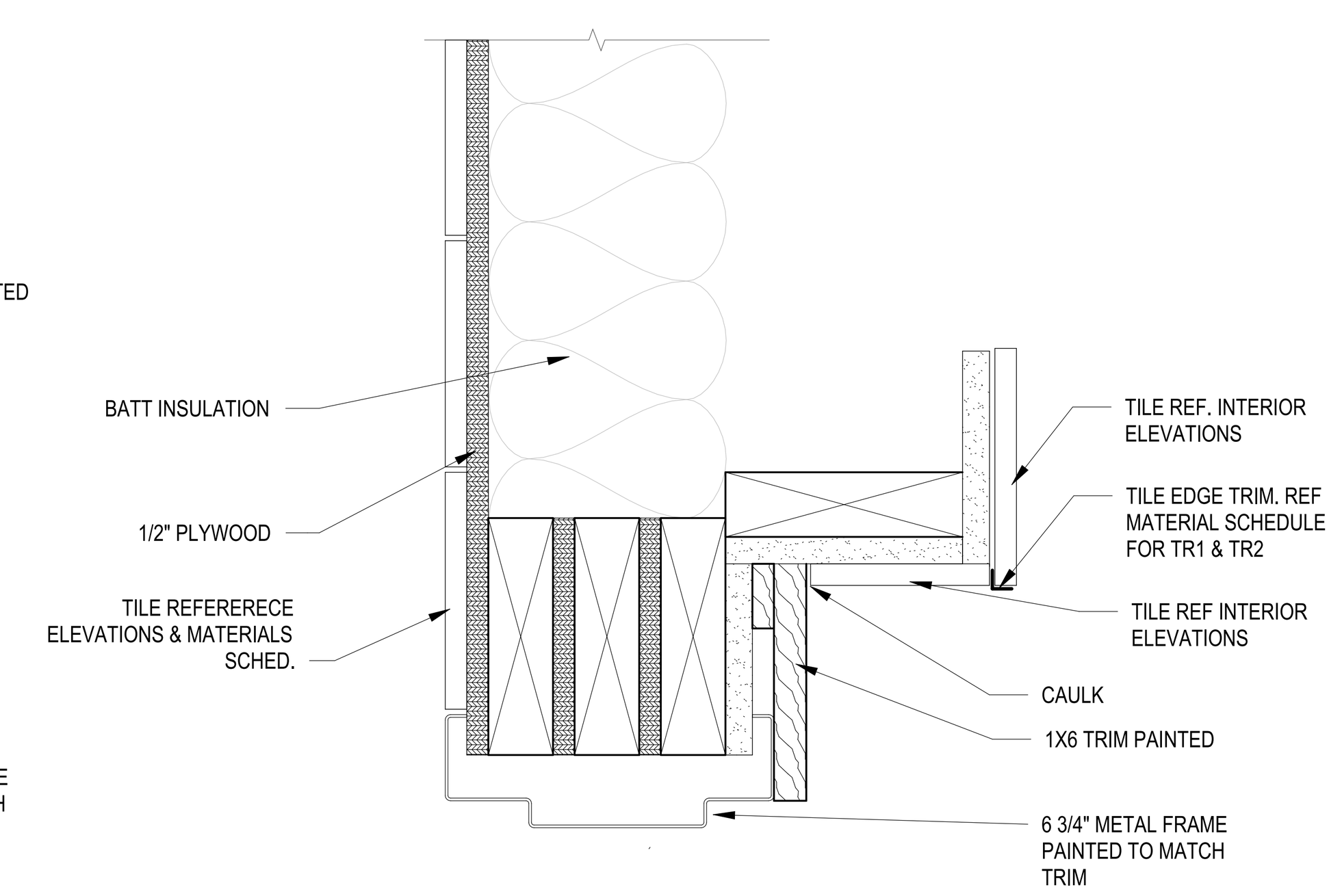
HW9- INTERIOR WOOD DOOR - SINGLE
LEVER LOCK KEYPAD- BLACK
4 HINGE 4 1/2 STD WT
1 LEVER WITH KEYPAD
1 CLOSER
1 KICK PLATE
SILENCER
1 FLOOR-MOUNTED DOORSTOP

HW10- INTERIOR WOOD DOOR - SINGLE
LEVER LOCK - BLACK
4 HINGE 4 1/2 STD WT
1 LEVER WITH LOCK
1 CLOSER
SILENCER
1 FLOOR-MOUNTED DOORSTOP

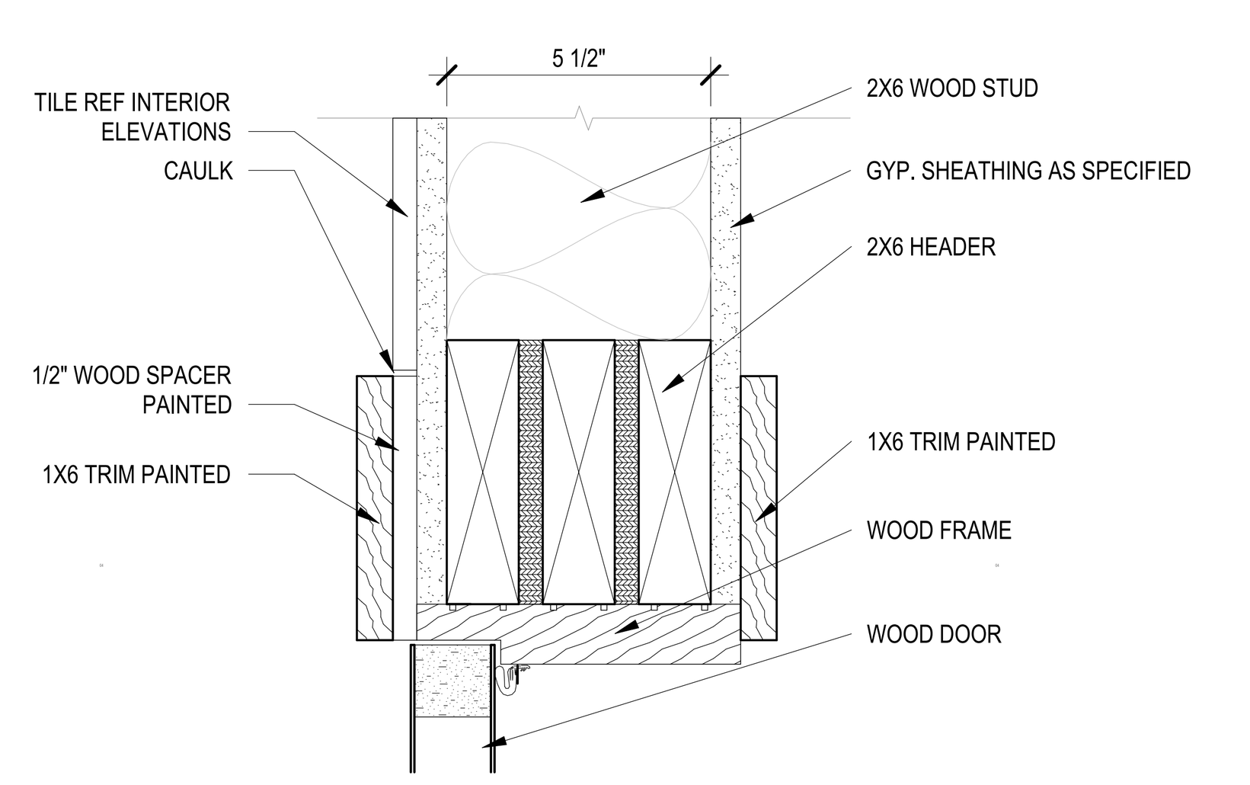
HW11- EXTERIOR OVERHEAD DOOR
CURTAIN: FLAT PROFILE TYPE F-265
20 GAUGE GALVANIZED STEEL
POLYESTER TOP COAT - TAN
VINYL BOTTOM, INTERIOR GUIDE
AND LINTEL WEATHERSEALS
BOTTOM BAR: TWO GALVANIZED STEEL ANGLES
BRACKETS: GALVANIZED STEEL TO SUPPORT
COUNTERBALANCE, CURTAIN AND HOOD
HOOD: 24 GAUGE GLAVANIZED STEEL
WITH INTERMEDIATE SUPPORTS AS REQUIRED
ELECTRONIC MOTOR OPERATION
SENSING EDGE PROTECTION
ELECTRIC SENSING EDGE
OPERATION CONTROLS:
PUSH BUTTON OPERATED CONTROL STATIONS
WITH OPEN, CLOSE AND STOP BUTTONS
CONTROLS FOR BOTH INTERIOR AND EXTERIOR
SURFACE MOUNTED
NO SPECIAL OPERATION
STANDARD WIND LOAD
LOCK: CYLINDER LOCK FOR ELECTRIC OPERATION
MOUNTING CONDITION: FACE-OF-WALL



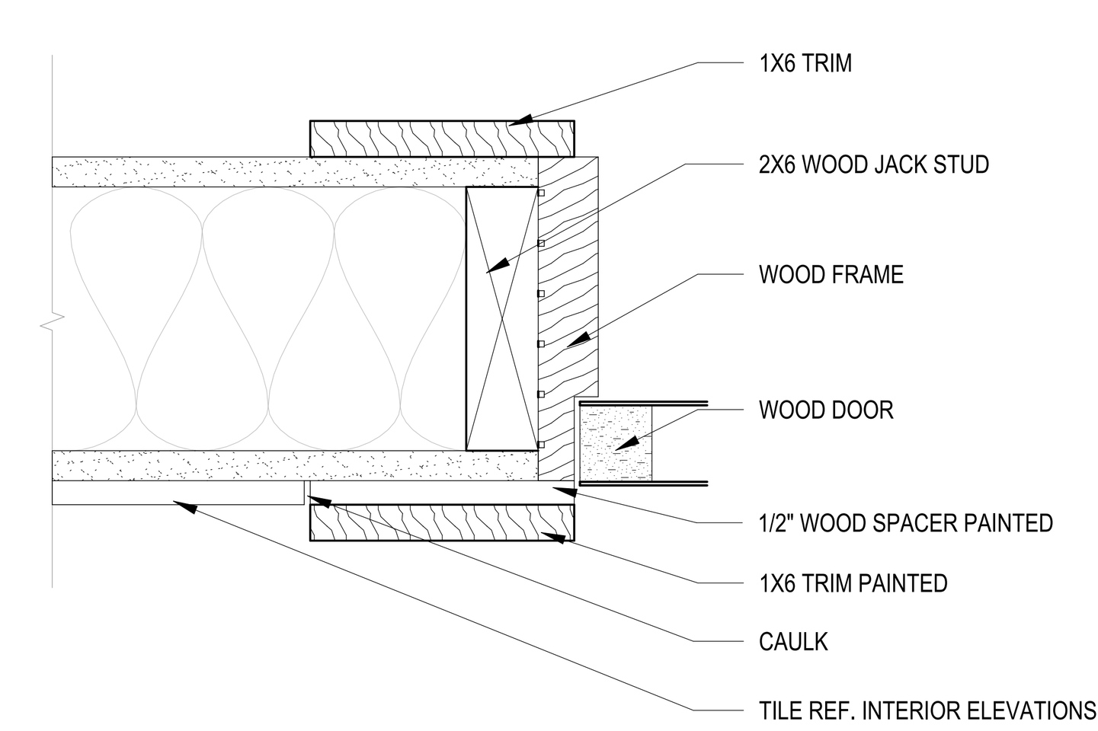
09 DOOR HEADER - EXTERIOR
3" = 1'-0"



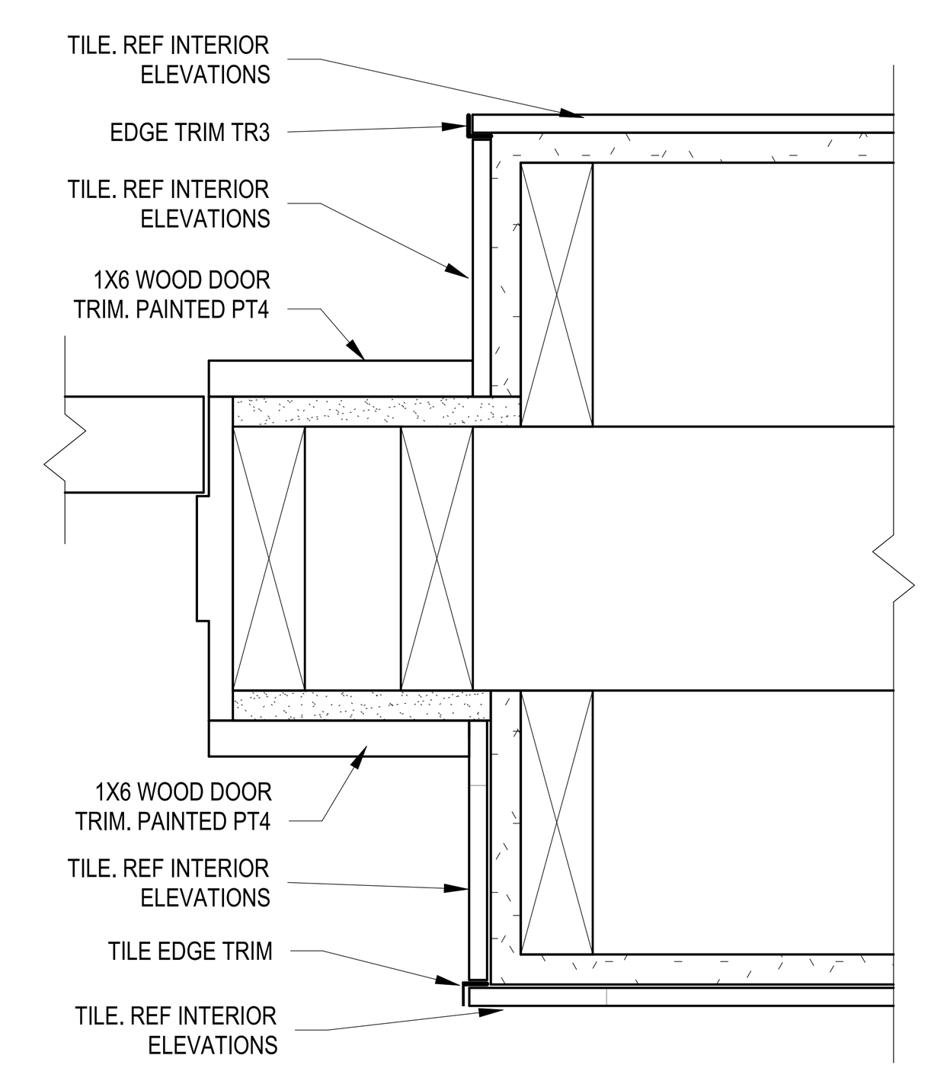
08 DOOR HEAD - EXTERIOR
3" = 1'-0"



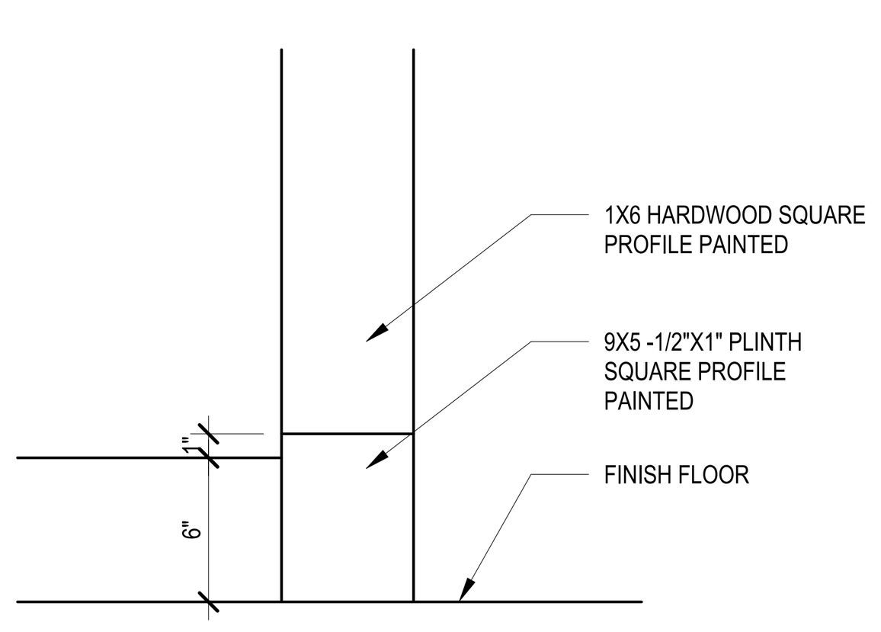
07 DOOR HEAD - INTERIOR
3" = 1'-0"



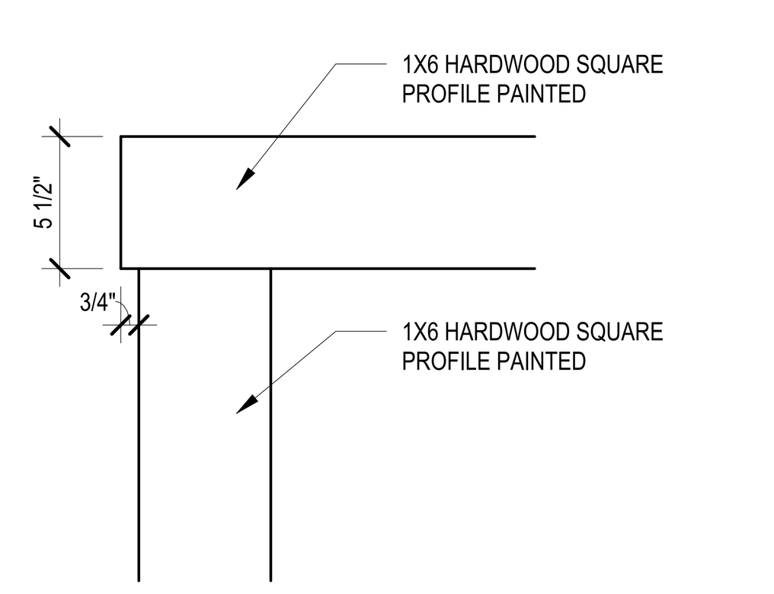
06 DOOR JAMB - INTERIOR
3" = 1'-0"



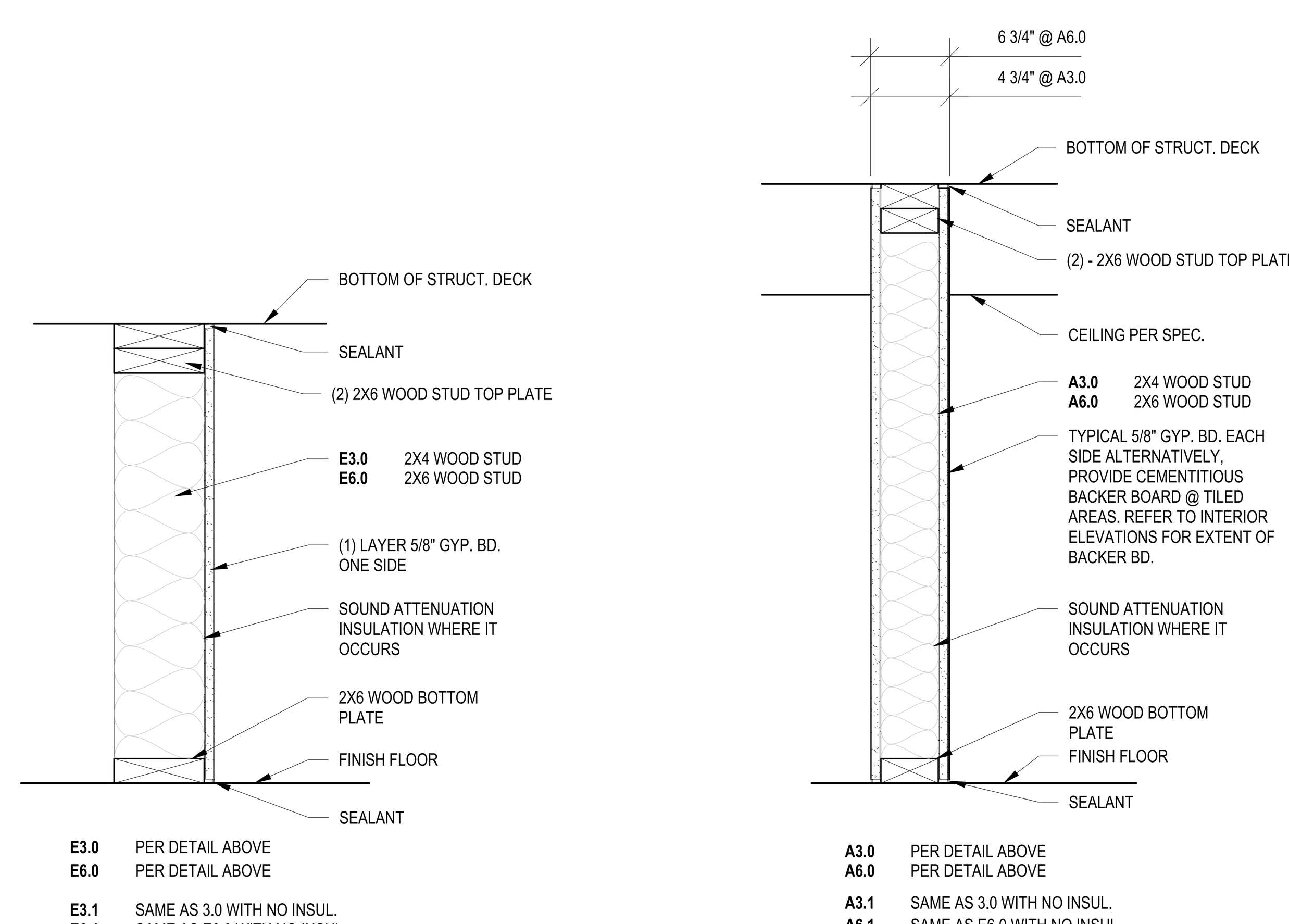
05 TYP DOOR DETAIL - int
3" = 1'-0"



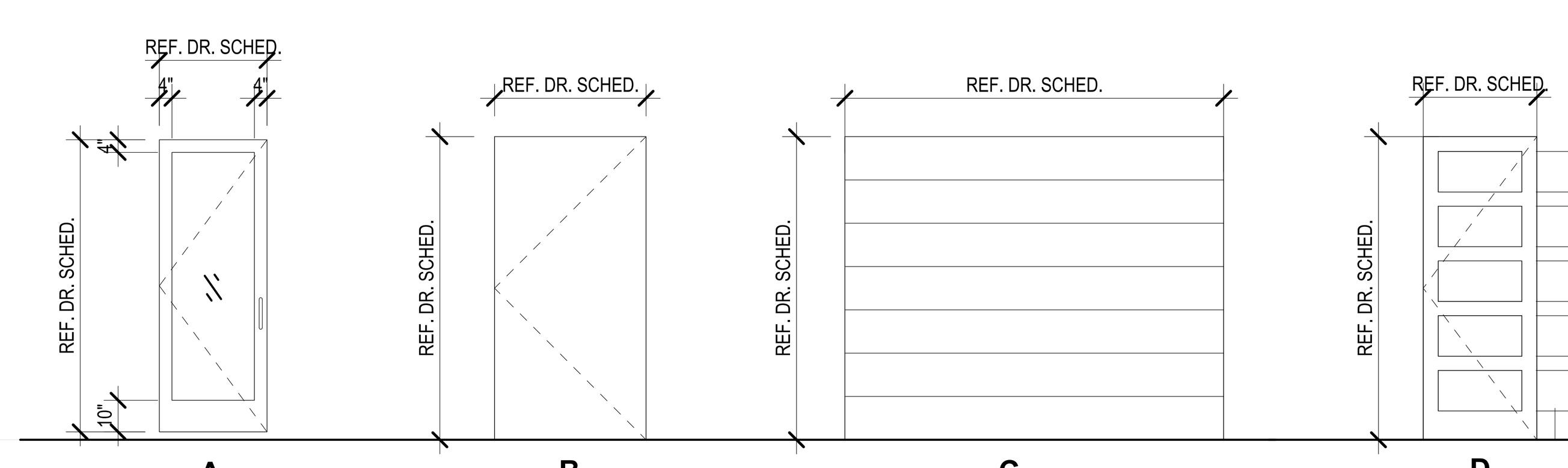
04 WOOD BASE TO DOOR TRIM DETAIL
1 1/2" = 1'-0"



03 DOOR HEAD CASING DETAIL
1 1/2" = 1'-0"



2 Wall Types
1 1/2" = 1'-0"



01 Door Types
1/4" = 1'-0"

STEPHEN HAMPTON 25489 REGISTERED ARCHITECT STATE OF TEXAS 04/09/25

Weed Corley Fish

N-VIZION
FORMS • ENVIRONMENTS • IMAGES

Door and Hardware Schedules

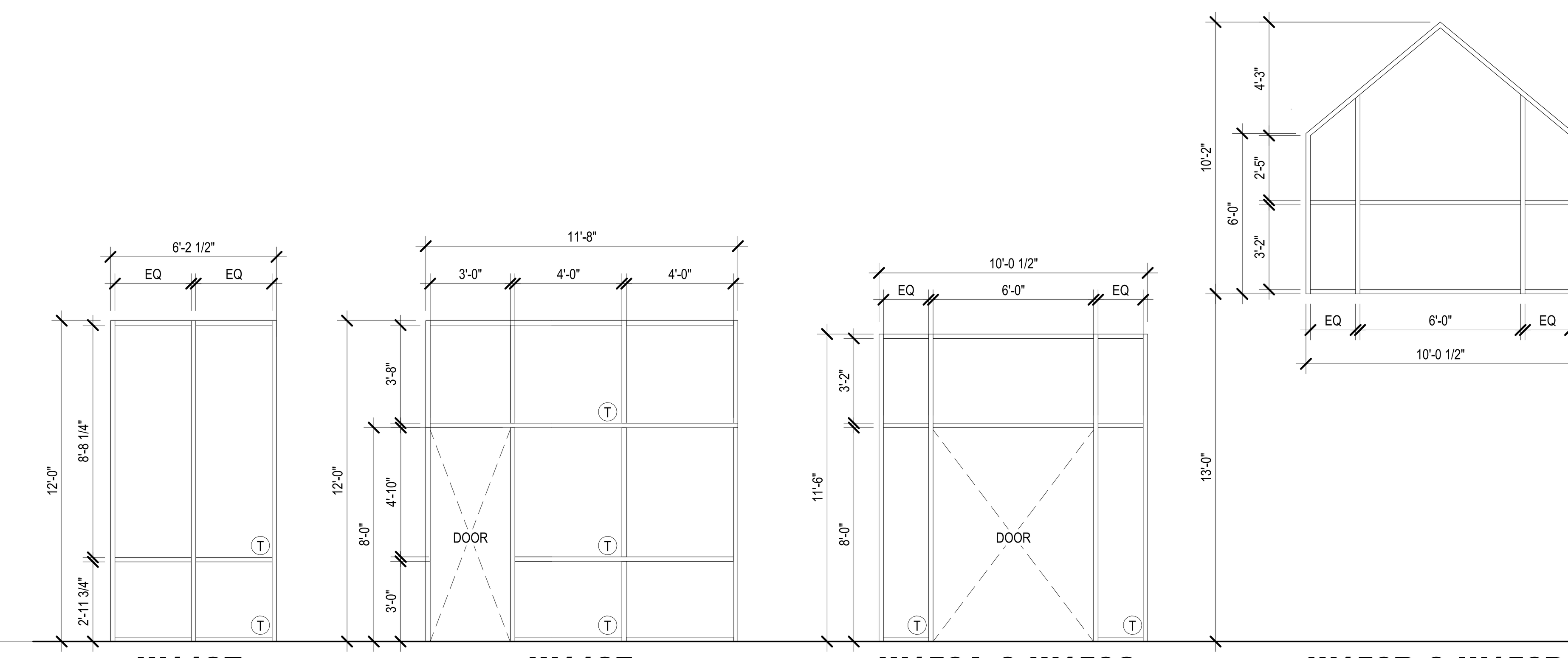
A302

GLAZING AND FRAME SCHEDULE									
WIN#	ROOM	SOURCE	FRAME		OPER	GLAZ. TYPE	MANUF.	WIN#	REMARKS
			MATERIAL	FINISH					
W105A	PREMIER VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W105A	2
W105B	PREMIER VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W105B	2
W105C	PREMIER VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W105C	2
W105D	PREMIER VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W105D	2
W105E	PREMIER VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W105E	2
W105F	PREMIER VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W105F	2
W105G	PREMIER VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x,y	OLD CASTLE	W105G	2
W105H	PREMIER VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x,y	OLD CASTLE	W105H	2
W106A	STANDARD VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W106A	2
W106B	STANDARD VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W106B	2
W106C	STANDARD VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W106C	2
W106D	STANDARD VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W106D	2
W106E	STANDARD VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W106E	2
W106F	STANDARD VENUE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W106F	2
W110A	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W110A	2
W110B	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W110B	2
W110C	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W110C	2
W110D	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W110D	2
W110E	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W110E	2
W110F	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W110F	2
W111A	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W111A	2
W111B	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W111B	2
W111C	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W111C	2
W111D	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W111D	2
W111E	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W111E	2
W111F	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W111F	2
W111G	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W111G	2
W111H	ARRANGEMENT	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W111H	2
W115A	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W115A	2
W115B	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W115B	2
W115C	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W115C	2
W115D	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W115D	2
W115E	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W115E	2
W115F	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W115F	2
W116A	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W116A	2
W116B	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W116B	2
W116C	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W116C	2
W116D	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W116D	2
W116E	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W116E	2
W116F	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W116F	2
W117A	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W117A	2
W117B	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W117B	2
W117C	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W117C	2
W117D	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W117D	2
W117E	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W117E	2
W117F	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W117F	2
W118A	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W118A	2
W118B	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W118B	2
W118C	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W118C	2
W118D	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x	OLD CASTLE	W118D	2
W118E	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x,y	OLD CASTLE	W118E	1,2
W118F	OFFICE	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x,y	OLD CASTLE	W118F	1,2
W150A	CORRIDOR	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x,y	OLD CASTLE	W150A	1,2
W150B	CORRIDOR	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x,y	OLD CASTLE	W150B	1,2
W150C	CORRIDOR	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x,y	OLD CASTLE	W150C	1,2
W150D	CORRIDOR	NEW	ALUMINUM	BLACK ANODIZED	FIXED	x,y	OLD CASTLE	W150D	1,2

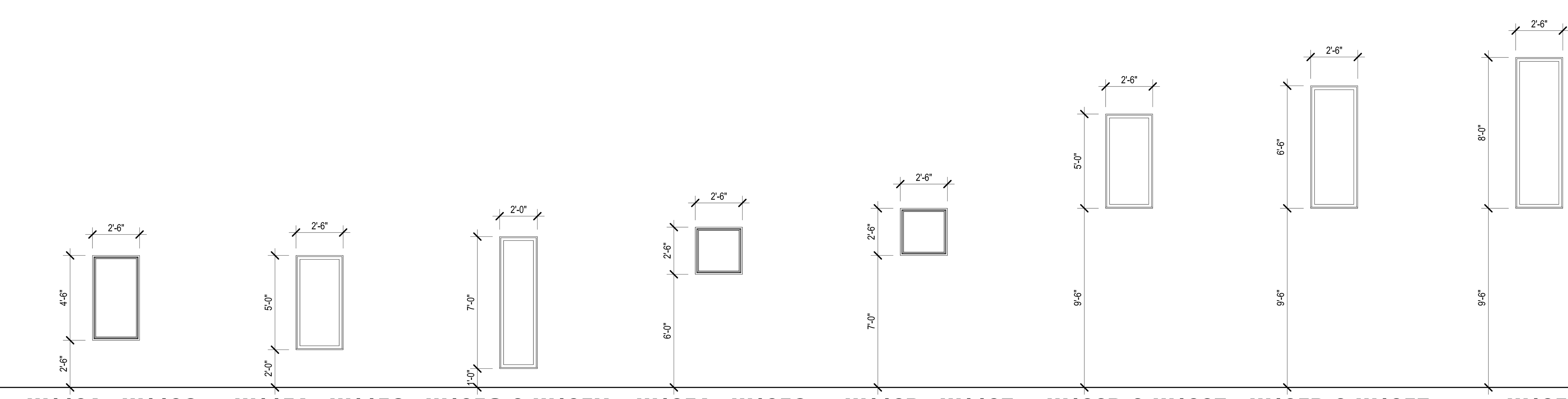
GLAZING TYPE:
x. CLEAR GLASS
y. TEMPERED

REMARKS:
1. SIDE-LITE/DOOR FRAME ASSEMBLY. REF. DOOR SCHEDULE AND ELEVATIONS
2. STOREFRONT - U-VALUE=0.37, SHGC=0.25

NOTES:
1. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF ANY EXISTING CONDITIONS OR NEW WORK PRIOR TO PERFORMING ANY WORK OR ORDERING ANY MATERIALS.
ANY DISCREPANCIES SHALL BE REPORTED TO ARCHITECT FOR CONSIDERATION PRIOR TO PROCEEDING WITH WORK. GC ASSUMES RESPONSIBILITY
2. OWNER AND CONTRACTOR TO VERIFY ALL SCHEDULES PRIOR TO ORDERING MATERIALS
3. ALTERNATES REQUIRE SUBMITTAL TO ARCHITECT AND OWNER FOR APPROVAL PRIOR TO ORDERING MATERIAL
4. ALL HARDWARE AND THRESHOLDS TO BE TAS COMPLIANT
5. ALL EXTERIOR GLAZING TO BE DOUBLE PANE, LOW-E
6. INSTALL TEMPERED SAFETY GLAZING WHERE SHOWN AS WELL AS WHERE REQUIRED BY CODE



W118E **W118F** **W150A & W150C** **W150B & W150D**



W110A - W110C
W111A - W111D
W118A & W118B

W115A - W115C
W116A - W116C
W117A - W117C

W105G & W105H

W105A - W105C
W106A - W106C

W110D - W110F
W111E - W111H
W115D - W115F
W116D - W116F
W117D - W117F
W118C & W118D

W106D & W106F

W105D & W105F
W106E

W105E

(T) = TEMPERED GLASS

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

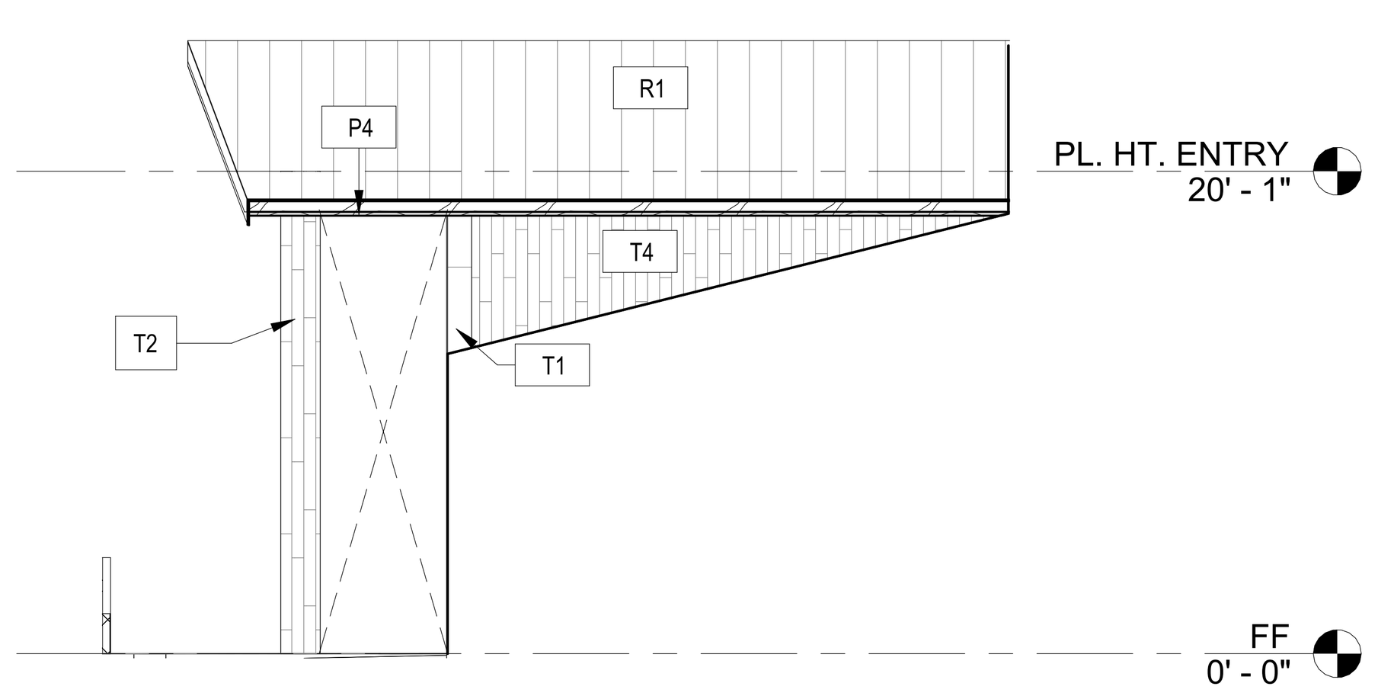
N-VIZION
FORMS • ENVIRONMENTS • IMAGES

Window Schedule & Window Types

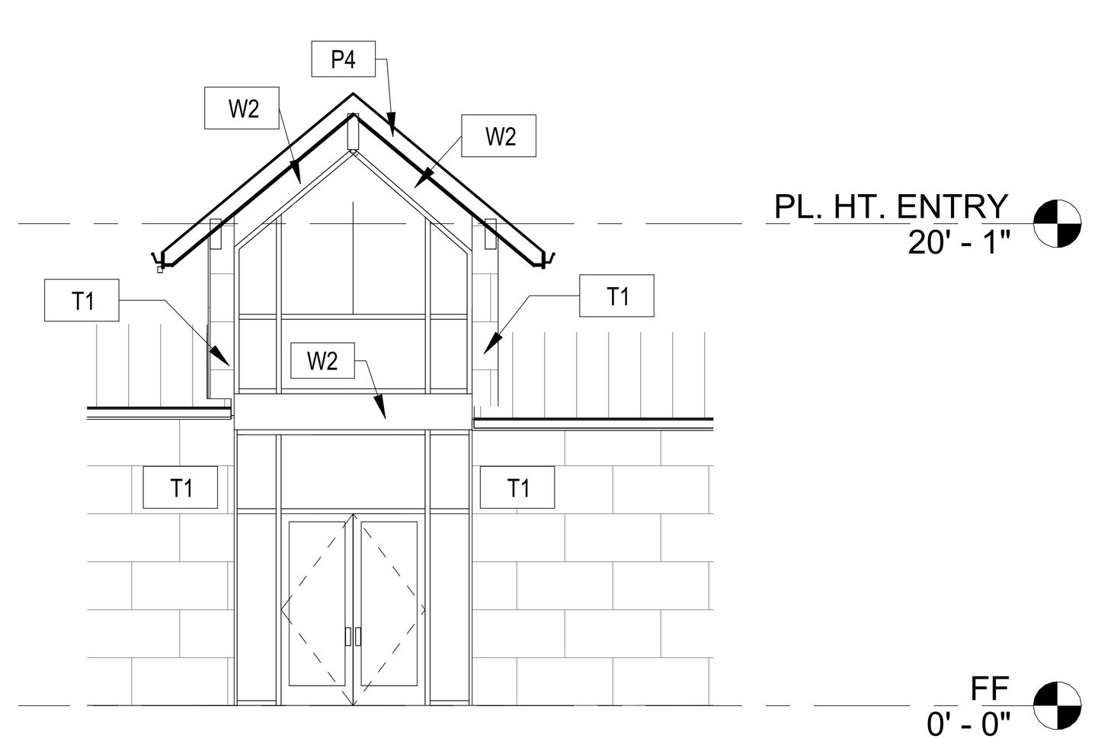
Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set

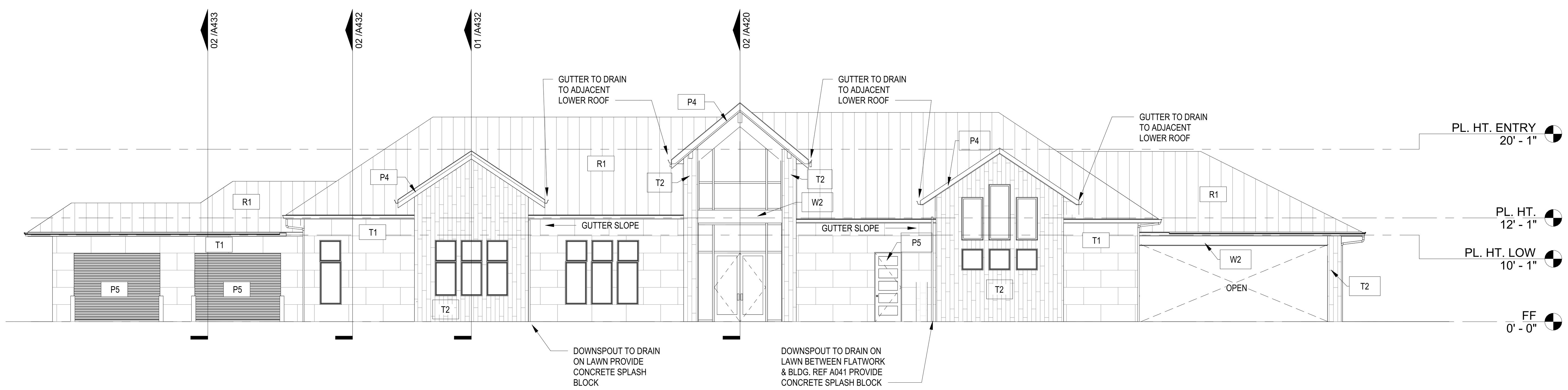
A303



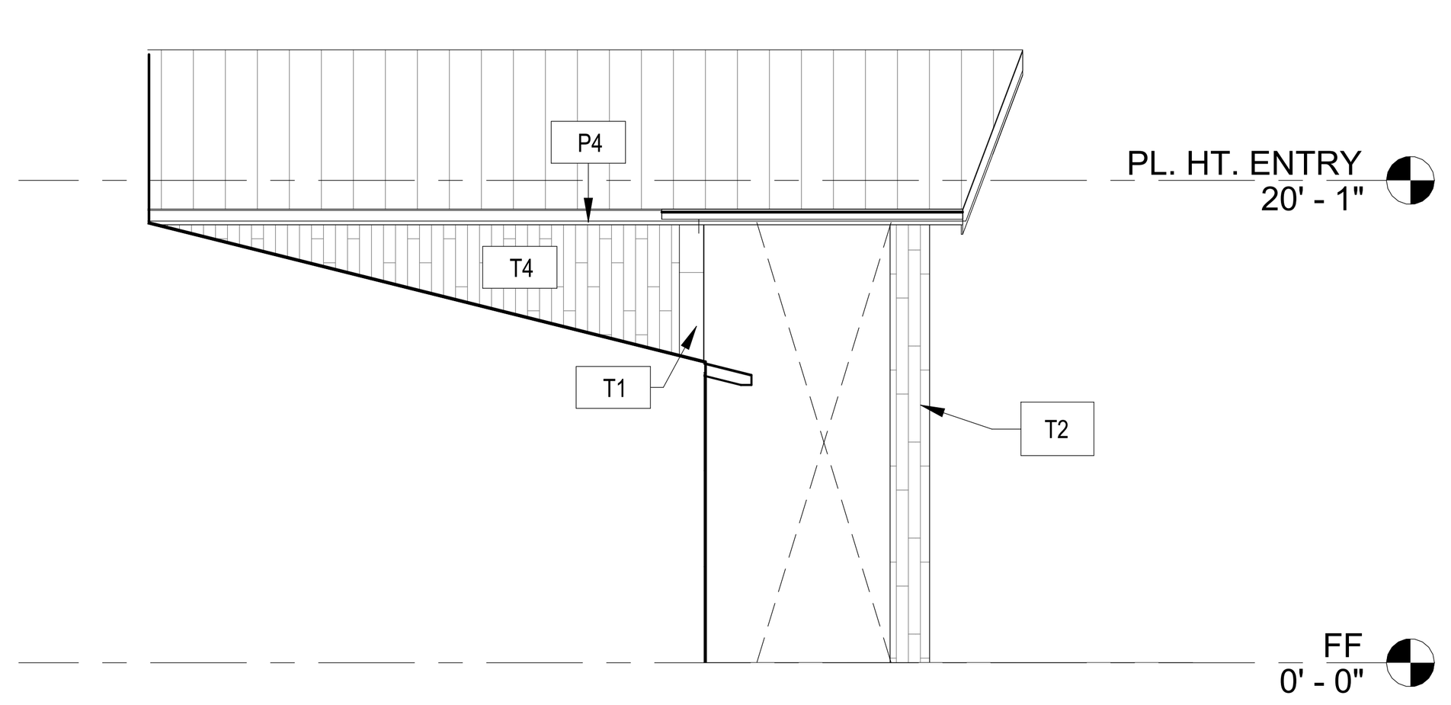
06 Rear Elevation Side
1/8" = 1'-0"



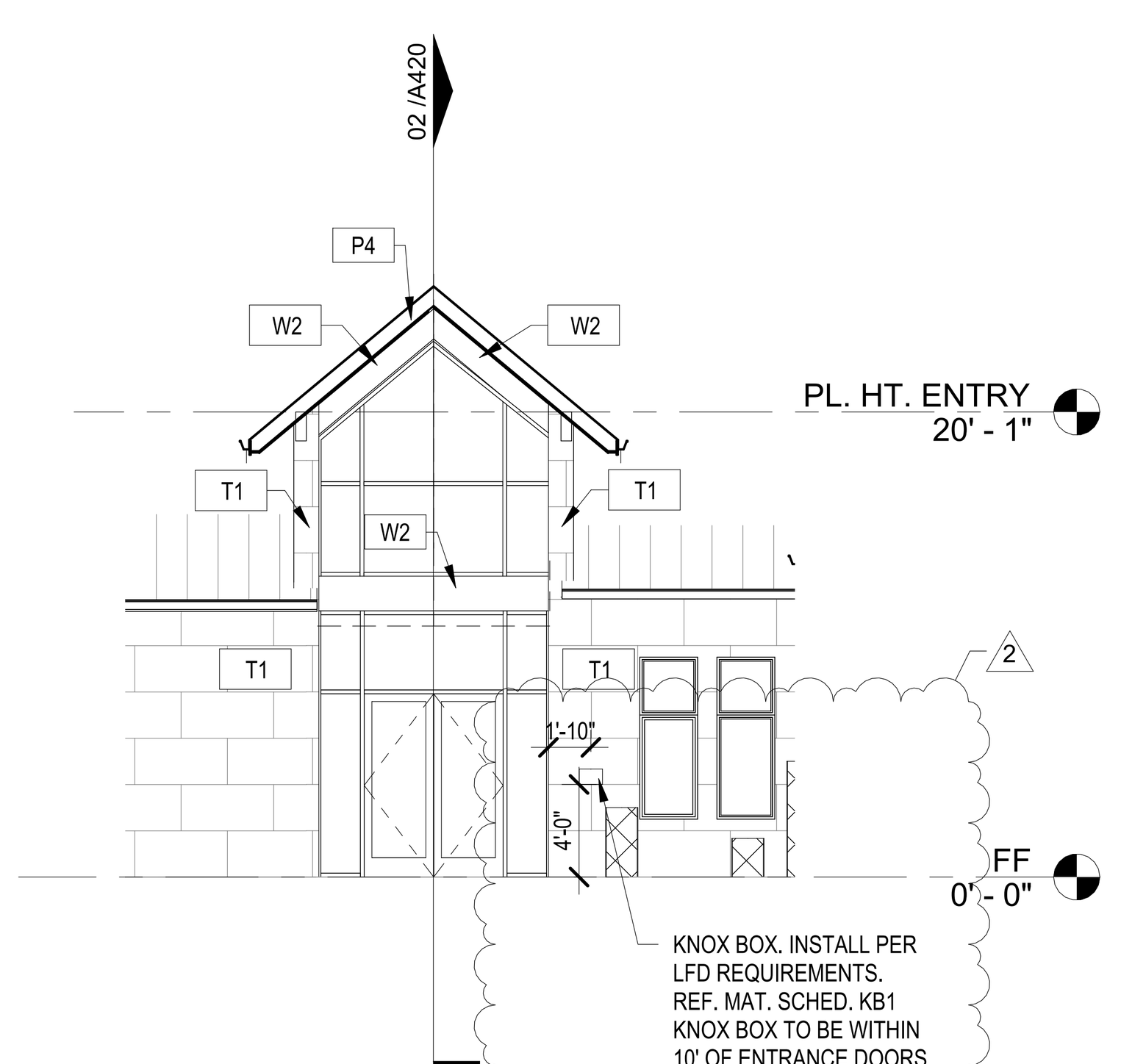
05 Rear Elevation at Entry Door
1/8" = 1'-0"



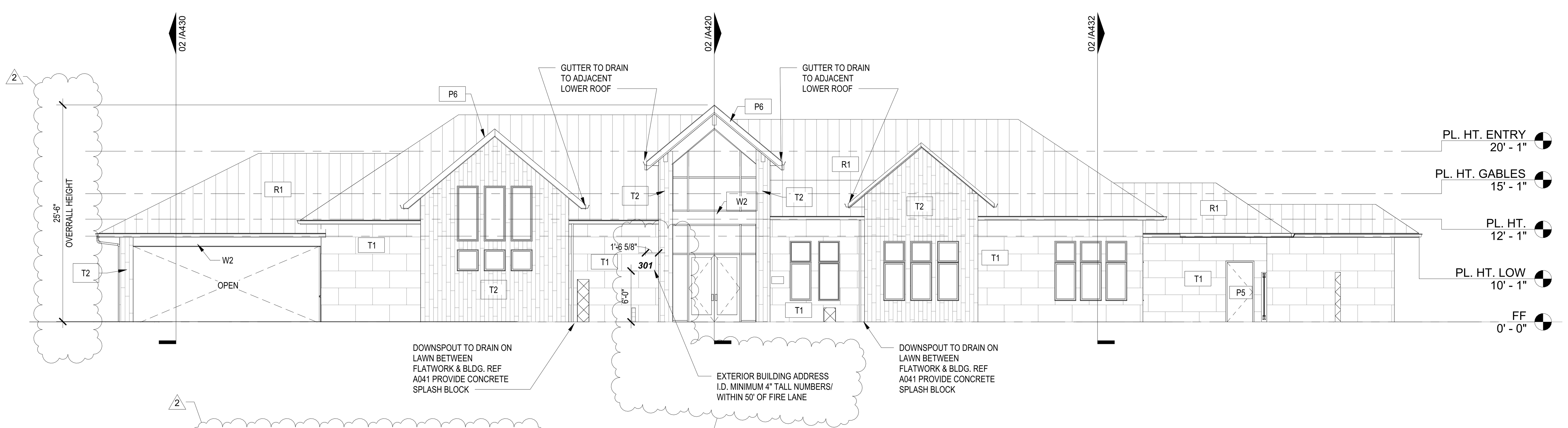
04 Rear Elevation
1/8" = 1'-0"



03 Front Elevation Side
1/8" = 1'-0"



02 Front Elevation at Entry Door
1/8" = 1'-0"



01 Front Elevation - Vista Ridge Drive & Bagdad Road
1/8" = 1'-0"

SECTION 3: TYPE C
(b) Exterior Wall Standards:

(2) Our building front has at least five different design features to break the wall plane and is under 50,000 SQ.FT. Our buildings design satisfies more than five design features.

1) Projections
2) Porte - Cocheres
3) Recessed Entries
4) Ornamental Cornices
5) Vertical Elevaton Offsets
6) Outdoor Patio
7) Tile Work
8) Varied Roof Heights

NOTES:

i.) ALL PERMANAENT EXTERIOR LIGHTING SHALL BE NON-FLASHING AND SHIELDED SUCH THAT THE LIGHT SOURCES IS NOT VISIBLE FROM THE PUBLIC RIGHT-OF-WAY OR ADJACENT RESIDENTIAL USES AT THE PROPERTY LINE. WALL PACK LIGHTING AND OTHER LIGHTING THAT DIRECTS THE LIGHT IN A HORIZONTAL DIRECTION WITHOUT AN ADEQUATE SHIELD IS NOT PERMITTED IF THERE ARE STREETS OR RESIDENTIAL USES IN THE DIRECTION OF THE LIGHT

ii.) ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND

iii.) WINDOWS SHALL HAVE A MAXIMUM EXTERIOR REFLECTIVITY OF TWENTY (20%) PERCENT.

FRONT ELEVATION- CALCULATIONS

WINDOW AREA PERCENTAGE CHART

WALLS 1,193 SQ.FT.
WINDOWS/DOORS 446 SQ.FT.
446/1193 = .37 OR 37%

EXTERIOR MASONRY PERCENTAGES

ALL EXTERIOR WALL FINISHES ARE MASONRY VENEERS
PROPOSED MASONRY PERCENTAGE = 100%

MATERIALS:

T1 - MARAZZI - UNICHE - BIANCO UN10 - MATTE - 24X48
T2 - DALTILE - ARTICULO - EDITORIAL WHITE AR06 - MATTE 6X24
R1 - MCELROY - MAXIMA - 2" SEAM - 18" WIDE PANEL - MATTE BLACK
P4 - SHERWIN WILLIAMS - DURATION EXTERIOR ACRYLIC LATEX - SW6258 TRICORN BLACK - SATIN
P5 - SHERWIN WILLIAMS - DURATION EXTERIOR ACRYLIC LATEX - SW9166 DRIFT OF MIST - SEMI-GLOSS
P6 - SHERWIN WILLIAMS - POLYURETHANE SEMI-TRANSPARENT - CLEAR MATTE SEALER - WOOD W1 & W2 TO MATCH COLOR OF TILE 4

REFERENCE MATERIAL SCHEDULE FOR DETAILED MATERIAL SPECS.

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

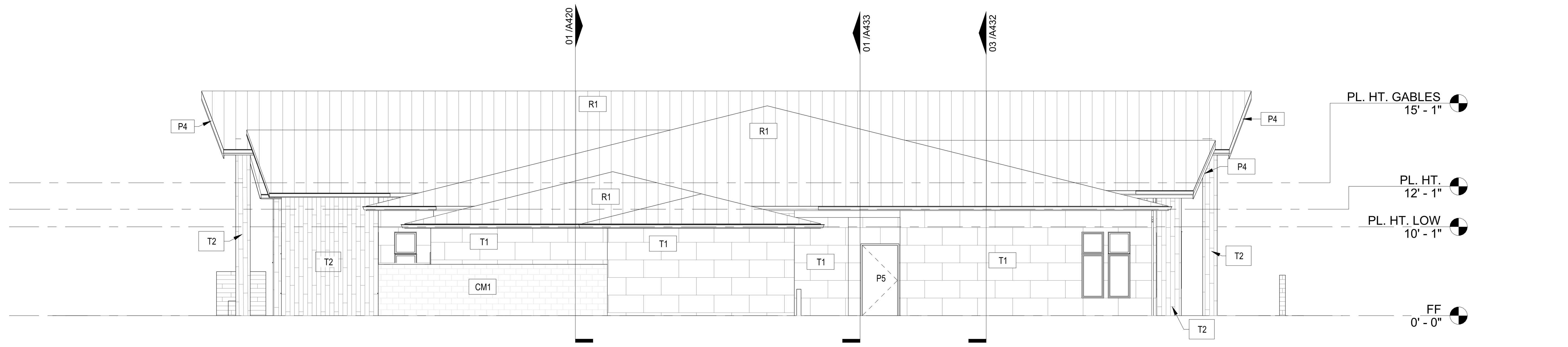
N-VIZION
FORMS • ENVIRONMENTS • IMAGES

Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments

Elevations

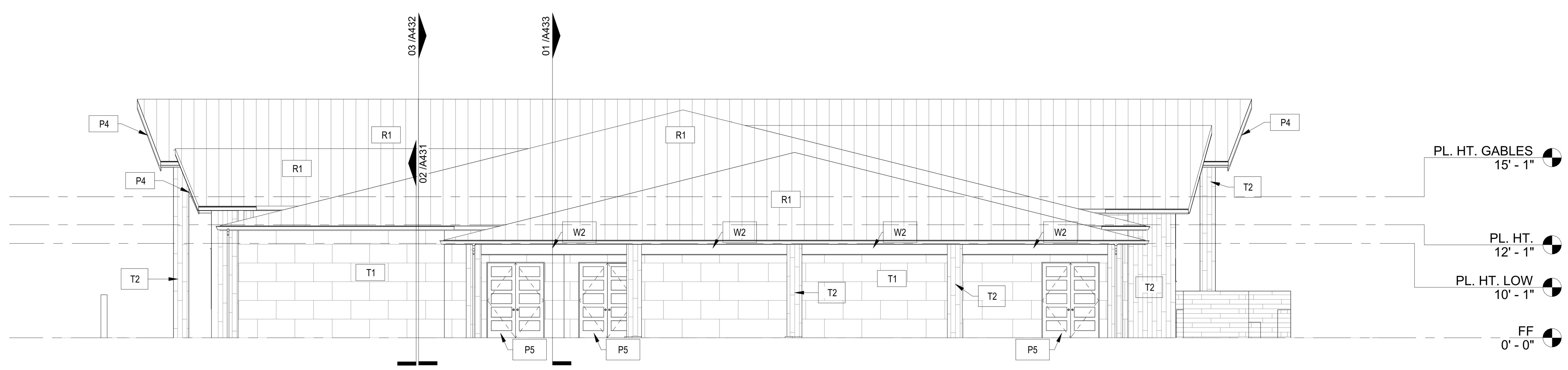
Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

A400



02 Right Elevation - Bagdad Road

1/8" = 1'-0"



01 Left Elevation - Vista Ridge Drive

1/8" = 1'-0"

2

FRONT ELEVATION- CALCULATIONS

MASONRY AREA PERCENTAGE

WALLS	1,193 SQ.FT.
WINDOWS/DOORS	446 SQ.FT.
TOTAL MASONRY	747 SQ.FT.

EXTERIOR MASONRY PERCENTAGES

ALL EXTERIOR WALL FINISHES ARE MASONRY VENEERS

PROPOSED MASONRY PERCENTAGE = 100%

SECTION 3: TYPE C

(b) Exterior Wall Standards:

(2) Our building front has at least five different design features to break the wall plane and is under 50,000 SQ.FT. Our buildings design satisfies more than five design features.

1) Projections
2) Porte - Cocheres
3) Recessed Entries
4) Ornamental Cornices
5) Vertical Elevaton Offsets
6) Outdoor Patio
7) Tile Work
8) Varied Roof Heights

NOTES:

i.) ALL PERMANAENT EXTERIOR LIGHTING SHALL BE NON-FLASHING AND SHIELDING SUCH THAT THE LIGHT SOURCES IS NOT VISIBLE FROM THE PUBLIC RIGHT-OF-WAY OR ADJACENT RESIDENTIAL USES AT THE PROPERTY LINE. WALL PACK LIGHTING AND OTHER LIGHTING THAT DIRECTS THE LIGHT IN A HORIZONTAL DIRECTION WITHOUT AN ADEQUATE SHIELD IS NOT PERMITTED IF THERE ARE STREETS OR RESIDENTIAL USES IN THE DIRECTION OF THE LIGHT

ii.) ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND

iii.) WINDOWS SHALL HAVE A MAXIMUM EXTERIOR REFLECTIVITY OF TWENTY (20%) PERCENT.

MATERIALS:

T1 - MARAZZI - UNICHE - BIANCO UN10 - MATTE - 24X48
T2 - DALTILE - ARTICULO - EDITORIAL WHITE AR06 - MATTE 6X24
R1 - MCELROY - MAXIMA - 2" SEAM - 18" WIDE PANEL - MATTE BLACK
P4 - SHERWIN WILLIAMS - DURATION EXTERIOR ACRYLIC LATEX - SW6258 TRICORN BLACK - SATIN
P5 - SHERWIN WILLIAMS - DURATION EXTERIOR ACRYLIC LATEX - SW9166 DRIFT OF MIST - SEMI-GLOSS
P6 - SHERWIN WILLIAMS - POLYURETHANE SEMI-TRANSPARENT - CLEAR MATTE SEALER - WOOD W1 & W2 TO MATCH COLOR OF TILE 4

REFERENCE MATERIAL SCHEDULE FOR DETAILED MATERIAL SPECS.

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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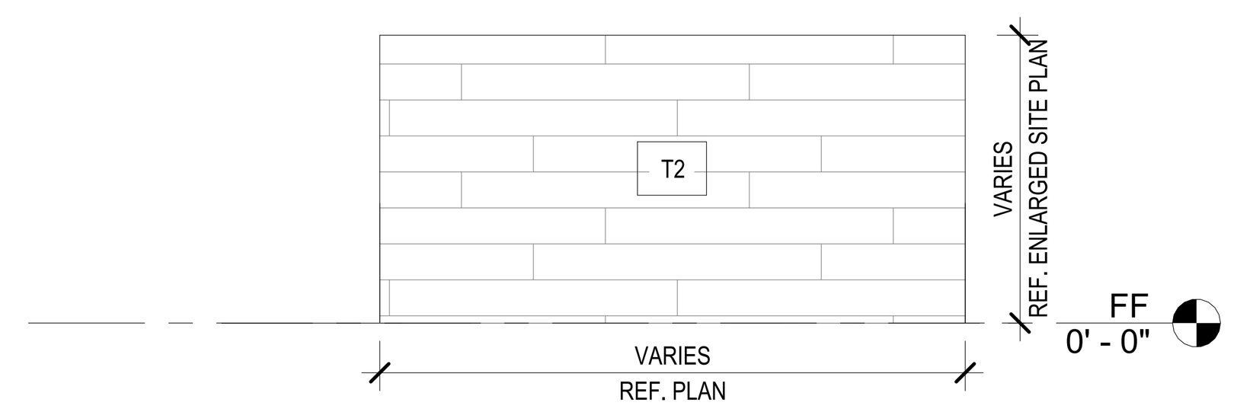
Date:	Description:
06.07.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments

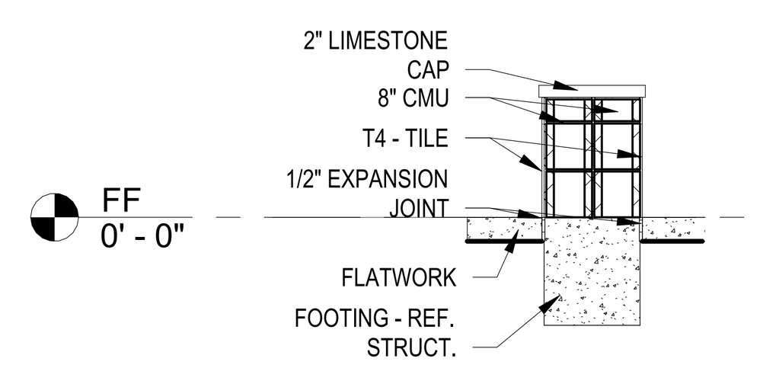
Elevations

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

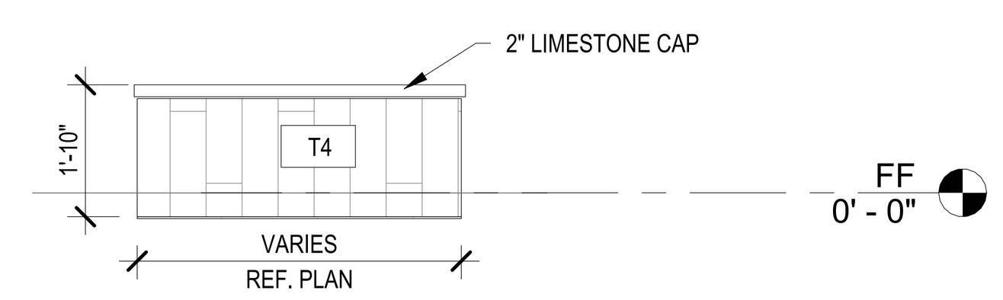
A401



11 Typ. Site Wall Elevation
3/8" = 1'-0"



10 CMU BENCH
3/8" = 1'-0"



09 Bench Elevation
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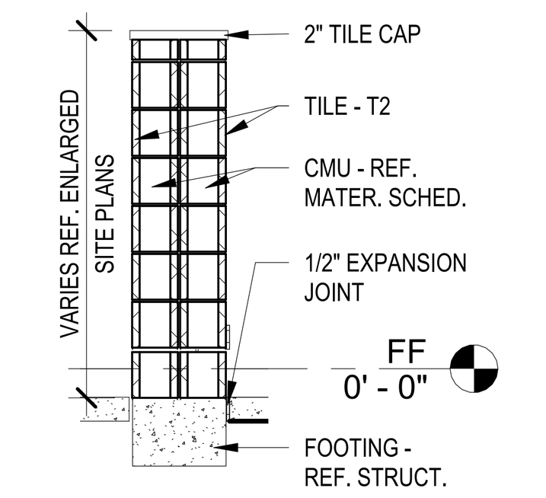

08 Patio Wall Sect
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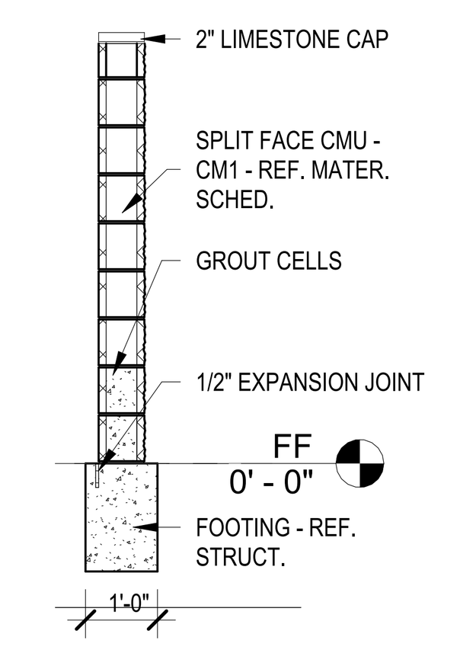

07 Mechanical Yard Wall Section
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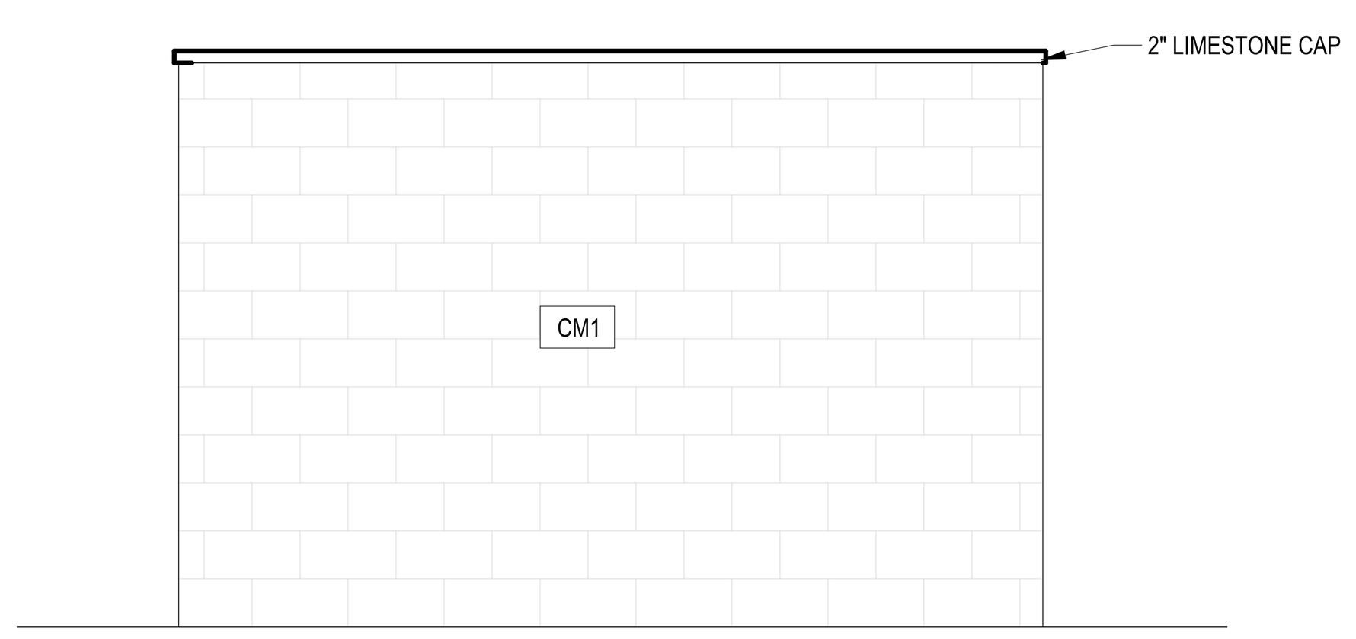
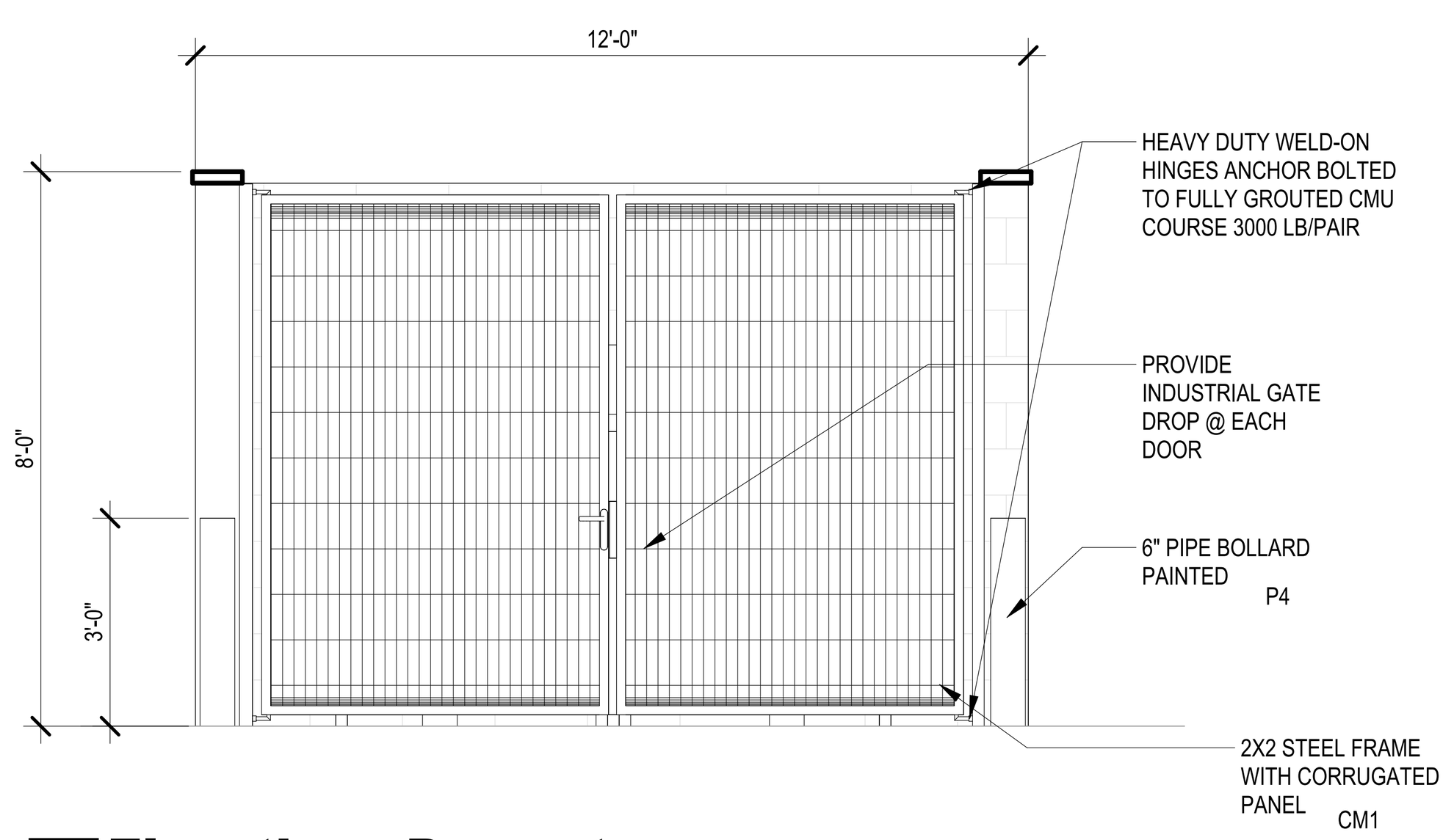
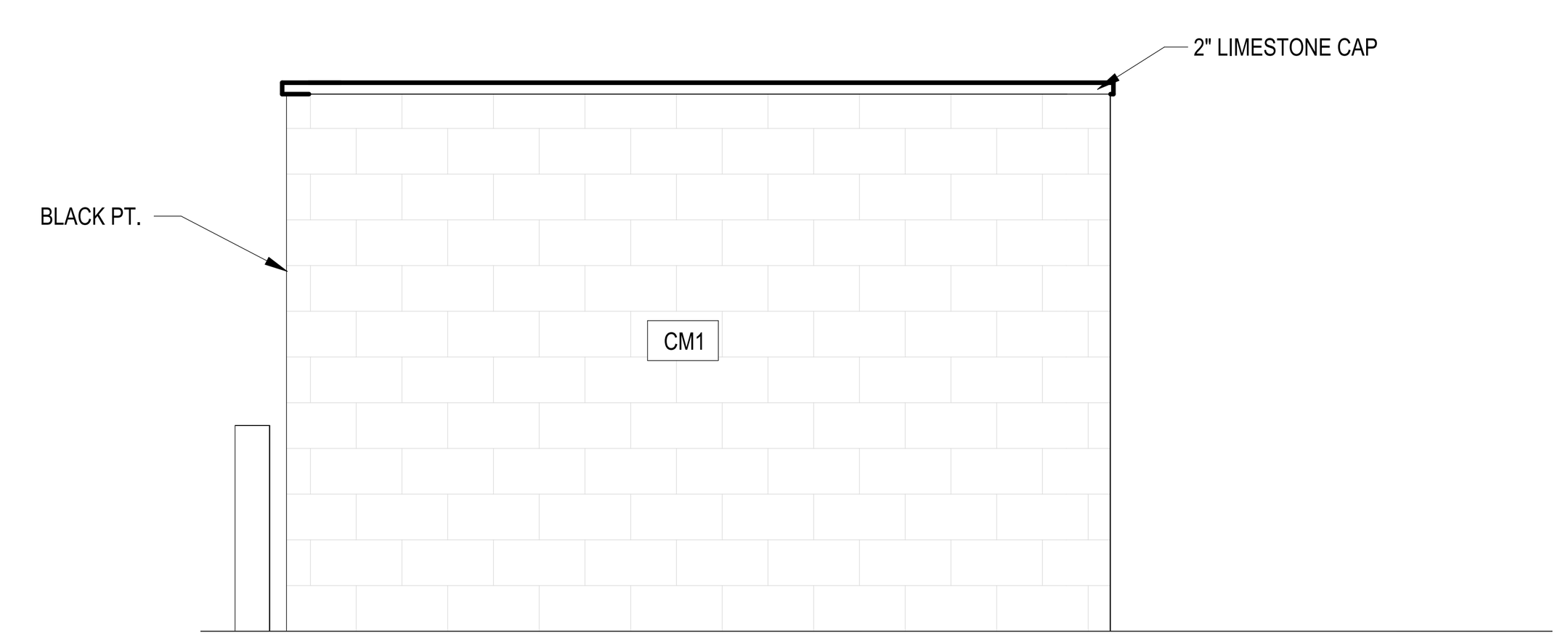


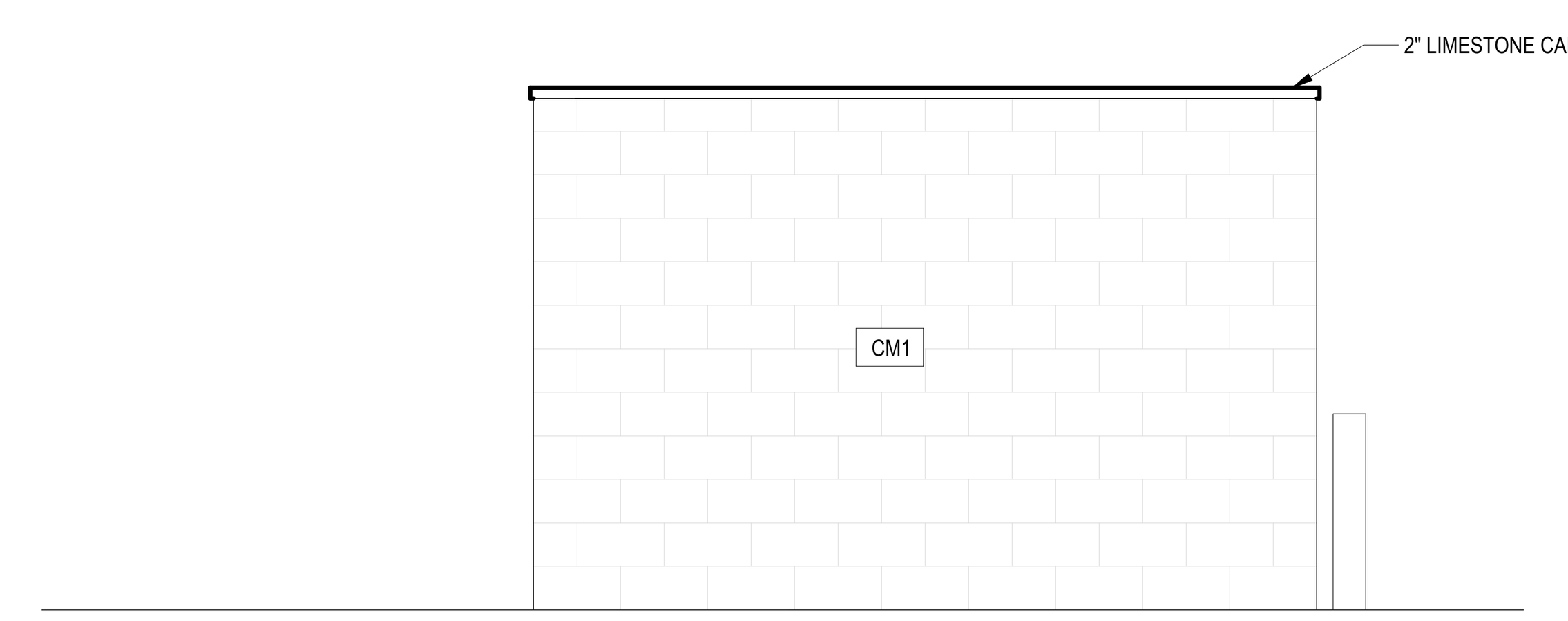
06 Elevation - Dumpster
3/8" = 1'-0"



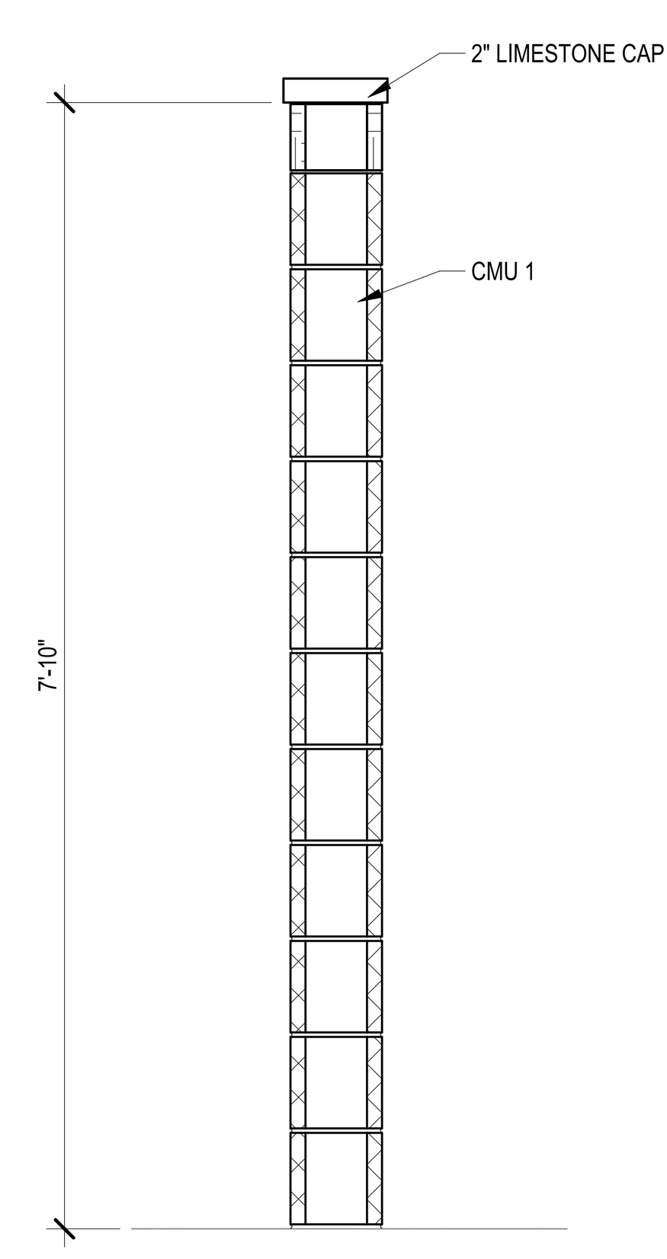
05 Elevation - Dumpster
3/8" = 1'-0"



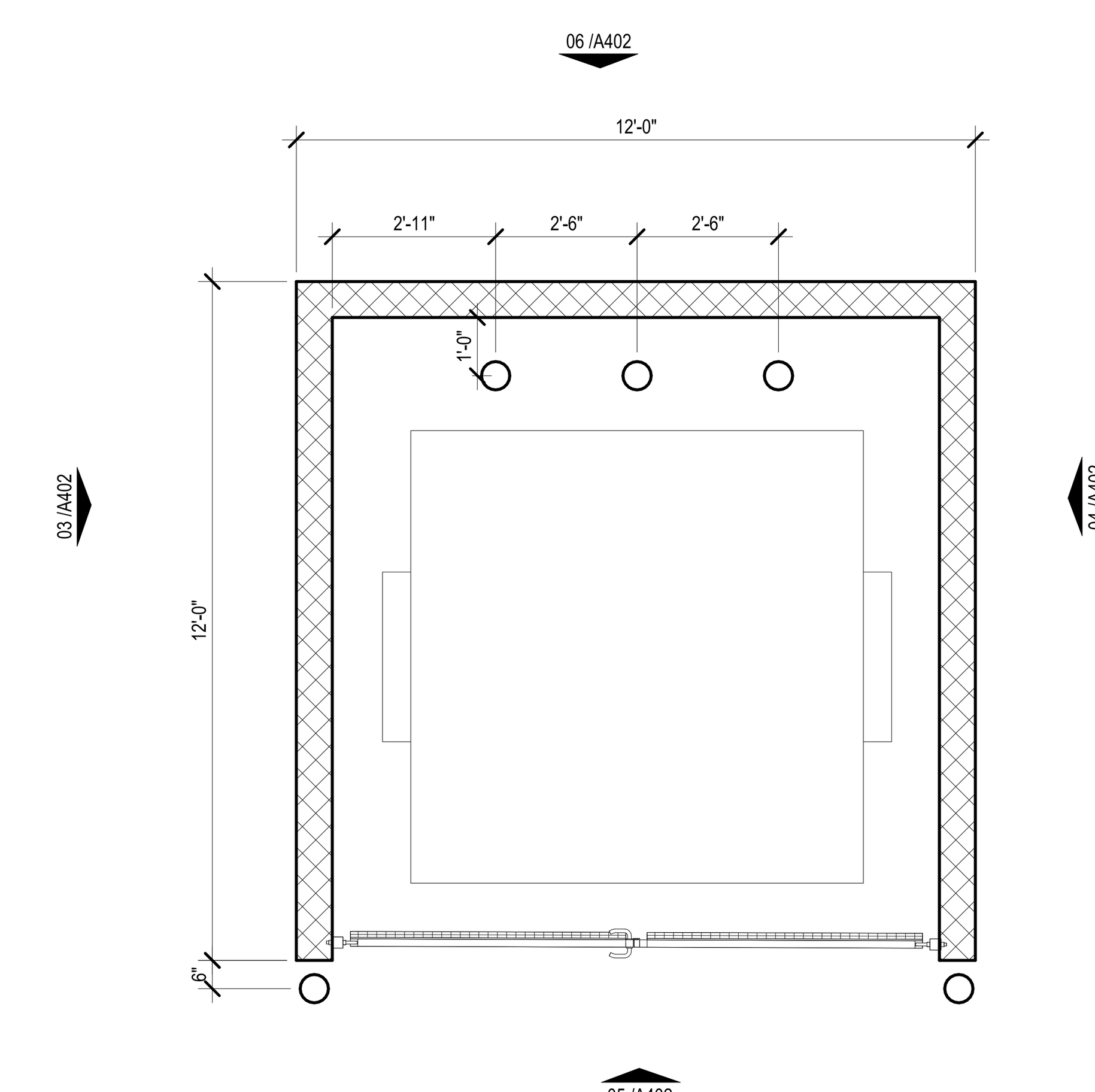
04 Elevation - Dumpster
3/8" = 1'-0"



03 Elevation - Dumpster
3/8" = 1'-0"



02 Section - Dumpster
3/4" = 1'-0"



01 Enlarged Plan - Dumpster
3/8" = 1'-0"

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Elevations - Dumpster

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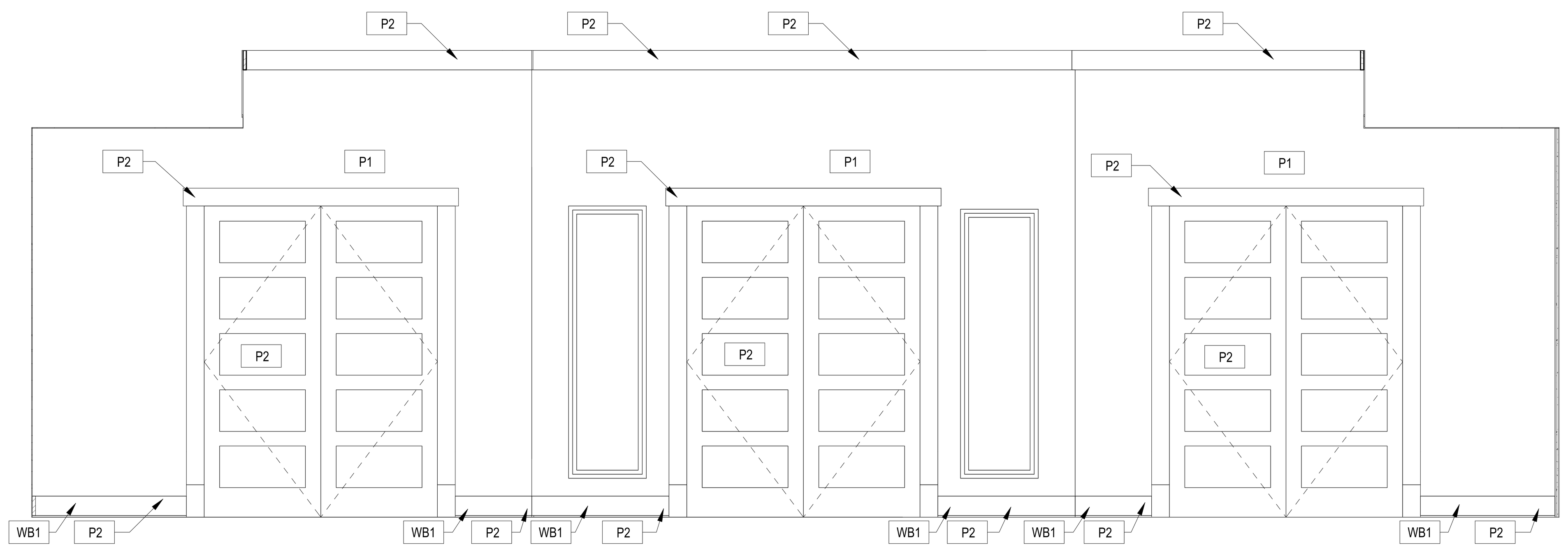
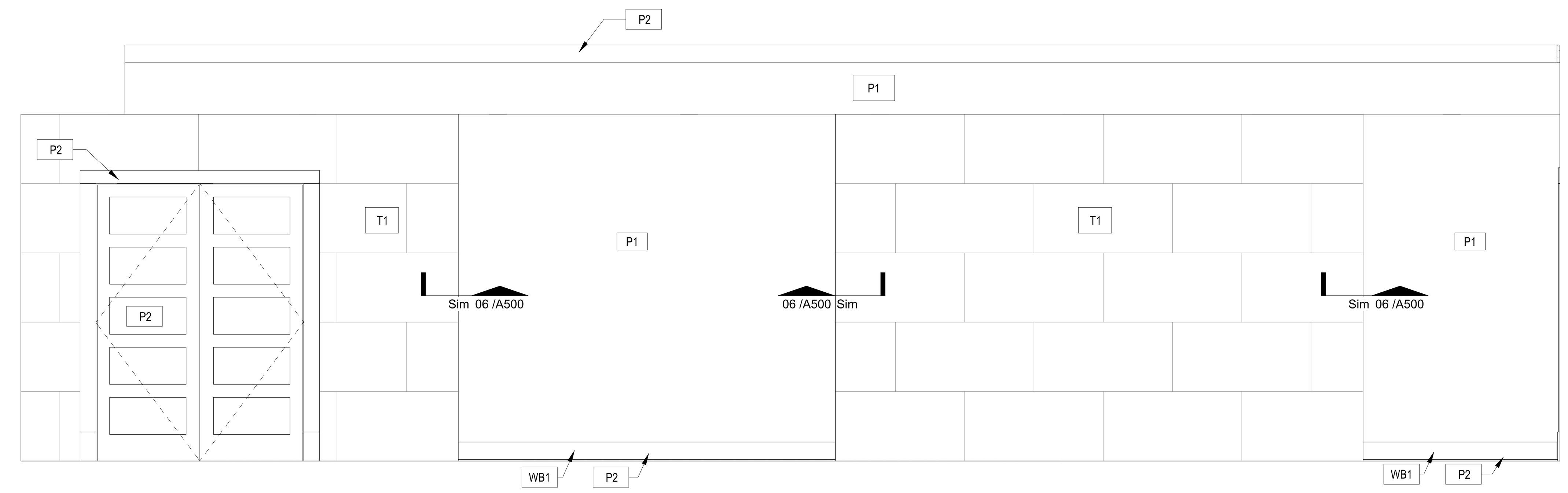
Date	Description
06.27.24	CD Set
10.25.24	Rev1 Permit Set
04.09.25	Rev2 City Comments

A402



04 Premiere Venue
3/8" = 1'-0"



03 Premiere Venue
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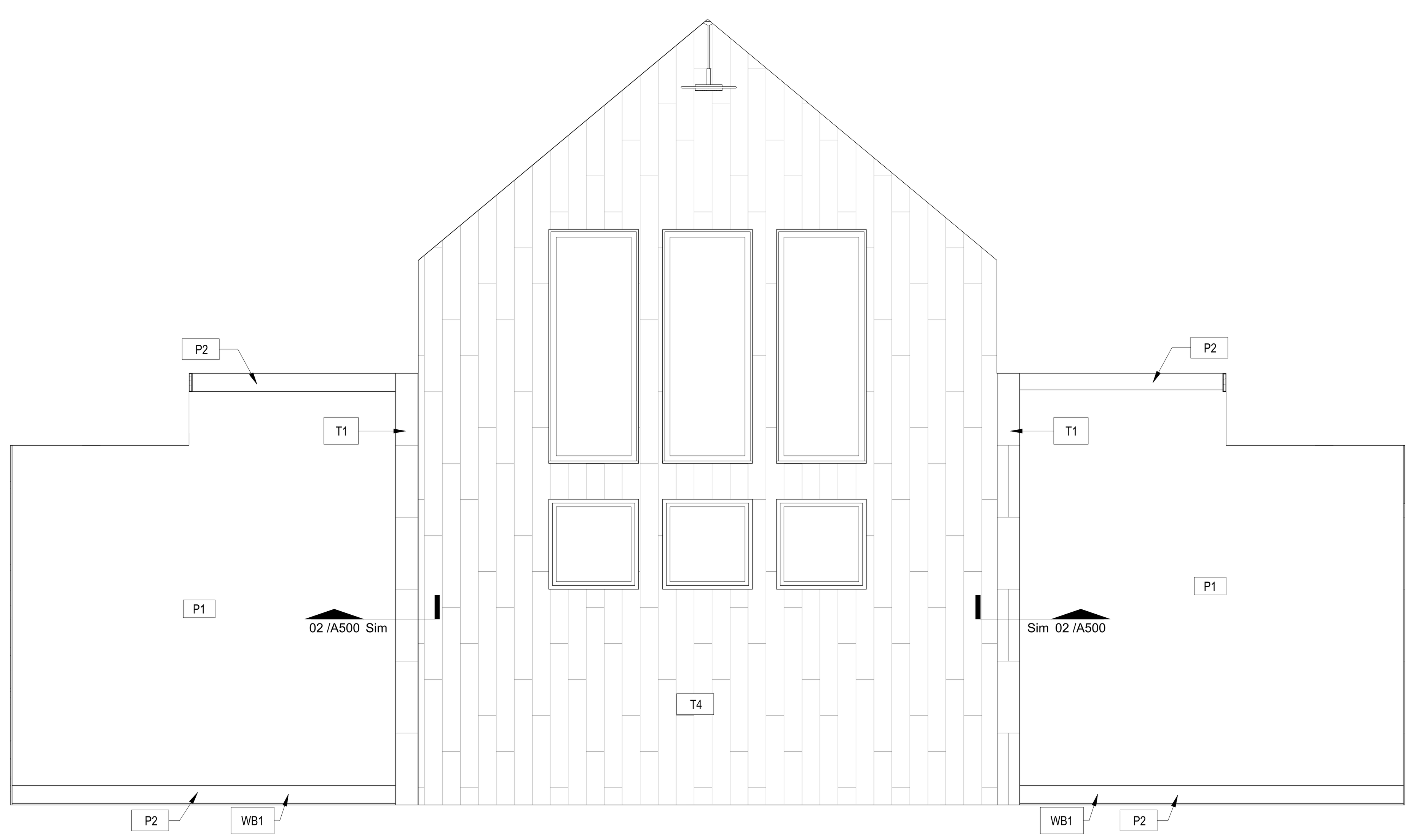

02 Premiere Venue
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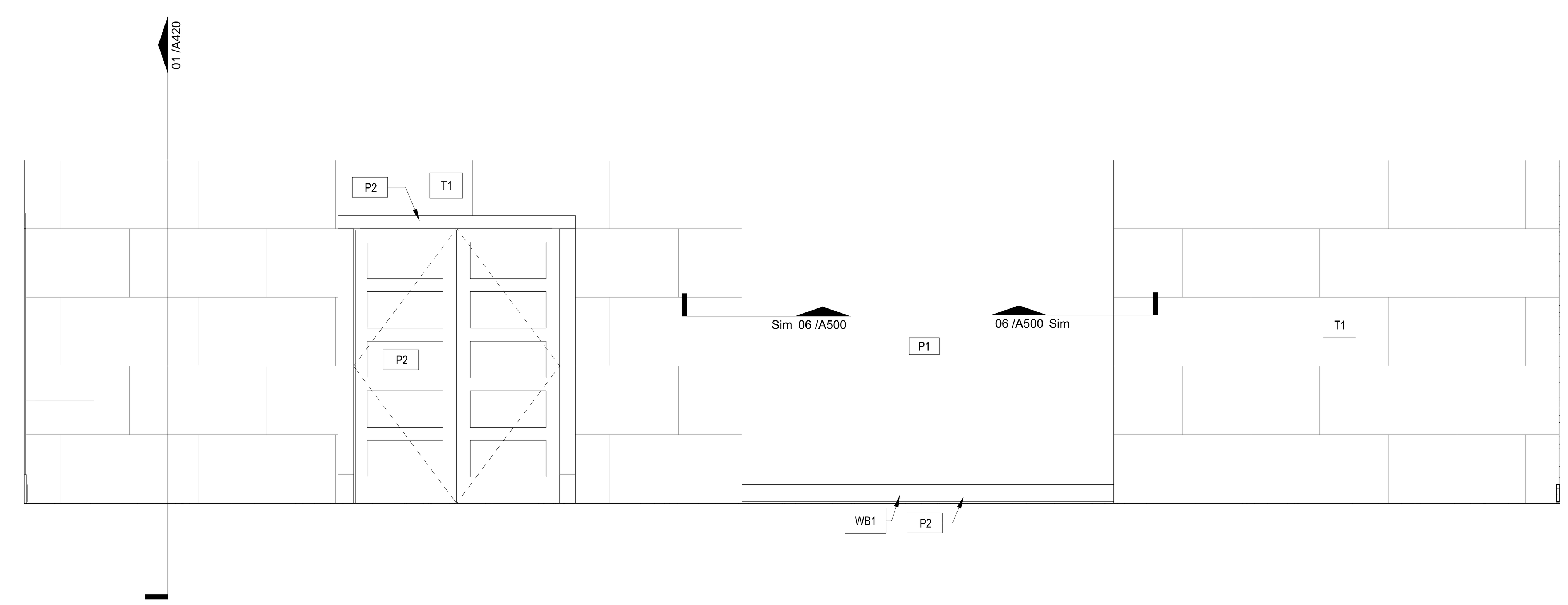

01 Premiere Venue
3/8" = 1'-0"

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STATE OF TEXAS
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Interior Elevations

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Date:	Description:
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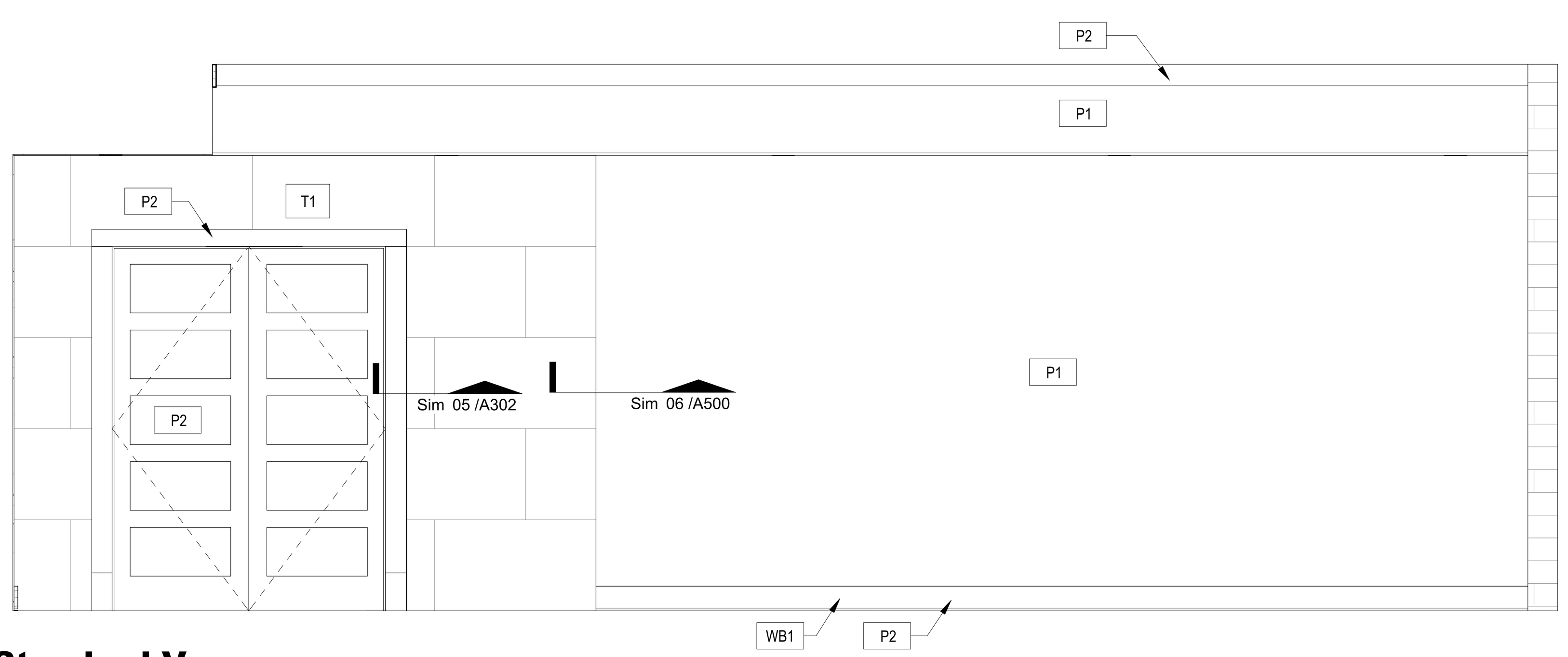
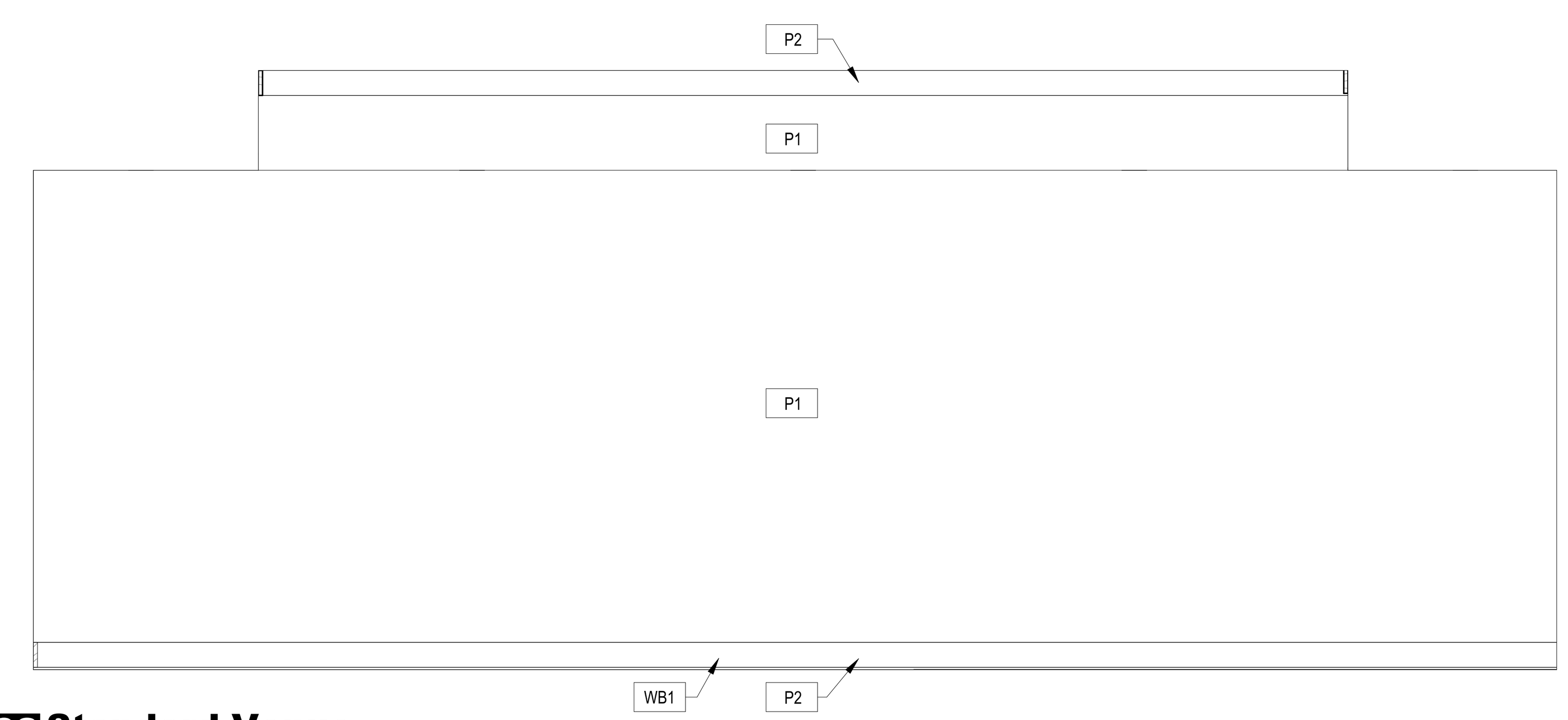
A410



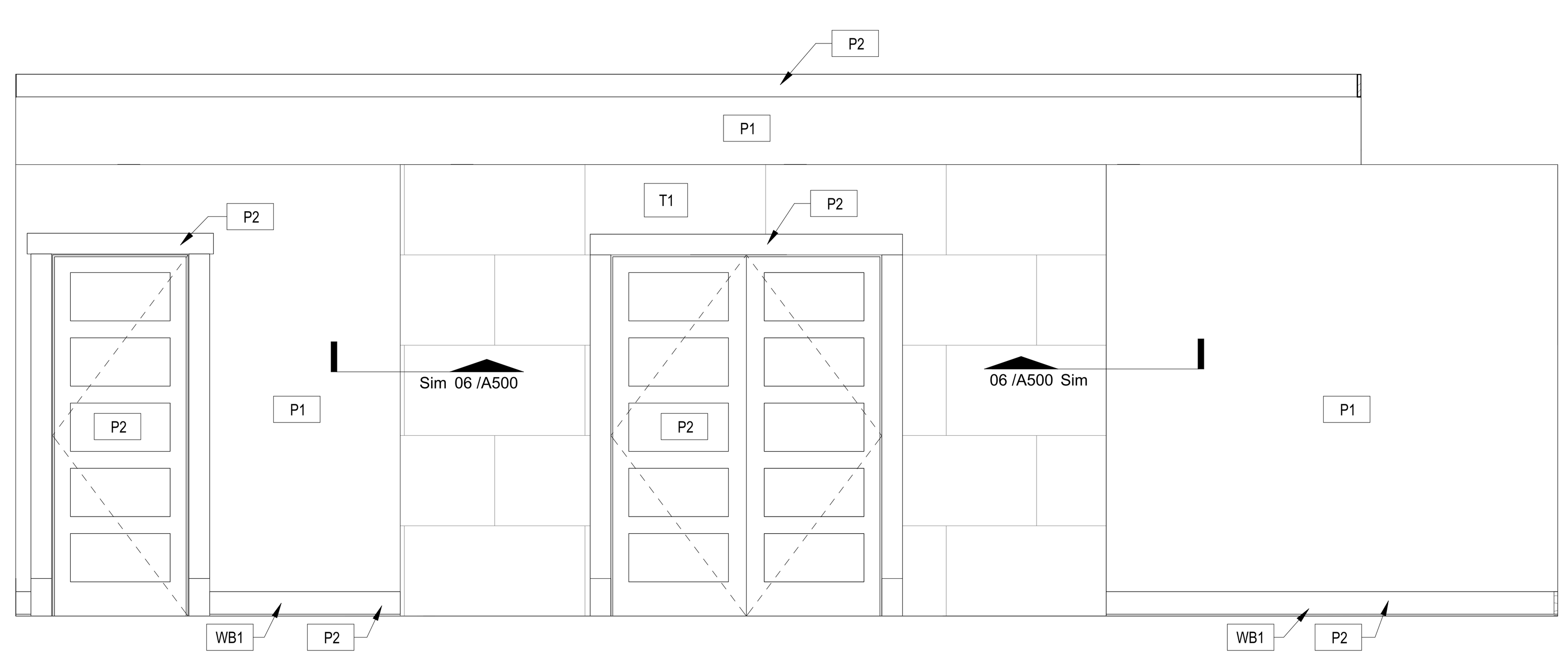
04 **Standard Venue**

3/8" = 1'-0"



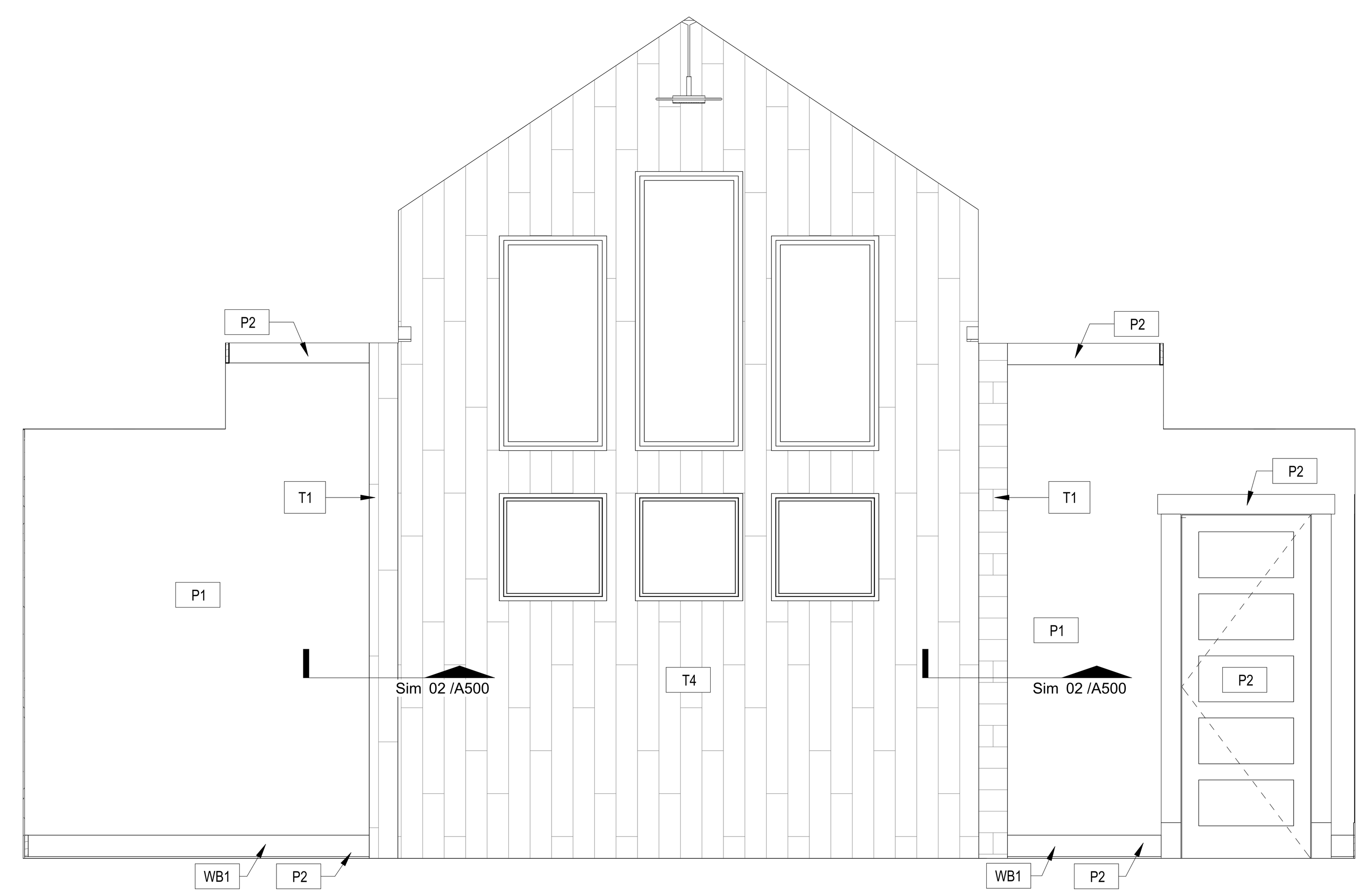
03 **Standard Venue**

3/8" = 1'-0"



02 **Standard Venue**

3/8" = 1'-0"



01 **Standard Venue**

3/8" = 1'-0"

10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Interior Elevations

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Date:	Description:
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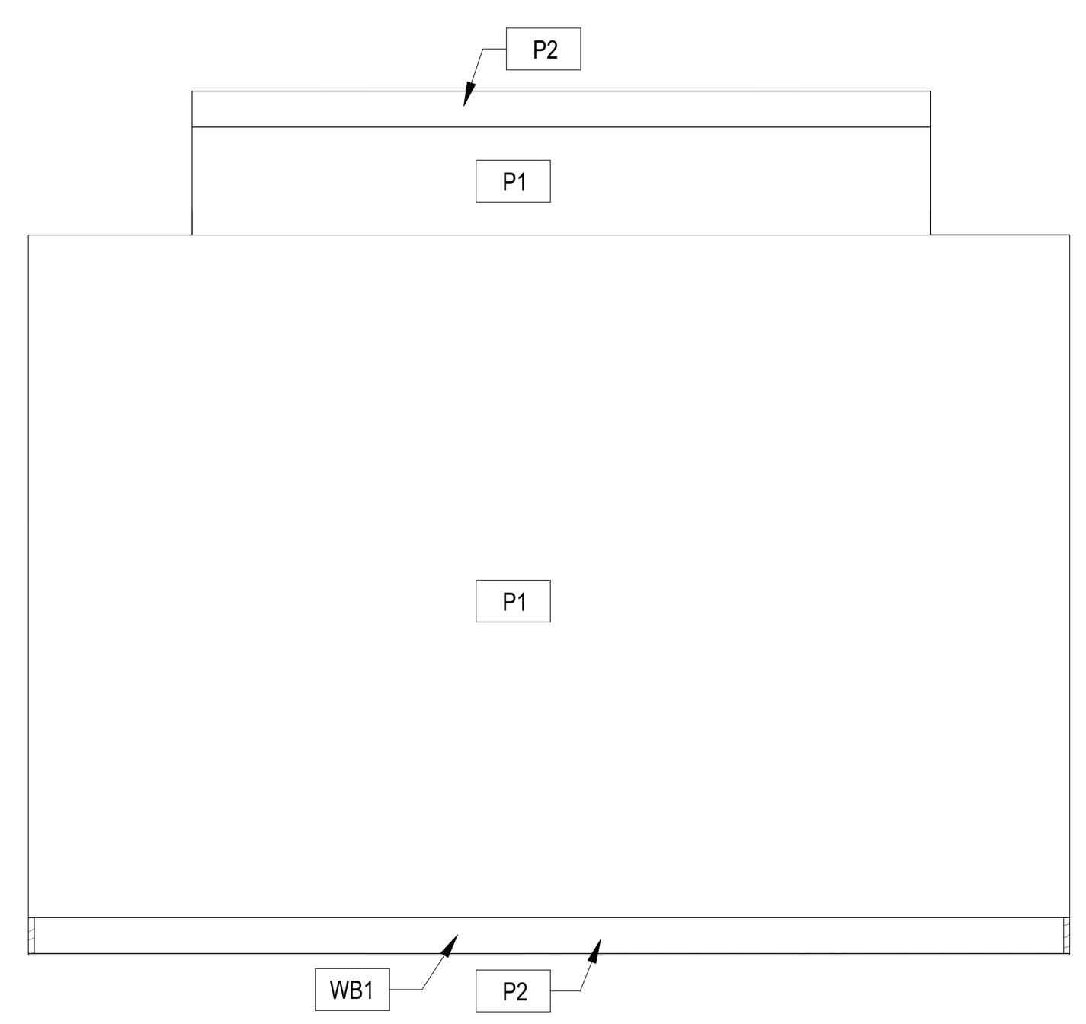
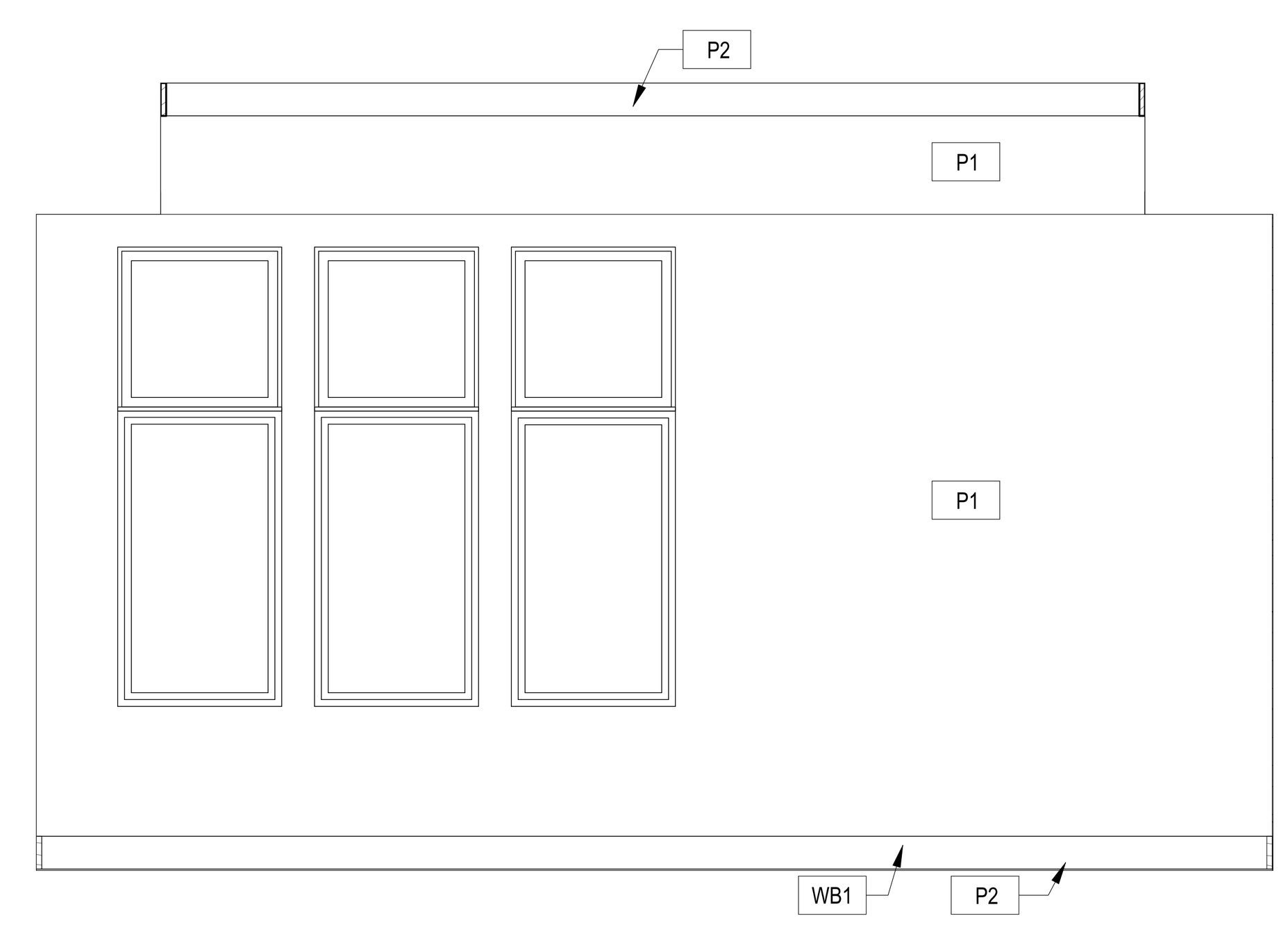
A411



12 Arrangement 111
3/8" = 1'-0"



11 Arrangement 111
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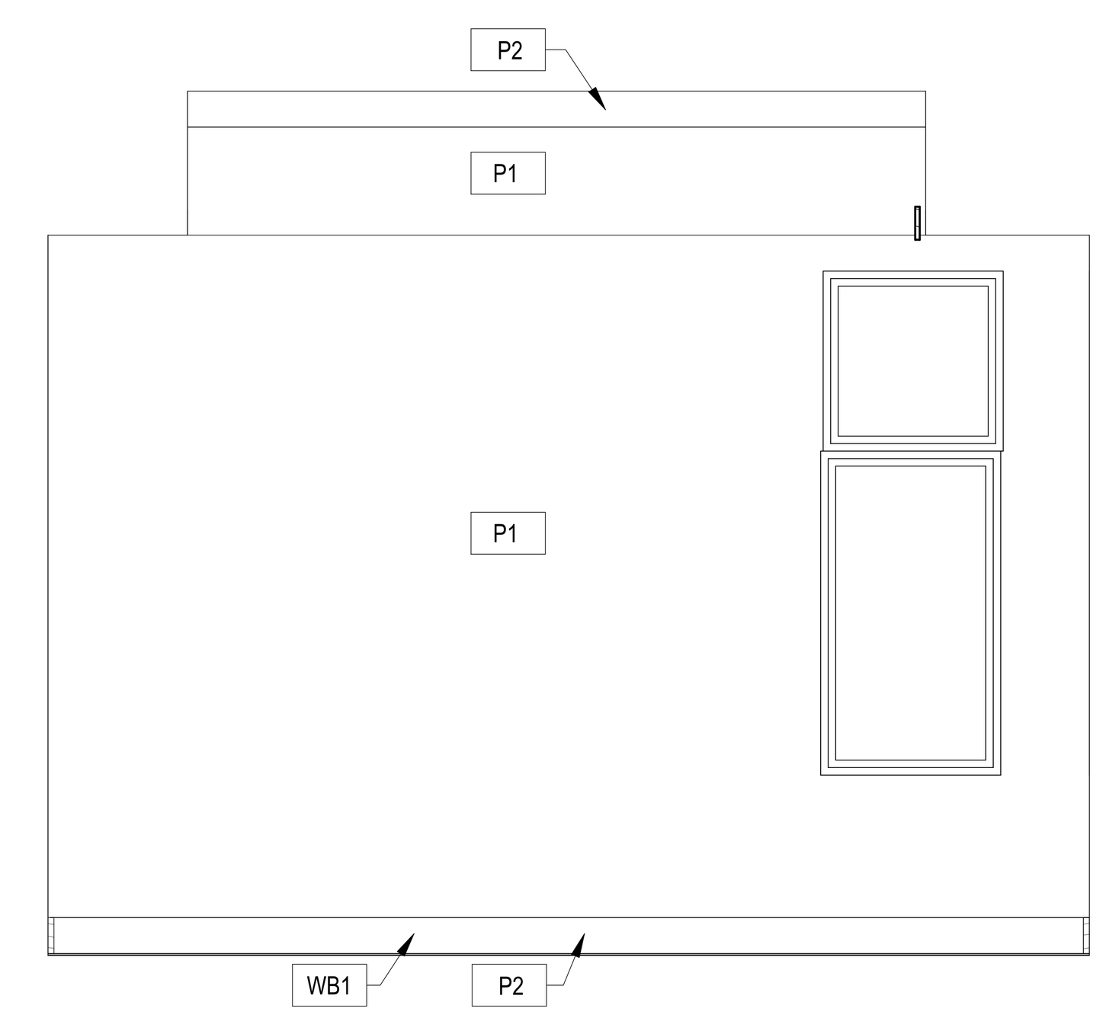

10 Arrangement 111
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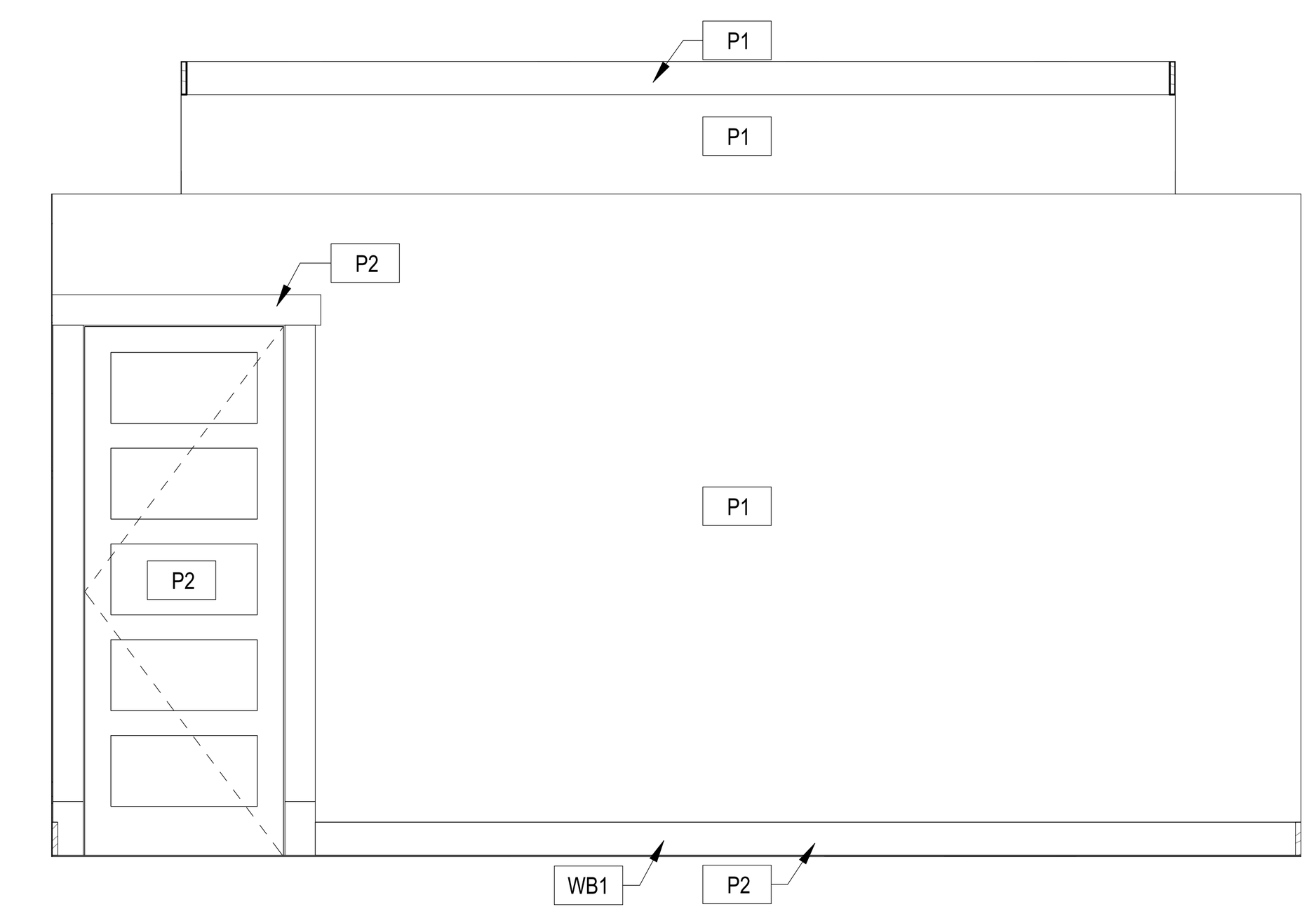

09 Arrangement 111
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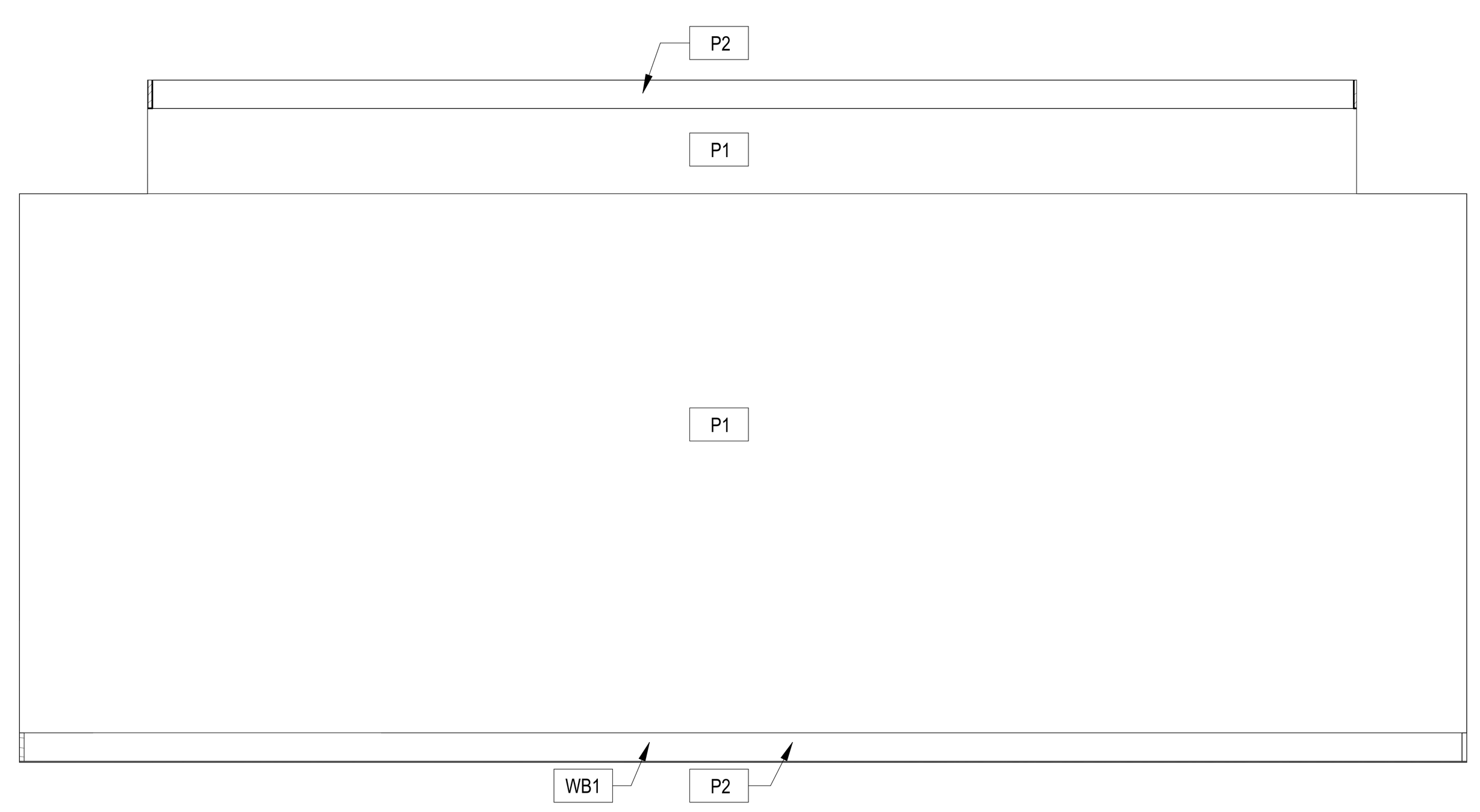

08 Arrangement 126
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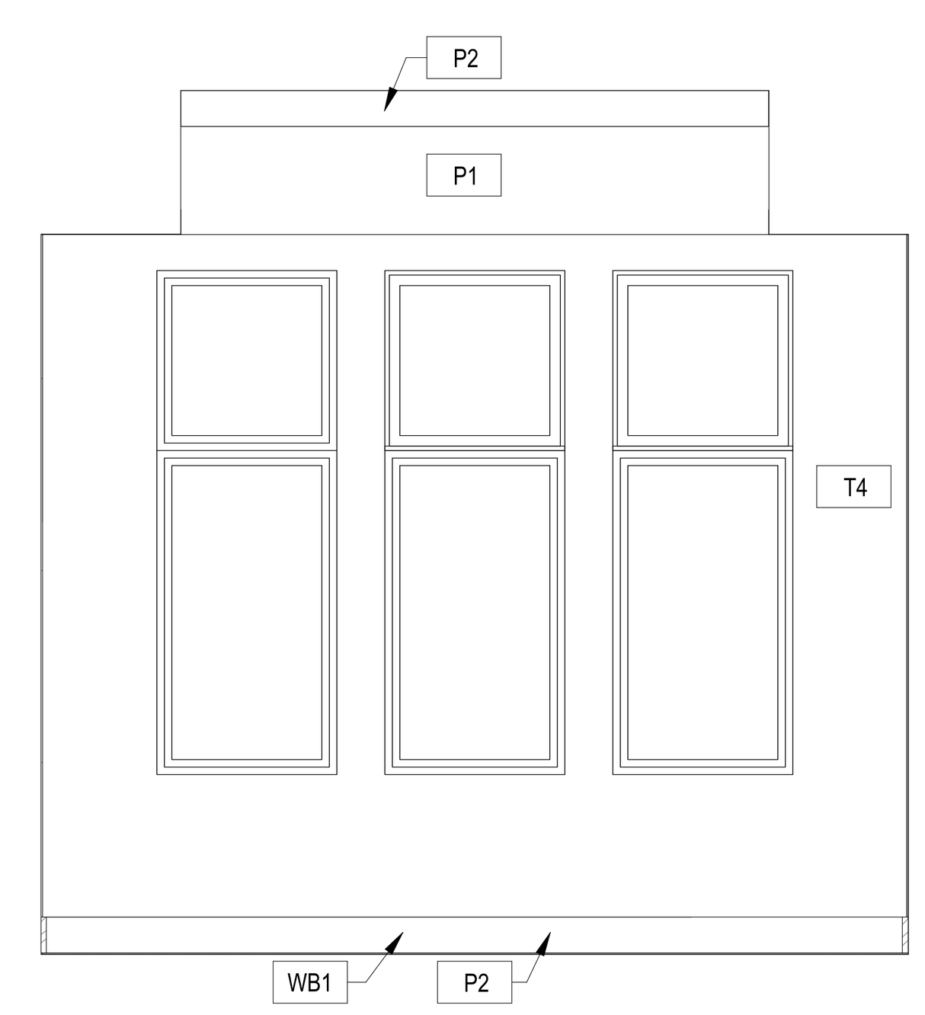

07 Arrangement 126
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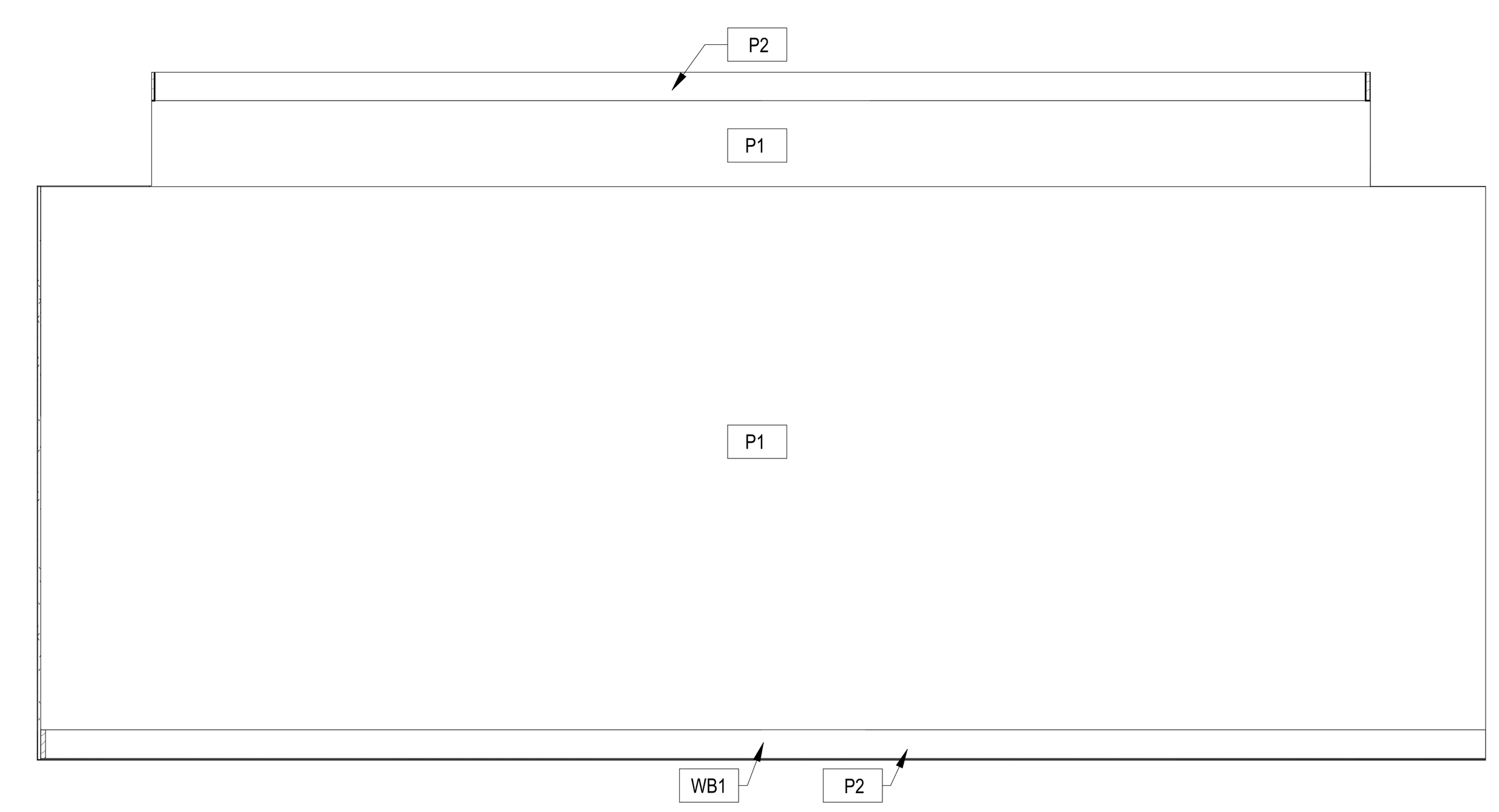
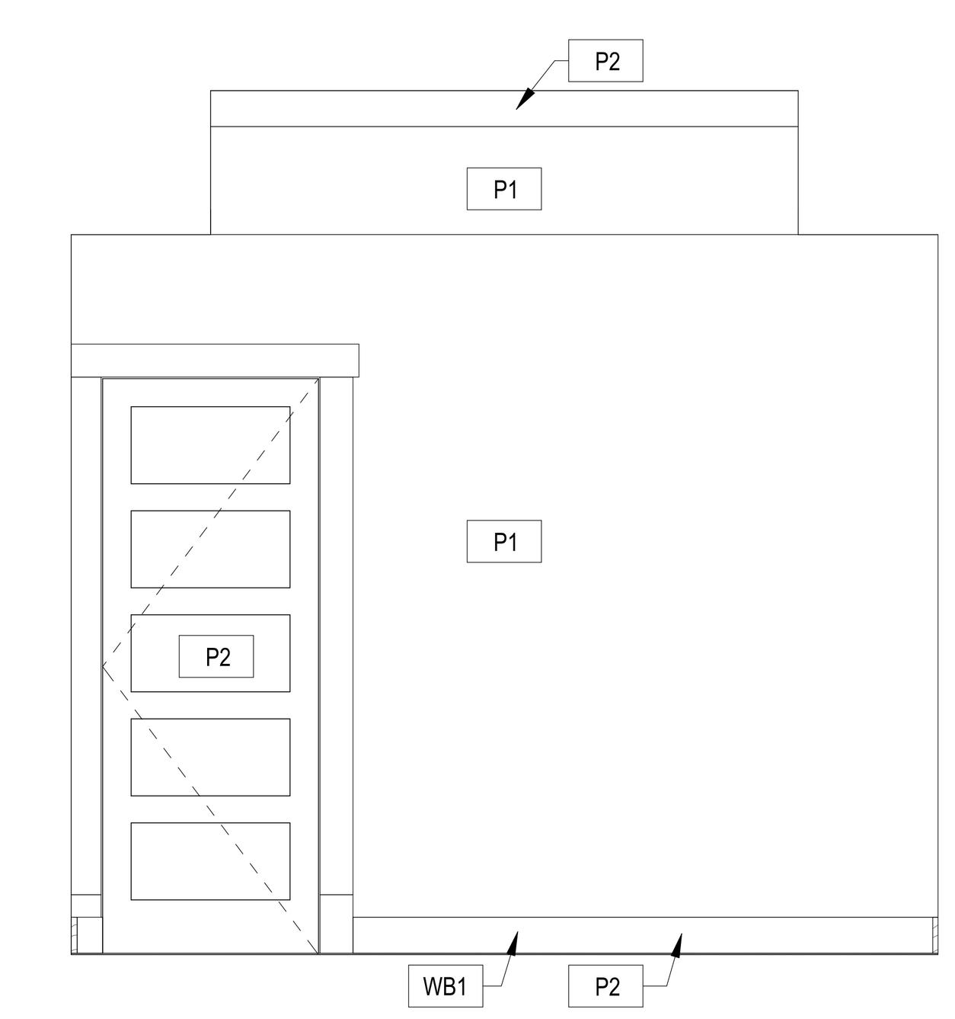


06 Arrangement 126
3/8" = 1'-0"



05 Arrangement 126
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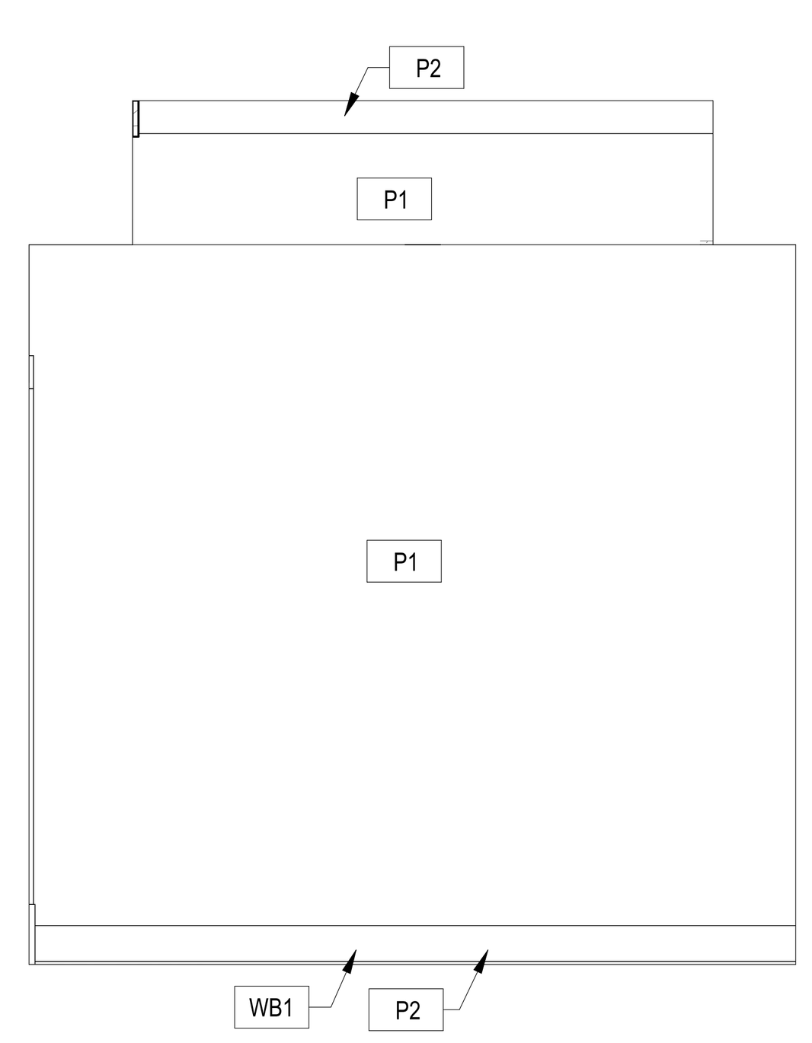
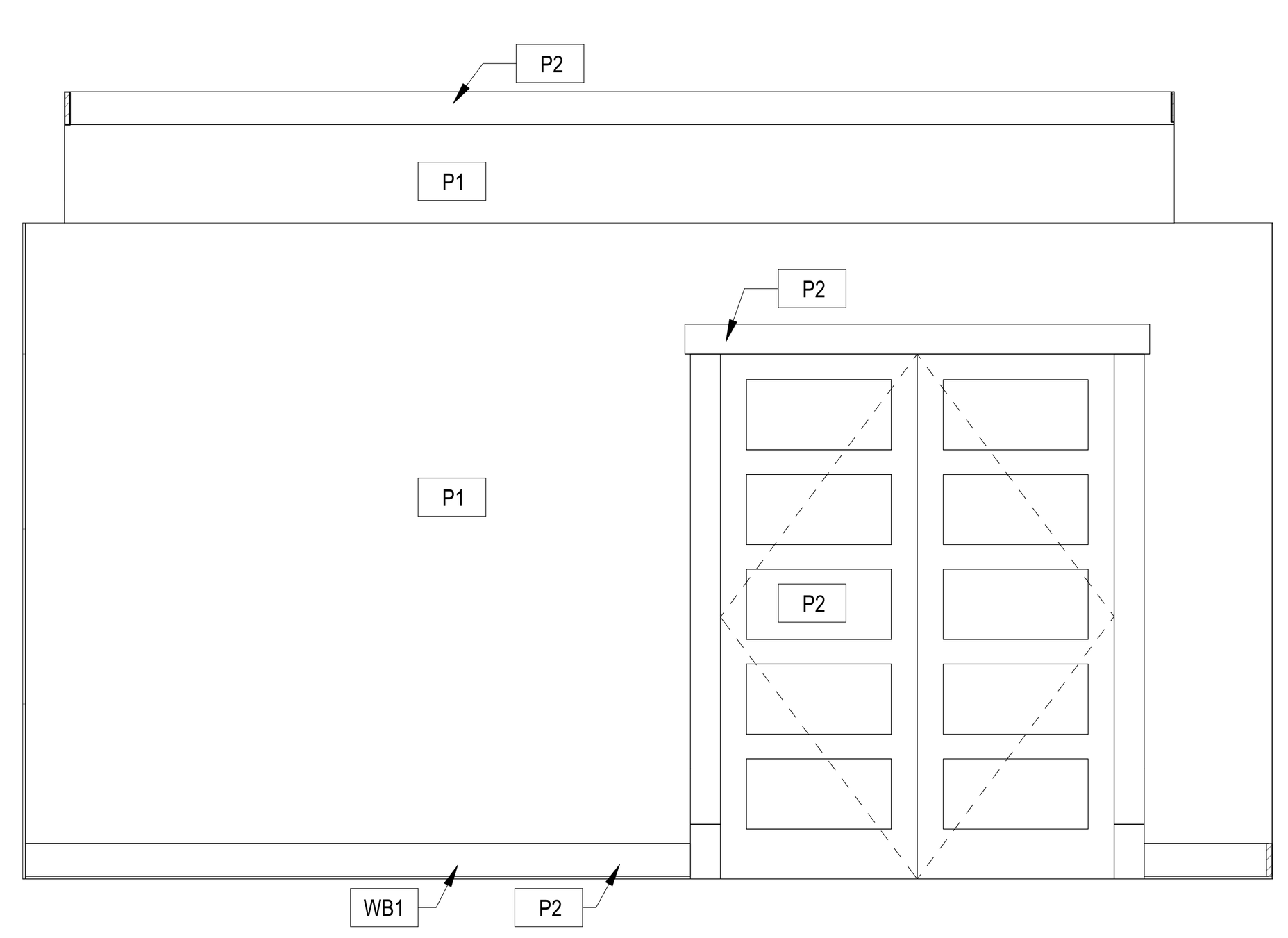
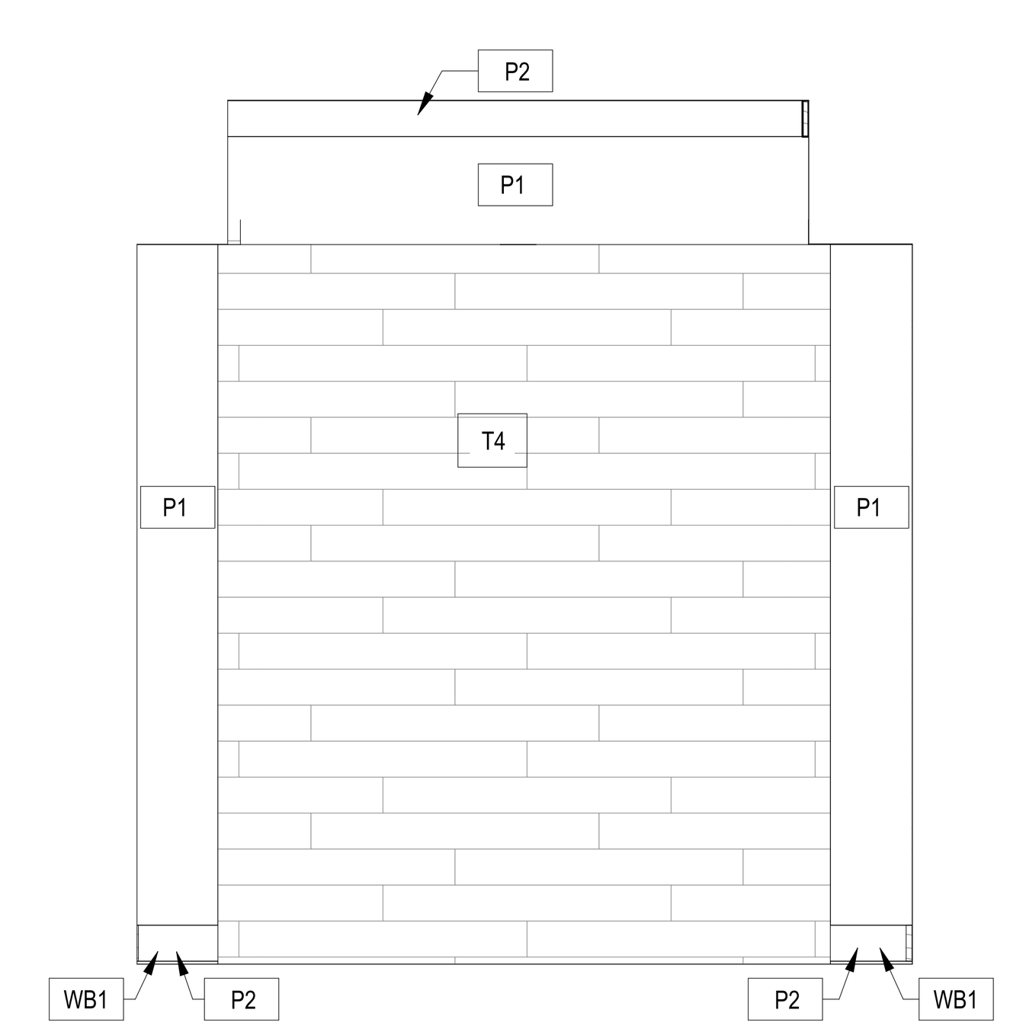


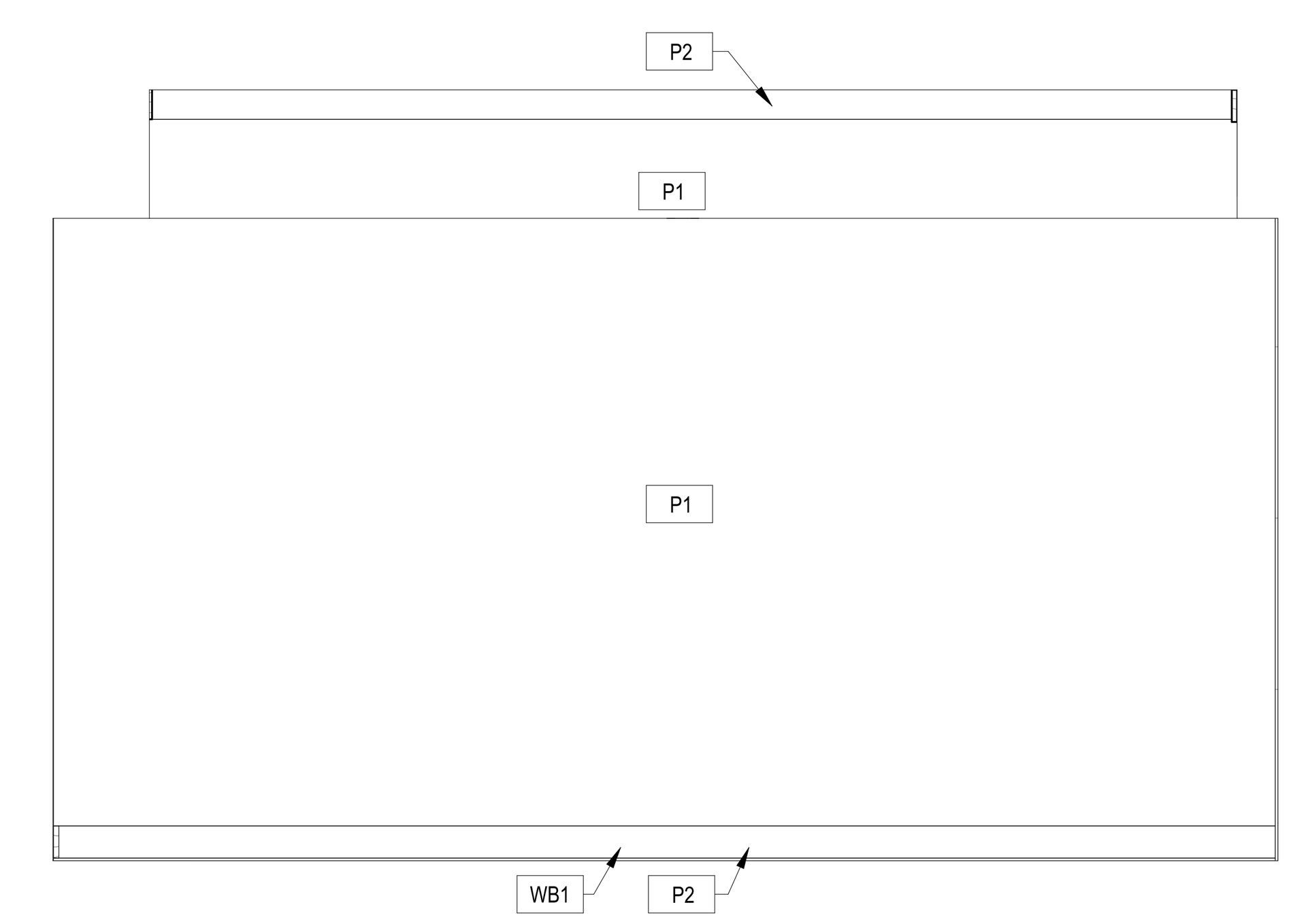
04 Basic Venue
3/8" = 1'-0"



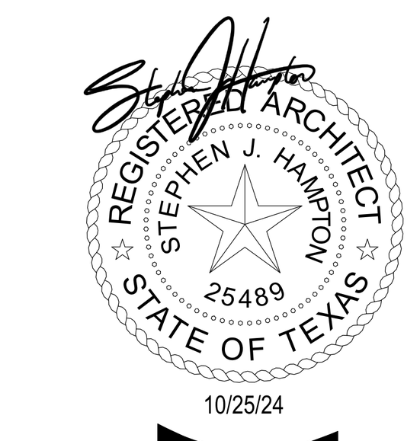
03 Basic Venue
3/8" = 1'-0"



02 Basic Venue
3/8" = 1'-0"



01 Basic Venue
3/8" = 1'-0"



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Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Interior Elevations

Project Number: 230502
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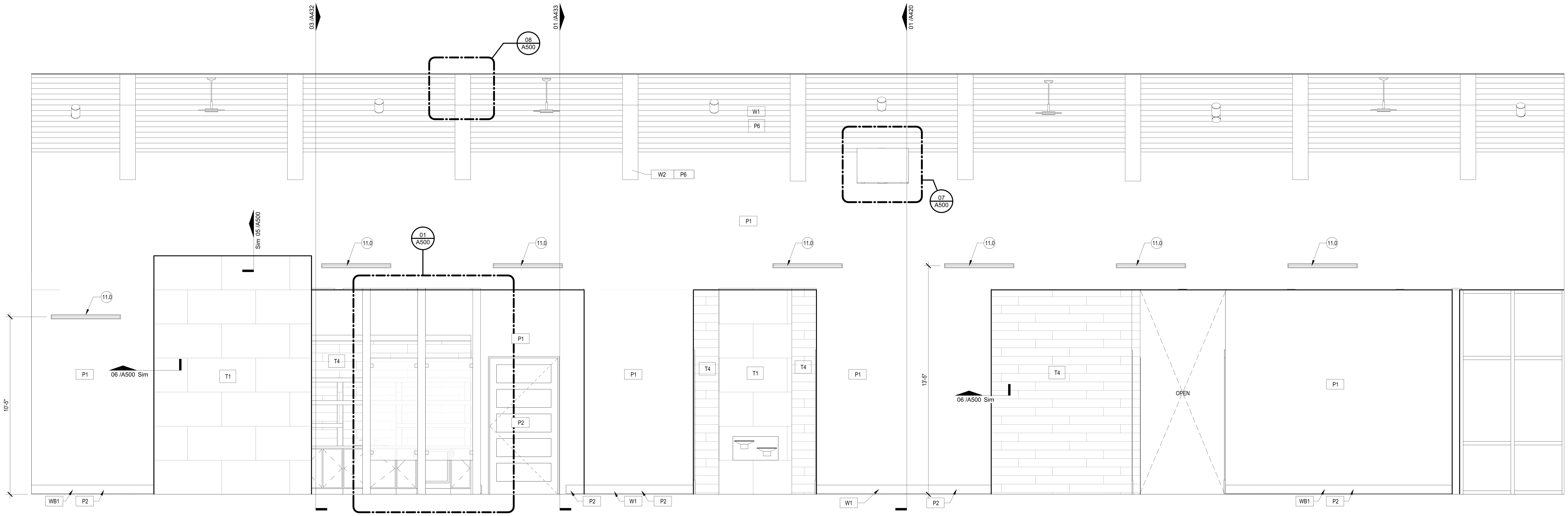
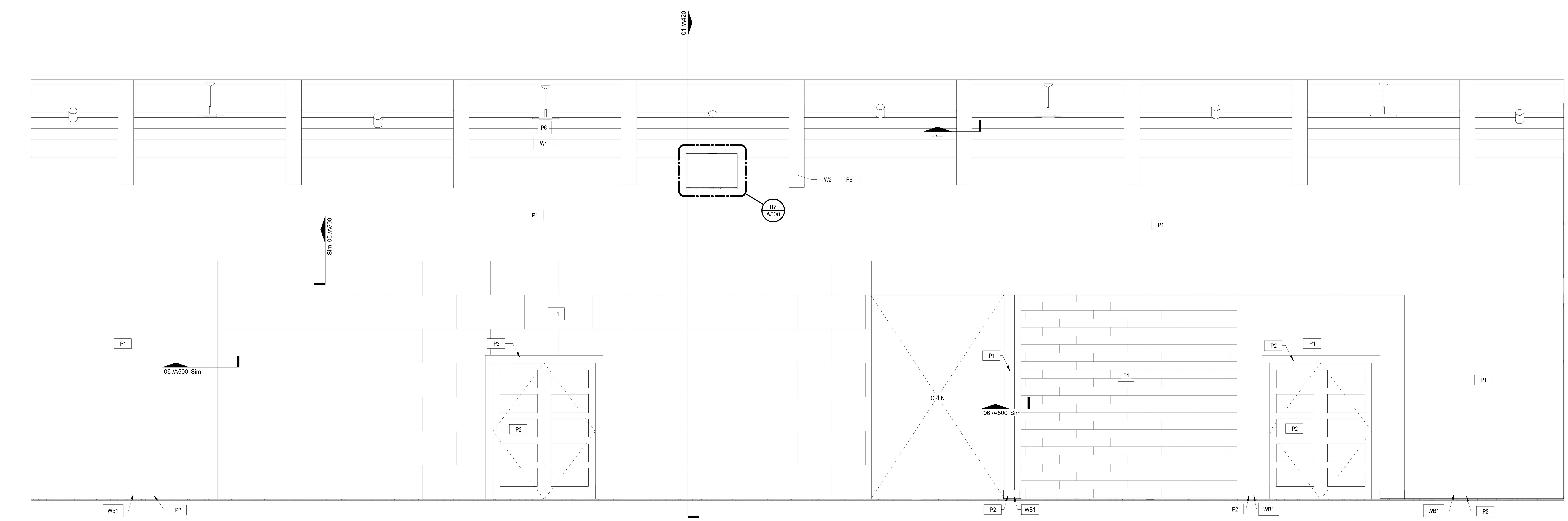
Leander, TX 78641



2 Main Corridor
3/8" = 1'-0"



01 Main Corridor
3/8" = 1'-0"

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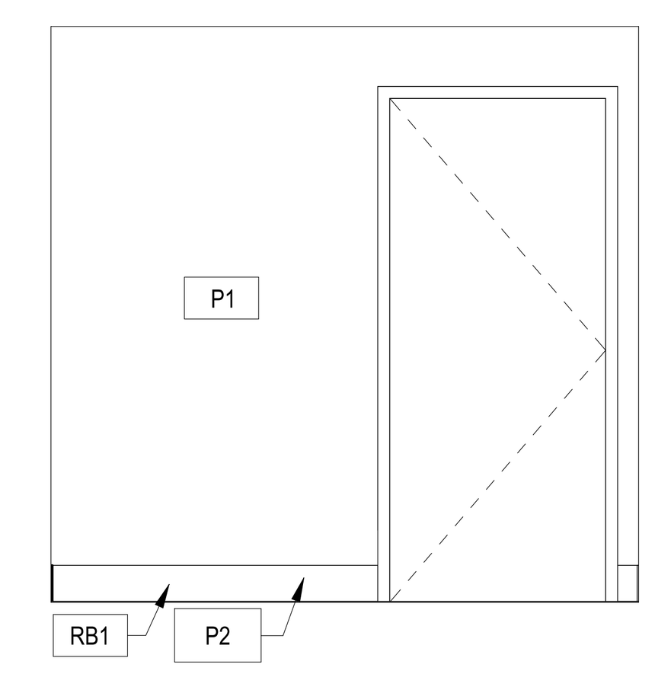
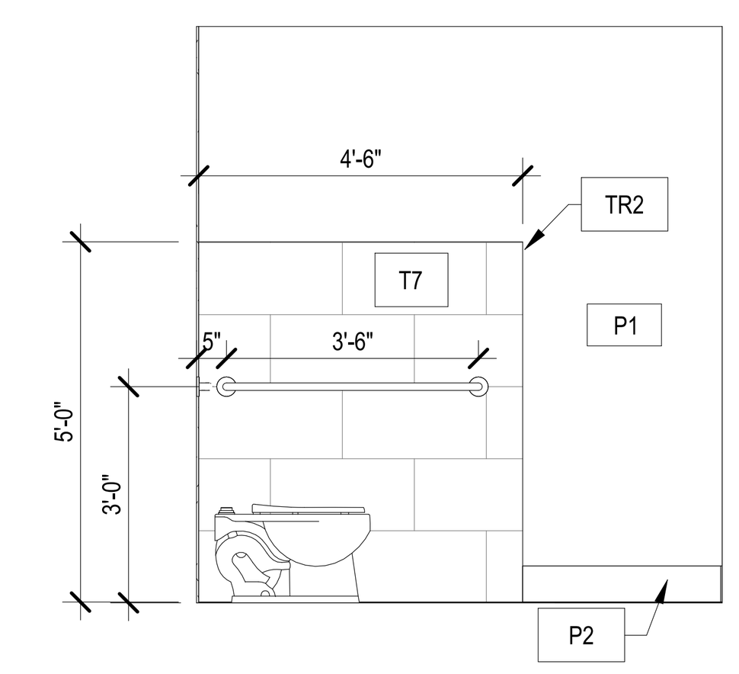
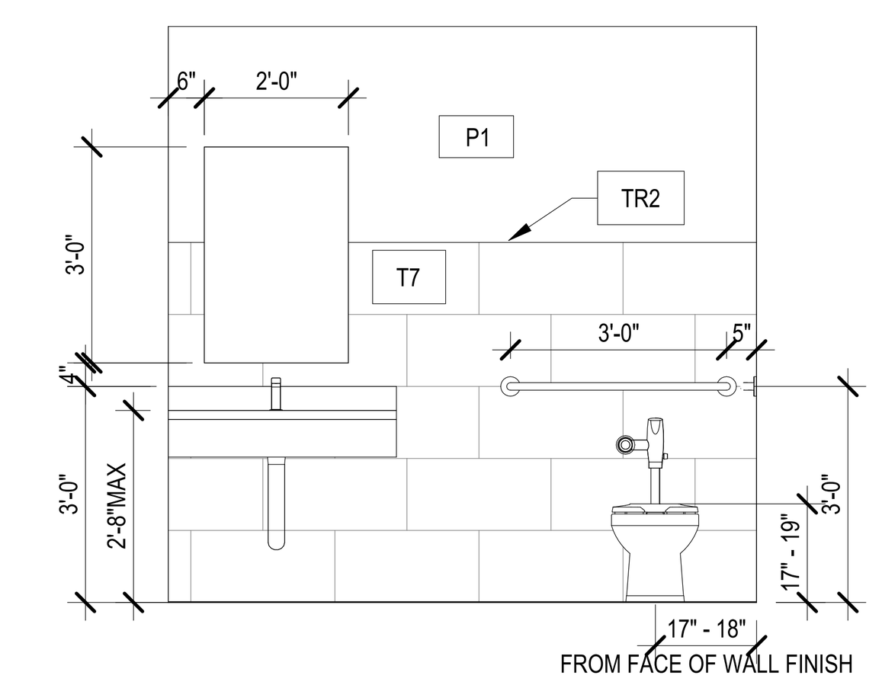
A413



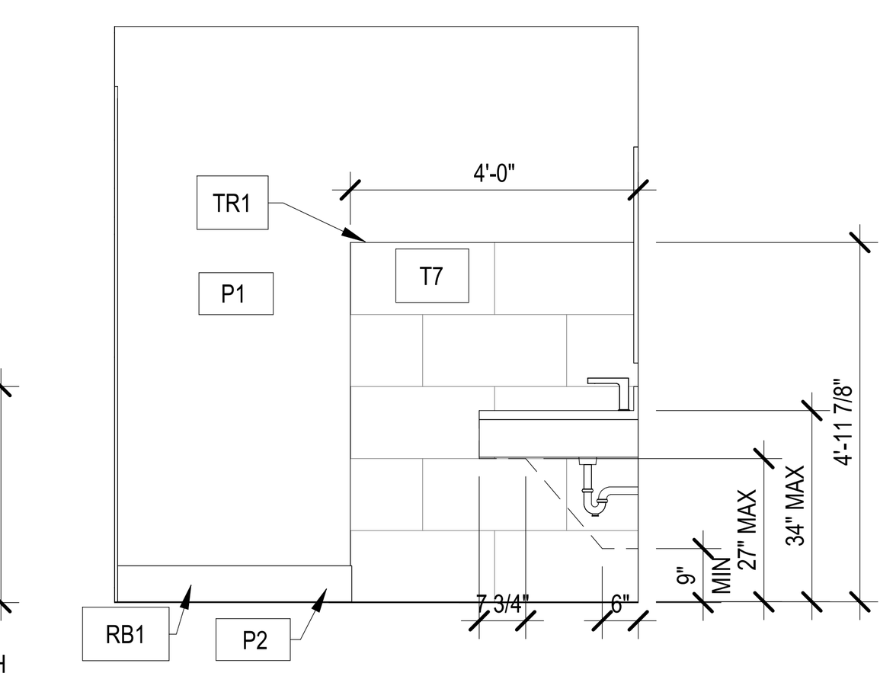
12 Unisex Restroom
3/8" = 1'-0"



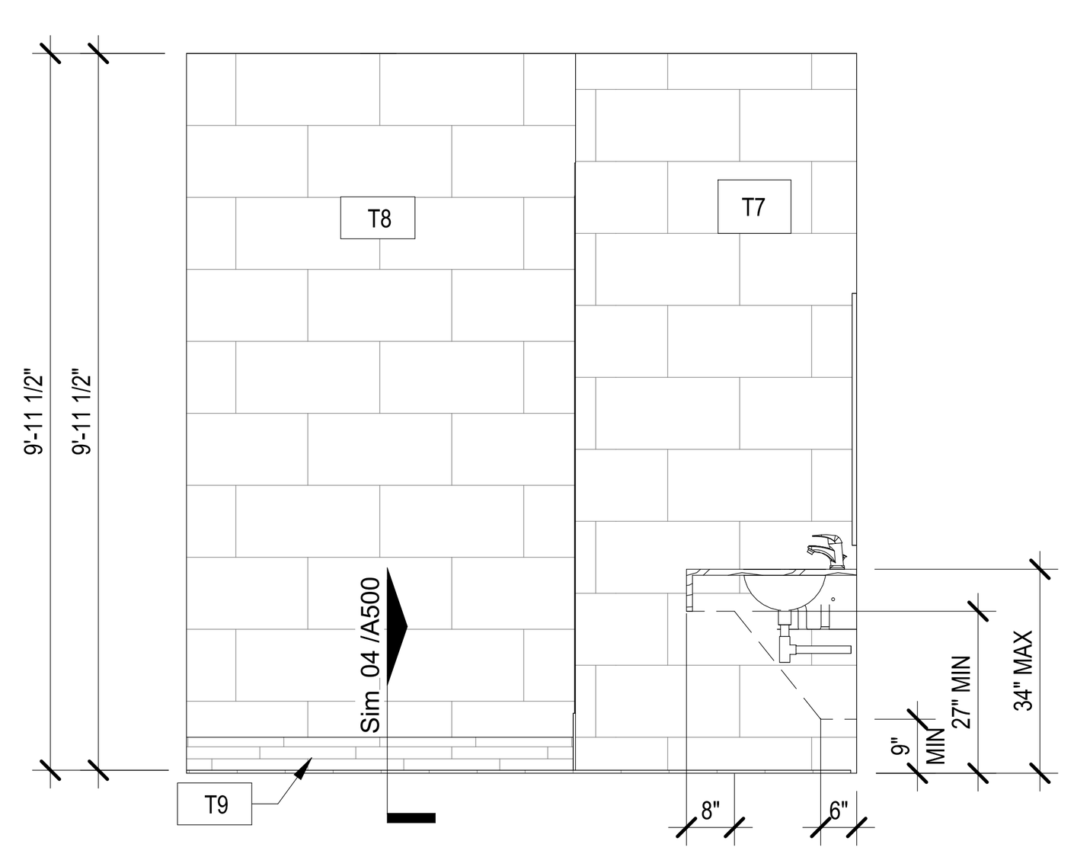
11 Unisex Restroom
3/8" = 1'-0"



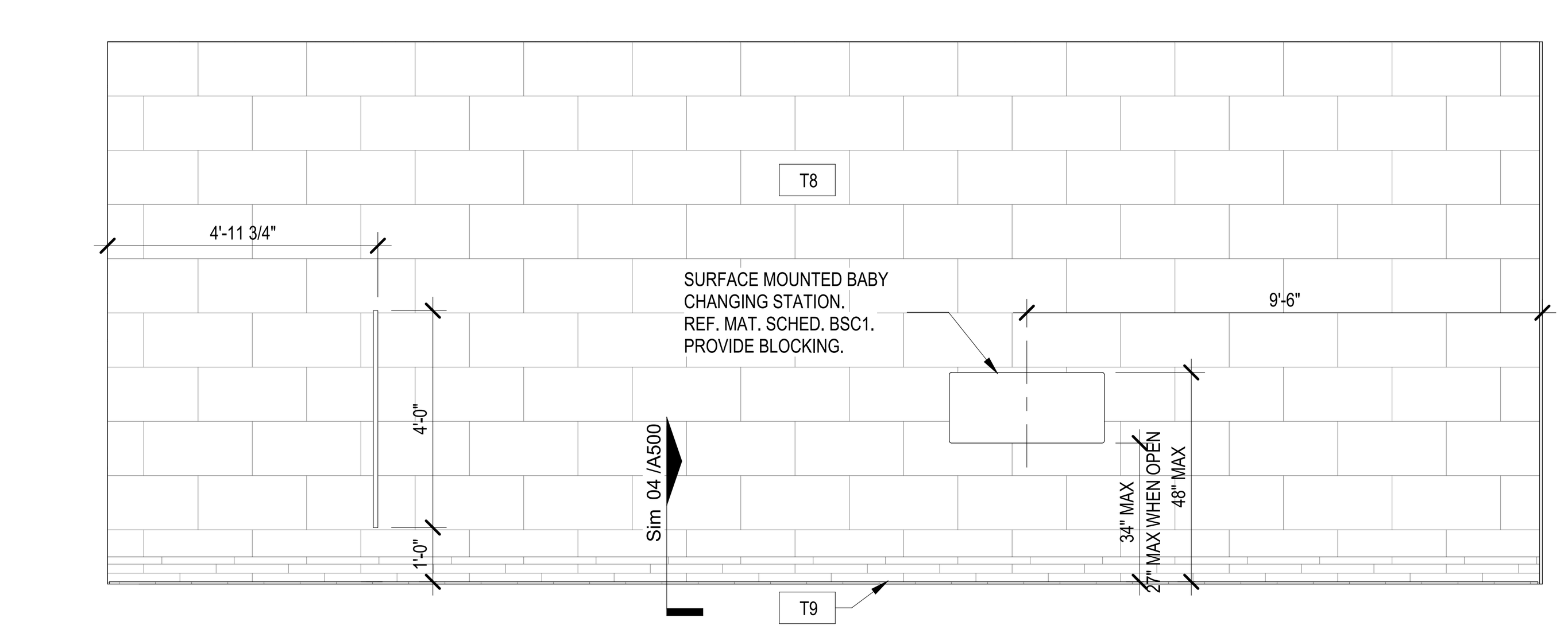
10 Unisex Restroom
3/8" = 1'-0"



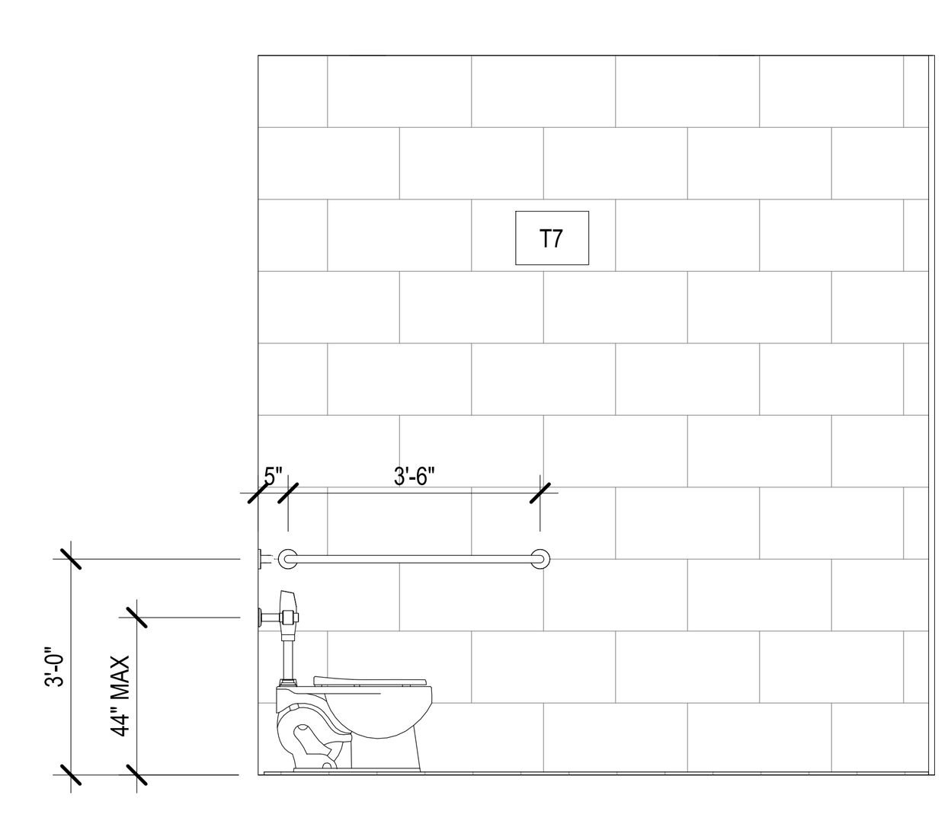
09 Unisex Restroom
3/8" = 1'-0"



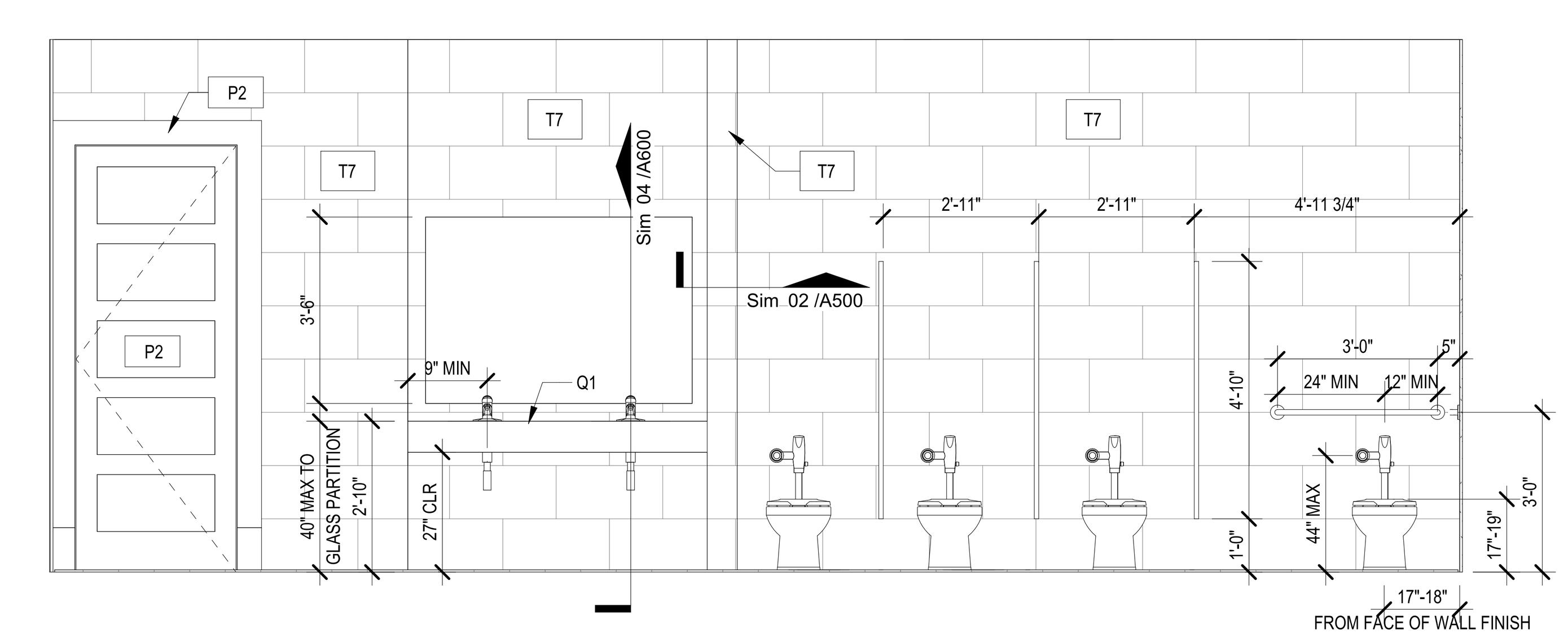
08 Women's R.R.
3/8" = 1'-0"



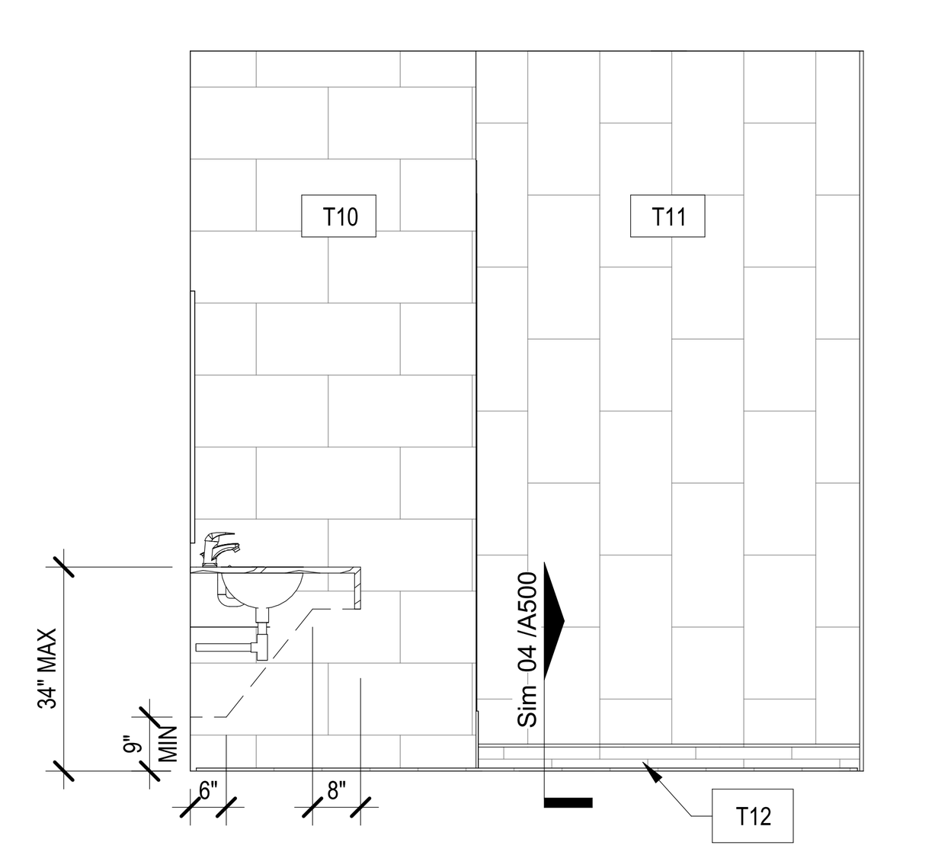
07 Women's Restrrom
3/8" = 1'-0"



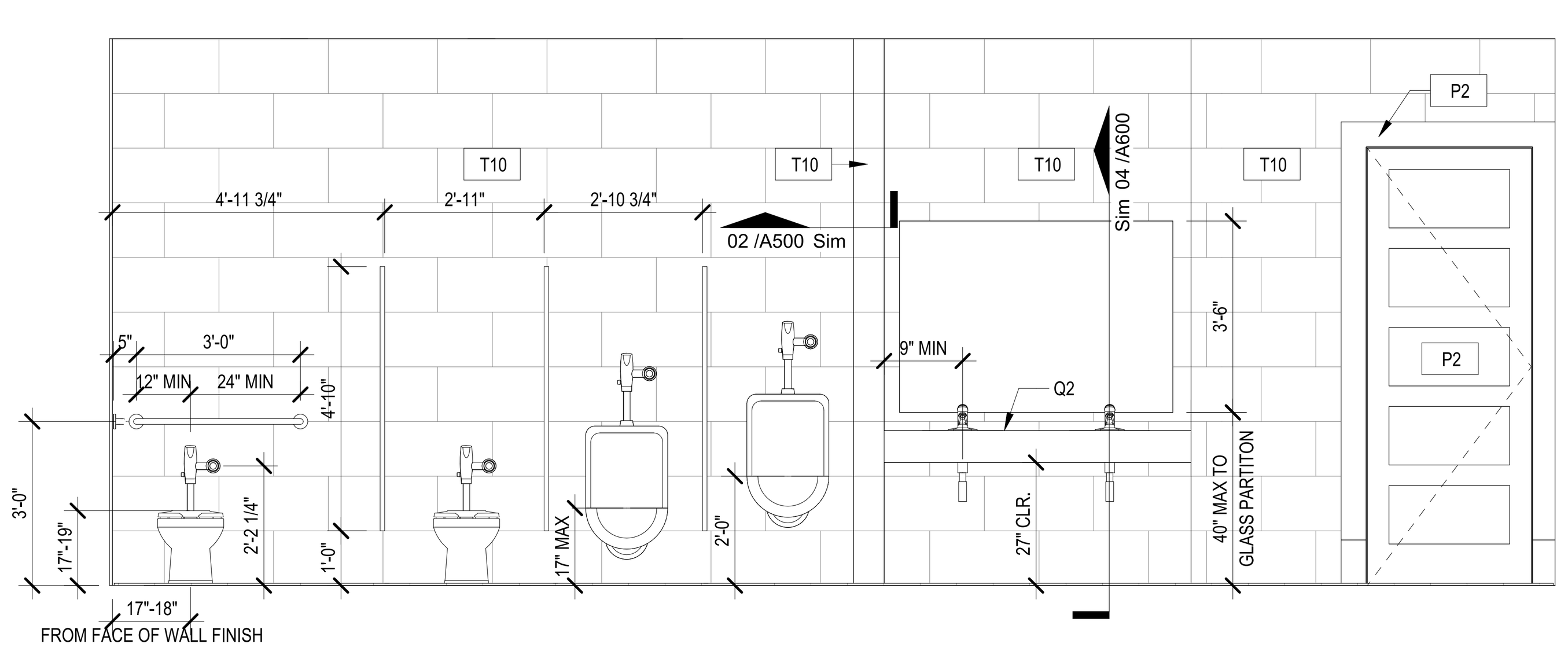
06 Women's R.R 1
3/8" = 1'-0"



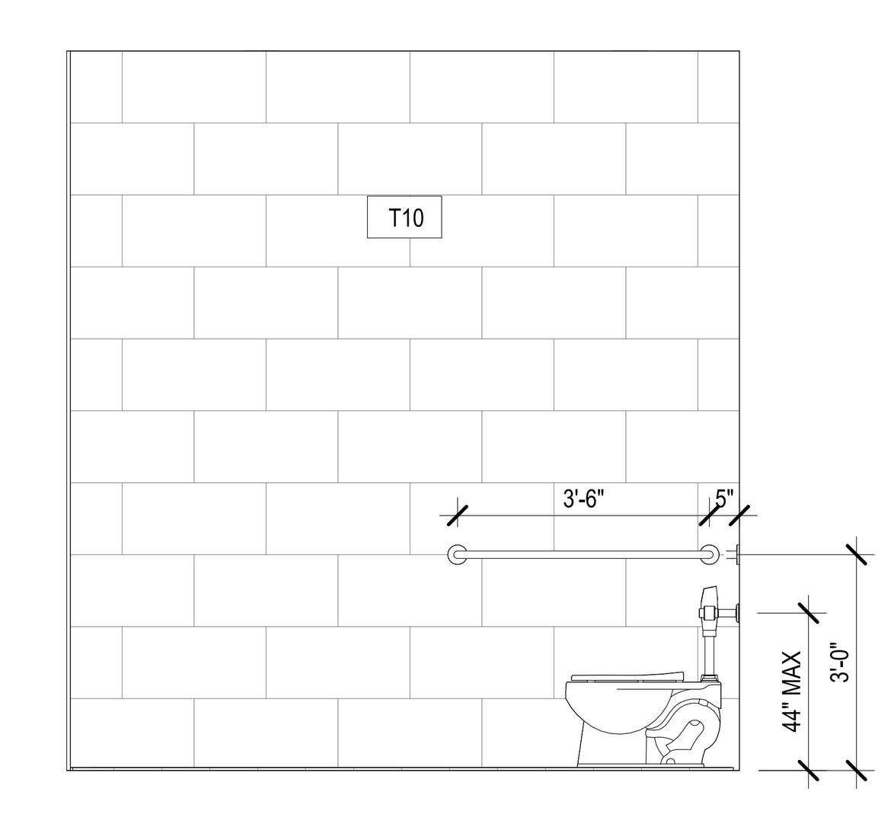
05 Womens Restroom
3/8" = 1'-0"



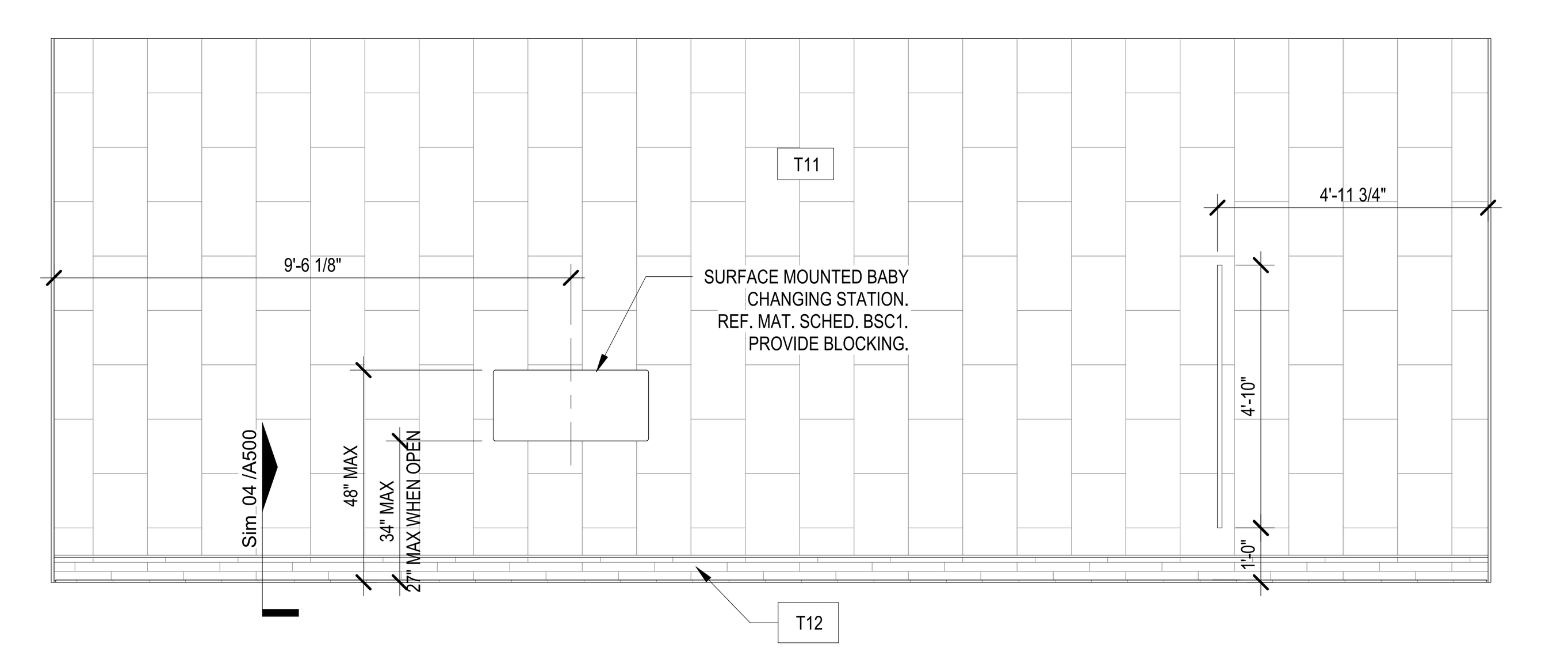
04 MENS 03
3/8" = 1'-0"



03 Mens Restroom
3/8" = 1'-0"



02 Mens Restroom
3/8" = 1'-0"



01 Mens Restroom
3/8" = 1'-0"

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
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Interior Elevations

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Date	Description
08.27.24	CD Set
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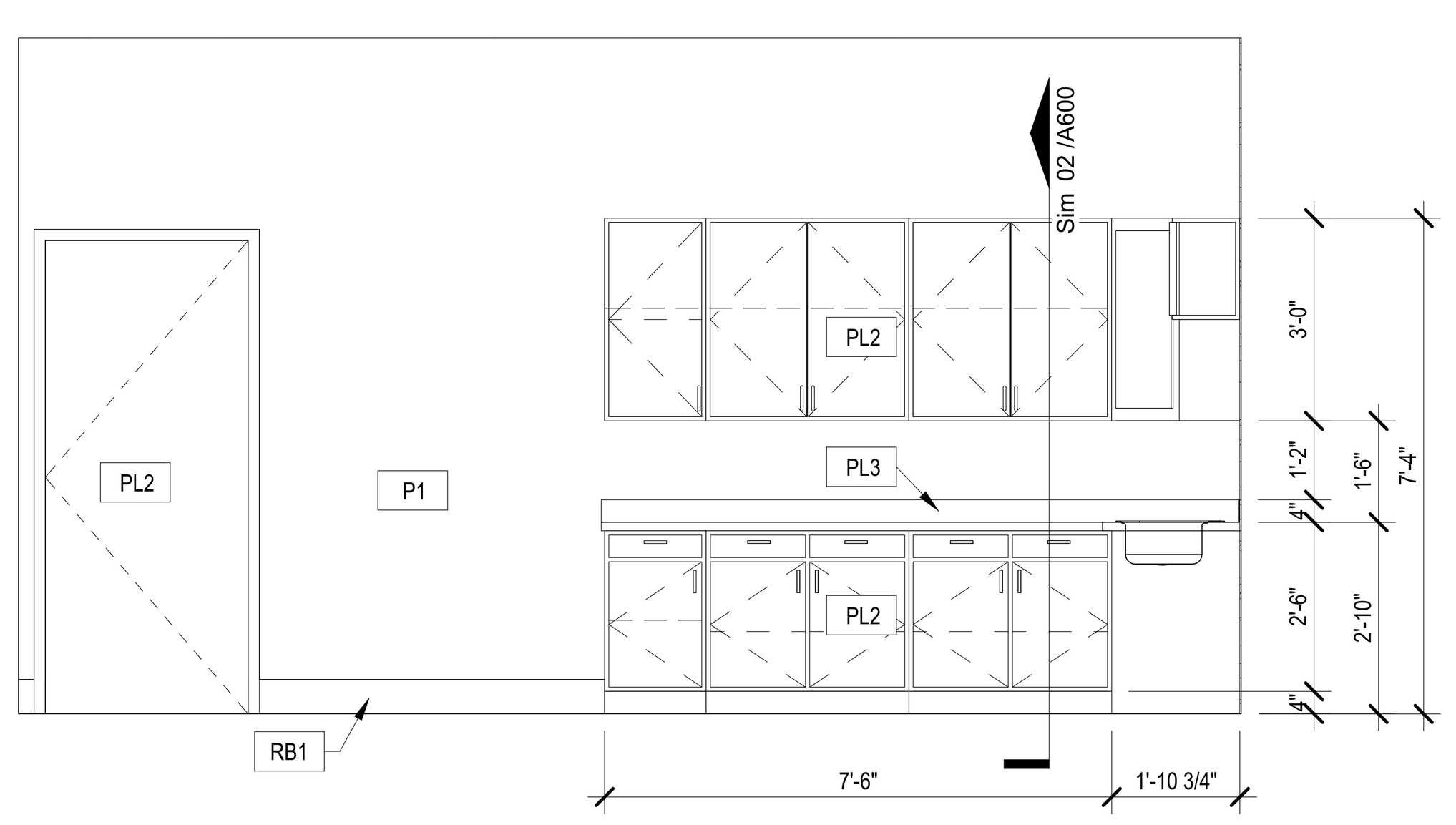
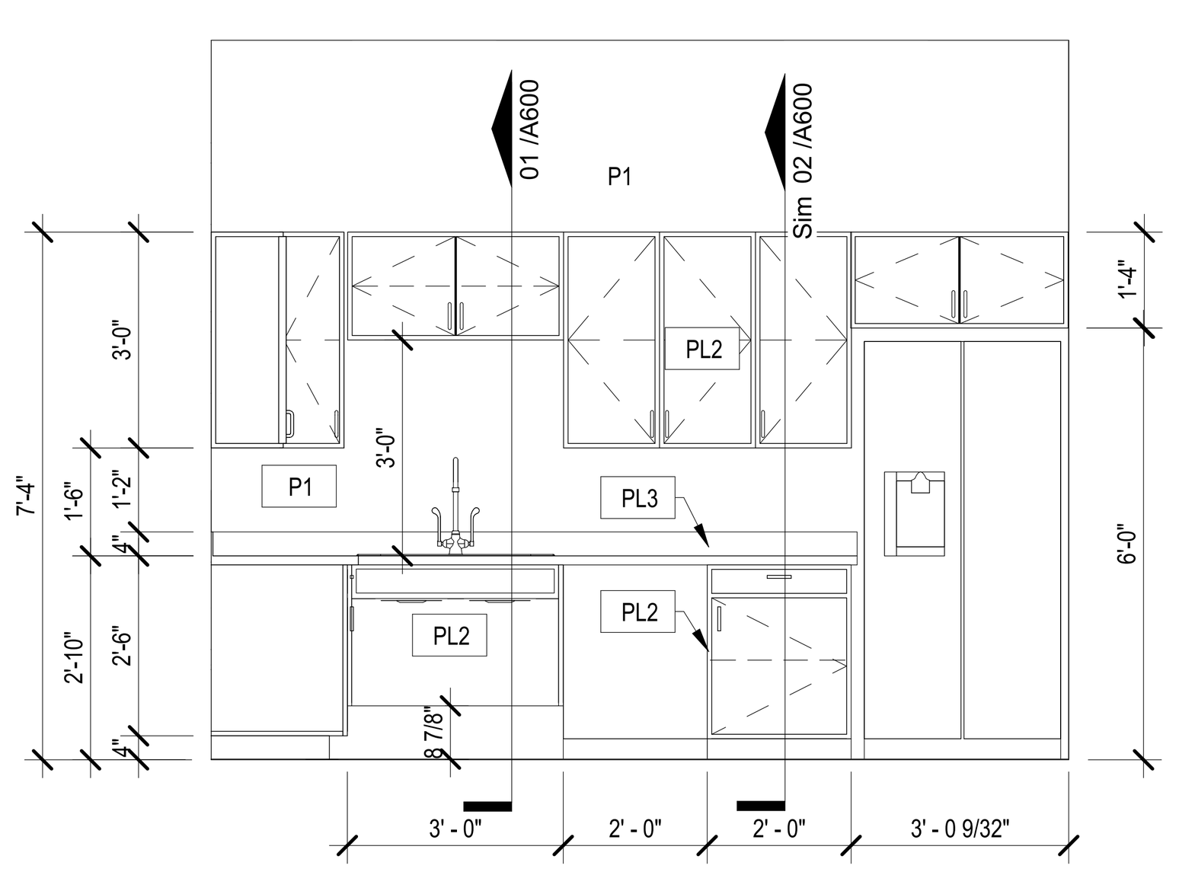
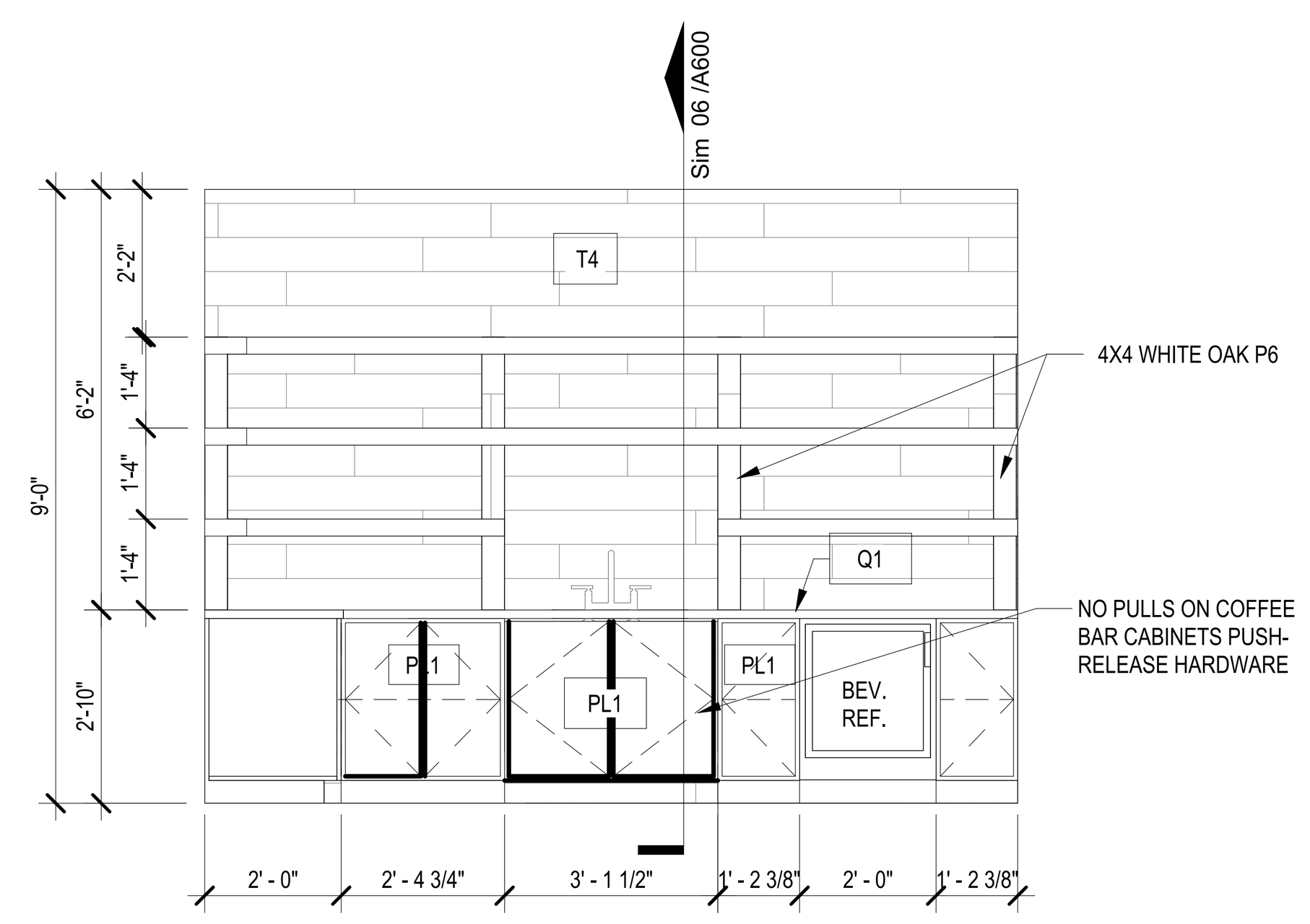
A414



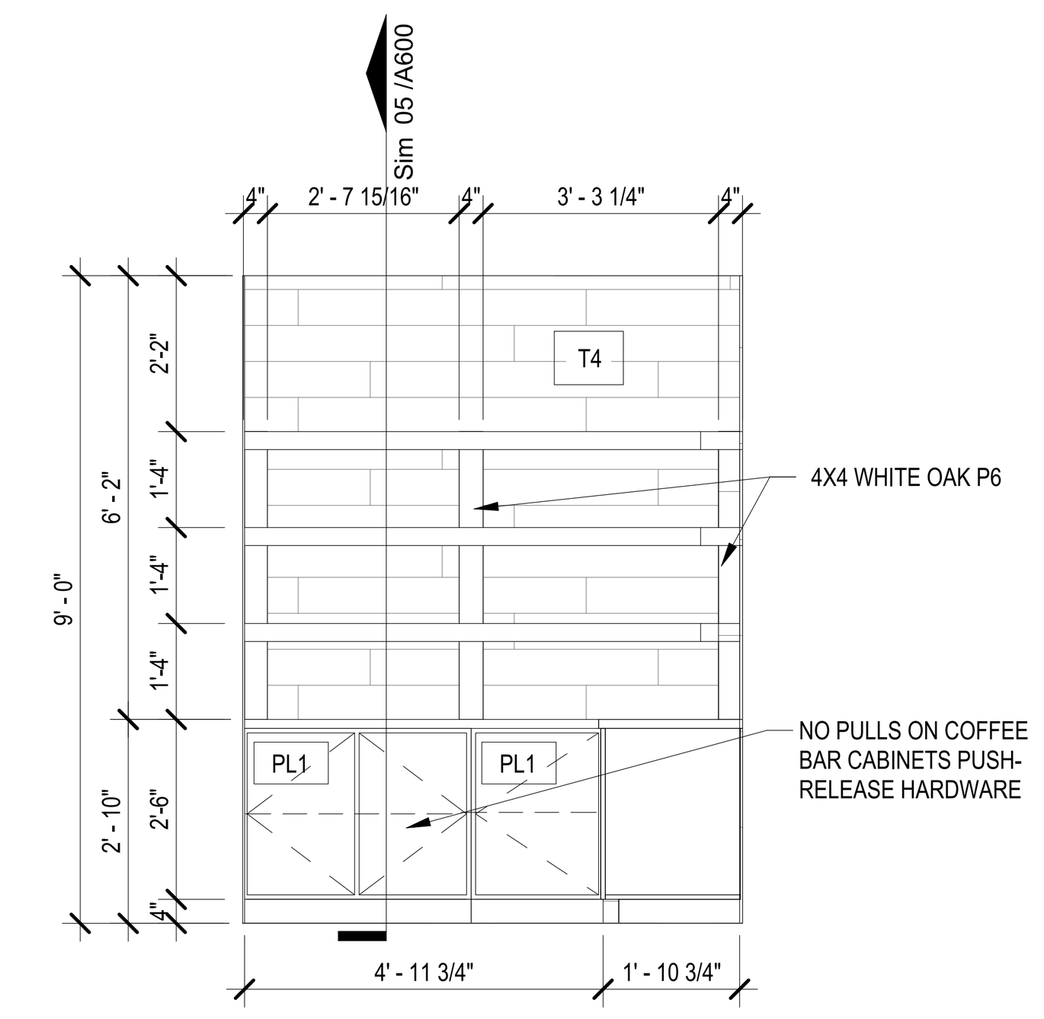
09 **Break Room**
3/8" = 1'-0"



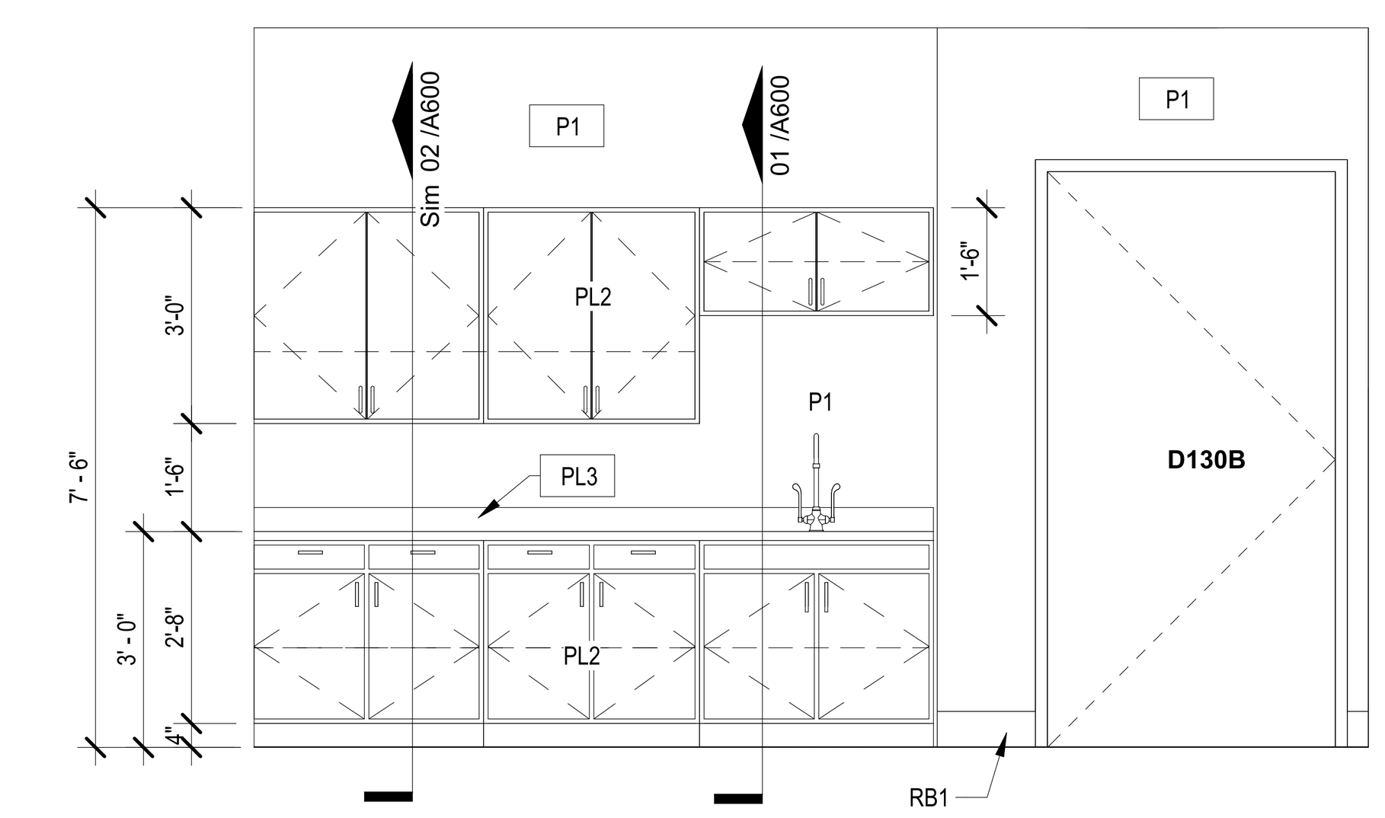
08 **Break Room**
3/8" = 1'-0"



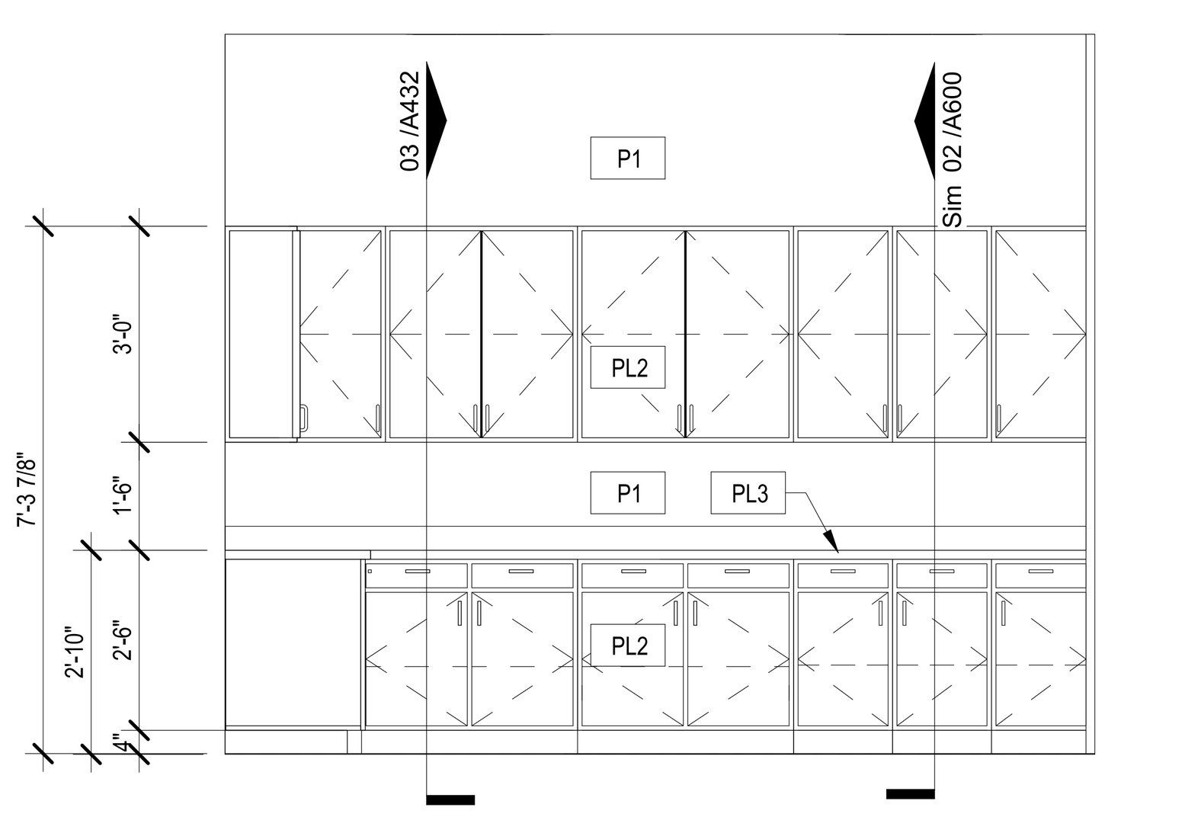
07 **Coffee Bar**
3/8" = 1'-0"



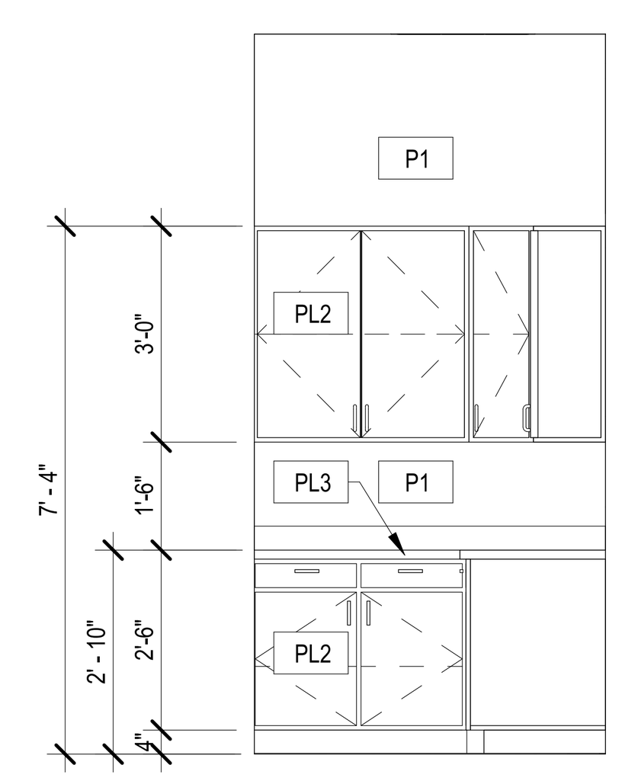
06 **Coffee Bar**
3/8" = 1'-0"



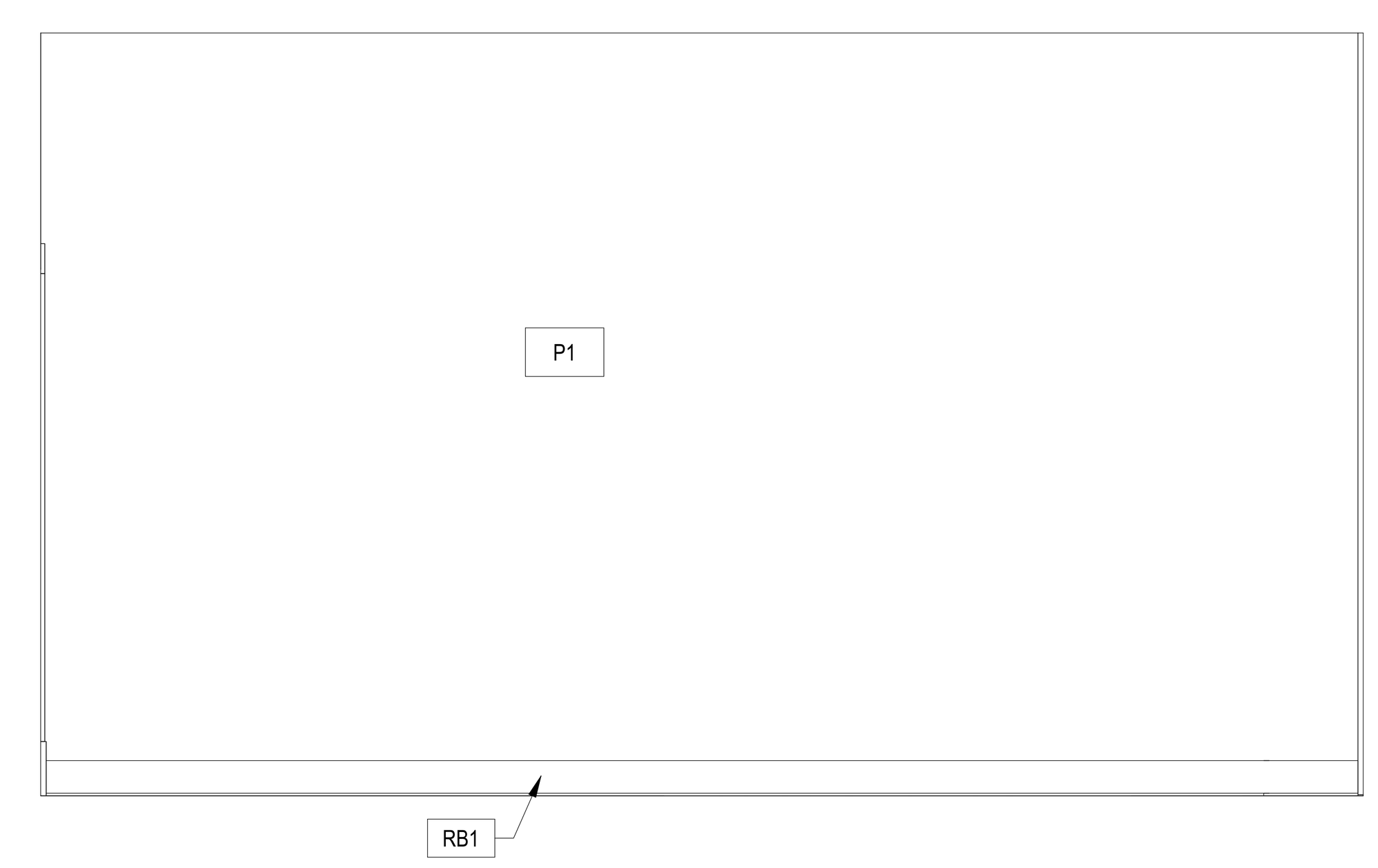
05 **Dressing Room**
3/8" = 1'-0"



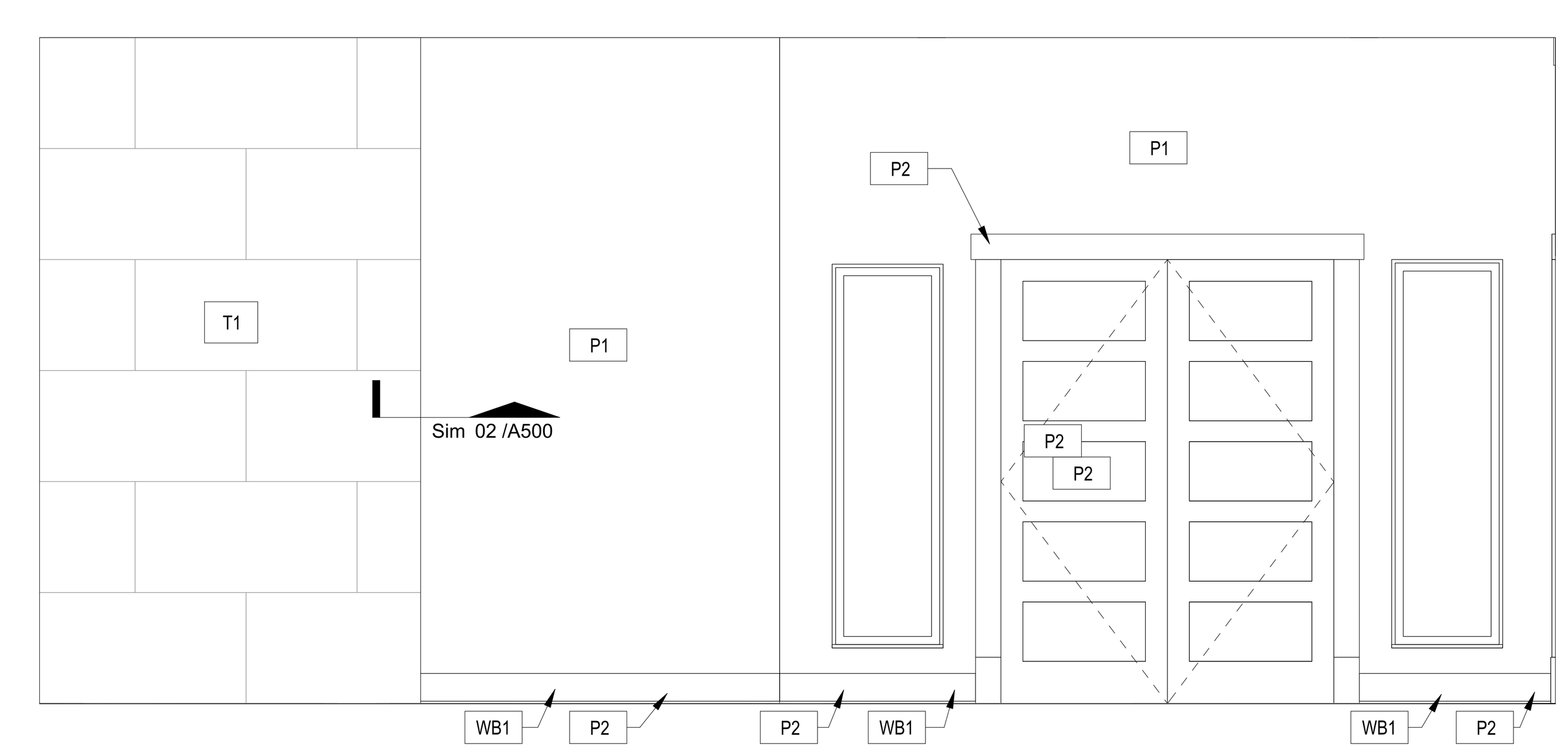
04 **Delivery**
3/8" = 1'-0"



03 **Delivery**
3/8" = 1'-0"



02 **Corridor**
3/8" = 1'-0"



01 **Corridor**
3/8" = 1'-0"

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301 S. Bagdad Rd.
Leander, TX 78641

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Interior Elevations

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Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

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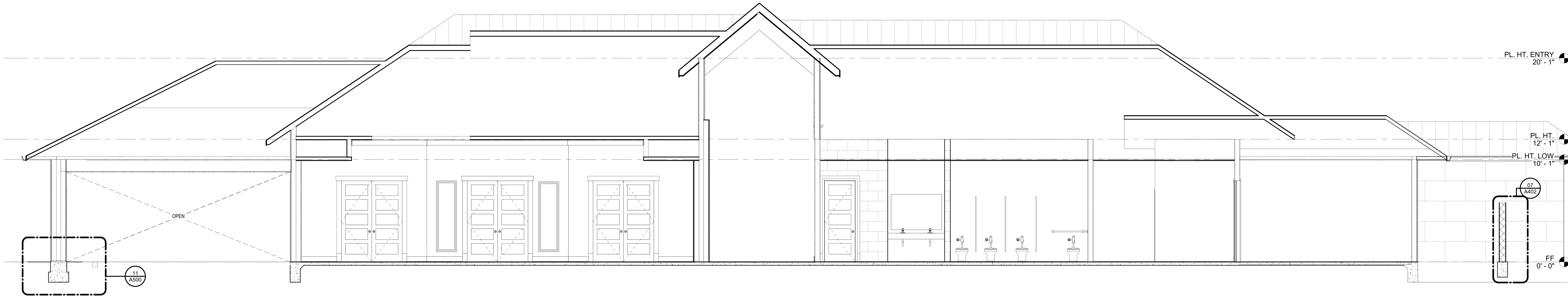
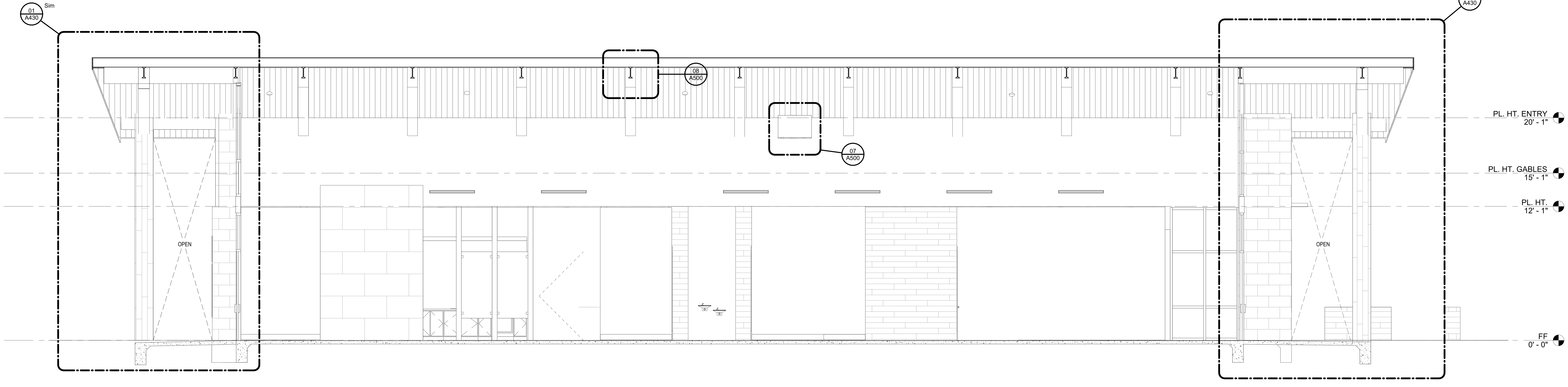
A415



01 Building Section
1/4" = 1'-0"



02 Building Section
1/4" = 1'-0"

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Leander, TX 78641

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Building Sections

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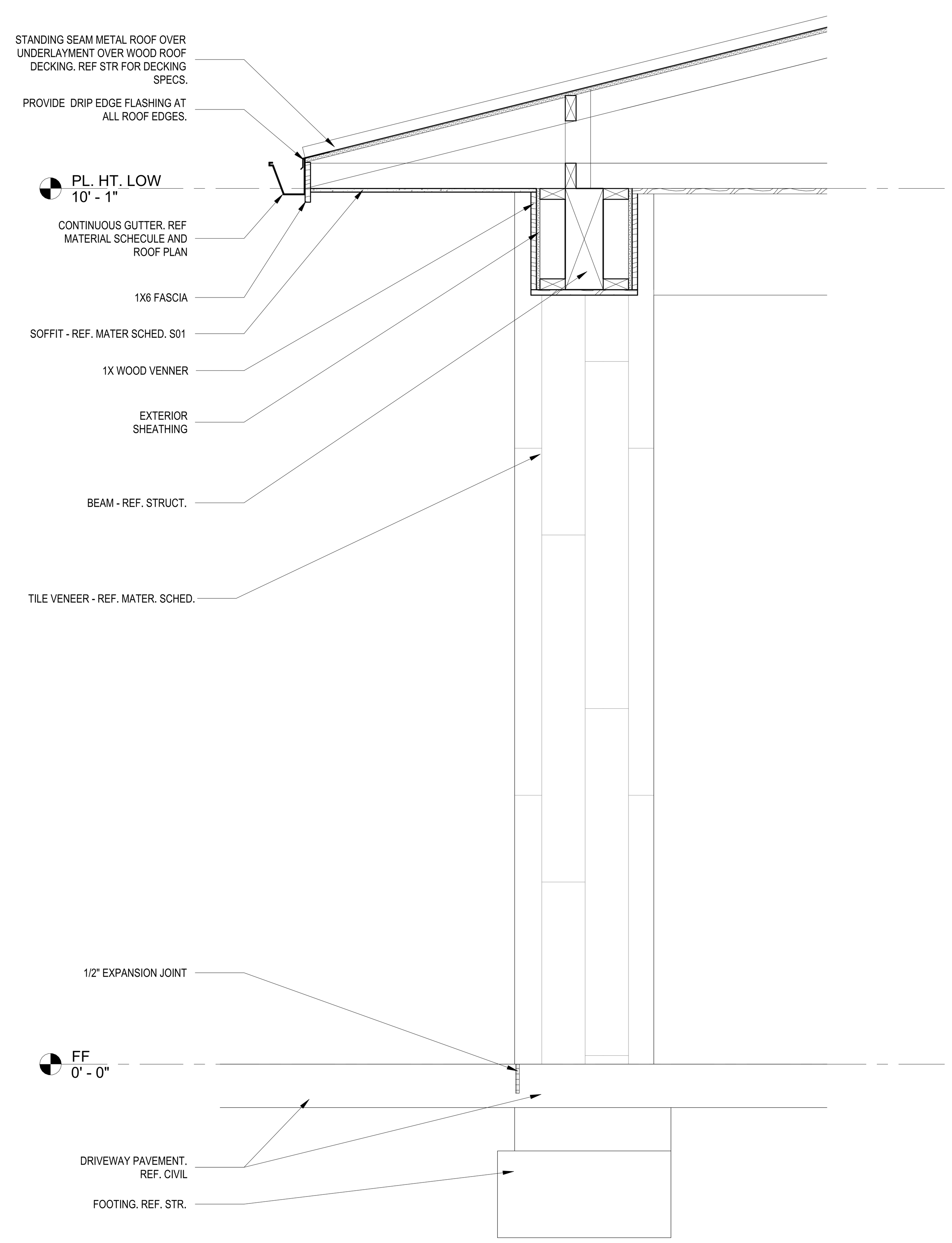
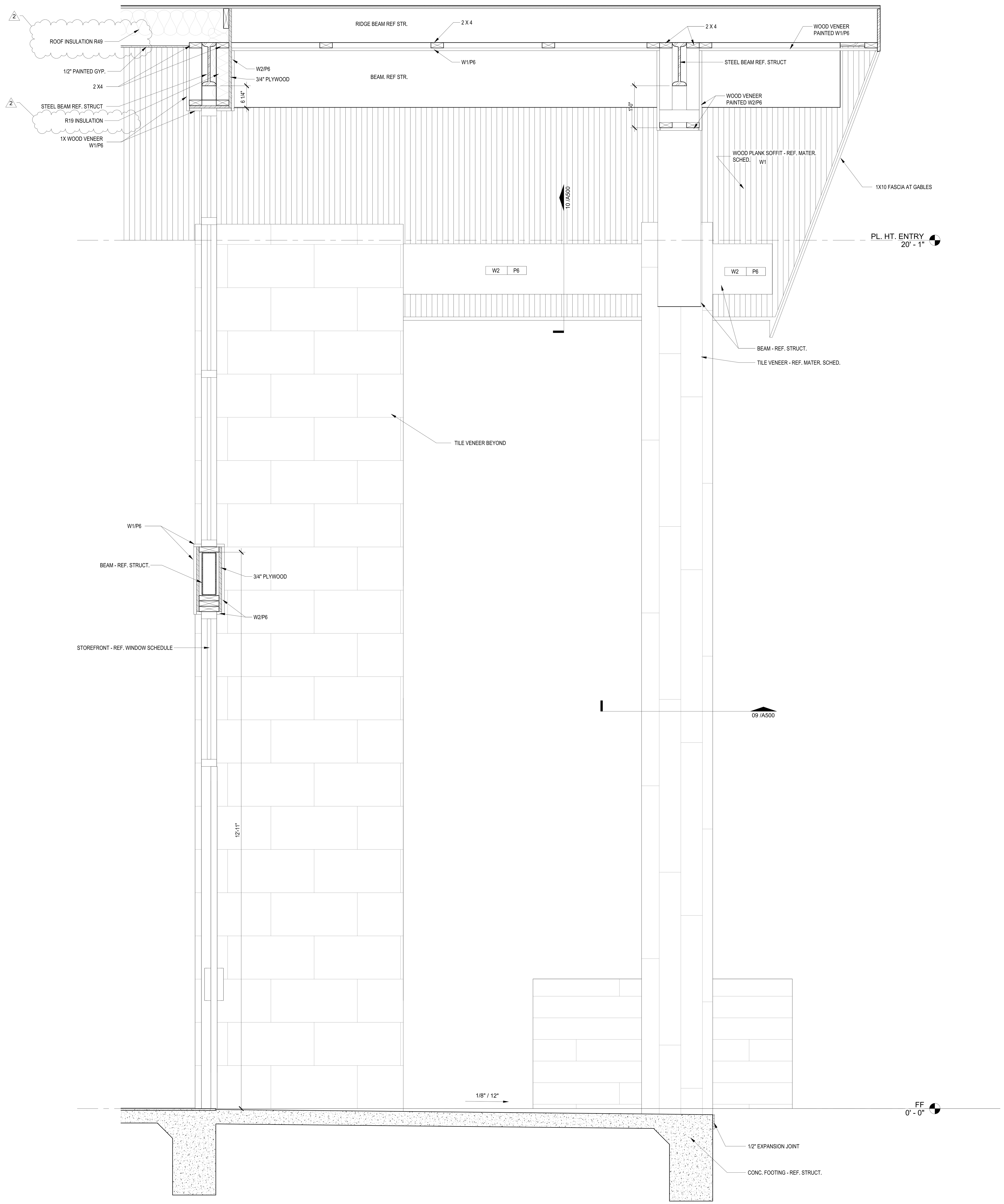
A420



02 Wall Section

1" = 1'-0"



01 Wall Section

1" = 1'-0"

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Leander, TX 78641

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Wall Sections

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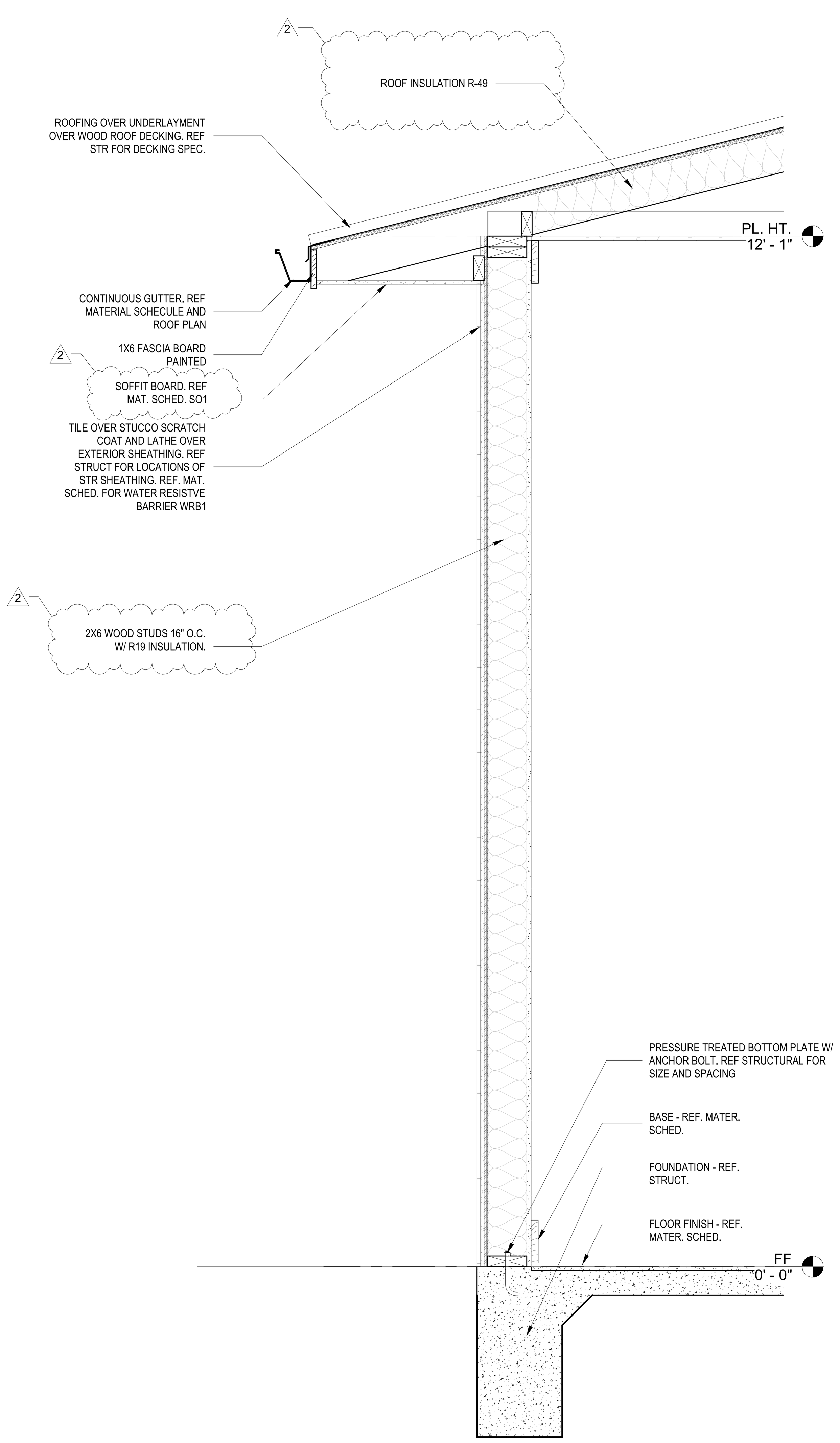
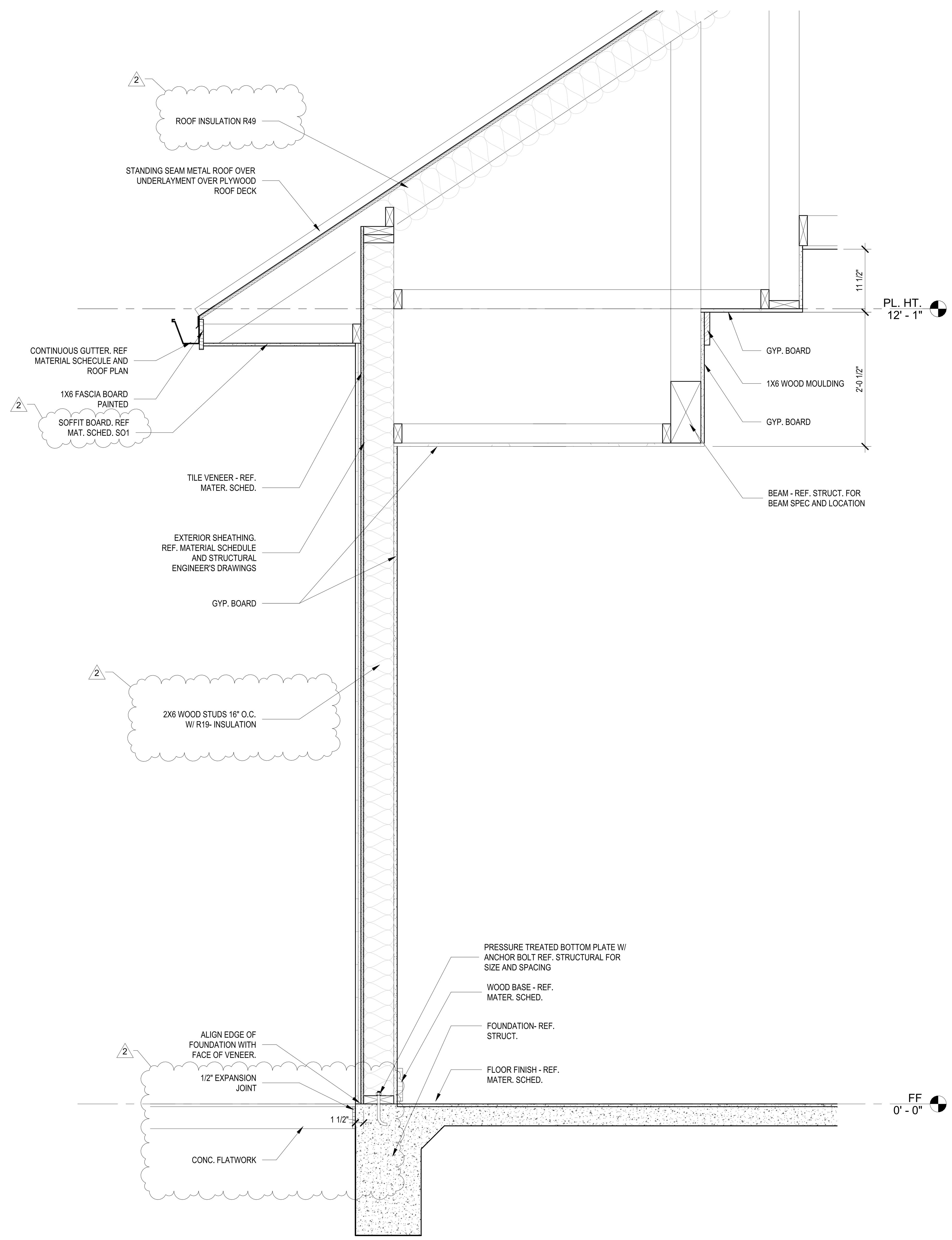
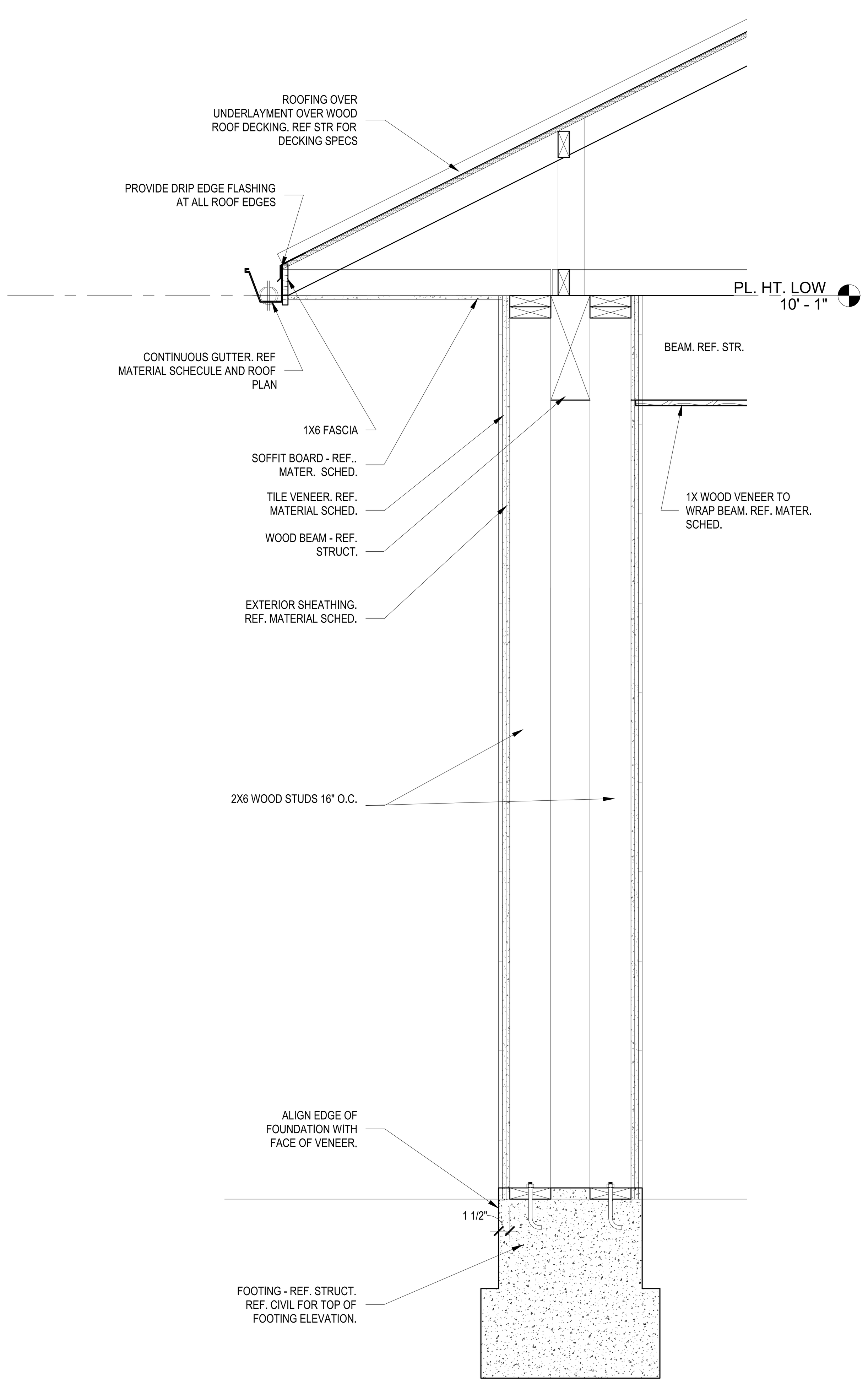
A430



03 SECTION
1" = 1'-0"



02 WALL SECTION
1" = 1'-0"



01 Wall Section
1" = 1'-0"

REGISTERED ARCHITECT
STEPHEN A. HAMPTON
25489
STATE OF TEXAS
04/09/25

Weed Corley Fish

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Wall Sections

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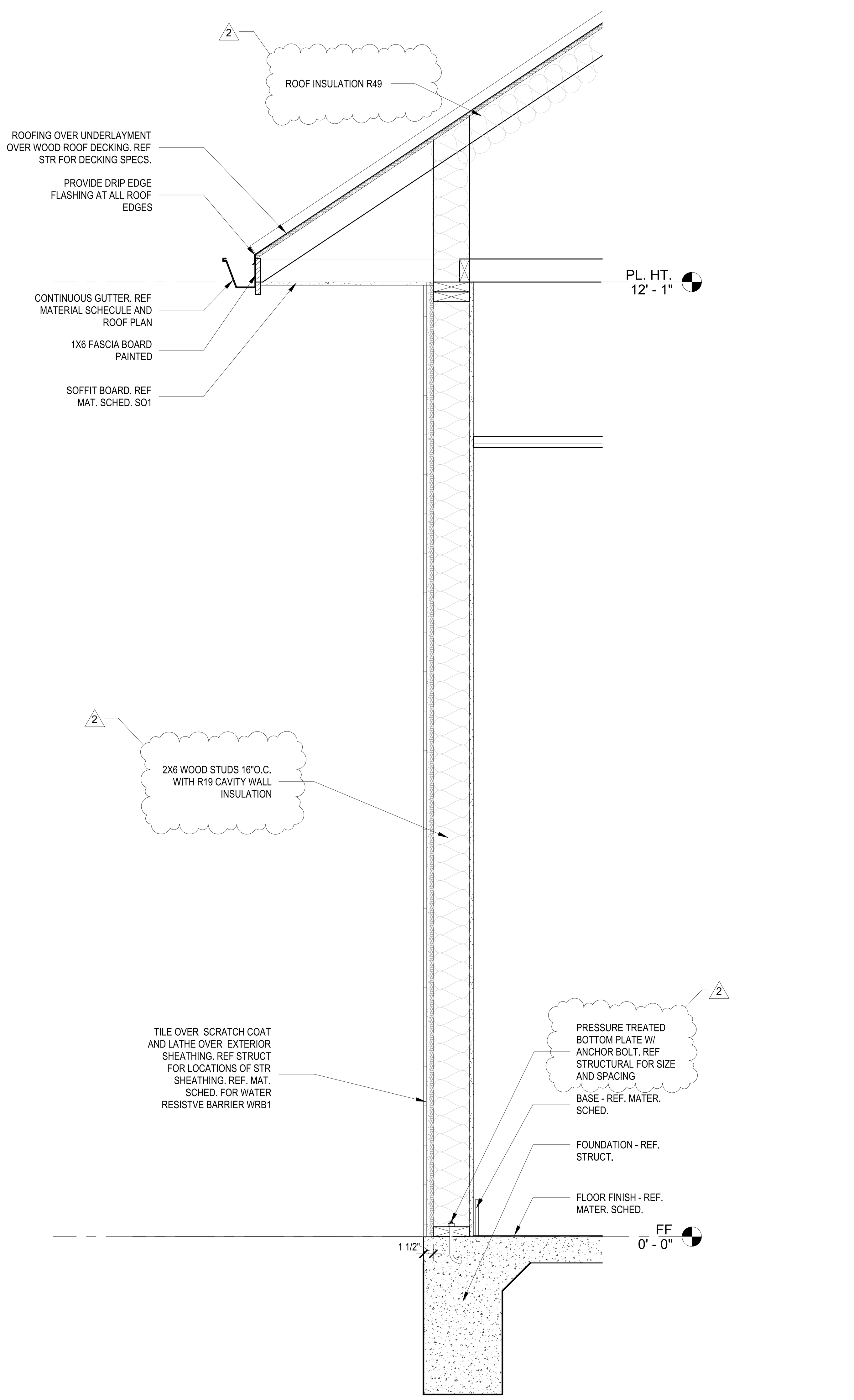
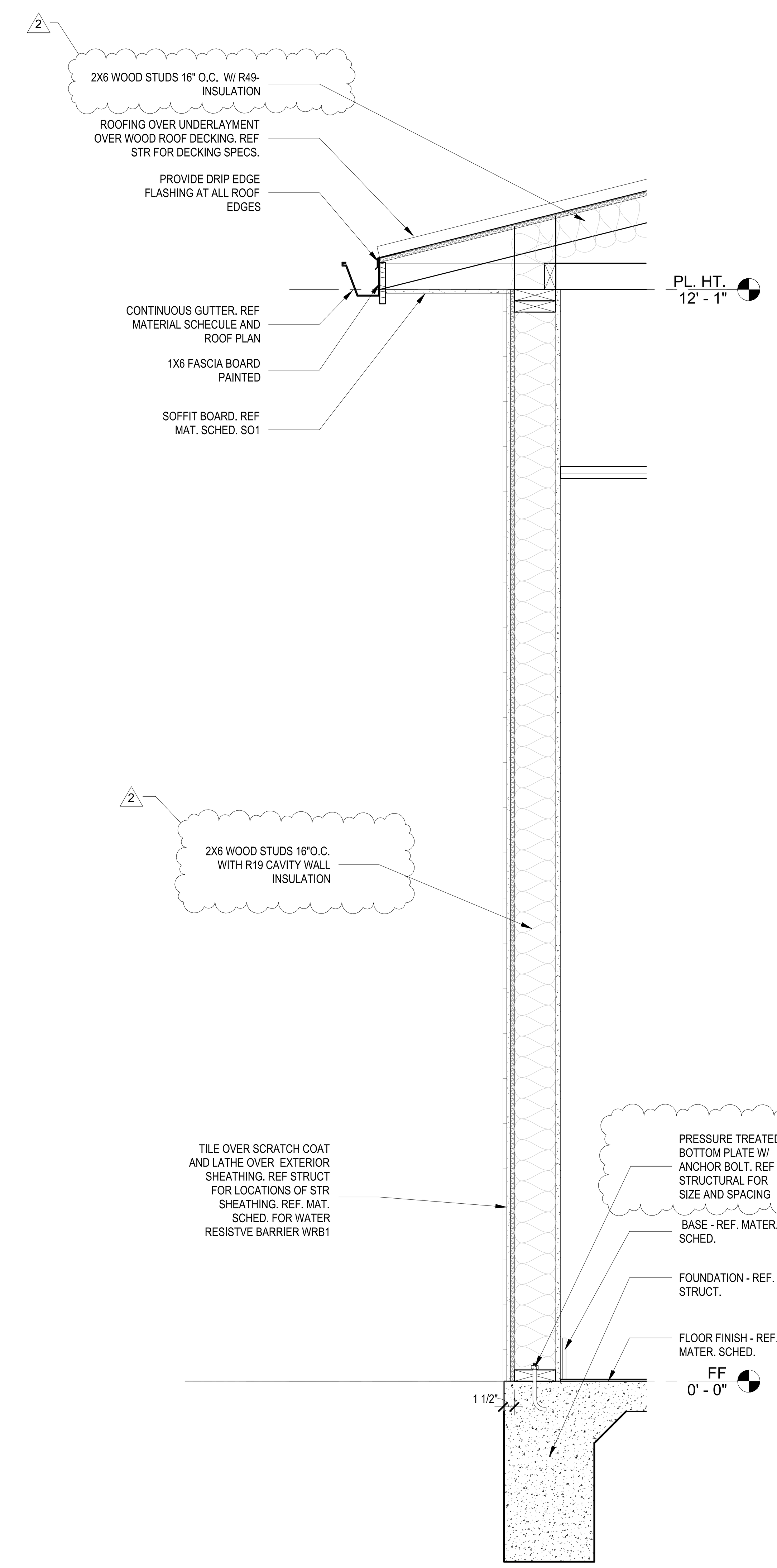
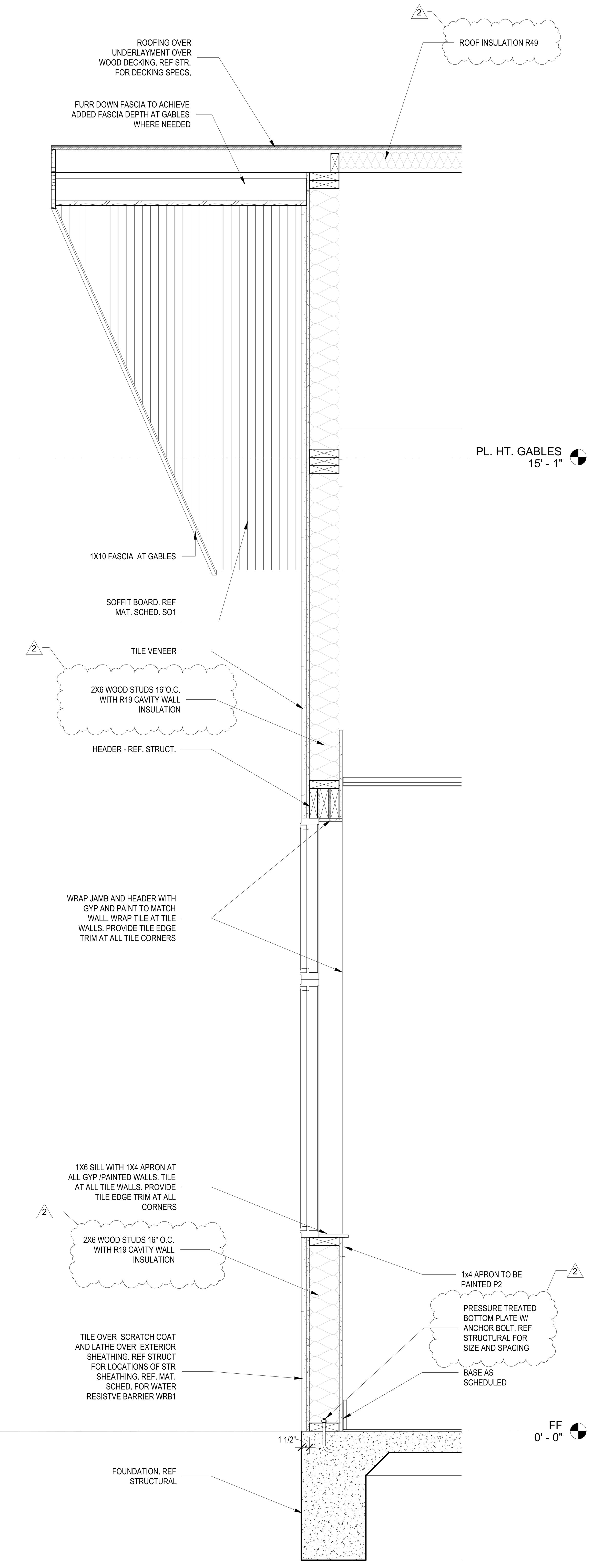
A431



03 Wall Section
1" = 1'-0"



02 Wall Section
1" = 1'-0"



01 Wall Section
1" = 1'-0"

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
04/09/25

Weed Corley Fish
301 S. Bagdad Rd.
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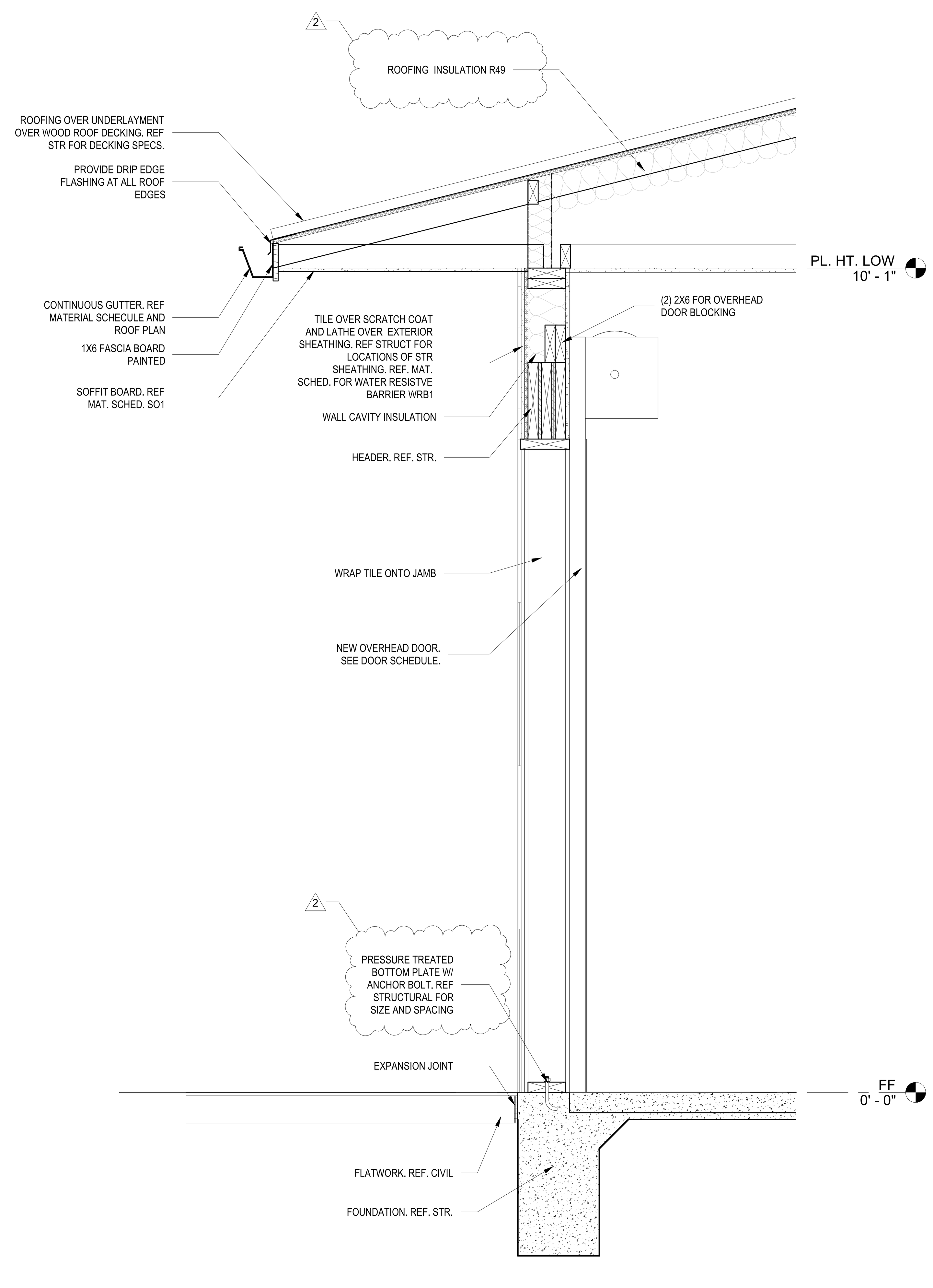
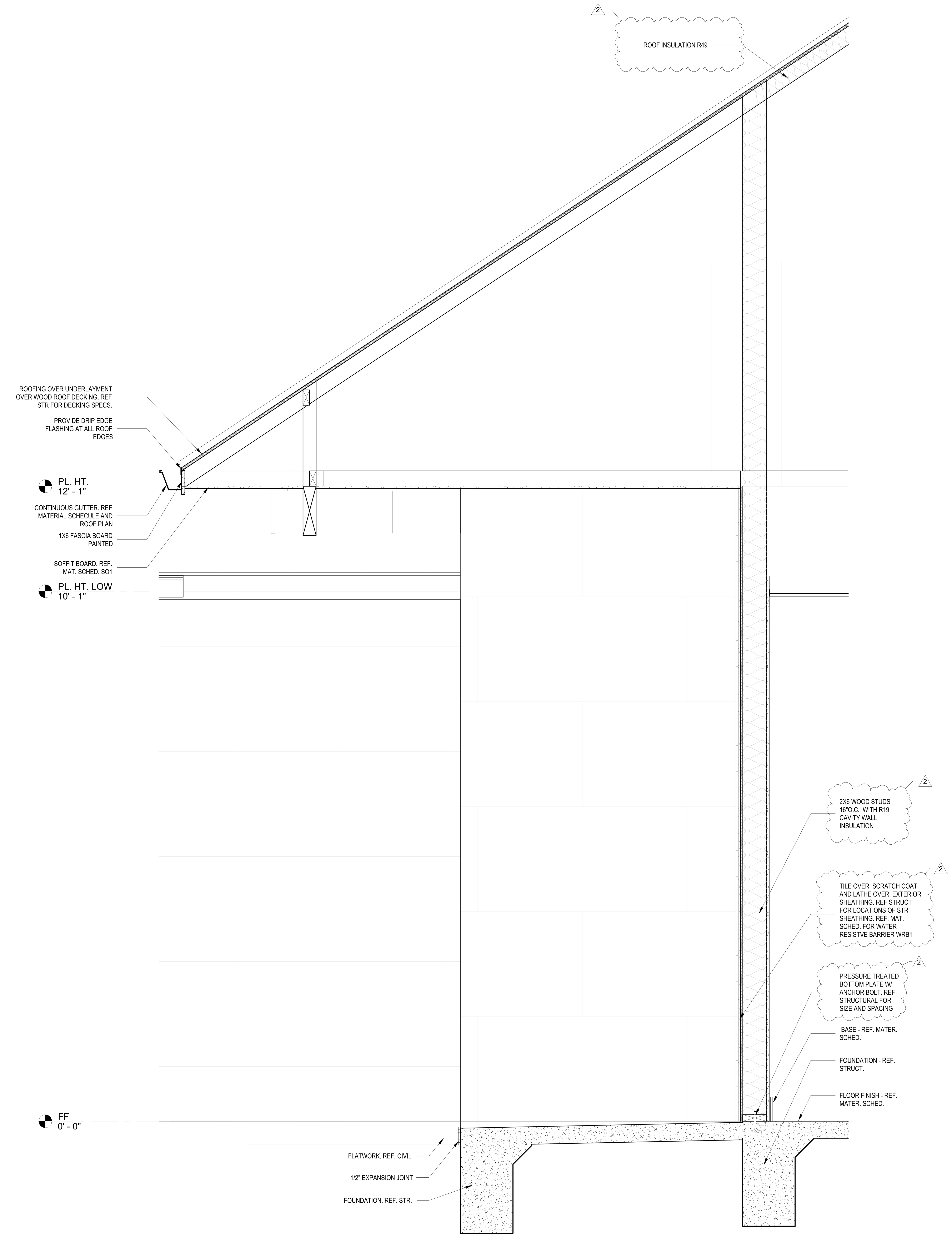


02 Wall Section

1" = 1'-0"



01 Wall Section

1" = 1'-0"

Stephen L. Hampton — Registered Architect — 25489 — State of Texas — 04/09/25

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Wall Sections

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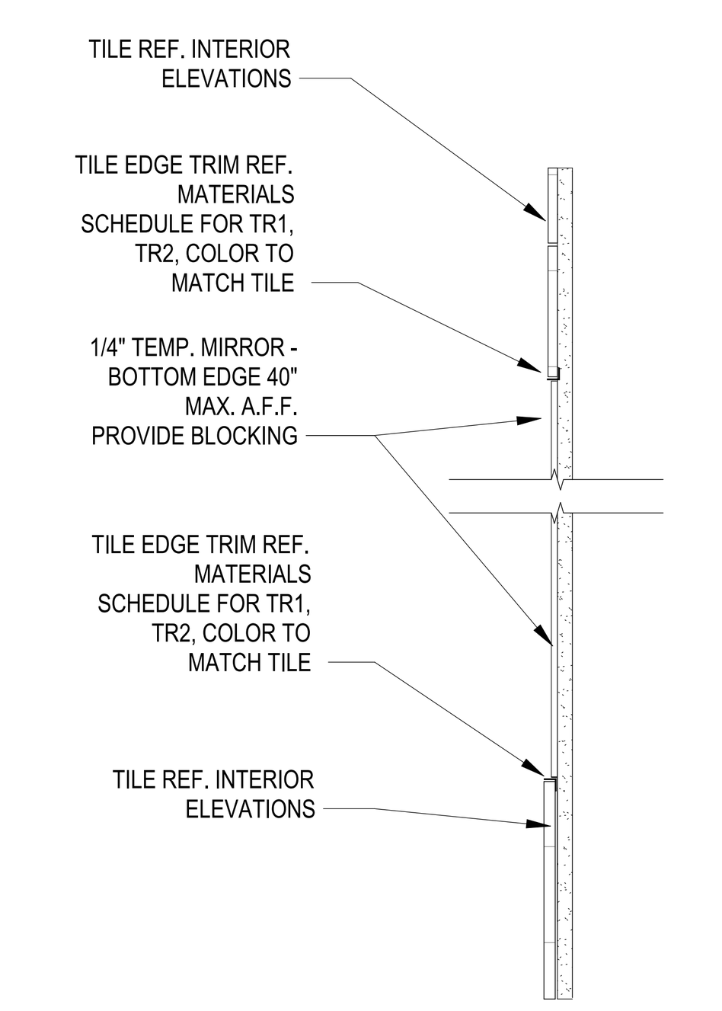
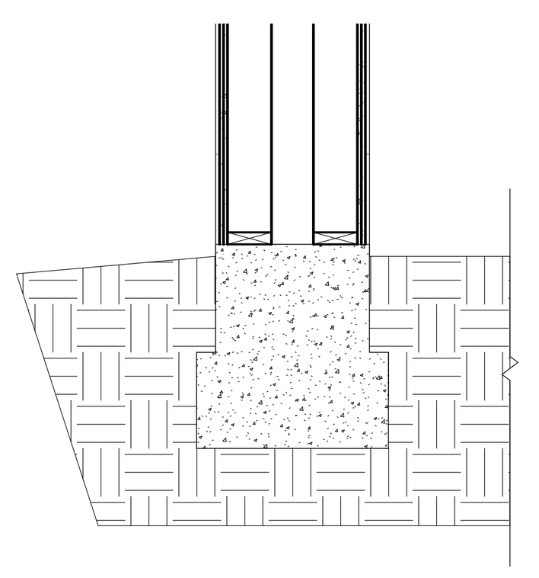
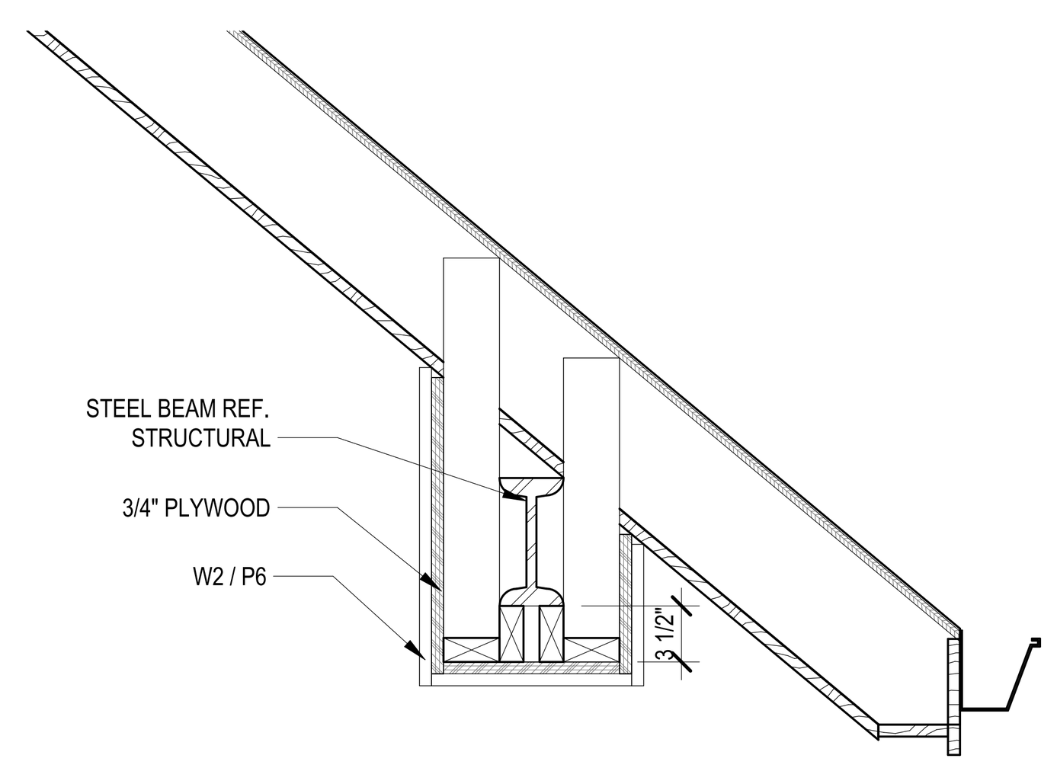


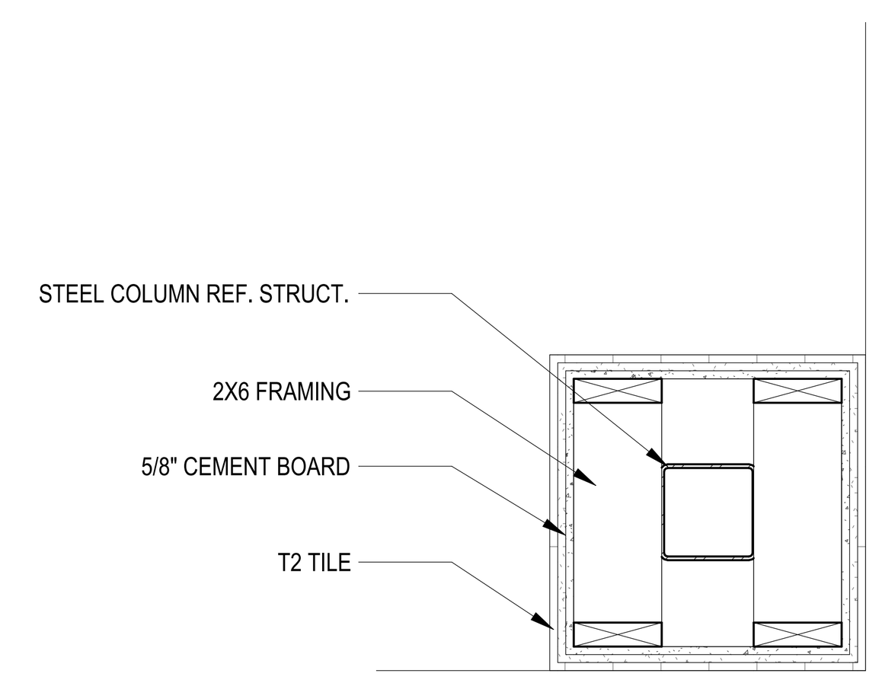
12 MIRROR DETAIL
1 1/2" = 1'-0"



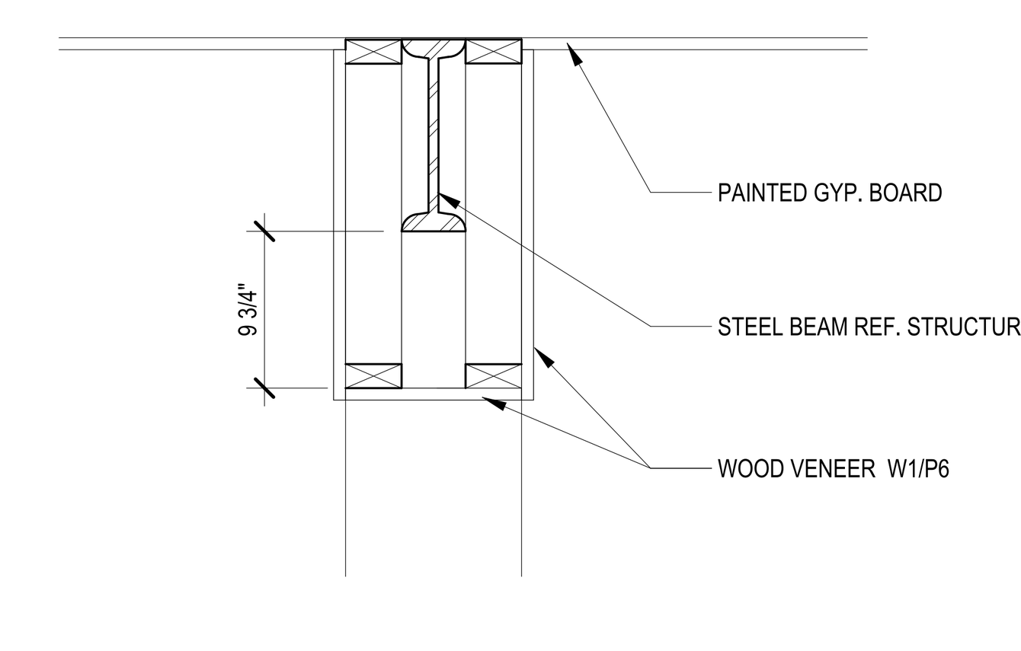
11 INFILL DETAIL
1/2" = 1'-0"



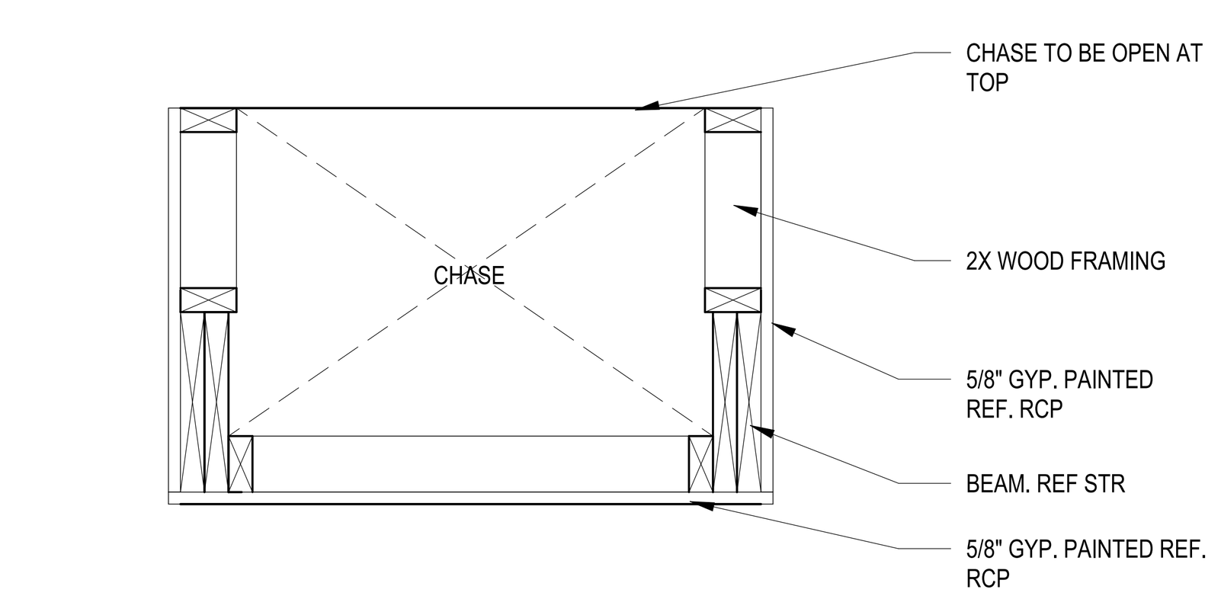
10 Detail 3
1" = 1'-0"



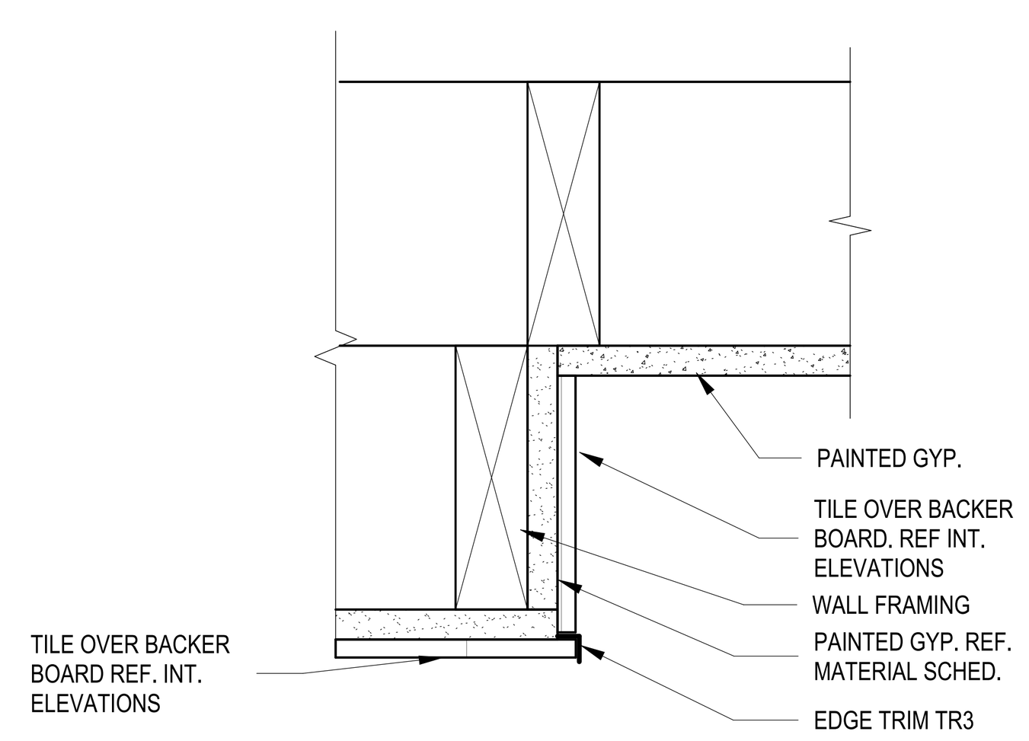
09 Detail 2
1" = 1'-0"



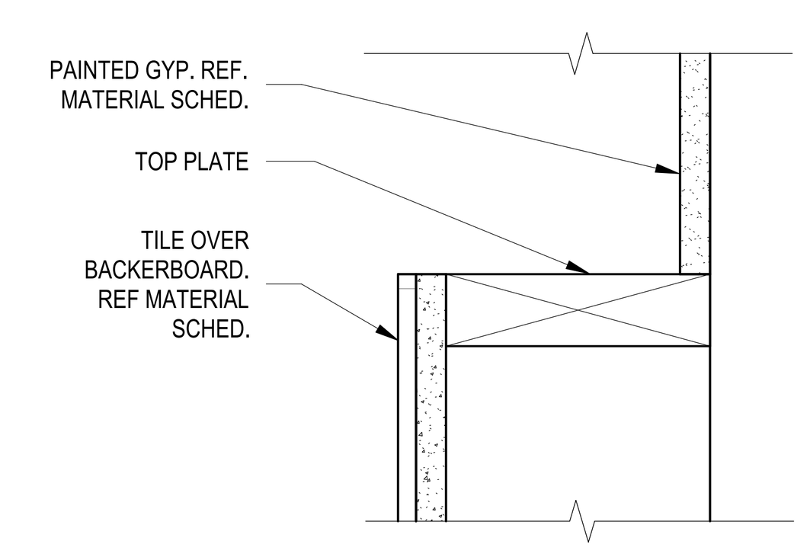
08 Detail 1
1" = 1'-0"



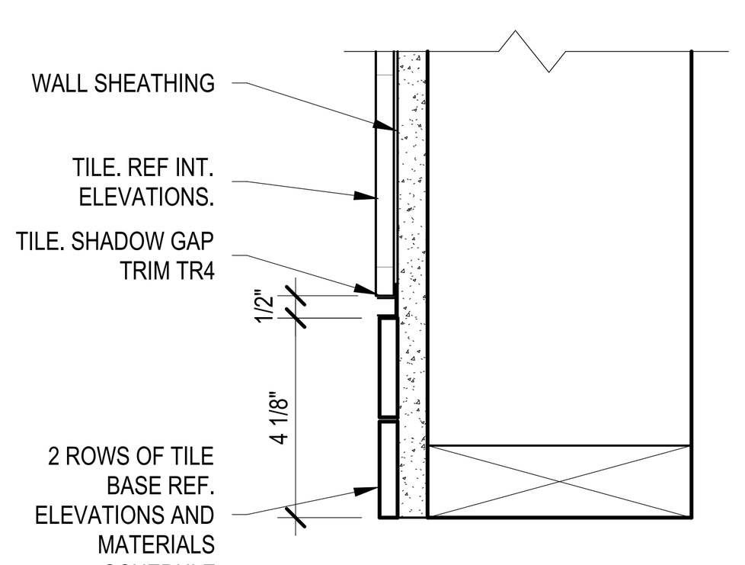
07 DUCT CHASE SECTION
1" = 1'-0"



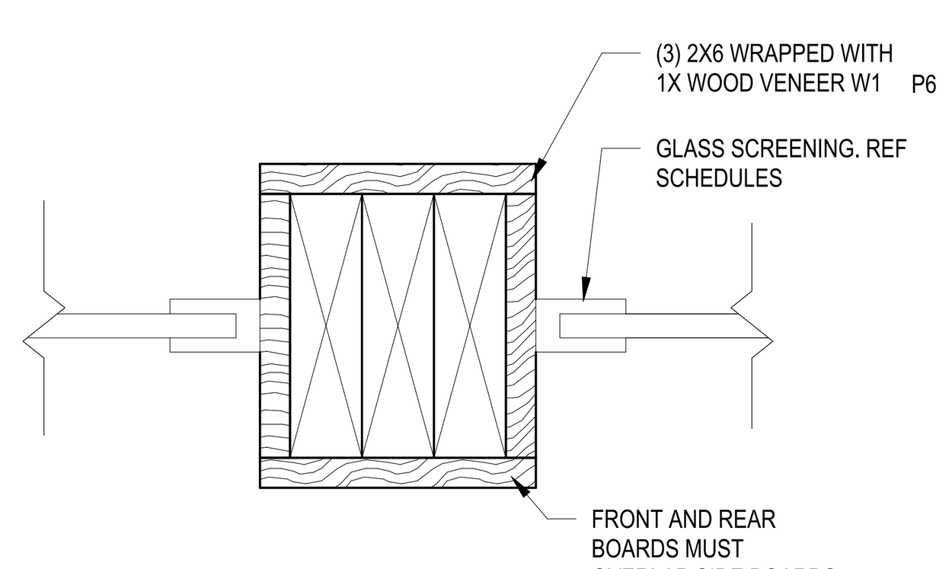
06 TYP DETAIL - WALL FURROUT CROSS SECTION
3" = 1'-0"



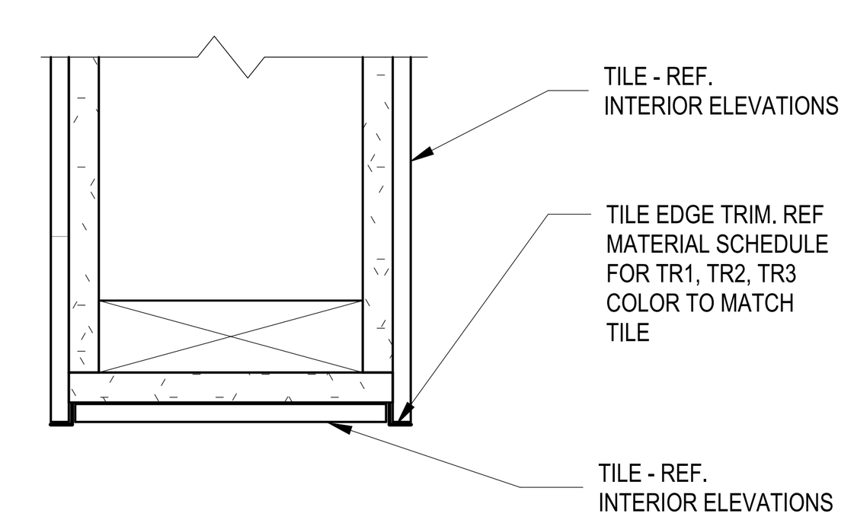
05 TYP. DETAIL -TOP OF TILE WALL FURROUT
3" = 1'-0"



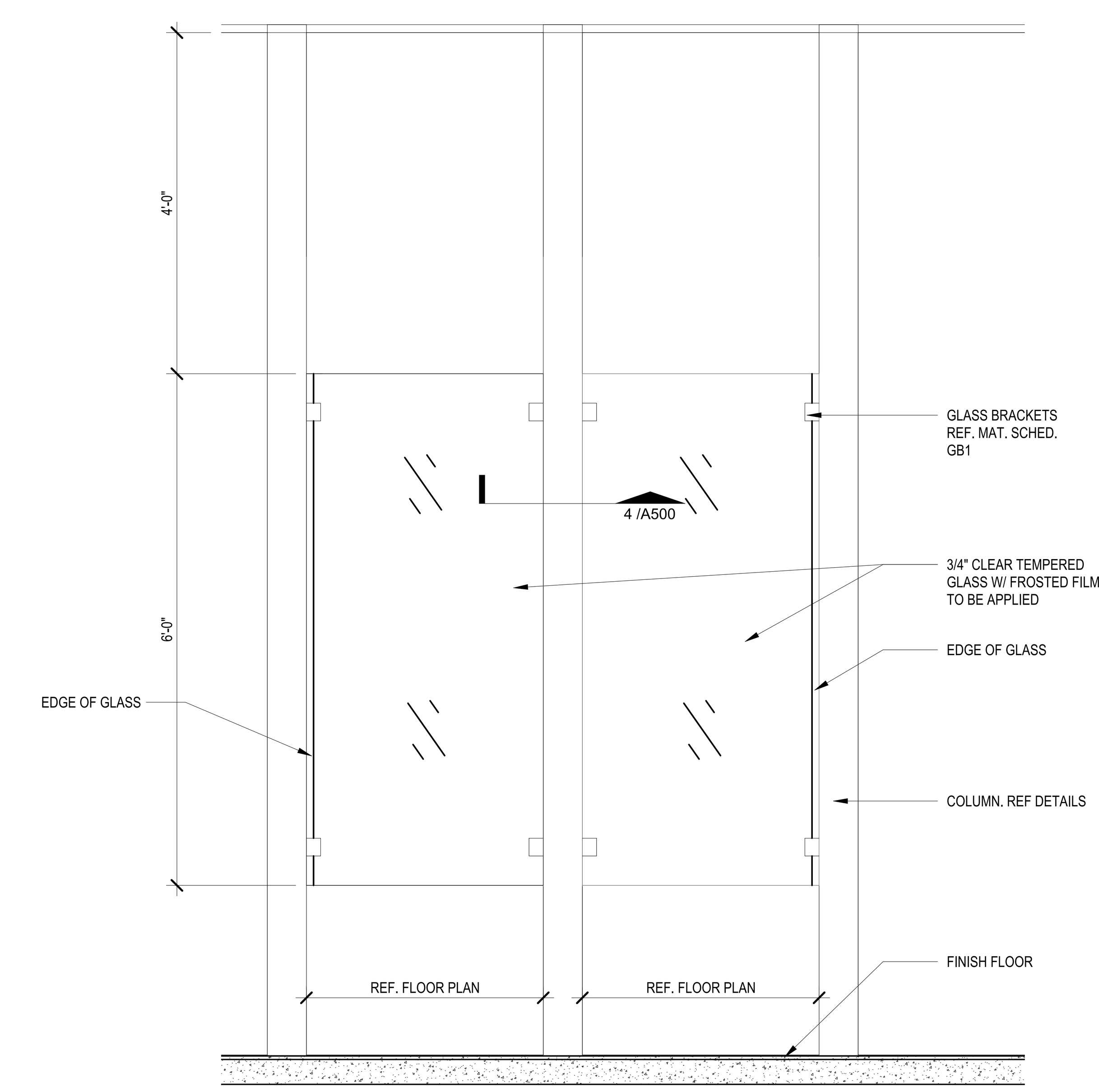
04 TYP. RR TILE DETAIL
3" = 1'-0"



03 TYP. COL. AT SCREEN WALL
3" = 1'-0"



02 RR TILE END WALL DETAIL
3" = 1'-0"



01 Screen Wall at Coffee Bar
3/4" = 1'-0"

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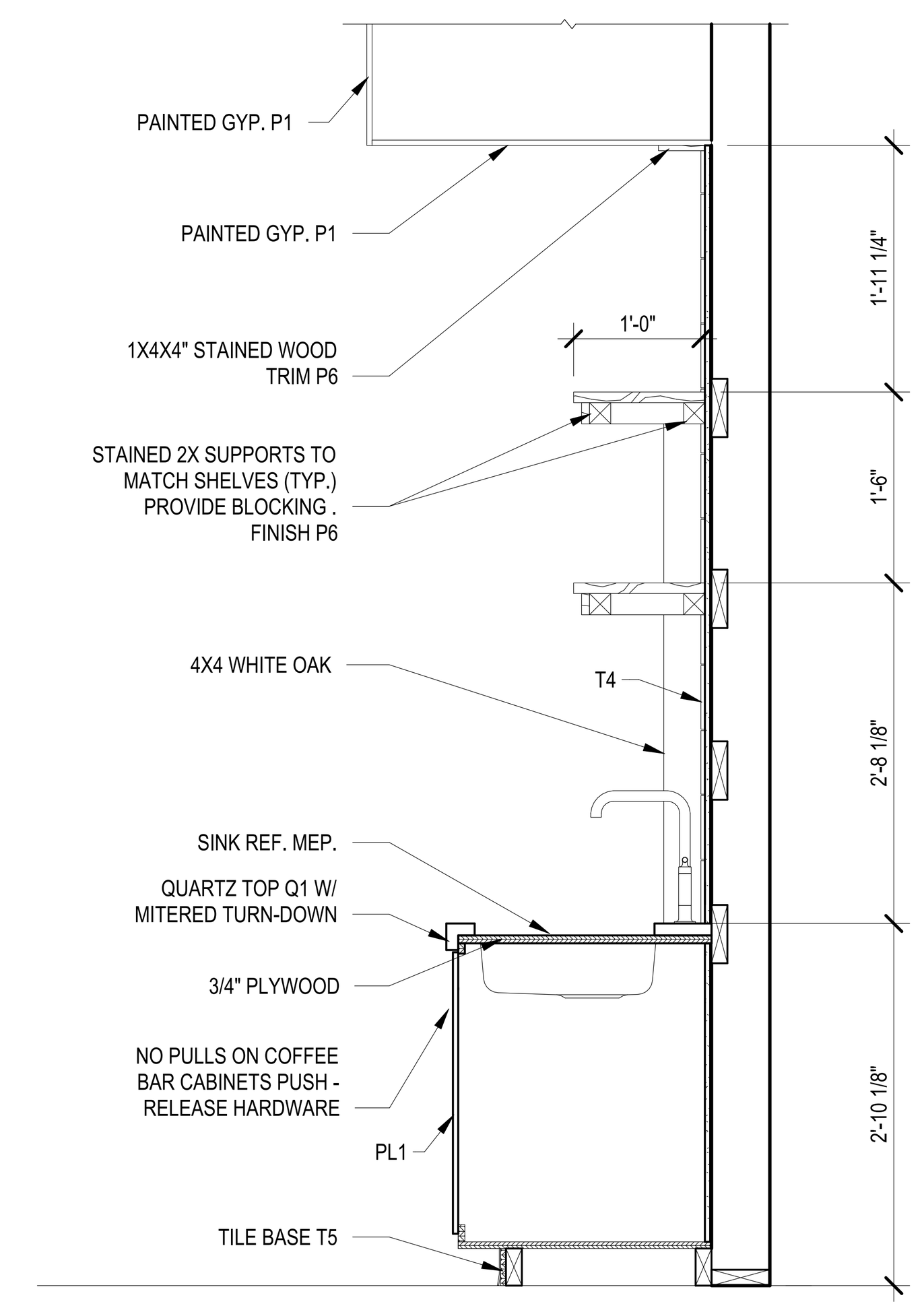
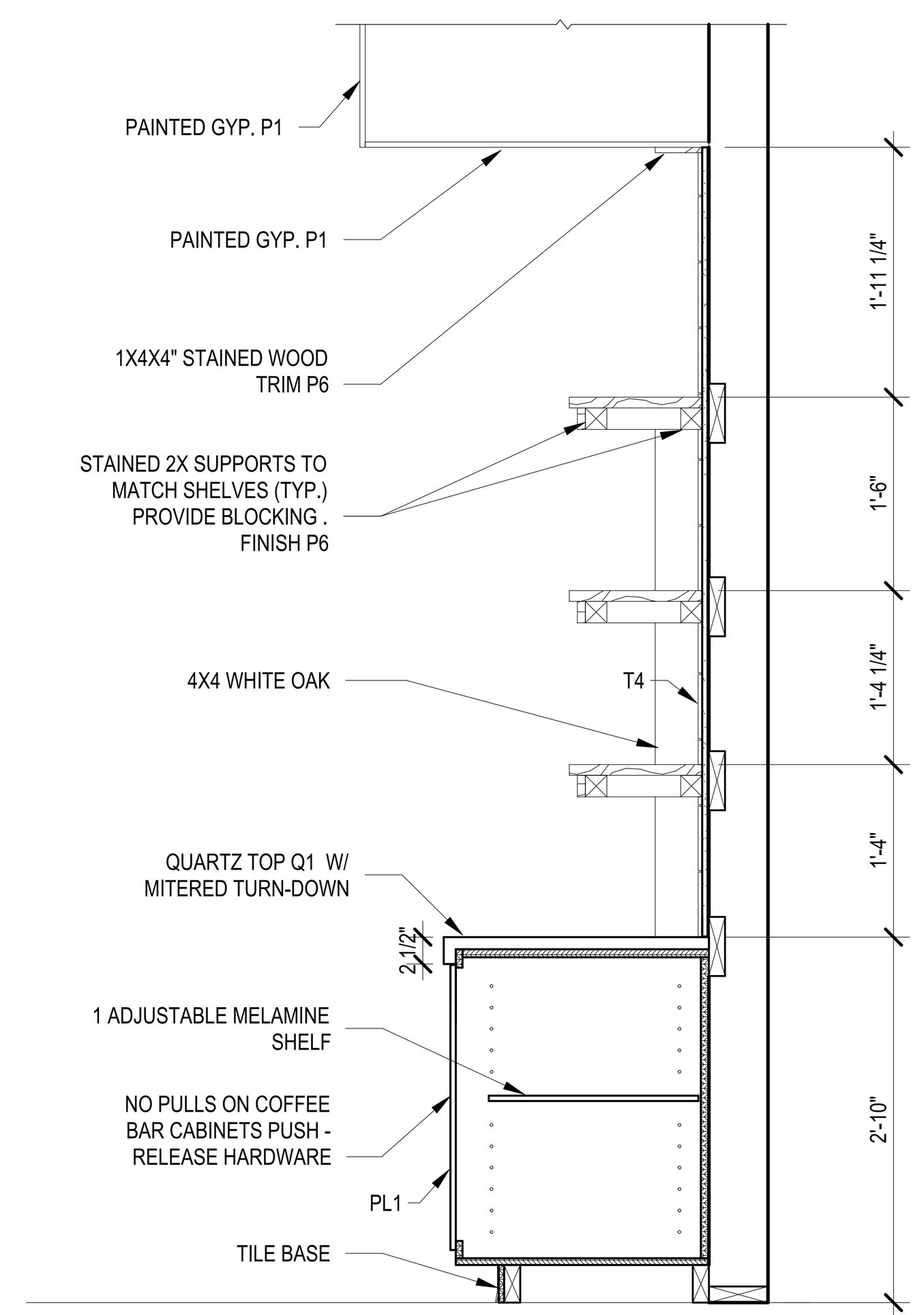
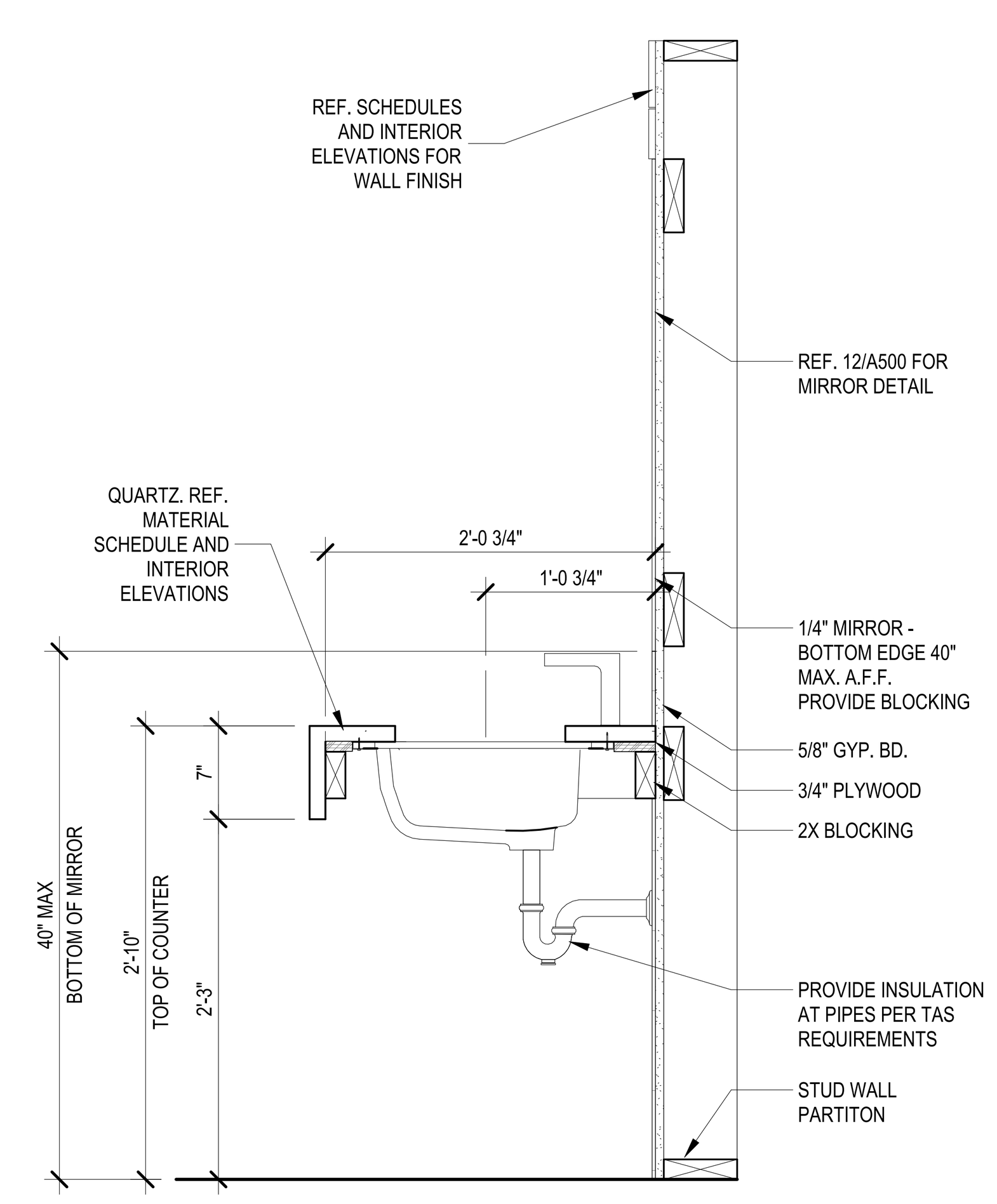


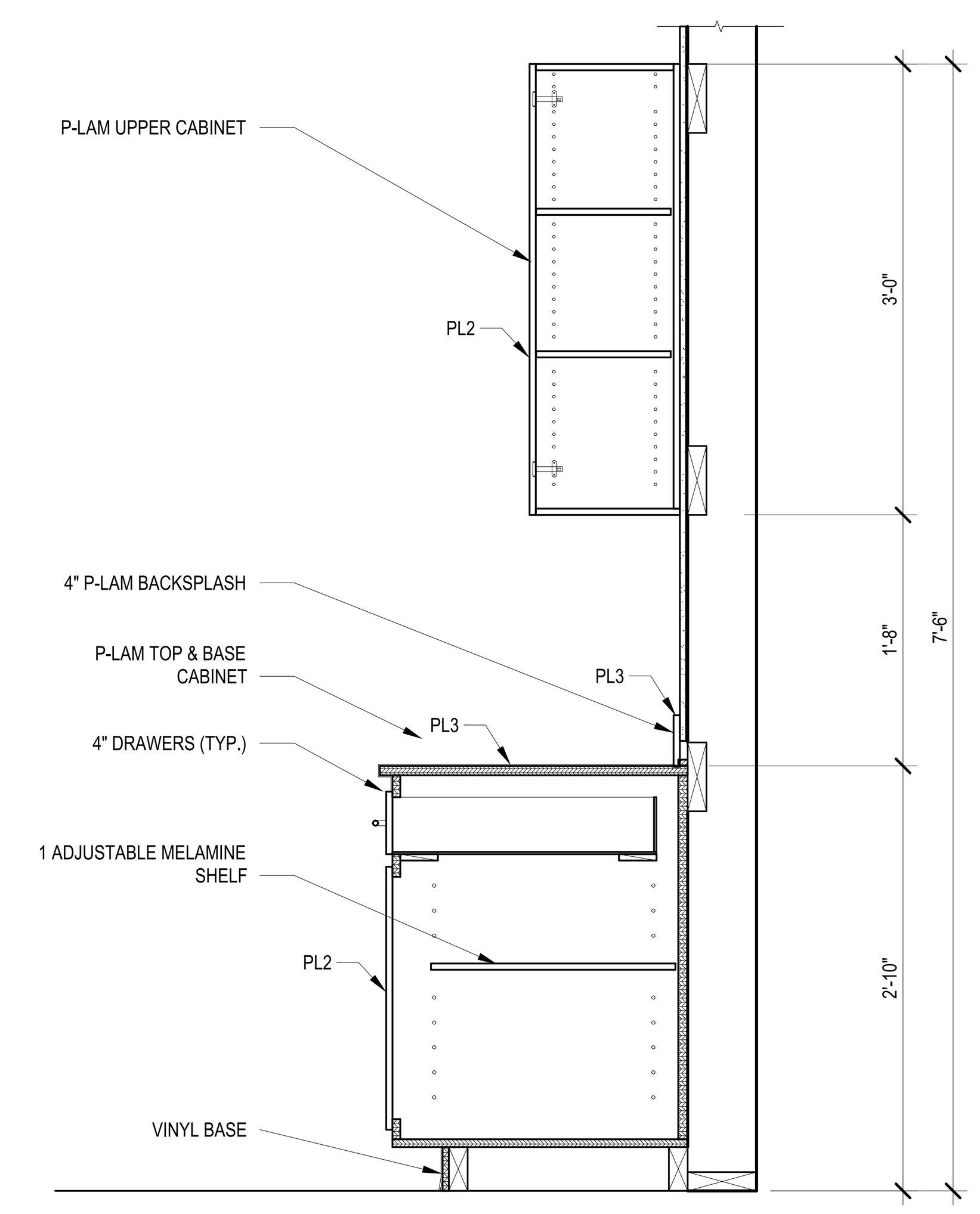
06 COFFEE BAR - SINK SECTION
3/4" = 1'-0"



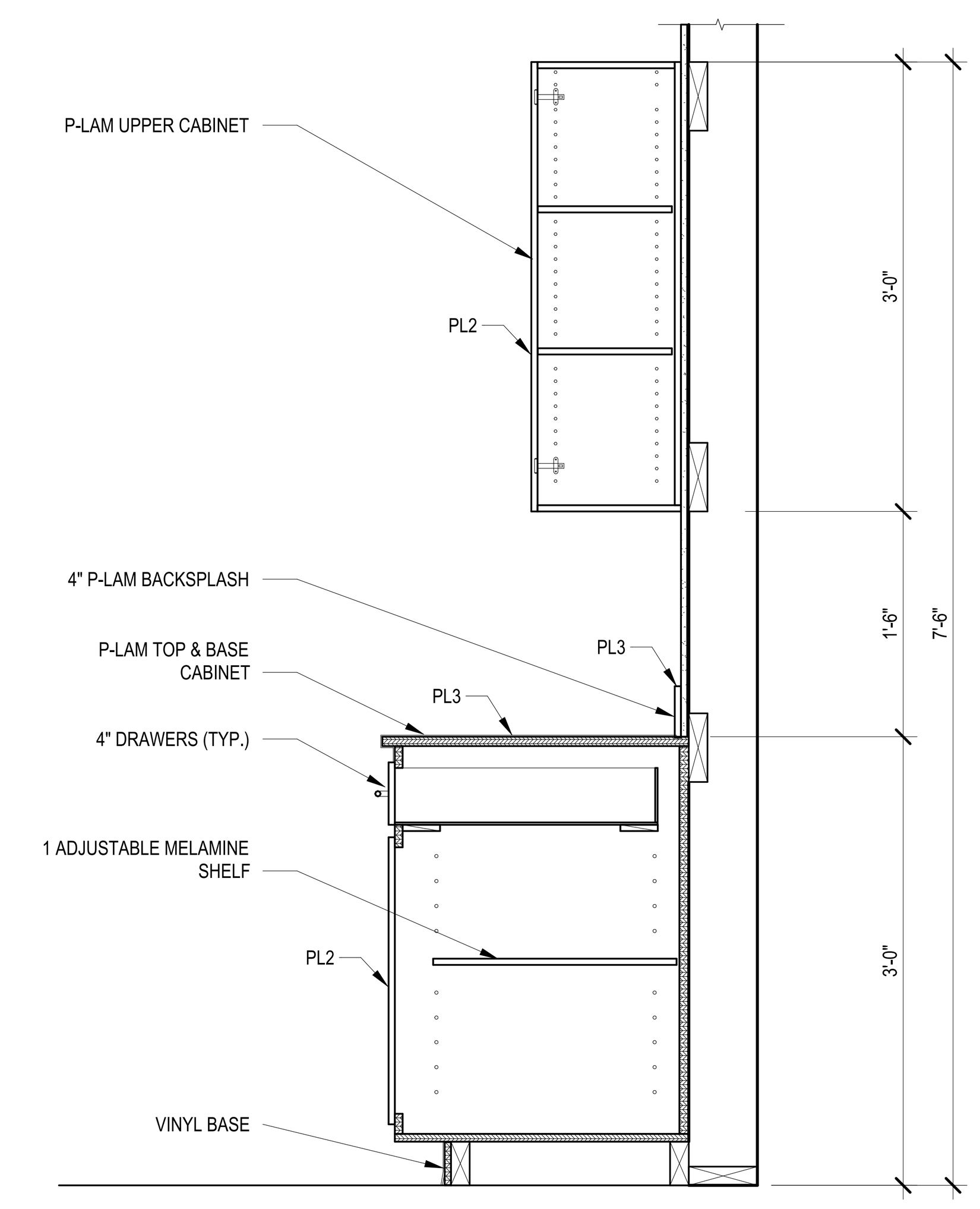
05 COFFEE BAR SECTION
3/4" = 1'-0"



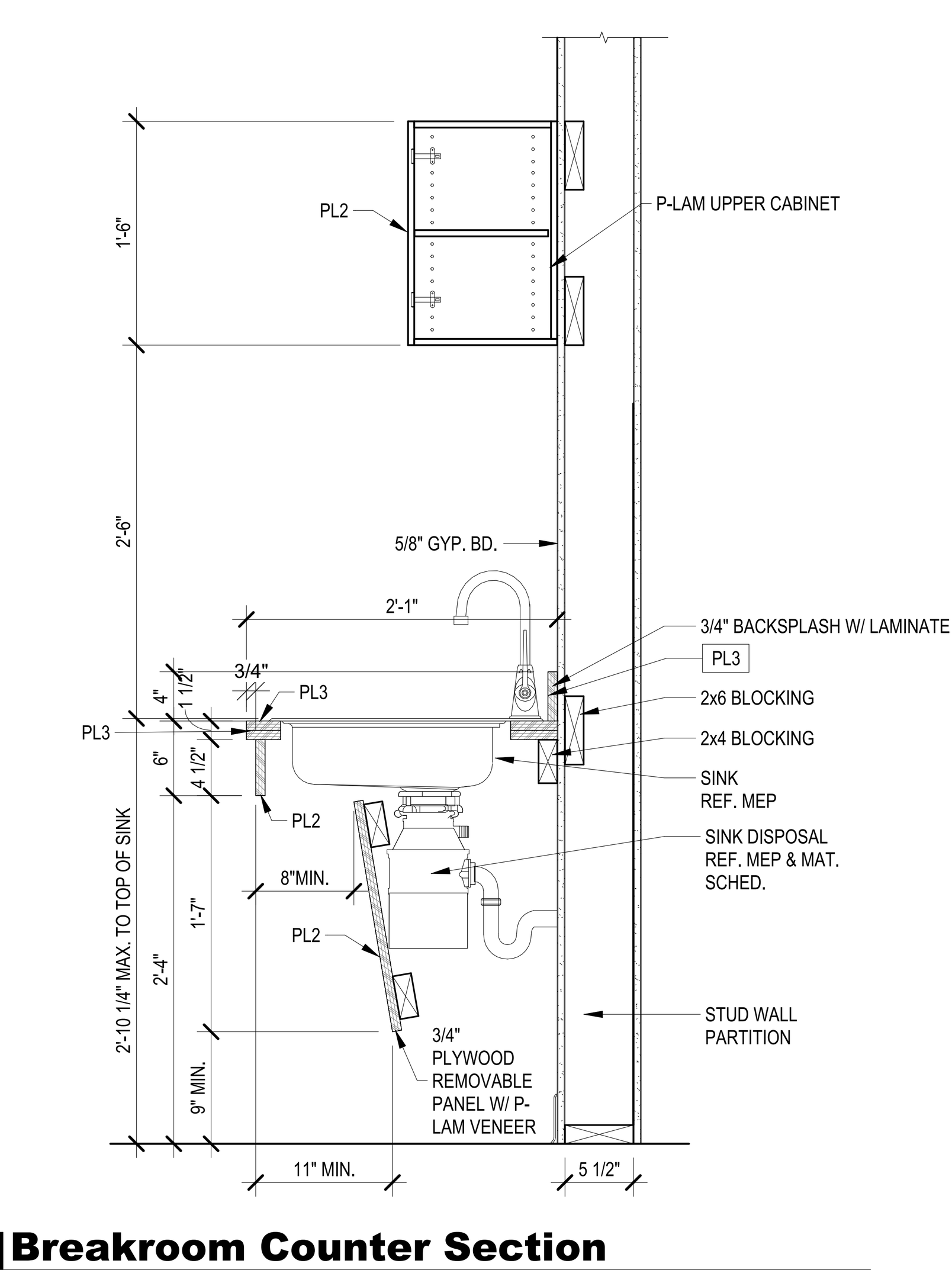
04 Lavatory Section
1" = 1'-0"



3 TYP. COUNTER SECTION
1" = 1'-0"



02 TYP. COUNTER SECTION
1" = 1'-0"



01 Breakroom Counter Section
1" = 1'-0"

REGISTERED ARCHITECT
STEPHEN J. HAMPTON
25489
STATE OF TEXAS
10/25/24

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Millwork Details

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A600

Structural General Notes

General Notes

1. THESE NOTES SHALL APPLY UNLESS OTHERWISE INDICATED BY DRAWINGS OR SPECIFICATIONS.

2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE, AND SHALL BE RESPONSIBLE FOR CONDITIONS OF ALL WORK AND MATERIALS, INCLUDING THOSE FURNISHED BY SUBCONTRACTORS. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH LOCAL STANDARDS AND THE APPLICABLE PROVISIONS OF THE GOVERNING BUILDING CODE.

3. DISCREPANCIES OR VARIATIONS SHALL BE PROMPTLY REPORTED TO THE ARCHITECT.

4. STRUCTURAL DRAWINGS ARE DIAGRAMMATIC IN NATURE. THESE DRAWINGS SHOW ONLY REPRESENTATIVE AND TYPICAL DETAILS TO ASSIST THE CONTRACTOR: THEY DO NOT ILLUSTRATE EVERY CONDITION. SHOP DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AS REQUIRED TO DETAIL ALL CONDITIONS.

5. DIMENSIONS, NOTES, AND SPECIFIC DETAILS CUT ON THESE DRAWINGS TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

6. NON–STRUCTURAL FRAMING REQUIREMENTS ARE NOT SPECIFIED ON STRUCTURAL DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR ANY ADDITIONAL FRAMING REQUIRED.

7. THE USE OR REPRODUCTION OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.

8. THE STRUCTURE SHOWN ON THESE DRAWINGS IS STRUCTURALLY SOUND ONLY IN ITS COMPLETED FORM. THE CONTRACTOR SHALL TEMPORARILY BRACE EARTH, FORMS, CONCRETE, STEEL, WOOD & MASONRY TO RESIST EARTH, GRAVITY, WIND, SEISMIC & LIVE LOADS DURING CONSTRUCTION.

9. UNLESS NOTED OTHERWISE, THESE DRAWINGS DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS, AND ALL OTHER PERSONS DURING CONSTRUCTION, AND TO COMPLY WITH APPLICABLE CITY, STATE, AND FEDERAL LAWS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) AND REGULATIONS PURSUANT THERETO.

10. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
    SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, UNLESS NOTED OTHERWISE.
    SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS UNLESS NOTED OTHERWISE.
    FLOOR, WALL AND ROOF FINISHES.
    FIRE PROTECTION REQUIREMENTS FOR STRUCTURAL STEEL.

11. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
    PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, EXCEPT AS SHOWN.
    ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
    CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.
    SIZE AND LOCATION OF MACHINE OR EQUIPMENT BASES OR CURBS AND ANCHOR BOLTS FOR MOTOR MOUNTS.

Design Criteria

1. BUILDING CODE:
   2015 INTERNATIONAL BUILDING CODE, ASCE 7–10 (MINIMUM DESIGN LOADS),
   ACI 318–14 (STRUCTURAL CONCRETE), AISC 360–10 (STRUCTURAL STEEL),
   AWC 2015 NDS (WOOD GRAVITY) & AWC 2015 SDPWS (WOOD LATERAL).

   ALL STANDARDS INCORPORATED BY REFERENCE SHALL BE OF THE YEAR REFERENCED BY OR CONSISTENT WITH THE MAIN CODE ABOVE.

2. DESIGN DEAD LOADS:

ROOF TRUSS TOP CHORD DEAD	15 PSF
ROOF TRUSS BOT CHORD DEAD	5 PSF
STICK–FRAMED ROOF/CEILING	10 PSF
WALL TILE ALLOWANCE	10 PSF

3. DESIGN LIVE LOADS:

TYPICAL ROOF LIVE	20 PSF (REDUCIBLE)

4. SNOW DESIGN CRITERIA:

GROUND SNOW LOAD	5 PSF

5. WIND DESIGN CRITERIA:

WIND SPEED, V/ULT	115 MPH
EXPOSURE CATEGORY	B
INTERNAL PRESSURE COEFFICIENT, GCpi	0.18
C&C PRESSURE VARIES BY ZONE	

6. SEISMIC DESIGN CRITERIA:

RISK CATEGORY	II
SEISMIC IMPORTANCE FACTOR I/e	1.0
SITE CLASS	D
MCE/R GROUND MOTION at 1.0s S/1	0.030
MCE/R GROUND MOTION at 0.2s S/S	0.052
SEISMIC DESIGN ACC at 1.0s S/D1	0.047 < 0.067
SEISMIC DESIGN ACC at 0.2s S/DS	0.055 < 0.167
SEISMIC DESIGN CATEGORY	A

Foundations

1. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS BY ROCK ENGINEERING & TESTING LABORATORY. ALLOWABLE SOIL BEARING PRESSURE IS 2500 PSF FOR BEAMS & FOOTINGS FOUNDED 24" INTO SELECT FILL OR UNDISTURBED NATIVE SOIL. CONTRACTOR SHOULD FAMILIARIZE THEMSELVES WITH GEOTECHNICAL REPORT PRIOR TO CONSTRUCTION.

2. SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE GEOTECH REPORT. THE EXISTING SITE SHALL BE STRIPPED TO REMOVE ANY VEGETATION, ROOTS, OR OTHER ORGANIC MATERIAL. A MINIMUM OF 6" OF EXISTING SOIL SHALL BE REMOVED. IN ADDITION, UPPER SOILS SHALL BE OVER–EXCAVATED TO ALLOW AT LEAST 12" SELECT FILL UNDER SLAB. SUBSEQUENT TO STRIPPING AND OVEREXCAVATION AS REQUIRED, THE EXPOSED NATURAL SOIL SHOULD BE PROOF–ROLLED TO 95% MAXIMUM DRY DENSITY PER ASTM D698. PAD SHALL BE BROUGHT TO FINAL ELEVATION USING SELECT FILL, PER NOTE 3.

3. SELECT FILL SHALL CONSIST OF IMPORTED, CRUSHED LIMESTONE SPECIFICALLY APPROVED BY THE GEOTECH ENGINEER. IT SHALL BE PLACED AT 95% MAXIMUM DRY DENSITY PER ASTM D1557 WITHIN –1% TO +3% OF OPTIMUM MOISTURE CONTENT. SELECT FILL PAD SHALL EXTEND 3 FT BEYOND BUILDING LIMIT IN ALL DIRECTIONS.

4. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM FOUNDATION IN ACCORDANCE WITH APPLICABLE CODES. ENGINEER ASSUMES NO RESPONSIBILITY FOR FOUNDATION WITH INADEQUATE DRAINAGE AND/OR GROUNDWATER COLLECTION. USER IS ADVISED THAT INADEQUATE DRAINAGE CAN DISTRESS STRUCTURE AND ATTACHED COMPONENTS.

5. CROSS–REFERENCE ARCHITECTURAL AND STRUCTURAL DRAWINGS TO ASSURE PROPER DIMENSIONS AND PLACEMENT OF ALL ANCHOR BOLTS, INSERTS, NOTCHES, EDGES IN GRADE BEAMS, FOUNDATION WALLS AND PIERS.

6. PIPES EXTENDING UNDER FOOTINGS SHALL BE PLACED BEFORE POURING FOOTING AND THE VOID PRODUCED IN LAYING THE PIPE SHALL BE FILLED WITH CONCRETE OR CONTROLLED LOW–STRENGTH MATERIAL.

7. CONTRACTOR SHALL MAINTAIN STABILITY OF EXCAVATIONS UNTIL PROPERLY BACKFILLED, KEEP EXCAVATIONS FREE OF ANY LOOSE MATERIAL, DEWATER EXCAVATIONS, AND REMOVE ANY WET MATERIAL PRIOR TO THE PLACING OF CONCRETE WORK.

8. A VAPOR BARRIER SHALL BE PLACED UNDER ALL INTERIOR SLABS–ON GROUND, MINIMUM 10 MIL THICKNESS. LAP AND SEAL ALL EDGES.

9. THIRD–PARTY SOILS INSPECTION REPORTS BY IBC–QUALIFIED SPECIAL INSPECTOR SHALL BE SUBMITTED FOR ENGINEER REVIEW PER IBC 1705.6, AND SHALL ADDRESS BEARING MATERIAL AND FILL MATERIAL/LIFT THICKNESSES/COMPACTION.

Concrete

1. CONCRETE WORK SHALL BE EXECUTED ACCORDING TO ACI 318 'BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE', AND ACI 301 'SPECIFICATIONS FOR STRUCTURAL CONCRETE', UNLESS NOTED OTHERWISE.

2. CONCRETE MIX DESIGNS, TO BE SUBMITTED FOR ENGINEER REVIEW, SHALL BE AS SPECIFIED:

28–DAY DESIGN STRENGTH	3000 PSI (SLABS–ON–GRADE & FOUNDATIONS)
PORTLAND CEMENT	ASTM C150, TYPE I/II
FLY–ASH	ASTM C618 F OR C, 15–25% REPLACEMENT
NORMAL–WEIGHT AGGREGATE	ASTM C33, 1–1/2" MAX SIZE

3. NO AIR–ENTRAINMENT ADMIXTURES SHALL BE USED IN CONCRETE FOR FLOOR SLABS, TILT–WALL PANELS, OR ANY OTHER CONCRETE TO RECEIVE A HARD–TROWEL FINISH.

4. CONTRACTOR SHALL PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL PENETRATIONS THROUGH CONCRETE BEFORE PLACING. SECURE SUCH SLEEVES TO PREVENT MOVEMENT DURING PLACING OPERATIONS. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF PENETRATIONS. CORE–DRILLING CONCRETE IS NOT PERMITTED UNLESS NOTED OTHERWISE OR APPROVED IN WRITING BY THE ARCHITECT.

5. CONFIRM WITH ARCHITECT THAT MATERIALS TO BE EMBEDDED ARE SUITABLE FOR EMBEDMENT IN CONCRETE. ANY ALUMINUM MUST BE COATED TO PREVENT ALUMINUM–CONCRETE REACTION.

6. SLOPE SLABS TO DRAINS OR FOR POSITIVE DRAINAGE IF NO DRAINS ARE PRESENT, AND PROVIDE DEPRESSIONS WHERE SHOWN ON THE STRUCTURAL AND/OR ARCHITECTURAL DRAWINGS, WITHOUT REDUCING THE THICKNESS OF THE SLABS INDICATED. FOR SLAB–ON–GROUND DEPRESSIONS GREATER THAN 1", CONTACT STRUCTURAL ENGINEER FOR ADDITIONAL REINFORCING DETAILS.

7. CONTRACTOR SHALL PROVIDE ADEQUATE CURING PER ACI 301 UNTIL THE CONCRETE STRENGTH SURPASSES 70% DESIGN STRENGTH. MOIST CURING WITH MATS/FABRIC KEPT CONTINUOUSLY WET, CURING BENEATH SHEET MATERIALS PER ASTM C171, OR USE OF CURING COMPOUNDS PER ASTM C309 OR C1315 PER MANUFACTURER'S GUIDELINES AT RATES GREATER THAN 1 GAL/200 SF ARE ALL ACCEPTABLE CURING METHODS IF PROPERLY EXECUTED.

8. FLOOR TOLERANCES SHALL BE AS BELOW:

SURFACE TOLERANCE:	CLASS 'B' PER ACI 301
THICKNESS:	+1" & –1/2" SLAB–ON–GRADE
FLATNESS:	FF = 35
LEVELNESS:	FL = 25

9. CONTRACTOR SHALL PROVIDE SAWCUT CONTROL JOINTS 1/4 SLAB THICKNESS DEEP IN ALL SLABS–ON–GRADE AT LOCATIONS SHOWN IN PLAN. ALTERNATELY, LOCATE JOINTS AT A MAXIMUM OF 36 TIMES SLAB THICKNESS IN BETWEEN STIFFENING BEAMS (NOT ON TOP OF BEAMS WHEREVER POSSIBLE). CONTROL JOINTS SHALL BE CONTINUOUS, NOT STAGGERED OR OFFSET. SLAB PANELS SHALL HAVE A MAXIMUM LENGTH TO WIDTH RATIO OF 1.5 TO 1.

10. ALL CONSTRUCTION JOINTS BETWEEN ADJACENT CONCRETE POURS OR BETWEEN CONCRETE AND MASONRY CLEANED OF DIRT, DEBRIS, FORM OILS, AND LAITANCE TO ASSURE PROPER BOND WITH ADJACENT POUR OR MASONRY CONSTRUCTION. INTENTIONALLY ROUGHEN ALL EXISTING CONCRETE SURFACES OLDER THAN 28 DAYS AGAINST WHICH CONCRETE IS TO BE PLACED UNLESS DIRECTED OTHERWISE IN WRITING BY ENGINEER.

11. CONTRACTOR SHALL FOLLOW ACI 306 FOR COLD–WEATHER CONCRETING AND ACI 305 WHEN ANY COMBINATION OF HIGH TEMPERATURE, LOW RELATIVE HUMIDITY AND WIND VELOCITY TEND TO IMPAIR THE QUALITY OF THE CONCRETE. CONCRETE SHALL BE REJECTED IF ITS TEMPERATURE AT TIME OF PLACEMENT IS 90F OR ABOVE. PROTECT SURFACES OF EXPOSED CONCRETE FROM PRECIPITATION DAMAGE UNTIL ADEQUATE STRENGTH IS GAINED TO PREVENT DAMAGE.

12. THIRD–PARTY PRE–POUR INSPECTION REPORTS BY IBC–QUALIFIED SPECIAL INSPECTOR SHALL BE SUBMITTED FOR ENGINEER REVIEW FOR ALL SLAB–ON–GRADE FOUNDATIONS PER IBC 1705.3, AND SHALL ADDRESS PLACEMENT OF MILD REINFORCEMENT, EMBED PLATES, AND ANCHOR RODS AS APPLICABLE; AS WELL AS FORMWORK AND MEMBER DIMENSIONS.

Concrete Reinforcment

1. REINFORCING BARS SHALL CONFORM WITH ASTM A615, GRADE 60.

2. FOR CAST–IN–PLACE CONCRETE, PROVIDE MINIMUM CONCRETE COVER AS FOLLOWS:

GRADE BEAMS/FOOTINGS	3" BOTTOM, 2" SIDES & TOP
SLABS–ON–GRADE	1–1/2" TOP

3. ALL CONTINUOUS BARS SHALL HAVE 42 BAR DIAMETERS LAP SPLICE. PROVIDE CORNER BARS AT ALL WALL AND GRADE BEAM CORNERS & INTERSECTIONS PER DETAIL. PROVIDE TOP DIAGONAL BARS 3–#4 x4 FT LONG AT ALL REENTRANT CORNERS IN ALL SLABS–ON–GRADE.

4. WHERE REBAR IS INTERRUPTED BY OPENINGS OR EMBEDDED OBJECTS, AN EQUAL AMOUNT OF STEEL SHALL BE PLACED AT THE SIDES OF THE OPENING/EMBED, AND SHALL BE LAPPED 42 BAR DIAMETERS PAST THE EDGE OF THE OPENING/EMBED.

5. PROVIDE ADEQUATE TIES, CONCRETE BLOCKS & CHAIRS TO PROPERLY SECURE REBAR & CONCRETE INSERTS AT CORRECT LOCATION, PER CRSI MANUAL OF STANDARD PRACTICE.

6. CONTINUOUS REINFORCING SHALL BE LAPPED AS FOLLOWS UNLESS NOTED OTHERWISE:

TOP BARS	MIDSPAN OR BETWEEN INTERSECTING BEAMS
BOTTOM BARS	DIRECTLY OVER SUPPORT OR AT INTERSECTING BEAMS

7. REINFORCING BARS SHALL BE BENT COLD, AND NO METHOD OF FABRICATION SHALL BE USED WHICH WOULD BE INJURIOUS TO THE MATERIAL. HEATING OF BARS FOR BENDING IS NOT PERMITTED.

8. CONCRETE REBAR SHOP DRAWINGS SHALL BE SUBMITTED FOR ENGINEER REVIEW.

Concrete or Masonry Anchors

1. HEADED STUD ANCHORS CAST INTO CONCRETE OR GROUT–FILLED MASONRY SHALL BE NELSON FLUXED HEAD STUDS OR APPROVED EQUAL. STUDS SHALL BE AUTOMATICALLY END–WELDED, IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. HEADED STUDS SHALL BE MANUFACTURED OF C1015, C1017, OR C1020 COLD–DRAWN STEEL CONFORMING TO ASTM 108–58T.

2. EXPANSION ANCHORS POST–INSTALLED IN CONCRETE SHALL BE HILTI KWIK–BOLT TZ, SIMPSON WEDGE–ALL, OR APPROVED EQUAL.

3. EPOXY ANCHORS & DOWELS POST–INSTALLED IN CONCRETE SHALL USE HILTI HIT–HY 200 EPOXY, SIMPSON SET–3G EPOXY, ITW RED HEAD C6+ EPOXY, DEWALT AC200+, OR APPROVED EQUAL. ANCHORS SHALL BE CONSIST OF ASTM F1554, GRADE 36 THREADED ROD; ASTM A563 NUTS; AND ANSI A436 WASHERS. DOWELS SHALL BE ASTM A615, GRADE 60 REBAR.

4. EPOXY ANCHORS & DOWELS POST–INSTALLED INTO MASONRY SHALL USE HILTI HIT–HY 270, DEWALT AC100+, OR APPROVED EQUAL, WITH MESH SLEEVES AT HOLLOW CMU OR MASONRY WITH VOIDS. ANCHORS SHALL BE CONSIST OF ASTM F1554, GRADE 36 THREADED ROD; ASTM A563 NUTS; AND ANSI A436 WASHERS. DOWELS SHALL BE ASTM A615, GRADE 60 REBAR.

5. LARGE–DIAMETER SCREW ANCHORS POST–INSTALLED IN CONCRETE SHALL BE HILTI KWIK HUS–EZ, SIMPSON TITEN HD, TAPCON HEAVY DUTY, DEWALT SCREW–BOLT+, OR APPROVED EQUAL. SMALL–DIAMETER DIAMETER SCREW ANCHORS (3/16" OR 1/4") SHALL BE TAPCON, SIMPSON TITEN TURBO, OR APPROVED EQUAL

6. CONTRACTOR SHALL LOCATE EXISTING REINFORCING, POST–TENSIONING TENDONS AND/OR SOLID–GROUTED CMU CELLS PRIOR TO DRILLING. IT IS NOT ACCEPTABLE TO CUT EXISTING REBAR OR PT TENDONS. IF THE ANCHOR OR DOWEL CANNOT BE SHIFTED TO AVOID THE REBAR/PT TENDONS, THE ENGINEER WILL DETERMINE A NEW LOCATION.

7. CONTRACTOR SHALL INSTALL ANCHORS PER MANUFACTURER'S INSTRUCTIONS, AND SHALL ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE TRAINING IF NECESSARY. ANCHOR HOLES MUST BE CLEANED PROPERLY, USING HOLLOW DRILL BITS, COMPRESSED AIR AND/OR VACUUMS, AS REQUIRED, PRIOR TO INSTALLATION OF ANCHORS.

8. STAINLESS STEEL ANCHORS ARE REQUIRED FOR EXTERIOR USE (EXPOSED TO WEATHER); GALVANIZED ANCHORS ARE ACCEPTABLE AT OTHER LOCATIONS.

Concrete Masonry Units

1. MASONRY MATERIALS, TO BE SUBMITTED FOR ENGINEER REVIEW, SHALL BE AS SPECIFIED:

CONCRETE BLOCK	ASTM C90, GRADE N–1, 1900 PSI AVERAGE NET AREA
MORTAR	ASTM C270, TYPE S, 1800 PSI BY PROPORTION
GROUT	ASTM C476, 2500 PSI
MORTAR/GROUT BINDER	PORTLAND CEMENT TYPE I/II (NOT LIME/MASONRY CEMENT)

2. MORTARING/GROUTING REQUIREMENTS SHALL BE AS FOLLOW:
   a. BED, HEAD, AND COLLAR JOINTS SHALL BE COMPLETELY FILLED WITH MORTAR.
   b. ALL CELLS CONTAINING REINFORCING SHALL BE FILLED SOLID WITH GROUT.
   c. MINIMUM 5/8" GROUT BETWEEN MAIN REINFORCING AND FACE OF MASONRY UNIT.
   d. MAXIMUM GROUT LIFT WITHOUT CLEANOUTS 5 FT.

3. VERTICAL REINFORCING SHALL BE CENTERED IN WALL & SHALL BE SPLICED 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

4. LOAD–BEARING MASONRY SHALL HAVE 9 GAGE LADDER TYPE FULL–LENGTH HORIZONTAL REINFORCEMENT NOT TO EXCEED 16" O.C. VERTICALLY.

5. CONTRACTOR SHALL REINFORCE WALL CORNERS, WALL INTERSECTIONS, WALL ENDS, AND OPENING JAMBS IN ADDITION TO PROVIDING BARS AT TYPICAL WALL SPACING; AND PROVIDE CONTINUOUS BOND BEAMS AT THE TOP COURSE OF THE WALL, AT FLOOR/ROOF BEARING ELEVATION, AND AT OTHER LOCATIONS AS DETAILED.

6. SEE ARCHITECTURAL DRAWINGS FOR SURFACE AND HEIGHT OF UNITS, LAYING PATTERN AND JOINT TYPE. UNLESS NOTED OTHERWISE, ALL BLOCK SHALL BE RUNNING BOND.

Wood

1. DIMENSIONAL LUMBER FOR CEILING JOISTS, BEAMS, RAFTERS, AND EXTERIOR LOAD–BEARING STUDS SHALL BE SOUTHERN PINE #2, 19% KD, WITH DESIGN VALUES AS BELOW:

2x4	Fb=1100 PSI	Fv=175 PSI	E=1400 KSI
2x6	Fb=1000 PSI	Fv=175 PSI	E=1400 KSI
2x8	Fb= 925 PSI	Fv=175 PSI	E=1400 KSI
2x10	Fb= 800 PSI	Fv=175 PSI	E=1400 KSI
2x12	Fb= 750 PSI	Fv=175 PSI	E=1400 KSI

2. DIMENSIONAL LUMBER FOR STUDS IN BEARING WALLS SHALL BE SOUTHERN PINE OR SPRUCE–PINE–FIR STUD GRADE TYPICALLY, WITH MINIMUM DESIGN VALUES VALUES BELOW. SOUTHERN PINE #2 GRADE SHALL BE REQUIRED FOR STUD COLUMNS UNDER CEILING BEAMS AND AT BALOON–FRAMED WALLS, AS SPECIFIED ON THE FRAMING PLANS.

2x	Fb=875 PSI	Fc=1150 PSI	E=1400 KSI

3. ENGINEERED LUMBER SHALL HAVE THE FOLLOWING MINIMUM DESIGN PROPERTIES:

GLULAM	Fb=2400 PSI	Fv=200 PSI	E=1800 KSI
LVL	Fb=2600 PSI	Fv=285 PSI	E=2000 KSI
PSL	Fb=2900 PSI	Fv=290 PSI	E=2000 KSI

4. ALL LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED TESTING AGENCY. EACH PIECE OF LUMBER SHALL BE OF THE GRADE/SIZE SPECIFIED OR BETTER.

5. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE TREATED.

6. GLULAM MEMBERS, WHERE EXPOSED, SHALL BE AITC ARCHITECTURAL APPEARANCE GRADE. MEMBERS NOT EXPOSED SHALL BE USI INDUSTRIAL GRADE.

7. STUDDING SHALL BE DOUBLE AT ALL ANGLES, CORNERS, AND AT OPENINGS ≤ 8 FT CLEAR. STUDDING SHALL BE TRIPLE UNDER TRUSS GIRDERS OR AT LONGER–SPAN OPENINGS, UNLESS NOTED OTHERWISE. AT MULTI–PLY JOISTS OR HEADERS, THERE SHALL BE ONE STUD PER PLY (ie, PROVIDE DOUBLE STUDS UNDER DOUBLE JOISTS).

8. CONTRACTOR SHALL ENSURE THAT ALL LOADS TRANSFERRED BY HEADERS & BEAMS TO UPPER LEVEL STUDS ARE PROPERLY TRANSFERRED DOWN TO THE FOUNDATION.

9. ALL FLUSH BEAMS AND JOISTS SHALL BE SUPPORTED WITH THE SIMPSON STRONG–TIE BEAM OR JOIST HANGER INDICATED IN THE PLANS, OR RATED–LOAD EQUIVALENT.

10. CONTRACTOR SHALL DOUBLE RAFTERS OR JOISTS AT OPENINGS OR WHERE CONCENTRATED LOADS EXCEED 100 LBS, BUT SHALL CONTACT ENGINEER IF CONCENTRATED LOADS EXCEED 200 LBS.

11. STRUCTURAL BLOCKING REQUIREMENTS SHALL BE AS FOLLOW, UNLESS NOTED OTHERWISE:
    a. 2x BLOCKING AT RAFTER OR JOIST SUPPORTS
    b. 2x SOLID BLOCKING OR BLOCKING PANELS AT TRUSS HEELS

12. ALL NAIL SIZES GIVEN IN THESE NOTES AND FRAMING DETAILS ARE AS COMMON NAILS. NAIL SIZES MAY BE SUBSTITUTED AS BELOW, OR WITH SPECIFIC PERMISSION OF THE ENGINEER:
    a. 10d BOX NAILS MAY BE SUBSTITUTED FOR 8d COMMON
    b. 16d BOX NAILS MAY BE SUBSTITUTED FOR 10d COMMON
    c. 40d BOX NAILS OR 16d SINKER NAILS MAY BE SUBSTITUTED FOR 16d COMMON

14. MINIMUM NAILING SHALL BE AS FOLLOWS. SEE IBC NAILING SCHEDULE FOR NAILING NOT SPECIFICALLY CALLED OUT IN THE NOTES OR DRAWINGS.

BLOCKING BTWN FRAMING	
AT TOP PLATE	(3) 8d TOENAIL
OTHERWISE	(2) 8d TOENAIL OR (2) 16d END NAIL
BRIDGING TO JOIST/RAFTER/TRUSS	(2) 8d TOENAILS EACH END
BLOCKING/RIM JOIST TO TOP PLATE	8d @ 6" O.C. TOE NAIL
CEILING JOISTS	
TO TOP PLATE	(3) 8d TOENAIL
LAPS OVER PARTITIONS	(3) 16d FACE NAIL
RAFTER/TRUSS, TO TOP PLATE	(3) 10d TOE NAIL
RAFTER, TO VALLEY/HIP/RIDGE BEAMS	(3) 10d TOE NAIL & (2) 16d END NAIL
JOIST TO SILL/TOP PLATE/BEAM	(3) 8d TOE NAIL
JOIST TO BAND JOIST	(3) 16d END NAIL
BUILT–UP MULTI–2x STUDS	16d @ 16" O.C. FACE NAIL
ABUTTING STUDS AT WALL INTERSECTIONS	16d @ 16" O.C. FACE NAIL
DOUBLE TOP PLATE PIECES	
UPPER TO LOWER PLATE, CONTINUOUS	16d @ 16" O.C. FACE NAIL
SPLICES IN PLATE, 4 FT EACH SIDE	16d @ 6" O.C. FACE NAIL (MIN 4'–0")
LAPS AT CORNERS OR INTERSECTIONS	(2) 16d FACE NAIL
BOTTOM PLATE TO JOIST/BAND/BLOCKING	(3) 16d @ 16" O.C. FACE NAIL
STUD TO TOP OR BOTTOM PLATE	(4) 8d TOENAIL OR (2) 16d END NAIL
CONTINUOUS HEADER TO STUD	(4) 8d TOENAIL
BUILT–UP MULTI–2x HEADER	16d AT 12" O.C. TOP & BOT, STAGGERED & (2) 16d AT ENDS/EACH SPLICE
BUILT–UP MULTI–LVL GIRDERS	(3) 16d @ 12" O.C. (TOP, MID & BOT) & (3) 16d AT ENDS/EACH SPLICE

15. SPECIAL FASTENING REQUIREMENTS SHALL BE AS FOLLOW, UNLESS NOTED OTHERWISE:
    a. NAILS LARGER THAN 20d MUST BE PRE–DRILLED.
    b. THRU–BOLT HOLES SHALL BE FIELD–DRILLED FOR PROPER MATCHING AND BEARING.
    c. LAG SCREWS REQUIRE CLEARANCE HOLES (SAMEø AS SHAFT) AND LEAD HOLES (ROOT THREADø) PER NDS. LAG SCREWS SHALL NOT BE DRIVEN INTO PLACE.
    d. STANDARD CUT WASHERS SHALL BE PROVIDED FOR MACHINE BOLTS AND LAG SCREWS WITH HEADS OR NUTS BEARING ON WOOD.

16. ALL WOOD SHEATHING SHALL BE EXPOSURE 1 RATED. FLOOR AND ROOF SHEATHING SHALL BE LAID WITH ITS LONG AXIS AND FACE GRAIN PERPENDICULAR TO FRAMING UNLESS NOTED OTHERWISE.

17. WOOD ROOF DECK SHALL BE 15/32" APA–RATED SHEATHING (PLYWOOD OR OSB) FOR 24" O.C. RAFTER/TRUSS SPACING. ENDS OF PANELS SHALL MEET OVER SUPPORTS. DECK SHALL BE NAILED TO SUPPORTS WITH 8d COMMON NAILS @ 6" O.C. AT PANEL EDGES, IN THE FIELD, AND AT SHEAR WALL LOCATIONS.

18. WOOD SHEATHING ON SHEAR WALLS SHALL BE 15/32" CDX APA–RATED PLYWOOD SHEATHING (OSB NOT PERMITTED). NAIL SHEATHING TO STUDS WITH 8d COMMON NAILS @ 6" O.C. EDGES, 12" O.C. FIELD, UNLESS SHEAR WALL SCHEDULE PROVIDES TIGHTER SPACING. PANEL EDGES SHALL BE BLOCKED, UNLESS NOTED OTHERWISE.

19. SILL PLATE ON CONCRETE SHALL BE PRESSURE–TREATED SOUTHERN PINE, ANCHORED WITH 1/2"ø ANCHOR BOLTS EMBEDDED 7" MINIMUM INTO CONCRETE @ 48" O.C. OR WITH HILTI X–CP POWDER ACTUATED FASTENERS @ 8" O.C., UNLESS NOTED OTHERWISE. MINIMUM OF 2 ANCHORS OR FASTENERS PER PIECE WITH ONE ANCHORS OR FASTENER WITHIN 12" OF EACH END.

20. INTERIOR WALLS NOT SPECIFICALLY DESIGNATED AS LATERAL FORCE–RESISTING ELEMENTS SHALL BE SPECIFIED BY THE ARCHITECT AND/OR IN ACCORDANCE WITH THE GOVERNING CODE.

21. A HOLE <40% OF THE STUD WIDTH MAY BE BORED IN ANY WOOD STUD, PROVIDED THAT IT HAS >5/8" CLEAR TO THE EDGE OF THE STUD. HOLES MAY NOT BE BORED IN LENGTHS OF STUDS THAT ARE ALREADY CUT OR NOTCHED.

22. ALL ROUGH CARPENTRY SHALL PRODUCE JOINTS TRUE, TIGHT, AND WELL NAILED WITH MEMBERS ASSEMBLED IN ACCORDANCE WITH THE DRAWINGS AND WITH ALL PERTINENT BUILDING CODES. THE SHIMMING OF SILLS, JOISTS, SHORT STUDS, TRIMMERS, HEADERS OR OTHER FRAMING MEMBERS SHALL NOT BE PERMITTED. ALL WALLS AND PARTITIONS SHALL BE STRAIGHT, PLUMB AND ACCURATELY LOCATED. CAREFULLY SELECT ALL STRUCTURAL MEMBERS. INDIVIDUAL PIECES SHALL BE SELECTED SO THAT KNOTS AND OBVIOUS MINOR DEFECTS WILL NOT INTERFERE WITH THE PLACING OF BOLTS, OR PROPER NAILING, OR THE MAKING OF SOUND CONNECTIONS. LUMBER MAY BE REJECTED BY THE ENGINEER OR ARCHITECT FOR EXCESSIVE WARP, TWIST, BOW OR CROOK, MILDEW, FUNGUS OR MOLD AS WELL AS FOR IMPROPER GRADE MARKING DEFECTS THAT RENDER A PIECE UNABLE TO SERVE ITS INTENDED FUNCTION.

Prefabricated Wood Trusses

1. PREFABRICATED WOOD TRUSSES ARE DEFERRED DESIGN SUBMITTALS AND SHALL BE DESIGNED BY A REGISTERED ENGINEER HIRED BY THE TRUSS MANUFACTURER. DESIGN SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF TPI 'DESIGN SPECIFICATION FOR METAL PLATE CONNECTED TRUSSES' AND AWC 'NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION'.

2. TRUSS MANUFACTURER SHALL VERIFY AND COORDINATE ALL TRUSS DIMENSIONS WITH THE ARCHITECT'S AND ENGINEER'S PLANS.

3. UNIFORM DESIGN LOADS FOR ROOF AND FLOOR TRUSSES ARE LISTED IN 'DESIGN CRITERIA'. CONCENTRATED OR LINE LOADS ARE AS INDICATED ON THE PLANS.

4. MAXIMUM DESIGN DEFLECTION UNDER DESIGN LIVE LOADS:

FLOOR TRUSSES	SPAN/360
ROOF TRUSSES	SPAN/240

5. TRUSS CONNECTOR PLATES SHALL BE MANUFACTURED FROM MINIMUM 20 GAGE GALVANIZED SHEET METAL WITH Fy=33 KSI AND Fu=45 KSI. GALVANIZING SHALL MEET ASTM A446.

6. TRUSS MANUFACTURER SHALL SUBMIT TRUSS SHOP DRAWINGS SIGNED BY A REGISTERED ENGINEER FOR REVIEW PRIOR TO FABRICATION, SHOWING TRUSS LAYOUTS, TRUSS PROFILES, LUMBER GRADES, CONNECTION DETAILS, BRACING DETAILS, BLOCKING DETAILS, AND DESIGN LOADS FOR EACH UNIQUE TRUSS. SHOP DRAWINGS SHALL CLEARLY INDICATE WHERE ADDITIONAL CONVENTIONAL FRAMING IS REQUIRED BY OTHERS TO COMPLETE OVERHANGS, PLATFORMS, OR CONNECTING ROOFS.

7. ROOF TRUSS UPLIFT FORCES SHALL BE NOTED ON THE TRUSS SHOP DRAWINGS. UNLESS NOTED OTHERWISE, CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE PROPERLY SIZED ANCHORAGE TO SECURE THE TRUSS TO THE SUPPORTS,

8. CONTRACTOR SHALL EXERCISE REASONABLE CARE IN HANDLING AND STORING TRUSSES PRIOR TO INSTALLATION. TRUSSES SHALL BE PROTECTED FROM WEATHER, WATER, SOIL AND FUNGUS–RELATED DETERIORATION. TRUSSES SHALL BE STORED ON BLOCKS VERTICALLY AND COVERED IF STORED FOR LONGER THAN ONE MONTH. TRUSSES SHALL NOT BE OVERLOADED DURING CONSTRUCTION WHILE TEMPORARILY STORING MATERIALS OR EQUIPMENT.

9. TRUSSES SHALL BE ADEQUATELY BRACED DURING CONSTRUCTION. MINIMUM BRACING SHALL COMPLY WITH BCSI 'GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING, AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES'. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL PERMANENT BRACING, WALL SHEATHING, AND FLOOR/ROOF DECKING IS INSTALLED.

10. FIELD NOTCHING OR CUTTING OF TRUSS IS PROHIBITED. ALL MODIFICATIONS SHALL BE MADE UNDER THE DIRECTION OF THE TRUSS DESIGN ENGINEER.

11. ANY TRUSS REPAIRS MADE IN THE FIELD SHALL BE DOCUMENTED BY THE CONTRACTOR. A SIGNED AND SEALED ENGINEERED REPAIR FROM THE TRUSS MANUFACTURER SHALL BE REQUIRED.

Structural Steel

1. STRUCTURAL STEEL SHAPES SHALL CONFORM TO THE FOLLOWING STANDARDS:

WIDE–FLANGE BEAMS/COLUMNS	ASTM A992	Fy=50 KSI
SQUARE/RECTANGULAR TUBES	ASTM A500, GR B/C	Fy=50 KSI
ROUND TUBES	ASTM A500, GR B/C	Fy=46 KSI
PIPE COLUMNS	ASTM A53, GR B	Fy=35 KSI
ALL OTHER STEEL	ASTM A36	Fy=36 KSI

2. STRUCTURAL STEEL CONNECTION MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:

ANCHOR RODS	ASTM F1554	Fy=36 KSI, UNO
ELECTRODES (ARC WELDING)	AWS 5.1	E70XX, UNO
PERMANENT BOLTS	ASTM A325	3/4"ø, UNO
HEAVY HEX NUTS	ASTM A563	
WASHERS	ASTM F436	

3. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) 'DETAILING FOR STEEL CONSTRUCTION' AND FABRICATED AND ERECTED IN ACCORDANCE WITH THE 'SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS'.

4. STRUCTURAL STEEL SHOP DRAWINGS SHALL BE SUBMITTED FOR ENGINEER AND ARCHITECT'S REVIEW BEFORE FABRICATION.

5. STANDARD BOLT HOLES IN STEEL SHALL BE 1/16" LARGER DIAMETER THAN NOMINAL SIZE OF BOLT USED UNLESS NOTED OTHERWISE.

6. ALL WELDS SHALL CONFORM TO THE AMERICAN WELDING SOCIETY 'STRUCTURAL WELDING CODE FOR STEEL' (AWS D1.1) AND BE MADE WITH APPROVED ELECTRODES.

7. WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS, EXPERIENCED IN AND CERTIFIED FOR THE TYPES OF WELDING SPECIFIED. WELDERS SHALL BE RECENTLY QUALIFIED AS PRESCRIBED IN 'QUALIFICATION PROCEDURES' OF THE AMERICAN WELDING SOCIETY (AWS).

8. WELD LENGTHS CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. UNLESS NOTED OTHERWISE, WELDS SHALL BE CONTINUOUS 3/16" FILLET WELDS.

9. FIELD CONNECTIONS SHALL BE WELDED OR BOLTED. SHOP CONNECTIONS SHALL BE WELDED UNLESS NOTED OTHERWISE. WELDS INDICATED WITH A SHOP WELD SYMBOL MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE ENGINEER. LOCATIONS OF ALL FIELD WELDS SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS. WELDS SHALL BE DESIGNED TO BE EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS DETAILED TO MINIMIZE BENDING IN THE CONNECTION.

10. BEAM CONNECTIONS NOT SPECIFICALLY DETAILED SHALL BE STANDARD SIMPLE SHEAR CONNECTIONS, DESIGNED FOR 55% OF THE MAXIMUM TOTAL UNIFORM LOAD INDICATED IN THE AISC 'STEEL CONSTRUCTION MANUAL'. CONNECTION LENGTH MUST BE EXCEED 50% BEAM WEB 'T' DIMENSION.

11. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC 'SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS'. BOLTED CONNECTIONS SHALL BE BEARING TYPE UNLESS NOTED OTHERWISE.

12. MINIMUM EMBEDMENT OF ANCHOR RODS IN CONCRETE OR GROUTED MASONRY:
    12" WITH THE HEAD AT THE EMBEDDED END, UNLESS NOTED OTHERWISE.

13. CUTS, HOLES (OPENINGS), ETC., REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OF HOLES AND CUTS IN THE FIELD SHALL NOT BE ALLOWED, EXCEPT BY WRITTEN AUTHORIZATION FROM THE ENGINEER.

14. MISCELLANEOUS STEEL, CURBS, HANGERS, EXPANSION JOINT ANGLES, STRUTS, ETC., SHALL BE FURNISHED AND INSTALLED AS CALLED FOR OR AS NECESSARY PER ARCHITECT OR MEP DRAWINGS.

15. THIRD–PARTY STEEL AND WELDING INSPECTION REPORTS BY IBC–QUALIFIED SPECIAL INSPECTOR AND/OR CERTIFIED WELD INSPECTOR AS REQUIRED SHALL BE SUBMITTED FOR ENGINEER REVIEW PER IBC 1705.2, AND SHALL ADDRESS STRUCTURAL STEEL FRAMING DETAILS, JOIST FRAMING DETAILS, AND SIZE/LENGTH/LOCATION AND VISUAL ACCEPTANCE OF WELDS.

Structural Drawings

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N-VIZION
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Structural General Notes

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Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	STR Permit Set
10.24.24	Rev. 1 Permit Set

S1.0

FOUNDATION PLAN NOTES

1. BUILDER MUST VERIFY ALL DIMENSIONS WITH ARCHITECTURE PRIOR TO START OF CONSTRUCTION.
2. CONTACT ENGINEER IF GROUNDWATER IS ENCOUNTERED OR OTHER SOIL CONDITIONS NOT IDENTIFIED IN GEOTECHNICAL REPORT ARE ENCOUNTERED.
3. TYPICAL GRADE BEAM SIZE GB1 = 12" X 24" & WIDENED GRADE BEAM GB2 = 18" X 24". SEE DETAILS S3.0
4. CONTRACTOR SHALL STRIP ALL INCOMPETENT MATERIALS (6" MIN) & BUILD PAD WITH COMPACTED SELECT FILL, FOLLOWING THE PROCEDURE OUTLINED IN THE GEOTECHNICAL REPORT AND SUMMARIZED ON S1.0.
5. FINISH FLOOR ELEVATION OF 100'-0" IS EQUIVALENT TO DATUM REFERENCED IN CIVIL DRAWINGS

NOTE:
CONDITIONS BASED ON SOIL ANALYSIS PREPARED
BY: ROCK ENGINEERING & TESTING LABORATORY
DATED: DECEMBER 19, 2023
REPORT #: G323294
AND RECOGNIZED ENGINEERING PRACTICES.
Q.U. = 2500 PSF IN SELECT FILL OR UNDISTURBED NATIVE SOILS
DESIGN P.I. = 16

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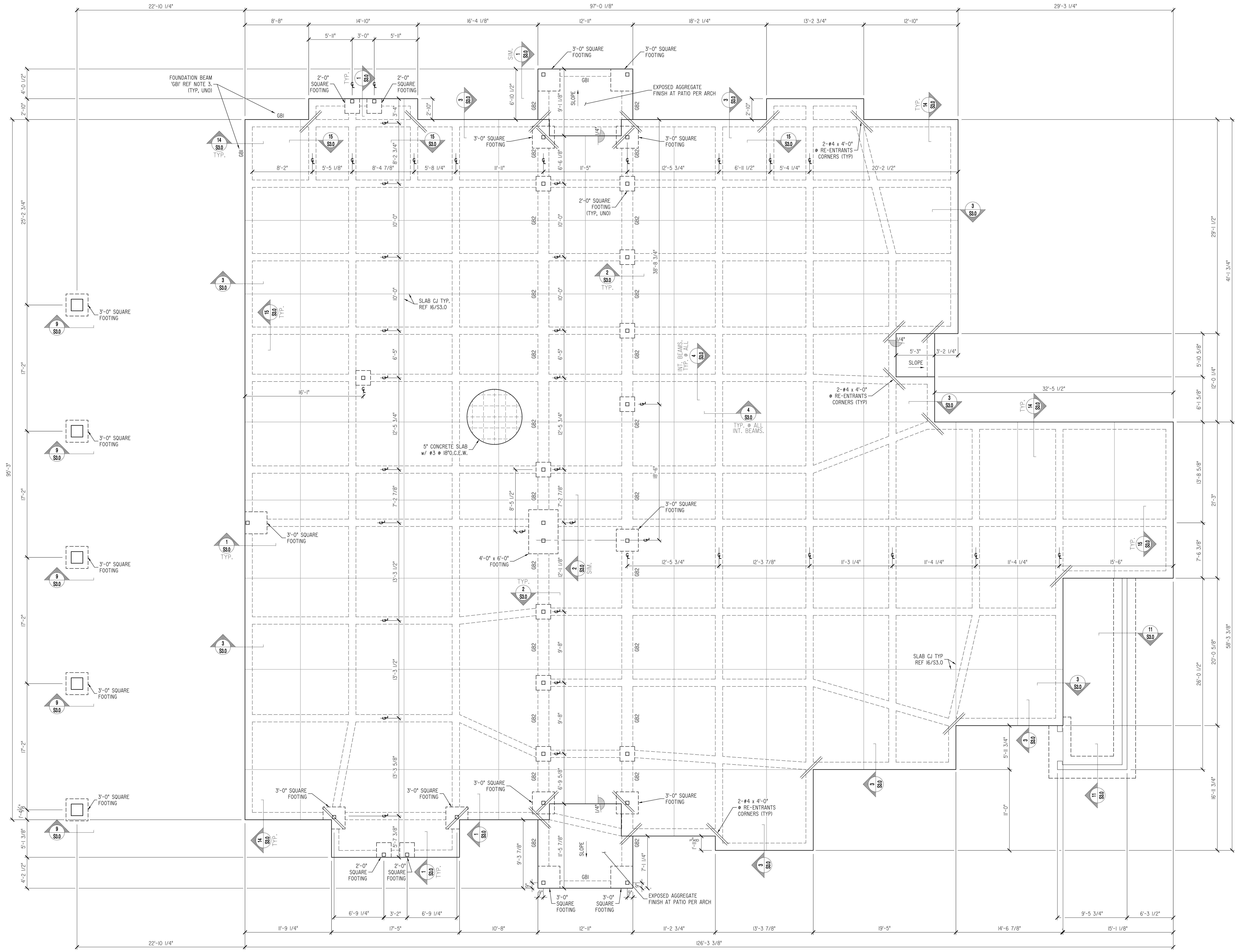
REGISTR. #2487
ATS Project #: 2402083.1

STATE OF TEXAS
DAVID A. DUNKMAN
122387
LICENSED PROFESSIONAL ENGINEER

10/25/2024 11:00 AM

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641



FOUNDATION PLAN

SCALE: 3/16"=1'-0"

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Foundation Plan

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ATS Project #: 2402063.1

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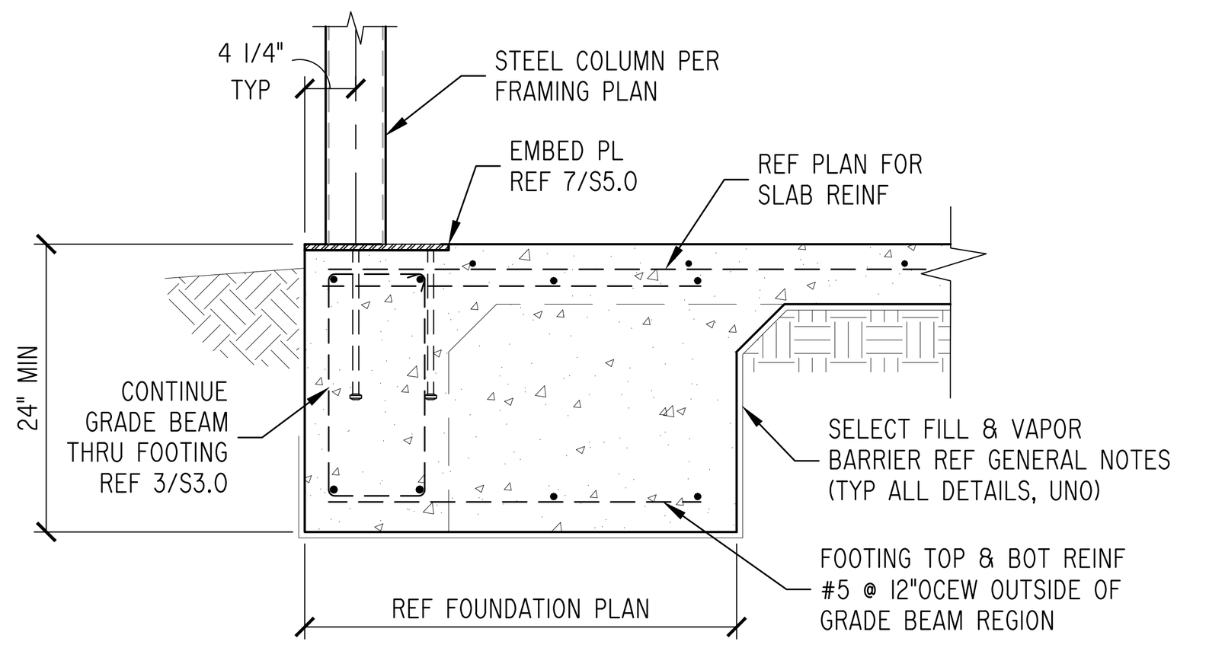
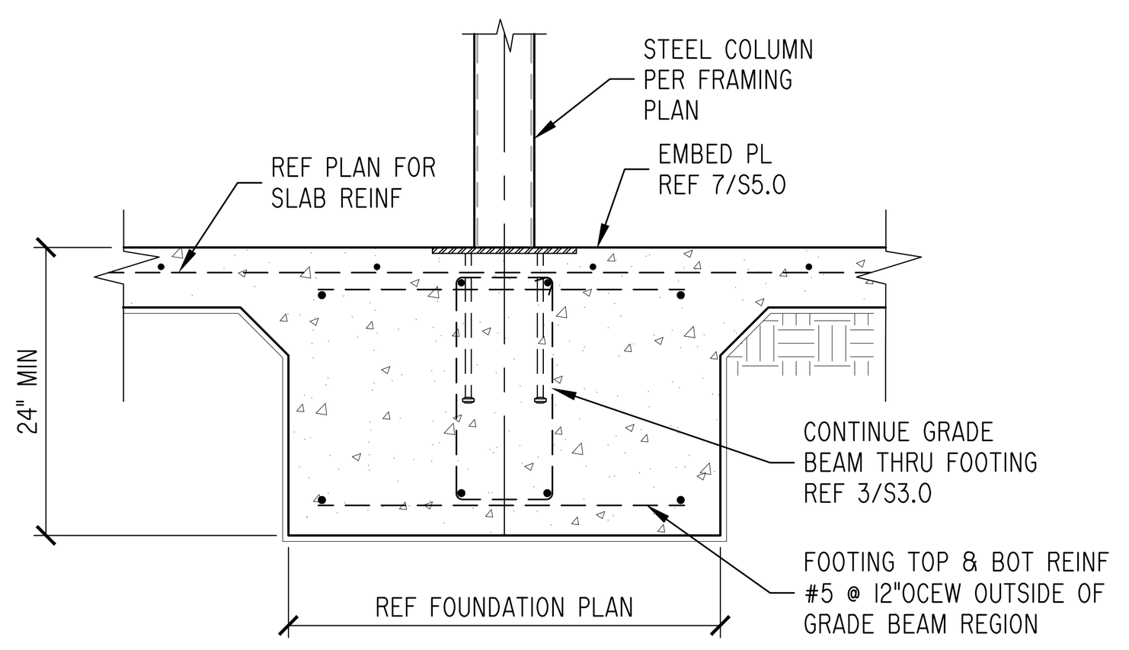
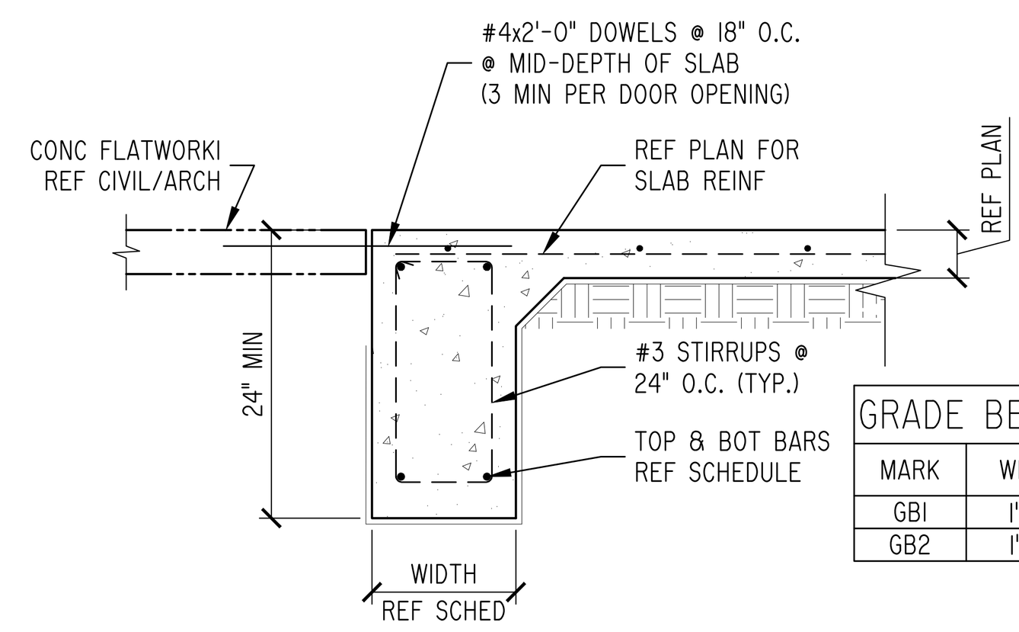


1 EXTERIOR STEEL COLUMN FOOTING
SCALE: 3/4"=1'-0" (TYP, UNO)



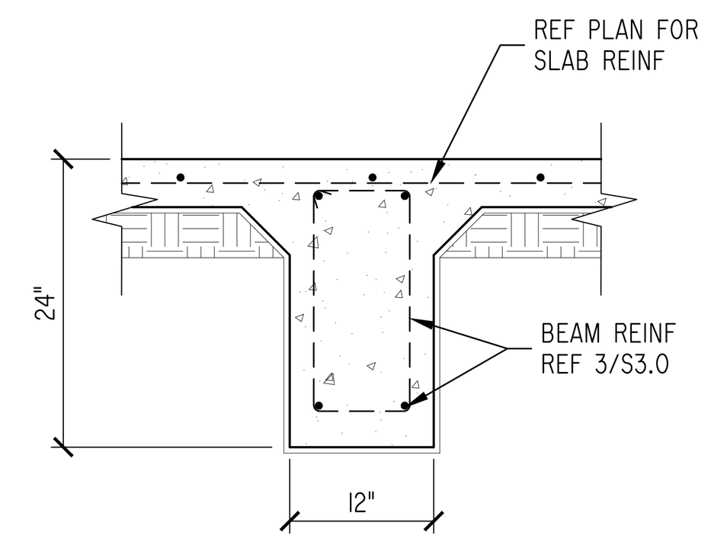
2 INTERIOR STEEL COLUMN FOOTING

NOTE:
BEAM EDGE TO SIT 1-1/2" OUT FROM STUD WALL TO ALIGN WITH OUTSIDE EDGE OF TILE WALL FINISH. CONFIRM WITH ARCHITECT PRIOR TO CONSTRUCTION.

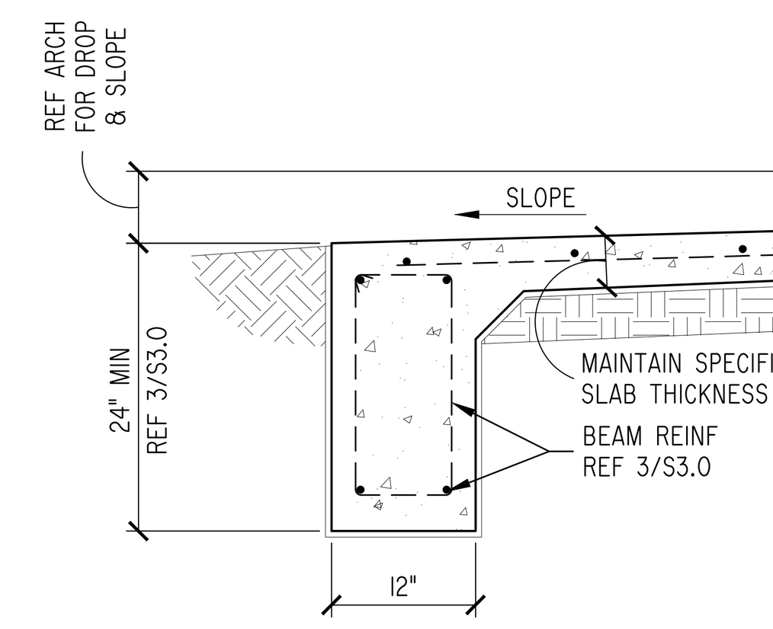


GRADE BEAM SCHEDULE		
MARK	WIDTH	T&B BARS
GB1	1'-0"	2-#5
GB2	1'-6"	3-#5

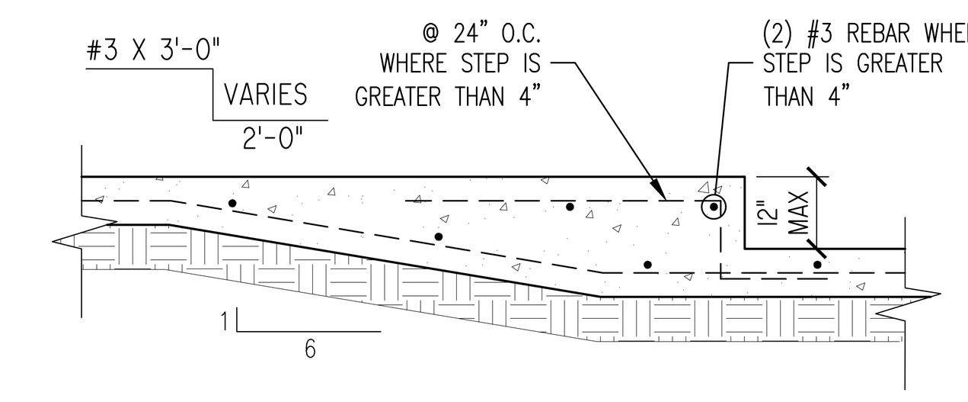
3 EXTERIOR BEAM
3/4"=1'-0"



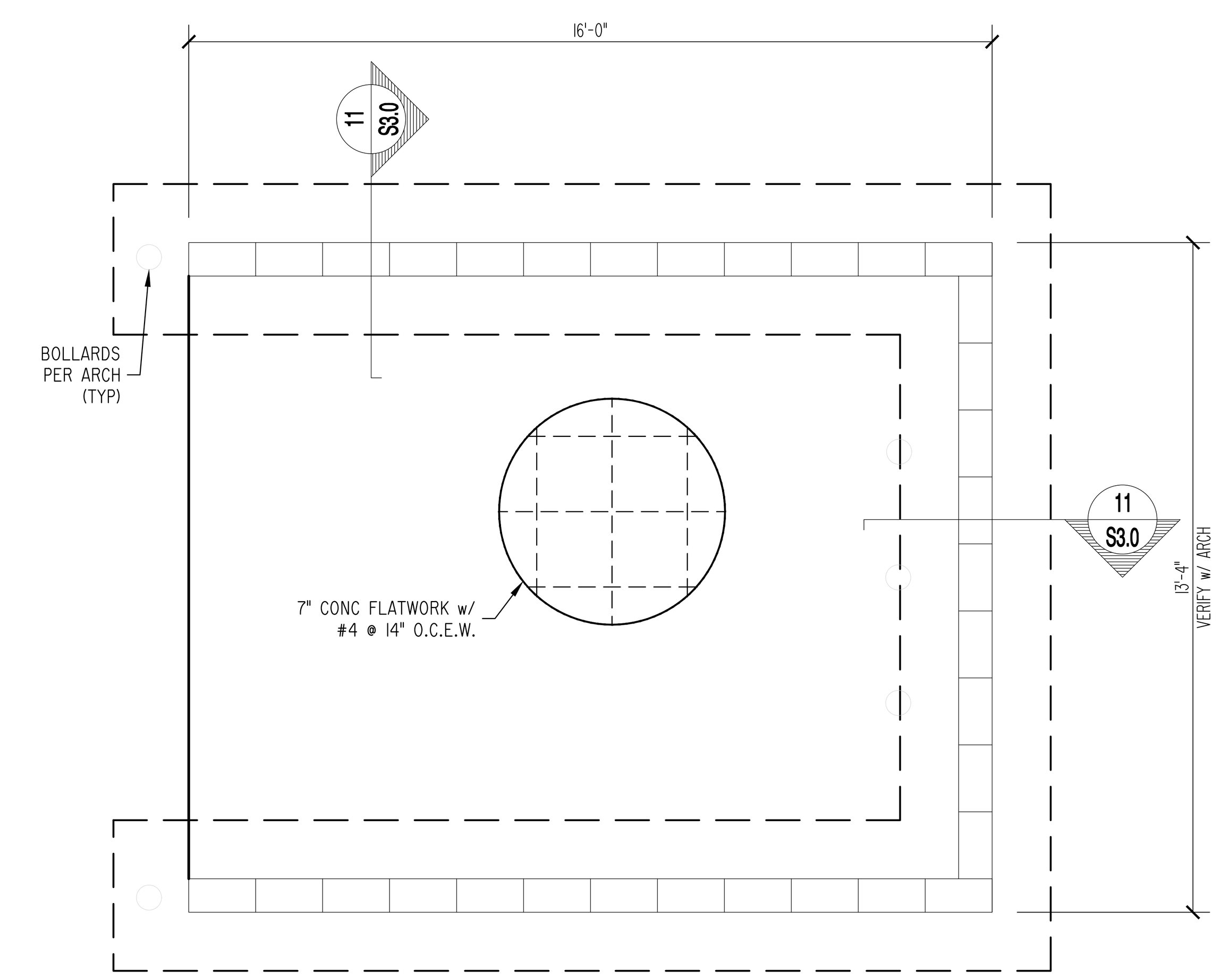
4 INTERIOR BEAM

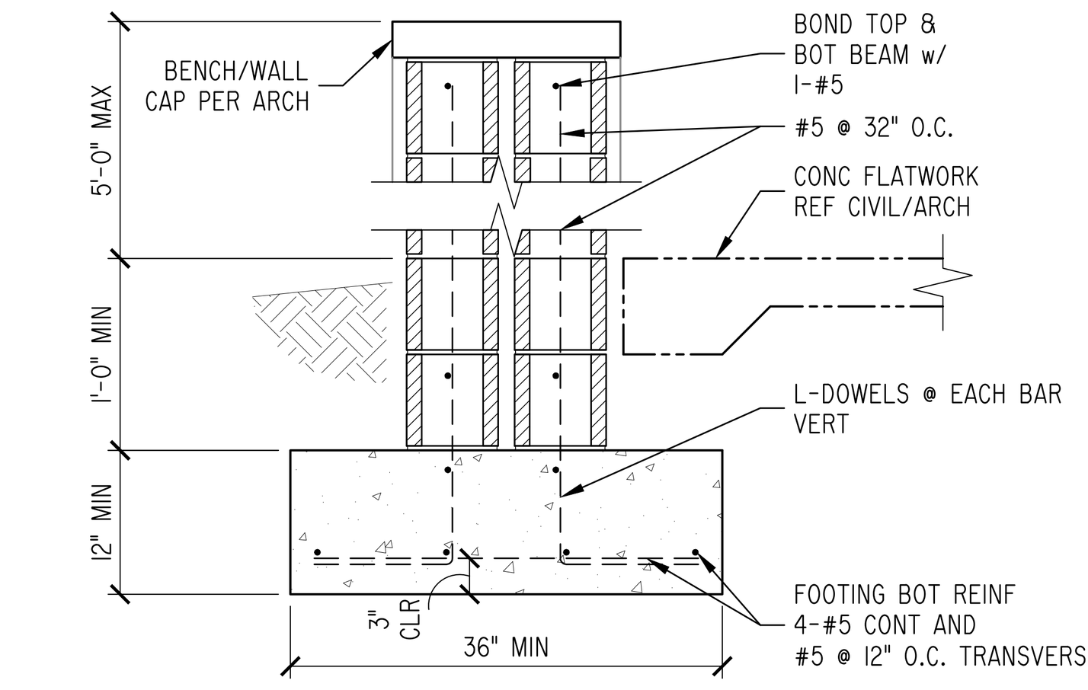


5 SLOPE IN SLAB

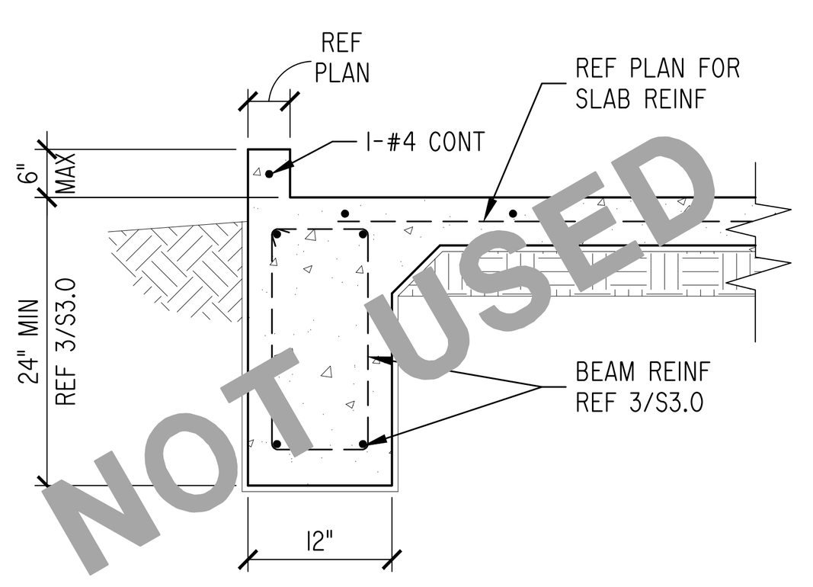


6 DROP IN SLAB

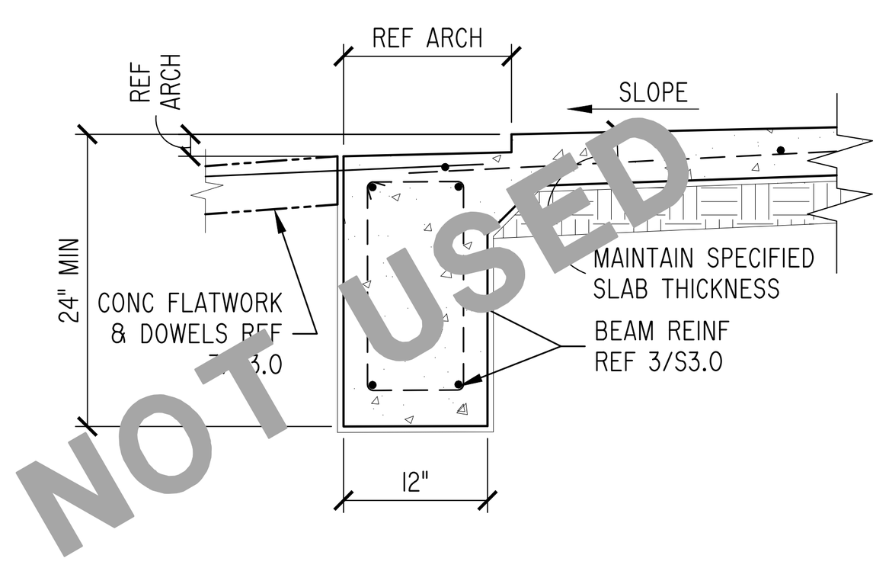




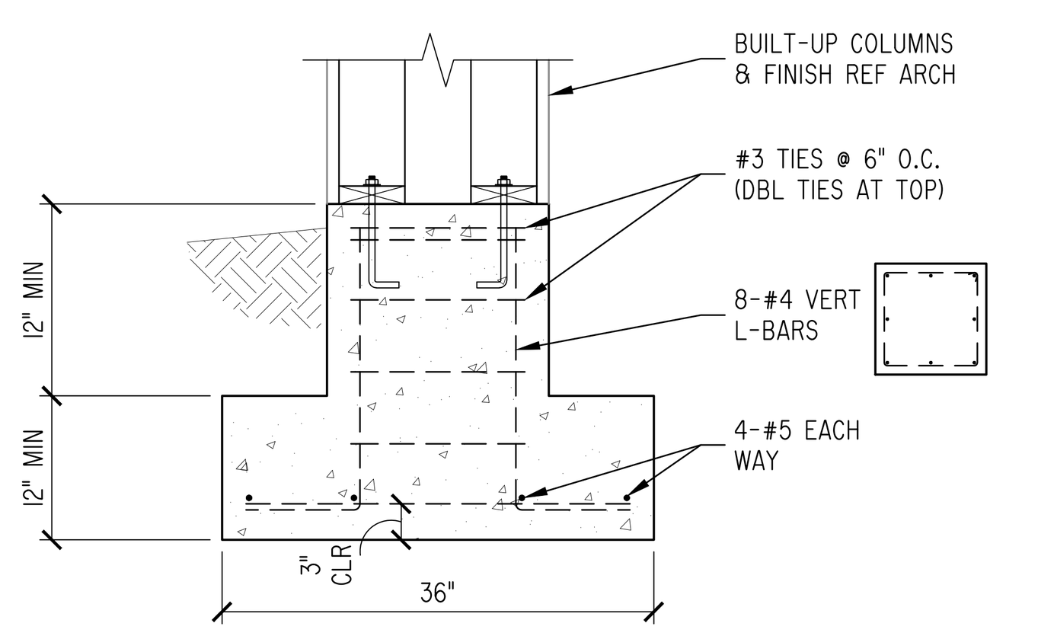
12 CMU WALL & BENCH DETAIL



7 TYPICAL CURB DETAIL

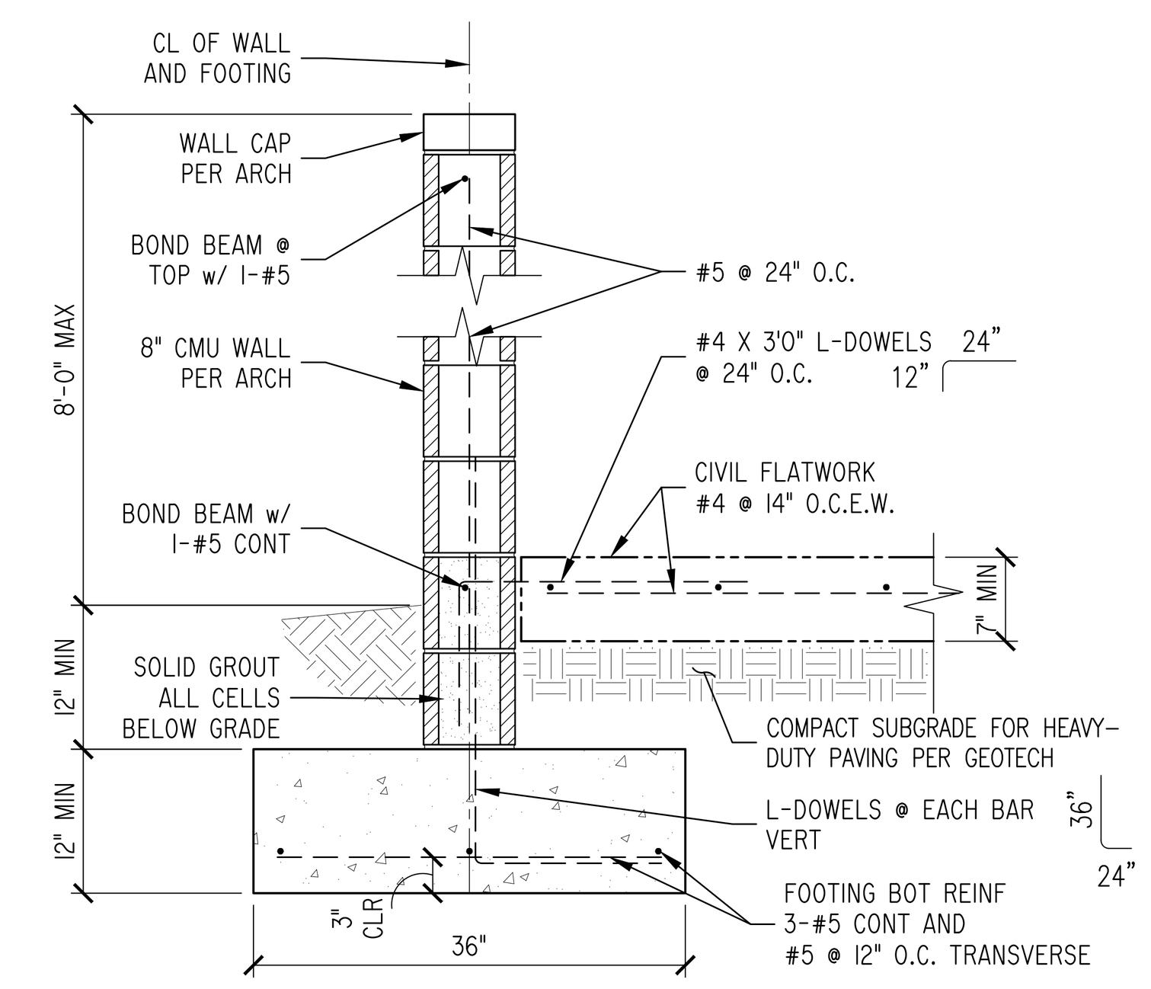


8 GARAGE DOOR BLOCKOUT

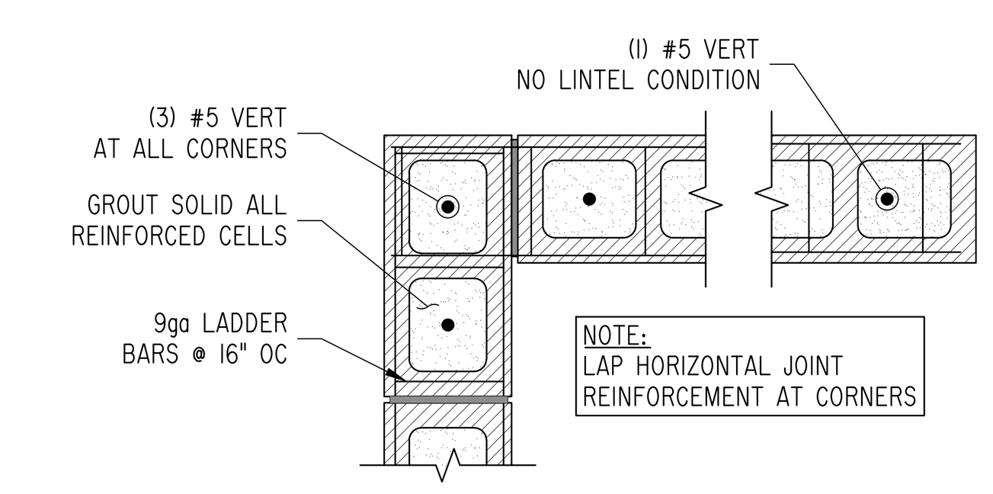


9 PORTE-COCHERE FOOTING

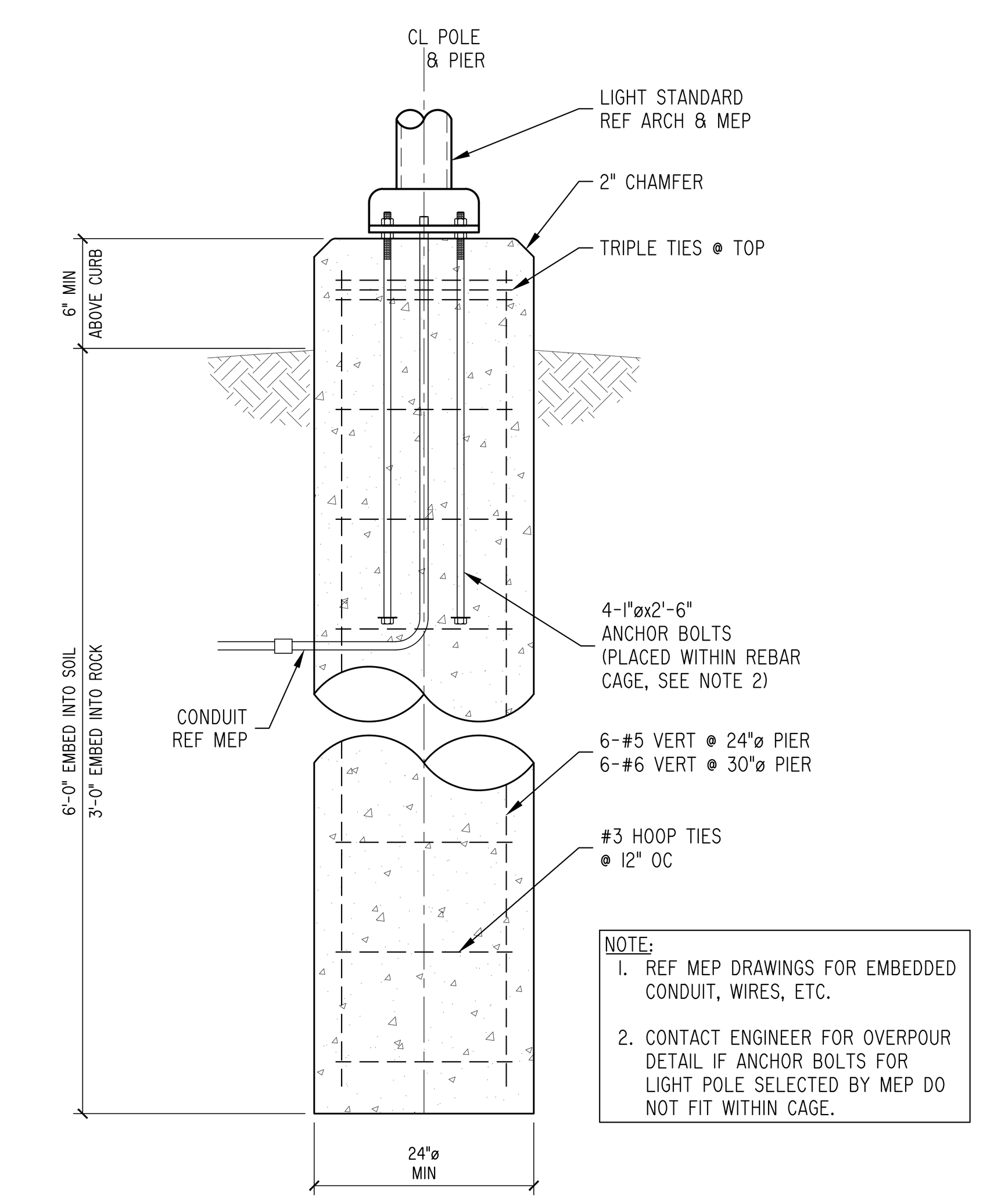
10 DUMPSTER ENCLOSURE PLAN
SCALE: 3/8"=1'-0"



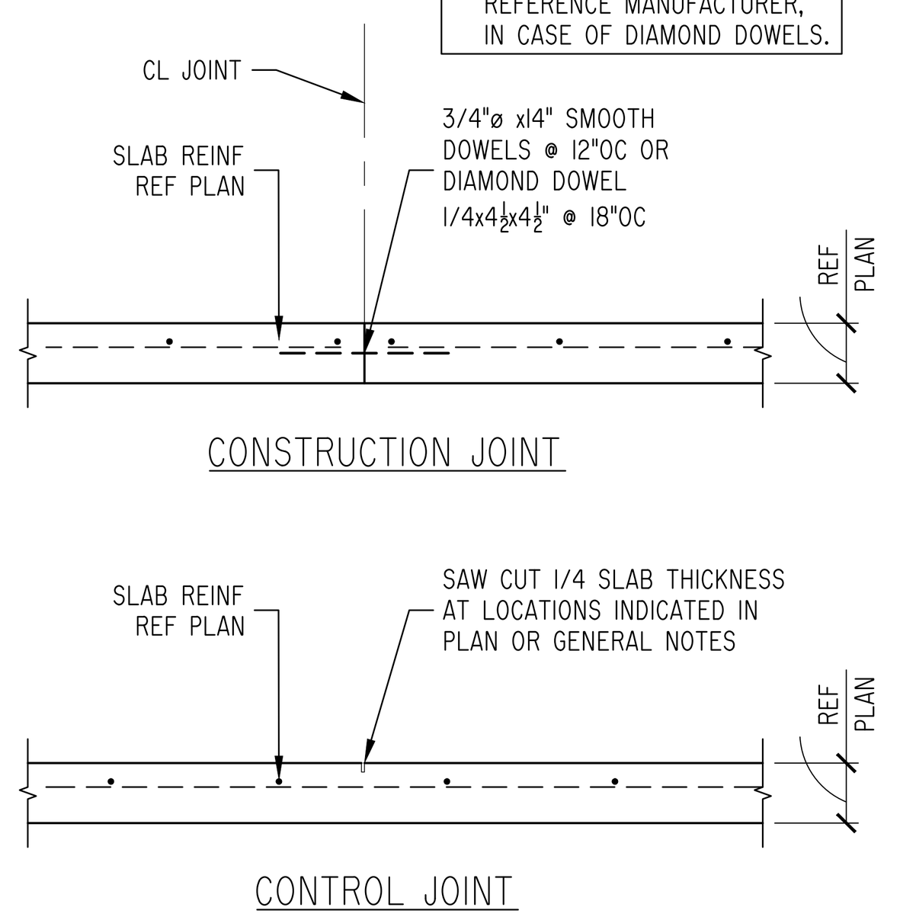
11 MECH YARD & DUMPSTER CMU STRIP FOOTING DETAIL

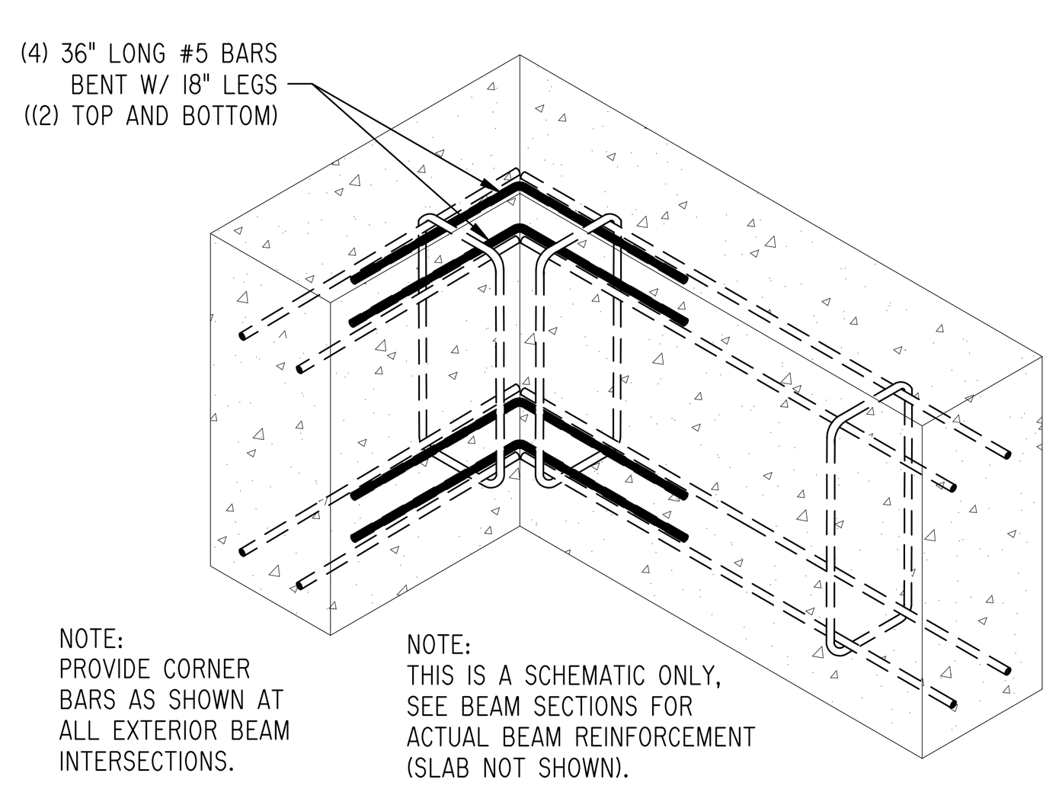


13 CMU WALL CORNERS & ENDS
NTS

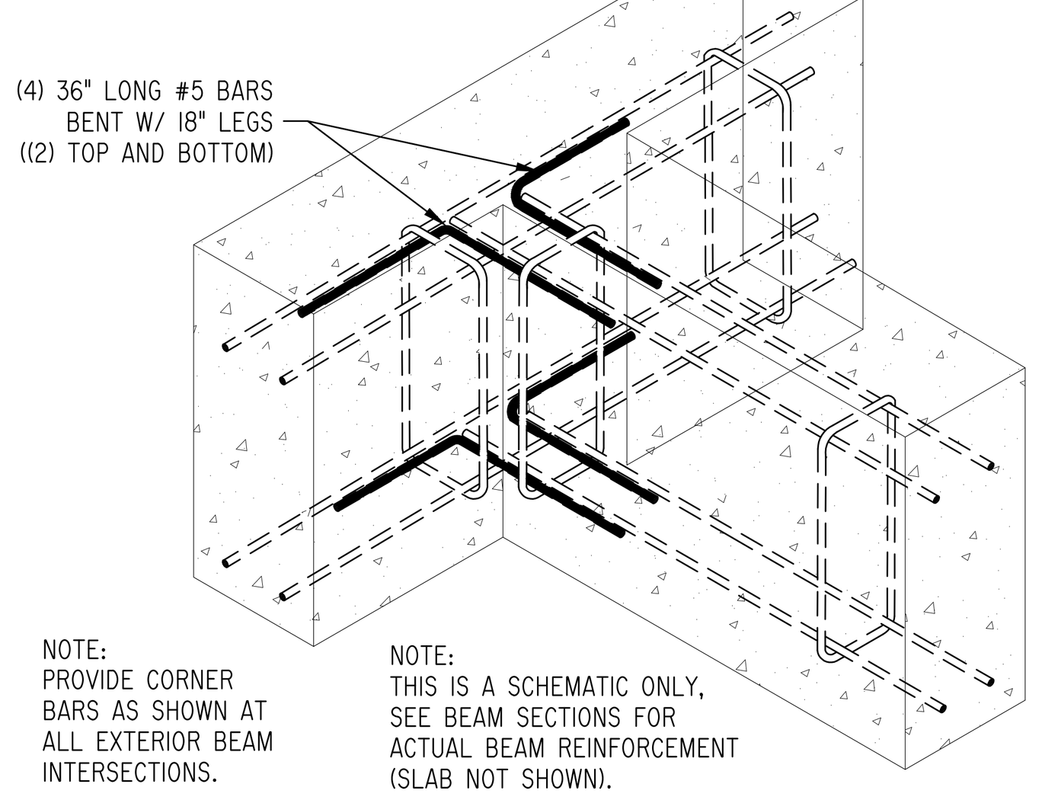


NOTE:
LIGHTLY GREASE DOWELS TO ASSURE THAT DOWEL IS NOT BONDED TO CONCRETE. REFERENCE MANUFACTURER, IN CASE OF DIAMOND DOWELS.



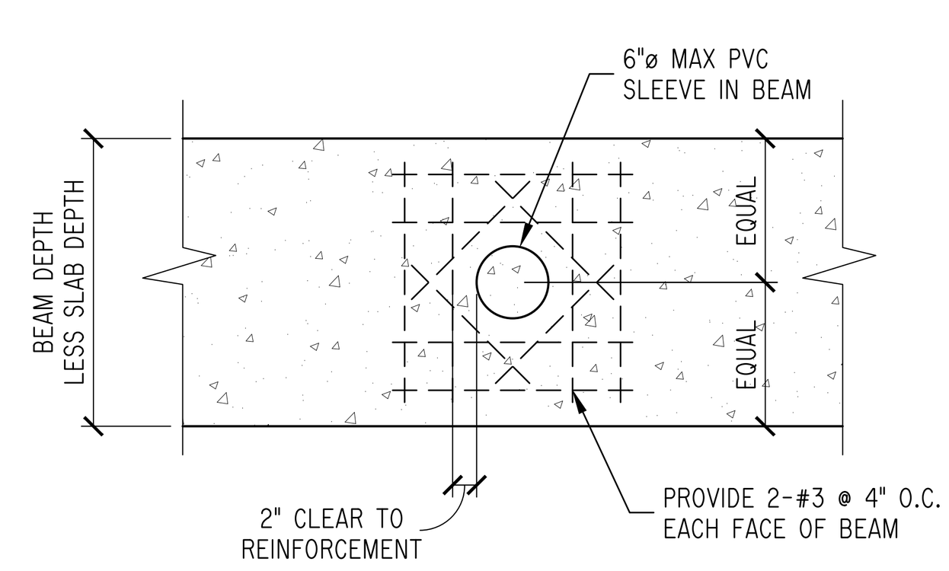


14 TYPICAL CORNER REINF. LAYOUT



15 TYPICAL GRADE BEAM INTERSECTION REINF. LAYOUT

16 SLAB CONSTRUCTION & SLAB CONTROL JOINTS
NTS



17 BEAM PENETRATION

18 LIGHT POLE STANDARD DETAIL

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Foundation Details

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S3.0

FRAMING NOTES

1. ROOF DESIGN IS BASED ON MAXIMUM METAL ROOF DEAD LOAD OF 500 LBS/SQUARE. CONSULT ENGINEER IF OTHER MATERIALS ARE USED.
2. ROOF TRUSS DESIGN BY OTHERS SHALL BE BASED ON TCDL 15psf, BCDL 5psf, TCLL 20psf (REDUCIBLE FOR SLOPE AND AREA) & MAX LIVE LOAD DEFLECTION L/240.
3. EXTERIOR WALL FINISH TO LARGELY CONSIST OF ADHERED WALL TILE 10psf MAX WEIGHT. CONSULT ENGINEER IF OTHER MATERIALS ARE USED.
4. ALL JOISTS & RAFTERS TO BE 2 X 6 @ 24" O.C. UNLESS NOTED OTHERWISE.
5. ALL HEADERS TO BE A MINIMUM OF (3) 2 X 6 UNLESS NOTED OTHERWISE.
6. ALL ROOF AND FLOOR TRUSSES ASSUMED TO BEAR AT ENDS ONLY, U.N.O.
7. PROVIDE MINIMUM HANGER BY SIMPSON FOR ALL BEAM TO BEAM CONNECTIONS UNLESS SPECIFIC HANGER SIZE IS CALLED OUT ON PLAN. TRUSS HANGERS BY TRUSS MANUFACTURER, U.N.O.
8. NOTCH BEAMS @ SLOPED ROOFS AND REPAIR WHERE INDICATED ON PLANS. BEAM TAPERS HAVE BEEN DESIGNED BASED ON A MINIMUM BEAM DEPTH EQUAL TO THE VERTICAL DEPTH OF THE RAFTERS AT THE INTERIOR FACE OF THE STUD WALL (a.k.a. THE DEPTH FROM THE ROOF DECK TO THE TOP OF THE TOP PLATE.)
9. (4) PLY BEAMS TO BE BOLTED W/ (2) ROWS OF 1/2"ø THROUGH BOLTS @ 12" O.C. ROWS SHOULD BE LOCATED @" FROM THE TOP AND BOTTOM OF THE BEAM.
10. COORDINATE CHASE OPENINGS THROUGH TRUSSES WITH ARCH & MEP DRAWINGS.
11. WHERE ARCHITECTURAL CEILING ARE SHOWN LOWER THAN BOTTOM OF ROOF TRUSSES (BY OTHERS), CONTRACTOR SHALL (A) FURR-DOWN FROM BOTTOM OF ROOF FRAMING AND ADD BOTTOM CHORD BRACING PER TRUSS MANUFACTURER (10'-0" O.C MIN) OR (B) STICK-FRAME 2 X 6 24" O.C. MAX 10'-0" SPAN, 2 X 8 @ 24" O.C. MAX 13'-6" SPAN, AND 2 X 10 @ 24" O.C. MAX 16'-0" SPAN.
12. BRACE ALL LOW STEEL OR WOOD BEAMS TO ADJACENT PARALLEL TRUSSES @ 10"-0" O.C. MAX.
13. BRACE ALL COLUMNS NOT EXTENDED TO ROOF STEEL IN PLANE OF WALL BY ATTACHING 2x STUDS TO EACH SIDE WITH 1/2" DIA THREADED STUDS @ 24" OC

LEGEND:

1	(2) 2 X 4 S.Y.P. #2
2	(3) 2 X 4 S.Y.P. #2
3	(4) 2 X 4 S.Y.P. #2
4	(5) 2 X 4 S.Y.P. #2
5	(2) 2 X 6 S.Y.P. #2
6	(3) 2 X 6 S.Y.P. #2
7	(4) 2 X 6 S.Y.P. #2
8	HSS 5 X 5 X 1/4 TO FDN
9	HSS 5 X 5 X 1/4 STUB COLUMN ON BEAM

REPRESENTS MIN. # OF STUDS FOR END SUPPORT OF MEMBER.

FRAMING LEGEND

- TRUSS BY OTHERS
- BEAM OR GIRDER TRUSS BY OTHERS
- JOIST
- LOAD BEARING WALLS
- RIDGE OR VALLEY SUPPORT
- SUPPORT AND LOCATION
- C — PURLIN FROM WALL OR BEAM BELOW TO SUPPORT RAFTERS AT LOCATIONS SHOWN ON PLAN
- ROOF SPLICE

X — DENOTES UNFACTORED POINT LOAD (lbs) FROM FRAMING IN UPPER STORIES. FLOOR TRUSS MANUFACTURER TO SUPPORT A POINT LOAD OF DL #, LL # AT THIS LOCATION FROM BEAM(S)____ ABOVE.

DENOTES UNFACTORED LINE LOAD (plf) FROM FRAMING IN UPPER STORIES. FLOOR TRUSS MANUFACTURER TO SUPPORT A LINE LOAD OF DL_ plf, LL_ plf FROM LOAD BEARING WALL ABOVE AT THIS LOCATION.

DENOTES 2X OVERFRAMING. PROVIDE 2 X 12 VALLEY NAILER ATTACHED TO ROOF DECK WITH 10d @ 6" O.C.

STUD SCHEDULE	
BEARING WALL 12'-0" PLATE MAX	2 X 6 SYP/SPF STUD GRADE @ 16" O.C.
BEARING WALL TALLER THAT 12'-0"	2 X 6 SYP #2 GRADE @ 16" O.C.
NONBEARING WALL	2 X 4 SYP/SPF STUD GRADE @ 24" O.C. (OR BETTER REF ARCHITECT PLANS)

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LICENSED PROFESSIONAL ENGINEER

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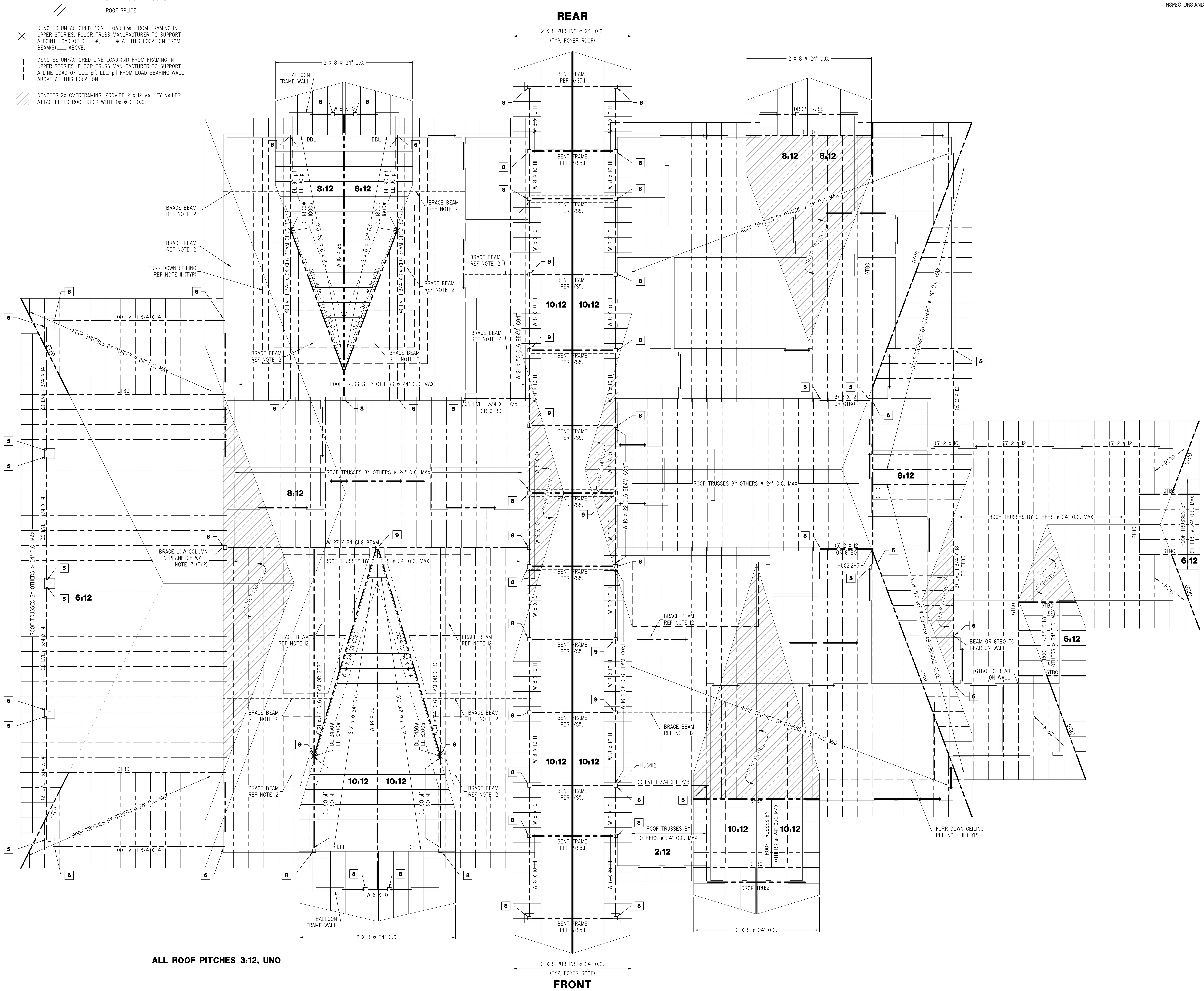

ALL ROOF PITCHES 3:12, UNO

ROOF FRAMING PLAN

SCALE: 3/16"=1'-0"

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Roof Framing Plan

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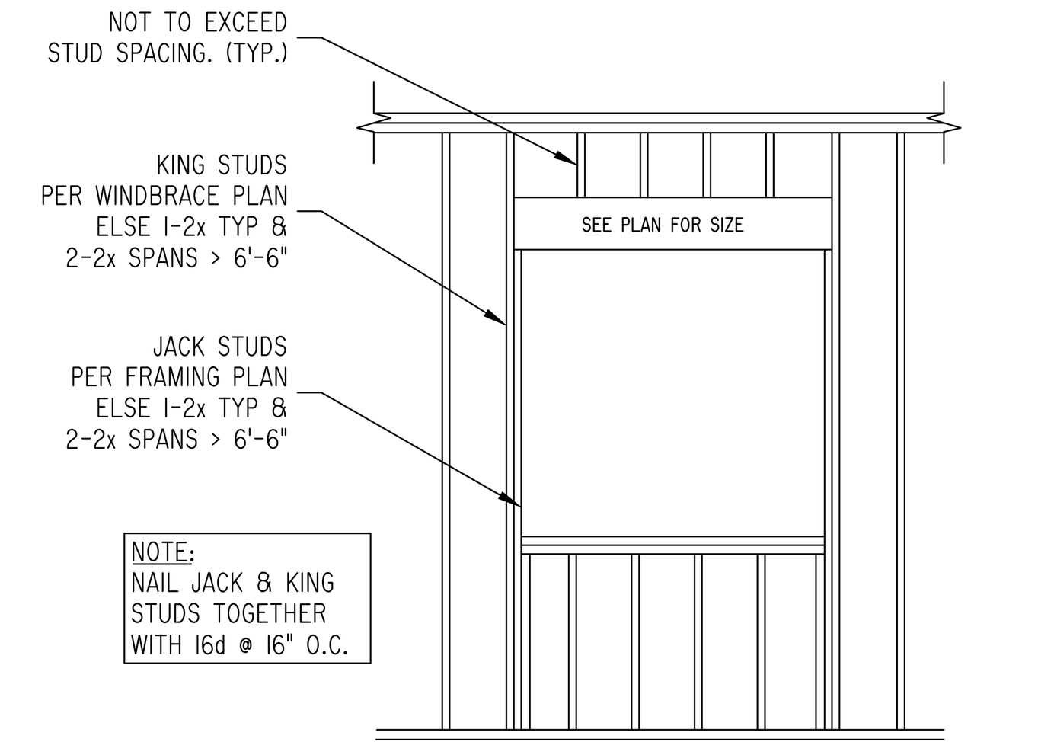
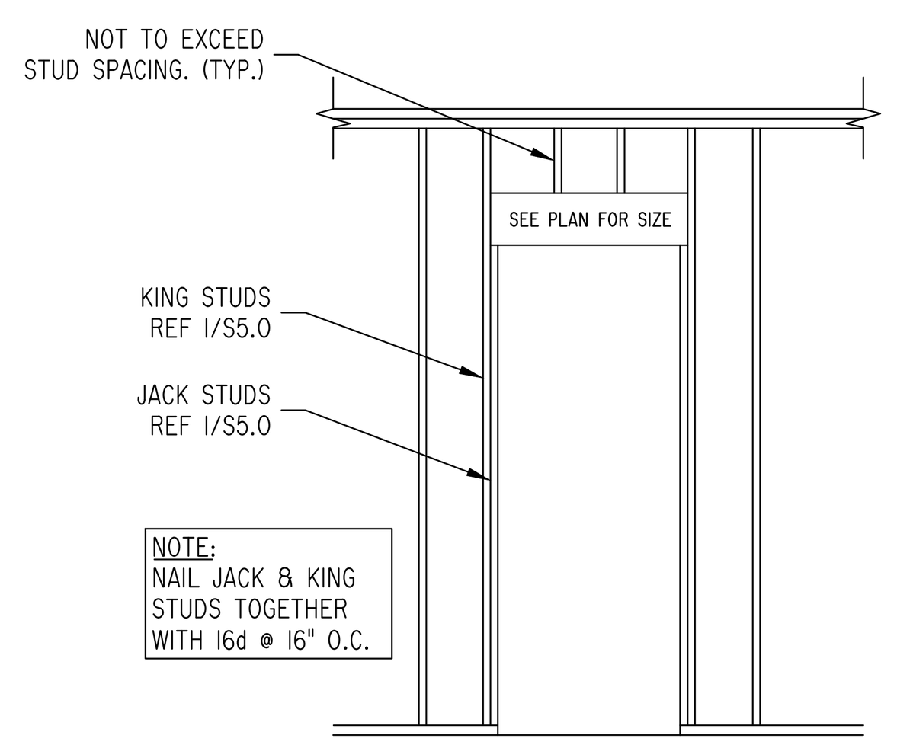
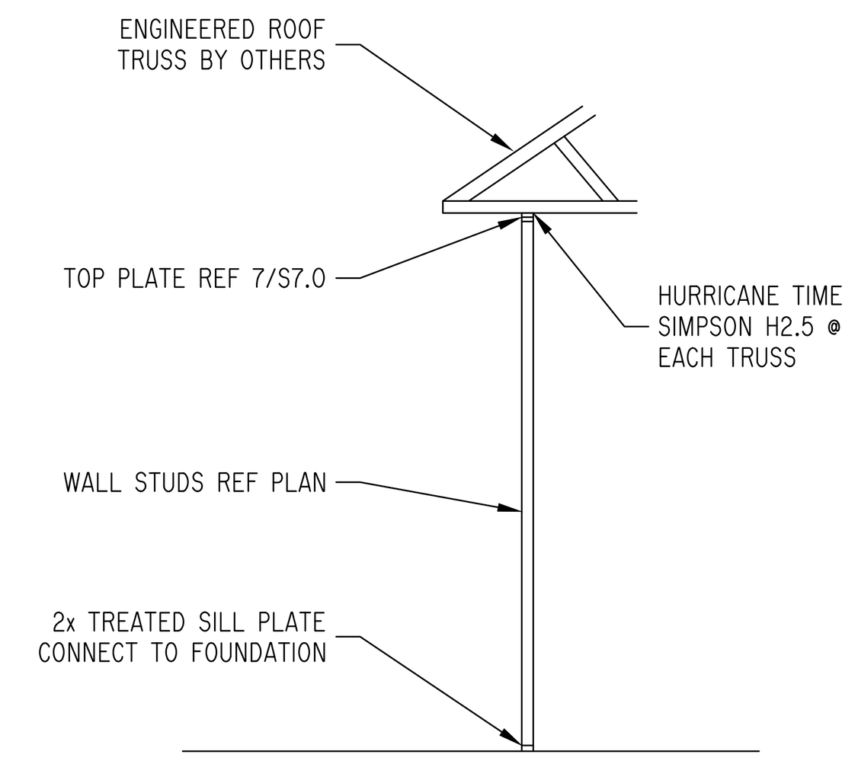


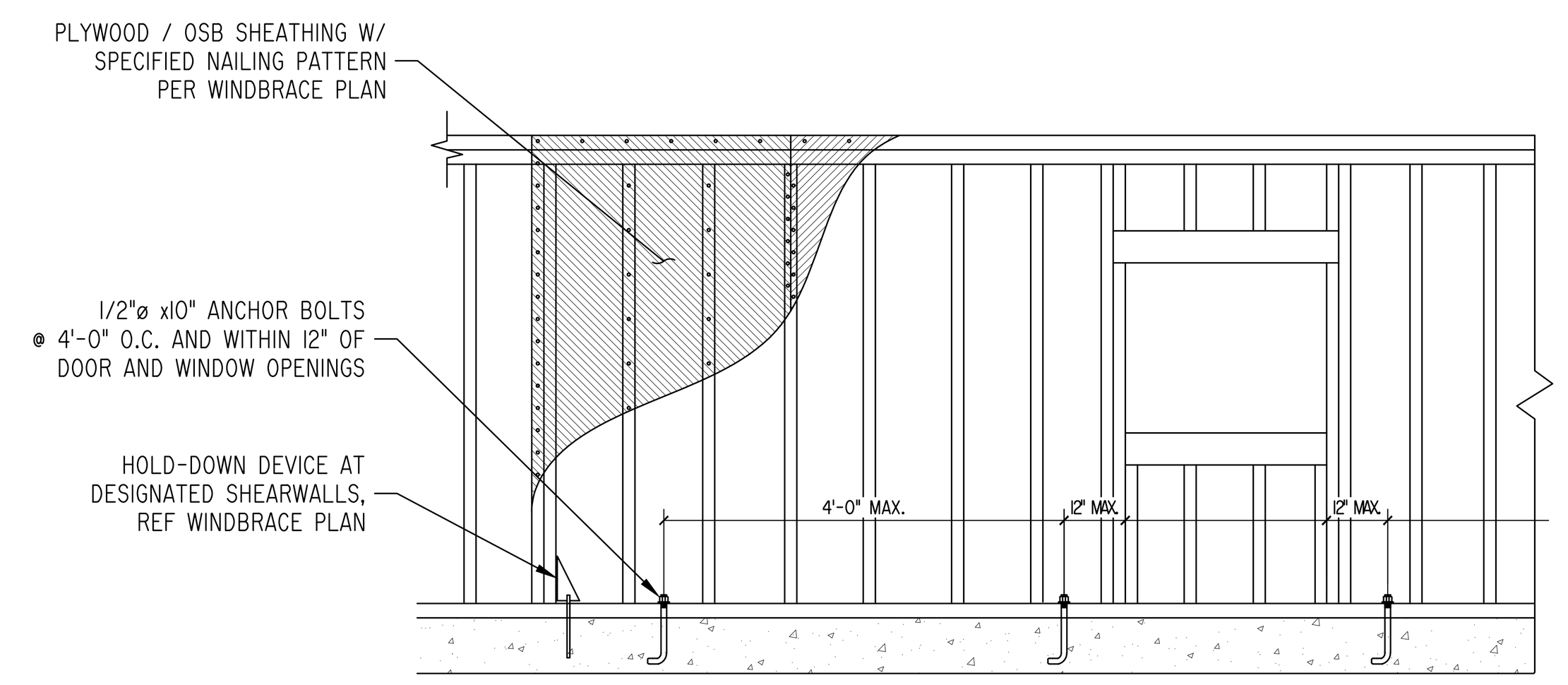
1 TYPICAL WINDOW OPENING
NTS



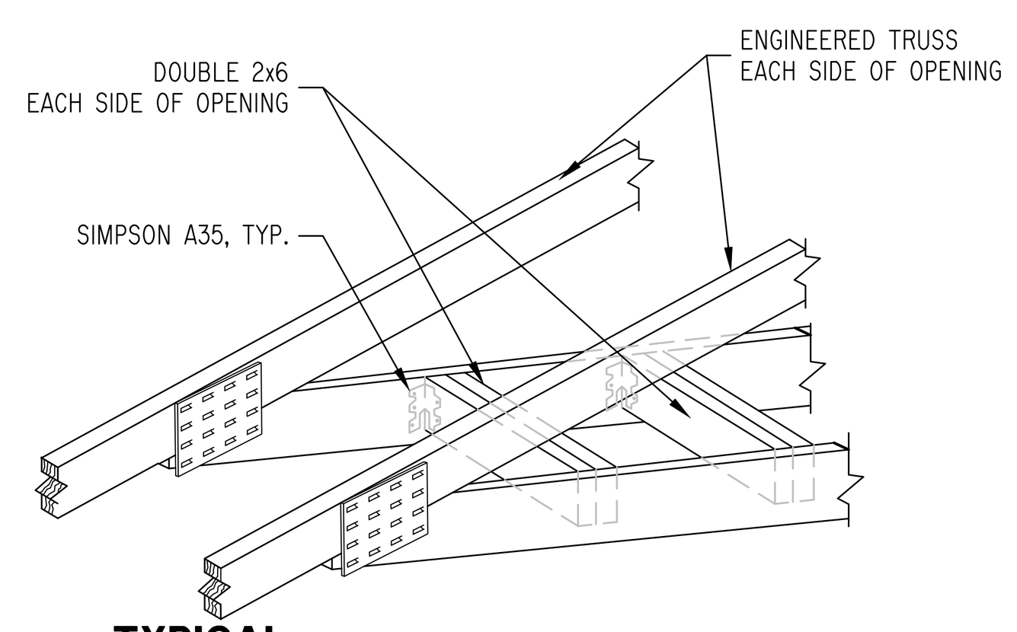
2 TYPICAL DOOR OPENING
NTS



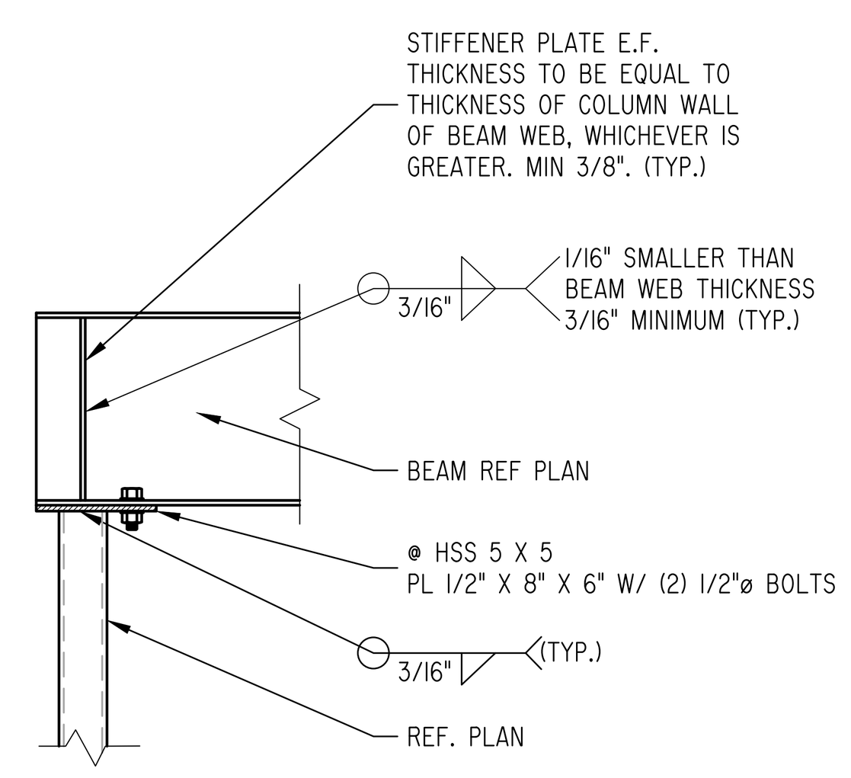
3 TYPICAL WALL SECTION
NTS



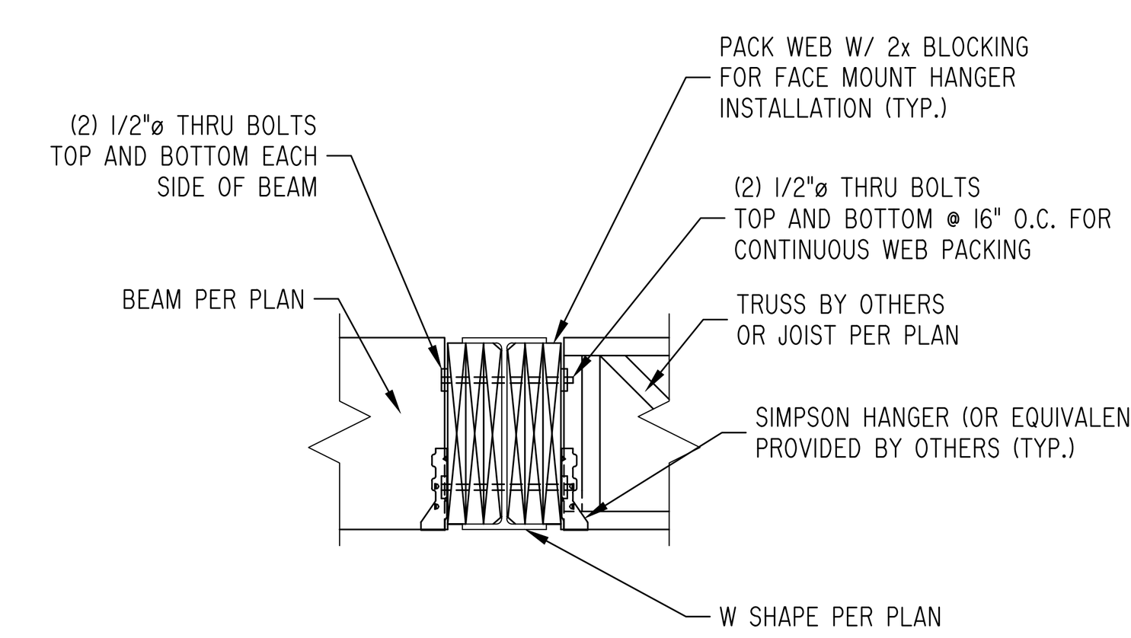
4 TYPICAL WALL BRACING
NTS



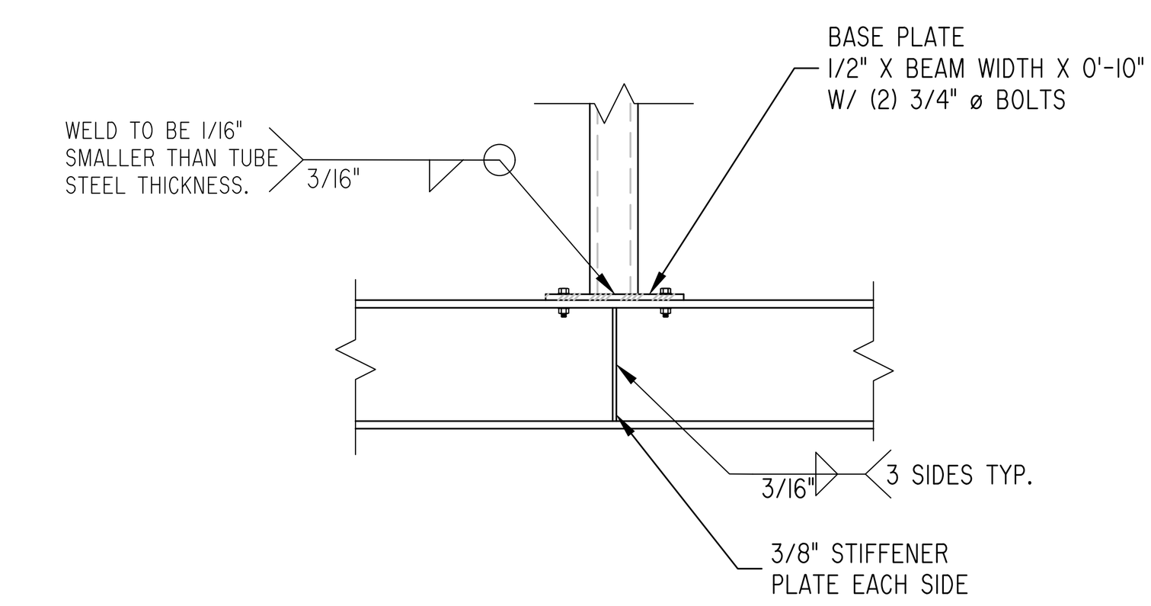
5 TYPICAL CEILING OPENING
NTS



6 BEAM PROFILE w/ BOLTED CONNECTION
NTS

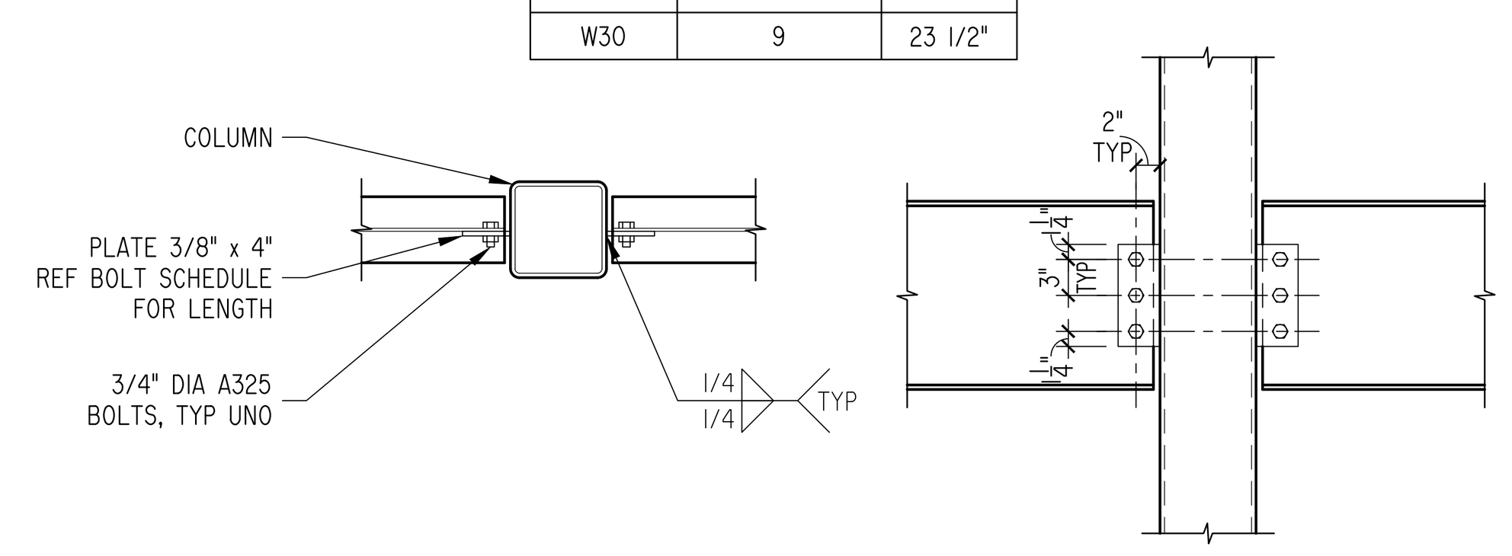


7 TYPICAL WOOD FRAMING MEMBER TO STEEL BEAM
NTS

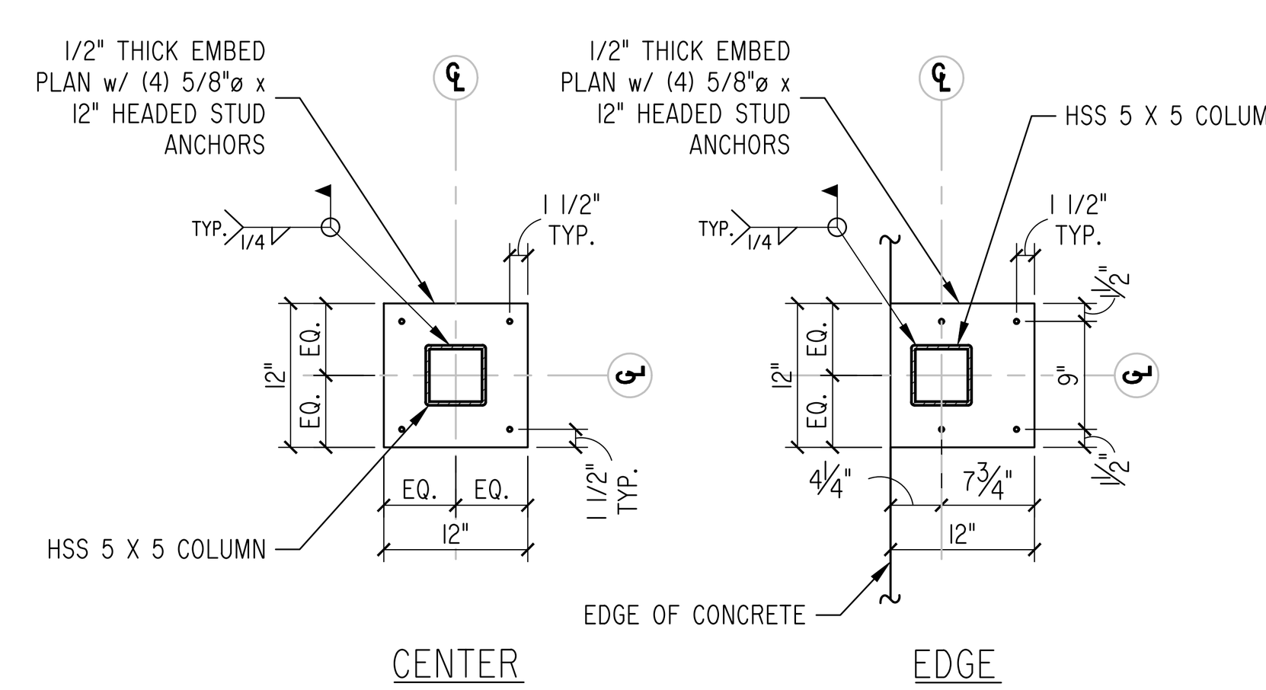


8 TYP. STEEL COLUMN ABOVE STEEL BEAM
NTS

BOLT SCHEDULE		
SECTION	BOLTS PER MEMBER	PLATE LENGTH
W8	2	5 1/2"
W10	2	5 1/2"
W12	3	8 1/2"
W14	3	8 1/2"
W16	4	11 1/2"
W18	5	14 1/2"
W21	6	17 1/2"
W24	7	20 1/2"
W30	9	23 1/2"



9 STEEL BEAM CONNECTION SCHEDULE
NTS



10 EMBEDDED PLATE DETAIL
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Framing Details

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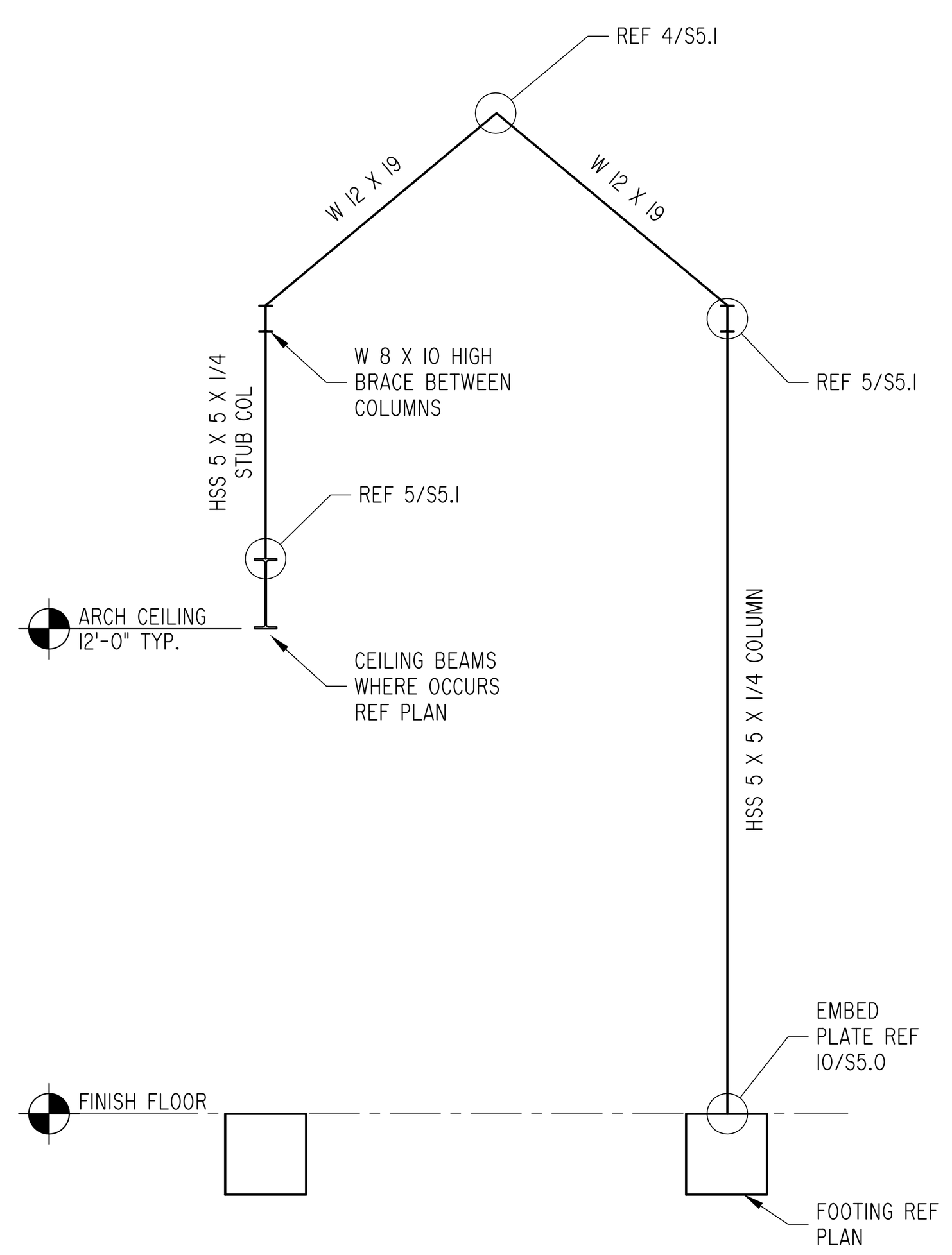
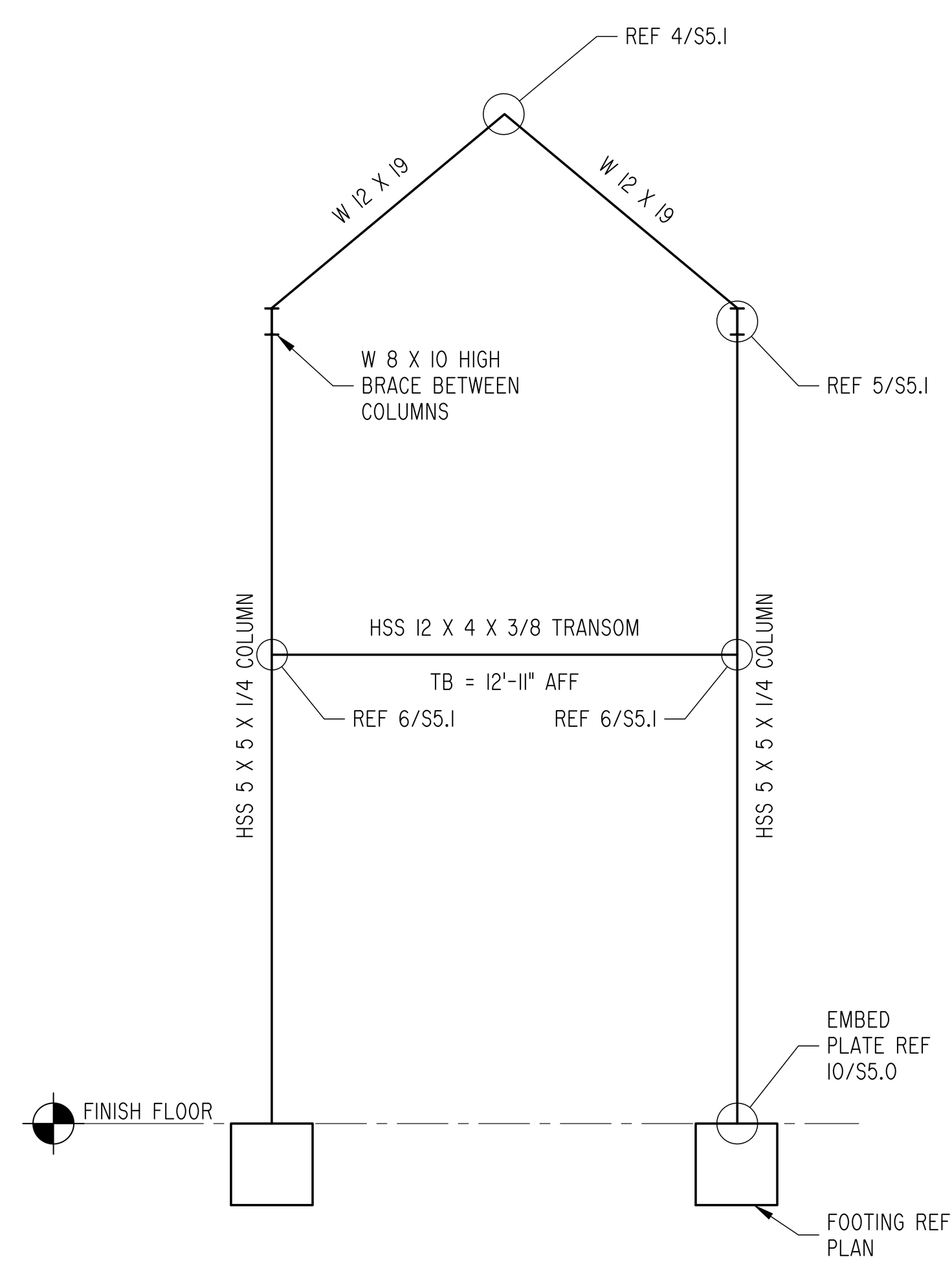
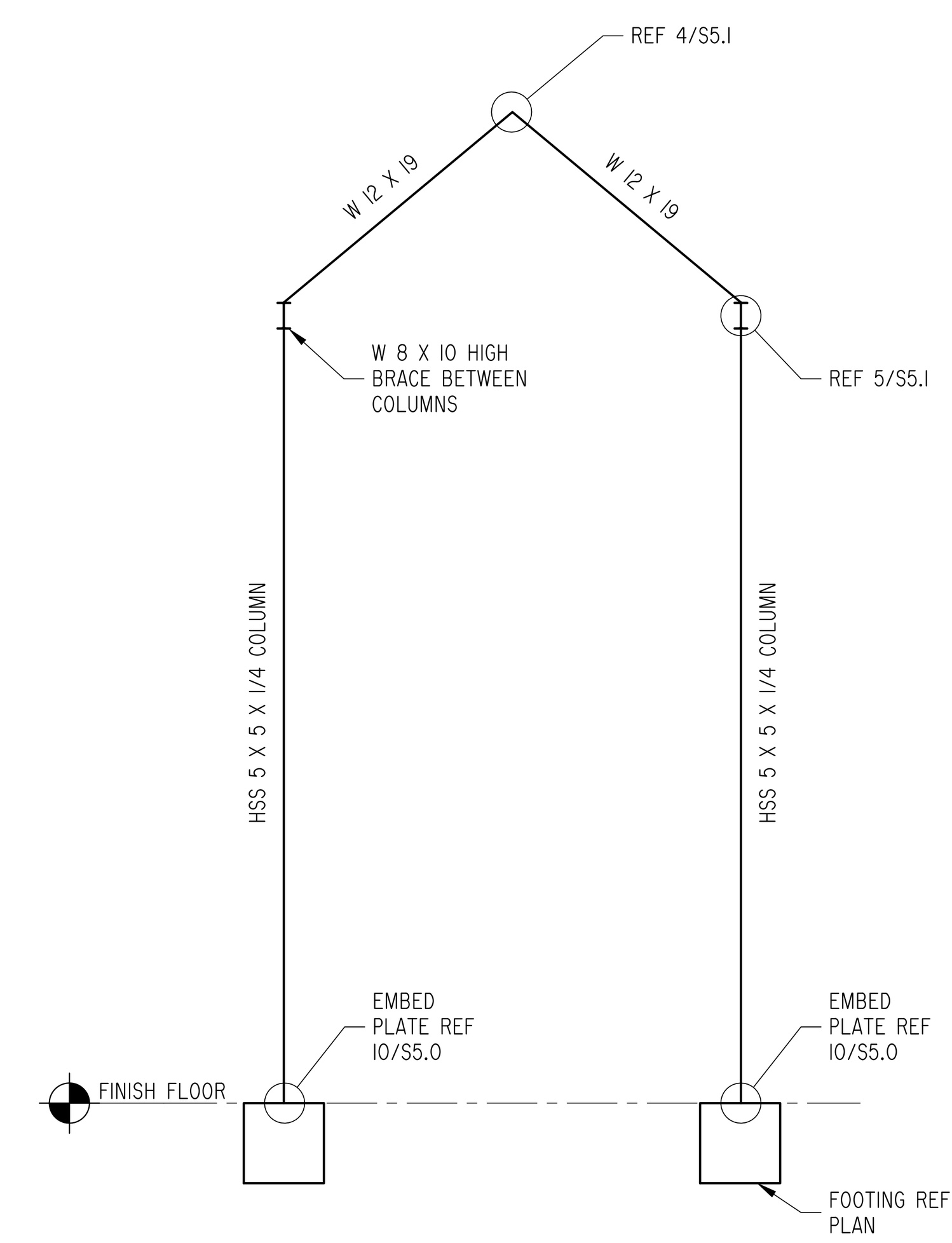


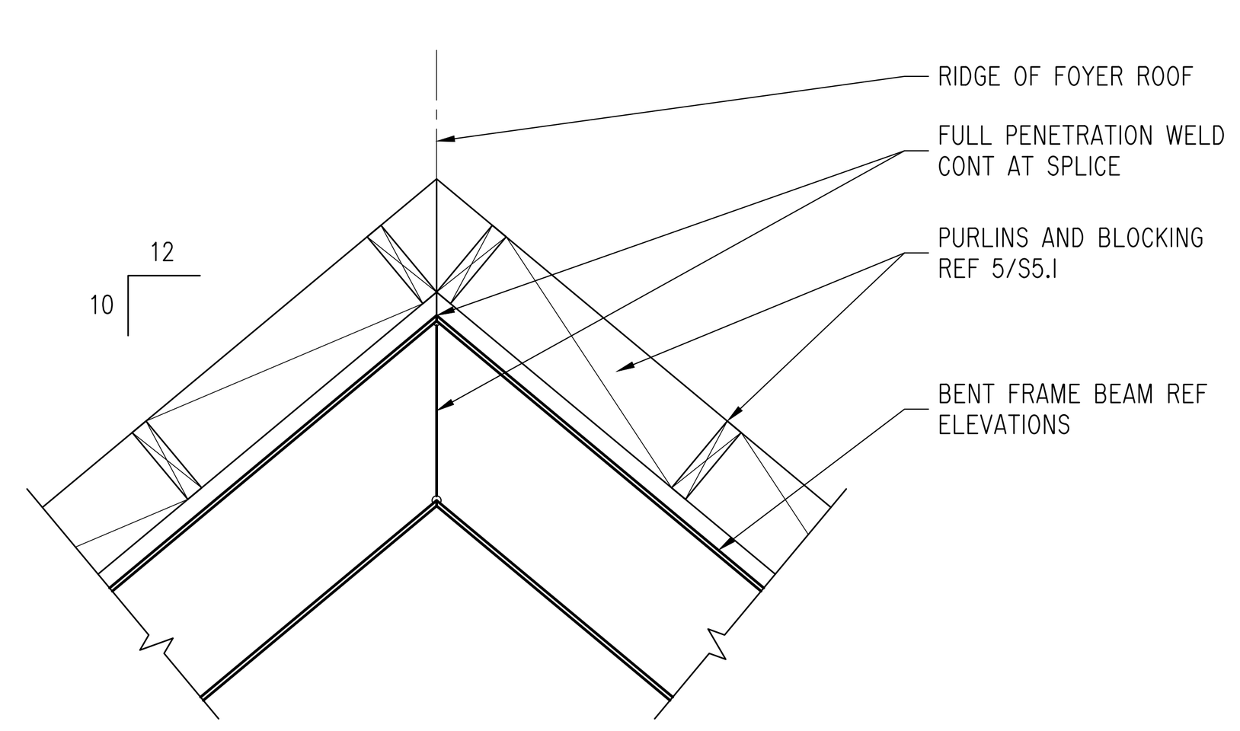
1 **BENT FRAME AT FOYER**
SCALE: 1/4"=1'-0"



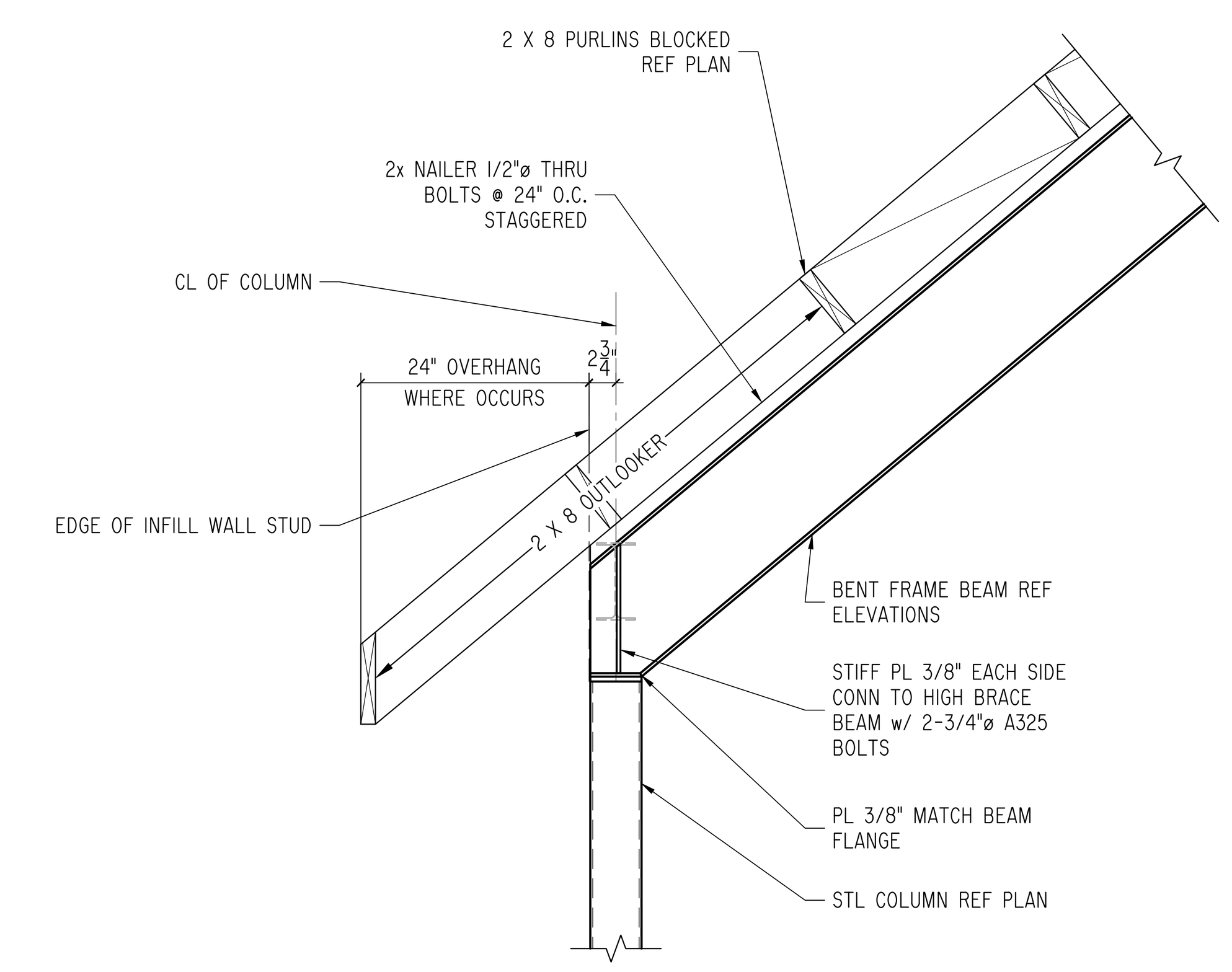
2 **BENT FRAME AT ENTRY**
SCALE: 1/4"=1'-0"



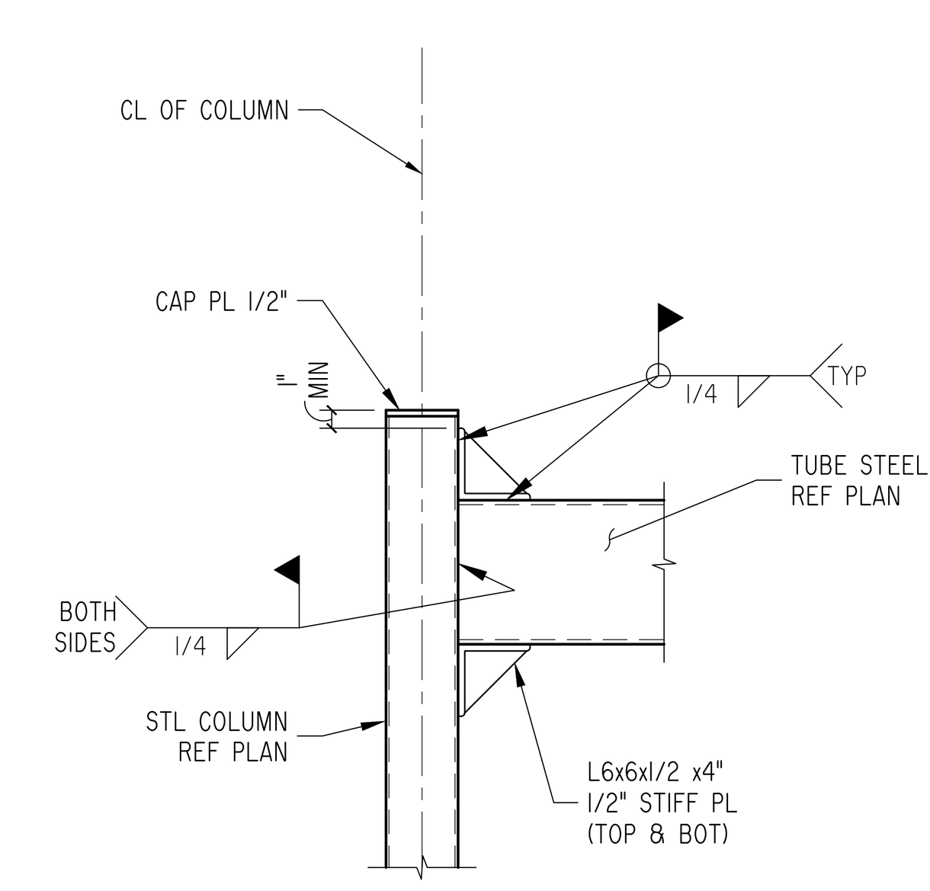
3 **BENT FRAME AT EXTERIOR**
SCALE: 1/4"=1'-0"



4 **BENT FRAME RIDGE DETAIL**
SCALE: 3/4" = 1'-0"



5 **BENT FRAME EAVE DETAIL**
SCALE: 3/4" = 1'-0"



6 **STEEL TUBE TO COLUMN CONNECTION**
SCALE: 3/4" = 1'-0"

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SHEATHING & BRACING SCHEDULE

SW 1/2" THICK GYPSUM WALL BOARD (5/8" THICK AT FIREWALL) W/5d NAILS OR #6 SCREWS AT 7" O.C. AT TOP & BOTTOM PLATES AND STUDS.

T RED-STRUCTURAL GRADE THERMO-PLY (TER 1004-01) INTERIOR SHEATHING FASTENED TO STUDS SPACED 16" O.C. MAX USING MIN. 16GA, 1" CROWN STAPLES OR EQUAL.

EXTERIOR SIDES OF EXTERIOR WALLS:

B 15/32" CDX PLYWOOD APA-RATED SHEATHING (ONE SIDE), BLOCKED, NAILED W/ 10d COMMON NAILS @ 6" O.C. AT EDGES AND 12" O.C. IN FIELD **UNLESS NOTED OTHERWISE. NO OSB PERMITTED DUE TO TILE FINISH**

A 15/32" CDX PLYWOOD APA-RATED SHEATHING (ONE SIDE), BLOCKED, NAILED W/ 10d COMMON NAILS @ 4" O.C. AT EDGES AND 12" O.C. IN FIELD. **UNLESS NOTED OTHERWISE. NO OSB PERMITTED DUE TO TILE FINISH*

STRAPPED FORCE-TRANSFER-AROUND-OPENING WALL PER DETAIL 8/S-7.0

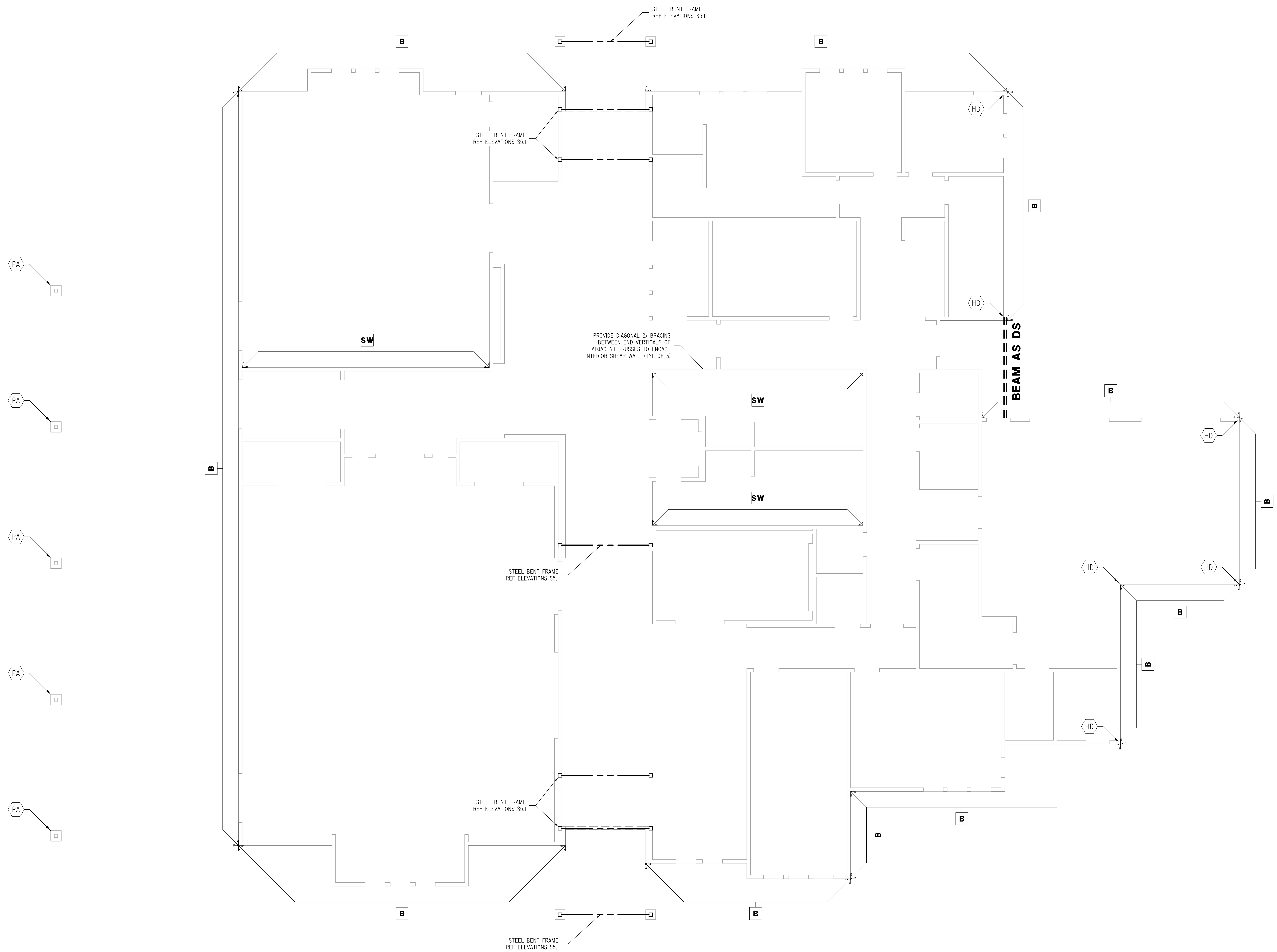
S

NOTES

1. SHEAR WALL A, B, SW
   SILL PLATE ANCHORAGE:
   EXTERIOR: 1/2"ø X 10" ANCHOR BOLTS @ 48" O.C.
   INTERIOR: HILTI X-U P.A.F. (OR EQUAL) @ 8" O.C.
2. STANDARD SILL PLATE ANCHORAGE:
   EXTERIOR: 1/2"ø X 10" ANCHOR BOLTS @ 72" O.C.
   INTERIOR: HILTI X-U P.A.F. (OR EQUAL) @ 16" O.C.
   ALL WALLS: ANCHORS/P.A.F. 12" FROM DOORS & ENDS.

CALLOUTS

DS	DRAG STRUT PER DETAILS 2-4/S-7.0 OR OTHERWISE ENGAGE INTERIOR SHEAR WALLS PER 5-6/S7.0
HD	SIMPSON HDU5-SDS2.5 HOLD-DOWN ON (2)2x STUDS WITH 5/8"ø x6" SCREW ANCHOR
STHD	SIMPSON STHD14 HOLD DOWN (CAST IN)
PA	POSITIVE ANCHORAGE PER DETAIL 9/S-7.0
FT	SIMPSON MTSC52 FLOOR TIE. CONNECT 2-2X STUD ABOVE FLOOR TO 2-2X BELOW, CENTERED ON FLOOR DEPTH, U.N.O.



WINDBRACE PLAN

SCALE: 3/16"=1'-0"

ATS Engineers Inspectors & Surveyors
www.ats-engineers.com
4910 W. Highway 290
AUSTIN, TEXAS 78735
(512) 328-6995
FAX: (512) 328-6996
REGISTR. #2487
ATS Project #: 2402083.1

STATE OF TEXAS
DAVID A. DUNKMAN
122387
LICENSED PROFESSIONAL ENGINEER

10/25/2024 11:00 AM

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

N-VIZION
FORMS • ENVIRONMENTS • IMAGES

Windbrace Plan

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date:	Description:
06.07.24	STR Permit Set
10.24.24	Rev. 1 Permit Set

S6.0

ATS Engineers Inspectors & Surveyors
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4910 W. Highway 290
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DAVID A. DUNKMAN
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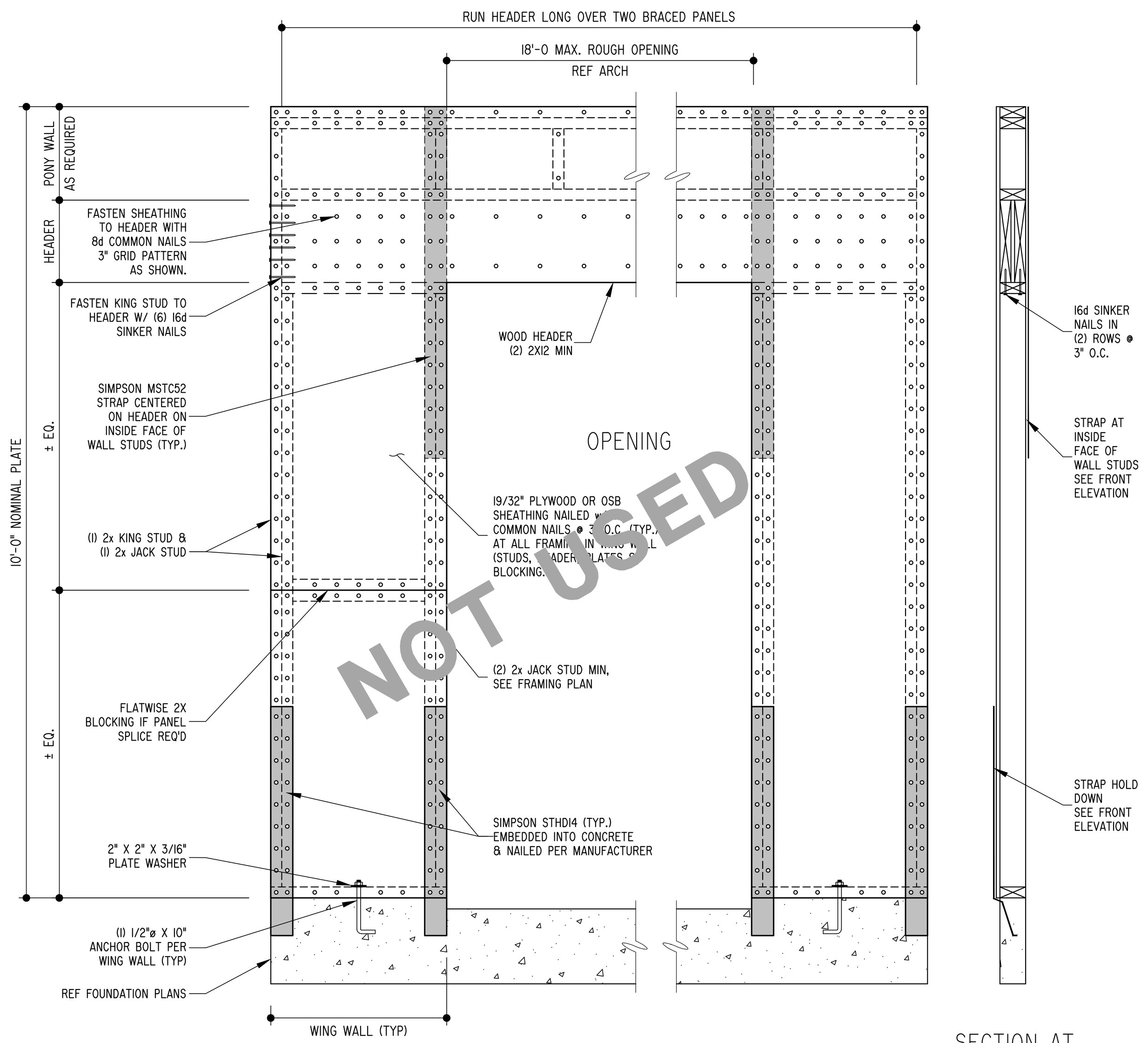
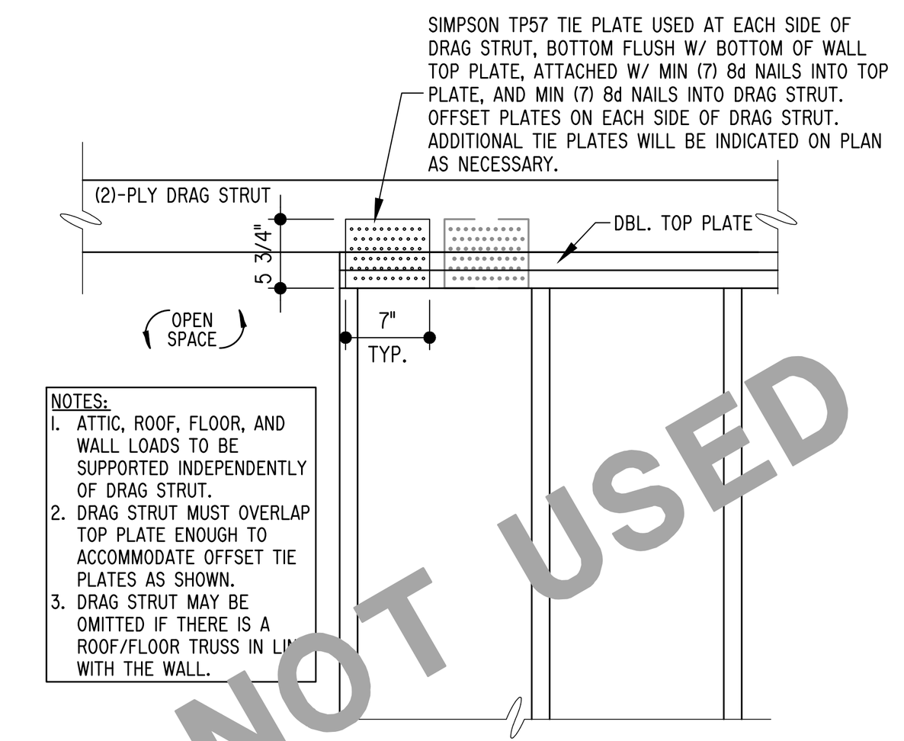
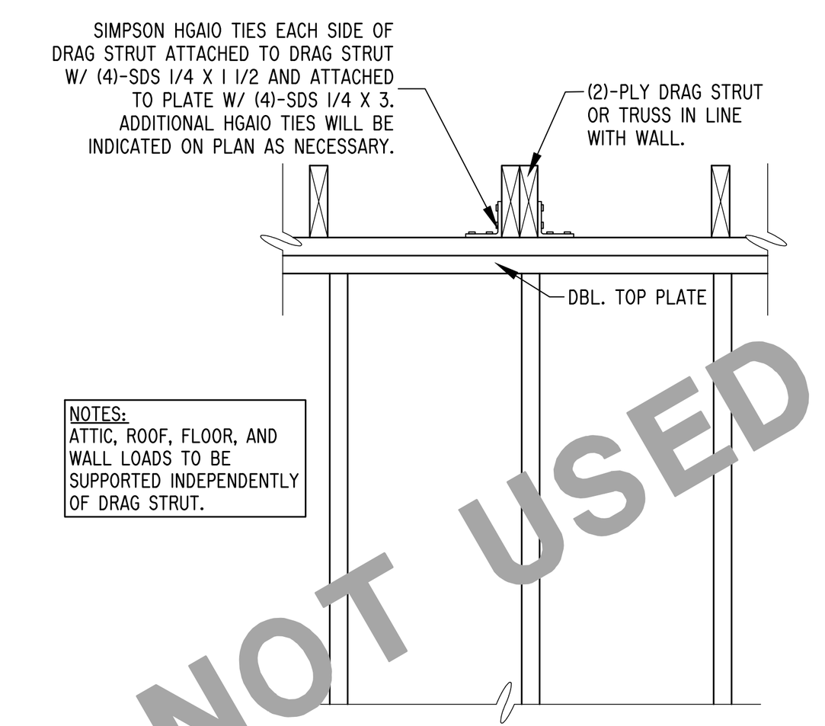


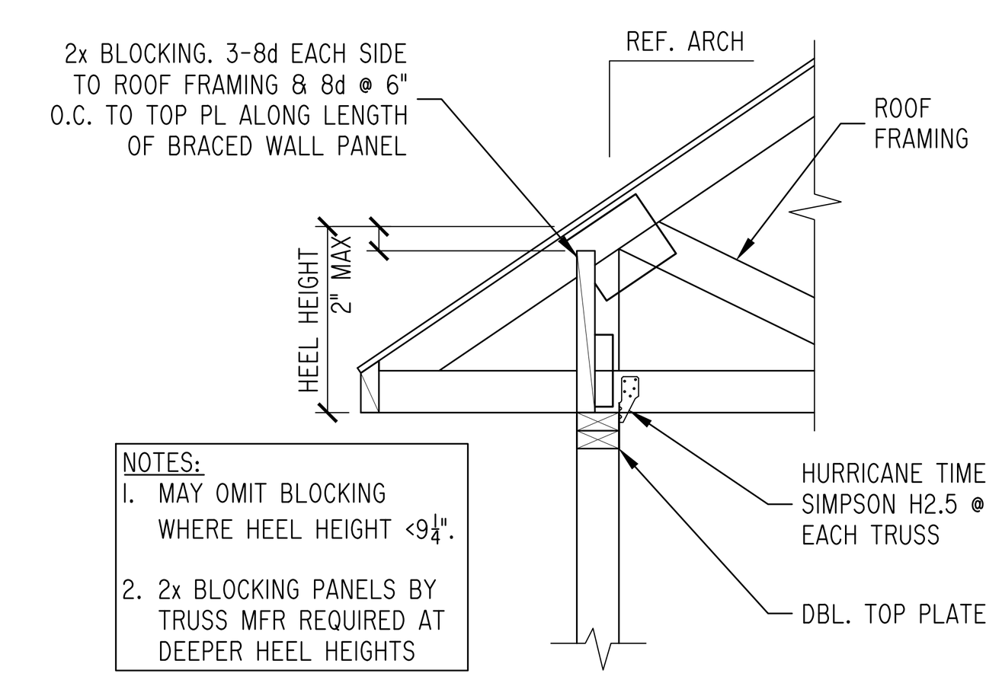
1 **ENGINEERED PORTAL FRAME**
NTS



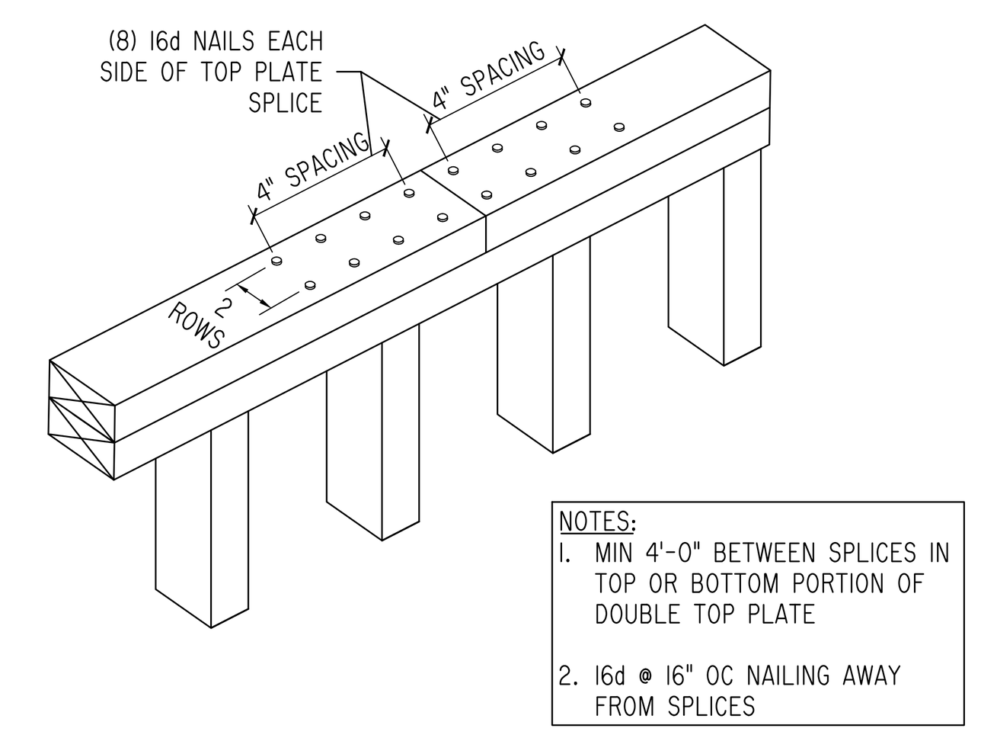
2 PARALLEL CONNECTION **DRAG STRUT TO WALL**



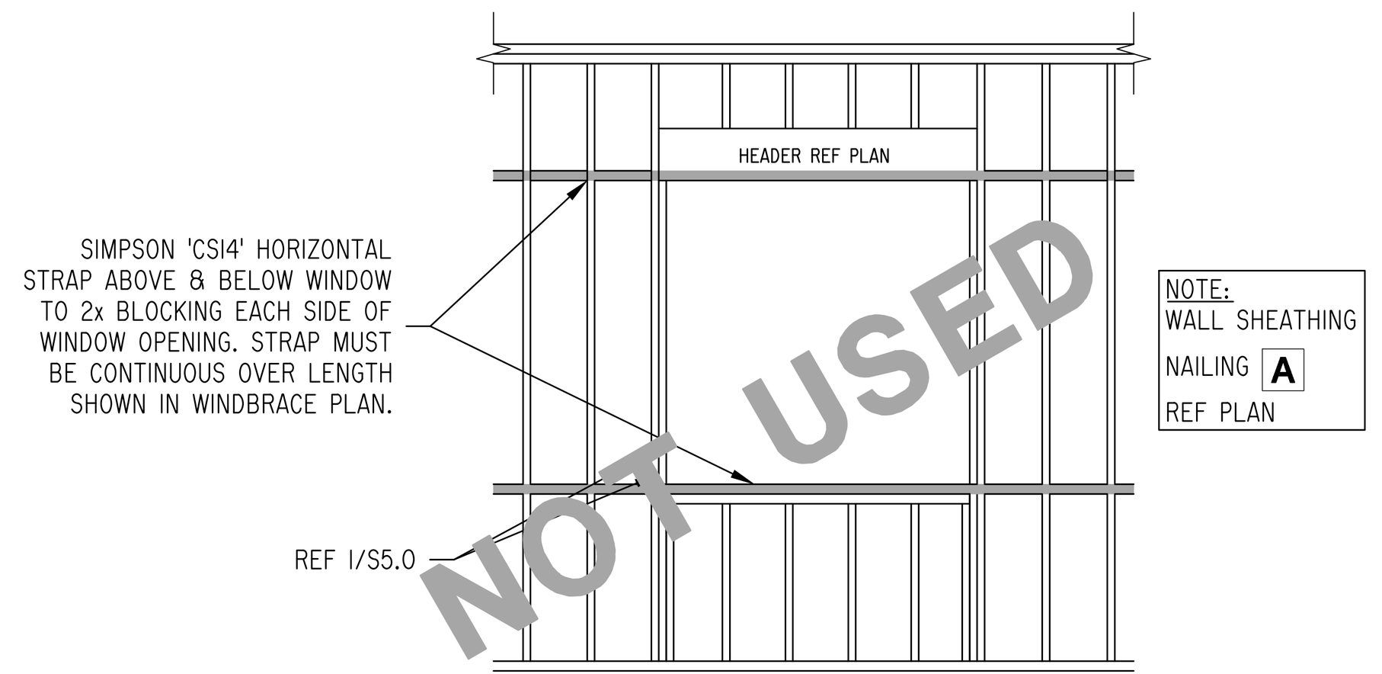
3 PERPENDICULAR CONNECTION **DRAG STRUT TO WALL**



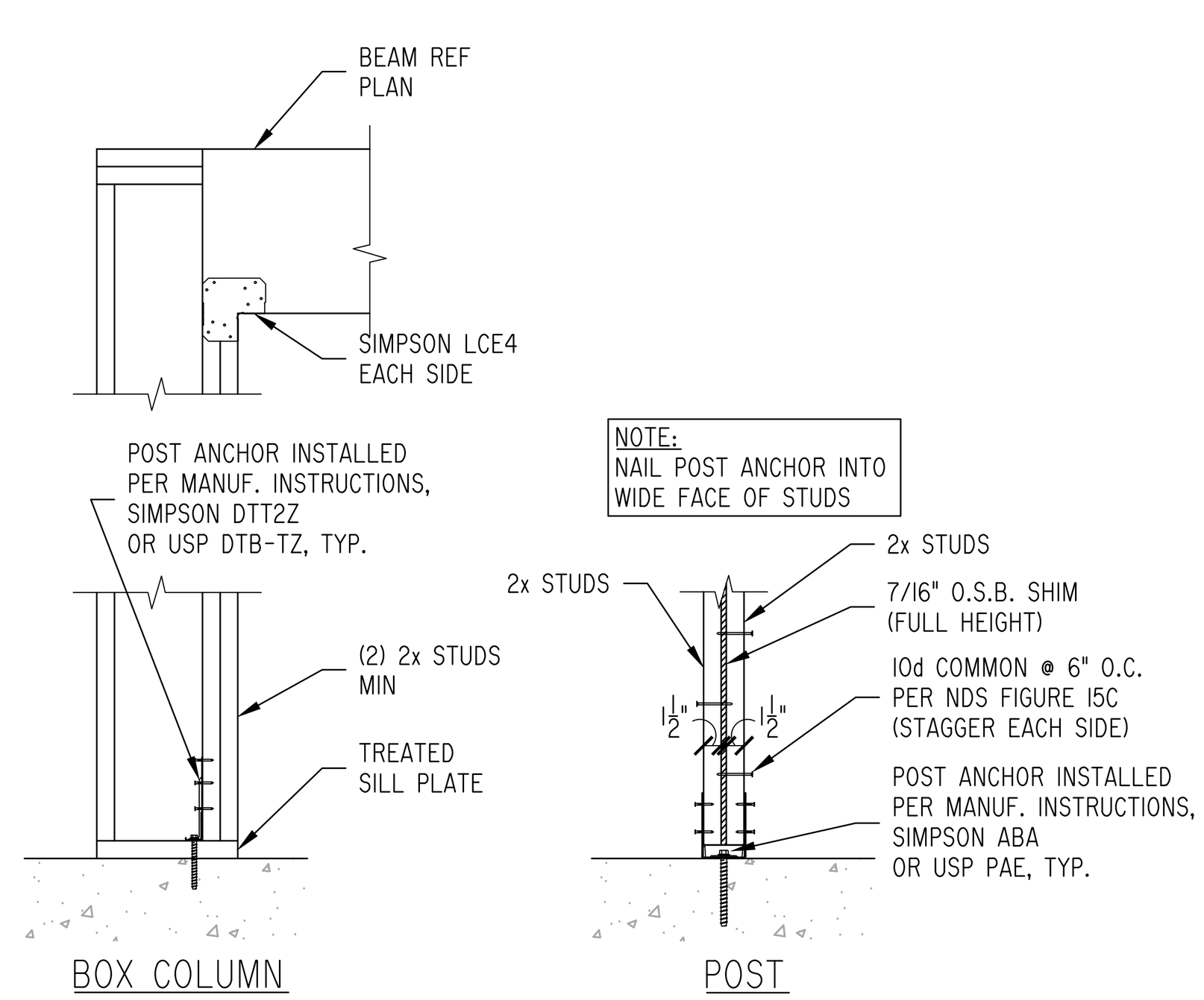
4 BLOCKING **AT RAFTER/TRUSS HEEL**
N.T.S.



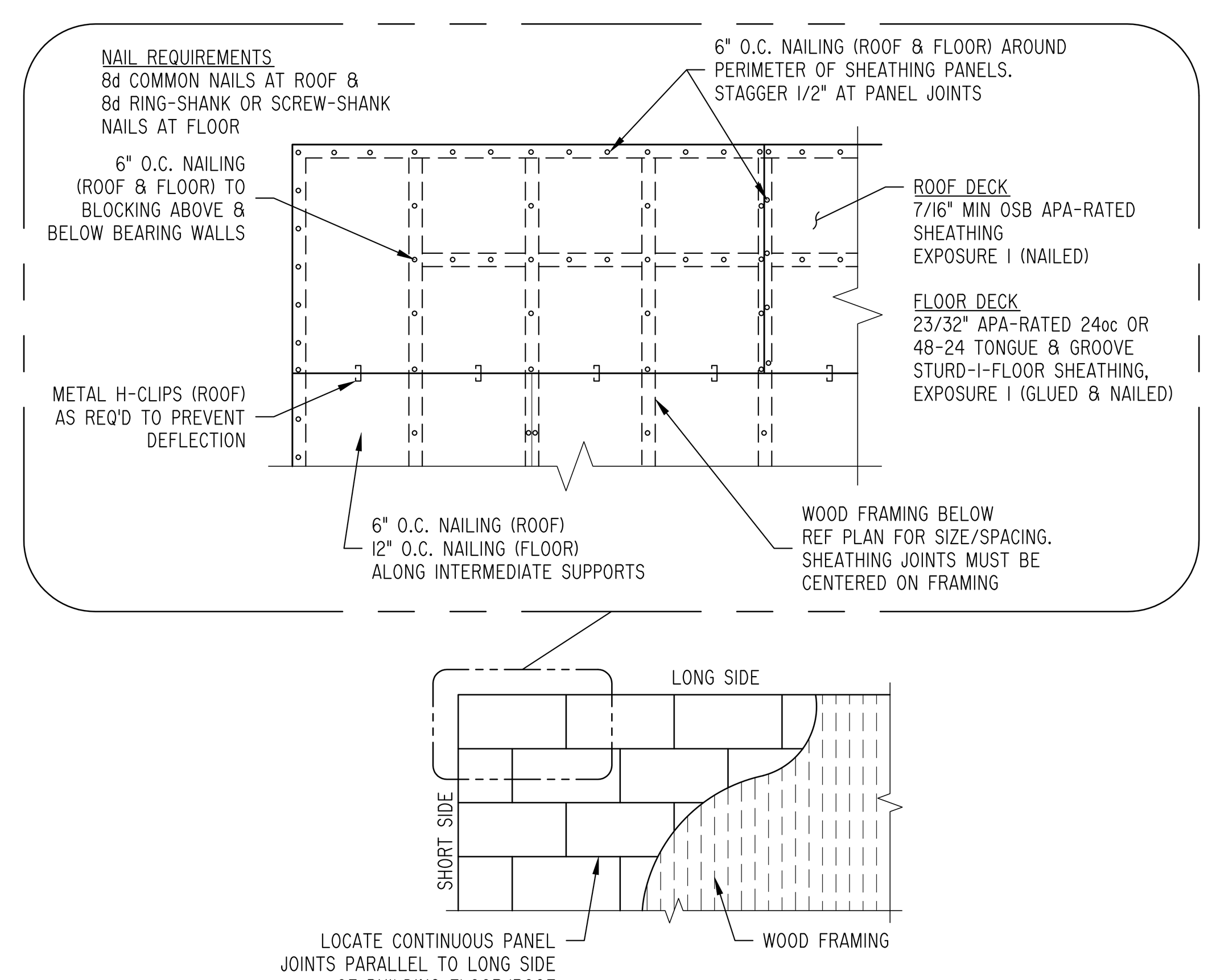
7 **DOUBLE TOP PLATE SPLICE**
NTS



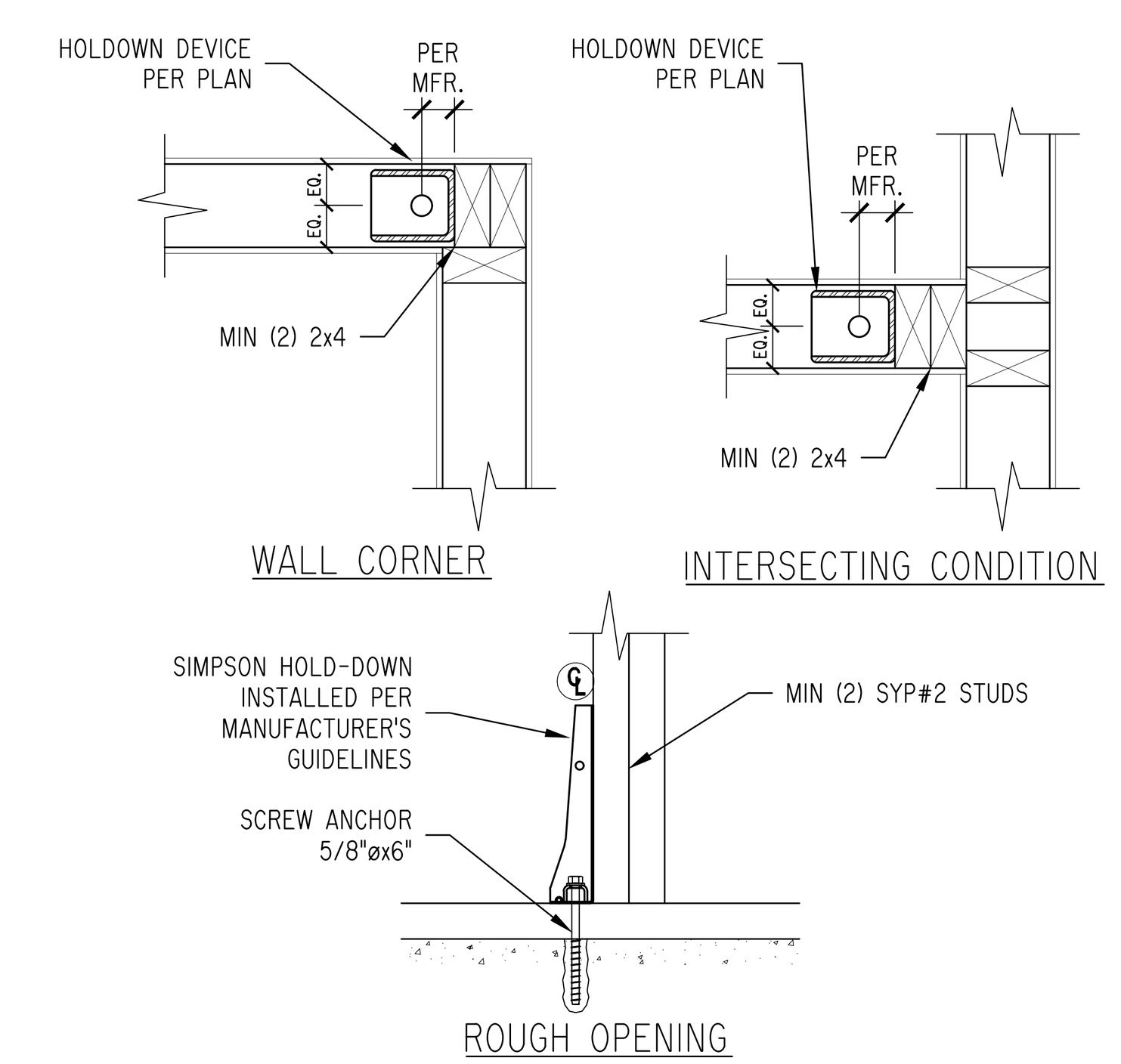
8 FORCE-TRANSFER-AROUND-OPENING **STRAPPED WALL AT WINDOW**
NTS



9 **POSITIVE ANCHORAGE**



8 TYPICAL FLOOR & ROOF **DECK NAILING SCHEDULE**



11 TYPICAL ANCHOR BOLT **INSTALLATION AT HD HOLDOWN**
SCALE: 1-1/2" = 1'-0"

Weed Corley Fish
301 S. Bagdad Rd.
Leander, TX 78641

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Date:	Description:
06.07.24	STR Permit Set
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Windbrace Details

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S7.0

MECHANICAL ABBREVIATIONS

(E)	EXISTING TO REMAIN
AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTICAL LINING
AP	ACCESS PANEL
BDD	BACK DRAFT DAMPER
BFC	BELOW FINISHED CEILING
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
CA	COMPRESSED AIR
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHP	CHILLED WATER PUMP
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CO	CLEAN OUT
COND	CONDENSATE DRAIN
CP	CONDENSATE PUMP
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DB	DRY BULB
DWP	DOMESTIC WATER PUMP
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
ERU	ENERGY RECOVERY UNIT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
FA	FREE AREA
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FLR	FLOOR
FOP	FUEL OIL PUMP
FP	FIRE PUMP
FPM	FEET PER MINUTE
FPTU	FAN POWERED TERMINAL UNIT
FSD	COMBINATION FIRE AND SMOKE DAMPER
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HP	HEAT PUMP
HW	HOT WATER
HWP	HOT WATER PUMP
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
HX	HEAT EXCHANGER
HZ	HERTZ
ID	INSIDE DIAMETER
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
MA	MAKE-UP AIR (OUTSIDE AIR)
MBH	THOUSAND BTU PER HOUR
MOCP	MAXIMUM OVERCURRENT PROTECTION
MOD	MOTOR OPERATED DAMPER
MTD	MOUNTED
MUA	MAKE-UP AIR UNIT
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NK	NECK
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAHU	OUTSIDE AIR HANDLING UNIT
OAT	OUTSIDE AIR TEMPERATURE
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
PBD	PARALLEL BLADE DAMPER
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH (GAUGE)
PTAC	PACKAGED TERMINAL AIR CONDITIONER
RA	RETURN AIR
RAG	RETURN AIR GRILL
RCP	REFLECTED CEILING PLAN
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SD	SMOKE DAMPER
SEF	SMOKE EXHAUST FAN
SF	SUPPLY FAN
SP	STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
VAV	VARIABLE AIR VOLUME UNIT
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
WB	WET BULB
°F	DEGREES FAHRENHEIT

MECHANICAL LEGEND

- BUTTERFLY VALVE
- BALL VALVE
- SWING CHECK VALVE
- GATE VALVE, ANGLE
- THREE WAY CONTROL VALVE
- TWO WAY CONTROL VALVE
- S — SOLENOID VALVE
- PRESSURE REDUCING VALVE (PRV)
- MANUAL AIR VENT
- BALANCING VALVE
- DIRECTION OF FLOW
- STRAINER
- STRAINER WITH BLOW OFF VALVE
- PIPE RISING UP
- PIPE DROPPING DOWN
- PIPE CAP
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- UNION
- ANCHOR
- GUIDE
- EXPANSION JOINT
- THERMOMETER
- GAS PRESSURE REGULATOR
- STRAINER
- ELECTRICALLY TRACED PIPING
- H, W — EXPANSION LOOP (WxH)
- RETURN LINEAR DIFFUSER
- LINEAR DIFFUSER WITH PLENUM
- SUPPLY DIFFUSER
- FLEXIBLE DUCTWORK
- RETURN GRILLE
- EXHAUST GRILLE
- DIRECTION OF FLOW
- T — THERMOSTAT
- H — HUMIDISTAT
- P — PRESSURE SENSOR
- CT - 1-1 — EQUIPMENT DESIGNATION
- A, SIZE (CFM) — AIR OUTLET/INLET DEVICE DESIGNATION

MECHANICAL LEGEND

- POINT OF CONNECTION (NEW TO EXISTING)
- 20x14 — DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN SIZE
- 10Ø — ROUND DUCT DIAMETER SIZE (CLEAR INSIDE DIMENSION)
- RECTANGULAR OR SQUARE TO ROUND OR OVAL TRANSITION
- ROUND EXHAUST DUCT UP
- ROUND EXHAUST DUCT DOWN
- ROUND RETURN DUCT UP
- ROUND RETURN DUCT DOWN
- ROUND SUPPLY DUCT UP
- ROUND SUPPLY DUCT DOWN
- RECTANGULAR EXHAUST DUCT UP
- RECTANGULAR EXHAUST DUCT DOWN
- RECTANGULAR RETURN DUCT UP
- RECTANGULAR RETURN DUCT DOWN
- RECTANGULAR SUPPLY DUCT UP
- RECTANGULAR SUPPLY DUCT DOWN
- VOLUME DAMPER (MANUAL)
- FLEXIBLE CONNECTION
- M — MOTORIZED DAMPER
- S — SMOKE DAMPER
- FUSIBLE LINK FIRE DAMPER
- M — MOTORIZED FIRE SMOKE DAMPER
- BDD — BACK DRAFT DAMPER
- VANED ELBOW
- RADIUS ELBOW
- ACCESS DOOR (AD)
- BRANCH DUCT TAKE-OFF
- INTERNALLY LINED DUCT
- EXISTING TO REMAIN
- DEMOLISHED OR RELOCATED EQUIPMENT OR MATERIALS
- NEW CONSTRUCTION

MECHANICAL GENERAL NOTES

1	ALL WORK PERFORMED FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL BUILDING CODES, MECHANICAL CODES, ENERGY CODES AND THEIR AMENDMENTS. THE MORE STRINGENT CODE SHALL APPLY.
2	CONTRACTOR SHALL VISIT THE PROJECT SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS. FAILURE TO DO SO SHALL NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FROM PERFORMING WORK PROPERLY.
3	CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK UNDER THEIR CONTACT PRIOR TO FABRICATION, ROUGH-IN AND FINAL CONNECTION.
4	HVAC AND FIRE PROTECTION PIPING WORK IS SHOWN DIAGRAMMATIC IN NATURE. DRAWINGS SHOULD NOT BE SCALED. PROVIDE ALL OFFSETS AND FITTINGS REQUIRED TO FIT WITHIN AVAILABLE SPACE. COORDINATE WORK WITH STRUCTURAL, ARCHITECTURAL, PLUMBING AND ELECTRICAL PRIOR TO INSTALLATION.
5	LOCATE ALL EQUIPMENT TO ALLOW FOR SERVICE ACCESS. COORDINATE LOCATION WITH OTHER TRADES. DO NOT ALLOW ACCESS TO BE ENCROACHED UPON BY CONDUITS, PIPE AND OTHER MATERIALS.
6	PROVIDE ACCESS DOORS FOR ALL EQUIPMENT, VALVES, DAMPERS, ETC. ABOVE ALL NON-LAY-IN CEILINGS FOR MAINTENANCE AND SERVICE.
7	ALL RECTANGULAR AND ROUND DUCTWORK IS TO BE CONSTRUCTED OF GALVANIZED SHEET METAL, UNLESS NOTED OTHERWISE. ALL DUCTWORK SHALL BE CONSTRUCTED PER THE LATEST SMACNA DUCT STANDARDS.
8	ALL DUCTWORK SIZES INDICATED ARE CLEAR INSIDE DIMENSIONS. CONTRACTOR TO ALLOW FOR DUCT LINING AS REQUIRED. IF RESIZING IS REQUIRED IT SHALL BE DONE PER THE EQUAL FRICTION METHOD.
9	DUCT RUN-OUTS TO SUPPLY AIR DIFFUSERS SHALL BE THE SAME SIZE AS THE DIFFUSER NECK.
10	FOR EACH HEATING OR COOLING UNIT PROVIDE A TEMPERATURE SENSING DEVICE. LOCATE DEVICE WHERE SHOWN ON DRAWINGS AND COORDINATE LOCATION WITH ARCHITECT, OTHER WALL DEVICES AND PER ADA GUIDELINES.
11	INSTALL ALL MECHANICAL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. IF CONTRACTOR SUBSTITUTES EQUIPMENT AND AFTER APPROVAL BY THE ENGINEER, THE CONTRACTOR SHALL MAKE ALL NECESSARY MODIFICATIONS TO THE SYSTEM AS REQUIRED TO PROVIDE INSTALLATION AT CONTRACTORS COST.
12	CONTRACTOR TO VERIFY ALL ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT WITH ELECTRICAL DRAWINGS BEFORE EQUIPMENT RELEASE.
13	COORDINATE ALL SLEEVE, CHASE AND SLAB BLOCK-OUTS WITH EXISTING STRUCTURE. COORDINATE ACTUAL EQUIPMENT DIMENSION WITH OTHER TRADES.
14	COORDINATE CEILING DIFFUSER FRAME TYPES AND COLORS WITH ARCHITECTURAL CEILINGS.
15	FOR PIPES PASSING THROUGH FIRE RATED WALLS AND FLOORS PROVIDE WITH UL LISTED ASSEMBLIES AND MATERIALS TO OBTAIN REQUIRED FIRE RATING.
16	PROVIDE 1-1/2" ACOUSTICAL LINING ON ALL DUCTWORK WITHIN 10'-0" OF RTU/AHU. ALL OTHER DUCTWORK IS TO BE INSULATED WITH 1-1/2" FIBERGLASS WRAP/INSULATION.
17	PROVIDE ALL TRANSITION AS NECESSARY TO MAKE CONNECTION TO HVAC EQUIPMENT.
18	ALL PIPING, DUCTWORK AND EQUIPMENT SHALL BE SUPPORTED PER THE LATEST EDITION OF SMACNA.
19	PROVIDE DUCT ACCESS DOORS ON ALL MOTORIZED DAMPERS, FIRE DAMPERS, SMOKE DAMPERS, BACKDRAFT DAMPERS AND FIRE/SMOKE DAMPERS.
20	CONTRACTOR SHALL COORDINATE WITH BUILDING MANAGEMENT AND BUILDING ENGINEER FOR ALL BASE BUILDING STANDARDS, DEVICE, CONTROLS AND ALL ASSOCIATED EQUIPMENT AS REQUIRED FOR A COMPLETE INSTALLATION.
21	FLEXIBLE DUCTWORK FOR CONNECTION TO AIR DEVICES SHALL BE LIMITED TO 5'-0" IN LENGTH. FOR LONGER CONNECTIONS USE INSULATED RIGID SPIRAL ROUND DUCTWORK. SPLIT SEAM ROUND DUCTWORK IS NOT ALLOWED.
22	PROVIDE MANUAL VOLUME DAMPERS AT DUCT TAKEOFFS FROM MAINS. DAMPERS SHALL BE LOCATED IN ACCESSIBLE LOCATIONS. AVOID THE INSTALLATION OF DAMPERS AT DIFFUSERS DUE TO NOISE ISSUES.
23	A NEBB OR AABC CERTIFIED BALANCE COMPANY SHALL BE USED TO BALANCE ALL DEVICES TO CFM AND GPM AS REQUIRED ON THE DRAWINGS. PROVIDE BALANCING REPORTS OF ALL EQUIPMENT AND DEVICES TO OWNER.
24	PROVIDE SMACNA DUCT TRANSITIONS TO ALL TERMINAL UNIT INLETS AND OUTLETS FOR CONNECTION TO DUCTWORK.
25	ALL EXHAUST FAN OUTLETS SHALL BE A MINIMUM OF 10' FROM ALL BUILDING AIR INTAKES AND OPENINGS.
26	ALL EXTERIOR BUILDING PENETRATION SHALL BE SEALED WATER TIGHT. ALL INTERIOR WALL AND FLOOR PENETRATIONS FOR DUCTWORK AND PIPING SHALL BE MEET THE FIRE RATING OF THE ARCHITECTURAL PLANS AND WILL BE INSTALLED TO MEET ALL UL ASSEMBLY REQUIREMENTS.
27	PROVIDE MANUAL BALANCE DAMPERS AT EACH BRANCH DUCT TO ALL SUPPLY DIFFUSERS, EXHAUST GRILLS AND DUCTED RETURN GRILLES.
28	PROVIDE 4" CONCRETE HOUSEKEEPING PAD FOR ALL FLOOR MOUNTED AND GRADE MOUNTED EQUIPMENT, UNLESS NOTED OTHERWISE.
29	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOUVER LOCATIONS AND COORDINATE LOUVER PLACEMENT WITH ARCHITECT.
30	PROVIDE MOTORIZED DAMPERS ON ALL EXTERIOR BUILDING PENETRATIONS. INTERLOCK WITH RESPECTIVE FANS. DAMPER TO FAIL CLOSED, UNLESS NOTED OTHERWISE.
31	PROVIDE SMOKE DETECTOR/S ON ALL AIR HANDLING EQUIPMENT 2,000 CFM OR GREATER TO MEET ALL NFPA REQUIREMENTS. FOR AIR HANDLING EQUIPMENT 15,000 CFM OR GREATER PROVIDE MOTORIZED ISOLATION DAMPERS ON ALL INLETS AND OUTLETS OF THE UNIT TO MEET ALL NFPA REQUIREMENTS. DAMPERS TO BE INTERLOCKED WITH UNIT.
32	FIRE PROTECTION CONTRACTOR SHALL MODIFY ALL EXISTING FIRE PROTECTION AND SPRINKLER PIPES AS REQUIRED TO MEET THE MAINTENANCE AND REMOVAL CLEARANCES OF ALL EXISTING MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT.

1

GENERAL NOTE:

A COMMISSIONING PLAN SHALL BE DEVELOPED BY INFINITY MEP+S CONSULTANTS AND SHALL INCLUDE THE FOLLOWING ITEMS PER IECC C408.2.1:

1. A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES.
2. A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PEREFORMED.
3. FUNCTIONS TO BE TESTED INCLUDING, BUT NOT LIMITED TO, CALIBRATIONS AND ECONOMIZER CONTROLS.
4. CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED. TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS.
5. MEASUREABLE CRITERIA FOR PERFORMANCE.

MECHANICAL SHEET LIST

SHEET NUMBER	SHEET NAME
M0.01	MECHANICAL COVER SHEET
M0.02	MECHANICAL SCHEDULES
M0.03	MECHANICAL SCHEDULES
M0.04	MECHANICAL SPECIFICATIONS
M0.05	MECHANICAL SPECIFICATIONS
M2.01	MECHANICAL PLAN
M2.02	MECHANICAL PIPING PLAN
M2.03	MECHANICAL ROOF PLAN
M3.01	MECHANICAL CEILING COORDINATION PLAN
M4.01	MECHANICAL VRF DIAGRAM
M4.02	MECHANICAL VRF DIAGRAM
M6.01	MECHANICAL DETAILS
M6.02	MECHANICAL DETAILS
M6.03	MECHANICAL DETAILS
M7.01	MECHANICAL CONTROLS

CODE SUMMARY

A. **APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO:**
1. CITY OF LEANDER MECHANICAL CODE: 2015 IMC
2. CITY OF LEANDER BUILDING CODE: 2015 IBC
3. CITY OF LEANDER BUILDING CODE: 2021 IBC (TABLES 1004.1.2 AND 1004.5 FROM SECTION 2902.2
4. COMMERCIAL ENERGY CONSERVATION CODE: 2015 IECC
5. CITY OF LEANDER PLUMBING CODE: 2015 IPC
6. CITY OF LEANDER PLUMBING CODE: 2021 IPC SECTION 403.2

STATE OF TEXAS
GREG W. CANTER
87254
LICENSED
PROFESSIONAL ENGINEER
04/23/2025

N-VIZION
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Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set
04-23-25	CITY COMMENTS

MECHANICAL COVER SHEET

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
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INFINITY
MEP+S CONSULTANTS
TBPE Registration Number: 18865
5316 Hwy. 290 Service Rd., Suite 130
Austin, TX 78735
512-692-9224
www.infinitymep.com

M0.01

OUTSIDE AIR CALCULATION FCU-1

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
OFFICE	6	5	30	626	0.06	38	68	0.8	84.45
STORAGE	0	0	0	136	0.06	8	8	0.8	10.2
TOTAL:							76 CFM		95 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 95 CFM

OUTSIDE AIR CALCULATION FCU-2

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
BREAKROOM	7	5	35	470	0.12	56	91	0.8	114.25
CORRIDOR	0	0	0	480	0.06	29	29	0.8	36
OFFICE	1	5	5	144	0.06	9	14	0.8	17.05
STORAGE	0	0	0	358	0.06	21	21	0.8	26.85
TOTAL:							155 CFM		194 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 195 CFM

OUTSIDE AIR CALCULATION FCU-3

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
OFFICE	2	5	10	156	0.06	9	19	0.8	24.2
RECEPTION	4	5	20	134	0.06	8	28	0.8	35.05
STORAGE	0	0	0	279	0.06	17	17	0.8	20.925
TOTAL:							64 CFM		80 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 90 CFM

OUTSIDE AIR CALCULATION FCU-4

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
AV ROOM	0	0	0	35	0	0	0	0.8	0
TOTAL:							0 CFM		0 CFM

BALANCE EXISTING OUTSIDE AIR DAMPER IN MECHANICAL ROOMS SERVING FLOOR TO: 0 CFM

OUTSIDE AIR CALCULATION FCU-5

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
AUDITORIUM	16	5	80	242	0.1	24	104	0.8	130.25
TOTAL:							104 CFM		130 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 130 CFM

OUTSIDE AIR CALCULATION FCU-6

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
OFFICE	10	5	50	1053	0.06	63	113	0.8	141.475
TOTAL:							113 CFM		141 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 145 CFM

OUTSIDE AIR CALCULATION FCU-7

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
CORRIDOR	0	0	0	1629	0.06	98	98	0.8	122.175
RECEPTION	4	5	20	186	0.06	11	31	0.8	38.95
STORAGE	0	0	0	243	0.06	15	15	0.8	18.225
TOTAL:							143 CFM		179 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 180 CFM

OUTSIDE AIR CALCULATION FCU-8

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
AUDITORIUM	52	5	260	569	0.1	57	317	0.8	396.125
TOTAL:							317 CFM		396 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 400 CFM

FAN SCHEDULE

EQUIPMENT		SERVICE	LOCATION	UNIT TYPE		CFM	EXT. S.P. (IN W.G.)	MOTOR			ELECTRICAL DATA					OPERATIONAL WEIGHT (LBS.)	NOTES
TYPE	NUMBER			MANUFACTURER	MODEL			RPM	BHP	HP	VOLTAGE	PHASE	FLA	MCA	MOCP		
EF	1-1	EXHAUST	CORR.	GREENHECK	SQ-120-VG	750	0.75	1250	0.17	1/2	115	1	6.6	8.2	15	55	ALL

NOTES:

1. PROVIDE WITH FACTORY MOUNTED ELECTRICAL DISCONNECT AND EC MOTOR.
2. FAN SHALL BE CONTROLLED BY BUILDING TIME CLOCK.
3. PROVIDE WITH SPRING ISOLATION HANGERS. FAN TO BE SUSPENDED FROM STRUCTURE ABOVE.

OUTSIDE AIR CALCULATION FCU-9

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
AUDITORIUM	52	5	260	569	0.1	57	317	0.8	396.125
TOTAL:							317 CFM		396 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 400 CFM

OUTSIDE AIR CALCULATION FCU-10

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
AUDITORIUM	81	5	405	969	0.1	97	502	0.8	627.375
TOTAL:							502 CFM		627 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 630 CFM

OUTSIDE AIR CALCULATION FCU-11

ROOM TYPE	PEOPLE	PEOPLE OUTSIDE AIR RATE	OCCUPANT AIR RATE	ROOM AREA	AREA OUTSIDE AIR RATE	AREA AIR RATE 2	BREATHING ZONE OUTDOOR AIR	ZONE AIR DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIR
	Pz	Rp	Pz*Rp	Ra	Az	Rz*Az	Vbz = RpPz + RaAz	Ez	Voz = Vbz/ Ez
AUDITORIUM	81	5	405	969	0.1	97	502	0.8	627.375
TOTAL:							502 CFM		627 CFM

BALANCE NEW OUTSIDE AIR DAMPER TO 630 CFM

AIR DEVICE SCHEDULE

DESIGNATION	MANUFACTURER	MODEL	MATERIAL	SERVICE	FACE DIMENSIONS	NECK DIMENSIONS	DESCRIPTION	NOTES
A	TITUS	OMNI	STEEL	SUPPLY	PER PLANS	PER PLANS	PLAQUE DIFFUSER	1,2,3
B	TITUS	OMNI	STEEL	SUPPLY	12x12	PER PLANS	PLAQUE DIFFUSER	1,2,3
C	TITUS	FL-20	STEEL	SUPPLY	48" LONG	PER PLANS	FLOWBAR, 2" SLOT, STRAIGHT END BORDER, HIGH THROW, PROVIDE WITH FPBI-20 PLENUMS	1,2,3,4
E	TITUS	PAR	STEEL	RETURN	24X24	PER PLANS	PERFORATED GRILLE	1,2,3
F	TITUS	FL-20	STEEL	RETURN	-	PER PLANS	FLOWBAR, 2" SLOT, STRAIGHT END BORDER; PROVIDE WITH LIGHT SHIELD.	1,2,3,4
G	TITUS	OMNI	STEEL	EXHAUST	PER PLANS	PER PLANS	PLAQUE AIR GRILLE	1,2,3

NOTES:

1. PROVIDE WITH BALANCING DAMPER AT BRANCH TAKEOFF.
2. COORDINATE BORDER TYPE AND COLOR WITH ARCHITECT PRIOR TO PURCHASE.
3. MATCH BUILDING STANDARD DIFFUSER/GRILLE. COORDINATE EXACT SPECIFICATION WITH BUILDING ENGINEER.
4. PROVIDE WITH BLANK-OFFS FOR UNUSED PORTIONS OF SLOTS AND CORNER/END PIECES TO FORM CONTINUOUS SLOT AS SHOWN ON PLANS.

VRF FAN COIL SCHEDULE WITH HEAT SCHEDULE

EQUIPMENT		LOCATION	UNIT		CFM	MIN. O.A. CFM	EXT. S.P. (IN.W.G.)	HP	COOLING COIL						HEAT PUMP HEATING			ELECTRICAL DATA				OPERATIONAL WEIGHT (LBS.)	NOTES
									CAPACITY		EAT		LAT										
TYPE	NUMBER		MANUFACTURER	MODEL					TOTAL MBH	SENSIBLE MBH	DB (°F)	WB (°F)	DB (°F)	WB (°F)	CAPACITY (MBH)	EAT (°F)	LAT (°F)	VOLTAGE	PHASE	MCA	MOCP		
FCU	1-1	OFFICE	DAIKIN	FXMQ36TBVJU	1055	95	0.5	0.49	29.3	22.4	74.5	63.4	55	54	29.9	67.3	90	208	1	3.1	15	105	1-8
FCU	1-2	DELIVERY	DAIKIN	FXMQ36TBVJU	835	195	0.5	0.49	24.1	17.3	74.1	63.7	55	54	28.8	62.3	90	208	1	3	15	105	1-8
FCU	1-3	CORR.	DAIKIN	FXMQ36TBVJU	960	90	0.5	0.49	27.6	20	74.2	63.7	55	54	31.9	63.3	90	208	1	3.1	15	105	1-9
FCU	1-4	AV	DAIKIN	FXAQ18PVJU	500	0	0.5	43W	13.2	10.9	75	63	55	54	11.2	72	90	208	1	0.4	15	35	1-8
FCU	1-5	CORR.	DAIKIN	FXSQ12TBVJU	300	130	0.5	0.1	9.7	5.8	72.8	64.7	55	54	15.2	49.5	90	208	1	0.8	15	55	1-8
FCU	1-6	ARRANGE.	DAIKIN	FXMQ36TBVJU	1055	145	0.5	0.49	29.3	22.4	74.5	63.4	55	54	29.9	67.3	90	208	1	3.1	15	105	1-8
FCU	1-7	MENS	DAIKIN	FXMQ54TBVJU	1655	180	0.5	0.47	45.9	35	74.5	63.4	55	54	47.9	66.8	90	208	1	3.6	15	115	1-10
FCU	1-8	CORR.	DAIKIN	FXMQ54TBVJU	1550	400	0.5	0.47	46.1	31.5	73.7	64	55	54	60.8	58.6	90	208	1	3.6	15	115	1-10
FCU	1-9	CORR.	DAIKIN	FXMQ54TBVJU	1550	400	0.5	0.47	46.1	31.5	73.7	64	55	54	60.8	58.6	90	208	1	3.6	15	115	1-10
FCU	1-10	STORAGE	DAIKIN	FXMQ72MVJU	2050	630	0.5	380W x 2	61.6	40	73.4	64.3	55	54	85.8	55.6	90	208	1	9	15	305	1-10
FCU	1-11	STORAGE	DAIKIN	FXMQ72MVJU	2050	630	0.5	380W x 2	61.6	40	73.4	64.3	55	54	85.8	55.6	90	208	1	9	15	305	1-10

NOTES:

1. PROVIDE WITH ELECTRICAL DISCONNECT.
2. SELECT DIRECT DRIVE FCU FAN AT MEDIUM SPEED.
3. PROVIDE DRAIN PAN FLOAT SWITCH. INTERLOCK SWITCH WITH UNIT TO SHUT DOWN FCU UPON PRIMARY DRAIN BECOMING RESTRICTED.
4. PROVIDE WITH FACTORY MOUNTED DRAIN PUMP AND OVERFLOW SWITCH (DUCTED UNITS). IF ADDITIONAL CONDENSATE PUMP IS NEEDED, PROVIDE WITH LITTLE GIANT OR EQUAL. INTERLOCK WITH CONDENSATE PUMP FLOAT SWITCH.
5. PROVIDE WALL MOUNTED THERMOSTAT AS PER VRF SPECIFICATIONS.
6. PROVIDE WITH 2" DISPOSABLE FILTER.
7. UNIT SHALL HAVE SELF-DIAGNOSTIC FUNCTION, AUTO-RESTART, AND GROUP CONTROL.
8. PROVIDE TOUCH SCREEN INTERFACE TO ALLOW SCHEDULING OF ALL UNITS AND WEB INTERFACE OVER A CUSTOMER SUPPLIED IP ADDRESS.
9. CONTRACTOR SHALL PROVIDE SMOKE DETECTORS IN RETURN AIR DUCT UPSTREAM OF OUTDOOR AIR CONNECTION PER IMC - SECTION 606.2.2.
10. CONTRACTOR SHALL PROVIDE SOUND ACTUATOR.

VRF HEAT PUMP SCHEDULE

EQUIPMENT		LOCATION	UNIT		AMBIENT TEMPERATURE (°F)	REFRIGERANT	# OF MODULES	MATCHED TOTAL CAPACITY (MBH)	NUMBER OF FANS	IEER	ELECTRICAL DATA					OPERATIONAL WEIGHT (LBS.)	NOTES
TYPE	NUMBER		MANUFACTURER	MODEL							VOLTAGE	PHASE	RLA	MCA	MOCP		
HP	1-1	MECH YARD	DAIKIN	REYQ168AATJA	105	R-410A	1	163.1	2	22.7	208	3	12.5 + 20	54.9	60	790	ALL
HP	1-2	MECH YARD	DAIKIN	REYQ192AAYDA	105	R-410A	1	186.2	2	21	208	3	16.6 + 16.6	59.8	60	960	ALL

NOTES:

1. MOUNT ON 6" CONCRETE HOUSEKEEPING PAD.
2. MAINTAIN ALL MANUFACTUER REQUIRED CLEARANCES.
3. PROVIDE WITH ELECTRICAL DISCONNECT SWITCH.
4. PROVIDE WITH LOW AMBIENT STANDARD.

VRF HEAT RECOVERY BOX SCHEDULE

EQUIPMENT		SERVICE	LOCATION	UNIT		CAPACITY			BOX DIMENSIONS			ELECTRICAL DATA				OPERATIONAL WEIGHT (LBS.)	NOTES
TYPE	NUMBER			MANUFACTURER	MODEL	TOTAL MBH	NO. OF PORTS	PORT MBH	LENGTH (IN)	HEIGHT (IN)	WIDTH (IN)	VOLTAGE	PHASE	MCA	MOCP		
HRB	1-1	HP 1-1	CORR.	DAIKIN	BSF8Q54TVJ	290	8	54	24	10	24	208	1	0.8	15	85	ALL
HRB	1-2	HP 1-2	CORR.	DAIKIN	BSF8Q54TVJ	290	8	54	24	10	24	208	1	0.8	15	85	ALL
HRB	1-3	DOAS 1-1	BREAK ROOM	DAIKIN	BSF8Q54TVJ	290	8	54	24	10	24	208	1	0.8	15	85	ALL

NOTES:

1. PROVIDE WITH ELECTRICAL DISCONNECT SWITCH.
2. CONTRACTOR TO FIELD INSTALL 2-POSITION ISOLATION VALVE (MIN. 800 PSI AND 300°F RATING) UPSTREAM OF HEAT RECOVERY BOX. INSTALL VALVE 6"-12" UPSTREAM IN AN ACCESSIBLE LOCATION AND PROVIDE ACCESS DOOR (CEILING ACCESS PANEL) IF NECESSARY.
3. CONTRACTOR TO MAINTAIN SERVICE CLEARANCE OF 18" ON FRONT (ELECTRICAL CONNECTION), 12" ON SIDES AND 4" ON TOP.
4. Y-BRANCHES DOWNSTREAM OF A PORT TO ACCOMMODATE MORE THAN ONE INDOOR UNIT PER PORT IS NOT ACCEPTABLE.
5. INDOOR UNITS CONNECTED TO THE HEAT RECOVERY BOX MUST BE ABLE TO INDEPENDENTLY HEAT OR COOL REGARDLESS OF MODE OF ANY OTHER INDOOR UNIT ON HEAT RECOVERY BOX.
6. CONTRACTOR IS RESPONSIBLE FOR ANY COST INCURRED USING ALTERNATE MANUFACTURER HEAT RECOVERY BOX INCLUDING BUT NOT LIMITED TO ELECTRICAL, CONDENSATE PIPING, REFRIGERANT PIPING, OR STRUCTURAL CHANGES.
7. ELEVATION DIFFERENCE BETWEEN HEAT RECOVERY BOX AND INDOOR UNIT SHALL NOT EXCEED 49 FEET.

DIFFUSER NECK SIZES

SUPPLY CFM (MIN-MAX)	RETURN CFM (MIN-MAX)	RECTANGULAR NECK SIZE (IN.)	ROUND NECK SIZE (ø)
0 - 100	0-90	6x6	6"
101 - 200	91-200	8x8	8"
201 - 400	201-300	10x10	10"
401 - 600	301-450	12x12	12"
601 - 900	451-700	14x14	14"
--	701-2000	22 x 22	--

DUCT INSULATION SCHEDULE

DUCT INSULATION	TYPE	MIN./ INSTALLED INSULATION VALUE	MIN. THICKNESS	MIN. NOMINAL DENSITY	CONCEALED: SUPPLY	CONCEALED: RETURN	CONCEALED: EXHAUST	CONCEALED: OUTSIDE AIR	CONCEALED: JACKET	EXPOSED IN NON-SERVICE SPACES: SUPPLY	EXPOSED IN NON-SERVICE SPACES: RETURN	EXPOSED IN NON-SERVICE SPACES: EXHAUST	EXPOSED IN NON-SERVICE SPACES: OUTSIDE AIR	EXPOSED IN NON-SERVICE SPACES: JACKET	EXPOSED IN SERVICE/ MECHANICAL ROOMS: SUPPLY	EXPOSED IN SERVICE/ MECHANICAL ROOMS: RETURN	EXPOSED IN SERVICE/ MECHANICAL ROOMS: EXHAUST	EXPOSED IN SERVICE/ MECHANICAL ROOMS: OUTSIDE AIR	EXPOSED IN SERVICE/ MECHANICAL ROOMS: JACKET	NOTES
ABOVE GROUND OUTDOOR ROUND/ FLAT-OVAL/ RECTANGULAR DUCT	MINERAL FIBER BLANKET	R-8	2	1-1/2																
	MINERAL FIBER BOARD	R-8	2	3	X	X		X	FSK	X	X		X	ALUMINUM SMOOTH 55-60 MILS THICK	X	X		X	ALUMINUM SMOOTH 55-60 MILS THICK	1
	DOUBLE WALL, INSULATED	R-8	NOTE 2	NOTE 2																
INDOOR ROUND/ FLAT-OVAL/ RECTANGULAR DUCT	MINERAL FIBER BLANKET	R-6	2	3/4	X	X		X	FSK						X	X		X	FSK	1
	MINERAL FIBER BOARD	R-6	1-1/2	2																
	DOUBLE WALL, INSULATED	R-6	NOTE 2	NOTE 2						X	X		X	NONE						2

NOTES:

1. REFER TO SPECIFICATIONS FOR ADDITONAL INSULATION REQUIREMENTS AND JACKET DETAILS.
2. REFER TO SPECIFICATONS FOR REQUIREMENTS OF DOUBLE WALLED DUCT.
3. CONDITIONED OUTSIDE AIR DUCTWORK WILL REQUIRE INSULATION.
4. AIR CONDITIONING AND REFRIGERATION PIPE AND TUBING LINES SHALL BE INSULATED WITH ACR TYPE INSULATION HAVING A THERMAL RESISTIVITY OF NOT LESS THAN R-4.

STATE OF TEXAS
GREG W. CANTER
87854
LICENSED
PROFESSIONAL ENGINEER
04/23/2025

[redacted]

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MECHANICAL SCHEDULES

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Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set
04-23-25	CITY COMMENTS

INFINITY
MEP+S CONSULTANTS
TBPE Registration Number: 18865
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M0.02

[redacted]

DX DOAS UNIT SCHEDULE

EQUIPMENT			UNIT				SUPPLY FAN							DX COOLING COIL							HEAT PUMP HEATING COIL			AIR FILTER	ELECTRICAL DATA				
														EAT		LAT		CAPACITY											
TYPE	NUMBER	LOCATION	MANUFACTURER	MODEL	TOTAL AIR FLOW	MIN OUTSIDE AIRFLOW	NO. OF FANS	CFM/FAN	EXT. S.P. (IN.W.G.)	TOTAL S.P. (IN W.G.)	RPM	BHP/FAN	HP/FAN	DB (°F)	WB (°F)	DB (°F)	WB (°F)	TOTAL MBH	SENSIBLE MBH	REFRIGERANT	MBH	EAT (°F)	LAT (°F)	MERV FINAL	VOLTAGE	PHASE	FLA	OPERATIONAL WEIGHT (LBS.)	NOTES
DOAS	1-1	BREAK ROOM	DAIKIN	BCHD0401	2860	2860	1	2860	1	1.5	1018	1.06	5	98.9	74.8	54.6	53.4	205	138.4	R-410A	247.9	25	90	13	208	3	13.6	635	ALL

NOTES:

1. PROVIDE WITH FACTORY MOUNTED DISCONNECT.
2. UNIT TO BE SELECTED AT MEDIUM SPEED.
3. PROVIDE WITH EC MOTOR.
4. PROVDE WITH REFRIGERANT LINE LINK KIT.
5. PROVIDE WITH HOT GAS REHEAT TO PROVIDE 70°F LAT.
6. PROVIDE WITH 7-DAY PROGRAMMABLE WALL-MOUNTED THERMOSTAT.
7. PROVIDE WITH CONTROL BOXES MOUNTED ON UNIT.
8. PROVIDE CUSTOM CONTROL CONTROLLER.

(DOAS) VRF HEAT PUMP SCHEDULE

EQUIPMENT			UNIT								ELECTRICAL DATA					
TYPE	NUMBER	LOCATION	MANUFACTURER	MODEL	AMBIENT TEMPERATURE (°F)	REFRIGERANT	# OF MODULES	MATCHED TOTAL CAPACITY (MBH)	NUMBER OF FANS	IEER/EER/COP	VOLTAGE	PHASE	MCA	MOCP	OPERATIONAL WEIGHT (LBS.)	NOTES
CU DOAS	1-1A	MECH YARD	DAIKIN	REYQ96XBTJA	105	R-410A	1	91.8	2	19.2/11.5/3.46	208	3	38.1	45	730	ALL
CU DOAS	1-1B	MECH YARD	DAIKIN	REYQ96XBTJA	105	R-410A	1	91.8	2	19.2/11.5/3.46	208	3	38.1	45	730	ALL

NOTES:

1. MOUNT ON 6" CONCRETE HOUSEKEPING PAD.
2. MAINTAIN ALL MANUFACTUER REQUIRED CLEARANCES.
3. PROVIDE WITH VARIABLE SPEED COMPRESSORS.
4. PROVIDE WITH ELECTRICAL DISCONNECT SWITCH AND SINGLE POINT POWER CONNECTION.
5. PROVIDE WITH LOW AMBIENT STANDARD.
6. PROVIDE PIPING CONNECTION KIT TO TIE CU DOAS 1-1A AND CU DOAS 1-1B TOGETHER.

ELECTRIC UNIT HEATER SCHEDULE

EQUIPMENT				UNIT		HEATING COIL			FAN		ELECTRICAL DATA			
TYPE	NUMBER	SERVICE	LOCATION	MANUFACTURER	MODEL	CAPACITY KW	CONTROL STEPS	TEMP. RISE (°F)	CFM	HP	VOLTAGE	PHASE	HZ	NOTES
EUH	1-1	SPRK.	SPRK.	INDEECO	UCI	5	1	23	700	1/30	208	1	60	ALL

NOTES:

1. PROVIDE WITH ELECTRICAL DISCONNECT.
2. PROVIDE WITH CEILING SUSPENSION KIT.

GRAVITY VENTILATOR SCHEDULE

EQUIPMENT				UNIT		THROAT DIMENSIONS							
TYPE	NUMBER	SERVICE	LOCATION	MANUFACTURER	MODEL	LENGTH (IN)	HEIGHT (IN)	WIDTH (IN)	CFM	THROAT MAX FACE VELOCITY (FPM)	THROAT AREA (SQ. FT.)	MAX. PRESSURE DROP (IN W.G.)	NOTES
GV	1-1	RELIEF	ROOF	GREENHECK	GRSR	16	10	16	680	600	1.12	0.06	1,3
GV	1-2	RELIEF	ROOF	GREENHECK	GRSR	20	10	20	1200	600	1.83	0.06	1,3
GV	1-3	OUTSIDE AIR	ROOF	GREENHECK	GRSI	30	18	30	2860	600	5.03	0.08	1,2
GV	1-4	EXHAUST	ROOF	GREENHECK	GRSR	12	10	12	750	800	0.82	0.1	1,2

NOTES:

1. PROVIDE WITH MANUFACTURERS ROOF CURB MIN. 12" HIGH MATCHED TO ROOF PITCH AND SLOPE.
2. PROVIDE WITH BIRDSCREEN, DAMPER TRAY & 2 POS. MOTORIZED DAMPER WITH END SWITCH AND DRY CONTACTS.
3. PROVIDE WITH BIRDSCREEN, DAMPER TRAY & BAROMETRIC RELIEF DAMPER.
4. PROVIDE BLACK FINISH. COORDINATE WITH ARCHITECT FOR FINAL FINISH COLOR.

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

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MECHANICAL SCHEDULES

Date	Description
10-15-24	IFP
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M0.03

MECHANICAL SPECIFICATIONS

SECTION 23 05 00 - COMMON WORK RESULTS FOR HVAC

1. DEMOLITION: REMOVE DUCTS/PIPE TO ABOVE CEILING OR BELOW FLOOR. RE-SUPPORT ANY REMAINING DUCT/PIPE THAT WAS SUPPORTED BY DEMOLITION WALLS. DAMAGE TO EXISTING MATERIALS/EQUIPMENT WILL BE REPAIRED AT NO ADDITIONAL COST. GIVE DEMOLISHED EQUIPMENT TO OWNER, DISPOSE OF IF OWNER DOES NOT WANT. REFRIGERANTS BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED PER EPA REGULATIONS AND ARI STD 770.
2. COORDINATION: PROVIDE ELECTRICAL CONTRACTOR WITH ELECTRICAL REQUIREMENTS OF APPROVED EQUIPMENT IN SUFFICIENT TIME TO ORDER PANEL BOARDS, DISCONNECTS, ETC.
3. ACCESS DOORS: PROVIDE "STEALTH ACCESS PANEL" BY WIND-LOCK OR EQUAL AS REQUIRED FOR ACCESS TO ALL VALVES, FILTERS, CONTROLS, DAMPERS OR OTHER DEVICES REQUIRING ATTENTION. ACCESS PANEL SHALL HAVE NO VISIBLE HINGE AND LATCH. DOORS SHALL MATCH WALL OR CEILING RATING. ARCHITECT MUST APPROVE LOCATION AND APPEARANCE OF ALL ACCESS DOORS. ACCESS PANELS FOR FIRE OR SMOKE DAMPERS SHALL HAVE THE ABILITY TO OPEN WITHOUT THE USE OF TOOLS.
4. SLEEVES: PROVIDE METAL SLEEVES WHERE PIPES OR CONTROL WIRING PENETRATE WALLS.
5. WARRANTY: GUARANTEE LABOR AND MATERIALS FOR 1 YEAR. WARRANTIES BEGIN UPON OWNER'S ACCEPTANCE OF SUBSTANTIAL COMPLETION OF THE INSTALLATION.
6. OPERATIONS AND MAINTENANCE INSTRUCTIONS: PROVIDE 3 COPIES OF OPERATION AND MAINTENANCE MANUALS TO OWNER. PROVIDE WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE. THESE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARD SUCH AS ASHRAE GUIDELINE 1 AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
   A. SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
   B. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
   C. NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY.
   D. HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SETPOINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS.
   E. A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SETPOINTS. PROVIDE INSTRUCTION ON SYSTEM OPERATION TO OWNER'S REPRESENTATIVES.
7. SUBMITTALS/ SHOP DRAWINGS: SUBMIT COMPLETE INFORMATION ON ALL EQUIPMENT, AIR DEVICES, VALVES, DUCT ACCESSORIES AND CONTROLS. SUBMIT COMPLETE DUCTWORK AND PIPING SHOP DRAWINGS, BASED ON APPROVED EQUIPMENT AND FIELD OBSERVATION OF BUILDING CONDITIONS. ALL SUBMISSIONS THAT DERIATE FROM THE CONTRACT DOCUMENTS SHALL CONTAIN A CONSTRUCTION STANDARD INSTITUTE (CSI) FORM 1.5C PRIOR TO BIDDING OR A CSI FORM 13.1A AFTER THE BIDDING/NEGOTIAION PHASE. SUBMIT DETAILED LAYOUT OF MECHANICAL ROOMS AND YARDS. INCOMPLETE SUBMITTALS WILL BE RETURNED TO THE CONTRACTOR UNREVIEWED. NO TIME EXTENSIONS OR COST INCREASES WILL BE ALLOWED FOR DELAYS CAUSED BY RETURN OF INCOMPLETE SUBMITTALS. WHERE EQUIPMENT OF THE ACCEPTABLE MANUFACTURERS REQUIRE DIFFERENT ARRANGEMENT OR CONNECTIONS FROM THOSE SHOWN, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL THE EQUIPMENT TO OPERATE PROPERLY AND IN HARMONY WITH THE ORIGINAL INTENT OF THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL MAKE ALL NECESSARY CHANGES IN ALL AFFECTED RELATED WORK PROVIDED UNDER OTHER SECTIONS INCLUDING LOCATION OF ROUGH-IN CONNECTIONS BY OTHER TRADES, CONDUIT SUPPORTS, INSULATION, ETC. ALL CHANGES SHALL BE MADE AT NO INCREASE IN THE CONTRACTED AMOUNT OR ADDITIONAL COST TO THE OTHER TRADES AND/OR OWNER.
8. RECORD DRAWINGS: WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, PROVIDE RECORD DRAWINGS IN CAD/REVIT FORMAT (USING THE SAME SOFTWARE AND VERSION THE PROJECT WAS DESIGNED IN), PLUS FULL SIZE HARD COPY. PROJECT DESIGNED IN REVIT. ELECTRONIC DRAWINGS MAY BE AVAILABLE FROM ENGINEER FOR A FEE. RECORD DRAWINGS SHALL INCLUDE AS A MINIMUM THE INSTALLED LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, AIR DEVICES, CONTROL SENSORS, CONTROL PANELS, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES.
9. OVERFLOW DRAIN PANS: PROVIDE UNDER ALL FURRED IN UNITS. PANS TO BE MINIMUM 24 GAUGE GALVANIZED SHEET STEEL; MINIMUM 1-1/2" DEEP AND NOT LESS THAN 3" LARGER THAN UNIT OR COIL DIMENSIONS. PROVIDE SEPARATE 3/4" DRAIN FROM PAN TO CONSPICUOUS LOCATION; PROVIDE ESCUTCHEON PLATES AT CEILING PENETRATIONS. WHEN ALLOWED BY LOCAL AUTHORITY, CONTRACTOR MAY PROVIDE A FLOAT SWITCH IN THE OVERFLOW PAN, INSTEAD OF DISCHARGE PIPING. FLOAT SWITCH SHALL SHUT UNIT OFF IF STANDING WATER IS DETECTED IN THE OVERFLOW DRAIN PAN. PANS EQUIPPED WITH FLOAT SWITCH SHALL HAVE SCREW CAP NIPPLE ON BOTTOM OR SIDE OF PAN TO ALLOW WATER TO BE DRAINED FROM PAN.
10. CONDENSATE CONTROL IN COOLING AIR UNITS: ROUTE CONDENSATE DRAIN TO NEAREST ROOF DRAIN; OR, TO INTERIOR FLOOR DRAIN. AS AN ALTERNATIVE, CONTRACTOR MAY ROUTE CONDENSATE DRAIN TO A SUITABLE LAVATORY TAILPIECE. THIS ALTERNATIVE MUST BE COORDINATED WITH THE PLUMBING CONTRACTOR, TO ENSURE THE PROPER LAVATORY TAILPIECE ACCESSORIES ARE PROVIDED TO ACCOMMODATE THE CONDENSATE DRAIN PIPING CONNECTION. IN ADDITION, A FLOAT SWITCH SHALL BE PROVIDED THAT TURNS UNIT OFF, IF STANDING WATER IS DETECTED IN THE PRIMARY PAN. CONDENSATE PIPING SHALL BE ASTM B88, TYPE L OR DWV COPPER. PVC PIPING IS NOT ACCEPTABLE.
11. TRENCHING REQUIREMENTS: REFER TO SUBCHAPTER C OF CHAPTER 756 OF THE TEXAS HEALTH AND SAFETY CODE FOR REQUIREMENTS APPLICABLE TO TRENCH SAFETY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE COMPLIANCE WITH APPLICABLE STATE AND FEDERAL LAWS, AND NO PROVISION OF THESE DRAWINGS OR SPECIFICATIONS SHALL BE DEEMED TO EXCUSE COMPLIANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS FOR TRENCH SAFETY
12. CONTRACTOR TO PROVIDE TESTING AND COMMISSIONING OF THE HVAC SYSTEMS IN SCOPE IN ACCORDANCE WITH IECC SECTION C408. CONTRACTOR SHALL INCLUDE IN BID THE SERVICES OF A REGISTERED DESIGN PROFESSIONAL TO PRODUCE A COMMISSIONING PLAN TO CONFIRM THAT TESTING AND CALIBRATION HAVE BEEN PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. COPIES OF ALL DOCUMENTATION SHALL BE GIVEN TO THE OWNER OR OWNER'S AUTHORIZED AGENT WITHIN 90 DAYS OF RECEIPT OF CERTIFICATE OF OCCUPANCY AND MADE AVAILABLE TO CODE OFFICIAL UPON REQUEST IN ACCORDANCE WITH SECTIONS C408.2.4 AND C408.2.5. *REFER TO SPEC SECTION 23 08 00 - COMMISSIONING OF HVAC.*
13. WIND LOAD & EQUIPMENT ANCHORAGE
   A. PER CITY/ CODE AMENDMENTS, EXTERIOR HVAC EQUIPMENT SHALL BE SECURELY FASTENED IN PLACE. SUPPORTS SHALL BE DESIGNED AND CONSTRUCTED TO SUSTAIN VERTICAL AND HORIZONTAL LOADS WITHIN THE STRESS LIMITATIONS SPECIFIED IN THE BUILDING CODE. EXTERIOR DUCTS SHALL BE SUPPORTED IN A LIKE MANNER.
   B. REPLACEMENTS OF EQUIPMENT IN KIND NEED ONLY MATCH THE FASTENING OF THE EQUIPMENT REPLACED.

SECTION 23 05 13 - COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT

1. TEST MOTORS IN ACCORDANCE WITH NEMA MG 1, INCLUDING WINDING RESISTANCE, NO-LOAD SPEED AND CURRENT, LOCKED ROTOR CURRENT, INSULATION HIGH-POTENTIAL TEST, AND MECHANICAL ALIGNMENT TESTS. INSTALL SECURELY ON FIRM FOUNDATION. MOUNT BALL BEARING MOTORS WITH SHAFT IN ANY POSITION. INSTALL ENGRAVED PLASTIC NAMEPLATES. GROUND AND BOND MOTORS.
2. SINGLE-PHASE MOTORS: PERMANENT SPLIT-CAPACITOR TYPE, WHERE AVAILABLE; OTHERWISE, USE SPLIT-PHASE START/CAPACITOR RUN OR CAPACITOR START/CAPACITOR RUN MOTOR. TERMINAL LUGS TO MATCH BRANCH CIRCUIT CONDUCTOR QUANTITIES, SIZES AND MATERIALS.
3. THREE-PHASE MOTORS: NEMA MG 1, DESIGN B, PREMIUM -EFFICIENCY SQUIRREL-CAGE INDUCTION MOTOR, WITH WINDINGS TO ACCOMPLISH STARTING METHODS AND NUMBER OF SPEEDS INDICATED. SERVICE FACTOR: 1.15 UNLESS OTHERWISE INDICATED ON DRAWINGS. ENCLOSURE: MEET CONDITIONS OF INSTALLATION UNLESS SPECIFIC ENCLOSURE IS SPECIFIED OR INDICATED. DESIGN FOR CONTINUOUS OPERATION IN 40 DEGREES C ENVIRONMENT, WITH TEMPERATURE RISE IN ACCORDANCE WITH NEMA MG 1 LIMITS FOR INSULATION CLASS, SERVICE FACTOR, AND MOTOR ENCLOSURE TYPE. INSULATION SYSTEM: NEMA CLASS F . MOTOR FRAMES: NEMA STANDARD T-FRAMES OF STEEL, ALUMINUM, OR CAST IRON WITH END BRACKETS OF CAST IRON OR ALUMINUM WITH STEEL INSERTS. THERMISTOR SYSTEM (MOTOR FRAME SIZES 254T AND LARGER): THREE PTC THERMISTORS EMBEDDED IN MOTOR WINDINGS AND EPOXY ENCAPSULATED SOLID STATE CONTROL RELAY WITH WIRING TO TERMINAL BOX. BEARINGS: GREASE LUBRICATED ANTI-FRICTION BALL BEARINGS WITH HOUSINGS EQUIPPED WITH PLUGGED PROVISION FOR RELUBRICATION, RATED FOR MINIMUM ABMA 9, L-10 LIFE OF 200,000 HOURS. CALCULATE BEARING LOAD WITH NEMA MINIMUM V-BELT PULLEY WITH BELT CENTER LINE AT END OF NEMA STANDARD SHAFT EXTENSION. STAMP BEARING SIZES ON NAMEPLATE. SOUND POWER LEVELS: CONFORM TO NEMA MG 1. TERMINAL LUGS TO MATCH BRANCH CIRCUIT CONDUCTOR QUANTITIES, SIZES AND MATERIALS.

SECTION 23 05 29 – HANGERS AND SUPPORTS FOR HVAC

1. METAL PIPE HANGERS AND SUPPORTS CARBON-STEEL PIPE HANGERS AND SUPPORTS:
   A. DESCRIPTION: MSS SP-58, TYPES 1 THROUGH 58, FACTORY-FABRICATED COMPONENTS, GALVANIZED METALLIC
   B. COATINGS: GALVANIZED OR HOT DIPPED
   C. COATINGS: PLASTIC COATING, JACKET, OR LINER.
   D. PADDED HANGERS: HANGER WITH FIBERGLASS OR OTHER PIPE INSULATION PAD OR CUSHION TO SUPPORT BEARING SURFACE OF PIPING, GALVANIZED HANGER RODS: CONTINUOUS-THREAD ROD, NUTS, AND GALVANIZED METALLIC WASHERS.
2. TRAPEZE PIPE HANGERS:
   A. DESCRIPTION: MSS SP-69, TYPE 59, SHOP- OR FIELD-FABRICATED PIPE-SUPPORT ASSEMBLY MADE FROM STRUCTURAL CARBON-STEEL SHAPES WITH MSS SP-58 GALVANIZED METALLIC HANGER RODS, NUTS, SADDLES, AND U-BOLTS.
3. THERMAL-HANGER SHIELD INSERTS
   A. INSULATION-INSERT MATERIAL FOR COLD PIPING: ASTM C 552, TYPE II CELLULAR GLASS WITH 100-PSIG OR ASTM C 591, TYPE VI, GRADE 1 POLYISOCYANURATE WITH 125-PSIG MINIMUM COMPRESSIVE STRENGTH AND VAPOR BARRIER.
   B. INSULATION-INSERT MATERIAL FOR HOT PIPING: WATER-REPELLENT TREATED, ASTM C 533, TYPE I CALCIUM SILICATE WITH 100-PSIG, ASTM C 552, TYPE II CELLULAR GLASS WITH 100-PSIG OR ASTM C 591, TYPE VI, GRADE 1 POLYISOCYANURATE WITH 125-PSIG MINIMUM COMPRESSIVE STRENGTH.
4. FOR TRAPEZE OR CLAMPED SYSTEMS:
   A. INSERT AND SHIELD SHALL COVER ENTIRE CIRCUMFERENCE OF PIPE.
5. FOR CLEVIS OR BAND HANGERS:
   A. INSERT AND SHIELD SHALL COVER LOWER 180 DEGREES OF PIPE.
   B. INSERT LENGTH: EXTEND 2 INCHES BEYOND SHEET METAL SHIELD FOR PIPING OPERATING BELOW AMBIENT AIR TEMPERATURE.
   C. DESCRIPTION: WELDED, SHOP- OR FIELD-FABRICATED EQUIPMENT SUPPORT MADE FROM STRUCTURAL CARBON-STEEL SHAPES.
6. STRUCTURAL STEEL:
   A. ASTM A 36/A 36M, CARBON-STEEL PLATES, SHAPES, AND BARS; GALVANIZED.
7. GROUT:
   A. ASTM C 1107, FACTORY-MIXED AND -PACKAGED, DRY, HYDRAULIC-CEMENT, NONSHRINK AND NONMETALLIC GROUT; SUITABLE FOR INTERIOR AND EXTERIOR APPLICATIONS.
      a. PROPERTIES: NONSTAINING, NONCORROSIVE, AND NONGASEOUS.
      b. DESIGN MIX: 5000-PSI, 28-DAY COMPRESSIVE STRENGTH.

SECTION 23 05 48.13 – VIBRATION CONTROLS FOR HVAC

1. AIR HANDLERS, FURNACES, FANS AND FAN COILS SHALL BE SUSPENDED OR SUPPORTED WITH SPRING ISOLATOR UNLESS INTERNALLY ISOLATED.
2. PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL AIR HANDLERS, ROOFTOP UNITS AND FANS, UNLESS INTERNALLY ISOLATED.
3. PIPE: ALL PIPING SHALL BE VIBRATION ISOLATED WITHIN 50 FT OF VIBRATING EQUIPMENT. FIRST 3 HANGERS SHALL BE SAME DEFLECTION AS EQUIPMENT ISOLATORS (BUT MAXIMUM OF 2''); REMAINING HANGERS SHALL BE 0.75'' DEFLECTION SPRING OR SPRING+RUBBER. FIRST 2 HANGERS CLOSEST TO EQUIPMENT SHALL BE POSITIONING OR PRE-COMPRESSED TYPE, TO PREVENT LOAD TRANSFER TO EQUIPMENT FLANGES WHEN PIPE IS FILLED.
4. ELASTOMERIC MOUNT IN A STEEL FRAME WITH UPPER AND LOWER STEEL HANGER RODS:
   A. MANUFACTURERS: KINETICS NOISE CONTROL, INC., MASON INDUSTRIES, INC., NOVIA; A DIVISION OF C&P.
   B. FRAME: STEEL, FABRICATED WITH A CONNECTION FOR AN UPPER THREADED HANGER ROD AND AN OPENING ON THE UNDERSIDE TO ALLOW FOR A MAXIMUM OF 30 DEGREES OF ANGULAR LOWER HANGER-ROD MISALIGNMENT WITHOUT BINDING OR REDUCING ISOLATION EFFICIENCY, DAMPENING ELEMENT: MOLDED, OIL-RESISTANT RUBBER, NEOPRENE, OR OTHER ELASTOMERIC MATERIAL WITH A PROJECTING BUSHING FOR THE UNDERSIDE OPENING PREVENTING STEEL TO STEEL CONTACT.
5. COMBINATION COIL-SPRING AND ELASTOMERIC-INSERT HANGER WITH SPRING AND INSERT IN COMPRESSION:
   A. MANUFACTURERS: KINETICS NOISE CONTROL, INC., MASON INDUSTRIES, INC., NOVIA; A DIVISION OF C&P.
   B. FRAME: STEEL, FABRICATED FOR CONNECTION TO THREADED HANGER RODS AND TO ALLOW FOR A MAXIMUM OF 30 DEGREES OF ANGULAR HANGER-ROD MISALIGNMENT WITHOUT BINDING OR REDUCING ISOLATION EFFICIENCY.
   C. OUTSIDE SPRING DIAMETER: NOT LESS THAN 80 PERCENT OF THE COMPRESSED HEIGHT OF THE SPRING AT RATED LOAD.
   D. MINIMUM ADDITIONAL TRAVEL: 50 PERCENT OF THE REQUIRED DEFLECTION AT RATED LOAD.
   E. LATERAL STIFFNESS: MORE THAN 80 PERCENT OF RATED VERTICAL STIFFNESS.
   F. OVERLOAD CAPACITY: SUPPORT 200 PERCENT OF RATED LOAD, FULLY COMPRESSED, WITHOUT DEFORMATION OR FAILURE.
   G. ELASTOMERIC ELEMENT: MOLDED, OIL-RESISTANT RUBBER OR NEOPRENE. STEEL-WASHER-REINFORCED CUP TO SUPPORT SPRING AND BUSHING PROJECTING THROUGH BOTTOM OF FRAME.
   H. ADJUSTABLE VERTICAL STOP: STEEL WASHER WITH NEOPRENE WASHER "UP-STOP" ON LOWER THREADED ROD.
   I. SELF-CENTERING HANGER ROD CAP TO ENSURE CONCENTRICITY BETWEEN HANGER ROD AND SUPPORT SPRING COIL.
6. ROOF MOUNTED EQUIPMENT:
   A. MANUFACTURERS: CURB SHALL BE TYPE SRSC AS MANUFACTURED BY MASON INDUSTRIES, INC. OR EQUAL.
   B. CURB MOUNTED ROOFTOP EQUIPMENT SHALL BE MOUNTED ON SPRING ISOLATION CURBS. THE LOWER MEMBER SHALL CONSIST OF A SHEET METAL Z SECTION CONTAINING ADJUSTABLE AND REMOVABLE STEEL SPRINGS THAT SUPPORT THE UPPER FLOATING SECTION.
   C. THE UPPER FRAME MUST PROVIDE CONTINUOUS SUPPORT FOR THE EQUIPMENT AND MUST BE CAPTIVE SO AS TO RESILIENTLY RESIST WIND OR SEISMIC FORCES ATTESTING TO THE MAXIMUM HORIZONTAL AND VERTICAL LOAD RATINGS. THESE LOAD RATINGS MUST HAVE BEEN ACHIEVED BY DESTRUCTIVE TESTING OF FULL-SIZED CURBS, UNDER THE SUPERVISION OF AN INDEPENDENT CONSULTING ENGINEERING FIRM. P.E. STAMPED DRAWINGS MUST BE PROVIDED BY THE MANUFACTURER'S ENGINEERING DEPARTMENT INDICATING THE APPLICABLE WIND OR SEISMIC FORCES, RECOMMENDED ROOF ATTACHMENT METHODS, ALONG WITH SPRING ISOLATOR LOAD POINTS AND DEFLECTION AT EACH POINT.
   D. ALL DIRECTIONAL NEOPRENE SNUBBER BUSHINGS SHALL BE A MINIMUM OF 1/4"(6MM) THICK. STEEL SPRINGS SHALL BE LATERALLY STABLE AND REST ON 1/4"(6MM) THICK NEOPRENE ACOUSTICAL PADS.
   E. HARDWARE MUST BE PLATED AND THE SPRINGS PROVIDED WITH A RUST RESISTANT FINISH.
   F. AN ACOUSTICAL PACKAGE SHALL BE PROVIDED INCLUDING THE 2" CHANNEL STEEL DESIGNED TO SUPPORT TWO LAYERS OF 5/8" THICK GYPSUM BOARD (GYPSUM BOARD BY INSTALLING CONTRACTOR), AND 4" THICK 1-1/2 LB. DENSITY FIBERGLASS INSIDE THE BOTTOM OF THE SRSC CURB (INSULATION BY INSTALLING CONTRACTOR) ALL IN ACCORDANCE WITH PLAN DETAILS.
   G. THE CURBS WATERPROOFING SHALL CONSIST OF A CONTINUOUS GALVANIZED FLEXIBLE COUNTER FLASHING NAILED OVER THE LOWER CURB'S WATERPROOFING AND JOINED AT THE CORNERS BY EPDM BELLOWS.
   H. ALL SPRING LOCATIONS SHALL HAVE ACCESS PORTS WITH REMOVABLE WATERPROOF COVERS. LOWER CURBS SHALL HAVE PROVISION FOR 2"(50MM) OF INSULATION.

SECTION 23 05 53 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

1. EQUIPMENT: PERMANENT LABEL (STENCIL, METAL TAG OR ENGRAVED PLASTIC) WITH UNIT TAG OR NAME AND AREA OR SPACE SERVED.
2. FIRE DAMPER ACCESS DOORS: SEE FIRE DAMPER SPECIFICATIONS.
3. CEILING TACKS: PROVIDE CEILING TACKS TO LOCATE VALVES OR DAMPERS ABOVE T-BAR TYPE PANEL CEILINGS. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT. COLOR CODE: EQUIPMENT:
   A. YELLOW. FIRE DAMPERS/SMOKE DAMPERS: RED. VALVES: BLUE.
4. PIPING:
   A. PIPING LABEL MANUFACTURERS: BRIMAR INDUSTRIES, INC., CRAFTMARK PIPE MARKERS., SETON IDENTIFICATION PRODUCTS.
   B. GENERAL REQUIREMENTS FOR MANUFACTURED PIPE LABELS: PREPRINTED, COLOR-CODED, WITH LETTERING INDICATING SERVICE, AND SHOWING FLOW DIRECTION ACCORDING TO ASME A13.1. PROVIDE PIPE MARKERS EVERY 20 FEET. IDENTIFY SERVICE AND FLOW DIRECTION. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING.
   C. PRETENSIONED PIPE LABELS: PRECOILED, SEMIRIGID PLASTIC FORMED TO PARTIALLY COVER CIRCUMFERENCE OF PIPE AND TO ATTACH TO PIPE WITHOUT FASTENERS OR ADHESIVE.
   D. SELF-ADHESIVE PIPE LABELS: PRINTED PLASTIC WITH CONTACT-TYPE, PERMANENT-ADHESIVE BACKING.
   E. PIPE LABEL CONTENTS: INCLUDE IDENTIFICATION OF PIPING SERVICE USING SAME DESIGNATIONS OR ABBREVIATIONS AS USED ON DRAWINGS; ALSO INCLUDE PIPE SIZE AND AN ARROW INDICATING FLOW DIRECTION,
   F. FLOW-DIRECTION ARROWS: INTEGRAL WITH PIPING SYSTEM SERVICE LETTERING TO ACCOMMODATE BOTH DIRECTIONS OR AS SEPARATE UNIT ON EACH PIPE LABEL TO INDICATE FLOW DIRECTION, LETTERING SIZE: SIZE LETTERS ACCORDING TO ASME A13.1 FOR PIPING.
   G. UNDERGROUND PIPES: PROVIDE WARNING TAPE ABOVE PIPE FOR ENTIRE LENGTH. FOR NON-METALLIC PIPES PROVIDE TRACED WIRE ABOVE AND PARALLEL TO ENTIRE LENGTH AND STUBBED OUT ABOVE GRADE AT ONE END.
5. VALVE TAGS:
   A. MANUFACTURERS: BRIMAR INDUSTRIES, INC., CRAFTMARK PIPE MARKERS., SETON IDENTIFICATION PRODUCTS.
   B. DESCRIPTION: STAMPED OR ENGRAVED WITH 1/4-INCH LETTERS FOR PIPING SYSTEM ABBREVIATION AND 1/2-INCH NUMBERS. NUMBER TAGS CONSECUTIVELY BY LOCATION.
   C. TAG MATERIAL: BRASS, 0.032-INCH MINIMUM THICKNESS, AND HAVING PREDRILLED OR STAMPED HOLES FOR ATTACHMENT HARDWARE, FASTENERS: BRASS WIRE-LINK CHAIN.
   D. TAG CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME OR PLASTIC LAMINATED.

SECTION 23 05 93 – TESTING, ADJUSTING, AND BALANCING FOR HVAC
EXECUTION

1. REPORT DEFICIENCIES DISCOVERED BEFORE AND DURING PERFORMANCE OF TAB PROCEDURES. OBSERVE AND RECORD SYSTEM REACTIONS TO CHANGES IN CONDITIONS. RECORD DEFAULT SET POINTS IF DIFFERENT FROM INDICATED VALUES.
2. NO ADJUSTMENT TO EXISTING AIR HANDLERS AND FANS SERVING THE AREA ARE ALLOWED WITHOUT OWNER'S EXPRESS KNOWLEDGE AND CONSENT.
3. PERFORM SYSTEM-READINESS CHECKS OF HVAC SYSTEMS AND EQUIPMENT TO VERIFY SYSTEM READINESS FOR TAB WORK.
4. GENERAL PROCEDURES FOR TESTING AND BALANCING:
   A. PERFORM TESTING AND BALANCING PROCEDURES ON EACH SYSTEM ACCORDING TO THE PROCEDURES CONTAINED IN AABC (ASSOCIATED AIR BALANCE COUNCIL) "NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE", NEBB'S "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS", SMACNA'S "HVAC SYSTEMS - TESTING, ADJUSTING, AND BALANCING" AND IN THIS SECTION. CUT INSULATION, DUCTS, PIPES, AND EQUIPMENT CABINETS FOR INSTALLATION OF TEST PROBES TO THE MINIMUM EXTENT NECESSARY FOR TAB PROCEDURES.
   B. MARK EQUIPMENT AND BALANCING DEVICES, INCLUDING DAMPER-CONTROL POSITIONS, VALVE POSITION INDICATORS, FAN-SPEED-CONTROL LEVERS, AND SIMILAR CONTROLS AND DEVICES, WITH PAINT OR OTHER SUITABLE, PERMANENT IDENTIFICATION MATERIAL TO SHOW FINAL SETTINGS.
   C. TAKE AND REPORT TESTING AND BALANCING MEASUREMENTS IN INCH-POUND (IP)UNITS.
   D. VERIFY FINAL SYSTEM CONDITIONS.
5. EXISTING AIR DISTRIBUTION SYSTEMS SHALL BE REBALANCED TO MEET THE EXISTING AIR FLOW AS WELL AS THE FLOW REQUIREMENTS INDICATED IN THE CONSTRUCTION DOCUMENTS.
6. EXISTING PUMPS SHALL BE REBALANCED TO MEET THE EXISTING WATER FLOW AS WELL AS THE FLOW REQUIREMENTS INDICATED IN THE CONSTRUCTION DOCUMENTS. AREAS OUTSIDE THE RENOVATED AREA THAT ARE SERVED BY THESE EXISTING SYSTEMS SHALL BE REBALANCED TO AIR AND/OR WATER FLOWS AS RECORDED IN THE PRECONSTRUCTION RECORDINGS.

SECTION 23 07 13– DUCT INSULATION

1. MINERAL-FIBER BLANKET INSULATION: MINERAL OR GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C 553, TYPE II AND ASTM C 1290, TYPE III WITH FACTORY-APPLIED FSK JACKET. FACTORY-APPLIED JACKET REQUIREMENTS ARE SPECIFIED IN "FACTORY-APPLIED JACKETS" ARTICLE.
2. MANUFACTURERS: JOHNS MANVILLE; A BERKSHIRE HATHAWAY COMPANY., KNAUF INSULATION, OWENS CORNING.
3. FIRE-RATED BLANKET: HIGH-TEMPERATURE, FLEXIBLE, BLANKET INSULATION WITH FSK JACKET THAT IS TESTED AND CERTIFIED TO PROVIDE A 2-HOUR FIRE RATING BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
4. MANUFACTURERS: JOHNS MANVILLE; A BERKSHIRE HATHAWAY COMPANY, NELSON FIRESTOP; A BRAND OF EMERSON INDUSTRIAL AUTOMATION, THERMAL CERAMICS.
5. ADHESIVES:
   A. MATERIALS SHALL BE COMPATIBLE WITH INSULATION MATERIALS, JACKETS, AND SUBSTRATES AND FOR BONDING INSULATION TO ITSELF AND TO SURFACES TO BE INSULATED UNLESS OTHERWISE INDICATED.
   B. ADHESIVE: COMPLY WITH MIL-A-24179A, TYPE II, CLASS I.
   C. MANUFACTURERS: ARMACELL LLC., FOSTER BRAND; H. B. FULLER CONSTRUCTION PRODUCTS, K-FLEX USA.
6. SEALANTS:
   A. SEALANTS MANUFACTURERS: CHILDERS BRAND; H. B. FULLER CONSTRUCTION PRODUCTS., EAGLE BRIDGES - MARATHON INDUSTRIES, FOSTER BRAND; H. B. FULLER CONSTRUCTION PRODUCTS.
7. FACTORY-APPLIED JACKETS:
   A. MANUFACTURERS: CHILDERS BRAND; H. B. FULLER CONSTRUCTION PRODUCTS.
   B. TAPES MANUFACTURERS: IDEAL TAPE CO., INC., AN AMERICAN BILTRITE COMPANY, KNAUF INSULATION, VENTURE TAPE.

SECTION 23 08 00 – COMMISSIONING OF HVAC

1. ALL THIRD PARTY COMMISSIONING AGENTS SHALL BE CERTIFIED BY ONE OF THE FOLLOWING ORGANIZATIONS:
   A. CBCP - CERTIFIED BUILDING COMMISSIONING PROFESSIONAL - ASSOCIATION OF ENERGY ENGINEERS
   B. CCP - CERTIFIED COMMISSIONING PROFESSIONAL - BUILDING COMMISSIONING ASSOCATION
   C. CPMP - CERTIFIED PROCESS MANAGEMENT PROFESSIONAL - ASHRAE
   D. CXA - CERTIFIED COMMISSIONING AUTHORITY - AABC COMMISSIONING GROUP
   E. BSC - BUILDING SYSTEM COMMISSIONING CERTIFICATION - NATHIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)
2. CERTIFY THAT HVAC&R SYSTEMS, SUBSYSTEMS, AND EQUIPMENT HAVE BEEN INSTALLED, CALIBRATED, AND STARTED AND OPERATING ACCORDING TO THE CONTRACT DOCUMENTS, APPROVED SHOP DRAWINGS AND SUBMITTALS.
3. CERTIFY THAT HVAC&R INSTRUMENTATION AND CONTROL SYSTEMS HAVE BEEN COMPLETED AND CALIBRATED, THAT THEY ARE OPERATING ACCORDING TO THE CONTRACT DOCUMENTS, APPROVED SHOP DRAWINGS, SUBMITTALS, AND PRETEST SET POINTS HAVE BEEN RECORDED.
4. CERTIFY THAT TAB PROCEDURES HAVE BEEN COMPLETED, TAB REPORTS HAVE BEEN SUBMITTED, DISCREPANCIES CORRECTED, AND CORRECTIVE WORK APPROVED.
5. SET SYSTEMS, SUBSYSTEMS, AND EQUIPMENT INTO OPERATING MODE TO BE TESTED ACCORDING TO APPROVED TEST PROCEDURES (E.G., NORMAL SHUTDOWN, NORMAL AUTO POSITION, NORMAL MANUAL POSITION, UNOCCUPIED CYCLE, EMERGENCY POWER, AND ALARM CONDITIONS).
6. MEASURE CAPACITIES AND EFFECTIVENESS OF SYSTEMS, ASSEMBLIES, SUBSYSTEMS, EQUIPMENT, AND COMPONENTS, INCLUDING OPERATIONAL AND CONTROL FUNCTIONS TO VERIFY COMPLIANCE WITH ACCEPTANCE CRITERIA.
7. TEST SYSTEMS, ASSEMBLIES, SUBSYSTEMS, EQUIPMENT, COMPONENTS OPERATING MODES, INTERLOCKS, CONTROL RESPONSES, RESPONSES TO ABNORMAL OR EMERGENCY CONDITIONS, AND RESPONSE ACCORDING TO ACCEPTANCE CRITERIA.
8. CONSTRUCTION CHECKLISTS: PREPARE AND SUBMIT DETAILED CONSTRUCTION CHECKLISTS FOR HVAC&R SYSTEMS, SUBSYSTEMS, EQUIPMENT, AND COMPONENTS.
9. PERFORM TESTS USING DESIGN CONDITIONS, WHENEVER POSSIBLE.
10. SIMULATED CONDITIONS MAY, WITH APPROVAL OF ARCHITECT/ENGINEER, BE IMPOSED USING AN ARTIFICIAL LOAD WHEN IT IS IMPRACTICAL TO TEST UNDER DESIGN CONDITIONS. BEFORE SIMULATING CONDITIONS, CALIBRATE TESTING INSTRUMENTS. PROVIDE EQUIPMENT TO SIMULATE LOADS. SET SIMULATED CONDITIONS AS DIRECTED BY COMMISSIONING COORDINATOR AND DOCUMENT SIMULATED CONDITIONS AND METHODS OF SIMULATION. AFTER TESTS, RETURN CONFIGURATIONS AND SETTINGS TO NORMAL OPERATING CONDITIONS.
11. COMMISSIONING TEST PROCEDURES MAY DIRECT THAT SET POINTS BE ALTERED WHEN SIMULATING CONDITIONS IS IMPRACTICAL, COMMISSIONING TEST PROCEDURES MAY DIRECT THAT SENSOR VALUES BE ALTERED WITH A SIGNAL GENERATOR WHEN DESIGN OR SIMULATING CONDITIONS AND ALTERING SET POINTS ARE IMPRACTICAL. IF TESTS CANNOT BE COMPLETED BECAUSE OF A DEFICIENCY OUTSIDE THE SCOPE OF THE HVAC&R SYSTEM, DOCUMENT THE DEFICIENCY AND REPORT IT TO OWNER. AFTER DEFICIENCIES ARE RESOLVED, RESCHEDULE TESTS.
12. IF SEASONAL TESTING IS SPECIFIED, COMPLETE APPROPRIATE INITIAL PERFORMANCE TESTS AND DOCUMENTATION AND SCHEDULE SEASONAL TESTS.
13. COORDINATE SCHEDULE WITH, AND PERFORM COMMISSIONING ACTIVITIES AT THE DIRECTION OF, COMMISSIONING COORDINATOR.
14. COMPLY WITH CONSTRUCTION CHECKLIST REQUIREMENTS, INCLUDING MATERIAL VERIFICATION, INSTALLATION CHECKS, START-UP, AND PERFORMANCE TESTS REQUIREMENTS SPECIFIED IN SECTIONS SPECIFYING HVAC SYSTEMS AND EQUIPMENT.
15. PROVIDE TECHNICIANS, INSTRUMENTATION, TOOLS, AND EQUIPMENT TO COMPLETE AND DOCUMENT THE FOLLOWING: PERFORMANCE TESTS,DEMONSTRATION OF A SAMPLE OF PERFORMANCE TESTS, COMMISSIONING TESTS, COMMISSIONING TEST DEMONSTRATIONS.
16. CONTRACTOR TO VERIFY AND DOCUMENT PLUMBING SYSTEM OPERATION AND RECOVERY TIMES.
17. CONTRACTOR TO ADJUST, VERIFY, AND DOCUMENT DOMESTIC HOT WATER TEMPERATURES FOR CIRCULATING PUMP(S) MEET CODE MINIMUM REQUIREMENTS.
18. CONTRACTOR TO VERIFY FIXTURE HOT WATER DELIVERY MEETS CODE MINIMUM DEMAND RESPONSE TIME.

SECTION 23 09 23.12 - CONTROL DAMPERS

1. RECTANGULAR DAMPERS WITH ALUMINUM AIRFOIL BLADES:
   A. MANUFACTURERS: ARROW UNITED INDUSTRIES, RUSKIN COMPANY (REQUIREMENTS IN SUBPARAGRAPHS BELOW ARE BASED ON RUSKIN'S "CD50 SERIES.")
   B. PERFORMANCE: LEAKAGE: AMCA 511, CLASS 1A. LEAKAGE SHALL NOT EXCEED 3 CFM/SQ. FT. AGAINST 1-IN. WG DIFFERENTIAL STATIC PRESSURE., PRESSURE DROP: 0.05-IN. WG AT 1500 FPM ACROSS A 24-BY-24-INCH DAMPER WHEN TESTED ACCORDING TO AMCA 500-D, FIGURE 5.3.
2. GENERAL CONTROL-DAMPER ACTUATORS REQUIREMENTS
   A. ACTUATORS SHALL OPERATE RELATED DAMPER(S) WITH SUFFICIENT RESERVE POWER TO PROVIDE SMOOTH MODULATING ACTION OR TWO-POSITION ACTION AND PROPER SPEED OF RESPONSE AT VELOCITY AND PRESSURE CONDITIONS TO WHICH THE DAMPER IS SUBJECTED.
   B. ACTUATORS SHALL PRODUCE SUFFICIENT POWER AND TORQUE TO CLOSE OFF AGAINST THE MAXIMUM SYSTEM PRESSURES ENCOUNTERED. ACTUATORS SHALL BE SIZED TO CLOSE OFF AGAINST THE FAN SHUTOFF PRESSURE AS A MINIMUM REQUIREMENT.
3. ELECTRIC AND ELECTRONIC ACTUATORS
   A. TYPE: MOTOR OPERATED, WITH OR WITHOUT GEARS, ELECTRIC AND ELECTRONIC.
   B. VOLTAGE: 24 V UNLESS 120 V IS REQUIRED BASED ON DAMPER SIZE AND CLOSING FORCE REQUIRED BASED ON AIR PRESSURE. COORDINATE WITH EQUIPMENT VOLTAGES. PROVIDE TRANSFORMERS AS NECESSARY. ACTUATOR SHALL DELIVER TORQUE REQUIRED FOR CONTINUOUS UNIFORM MOVEMENT OF CONTROLLED DEVICE FROM LIMIT TO LIMIT WHEN OPERATED AT RATED VOLTAGE.
   C. TWO-POSITION ACTUATORS: SINGLE DIRECTION, SPRING RETURN OR REVERSING TYPE.

SECTION 23 09 23.01 - BUILDING CONTROL SYSTEM FOR HVAC

1. ELECTRIC CONTROLS FOR HVAC
   A. ELECTRIC, PROGRAMMABLE MULTISTAGE THERMOSTATS, AUTOMATIC CHANGEOVER, BATTERY BACKUP. HONEYWELL TB7220 SERIES OR EQUAL.

SECTION 23 31 13 – METAL DUCT

1. MANUFACTURERS: MCGILL AIRFLOW LLC., SEMCO LLC., SHEET METAL CONNECTORS, INC.
2. TRANSVERSE JOINTS: SELECT JOINT TYPES AND FABRICATE ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 3-1, "ROUND DUCT TRANSVERSE JOINTS," FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS, MATERIALS INVOLVED, DUCT-SUPPORT INTERVALS, AND OTHER PROVISIONS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
3. TRANSVERSE JOINTS IN DUCTS LARGER THAN 60 INCHES IN DIAMETER: FLANGED.
4. LONGITUDINAL SEAMS: SELECT SEAM TYPES AND FABRICATE ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 3-2, "ROUND DUCT LONGITUDINAL SEAMS," FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS, MATERIALS INVOLVED, DUCT-SUPPORT INTERVALS, AND OTHER PROVISIONS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE." FABRICATE ROUND DUCTS LARGER THAN 90 INCHES IN DIAMETER WITH BUTT-WELDED LONGITUDINAL SEAMS.
5. FABRICATE FLAT-OVAL DUCTS LARGER THAN 72 INCHES IN WIDTH (MAJOR DIMENSION) WITH BUTT-WELDED LONGITUDINAL SEAMS.
6. TEES AND LATERALS: SELECT TYPES AND FABRICATE ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 3-5, "90 DEGREE TEES AND LATERALS," AND FIGURE 3-6, "CONICAL TEES," FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS, MATERIALS INVOLVED, DUCT-SUPPORT INTERVALS, AND OTHER PROVISIONS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE."
7. SHEET METAL MATERIALS
   A. GENERAL MATERIAL REQUIREMENTS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" FOR ACCEPTABLE MATERIALS, MATERIAL THICKNESS, AND DUCT CONSTRUCTION METHODS UNLESS OTHERWISE INDICATED. SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTION.
   B. GALVANIZED SHEET STEEL: COMPLY WITH ASTM A 653/A 653M. GALVANIZED COATING DESIGNATION: G60. FINISHES FOR SURFACES EXPOSED TO VIEW: MILL PHOSPHATIZED.
   C. CARBON-STEEL SHEETS: COMPLY WITH ASTM A 1008/A 1008M, WITH OILED, MATTE FINISH FOR EXPOSED DUCTS.
   D. ALUMINUM SHEETS: COMPLY WITH ASTM B 209 ALLOY 3003, H14 TEMPER; WITH MILL FINISH FOR CONCEALED DUCTS, AND STANDARD, ONE-SIDE BRIGHT FINISH FOR DUCT SURFACES EXPOSED.
   E. REINFORCEMENT SHAPES AND PLATES: ASTM A 36/A 36M, STEEL PLATES, SHAPES, AND BARS; BLACK AND GALVANIZED.
   F. TIE RODS: GALVANIZED STEEL, 1/4-INCH MINIMUM DIAMETER FOR LENGTHS 36 INCHES OR LESS; 3/8-INCH MINIMUM DIAMETER FOR LENGTHS LONGER THAN 36 INCHES.

SECTION 23 31 13 – METAL DUCT

8. FIBROUS-GLASS DUCT LINER: COMPLY WITH ASTM C665 (CORROSIVENESS TEST), ASTM C411 (MAXIMUM SERVICE TEMPERATURE TEST), ASTM C1071; TYPE 1 (AIR VELOCITY TEST), ASTM C1104 (WATER VAPOR SORPTION TEST), ASTM C1338, ASTM G21 ,& ASTM G22 (MICROBIAL GROWTH TEST), ASTM E84, UL 723, CAN/ULC S102 (SURFACE BURNING CHARACTERISTICS TEST), NFPA 90A OR NFPA 90B; AND WITH NAIMA AH124, "FIBROUS GLASS DUCT LINER STANDARD."
   A. MANUFACTURERS: JOHNS MANVILLE; A BERKSHIRE HATHAWAY COMPANY., KNAUF INSULATION, OWENS CORNING.
   B. TYPE I, FLEXIBLE: 0.27 BTU X IN./H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE. TYPE II, RIGID: 0.23 BTU X IN./H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE, ANTIMICROBIAL EROSION-RESISTANT COATING: APPLY TO THE SURFACE OF THE LINER THAT WILL FORM THE INTERIOR SURFACE OF THE DUCT TO ACT AS A MOISTURE REPELLENT AND EROSION-RESISTANT COATING. ANTIMICROBIAL COMPOUND SHALL BE TESTED FOR EFFICACY BY AN NRTL AND REGISTERED BY THE EPA FOR USE IN HVAC SYSTEMS.
   C. WATER-BASED LINER ADHESIVE: COMPLY WITH NFPA 90A OR NFPA 90B AND WITH ASTM C916.LOW PRESSURE DUCT WILL BE CONSTRUCTED IN 2 INCH WG. MEDIUM PRESSURE DUCT SHALL BE CONSTRUCTED TO 4.0 IN WG. DUCT LINER ADHESIVE SHALL BE APPLIED TO THE SHEET METAL WITH A MINIMUM COVERAGE OF 90% ADHESIVE SHALL MEET THE REQUIRMEENTS OF ASTM C916.
9. DOUBLE-WALL SUPPLY DUCT:
   A. MANUFACTURERS: MASON INDUSTRIES, MCGILL AIRFLOW LLC., SEMCO LLC., SHEET METAL CONNECTORS, INC.
   B. GALVANIZED SHEET METAL OUTER WALLS AND A LAYER OF FIBERGLASS INSULATION SURROUNDING THE PERFORATED METAL INNER LINER.
   C. STANDARD FITTINGS TO HAVE SOLID METAL INNER LINER.
10. PRESSURE CLASS REQUIREMENTS FOR DUCT CONSTRUCTION:
   A. SUPPLY DUCTS:
      a. DUCTS CONNECTED TO FAN COIL UNITS, AND TERMINAL UNITS:
         • PRESSURE CLASS: POSITIVE 2-INCH WG; MINIMUM SMACNA SEAL CLASS: B.;SMACNA LEAKAGE CLASS FOR RECTANGULAR: 24; SMACNA LEAKAGE CLASS FOR ROUND: 12.
      b. DUCTS CONNECTED TO CONSTANT-VOLUME AIR-HANDLING UNITS:
         • PRESSURE CLASS: POSITIVE 3-INCH WG.; MINIMUM SMACNA SEAL CLASS: A.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.; SMACNA LEAKAGE CLASS FOR ROUND: 6.
      c. DUCTS CONNECTED TO VARIABLE-AIR-VOLUME AIR-HANDLING UNITS:
         • PRESSURE CLASS: POSITIVE 4-INCH WG.; MINIMUM SMACNA SEAL CLASS: A.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 6.; SMACNA LEAKAGE CLASS FOR ROUND: 3.
      d. DUCTS CONNECTED TO EQUIPMENT NOT LISTED ABOVE:
         • PRESSURE CLASS: POSITIVE 3-INCH WG.; MINIMUM SMACNA SEAL CLASS: A.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 6.; SMACNA LEAKAGE CLASS FOR ROUND: 3.
   B. RETURN DUCTS:
      a. DUCTS CONNECTED TO FAN COIL UNITS AND TERMINAL UNITS:
         • PRESSURE CLASS: POSITIVE OR NEGATIVE 1-INCH WG.;MINIMUM SMACNA SEAL CLASS: B.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 24.; SMACNA LEAKAGE CLASS FOR ROUND: 12.
      b. DUCTS CONNECTED TO AIR-HANDLING UNITS:
         • PRESSURE CLASS: POSITIVE OR NEGATIVE 2-INCH WG.; MINIMUM SMACNA SEAL CLASS: A.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.; SMACNA LEAKAGE CLASS FOR ROUND: 6.
      c. DUCTS CONNECTED TO EQUIPMENT NOT LISTED ABOVE:
         • PRESSURE CLASS: POSITIVE OR NEGATIVE 2-INCH WG.; MINIMUM SMACNA SEAL CLASS: B.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.; SMACNA LEAKAGE CLASS FOR ROUND: 6.
   C. EXHAUST DUCTS:
      a. DUCTS CONNECTED TO FANS EXHAUSTING (ASHRAE 62.1, CLASS 1 AND 2) AIR:
         • PRESSURE CLASS: NEGATIVE 3-INCH WG.; MINIMUM SMACNA SEAL CLASS: A IF NEGATIVE PRESSURE, AND A IF POSITIVE PRESSURE.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.; SMACNA LEAKAGE CLASS FOR ROUND: 6.
      b. DUCTS CONNECTED TO AIR-HANDLING UNITS:
         • PRESSURE CLASS: POSITIVE OR NEGATIVE 3-INCH WG.; MINIMUM SMACNA SEAL CLASS: A IF NEGATIVE PRESSURE, AND A IF POSITIVE PRESSURE.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.; SMACNA LEAKAGE CLASS FOR ROUND: 6.
      c. DUCTS CONNECTED TO FANS EXHAUSTING LABORATORY AND PROCESS (ASHRAE 62.1, CLASS 3 AND 4) AIR:
         • TYPE 316, STAINLESS-STEEL SHEET.
            1. EXPOSED TO VIEW: NO. 4 FINISH.
            2. CONCEALED: NO. 2D FINISH.
         • PRESSURE CLASS: POSITIVE OR NEGATIVE 4-INCH WG.; MINIMUM SMACNA SEAL CLASS: A.; SMACNA LEAKAGE CLASS: 3.
      d. DUCTS CONNECTED TO EQUIPMENT NOT LISTED ABOVE:
         • PRESSURE CLASS: POSITIVE OR NEGATIVE 3-INCH WG.; MINIMUM SMACNA SEAL CLASS: A.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 6.; SMACNA LEAKAGE CLASS FOR ROUND AND FLAT OVAL: 3.
   D. OUTDOOR-AIR (NOT FILTERED, HEATED, OR COOLED) DUCTS:
      a. DUCTS CONNECTED TO FAN COIL UNITS, AND TERMINAL UNITS:
         • PRESSURE CLASS: POSITIVE OR NEGATIVE 2-INCH WG; MINIMUM SMACNA SEAL CLASS: B.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 24.; SMACNA LEAKAGE CLASS FOR ROUND AND FLAT OVAL: 12.
      b. DUCTS CONNECTED TO AIR-HANDLING UNITS:
         • PRESSURE CLASS: POSITIVE OR NEGATIVE 2-INCH WG.; MINIMUM SMACNA SEAL CLASS: B.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 24.; SMACNA LEAKAGE CLASS FOR ROUND AND FLAT OVAL: 12.
      c. DUCTS CONNECTED TO EQUIPMENT NOT LISTED ABOVE:
         • PRESSURE CLASS: POSITIVE OR NEGATIVE 3-INCH WG.; MINIMUM SMACNA SEAL CLASS: A.; SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.; SMACNA LEAKAGE CLASS FOR ROUND AND FLAT OVAL: 12.
   E. LINER:
      a. SUPPLY AIR DUCTS: FIBROUS GLASS, TYPE I, 2 INCHES THICK.
      b. RETURN AIR DUCTS: FIBROUS GLASS, TYPE I, 1 INCHES THICK.
      c. EXHAUST AIR DUCTS: FIBROUS GLASS, TYPE I, 1 INCH THICK.
      d. SUPPLY FAN PLENUMS: FIBROUS GLASS, TYPE II, 1-1/2 INCHES THICK.
      e. RETURN- AND EXHAUST-FAN PLENUMS: FIBROUS GLASS, TYPE II, 2 INCHES THICK.
      f. TRANSFER DUCTS: FIBROUS GLASS, TYPE I, 1 INCHES THICK.

SECTION 23 33 00 – AIR DUCT ACCESSORIES

1. STANDARD, STEEL, MANUAL VOLUME DAMPERS:
   A. MANUFACTURERS: MCGILL AIRFLOW LLC., NAILOR INDUSTRIES INC., RUSKIN COMPANY, OR APPROVED EQUAL.
   B. STANDARD LEAKAGE RATING, WITH LINKAGE OUTSIDE AIRSTREAM. SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS.
2. FIRE DAMPERS:
   A. FIRE DAMPERS MANUFACTURERS: NAILOR INDUSTRIES INC., POTTORFF OR APPROVED EQUAL.
   B. TYPE: STATIC; RATED AND LABELED ACCORDING TO UL 555 BY AN NRTL.
   C. CLOSING RATING IN DUCTS UP TO 4-INCH WG STATIC PRESSURE CLASS AND MINIMUM 2000-FPM> VELOCITY.
   D. FIRE RATING: 1-1/2 AND 3 HOURS.
   E. FRAME: CURTAIN TYPE WITH BLADES OUTSIDE AIRSTREAM; FABRICATED WITH ROLL-FORMED, 0.034-INCH-THICK GALVANIZED STEEL; WITH MITERED AND INTERLOCKING CORNERS.
   F. MOUNTING SLEEVE: FACTORY- OR FIELD-INSTALLED, GALVANIZED SHEET STEEL.
   G. MINIMUM THICKNESS: 0.39 INCH THICK, AS INDICATED, AND OF LENGTH TO SUIT APPLICATION.
   H. MOUNTING ORIENTATION: VERTICAL OR HORIZONTAL AS INDICATED.
   I. BLADES: ROLL-FORMED, INTERLOCKING, 0.034-INCH- THICK, GALVANIZED SHEET STEEL. IN PLACE OF INTERLOCKING BLADES, USE FULL-LENGTH, 0.034-INCH-THICK, GALVANIZED-STEEL BLADE CONNECTORS.
   J. HORIZONTAL DAMPERS: INCLUDE BLADE LOCK AND STAINLESS-STEEL CLOSURE SPRING.
   K. HEAT-RESPONSIVE DEVICE: REPLACEABLE, 165 DEG F RATED, FUSIBLE LINKS.
   L. HEAT-RESPONSIVE DEVICE: REPLACEABLE LINK AND SWITCH PACKAGE, FACTORY INSTALLED, 165 DEG F RATED.
3. SMOKE DAMPERS:
   A. MANUFACTURERS: GREENHECK FAN CORPORATION, NAILOR INDUSTRIES INC., RUSKIN, OR APPROVED EQUAL
   B. COMPANY.GENERAL REQUIREMENTS: LABEL ACCORDING TO UL 555S BY AN NRTL.
   C. SMOKE DETECTOR: INTEGRAL, FACTORY WIRED FOR SINGLE-POINT CONNECTION.
   D. FRAME: HAT-SHAPED, 0.094-INCH-THICK, GALVANIZED SHEET STEEL, WITH WELDED CORNERS AND MOUNTING FLANGE.
   E. BLADES: AIR FOIL, ROLL-FORMED, HORIZONTAL, INTERLOCKING, 0.063-INCH- THICK, GALVANIZED SHEET STEEL.
   F. LEAKAGE: CLASS I.
   G. RATED PRESSURE AND VELOCITY TO EXCEED DESIGN AIRFLOW CONDITIONS.
   H. MOUNTING SLEEVE: FACTORY-INSTALLED, 0.05-INCH THICK, GALVANIZED SHEET STEEL; LENGTH TO SUIT WALL OR FLOOR APPLICATION WITH FACTORY-FURNISHED SILICONE CALKING.
   I. DAMPER MOTORS: TWO-POSITION ACTIONDEFAULT MOTOR CHARACTERISTICS ARE SPECIFIED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT."
   J. COMPLY WITH NEMA DESIGNATION, TEMPERATURE RATING, SERVICE FACTOR, ENCLOSURE TYPE, AND EFFICIENCY REQUIREMENTS FOR MOTORS SPECIFIED IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT."
   K. MOTOR SIZES: MINIMUM SIZE AS INDICATED. IF NOT INDICATED, LARGE ENOUGH SO DRIVEN LOAD WILL NOT REQUIRE MOTOR TO OPERATE IN SERVICE FACTOR RANGE ABOVE 1.0.
   L. CONTROLLERS, ELECTRICAL DEVICES, AND WIRING: COMPLY WITH REQUIREMENTS FOR ELECTRICAL DEVICES AND CONNECTIONS SPECIFIED IN SECTION 230923 "DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC."
   M. PERMANENT-SPLIT-CAPACITOR OR SHADED-POLE MOTORS: WITH OIL-IMMERSED AND SEALED GEAR TRAINS. SPRING-RETURN MOTORS: EQUIP WITH AN INTEGRAL SPIRAL-SPRING MECHANISM WHERE INDICATED. ENCLOSE ENTIRE SPRING MECHANISM IN A REMOVABLE HOUSING DESIGNED FOR SERVICE OR ADJUSTMENTS. SIZE FOR RUNNING TORQUE RATING OF 150 IN. X LBF AND BREAKAWAY TORQUE RATING OF 150 IN. X LBF. OUTDOOR MOTORS AND MOTORS IN OUTDOOR-AIR INTAKES: EQUIP WITH O-RING GASKETS DESIGNED TO MAKE MOTORS WEATHERPROOF. EQUIP MOTORS WITH INTERNAL HEATERS TO PERMIT NORMAL OPERATION AT MINUS 40 DEG F.
   N. NONSPRING-RETURN MOTORS: FOR DAMPERS LARGER THAN 25 SQ. FT., SIZE MOTOR FOR RUNNING TORQUE RATING OF 150 IN. X LBF AND BREAKAWAY TORQUE RATING OF 300 IN. X LBF.
   O. ELECTRICAL CONNECTION: 115 V, SINGLE PHASE, 60 HZ.
   P. ACCESSORIES: AUXILIARY SWITCHES FOR SIGNALING. TEST AND RESET SWITCHES, DUCT MOUNTED.
4. COMBINATION FIRE AND SMOKE DAMPERS
   A. MANUFACTURERS: GREENHECK FAN CORPORATION, POTTORFF, RUSKIN COMPANY OR APPROVED EQUAL.
   B. TYPE: DYNAMIC; RATED AND LABELED ACCORDING TO UL 555 AND UL 555S BY AN NRTL.
   C. CLOSING RATING IN DUCTS UP TO 4-INCH WG STATIC PRESSURE CLASS AND MINIMUM 2000-FPM VELOCITY.
   D. FIRE RATING: 1-1/2 HOURS.
   E. FRAME: HAT-SHAPED, 0.094-INCH-THICK, GALVANIZED SHEET STEEL, WITH WELDED CORNERS AND MOUNTING FLANGE.
   F. HEAT-RESPONSIVE DEVICE: RESETTABLE LINK AND SWITCH PACKAGE, FACTORY INSTALLED, RATED.
   G. SMOKE DETECTOR: INTEGRAL, FACTORY WIRED FOR SINGLE-POINT CONNECTION.
   H. BLADES: AIR FOIL, ROLL-FORMED, HORIZONTAL, INTERLOCKING THICK, GALVANIZED SHEET STEEL.
   I. LEAKAGE: CLASS I. RATED PRESSURE AND VELOCITY TO EXCEED DESIGN AIRFLOW CONDITIONS. MOUNTING SLEEVE: FACTORY-INSTALLED, 0.05-INCH-THICK, GALVANIZED SHEET STEEL; LENGTH TO SUIT WALL OR FLOOR APPLICATION WITH FACTORY-FURNISHED SILICONE CALKING.
   J. MANUFACTURED TURNING VANES FOR METAL DUCTS: CURVED BLADES OF GALVANIZED SHEET STEEL; SUPPORT WITH BARS PERPENDICULAR TO BLADES SET; SET INTO VANE RUNNERS SUITABLE FOR DUCT MOUNTING.
   K. VANE CONSTRUCTION: DOUBLE WALL.
   L. VANE CONSTRUCTION: SINGLE WALL FOR DUCTS UP TO 36 INCHES WIDE AND DOUBLE WALL FOR LARGER DIMENSIONS.
5. REMOTE DAMPER OPERATORS
   A. MANUFACTURERS: POTTORFF, VENTFABRICS, INC., YOUNG REGULATOR COMPANY OR APPROVED EQUAL.
6. DUCT-MOUNTED ACCESS DOORS
   A. MANUFACTURERS: GREENHECK FAN CORPORATION, MCGILL AIRFLOW LLC., NAILOR INDUSTRIES INC., OR APPROVED EQUAL.
   B. FABRICATE ACCESS PANELS ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE"; FIGURES 7-2, "DUCT ACCESS DOORS AND PANELS," AND 7-3, "ACCESS DOORS - ROUND DUCT.
7. FLEXIBLE DUCT
   A. MANUFACTURERS: FLEXMASTER U.S.A., INC., JP LAMBORN CO., MCGILL AIRFLOW LLC., THERMAFLEX; A FLEX-TEK GROUP COMPANY, OR APPROVED EQUAL.

SECTION 23 37 13.13 – AIR DIFFUSERS, REGISTERS AND GRILLES

1. PRODUCTS
   A. MANUFACTURERS: METALAIRE, INC., NAILOR INDUSTRIES INC., PRICE INDUSTRIES, TITUS, OR APPROVED EQUAL.
   B. DEVICES SHALL BE SPECIFICALLY DESIGNED FOR VARIABLE-AIR-VOLUME FLOWS.
   C. VERIFICATION OF PERFORMANCE: RATE DIFFUSERS ACCORDING TO ASHRAE 70, "METHOD OF TESTING FOR RATING THE PERFORMANCE OF AIR OUTLETS AND INLETS."

STATE OF TEXAS
DEREK C. GASKAMP
124024
LICENSED PROFESSIONAL ENGINEER
10/25/2024

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N-VIZION
FORMS • ENVIRONMENTS • IMAGES

MECHANICAL SPECIFICATIONS

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Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

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M0.04

MECHANICAL SPECIFICATIONS

SECTION 23 82 19 – DUCTED VERTICAL/HORIZONTAL CONVERTIBLE VRF FAN COIL UNITS

1. MANUFACTURERS: LG ELECTRONICS, DAIKIN OR APPROVED EQUAL.
2. FAN COIL UNIT COIL WILL BE SINGLE REFRIGERANT CIRCUIT.
3. UNIT TO BE FIELD CONVERTIBLE FOR VERTICAL UP FLOW, DOWN FLOW, HORIZONTAL LEFT, AND HORIZONTAL RIGHT CONFIGURATIONS.
4. SURFACE-BURNING CHARACTERISTICS: INSULATION AND ADHESIVE SHALL HAVE A COMBINED MAXIMUM FLAME-SPREAD INDEX OF 25 AND SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO ASTM E 84 BY A QUALIFIED TESTING AGENCY.
5. DRAIN PANS: STAINLESS STEEL OR HIGH IMPACT POLYSTYRENE RESIN (HIPS). STAINLESS STEEL PANS AND DRAIN CONNECTIONS TO COMPLY WITH ASHRAE 62.1. DRAIN PANS SHALL BE REMOVABLE.
6. CABINET: 22-GAUGE COATED STEEL WITH HIGH GLOSS BAKED ENAMEL FINISH. ALL COLD SURFACES TO BE GALVANIZED STEEL.
7. INSULATION: ALL COLD SURFACES SHALL BE INTERNALLY INSULATED WITH ½ INCH FOIL FACED POLYSTYRENE FIBER INSULATION, ENCAPSULATED ON BOTH SIDES, AND SEALED ALONG THE EDGES WITH A REINFORCED FOIL-FACED COVERING.
8. FILTERS: PROVIDE FACTORY INSTALLED 1" FILTER RACK WITH MERV-8 FILTER
9. INDOOR REFRIGERANT COILS: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS BRAZED JOINTS AT FITTINGS. NO MORE THAN 21 FINS PER INCH. COMPLY WITH AHRI 210/240, AND LEAK TEST TO MINIMUM 450 PSIG FOR A MINIMUM 300-PSIG WORKING PRESSURE.
10. FAN AND MOTOR BOARD: REMOVABLE.
11. FANS: PROVIDE AN INTEGRAL FAN ASSEMBLY CONSISTING OF A GALVANIZED STEEL HOUSING AND FORWARD CURVED FAN WHEEL. PROVIDE A DIRECT DRIVE FAN/MOTOR ASSEMBLY MOUNTED ON RUBBER GROMMETS ISOLATING THE RATTING ASSEMBLY FROM THE FAN HOUSING.
12. MOTOR UNITS TO BE PROVIDED WITH A BRUSHLESS DIGITALLY-CONTROLLED FAN MOTOR (BLDC) HAVING PERMANENTLY LUBRICATED AND SEALED BALL BEARINGS.
13. WIRING TERMINATION: CONNECT MOTOR TO CHASSIS WIRING WITH PLUG CONNECTION.
14. PROVIDE UNITS THAT ARE FACTORY WIRED WITH NECESSARY ELECTRICAL COMPONENTS, INTEGRAL MICROPROCESSORS, PRINTED CIRCUIT BOARDS, THERMISTORS, SENSORS, TERMINAL BLOCKS, AND LUGS FOR POWER WIRING.
15. PROVIDE MICROPROCESSOR-BASED ALGORITHMS FOR COMPONENT PROTECTION, SOFT-START CAPABILITY, REFRIGERATION SYSTEM PRESSURE, TEMPERATURE, DEFROST, AND AMBIENT CONTROL.
16. PROVIDE A MATCHED WIRED TEMPERATURE SENSOR WITH SIMPLE OPERATOR INTERFACE TO CONTROL UNIT MODE, COOLING AND HEATING SETPOINTS, 7 DAY SCHEDULING, AND FAN SPEED.
17. PROVIDE FIELD INSTALLED CONDENSATE PUMP
18. IF SCHEDULED: PROVIDE UNIT WITH ELECTRIC HEAT MODULE TO BE FIELD INSTALLE DIN THE REHEAT POSITION. HEATING MODULE TO BE PROVIDED WITH HEATING ELEMENTS, CONTACTORS, RELAYS, HIGH TEMPERATURE SAFETY SWITCH, AND INTERCONNECTING CONTROL WIRING HARNESS WITH A QUICK CONNECT PLUG FOR EASY CONNECTION TO THE AIR HANDLING UNIT CONTROL BOARD.

SECTION 23 82 19 – DUCTED HIGH STATIC VRF FAN COIL UNITS

1. MANUFACTURERS: LG ELECTRONICS, DAIKIN OR APPROVED EQUAL.
2. FAN COIL UNIT COIL WILL BE SINGLE REFRIGERANT CIRCUIT.
3. SURFACE-BURNING CHARACTERISTICS: INSULATION AND ADHESIVE SHALL HAVE A COMBINED MAXIMUM FLAME-SPREAD INDEX OF 25 AND SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO ASTM E 84 BY A QUALIFIED TESTING AGENCY.
4. DRAIN PANS: STAINLESS STEEL OR HIGH IMPACT POLYSTYRENE RESIN (HIPS). STAINLESS STEEL PANS AND DRAIN CONNECTIONS TO COMPLY WITH ASHRAE 62.1. DRAIN PANS SHALL BE REMOVABLE. DRAIN PAN SHALL HAVE A SECONDARY DRAIN PORT/PLUG ALLOWING THE PAN TO BE DRAINED FOR SERVICE. DRAIN PANS SHALL BE PROVIDED WITH A SAFETY SWITCH THAT WILL SHUT OFF THE INDOOR UNIT IF THE CONDENSATE RISES TOO HIGH IN THE DRAIN PAN.
5. CABINET: COATED METAL CABINET. COLD SURFACES SHALL BE COVERED WITH A COATED POLYSTYRENE INSULATING MATERIAL. THE COLD SURFACE AREAS OF THE CASE SHALL BE COVERED EXTERNALLY WITH SHEET INSULATION MADE OF ETHYLENE PROPYLENE DIENE MONOMER (M-CLASS) (EDPM) CONFIRMING TO ASTM STANDARD D-1418. THE CASE SHALL BE PROVIDED WITH HANGER BRACKETS DESIGNED TO SUPPORT THE UNIT WEIGHT ON FOUR CORNERS. HANGER BRACKETS SHALL HAVE PRE-PUNCHED HOLES DESIGNED TO ACCEPT FIELD SUPPLIED, ALL-THREAD ROD HANGERS.
6. FILTERS: PROVIDE FACTORY INSTALLED WASHABLE FILTER WITH ANTIFUNGAL TREATMENT.
7. INDOOR REFRIGERANT COILS: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS BRAZED JOINTS AT FITTINGS. NO MORE THAN 21 FINS PER INCH. COMPLY WITH AHRI 210/240, AND LEAK TEST TO MINIMUM 450 PSIG FOR A MINIMUM 300-PSIG WORKING PRESSURE.
8. FAN AND MOTOR BOARD: REMOVABLE.
9. FANS: PROVIDE SIROCCO FANS MADE OF HIGH STRENGTH ABS GP-2200 POLYMERIC RESINS. FANS SHALL BE DIRECT DRIVE AND MOUNTED ON A COMMON SHAFT.
10. MOTOR UNITS TO BE PROVIDED WITH A BRUSHLESS DIGITALLY-CONTROLLED FAN MOTOR (BLDC) HAVING PERMANENTLY LUBRICATED AND SEALED BALL BEARINGS.
11. WIRING TERMINATION: CONNECT MOTOR TO CHASSIS WIRING WITH PLUG CONNECTION.
12. PROVIDE UNITS THAT ARE FACTORY WIRED WITH NECESSARY ELECTRICAL COMPONENTS, INTEGRAL MICROPROCESSORS, PRINTED CIRCUIT BOARDS, THERMISTORS, SENSORS, TERMINAL BLOCKS, AND LUGS FOR POWER WIRING.
13. PROVIDE MICROPROCESSOR-BASED ALGORITHMS FOR COMPONENT PROTECTION, SOFT-START CAPABILITY, REFRIGERATION SYSTEM PRESSURE, TEMPERATURE, DEFROST, AND AMBIENT CONTROL.
14. PROVIDE A MATCHED WIRED TEMPERATURE SENSOR WITH SIMPLE OPERATOR INTERFACE TO CONTROL UNIT MODE, COOLING AND HEATING SETPOINTS, 7 DAY SCHEDULING, AND FAN SPEED.
15. PROVIDE FIELD INSTALLED CONDENSATE PUMP
16. IF SCHEDULED: PROVIDE MERV 8 (OR 13) FILTERS HOUSED IN A FACTORY PROVIDED FILTER BOX.

SECTION 23 82 19 – CEILING CASSETTE VRF FAN COIL UNITS

1. MANUFACTURERS: LG ELECTRONICS, DAIKIN OR APPROVED EQUAL.
2. FAN COIL UNIT COIL WILL BE SINGLE REFRIGERANT CIRCUIT.
3. SURFACE-BURNING CHARACTERISTICS: INSULATION AND ADHESIVE SHALL HAVE A COMBINED MAXIMUM FLAME-SPREAD INDEX OF 25 AND SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO ASTM E 84 BY A QUALIFIED TESTING AGENCY.
4. DRAIN PANS: STAINLESS STEEL OR EXPANDABLE POLYSTYRENE RESIN (EPS). STAINLESS STEEL PANS AND DRAIN CONNECTIONS TO COMPLY WITH ASHRAE 62.1. DRAIN PANS SHALL BE REMOVABLE. DRAIN PANS SHALL BE PROVIDED WITH A SAFETY SWITCH THAT WILL SHUT OFF THE INDOOR UNIT IF THE CONDENSATE RISES TOO HIGH IN THE DRAIN PAN.
5. CABINET: UNIT SHALL BE DESIGNED TO MOUNT RECESSED IN THE CEILING AND SHALL HAVE A SURFACE-MOUNTED CONCENTRIC GRILLE ON THE BOTTOM OF THE UNIT. THE CABINET SHALL BE CONSTRUCTED OF COATED METAL. COLD SURFACES SHALL BE COVERED WITH A COATED POLYSTYRENE INSULATING MATERIAL.
6. FILTERS: PROVIDE FACTORY INSTALLED WASHABLE FILTER WITH ANTIFUNGAL TREATMENT.
7. INDOOR REFRIGERANT COILS: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS BRAZED JOINTS AT FITTINGS. NO MORE THAN 21 FINS PER INCH. COMPLY WITH AHRI 210/240, AND LEAK TEST TO MINIMUM 450 PSIG FOR A MINIMUM 300-PSIG WORKING PRESSURE.
8. FAN AND MOTOR BOARD: REMOVABLE.
9. FANS: PROVIDE DIRECT-DRIVE FAN CONSTRUCTED OF HIGH STRENGTH ABS HT-700 POLYMERIC RESIN.
10. MOTOR UNITS TO BE PROVIDED WITH A BRUSHLESS DIGITALLY-CONTROLLED FAN MOTOR (BLDC) HAVING PERMANENTLY LUBRICATED AND SEALED BALL BEARINGS.
11. WIRING TERMINATION: CONNECT MOTOR TO CHASSIS WIRING WITH PLUG CONNECTION.
12. PROVIDE UNITS THAT ARE FACTORY WIRED WITH NECESSARY ELECTRICAL COMPONENTS, INTEGRAL MICROPROCESSORS, PRINTED CIRCUIT BOARDS, THERMISTORS, SENSORS, TERMINAL BLOCKS, AND LUGS FOR POWER WIRING.
13. PROVIDE MICROPROCESSOR-BASED ALGORITHMS FOR COMPONENT PROTECTION, SOFT-START CAPABILITY, REFRIGERATION SYSTEM PRESSURE, TEMPERATURE, DEFROST, AND AMBIENT CONTROL.
14. PROVIDE A MATCHED WIRED TEMPERATURE SENSOR WITH SIMPLE OPERATOR INTERFACE TO CONTROL UNIT MODE, COOLING AND HEATING SETPOINTS, 7 DAY SCHEDULING, AND FAN SPEED.
15. PROVIDE FIELD INSTALLED CONDENSATE PUMP
16. IF SCHEDULED: PROVIDE MERV 8 FILTERS DESIGNED TO FIT IN THE CASSETTE

SECTION 23 82 19 – WALL MOUNTED VRF FAN COIL UNITS

1. MANUFACTURERS: LG ELECTRONICS, DAIKIN OR APPROVED EQUAL.
2. FAN COIL UNIT COIL WILL BE SINGLE REFRIGERANT CIRCUIT.
3. SURFACE-BURNING CHARACTERISTICS: INSULATION AND ADHESIVE SHALL HAVE A COMBINED MAXIMUM FLAME-SPREAD INDEX OF 25 AND SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO ASTM E 84 BY A QUALIFIED TESTING AGENCY.
4. DRAIN PANS: STAINLESS STEEL OR EXPANDABLE POLYSTYRENE RESIN (EPS). STAINLESS STEEL PANS AND DRAIN CONNECTIONS TO COMPLY WITH ASHRAE 62.1. DRAIN PANS SHALL BE REMOVABLE.
5. CHASSIS: HEAVY DUTY ACRYLONITRILE BUTADIENE STYRENE(ABS) AND HIGH IMPACT POLYSTYRENE (HIPS).
6. CABINET: HEAVY DUTY ACRYLONITRILE BUTADIENE STYRENE(ABS) AND HIGH IMPACT POLYSTYRENE (HIPS). STEEL RECESSING FLANGES FOR RECESSING FAN COIL UNITS INTO CEILING OR WALL.
7. FILTERS: FACTORY PROVIDED WASHABLE FILTER.
8. INDOOR REFRIGERANT COILS: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS BRAZED JOINTS AT FITTINGS. NO MORE THAN 21 FINS PER INCH. COMPLY WITH AHRI 210/240, AND LEAK TEST TO MINIMUM 450 PSIG FOR A MINIMUM 300-PSIG WORKING PRESSURE.
9. FAN AND MOTOR BOARD: REMOVABLE.
10. FANS: SINGLE DIRECT DRIVEN CROSSFLOW TANGENTIAL SIROCCO FAN MADE OF HIGH STRENGTH ABS BSN-7530 POLYMERIC RESIN OR APPROVED ALTERNATIVE. FAN SPEEDS SHALL BE LOW, MEDIUM AND HIGH.
11. MOTOR: BRUSHLESS DIGITALLY CONTROLLED(BLDC) DESIGN WITH PERMANENTLY LUBRICATED AND SEALED BALL BEARINGS. FAN/MOTOR ASSEMBLY SHALL BE MOUNTED ON VIBRATION ATTENUATING RUBBER GROMMETS. COMPLY WITH REQUIREMENTS IN SECTION 230513 "COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT."
12. WIRING TERMINATION: CONNECT MOTOR TO CHASSIS WIRING WITH PLUG CONNECTION.
13. PROVIDE UNITS THAT ARE FACTORY WIRED WITH NECESSARY ELECTRICAL COMPONENTS, INTEGRAL MICROPROCESSORS, PRINTED CIRCUIT BOARDS, THERMISTORS, SENSORS, TERMINAL BLOCKS, AND LUGS FOR POWER WIRING.
14. PROVIDE MICROPROCESSOR-BASED ALGORITHMS FOR COMPONENT PROTECTION, SOFT-START CAPABILITY, REFRIGERATION SYSTEM PRESSURE, TEMPERATURE, DEFROST, AND AMBIENT CONTROL.
15. PROVIDE A MATCHED WIRED TEMPERATURE SENSOR WITH SIMPLE OPERATOR INTERFACE TO CONTROL UNIT MODE, COOLING AND HEATING SETPOINTS, 7 DAY SCHEDULING, AND FAN SPEED.
16. PROVIDE FIELD INSTALLED CONDENSATE PUMP

SECTION 23 82 20 – VARIABLE REFRIGERANT FLOW (VRF) HEAT RECOVERY CONDENSING UNITS

1. MANUFACTURERS: LG ELECTRONICS, DAIKIN OR APPROVED EQUAL.
2. CASE: OUTDOOR UNIT CASE TO BE CONSTRUCTED FROM GALVANIZED STEEL, BONDERIZED AND FINISHED WITH BAKED ENAMEL PAINT. EACH FRAME SHALL HAVE A REMOVABLE INSPECTION PANEL TO ALLOW ACCESS TO SERVICE TOOL CONNECTIONS, DIP SWITCHES, AUTO ADDRESSING, AND ERROR CODES. THE ENTIRE FRONT PANEL OF THE CONDENSING UNIT SHALL BE REMOVABLE FOR MAINTENANCE. OUTDOOR UNIT FRAMES SHALL BE COMPLETELY FACTORY ASSEMBLED, PIPED AND WIRED. DUAL AND TRIPLE FRAME OUTDOOR UNIT SHALL BE FIELD PIPED WITH FACTORY DESIGNED AND SUPPLIED OUTDOOR UNIT Y-BRANCHES TO MANIFOLD THEM TOGETHER INTO A SINGLE REFRIGERANT CIRCUIT.
3. COILS: OUTDOOR UNIT COILS TO BE MANUFACTURED USING COPPER TUBS WITH MECHANICALLY BONDED ALUMINUM LOUVERED FINS AND PROTECTED BY A METAL GUARD. PROVIDE FACTORY APPLIED CORROSION RESISTANT BLACKFIN MATERIAL WITH HYDROPHILIC COATING.
4. FANS: FAN BLADES TO BE MADE OF DURABLE ACRYLONITRILE BUTADIENE STYRENE (ABS) POLYMERIC RESIN OR APPROVED ALTERNATIVE. OUTDOOR FAN TO BE VARIABLE SPEED PROPELLER TYPE. THE BRUSHLESS DIGITALLY CONTROLLED FAN MOTOR SHALL HAVE INHERENT PROTECTION, PERMANENTLY LUBRICATED BEARINGS, AND VARIABLE SPEED.
5. REFRIGERATION SYSTEM: THE REFRIGERATION SYSTEM CONSISTS OF A SINGLE REFRIGERATION CIRCUIT AND USES R410A REFRIGERANT. THE OUTDOOR UNIT SHALL BE PROVIDED WITH FACTORY INSTALLED COMPONENTS INCLUDING A REFRIGERANT STRAINER, CHECK VALVES, OIL SEPARATOR, OIL LEVEL SENSOR, ACCUMULATOR, FOUR-WAY REVERSING VALVE, ELECTRONIC CONTROLLED EXPANSION VALVE (EEV), HIGH AND LOW SIDE CHARGING PORTS, HIGH PRESSURE SAFETY SWITCH, SERVICE VALVES, AND INTERCONNECTING PIPING. THE OUTDOOR UNIT SHALL BE FURNISHED WITH AN INTEGRAL SUBCOOLER ASSEMBLY CONSISTING OF A DOUBLE SPIRAL TUBE-TYPE SUBCOOLING HEAT EXCHANGER AND EEV PROVIDING MODULATION OF UP TO 23 DEGREES OF SUBCOOLING. SYSTEM SHALL BE HEAT RECOVERY TYPE WITH CONTROLS FOR INDEPENDENT HEATING AND COOLING FOR EACH FAN COIL. VRF SYSTEM SHALL BE 3-PIPE FROM CONDENSING UNIT TO FACTORY PROVIDED HEAT RECOVERY UNITS, AND 2 PIPE FROM HEAT RECOVERY UNITS TO FAN COILS
6. COMPRESSOR: SINGLE PHASE CONDENSING UNITS SHALL BE PROVIDED WITH A SINGLE DIGITALLY CONTROLLED INVERTER-DRIVEN HERMETIC SCROLL COMPRESSOR TO MODULATE CAPACITY (VARIABLE FROM 20 TO 125 HZ). THREE PHASE UNITS LESS THAN 130 MBH SHALL BE EQUIPPED WITH ONE DIGITALLY CONTROLLED INVERTER-DRIVEN HERMETIC SCROLL COMPRESSOR TO MODULATE CAPACITY (VARIABLE FROM 12 TO 150HZ). THREE PHASE UNITS LARGER THAN 130 MBH NOMINAL CAPACITY SHALL BE EQUIPPED WITH TWO DIGITALLY CONTROLLED INVERTER-DRIVEN HERMETIC SCROLL COMPRESSORS TO MODULATE CAPACITY (VARIABLE FROM 12 TO 150HZ). AN INTERNAL THERMAL OVERLOAD AND FACTORY MOUNTED 60 WATT CRANKCASE HEATER SHALL BE INCLUDED ON ALL COMPRESSORS.
7. CONTROLS: OUTDOOR CONDENSING UNITS SHALL BE FACTORY WIRED WITH NECESSARY ELECTRICAL CONTROL COMPONENTS, INTEGRAL MICROPROCESSORS, PRINTED CIRCUIT BOARDS, THERMISTORS, SENSORS, TERMINAL BLOCKS, AND LUGS FOR POWER WIRINGS. THE CONTROL CIRCUIT BETWEEN THE INDOOR UNITS, HEAT RECOVERY UNITS, AND OUTDOOR UNIT SHALL BE A VARIABLE LOW VOLTAGE DC COMMUNICATION COMPLETED USING A TWO CONDUCTOR, STRANDED, AND SHIELDED CABLE FOR THE RS-485 DAISY CHAIN COMMUNICATION WIRINGS. MICROPROCESSOR-BASED ALGORITHMS SHALL PROVIDE COMPONENT PROTECTION, SOFT-START CAPABILITY, REFRIGERATION SYSTEM PRESSURE, TEMPERATURE, DEFROST, AND AMBIENT CONTROL.
8. HEAT RECOVERY UNITS: HEAT RECOVERY UNITS (HRU) SHALL HAVE TWO, THREE, FOUR, SIX, OR EIGHT PORTS FOR CONNECTION TO INDOOR UNITS. EACH PORT SHALL BE CAPABLE OF CONNECTING FROM ONE INDOOR UNIT UP TO EIGHT INDOOR UNITS UP TO A MAXIMUM NOMINAL CAPACITY OF 60 MBH. INDIVIDUAL INDOOR UNITS THAT ARE GREATER THAN 60 MBH SHALL USE TWO NEIGHBORING HEAT RECOVERY UNIT PORTS TWINNED TOGETHER USING A REVERSE Y-BRANCH KIT. EACH HEAT RECOVERY UNIT SHALL SUPPORT UP TO A MAXIMUM CAPACITY OF 230 MBH. EACH HEAT RECOVERY PORT SHALL BE ABLE TO OPERATE IN HEATING OR COOLING MODE INDEPENDENTLY, REGARDLESS OF THE MODE OF ANY OTHER PORT ON THE UNIT OR IN THE SYSTEM. HEAT RECOVERY UNITS SHALL CONTAIN ONE DOUBLE SPIRAL SUBCOOLING HEAT EXCHANGER PER PORT. EACH HEAT RECOVERY UNIT PORT SHALL BE CIRCUITED WITH TWO 2-POSITION MOTORIZED VALVES TO CONTROL R410A REFRIGERANT FLOW PATH TO ALLOW INDOOR UNITS TO OPERATE IN HEATING OR COOLING MODE.
9. REFRIGERANT PIPING: FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS FOR REFRIGERANT PIPING. CONSULT THE REFRIGERANT PIPING TREE LOCATED IN THE CONSTRUCTION DOCUMENTS FOR ESTIMATED PIPE LENGTHS AND SIZING. ALL Y-BRANCHES AND HEAT RECOVERY UNITS SHALL BE PROVIDED BY THE VRF MANUFACTURER. ANY CHANGES FROM THIS PIPING TREE NEED TO BE COORDINATED WITH THE VRF MANUFACTURER AND INFINITY MEP IN WRITING AND SUBMITTED AS PART OF THE FINAL CONSTRUCTION DOCUMENTS.
10. WARRANTY: PROVIDE A 1 YEAR LIMITED PARTS WARRANTY ON THE COMPLETE UNIT AND 5-YEAR PARTS WARRANTY ON THE COMPRESSOR

SECTION 23 23 00 – REFRIGERANT PIPING

1. SIZE PER A/C UNIT MANUFACTURER'S RECOMMENDATION, INCLUDING REQUIREMENT FOR LONG LINE APPLICATIONS. PROVIDE SOLENOID VALVES, TRAPS AND/OR ACCUMULATOR WHEN RECOMMENDED BY CONDENSING UNIT VENDOR, SUCH AS FOR UNDERGROUND LINES. USE FACTORY SEALED LINE SETS, UNLESS SIZE OR DISTANCE EXCEEDS FACTORY SET AVAILABILITY. ROUTE HIDDEN FROM VIEW. INSULATE SUCTION LINE IN INDOOR APPLICATIONS AND BOTH REFRIGERANT LIQUID AND SUCTION FOR OUTDOOR APPLICATIONS.
2. WALL PENETRATIONS TO BE PROVIDED AND INSTALLED WITH COMPRESSION GASKET AND SEAL CONSISTING OF A WALL FASTENING COMPRESSION MOUNTING METHOD AND TO MUST BE SUPPLIED AND FASTENED WITH ICC-ES LISTED NON-CORROSIVE SCREWS WITH PRE-LOADED NEOPRENE WASHERS. WALL OUTLET MUST PROVIDE AN INTEGRATED OVER-MOLDED FLEXIBLE ELASTOMERIC SLEEVE FOR SEALING, ISOLATING, AND SUPPORTING REFRIGERANT PIPES FOR VIBRATION. THE WALL OUTLET MUST ALSO PROVIDE EXPANSION AND CONTRACTION WALL PROTECTION FEATURES WITH GASKETS AND SEALS AS PER ENERGY CODE REQUIREMENTS. A STAINLESS STEEL CLAMP MUST BE SUPPLIED TO ALLOW A MECHANICAL CONNECTION AS INTENDED PER THE ENERGY CODES ALLOWING OFF/ ON REMOVABLE/ REUSABLE MAINTENANCE CAPABILITIES, AND SIZED TO CO-ACT AND FIT WITH THE PIPE INSULATION PROTECTIVE COVER. WALL OUTLET INSTALLED MUST ENSURE THAT THE INSULATION PROTECTOR AND THE WALL SEAL ARE BOTH SECURELY AND MECHANICALLY FASTENED TOGETHER WITHOUT THE USE OF ADHESIVES OR ADHESIVES TAPES AS PER ENERGY CODE REQUIREMENTS. WALL OUTLET SHALL BE TESTED AND MEET THE FOLLOWING TESTING: ASTM E 331, ASTM E 283, AND ASTM E 2178. SEAL WALL PENETRATIONS WATER TIGHT.
3. PROVIDE A FLEXIBLE PVC PLASTIC UV/WEATHER PROTECTIVE COVER FOR EXTERIOR PIPING INSULATION SIMILAR TO AIREX PRO-SYSTEM KIT. THE PIPE INSULATION UV/PROTECTIVE COVER SHALL FEATURE AN OUTDOOR INDUSTRIAL GRADE COMBINED METHOD WITH MOLECULAR BONDING THAT FEATURES AN INTEGRAL PRE-FASTENING SYSTEM THAT ALLOWS REMOVABLE/ REUSABLE USE FOR MAINTENANCE AND FULL-ENCLOSURE INCLUDING CUT TO LENGTH CAPABILITIES WITHOUT THE USE OF ADHESIVES AS AN ATTACHMENT. ALL PIPE INSULATION MATERIAL MUST BE COMPLETELY COVERED AND PROTECTED. THE USE OF ANY ADHESIVES IS NOT PERMITTED FOR THIS APPLICATION. INSULATION PROTECTIVE COVER SHALL BE TESTED AND MEET ASTM E 96, ASTM G 153, ASTM D 412, ASTM 570, ASTM E 84, AND ASTM G 21, AND SHALL MEET CLASS II VAPOR RETARDER PER ASTM E 96 - 1 PERM OR LESS. WRAPPING TAPE OR ADHESIVE TAPE IS NOT PERMITTED AS PER ENERGY CODES.
4. **COPPER TUBING**: ASTM B280, TYPE ACR HARD DRAWN OR ANNEALED. FITTINGS: ASME B16.22 WROUGHT COPPER. JOINTS: BRAZE, AWS A5.8 BCUP SILVER/PHOSPHORUS/COPPER ALLOY WITH MELTING RANGE 1190 TO 1480 DEGREES F. UNIONS, FLANGES, AND COUPLINGS: COPPER PIPE: BRONZE, SOLDERED JOINTS.

SECTION 23 82 19 – INDOOR SPECIALTY DX AIR HANDLING UNIT/ FAN COIL UNITS

1. MANUFACTURERS: AAON, DAIKIN, TRANE OR APPROVED EQUAL
2. SURFACE-BURNING CHARACTERISTICS: INSULATION AND ADHESIVE SHALL HAVE A COMBINED MAXIMUM FLAME-SPREAD INDEX OF 25 AND SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO ASTM E 84 BY A QUALIFIED TESTING AGENCY.
3. DRAIN PANS: 304 STAINLESS STEEL WITH STAINLESS DRAIN CONNECTIONS TO COMPLY WITH ASHRAE 62.1. DRAIN PANS SHALL BE REMOVABLE.
4. CABINET: THERMALLY BROKEN DOUBLE WALL CABINET. UNIT SHALL BE G90 GALVANIZED ON BOTH EXTERIOR AND INTERIOR LINER. PROVIDE 1" EXPANDED FOAM INSULATION PROVIDING R-VALUE 6.25. PROVIDE ACCESS DOORS TO FILTERS, COIL, AND SUPPLY FAN WITH PIANO HINGES AND LOCKABLE QUARTER TURN HANDLES.
5. FILTERS: PROVIDE FACTORY INSTALLED 2", 4", OR COMBINATION 2" +4" FILTER RACK WITH SCHEDULED FILTERS
6. INDOOR REFRIGERANT COILS: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS BRAZED JOINTS AT FITTINGS. COIL SHALL BE FURNISHED WITH A FACTORY INSTALLED THERMOSTATIC EXPANSION VALVE. COIL SHALL BE HYDROGEN LEAK TESTED.
7. FAN AND MOTOR BOARD: REMOVABLE.
8. FANS: FANS SHALL BE DIRECT DRIVE, UNHOUSED, BACKWARD CURVED PLENUM TYPE. FANS AND MOTOR ASSEMBLY SHALL BE DYNAMICALLY BALANCED.
9. MOTOR: MOTOR SHALL BE A HIGH EFFICIENCY ELECTRONICALLY COMMUTATED MOTOR (ECM) OR PREMIUM EFFICIENCY MOTOR WITH FACTORY INSTALLED VFD
10. QUALITY ASSURANCE
    - A. UNIT SHALL BE CERTIFIED IN ACCORDANCE WITH UL STANDARD 1995/CSA C22.2 NO. 236, SAFETY STANDARD FOR HEATING AND COOLING EQUIPMENT.
    - B. UNIT AND REFRIGERATION SYSTEM SHALL COMPLY WITH ASHRAE 15, SAFETY STANDARD FOR MECHANICAL REFRIGERATION.
    - C. UNIT SHALL BE CERTIFIED IN ACCORDANCE WITH ANSI Z21.47B/CSA 2.3B AND ANSI Z83.8/CSA 2.6, SAFETY STANDARD GAS-FIRED FURNACES.
    - D. UNIT SHALL BE SAFETY CERTIFIED BY ETL AND BE ETL US AND ETL CANADA LISTED. UNIT NAMEPLATE SHALL INCLUDE THE ETL/ETL CANADA LABEL.
11. SCHEDULE: REFER TO MECHANICAL SCHEDULE NOTES FOR ADDITIONAL UNIT OPTION REQUIREMENTS. IF ANY NOTES CONFLICT WITH THE SPECIFICATION ABOVE, THE SCHEDULE NOTES SHALL SUPERSEDE THE SPECIFICATION.

SECTION 23 82 20 – OUTDOOR SPECIALTY CONDENSING UNITS

1. MANUFACTURERS: AAON, DAIKIN, TRANE OR APPROVED EQUAL
2. CASE: OUTDOOR UNIT CASE TO BE CONSTRUCTED FROM G90 GALVANIZED STEEL. EXTERIOR SURFACES SHALL BE COATED WITH PAINT CAPABLE OF WITHSTANDING A MINIMUM 2500 HOUR SALT SPRAY TEST. UNIT TO HAVE LIFTING LUGS OR DESIGNED WITH FORKLIFT SLOTS.
3. COILS: OUTDOOR UNIT COILS TO BE MANUFACTURED USING ALL ALUMINUM MICRO-CHANNEL FINS AND TUBING.
4. FANS: PROVIDE DIRECT DRIVEN PROPELLER-TYPE FANS. CONDENSER FANS SHALL BE EITHER BE HIGH EFFICIENCY ELECTRONICALLY COMMUTATED MOTOR DRIVEN (ECM) OR PROVIDED WITH PREMIUM EFFICIENCY MOTOR AND VFD. FACTORY CONTROLS SHALL MODULATE AIRFLOW TO MAINTAIN HEAD PRESSURE.
5. PROVIDE A FULL REFRIGERATION SYSTEM UTILIZING R-410A REFRIGERANT. PROVIDE AUTOMATIC RESET LOW PRESSURE AND MANUAL RESET HIGH PRESSURE REFRIGERANT SAFETY CONTROLS, SCHRADER TYPE SERVICE FITTINGS ON BOTH THE HIGH PRESSURE AND LOW PRESSURE SIDES, LIQUID LINE FILTER DRIERS, AND SERVICE VALVES FOR LIQUID AND SUCTION CONNECTIONS.
6. COMPRESSOR: UNIT SHALL BE EQUIPPED WITH VARIABLE CAPACITY COMPRESSORS EITHER DIGITAL SCROLL OR VFD DRIVEN SCROLL TYPE. HOT GAS BYPASS WILL NOT BE AN ACCEPTABLE SUBSTITUTION FOR VARIABLE CAPACITY COMPRESSORS. COMPRESSORS SHALL BE MOUNTED IN AN ISOLATED SERVICE COMPARTMENT WHICH CAN BE ACCESSED WITH AFFECTING UNIT OPERATION. LOCKABLE HINGED ACCESS DOORS SHALL PROVIDE ACCESS TO THE COMPRESSORS. COMPRESSORS SHALL BE ISOLATED FROM THE BASE PAN WITH THE COMPRESSOR MANUFACTURER'S RECOMMENDED RUBBER VIBRATION ISOLATORS.
7. CONTROLS: PROVIDE FULL DDC CONTROLS SYSTEM TO MEET SEQUENCE OF OPERATIONS. PROVIDE BACNET INTERFACE TO UNITS CONTROLS
8. QUALITY ASSURANCE
    - A. PACKAGED AIR-COOLED CONDENSER UNITS SHALL BE CERTIFIED IN ACCORDANCE WITH ANSI/AHRI STANDARD 340/360 PERFORMANCE RATING OF COMMERCIAL AND INDUSTRIAL UNITARY AIR-CONDITIONING AND HEAT PUMP EQUIPMENT.
    - B. UNIT SHALL BE CERTIFIED IN ACCORDANCE WITH UL STANDARD 1995/CSA C22.2 NO. 236, SAFETY STANDARD FOR HEATING AND COOLING EQUIPMENT.
    - C. UNIT AND REFRIGERATION SYSTEM SHALL COMPLY WITH ASHRAE 15, SAFETY STANDARD FOR MECHANICAL REFRIGERATION.
    - D. UNIT SHALL BE CERTIFIED IN ACCORDANCE WITH ANSI Z21.47B/CSA 2.3B AND ANSI Z83.8/CSA 2.6, SAFETY STANDARD GAS-FIRED FURNACES.
    - E. UNIT ENERGY EFFICIENCY RATIO (EER) SHALL BE EQUAL TO OR GREATER THAN PRESCRIBED BY ASHRAE 90.1, ENERGY EFFICIENT DESIGN OF NEW BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.
    - F. UNIT SHALL BE SAFETY CERTIFIED BY ETL AND BE ETL US AND ETL CANADA LISTED. UNIT NAMEPLATE SHALL INCLUDE THE ETL/ETL CANADA LABEL.
9. WARRANTY: PROVIDE A 1 YEAR LIMITED PARTS WARRANTY ON THE COMPLETE UNIT AND 5-YEAR PARTS WARRANTY ON THE COMPRESSOR
10. SCHEDULE: REFER TO MECHANICAL SCHEDULE NOTES FOR ADDITIONAL UNIT OPTION REQUIREMENTS. IF ANY NOTES CONFLICT WITH THE SPECIFICATION ABOVE, THE SCHEDULE NOTES SHALL SUPERSEDE THE SPECIFICATION.

SECTION 23 23 00 – REFRIGERANT PIPING

1. SIZE PER A/C UNIT MANUFACTURER'S RECOMMENDATION, INCLUDING REQUIREMENT FOR LONG LINE APPLICATIONS. PROVIDE SOLENOID VALVES, TRAPS AND/OR ACCUMULATOR WHEN RECOMMENDED BY CONDENSING UNIT VENDOR, SUCH AS FOR UNDERGROUND LINES. USE FACTORY SEALED LINE SETS, UNLESS SIZE OR DISTANCE EXCEEDS FACTORY SET AVAILABILITY. ROUTE HIDDEN FROM VIEW. INSULATE SUCTION LINE IN INDOOR APPLICATIONS AND BOTH REFRIGERANT LIQUID AND SUCTION FOR OUTDOOR APPLICATIONS.
2. WALL PENETRATIONS TO BE PROVIDED AND INSTALLED WITH COMPRESSION GASKET AND SEAL CONSISTING OF A WALL FASTENING COMPRESSION MOUNTING METHOD AND TO MUST BE SUPPLIED AND FASTENED WITH ICC-ES LISTED NON-CORROSIVE SCREWS WITH PRE-LOADED NEOPRENE WASHERS. WALL OUTLET MUST PROVIDE AN INTEGRATED OVER-MOLDED FLEXIBLE ELASTOMERIC SLEEVE FOR SEALING, ISOLATING, AND SUPPORTING REFRIGERANT PIPES FOR VIBRATION. THE WALL OUTLET MUST ALSO PROVIDE EXPANSION AND CONTRACTION WALL PROTECTION FEATURES WITH GASKETS AND SEALS AS PER ENERGY CODE REQUIREMENTS. A STAINLESS STEEL CLAMP MUST BE SUPPLIED TO ALLOW A MECHANICAL CONNECTION AS INTENDED PER THE ENERGY CODES ALLOWING OFF/ ON REMOVABLE/ REUSABLE MAINTENANCE CAPABILITIES, AND SIZED TO CO-ACT AND FIT WITH THE PIPE INSULATION PROTECTIVE COVER. WALL OUTLET INSTALLED MUST ENSURE THAT THE INSULATION PROTECTOR AND THE WALL SEAL ARE BOTH SECURELY AND MECHANICALLY FASTENED TOGETHER WITHOUT THE USE OF ADHESIVES OR ADHESIVES TAPES AS PER ENERGY CODE REQUIREMENTS. WALL OUTLET SHALL BE TESTED AND MEET THE FOLLOWING TESTING: ASTM E 331, ASTM E 283, AND ASTM E 2178. SEAL WALL PENETRATIONS WATER TIGHT.
3. PROVIDE A FLEXIBLE PVC PLASTIC UV/WEATHER PROTECTIVE COVER FOR EXTERIOR PIPING INSULATION SIMILAR TO AIREX PRO-SYSTEM KIT. THE PIPE INSULATION UV/PROTECTIVE COVER SHALL FEATURE AN OUTDOOR INDUSTRIAL GRADE COMBINED METHOD WITH MOLECULAR BONDING THAT FEATURES AN INTEGRAL PRE-FASTENING SYSTEM THAT ALLOWS REMOVABLE/ REUSABLE USE FOR MAINTENANCE AND FULL-ENCLOSURE INCLUDING CUT TO LENGTH CAPABILITIES WITHOUT THE USE OF ADHESIVES AS AN ATTACHMENT. ALL PIPE INSULATION MATERIAL MUST BE COMPLETELY COVERED AND PROTECTED. THE USE OF ANY ADHESIVES IS NOT PERMITTED FOR THIS APPLICATION. INSULATION PROTECTIVE COVER SHALL BE TESTED AND MEET ASTM E 96, ASTM G 153, ASTM D 412, ASTM 570, ASTM E 84, AND ASTM G 21, AND SHALL MEET CLASS II VAPOR RETARDER PER ASTM E 96 - 1 PERM OR LESS. WRAPPING TAPE OR ADHESIVE TAPE IS NOT PERMITTED AS PER ENERGY CODES.
4. **COPPER TUBING**: ASTM B280, TYPE ACR HARD DRAWN OR ANNEALED. FITTINGS: ASME B16.22 WROUGHT COPPER. JOINTS: BRAZE, AWS A5.8 BCUP SILVER/PHOSPHORUS/COPPER ALLOY WITH MELTING RANGE 1190 TO 1480 DEGREES F. UNIONS, FLANGES, AND COUPLINGS: COPPER PIPE: BRONZE, SOLDERED JOINTS.

SECTION 23 07 19 – HVAC PIPING INSULATION

1. PIPE INSULATIONS, MASTICS AND JACKETS LOCATED IN ENVIRONMENTAL AIR PLENUMS SHALL HAVE MAXIMUM FLAME SPREAD INDEX OF 25 AND MAXIMUM SMOKE DEVELOPED INDEX OF NOT EXCEEDING 50 IN ACCORDANCE WITH ASTM E84.
2. FLEXIBLE ELASTOMERIC INSULATION:
    - A. CLOSED-CELL, SPONGE- OR EXPANDED-RUBBER MATERIALS. COMPLY WITH ASTM C 534, TYPE I FOR TUBULAR MATERIALS.
    - B. MANUFACTURERS: AIREX MANUFACTURING, ARMACELL LLC, K-FLEX USA.
3. PRIMARY CONDENSATE DRAINS:
    - A. INSIDE BUILDINGS- 3/4" ELASTOMERIC INSULATION FOR ENTIRE LENGTH. NO INSULATION REQUIRED OUTDOORS. INSULATION OF SECONDARY (OVERFLOW) CONDENSATE DRAINS NOT REQUIRED.
4. REFRIGERANT SUCTION PIPING:
    - A. 1" ELASTOMERIC INSULATION. PAINT OUTDOOR PORTIONS WITH MANUFACTURER'S RECOMMENDED WATER RETARDANT ULTRAVIOLET SOLAR RADIATION PROTECTIVE COATING.

SECTION 23 82 39 – WALL AND CEILING UNIT HEATERS

1. MANUFACTURERS: INDEECO, REZNOR, TRANE, Q-MARK, OR APPROVED EQUAL.
2. DESCRIPTION:
    - A. ASSEMBLY INCLUDING CHASSIS, ELECTRIC HEATING COIL, FAN, MOTOR, AND CONTROLS. COMPLY WITH UL 2021.
    - B. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
3. CABINET:
    - A. FRONT PANEL: **STAMPED-STEEL LOUVER**, WITH REMOVABLE PANELS FASTENED WITH TAMPERPROOF FASTENERS.
    - B. FINISH: BAKED ENAMEL OVER BAKED-ON PRIMER WITH MANUFACTURER'S **STANDARD** COLOR SELECTED BY ARCHITECT, APPLIED TO FACTORY-ASSEMBLED AND -TESTED WALL AND CEILING HEATERS BEFORE SHIPPING.
    - C. SURFACE-MOUNTED CABINET ENCLOSURE: STEEL WITH FINISH TO MATCH CABINET.
4. COIL:
    - A. ELECTRIC-RESISTANCE HEATING COIL: NICKEL-CHROMIUM HEATING WIRE, FREE FROM EXPANSION NOISE AND 60-HZ HUM, EMBEDDED IN MAGNESIUM OXIDE REFRACTORY AND SEALED IN CORROSION-RESISTANT METALLIC SHEATH. TERMINATE ELEMENTS IN STAINLESS-STEEL, MACHINE-STAKED TERMINALS SECURED WITH STAINLESS-STEEL HARDWARE, AND LIMIT CONTROLS FOR HIGH-TEMPERATURE PROTECTION. **PROVIDE INTEGRAL CIRCUIT BREAKER FOR OVERCURRENT PROTECTION.**
5. FAN AND MOTOR:
    - A. FAN: ALUMINUM PROPELLER DIRECTLY CONNECTED TO MOTOR.
    - B. MOTOR: PERMANENTLY LUBRICATED**, MULTISPEED**.
6. INSTALLATION:
    - A. INSTALL WALL AND CEILING UNIT HEATERS TO COMPLY WITH NFPA 90A.
    - B. INSTALL WALL AND CEILING UNIT HEATERS LEVEL AND PLUMB.
    - C. INSTALL WALL-MOUNTED THERMOSTATS AND SWITCH CONTROLS IN ELECTRICAL OUTLET BOXES AT HEIGHTS TO MATCH LIGHTING CONTROLS. VERIFY LOCATION OF THERMOSTATS AND OTHER EXPOSED CONTROL SENSORS WITH DRAWINGS AND ROOM DETAILS BEFORE INSTALLATION.

SECTION 23 34 00 – HVAC FANS

1. DIRECT DRIVE CENTRIFUGAL FAN
    - A. MANUFACTURERS: COOK, TWIN CITY, GREENHECK. MANUFACTURER SHALL BE ISO 9001 ACCREDITED.
    - B. PERFORMANCE CONFORM TO AMCA STANDARD 211 AND 311. FANS MUST BE TESTED IN ACCORDANCE WITH ANSI/AMCA STANDARD 210-99 AND AMCA STANDARD 300-96 IN AN AMCA ACCREDITED LABORATORY. FANS SHALL BE CERTIFIED TO BEAR THE AMCA LABEL FOR AIR AND SOUND PERFORMANCE SEAL
    - C. WARRANTY: MANUFACTURER SHALL PROVIDE STANDARD LIMITED WARRANTY FOR FAN EQUIPMENT (EXCLUDING MOTOR) FOR A PERIOD OF ONE YEAR (12 MONTHS) FROM DATE OF PURCHASE. MOTOR WARRANTY SHALL BE PROVIDED BY MOTOR MANUFACTURER FOR A PERIOD OF ONE YEAR (12 MONTHS) FROM DATE OF PURCHASE. WHEN NOTIFIED IN WRITING FROM THE OWNER OF A MANUFACTURING DEFECT, MANUFACTURER SHALL PROMPTLY CORRECT DEFICIENCIES WITHOUT COST TO THE OWNER.
    - D. FABRICATION:
        - a. MOTOR: OPEN TYPE, EC MOTOR SPECIFICALLY DESIGNED FOR FAN APPLICATIONS. AC INDUCTION TYPE MOTORS ARE NOT ACCEPTABLE. MOTOR SHALL BE PROVIDED WITH PERMANENTLY LUBRICATED BEARINGS AND INCLUDE IMPEDANCE OR THERMAL OVERLOAD PROTECTION AND DISCONNECT PLUG.
        - b. HOUSING: MATERIAL: MINIMUM 22 GAUGE GALVANIZED STEEL; MATERIAL: MINIMUM 22 GAUGE GALVANIZED STEEL; DAMPER ON INLET/OUTLET AS SPECIFIED ON SCHEDULE; INLET AND OUTLET SHALL INCLUDE SQUARE DUCT COLLARS.
        - c. WHEEL: STATICALLY AND DYNAMICALLY BALANCED IN ACCORDANCE TO AMCA STANDARD 204-05; THE WHEEL CONE AND FAN INLET WILL BE MATCHED AND SHALL HAVE PRECISE RUNNING TOLERANCES FOR MAXIMUM PERFORMANCE AND OPERATING EFFICIENCY; BLADES CONSTRUCTED OF ALUMINUM OR INJECTION MOLDED OF POLYPROPYLENE RESIN.
    - E. EXECUTION
        - a. COMPLIANCE: COMPLY WITH MANUFACTURER'S PRODUCT DATA, INCLUDING TECHNICAL BULLETINS, PRODUCT CATALOG INSTALLATION INSTRUCTIONS
        - b. EXAMINATION: EXAMINE AREAS TO RECEIVE FANS. NOTIFY THE ENGINEER OF CONDITIONS THAT WOULD ADVERSELY AFFECT INSTALLATION OR SUBSEQUENT UTILIZATION AND MAINTENANCE OF FANS. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.
        - c. PREPARATION: ENSURE ROOF OPENINGS ARE SQUARE, ACCURATELY ALIGNED, CORRECTLY LOCATED, AND IN TOLERANCE; ENSURE DUCT IS PLUMB, SIZED CORRECTLY, AND TO PROPER ELEVATION ABOVE ROOF DECK. INSTALL DUCT AS SPECIFIED IN AIR DISTRIBUTION.
        - d. INSTALLATION: INSTALL FANS SYSTEM AS INDICATED ON THE INSTALLATION, OPERATION AND MAINTENANCE MANUAL (IOM) AND CONTRACT DRAWINGS; INSTALL FANS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
        - e. SYSTEM STARTUP: REFER TO INSTALLATION, OPERATION, AND MAINTENANCE MANUAL (IOM).
        - f. ADJUSTING: ADJUST EXHAUST FANS TO FUNCTION PROPERLY; ADJUST BELT TENSION (AS REQUIRED); LUBRICATE BEARINGS; ADJUST DRIVE FOR FINAL SYSTEM BALANCING; CHECK WHEEL OVERLAP.
        - g. CLEANING: CLEAN AS RECOMMENDED BY MANUFACTURER. DO NOT USE MATERIAL OR METHODS WHICH MAY DAMAGE FINISH SURFACE OR SURROUNDING CONSTRUCTION.
        - h. PROTECTION: PROTECT INSTALLED PRODUCT AND FINISHED SURFACES FROM DAMAGE DURING CONSTRUCTION; PROTECT INSTALLED EXHAUST FANS TO ENSURE THAT, EXCEPT FOR NORMAL WEATHERING, FANS WILL BE WITHOUT DAMAGE OR DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION.

STATE OF TEXAS
DEREK C. GASKAMP
124024
LICENSED
PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

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MECHANICAL SPECIFICATIONS

Project Number: 230502
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Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date	Description
10-15-24	IFP
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INFINITY
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GENERAL NOTES

A	ALL AIR DEVICES ARE TO BE CLEANED. CONTRACTOR TO REVIEW OPERABILITY AND APPEARANCE OF DIFFUSERS. NOTIFY CLIENT AND ARCHITECT OF DAMAGED AND INOPERABLE DIFFUSERS.
B	CONTRACTOR TO PROVIDE ADEQUATE RETURN AIR OPENINGS IN GYP. WALLS THAT EXTEND TO DECK. SIZE OPENINGS AT 500 FPM. CORDINATE FINAL OPENING SIZE WITH MECHANICAL ENGINEER.
C	CONTRACTOR SHALL VERIFY THERMOSTATS SERVE THEIR RESPECTIVE ZONES.
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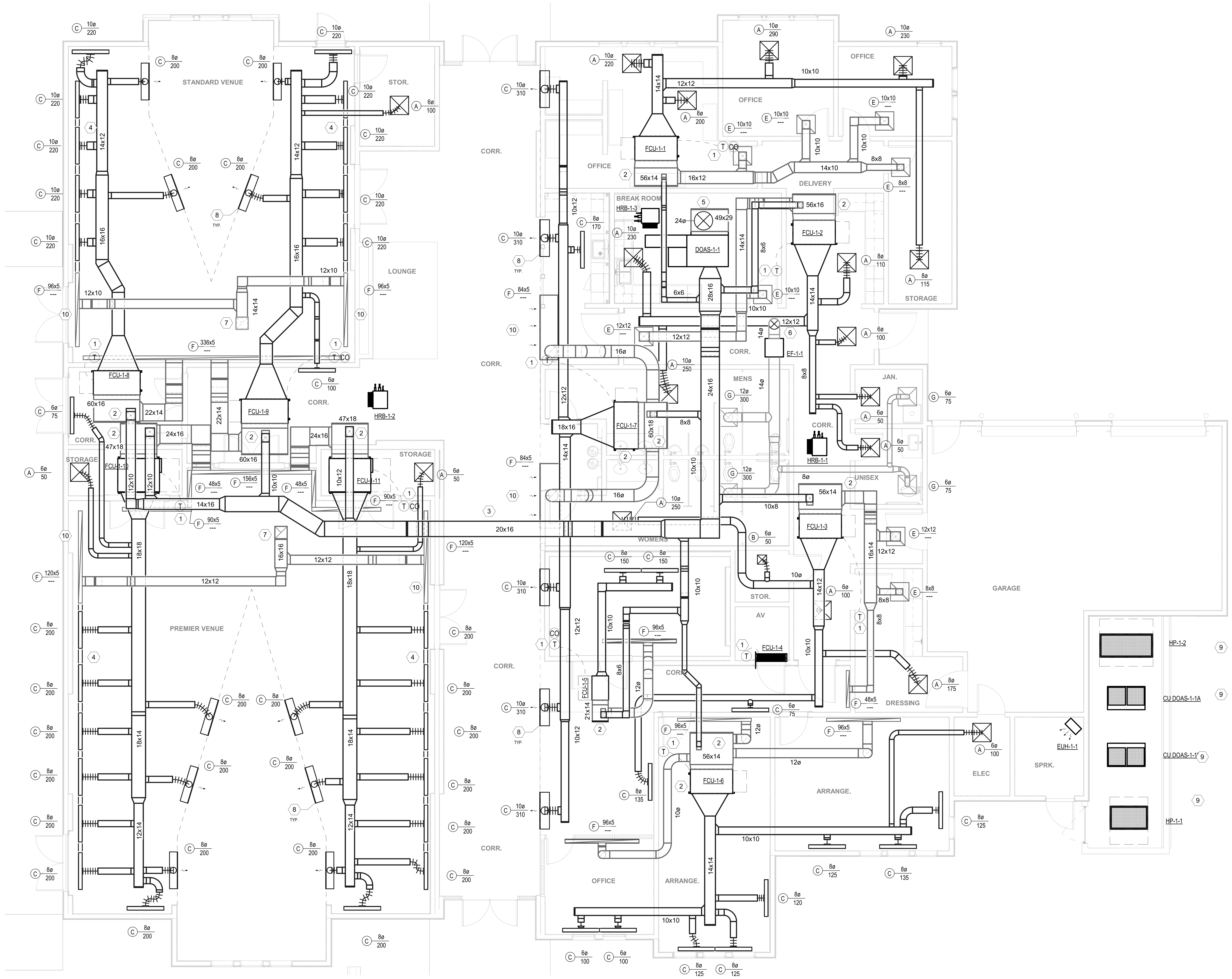
KEYNOTES

KEYNOTE	DESCRIPTION
1	PROVIDE PROGRAMMABLE BUILDING STANDARD THERMOSTAT. COORDINATE EXACT FINAL LOCATION WITH ARCHITECT.
2	PROVIDE RETURN AIR PLENUM AND FILTER BOX AT BACK OF FCU. PROVIDE 1" THICK INTERIOR LINING FOR ACOUSTICS. PROVIDE MANUAL VOLUME DAMPERS TO BALANCE OUTSIDE AIR AND RETURN AIR.
3	OUTSIDE AIR DUCT WORK SHALL BE ROUTED THROUGH CHASE. REFER TO ARCHITECTURE FOR CHASE LOCATION AND DETAIL.
4	PROVIDE SLOT TRACK FOR RETURN AND SUPPLY SLOT DIFFUSERS. DETAILING AND FINISH AS MATCH RETURN AIR SLOT TRACK ON ADJACENT SIDE OF THE ROOM. SUPPLY AIR SLOTS AND INSULATED PLENUMS TO BE PROVIDED FOR SLOT DIFFUSER. BALANCE SUPPLY SLOT DIFFUSERS AS INDICATED.
5	OUTSIDE AIR DUCT TO GRAVITY VENTILATOR LOCATED ON ROOF.
6	EXHAUST AIR DUCT TO GRAVITY VENTILATOR LOCATED ON ROOF.
7	RELIEF AIR DUCT TO GRAVITY VENTILATOR LOCATED ON ROOF.
8	MOUNT SLOT DIFFUSER FLUSH WITH FURRDOWN/ WALL. CONTRACTOR TO COORDINATE FINAL LOCATION, DETAILING, COLOR, AND MOUNTING HEIGHT WITH ARCHITECT.
9	CONDENSING UNIT LOCATED ON 6" CONCRETE HOUSEKEEPING PAD. CONTRACTOR TO COORDINATE EXACT FINAL LOCATION WITH ARCHITECT. CONTRACTOR TO MAINTAIN INSTALL/CLEARANCE REQUIREMENTS SPECIFIED BY THE MANUFACTURE.
10	PROVIDE CONTINUOUS FLOWBAR IN AREA INDICATED. AREA NOT USED FOR SUPPLY SHALL BE USED FOR RETURN AIR. PROVIDE PERFORATED RETURN LIGHT SHIELD. COORDINATE EXACT FINAL LOCATION WITH ARCHITECT.



1 MECHANICAL PLAN
3/16" = 1'-0"
TRUE NORTH

STATE OF TEXAS
DEREK C. GASKAMP
124024
LICENSED PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
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M2.01

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KEYNOTES

KEYNOTE	DESCRIPTION
1	ROUTE 1" INSULATED CONDENSATE LINE TO THE INDIRECT RECEPTOR LOCATED NEAR SINK. CONTRACTOR SHALL COORDINATE WITH PLUMBING.
2	ROUTE 1" INSULATED CONDENSATE LINE TO THE INDIRECT RECEPTOR LOCATED JANITOR MOP SINK. CONTRACTOR SHALL COORDINATE WITH PLUMBING.
3	ROUTE REFRIGERANT LINES TO RESPECTIVE UNIT LOCATED AT MECHANICAL YARD. SIZE PER MANUFACTURER'S RECOMMENDATION. FIELD VERIFY EXACT ROUTING WITH EXISTING CONDITIONS.
4	PIPING SHALL BE ROUTED THROUGH CHASE. REFER TO ARCHITECTURE FOR CHASE LOCATION AND DETAIL.
5	PROVIDE HRB IN APPROXIMATE LOCATION. REFRIGERANT PIPING SHALL BE SIZED BASED ON INSTALLED PIPE LENGTHS AND MANUFACTURERS GUIDELINES. MAINTAIN ALL MANUFACTURER REQUIRED CLEARANCES.

STATE OF TEXAS
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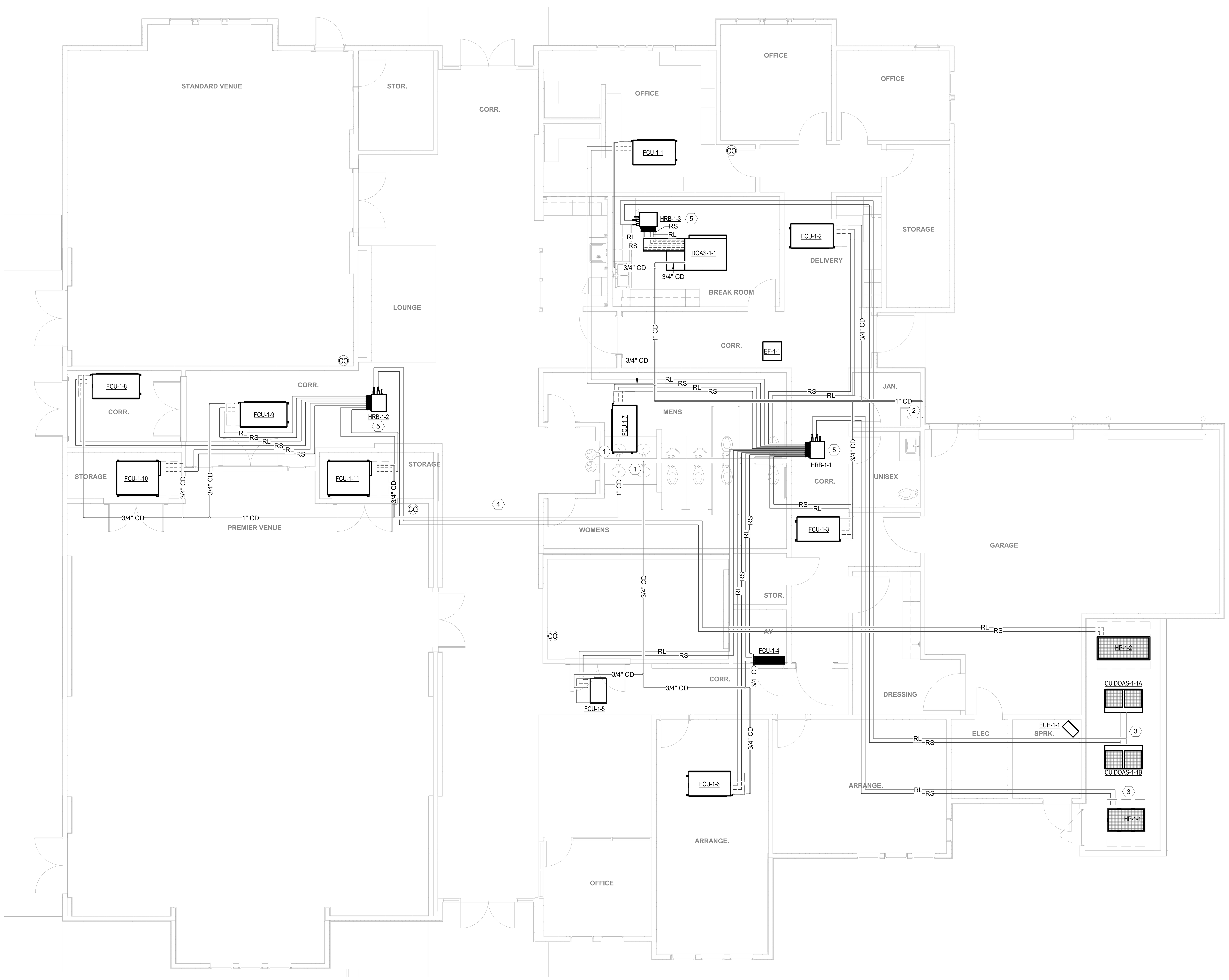
10/25/2024



1 MECHANICAL PIPING PLAN
3/16" = 1'-0"
TRUE NORTH

Weed Corley Fish
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MECHANICAL PIPING PLAN

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KEYNOTES

KEYNOTE	DESCRIPTION
1	INTAKE GRAVITY VENTILATOR MOUNTED ON ROOF. COORDINATE DUCT ROUTING WITH STRUCTURE. DISCHARGE SHALL BE A MINIMUM OF 10 FEET FROM ALL EXHAUST AIR.
2	EXHAUST GRAVITY VENTILATOR MOUNTED ON ROOF. COORDINATE DUCT ROUTING WITH STRUCTURE. DISCHARGE SHALL BE A MINIMUM OF 10 FEET FROM ALL AIR INTAKES.
3	GRAVITY VENTILATOR TO BE FLASHED AIR TIGHT TO EXISTING ROOF STRUCTURE. BARAMETRIC RELEIF DAMPER TO BE SET TO MAINTAIN BUILDING PRESSURIZATION TO +0.02 (ADJ.)

STATE OF TEXAS
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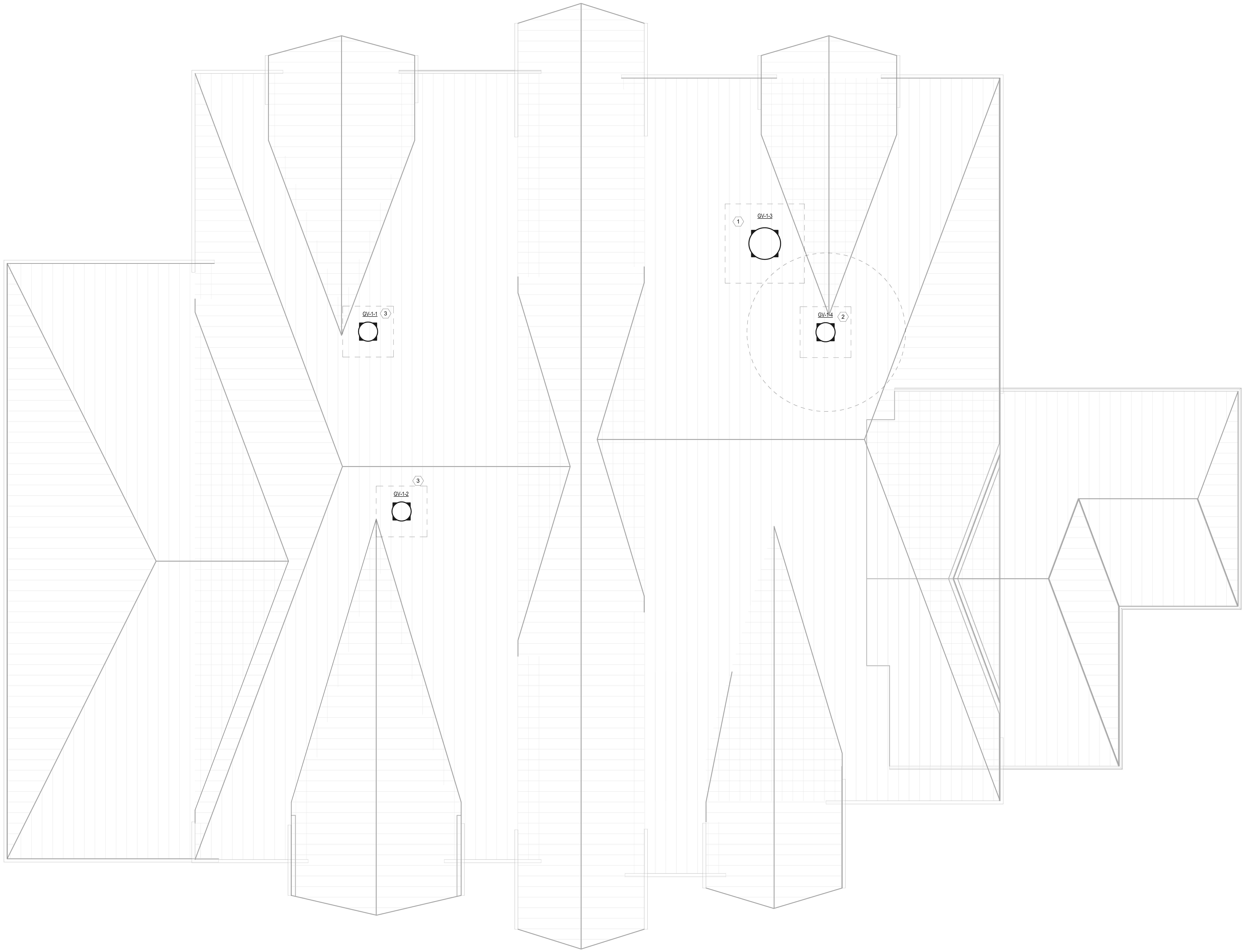

1 MECHANICAL ROOF PLAN
3/16" = 1'-0"
TRUE NORTH

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MECHANICAL ROOF PLAN

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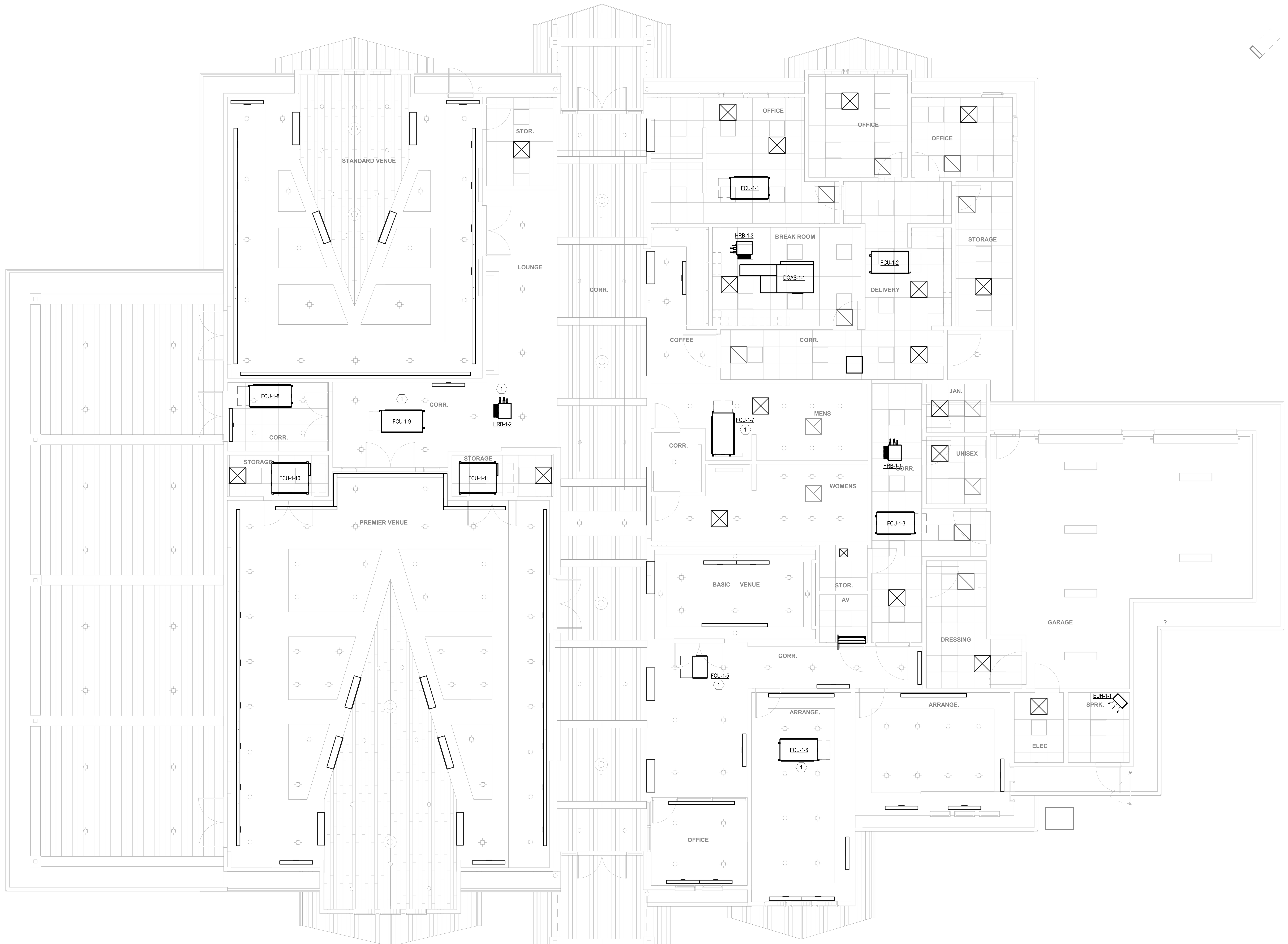
KEYNOTES

KEYNOTE	DESCRIPTION
1	PROVIDE TRIMLESS ACCESS PANEL FOR EQUIPMENT LOCATE ABOVE INACCESSIBLE CEILING. COORDINATE EXACT SPECIFICATION, SIZE, AND DIMENSION WITH ARCHITECT.



1 MECHANICAL CEILING COORDINATION PLAN
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DEREK C. GASKAMP
124024
10/25/2024

Weed Corley Fish
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MECHANICAL CEILING COORDINATION PLAN

Project Number: 230502
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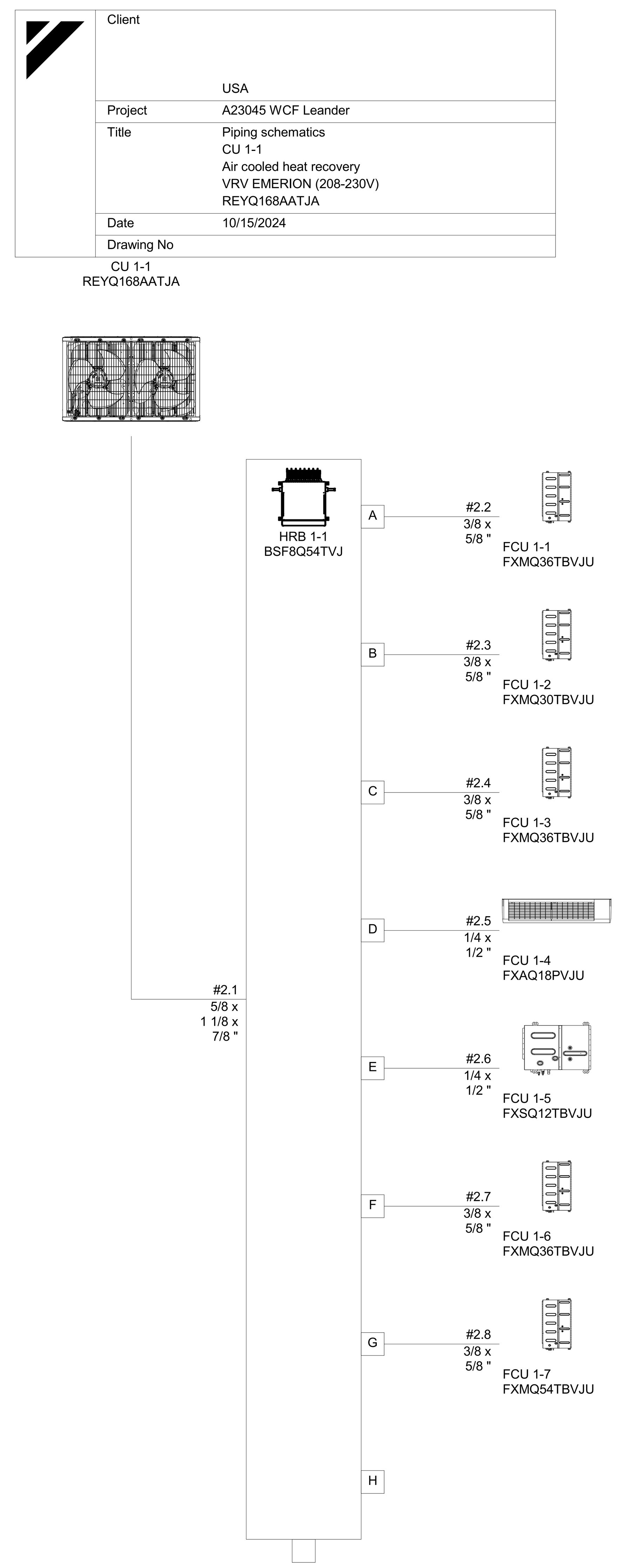
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USA
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VRV EMERION (208-230V)
REYQ168AATJA
Date 10/15/2024
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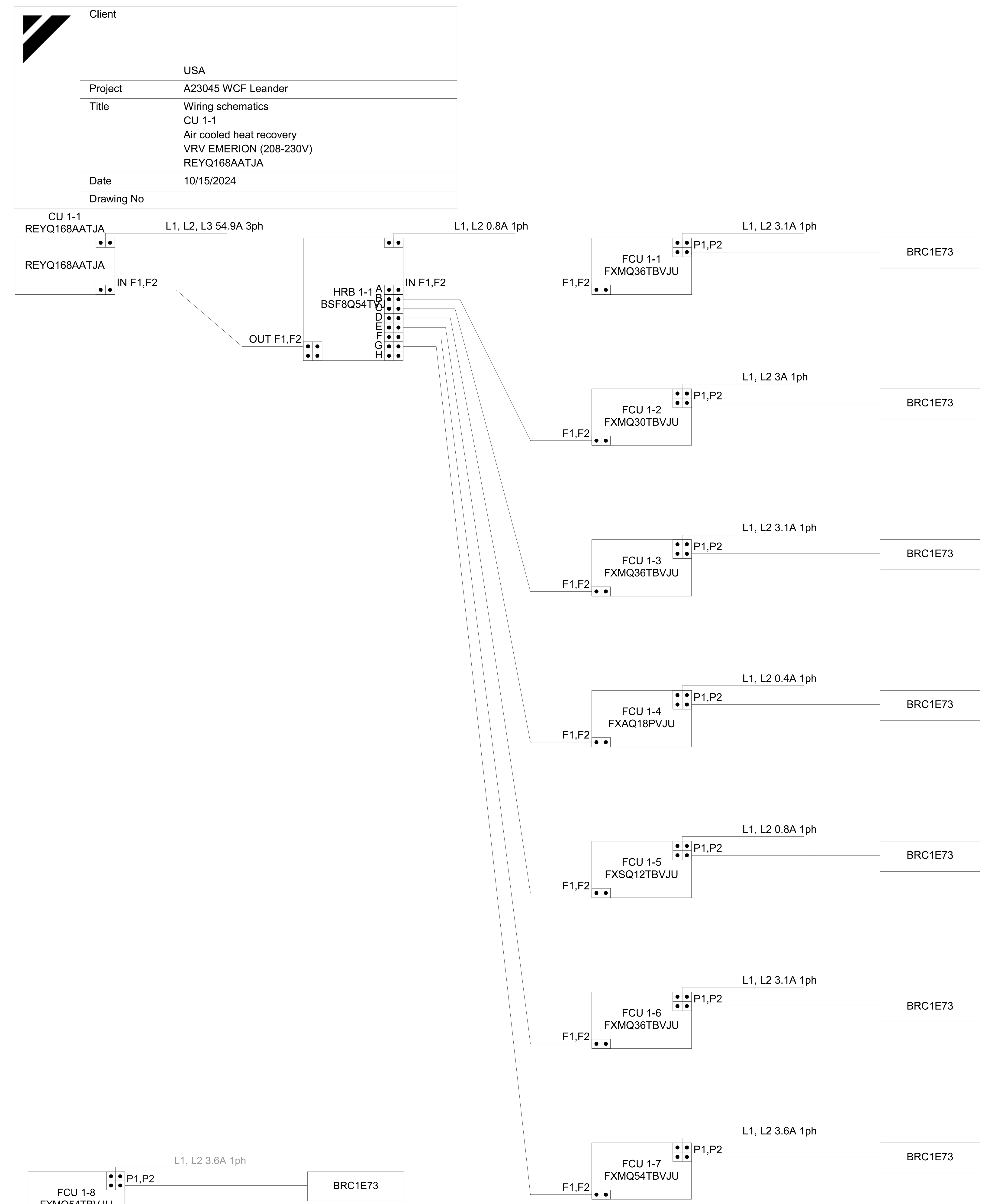
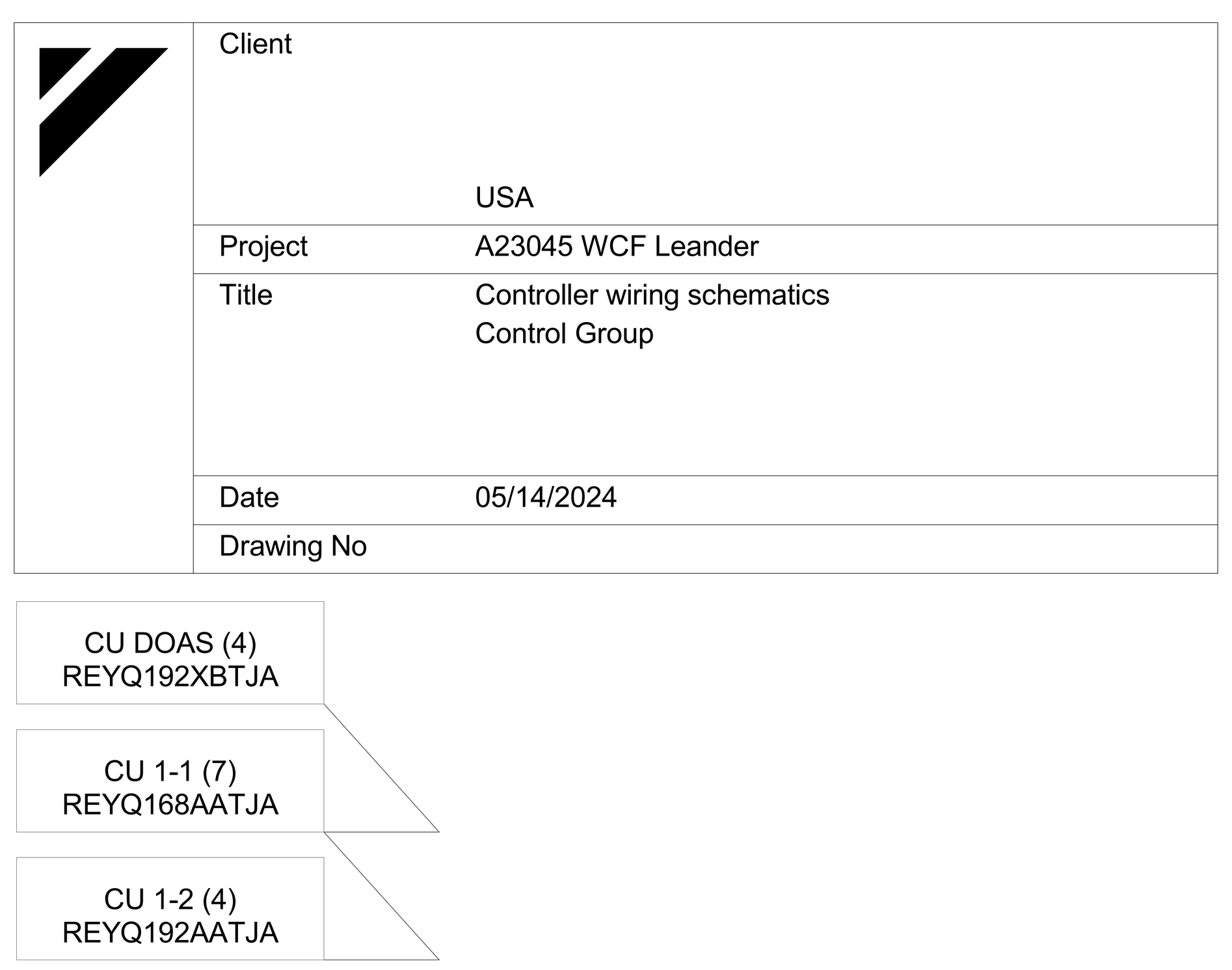
5/8 "
FCU 1-1
FXMQ36TBVJU
B
#2.3
3/8 x
5/8 "
FCU 1-2
FXMQ30TBVJU
C
#2.4
3/8 x
5/8 "
FCU 1-3
FXMQ36TBVJU
D
#2.5
1/4 x
1/2 "
FCU 1-4
FXAQ18PVJU
E
#2.6
1/4 x
1/2 "
FCU 1-5
FXSQ12TBVJU
F
#2.7
3/8 x
5/8 "
FCU 1-6
FXMQ36TBVJU
G
#2.8
3/8 x
5/8 "
FCU 1-7
FXMQ54TBVJU
H

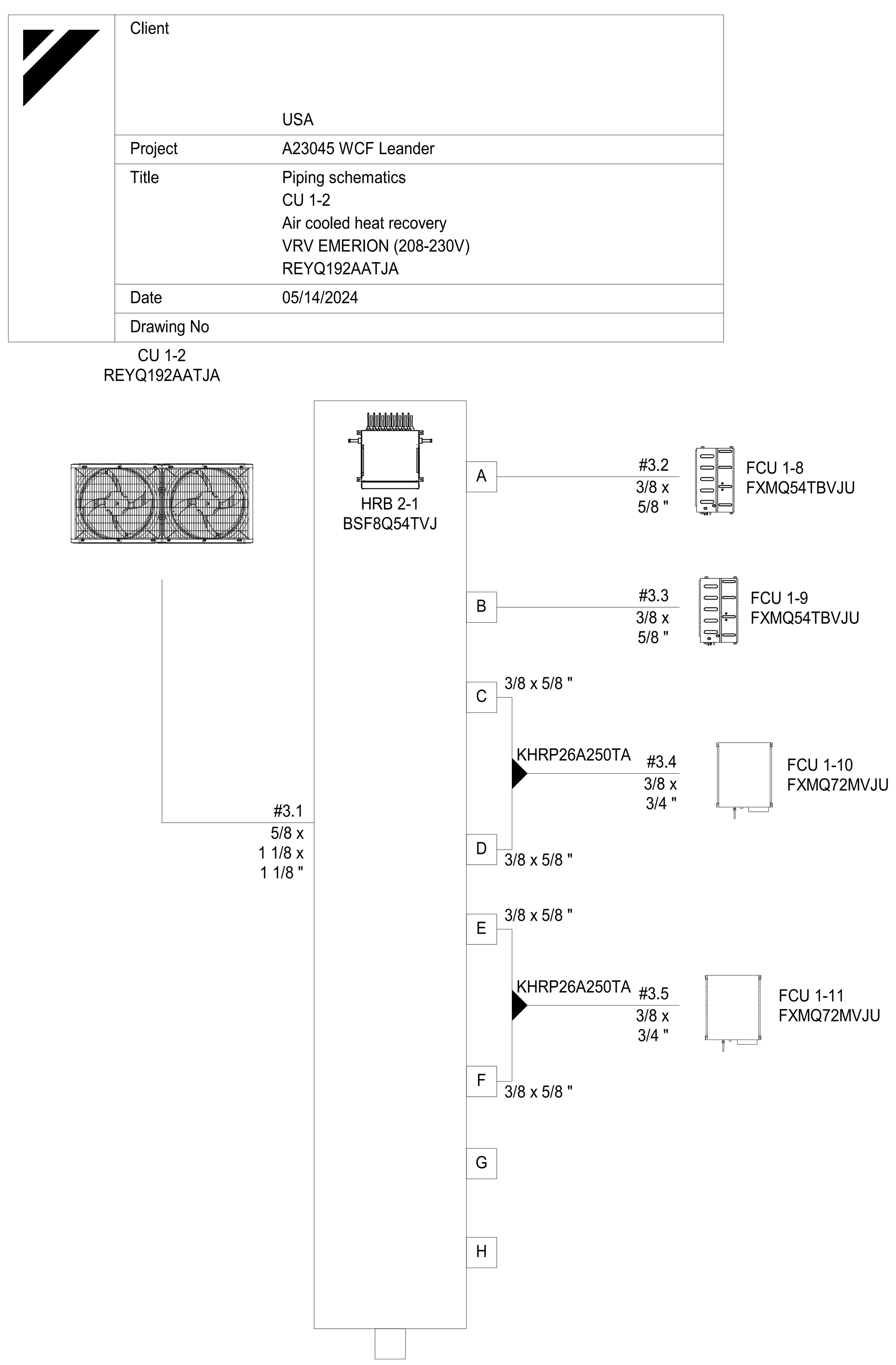
3 **HP 1-1 PIPING DIAGRAM**
NOT TO SCALE


Client
USA
Project A23045 WCF Leander
Title Wiring schematics
CU 1-1
Air cooled heat recovery
VRV EMERION (208-230V)
REYQ168AATJA
Date 10/15/2024
Drawing No
CU 1-1
REYQ168AATJA
REYQ168AATJA
L1, L2, L3 54.9A 3ph
IN F1,F2
OUT F1,F2
L1, L2 0.8A 1ph
HRB 1-1
BSF8Q54TVJ
IN F1,F2
A B C D E F G H
FCU 1-1
FXMQ36TBVJU
F1,F2
P1,P2
L1, L2 3.1A 1ph
BRC1E73
FCU 1-2
FXMQ30TBVJU
F1,F2
P1,P2
L1, L2 3A 1ph
BRC1E73
FCU 1-3
FXMQ36TBVJU
F1,F2
P1,P2
L1, L2 3.1A 1ph
BRC1E73
FCU 1-4
FXAQ18PVJU
F1,F2
P1,P2
L1, L2 0.4A 1ph
BRC1E73
FCU 1-5
FXSQ12TBVJU
F1,F2
P1,P2
L1, L2 0.8A 1ph
BRC1E73
FCU 1-6
FXMQ36TBVJU
F1,F2
P1,P2
L1, L2 3.1A 1ph
BRC1E73
FCU 1-7
FXMQ54TBVJU
F1,F2
P1,P2
L1, L2 3.6A 1ph
BRC1E73

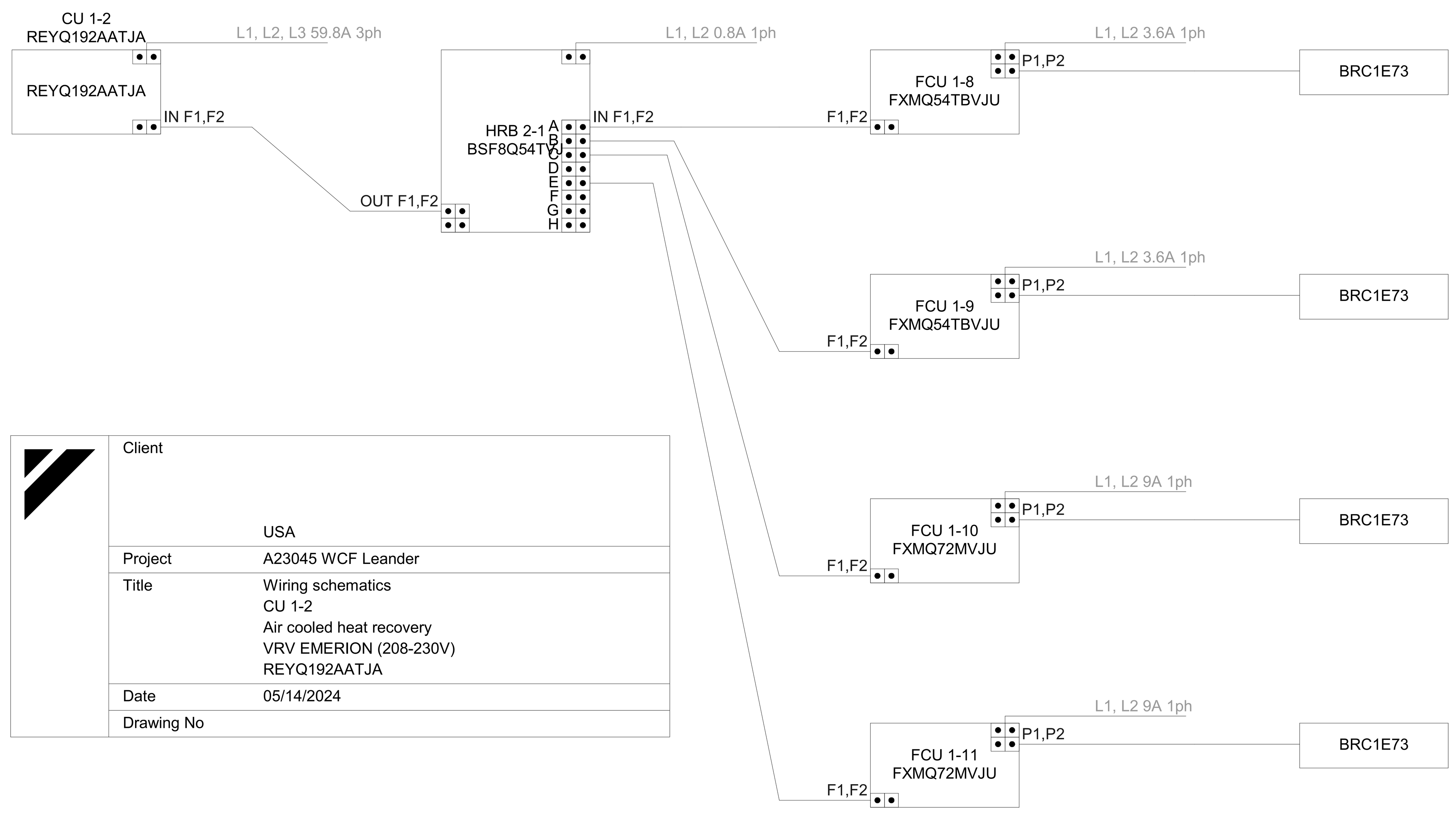
1 **HP 1-1 WIRING DIAGRAM**
NOT TO SCALE



5 **CONTROLLER WIRING DIAGRAM**
NOT TO SCALE


Client
USA
Project A23045 WCF Leander
Title Piping schematics
CU 1-2
Air cooled heat recovery
VRV EMERION (208-230V)
REYQ192AATJA
Date 05/14/2024
Drawing No
CU 1-2
REYQ192AATJA
HRB 2-1
BSF8Q54TVJ
#3.1
5/8 x
1 1/8 x
1 1/8 "
A
#3.2
3/8 x
5/8 "
FCU 1-8
FXMQ54TBVJU
B
#3.3
3/8 x
5/8 "
FCU 1-9
FXMQ54TBVJU
C
3/8 x 5/8 "
KHRP26A250TA
#3.4
3/8 x
3/4 "
FCU 1-10
FXMQ72MVJU
D
3/8 x 5/8 "
E
3/8 x 5/8 "
KHRP26A250TA
#3.5
3/8 x
3/4 "
FCU 1-11
FXMQ72MVJU
F
3/8 x 5/8 "
G
H

4 **HP 1-2 PIPING DIAGRAM**
NOT TO SCALE


CU 1-2
REYQ192AATJA
REYQ192AATJA
L1, L2, L3 59.8A 3ph
IN F1,F2
OUT F1,F2
L1, L2 0.8A 1ph
HRB 2-1
BSF8Q54TVJ
IN F1,F2
A B C D E F G H
FCU 1-8
FXMQ54TBVJU
F1,F2
P1,P2
L1, L2 3.6A 1ph
BRC1E73
FCU 1-9
FXMQ54TBVJU
F1,F2
P1,P2
L1, L2 3.6A 1ph
BRC1E73
FCU 1-10
FXMQ72MVJU
F1,F2
P1,P2
L1, L2 9A 1ph
BRC1E73
FCU 1-11
FXMQ72MVJU
F1,F2
P1,P2
L1, L2 9A 1ph
BRC1E73
Client
USA
Project A23045 WCF Leander
Title Wiring schematics
CU 1-2
Air cooled heat recovery
VRV EMERION (208-230V)
REYQ192AATJA
Date 05/14/2024
Drawing No

2 **HP 1-2 WIRING DIAGRAM**
NOT TO SCALE

STATE OF TEXAS
DEREK C. GASKAMP
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LICENSED
PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

N-VIZION
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MECHANICAL VRF DIAGRAM

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

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TBPE Registration Number: 18865
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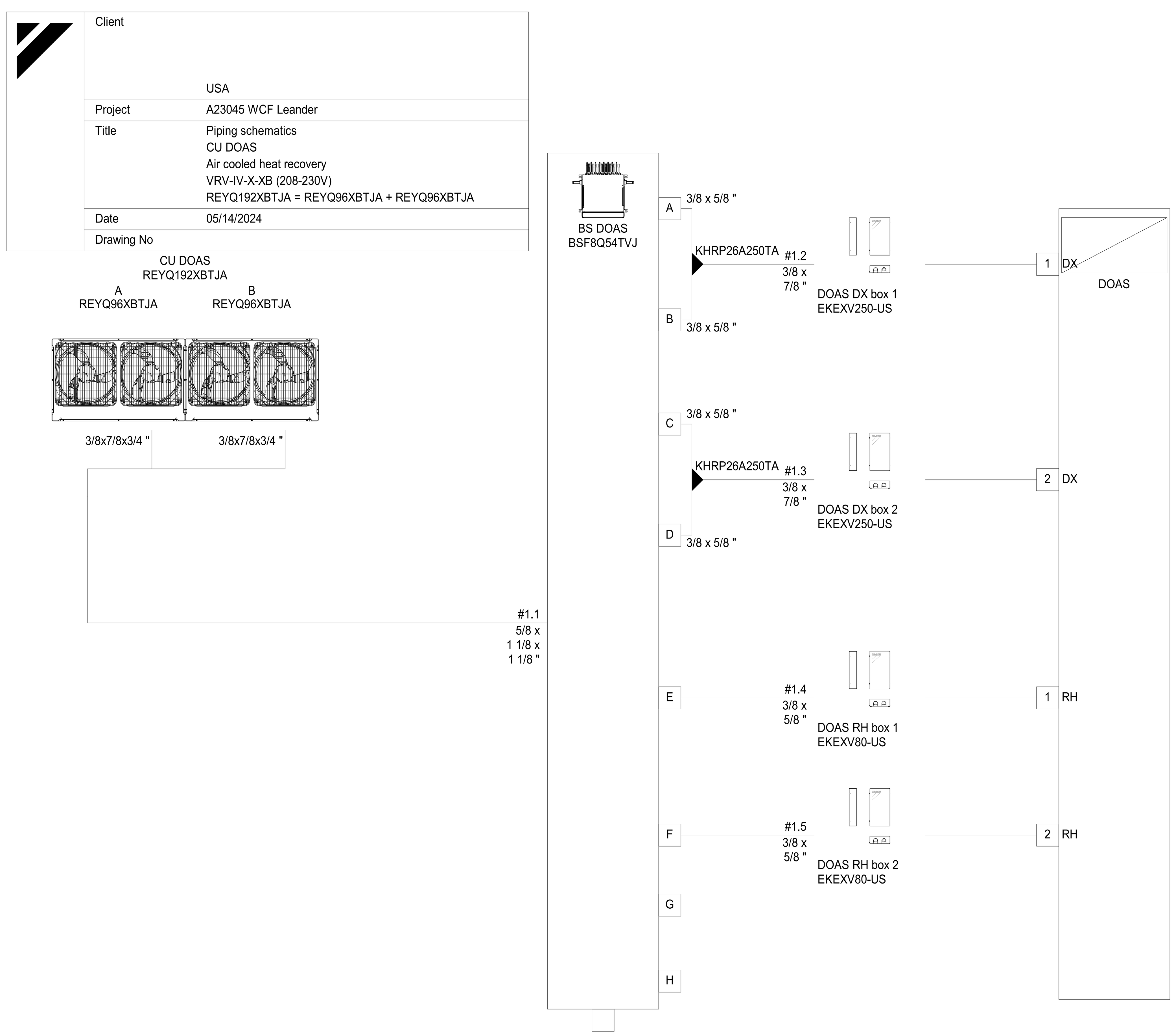
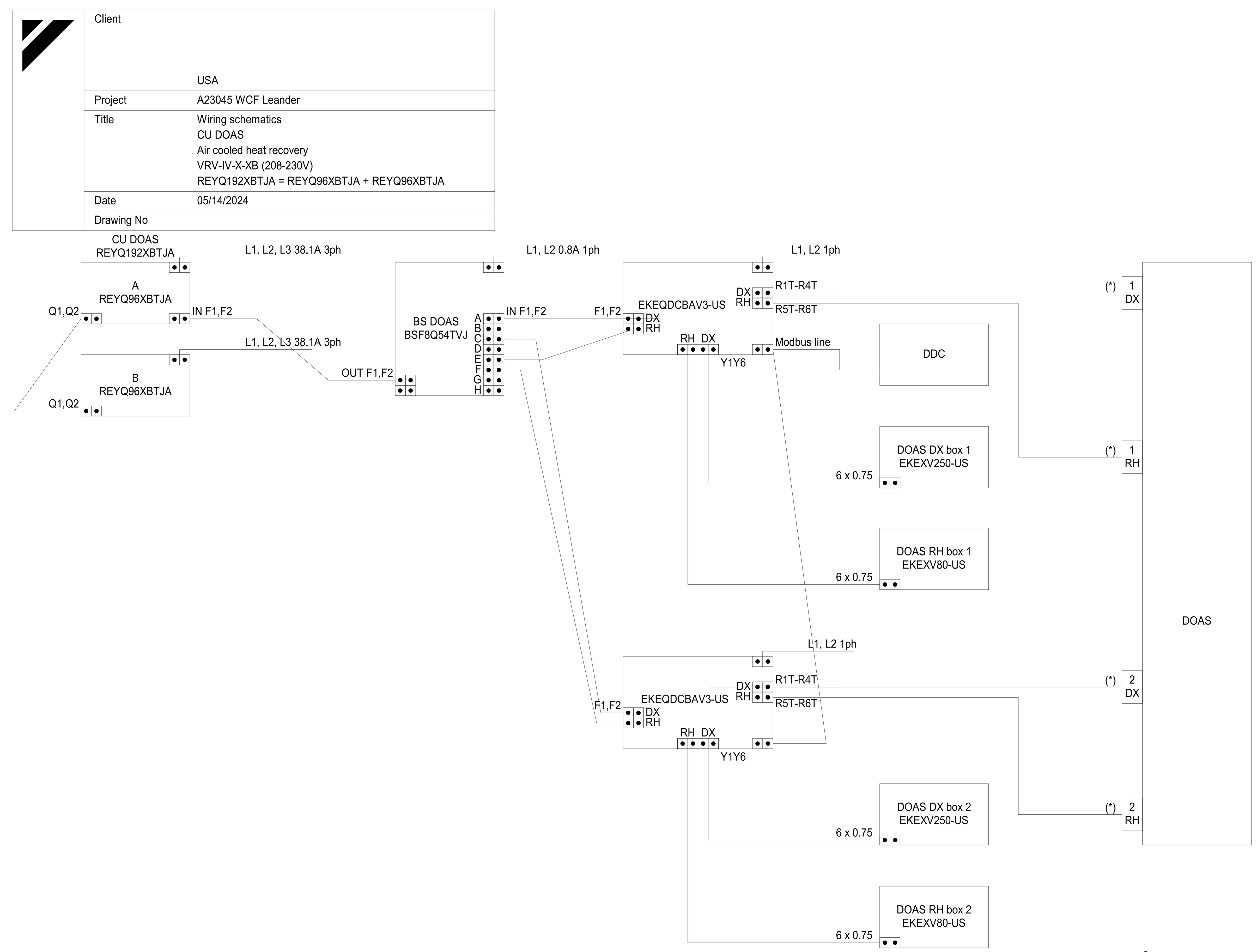
M4.01



2 DOAS PIPING DIAGRAM
NOT TO SCALE



1 DOAS WIRING DIAGRAM
NOT TO SCALE

STATE OF TEXAS
DEREK C. GASKAMP
124024
LICENSED
PROFESSIONAL ENGINEER
10/25/2024

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Vista Ridge and Bagdad Rd.
Leander, TX 78641

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MECHANICAL VRF DIAGRAM

Project Number: 230692
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p.512.327.8695 www.n-vizion.net
Registration Nos.: TX PE Firm F-12229, TX 25486, LA: 9413 MI:
1301069591, NV: 8252, NC: 14883, OH: ARC.1917865

Date	IFP	Description
10-15-24	IFP	
10-25-24	Rev1	Permit Set

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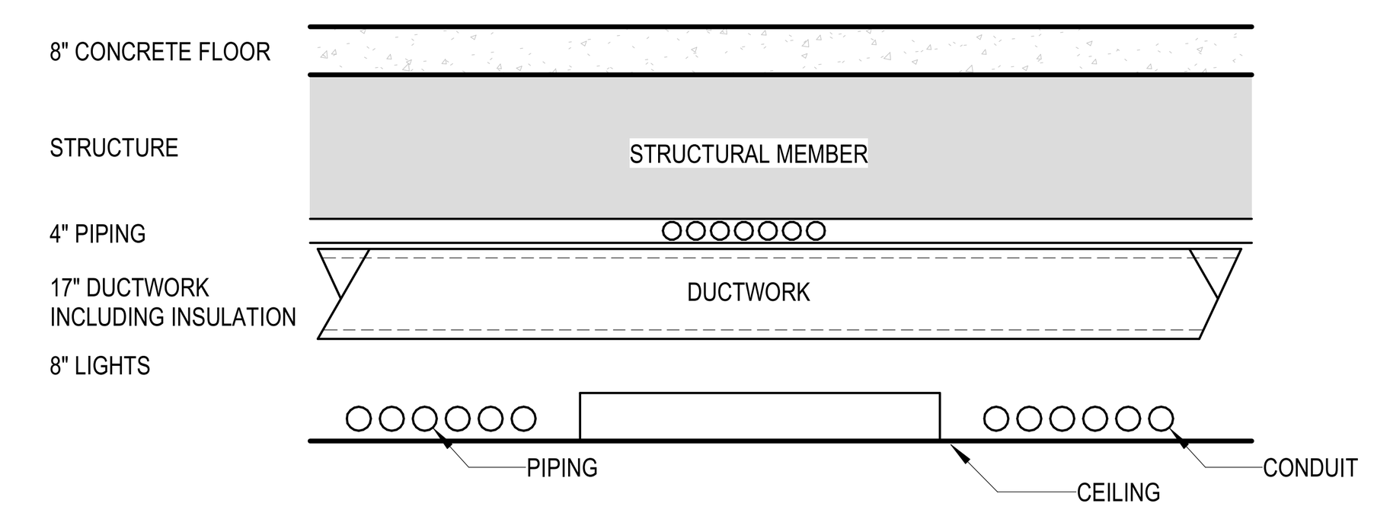
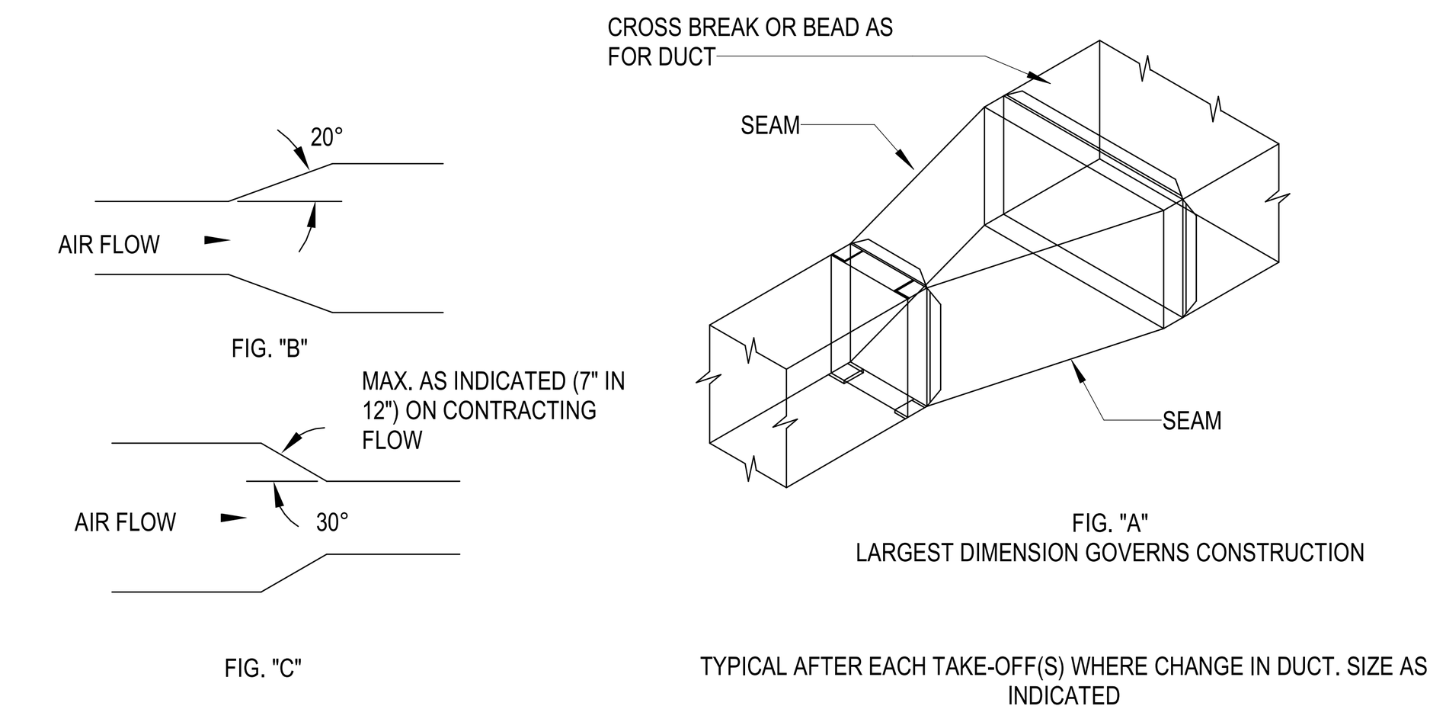
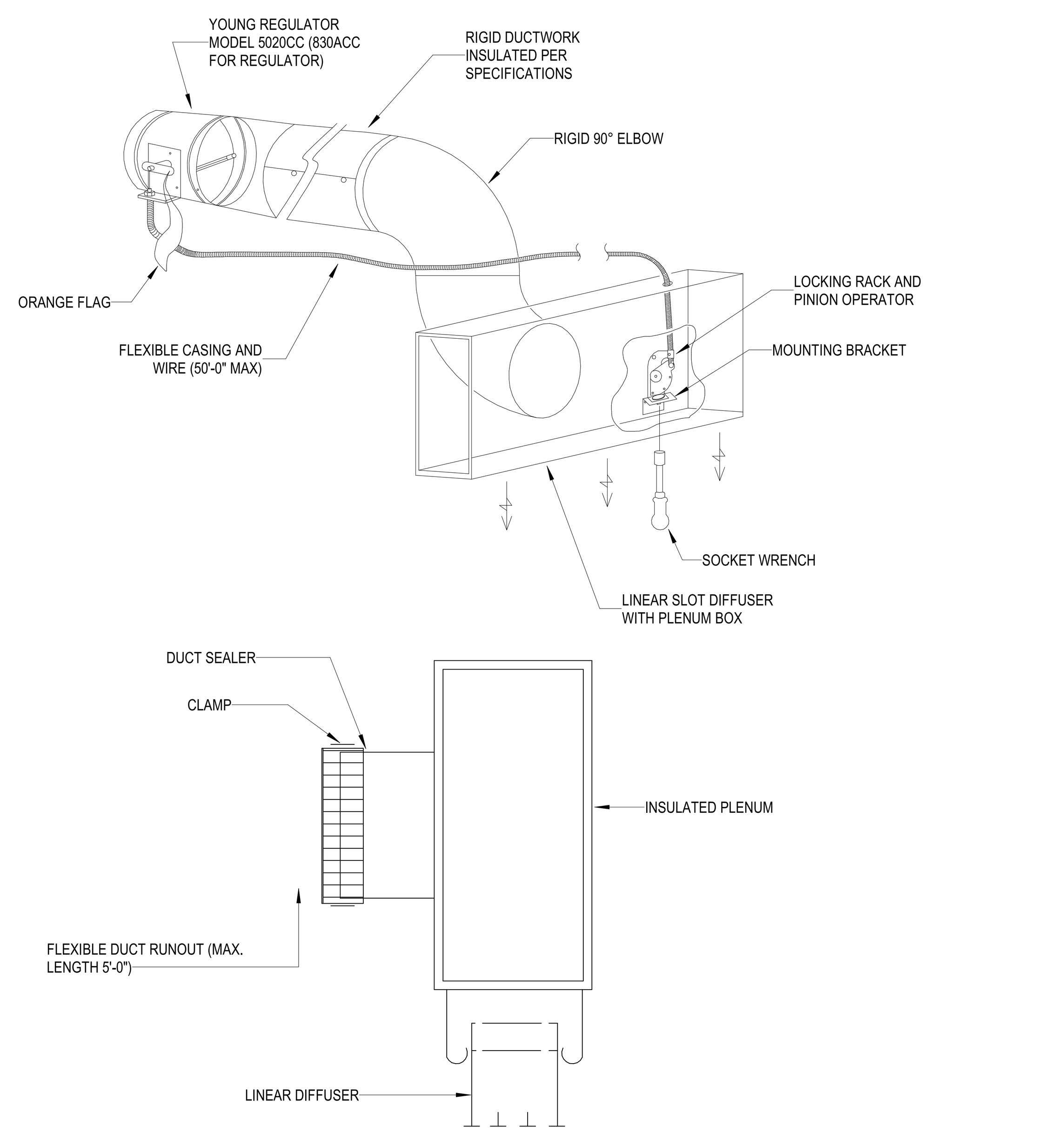
M4.02



6 TYPICAL PLENUM ARRANGEMENT DETAIL
NOT TO SCALE



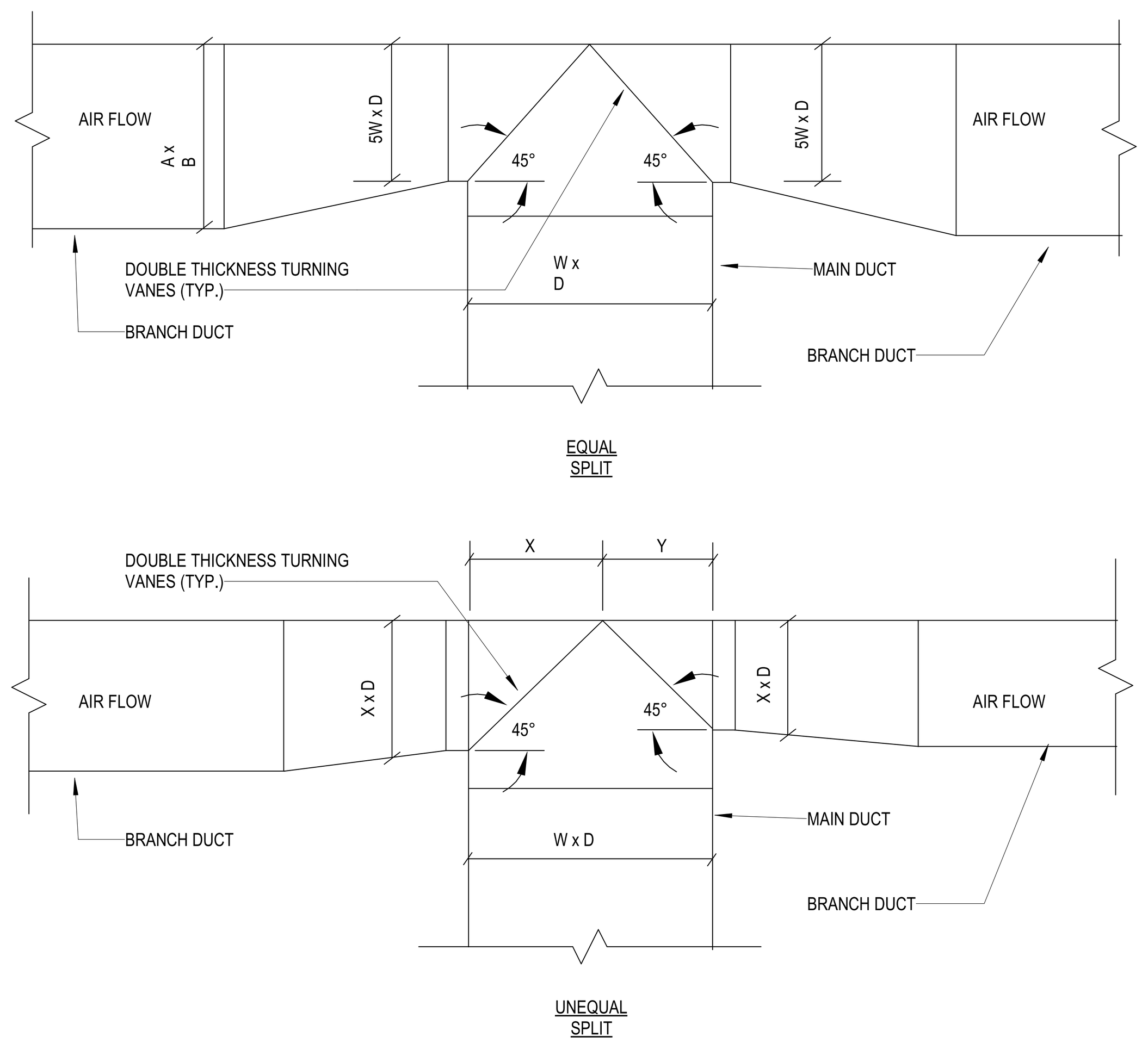
3 DUCT TRANSITION DETAIL
NOT TO SCALE



NOTES:

1. PROVIDE REMOTE CABLE DAMPERS FOR ALL GYP./ NON ACCESSIBLE CEILINGS.
2. COORDINATE EXACT LOCATION OF CEILING MOUNTED CONCEALED REGULATOR WITH ARCHITECT PRIOR TO INSTALLATION.
3. PROVIDE BALANCING DAMPER AT BRANCH TAKEOFF.

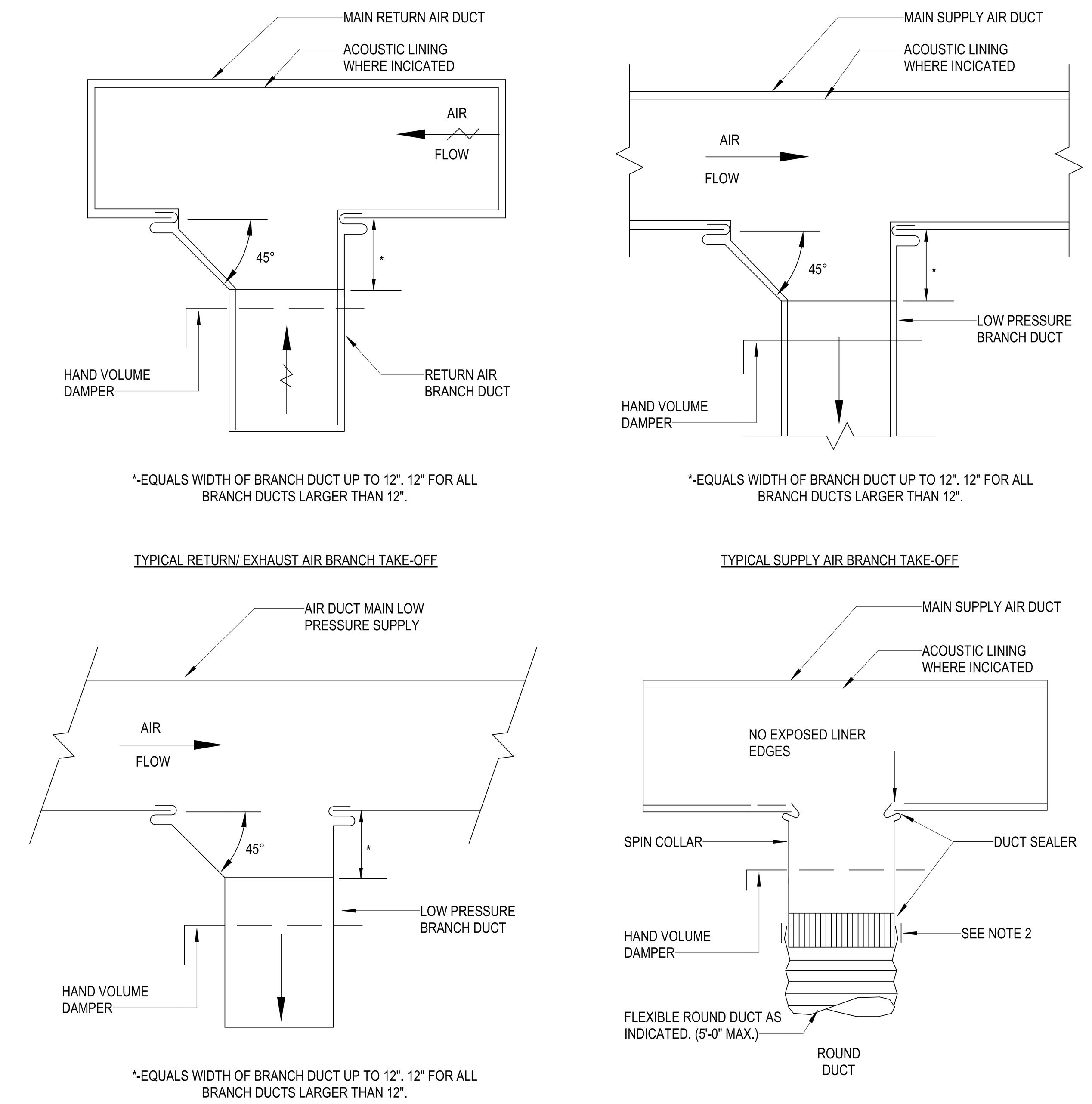
7 LINEAR DIFFUSER CONNECTION
NOT TO SCALE



NOTES:

1. DIMENSIONS 'X' AND 'Y' ARE EQUAL TO (BRANCH CFM ÷ MAIN CFM) x W

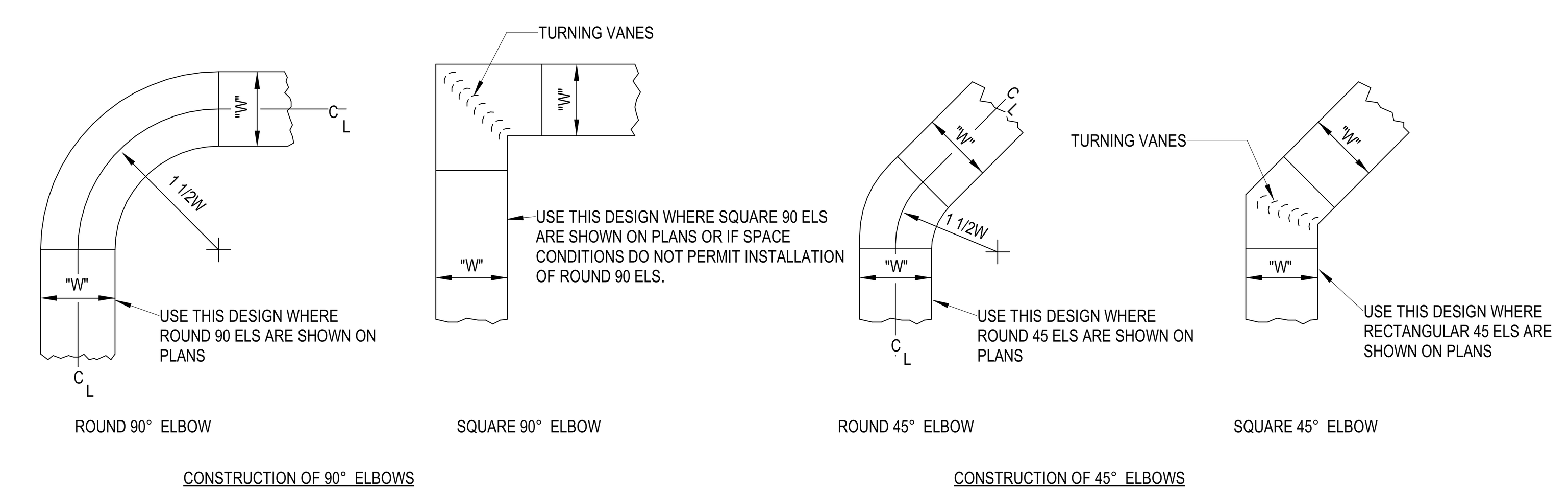
5 DUCT TEE CONNECTION DETAIL
NOT TO SCALE

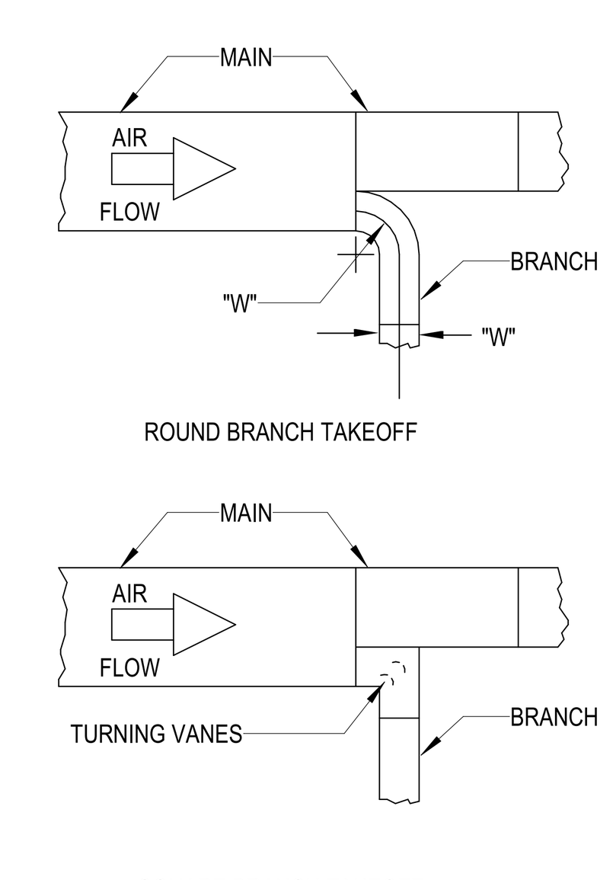


NOTES:

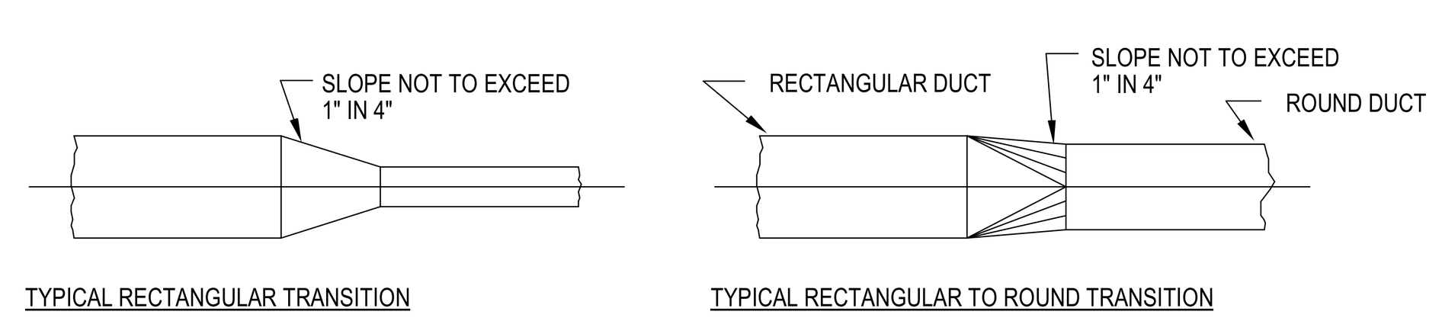
1. PROVIDE BALANCING DAMPER AT BRANCH TAKEOFF.
2. SEAL FLEX DUCT TO METAL COLLAR WITH DUCT TAPE (NASHUA 398 OR EQUAL), INSTALL TIE-WRAP (ULINE JUMBO NATURAL NYLON CABLE TIES) OVER DUCT TAPE, INSTALL DUCT INSULATION OVER METAL COLLAR AND SECURE WITH TIE-WRAP.

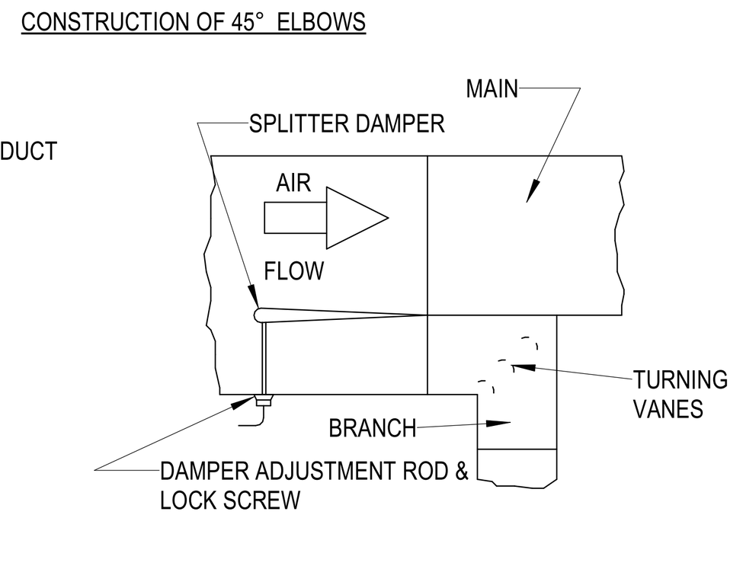
2 TYPICAL LOW PRESSURE BRANCH DUCT TAKE-OFF DETAIL
NOT TO SCALE





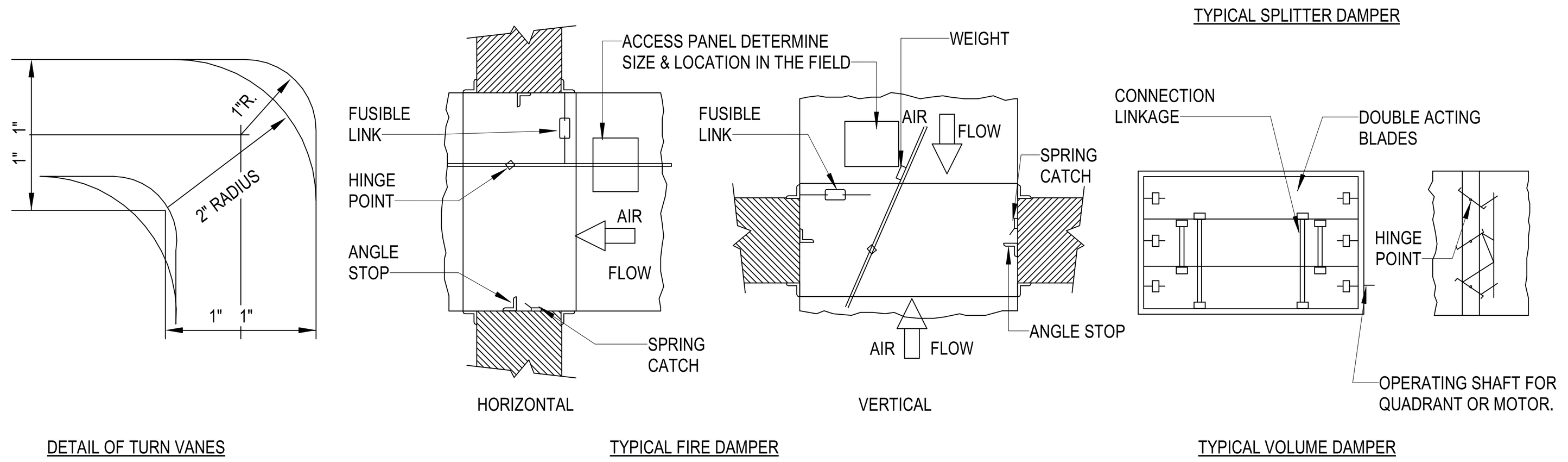
CONSTRUCTION OF BRANCH TAKEOFFS FROM MAIN



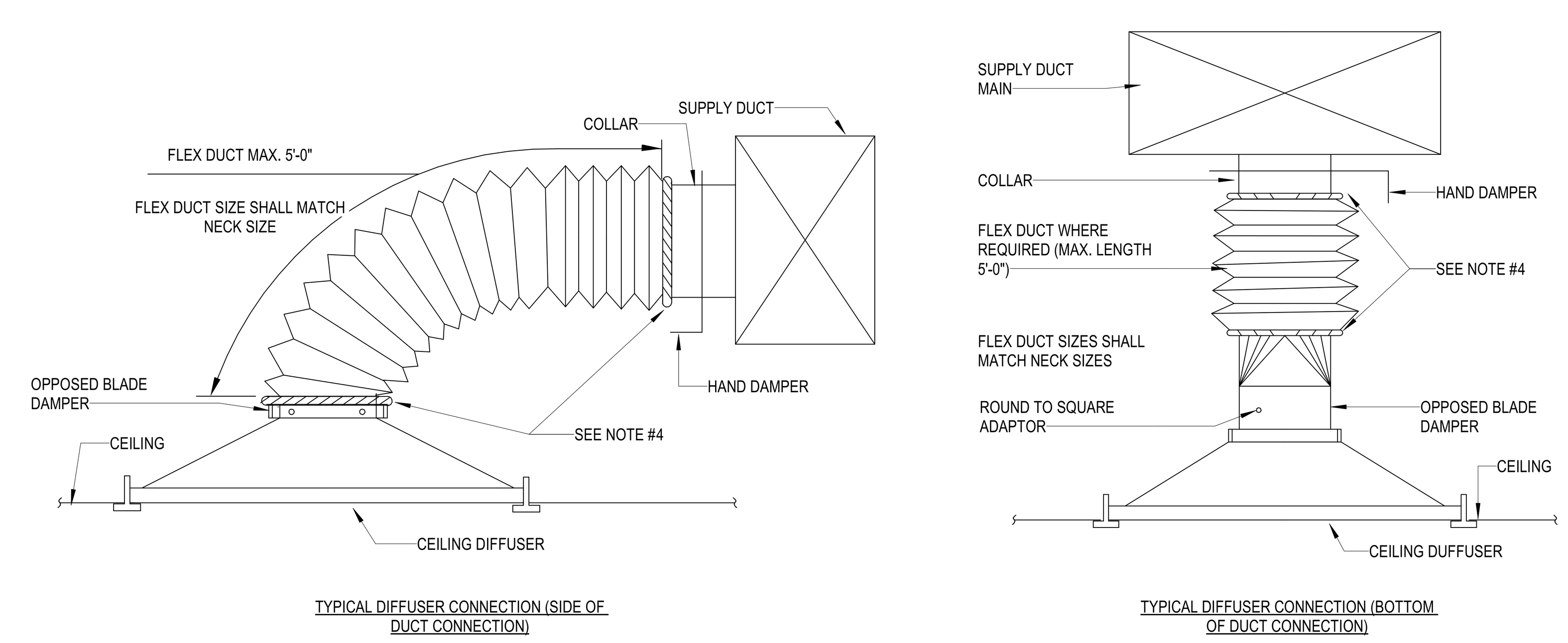


INSTALLATION NOTES:

1. ALL DUCTS SHALL BE CONSTRUCTED AND ERECTED IN A NEAT AND WORKMANLIKE MANNER.
2. DUCTS SHALL BE CONSTRUCTED OF THE WEIGHTS , GAGES AND MATERIAL SHOWN IN THE SCHEDULE ON THESE DRAWINGS.
3. THE DIMENSION SHOWN FOR ALL DUCTS SHOWN IN PLAN GIVE THE WIDTH FIRST AND THEN THE HEIGHT.
4. DUCT RISERS SHOULD BE SUPPORTED BY ANGLES AT EVERY FLOOR.
5. AIR TURNING VANES SHALL BE INSTALLED IN ALL ABRUPT ELBOWS TO PREVENT TURBULENCE.
6. DUCTS SHALL BE SECURELY ATTACHED TO THE BUILDING CONSTRUCTION IN AN APPROVED MANNER.
7. DIVERGING TRANSITION PIECES SHALL BE MADE AS GRADUAL AS POSSIBLE.
8. INSTALL FIRE DAMPERS IN ACCORDANCE WITH UL 555.
9. ACCESS PANELS SHOULD BE PLACED BEFORE AND/ OR AFTER EQUIPMENT INSTALLED IN THE DUCT.
10. DUCT AREA SHOULD NOT BE DECREASED MORE THAN 10% WHEN OBSTRUCTIONS CANNOT BE AVOIDED, AND THEN A STREAMLINED FITTING SHOULD BE USED.
11. JOINTS AND SEAMS OF SUPPLY DUCTS SHALL BE FASTENED SECURELY AND MADE AIR TIGHT.



4 LOW VELOCITY DUCT DETAIL
NOT TO SCALE



NOTES:

1. PROVIDE REMOTE CABLE DAMPERS FOR ALL GYP./ NON ACCESSIBLE CEILINGS.
2. PROVIDE BALANCING DAMPER AT BRANCH TAKEOFF.
3. PROVIDE WITH EQUAL TO TITUS "TITUS FLEX RIGHT" OR HARD RIGHT ELBOW TO ENSURE ADEQUATE AIRFLOW.
4. SEAL FLEX DUCT TO METAL COLLAR WITH DUCT TAPE (NASHUA 398 OR EQUAL), INSTALL TIE-WRAP (ULINE JUMBO NATURAL NYLON CABLE TIES) OVER DUCT TAPE. INSTALL DUCT INSULATION OVER METAL COLLAR AND SECURE WITH TIE-WRAP.

1 TYPICAL DIFFUSER CONNECTION DETAIL
NOT TO SCALE

STATE OF TEXAS
DEREK C. GASKAMP
124024
LICENSED
PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd.
Leander, TX 78641

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Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

MECHANICAL DETAILS

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

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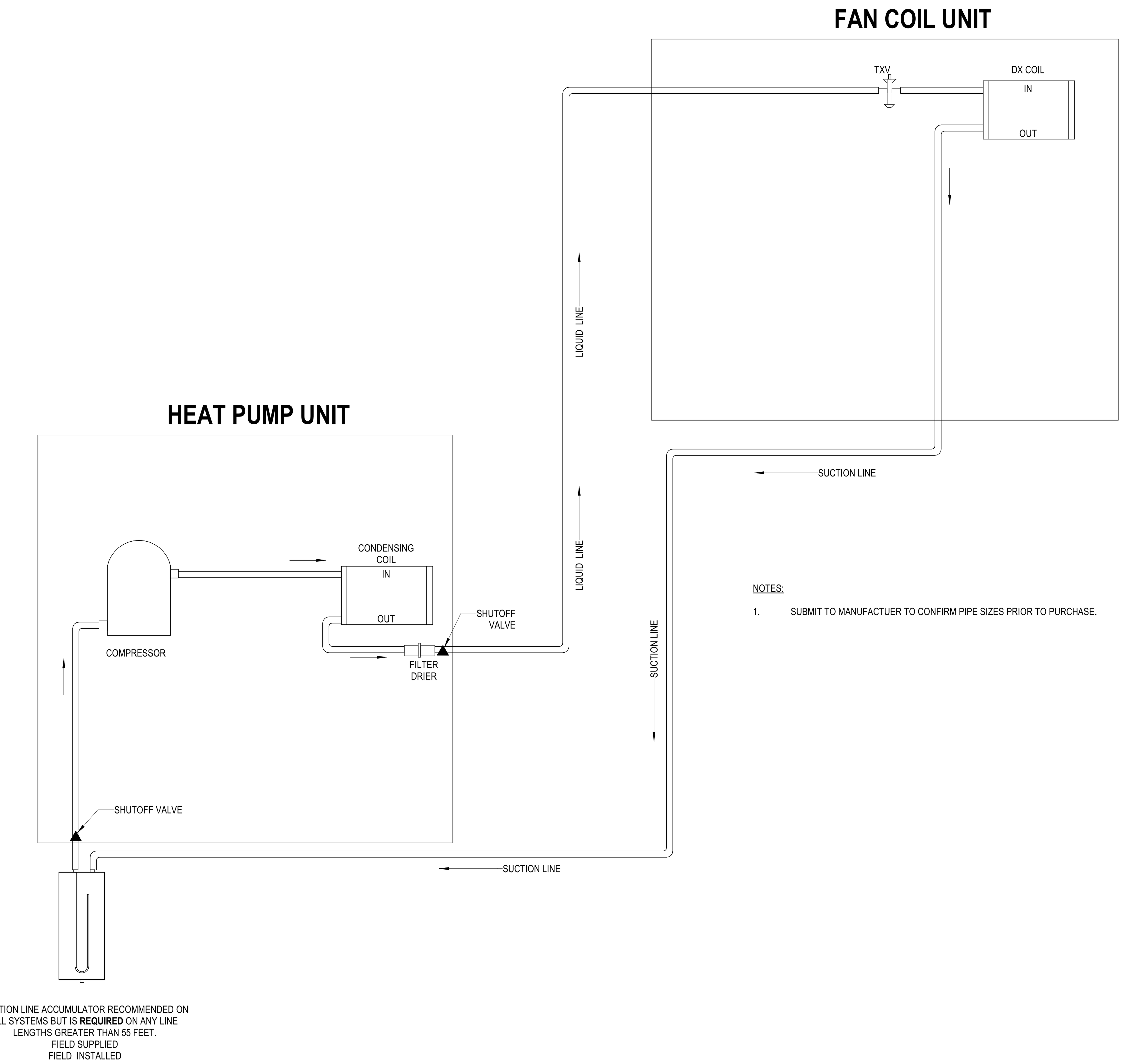
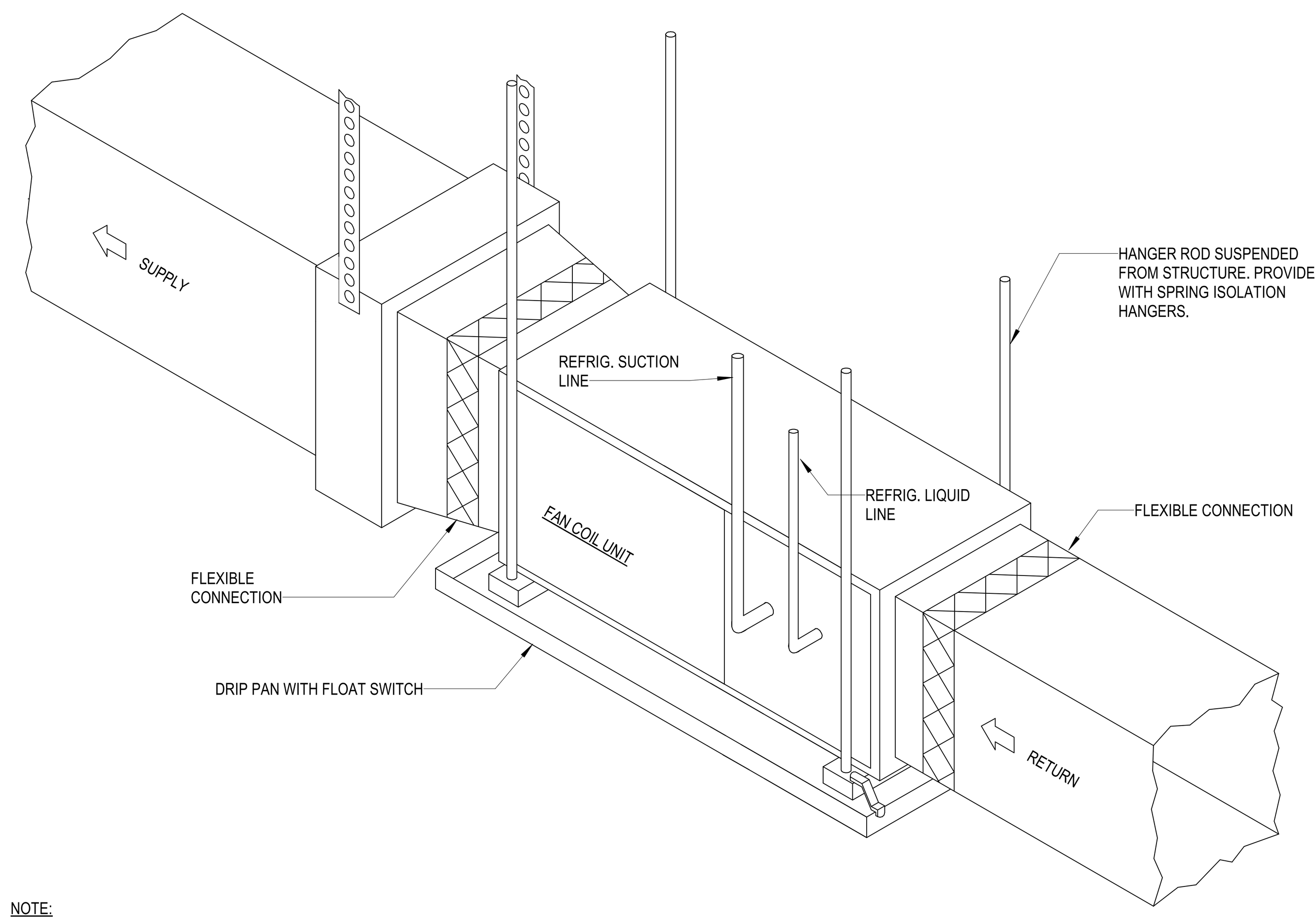


NOTES:

1. SUBMIT TO MANUFACTUER TO CONFIRM PIPE SIZES PRIOR TO PURCHASE.

7 DX SPLIT SYSTEM (DOWNFLOW)

NOT TO SCALE

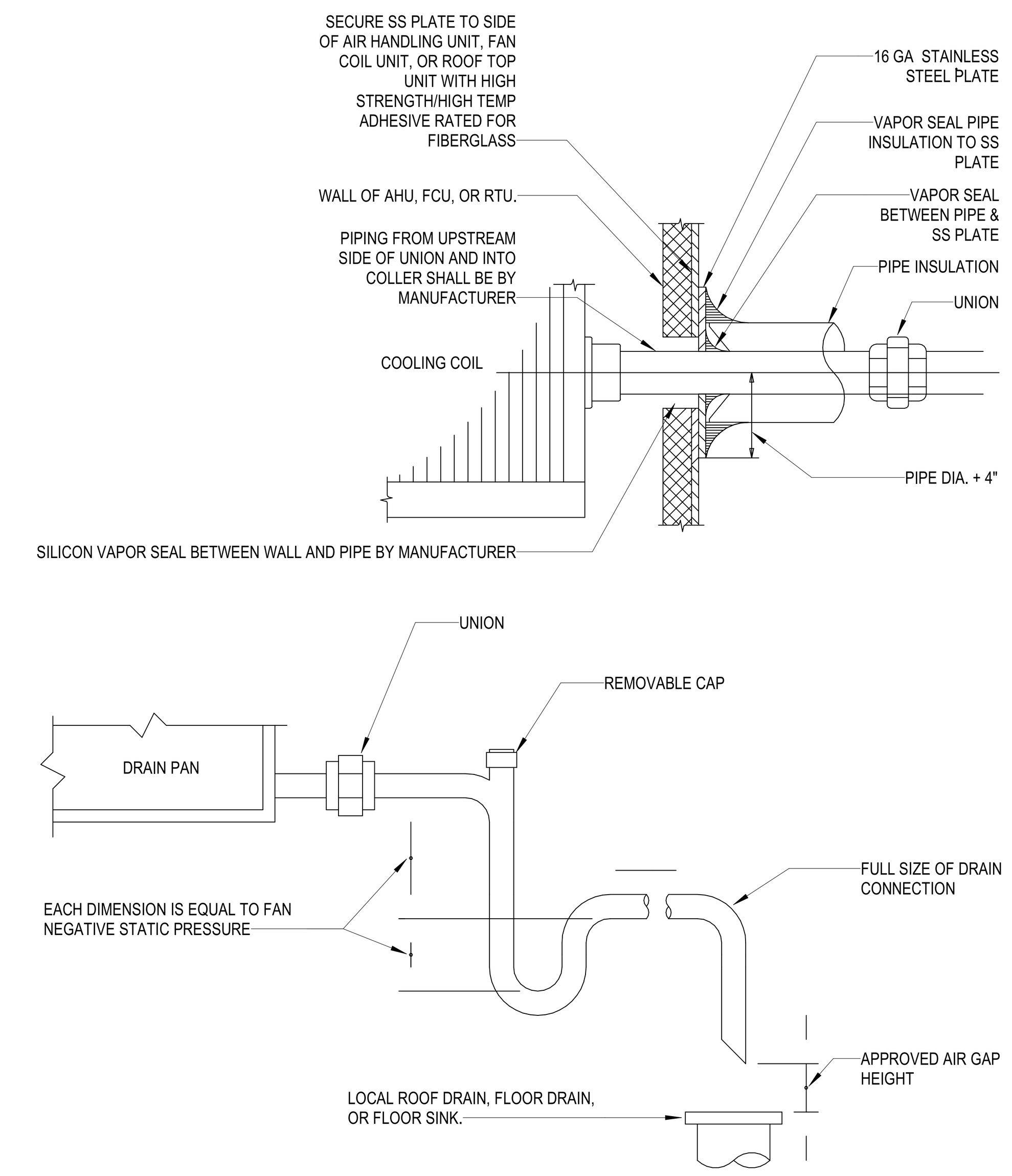


NOTE:

1. CONTRACTOR TO COORDINATE HANGER ROD INSTALLATION WITH EXISTING CONDITIONS AND STRUCTURAL ENGINEER.

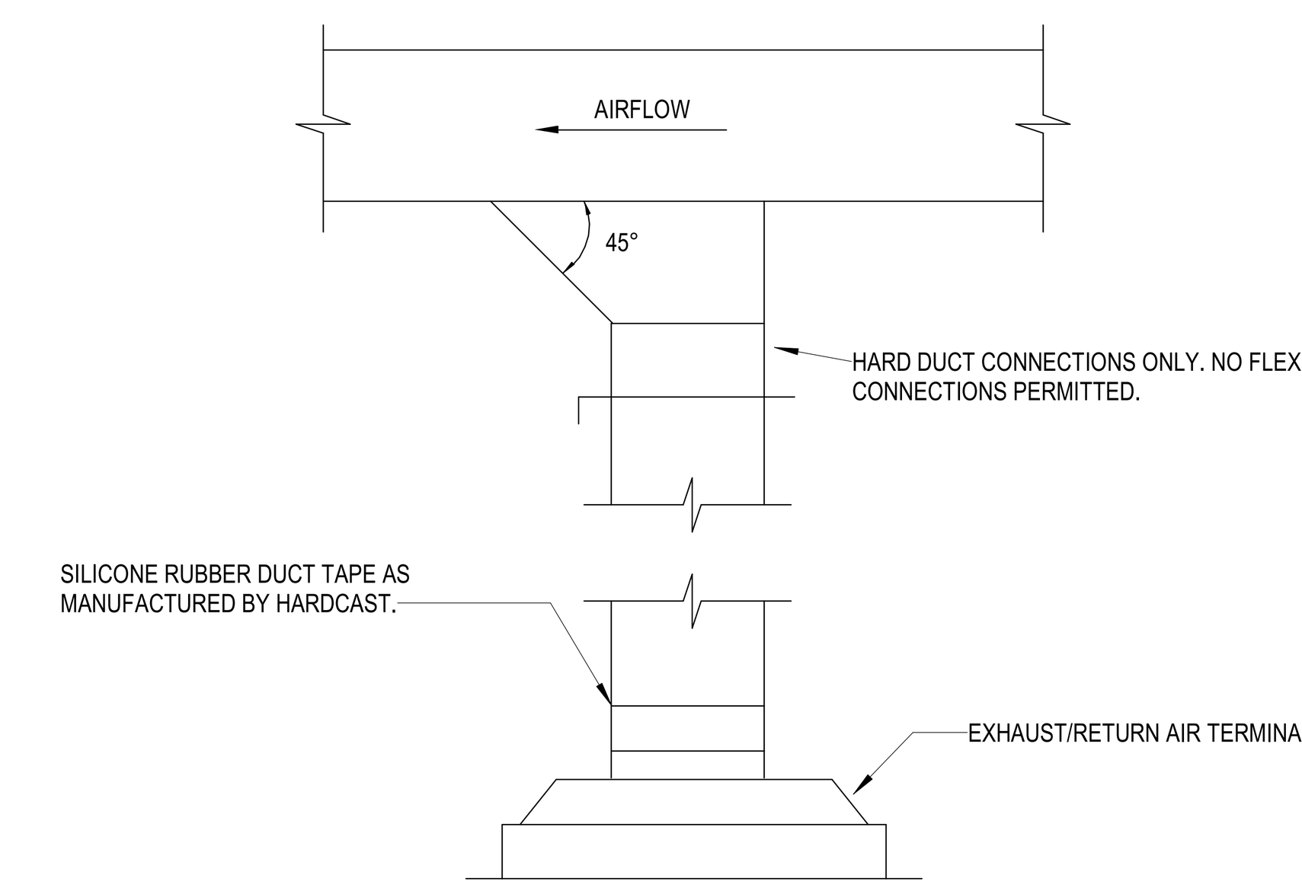
5 HORIZONTAL FAN COIL UNIT W/ CONDENSATE PUMP DETAIL

NOT TO SCALE



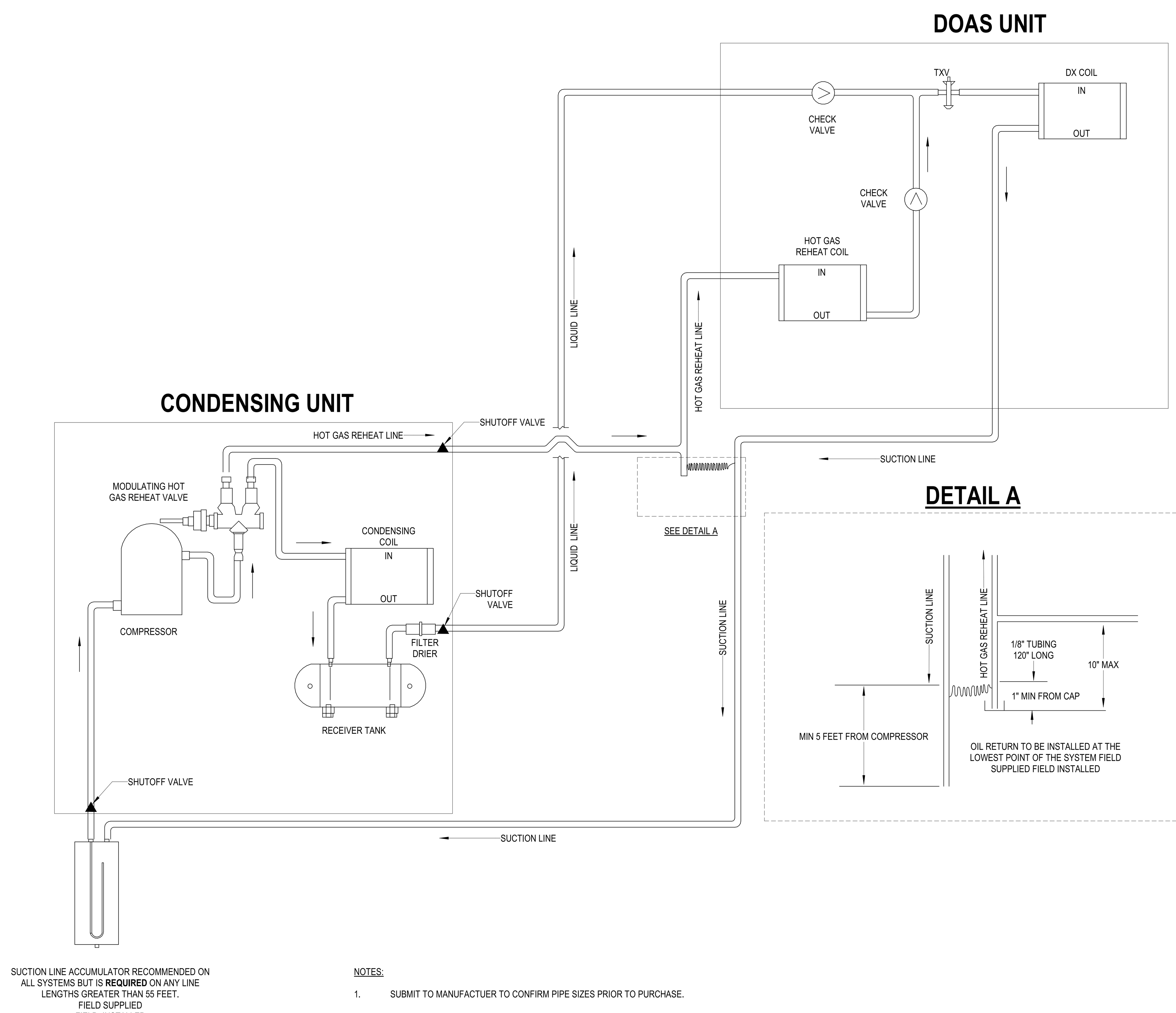
3 CONDENSATE DRAIN DETAIL

NOT TO SCALE



2 EXHAUST/RETURN DUCT BRANCH TAKE-OFF DETAIL

NOT TO SCALE

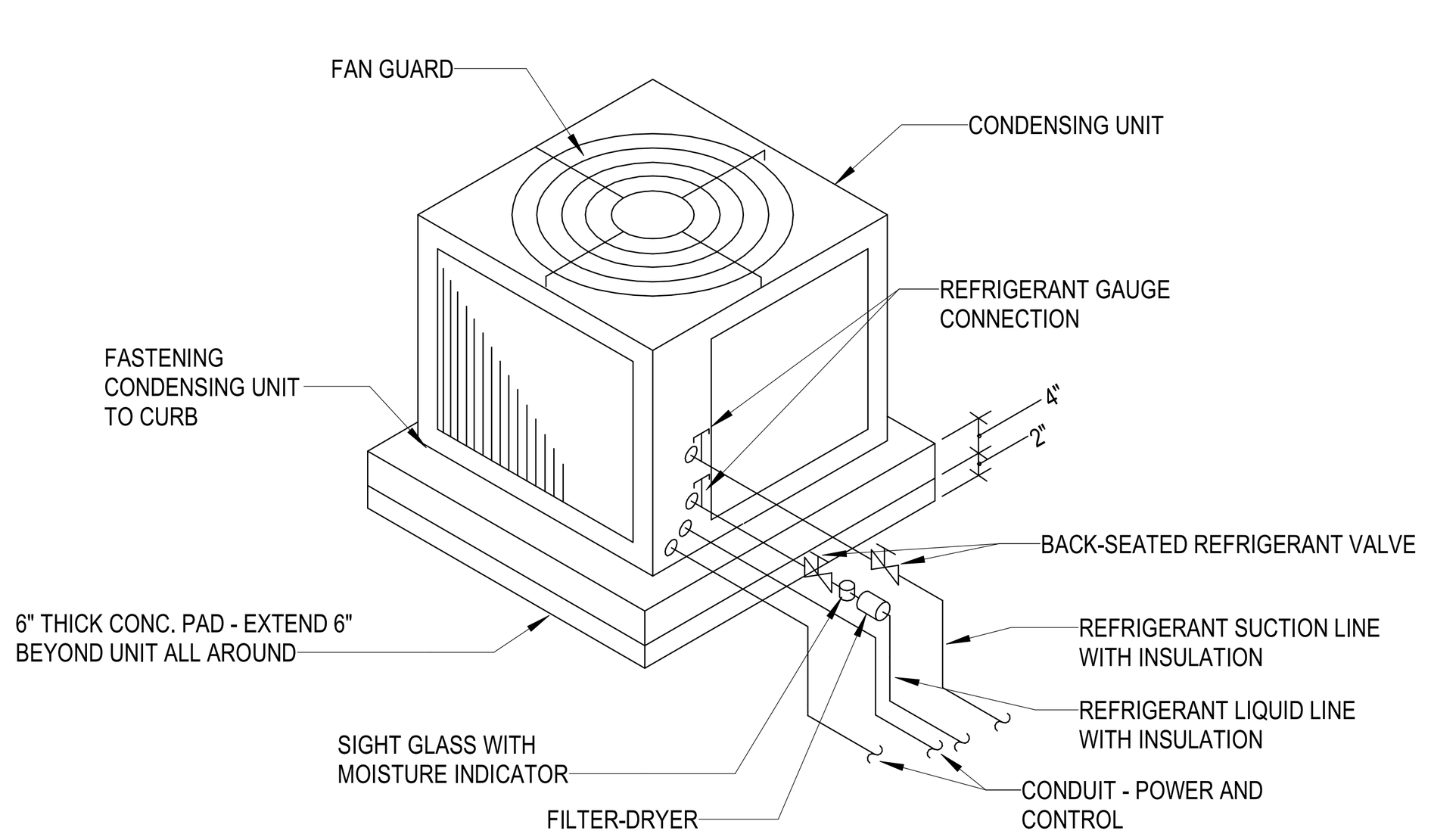


NOTES:

1. SUBMIT TO MANUFACTUER TO CONFIRM PIPE SIZES PRIOR TO PURCHASE.

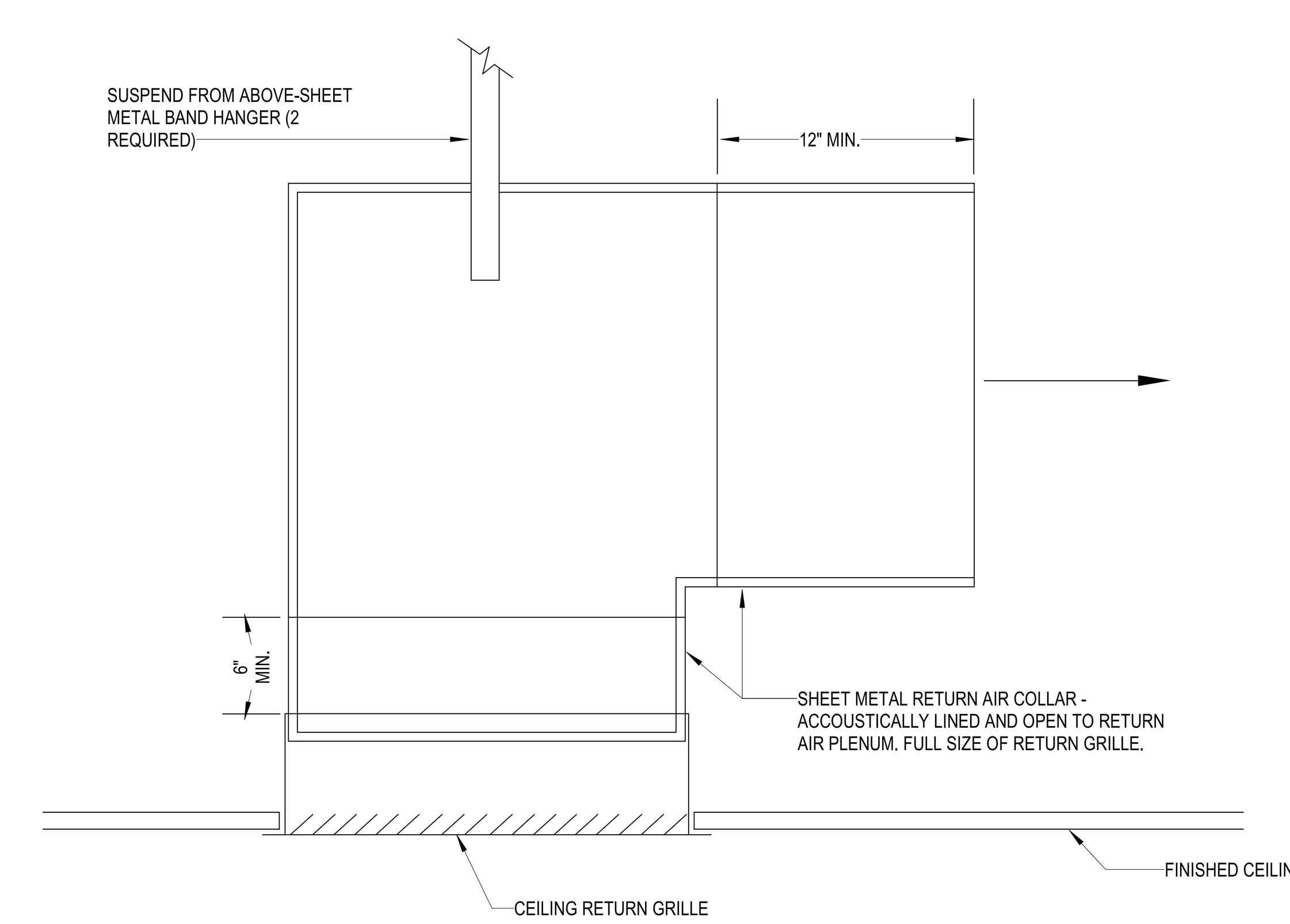
4 SPECIALTY DX SPLIT SYSTEM (DOWNFLOW) W/ HOT GAS REHEAT

NOT TO SCALE



6 DX CONDENSING UNIT - SLAB MOUNTED AT GRADE

NOT TO SCALE



1 RETURN AIR TRANSFER DUCT (GRILLE AND COLLAR) DETAIL

NOT TO SCALE

STATE OF TEXAS
DEREK C. GASKAMP
124024
LICENSED PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

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MECHANICAL DETAILS

Date	Description
10-15-24	IFP
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M6.02

STATE OF TEXAS
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PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
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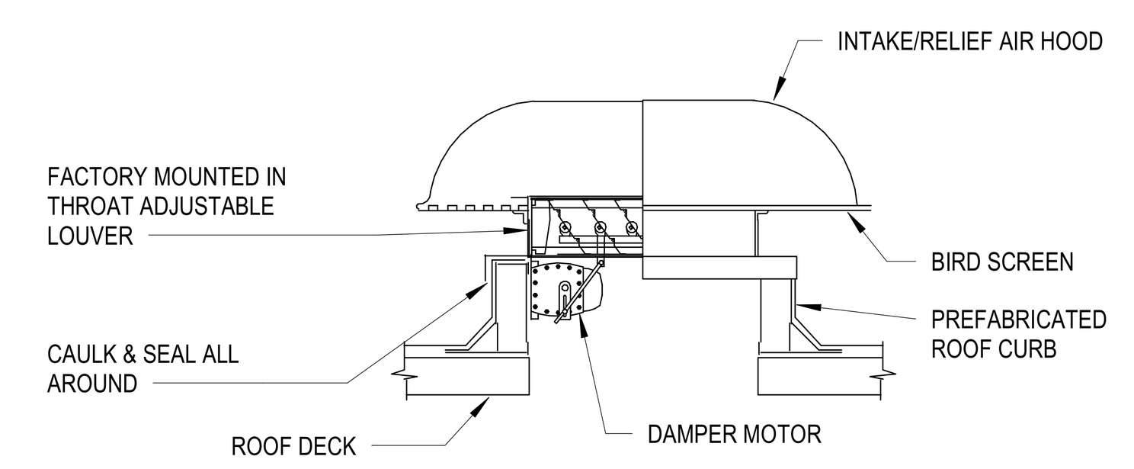
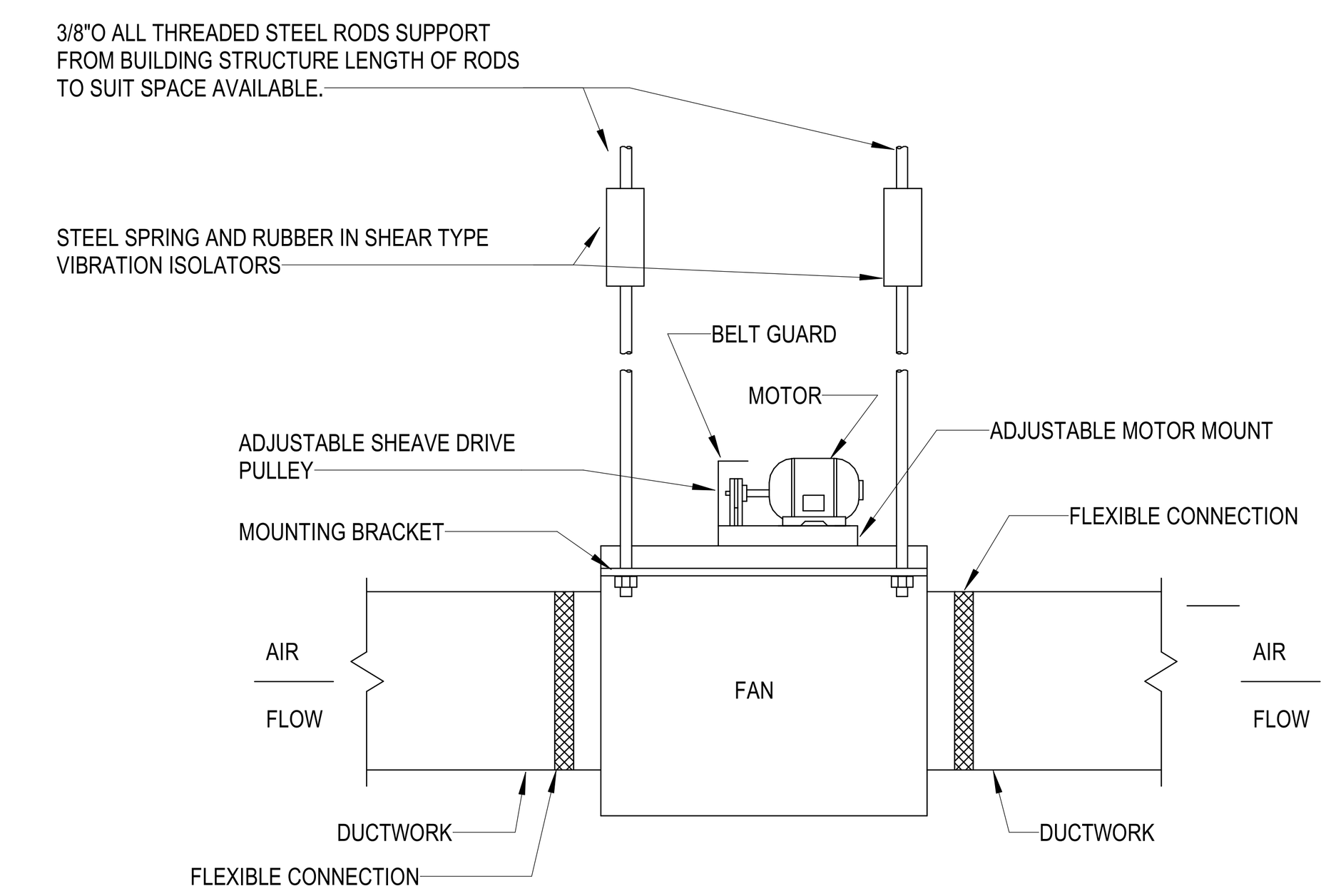
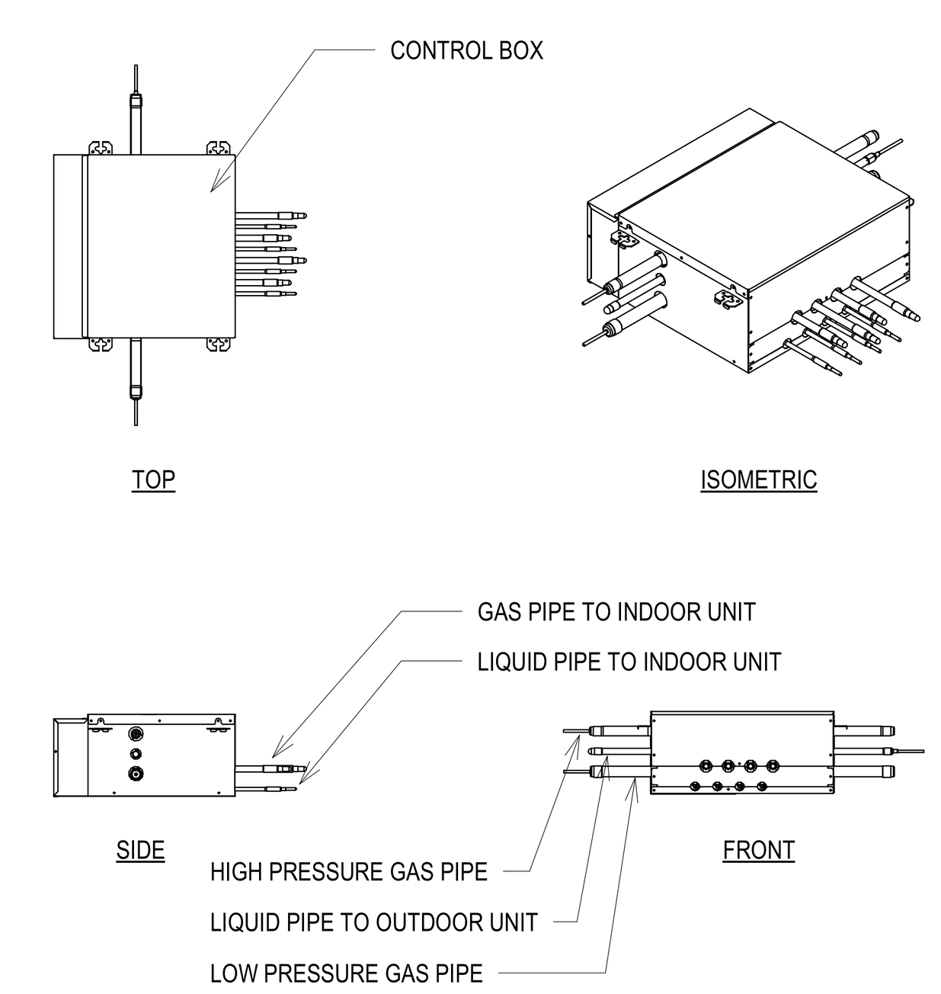
Leander, TX 78641



3 GRAVITY VENTILATOR WITH MOTORIZED LOUVER DETAIL
NOT TO SCALE



2 CENTRIFUGAL IN-LINE FAN DETAIL
NOT TO SCALE



NOTES:

1. UNIT SHOULD BE INSTALLED IN COMPLIANCE WITH THE INSTALLATION MANUAL IN THE PRODUCT BOX.
2. UNIT SHOULD BE GROUNDED IN ACCORDANCE WITH THE LOCAL REGULATIONS OR APPLICABLE NATIONAL CODES.
3. ALL ELECTRICAL COMPONENTS AND MATERIALS TO BE SUPPLIED FROM THE SITE MUST COMPLY WITH THE LOCAL REGULATIONS AND INTERNATIONAL CODES.

1 VRF HEAT RECOVERY BOX DETAIL
NOT TO SCALE

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MECHANICAL DETAILS

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
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M6.03

CONTROLS RESPONSIBILITY MATRIX

WORK	FURNISH	INSTALL	LOW VOLTAGE WIRING/ CONDUIT	LINE POWER
BAS LOW VOLTAGE (24AC) AND COMMUNICATION WIRING.	BAS	BAS	BAS	N/A
VAV BOX NODES	BAS	23	BAS	26
BAS CONDUITS AND RACEWAY	BAS	BAS	BAS	26
AUTOMATIC DAMPERS	BAS	23	N/A	N/A
VAV BOXES/ LAB VALVES	23	23	N/A	N/A
PIPE INSERTION DEVICES AND TAPS INCLUDING THERMOWELLS, FLOW AND PRESSURE STATIONS	BAS	23	BAS	BAS
BAS CURRENT SWITCHES	BAS	BAS	BAS	N/A
BAS CONTROL RELAYS	BAS	BAS	BAS	N/A
POWER DISTRIBUTION SYSTEM MONITORING INTEGRATION	26	26	BAS	26
CONCRETE AND/ OR INERTIA EQUIPMENT PADS AND SEISMIC BRACING	23	23	N/A	N/A
BAS INTERFACE WITH PACKAGED AIR CONDITIONING EQUIPMENT	23	23	BAS	26
BAS INTERFACE WITH COMPUTER ROOM AIR CONDITIONING EQUIPMENT	23	23	BAS	26
ALL BAS NODES, EQUIPMENT, HOUSINGS, ENCLOSURES AND PANELS	BAS	BAS	BAS	26
SMOKE DETECTORS	26	26	26	26
FIRE/ SMOKE DETECTORS	23	23	26	26
FIRE DAMPERS	23	23	N/A	N/A
VARIABLE FREQUENCY DRIVES	23	26	BAS	26
FIRE ALARM SHUTDOWN RELAY INTERLOCK WIRING	26	26	26	26
FIRE ALARM SMOKE CONTROL RELAY INTERLOCK WIRING (HVAC)	26	26	BAS	26
FIREMAN'S SMOKE CONTROL OVERRIDE PANEL	26	26	26	26
FAN COIL UNITS CONTROL	BAS	BAS	BAS	26
FAN POWERED TERMINAL UNIT CONTROLS	BAS	BAS	BAS	26
PACKAGED UNIT SPACE MOUNTED CONTROLS	23	BAS	BAS	26
STARTERS, HOA SWITCHES	26	26	N/A	26
CONTROL DAMPER ACTUATORS	BAS	BAS	BAS	26
CHILLED WATER AND HOT WATER CONTROL VALVES	BAS	23	BAS	26

TEMPERATURE SETPOINTS

OCCUPIED: COOL 74°F HEAT 70°F
UN-OCCUPIED: COOL 78°F HEAT 68°F
(ALL POINTS ADJ. BY OWNER)

CONTROLS LEGEND

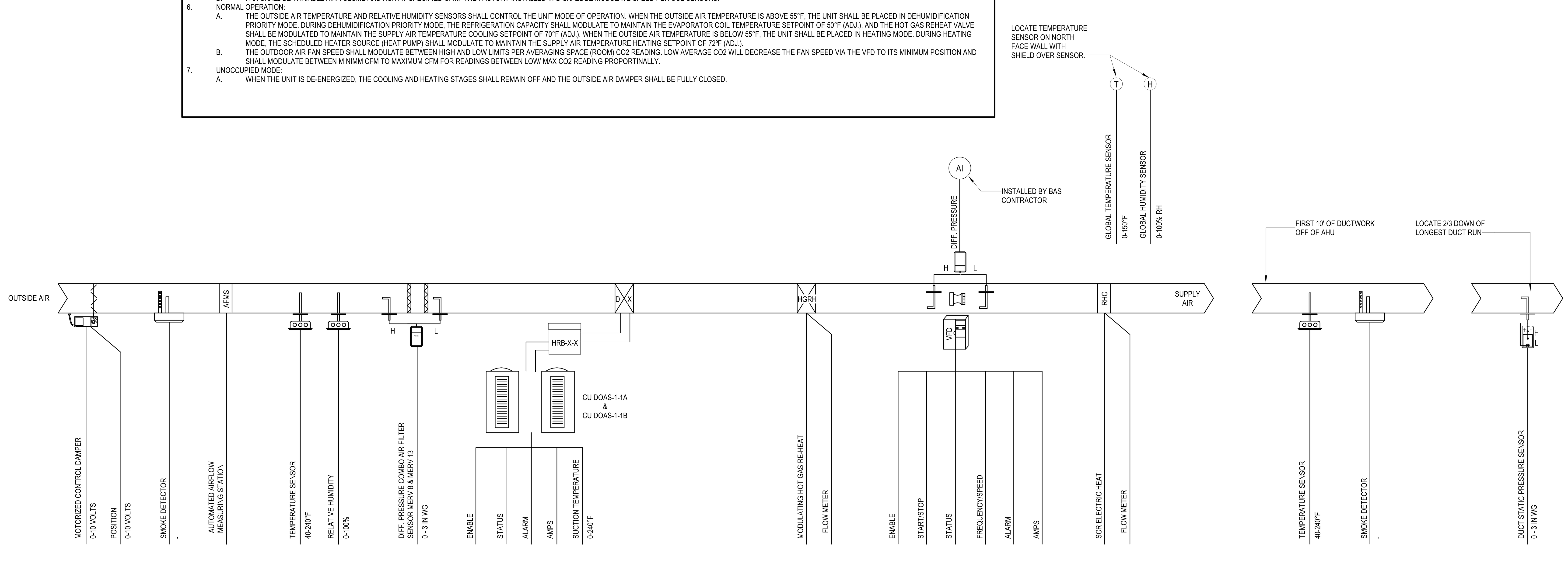
FAMSD	FAST ACTING MOTORIZED SMOKE DAMPER WITH END SWITCHES
MSDSR	MOTORIZED SMOKE DAMPER WITH SPRING RETURN
	LOW TEMP CUTOUT
	VARIABLE FREQUENCY DRIVE
	FAN
	FILTER
AFMS	AIR FLOW MONITORING STATION
AI	ANALOG IN
AO	ANALOG OUT
DI	DIGITAL IN
DO	DIGITAL OUT
T	TEMPERATURE SENSOR
H L	STATIC PRESSURE
	HUMIDITY SENSOR
	STATIC PRESSURE SENSOR
L H	DIFFERENTIAL PRESSURE SENSOR
LPS	HUMIDIFIER
LPS	AIR WASHER
	SMOKE DETECTOR
	TEMPERATURE SENSOR
	CO2 SENSOR
	AVERAGING TEMP SENSOR
C C	COOLING COIL
G C	GAS HEAT COIL
R C	REHEAT COIL
	CONTROL VALVE
T	TEMPERATURE STAT/SENSOR
P	STATIC PRESSURE STAT/SENSOR
H	HUMIDITY STAT/SENSOR

CONTROLS ABBREVIATIONS

B	BOILER
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
CA	COMPRESSED AIR
CC	COOLING COIL
CCFM	CUBIC FEET PER MINUTE
CH	CHILLER
CT	COOLING TOWER
CU	CONDENSING UNIT
CW	CONDENSING WATER
DB	DRY BULB
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EFF	EFFICIENCY
EHC	ELECTRIC HEATING COIL
ERU	ENERGY RECOVERY UNIT
EUH	ELECTIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE
F	FILTER
FCU	FAN COIL UNIT
FLA	FULL LOAD AMPS
FPB	FAN POWERED BOX
FPTU	FAN POWERED TERMINAL UNIT
FSD	COMBINATION FIRE SMOKE DAMPER
FT	FEET
GEX	GENERAL EXHAUST
GPM	GALLONS PER MINUTE
H	HUMIDIFIER
HC	HEATING COIL
HP	HORSE POWER
HR	HOUR
HW	HOT WATER
HX	HEAT EXCHANGER
HX	PLATE HEAT EXCHANGER
IDEC	INDIRECT EVAPORATIVE COOLER
KW	KILOWATT
KWH	KILOWATT HOURS
KX	KITCHEN EXHAUST
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LRA	LOCK ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MFG	MANUFACTURER
MIN	MINIMUM
MUA	MAKE-UP AIR UNIT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OAHU	OUTSIDE AIR HANDLING UNIT
P	PUMP
PHC	PRE-HEAT COIL
PRV	PRESSURE RELIEF VALVE
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RPM	ROVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SD	SMOKE DAMPER
SENS	SENSIBLE
SF	SUPPLY FAN
SP	STATIC PRESSURE
TF	TRANSFER FAN
TYP	TYPICAL
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB
WG	WATER GAUGE
wtwt	AIR HANDLING UNIT
°F	DEGREES FAHRENHEIT

NEUTRAL AIR (PRE-TREATED) SPLIT-SYSTEM OUTSIDE AIR UNIT WITH HEAT PUMP HEATING COIL CONTROLS SEQUENCE

1. THE DOAS UNIT SHALL HAVE AN INTERNAL OCCUPANCY/VACANCY SCHEDULE, OCCUPIED HEATING/COOLING SETPOINTS THAT ARE ASSIGNED AT STARTUP. DOAS UNITS SHALL BE ENABLED BY THE ON-BOARD INTERNAL WEEK SCHEDULE. THE SCHEDULE SHALL HAVE 7 DAYS WITH 2 START/STOP EVENTS PER DAY. WHEN THE UNIT IS ENABLED, THE OUTSIDE AIR DAMPER SHALL FULLY OPEN, AND THE SUPPLY FAN SHALL BE ENABLED.
2. THE SPLIT-SYSTEM WILL SUPPORT UL-864-U UKL CONTROL SEQUENCES AND SHALL BE INDEXED OFF WHENEVER ANY OF SMOKE DETECTOR, LOCATED IN THE AHU SUPPLY DUCT, SENSE PRODUCTS OF COMBUSTION.
3. DIFFERENTIAL PRESSURE SWITCH ACROSS EACH FILTER BANK SHALL SEND AN ALARM TO THE BAS WHENEVER THE SCHEDULE PRESSURE DROP IS EXCEEDED. SET POINT SHALL BE ADJUSTABLE WITH INITIAL SETTINGS AT 1" WATER GAUGE FOR MERV 8 FILTERS & 1.25" FOR MERV 13 FILTERS. COMBINATION (MERV 8 & MERV 13) FILTERS WILL HAVE ONE DIFFERENTIAL PRESSURE SWITCH ACROSS THE COMBINATION FILTER BANK. INITIAL SETTING FOR COMBINATION FITLER BANK AT 1.25".
4. AIRFLOW MEASURING STATIONS WILL RECORD AND MONITOR THE AMOUNT OF OUTDOOR AIR. AN ALARM SHALL NOTIFY THE BAS IF THE AMOUNT OF OUTSIDE AIR IS BELOW SETPOINT.
5. SUPPLY FAN:
   A. A FAN AIRFLOW PROVING SWITCH SHALL PROVE STATUS TO THE UNIT CONTROLLER AND SHALL ALARM IF THE SWITCH IS NOT MADE WITHIN 60 SECONDS.
   B. FAN SHALL BE VARIABLE AIR VOLUME AND RUN AT SPECIFIED CFM. THE FACTORY INSTALLED VFD SHALL BE MODULATE SPEED PER CO2 SENSORS.
6. NORMAL OPERATION:
   A. THE OUTSIDE AIR TEMPERATURE AND RELATIVE HUMIDITY SENSORS SHALL CONTROL THE UNIT MODE OF OPERATION. WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 55°F, THE UNIT SHALL BE PLACED IN DEHUMIDIFICATION PRIORITY MODE. DURING DEHUMIDIFICATION PRIORITY MODE, THE REFRIGERATION CAPACITY SHALL MODULATE TO MAINTAIN THE EVAPORATOR COIL TEMPERATURE SETPOINT OF 50°F (ADJ.), AND THE HOT GAS REHEAT VALVE SHALL BE MODULATED TO MAINTAIN THE SUPPLY AIR TEMPERATURE COOLING SETPOINT OF 70°F (ADJ.). WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 55°F, THE UNIT SHALL BE PLACED IN HEATING MODE. DURING HEATING MODE, THE SCHEDULED HEATER SOURCE (HEAT PUMP) SHALL MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE HEATING SETPOINT OF 72ºF (ADJ.).
   B. THE OUTDOOR AIR FAN SPEED SHALL MODULATE BETWEEN HIGH AND LOW LIMITS PER AVERAGING SPACE (ROOM) CO2 READING. LOW AVERAGE CO2 WILL DECREASE THE FAN SPEED VIA THE VFD TO ITS MINIMUM POSITION AND SHALL MODULATE BETWEEN MINIMM CFM TO MAXIMUM CFM FOR READINGS BETWEEN LOW/ MAX CO2 READING PROPORTINALLY.
7. UNOCCUPIED MODE:
   A. WHEN THE UNIT IS DE-ENERGIZED, THE COOLING AND HEATING STAGES SHALL REMAIN OFF AND THE OUTSIDE AIR DAMPER SHALL BE FULLY CLOSED.

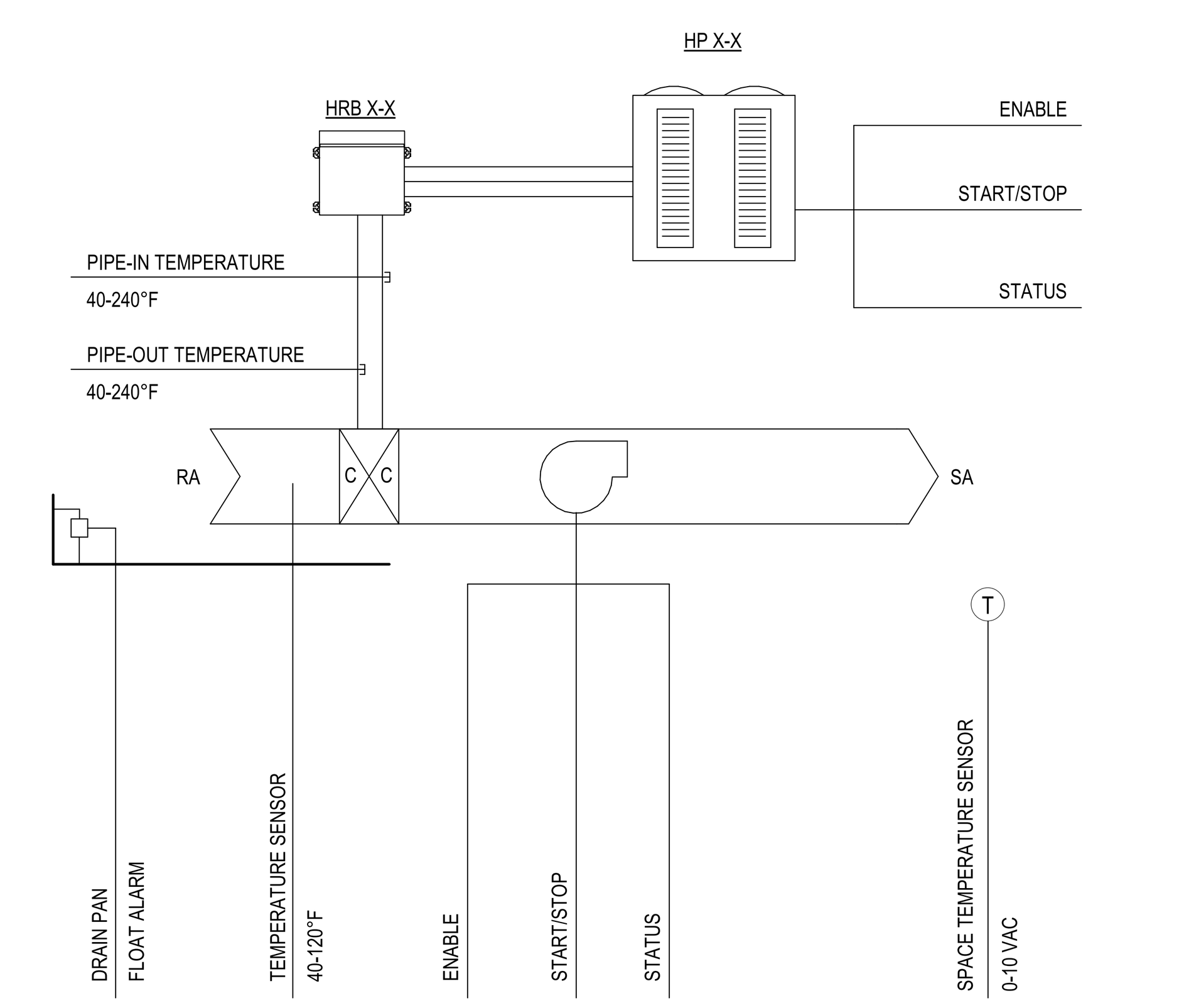


VRF (HEAT RECOVERY) SPLIT SYSTEM

OCCUPIED MODE:
OCCUPANCY MODE WILL BE CONTROLLED VIA A NETWORK INPUT (ADJ. BY OWNER). DURING OCCUPIED MODE, THE THREE SPEED SUPPLY FAN WILL BE STARTED, AND SHALL WORK IN TANDEM WITH THE HEAT RECOVERY BOX (HRB) AND HEAT PUMP CONDENSING UNIT TO MAINTAIN ZONE TEMPERATURE SETPOINT.

UNOCCUPIED MODE:
THE UNIT WILL CYCLE ON TO MAINTAIN UNOCCUPIED ZONE SETPOINTS DURING UNOCCUPIED PERIODS.

ALARM:
- INTERLOCK DRAIN PAN FLOAT ALARM TO FCU. CLOSE COOLING COIL CONTROL VALVE AND DE-ENERGIZE FCU UPON FLOAT ALARM ACTIVATION.
- SMOKE DETECTOR TO BE HARDWIRED INTERLOCKED AND SHUTDOWN UNIT UPON SENSING PRODUCT OF COMBUSTION. (PROVIDE SMOKE DETECTOR ON UNITS.)



STATE OF TEXAS
DEREK C. GASKAMP
124024
LICENSED PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd.
Leander, TX 78641

N-VIZION
FORMS • ENVIRONMENTS • IMAGES

INFINITY MEP+S CONSULTANTS
TBPE Registration Number: 18865
5316 Hwy. 290 Service Rd., Suite 130
Austin, TX 78735
512-692-9224
www.infinitymep.com

Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

MECHANICAL CONTROLS

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

M7.01

FEEDER SCHEDULE (COPPER)

FEEDER TAG	FEEDER SIZE
15.3, 20.3	3#12, #12G, 3/4"C
15.4, 20.4	4#12, #12G, 3/4"C
30.3	3#10, #10G, 3/4"C
30.4	4#10, #10G, 3/4"C
40.3	3#8, #10G, 3/4"C
40.4	4#8, #10G, 3/4"C
50.3	3#6, #10G, 3/4"C
50.4	4#6, #10G, 1"C
60.3	3#4, #10G, 1"C
60.4	4#4, #10G, 1-1/4"C
70.3	3#4, #8G, 1"C
70.4	4#4, #8G, 1-1/2"C
80.3	3#3, #8G, 1-1/4"C
80.4	4#3, #8G, 1-1/4"C
90.3	3#2, #8G, 1-1/4"C
90.4	4#2, #8G, 1-1/4"C
100.3	3#1, #8G, 1-1/4"C
100.4	4#1, #8G, 1-1/2"C
110.3	3#1, #8G, 1-1/4"C
110.4	4#1, #8G, 1-1/2"C
125.3, 150.3	3#1/0, #6G, 1-1/2"C
125.4 150.4	4#1/0, #6G, 2"C
175.3	3#2/0, #6G, 2"C
175.4	4#2/0, #6G, 2"C
200.3	3#3/0, #6G, 2"C
200.4	4#3/0, #6G, 2"C
225.3	3#4/0, #4G, 2"C
225.4	4#4/0, #4G, 2-1/2"C
250.3	3#250, #4G, 2-1/2"C
250.4	4#250, #4G, 2-1/2"C
300.3	3#350, #4G, 2-1/2"C
300.4	4#350, #4G, 3"C
350.3	3#500, #3G, 3"C
350.4	4#500, #3G, 3-1/2"C
400.3	2 SETS OF 3#3/0, #3G, 2"C
400.4	2 SETS OF 4#3/0, #3G, 2-1/2"C
500.3	2 SETS OF 3#250, #2G, 2-1/2"C
500.4	2 SETS OF 4#250, #2G, 2-1/2"C
600.3	2 SETS OF 3#350, #1G, 2-1/2"C
600.4	2 SETS OF 4#350, #1G, 2-1/2"C
700.3	2 SETS OF 3#1/0, #2G, 3"C
700.4	2 SETS OF 4#500, #1/0G, 3-1/2"C
800.3	2 SETS OF 3#600, #1/0G, 3-1/2"C
800.4	2 SETS OF 4#600, #1/0G, 4"C
1000.3	3 SETS OF 3#500, #2/0G, 3"C
1000.4	3 SETS OF 4#500, #2/0G, 3"C
1200.3	4 SETS OF 3#350, #3/0G, 3"C
1200.4	4 SETS OF 4#350, #3/0G, 3-1/2"C
1600.3	5 SETS OF 3#500, #4/0G, 3"C
1600.4	5 SETS OF 4#500, #4/0G, 3"C
2000.3	6 SETS OF 3#500, #4/0G, 3"C
2000.4	6 SETS OF 4#500, #4/0G, 3"C
2500.3	7 SETS OF 3#500, #4/0G, 3-1/2"C
2500.4	7 SETS OF 4#500, #4/0G, 3-1/2"C
3000.3	8 SETS OF 3#500, #4/0G, 3"C
3000.4	8 SETS OF 4#500, #4/0G, 3-1/2"C
3200.3	8 SETS OF 3#600, #4/0G, 4"C
3200.4	8 SETS OF 4#600, #4/0G, 4"C
4000.3	10 SETS OF 3#600, #4/0G, 4"C
4000.4	10 SETS OF 4#600, #4/0G, 4"C

NOTES:

1. BASED ON 30C AMBIENT AND 75C CONDUCTORS. RESIZE FEEDER PER NEC FOR OTHER AMBIENT TEMPERATURES.
2. ALL FEEDERS SHALL BE THHN/THWN-2 COPPER, UNLESS NOTED OTHERWISE.
3. BRANCH CIRCUITS DO NOT ACCOUNT FOR VOLTAGE DROP.
4. BASED ON 3 CURRENT CARRYING CONDUCTORS IN RACEWAY.

BRANCH CIRCUIT WIRING SCHEDULE

BREAKER		WIRE SIZE
AMPERAGE	POLE	
20A	1P	2#12, #12G, 3/4"C
20A	2P	3#12, #12G, 3/4"C
20A	3P	4#12, #12G, 3/4"C
30A	1P	2#10, #10G, 3/4"C
30A	2P	3#10, #10G, 3/4"C
30A	3P	4#10, #10G, 3/4"C
40A	1P	2#8, #10G, 3/4"C
40A	2P	3#8, #10G, 3/4"C
40A	3P	4#8, #10G, 1"C
50A	2P	3#6, #10G, 1"C
50A	3P	4#6, #10G, 1-1/2"C
60A	2P	3#6, #10G, 1"C
60A	3P	4#6, #10G, 1-1/2"C
70A	2P	3#4, #8G, 1-1/2"C
70A	3P	4#4, #8G, 1-1/2"C
80A	2P	3#4, #8G, 1-1/2"C
80A	3P	4#4, #8G, 1-1/2"C
100A	2P	3#3, #8G, 1-1/2"C
100A	3P	4#3, #8G, 1-1/12"C

NOTES:

1. BASED ON 30C AMBIENT AND 75C CONDUCTORS. RESIZE FEEDER PER NEC FOR OTHER AMBIENT TEMPERATURES.
2. ALL FEEDERS SHALL BE THHN/THWN-2 COPPER, UNLESS NOTED OTHERWISE.
3. BRANCH CIRCUITS DO NOT ACCOUNT FOR VOLTAGE DROP.
4. BASED ON 3 CURRENT CARRYING CONDUCTORS IN RACEWAY.

ELECTRICAL LEGEND

F	MANUAL FIRE PULL STATION
SD	AREA SMOKE DETECTOR, CEILING MOUNTED
SD	AREA SMOKE DETECTOR, WALL MOUNTED
SD	SMOKE DETECTOR, MOUNTED IN DUCT
HD	HEAT DETECTOR, CEILING MOUNTED
W	SPRINKLER WATER FLOW SWITCH
T	SPRINKLER TAMPER SWITCH
A	AUDIBLE FIRE ALARM STROBE, CEILING MOUNTED
A	AUDIBLE FIRE ALARM STROBE, WALL MOUNTED
AV	AUDIO/VISUAL FIRE ALARM STROBE, CEILING MOUNTED
AV	AUDIO/VISUAL FIRE ALARM STROBE WALL MOUNTED
V	VISUAL FIRE ALARM STROBE, CEILING MOUNTED
V	VISUAL FIRE ALARM STROBE, WALL MOUNTED
FJ	FIREMAN'S JACK
FB	FIRE ALARM BELL
F/S	FIRE/SMOKE DAMPER
S	SMOKE DAMPER
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM REMOTE ANNUNCIATOR PANEL
	SIMPLEX RECEPTACLE, WALL MOUNTED
	DUPLEX RECEPTACLE, WALL MOUNTED
	DUPLEX RECEPTACLE, CEILING MOUNTED
	DUPLEX RECEPTACLE, TOP HALF SWITCHED
	QUADRUPLEX RECEPTACLE, WALL MOUNTED
	SPECIAL PURPOSE RECEPTACLE, WALL MOUNTED, COORDINATE NEMA PLUG TYPE WITH OWNER
GFI	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTER
IG	DUPLEX RECEPTACLE, ISOLATED GROUND
WP	DUPLEX RECEPTACLE, WEATHERPROOF
	COMBINATION POWER/TELECOM FLOOR BOX OR FIRE RATED POKE THRU DEVICE, REFER TO PLANS FOR SPECIFICATION
	TELECOM OUTLET. PROVIDE BACK BOX/COVER PLATE. INSTALL 3/4"C W/BUSHING AND PULLSTRING, STUBBED TO ACCESSIBLE CEILING.
TV	TELEVISION OUTLET. PROVIDE BACK BOX/COVER PLATE. INSTALL 3/4"C W/BUSHING AND PULLSTRING, STUBBED TO ACCESSIBLE CEILING.
$	SINGLE POLE SWITCH
$2	DOUBLE POLE SWITCH
$3	THREE WAY SWITCH
$4	FOUR WAY SWITCH
$K	KEY LOCKED SWITCH
$MC	MOMENTARY CONTACT SWITCH
$T	TIMER SWITCH
$D	WALL DIMMER
$LV	LOW VOLTAGE SWITCH
$O	OCCUPANCY SENSOR SWITCH
$V	VACANCY SENSOR SWITCH
PC	PHOTOCELL
VS OS	VACANCY OR OCCUPANCY SENSOR SWITCH WATTSTOPPER DW-100 SERIES
VS OS	CEILING MOUNTED VACANCY OR OCCUPANCY SENSOR WATTSTOPPER DT-300 SERIES

ELECTRICAL LEGEND

	SURFACE MOUNTED PANEL
	PANEL RECESSED IN WALL
T F	STEP DOWN TRANSFORMER
	GROUND BUS BAR
	HEAVY DUTY DISCONNECT SWITCH
	HEAVY DUTY FUSED DISCONNECT SWITCH
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH
VFD	VFD WITH DISCONNECT, COORDINATE WITH MECHANICAL CONTRACTOR
EPO	EMERGENCY POWER OFF SWITCH
$MS	MOTORIZED SHADE CONTROL
$T	THERMAL OVERLOAD SWITCH
10	MOTOR CONNECTION, HP AS NOTED
M 1/2	SINGLE PHASE MOTOR CONNECTION, HP AS NOTED
J	JUNCTION BOX, CEILING MOUNTED
J	JUNCTION BOX, WALL MOUNTED
P B	PULL BOX
	GROUND ROD
	GROUND WELL
	CIRCUIT BREAKER
	SWITCH AND FUSE
	ENCLOSED CIRCUIT BREAKER
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	NUMBERED NOTE
	EXIT SIGN; WALL MOUNTED
	EXIT SIGN; CEILING MOUNTED
	FIXED CLOSED CIRCUIT CAMERA
MS	MOTION SENSOR
ML	MAGNETIC LOCK
KP	KEYPAD
DR	DOOR RELEASE
PB	PUSH BUTTON
CR	CARD READER
EL	ELECTRIC LOCK
ES	ELECTRIC STRIKE
	CONDUIT CONCEALED IN CEILING OR WALL
	CONDUIT BELOW FLOOR OR IN SLAB
E	CONDUIT STUBBED OUT AND CAPPED W/PULLSTRING
	CONDUIT HOMERUN BACK TO PANEL

ELECTRICAL ABBREVIATIONS

(E)/EXIST	EXISTING
(N)	NEW
(R)/RELOC	EXISTING TO BE RELOCATED
A	AMPERES
A/V	AUDIO/VISUAL
AF	AMPERE FUSE RATING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CAPACITY
AL	ALUMINUM
AT	AMPERE TRIP RATING
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CM	CEILING MOUNTED
CU	COPPER
DIA	DIAMETER
DPDT	DOUBLE POLE DOUBLE THROW
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
EP	EXPLOSION PROOF
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FWE	FURNISHED WITH EQUIPMENT
GC	GENERAL CONTRACTOR
GFI/GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HP	HORSEPOWER
IG	ISOLATED GROUND
KVA	KILO-VOLT AMPERE
KW	KILO-WATT
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED
NEUT	NEUTRAL
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PB	PULL BOX
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
SH	SHIELDED
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TS	TIME SWITCH
TVSS	TRANSIENT VOLTAGE SURGE SUPRESSOR
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLT
WP	WEATHERPROOF

ELECTRICAL GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS IN THE DEMOLITION AREA PRIOR TO SUBMITTING A BID. THE CONTRACTOR SHALL INCLUDE IN THEIR BID THE COST OF REPLACEMENT, REPAIR, RELOCATION OR REMOVAL OF EXISTING MEP ELEMENTS AS REQUIRED TO COMPLETE INSTALLATION OF ALL SYSTEMS AS SPECIFIED, AND AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR, BY SUBMITTING THEIR PROPOSAL, AGREES TO ACCEPT ALL EXISTING SITE CONDITIONS NOT SPECIFICALLY EXCEPTED. RETURN REUSABLE ITEMS REMOVED FROM THE DEMOLITION AREA TO THE OWNER'S STOCK. REUSE OF ANY EXISTING ITEM ON THIS PROJECT, INCLUDING THOSE INDICATED ON THE DRAWING TO BE RELOCATED, SHALL BE APPROVED BY THE ENGINEER AND SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS. WHERE THESE DRAWINGS CONFLICT WITH EXISTING FIELD CONDITIONS, A RECORD OF THE FIELD CONDITIONS SHALL BE MADE AVAILABLE TO THE OWNER, ENGINEER, AND ARCHITECT.
2. REMOVE ALL UNUSED CABLING, WIRE AND CONDUIT IN THIS SPACE. CONDUIT SHALL BE TAKEN BACK TO OUTSIDE ELECTRICAL ROOM INTO A J-BOX. LABEL UNUSED BREAKERS AS SPARE.
3. ALL EXISTING CONDUITS, CONDUCTORS, AND EQUIPMENT SERVING HVAC SYSTEM TO BE DEMOLISHED SHALL BE REMOVED, THE CIRCUITS SHALL BE REMOVED BACK TO THE PANEL BOARD AND DE-ENERGIZED.
4. EXISTING EQUIPMENT WHICH IS SHOWN AS EXISTING TO REMAIN ON THE DRAWINGS SHALL BE RENDERED FULLY FUNCTIONAL BY THE CONTRACTOR. RE-CIRCUIT AND REPLACE EXISTING DEVICES WHERE REQUIRED TO COMPLY WITH CONSTRUCTION DOCUMENTS. THE ELECTRICAL CONTRACTOR SHALL ENSURE THAT THE RESULTANT LOAD DUE TO THIS TENANT REVISION ON ANY GIVEN BRANCH CIRCUIT DOES NOT EXCEED 80% OF THE SERVING BREAKER AMPACITY RATING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOSS OR DAMAGE TO THE EXISTING FACILITIES CAUSED BY HIM AND HIS WORKMEN, AND SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING SUCH LOSS OR DAMAGE. THE CONTRACTOR SHALL SEND PROPER NOTICES, MAKE NECESSARY ARRANGEMENTS, AND PERFORM OTHER SERVICES REQUIRED FOR THE CARE, PROTECTION AND IN-SERVICE MAINTENANCE OF ALL ELECTRICAL SERVICES FOR THE EXISTING FACILITIES. THE CONTRACTOR SHALL ERECT TEMPORARY BARRICADES, WITH NECESSARY SAFETY DEVICES, AS REQUIRED TO PROTECT PERSONNEL AND THE GENERAL PUBLIC FROM INJURY, REMOVING ALL SUCH TEMPORARY PROTECTION UPON COMPLETION OF THE WORK.
6. THE CONTRACTOR SHALL MODIFY, REMOVE AND/OR REPLACE ALL MATERIALS AND ITEMS SO INDICATED ON THE DRAWINGS OR REQUIRED BY THE INSTALLATION OF NEW FACILITIES. SALVAGE MATERIALS SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE DELIVERED TO SUCH DESTINATION AS DIRECTED BY THE OWNER. DISPOSE OF SALVAGE MATERIAL IF NOT RETAINED BY OWNER.
7. WHERE EXISTING CONSTRUCTION IS REMOVED TO PROVIDE WORKING AND EXTENSION ACCESS TO EXISTING FACILITIES, CONTRACTOR SHALL REMOVE CEILING GRIDS, TILES, DOORS, PIPING, AIR CONDITIONING DUCTWORK AND EQUIPMENT, ETC., TO PROVIDE THIS ACCESS AND SHALL REINSTALL SAME UPON COMPLETION OF WORK IN THE AREAS AFFECTED.
8. CONTRACTOR SHALL REMOVE ALL OWNER STANDARD LIGHTS INDICATED TO BE REMOVED AND RETURN TO OWNER STOCK AS DIRECTED BY OWNER. CONTRACTOR SHALL TAKE CARE SO AS NOT TO DAMAGE LIGHTS DURING REMOVAL AND STORAGE.
9. WORK IN OCCUPIED AREAS: WORK IN, ABOVE, BELOW OR NEAR OCCUPIED AREAS SHALL BE AT OWNER'S CONVENIENCE AND MAY BE DURING EVENINGS OR WEEKENDS. SCHEDULE ALL REQUIRED POWER OUTAGES A MINIMUM OF 7 DAYS IN ADVANCE WITH BUILDING OWNER.
10. ELECTRICAL SERVICE OUTAGE: SERVICE TO THE EXISTING BUILDING SHALL BE MAINTAINED DURING NORMAL WORKING HOURS. ANY SERVICE OUTAGE REQUIRED TO COMPLETE THE WORK SHALL BE THE TIME AND FOR THE LENGTH OF TIME AS DIRECTED BY THE OWNER. NOTIFY OWNER MINIMUM OF 48 HOURS PRIOR TO SHUTDOWN. ALL PREMIUM TIME SHALL BE INCLUDED IN CONTRACTOR'S BID.
11. FIRE PROTECTION CONTRACTOR SHALL MODIFY ALL EXISTING FIRE PROTECTION AND SPRINKLER PIPES AS REQUIRED TO MEET THE MAINTENANCE AND REMOVAL CLEARANCES OF ALL EXISTING MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT.
12. CONTRACTOR TO PROVIDE ALLOWANCE FOR ANY LOW VOLTAGE CABLING ABOVE INACCESSIBLE OR SPECIALTY CEILING TO BE INSTALLED IN CONDUIT.

ELECTRICAL SHEET LIST

SHEET NUMBER	SHEET NAME
E0.01	ELECTRICAL COVER SHEET
E0.02	ELECTRICAL SPECIFICATIONS
E0.50	ELECTRICAL SITE PLAN
E2.01	POWER PLAN
E2.02	POWER MECAHNICAL PLAN
E3.01	LIGHTING PLAN
E7.00	PANEL SCHEDULES & RISER

CODE SUMMARY

A. **APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO:**
1. CITY OF LEANDER NATIONAL ELECTRICAL CODE (2014 NEC) WITH LOCAL AMENDMENTS
2. CITY OF LEANDER INTERNATIONAL BUILDING CODE 2015
3. CITY OF LEANDER INTERNATIONAL BUILDING CODE 2021, TABLES 1004.1.2 AND 1004.5 FROM SECTION 2902.2
4. LIFE SAFETY CODE (NFPA 101).
5. TEXAS ACCESSIBILITY STANDARDS, AMERICANS WITH DISABILITIES ACT.
6. ENERGY CONSERVATION CODE: IECC 2015.
7. REFER TO BUILDING OWNER FOR ANY STANDARDS ABOVE CODE REQUIREMENT.

STATE OF TEXAS
MICHAEL A. MIRANDE
149411
LICENSED
PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

N-VIZION
FORMS • ENVIRONMENTS • IMAGES

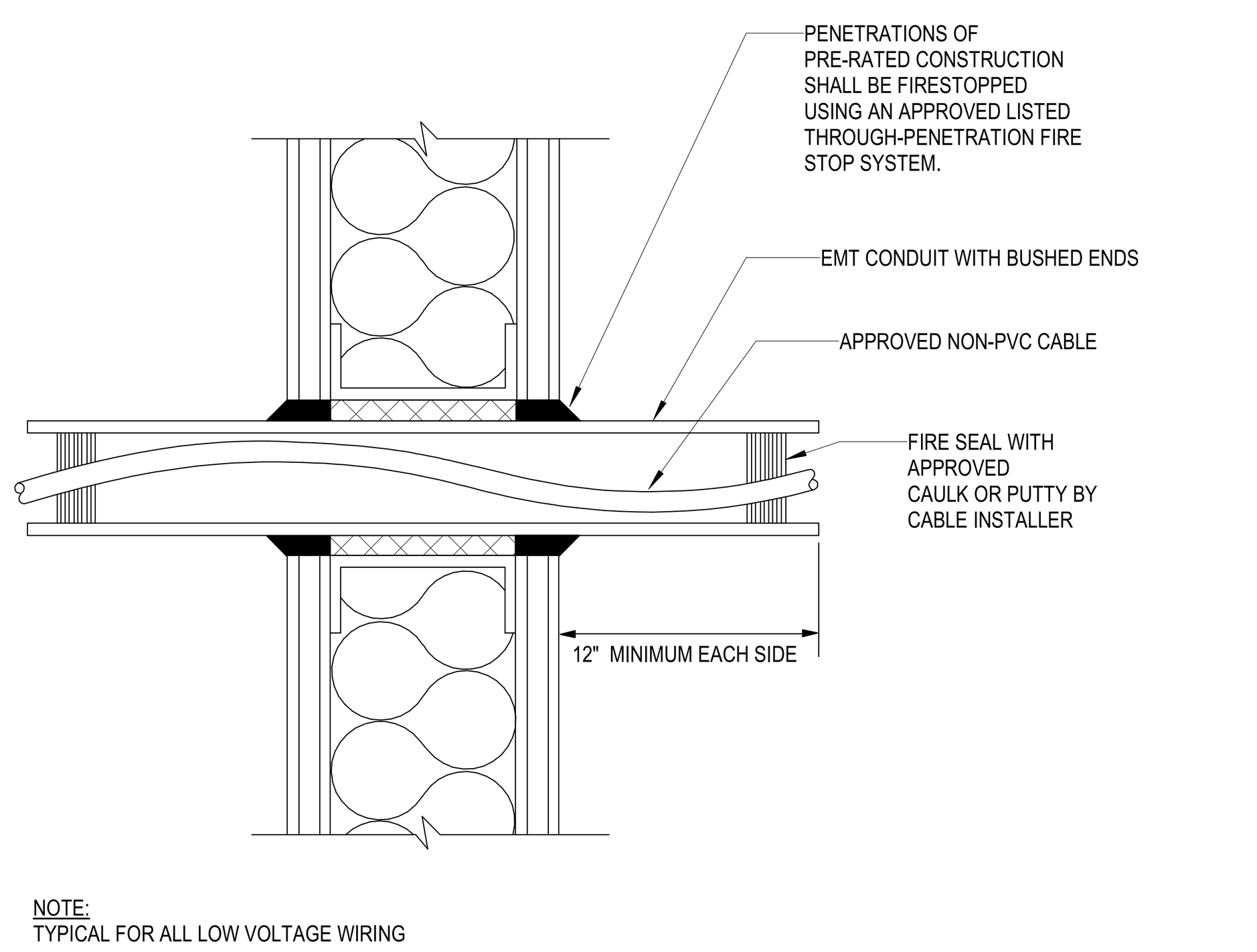
Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

ELECTRICAL COVER SHEET

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

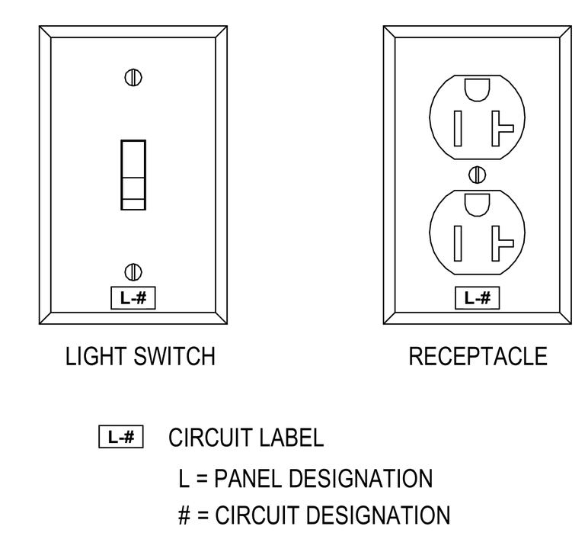
INFINITY
MEP+S CONSULTANTS
TBPE Registration Number: 18865
5316 Hwy. 290 Service Rd., Suite 130
Austin, TX 78735
512-692-9224
www.infinitymep.com

E0.01



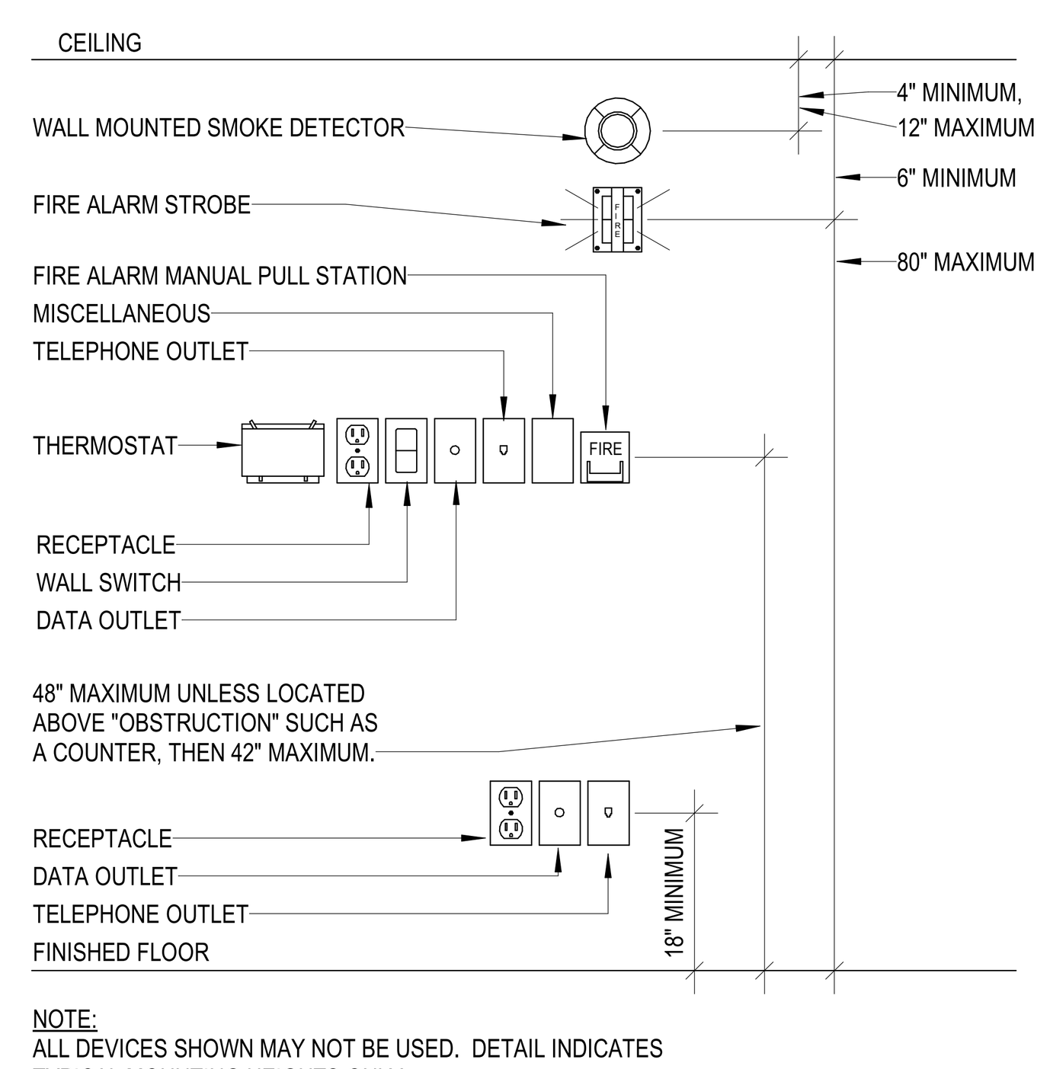
NOTE:
TYPICAL FOR ALL LOW VOLTAGE WIRING

4 CONDUIT PENETRATION OF RATED PARTITION / WITH CABLE
NOT TO SCALE



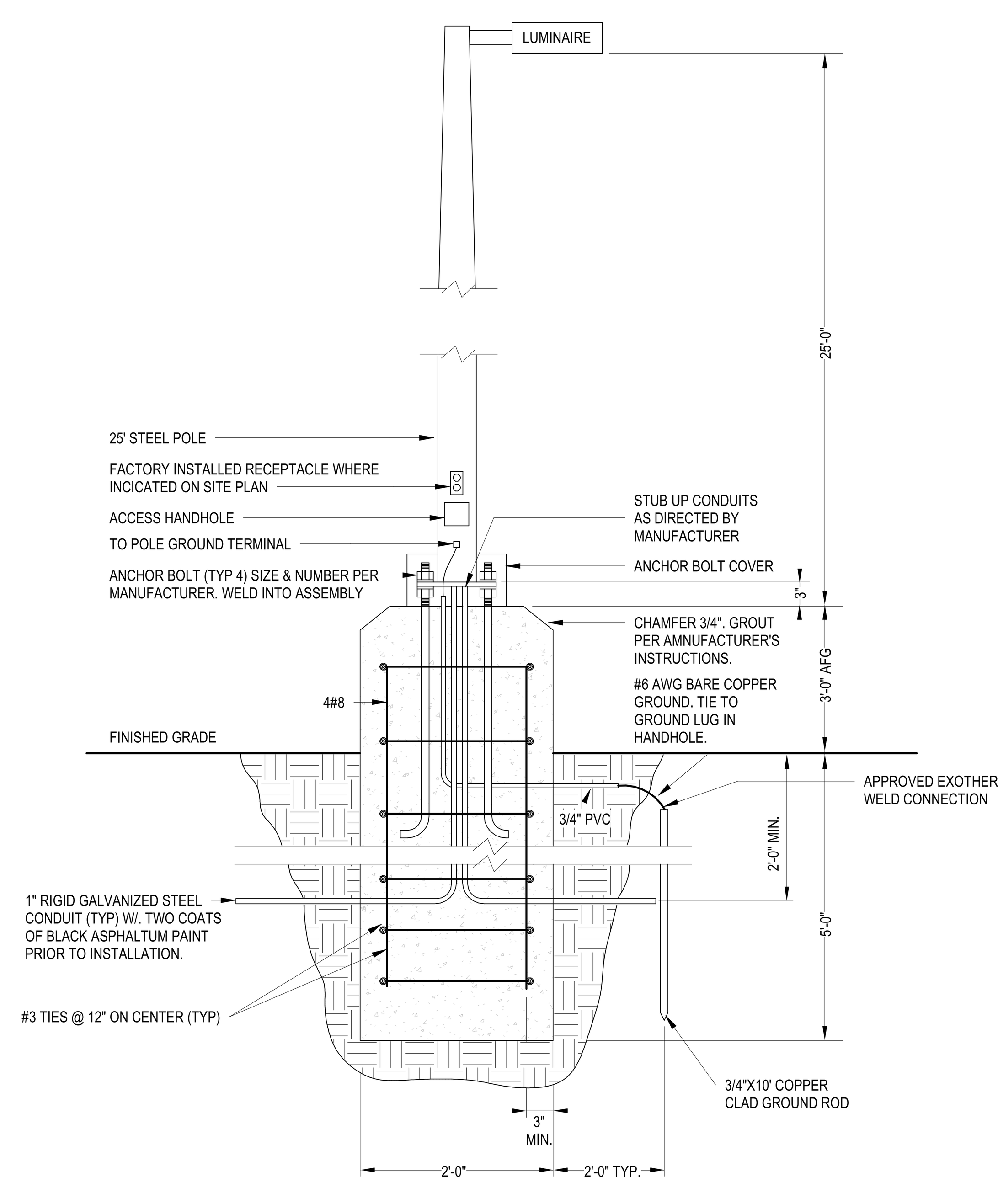
L-# CIRCUIT LABEL
L = PANEL DESIGNATION
# = CIRCUIT DESIGNATION

3 DEVICE PLATES - CIRCUIT LABEL
NOT TO SCALE



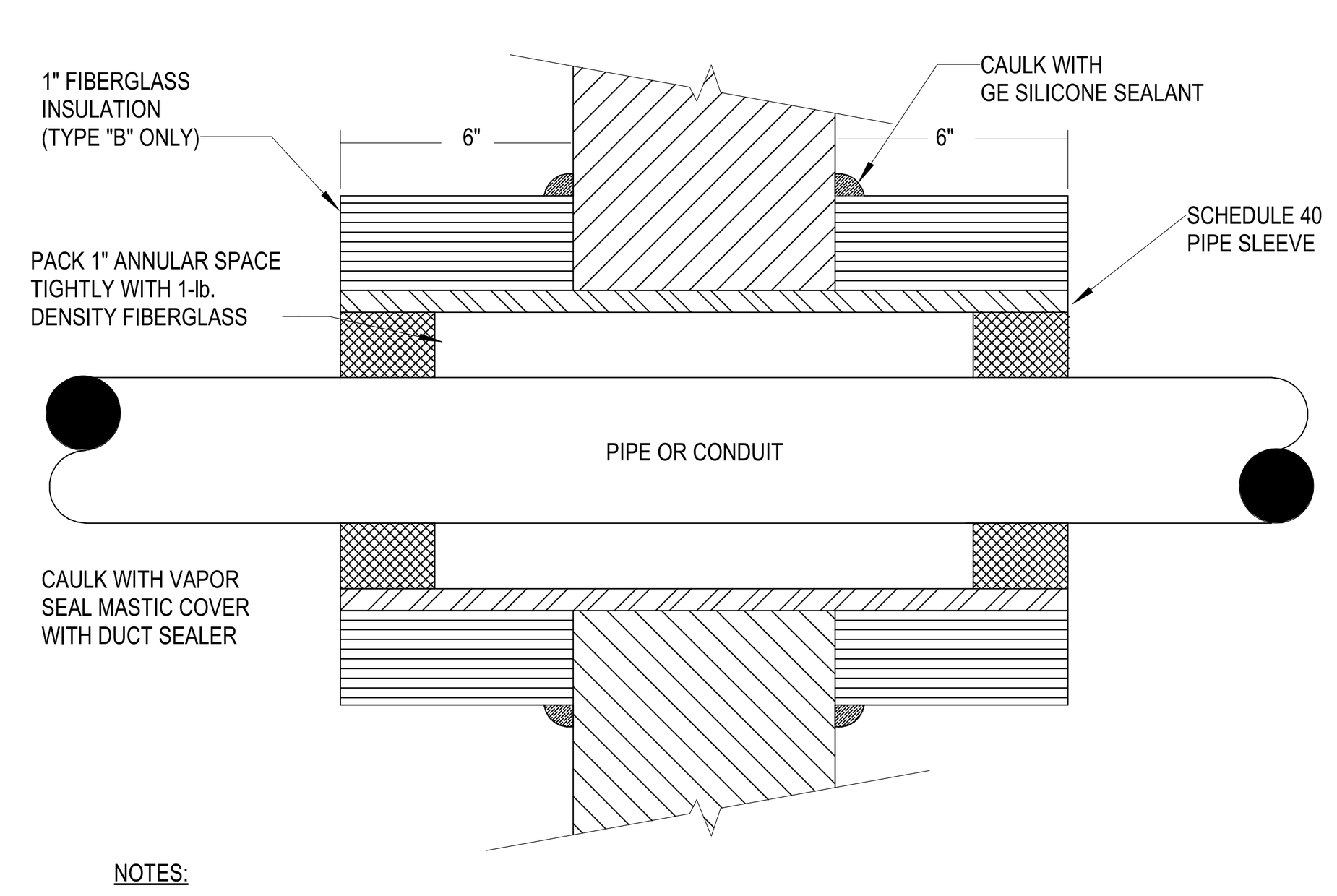
NOTE:
ALL DEVICES SHOWN MAY NOT BE USED. DETAIL INDICATES TYPICAL MOUNTING HEIGHTS ONLY.

2 MOUNTING HEIGHT DETAIL
NOT TO SCALE



1. REFER TO STRUCTURAL FOR CONCRETE INFORMATION.
2. FORM FOUNDATION TO MATCH POLE BASE. MINIMUM FOUNDATION DIMENSION EQUAL TO POLE BASE PLATE PLUS 1'-0".

5 POLE MOUNTED SITE LIGHT DETAIL
NOT TO SCALE



NOTES:

1. TYPICAL TREATMENT FOR CONDUIT AND H.V.A.C. PIPING FOR NON-FIRE-RATED WALLS.
2. SIZE SLEEVE TO ACCEPT CONDUIT.
3. FOR FIRE WALLS PROVIDE U.L. APPROVED SEAL ASSEMBLY FOR OPENING SIZE AND WALL TYPE.

1 CONDUIT SEALANT THRU WALLS
NOT TO SCALE

ELECTRICAL SPECIFICATIONS

SECTION 26 00 00 – COMMON WORK RESULTS FOR ELECTRICAL

1. PERMITS AND CODES: OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND REQUIRED INSPECTIONS. COMPLY WITH ALL NATIONAL, STATE AND MUNICIPAL LAWS, CODES AND ORDINANCES RELATING TO BUILDING AND PUBLIC SAFETY.
2. TEMPORARY POWER: PROVIDE ANY REQUIRED TEMPORARY POWER AND UTILITIES FOR ALL TRADES AND ALL CONSTRUCTION TRAILERS. PROVIDE TEMPORARY CONSTRUCTION LIGHTING AND POWER. ELECTRICAL CONTRACTOR SHALL INCLUDE TEMPORARY ELECTRIC: ALL TEMPORARY ELECTRIC SHALL BE IN ACCORDANCE WITH OSHA CONSTRUCTION STANDARDS 29FCR, PART 1926 AND ARTICLE 590 OF THE 2023 NATIONAL ELECTRICAL CODE. TEMPORARY LIGHTING AND POWER SHALL BE PROVIDED IN ACCORDANCE WITH OSHA STANDARDS. THE OSHA MINIMUM ILLUMINATION IS 5 FOOTCANDLES IN GENERAL CONSTRUCTION AREAS, AND 10 FC IN MECHANICAL / ELECTRICAL ROOMS AND WORKROOMS. INCLUDED ARE CONNECTIONS TO ALL CONSTRUCTION TRAILERS. THE COST OF THIS WORK IS TO BE INCLUDED IN THE BASE ELECTRICAL BID FOR THE PROJECT.
3. TRENCHING REQUIREMENTS: REFER TO SUBCHAPTER C OF CHAPTER 756 OF THE TEXAS HEALTH AND SAFETY CODE FOR REQUIREMENTS APPLICABLE TO TRENCH SAFETY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE COMPLIANCE WITH APPLICABLE STATE AND FEDERAL LAWS, AND NO PROVISION OF THESE DRAWINGS OR SPECIFICATIONS SHALL BE DEEMED TO EXCUSE COMPLIANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS FOR TRENCH SAFETY
4. VISITING THE JOB SITE: VISIT THE SITE OF THE PROPOSED CONSTRUCTION IN ORDER TO FULLY UNDERSTAND THE FACILITIES, DIFFICULTIES AND RESTRICTIONS ATTENDING THE EXECUTION OF THE WORK. NO ADDITIONAL COMPENSATION WILL BE ALLOWED THIS CONTRACTOR FOR WORK OR ITEMS OMITTED FROM HIS ORIGINAL PROPOSAL DUE TO HIS FAILURE TO INFORM HIMSELF REGARDING SUCH MATTERS AFFECTING THE PERFORMANCE OF THE WORK IN THIS CONTRACT OR NECESSARY FOR THE INSTALLATION AND COMPLETION OF THE WORK INCLUDED HEREIN.
5. DRAWINGS: DRAWINGS ARE DIAGRAMMATIC; CONFIRM DIMENSIONS & LOCATIONS IN THE FIELD. IF CONFLICTING DIMENSIONS ARE SHOWN, USE LARGER DIMENSIONS AND VERIFY WITH ARCHITECT. SEE ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF FIXTURES AND WALL MOUNTED DEVICES.
6. MATERIAL: ALL MATERIALS SHALL BE NEW, MADE IN USA AND U.L. LISTED. MATERIAL INSTALLATION SHALL COMPLY WITH NEC REQUIREMENTS AND PERFORM BY CRAFTSMEN SKILLED IN THIS PARTICULAR WORK.
7. EQUIPMENT PROTECTION: PROTECT EQUIPMENT AND WORK FROM DAMAGE DURING HANDLING AND INSTALLATION UNTIL COMPLETION OF CONSTRUCTION.
8. COORDINATION WITH OTHERS: COOPERATION WITH TRADES OF ADJACENT, RELATED OR AFFECTED MATERIALS OR OPERATIONS, AND WITH TRADES PERFORMING CONTINUATIONS OF THIS WORK UNDER SUBSEQUENT CONTRACTS, IS CONSIDERED A PART OF THIS WORK IN ORDER TO EFFECT TIMELY AND ACCURATE PLACING OF WORK AND TO BRING TOGETHER, IN PROPER AND CORRECT SEQUENCE, THE WORK OF SUCH TRADES. PROVIDE OTHER TRADES, AS REQUIRED, ALL NECESSARY TEMPLATES, PATTERNS, SETTING PLANS AND SHOP DETAILS FOR THE PROPER INSTALLATION OF THE WORK AND FOR THE PURPOSE OF COORDINATING ADJACENT WORK. ELECTRICAL POWER CONNECTIONS FOR MECHANICAL AND PLUMBING EQUIPMENT ARE IN THIS DIVISION UNLESS NOTED OTHERWISE. VERIFY ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT WITH DIVISION 15 AND OTHER SPECIAL DIVISIONS (ELEVATORS ETC) BEFORE ROUGHING IN THE ELECTRICAL CONNECTIONS AND ENERGIZING THE EQUIPMENT. REMOVE ANY IMPROPERLY INSTALLED ELECTRICAL EQPT AND CONDUIT THAT ARE LIMITING PROPER ACCESS FOR MECH/PLUMBING/SPECIAL EQPT SERVICE AND MAINTENANCE.
9. ACCESS DOORS: PROVIDE *MILCOR* OR EQUAL AS REQUIRED FOR ACCESS FOR ALL DEVICES REQUIRING ADJUSTMENT. SIMILARLY FOR ALL JUNCTION BOXES, PULL BOXES, ETC. THAT ARE REQUIRED TO BE ACCESSIBLE PER CODE AND/OR THE LOCAL AUTHORITY HAVING JURISDICTION. APPEARANCE OF ACCESS PANELS/DOORS SHALL BE ACCEPTABLE TO ARCHITECT. DOORS SHALL MATCH WALL OR CEILING RATING. ARCHITECT MUST APPROVE LOCATION AND APPEARANCE OF ALL ACCESS DOORS.
10. CLEAN UP: PROVIDE FOR ISOLATION OF WORK AREAS AND DAILY REMOVAL OF DEBRIS. CLEAN ALL EQUIPMENT AND FIXTURE LENSES. REPLACE ALL BURNED OUT LAMPS. TOUCH UP WITH PAINT WHERE REQUIRED.
11. SHOP DRAWINGS: SUBMIT COMPLETE INFORMATION ON ALL EQUIPMENT, LIGHT FIXTURES, GENERATOR, FIRE ALARM SYSTEM, CONDUIT/FITTINGS, WIRE, AND DEVICES. OVERCURRENT (OC) & DISCONNECT DEVICES SHOWN ON PLANS ARE BASED ON A SPECIFIC HVAC EQUIPMENT MANUFACTURER. HVAC CONTRACTOR MAY SUBMIT OTHER MANUFACTURERS, DIFFERENT MODELS OR RATINGS. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE OC/DISCONNECT DEVICES WITH THE HVAC CONTRACTOR PRIOR TO SUBMITTING SUCH DEVICES FOR ENGINEER'S REVIEW. SUBMIT DETAILED LAYOUT OF ELECTRICAL ROOMS. INCOMPLETE SUBMITTALS WILL BE RETURNED TO THE CONTRACTOR UNREVIEWED. NO TIME EXTENSIONS OR COST INCREASES WILL BE ALLOWED FOR DELAYS CAUSED BY RETURN OF INCOMPLETE SUBMITTALS.
12. RECORD DRAWINGS: WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, PROVIDE RECORD DRAWINGS IN CAD/REVIT FORMAT (USING THE SAME SOFTWARE AND VERSION THE PROJECT WAS DESIGNED IN), PLUS FULL SIZE HARD COPY. ELECTRONIC DRAWINGS MAY BE AVAILABLE FROM ENGINEER FOR A FEE. RECORD DRAWINGS SHALL INCLUDE EXACT DIMENSIONS AND LOCATION FOR ALL UNDER-SLAB CONDUIT, SWITCHGEAR, PANELBOARDS, TRANSFORMERS, EQUIPMENT, AND REVISED HOMERUN CIRCUIT LOCATIONS.
13. FINAL INSPECTION & TESTING: ALL ELECTRICAL SYSTEMS MUST BE CHECKED FOR PROPER POLARITY AND SEQUENCE, ALL MOTORS MUST BE CHECKED FOR PROPER ROTATION AND ALL EQUIPMENT CHECKED FOR PROPER VOLTAGE AND PHASING REQUIREMENTS. PRIOR TO THE APPLICATION OF ANY POWER, THE CONTRACTOR MUST CERTIFY THAT ALL CONNECTED EQUIPMENT MATCH THE CHARACTERISTICS OF THE SUPPLY CIRCUIT VOLTAGE, PHASING AND FEEDER REQUIREMENTS. AFTER ALL SYSTEMS HAVE BEEN COMPLETED AND PUT INTO OPERATION, SUBJECT EACH SYSTEM TO AN OPERATING TEST UNDER DESIGN CONDITIONS TO ENSURE PROPER SEQUENCE AND OPERATION THROUGHOUT THE RANGE OF OPERATION. MAKE ADJUSTMENTS AS REQUIRED TO ENSURE PROPER FUNCTIONING OF ALL SYSTEMS. SPECIAL TESTS ON INDIVIDUAL SYSTEMS ARE SPECIFIED UNDER INDIVIDUAL SECTIONS

SECTION 26 05 19 – LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

1. WIRE: (TRIANGLE, AMERICAN INSULATED CABLE CO., CABLEC OR IUSA.)
2. ALL WIRING SHALL BE IN CONDUIT (EXCEPT PLENUM RATED LOW VOLTAGE CABLES). ALL WIRES MUST BE 75°C RATED OR BETTER, 60°C RATED WIRE SHALL NOT BE USED. 90°C RATED WIRE MAY BE USED BUT ONLY AT 75°C AMPACITY. EMERGENCY AND NORMAL CIRCUITS MUST BE INSTALLED IN SEPARATE CONDUIT AND DEVICE BOXES PER N.E.C. ARTICLE 700.9.(B).
   A. MINIMUM SIZE #12 EXCEPT CONTROLS MAY BE #14. USE #10 CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 100 FEET. USE #10 CONDUCTORS FOR 20 AMPERE, 277 VOLT BRANCH CIRCUITS LONGER THAN 200 FEET.
   B. TYPE THHN/THWN STRANDED COPPER THERMOPLASTIC IN DRY LOCATIONS.
   C. TYPE THWN IN WET LOCATIONS (OUTDOOR, UNDERGROUND, ON ROOF).
   D. ALL WIRE SHALL BE 98% CONDUCTIVITY COPPER, 600 VOLT. ALUMINUM WIRES MAY BE USED ONLY FOR FEEDERS 100 AMPS AND LARGER.
   E. WIRE #10 AND SMALLER MAY BE SOLID OR STRANDED, #8 OR LARGER SHALL BE STRANDED.
   F. COMMUNICATION WIRES (FIRE ALARM, TELEPHONE, HVAC THERMOSTAT, DATA ETC.): PLENUM RATED LOW-SMOKE CABLE MAY BE USED IN LIEU OF WIRE/CONDUIT TYPE INSTALLATION. ALL PLENUM RATED CABLE SHALL BE PROPERLY SUPPORTED BY BRIDAL RINGS, CABLE TIES, CLIPS ETC MADE BY ERICO (CADDY COMMUNICATION FASTENERS) OR EQUAL. DO NOT USE SCRAP WIRE TO WRAP AND SUPPORT COMMUNICATION WIRES. HOMEMADE SUPPORT DEVICES ARE NOT ACCEPTABLE. DO NOT LAY COMMUNICATION CABLE DIRECTLY ON TOP OF CEILING TILES, INSTALL CABLES A MINIMUM OF 12" ABOVE CEILING TILES AND 12" FROM HVAC DUCTWORK. PROVIDE A MINIMUM 6" SEPARATION BETWEEN POWER CONDUIT AND COMMUNICATION WIRINGS.
   G. ALL CABLING IN EXPOSED CEILING AREAS SHALL BE INSTALLED CLEAN AND TIGHT TO STRUCTURE
3. PROVIDE COMMON TRIP MULTI-POLE BREAKERS FOR ALL MULTI-WIRE CIRCUITS PER NEC 2023 ART. 210.4(B).
4. VOLTAGE DROP SHALL NOT EXCEED 3% FOR ALL BRANCH CIRCUITS AND 2% FOR ALL FEEDERS.
5. FIELD INSULATION TESTING: INSULATION RESISTANCE OF ALL CONDUCTORS SHALL BE TESTED. EACH CONDUCTOR SHALL HAVE ITS INSULATION RESISTANCE TESTED AFTER THE INSTALLATION IS COMPLETED AND ALL SPLICES, TAPS AND CONNECTIONS ARE MADE EXCEPT CONNECTION TO OR INTO ITS SOURCE AND POINT (OR POINTS) OF TERMINATION. INSULATION RESISTANCE OF CONDUCTORS WHICH ARE TO OPERATE AT 600 VOLTS OR LESS SHALL BE TESTED BY USING A BIDDLE MEGGER OF NOT LESS THAN 1000 VOLTS DC. INSULATION RESISTANCE OF CONDUCTORS RATED AT 600 VOLTS SHALL BE FREE OF SHORTS AND GROUNDS AND HAVE A MINIMUM RESISTANCE PHASE-TO-PHASE AND PHASE-TO-GROUND OF AT LEAST 10 MEGOHMS. CONDUCTORS THAT DO NOT EXCEED INSULATION RESISTANCE VALUES LISTED ABOVE SHALL BE REMOVED AT CONTRACTOR'S EXPENSE AND REPLACED AND TEST REPEATED. THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND PERSONNEL REQUIRED FOR TESTS, SHALL TABULATE READINGS OBSERVED, AND SHALL FORWARD COPIES OF THE TEST READINGS TO THE OWNER. THESE TEST REPORTS SHALL IDENTIFY EACH CONDUCTOR TESTED, DATE AND TIME OF TEST AND WEATHER CONDITIONS. EACH TEST SHALL BE SIGNED BY THE PARTY MAKING THE TEST.

SECTION 26 05 26 – GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. GROUNDING: ALL CONDUIT WORK AND ELECTRICAL EQUIPMENT SHALL BE EFFECTIVELY AND PERMANENTLY GROUNDED IN ACCORDANCE WITH NEC REQUIREMENTS. PROVIDE GREEN EQUIPMENT GROUNDING CONDUCTOR WITH ALL POWER AND RECEPTACLE AND LIGHTING CIRCUITS. GREEN EQUIPMENT GROUNDING CONDUCTOR SHALL BE ROUTED FROM PANEL GROUND BUS TO FINAL DEVICES.

SECTION 26 05 29 – HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

1. SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS:
   A. GALVANIZED-STEEL SLOTTED SUPPORT SYSTEMS WITH METALLIC COATINGS.
   B. ALUMINUM SLOTTED SUPPORT SYSTEMS WITH NONMETALLIC COATINGS.
   C. NONMETALLIC SLOTTED SUPPORT SYSTEMS.
   D. RACEWAYS AND CABLE SUPPORTS.
   E. STEEL CONDUITS AND CABLE HANGERS, CLAMPS, AND ASSOCIATED ACCESSORIES.
   F. SUPPORT FOR NONARMORED CONDUCTORS AND CABLES IN VERTICAL CONDUIT RISERS.
   G. STRUCTURAL STEEL FOR FABRICATED SUPPORTS AND RESTRAINTS.
2. MOUNTING, ANCHORING, AND ATTACHMENT COMPONENTS:
   A. POWDER-ACTUATED FASTENERS.
   B. MECHANICAL-EXPANSION ANCHORS.
   C. CONCRETE INSERTS.
   D. CLAMPS FOR ATTACHMENT TO STEEL STRUCTURAL ELEMENTS.
   E. STEEL SPRINGHEAD TOGGLE BOLTS.
   F. THREADED HANGER RODS.
   G. FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES: WELDED OR BOLTED STEEL SHAPES.
3. CONCRETE BASES: 3000-PSI, 28-DAY COMPRESSIVE-STRENGTH CONCRETE.
4. MAXIMUM SUPPORT SPACING AND MINIMUM HANGER ROD SIZE FOR RACEWAY: SPACE SUPPORTS FOR EMTS, IMCS, AND RMCS AS REQUIRED BY NFPA 70. MINIMUM ROD SIZE SHALL BE 1/4 INCH IN DIAMETER. MULTIPLE RACEWAYS OR CABLES: INSTALL TRAPEZE-TYPE SUPPORTS FABRICATED WITH STEEL SLOTTED OR OTHER SUPPORT SYSTEM, SIZED SO CAPACITY CAN BE INCREASED BY AT LEAST 25 PERCENT IN FUTURE WITHOUT EXCEEDING SPECIFIED DESIGN LOAD LIMITS. ALL SUPPORTS SHALL BE INDEPENDENT OF FIRE, PLUMBING, MECHANICAL, AND TELECOM.

SECTION 26 05 33 – RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

1. CONDUIT: SHALL BE RIGID GALVANIZED STEEL (RGS) OR ELECTRICAL METALLIC TUBING (EMT) AS MANUFACTURED BY ALLIED, TRIANGLE, WHEATLAND OR QUALITY TUBE.
2. INDOORS ABOVE GRADE: EMT OR RGS. AMERICAN CONDUIT PULLEASE ALUMINUM EMT IS ACCEPTABLE. PER UL 514B, BOTH STEEL AND DIECAST FITTINGS ARE APPROVED FOR USE WITH ALUMINUM EMT. DO NOT USE FLAT STEEL FISHTAPES WITH ALUMINUM EMT. FOR SMALLER SIZES USE ONLY ROUND FIBERGLASS FISHTAPES. FOR LARGER SIZES USE POLYPROPYLENE STYLE ROPE.
3. INDOORS OR OUTDOORS ABOVE GRADE, STUB-UPS, ON ROOF, MECHANICAL ROOMS, OR WHERE SUBJECT TO PHYSICAL DAMAGE: RGS, IMC.
4. BELOW GRADE: SCHEDULE 40 OR 80 PVC OR RGS. PROVIDE TRANSITION FITTINGS FROM PVC SCH 40 OR 80 TO RGS FOR ALL ABOVE GRADE CONDUIT. ALL UNDERGROUND METALLIC CONDUIT SHALL HAVE 40-MIL THICK EXTERNAL PVC COATING FOR CORROSION PROTECTION. UNDERGROUND CONDUIT MINIMUM SIZE 3/4". MINIMUM 24" BURIAL DEPTH FROM FINISHED GRADE TO TOP OF CONDUIT, PROVIDE DEEPER BURIAL DEPTH IF REQUIRED BY LOCAL CODES. PROVIDE CONCRETE ENCASEMENT FOR ALL INCOMING SERVICE CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE. PROVIDE RED DETECTABLE WARNING TAPE OVER ENTIRE RUN OF SERVICE AND MAJOR CONDUIT RUNS.
5. UNDER SLAB: RGS, SCHEDULE 80 PVC.
6. INSTALL GROUND WIRES WHERE SHOWN ON THE DRAWINGS. COMPRESSION OR SET-SCREW TYPE FITTINGS MAY BE USED FOR EMT. MINIMUM CONDUIT SIZE 1/2 INCH, HOWEVER HOMERUN TO PANEL SHALL BE MINIMUM 3/4 INCH.
7. TYPE "MC" METAL CLAD CABLE IS ACCEPTABLE ONLY IF APPROVED BY THE OWNER IN WRITING AND THE LOCAL AUTHORITY. MC CABLE, IF APPROVED, HOWEVER, MAY BE USED ONLY FOR DROPS FROM CEILING PLENUM JUNCTION BOXES TO RECEPTACLES AND LIGHT SWITCHES IN WALLS. MC CABLE MAY ALSO BE USED AS FIXTURE WHIPS FROM CEILING PLENUM JUNCTION BOXES TO LIGHT FIXTURES, WHIPS MUST BE 6-FT OR LESS. HOMERUN CIRCUITS TO PANELS SHALL BE IN CONDUIT, MC HOMERUN TO PANELS ARE NOT ACCEPTABLE. TYPE "AC" ARMORED CABLE (COMMONLY REFERRED TO AS "BX") IS NOT ACCEPTABLE AND SHALL NOT BE USED. KAF-TECH ATKORE MC GLIDE-LITE ALUMINUM MC CABLE IS ACCEPTABLE. IF USED, AN ALUMINUM CABLE ARMOR SHALL HAVE A CONTINUOUS LOW-PROFILE CONVOLUTION MINIMIZING LOW SPOTS TO PREVENT INSTALLATION DAMAGE IN ACCORDANCE WITH MC GLIDE-LITE. THE LOW-PROFILE ARMOR SHALL BE APPLIED OVER THE CABLED WIRE ASSEMBLY WITH AN INTERLOCK IN COMPLIANCE WITH SECTION 5 OF UL 1569. INSTALLATION SHALL BE PER MANUFACTURER RECOMMENDATIONS.
8. ELECTRICAL NONMETALLIC TUBING (ENT, NEC ARTICLE 362) SHALL NOT BE USED UNLESS SPECIFICALLY APPROVED BY THE ENGINEER. FLEXIBLE CONDUIT SHALL BE UTILIZED AS FINAL CONNECTIONS (3'-5' ONLY) AT THE FOLLOWING EQUIPMENT: MOTORS, LIGHTING FIXTURES, HEATER, POWER SUPPLIES, AND ANY OTHER VIBRATION PRODUCING EQUIPMENT. UTILIZE 1/2" FLEXIBLE METALLIC CONDUIT MINIMUM AND INCLUDE A GREEN GROUND WIRE. USE SEALTITE IN WET LOCATIONS SUCH AS OUTDOOR CONDENSING UNITS, WALK-IN COOLER/FREEZER, KITCHEN, ROOFTOP HVAC EQPT, ETC. CONDUIT SHALL BE SUPPORTED FROM STRUCTURE EVERY 5 FEET AND WITHIN 3 FEET OF ALL BOXES. USE LOCKNUTS INSIDE AND OUT AT BOXES. MAINTAIN MINIMUM 12" SEPARATION FROM ALL HIGH TEMPERATURE PIPES. ALL CONDUIT RUNS SHALL BE INSTALLED EITHER PARALLEL OR PERPENDICULAR TO BUILDING LINES. ROUTE CONDUIT AS DIRECTLY AS POSSIBLE WITH LARGEST RADIUS BENDS POSSIBLE. MAKE BENDS WITH STANDARD ELBOWS OR BENDS PER NEC. PROVIDE EXPANSIONS FITTINGS IF CONDUIT CROSSES STRUCTURAL EXPANSION JOINT. ALL CONDUITS ON ROOF SHALL BE SUPPORTED BY AN ENGINEERED, PREFABRICATED PORTABLE PIPE SYSTEM SPECIFICALLY DESIGNED TO BE INSTALLED ABOVE FINISHED ROOF WITHOUT ROOF PENETRATIONS, FLASHINGS OR DAMAGE TO ROOF MEMBRANE.
9. SUPPORT AT INTERVAL NOT TO EXCEED 10' ON CENTER, AND WITHIN 5' OF ANY DEFLECTION OF CONDUIT. CLEAN CONDUIT INTERIOR AFTER INSTALLATION; COAT SCRATCHES WITH ZINC PAINT. PROVIDE PULL WIRE IN ALL CONDUIT (POWER, FIRE ALARM, TELEPHONE AND OTHER COMMUNICATION CONDUIT). PULL WIRE ALSO REQUIRED IN ALL SPARE CONDUIT.
10. OUTLET BOXES: SHALL BE GALVANIZED STEEL SUITABLE FOR LOCATION. CEILING OUTLET BOXES SHALL BE 4" OCTAGON. WALL OUTLET BOXES SHALL BE PROPER DESIGN TO ACCOMMODATE THE DEVICES REQUIRED - 4 INCH SQUARE WITH RAISED COVER. PROVIDE RACO, STEEL CITY OR APPLETON. ALL J-BOXES / SPLICE BOXES MUST BE ACCESSIBLE.
11. JUNCTION /PULL BOXES: FOR EACH CONDUIT RUN: PROVIDE ONE JUNCTION/PULL BOX FOR EACH EQUIVALENT THREE QUARTER BENDS (270°). UNDERGROUND FEEDERS: MINIMUM ONE PULL BOX FOR EACH 350 FEET OF CONDUIT RUN.
12. CONTRACTOR SHALL NOT INSTALL MORE THAN THREE CIRCUITS IN SAME CONDUIT UNLESS OTHERWISE NOTED. WHEN INSTALLING MORE THAN THREE CURRENT CARRYING CONDUCTORS IN SAME CONDUIT, CONTRACTOR SHALL DERATE THE AMPACITY OF ALL CURRENT CARRYING CONDUCTORS PER NEC 2023 ART. 310.15(B)(2)(A).

SECTION 26 05 44 – SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING

1. ALL PENETRATIONS THROUGH FIRE RATED FLOORS AND WALLS SHALL BE SEALED WITH 3M FIRE RESISTANT FOAM SEALANT, TO PREVENT THE SPREAD OF SMOKE, FIRE, TOXIC GAS OR WATER THROUGH THE PENETRATION EITHER BEFORE, DURING OR AFTER A FIRE. THE FIRE RATING OF THE PENETRATION SEAL SHALL BE AT LEAST THAT OF THE FLOOR OR WALL INTO WHICH IT IS INSTALLED, SO THAT THE ORIGINAL FIRE RATING OF THE FLOOR OR WALL IS MAINTAINED AS REQUIRED BY ARTICLE 300.21 OF THE NATIONAL ELECTRICAL CODE.

SECTION 26 05 53 – IDENTIFICATION FOR ELECTRICAL SYSTEMS

1. IDENTIFICATION: LABEL ALL JUNCTION AND PULL BOXES WITH PANELS AND CIRCUIT NUMBERS. MARK ALL BRANCH CONDUIT WITH CIRCUIT NUMBERS AT EACH SURFACE MOUNTED PANEL LOCATION. FOR RECESSED PANELS, MARK BRANCH CONDUIT IN CEILING PLENUM JUST ABOVE PANELS.
2. COLOR CODE: CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS:
   A. 480Y/277V 3PH, 4W
      a. PHASE A: BROWN
      b. PHASE B: PURPLE
      c. PHASE C: YELLOW
      d. NEUTRAL: GRAY OR WHITE
      e. GROUND: GREEN
      f. ISOLATED GROUND: GREEN/YELLOW STRIPE
   B. 208Y/120V 3PH, 4W
      a. PHASE A: BLACK
      b. PHASE B: RED
      c. PHASE C: BLUE
      d. NEUTRAL: WHITE
      e. GROUND: GREEN
      f. ISOLATED GROUND: GREEN/YELLOW STRIPE
   C. 240/120V 3PH, 4W
      a. PHASE A: BLACK
      b. PHASE B: ORANGE (HIGH LEG)
      c. PHASE C: BLUE
      d. NEUTRAL: WHITE
      e. GROUND: GREEN
      f. ISOLATED GROUND: GREEN/YELLOW STRIPE
   D. 240/120V 1PH, 3W
      a. PHASE A: BLACK
      b. PHASE B: RED
      c. NEUTRAL: WHITE
      d. GROUND: GREEN
      e. ISOLATED GROUND: GREEN/YELLOW STRIPE
3. ALL PANELS SHALL BE IDENTIFIED USING NAMEPLATES WITH 4 ROWS OF TEXT (LETTER HEIGHT SHALL BE 1/4" MINIMUM), EXAMPLE:
   PANEL "XX" 225 AMPS MCB, SECTION #1 OF 2-SECTION PNL
   208Y/120V, 3 PHASE, 4 WIRE
   FEEDER SIZE 4 # 4/0 THWN, 1 # 4 G, 2 1/2" C.
   FED FROM DIST PANEL "XXX", 1ST FLOOR
   A. PANEL NAMEPLATES SHALL BE ENGRAVED THREE-LAYER LAMINATED PLASTIC, WHITE LETTERS ON BLACK BACKGROUND FOR NORMAL POWER, RED LETTER/BLACK BACKGROUND FOR EMERGENCY POWER. SECURE NAMEPLATES TO EQUIPMENT USING SCREWS OR RIVETS.
   B. ALL DISCONNECTS, STARTERS, COMBINATION STARTER/DISCONNECT, TRANSFORMERS, WIREWAYS, COMMUNICATION CABINETS, JUNCTION AND PULL BOXES ETC. SHALL BE SIMILARLY IDENTIFIED.

SECTION 26 05 73 – ELECTRICAL STUDIES

1. CONTRACTOR SHALL PROVIDE WARNING LABELS ON ELECTRICAL EQUIPMENT INDICATING INCIDENT ENERGY LEVEL, LEVEL OF HAZARD AND THE REQUIRED PERSONAL PROTECTION EQUIPMENT. EQUIPMENT REQUIRED TO BE LABELED SHALL INCLUDE, BUT NOT LIMITED TO, SWITCHBOARDS, DISTRIBUTION PANELS, MOTOR CONTROL CENTERS, PANELS, CONTACTORS, DISCONNECT SWITCHES AND MOTOR STARTERS.
2.

SECTION 26 09 23 – LIGHTING CONTROL DEVICES

1. PROVIDE AS PER DRAWINGS AND DETAILS. ALL FACEPLATES SHALL BE DECORA STYLE. BACK OF HOUSE AREAS SHALL BE TOGGLE SWITCHES. FACE PLATES SHALL BE WHITE UNLESS NOTED OTHERWISE.
2. DIMMER SWITCHES: PROVIDE DEDICATED NEUTRAL FOR DIMMER CONTROLLED LIGHTING CIRCUIT. DO NOT SHARE NEUTRAL WITH 2 OR MORE BRANCH CIRCUITS. DO NOT BREAK FINS (HEAT SINKS) ON DIMMER SWITCH. DERATED DIMMER SWITCHES MAY BE USED ONLY WHERE SPECIFICALLY APPROVED BY ENGINEER.
3. OCCUPANCY SENSOR SWITCHES SHALL HAVE NEUTRAL WIRE. GROUND WIRE SHALL NOT BE USED AS CURRENT CARRYING CONDUCTOR.
4. OCCUPANCY SENSORS:
   A. ALL SENSOR LOCATIONS ARE APPROXIMATE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
   B. ULTRASONIC CEILING MOUNT SENSORS SHOULD BE LOCATED A MINIMUM OF SIX (6) FEET FROM HVAC SUPPLY/RETURN VENTS.
   C. WALL MOUNTED OCCUPANCY SENSORS SHALL BE PROVIDED WITH INTEGRAL "TOUCH PLATE" MANUAL OFF CONTROL AND SHALL BE CONNECTED WITH THE NEUTRAL CONDUCTOR PER NEC ARTICLE 404.2.
   D. CONTRACTOR IS RESPONSIBLE FOR PROPER SENSITIVITY AND TIME DELAY SETTINGS, RECOMMENDED PLACEMENT AND FIELD VERIFICATION OF CIRCUITS WITH RESPECT TO POWER PLACEMENT.
   E. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF REQUIRED NUMBER OF SWITCH PACKS.
   F. ONE SWITCH PACK IS REQUIRED FOR EACH CIRCUIT TO BE CONTROLLED.
   G. ONE SWITCH PACK IS REQUIRED FOR EVERY FIVE SENSORS IN THE ZONE.
   H. SENSORS MOUNTED OVER THE DOOR MUST BE PLACED ONE FOOT INSIDE THE THRESHOLD.
   I. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SENSOR BILL OF MATERIALS COMPLIES WITH THE SENSOR DESIGN AND SPECIFICATIONS.
   J. CONTRACTOR IS RESPONSIBLE FOR INSTALLING EQUIPMENT IN COMPLIANCE WITH LOCAL CODE.
   K. WALL MOUNTED OCCUPANCY SENSORS SHALL BE GANGED UNDER A COMMON COVERPLATE WHERE LOCATED ADJACENT TO DIMMERS OR SWITCHES (I.E. IN A CONFERENCE ROOM).
   L. FOR ALL AREAS INDICATED WITH OCCUPANCY SENSORS, FURNISH AND INSTALL SWITCHES, DIMMERS, MOTION SENSORS, AND SWITCH PACKS AS NECESSARY TO PERFORM THE FOLLOWING FUNCTIONS:
   M. ACTIVATION OF ANY MOTION SENSING DEVICE WITHIN THE INDICATED ZONE OF CONTROL SHALL ENERGIZE ALL LIGHT FIXTURES, REGARDLESS OF VOLTAGE, WITHIN THAT ZONE.
   N. WALL MOUNTED SWITCHES AND DIMMERS SHALL WORK IN CONJUNCTION WITH MOTION SENSOR(S) TO PROVIDE MANUAL OPERATION OF SWITCHED FIXTURES WITHIN THE ZONE (UPON MOTION SENSOR ACTIVATION).

SECTION 26 09 43.23 – RELAY BASED LIGHTING CONTROLS

1. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS OF THE LIGHTING RELAY PANELS WITH THE BUILDING CONTROLS CONTRACTOR AND BUILDING ENGINEERING STAFF TO ASSURE PROPER OPERATION (ON, OFF, TIME OF DAY PROGRAMMING) OF THE LIGHTING RELAY SYSTEM AND ITS COMPONENTS PRIOR TO FINAL DELIVERY OF THE FLOOR. THE ELECTRICAL CONTRACTOR SHALL IMMEDIATELY REPORT ANY OBSERVED DEFICIENCIES TO THE BUILDING ENGINEERING STAFF. REPAIR OF EXISTING NON-FUNCTIONAL DEVICES OR INSTALLATION OF MISSING DEVICES SHALL BE PERFORMED ON A CHANGE ORDER BASIS OR UNDER SEPARATE CONTRACT. IN AS MUCH AS IS POSSIBLE, THE CONTRACTOR SHALL DELIVER TO THE OWNER A COMPLETE AND FUNCTIONING SYSTEM FOR EACH RENOVATED FLOOR.
2. LIGHTING CONTROL RELAY PANELS: STANDALONE LIGHTING CONTROL PANEL USING MECHANICALLY LATCHED RELAYS TO CONTROL LIGHTING AND APPLIANCES.
   A. SINGLE ENCLOSURE WITH INCOMING LIGHTING BRANCH CIRCUITS, CONTROL CIRCUITS, SWITCHING RELAYS, AND ON-BOARD TIMING AND CONTROL UNIT.
      a. CONTROL UNIT: POWER SUPPLY AND ELECTRONIC CONTROL FOR OPERATING AND MONITORING INDIVIDUAL RELAYS.
      b. TIMING UNIT: 365-DAY CALENDAR; ASTRONOMICAL CLOCK; SEVEN INDEPENDENT SCHEDULES, EACH HAVING 24 TIME PERIODS.
      c. SEQUENCING CONTROL WITH OVERRIDE.
   B. OVERRIDE CONTROL "BLINK WARNING" APPROXIMATELY FIVE MINUTES BEFORE OFF SEQUENCE.
   C. NONVOLATILE MEMORY RETAINS SETUP CONFIGURATIONS.
      a. RELAYS: ELECTRICALLY OPERATED, MECHANICALLY HELD SINGLE-POLE SWITCH, RATED AT 20 A AT 277-V AC.
      b. OPERATOR INTERFACE: INTEGRAL KEYPAD AND DIGITAL DISPLAY.

SECTION 26 24 16 – PANELBOARDS

1. ALL PANELBOARDS SHALL HAVE COPPER BUSES. LOAD CENTER TYPE PANELBOARDS ARE NOT ACCEPTABLE AND SHALL NOT BE USED. PROVIDE BREAKERS WHICH ARE QUICK-MAKE AND QUICK-BREAK ON BOTH MANUAL AND AUTOMATIC OPERATION. USE A TRIP-FREE BREAKER WHICH IS TRIP INDICATING. INCORPORATE INVERSE TIME CHARACTERISTIC BY BIMETALLIC OVERLOAD ELEMENTS AND INSTANTANEOUS CHARACTERISTIC BY MAGNETIC TRIP. 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. ALL BREAKERS SHALL BE BOLT-ON THERMAL MAGNETIC TYPE. STAB-ON BREAKERS ARE NOT ACCEPTABLE. DO NOT USE TANDEM CIRCUIT BREAKERS. ALL CIRCUIT BREAKERS RATED 100 AMP OR LESS SHALL BE SUITABLE FOR TERMINATING 75°C WIRE (BREAKERS RATED FOR ONLY 60°C WIRE ARE NOT ACCEPTABLE.
2. PANELBOARD DIRECTORIES: PROVIDE A STEEL DIRECTORY FRAME MOUNTED INSIDE THE DOOR WITH A HEAT-RESISTANT TRANSPARENT FACE AND A DIRECTORY CARD FOR IDENTIFYING THE LOADS SERVED. IDENTIFY EACH CIRCUIT WITH LOAD AND LOCATIONS (ROOM NAMES AND ROOM NUMBERS) AND INDICATE WITH TYPED DIRECTORIES.
3. 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.
4. ACCEPTABLE MANUFACTURERS ARE GE, SQUARE D, EATON, AND SIEMENS.

SECTION 26 27 26 – WIRING DEVICES

1. WIRING DEVICES: PROVIDE ALL WIRING DEVICES SHOWN ON DRAWINGS COMPLETELY AND PROPERLY WIRED INCLUDING A SECURE GROUND CONNECTION. ALL DEVICES SHALL BE INSTALLED IN OUTLET BOXES OF REQUIRED SIZE AND VOLUME. GENERAL PURPOSE RECEPTACLES SHALL BE HUBBELL 5262 SERIES. ISOLATED GROUND RECEPTACLES SHALL BE HUBBELL IG-5362-ORANGE WITH ISOLATED GROUND CONNECTION. GROUND FAULT INTERRUPT RECEPTACLES (MARKED GFCI) SHALL BE HUBBELL GF-5262. REFER TO ARCHITECTURAL DRAWINGS FOR COLOR AND MOUNTING HEIGHTS.
2. **COVER PLATES:** HIGH ABUSE NYLON OR STAINLESS STEEL PER ARCHITECT. WHERE MORE THAN ONE SWITCH OCCURS AT THE SAME LOCATION, THEY SHALL BE GANGED UNDER ONE COVERPLATE, INSTALLED IN BOXES IN UNIFORM POSITION, SET TO OPEN AND CLOSE CIRCUITS BY MOVING IN THE SAME DIRECTION THROUGHOUT JOB. PROVIDE CIRCUIT NUMBER LABEL ON ALL DEVICE PLATES.
3. ALL ELECTRICAL BOXES ON OPPOSITE SIDES OF CORRIDOR WALL AND FIREWALLS MUST BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES.
4. REFER TO ARCHITECTURAL DRAWINGS FOR RECEPTACLE AND DATA J-BOX MOUNTING HEIGHTS.
5. COORDINATE NEMA RECEPTACLE TYPES FOR ALL COPIERS WITH COPIER MANUFACTURER(S) PRIOR TO INSTALLATION. CONTRACTOR SHALL REPORT ANY CIRCUIT DISCREPANCY TO THE ENGINEER FOR REVIEW.
6. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION ON ALL FLOOR DEVICES. LOCATIONS SHALL BE IN ACCORDANCE WITH ALL UNDERWRITER LABORATORIES AND LOCAL AUTHORITY REQUIREMENTS. IN NO CASE SHALL U.L. LISTED FIRE RATED POKE-THRU DEVICES BE INSTALLED LESS THAN 24" ON CENTER AND/OR MORE THAN ONE (1) PENETRATION PER 65 SQUARE FEET OF FLOOR AREA OF BEAM SPACE. THE CONTRACTOR SHALL CALL TO THE ATTENTION OF, AND REQUEST DIRECTION FROM THE ARCHITECT AND THE ENGINEER IN ANY CASE IN WHICH THE INSTALLATION MAY VARY FROM THESE REQUIREMENTS PRIOR TO ROUGH-IN. X-RAY SLAB PRIOR TO SAW CUTTING OR CORING.
7. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE FURNITURE MANUFACTURER THE INSTALLATION OF ALL ELECTRICAL DEVICES MOUNTED IN DEMOUNTABLE PARTITIONS. REFER TO ARCHITECT FOR LOCATION OF ALL DEMOUNTABLE PARTITIONS. THE LICENSED ELECTRICIAN SHALL MAKE THE FINAL CONNECTION BETWEEN CIRCUIT AND PLUG-IN FURNITURE SYSTEM.

SECTION 26 28 16 – ENCLOSED SWITCHES AND CIRCUIT BREAKERS

1. PROVIDE ALL SAFETY DISCONNECT SWITCHES INDICATED ON THE DRAWINGS AND AT ALL MECHANICAL EQUIPMENT. PROVIDE HEAVY DUTY TYPE SAFETY SWITCHES SIMILAR TO GE TYPE TH. ALL SWITCHES SHALL BE FUSIBLE, EXCEPT THOSE INDIVIDUALLY ENCLOSED SAFETY SWITCHES INDICATED AS NON-FUSIBLE. PROVIDE NEMA 1 ENCLOSURE FOR NORMAL INDOOR INSTALLATIONS AND NEMA 3R ENCLOSURE FOR INSTALLATIONS OUTDOORS AND IN WET AREAS. COMPLY WITH CODE REQUIREMENTS FOR OTHER ENVIRONMENTS. PROVIDE EXTERNALLY OPERATED HANDLES WITH PROVISIONS FOR PADLOCKING IN THE OFF OR ON POSITION. SWITCH RATINGS SHALL BE SIZED LARGE ENOUGH FOR THE APPLIED LOAD. SWITCHES SERVING MOTORS SHALL BE HORSEPOWER RATED FOR THE INSTALLED MOTOR. VOLTAGE RATINGS SHALL BE SUFFICIENT FOR THE INSTALLED CIRCUIT VOLTAGE. TOGETHER WITH THE SPECIFIED FUSES (IF SWITCH IS FUSIBLE) THE SWITCH SHALL SAFELY AND WITHOUT FAILURE WITHSTAND SHORT CIRCUITS ON A SYSTEM CAPABLE OF DELIVERING UP TO 200,000 AMPS RMS SYMMETRICAL AT THE APPLIED VOLTAGE. INSTALL SWITCHES SECURELY TO WALLS. WHERE WALL IS NOT AVAILABLE, PROVIDE UNISTRUT SUPPORT STRUCTURE. ACCEPTABLE MANUFACTURERS ARE GE, SQUARE D, EATON, AND SIEMENS.

SECTION 26 51 00 – LIGHTING

1. PROVIDE QUANTITY OF FIXTURES AS INDICATED ON DRAWINGS. REFER TO LIGHT FIXTURE FOR SPECIFICATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS, LENGTHS, AND EXACT LOCATIONS.
2. ALL LIGHTING FIXTURES WHICH ARE SUPPORTED BY THE CEILING GRID SHALL BE SECURED TO THE GRID AS REQUIRED BY THE LOCAL CODE AUTHORITIES.
3. LINEAR LIGHTING FIXTURES SHALL BE SERIES INDICATED IN THE LIGHTING FIXTURE SCHEDULE WITH EXACT LENGTHS PER ARCHITECTURAL DRAWINGS. REFER TO THE ARCHITECT AND MILLWORK CONTRACTOR FOR EXACT LENGTH AND MOUNTING DETAILS. PROVIDE BONDING JUMPERS BETWEEN ADJACENT UNDER COUNTER LIGHTING FIXTURE CASINGS.

SECTION 27 5 00 – COMMUNICATION SYSTEMS

1. PROVIDE A J-BOX WITH PLASTER RING FOR DEVICE SUPPORT, AND 1" SPARE CONDUIT ROUTED TO THE ACCESSIBLE CEILING AT EACH POSITION INDICATED TO HAVE A DATA AND/OR TELEPHONE OUTLET, CARD READER, MAGNETIC LOCK, DOOR RELEASE, AUDIO/VISUAL DEVICE BOX, OR TV CABLE JUNCTION BOX.
2. SYMBOLS AND DEVICES NOT SPECIFICALLY NOTED REPRESENT ARCHITECTURAL, A/V, OR SECURITY DEVICE COMPONENTS. REFER TO THE RESPECTIVE DRAWINGS FOR LOCATIONS, ADDITIONAL INFORMATION AND SPECIFICATIONS.

SECTION 28 46 21 – FIRE ALARM

1. THE FACILITY HAS AN EXISTING FIRE ALARM SYSTEM. ELECTRICAL CONTRACTOR SHALL PROVIDE ADDITIONAL NEW FIRE ALARM DEVICES (SMOKE DETECTORS, PULL STATIONS, SPEAKERS/STROBES, ETC.) AS SHOWN ON PLAN AND CONNECT TO FACILITY-WIDE FIRE ALARM SYSTEM. PROVIDE ADDITIONAL POWER SUPPLIES, RE-PROGRAMMING, CIRCUIT RE-ASSIGNMENTS, NEW WIRES AND/OR CONDUIT/WIRE EXTENSION AND ALL ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. VERIFY ZONING REQUIREMENTS WITH OWNER AND PROVIDE ACCORDINGLY. ALL NEW FIRE ALARM DEVICES AND MATERIAL SHALL MATCH EXISTING AND SHALL BE OF THE LATEST COMPATIBLE MODEL. ALL PENETRATIONS THROUGH FIRE RATED FLOORS AND WALLS SHALL BE SEALED WITH APPROVED FIRE-SAFING MATERIAL. SIMILAR FOR ALL OTHER COMMUNICATION SYSTEMS SHOWN ON PLAN.

10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

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ELECTRICAL SPECIFICATIONS

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

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MEP+S CONSULTANTS
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E0.02

LIGHT FIXTURE SCHEDULE.

DESIGNATION	FIXTURE DESCRIPTION	MOUNTING	MANUFACTURER	MODEL NUMBER	POLE	LAMP TYPE	DIMMING TYPE	VOLTAGE	WATTAGE
S1	TYPE 4 DISTRIBUTION	POLE	GARDCO	OPF-M-A09-740-T4W-UNV-FINISH-CONTROLS	SSS-XX-FINISH-XX	LED	0-10V	UNV	93 VA
S2-2	TYPE 3 DISTRIBUTION	POLE	GARDCO	OPF-M-A09-740-T3M-UNV-FINISH-CONTROLS	SSS-XX-FINISH-XX	LED	0-10V	UNV	93 VA
S3	TYPE BLC DISTRIBUTION	POLE	GARDCO	OPF-M-A09-740-BLC-UNV-FINISH-CONTROLS	SSS-XX-FINISH-XX	LED	0-10V	UNV	93 VA
SL	STEP LIGHT	RECESSED	GARDCO	GARDCO - 941L-21L-NW-DG-FINISH	-	LED	-	UNV	21 VA

1

KEYNOTES

KEYNOTE	DESCRIPTION
1	STEP LIGHT TO BE CONTROLLED BY DAY LIGHT SENSORS.
2	MAXIMUM MOUNTING HEIGHT 20'. POLE PART NUMBER SSS-XX-FINISH-XX
3	ELECTRICAL PANELBOARD 'L3' (FOR FUTURE CEMETERY LIGHT/POWER) SHALL BE MOUNTED ON RETAIN WALL.

1

GENERAL NOTES

A	ELECTRICAL UNDERGROUND SERVICE CONDUCTORS SHALL BE INSTALLED IN ACCORDANCE WITH NEC 2014 SECTION 300.5(D)(3)
B	ALL EXTERIOR LIGHTING SHALL BE CONTROLLED BY PHOTOCELL AND TIMER. PHOTOCELL SHALL BE MOUNTED AT 6" ABOVE ROOF LINE AND FACING NORTH. TIMER SHALL BE MOUNTED ON WALL ADJACENT TO ELECTRICAL PANELBOARD 'L1'

STATE OF TEXAS
ANDREW D. HUNTER
109975
LICENSED
PROFESSIONAL ENGINEER
01/31/2025

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Leander, TX 78641

1 ELECTRICAL SITE PLAN

1" = 20'-0"

TRUE NORTH

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10-25-24	Rev1 Permit Set
01-31-25	CITY COMMENTS

ELECTRICAL SITE PLAN

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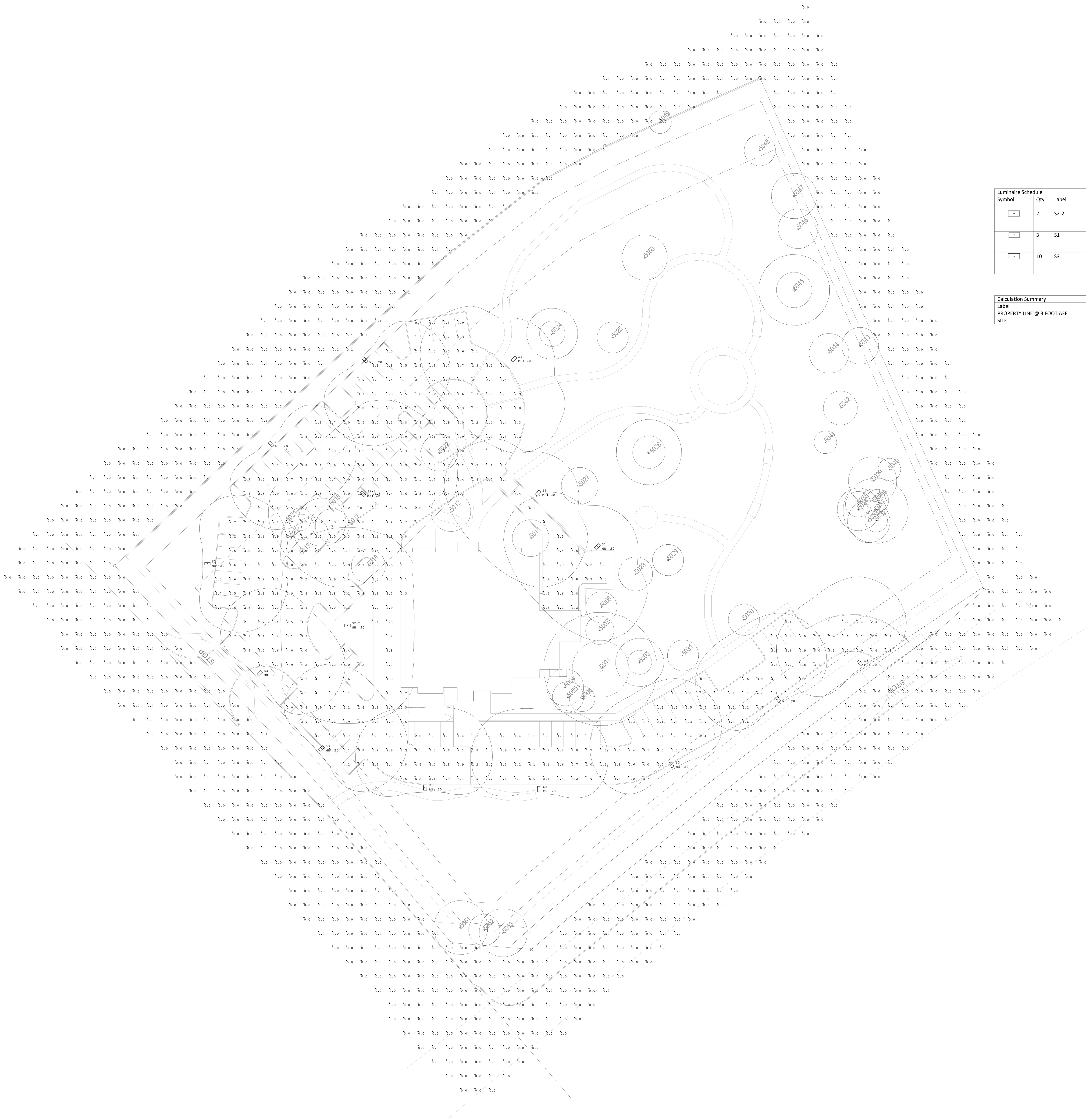

1 **LIGHTING PHOTOMETRICS PLAN**

1" = 30'-0"

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	2	S2-2	Back-Back	SIGNIFY GARDCO - OPF-M-A09-740-T3M-UNV-FINISH-CONTROLS POLE: SSS-XX-FINISH-XX	TYPE 3 DISTRIBUTION	0.930	16947	92.84	371.36
	3	S1	Single	SIGNIFY GARDCO - OPF-M-A09-740-T4W-UNV-FINISH-CONTROLS POLE: SSS-XX-FINISH-XX	TYPE 4 DISTRIBUTION	0.930	16353	92.84	278.52
	10	S3	Single	SIGNIFY GARCO - OPF-M-A09-740-BLC-UNV-FINISH-CONTROLS POLE: SSS-XX-FINISH-XX	TYPE BLC DISTRIBUTION	0.930	11911	92.84	928.4

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PROPERTY LINE @ 3 FOOT AFF	Illuminance	Fc	0.00	0.1	0.0	N.A.	N.A.
SITE	Illuminance	Fc	2.91	12.1	0.7	4.16	17.29

STATE OF TEXAS
GREG W. CANTER
82854
LICENSED
PROFESSIONAL ENGINEER
04/23/2025

[redacted]

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ELECTRICAL SITE PHOTOMETRICS PLAN

Project Number: 230502
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E1.00

[redacted]

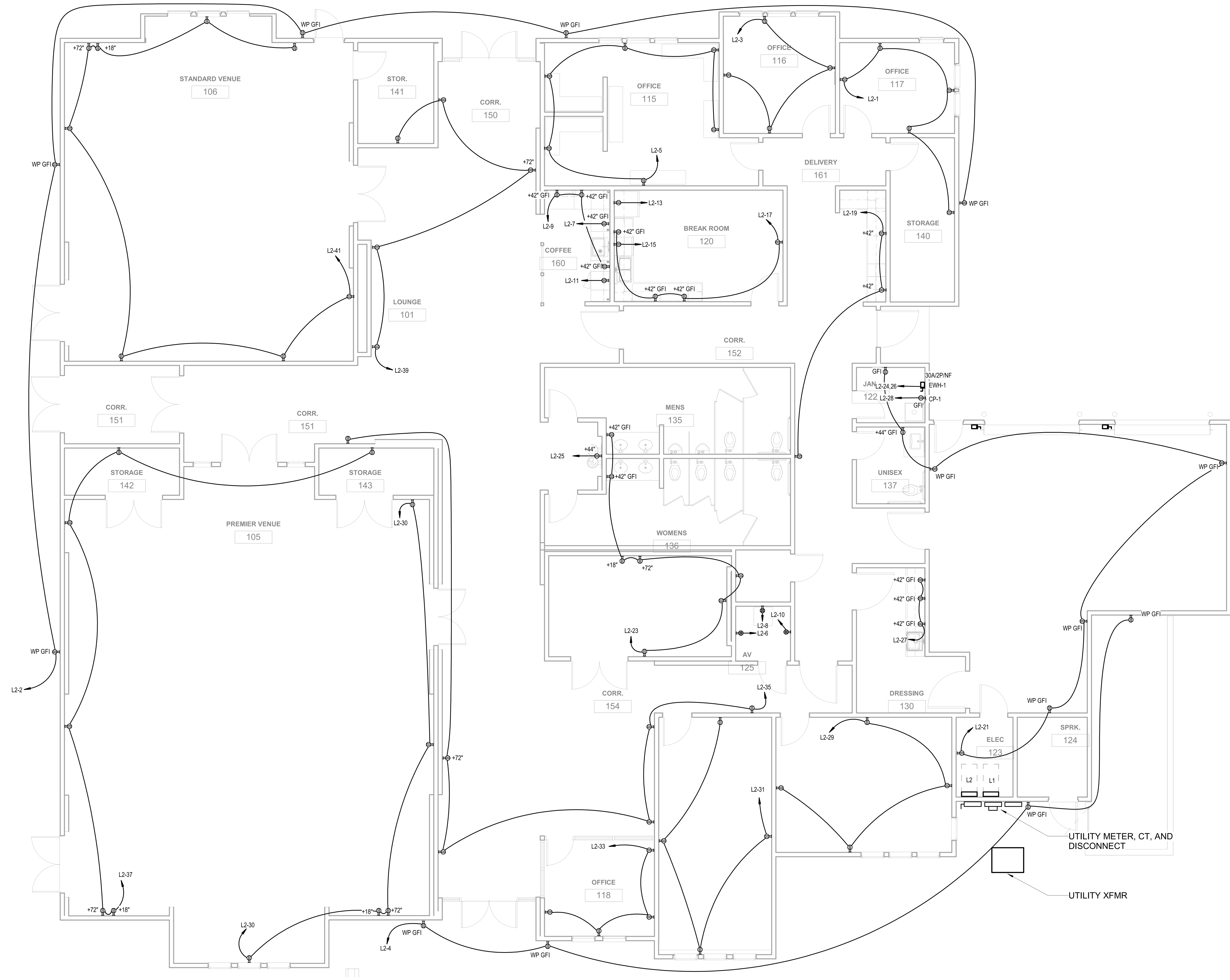
FIRE ALARM NOTES

A	FIRE ALARM SYSTEM DESIGN (DEVICES AND LAYOUT) ARE UNDER SEPARATE PERMIT BY THE FIRE ALARM CONTRACTOR.
B	FIRE ALARM SYSTEM CONSTRUCTION DOCUMENTS FOR THE SCOPE OF WORK INDICATED IN THIS PROJECT SHALL BE SUBMITTED TO THE LOCAL AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO COMMENCING FIRE ALARM WORK AND THE INSTALLATION MUST BE APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION AFTER COMPLETION.
C	THE FIRE ALARM SYSTEM MODIFICATIONS FOR THIS PROJECT SHALL BE DESIGNED BY A LICENSED FIRE ALARM CONTRACTOR AND BE IN ACCORDANCE WITH NFPA 72 & 101 AND THE LOCAL AUTHORITY HAVING JURISDICTION BUILDING CODE. CONTRACTOR IS RESPONSIBLE FOR SUBMISSION OF PL
D	ALL 120V CIRCUITS REQUIRED FOR THE OPERATION OF THE FIRE ALARM SYSTEM SHALL BE INCLUDED. LOCATIONS OF ALL PANELS AND BOOSTERS SHALL BE COORDINATED WITH ARCHITECT. CONTRACTOR SHALL TEST THE SYSTEM IN THE PRESENCE OF LOCAL AUTHORITIES AND MAKE ALL REQUIRED MODIFICATIONS AND ADDITIONS TO THE DESIGN AT NO ADDITIONAL COST.

GENERAL NOTES

A	ELECTRICAL UNDERGROUND SERVICE CONDUCTORS SHALL BE INSTALLED IN ACCORDANCE WITH NEC 2014 SECTION 300.5(D)(3)
B	ALL EXTERIOR LIGHTING SHALL BE CONTROLLED BY PHOTOCELL AND TIMER. PHOTOCELL SHALL BE MOUNTED AT 6" ABOVE ROOF LINE AND FACING NORTH. TIMER SHALL BE MOUNTED ON WALL ADJACENT TO ELECTRICAL PANELBOARD 'L1'
C	CONTRACTOR SHALL TRACE EXISTING CIRCUITS FOR ALL PANELS IN SCOPE AND REUSE THOSE THAT ARE NOT CURRENTLY BEING USED OR BECOME AVAILABLE DUE TO DEMO. CIRCUIT NUMBERS SHOWN ARE DIAGRAMMATIC AND MAY NEED TO BE MODIFIED FOR FIELD CONDITIONS. CONTRACTOR SHALL COORDINATE ALL WORK WITH BUILDING ENGINEER AND MAY NEED TO SCHEDULE WORK AFTER HOURS. CONTRACTOR SHALL CHECK ALL PANELS FOR ELECTRICAL LOAD. IF SUFFICIENT NUMBER OF CIRCUITS CANNOT BE LOCATED AND REUSED, ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
D	ALL 125-VOLT THROUGH 250-VOLT RECEPTACLES SUPPLIED BY SINGLE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 50 AMPERES OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 100 AMPERES OR LESS, INSTALLED IN THE LOCATIONS SPECIFIED IN 210.8(B) (1) THROUGH (B) (12) SHALL HAVE GROUND FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL. 210.8(B)(2) KITCHENS OR AREAS WITH A SINK AND PROVISIONS FOR EITHER FOOD PREPARATION OR COOKING.
E	PROVIDE MINIMUM OF 36-INCH HORIZONTAL AND 72-INCH VERTICAL CLEARANCE AROUND ALL ELECTRICAL PANELS.

1



1 POWER PLAN
3/16" = 1'-0"
TRUE NORTH

STATE OF TEXAS
GREG W. CANTER
87854
LICENSED PROFESSIONAL ENGINEER
04/23/2025

[redacted]

[redacted]

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POWER PLAN

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
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FIRE ALARM NOTES

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B	FIRE ALARM SYSTEM CONSTRUCTION DOCUMENTS FOR THE SCOPE OF WORK INDICATED IN THIS PROJECT SHALL BE SUBMITTED TO THE LOCAL AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO COMMENCING FIRE ALARM WORK AND THE INSTALLATION MUST BE APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION AFTER COMPLETION.
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GENERAL NOTES

A	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL DEVICES. REFER TO IT REPRESENTATIVE FOR EXACT LOCATION OF IT DEVICES. REFER TO AV DRAWINGS FOR A DETAILED LAYOUT OF CONDUIT AND CABLE FOR AV DEVICES.
B	PROVIDE RECESSED CLOCK TYPE BOX FOR ALL WALL MOUNTED TV POWER AND A/V DEVICES.
C	CONTRACTOR SHALL TRACE EXISTING CIRCUITS FOR ALL PANELS IN SCOPE AND REUSE THOSE THAT ARE NOT CURRENTLY BEING USED OR BECOME AVAILABLE DUE TO DEMO. CIRCUIT NUMBERS SHOWN ARE DIAGRAMMATIC AND MAY NEED TO BE MODIFIED FOR FIELD CONDITIONS. CONTRACTOR SHALL COORDINATE ALL WORK WITH BUILDING ENGINEER AND MAY NEED TO SCHEDULE WORK AFTER HOURS. CONTRACTOR SHALL CHECK ALL PANELS FOR ELECTRICAL LOAD. IF SUFFICIENT NUMBER OF CIRCUITS CANNOT BE LOCATED AND REUSED, ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
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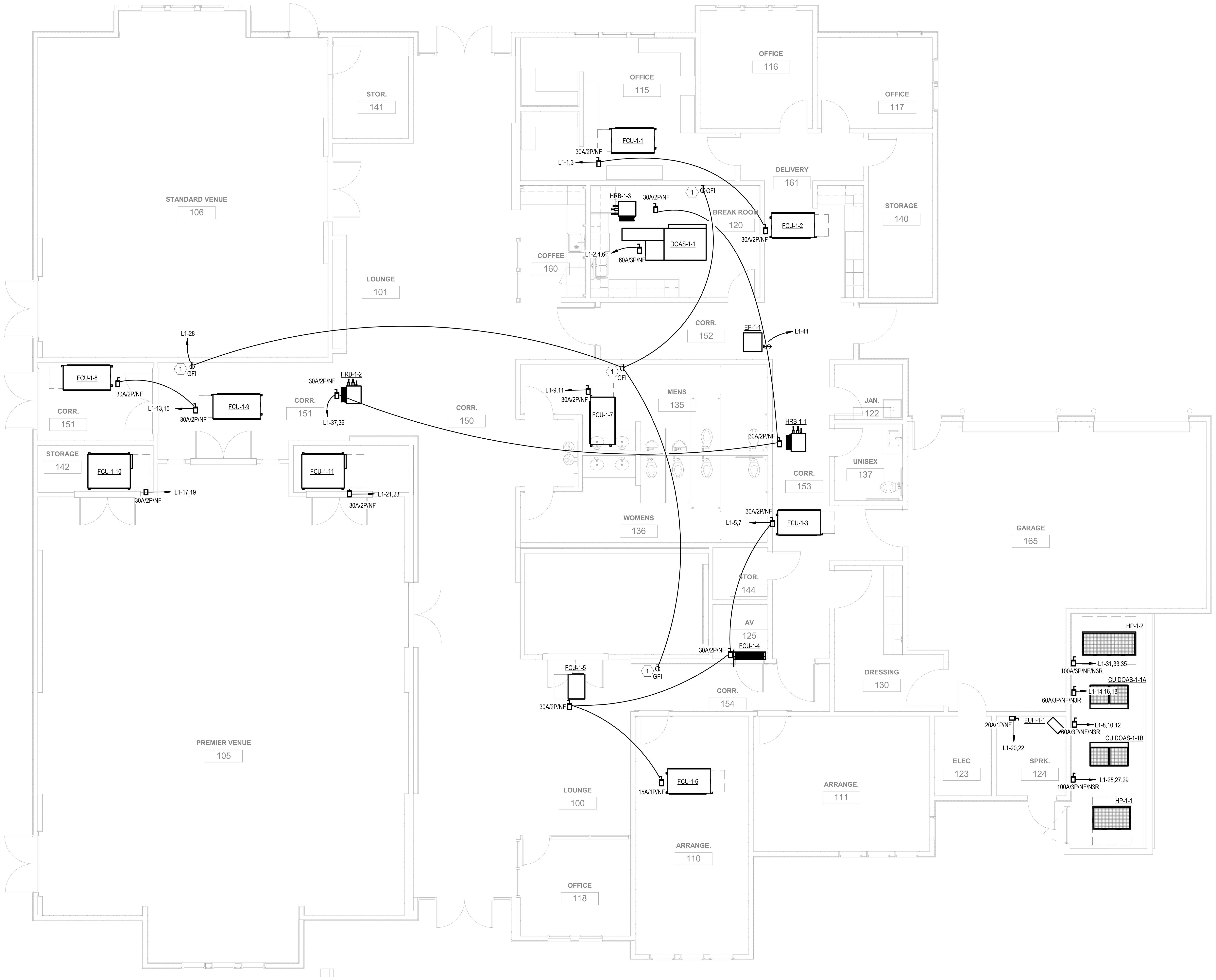
KEYNOTES

KEYNOTE	DESCRIPTION
1	PROVIDE GFI HVAC MAINTENACE RECEPACLE WITHIN 25FT OF EQUIPMENT. RECEPTACLE TO BE MOUNTED TO STRUCUTRE.



1 **POWER MECHANICAL PLAN**
3/16" = 1'-0"
TRUE NORTH

STATE OF TEXAS
MICHAEL A. MIRANDE
149411
LICENSED PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

N-VIZION
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POWER MECAHNICAL PLAN

Project Number: 230502
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E2.02

LIGHT FIXTURE SCHEDULE

DESIGNATION	FIXTURE DESCRIPTION	MOUNTING	MANUFACTURER	MODEL NUMBER	LAMP TYPE	DIMMING TYPE	VOLTAGE	WATTAG
A1	2x2 TROFFER	RECESSED	SIGNIFY GARDCO	2FGXG38B840-2-UNV-DIM	LED	0-10V	UNV	32 VA
A1E	2x2 TROFFER W/ EMERGENCY BATTERY PACK	RECESSED	SIGNIFY GARDCO	2FGXG38B840-2-UNV-DIM-EM	LED	0-10V	UNV	32 VA
C	CHANDELIER	PENDANT	MODERN FORMS	PD-64521R-BK/AB-BK	LED	0-10V	UNV	23 VA
D1	6" RECESSED CAN	RECESSED	ELITE	HH6-LED-2000L-DIM10-MVOLT-WD-40K-90-HH6-6501-CL-WH	LED	0-10V	UNV	20 VA
D1E	6" RECESSED CAN W/ EMERGENCY BATTERY PACK	RECESSED	ELITE	HH6-LED-2000L-DIM10-MVOLT-WD-40K-90-HH6-6501-CL-WH-EM	LED	0-10V	UNV	20 VA
D2	6" RECESSED CAN - WET LISTED	RECESSED	ELITE	HH6-LED-2000L-DIM10-MVOLT-WD-40K-90-HH6-6501-CL-WH	LED	0-10V	UNV	20 VA
D2E	6" RECESSED CAN - WET LISTED - W/ EMERGENCY BATTERY PACK	RECESSED	ELITE	HH6-LED-2000L-DIM10-MVOLT-WD-40K-90-HH6-6501-CL-WH-EM	LED	0-10V	UNV	20 VA
D3	6" RECESSED COLORED FIXTURE	RECESSED	METEOR	RS6-50-308C-W-RGB-XX-XX-WD-X	LED	0-10V	UNV	25 VA
L1	4FT SURFACE MOUNTED LINEARS	SURFACE MOUNTED	SIGNIFY DAYBRITE	FSS-4-55L-840-UNV-DIM	LED	0-10V	UNV	41 VA
L2	BEAM MOUNTED UPLIGHT LINEAR - BLACK HOUSING - ERT TO MAKE SUGGESTION	SURFACE SIDE BEAM	PAL LIGHTING	ACC-HO-CCT-4-LOH-UNV	LED	0-10V	UNV	42 VA
L3	3FT VANITY FIXTURE	SUSPENDED	MODERN FORMS	PD-68146-BN	LED	0-10V	UNV	42 VA
M	UP AND DOWN LIGHT SCONCE - MATTE BLACK	WALL MOUNT	SIGNIFY	C3SQCWUD109D2WZ10UB	LED	0-10V	UNV	22 VA
W1	SOFIT UPLIGHT - ERT TO MAKE SUGGESTION BLACK HOUSING	WALL MOUNT	SIGNIFY GARDCO	121-16L-1200-NW-G4-4	LED	0-10V	UNV	66 VA
W2	MECHANICAL YARD WALL PACK BLACK HOUSING	WALL MOUNT	SIGNIFY GARDCO	121-16L-1200-NW-G4-4	LED	0-10V	UNV	15 VA
X1	SUSPENDED EXIT SIGN	SURFACE	EELP	EDG-1RC-A	LED	-	UNV	4 VA

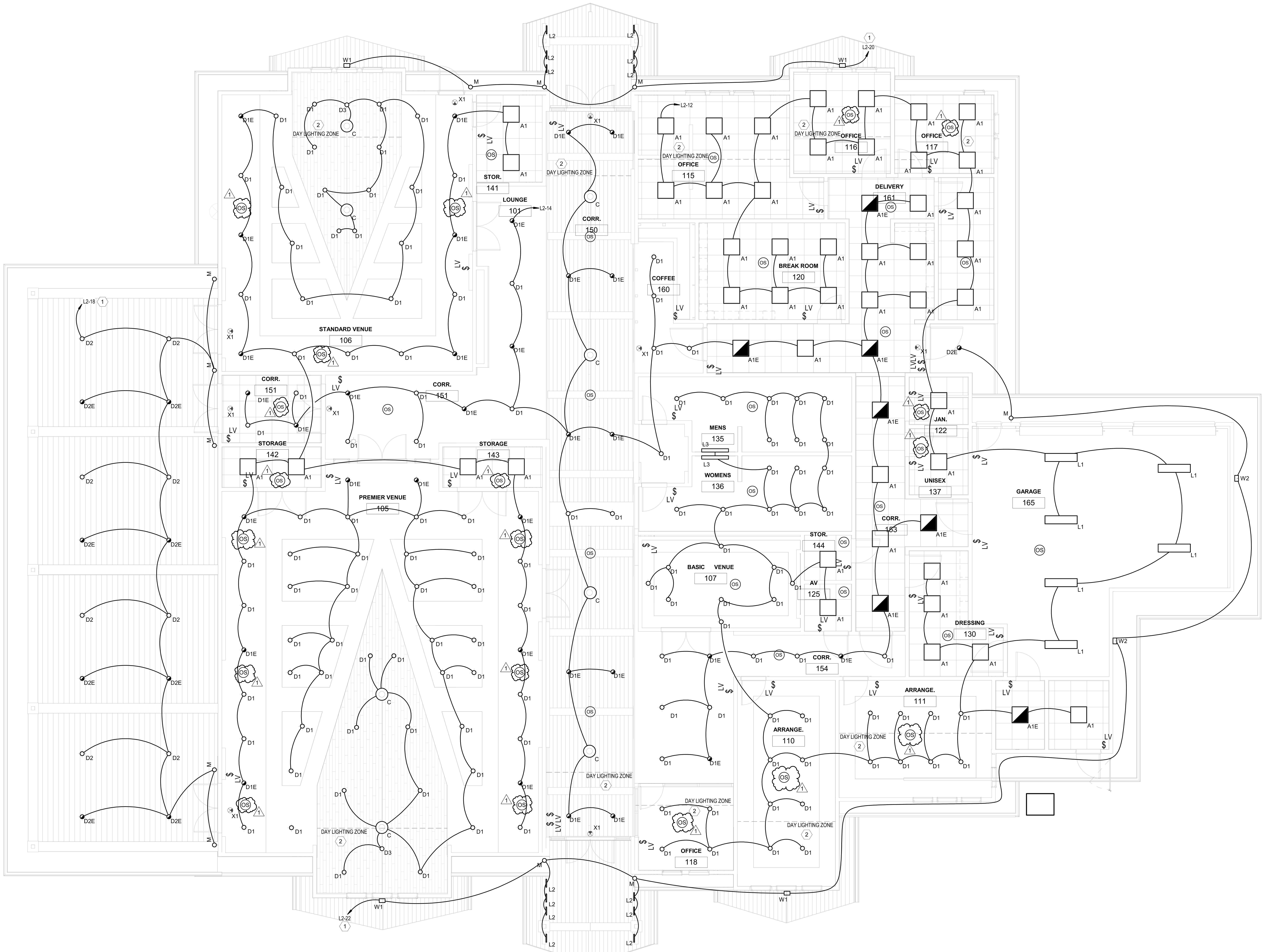
1

GENERAL NOTES

A	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF FIXTURES.
B	FIXTURES WITH BATTERY PACK SHALL HAVE NORMAL BALLAST CONNECTED TO LIGHT SWITCH, AND BATTERY BALLAST CONNECTED TO UN-SWITCHED POWER. BATTERY BALLAST IS SWITCHED AT PANEL ONLY. REFER TO MANUFACTURER WIRING DIAGRAM FOR INSTALLATION WITH FIXTURE NORMAL BALLAST.
C	EXISTING FIXTURES INDICATED TO BE REUSED SHALL BE CLEANED AND RE-LAMPED. INSPECT EXISTING BALLASTS AND REPLACE IF NOISY OR NOT OPERATING. RETURN UNUSED FIXTURES TO OWNER OR DISPOSE IF NOT NEEDED BY OWNER.
D	EXIT SIGNS SHALL BE CONNECTED TO UN-SWITCHED POWER. EMERGENCY LIGHTS SHALL BE SWITCHED AT PANEL ONLY.
E	GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE.
F	CONTRACTOR TO PROVIDE TESTING AND COMMISSIONING OF THE LIGHTING CONTROL SYSTEMS IN SCOPE IN ACCORDANCE WITH JURISDICTION ADOPTED IECC SECTION C408. CONTRACTOR SHALL INCLUDE IN BID THE SERVICES OF A REGISTERED DESIGN PROFESSIONAL TO PRODUCE A COMMISSIONING PLAN TO CONFIRM TESTING AND CALIBRATION HAVE BEEN PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. COPIES OF ALL DOCUMENTATION SHALL BE GIVEN TO THE OWNER OR OWNER'S AUTHORIZED AGENT WITHIN 90 DAYS OF RECEIPT OF CERTIFICATE OR OCCUPANCY AND MADE AVAILABLE TO CODE OFFICIAL UPON REQUEST IN ACCORDANCE WITH SECTIONS C408.3.1.1 AND C408.3.1.2.

KEYNOTES

KEYNOTE	DESCRIPTION
1	ALL EXTERIOR LIGHTING TO BE ROUTED THRU LIGHTING CONTROL PANEL
2	TOTAL WATTS OF GENERAL LIGHTING WITHIN THIS SIDELIGHT DAYLIGHT ZONE IS LESS THAN 150 WATTS. THERE IS NO DAYLIGHT RESPONSIVE CONTROLS IS REQUIRED FOR GENERAL LIGHTS WITHIN THIS DAY LIGHT ZONE.



1 **LIGHTING CEILING PLAN**
3/16" = 1'-0"
TRUE NORTH

STATE OF TEXAS
ANDREW D. HUNTER
109975
LICENSED

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

N-VIZION
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LIGHTING PLAN

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set
01-31-25	CITY COMMENTS

INFINITY
MEP+S CONSULTANTS
TBPE Registration Number: 18865
5316 Hwy. 290 Service Rd., Suite 130
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E3.01

GENERAL NOTES

A	ALL NEW WIRES SHALL HAVE THHN/THWN INSULATION.

PANEL: L1

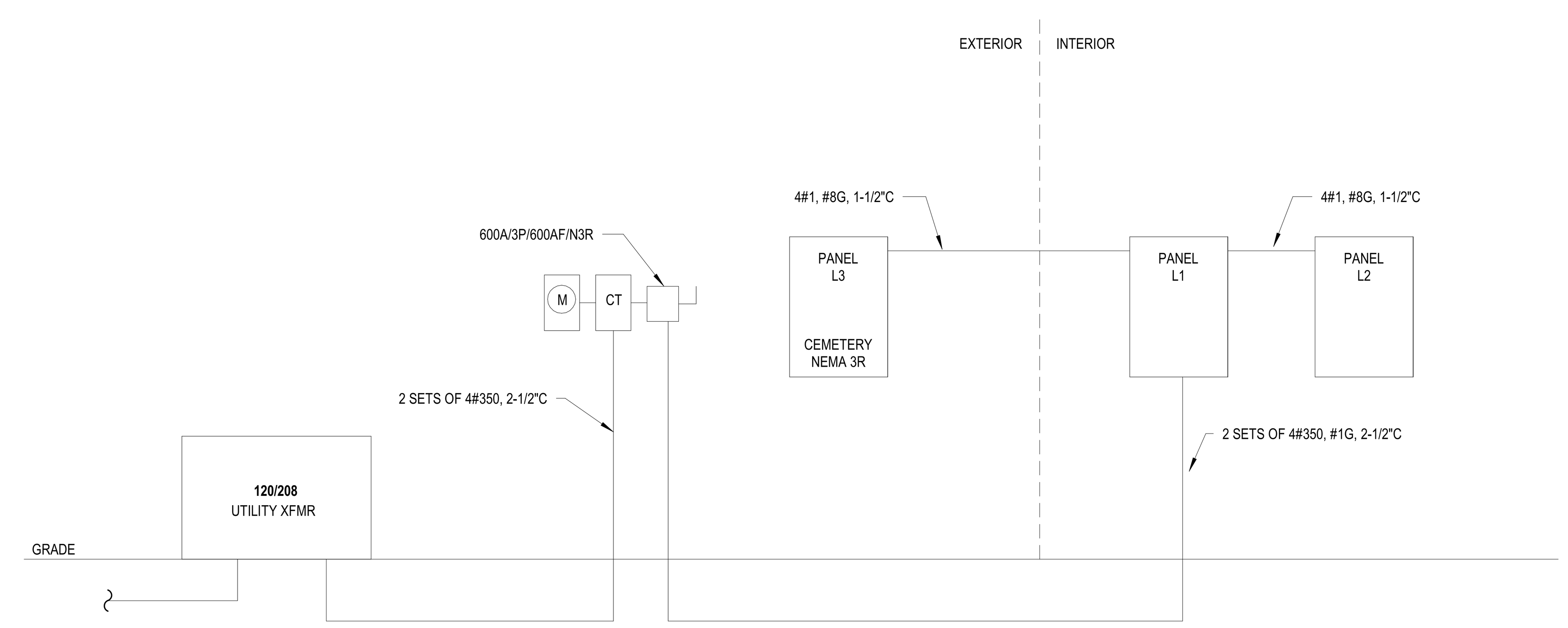
INFINITY MEP CONSULTANTS

LOCATION:	ELEC 123	VOLTS:	120/208 Wye	A.I.C. RATING:	35000
SUPPLY FROM:		PHASES:	3	MAINS TYPE:	MCB
MOUNTING:	Surface	WIRES:	4	BUS RATING:	600 A
ENCLOSURE:	Type 1			MAIN RATING:	600 A

NOTES:

NOTES	CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DESCRIPTION	CKT	NOTES
	1	FCU-1-1 / FCU-1-2	15 A	2	624 VA / 2046 VA			3	30 A	DOAS-1-1	2	
	3					624 VA / 2046 VA					4	
	5	FCU-1-3/FCU-1-4/FCU-1-5/FCU-1-6	15 A	2			771 VA / 2046 VA				6	
	7				771 VA / 4587 VA			3	45 A	CU-DOAS-1-1B	8	
	9	FCU-1-7	15 A	2		375 VA / 4587 VA					10	
	11						375 VA / 4587 VA				12	
	13	FCU-1-8/FCU-1-9	15 A	2	749 VA / 4587 VA			3	45 A	CU-DOAS-1-1A	14	
	15					749 VA / 4587 VA					16	
	17	FCU-1-10	15 A	2			936 VA / 4587 VA				18	
	19				936 VA / 2500 VA			2	20 A	EUH-1-1	20	
	21	FCU-1-11	15 A	2		936 VA / 2500 VA					22	
	23						936 VA / 743 VA	1	20 A	OUTDOOR LIGHTING	24	
	25	HP-1-1	60 A	3	6667 VA / 650 VA			1	20 A	OUTDOOR LIGHTING	26	
	27					6667 VA / 720 VA		1	20 A	HVAC EQUIP RECPT	28	
	29						6667 VA / 105 VA	1	20 A	STEP LIGHT	30	
	31	HP-1-2	60 A	3	7220 VA / 70 VA			1	20 A	STEP LIGHT	32	
	33					7220 VA / 0 VA					34	
	35						7220 VA / 0 VA	1	20 A	SPARE	36	
	37	HRB-1-1/1-2/1-3	15 A	2	255 VA / 0 VA			1	20 A	SPARE	38	
	39					255 VA / 0 VA		1	20 A	SPARE	40	
	41	EF-1	20 A	1			1000 VA / 0 VA	1	20 A	SPARE	42	
	43	L2	100 A	3	10275 VA / 0 VA			1	20 A	SPARE	44	
	45					9360 VA / 0 VA		1	20 A	SPARE	46	
	47						13205 VA / 0 VA	1	20 A	SPARE	48	
	49	L3	100 A	3	0 VA / 0 VA			1	20 A	SPARE	50	
	51					0 VA / 0 VA		1	20 A	SPARE	52	
	53						0 VA / 0 VA	1	20 A	SPARE	54	
	55	SPARE	20 A	1	0 VA / 0 VA			1	20 A	SPARE	56	
	57	SPARE	20 A	1		0 VA / 0 VA		1	20 A	SPARE	58	
	59	SPARE	20 A	1			0 VA / 0 VA	1	20 A	SPARE	60	
				TOTAL LOAD:	41935 VA	40624 VA	43175 VA					
				TOTAL AMPS:	351 A	339 A	361 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND LOAD	PANEL TOTALS	
HVAC	90607 VA	100.00%	90607 VA		
INDOOR LIGHTING	7275 VA	125.00%	9094 VA	TOTAL CONNECTED LOAD:	125735 VA
MISC. NON-CONTINUOUS	4500 VA	100.00%	4500 VA	TOTAL NEC DEMAND LOAD:	121922 VA
OUTDOOR LIGHTING	1393 VA	125.00%	1741 VA	TOTAL CONNECTED:	349 A
RECEPTACLES	21960 VA	72.77%	15980 VA	TOTAL NEC DEMAND:	338 A



1 **ELECTRICAL ONE-LINE DIAGRAM**
NOT TO SCALE

PANEL: L2

INFINITY MEP CONSULTANTS

LOCATION:	ELEC 123	VOLTS:	120/208 Wye	A.I.C. RATING:	35000
SUPPLY FROM:	L1	PHASES:	3	MAINS TYPE:	MLO
MOUNTING:	Surface	WIRES:	4	BUS RATING:	100 A
ENCLOSURE:	Type 1			MAIN RATING:	100 A

NOTES:

NOTES	CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DESCRIPTION	CKT	NOTES
	1	OFFICE RECPT	20 A	1	900 VA / 900 VA			1	20 A	WP OUTDOOR RECPT	2	
	3	OFFICE RECPT	20 A	1		720 VA / 720 VA		1	20 A	WP OUTDOOR RECPT	4	
	5	OFFICE RECPT	20 A	1			1080 VA / 180 VA	1	20 A	AV RECPT	6	
	7	COFFEE RECPT	20 A	1	900 VA / 180 VA			1	20 A	AV RECPT	8	
	9	COFFEE RECPT	20 A	1		540 VA / 180 VA		1	20 A	AV RECPT	10	
GFI	11	REFRIGERATOR RECPT	20 A	1			900 VA / 2150 VA	1	20 A	INDOOR LIGHTING	12	
GFI	13	REFRIGERATOR RECPT	20 A	1	900 VA / 1450 VA			1	20 A	INDOOR LIGHTING	14	
GFI	15	DISH WASHER RECPT	20 A	1		900 VA / 2325 VA		1	20 A	INDOOR LIGHTING	16	
	17	BREAK ROOM RECPT	20 A	1			720 VA / 525 VA	1	20 A	OUTDOOR LIGHTING	18	
	19	DELIVERY HALL RECPT	20 A	1	540 VA / 275 VA			1	20 A	OUTDOOR LIGHTING	20	
	21	GARAGE RECPT	20 A	1		1260 VA / 375 VA		1	20 A	OUTDOOR LIGHTING	22	
	23	BASIC VEN/ RR RECPT	20 A	1			1260 VA / 2250 VA	2	30 A	EWH-1	24	
GFI	25	WATER FOUNTAIN RECPT	20 A	1	180 VA / 2250 VA						26	
	27	DRESSING RERCPT	20 A	1		540 VA / 180 VA		1	20 A	CP-1	28	
	29	ARRANGE RECPT	20 A	1			720 VA / 900 VA	1	20 A	PREMIER RECEPT	30	
	31	ARRANGE 2 RECPT	20 A	1	720 VA / 0 VA			1	20 A	SPARE	32	
	33	RECEPTION RECPT	20 A	1		720 VA / 0 VA		1	20 A	SPARE	34	
	35	CORRIDOR RCEPT	20 A	1			1080 VA / 0 VA	1	20 A	SPARE	36	
	37	PREMIER RECEPT	20 A	1	1080 VA / 0 VA			1	20 A	SPARE	38	
	39	CORRIDOR RECPT	20 A	1		900 VA / 0 VA		1	20 A	SPARE	40	
	41	STANDARF VEN RECPT	20 A	1			1440 VA / 0 VA	1	20 A	SPARE	42	
				TOTAL LOAD:	10275 VA	9360 VA	13205 VA					
				TOTAL AMPS:	87 A	78 A	111 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND LOAD	PANEL TOTALS	
INDOOR LIGHTING	7100 VA	125.00%	8875 VA		
MISC. NON-CONTINUOUS	4500 VA	100.00%	4500 VA	TOTAL CONNECTED LOAD:	32840 VA
RECEPTACLES	21240 VA	73.54%	15620 VA	TOTAL NEC DEMAND LOAD:	28995 VA
				TOTAL CONNECTED:	91 A
				TOTAL NEC DEMAND:	80 A

PANEL: L3

INFINITY MEP CONSULTANTS

LOCATION:		VOLTS:	120/208 Wye	A.I.C. RATING:	10000
SUPPLY FROM:	L1	PHASES:	3	MAINS TYPE:	MLO
MOUNTING:	Surface	WIRES:	4	BUS RATING:	100 A
ENCLOSURE:	NEMA 3R			MAIN RATING:	100 A

NOTES:
FUTURE CEMETARY LIGHTING/POWER

NOTES	CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DESCRIPTION	CKT	NOTES
	1	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	2	
	3	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	4	
	5	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	6	
	7	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	8	
	9	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	10	
	11	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	12	
	13	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	14	
	15	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	16	
	17	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	18	
	19	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	20	
	21	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	22	
	23	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	24	
	25	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	26	
	27	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	28	
	29	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	30	
	31	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	32	
	33	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	34	
	35	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	36	
	37	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	38	
	39	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	40	
	41	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	42	
				TOTAL LOAD:	0 VA	0 VA	0 VA					
				TOTAL AMPS:	0 A	0 A	0 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND LOAD	PANEL TOTALS	
				TOTAL CONNECTED LOAD:	0 VA
				TOTAL NEC DEMAND LOAD:	0 VA
				TOTAL CONNECTED:	0 A
				TOTAL NEC DEMAND:	0 A

FAULT CURRENT ANALYSIS

UTILITY TRANSFORMER		AVAILABLE FAULT CURRENT AT TRANSFORMER (Is.c, trans)
120/208 3PH (E l-l)	150 KVA	43198

EQUIPMENT NAME	WIRE L(FT)	WIRE N (SETS)	WIRE SIZE	WIRE TYPE	WIRE C VALUE	AVAILABLE FAULT CURRENT (I) (A.I.C)	EQUIPMENT A.I.C. RATING (A.I.C)
DISC	25	2	350 MCM	75C CU	19704	35,172	42,000
PANEL L1	25	2	350 MCM	75C CU	19704	29,661	35,000
PANEL L2	5	1	1 AWG	75C CU	7293	25,366	35,000
PANEL L3	110	1	01 AWG	075C CU	07293	6,277	10,000

NOTE:
POINT-TO-POINT CALCULATION:
Is.c. sym RMS = (Is.c. trans x (1 / (1 + ((1.732 * L * I) / (C * N * E l-l))))

CONTRACTOR IS TO VERIFY AVAILABLE FAULT CURRENT AT THE UTILITY TRANSFORMER WITH POWER COMPANY PRIOR TO ORDERING ELECTRICAL EQUIPMENT. KAIC RATINGS SHOWN ABOVE ARE BASED ON AN AVAILABLE SHORT CIRCUIT AMPACITY AT THE SECONDARY SIDE OF THE UTILITY TRANSFORMER. COORDINATE KAIC RATINGS ACCORDINGLY WITH ENGINEER.

STATE OF TEXAS
ANDREW D. HUNTER
109975
LICENSED PROFESSIONAL ENGINEER
01/31/2025

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

N-VIZION
FORMS • ENVIRONMENTS • IMAGES

PANEL SCHEDULES & RISER

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set
01-31-25	CITY COMMENTS

INFINITY MEP+S CONSULTANTS
TBPE Registration Number: 18865
5316 Hwy. 290 Service Rd., Suite 130
Austin, TX 78735
512-692-9224
www.infinitymep.com

E7.00

PLUMBING ABBREVIATIONS

(E)	EXISTING
(N)	NEW
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BFF	BELOW FINISHED FLOOR
C	CONDENSATE DRAIN
CO	CLEANOUT
CW	DOMESTIC COLD WATER
DF	DRINKING FOUNTAIN
DN	DOWN
DR	DRAIN
ELEV	ELEVATION
ET	EXPANSION TANK
EW	EYE WASH
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FP	FIRE PUMP
FS	FLOOR SINK
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RETURN
IE	INVERT ELEVATION
IW	INDIRECT WASTE
JP	JOCKEY PUMP
L	LAVATORY
MSB	MOP SINK BASIN
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OFD	OVERFLOW DRAIN
OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
S	SINK
SAN	SANITARY WASTE
SH	SHOWER
SOI	SAND-OIL INTERCEPTOR
SP	SUMP PUMP
ST	STORM PIPING
TD	TRENCH DRAIN
TMV	TEMPERATURE MIXING VALVE
TP	TRAP PRIMER
UR	URINAL
V	VENT
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTOR

PLUMBING LEGEND

A	COMPRESSED AIR PIPING
C	CONDENSATE DRAIN PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER RETURN PIPING
G	NATURAL GAS PIPING
OST	OVERFLOW STORM PIPING
SAN	SANITARY (ABOVE FLOOR)
	SANITARY (BELOW FLOOR)
SP	SPRINKLER PIPING
	STORM DRAIN PIPING
	VENT PIPING
	PIPING TO BE DEMOLISHED
	CLEANOUT/PLUG
	PIPE DOWN
	PIPE UP
	PIPE CAP
	CHANGE IN PIPE ELEVATION
	INSULATED AND HEAT TRACED PIPING
	ACCESS PANEL FOR TRAP PRIMER
DCVA	DOUBLE CHECK VALVE ASSEMBLY
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY
	BOTTOM PIPE CONNECTION
	CLEANOUT (TWO-WAY) (PROVIDE CONCRETE PAD OUTSIDE 18" X 24" X 4")
	FLOOR CLEANOUT/GRADE CLEANOUT
	P-TRAP
	TOP PIPE CONNECTION
	VALVE IN VERTICAL
	WALL HYDRANT
	ANGLE RELIEF VALVE
	AUTOMATIC AIR VENT
	AUTOMATIC CONTROL VALVE
	AUTOMATIC CONTROL VALVE (3-WAY)
	BUTTERFLY VALVE MANUAL
	BALL VALVE
	CALIBRATED BALANCING VALVE
	CHECK VALVE
	CHECK VALVE WITH A.B.D.
	FLEXIBLE CONNECTION
	GAS COCK VALVE
	GLOBE VALVE
	OS&Y (OUTSIDE SCREW & YOKE) VALVE
	PRESSURE REDUCING VALVE
	PRESSURE GAUGE AND COCK
	RELIEF SAFETY VALVE
	SOLENOID VALVE
	THERMOMETER
	TEMPERATURE MIXING VALVE
	WATER HAMMER ARRESTOR
	VACUUM BREAKER
	VALVE WITH TAMPER SWITCH
	Y-STRAINER WITH BLOW OFF VALVE
	HOSE BIBB
M	METER
	PUMP
	FLOW METER
	VENTURI METER
	POINT OF CONNECTION (NEW TO EXISTING)
EWH - 1-1	EQUIPMENT DESIGNATION

PLUMBING GENERAL NOTES

1	ALL SYSTEMS WILL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES AND NATIONAL STANDARDS.
2	NO PVC PIPING SHALL BE INSTALLED IN A RETURN AIR PLENUM.
3	CONTRACTOR SHALL PROVIDE A FULLY FUNCTIONAL, CODE COMPLIANT SYSTEM.
4	CONTRACTOR SHALL TEST ALL SYSTEMS FOR FUNCTIONALITY BOTH BEFORE WORK IS STARTED AND ALSO AFTER CONTRACTED WORK IS FINISHED. REPORT ANY ISSUES TO THE ENGINEER AND TO THE BUILDING MANAGER.
5	CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS TO FAMILIARIZE THEMSELVES WITH THE PROJECT BEFORE BIDDING. ALL ISSUES SHALL BE TAKEN INTO ACCOUNT WITH THEIR BID. CONTRACTOR AGREES TO ACCEPT ALL EXISTING CONDITIONS AS PART OF THEIR BID.
6	INFORMATION ON THE DRAWINGS IS DIAGRAMMATIC IN NATURE. NOT ALL OFFSETS ARE SHOWN FOR CLARITY PURPOSES. CONTRACTOR TO PROVIDE ALL OFFSETS AND FITTINGS TO MAKE A FULLY FUNCTIONAL SYSTEM.
7	EXISTING SYSTEMS MAY NOT MATCH WHAT IS SHOWN ON THE DRAWINGS. CONTRACTOR TO ADJUST CONSTRUCTION AS REQUIRED TO COMPLETE WORK.
8	CONTRACTOR SHALL PROTECT ALL EXISTING BUILDING STRUCTURES, FLOORING, PIPING, FIXTURES, ETC. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE THEY CAUSE TO THE SITE, PLUMBING FIXTURES OR PIPING, ETC.
9	ALL REMOVED FIXTURES OR EQUIPMENT SHALL BE RETURNED TO OWNER'S STOCK OR DISPOSED OF PER OWNER'S DISCRETION.
10	COORDINATE ALL WORK WITH BUILDING OWNER'S OPERATING SCHEDULE.
11	ALL SYSTEMS SHALL REMAIN OPERATIONAL DURING CONSTRUCTION AS REQUIRED BY BUILDING OWNER.
12	WHERE EXISTING WALLS ARE DEMOLISHED, REMOVE ALL PIPING ENCLOSED IN WALLS AND CAP BACK AT RISER OR AS APPROPRIATE FOR OTHER CONNECTIONS.
13	EXISTING FLOOR DRAINS OR FLOOR SINKS THAT ARE NOT REQUIRED SHALL BE REMOVED AND PIPING CAPPED BACK AT RISER OR AS REQUIRED TO MAKE NEW CONNECTION.
14	UNUSED FLOOR DRAINS OR FLOOR SINKS ON THE GROUND FLOOR SHALL BE PERMANENTLY PLUGGED AND MODIFIED TO ALLOW INSTALLATION OF NEW FLOORING MATERIAL
15	PROVIDE ANY AND ALL DEMOLITION WORK REQUIRED TO INSTALL NEW EQUIPMENT. RETURN SURROUNDING AREA TO ORIGINAL CONDITION AFTER INSTALLATION IS COMPLETE. MAINTAIN PLUMBING SYSTEMS IN ADJACENT SPACES.
16	CONTRACTOR TO COORDINATE ALL PLUMBING FIXTURE COMPATIBILITY WHEN MATCHING FIXTURES, FLUSH VALVES, FAUCETS, DRAINS, ETC.
17	CONTRACTOR TO VERIFY ARCHITECTURAL REQUIREMENTS AND COORDINATION WITH SPECIFIED PLUMBING FIXTURES. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECT'S AND ENGINEER'S ATTENTION.
18	CONTRACTOR SHALL PROVIDE ALL MATERIAL, EQUIPMENT, ACCESSORIES, AND LABOR REQUIRED FOR INSTALLATION OF A COMPLETE AND OPERABLE SYSTEMS.
19	CONTRACTOR SHALL COORDINATE ALL PIPE ROUTING AND EQUIPMENT LOCATIONS WITH OTHER TRADES AND EXISTING CONDITIONS. CONTRACTOR SHALL MODIFY EXISTING DESIGN CONDITIONS AS REQUIRED TO PROVIDE A FUNCTIONAL, CODE COMPLIANT INSTALLATION.
20	CONTRACTOR TO COORDINATE ALL WORK WITH ARCHITECT'S AND ENGINEER'S PHASING PLANS. MAKE ALL NECESSARY ALLOCATIONS TO ACCOMMODATE PHASING AND PHASED CONSTRUCTION.
21	INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. MAINTAIN ALL REQUIRED CLEARANCES FOR MAINTENANCE AND ACCESS.
22	ALL PLUMBING FIXTURES SHALL MEET TAS/ADA REQUIREMENTS. FIXTURES SHALL BE INSTALLED TO MEET TAS/ADA HEIGHT AND CLEARANCE REQUIREMENTS. COORDINATE WITH ARCHITECTURAL DRAWING DIMENSIONS.
23	ROUTE ALL PIPING AS HIGH AS POSSIBLE AND TIGHT TO STRUCTURE. INSTALL PERPENDICULAR TO WALLS AND COLUMNS.
24	ALL EQUIPMENT SHALL BE INSTALLED ON 4" CONCRETE HOUSEKEEPING PADS.
25	PROVIDE DIELECTRIC FITTINGS OR UNIONS BETWEEN PIPING OF DISSIMILAR METALS.
26	PROVIDE ACCESS PANELS AS REQUIRED TO SERVICE ALL VALVES AND EQUIPMENT. COORDINATE LOCATION OF ACCESS PANELS WITH ARCHITECTURAL CEILING AND WALL ELEVATION DRAWINGS.
27	DO NOT ROUTE PIPING THROUGH ELECTRICAL ROOMS/CLOSETS OR IT/DATA ROOMS. IF THE CONSTRUCTION SITUATION MAKES THIS UNAVOIDABLE, PROVIDE SECONDARY LEAK PROTECTION SLOPED DRAIN PAN UNDER PIPE. ROUTE DRAIN PAN LINE TO NEAREST FLOOR DRAIN OR SINK TAIL PIECE.
28	PROVIDE SHUT-OFF VALVES ON ALL PLUMBING BRANCH PIPING, EQUIPMENT, TOILET ROOM GROUPS, AND INDIVIDUAL FLOORS.
29	SLOPE PIPING AS REQUIRED TO MEET CODE REQUIREMENTS, AVOID LOW POINTS, AND ESTABLISH HIGH POINTS FOR AIR REMOVAL.
30	COORDINATE ALL ROOF PENETRATIONS WITH STRUCTURE. COORDINATE ALL VENT TERMINATIONS WITH BUILDING AIR INTAKES TO MAINTAIN CODE REQUIRED MINIMUM DISTANCES.
31	PROVIDE BACKFLOW PREVENTERS AS REQUIRED BY CODE AND APPLICABLE STANDARDS.
32	PROVIDE TRAP GUARD ON ALL FLOOR DRAINS, AIR DRAINS AND FLOOR SINKS OR OTHER APPROVED TRAP SEALING DEVICE.
33	ALL WORK SHALL BE COMPLETED TO THE APPROVAL OF THE BUILDING ENGINEER.
34	CONTRACTOR TO ACCOMMODATE ALL CLEARANCE AND DIMENSIONAL DIFFERENCES OF EQUIPMENT ACTUALLY PURCHASED FOR INSTALLATION.
35	CONTRACTOR SHALL X-RAY SLAB AS REQUIRED TO VERIFY EXACT LOCATION OF EXISTING PIPING IN SLAB.
36	FIRE PROTECTION CONTRACTOR SHALL MODIFY ALL EXISTING FIRE PROTECTION AND SPRINKLER PIPES AS REQUIRED TO MEET THE MAINTENANCE AND REMOVAL CLEARANCES OF ALL EXISTING MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT.

AUTOMATIC SPRINKLER NOTES

1	COMPLY WITH ALL NFPA CHAPTERS. EXACT NUMBERS OF HEADS REQUIRED SHALL BE AS DETERMINED BY THE CONTRACTOR. HOWEVER, SPECIFIC GUIDELINES AS REQUIRED BY OWNER, AND AS SPECIFIED PER SECTION IN THE SPECIFICATIONS SHALL BE MET.
2	CONTRACTOR SHALL REWORK EXISTING SPRINKLER HEADS AND PIPING IN REMODLED AREA. SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH NFPA 13 AND LOCAL CODES AND REQUIREMENTS. CONTRACTOR SHALL MATCH EXISTING PIPING MATERIALS AND SPRINKLER HEADS.
3	EXISTING FIRE PROTECTION SYSTEMS SHALL REMAIN OPERATIONAL THROUGHOUT DURATION OF THE PROJECT.
4	DESIGN OF THE SPRINKLER SYSTEM SHALL BE UNDER THE DIRECT SUPERVISION OF A FIRE PROTECTION ENGINEER LICENSED IN THE STATE OF TEXAS. ALL DESIGN SUBMITTAL DOCUMENTS SHALL BEAR THE ENGINEER'S SIGNED AND DATED REGISTRATION NUMBER.
5	THE SYSTEM SHALL BE INSTALLED BY A FIRM HAVING A MINIMUM OF 5 YEARS EXPERIENCE REGULARLY ENGAGED IN THE DESIGN AND INSTALLATION OF AUTOMATIC FIRE PROTECTION SYSTEMS IN ACCORDANCE WITH REQUIREMENTS OF NFPA AND THE STATE OF TEXAS FIRE MARSHALL'S OFFICE. EVIDENCE TO SUPPORT THE ABOVE REQUIREMENTS SHALL BE SUBMITTED WITH SHOP DRAWINGS TO THE AHJ.
6	ALL REVISIONS TO THE STANDPIPE SYSTEM SHALL COMPLY WITH LOCAL AHJ, LATEST EDITION OF NFPA 14 AND OWNER'S INSURING GUIDELINES.
7	FURNISH, INSTALL, AND COMPLETE A 100% HYDRAULICALLY CALCULATED, AUTOMATIC WET PIPE SPRINKLER SYSTEM SERVING THE ENTIRE SPACE. THE SYSTEM SHALL BE INSTALLED TO MEET OWNERS INSURING GUIDELINES, LATEST ADOPTED EDITION OF NFPA 13, AND STATE AND LOCAL CODE REQUIREMENTS.
8	FIRE PROTECTION CONTRACTOR SHALL MODIFY ALL EXISTING FIRE PROTECTION AND SPRINKLER PIPES AS REQUIRED TO MEET THE MAINTENANCE AND REMOVAL CLEARANCES OF ALL EXISTING MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT.

PLUMBING SHEET LIST

SHOCK ARRESTOR SCHEDULE

	MANUFACTURER & MODEL	FIXTURE UNITS	SIZE	MODEL NUMBER
A	PRECISION PLUMBING	1-11	1/2" NPT	SC-500
B	PRECISION PLUMBING	12-32	3/4" NPT	SC-750
C	PRECISION PLUMBING	33-60	1" NPT	SC-1000
D	PRECISION PLUMBING	61-113	1 1/4" NPT	SC-1250
E	PRECISION PLUMBING	114-154	1 1/2" NPT	SC-1500
F	PRECISION PLUMBING	155-330	2" NPT	SC-2000

NOTE:
PROVIDE SHOCK ARRESTORS AT ENDS OF DCW AND DHW PIPING RUNS; AT ALL QUICK-CLOSING FIXTURES SUCH AS SHOWERS, FLUSHVALVES, SOLENOID VALVES, SINGLE-HANDED FAUCETS, AND SENSOR OPERATED FAUCETS; AND, FOR ALL GROUPS OF FIXTURES. SHOCK ARRESTORS SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE LAST FIXTURE ON EACH PIPING RUN.

SPRINKLER FLOW DENSITIES

HAZARD	AREA (SF)	GPM/SF
LIGHT HAZARD	1500	0.10
ORDINARY HAZARD I	1500	0.15
ORDINARY HAZARD II	1500	0.20

PIPING MATERIAL SCHEDULE

SYSTEM	BELOW GRADE	ABOVE GRADE
CHEMICAL WASTE PIPING	PVDF	PVDF
DOMESTIC COLD/ HOT WATER PIPING	TYPE "K" COPPER	TYPE "L" COPPER
NATURAL GAS PIPING	POLYTHYLENE	SCHEUDLE 40 BLACK STEEL
SANITARY/ VENT PIPING	SCHEDULE 40 PVC	NO - HUB CAST IRON
STORM PIPING	SCHEDULE 40 PVC	NO - HUB CAST IRON

CODE SUMMARY

A. **APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO:**
1. CITY OF LEANDER MECHANICAL CODE: 2015 IMC
2. CITY OF LEANDER BUILDING CODE: 2015 IBC
3. CITY OF LEANDER BUILDING CODE: 2021 IBC, TABLES 1004.1.2 AND 1004.5 FROM SECTION 2902.2
4. CITY OF LEANDER COMMERCIAL ENERGY CONSERVATION CODE: 2015 IECC
5. CITY OF LEANDER PLUMBING CODE: 2015 IPC
6. CITY OF LEANDER PLUMBING CODE: 2021 IPC, SECTION 403.2

STATE OF TEXAS
STEPHEN M. BUTLER
112019
LICENSED
PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

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Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

PLUMBING COVER SHEET

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

INFINITY
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TBPE Registration Number: 18865
5316 Hwy. 290 Service Rd., Suite 130
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PUMP SCHEDULE

TYPE	NUMBER	SERVICE	LOCATION	UNIT			GPM	HEAD (FT.)	RPM	HP	ELECTRICAL DATA			OPERATIONAL WEIGHT (LBS.)	VARIABLE SPEED	NOTES
				MANUFACTURER	MODEL	TYPE					VOLTAGE	PHASE	HERTZ			
CP	1	HOT WATER	JAN	TACO	008-BC6	INLINE CIRC.	2	3.5	3250	1/25	120	1	60	8	NO	1

NOTES:

1. TIME CLOCK - TORK MODEL EWZ120. TIME CLOCK SHALL BE PROVIDED BY PLUMBING CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR.

ELECTRIC WATER HEATER SCHEDULE

EQUIPMENT		SERVICE	LOCATION	UNIT TYPE		STORAGE GALLONS	RECOVERY GPH@100°F	TEMPERATURE SETTING (°F)	ELECTRICAL DATA				OPERATIONAL WEIGHT (LBS.)	NOTES
TYPE	NUMBER			MANUFACTURER	MODEL				kW	VOLTAGE	PHASE	HZ		
EWH	1	DOMESTIC HOT WATER	JAN.	A.O. SMITH	DEL-30	30	18	140	4.5	208	1	60		1

NOTES:

1. PROVIDE WITH THERM-X-TROL ST-5 EXPANSION TANK.

PLUMBING FIXTURE CONNECTION SCHEDULE

FIXTURE	CW	HW	MIN.TRAP SIZE & TRAP ARM	V	NOTES
WATER CLOSET (FLUSH VALVE)	1-1/2"	-	4"	2"	1,2
LAV	3/4"	3/4"	1-1/2"	2"	2
KITCHEN SINK	3/4"	3/4"	1-1/2"	2"	2
MOP SERVICE BASIN	3/4"	3/4"	3"	2"	2
URINAL (FLUSH VALVE)	1-1/2"	-	2"	2"	1,2
SHOWER	3/4"	3/4"	2"	2"	2

NOTES:

1. 2" MINIMUM WASTE AND 2" VENT PIPE BELOW GRADE.
2. TRAP SIZE TO BE CONSISTENT WITH FIXTURE OUTLET.

PLUMBING FIXTURE SCHEDULE

SYMBOL	MANUFACTURER & MODEL NUMBER	DESCRIPTION	NOTES
BFP-1	WATTS LF909	REDUCED PRESSURE BACKFLOW PREVENTER-BRONZE ASSEMBLY, FULL PORT, QUARTER TURN BRONZE BALL VALVES, WITH TEE HANDLES, TWO INDEPENDENT CHECK VALVES, CAPTURE STRINGS, REPLACEMENT CHECK SEATS AND DIFF. PRESSURE RELIEF, WITH BRONZE STRAINER. 3/4"-2".	
EWC-1	ELKAY EDFPBM117C	WALL MOUNT BI LEVEL DRINKING FOUNTAIN - NON FILTERED, NON REFRIGERATED, STAINLESS STEEL FINISH.	
FCO-1	JAY R. SMITH MODEL 4120A	FLOOR CLEANOUT-DUCTILE IRON BODY WITH THREADED ADJUSTABLE HOUSING, FLANGED FERRULE WITH BRONZE, GASKETED PLUG HAVING NEOPRENE GASKET. ROUND SCORIATED NICKEL BRONZE VENEER TRACTOR COVER, NO-HUB OUTLET.	
FD-1	JAY R. SMITH MODEL 2010	6" DIAMETER NICKEL BRONZE STRAINER, ROUND FLOOR DRAIN-CAST IRON BODY WITH FLANGE, ADJUSTABLE NICKEL BRONZE STRAINER. TRAP GUARD AND NO-HUB OUTLET.	
FS-1	JAY R. SMITH 3101-13	SQUARE NICKEL BRONZE TOP, 8 1/2" (215) TOP - MEDIUM RECEPTORS, SANI-RECEPTOR ACID RESISTANT COATED, 3/4" - GRATE, TRAP GUARD WITH SEDIMENT BUCKET.	
HB-1	JAY R. SMITH #5509QT	QUARTER TURN NON-FREEZE WALL HYDRANT WITH INTEGRAL VACUUM BREAKER AND STAINLESS STEEL BOX.	
LV-1 UNDER MOUNTED	KOHLER K2214-6-0	VITREOUS CHINA UNDER MOUNTED LAVATORY. FAUCETS: KOHLER STARYT K-103536-BN, BRUSHED NICKEL, TOUCHLESS, ADA COMPLIANT. SUPPLY WITH STOP: MCGUIRE # BV2165CC LOOSE KEY SUPPLY AND STOP KIT. SUPPLY WITH STOP: MCGUIRE # BV2165CC LOOSE KEY SUPPLY AND STOP KIT. TRAP: MCGUIRE # 8090 CAST P-TRAP WITH CLEANOUT. INSULATION: TRUEBRO # LAV GUARD ON TRAP, DRAIN, AND BOTH HOT AND COLD SUPPLY. REFER TO ARCHITECTURAL FOR MOUNTING HEIGHT & LOCATION.	PROVIDE TMV-1
MS-1	FIAT TERRAZO TSB3000 SQUARE	MOP SINK 24 X 24 X 10 INCH HIGH. RECEPTOR COMPOSED OF PEARL GREY MARBLE CHIPS AND WHITE PORTLAND CEMENT GROUND SMOOTH, GROUTED AND SEALED TO RESIST STAINS, FLOOR MOUNTED, WITH 1-1/4 INCH WIDE SHOULDERS, VINYL BUMPER GUARD, STAINLESS STEEL DOME STRAINER. FAUCET: FIAT 830-AA CHROME PLATED WITH VACUUM BREAKER, INTEGRAL STOPS. ADJUSTABLE WALL BRACE, PAIL HOOK, AND 3/4" HOSE THREAD ON SPOUT. BODY INLETS 8" CENTER TO CENTER. PROVIDE 3" QUICK DRAIN CONNECTOR, MODEL 832-AA 30" LONG HOSE AND BRACKET MODEL 889-CC MOP HANGER, MODEL 1453-BB STAINLESS STEEL STRAINER DRAIN AND WALL GUARD. (MOUNT FAUCET AT 36" A.F.F.).	
SK-1	ELKAY LRAD3322551	DOUBLE- BOWL SINK, TYPE 304 STAINLESS STEEL. SELF-RIMMING AND UNDERCOATED, WITH 1-1/2 INCH CHROMED BRASS STAINLESS STEEL DRAIN, LEDGE BACK DRILLED FOR TRIM. FAUCET: ELKAY LK500GN08T4RE SUPPLY STOP: MCGUIRE # BV2165CC LOOSE KEY SUPPLY AND STOP KIT. SUPPLY WITH STOP: MCGUIRE # BV2165CC LOOSE KEY SUPPLY AND STOP KIT. TRAP: MCGUIRE # 8090 CAST P-TRAP WITH CLEANOUT.	PROVIDE TMV-1
SK-2	KOHLER K-5979-5U-0	WHITE UNDERMOUNT. FAUCET: KOHLER K-7547-4-BL, MATTE BLACK, SUPPLY WITH STOP: MCGUIRE # BV2165CC LOOSE KEY SUPPLY AND STOP KIT. SUPPLY WITH STOP: MCGUIRE # BV2165CC LOOSE KEY SUPPLY AND STOP KIT. TRAP: MCGUIRE # 8090 CAST P-TRAP WITH CLEANOUT.	PROVIDE TMV-1
SK-3	ELKAY LRAD2521551	SINGLE- BOWL SINK, TYPE 304 STAINLESS STEEL. SELF-RIMMING AND UNDERCOATED, WITH 1-1/2 INCH CHROMED BRASS STAINLESS STEEL DRAIN, LEDGE BACK DRILLED FOR TRIM. FAUCET: ELKAY LK500GN08T4RE SUPPLY STOP: MCGUIRE # BV2165CC LOOSE KEY SUPPLY AND STOP KIT. SUPPLY WITH STOP: MCGUIRE # BV2165CC LOOSE KEY SUPPLY AND STOP KIT. TRAP: MCGUIRE # 8090 CAST P-TRAP WITH CLEANOUT.	PROVIDE TMV-1
TMV-1	ACORN ST70-38	TEMPERING VALVE SIMILAR LEAD-FREE CERTIFIED DZR BRASS BODY, ASSE 1070 AT 0.25 GPM AND MAXIMUM SET POINT 115 DEGREE FAHRENHEIT, FACTOR SET AT 105 DEGREE FAHRENHEIT.	
UR-1	AMERICAN STANDARD MODEL 6581.001EC	VITREOUS CHINA, WALL HUNG URINAL, ELONGATED RIM INTEGRAL TRAP, REMOVABLE STAINLESS STEEL STRAINER, 3/4 INCH TOP SPUD, MOUNT RIM AT 24". FAUCET: AMERICAN STANDARD 6061.013.002 EXPOSED AC POWERED SENSOR FLUSH VALVE.	
UR-2(ADA)	AMERICAN STANDARD MODEL 6581.001EC	VITREOUS CHINA, WALL HUNG URINAL, ELONGATED RIM INTEGRAL TRAP, REMOVABLE STAINLESS STEEL STRAINER, 3/4 INCH TOP SPUD, VITREOUS CHINA, WALL HUNG URINAL, ELONGATED RIM INTEGRAL TRAP, REMOVABLE STAINLESS STEEL STRAINER, 3/4 INCH TOP SPUD, MOUNT RIM AT 24". FAUCET: AMERICAN STANDARD 6061.013.002 EXPOSED AC POWERED SENSOR FLUSH VALVE. MOUNT RIM AT ADA HEIGHT	
WCO-1	JAY R. SMITH MODEL 4710-05	WALL CLEANOUT-CAST IRON BODY WITH SPIGOT INLET/OUTLET AND THREADED BRASS RAISED HEAD, DRILLED AND TAPPED FOR r-20 SCREW. PROVIDE WITH 8480R, ROUND, STAINLESS STEEL ACCESS COVER HAVING 1/4-20X3-1/2 CENTER SCREW.	
WC-1 (ADA) FLOOR/FLUSH VALVE	AMERICAN STANDARD MODEL 3461001	VITREOUS CHINA FLOOR MOUNTED WATER CLOSET WITH OPEN FRONT LESS COVER SEAT. FLUSH VALVE AMERICAN STANDARD 606B.721 PK00.MAC MULTI AC ADAPTOR. EXPOSED A/C POWERED SENSOR. SEAT: BEMIS # 1655CT ELONGATED EXTRA HEAVY DUTY.	
WB-1	GUY GRAY 88525	STAINLESS STEEL ICE MAKER BOX, QUARTER-TURN ARRESTER VALVES WITH 1/2" MIP/SWEAT CONNECTION FURNISHED, VALVES COMPLY WITH ASME A112.18.1.	

Weed Corley Fish

Vista Ridge and Bagdad Rd

Leander, TX 78641

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PLUMBING SCHEDULES

Date	Description
10-15-24	IFP
10-25-24	Rev 1 Permit Set

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P0.02

PLUMBING SPECIFICATIONS

SECTION 22 05 00 - COMMON WORK RESULTS FOR PLUMBING

GENERAL:

1. THE PLUMBING SYSTEMS WILL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE INCLUDING ANY STATE OR LOCAL AMENDMENTS.
2. ALL PERMITS (FEES BY CONTRACTOR), AND INSPECTIONS WILL BE OBTAINED AS REQUIRED BY ALL LEGAL AUTHORITIES OF WORK INCLUDED IN THESE DOCUMENTS. MATERIAL WHICH ARE SPECIFIED BY REFERENCE TO FEDERAL, STATE, OR OWNER INSURANCE PROVIDERS. SPECIFICATION (I.E., ASTM,ASM, ANSI, TAS, FM GLOBAL, FGI OR AWWA SPECIFICATIONS). FEDERAL STANDARDS, OR OTHER STANDARD SPECIFICATIONS MUST COMPLY WITH THE LATEST EDITIONS UNLESS OTHERWISE NOTED WITHIN THE CONTRACT DOCUMENTS OR OTHER SPECIFICATION SECTIONS.
3. THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY DEPICT EXACT CONDITIONS. THE INDICATED LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE APPROXIMATE ONLY. THE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT TO BE SCALED. SCALES ARE SHOWN FOR REFERENCE AND APPROXIMATION ONLY. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONAL DATA OF BUILDING COMPONENTS.
4. THE INTER-RELATION OF THE SPECIFICATIONS, THE DRAWINGS, AND THE SCHEDULES ARE AS FOLLOWS:
   - A. THE SPECIFICATIONS PROVIDE THE WRITTEN REQUIREMENTS FOR THE QUALITY, STANDARD, NATURE OF THE MATERIALS, EQUIPMENT AND CONSTRUCTION SYSTEMS.
   - B. THE DRAWINGS ESTABLISH THE QUANTITIES, APPROXIMATE DIMENSIONS, DETAILS AND LOCATION OF EQUIPMENT.
   - C. THE SCHEDULES GIVE THE CAPACITIES, CHARACTERISTICS AND COMPONENTS.
5. FOR ANY INDIVIDUAL PROJECT, IF THERE IS CONFLICT BETWEEN THE DRAWINGS AND OR SPECIFICATIONS, THEY ARE EQUIVALENT IN AUTHORITY AND PRIORITY. SHOULD THEY DISAGREE IN THEMSELVES, OR WITH EACH OTHER, PRICES SHALL BE BASED ON THE MOST EXPENSIVE COMBINATION OF QUALITY AND QUANTITY OF WORK INDICATED. IN THE EVENT OF THE ABOVE MENTIONED DISAGREEMENTS THE RESOLUTION SHALL BE DETERMINED BY THE ARCHITECT.
6. CONTRACTOR IS RESPONSIBLE TO BRING ANY CONFLICTS IN DRAWINGS AND/OR SPECIFICATIONS TO THE ATTENTION OF THE ARCHITECT, IMMEDIATELY, PRIOR TO ANY WORK BEING DONE.
7. WHERE THE SPECIFICATIONS DO NOT FULLY AGREE WITH THE SCHEDULES, THE SCHEDULES SHALL GOVERN. FIGURES GIVEN ON DRAWINGS GOVERN SCALE MEASUREMENTS AND LARGE-SCALE DETAILS GOVERN SMALL SCALE DRAWINGS.
8. REVIEW ALL CONSTRUCTION DETAILS ILLUSTRATED ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND BE GUIDED THEREBY.
9. THE LOCATIONS, ARRANGEMENT AND EXTENT OF EQUIPMENT, DEVICES, AND OTHER APPURTENANCES RELATED TO THE INSTALLATION OF WORK SHOWN ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL NOT SCALE DRAWINGS BUT SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS OF BUILDING COMPONENTS. SHOULD A CONFLICT EXIST BETWEEN THE ARCHITECTURAL AND ENGINEERING DRAWINGS REGARDING DIMENSIONS AND SCALE, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF THE DISCREPANCY FOR RESOLUTION.
10. MATERIALS, EQUIPMENT OR LABOR NOT INDICATED BUT WHICH CAN BE REASONABLY INFERRED TO BE NECESSARY FOR A COMPLETE INSTALLATION SHALL BE PROVIDED. DRAWINGS AND SPECIFICATIONS DO NOT UNDERTAKE TO INDICATE EVERY ITEM OF MATERIAL, EQUIPMENT, OR LABOR REQUIRED TO PRODUCE A COMPLETE AND PROPERLY OPERATING INSTALLATION.
11. ALL MATERIALS AND EQUIPMENT WILL BE NEW AND WILL BE INSTALLED IN ACCORDANCE WITH INDUSTRY STANDARDS.
12. SUBMITTALS WILL BE PREPARED FOR ALL MATERIALS AND EQUIPMENT INDICATING PERFORMANCE DATA, CATALOG INFORMATION, INSTALLATION DETAILS, ETC. IN ADDITION, SOME AREAS WILL BE DETAILED ON SHOP DRAWINGS AND USED FOR COORDINATION. ALL SUBMITTALS AND SHOP DRAWINGS WILL BE REVIEWED AND APPROVED BY THE DESIGN ENGINEER.
13. COMMON REQUIREMENTS FOR PRODUCT DATA: WHERE THIS SECTION AND OTHER SECTIONS OF THIS DIVISION REQUIRE PRODUCT DATA TO BE SUBMITTED, MEET THE REQUIREMENTS DEFINED IN DIVISION 01 SECTION "SUBMITTAL PROCEDURES". IN ADDITION TO THE REQUIREMENTS OF DIVISION 01 COMPLY WITH THE FOLLOWING:
   - A. SUBMIT HARDCOPY OF PRODUCT DATA IN THE QUANTITY AS REQUIRED UNDER DIVISION 01 SECTION "SUBMITTAL PROCEDURES". HARDCOPIES OF PRODUCT DATA SUBMITTALS SHALL BE BOUND MATERIALS AS DEFINED ABOVE. SEPARATE PRODUCTS UNDER DISTINCT SUBHEADINGS THAT CORRESPOND TO PARAGRAPHS IN SPECIFICATION TEXT. DIVIDE SECTIONS IN BINDER WITH LABELED DIVIDER TABS.
   - B. IN ADDITION TO HARDCOPIES REQUIRED BY DIVISION 01, SUBMIT ONE COPY OF PRODUCT DATA IN ELECTRONIC FORMAT. ALL FILES ON DISC SHALL BE IN PORTABLE DOCUMENT FORMAT (.PDF).
   - C. PRODUCT DATA SHALL NOT CONSIST OF MANUFACTURER'S CATALOGS OR CUT SHEETS THAT CONTAIN NO INDICATION OF THE EXACT ITEM OFFERED. THE SUBMISSION ON INDIVIDUAL ITEMS SHALL DESIGNATE THE EXACT ITEM OFFERED.
14. PRODUCT DATA: FOR THE FOLLOWING:
   - A. PLUMBING FIXTURES, FAUCETS AND TRIM.
   - B. WATER HEATERS AND STORAGE TANKS
   - C. DOMESTIC WATER PRESSURE BOOSTER SYSTEM
   - D. INSULATION
   - E. FLOOR DRAINS AND DRAINAGE ACCESSORIES
   - F. HYDRANTS AND HOSE BIBBS
   - G. MIXING VALVES
   - H. HOT WATER RETURN PUMPS
   - I. BACKFLOW PREVENTERS
   - J. GREASE/OIL INTERCEPTORS
   - K. PIPE AND FITTINGS
   - L. VALVES
   - M. PIPE SUPPORTS
   - N. PIPING ACCESSORIES
   - O. PIPE LABELS AND VALVE TAGS
   - P. DIELECTRIC FITTINGS.
   - Q. ESCUTCHEONS.
15. AT THE COMPLETION OF THE WORK, BOUND SETS OF OPERATIONS AND MAINTENANCE MANUALS WILL BE PROVIDED. THESE MANUALS WILL INCLUDE EQUIPMENT PERFORMANCE DATA, INSTALLATION DETAILS, MAINTENANCE AND SERVICE INSTRUCTIONS, PARTS LISTS, WIRING AND CONTROLS DIAGRAMS.
16. A SET OF PLUMBING DRAWINGS WILL BE MAINTAINED AT THE JOB SITE A SEPARATE SET OF CLEAN CONTRACT DRAWINGS FOR THE SOLE PURPOSE OF RECORDING THE "AS-BUILT" CHANGES AND DIAGRAMS OF THOSE PORTIONS OF WORK IN WHICH ACTUAL CONSTRUCION IS SIGNIFICANTLY DIFFERENT FROM THE CONTRACT DOCUMENTS. AT THE END OF THE PROJECT, OBTAIN WITHOUT COST TO THE4 OWNER. A SET OF THE ORIGINAL PLUMBING DRAWINGS/CAD FILES INDICATING ALL CHANGES FROM THE CONTRACT DOCUMENTS FOR THE OWNERS RECORDS. DELIVERY OF THE AS-BUILT PRINTS AND CAD FILES IS A CONDITION OF FINAL ACCEPTANCE OF THE WORK COMPLETED.
17. COMMON REQUIREMENTS FOR SPECIFICATION COMPLIANCE CERTIFICATION: WHERE THIS SECTION AND OTHER SECTIONS OF THIS DIVISION REQUIRE SPECIFICATION COMPLIANCE CERTIFICATION TO BE SUBMITTED, MEET THE REQUIREMENTS DEFINED IN DIVISION 01 SECTION "SUBMITTAL PROCEDURES" FOR "OTHER INFORMATIONAL SUBMITTALS". IN ADDITION TO THE REQUIREMENTS OF DIVISION 01 COMPLY WITH THE FOLLOWING:
   - A. PREPARE A LINE-BY-LINE SPECIFICATION COMPLIANCE CERTIFICATION BY MARKING UP A COPY OF THE CONTRACT DOCUMENT SPECIFICATION SECTION IN THE LEFT MARGIN. ACCOMPANY THE MARKUP WITH A WRITTEN REPORT EXPLAINING ALL ITEMS THAT ARE NOT MARKED WITH "COMPLIANCE". SUBMIT LINE-BY-LINE MARKUP, WRITTEN REPORT OF DEVIATIONS AND ALTERNATES AND A COVER LETTER CERTIFIED BY MANUFACTURER OR INSTALLER THAT PREPARED THE SPECIFICATION COMPLIANCE CERTIFICATION. USE THE FOLLOWING KEY FOR PREPARING THE LINE-BY-LINE MARKUP.
     - a. "C" FOR COMPLIANCE: BY NOTING THE TERM "COMPLIANCE" OR "C" IN THE MARGIN, IT SHALL BE UNDERSTOOD THAT THE MANUFACTURER IS IN FULL COMPLIANCE WITH THE ITEM SPECIFIED AND WILL PROVIDE EXACTLY THE SAME WITH NO DEVIATIONS.
     - b. "D" FOR DEVIATION: BY NOTING THE TERM "DEVIATION" OR "D" IN THE MARGIN, IT SHALL BE UNDERSTOOD THAT THE MANUFACTURER PREFERS TO PROVIDE A DIFFERENT COMPONENT IN LIEU OF THAT SPECIFIED.
     - c. "A" FOR ALTERNATE: BY NOTING THE TERM "ALTERNATE" OR "A" IN THE MARGIN, IT SHALL BE UNDERSTOOD THAT THE MANUFACTURER PROPOSES TO PROVIDE THE SAME OPERATING FUNCTION BUT PREFERS TO DO IT IN A DIFFERENT MANNER.
     - d. "N/A" FOR NOT APPLICABLE: BY NOTING THE TERM "NOT APPLICABLE" OR "N/A" IN THE MARGIN, IT SHALL BE UNDERSTOOD THAT THE SPECIFIED ITEM IS NOT APPLICABLE TO THE PROJECT.
18. ALL APPROVALS REQUIRED BY ANY CODE OR ENFORCEMENT AUTHORITY, INSURANCE UNDERWRITER, ETC. SHALL BE OBTAINED PRIOR TO EQUIPMENT BEING SUBMITTED TO THE ENGINEER.
19. REVIEW OF SUBMITTALS BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR COMPLYING WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS. FURTHERMORE, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE REQUIREMENTS OF ALL APPROVED EQUIPMENT WITH OTHER TRADES AND DISCIPLINES SUCH AS ROOF OPENINGS, WALL OPENINGS, ELECTRICAL CHARACTERISTICS, ETC.
20. ALL SUBMITTALS SHALL BE IDENTIFIED BY THE EQUIPMENT MARK OR TAG IDENTIFICATION NUMBERS SHOWN ON THE CONTRACT DRAWINGS. EACH INDIVIDUAL SUBMITTAL ITEM SHALL BE MARKED TO SHOW WHICH SPECIFICATION SECTION PERTAINS TO THE ITEM.
21. SUBMITTALS SHALL CLEARLY INDICATE SELECTION OF MODEL NUMBERS, SIZES, DIMENSIONS, ELECTRICAL CHARACTERISTICS, ETC. OF THE PROPOSED EQUIPMENT. ANY PROPOSED DEVIATIONS FROM SPECIFIED EQUIPMENT SHALL BE CLEARLY INDICATED ON THE SUBMITTAL
22. COORDINATION WILL TAKE PLACE WITH OTHER TRADES DURING CONSTRUCTION. ANY INTERFERENCES FOUND DUE TO OTHER TRADES WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.
23. UPON COMPLETION OF THE WORK, AND AT TIMES DURING THE INSTALLATION, RUBBISH AND DEBRIS RESULTING FROM THE SCOPE OF THIS WORK WILL BE REMOVED TO A LOCATION ON SITE PROVIDED BY THE GENERAL CONTRACTOR AND THE AREA WILL BE LEFT IN A NEAT, ALL FLOOR DRAINS AND PLUMBING FIXTURE/EQUIPMENT SHALL BE CLEANED TO LIKE NEW CONDITIONS.
24. ALL EQUIPMENT AND MATERIALS FURNISHED AND INSTALLED UNDER THIS SCOPE OF WORK WILL BE GUARANTEED TO BE FREE FROM DEFECTS OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER THE DATE OF EQUIPMENT START-UP.
25. ANY OPENINGS REQUIRED THROUGH STRUCTURAL WALLS, FLOORS AND ROOFS WILL BE IDENTIFIED ON BLOCK OUT DRAWINGS AND PROVIDED TO THE GENERAL CONTRACTOR. ALL FORMING, CUTTING AND FRAMING TO THESE OPENINGS WILL BE BY THE GENERAL CONTRACTOR.
26. ARCHITECTURAL ACCESS DOORS REQUIRED IN CEILINGS AND WALLS WILL BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR.
27. PIPE SLEEVES WILL BE PROVIDED WHERE PIPING PASSES THROUGH WALLS AND FLOORS. SLEEVES WILL BE 18 GAUGE GALVANIZED STEEL FOR WALLS AND STEEL PIPE FOR FLOORS. FIRE STOP WILL BE PROVIDED WHERE THE FLOOR OR WALLS ARE FIRE RATED. SLEEVES WILL BE EXTENDED 2 INCHES ABOVE THE FLOOR IN "WET" AREAS.
28. PRIOR TO THE ORDERING OR PURCHASING OF ANY PLUMBING EQUIPMENT OR MATERIALS OR THE LAYOUT OR INSTALLATION OF ANY WORK, THE CONTRACTOR SHALL EXAMINE THE PREMISES AND VERIFY ANY AND ALL OF THE EXISTING CONDITIONS UNDER WHICH HE WILL BE REQUIRED TO OPERATE, OR THAT WILL IN ANY MANNER AFFECT THE WORK UNDER THIS CONTRACT.
29. ACTIVE SERVICES: WHEN ENCOUNTERED IN WORK, PROTECT, BRACE, AND SUPPORT EXISTING ACTIVE SEWER, GAS AND OTHER SERVICES REQUIRED FOR PROPER EXECUTION OF THE WORK. IF EXISTING ACTIVE SERVICES ARE ENCOUNTERED THAT REQUIRE RELOCATION, RELOCATE AS SHOWN ON THE CONTRACT DOCUMENTS OR AS NECESSARY. DO NOT PREVENT OR DISTURB OPERATION OF ACTIVE SERVICES THAT ARE TO REMAIN. NOTIFY UTILITY COMPANIES OR MUNICIPAL AGENCIES HAVING JURISDICTION.
30. INTERRUPTION OF SERVICES: WHERE WORK MAKES TEMPORARY SHUT DOWN OF SERVICES UNAVOIDABLE, SHUT DOWN AT NIGHT OR AT SUCH TIMES AS APPROVED BY OWNER, WHICH WILL CAUSE THE LEAST INTERFERENCE WITH SCHEDULED OPERATIONS. ARRANGE WORK TO ASSURE THAT SERVICES WILL BE SHUT DOWN ONLY DURING TIME ACTUALLY REQUIRED TO MAKE THE CONNECTION TO THE EXISTING WORK.
31. THE EXISTING SYSTEM INSTALLATIONS REMOVED OR DAMAGED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE. EXISTING DUCTWORK, PIPE INSULATION, EQUIPMENT OR MATERIAL DAMAGED BY THE CONTRACTOR WHILE PERFORMING ANY WORK SHALL BE REPLACED WITH NEW MATERIALS TO MATCH EXISTING CONDITIONS.
32. WHERE WORK UNDER THIS PROJECT REQUIRES EXTENSION, RELOCATION, RECONNECTION OR MODIFICATIONS TO EXISTING EQUIPMENT OR SYSTEMS, THE EXISTING EQUIPMENT OR SYSTEMS SHALL BE RESTORED TO THEIR ORIGINAL AND OPERATING CONDITION.
33. ALL PIPE, FITTINGS, INSULATION, SUPPORTS, ETC. REMOVED IN THE RENOVATION AREA ARE TO BE REMOVED FROM THE SITE. NO EXISTING PIPE OR MATERIALS ARE TO BE REMOVED AND REUSED ON THE RENOVATION.

EXECUTION:

1. INSTALLATION OF PIPING, VALVES AND EQUIPMENT
2. PITCH: HORIZONTAL SANITARY AND DRAIN PIPING WILL BE RUN AT AN UNIFORM GRADE OF 1/4" PER FOOT FOR 2-1/2" AND LESS PIPE SIZES. 1/8" PER FOOT FOR 3" AND ABOVE PIPE SIZE. CONTRACTOR SHALL INSTALL PLUMBING SYSTEM SLOPE PER CODE AND AUTHORITIES HAVING JURISDICTION.
   - A. WATER PIPING WITHIN WALLS AND ROUGH-INS FOR FIXTURES AND EQUIPMENT: COPPER PLATED STEEL SUPPORT SYSTEM SOLDERED TO PIPING AND SECURED TO BUILDING CONSTRUCTION SO THAT PIPES CANNOT BE DISPLACED. (HOLDRITE OR EQUIVALENT). HOT WATER PIPING INSULATION WITH STANDARD JACKETS, WITH OR WITHOUT VAPOR BARRIER, FACTORY APPLIED OR FIELD APPLIED. FITTINGS, JOINTS, AND VALVES WILL BE INSULATED WITH LIKE MATERIAL AND THICKNESS AS ADJOINING PIPE. PROVIDE REMOVABLE INSULATION AND COVER FOR ALL VALVES AND UNIONS.
   - B. WASTE AND VENT PIPING WITHIN WALLS AND ROUGH-INS FOR FIXTURES AND EQUIPMENT: COPPER PLATED STEEL SUPPORT SYSTEM FOR COPPER DWV PIPING OR GALVANIZED STEEL SUPPORT SYSTEM FOR CAST IRON OR GALVANIZED PIPING. SUPPORTS TO PIPING AND BUILDING CONSTRUCTION WILL BE SECURED SO THAT PIPES CANNOT BE DISPLACED. FELT STRIP ISOLATION WILL BE PROVIDED BETWEEN DISSIMILAR METALS. (HOLDRITE OR EQUIVALENT)
   - C. UNDERGROUND PIPING: NO-HUB SOIL PIPE NOT PERMITTED.
   - D. UNION AND FLANGES: ON PIPING TO INLET AND OUTLET OF ALL APPARATUS AND EQUIPMENT TO FACILITATE REMOVAL OF EQUIPMENT, AND DOWNSTREAM OF ALL SHUTOFF VALVES.
   - E. WATER HAMMER ARRESTERS: WATER HAMMER ARRESTERS WILL BE INSTALLED AT ALL QUICK CLOSING VALVES SUCH AS FLUSH VALVES, FOOT CONTROL VALVES, FLOAT VALVES, SOLENOID VALVES, ETC. WATER HAMMER ARRESTERS WILL BE SIZED AND LOCATED AS RECOMMENDED BY PDI MANUAL WH 201.
3. CLEANOUTS WILL BE PROVIDED AND INSTALLED PER CPC SECTION 707.0 AND 719.0.
4. LABELS AND IDENTIFICATION: VALVE TAGS, PIPING SYSTEMS AND EQUIPMENT IDENTIFICATIONS AS SPECIFIED IN PLUMBING IDENTIFICATION.
5. PIPING SYSTEM LEAK TESTS:
   - A. POTABLE WATER PIPING WILL BE HYDROSTATICALLY PRESSURE TESTED FOR A DURATION OF FOUR HOURS AT A TEST PRESSURE OF 120 PSIG.
   - B. SANITARY DRAINAGE PIPING: ALL ABOVE GROUND PIPING WILL BE TESTED HYDROSTATICALLY BY CLOSING ALL OPENINGS IN THE PIPING SYSTEM, EXCEPT THE HIGHEST OPENING ABOVE THE ROOF, AND BY FILLING THE SYSTEM TO THE POINT OF OVERFLOWING. THE PRESSURE EXERTED ON THE SYSTEM WILL BE NO LESS THAN 10 FEET OF HEAD.
6. PLUMBING DEMOLITION
   - A. DISCONNECT, DEMOLISH, AND REMOVE PLUMBING SYSTEMS, EQUIPMENT, AND COMPONENTS INDICATED TO BE REMOVED.
     - a. PIPING TO BE REMOVED: REMOVE PORTION OF PIPING INDICATED TO BE REMOVED AND CAP OR PLUG REMAINING PIPING WITH SAME OR COMPATIBLE PIPING MATERIAL.
     - b. PIPING TO BE ABANDONED IN PLACE: DRAIN PIPING AND CAP OR PLUG PIPING WITH SAME OR COMPATIBLE PIPING MATERIAL.
     - c. EQUIPMENT TO BE REMOVED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT.
     - d. EQUIPMENT TO BE REMOVED AND REINSTALLED: DISCONNECT AND CAP SERVICES AND REMOVE, CLEAN, AND STORE EQUIPMENT; WHEN APPROPRIATE, REINSTALL, RECONNECT, AND MAKE EQUIPMENT OPERATIONAL.
     - e. EQUIPMENT TO BE REMOVED AND SALVAGED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT AND DELIVER TO OWNER.
   - B. IF PIPE, INSULATION, OR EQUIPMENT TO REMAIN IS DAMAGED IN APPEARANCE OR IS UNSERVICEABLE, REMOVE DAMAGED OR UNSERVICEABLE PORTIONS AND REPLACE WITH NEW PRODUCTS OF EQUAL CAPACITY AND QUALITY.
7. DOMESTIC HOT WATER SYSTEM BALANCING
   - A. THE TEST AND BALANCE CONTRACTOR SHALL PROVIDE TESTING, ADJUSTING AND BALANCING OF THE HOT WATER SYSTEM, ONCE THE SYSTEM IS FULLY INSTALLED AND OPERATIONAL. PRELIMINARY AND FINAL REPORTS SHALL BE PREPARED AND ISSUED TO THE GENERAL CONTRACTOR, ARCHITECT AND ENGINEER.
   - B. PREPARATION OF THE HOT WATER SYSTEM FOR BALANCING:
     - a. CONFIRM OUTLET TEMPERATURE OF THE SYSTEM AT WATER HEATERS AND/OR STORAGE TANKS.
     - b. VERIFY RECIRCULATION PUMP OPERATION AND ROTATION.
     - c. CONFIRM/ADJUST SETPOINT OF EACH INDIVIDUAL RISER BALANCING VALVE TO FLOW A MINIMUM OF 0.5 GPM OR AS OTHERWISE NOTED ON THE DOCUMENTS.
   - C. THE TEST AND BALANCE REPORT SHALL INDICATE THE FOLLOWING:
     - a. PRESSURE, TEMPERATURE AND FLOW IN GPM AT THE DISCHARGE SIDE OF EACH BALANCING VALVE REFERENCING THE VALVE TAG NUMBER.
     - b. PRESSURE, TEMPERATURE AND FLOW IN GPM AT THE SUCTION SIDE OF EACH RECIRCULATING PUMP.
   - D. COPIES OF THE FINAL APPROVED BALANCING REPORT ARE TO BE INCLUDED IN THE O AND M MANUALS AS NOTED IN "PERMITS" UNDER PART 1 OF SECTION 22 00 00.

SECTION 22 05 13 - COMMON MOTOR REQUIREMENTS FOR PLUMBING EQUIPMENT

1. TEST MOTORS IN ACCORDANCE WITH NEMA MG 1, INCLUDING WINDING RESISTANCE, NO-LOAD SPEED AND CURRENT, LOCKED ROTOR CURRENT, INSULATION HIGH-POTENTIAL TEST, AND MECHANICAL ALIGNMENT TESTS. INSTALL SECURELY ON FIRM FOUNDATION. MOUNT BALL BEARING MOTORS WITH SHAFT IN ANY POSITION. INSTALL ENGRAVED PLASTIC NAMEPLATES. GROUND AND BOND MOTORS.
2. SINGLE-PHASE MOTORS: PERMANENT SPLIT-CAPACITOR TYPE, WHERE AVAILABLE; OTHERWISE, USE SPLIT-PHASE START/CAPACITOR RUN OR CAPACITOR START/CAPACITOR RUN MOTOR. TERMINAL LUGS TO MATCH BRANCH CIRCUIT CONDUCTOR QUANTITIES, SIZES AND MATERIALS.
3. THREE-PHASE MOTORS: NEMA MG 1, DESIGN B, PREMIUM -EFFICIENCY SQUIRREL-CAGE INDUCTION MOTOR, WITH WINDINGS TO ACCOMPLISH STARTING METHODS AND NUMBER OF SPEEDS INDICATED. SERVICE FACTOR: 1.15 UNLESS OTHERWISE INDICATED ON DRAWINGS. ENCLOSURE: MEET CONDITIONS OF INSTALLATION UNLESS SPECIFIC ENCLOSURE IS SPECIFIED OR INDICATED. DESIGN FOR CONTINUOUS OPERATION IN 40 DEGREES C ENVIRONMENT, WITH TEMPERATURE RISE IN ACCORDANCE WITH NEMA MG 1 LIMITS FOR INSULATION CLASS, SERVICE FACTOR, AND MOTOR ENCLOSURE TYPE. INSULATION SYSTEM: NEMA CLASS F . MOTOR FRAMES: NEMA STANDARD T-FRAMES OF STEEL, ALUMINUM, OR CAST IRON WITH END BRACKETS OF CAST IRON OR ALUMINUM WITH STEEL INSERTS. THERMISTOR SYSTEM (MOTOR FRAME SIZES 254T AND LARGER): THREE PTC THERMISTORS EMBEDDED IN MOTOR WINDINGS AND EPOXY ENCAPSULATED SOLID STATE CONTROL RELAY

SECTION 22 05 23.12 – BALL VALVES FOR PLUMBING PIPING

1. BRASS:
   - A. PRODUCTS: TWO-PIECE BRASS BALL VALVES WITH FULL PORT AND STAINLESS-STEEL TRIM.
   - B. MANUFACTURERS: NIBCO, KITZ CORPORATION, MILWAUKEE VALVE COMPANY.
   - C. DESCRIPTION: STANDARD: MSS SP-110, SWP RATING: 150 PSIG, CWP RATING: 600 PSIG, BODY DESIGN: TWO PIECE, BODY MATERIAL: FORGED BRASS, ENDS: THREADED, SEATS: PTFE, STEM: STAINLESS STEEL, BALL: STAINLESS STEEL, VENTED, PORT: FULL.
2. BRONZE:
   - A. PRODUCTS: TWO-PIECE LEAD FREE BRONZE BALL VALVES WITH FULL PORT AND STAINLESS-STEEL TRIM.
   - B. MANUFACTURERS: NIBCO, KITZ CORPORATION, WATTS.
   - C. DESCRIPTION: STANDARD: MSS SP-110, SWP RATING: 150 PSIG, CWP RATING: 600 PSIG, BODY DESIGN: TWO PIECE, BODY MATERIAL: FORGED BRONZE, ENDS: THREADED, SEATS: PTFE, STEM: STAINLESS STEEL, BALL: STAINLESS STEEL, VENTED, PORT: FULL.
3. SELECT VALVES WITH THE FOLLOWING END CONNECTIONS:
   - A. FOR COPPER TUBING, NPS 2 AND SMALLER: THREADED ENDS EXCEPT WHERE SOLDER-JOINT VALVE-END OPTION IS INDICATED IN VALVE SCHEDULES BELOW.
   - B. FOR STEEL PIPING, NPS 2 AND SMALLER: THREADED ENDS.

SECTION 22 05 23.13 – BUTTERFLY VALVES FOR PLUMBING PIPING

1. SOURCE LIMITATIONS FOR VALVES: OBTAIN EACH TYPE OF VALVE FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
2. COMPLY WITH AWWA C606 FOR GROOVED-END CONNECTIONS. NSF COMPLIANCE: NSF 61 ANNEX G AND NSF 372 FOR VALVE MATERIALS FOR POTABLE-WATER SERVICE. VALVE PRESSURE-TEMPERATURE RATINGS: NOT LESS THAN INDICATED AND AS REQUIRED FOR SYSTEM PRESSURES AND TEMPERATURES.VALVE SIZES: SAME AS UPSTREAM PIPING UNLESS OTHERWISE INDICATED. HANDLEVER: FOR VALVES NPS 6 AND SMALLER. VALVES IN INSULATED PIPING: WITH 2-INCH STEM EXTENSIONS.
3. IRON, SINGLE-FLANGE BUTTERFLY VALVES:
   - A. IRON, SINGLE-FLANGE BUTTERFLY VALVES WITH STAINLESS-STEEL DISC.
   - B. MANUFACTURERS: NIBCO, MILWAUKEE VALVE COMPANY, WATTS.
   - C. DESCRIPTION: CWP RATING, NPS 6 AND SMALLER: 200 PSIG. BODY DESIGN: LUG TYPE; SUITABLE FOR BIDIRECTIONAL DEAD-END SERVICE AT RATED PRESSURE WITHOUT USE OF DOWNSTREAM FLANGE. BODY MATERIAL: CAST IRON OR DUCTILE IRON. SEAT: EPDM. STEM: ONE- OR TWO-PIECE STAINLESS STEEL. DISC: ALUMINUM BRONZE
4. DUCTILE-IRON, GROOVED-END BUTTERFLY VALVES:
   - A. 175 CWP, IRON, GROOVED-END BUTTERFLY VALVES:
   - B. MANUFACTURERS: TYCO FIRE PRODUCTS LP., VICTAULIC COMPANY, ZURN INDUSTRIES,LLC.
   - C. DESCRIPTION: CWP RATING: 175 PSIG. BODY MATERIAL: COATED, DUCTILE IRON. STEM: TWO-PIECE STAINLESS STEEL. DISC: COATED, DUCTILE IRON. SEAL: EPDM.
5. DOMESTIC HOT- AND COLD-WATER VALVE SCHEDULE
   - A. IRON, SINGLE-FLANGE BUTTERFLY VALVES: 200 CWP, EPDM SEAT, ALUMINUM BRONZE
   - B. DUCTILE-IRON, GROOVED-END BUTTERFLY VALVES: 175 CWP.

SECTION 22 05 23.14 – CHECK VALVES FOR PLUMBING PIPING

1. SOURCE LIMITATIONS FOR VALVES: OBTAIN EACH TYPE OF VALVE FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
2. COMPLY WITH ASME. COMPLY WITH AWWA C606 FOR GROOVED-END CONNECTIONS. NSF 61 ANNEX G AND NSF 372 FOR VALVE MATERIALS FOR POTABLE-WATER SERVICE.
3. BRONZE VALVES SHALL BE MADE WITH DEZINCIFICATION-RESISTANT MATERIALS. BRONZE VALVES MADE WITH COPPER ALLOY (BRASS) CONTAINING MORE THAN 15 PERCENT ZINC ARE NOT PERMITTED. VALVE PRESSURE-TEMPERATURE RATINGS: NOT LESS THAN INDICATED AND AS REQUIRED FOR SYSTEM PRESSURES AND TEMPERATURES. VALVE SIZES: SAME AS UPSTREAM PIPING UNLESS OTHERWISE INDICATED. VALVE BYPASS AND DRAIN CONNECTIONS: MSS SP-45.
4. BRONZE SWING CHECK VALVES
   - A. CLASS 125, BRONZE, SWING CHECK VALVES WITH BRONZE DISC.
   - B. MANUFACTURERS: NIBCO INC., WATTS.
   - C. DESCRIPTION: STANDARD: MSS SP-80, TYPE 3., CWP RATING: 300 PSIG., BODY DESIGN: HORIZONTAL FLOW., BODY MATERIAL: ASTM B 62, BRONZE., ENDS: THREADED OR SOLDERED. SEE VALVE SCHEDULE ARTICLES., DISC: BRONZE.

SECTION 22 05 29 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

1. SINGLE PIPE HANGERS WILL BE MALLEABLE IRON OR CARBON STEEL, ADJUSTABLE SWIVEL, SPLIT RING FOR PIPE SIZES UP TO 1 INCHES AND CARBON STEEL, ADJUSTABLE CLEVIS HANGERS FOR PIPE SIZES 2 INCHES AND OVER.
2. PROVIDE COPPER HANGERS OR WONDER TAPE AT ALL HANGERS FOR DISSIMILAR METALS.
3. MULTIPLE OR TRAPEZE HANGERS WILL BE UNISTRUT STEEL CHANNELS WITH UNISTRUT CLAMPS AND ALL-THREAD HANGER RODS AND DOUBLE NUTS. WHERE REQUIRED, UNISTRUT CHANNELS MAY BE REPLACED WITH STRUCTURAL STEEL CHANNELS OR I-BEAMS TO MEET STRUCTURAL LOADING.
4. WALL SUPPORTS WILL BE UNISTRUT BOLTED TO THE WALL WITH UNISTRUT PIPE CLAMPS FOR PIPE SIZES UP TO 3 INCHES AND WELDED STEEL BRACKETS AND STEEL CLAMPS FOR PIPE SIZES GREATER THAN 4 INCHES.
5. VERTICAL PIPE WILL BE SUPPORTED WITH STEEL RISER CLAMPS FOR STEEL PIPE AND COPPER RISER CLAMPS FOR COPPER PIPE.
6. GALVANIZED STEEL PIPE INSULATION SHIELDS WILL BE PROVIDED FOR PIPE SIZES UP TO 2 INCH. PRE-FABRICATED PIPE INSERTS AND SHIELDS WILL BE USED FOR PIPES SIZES OVER 2 INCHES.
7. HORIZONTAL PIPE WILL BE SUPPORTED WITH THE MAXIMUM SPACING:
   - A. STEEL PIPE
     - a. 1-1/4" AND SMALLER: 6'-0"
     - b. 1-1/2" – 2": 8'-0"
     - c. 2-1/2" AND LARGER: 10'-0"
   - B. CAST IRON SOIL PIPE: 2" AND LARGER: 10'-0"
   - C. COPPER TUBING:
     - a. 1/2" – 1-1/4": 5'-0"
     - b. 1-1/2" – 2": 8'-0"
     - c. 2-1/2" AND LARGER: 10'-0"
   - D. PVC/CPVC AND ALL PLASTIC PIPE:
     - a. 1-1/4" AND SMALLER: 3'-0"
     - b. 1-1/2" AND LARGER: 4'-0"
8. AT LEAST ONE HANGER SHALL OCCUR WITHIN 2'-0" FROM WHERE CHANGE IN DIRECTION TAKES PLACE. WHERE PIPES EXTEND DOWN OR UP TO OTHER FLOORS, PIPE CLAMPS SHALL BE PROVIDED ON EACH FLOOR TO SUPPORT VERTICAL RISERS. VERTICAL PIPING DROPS SHALL BE RIGIDLY ANCHORED TO STRUCTURE AT THE TOP AND BOTTOM OFFSETS AND AT EIGHT FOOT INCREMENTS ALONG THE VERTICAL DROP.
9. SPECIAL APPROVED HANGERS THAT REQUIRE LESS INSTALLATION SPACE ARE TO BE USED WHERE REQUIRED DUE TO CEILING SPACE LIMITATIONS.
10. ALL CONNECTIONS TO PUMPS AND OTHER VIBRATING MACHINERY SHALL BE PROVIDED WITH STAINLESS STEEL BRAIDED FLEXIBLE HOSE CONNECTIONS. CONNECTIONS TO POTABLE WATER SYSTEMS SHALL MEET ANSI/NSF 61 DESIGN STANDARDS.

SECTION 22 05 53 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

1. EQUIPMENT: PERMANENT LABEL (STENCIL, METAL TAG OR ENGRAVED PLASTIC) WITH UNIT TAG OR NAME AND AREA OR SPACE SERVED.
2. **PIPING**:
   - A. PIPING LABEL MANUFACTURERS: BRIMAR INDUSTRIES, INC., CRAFTMARK PIPE MARKERS., SETON IDENTIFICATION PRODUCTS.
   - B. GENERAL REQUIREMENTS FOR MANUFACTURED PIPE LABELS: PREPRINTED, COLOR-CODED, WITH LETTERING INDICATING SERVICE, AND SHOWING FLOW DIRECTION ACCORDING TO ASME A13.1. PROVIDE PIPE MARKERS EVERY 20 FEET. IDENTIFY SERVICE AND FLOW DIRECTION. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING.
   - C. PRETENSIONED PIPE LABELS: PRECOILED, SEMIRIGID PLASTIC FORMED TO PARTIALLY COVER CIRCUMFERENCE OF PIPE AND TO ATTACH TO PIPE WITHOUT FASTENERS OR ADHESIVE.
   - D. SELF-ADHESIVE PIPE LABELS: PRINTED PLASTIC WITH CONTACT-TYPE, PERMANENT-ADHESIVE BACKING.
   - E. PIPE LABEL CONTENTS: INCLUDE IDENTIFICATION OF PIPING SERVICE USING SAME DESIGNATIONS OR ABBREVIATIONS AS USED ON DRAWINGS; ALSO INCLUDE PIPE SIZE AND AN ARROW INDICATING FLOW DIRECTION,
   - F. FLOW-DIRECTION ARROWS: INTEGRAL WITH PIPING SYSTEM SERVICE LETTERING TO ACCOMMODATE BOTH DIRECTIONS OR AS SEPARATE UNIT ON EACH PIPE LABEL TO INDICATE FLOW DIRECTION, LETTERING SIZE: SIZE LETTERS ACCORDING TO ASME A13.1 FOR PIPING.
   - G. UNDERGROUND PIPES: PROVIDE WARNING TAPE ABOVE PIPE FOR ENTIRE LENGTH. FOR NON-METALLIC PIPES PROVIDE TRACED WIRE ABOVE AND PARALLEL TO ENTIRE LENGTH AND STUBBED OUT ABOVE GRADE AT ONE END.
   - H. WARNING-TAGS: HOSE BIBS RECEIVING NON-POTABLE WATER SHALL BE MARKED WITH WARNING SIGNAGE BEARING THE WORDS "CAUTION: NONPOTABLE WATER, DO NOT DRINK" AND A PICTORIAL REPRESENTATION OF THE "BARRED CIRCLE" OVER A HOSE BIBB ABOVE A PARTIALLY FILLED WATER GLASS.
   - I. PIPE LABEL COLOR SCHEDULE:
     - a. LOW-PRESSURE COMPRESSED AIR PIPING:
       - BACKGROUND: SAFETY BLUE
       - LETTER COLORS: WHITE
     - b. HIGH-PRESSURE COMPRESSED AIR PIPING:
       - BACKGROUND: SAFETY BLUE
       - LETTER COLORS: WHITE
     - c. DOMESTIC WATER PIPING:
       - BACKGROUND: SAFETY GREEN
       - LETTER COLORS: WHITE
     - d. NON-POTABLE WATER PIPING:
       - BACKGROUND: SAFETY YELLOW
       - LETTER COLORS: BLACK
     - e. SANITARY WASTE AND STORM DRAINAGE PIPING:
       - BACKGROUND: SAFETY BLACK
       - LETTER COLORS: WHITE
     - f. GRAY WATER, RECLAIMED, ON-SITE TREATED, AND RAINWATER PIPING:
       - BACKGROUND: PURPLE (PANTONE COLOR NO. 512,522C, OR EQUIVALENT)
       - LETTER COLORS: YELLOW (PANTONE NO. 108 OR EQUIVALENT)
3. **VALVE TAGS:**
   - A. MANUFACTURERS: BRIMAR INDUSTRIES, INC., CRAFTMARK PIPE MARKERS., SETON IDENTIFICATION PRODUCTS.
   - B. DESCRIPTION: STAMPED OR ENGRAVED WITH 1/4-INCH LETTERS FOR PIPING SYSTEM ABBREVIATION AND 1/2-INCH NUMBERS. NUMBER TAGS CONSECUTIVELY BY LOCATION.
   - C. TAG MATERIAL: BRASS, 0.032-INCH MINIMUM THICKNESS, AND HAVING PREDRILLED OR STAMPED HOLES FOR ATTACHMENT HARDWARE, FASTENERS: BRASS WIRE-LINK CHAIN.
   - D. MAIN VALVES IN EQUIPMENT ROOMS WILL BE IDENTIFIED WITH BRASS TAGS ATTACHED BY CHAIN.
   - E. A VALVE TAG CHART WILL BE PROVIDED INDICATING THE SYSTEM AND SERVICE OF EACH VALVE IDENTIFIED IN PREVIOUS STATEMENT. VALVE TAG CHART SHALL BE TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME OR PLASTIC LAMINATED.
   - F. VALVE-TAG SIZE AND SHAPE: COLD & HOT WATER - 2 INCHES, ROUND; LOW & HIGH PRESSURE COMPRESSED AIR - 2 INCHES, SQUARE.
   - G. VALVE-TAG COLORS: COLD WATER - SAFTETY GREEN; HOT WATER - SAFETY YELLOW; LOW-PRESSURE COMPRESSED AIR - SAFETY BLUE; HIGH-PRESSURE COMPRESSED AIR - SAFETY BLUE.
   - H. LETTER COLORS: WHITE.

SECTION 22 07 19 - PLUMBING PIPING INSULATION

1. SUMMARY
   - A. PERFORM ALL WORK REQUIRED TO PROVIDE AND INSTALL PIPING INSULATION, JACKETS AND ACCESSORIES INDICATED BY THE CONTRACT DOCUMENTS WITH SUPPLEMENTARY ITEMS NECESSARY FOR PROPER INSTALLATION.
   - B. SECTION INCLUDES:
     - a. PIPE INSULATION
     - b. JACKETS AND ACCESSORIES.
2. QUALITY ASSURANCE
   - A. ALL PIPING REQUIREING INSULATION SHALL BE INSULATED HEREIN AND AS REQUIRED FOR A COMPLETE SYSTEM. IN EACH CASE, THE INSULATION SHALL BE EQUIVALENT TO THAT SPECIFIED AND MATERIAL APPLIED AND FINISHED AS DESCRIBED IN THESE SPECIFICATIONS.
   - B. ALL INSULATION, JACKET, ADHESIVES, MASTICS, SEALERS, ECT., UTILIZED IN THE FABRICATION OF THOSE SYSTTEM SHALL MEET NFPA FOR FIRE RESISTANT RATINGS (MAXIMUM OF 25 FLAME SPREAD AND 50 SMOKE DEVELOPED RATING) AND SHALL BE APPROVED BY THE INSULATION MANUFACTURER FOR GUARANTEED PERFORMANCE WHEN INCORPORATED INTO THEIR INSULATION SYSTEM, UNLESS A SPECIFIC PRODUCT IS SPECIFIED FOR A SPECIFIC APPLICATION AND IS STATED AS AN EXPCEPTION TO THIS REQUIREMENT. CERTIFICATES TO THIS EFFECT SHALL BE SUBMITTED ALONG WITH CONTRACTOR'S SUBMITTAL DATA FOR THIS SECTION OF THE SPECIFICATIONS. NO MATERIAL SHALL BE USED THAT, WHEN TESTED BY THE ASTM E84-89 TEST METHOD, IS FOUND TO MELT, DRIP OR DELAMINATE TO SUCH A DEGREE THAT THE CONTINUITY OF THE FLAME FRONT IS DESTROYED, THEREBY RESULTING IN AN ARTIFICIALLY LOW FLAME SPREAD RATING.
   - C. APPLICATION COMPANY QUALIFICATIONS: COMPANY PERFORMING THE WORK OF THIS SECTION SHALL HAVE A MINIMUM OF THREE (3) YEARS OF EXPERIENCE SPECIALIZING IN THE TRADE.
   - D. ALL INSULATION SHALL BE APPLIED BY MECHANICS SKILLED IN THIS PARTICULAR WORK AND REGULARLY ENGAGED IN SUCH OCCUPATION.
   - E. UNSIGHTLY, INADEQUATE, OR SLOPPY WORK WILL NOT BE ACCEPTABLE AND ALL SUCH WORK SHALL BE REMOVED AND REPLACE AS MANY TIMES AS NECESSARY TO ACHIEVE AN ACCEPTABLE INSTALLATION.
   - F. THE FOLLOWING SHALL BE INSULATED:
     - a. ALL DOMESTIC COLD WATER PIPING ABOVE GRADE EXCEPT AT HORIZONTAL CHASE BRANCH PIPING TO INDIVIDUAL PLUMBING FIXTURES.
     - b. ALL HOT WATER AND HOT WATER RETURN PIPING EXCEPT AT HORIZONTAL CHASE BRANCH PIPING TO INDIVIDUAL PLUMBING FIXTURES.
     - c. ALL HORIZONTAL STORM DRAIN PIPING AND ROOF DRAIN BODIES.
     - d. ALL HOT AND COLD WATER PIPING EXPOSED TO AREAS SUBJECT TO FREEZING, REFER TO "HEAT CABLE FOR FREEZE PROTECTION OF PIPING" UNDER PART 2 OF SECTION 22 05 00 FOR ADDITIONAL REQUIREMENTS.
   - G. DOMESTIC HOT, COLD, HOT WATER RECIRCULATION, PRIMARY STORM DRAINAGE, AND WASTE DRAINAGE PIPING SHALL BE INSULATED WITH 4 LB. DENSITY SECTIONAL FIBERGLASS INSULATION WITH A THERMAL CONDUCTIVITY NOT TO EXCEED 0.24 WITH WHITE ALL SERVICE JACKET AND VAPOR BARRIER. ALL JOINTS AND SEAMS SHALL BE SEALED VAPOR TIGHT. ALL SEAMS AND STAPLES SHALL THEN BE COVERED WITH "ALL SERVICE JACKET" THREE-INCH WIDE TAPE.
   - H. ALL INTERIOR HORIZONTAL STORM DRAINAGE PIPING SYSTEMS AND ROOF DRAIN BODIES ARE TO BE INSULATED WITH BLANKET TYPE GLASS FIBER BONDED WITH THERMOSETTING RESIN WITH WHITE VINYL VAPOR RETARDING FACING, 2" WIDE STAPLING/TAPING TAB.
   - I. MATERIALS AS SPECIFIED IN THIS SECTION SHALL BE MANUFACTURED BY CERTAINTEED, JOHNS MANVILLE, KNAUF, OWENS CORNING OR EQUAL. INSULATION THICKNESSES SHALL BE AS SHOWN IN THE FOLLOWING TABLE:

INSULATION THICKNESS (IN.) FOR NOMINAL PIPE SIZES						
SYSTEM	TEMPERATURE RANGE (F)	1" AND LESS	1-1/4" TO 2"	2-1/2" TO 4"	6"	8" AND UP
DOMESTIC WATER	AMBIENT	1"	1-1/2"	1-1/2"	1-1/2"	1-1/2"
DOMESTIC HOT AND CIRC WATER	110-160	1"	1-1/2"	1-1/2"	1-1/2"	--
ABOVE GRADE DRAINS AND PIPING RECEIVING CONDENSATE OR ICE MACHINE DISCHARGE	40-60	1/2"	1"	1"	1-1/2"	--
HORIZONTAL STORM DRAINAGE	AMBIENT	--	--	1"	1"	1"

3. PIPE INSULATION WILL BE PROVIDED ON COLD WATER FIRST (20 FEET) TWENTY FEET, HOT WATER AND STORM PIPING.
   - A. INSULATION TYPE A: FIBERGLASS
     - a. ACCEPTABLE PRODUCTS: OWENS CORNING SSL II OR EQUAL GLASS FIBER PIPING INSULATION.
     - b. THERMAL CONDUCTIVITY: K-VALUE OF 0.23 BTU-IN/HR.-DREGREE F OR LESS AT 75 DREGREE F AND 0.32 BTU-IN/HR.-DEGREE F OR LESS AT 250 DEGREE F.
     - c. RATED MAXIMUM SERVICE TEMPERATURE: 1000 DEGREE F.
     - d. DENSITY: 3.5-5.5 LBS/FT.
     - e. RATED AS MAXIMUM 25 FLAME SPREAD AND MAXIMUM 50 SMOLE DEVELOPED WHEN TESTED IN ACCORDANCE WITH ASTME84, UL 723, CAN/ULC-S102-M88 OR NFPA 255.
     - f. CERTIFIED TO MEET THE REQUIREMENTS OF ASTM C795 FOR USE OVER STAINLESS STEEL.
     - g. RATED AS NON-COMBUSTIBLE WHEN TESTED IN ACCORDANCE WITH ASTM E136.
     - h. INSULATION TREATED WITH WATER RESISTANT RESIN ON THE SURFACE AND WITHIN EACH LAYER OF THE INSULATION.
     - i. SHALL MEET OR EXCEED REQUIREMENTS OF ASTM C552, CLASS 1.
     - j. PAPER FREE ALL-SERVICE JACKET WITH DOUBLE ADHESIVE LAP SEAL AND A TWO-PART BUTT STRIP SEAL.
     - k. RATED MEAN TEMPERATURE: 100 DEG F.
   - B. TYPE B: CLOSE CELL ELASTOMERIC
     - a. ACCEPTABLE PRODUCTS: ARMAFLEX AP AS MANUFACTURED BY ARMACELL OR EQUAL.
     - b. THERMAL CONDUCTIVITY: K-VALUE OF 0.28 BTU-IN/HR. DEGREE F OR LESS AT 75 F.
     - c. RATED MAXIMUM SERVICE TEMPERATURE OF 300 DEGREE F.
     - d. RATED AS 25 FLAME SPREAD AND 50 SMOKE DEVELOPED WHEN TESTED IN ACCORDANCE WITH SATM E84, UL 723, CAN/ULC-S102-M88 OR NFPA 255.
     - e. CERTIFIED TO MEET THE REQUIREMENTS OF ASTM C795 FOR USE OVER STAINLESS STEEL.
     - f. RATED AS NONCOMBUSTIBLE WHEN TESTED IN ACCORDANCE WITH ASTM E136.
     - g. ELASTOMERIC PRODUCTS SHALL BE SUPPLIED IN A PRE-SLIT TUBULAR FORM WITH A PRESSURE SENSITIVE ASHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING OF THE LONGITUDINAL JOINT.
     - h. SHALL MEET OR EXCEED REQUIREMENTS OF ASTM C534, TYPE I, TUBULAR GRADE.
4. FITTINGS
   - A. PROVIDE PRE-MOLDED FITTING AND ELBOWS MOLDED IN TWO MATCHING HALF SECTIONS OF SAME INSULATION THICKNESS AS ADJOINING PIPING. AS AN ALTERNATIVE, PROVIDE MITERED SECTIONS OF INSULATION EQUIVALENT IN THICKNESS AND COMPOSTION TO THAT INSTALLED ON STRAIGHT PIPE RUNS. NO INSERT OR BLANKET INSULATION ALLOWED.
5. ALUMINUM JACKETING
   - A. PIPING: FURNISH FOR FINISHING INTERIOR INSULATED PIPE, A PREFABRICATED JACKET OF ASTM B209 ALUMINUM, 0.016-INCH THICK, WITH FACTORY-APPLIED 2-MIL MOISTURE BARRIER.
   - B. VALVES, FITTINGS AND FLANGES. PROVIDE COMPLETE COVERAGE OF ALL VALVES, FITTINGS AND FLANGES, PROVIDE ALUMINUM COVERS, 0.016 INCH THICK, ASTM B209 ALUMINUM.
   - C. STRAP AND SEALS: FURNISHE 1 INCH x 0.010 INCH, ASTM B209 ALUMINUM STRAPPING AND SEALS FOR APPLYING ALUMINUM JACKET AND COVERS TO PROVIDE COMPLETELY WEATHER TIGHT COVERING OF ALL INSULATION INCLUDING CAPS, FLANGE AND END OF LINES.
6. CEMENTS AND COATINGS:
   - A. TYPE A INSULATION (FIBERGLASS):
     - a. LAP ADHESIVE. FURNISH CHILDERS CP-82 OR FOSTER 85-20 TO SEAL LONGITUDINAL LAPS OF THE VAPOR BARRIER JACKET AND TO ADHERE BUTT JOINT COVERS.
     - b. FINISH: FURNISH CHLDERS CP-10/11 OR FOSTER 46-50 WEATHER BARRIER MASTIC WITH REINFORCING MESH.
     - c. CEMENT: FURNISH RYDER ON CAOT OR EQUAL ON INSULATED FITTINGS, FLANGES AND VALVES.
     - d. PRIMER AND FINISH: FURNISH CHILDERS CP-50A MV1 DILUTED 50% WITH WATER OR EQUAL TO PRIME CEMENT PRIOR TO APPLYING COATING.
     - e. LAGGING ASHESIVE: USED IN CONJUCTION WITH CANVAS OR GLASS LAGGING CLOTH TO PROTECT EQUIPMENT/PIPING INDOORS. FOSTER 30-36 SEALFAS, CHILDERS CP-50AMV1 CHIL SEAL OR APPROVED EQUAL.
   - B. TYPE B INSULATION (ELASTOMERIC):
     - a. ADHESIVE: FURNISH ARMAFLEX 520 BLV LOW VOC ADHESIVE, FOSTER 85-75, OR CHILDERS CP-82 TO SEAL LONGITUDINAL LABS AND TO ADHERE BUTT JOINT COVERS.
     - b. FINISH: FURNISH ARMAFLEX WB OR FOSTER 30-63 WATER BASED LATEX ENAMEL FINISHED

SECTION 22 11 16 - DOMESTIC WATER PIPING

1. COPPER TUBE AND FITTINGS:
2. PIPING
   - A. UNDERGROUND: ASTM B-88 TYPE K SEAMLESS COPPER TUBING, SOFT ANNEALED, COATED AND WRAPPED WITH EXTRUDED HIGH DENSITY POLYETHYLENE TAPE.
   - B. ABOVE GROUND: ASTM B-88 TYPE L SEAMLESS COPPER TUBING, HARD TEMPER, COLD DRAWN. PEX-a, ASTM F 876/877, SDR 9, CTS, ENGEL METHOD.
   - C. CONDENSATE DRAINS FROM COOLING COILS: SEAMLESS COPPER TUBING, TYPE M, COLD DRAWN, HARD TEMPER, ASTM B-88.
3. FITTINGS
   - A. COPPER TUBING: ANSI B16.22 WROUGHT COPPER SOLDER SWEAT TYPE.
   - B. CAST-COPPER, SOLDER-JOINT FITTINGS: PRESSURE FITTINGS.
   - C. WROUGHT-COPPER, SOLDER-JOINT FITTINGS: WROUGHT-COPPER PRESSURE FITTINGS.
   - D. BRASS: ANSI B16.15 85% RED BRASS, CAST IRON PATTERN. SCREWED TYPE MAY BE USED WHERE CLOSE FITTING IS REQUIRED.
   - E. ADAPTERS WILL BE USED WHERE COPPER TUBING CONNECTS TO IRON PIPE SIZE BRASS PIPING.
   - F. PEX-a: ENGINEERED POLYMER OR LEAD-FREE BRASS ASTM F 1960 COLD EXPANSION WITH PEX-a REINFORCING RING.
   - G. FLANGES: VICTAULIC MECHANICAL GROOVED COUPLINGS.
   - H. COPPER UNIONS:
     - a. CAST-COPPER-ALLOY, HEXAGONAL-STOCK BODY; BALL-AND-SOCKET, METAL-TO-METAL SEATING SURFACES; THREADED ENDS OR PROPRESS.
   - I. COPPER PRESSURE-SEAL-JOINT FITTINGS:
     - a. MANUFACTURERS: VIEGA LLC.
     - b. FITTINGS FOR NPS 2 AND SMALLER: WROUGHT-COPPER FITTING WITH EPDM-RUBBER, O-RING SEAL IN EACH END.
     - c. FITTINGS FOR NPS 2-1/2 TO NPS 4: CAST-BRONZE OR WROUGHT-COPPER FITTING WITH EPDM-RUBBER, O-RING SEAL IN EACH END.
   - J. COPPER-TUBE, EXTRUDED-TEE CONNECTIONS:
     - a. MANUFACTURERS: T-DRILL INDUSTRIES INC.
     - b. TEE FORMED IN COPPER TUBE ACCORDING TO ASTM F 2014.
   - K. APPURTENANCES FOR GROOVED-END COPPER TUBING:
     - a. MANUFACTURERS: VICTAULIC COMPANY.
     - b. BRONZE FITTINGS FOR GROOVED-END, COPPER TUBING: ASTM B 75 COPPER TUBE OR BRONZE CASTINGS.
   - L. MECHANICAL COUPLINGS FOR GROOVED-END COPPER TUBING:
     - a. COPPER-TUBE DIMENSIONS AND DESIGN SIMILAR TO AWWA C606.;FERROUS HOUSING SECTIONS; EPDM-RUBBER GASKETS SUITABLE FOR HOT AND COLD WATER; BOLTS AND NUTS; MINIMUM PRESSURE RATING: 300 PSIG.
4. PIPING JOINING MATERIALS:
   - A. PIPE-FLANGE GASKET MATERIALS:
     - a. RUBBER, FLAT FACE, 1/8 INCH THICK OR NONMETALLIC AND ASBESTOS FREE UNLESS OTHERWISE INDICATED;
     - b. FULL-FACE OR RING TYPE UNLESS OTHERWISE INDICATED.
   - B. METAL, PIPE-FLANGE BOLTS AND NUTS: CARBON STEEL UNLESS OTHERWISE INDICATED.
   - C. SOLDER FILLER METALS: LEAD-FREE ALLOYS.
   - D. FLUX: WATER FLUSHABLE.
   - E. BRAZING FILLER METALS: BCUP SERIES, COPPER-PHOSPHORUS ALLOYS FOR GENERAL-DUTY BRAZING UNLESS OTHERWISE INDICATED.
5. TRANSITION FITTINGS:
   - A. SAME SIZE AS PIPES TO BE JOINED; PRESSURE RATING AT LEAST EQUAL TO PIPES TO BE JOINED; END CONNECTIONS COMPATIBLE WITH PIPES TO BE JOINED.
   - B. FITTING-TYPE TRANSITION COUPLINGS: MANUFACTURED PIPING COUPLING OR SPECIFIED PIPING SYSTEM FITTING. FITTINGS FOR FPS 1-1/2" AND SMALLER.
   - C. SLEEVE-TYPE TRANSITION COUPLING: MANUFACTURERS: JAY R. SMITH MFG. CO. FITTINGS FOR NPS 2" AND LARGER.
6. DIELECTRIC FITTINGS:
   - A. ASSEMBLY OF COPPER ALLOY AND FERROUS MATERIALS WITH SEPARATING NONCONDUCTIVE INSULATING MATERIAL. INCLUDE END CONNECTIONS COMPATIBLE WITH PIPES TO BE JOINED.
   - B. DIELECTRIC UNIONS:
     - a. MANUFACTURERS: ZURN INDUSTRIES, LLC.
     - b. STANDARD: ASSE 1079.
     - c. PRESSURE RATING: 150 PSIG.
     - d. END CONNECTIONS: SOLDER-JOINT COPPER ALLOY AND THREADED FERROUS.
   - C. DIELECTRIC FLANGES:
     - a. MANUFACTURERS: WATTS, WILKINS, ZURN INDUSTRIES, LLC.
     - b. STANDARD: ASSE 1079.
     - c. FACTORY-FABRICATED, BOLTED, COMPANION-FLANGE ASSEMBLY.
     - d. PRESSURE RATING: 150 PSIG.
     - e. END CONNECTIONS: SOLDER-JOINT COPPER ALLOY AND THREADED FERROUS; THREADED SOLDER-JOINT COPPER ALLOY AND THREADED FERROUS.
     - f. DIELECTRIC FITTINGS FOR NPS 2-1/2 AND LARGER.
   - D. DIELECTRIC-FLANGE INSULATING KITS:
     - a. MANUFACTURERS: CALPICO, INC., CENTRAL PLASTICS COMPANY, PIPELINE SEAL AND INSULATOR, INC.
     - b. NONCONDUCTING MATERIALS FOR FIELD ASSEMBLY OF COMPANION FLANGES.
     - c. PRESSURE RATING: 150 PSIG.
     - d. GASKET: NEOPRENE OR PHENOLIC.
     - e. BOLT SLEEVES: PHENOLIC OR POLYETHYLENE.
     - f. WASHERS: PHENOLIC WITH STEEL BACKING WASHERS.
     - g. DIELECTRIC FITTINGS FOR NPS 2-1/2 AND LARGER.
   - E. DIELECTRIC NIPPLES:
     - a. MANUFACTURERS: VICTAULIC COMPANY.
     - b. ELECTROPLATED STEEL NIPPLE.
     - c. PRESSURE RATING AND TEMPERATURE: 300 PSIG AT 225 DEG F.
     - d. DIELECTRIC FITTINGS FOR NPS 2 AND SMALLER.

STATE OF TEXAS
STEPHEN M. BUTLER
112019
LICENSED
PROFESSIONAL ENGINEER
10/25/2024

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N-VIZION
FORMS . ENVIRONMENTS . IMAGES

PLUMBING SPECIFICATIONS

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
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Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

INFINITY
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P0.03

PLUMBING SPECIFICATIONS

SECTION 22 11 19 - DOMESTIC WATER PIPING SPECIALTIES

1. VACUUM BREAKERS.
   - A. PIPE-APPLIED ATMOSPHERIC-TYPE VACUUM BREAKERS.
     - a. STANDARD: ASSE 1001
     - b. SIZE: NPS 1/4 TO NPS 3/4, AS REQUIRED TO MATCH CONNECTED PIPING.
     - c. BODY: BRONZE.
     - d. INTEL AND OUTLET CONNECTIONS: THREADED.
     - e. FINISH: ROUGH BRONZE.
   - B. HOSE-CONNECTION VACUUM BREAKERS
     - a. STANDARD: ASSE 1011.
     - b. BODY BRONZE, NONREMOVABLE, WITH MANUAL DRAIN.
     - c. OUTLET CONNECTION: GARDEN-HOSE THREADED COMPLYING WITH ASME B1.20.7
     - d. FINISH: CHROME OR ROUGH BRONZE.
2. BACKFLOW PREVENTERS.
   - A. REDUCING-PRESSURE PRINCIPLE BACKFLOW PREVENTERS
     - a. STANDARD: ASSE 1013.
     - b. OPERATION: CONTINUOUS-PRESSURE APPLICATIONS.
     - c. SIZE: NPS 1/2 TO NPS 2.
     - d. BODY: BRONZE FOR NPS 2 AND SMALLER.
     - e. END CONNECTION: THREADED FOR NPS 2 AND SMALLER.
     - f. ACCESSORIES:
       - • VALVES NPS AND SMALLER: BALL TYPE WITH THREADED ENDS ON INLET AND OUTLET
       - • AIR-GAP FITTING: ASME A112.1.2, MATCHING BACKFLOW-PREVENTER CONNECTION.
   - B. DOUBLE-CHECK BACKFLOW-PREVNTION ASSEMBLIES
     - a. STANDARD: ASSE 1015
     - b. OPERATION: CONTINUOUS-PRESSURE APPLICATIONS UNLESS OTHERWISE INDICATED.
     - c. PRESSURE LOSS: 5 PSIG MAXIMUM, THROUGH MIDDLE THIRD OF FLOW RANGE.
     - d. SIZE: NPS 3/4" TO NPS 4.
     - e. BODY: BRONZE FOR NPS 2 AND SMALLER. STEEL WITH INTERIOR LINING THAT COMPLIES WITH AWWA C550 OR THAT IS FDA APPROVED FOR NPS 2-1/2 AND LARGER.
     - f. END CONNECTION: THREADED FOR NPS 2 AND SMALLER, FLANGE FOR NPS 2-1/2 AND LARGER.CONFIGURATION: DESIGN FOR (HORIZONTAL, STRAIGHT-THROUGH) FLOW.
     - g. ACCESSORIES:
       - • VALVES NPS 2 AND SMALLER: BALL TYPE WITH TYPE WITH THREADED ENDS ON INLET AND OUTLET.
       - • VALVES NPS 2-1/2 AND LARGER: OUTSIDE-SCREW AND YOKE-GATE TYPE WITH FLANGE ENDS ON INLET AND OUTLET.
   - C. BEVERAGE-DISPENSING EQUIPMENT BACKFLOW PREVENTERS
     - a. STANDARD: ASSE 1022.
     - b. OPERTAION: CONTINUOUS-PRESSURE APPLICATIONS.
     - c. SIZE: NPS 1/4 OR NPS 3/8
     - d. BODY: STAINLESS STEEL.
     - e. END CONNECTIONS: THREADED.
   - C. DUAL-CHECK VALVE BACKFLOW PREVNTERS
     - a. STANDARD: ASSE 1024.
     - b. OPERATION: CONTINOUS PRESSURE APPLICATIONS.
     - c. SIZE: NPS 1/2 TO NPS 1-1/4.
     - d. BODY: BRONZE WITH UNION INLET.
   - D. CARBONATED BEVERAGE DISPENSER, DUAL CHECK VALVE BACKFLOW PREVENTORS
     - a. STANDARD: ASSE 1032.
     - b. OPERATION: CONTINUOUS_PRESSURE APPLICATIONS.
     - c. SIZE: NPS 1/4 OR NPS 3/8.
     - d. BODY STAINLESS STEEL.
     - e. END CONNECTIONS: THREADED.
   - F. DOUBLE CHECK DETECTOR-ASSEMBLY BACKFLOW PREVENTERS
     - a. STANDARD: ASSE 1048 AND IS FM GLOBAL APPROVED OR UL LISTED.
     - b. OPERATION: CONTINUOUS-PRESSURE APPLICATIONS.
     - c. PRESSURE LOSS: 5 PSIG MAXIMUM, THROUGH MIDDLE THIRD OF FLOW RANGE.
     - d. SIZE: NPS 2-1/2 TO NPS 4.
     - e. BODY: CAST IRON WITH INTERIOR LINING THAT COMPLIES WITH AWWA C550 OR THAT IS FDA APPROVED.
     - f. END CONNECTIONS: FLANGED.
     - g. CONFIGURATION: DESIGNED FOR (HORIZONTAL, STRAIGHT-THROUGH) (VERITICAL-INLET, HORIZONTAL-CENTER-SECTION, ASND VERITAL-OUTLET) (VERTICAL) FLOW.
     - h. ACCESSORIES:
       - • VALVES: OUTSIDE-SCREW AND YOKE-GATE TYPE WITH FLANGED ENDS ON INLET AND OUTLE.
       - • BYPASS: WITH DISPLACEMENT-TYPE WATER METER, SHUTOFF VALVES, AND REDUCED-PRESSURE BACKFLOW PREVENTER.

1. TEMPERATURE-ACTUATED, WATER MIXING VAVLES.
   - A. MANIFOLD THEMOSTATIC WATER MIXING-VALVE ASSEMBLIES
     - a. DESCRIPTION" FACTORY-FABRICATED, (CABINET-TYPE), (EXPOSED-MOUNTED), THERMOSTATICALY CONTROLLED, WATER MIXING-VALVE ASS EMBLY IN (TWO) (THREE) VALVE PARALLEL ARRANGEMENT.
     - b. LARGE FLOW PARALLEL: THERMOSTIC WATER MIXING VALVE AND DOWNSTREAM-PRESSURE REGULATOR WITH PRESSURE GAGES ON INLET AND OUTLET.
     - c. INTERMEDIATE-FLOW PARALLEL: THERMOSTIC WATER VALVE AND DOWNSTREAM-PRESSURE REGULATOR WITH PRESSURE GAGES ON INLET AND OUTLET.
     - d. SAMLL FLOW PARALLE: THERMOSTIC WATER MIXING VALVE.
     - e. THERMOSTIC MIXING VALVE: COMPLY WITH ASSE 1017. INCLUDE CHECK STOPS ON HOT AND COLD WATER INLET AND SHUTOFF VALVE ON OUTLET.
     - f. WATER REGULATOR(S): COMPLY WITH ASSE 1003. INCLUDE PRESSURE GAGE ON INLET AND OUTLET.
     - g. PRESSURE RATING: 125 PSIG MINIMUM UNLESS OTHERWISE INDICATED.
     - h. CABINET: FACTORY FABRICATED, STAINLESS STEEL, FOR (RECESSED) (SURFACE) MOUNTED AND WITH HINGED STAINLESS STEEL DOOR.
     - i. TEMPERED-WATER SETTING: 120 DE. F.
     - j. THERMOSTIC MIXING VALVE AND WATER REGULATOR FINISH: (CHROME PLATED) (POLISHED, CHROME PLATED) (ROUGH BRONZE).
     - k. PIPING FINISH: (CHROME PLATED) (COPPER).
   - B. INDIVIDUAL FIXTURE WATER TEMPERING VALVE.
     - a. STAMDARD: ASSE 1016, THERMOSTATICALLY CONTROL, WATER WATER TEMPERING VALVE.
     - b. PRESSURE RATING: 125 PSIG MINIMUM UNLESS OTHERWISE INDICATED.
     - c. BODY: BRONZE BODY WITH CORROSION-RESISTANT INTERIOR COMPONEMENTS.
     - d. TEMPERATURECONTROL: ADJUSTABLE.
     - e. INLET AND OUTELT: THREADED OR COMPRESSION FITING.
     - f. FINISHED: ROUGH OR CHROME-PLATED BRONZE.
     - g. TEMPERED-WATER SETTING: (INSERT DEG F).
     - h. TEMPERED-WATER DESIGN FLOW RATE: (INSERT GPM.
   - C. CLOTHES WASHER OULET BOXES
     - a. MOUNTED: RECESSED.
     - b. MATERIAL AND FINISH: (ENAMELED-STEEL OR EPOXY-PAINTED STEEL) (ENAMELED-STEEL, EPOXY-PAINTED STEEL, OR PLASTIC) (PLASTIC) (STAINLESS STEEL) BOX AND FACEPLATE.
     - c. FAUCET: COMBINATION VALVE FITTING OR SEPARTE HOT AND COLD WATER VALVE.FITTING COMPLYING WITH ASME A112.18.1. INCLUDE GARDEN-HOSE THREAD COMPLING WITH ASME B120.7 ON OUTLET.
     - d. SUPPLY SHUTOFF FITTING: NPS 1/2 BALL VALVES AND NPS 1/2 COPPER WATER TUBING.
     - e. DRAIN: NPS 2 STANDPIPE AND P-TRAP FOR DIRECT WASTE CONNECTION TO DRAINAGE PIPING.
     - f. INLET HOSE: TWO 60-INCH LONG, RUBBER HOUSEHOLD CLOTHES WASHER INLET HOSE WITH FEMALE, GARDEN-HOSE THREAD COUPLING. INCLUDE RUBBER WASHER.
     - g. DRAIN HOSE: ONE 48-INCH LONG, RUBBER HOUSEHOLD CLOTHES WASHER DRAIN HOSE WITH HOOKED END.
   - D. ICEMAKER OUTLET BOXES
     - a. MOUNTED: RECESSED.
     - b. MATERIAL AND FINISH: (ENAMELED-STEEL OR EPOXY PAINTED STEEL) (ENAMELED STEEL, EPOXY PAINTED STEEL OR PLASTIC) (PLASTIC) (STAINLESS STEEL) BOX AND FACEPLATE.
     - c. FAUCET: VALVED FITTING COMPLYING WITH ASME A112.18.1. INCLUDE NPS 1/2 OR SMALL COPPER TUBE OUTELT.
     - d. SUPPLY SHUTOFF FITTING: NPS 1/2 BALL VALVE AND NPS 1/2 COPPER WATER TUBING
   - E. HOSE BIBB
     - a. STANDARD: ASTME A112.18.1 FOR SEDIMENT FAUCETS.
     - b. BODY MATERIAL: BRONZE.
     - c. SEAT: BRONZE, REPLACEABLE.
     - d. SUPPLY CONNECTIONS: NPS 1/2 OR NPS 3/4 THREADED OR SOLDER-JOINT INLET
     - e. OUTLET CONNECTION: GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7.
     - f. PRESSURE RATING: 125 PSIG.
     - g. VACUUM BREAKER: INTEGRAL NONREMOVABLE, DRAINABLE, HOSE-CONNECTION VACUUM BREAKER COMPLYING WITH ASSE 1011.
     - h. FINISH FOR EQUIPMENT ROOMS: ROUGH BRONZE, CHROME OR NICKEL PLATED.
     - i. FINISH FOR SERVICE AREAS: ROUGH BRONZE, CHROME OR NICKEL PLATED.
     - j. OPERATION FOR EQUIPMENT ROOMS: WHEEL HANDLE OR OPERATING KEY.
     - k. OPERATION FOR SERVICE AREAS: WHEEL HANDLE OR OPERATING KEY.
     - l. INCLUDE OPERATING KEY WITH EACH OPERATING-KEY HOSE BIBB.
     - m. INCLUDE INTEGRAL WALL FLANGE WITH EACH CHROME OR NICKEL PLATED HOSE BIBB.
   - F. NON FREEZE WALL HYDRANTS
     - a. STANDARD: ASME A112.21.3M FOR CONCEALED-OUTLET, SELF-DRAINING WALL HYDRANTS.
     - b. PRESSURE RATING: 125 PSIG.
     - c. OPERATION: LOOSE KEY.
     - d. CASING AND OPERATING ROD: OF LENGTH REQUIRED TO MATCH WALL THINCKNESS. INCLUDE WALL CLAMP.
     - e. INLET: MPS3/4.
     - f. OUTLET: CONCEALED WITH INTERGRAL VACUUM BREAKER AND GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7.
     - g. BOX: DEEP FLUSH MOUNTED WITH COVER.
     - h. OUTLET: EXPOSED WITH INTEGRAL VACUUM BREAKER AND GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7.
     - i. NOZZLE AND WALL-PLATE FINISH: (POLISHED NICKEL BRONZE), (ROUGH BRONZE).
     - j. OPERATING KEYS(S): (ONE), (TWO) WITH EACH WALL HYDRANTS.
     - k. OPERATION FOR EQUIPMENT ROOMS: WHEEL HANDLE OR OPERATING KEY.
     - l. OPERATION FOR SERVICE AREAS: WHEEL HANDLE OR OPERATING KEY.
     - m. INCLUDE OPERATING KEY WITH EACH OPERATING-KEY HOSE BIBB.
     - n. INCLUDE INTEGRAL WALL FLANGE WITH EACH CHROME OR NICKEL PLATED HOSE BIBB.

SECTION 22 11 23 - DOMESTIC WATER PUMPS

1. MANUFACTURERS
   - A. PUMP MANUFACTURERS:
     - a. ARMSTRONG PUMPS INC.
     - b. AURORA PUMP; PENTAIR PUMP GROUP (THE).
     - c. BELL & GOSSETT DOMESTIC PUMP; ITT INDUSTRIES.
     - d. GRUNDFOS PUMPS CORP.
     - e. TACO, INC.
2. CLOSE-COUPLED, HORIZONTALLY MOUNTED, IN-LINE CENTRIFUGAL PUMPS
   - A. DESCRIPTION: FACTORY-ASSEMBLED AND -TESTED, OVERHUNG IMPELLER, SINGLE-STAGE, CLOSE-COUPLED, HORIZONTALLY MOUNTED, IN-LINE CENTRIFUGAL PUMPS AS DEFINED IN ANSI HI 1.1-1.2 AND HI 1.3; AND DESIGNED FOR INSTALLATION WITH PUMP AND MOTOR SHAFTS MOUNTED HORIZONTALLY.
     - a. PUMP CONSTRUCTION: ALL BRONZE.
       - • CASING: RADIALLY SPLIT, CAST IRON, WITH THREADED COMPANION-FLANGE CONNECTIONS FOR PUMPS WITH NPS 2 (DN 50) PIPE CONNECTIONS AND FLANGED CONNECTIONS FOR PUMPS WITH NPS 2-1/2 (DN 65) PIPE CONNECTIONS.
       - • IMPELLER: ASTM B 584, CAST BRONZE; STATICALLY AND DYNAMICALLY BALANCED, CLOSED, AND KEYED TO SHAFT.
       - • SHAFT AND SHAFT SLEEVE: STEEL SHAFT, WITH COPPER-ALLOY SHAFT SLEEVE.
       - • SEAL: MECHANICAL, WITH CARBON-STEEL ROTATING RING, STAINLESS-STEEL SPRING, CERAMIC SEAT, AND RUBBER BELLOWS AND GASKET. INCLUDE WATER SLINGER ON SHAFT BETWEEN MOTOR AND SEAL.
       - • BEARINGS: OIL-LUBRICATED; BRONZE-JOURNAL OR BALL TYPE.
   - B. SHAFT COUPLING: RIGID TYPE IF PUMP IS PROVIDED WITH COUPLING.
   - C. MOTOR: SINGLE SPEED, WITH GREASE-LUBRICATED BALL BEARINGS. COMPLY WITH REQUIREMENTS IN DIVISION 22 SECTION "COMMON MOTOR REQUIREMENTS FOR PLUMBING EQUIPMENT."
   - D. CAPACITIES AND CHARACTERISTICS: REFER TO SCHEDULE ON DRAWINGS
3. CONTROLS
   - A. AQUASTATS: ELECTRIC; ADJUSTABLE FOR CONTROL OF HOT-WATER CIRCULATION PUMP.
     - a. MANUFACTURERS:
       - • HONEYWELL INTERNATIONAL, INC.
       - • SQUARE D.
       - • WHITE-RODGERS DIV.; EMERSON ELECTRIC CO.
   - B. TYPE: WATER-IMMERSION SENSOR, FOR INSTALLATION IN HOT-WATER CIRCULATION PIPING.
   - C. RANGE: 65 TO 200 DEG F (18 TO 93 DEG C).
   - D. OPERATION OF PUMP: ON OR OFF.
   - E. TRANSFORMER: PROVIDE IF REQUIRED.
   - F. POWER REQUIREMENT: 120 V, AC.
   - G. SETTINGS: START PUMP AT 115 DEG F (46 DEG C) AND STOP PUMP AT 120 DEG F (49 DEG C).
4. TIMERS: ELECTRIC TIME CLOCK FOR CONTROL OF HOT-WATER CIRCULATION PUMP.
   - A. MANUFACTURERS:
     - a. HONEYWELL INTERNATIONAL, INC.
     - b. INTERMATIC, INC.
     - c. JOHNSON CONTROLS, INC.
     - d. TORK.
   - B. TYPE: PROGRAMMABLE, SEVEN-DAY CLOCK WITH MANUAL OVERRIDE ON-OFF SWITCH.
   - C. ENCLOSURE: SUITABLE FOR WALL MOUNTING.
   - D. OPERATION OF PUMP: ON OR OFF.
   - E. TRANSFORMER: PROVIDE IF REQUIRED.
   - F. POWER REQUIREMENT: 120 V, AC.
   - G. PROGRAMMABLE SEQUENCE OF OPERATION: UP TO TWO ON-OFF CYCLES EACH DAY FOR SEVEN DAYS.

EXECUTION:

1. PUMP INSTALLATION
   - A. COMPLY WITH ANSI HI 1.4.
   - B. INSTALL PUMPS WITH ACCESS FOR PERIODIC MAINTENANCE INCLUDING REMOVAL OF MOTORS, IMPELLERS, COUPLINGS, AND ACCESSORIES.
   - C. PENDENTLY SUPPORT PUMPS AND PIPING SO WEIGHT OF PIPING IS NOT SUPPORTED BY PUMPS AND WEIGHT OF PUMPS IS NOT SUPPORTED BY PIPING.
   - D. INSTALL CLOSE-COUPLED, HORIZONTALLY MOUNTED, IN-LINE CENTRIFUGAL PUMPS WITH MOTOR AND PUMP SHAFTS HORIZONTAL.
   - E. INSTALL CONTINUOUS-THREAD HANGER RODS AND SPRING HANGERS WITH VERTICAL-LIMIT STOP OF SUFFICIENT SIZE TO SUPPORT PUMP WEIGHT. VIBRATION ISOLATION DEVICES ARE SPECIFIED IN DIVISION 22 SECTION "VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT." FABRICATE BRACKETS OR SUPPORTS AS REQUIRED. HANGER AND SUPPORT MATERIALS ARE SPECIFIED IN DIVISION 22 SECTION "HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT."
2. CONTROL INSTALLATION
   - A. INSTALL IMMERSION-TYPE AQUASTATS IN HOT-WATER RETURN PIPING.
   - B. INSTALL TIMERS.
3. CONNECTIONS
   - A. PIPING INSTALLATION REQUIREMENTS ARE SPECIFIED IN OTHER DIVISION 22 SECTIONS. DRAWINGS INDICATE GENERAL ARRANGEMENT OF PIPING, FITTINGS, AND SPECIALTIES.
   - B. INSTALL PUMPS TO ALLOW SERVICE AND MAINTENANCE.
   - C. CONNECT DOMESTIC WATER PIPING TO PUMPS. INSTALL SUCTION AND DISCHARGE PIPING EQUAL TO OR GREATER THAN SIZE OF PUMP NOZZLES. REFER TO DIVISION 22 SECTION "DOMESTIC WATER PIPING."
     - a. INSTALL SHUTOFF VALVE AND STRAINER ON SUCTION SIDE OF PUMPS, AND CHECK VALVE AND THROTTLING VALVE ON DISCHARGE SIDE OF PUMPS. INSTALL VALVES SAME SIZE AS CONNECTED PIPING. REFER TO DIVISION 22 SECTION "GENERAL-DUTY VALVES FOR PLUMBING PIPING" FOR GENERAL-DUTY VALVES FOR DOMESTIC WATER PIPING AND DIVISION 22 SECTION "DOMESTIC WATER PIPING SPECIALTIES" FOR STRAINERS.
     - b. INSTALL PRESSURE GAGES AT SUCTION AND DISCHARGE OF PUMPS. REFER TO DIVISION 22 SECTION "METERS AND GAGES FOR PLUMBING PIPING" FOR PRESSURE GAGES AND GAGE CONNECTORS.
   - D. GROUND EQUIPMENT ACCORDING TO DIVISION 26 SECTION "GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS."
   - E. CONNECT AQUASTATS AND TIMERS TO PUMPS THAT THEY CONTROL.
   - F. INTERLOCK PUMP WITH WATER HEATER BURNER AND TIME DELAY RELAY.

SECTION 22 13 16 - SANITARY WASTE AND VENT PIPING

1. MANUFACTURERS SHALL BE ISO 9001 ACCREDITED.
2. PIPE AND FITTINGS ABOVE GROUND: CISPI 310 OR ASTM C 1277, CAST IRON NO-HUB SOIL PIPE AND FITTINGS WITH STAINLESS STEEL NO-HUB COUPLINGS. ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND BE LISTED BY NSF INTERNATIONAL®
3. INDIRECT DRAIN: TYPE M, ASTM B-88, SEAMLESS HARD TEMPER, COLD DRAWN COPPER TUBING WITH ANSI B16.29 WROUGHT COPPER SOLDER SWEAT DRAINAGE FITTINGS.
4. CAST IRON SOIL PIPE NO-HUB COUPLINGS: CONFORMING TO ASTM C 1540. HEAVY DUTY, 24 GAUGE, TYPE 304 STAINLESS STEEL SHIELD AND CLAMP ASSEMBLY WITH ASTM C 564 NEOPRENE SEALING SLEEVE TORQUED TO A MINIMUM OF 100 INCH/LBS. COUPLING WILL BE FACTORY MUTUAL APPROVED PER STANDARD 1680, CLASS I. (HUSKY 4000 OR EQUIVALENT)
5. PVC PIPE AND FITTINGS BELOW GROUND: SOLID-WALL PVC PIPE ASTM D 2665 AND ASTM D1785, DRAIN, WASTE, AND VENT. ALL BURIED PVC PIPING SYSTEMS SHALL BE INSTALLED PER ASTM D2321.
6. PVC SOCKET FITTINGS: ASTM D 2665, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS AND TO FIT SCHEDULE 40 PIPE.
7. ADHESIVE PRIMER: ASTM F 656
   - A. ADHESIVE PRIMER SHALL HAVE A VOC OF 550G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
   - B. ADHESHIVE PRIMER "STANDARD PRACTICE FOR THE TESTING OF VOLATILE ORGANIC EMISSIONS FROM VARIOUS SOURCES USING SMALL-SCALE ENVIROMENTAL CHAMBERS".
8. SOLVENT CEMENT: ASTM D 2564
   - A. ADHESIVE PRIMER SHALL HAVE A VOC OF 550G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
   - B. ADHESHIVE PRIMER "STANDARD PRACTICE FOR THE TESTING OF VOLATILE ORGANIC EMISSIONS FROM VARIOUS SOURCES USING SMALL-SCALE ENVIROMENTAL CHAMBERS".
9. CORROSIVE WASTE: IF REQUIRED ON THE PROJECT, CORROSIVE WASTE PIPING SHALL BE:
   - A. CPVC PIPE AND FITTINGS CONFORMING TO ASTM F2618. ALL COMPONENTS SHALL BE MANUFACTURED AS A SYSTEM FROM ONE MANUFACTURER AND BE CERTIFIED BY NSF INTERNATIONAL AND BEAR THE MARK NSF-CW

EXECUTION

1. PREPARATION
   - A. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN END FERROUS PIPE.
   - B. COORDINATE THE EXACT LOCATION OF ALL FLOOR DRAINS WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN. ENSURE DRAINS ARE LOCATED AT LOW POINT(S) OF FLOOR SLOPE.
   - C. REMOVE SCALE AND DIRT, ON INSIDE AND OUTSIDE, BEFORE ASSEMBLY.
2. INSTALLATION - BURIED PIPING SYSTEMS
   - A. VERIFY CONNECTION SIZE, LOCATION, AND INVERT AS INDICATED ON DRAWINGS.
   - B. ESTABLISH MINIMUM SEPARATION FROM OTHER SERVICES PIPING IN ACCORDANCE WITH CODE.
   - C. REMOVE SCALE AND DIRT ON INSIDE OF PIPING BEFORE ASSEMBLY.
   - D. INSTALL WITH A UNIFORM SLOPE OF NOT LESS THAN 1/8 OF AN INCH PER FOOT.
   - E. INSTALL PIPE ON PREPARED BEDDING OF BANK SAND, MINIMUM OF 2" DEPTH ON BOTTOM OF TRENCH UP TO CENTERLINE OF PIPE.
   - F. ROUTE PIPE IN STRAIGHT LINE.
   - G. EXCAVATION:
     - a. EXCAVATE TRENCHES FOR UNDERGROUND PIPING TO THE REQUIRED DEPTH TO ENSURE TWO (2) FOOT MINIMUM COVERAGE OVER PIPING.
     - b. CUT THE BOTTOM OF THE TRENCH OR EXCAVATION TO UNIFORM GRADE.
     - c. LAY OUT ALIGNMENT OF PIPE TRENCHES TO AVOID OBSTRUCTIONS. ASSURE THAT PROPOSED ROUTE OF PIPE WILL NOT INTERFERE WITH BUILDING FOUNDATION BEFORE ANY CUTTING IS BEGUN. SHOULD INTERFERENCE BE FOUND, CONTACT THE ARCHITECT/ENGINEER BEFORE PROCEEDING.
   - H. PIPE COVER AND BACKFILLING:
     - a. BACKFILL SHALL NOT BE PLACED UNTIL THE WORK HAS BEEN INSPECTED, TESTED, AND APPROVED. COMPLETE BACKFILL TO THE SURFACE OF NATURAL GROUND OR TO THE LINES AND GRADES SHOWN ON DRAWINGS. EXCEPT WHERE SPECIAL MATERIALS ARE REQUESTED, USE SUITABLE FRIABLE SOILS FROM OTHER EXCAVATION AS BACKFILL MATERIAL. DO NOT USE PEAT, SILT, MUCK, DEBRIS OR OTHER ORGANIC MATERIALS. DEPOSIT BACKFILL IN UNIFORM LAYERS AND COMPACT EACH LAYER AS SPECIFIED IN DIVISION 2.
     - b. COMPACTING BACKFILL. PLACE MATERIAL IN UNIFORM LAYERS OF PRESCRIBED MAXIMUM THICKNESS AND WET OR DRY THE MATERIAL TO OPTIMUM MOISTURE CONTENT. COMPACT WITH POWER-DRIVEN TAMPERS TO THE PRESCRIBED DENSITY. PLACE REGULAR BACKFILL IN EIGHT (8) INCH MAXIMUM LAYERS, LOOSE MEASURE. COMPACT TO NOT LESS THAN 95% OF MAXIMUM SOIL DENSITY AS DETERMINED BY ASTM D-698 STANDARD PROCTOR.
     - c. RESTORATION. COMPACT BACKFILL, WHERE TRENCHING OR EXCAVATION IS REQUIRED IN IMPROVED AREAS SUCH AS PAVEMENTS, WALKS, AND SIMILAR AREAS, TO A CONDITION EQUAL TO THE ADJACENT UNDISTURBED EARTH, AND RESTORE SURFACE OF THE AREA TO THE CONDITION EXISTING PRIOR TO TRENCHING OR EXCAVATING OPERATION.
   - I. DISPOSAL OF EXCESS MATERIAL:
     - a. REMOVE EXCESS EXCAVATION MATERIAL OR MATERIAL UNSUITABLE FOR BACKFILL. EXCESS MATERIAL CAN BE SPREAD ON GRADE, OR SHALL BE REMOVED FROM SITE AS DIRECTED BY OWNER/ARCHITECT.
3. INSTALLATION - ABOVE GROUND PIPING
   - A. ESTABLISH INVERT ELEVATIONS, SLOPES FOR DRAINAGE TO 1/8 INCH PER FOOT (ONE (1) PERCENT) MINIMUM. MAINTAIN GRADIENTS.
   - B. FURNISH AND INSTALL CLEANOUTS IN SOIL AND WASTE LINES AS REQUIRED BY CODE AND/OR JOB CONDITIONS, AS SHOWN ON THE DRAWINGS AND AS FOLLOWS: AT OR NEAR THE END OF EACH BRANCH AND MAIN DRAINAGE LINE, HORIZONTAL LINES AT INTERVALS AS REQUIRED BY CODE. ALL CLEANOUTS SHALL BE READILY ACCESSIBLE, WITH PLUGS EASILY REMOVABLE FOR CLEANOUT LINES. CLEANOUTS AT THE BASE OF VERTICAL PIPING SHALL BE HELD WITHIN 2'-0" FROM FINISHED FLOOR UNLESS OTHERWISE INDICATED.
   - C. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH MIXTURE OF GRAPHITE AND LINSEED OIL. PROVIDE CLEARANCES AT CLEANOUT FOR SNAKING DRAINAGE SYSTEM.
   - D. ENCASE EXTERIOR CLEANOUTS IN CONCRETE FLUSH WITH GRADE.
   - E. INSTALL FLOOR CLEANOUTS AT ELEVATION TO ACCOMMODATE FINISHED FLOOR.
   - F. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.
   - G. ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT. ROUTE PARALLEL AND PERPENDICULAR TO WALLS.
   - H. INSTALL PIPING TO MAINTAIN HEADROOM. DO NOT SPREAD PIPING, CONSERVE SPACE.
   - I. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.
   - J. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
   - K. PROVIDE CLEARANCE IN HANGERS AND FROM STRUCTURE AND OTHER EQUIPMENT FOR INSTALLATION OF INSULATION.
   - L. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT ACCESSIBLE. COORDINATE SIZE AND LOCATION OF ACCESS DOORS WITH ARCHITECT.
   - M. INSTALL PIPING PENETRATING ROOFED AREAS TO MAINTAIN INTEGRITY OF ROOF ASSEMBLY.
   - N. WHERE PIPE SUPPORT MEMBERS ARE WELDED TO STRUCTURAL BUILDING FRAMING, SCRAPE, BRUSH CLEAN, AND APPLY ONE COAT OF ZINC RICH PRIMER TO WELDING.
   - O. BURRED ENDS OF ALL PIPE AND TUBING SHALL BE REAMED TO THE BORE OF THE PIPE OR TUBE AND ALL CHIPS SHALL BE REMOVED BEFORE INSTALLATION.
   - P. INSTALL BELL AND SPIGOT PIPE WITH BELL END UPSTREAM.
   - Q. SLEEVE PIPES PASSING THROUGH PARTITIONS, WALLS AND FLOORS.
   - R. SUPPORT CAST IRON DRAINAGE PIPING AT EVERY JOINT.
   - S. WATER TEST ALL PIPING PER CODE.
   - T. INSULATE ALL ABOVE SLAB HORIZONTAL SANITARY WASTE PIPING CARRYING AIR-CONDITIONING CONDENSATE WITH MINIMUM 1" FIBERGLASS INSULATION WITH JACKET FROM FLOOR DRAIN, INCLUDING TRAPS, ALL THE WAY TO CHANGE IN DIRECTION TO VERTICAL.
   - U. SLOPE ALL VENT PIPING TO ALLOW FOR DRAINAGE.
   - V. INSTALL A FLOOR CLEAN OUT ACCORDING TO THE FOLLOWING;
     - a. NOT MORE THAN 80' APART IN ALL HORIZONTAL DRAIN LINES.
     - b. AT EACH CHANGE OF DIRECTION GREATER THAN 45 DEG.
     - c. AT THE BASE OF EACH WASTE OR SOIL STACK.
   - W. PROVIDE AND INSTALL A FLOOR SINK NEXT TO EACH HVAC AIR HANDLING UNIT, PUMP, EXPANSION TANK, AND EVERY PIECE OF HVAC EQUIPMENT REQUIRING CONDENSATE REMOVAL IN EVERY MECHANICAL ROOM.
   - X. DRAINAGE-WASTE-VENT COPPER PIPE AND FITTINGS FOR WASTE STUB-OUTS FOR ALL FIXTURE LOCATIONS.
4. RODDING SEWERS
   - A. ALL SANITARY SOIL AND WASTE LINES, BOTH IN THE BUILDING AND OUT, SHALL BE RODDED OUT AFTER COMPLETIONS OF THE INSTALLATION.
   - B. THIS WORK SHALL BE DONE, AS PART OF THE CONTRACT, TO MAKE CERTAIN THAT ALL LINES ARE CLEAR, AND ANY OBSTRUCTION THAT MAY BE DISCOVERED SHALL BE REMOVED IMMEDIATELY. RODDING SHALL BE ACCOMPLISHED BY UTILIZING A ROTARY CUTTER, WHICH SHALL BE FULL SIZE OF PIPE BEING CLEANED. RODDING OPERATIONS SHALL BE WITNESSED BY OWNER'S FIELD REPRESENTATIVE. SUBMIT A CERTIFICATE OF COMPLETION TO OWNER.
5. FIELD QUALITY CONTROL
   - A. SEPARATE TRENCHES FOR WATER LINES, SANITARY, STORM, AND GAS PIPING.
   - B. PIPING SHALL BE LABELED ALONG ENTIRE LENGTH; INDICATING SIZE, CLASS, MATERIAL SPECIFICATION, MANUFACTURERS NAME, AND COUNTRY OF ORIGIN.
   - C. PIPING AND FITTINGS RESTING ON GROUND IS UNACCEPTABLE. KEEP PRODUCTS COVERED. PROVIDE TEMPORARY END CAPS AND CLOSURES ON PIPING AND FITTINGS.
   - D. FOREIGN PIPE AND FITTINGS UNACCEPTABLE.
   - E. PRIOR TO COVER UP WATER PIPE, SANITARY PIPE, AND GAS PIPING SHALL BE PRESSURE TESTED. TESTS SHALL BE WITNESSED BY CONSULTANT AND OWNER. NOTIFY OWNER 48 HOURS PRIOR TO TEST. TEST SHALL BE WITNESSED BY CLIENT PLUMBING TECHNICIAN.
   - F. THE INSIDE OF ALL SANITARY LINES SHALL BE VIDEO RECORDED WITH A CAMERA AND WITNESSED BY OWNER TO FIRST OUTSIDE MANHOLE. PROVIDE TAPE AND/OR DVD UPON CLOSEOUT OF PROJECT. IF ANY OBSTRUCTIONS ARE FOUND THEY SHALL BE REMOVED AND THE LINE SHALL BE VIDEOED AGAIN TO SHOW THE BLOCKAGE HAS BEEN CLEARED.
   - G. FOR ADDITIONS AND RENOVATIONS, USE CAMERA TO LOCATE ROUTING OF UNDERSLAB LINES.
   - H. UPON COMPLETION OF THE SANITARY PIPING SYSTEM, THE CONTRACTOR SHALL NOTIFY ENGINEER AND OWNER TO OBSERVE A SMOKE TEST OF THE SYSTEM. SMOKE TESTING SHALL BE PERFORMED ON SANITARY PIPING SYSTEM TWICE DURING CONSTRUCTION.
   - I. DURING INSTALLATION, NOTIFY AUTHORITIES HAVING JURISDICTION AT LEAST 24 HOURS BEFORE INSPECTION MUST BE MADE. PERFORM TESTS SPECIFIED BELOW IN PRESENCE OF AUTHORITIES HAVING JURISDICTION.
     - a. ROUGHING-IN INSPECTION: ARRANGE FOR INSPECTION OF PIPING BEFORE CONCEALING OR CLOSING-IN AFTER ROUGHING-IN AND BEFORE SETTING FIXTURES.
     - b. FINAL INSPECTION: ARRANGE FOR FINAL INSPECTION BY AUTHORITIES HAVING JURISDICTION TO OBSERVE TESTS SPECIFIED BELOW AND TO ENSURE COMPLIANCE WITH REQUIREMENTS.
   - J. REINSPECTION: IF AUTHORITIES HAVING JURISDICTION FIND THAT PIPING WILL NOT PASS TEST OR INSPECTION, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR REINSPECTION.
   - K. REPORTS: PREPARE INSPECTION REPORTS AND HAVE THEM SIGNED BY AUTHORITIES HAVING JURISDICTION.

STATE OF TEXAS
STEPHEN M. BUTLER
112019
LICENSED PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

N-VIZION
FORMS • ENVIRONMENTS • IMAGES

PLUMBING SPECIFICATIONS

Project Number: 230502
N-vizion Design, LLC - 5900 Shepherd Mountain Cove, Ste. 2-250
Austin, TX 78730 p:512.327.9995 www.n-vizion.net
Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

INFINITY
MEP+S CONSULTANTS
TBPE Registration Number: 18865
5316 Hwy. 290 Service Rd., Suite 130
Austin, TX 78735
512-692-9224
www.infinitymep.com

P0.04

KEYNOTES

KEYNOTE	DESCRIPTION
1	2" SANITARY UP
2	3" SANITARY UP
3	2" VENT UP
4	4" SANITARY UP
5	2-1/2" CW UP.
6	2-1/2" CW (63 GPM) SEE CIVIL FOR CONTINUATION
7	4" SANITARY. I.E. = -4.00' SEE CIVIL FOR CONTINUATION
8	4" SANITARY UP TO 2-WAY CLEANOUT.
9	4" FW-UP.
10	4" FW. REFER TO CIVIL DWGS FOR CONTINUTION.

1 **PLUMBING UNDERFLOOR**
3/16" = 1'-0"
TRUE NORTH

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

Date	Description
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PLUMBING UNDERFLOOR PLAN

Project Number: 230502
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P2.00

KEYNOTES	
KEYNOTE	DESCRIPTION
1	3/4" CW DOWN
2	3/4" HW, CW AND 2" VENT DOWN
3	1-1/2" CW AND 2" VENT DOWN
4	3/4" HW, HWR, CW AND 2" VENT DOWN
5	2" VENT DOWN
6	2-1/2" CW-DN TO BELOW SLAB.
7	4" FW-DN TO BELOW SLAB
8	4"FW-DN TO SPRINKLER RISER.
9	4"FW-DN TO FDC.
10	PROVIDE KNOX BOX 3200 SERIES WITHIN 10 FT OF DOOR AND BETWEEN 4 AND 6 FT ABOVE FINISHED GRADE IN RISER ROOM.
11	CONFIRM RISER ROOM IDENTIFICATION MOUNTED ON EXTERIOR DOOR WITH ARCHITECT. IDENTIFICATION TO INDICATE “RISER ROOM” WITH RED LETTERING.
12	FDC LOCATED APPROXIMATELY 66 FT. FROM SITE HYDRANT. PROVIDE FDC WITH 5” STORZ CONNECTIONS WITH 30 DEG. ELBOWS AND KNOX LOCKING CAPS. NOZZLE CAPS TO BE AT 36” ABOVE FINISHED GRADE.

1 PLUMBING PLAN
3/16" = 1'-0"
TRUE NORTH

PLUMBING FLOOR PLAN

Project Number: 230502
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Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

Date	Description
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10-25-24	Rev1 Permit Set
04-23-25	CITY COMMENTS

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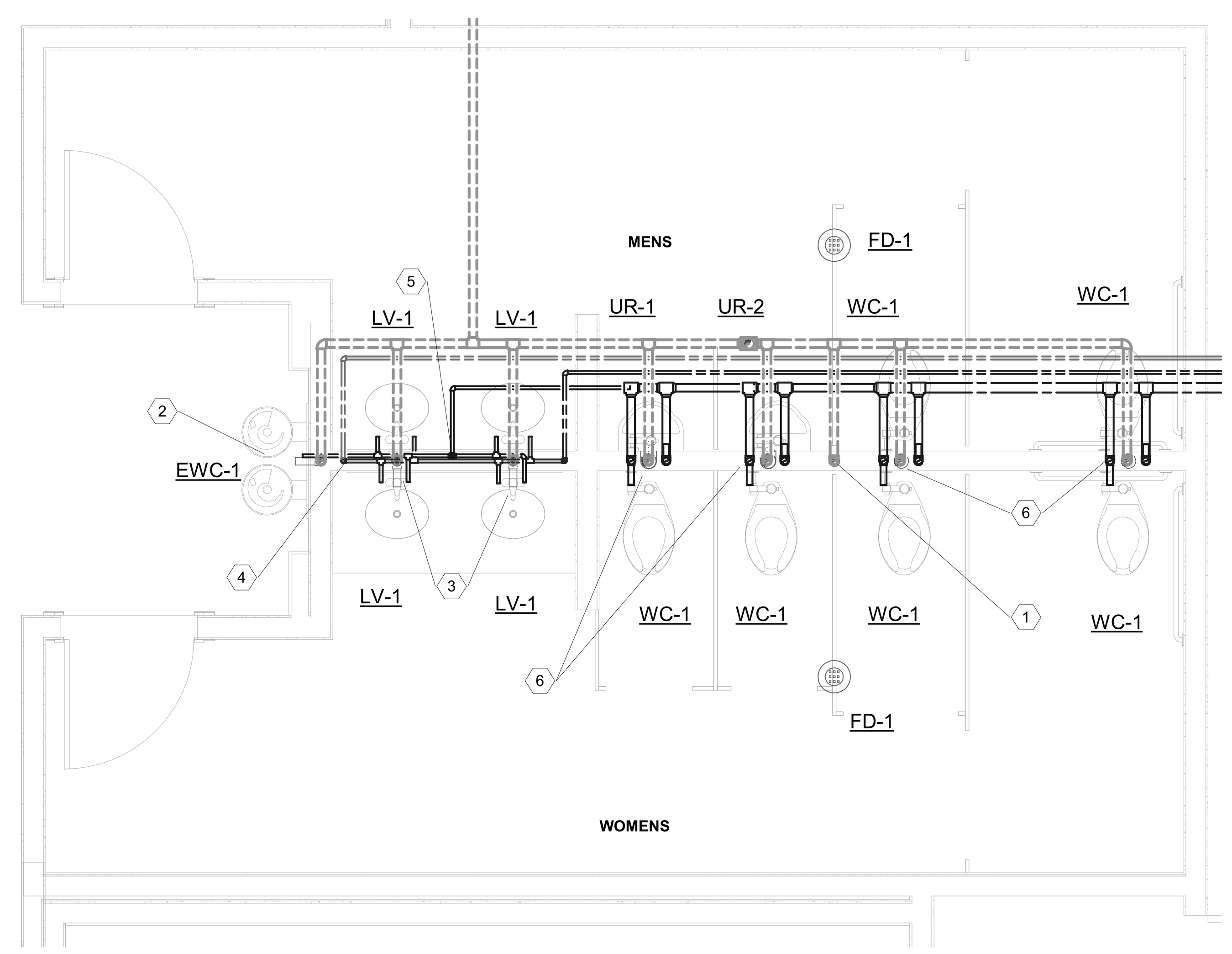
P2.01

KEYNOTES

KEYNOTE	DESCRIPTION
1	2" VENT DOWN
2	3/4" CW AND 2" VENT DOWN
3	2" VENT DOWN. FEED BOTH FIXTURES FROM HW,CW HORIZONAL
4	3/4" HW DOWN
5	3/4" CW DOWN
6	1-1/2" CW AND 2" VENT DOWN



1 ENLARGED PLUMBING PLAN
3/8" = 1'-0"
TRUE NORTH

STATE OF TEXAS
STEPHEN C. BUTLER
112919
LICENSED
PROFESSIONAL ENGINEER
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd.
Leander, TX 78641

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PLUMBING FLOOR PLAN

Project Number: 230502
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Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

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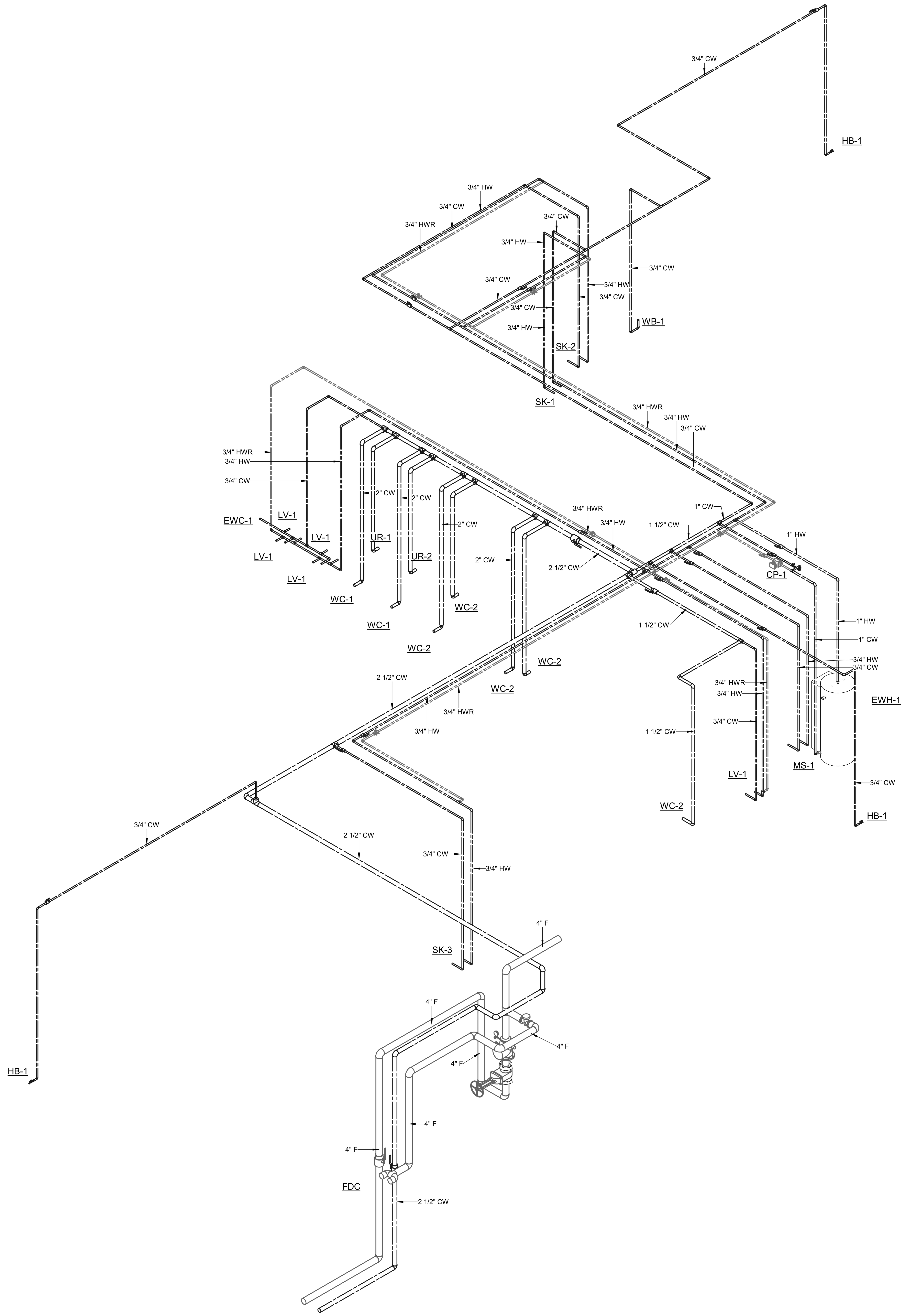
P4.01



1 PLUMBING RISER - DOMESTIC WATER

Weed Corley Fish
Vista Ridge and Bagdad Rd.
Leander, TX 78641

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Date	Description
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10-25-24	Rev1 Permit Set

PLUMBING RISERS

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Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

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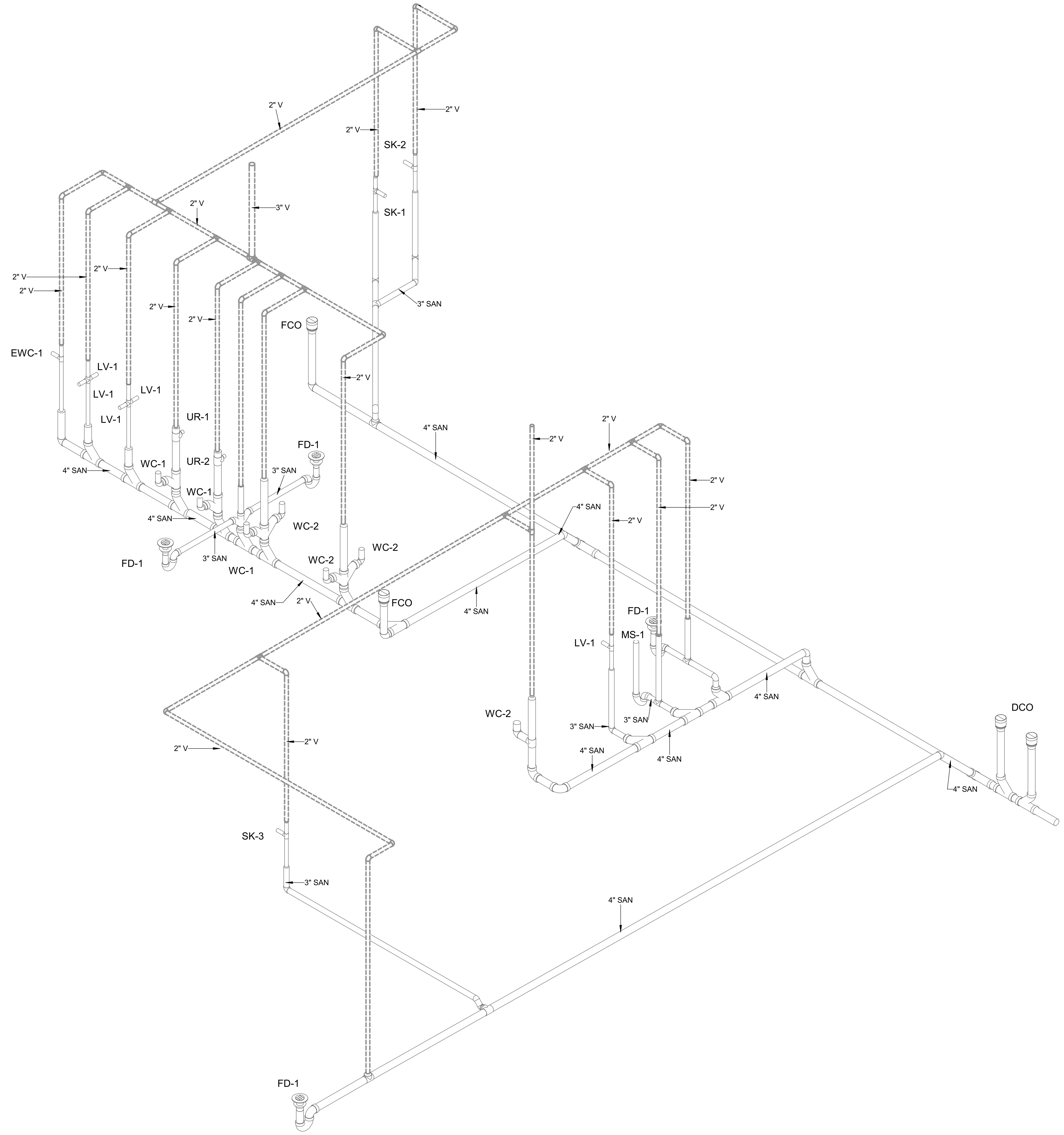
P5.01



1 PLUMBING RISER - SANITARY & VENT

STEPHEN M. BUTLER
112019
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
10/25/2024

Weed Corley Fish
Vista Ridge and Bagdad Rd
Leander, TX 78641

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Date	Description
10-15-24	IFP
10-25-24	Rev1 Permit Set

PLUMBING RISERS

Project Number: 230502
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Registration Nos.: TX PE Firm:F-12229, TX:25489, LA: 9413 MI: 1301069591, NV: 8252, NC: 14883, OH: ARC.1917885

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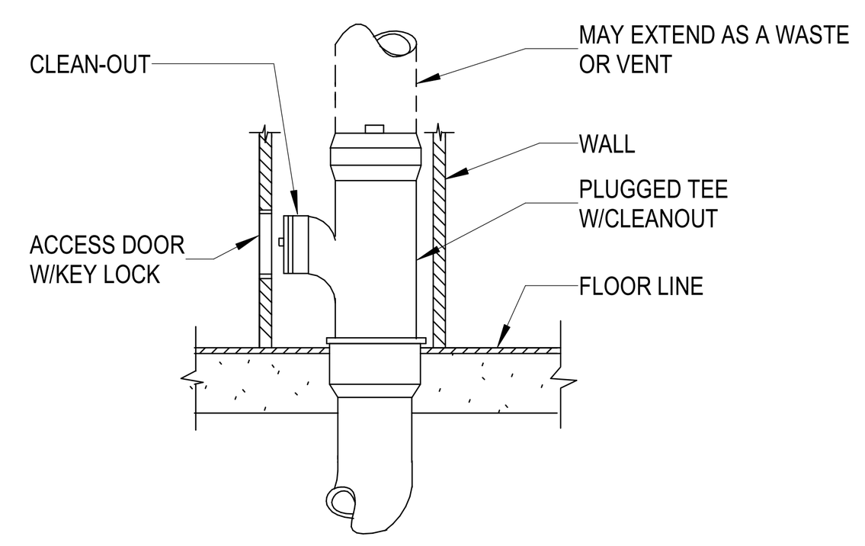
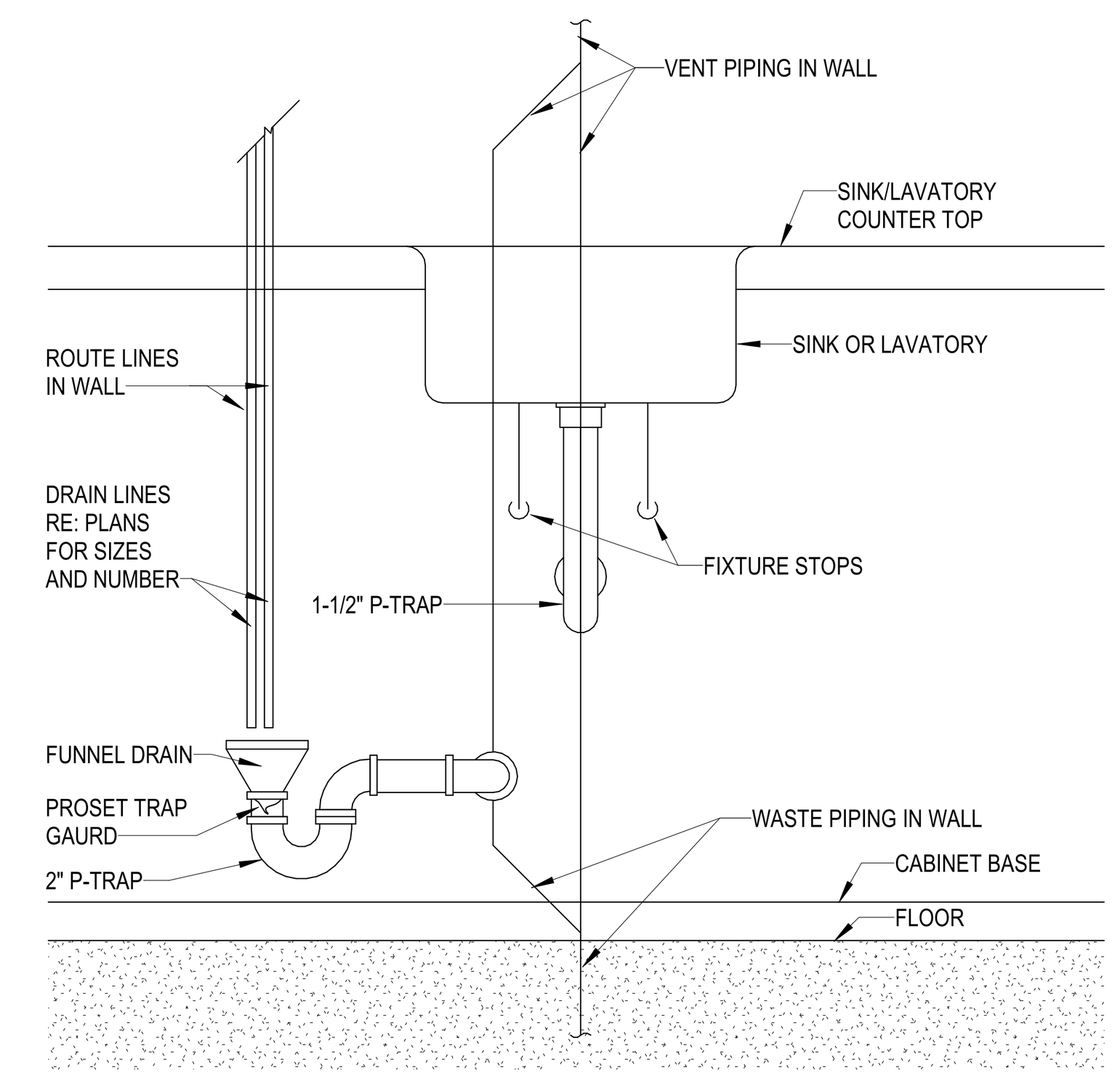
P5.02

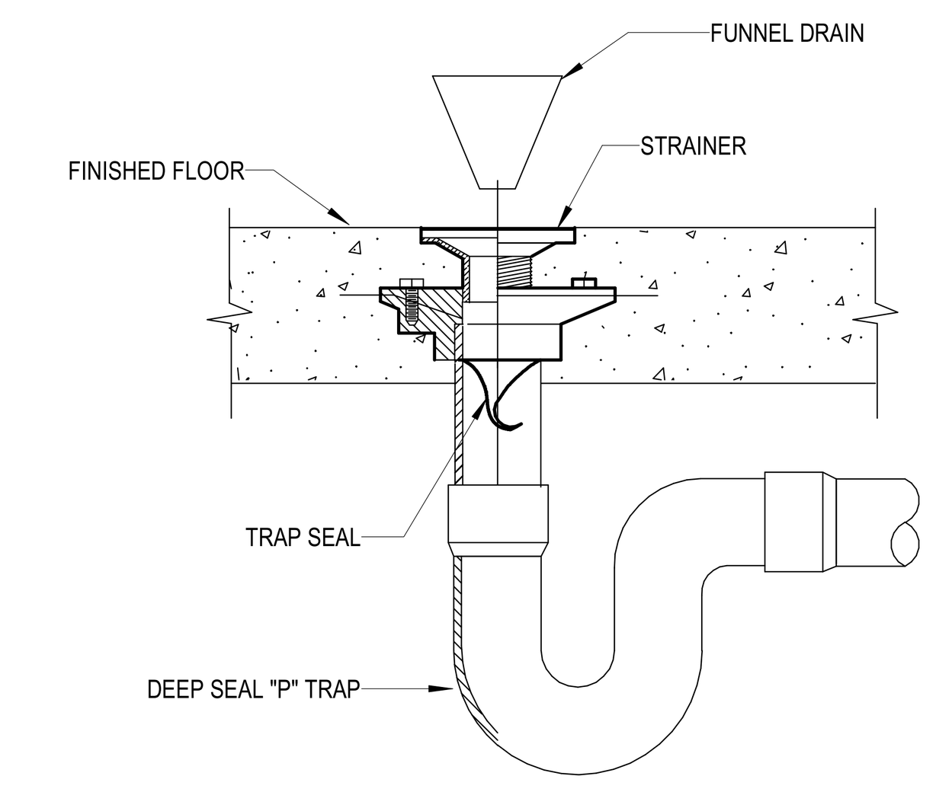


NOTES:
1. BALANCE OF PIPING SAME AS CLEANOUT TO GRADE.

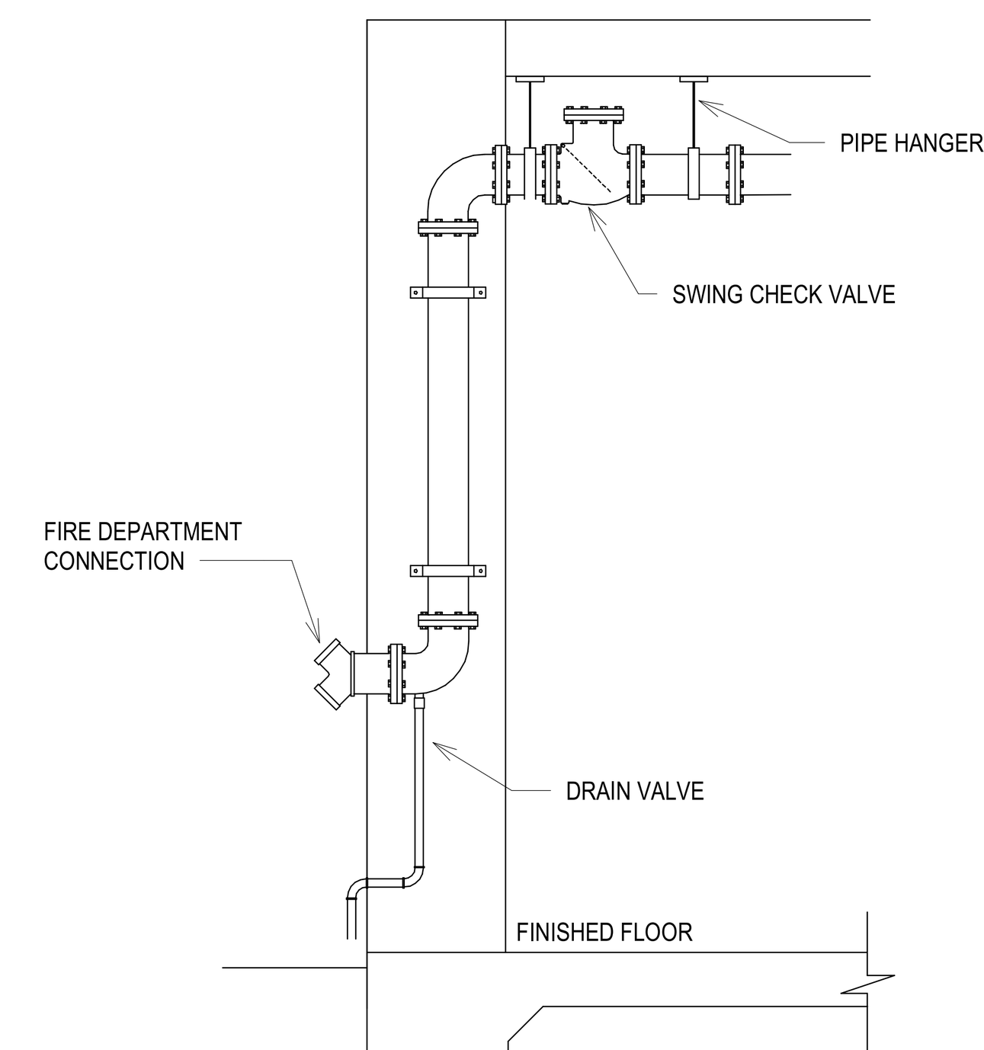
12 WALL CLEANOUT DETAIL
NOT TO SCALE



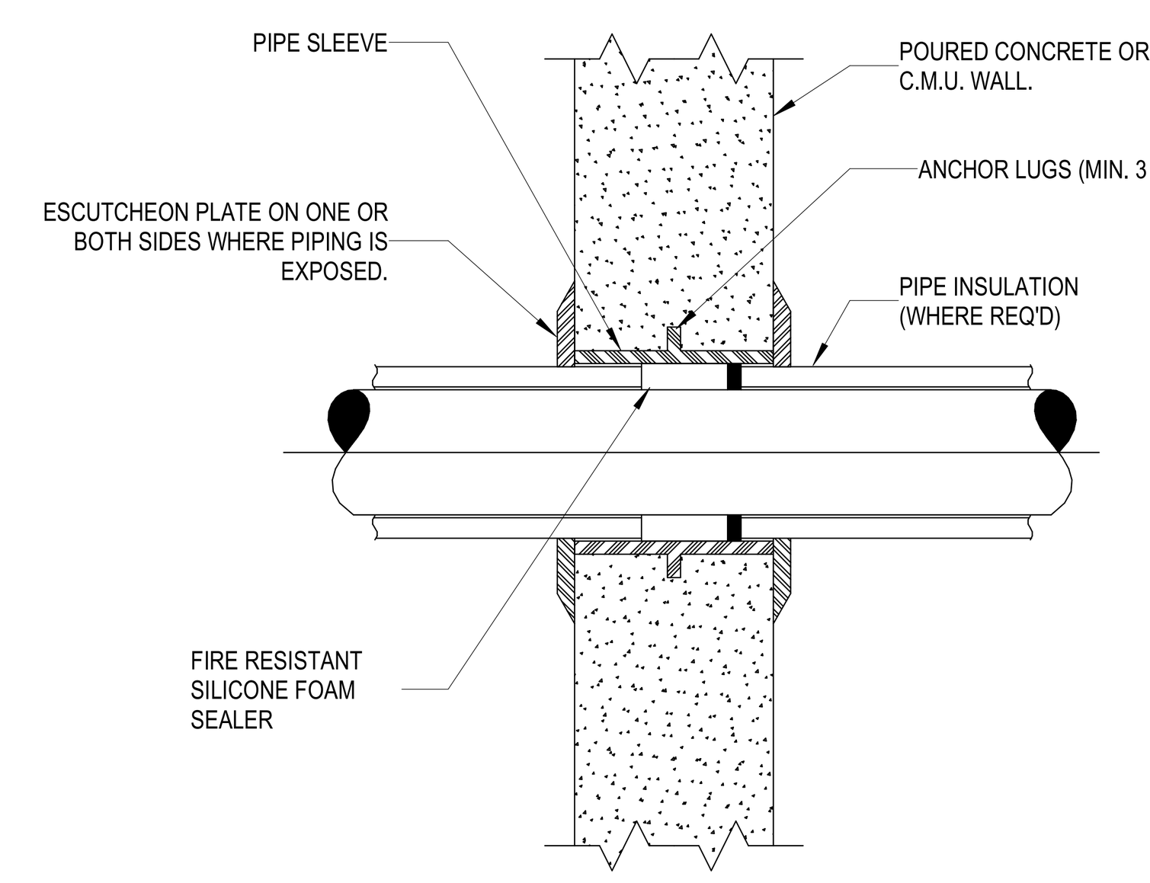
9 INDIRECT RECEPTOR DETAIL
NOT TO SCALE



5 FLOOR DRAIN / FUNNEL DRAIN DETAIL
NOT TO SCALE

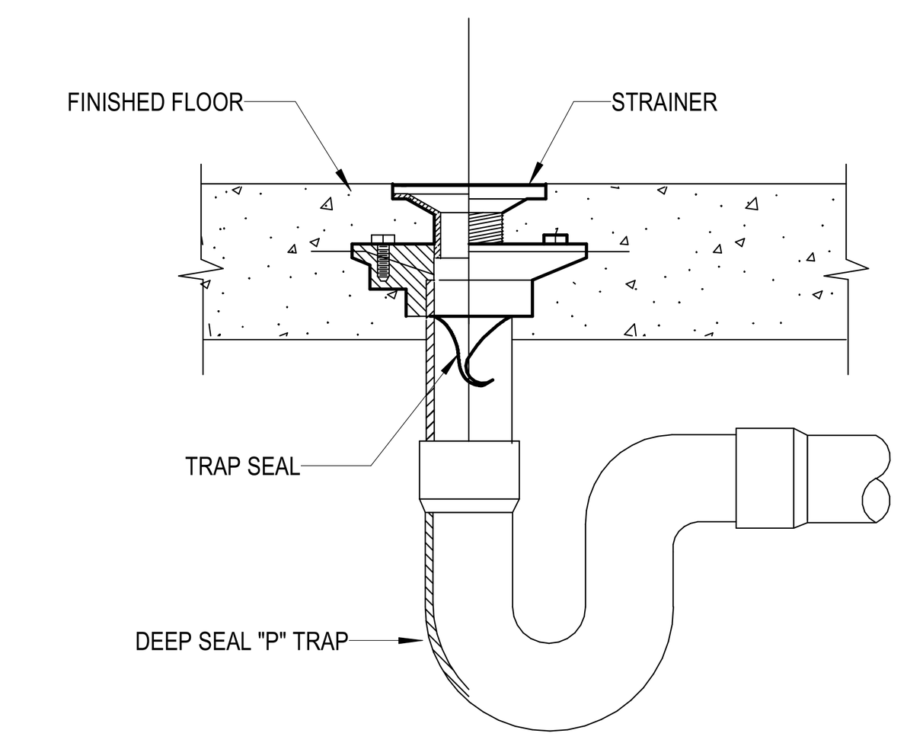


11 FIRE DEPARTMENT CONNECTION DETAIL
1/8" = 1'-0"

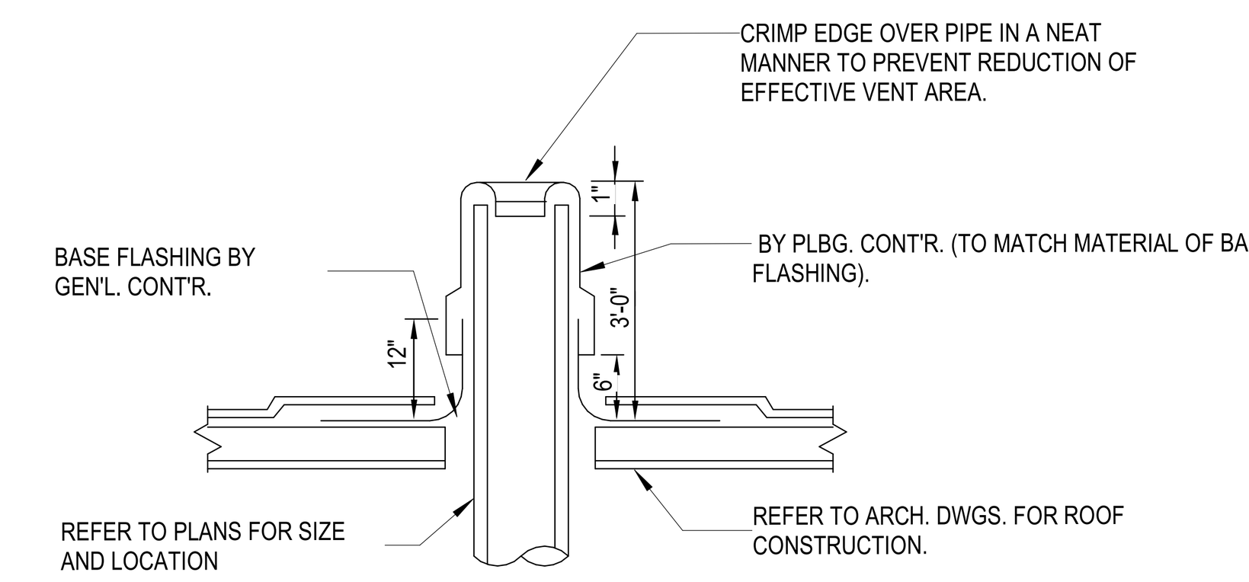


NOTES:
1. FOR INTERIOR WALLS AND BELOW GRADE GROUND TO GROUND WALLS.

8 PIPE SLEEVE THROUGH WALL DETAIL
NOT TO SCALE

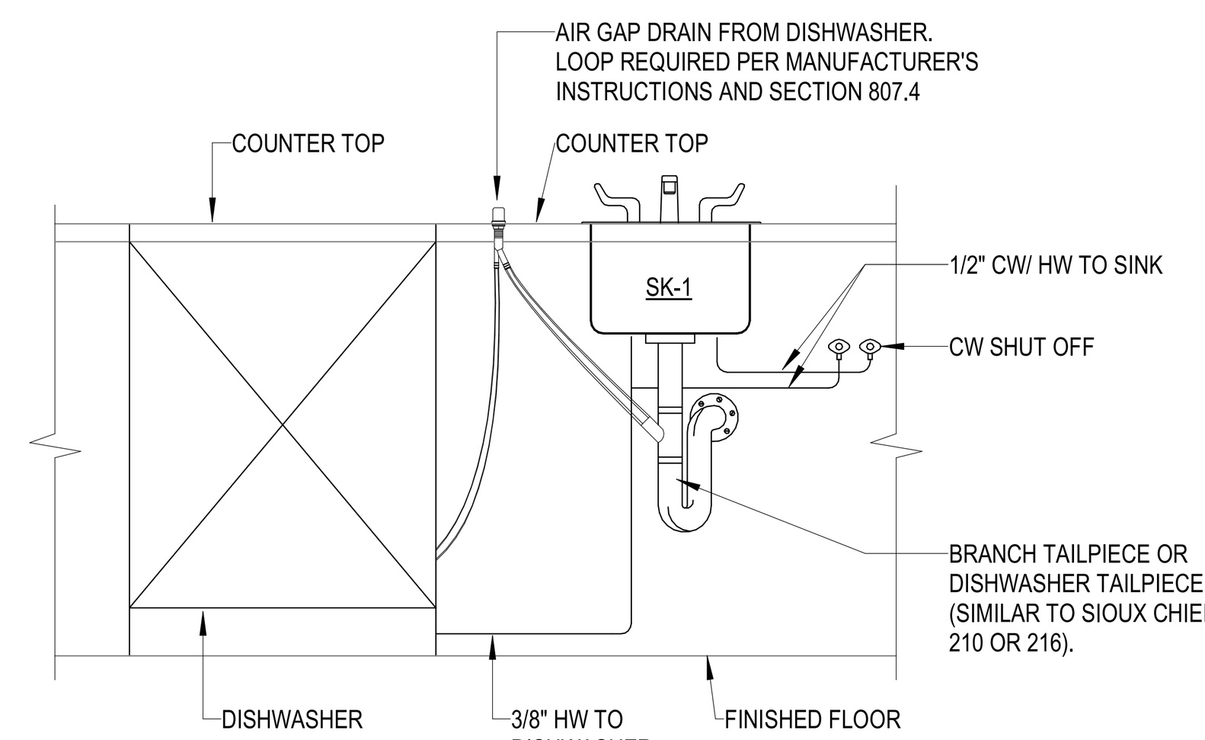


4 FLOOR DRAIN DETAIL
NOT TO SCALE

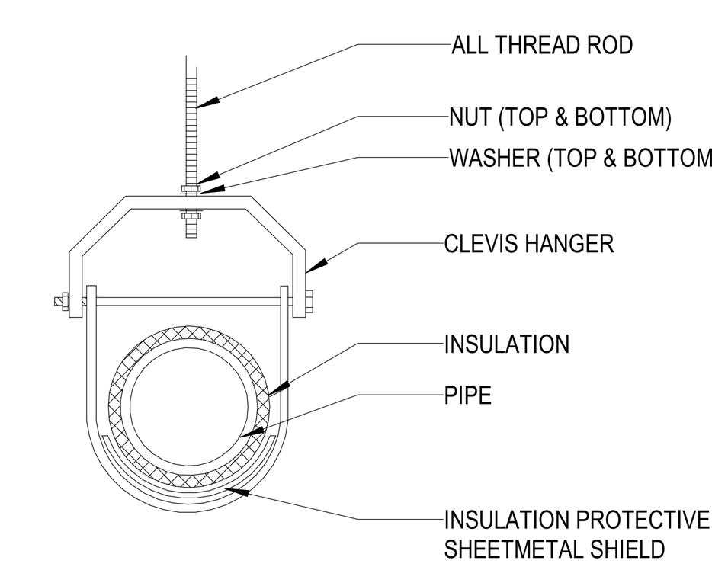


PLUMBING VENT THROUGH FLAT ROOF DETAIL

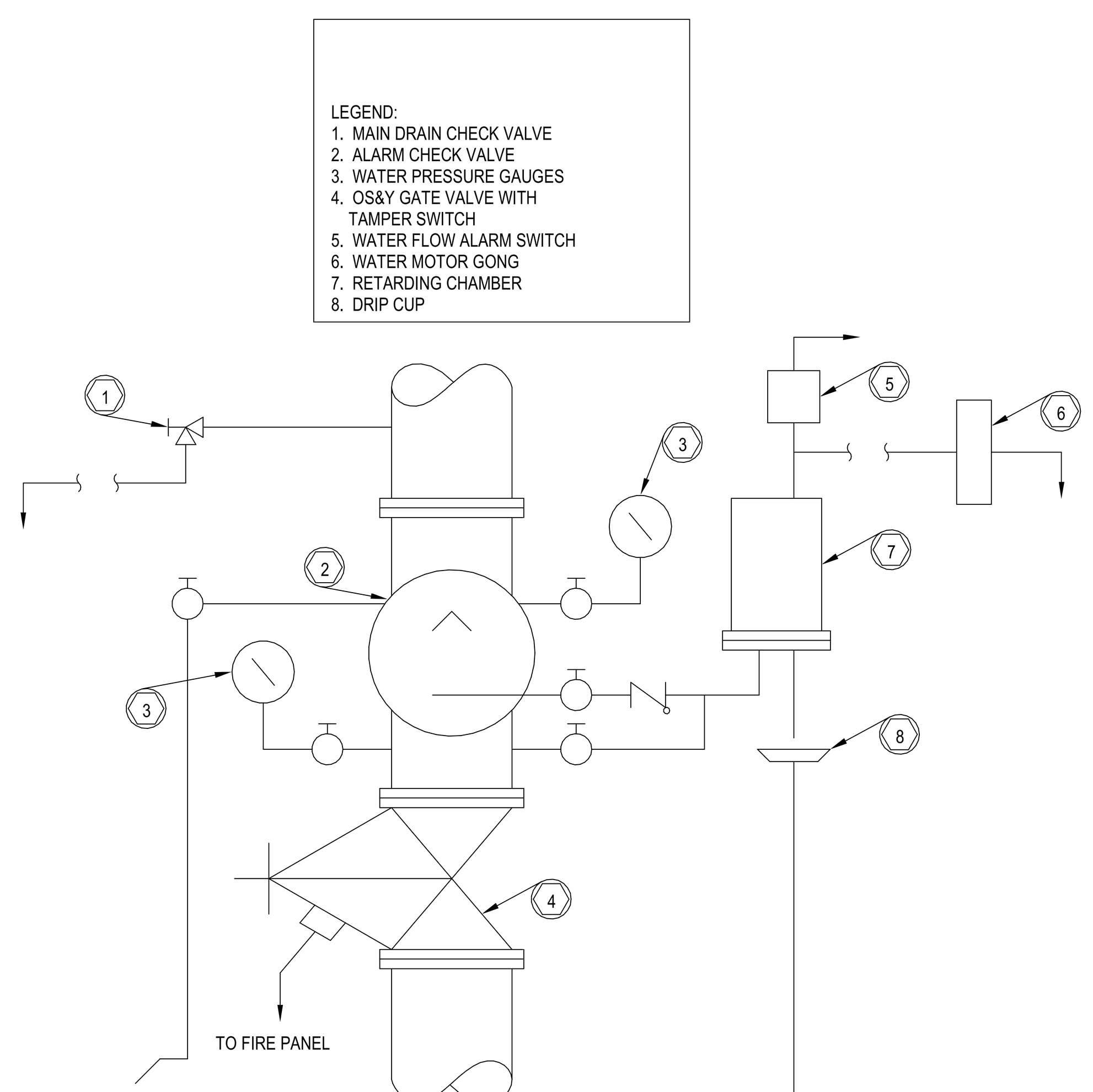
3 VENT THRU ROOF DETAIL
NOT TO SCALE



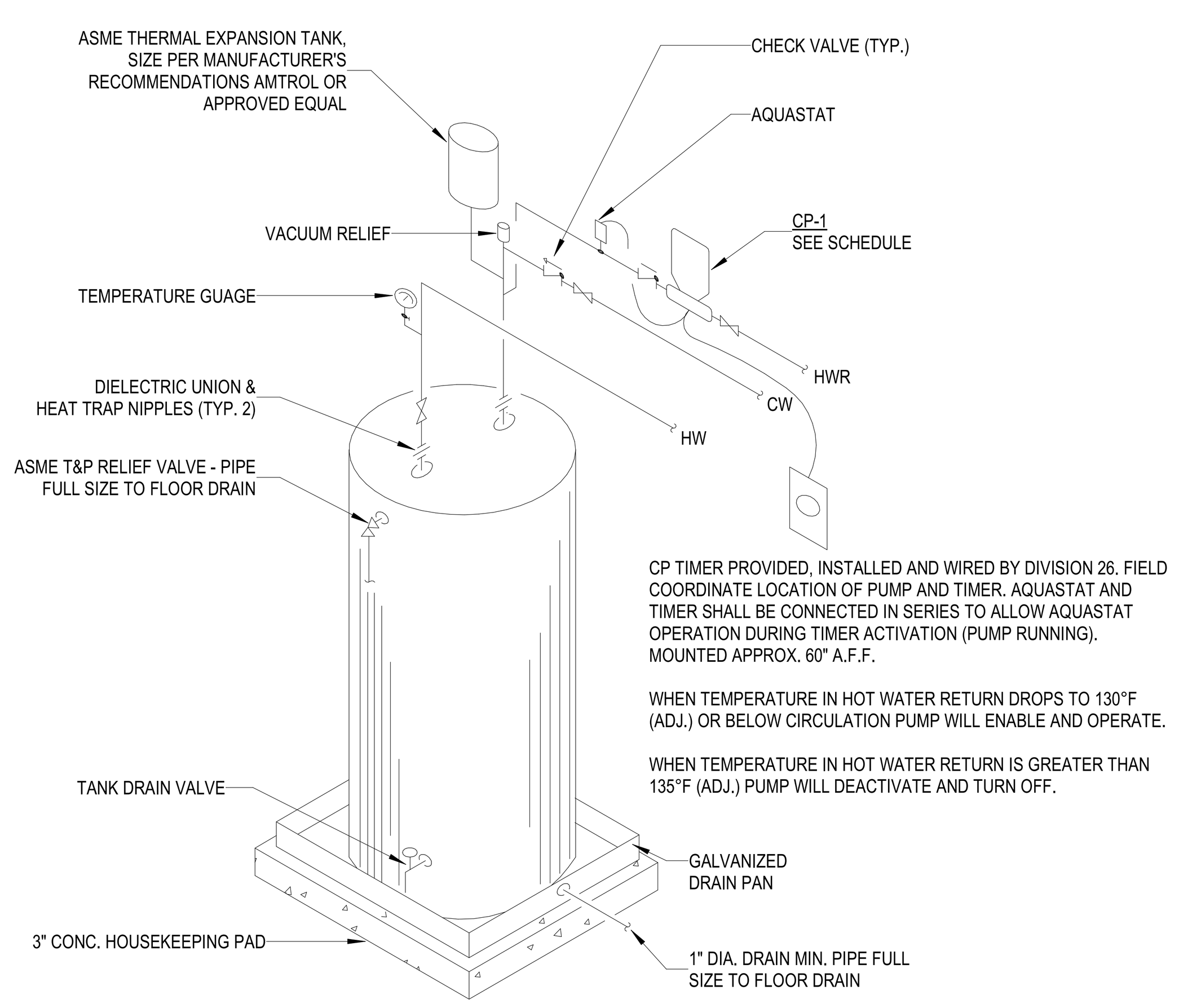
7 DISHWASHER DRAIN TO SINK DETAIL
NOT TO SCALE



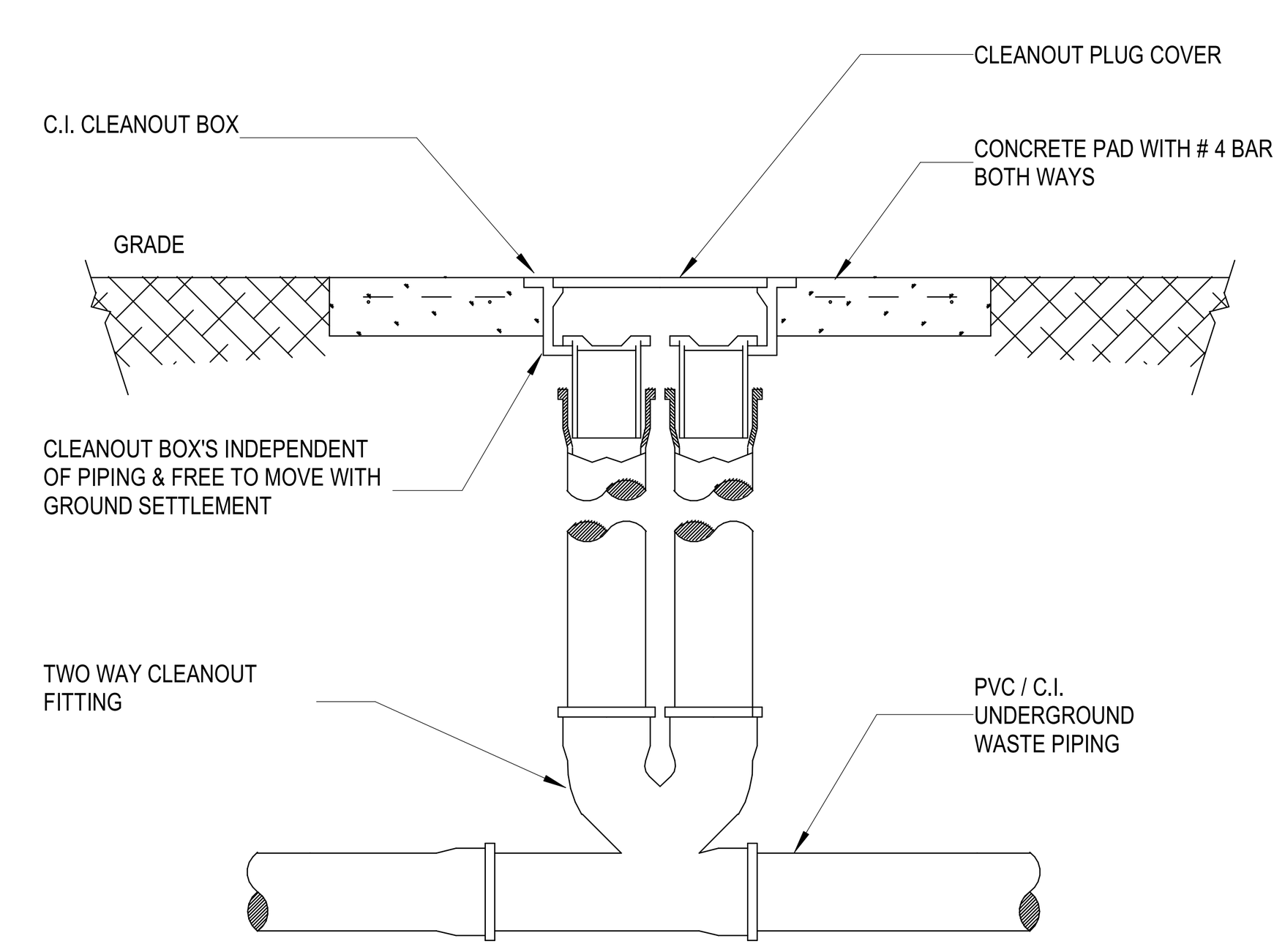
2 TYPICAL CLEVIS HANGER DETAIL
NOT TO SCALE



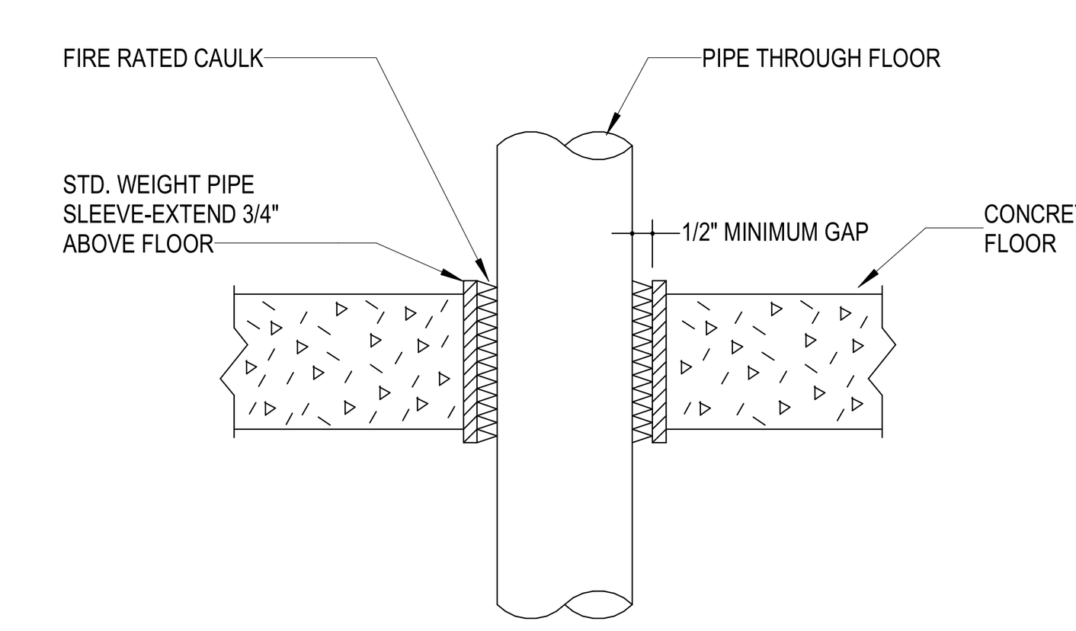
13 ALARM CHECK VALVE DETAIL1
NOT TO SCALE



10 ELECTRIC WATER HEATER W/ HOUSEKEEPING PAD DETAIL
NOT TO SCALE



6 TWO-WAY EXTERIOR CLEANOUT
NOT TO SCALE



1 PIPE SLEEVE THROUGH FLOOR DETAIL
NOT TO SCALE

10/25/2024

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