VICINITY MAP:

CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION

2180 I-25
Castle Rock, CO 80104

CREEKSIDE BIBLE CHURCH

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Volume 1

Architectural, Structural, Mechanical, Plumbing, and Electrical

PERMIT ISSUE SET
PROJECT NUMBER: 24010
DATE: 11/18/2024

ARCHITECTS/ INTERIOR DESIGNERS

ABBREVIATIONS:

Abbreviation	Meaning
ACT.	ACOUSTIC TILE
A.B.	ANCHOR BOLT
ACOUS.	ACOUSTIC(AL)
A.C.	AIR CONDITIONING
ADA	AMERICANS WITH DISABILITIES ACT
ADJ.	ADJUSTABLE
A.F.F.	ABOVE FINISHED FLOOR
AL.	ALUMINUM
ALT.	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH.	ARCHITECT(URAL)
ASPH.	ASPHALT
BH.	BULKHEAD
B.S.	BOTH SIDES
B & B	BOARD & BATTEN
BITUM.	BITUMINOUS
BLDG.	BUILDING
BLK.	BLOCK
BM.	BEAM
BOT.	BOTTOM
BRG.	BEARING
BSMT.	BASEMENT
B.S.	BUILDING SECTION
COL.	COLUMN
CAB.	CABINET
(C)	CAULK
CI	CAST IRON
C.I.P.	CAST IN PLACE
C.J.	CONTROL JOINT
CLG.	CEILING
C.M.U.	CONCRETE MASONRY UNIT
CONC.	CONCRETE
CONN.	CONNECTION
CONT.	CONTINUOUS
CONSTR.	CONSTRUCTION
CNTR.	COUNTER
C.T.	CERAMIC TILE
CLOS.	CLOSET
C.O.A.	CITY OF AURORA
CLSRM.	CLASSROOM
D.A.	DOUBLE ACTING
DBL.	DOUBLE
DTL.	DETAIL
D.F.	DRINKING FOUNTAIN
DIA.	DIAMETER
DN.	DOWN
DRWG.	DRAWING
EA.	EACH
E.J.	EXPANSION JOINT
ELEC.	ELECTRIC
EL.	ELEVATION
ELEV'R.	ELEVATOR
EQ.	EQUAL
EQUIP.	EQUIPMENT
E.W.	EACH WAY
E.W.C.	ELECTRIC WATER COOLER
EXH.	EXHAUST
E.F.	EXHAUST FAN
(E)	EXISTING
EXST.	EXISTING
EXP.	EXPANSION
EXT.	EXTERIOR
E.O.S.	EDGE OF SLAB
F.B.O.	FURNISHED BY OWNER
F.B.T.	FURNISHED BY TENANT
F.D.	FLOOR DRAIN
FDN.	FOUNDATION
F.E.	FINISHED END
F.E.C.	FIRE EXTINGUISHER CABINET
F.H.C.	FIRE HOSE CABINET
FIN.	FINISH(ED)
F.I.O.	FURNISHED & INSTALLED BY OWNER
F.I.T.	FURNISHED & INSTALLED BY TENANT
FLR., FL.	FLOOR
FT.	FOOT OR FEET
FTG.	FOOTING
FUT.	FUTURE
GA.	GAUGE
GALV.	GALVANIZED
G.C.	GENERAL CONTRACTOR
G.S.	GALVANIZED STEEL
GL.	GLASS
GND.	GROUND
GR.	GRADE
GYP.	GYPSUM
H. & S.	HARDEN & SEAL
H.B.	HOSE BIBB
H.C.	HOLLOW CORE
HDBD.	HARDBOARD
HDWR., HW.	HARDWARE
HDWD.	HARDWOOD
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
HT.	HEIGHT
HTR.	HEATER
HD.	HEAD
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
JM.	JAMB
JAN.	JANITOR
JST.	JOIST
JT.	JOINT
KIT.	KITCHEN
KS	KNEE SPACE
LAB.	LABORATORY
LAM.	LAMINATE(D)
LAV.	LAVATORY
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
LT.	LIGHT
L.W.C.	LIGHT WEIGHT CONCRETE
LVL.	LEVEL
MAS.	MASONRY
MATL.	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
M.H.	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTG.	MEETING
MTL.	METAL
MEZZ.	MEZZANINE
(N)	NEW
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NOM.	NOMINAL
O.A.	OVER ALL
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OFC.	OFFICE
O.H.	OVER HEAD
O.H.	OPPOSITE HAND
OPG.	OPENING
OPP.	OPPOSITE
PERF.	PERFORATED
P.F.	PREFINISHED
P.C.	PRECAST CONCRETE
P.I.P.	POURED IN PLACE
P.L.	PROPERTY LINE
PLMG.	PLUMBING
PR.	PAIR
P.S.	PRESSED STEEL
PT.	PRESSURE TREATED
PT.	POINT
PTN.	PARTITION
(P), P, P'TD	PAINTED
Q.T.	QUARRY TILE
REL.	RELOCATED
REV.	REVERSE
RAD	RADIUS
R., RI.	RISER
(R)	REMOVE
R.B.	RUBBER BASE
R.D.	ROOF DRAIN
RE:	REFER
REQD.	REQUIRED
REINF.	REINFORCING
REFL.	REFLECTED
RTU	ROOF-TOP UNIT
RM.	ROOM
R.O.	ROUGH OPENING
R.O.W.	RIGHT-OF-WAY
(S)	SEALANT
S.A.T.	SUSPENDED ACOUSTICAL CEILING
SCHED.	SCHEDULE
S.F.	SQUARE FEET/FLOOR
SHT.	SHEET
SIM.	SIMILAR
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SP.	SPACES
SPEC.	SPECIFICATION
SQ.	SQUARE
S/S	STAINLESS STEEL
STA.	STATION
STD.	STANDARD
STOR.	STORAGE
STRL.	STRUCTURAL
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
S, ST.	STAINED
T., TR.	TREAD
T.&B.	TOP & BOTTOM
T.&G.	TONGUE & GROOVE
TEL.	TELEPHONE
THK.	THICKNESS
T.O.J.	TOP OF JOIST
T.O.B.	TOP OF BEAM
T.O.C.	TOP OF CONCRETE
T.O.F.	TOP OF FOOTING
T.J.	TOOL JOINT
T.O.M.	TOP OF MASONRY
TOPO.	TOPOGRAPHY
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
UTIL.	UTILITY
U.B.C.	UNIFORM BUILDING CODE
VAR.	VARIES
V.P.	VENT PIPE
VERT.	VERTICAL
VEST.	VESTIBULE
V.C.T.	VINYL COMPOSITION TILE
V.W.C.	VINYL WALL COVERING
W.H.	WATER HEATER
W/	WITH
W.C.	WATER CLOSET
WD.	WOOD
W/O	WITHOUT
W.P.	WATERPROOF
WSCT.	WAINSCOT
WT.	WEIGHT
W.W.F.	WELDED WIRE FABRIC
℄	CENTERLINE
<	ANGLE
[	CHANNEL
Ø	DIAMETER
#	NUMBER
PL	PLATE
@	AT

MATERIALS:

BACKFILL	BRICK	RIGID INSULATION	FINISHED WOOD
COMPACTED FILL	CONCRETE MASONRY UNIT (C.M.U.)	BATT INSULATION	ACOUSTICAL PANEL
GRAVEL / STONE	STEEL	GYPSUM BOARD	
CONCRETE	METAL STUD	PLYWOOD OR OSB	
GROUT / MORTAR	2X WOOD BLOCKING OR FRAMING	PARTICLE BOARD	

SYMBOLS:

ROOM NAME AND NUMBER (OFFICE #)	SECTION OR DETAIL	ENLARGED PLANS
DOOR IDENTIFIER	SECTION OR DETAIL (BUILDING SECTION)	PLAN DETAIL
WINDOW IDENTIFIER	ELEVATION	
PARTITION TYPE	SPOT ELEVATION (F. F. EL. 100'-0")	
KEYNOTE		
REVISION NUMBER		

GENERAL NOTES:

1. The general contractor shall be responsible for obtaining all required building permits, and owner shall pay for all applicable fees/assessments therefrom.
2. All work shall be performed in strict conformity with all local laws, ordinances, rules and regulations of government authorities having jurisdiction.
3. Before commencement of the work and prior to ordering any materials, the contractor and his subcontractors shall field verify all dimensions and existing conditions shown in the contract documents. Any deviations, discrepancies and/or conflicts shall be reported immediately to the architect.
4. These drawings require complete and operational building systems / components. Any miscellaneous items or materials not specifically noted, but required for the proper execution of the work, shall be designed & provided by the contractor in accordance with all applicable laws and regulations. Contractor to provide owner with all required warranties for these systems at project closeout.
5. Existing conditions and dimensions shown on the drawings are based on existing documents provided to the architect by the owner. It is the contractor's responsibility to field verify dimensions for both quantity take off's and construction. Should a discrepancy occur between the contract documents and existing conditions, immediately notify the architect in writing.
6. Do not scale drawings! Dimensions govern. All floor plan dimensions are from face of finish, face of masonry, face of concrete, or face of existing finishes to remain, typical U.O.N.
7. Examination of the site: the contractor shall visit the job site with his subcontractors before bid is submitted to the owner. Failure to visit the site will in no way relieve the contractor from necessity of furnishing materials or performing work required to fully complete work in accordance with the drawings without additional cost to the owner.
8. The contractor shall perform high quality professional work using only workmen and workwomen who are skilled and experienced in the specific tasks required. Join materials with uniform accurate fits so they meet with neat straight lines. Install exposed materials appropriately level, plumb, and at accurate right angles, or flush with adjoining materials as appropriate for the conditions.
9. The contractor shall arrange to accommodate "not in contract" and " by owner" work.
10. Work to be coordinated with the owner during construction:
    - A. Computer equipment
    - B. Telephone system and data wiring
    - C. AV equipment and systems
    - D. Furniture
    - E. All low-voltage systems
11. Protect all building required exits from obstruction during construction. Remove all debris from building at the end of each working day. Provide temporary fire extinguishers available to workmen as needed to minimize fire.
12. Patch all finishes disturbed by general construction and/or installation of new construction, including plumbing, mechanical and electrical. Patch to match similar adjacent surfaces U.O.N. Finished patchwork shall bear a new appearance upon completion.
13. General contractor is not responsible for testing or removing any hazardous materials, if any are present on the facility.
14. Removal of asbestos material (if any) by owner.
15. Prior to interfacing with any existing system or materials, i.e. Roof, electrical panels, paging systems, etc., the contractor shall meet with the owner's representative to document the condition and operational status of the existing systems prior to commencing any work on the system.
16. Provide blocking as a required part of partition framing for attachment of, (including but not limited to), wall cabinets, mirrors, grab bars, marker & tackboards, plumbing equipment, fire extinguisher, drapery tracks, magnetic hold opens, etc..
17. When information is inadequate, request further instruction before proceeding.
18. All dissimilar materials, as depicted in these contract drawings require caulk and/or sealant at all adjoining joints as detailed or indicated, U.O.N.
19. Provide metal corner bead at all outside corners and metal "L" shape trim comparable to USG 200B where gypsum board joins dissimilar material.
20. All floor elevations indicated for existing construction depicted herein are based upon existing drawings or surveys. Discrepancies should be brought to the architects attention immediately prior to commencing with work.
21. Where a conflict occurs between or within standards and drawings, the more stringent or higher quality requirements shall apply. The precedence of the construction documents is in the following sequence:
    - A. Addenda and modifications to the drawings take precedence over the original construction documents.
    - B. Should there be a conflict within the drawings, the architect shall decide which stipulation will provide the best installation and his decision shall be final.
    - C. In the drawings, the precedence shall be drawings of a larger scale over those of a smaller scale, figured dimensions over scaled dimensions, and noted materials over graphic indications.
22. Bidders shall base their bid upon the use of any of the items specifically named in the specification or on the drawings, or as approved in an addendum issued by the architect. No changes or substitutions will be considered after the award of the contract except those which will result in a better job, a savings to the owner, or both.
23. Before ordering any material or doing any work, the contractor shall verify all measurements at the project and shall be responsible for the correctness of same. No extra charge or compensation shall be allowed on account of difference between actual dimensions and the measurements indicated on the drawings.
24. The Contractor shall submit all proposed substitutions to the Architect in writing with sufficient information, samples and difference in cost for an "informed evaluation." Substitutions must be approved in writing before they may be used.
25. The Contractor shall immediately, when notified of a proposed change, develop cost and schedule ramifications for Owner approval/acceptance.
26. SHOP DRAWINGS
    - A. The Contractor shall submit shop drawings, product data, and/or samples as required to explain work of all trades.
    - B. Architect shall review shop drawings and samples with reasonable promptness so as to cause no delay. Such review is only for conformity to the design concept for the project and with the information given in the Contract Documents. The review of a separate item shall not indicate a review of an assembly in which the item functions. Shop drawings that contain excessive errors or that are incomplete will be returned for re-submittal, and any delay thereby will be the responsibility of the Contractor.
    - C. The Contractor shall make any revisions as noted by the Architect and if indicated on the review stamp, re-submit corrected shop drawings for review and/or record.
    - D. The Architect's review of shop drawings or samples shall not relieve the Contractor of responsibility of any deviation from the Contract Documents unless the Contractor has informed the Architect in writing of such deviation at the time of submission, nor shall the Architect's review relieve the Contractor of responsibility for errors and omissions in the shop drawings or samples.
    - E. No portion of the work requiring shop drawings or sample submissions shall be commenced until the submission has been reviewed by the Architect.
27. Submit shop drawings and product data in accordance with project specifications' submittal requirements.
    - A. Shop Drawings required for work under this project:
        1 Finish Carpentry and Millwork
        2 New Doors, Frames and Hardware
        3 Electrical (see Electrical Drawings)
        4 Mechanical (see Mechanical Drawings)
        5 Carpet and other floor finishes
        6 Paint
        7 Plumbing Accessories
        8 Windows and glazing
        9 Steel Frame and Anchor Bolts
        10 Miscellaneous Metals
        11 Site Screen walls
    - B. Product Data required for work under this project:
        1 Painting Materials List
        2 Electrical (see Electrical Drawings)
        3 Plumbing
        4 Plumbing Accessories
        5 Stucco
        6 Hardware
        7 Finish materials
        8 Steel Framing
        9 Appliances
        10 Elevator Components and System
        11 Site Screen walls
    - C. Samples required for work under this project:
        1 Paint Finishes (12" x 12")
        2 Wood and Plastic Laminate Finishes
        3 VCT flooring / Tile Flooring / Carpet/ Rubber Base
        4 Solid Surface Counter Tops and Faces (Granite)
        5 Stucco
        6 CMU
        7 Glass and Frames
        8 Sheet Metal Colors
        9 Sealant and Grout Colors
        10 Site Screen walls
    - D. Separate submittals:
        1 Fire Alarm and Detection shop drawings shall be submitted for review and approval prior to installation of devices.
        2 Fire Protection shop drawings shall be submitted for review and approval prior to installation of devices.
28. All Contractor requests for substitution of specified items shall be made in accordance with the following:
    - A. Submit two (2) copies of each request. Submit separate request for each substitution. Document each request with complete data substantiating compliance of proposed substitution with requirements of the Contract Documents. Submit substantiating data with drawings and samples as appropriate, including:
        1 Reason for substitution request.
        2 Catalogs and/or drawings showing capacities, functions, dimensions, construction details, methods of assembly, connections and installation of the work.
        3 Laboratory test data.
        4 Comparison of the qualities of the proposed substitutions with that specified.
        5 Changes required in other elements of the work because of substitution.
        6 Effect on the construction schedule.
        7 Detailed cost data acceptable to the Architect comparing the proposed substitution with the product specified.
        8 Any required licensing fee or royalties.
        9 Availability of maintenance service and source of replacement materials.
29. The Contractor shall upon completion remove all paint from where it has spilled, splashed, or splattered on surfaces, including light fixtures, diffusers, registers, fittings, etc. The Contractor shall remove all electrical switch and outlet plates, surface hardware, etc., before painting, protecting and replacing same when painting is complete.
30. Application for all painted surfaces shall be not less than a two-coat system, unless otherwise noted, using the complete paint system (sealer, primer, finish coat, etc.) as recommended by the paint manufacturer and "The Modern Guide to Painting Specifications," latest edition, as a minimum standard.
31. Contractor shall be responsible for field inspection of the surfaces to receive paint and assuring that such surfaces are acceptable for application prior to initiating actual finish work. No paint or finish shall be applied on any surface which is unfinished, not properly prepared or otherwise not fully acceptable for the finish application. All roughness or other irregularities that may appear after priming shall be thoroughly sanded out or otherwise corrected to provide a smooth, even surface for painting and finishing. Finished application and wall appearance shall be free of surface and color irregularities. By finishing these surfaces, the finish contractor accepts the responsibility of the final product.
32. Contractor shall take care to protect existing finished surfaces, millwork, hardware, equipment and fixtures which are to remain.
33. Contractor shall take care to protect newly installed materials, millwork, built-ins and finishes.
34. The Contractor shall refer to the Contract Documents in their entirety when determining the specific locations of fixtures, receptacles and equipment. Should any discrepancies or ambiguities appear among the Contract Documents, the Contractor shall notify the Architect immediately for clarification.
35. FINAL CLEAN UP. The contractor and his subcontractors shall perform final cleanup and turn over the project to the Owner:
    - A. Free from all construction debris, scraps, materials and equipment.
    - B. Glass: Both sides of glass shall be carefully and thoroughly cleaned by professional window cleaners and left absolutely clean and free from paint, labels, grease, dirt, etc.
    - C. Millwork: All cabinets, doors, countertops and built-ins wiped down and free of dirt, grease and other foreign material.
    - D. Hardware: Clean and polish hardware and leave clean and free from paint, grease, dirt, etc.
    - E. Floors: Thoroughly clean floors. Mop resilient floor coverings with warm water and mild detergent as recommended by manufacturer of the tile, then thoroughly machine buff. Damp mop or scrub concrete floors as required to leave them thoroughly clean when building is turned over to the Owner.
    - F. Equipment: Carefully and thoroughly clean items of equipment, mechanical, electrical, cabinets, ductwork, etc.
    - G. Plumbing: Clean and polish plumbing fixtures, fittings and exposed plated piping. Wipe clean and free from paint, grease, dirt, etc.
36. This building is required to be fully sprinklered per NFPA 13 and provided with a manual audible and visual fire alarm system per NFPA 72. The contractor shall include the services of the respective system to fully design. Obtain approvals and build complete functional systems, fire alarm system shall be provided with two telephone lines to a monitoring company.
37. An assistive listening system shall be provided by the owner to meet the requirements of the ADA, ANSI, and accessibility requirements of the International Building Code.
38. This building is required to comply with IFC Section 510.
39. Fire extinguishers shall be a minimum of 4-a rated, 10-lb. ABC dry chemical mounted not less than 3 feet nor more than 5 feet from the floor to the top of the mounting bracket or cabinet.
40. Fire block offset walls, soffits, chases, dropped ceiling areas and along stair stringers per IBC 718.
41. Textile wall coverings and ceiling finishes shall have a flame spread index as shown in IBC Table 803.11 .
42. Remove and replace any broken sidewalk, curb or gutter, or install the same if sections are missing.
43. MOISTURE CONTROL (DURING CONSTRUCTION) DENVER GREEN CODE 1001.3.1.6 MOISTURE CONTROL - THE FOLLOWING ITEMS TO CONTROL MOISTURE SHALL BE IMPLEMENTED DURING CONSTRUCTION:
    a. Materials stored on-site, or materials installed that are absorptive, shall be protected from moisture damage.
    b. Building construction materials that show visual evidence of biological growth due to the presence of moisture shall not be installed on the building project.

DRAWING INDEX:

PERMIT ISSUE SET 11/18/2024

PROJECT MANUAL

Refer to the separate 8½" x 11" PROJECT MANUAL booklet. Said PROJECT MANUAL is an integral and corporate part of the Construction Documents.

STATE OF COLORADO LICENSED ARCHITECT

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CREEKSIDE BIBLE CHURCH
RENOVATION & ADDITION
2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE
BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by KC
Checked by KC

Title
PROJECT DATA, LEGENDS & SYMBOLS

G001

CODE ANALYSIS:

2021 INTERNATIONAL EXISTING BUILDING CODE

PROJECT ADDRESS:	2180 I-25, CASTLE ROCK, CO 80104
PROJECT DESCRIPTION:	DEMOLITION AND RENOVATION OF EXISTING LOBBY SPACE, RELIGIOUS EDUCATION ROOMS ADDITION, NEW SPACE TO INCLUDE CLASSROOMS, RESTROOMS, SUPPORT SPACES, MECHANICAL, PLUMBING, & ELECTRICAL DISTRIBUTION.
CLASSIFICATION OF WORK:	IEBC SECTION 606 ADDITIONS
OCCUPANCY:	A-3
CONSTRUCTION TYPE:	V-B
STORIES:	ONE STORY
EXISTING BUILDING:	8,344 SQ. FT.
NEW ADDITION:	5,465 SQ. FT.
TOTAL SQUARE FEET:	13,809 SQ. FT.
FIRE PROTECTION:	FULLY SPRINKLERED (Deferred Submittal)
FIRE SPRINKLER NOTE:	THE EXISTING BUILDING IS SPRINKLED. THE ADDITION & RENOVATIONS TO THE BUILDING SHALL ALSO BE SPRINKLED. SYSTEM COMPONENTS SHALL BE EVALUATED FOR COMPLIANCE WITH CURRENT CODES AND FOR FUNCTION, REPLACED OR UPGRADED WHERE REQUIRED
ALLOWABLE STORIES:	TWO STORIES
BUILDING HEIGHT:	30'-0"'
ALLOWABLE HEIGHT:	60'-0"
TABLE 506.2 ALLOWABLE AREA:	24,000 SQ. FT.
REQUIRED CONSTRUCTION RATINGS:	PER TABLE 601 AND 602 OF THE 2021 I.B.C. FOR TYPE V-B

STRUCTURAL FRAMING	0 HOUR
EXTERIOR BEARING WALLS	0 HOUR
INTERIOR BEARING WALLS	0 HOUR
NONBEARING WALLS & PARTITIONS	0 HOUR
FLOOR CONSTRUCTION	0 HOUR
ROOF CONSTRUCTION	0 HOUR

ENERGY CODE COMPLIANCE PATH: PERSCRIPTIVE

MEANS OF EGRESS - CHAPTER 10

SECTION 1005 MEANS OF EGRESS SIZING

1005.1 General. All portions of the means of egress system shall be sized in accordance with this section. Exception: Aisles and aisle accessways in rooms or spaces used for assembly purposes complying with Section1029.

1005.3.2 Other egress components. The capacity, in inches, of means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant.

1005.4 Continuity. The minimum width or required capacity of the means of egress required from any story of a building shall not be reduced along the path of egress travel until arrival at the public way.

1005.5 Distribution of minimum width and required capacity. Where more than one exit, or access to more than one exit, is required, the means of egress shall be configured such that the loss of any one exit, or access to one exit, shall not reduce the available capacity or width to less than 50 percent of the required capacity or width.

1006.2.1.1 Three or more exits or exit access doorways. Three exits or exit access doorways shall be provided from any space with an occupant load of 501 to 1,000. Four exits or exit access doorways shall be provided from any space with an occupant load greater than 1,000.

1006.3.2 Egress based on occupant load. Each story and occupied roof shall have the minimum number of separate and distinct exits, as specified in Table 1006.3.2. A single exit or access to a single exit shall be permitted in accordance with Section 1006.3.3. The required number of exits, or exit access stairways or ramps providing access to exits, from any story or occupied roof shall be maintained until arrival at the exit discharge or a public way.

1007.1.1 Two exits or exit access doorways. Where two exits, exit access doorways, exit access stairways or ramps, or any combination thereof, are required from any portion of the exit access, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between them. Interlocking or scissor stairways shall be counted as one exit stairway.
Exception 2: Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance shall be not less than one-third of the length of the maximum overall diagonal dimension of the area served.

MEANS OF EGRESS - CHAPTER 10 (CONT.)

1009.1 Accessible means of egress required. Accessible means of egress shall comply with this section. Accessible spaces shall be provided with not less than on accessible means of egress. Where more than one means of egress is required by Section 1006.2 or 1006.3 from any accessible space, each accessible portion of the space shall be served by not less than two accessible means of egress.

1010.1 Doors. Means of egress doors shall meet the requirements of this section. Doors serving a means of egress system shall meet the requirements of this section and Section 1022.2. Doors provided for egress purposes in numbers greater than required by this code shall meet the requirements of this section.

1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the occupant load thereof and shall provide a minimum clear width of 32 inches.

1010.1.2.1 Direction of swing. Pivot or side-hinged swinging doors shall swing in the direction of egress travel where serving a room or area containing an occupant load of 50 or more persons.

1010.1.5 Floor elevation. There shall be a floor or landing each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed 0.25 unit vertical in 12 units horizontal.

1010.1.6 Landings at doors. Landings shall have a width not less than the width of the stairway or the door, whichever is greater.

1010.1.8 Door arrangement. Space between tow doors in a series shall be 48 inches minimum plus the width of a door swinging into the space. Doors in a series shall swing either in the same direction or away from the space between the doors.

1010.1.10 Panic and fire exit hardware. Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than panic hardware or fire exit hardware.

1011.1 General. Stairways serving occupied portions of a building shall comply with the requirements of Sections 1011.2 through 1011.13.

1011.6 Stairway landings. There shall be a floor or landing at the top and bottom of each stairway. The width of landings, measured perpendicularly to the direction of travel, shall be not less than the width of stairways served. Every landing shall have a minimum depth, measured parallel to the direction of travel, equal to the width of the stairway or 48 inches, whichever is less.

1011.11 Handrails. Flights of stairways shall have handrails on each side and shall comply with Section 1014.

1012.2 Slope. Ramps used as part of a means of egress shall have a running slope not steeper than one unit vertical in 12 units horizontal.

1012.8 Handrails. Ramps with a rise greater than 6 inches shall have handrails on both sides. Handrails shall comply with Section 1014.

1013.1 Where required. Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel.

1014.1 Where required. Handrails serving flights of stairways, ramps, stepped aisles and ramped aisles shall be adequate in strength and attachment in accordance with Section 1607.8. Handrails required for flights of stairways by Section 1011.11 shall comply with Sections 1014.2 through 1014.9. Handrails required for ramps by Section 1012.8 shall comply with Sections 1014.2 through 1014.8. Handrails for stepped aisles and ramped aisles required by Section 1029.15 shall comply with Sections 1014.2 through 1014.8.

1015.2 Where required. Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, aisles, stairs, ramps and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches horizontally to the edge of the open side. Guards shall be adequate in strength and attachment in accordance with Section 1607.8.
Exception: Guards are not required for the following locations:
2. On the audience side of stages and raised platforms, including stairs leading up to the stage and raised platforms.

1018.2 Aisles in assembly spaces. Aisles and aisle accessways serving a room or space used for assembly purposes shall comply with Section 1029.

1028.1 General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide a direct path of egress travel to grade. The exit discharge shall not reenter a building.

1029.2 Assembly main exit. A building, room or space used for assembly purposes that has an occupant load of greater than 300 and is provided with a main exit, that main exit shall be of sufficient capacity to accommodate not less than one half of the occupant load, but such capacity shall be not less than the total required capacity of all means of egress leading to the exit. Where the building is classified as a Group A occupancy, the main exit shall front on not less than one street or an unoccupied space of not less than 10 feet in width that adjoins a street or public way. In a building, room or space used for assembly purposes where there is not a well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total capacity of egress is not less than 100 percent of the required capacity.

MEANS OF EGRESS - CHAPTER 10 (CONT.)

1029.3 Assembly other exits. In addition to having access to a main exit, each level in a building used for assembly purposes having an occupant load greater than 300 and provided with a main exit, shall be provided with additional means of egress that shall provide an egress capacity for not less than one-half of the total occupant load served by that level and shall comply with Section 1007.1. In a building used for assembly purposes where there is not a well-defined main exit or where multiple main exits are provided, exits for each level shall be permitted to be distributed around the perimeter of the building, provided that the total width of egress is not less than 100 percent of the required width.

1029.7 Travel distance. The exit access travel distance shall comply with Section 1017. Where aisles are provided for seating, the distance shall be measured along the aisles and aisle accessways without travel over or on the seats.

1029.8 Common path of egress travel. The common path of egress travel shall not exceed 30 feet from any seat to a point where an occupant has a choice of two paths of egress travel to two exits. Exceptions: 1. For areas serving less than 50 occupants, the common path of egress travel shall not exceed 75 feet.

ACCESSIBILITY - CHAPTER 11

1104.1 Site arrival points. At least on accessible route within the site shall be provided from public transportation stops, accessible parking, accessible passenger loading zones, and public streets or sidewalks to the accessible building entrance served.

1105.1 Public entrances. In addition to accessible entrances required by Sections 1105.1.1 through 1105.1.7, at least 60 percent of all public entrances shall be accessible.

1106.1 Required. Where parking is provided, accessible parking spaces shall be provided in compliance with Table 1106.1, except as required by Sections 1106.2 through 1106.4. Where more than one parking facility is provided on a site, the number of parking spaces required to be accessible shall b e calculated separately or each parking facility.

1108.2.2.1 General seating. Wheelchair spaces shall be provided in accordance with Table 1108.2.2.1.

1108.2.7 Assistive listening systems. Each building, room or space used for assembly purposes where audible communications are integral to the use of the space shall have an assistive listening system.

1109.2 Toilet and bathing facilities. Each toilet room and bathing room shall be accessible.

1109.2.1 Family or assisted-use toilet and bathing rooms. In assembly and mercantile occupancies, an accessible family or assisted-use toilet room shall be provided where an aggregate of six or more male and female water closets is required.

INTERIOR ENVIRONMENT - CHAPTER 12

1202.1 General. Buildings shall be provided with natural ventilation in accordance with Section 1202.5, or mechanical ventilation in accordance with the International Mechanical Code.

1203.1 Equipment and systems. Interior spaces intended for human occupancy shall be provided with active or passive space heating systems capable of maintaining an indoor temperature of not less than 68°F (20°C) at a point 3 feet above the floor on the design heating day.

1204.1 General. Every space intended for human occupancy shall be provided with natural light by means of exterior glazed openings in accordance with Section 1204.2 or shall be provided with artificial light in accordance with Section 1204.3. Exterior glazed openings shall open directly onto a public way or onto a yard or court in accordance with Section 1205.

FIRE PROTECTION SYSTEMS - CHAPTER 9

901.2 Fire Protection Systems. Fire protection systems shall be installed, repaired, operated and maintained in accordance with this code and the International Fire Code.

901.6.1 Automatic Sprinkler Systems. Automatic sprinkler systems shall be monitored by an approved supervising station.

901.6.3 Fire Alarm Systems. Fire alarm systems required by the provisions of Section 907.2 of this code and Sections 907.2 and 907.9 of the International Fire Code shall be monitored by an approved supervising station in accordance with Section 907.6.6.

Fire Sprinkler System plans, hydraulic calculations and equipment specifications shall be submitted as a deferred submittal.

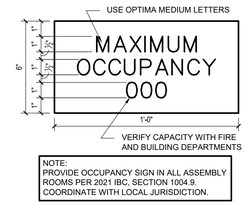
FIRE ALARM NOTE:
A voice fire alarm system will be installed per chapter 9 requirements. Fire alarm is a deferred submittal.

PUBLIC SAFTEY RADIO (BDA) AMPLIFICATION SYSTEM:
Testing required to determine if a BDA is required in the building.

REQUIRED A-3							
			1/150M, 1/75F		1/200	1/1000	
Gender	700	Occupants	Toilets	Urinals	Lavatories	DF	Service Sink
Male		350	1	2	2		
Female		350	5		2		
TOTAL REQ'D		700	6	2	4	1	1

PROVIDED PER PLAN							
Male			2	2	3		
Female			5		5		
Neutral			1		2		
TOTAL PROV'D	-	8	2	10	4	1	

3 PLUMBING FIXTURE TABLE



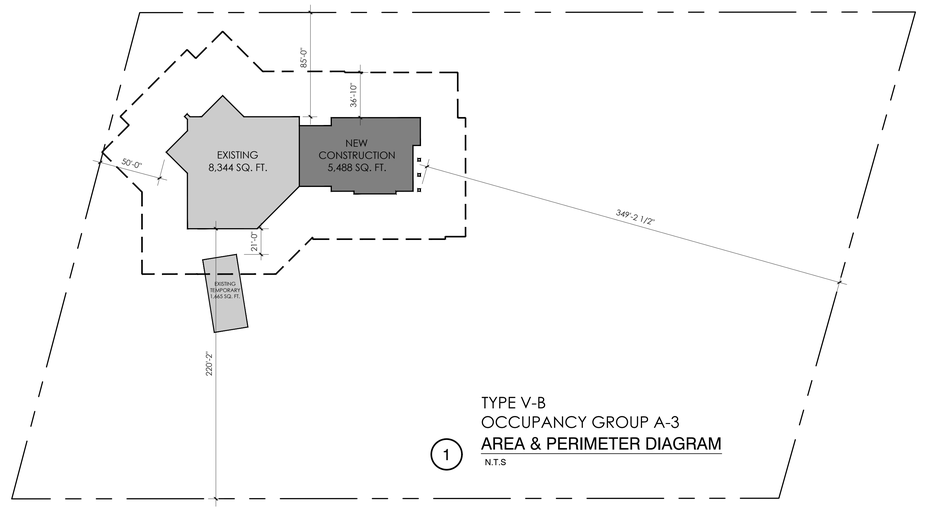
2 MAX. OCCUPANCY SIGN

ASSEMBLY OCCUPANCIES:
C140 - CLASSROOM = 85 OCCUPANTS

BUILDING CODES:

Douglas County, Colorado has adopted the following building codes. See Amendments 2021, to these codes adopted by Douglas County.

- 2021 International Building Code
- 2021 International Existing Building Code
- 2021 International Plumbing Code
- 2021 International Mechanical Code
- 2018 International Energy Conservation Code
- 2021 International Fuel Gas Code
- 2018 International Fire Code
- 2023 National Electrical Code
- 2017 ANSI-117.1 (Accessibility Standards)



TYPE V-B
OCCUPANCY GROUP A-3
AREA & PERIMETER DIAGRAM
N.T.S

1

STATE OF COLORADO
JOHN C. LEE
LICENSED ARCHITECT

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CREEKSIDE BIBLE CHURCH
RENOVATION & ADDITION
2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE
BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by KC
Checked by KC

Title
CODE ANALYSIS & PLUMBING FIXTURE COUNT

G002

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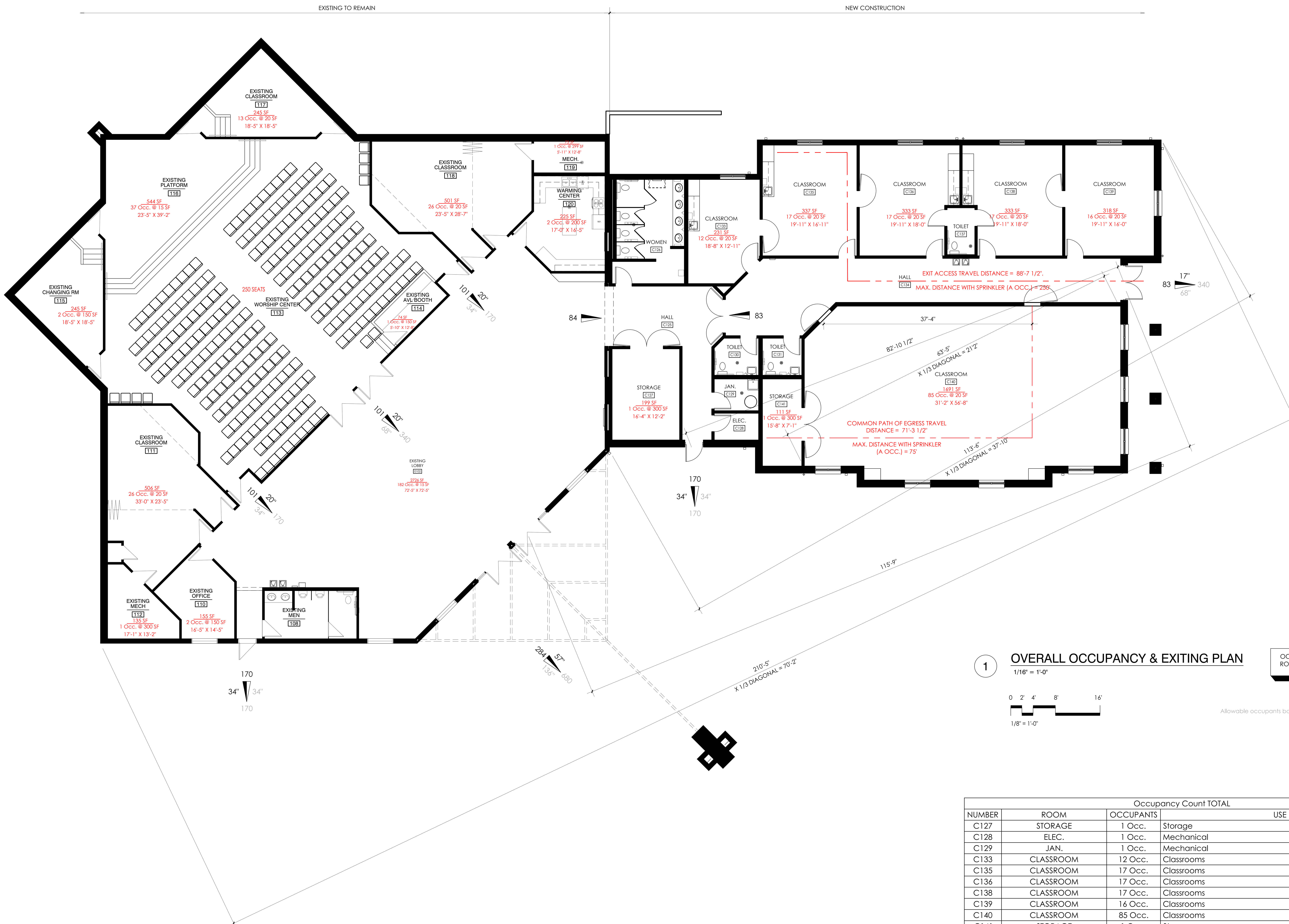

1 OVERALL OCCUPANCY & EXITING PLAN

1/16" = 1'-0"

OCCUPANT LOADS ARE CALCULATED PER ROOM OR AREA USE PER TABLE 1004.5

0 2' 4' 8' 16'
1/8" = 1'-0"

Required Width based on actual occupants
Allowable occupants based on actual width — Actual Occupants
Actual Width provided

Occupancy Count TOTAL				
NUMBER	ROOM	OCCUPANTS	USE	
C127	STORAGE	1 Occ.	Storage	300
C128	ELEC.	1 Occ.	Mechanical	300
C129	JAN.	1 Occ.	Mechanical	300
C133	CLASSROOM	12 Occ.	Classrooms	20
C135	CLASSROOM	17 Occ.	Classrooms	20
C136	CLASSROOM	17 Occ.	Classrooms	20
C138	CLASSROOM	17 Occ.	Classrooms	20
C139	CLASSROOM	16 Occ.	Classrooms	20
C140	CLASSROOM	85 Occ.	Classrooms	20
C141	STORAGE	1 Occ.	Storage	300
E102	EXISTING LOBBY	182 Occ.	Assembly Unconcentrated Tables and non Fixed Seats	15
E110	EXISTING OFFICE 110	2 Occ.	Offices (business areas)	150
E111	EXISTING CLASSROOM	26 Occ.	Classrooms	20
E112	EXSTING MECH.	1 Occ.	Mechanical	300
E113	EXISTING WORSHIP CENTER	250 Occ.	Sanctuary Seating	
E114	EXISTING AVL BOOTH	1 Occ.	Offices (business areas)	150
E115	EXISTING CHANGING RM	2 Occ.	Offices (business areas)	150
E116	EXITSING PLATFORM	37 Occ.	Stages and Platforms	15
E117	EXISTING CLASSROOM	13 Occ.	Classrooms	20
E118	EXISTING CLASSROOM	26 Occ.	Classrooms	20
E119	EXISTING MECH.	1 Occ.	Mechanical	300
E120	EXISTING WARMING CTR.	2 Occ.	Kitchens (commercial)	200
		699 Occ.		

2 OCCUPANT LOAD CALCULATION

FOR EXITING

EXIT WIDTH CALCULATION:
OCCUPANT LOAD X EGRESS CAPACITY FACTOR = CAPACITY IN INCHES
699 X 0.2 = 140"
TOTAL OCCUPANTS = 699
REQUIRED EGRESS WIDTH = 140"
PROVIDED EGRESS WIDTH = 272"

STATE OF COLORADO LICENSED ARCHITECT

ARCHITECTS
INTERIOR DESIGNERS
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CREEKSIDE BIBLE CHURCH
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2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE
BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by KC
Checked by KC

Title
OCCUPANCY & EXITING PLAN

G003

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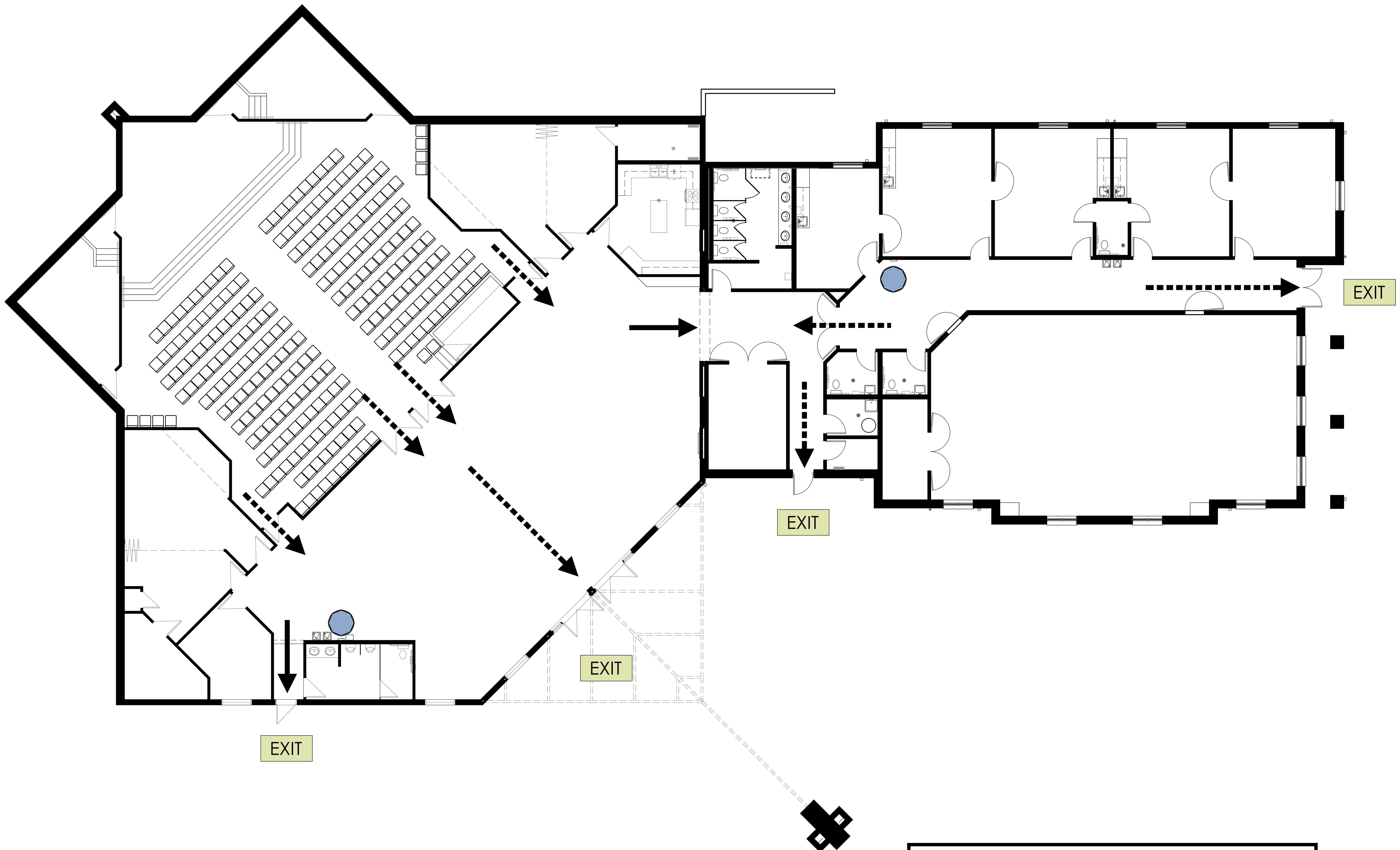

FIRE EVACUATION / SAFETY PLAN

NORTH

EXIT	ACCESSIBLE/ EMERGENCY EGRESS
(circle)	PORTABLE FIRE EXTINGUISHER
(dashed arrow)	PRIMARY EVACUATION ROUTE
(solid arrow)	SECONDARY EVACUATION ROUTE

STATE OF COLORADO LICENSED ARCHITECT

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CREEKSIDE BIBLE CHURCH
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21801-25
CASTLE ROCK, CO 80104

CREEKSIDE
BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by KC
Checked by KC

Title
FIRE EVAC.
SAFETY PLAN

G004

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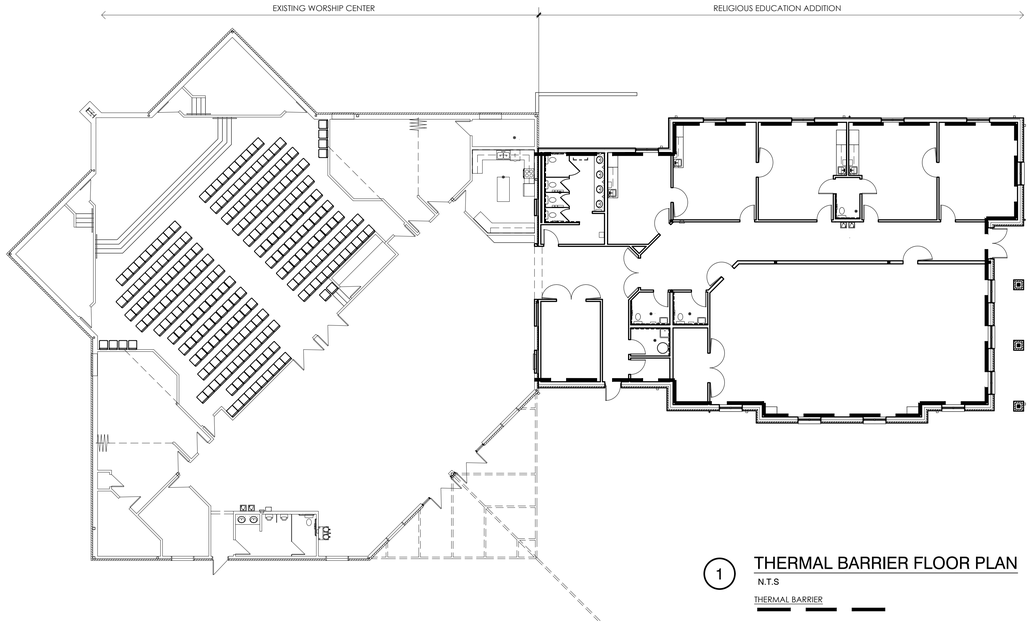
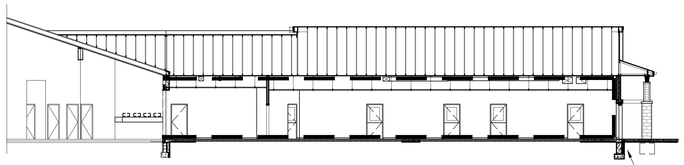
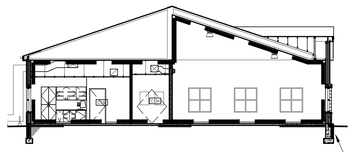


1 THERMAL BARRIER FLOOR PLAN
N.T.S
THERMAL BARRIER



2 TERMAL BARRIER SECTION
N.T.S
EXTEND INSULATION DOWN 36" BELOW SLAB



3 TERMAL BARRIER SECTION
N.T.S
EXTEND INSULATION DOWN 36" BELOW SLAB

IECC COMPLIANCE NOTES:

Unless otherwise noted, meeting the following minimum requirements:

C103.6 Building documentation and closeout submittal requirements. The construction documents shall specify that the documents described in this section be provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the certificate of occupancy.

C103.6.1 Record documents. Construction documents shall be updated to convey a record of the completed work. Such updates shall include mechanical, electrical and control drawings that indicate all changes to size, type and location of components, equipment and assemblies.

C103.6.2 Compliance documentation. Energy code compliance documentation and supporting calculations shall be delivered in one document to the building owner as part of the project record documents or manuals, or as a standalone document. This document shall include the specific energy code edition utilized for compliance determination for each system, documentation demonstrating compliance with Section C303.1.3 for each fenestration product installed, and the interior lighting power compliance path, building area or space-by-space, used to calculate the lighting power allowance.
For projects complying with Item 2 of Section C401.2, the documentation shall include:
1. The envelope insulation compliance path.
2. All compliance calculations including those required by Sections C402.1.5, C403.8.1, C405.3 and C405.4.

For projects complying with Section C47, the documentation shall include that required by Sections C407.4.1 and C407.4.2.

C103.6.3 Systems operation control. Training shall be provided to those responsible for maintaining and operating equipment included in the manuals required by Section C103.6.2
The training shall include:
1. review of manuals and permanent certificate.
2. Hands-on demonstration of all normal maintenance procedures, normal operation modes, and all emergency shutdown and startup procedures.
3. Training completion report.

C402.5 Air leakage - thermal envelope (Mandatory). The thermal envelope of buildings shall comply with Sections C402.5.1 through C402.5.8, or the building thermal envelope shall be tested in accordance with ASTM E 779 at a pressure differential of 0.3 inch water gauge (75 Pa) or an equivalent method approved by the code official and deemed to comply with the provisions of this section when the tested air leakage rate of the building thermal envelope is not greater than 0.40 cfm/ sq. ft. (2.0 L/s * M sq.). Where compliance is based on such testing, the building shall also comply with Sections C402.5.5, C402.5.6 and C402.5.7.

C402.5.1 Air barriers. A continuous air barrier shall be provided throughout the building thermal envelope. the air barriers shall be permitted to be located on the inside or outside of the building envelope, located within the assembles composing the envelope, or any combination thereof. The air barrier shall comply with Sections C402.5.1.1 and C402.5.1.2.
Exception: Air barriers are not required in buildings located in Climate Zone 2B.

C402.5.1.1 Air barrier construction. The continuous air barrier shall b constructed to comply with the following:
1. The air barrier shall be continuous for all assemblies that are the thermal envelope of the building and across the joints and assemblies.
2. Air barrier joints and seams shall be sealed, including sealing transitions in places and changes in materials. The joints and seals shall be securely installed in or on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation.
3. Penetrations of the air barrier shall be caulked, gasketed or otherwise sealed in a manner compatible with the construction materials and location. Sealing shall allow for expansion, contraction and mechanical vibration. Joints and seams associated with penetrations shall be sealed in the same manner or taped. Sealing materials shall be securely installed around the penetration so as not to dislodge, loosen or otherwise impair the penetrations' ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation. Sealing of concealed fire sprinklers, where required, shall be in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.
4. Recessed lighting fixtures shall comply with Section C402.5.8. Where similar objects are installed that penetrate the air barrier, provisions shall be made to maintain the integrity f the air barrier.

C402.5.1.2 Air barrier compliance options. A continuous air barrier for the opaque building envelope shall comply with Section C402.5.1.2.1 or C402.5.1.2.2.

C402.5.1.2.1 Materials. Materials with an air permeability not greater than 0.004 cfm/sq. ft. (0.02 L/s * m sq.) under a pressure differential of 0.3 inch water gauge (75 Pa) when tested in accordance with ASTM E2178 shall comply with this section. Materials in Items 1 through 16 shall be deemed to comply with this section, provided that joints are sealed and materials are installed as air barriers in accordance with the manufacturer's instructions.
1. Plywood with a thickness of not less than 3/8 inch (10 mm).
2. Oriented strand board having a thickness of not less than 3/8 inch (10 mm).
3. Extruded polystyrene insulation board having a thickness of not less than 1/2 inch (12.7 mm).
4. Foil-back polyisocyanurate insulation board having a thickness of not less than 1/2 inch (12.7 mm).
5. Closed-cell spray foam having a minimum density of 1.5 pcf (2.4 kg/m3) and having a thickness of not less than 4.5 inches (113 mm).
6. Open-cell spray foam with a density between 0.4 and 1.5 pcf (0.6 and 2.4 kg/m3) and having a thickness of not less than 4.5 inches (113 mm).
7. Exterior or interior gypsum board having a thickness of not less than 1/2 inch (12.7 mm).
8. Cement board having a thickness of not less than 1/2 inch (12.7 mm).
9. Built-up roofing membrane.
10. Modified bituminous roof membrane.
11. Fully adhered single-ply roof membrane.
12. A Portland cement/sand parge, or gypsum plaster having a thickness of not less than 5/8 inch (15.9 mm).
13. Cast-in-place and precast concrete.
14. Fully grouted concrete block masonry.
15. Sheet steel or aluminum.
16. Solid or hollow masonry constructed of clay or shale masonry units.

C402.5.1.2.2 Assemblies. Assemblies of materials and components with an average air leakage not greater than 0.04 cfm/sq. ft. (0.2 L/s * m2) under a pressure differential of 0.3 inch of water gauge (w.g.) (75 Pa) when tested in accordance with ASTM E2357, ASTM E1677 or ASTM E283 shall comply with this section. Assemblies listen in Items 1 through 3 shall be deemed to comply, provided that joints are sealed and the requirements of Section C402.5.1.1 are met.
1. Concrete masonry wall coated with either one application of block filler or two applications of a a paint or sealer coating.
2. Masonry walls constructed of clay or shale masonry nits with a nominal width of 4 inches (102 mm) or more.
3. A Portland cement/sand parge, stucco or plaster not less than 1/2 inch (12.7 mm) in thickness.

C402.5.2 Air leakage of fenestration. The air leakage of fenestration assemblies shall meet the provisions of Table C42.5.2. Testing shall be in accordance with the applicable reference test standard in Table C402.5.2 by an accredited, independent testing laboratory and labeled by the manufacturer.
Exceptions:
1. Field-fabricated fenestration assemblies that are sealed in accordance with Section C402.5.1.
2. Fenestration in buildings that comply with the testing alternative of Section C402.5 are not required to meet the air leakage requirements in Table C402.5.2.

C402.5.7 Vestibules. Building entrances shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time. The installation of one or more revolving doors in the building entrance shall not eliminate the requirement that a vestibule be provided on any doors adjacent to revolving doors.

C402.5.8 Recessed lighting. Recessed luminaries installed in the building thermal envelope shall be all of the following:
1. IC-rated.
2. Labeled as having an air leakage rate of not more 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E283 at a 1.57 psf (75 Pa) pressure differential.
3. Sealed with a gasket or caulk between the housing and interior wall or ceiling covering.

COMcheck Software Version COMcheckWeb
Envelope Compliance Certificate

Project Information

Energy Code:	2018 IECC
Project Title:	Creekside Bible Church Renovation and Classroom Addtion
Location:	Castle Rock, Colorado
Climate Zone:	5b
Project Type:	Addition
Vertical Glazing / Wall Area	9%

Construction Site:
2180 I-25
Castle Rock, Colorado 80304

Owner/Agent:
Charles Vaughan
Creekside Bible Church
2180 I-25
Castle Rock, Colorado 80104

Designer/Contractor:
Kevin Calme
Lee Architects
2525 South Wadsworth Boulevard
Denver, Colorado 80227
7209274830
kcalme@leearchitects.com

Building Area	Floor Area
1-Church (Religious Building) : Nonresidential	5465

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor[a,b]
Roof: Attic Roof, Wood Joists, [Bldg. Use 1 - Church]	5984	38.0	0.0	0.027	0.027
South Ext. Wall: Steel-Framed, 16in. o.c., [Bldg. Use 1 - Church]	1284	19.0	12.0	0.047	0.064
Window: Meta Frame with Thermal Break: Fixed, Perf. Specs.: Product ID 4644, SHGC 0.38, [Bldg. Use 1 - Church] b)	93	---	---	0.280	0.380
Door: Insulated Metal, Swirging, [Bldg. Jse 1 - Church]	24	---	---	0.600	0.370
East Ext. Wall: Steel-Framed, 16in. o.c., [Bldg. Use 1 - Church]	806	19.0	12.0	0.047	0.064
Window: Meta Frame with Thermal Break: Fixed, Perf. Specs.: Product ID 4644, SHGC 0.38, [Bldg. Use 1 - Church] b)	93	---	---	0.280	0.380
Door: Insulated Metal, Swirging, [Bldg. Jse 1 - Church]	46	---	---	0.600	0.370
North Ext. Wall: Steel-Framed, 16in. o.c., [Bldg. Use 1 - Church]	1282	19.0	12.0	0.047	0.064
Window: Meta Frame with Thermal Break: Fixed, Perf. Specs.: Product ID 4644, SHGC 0.38, [Bldg. Use 1 - Church] b)	117	---	---	0.280	0.380
Floor: Unheated Slab-On-Grade, Vertical 3 ft., [Bldg. Use 1 - Church] (c)	274	---	8.0	0.526	0.540

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
(c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Project Title: Creekside Bible Church Renovation and Classroom Addition — Report date: 11/18/24
Data filename: — Page 1 of 9

Envelope PASSES: Design 11% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations sumitted with this permit application. The proposed envelope systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Kevin Calme, Project Manager — Kevin Calme — 11/18/2024
Name - Title — Signature — Date

TYPICAL INSULATION VALUES:

DESCRIPTION:	R-VALUE / U-FACTOR:	
Roofs Attic and other	R-38 (Batt)	0.027 U-Factor
Walls, above grade Metal framed	R-19 (Batt) + R12 ci	0.033 U-Factor
Slab-on-grade floors Unheated slabs	R-8 (2" Polyiso)	0.125 U-Factor

DESCRIPTION:	U-FACTOR / SHGC:	
Alum. Storefront Windows	0.28 U-Factor	0.38
Insulated Metal Doors	0.60 U-Factor	

TABLE C402.5.2
MAXIMUM AIR LEAKAGE RATE FOR FENESTRATION ASSEMBLIES

FENESTRATION ASSEMBLY	MAXIMUM RATE (CFM/FT²)	TEST PROCEDURE
Windows	0.20ᵃ	AAMA/WDMA/CSA101/I.S.2/A440 or NFRC 400
Sliding doors	0.20ᵃ	
Swinging doors	0.20ᵃ	
Skylights – with condensation weepage openings	0.30	
Skylights – all other	0.20ᵃ	
Curtain walls	0.06	NFRC 400 or ASTM E283 at 1.57 psf (75 Pa)
Storefront glazing	0.06	
Commercial glazed swinging entrance doors	1.00	
Power-operated sliding doors and power-operated folding doors	1.00	
Revolving doors	1.00	
Garage doors	0.40	ANSI/DASMA 105, NFRC 400, or ASTM E283 at 1.57 psf (75 Pa)
Rolling doors	1.00	
High-speed doors	1.30	

TABLE C402.4
BUILDING ENVELOPE FENESTRATION MAXIMUM *U*-FACTOR AND SHGC REQUIREMENTS

CLIMATE ZONE	1	2	3	4 EXCEPT MARINE	5 AND MARINE 4	6	7	8
Vertical fenestration								
***U*-factor**								
Fixed fenestration	0.50	0.50	0.46	0.38	0.38	0.36	0.29	0.29
Operable fenestration	0.65	0.65	0.60	0.45	0.45	0.43	0.37	0.37
Entrance doors	1.10	0.83	0.77	0.77	0.77	0.77	0.77	0.77
SHGC								
Orientationᵃ	SEW	N	SEW	N	SEW	N	SEW	N	SEW	N	SEW	N	SEW	N	SEW	N
PF < 0.2	0.25	0.33	0.25	0.33	0.25	0.33	0.36	0.48	0.38	0.51	0.40	0.53	0.45	NR	0.45	N
0.2 ≤ PF < 0.5	0.30	0.37	0.30	0.37	0.30	0.37	0.43	0.53	0.46	0.56	0.48	0.58	NR	NR	NR	NR
PF ≥ 0.5	0.40	0.40	0.40	0.40	0.40	0.40	0.58	0.58	0.61	0.51	0.64	0.64	NR	NR	NR	NR
Skylights								
U-factor	0.75	0.65	0.55	0.50	0.50	0.50	0.50	0.50
SHGC	0.35	0.35	0.35	0.40	0.40	0.40	NR	NR

TABLE C402.1.3
OPAQUE THERMAL ENVELOPE INSULATION COMPONENTˢ MINIMUM REQUIREMENTS, R-VALUE METHODᵃ·ᵍ

CLIMATE ZONE	1		2		3		4 EXCEPT MARINE		5 AND MARINE 4		6		7		8	
	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R
Roofs																
Insulation entirely above roof deck	R-20ci	R-25ci	R-25ci	R-25ci	R-25ci	R-25ci	R-30ci	R-30ci	R-30ci	R-30ci	R-30ci	R-30ci	R-35ci	R-35ci	R-35ci	R-35ci
Metal buildingsᵇ	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-25 + R-11 LS	R-25 + R-11 LS	R-30 + R-11 LS	R-30 + R-11 LS	R-33 + R-11 LS	R-30 + R-11 LS
Attic and other	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-49	R-49	R-49	R-49	R-49	R-49	R-49
Walls, above grade																
Massᵈ	R-5.7ci[f]	R-5.7ci[f]	R-5.7ci[f]	R-7.6ci	R-7.6ci	R-9.5ci	R-9.5ci	R-11.4ci	R-11.4ci	R-13.3ci	R-13.3ci	R-15.2ci	R-15.2ci	R-15.2ci	R-25ci	R-25ci
Metal building	R-13 + R-6.5ci	R-13 + R-6.5ci	R13 + R-6.5ci	R-13 + R-13ci	R-13 + R-6.5ci	R-13 + R-13ci	R-13 + R-13ci	R-13 + R-13ci	R-13 + R-13ci	R-13 + R-13ci	R-13 + R-13ci	R-13 + R-13ci	R-13 + R-13ci	R-13 + R-19.5ci	R-13 + R-13ci	R-13 + R-19.5ci
Metal framed	R-13 + R-5ci	R-13 + R-5ci	R-13 + R-5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-15.6ci	R-13 + R-15.6ci	R-13 + R-7.5ci	R-13 + R-17.5ci
Wood framed and other	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-15.6ci or R-20 + R-10ci	R-13 + R-15.6ci or R-20 + R-10ci	R-13 + R-15.6ci or R-20 + R-10ci
Walls, below grade																
Below-grade wallᵉ	NR	NR	NR	NR	NR	NR	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-10ci	R-10ci	R-10ci	R-12.5ci
Floors																
Massᵈ	NR	NR	R-6.3ci	R-8.3ci	R-10ci	R-10ci	R-10ci	R-10.4ci	R-10ci	R-12.5ci	R-12.5ci	R-12.5ci	R-15ci	R-16.7ci	R-15ci	R-16.7ci
Joist/framing	NR	NR	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30	R-30[f]	R-30[f]	R-30[f]	R-30[f]	R-30[f]
Slab-on-grade floors																
Unheated slabs	NR	NR	NR	NR	NR	NR	R-10 for 24" below	R-10 for 24" below	R-10 for 24" below	R-10 for 24" below	R-10 for 24" below	R-15 for 24" below	R-15 for 24" below	R-15 for 24" below	R-15 for 24" below	R-20 for 24" below
Heated slabsʲ	R-7.5 for 12" below + R-5 full slab	R-7.5 for 12" below + R-5 full slab	R-7.5 for 12" below + R-5 full slab	R-7.5 for 12" below + R-5 full slab	R-10 for 24" below + R-5 full slab	R-10 for 24" below + R-5 full slab	R-15 for 24" below + R-5 full slab	R-15 for 24" below + R-5 full slab	R-15 for 36" below + R-5 full slab	R-15 for 36" below + R-5 full slab	R-15 for 36" below + R-5 full slab	R-20 for 48" below + R-5 full slab	R-20 for 48" below + R-5 full slab	R-20 for 48" below + R-5 full slab	R-20 for 48" below + R-5 full slab	R-20 for 48" below + R-5 full slab
Opaque doors																
Nonswinging	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75	R-4.75

STATE OF COLORADO
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CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by: KC
Checked by: KC

Title
ENERGY COMPLIANCE

G005

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kcalme

QC by:

Opened by:
kcalme

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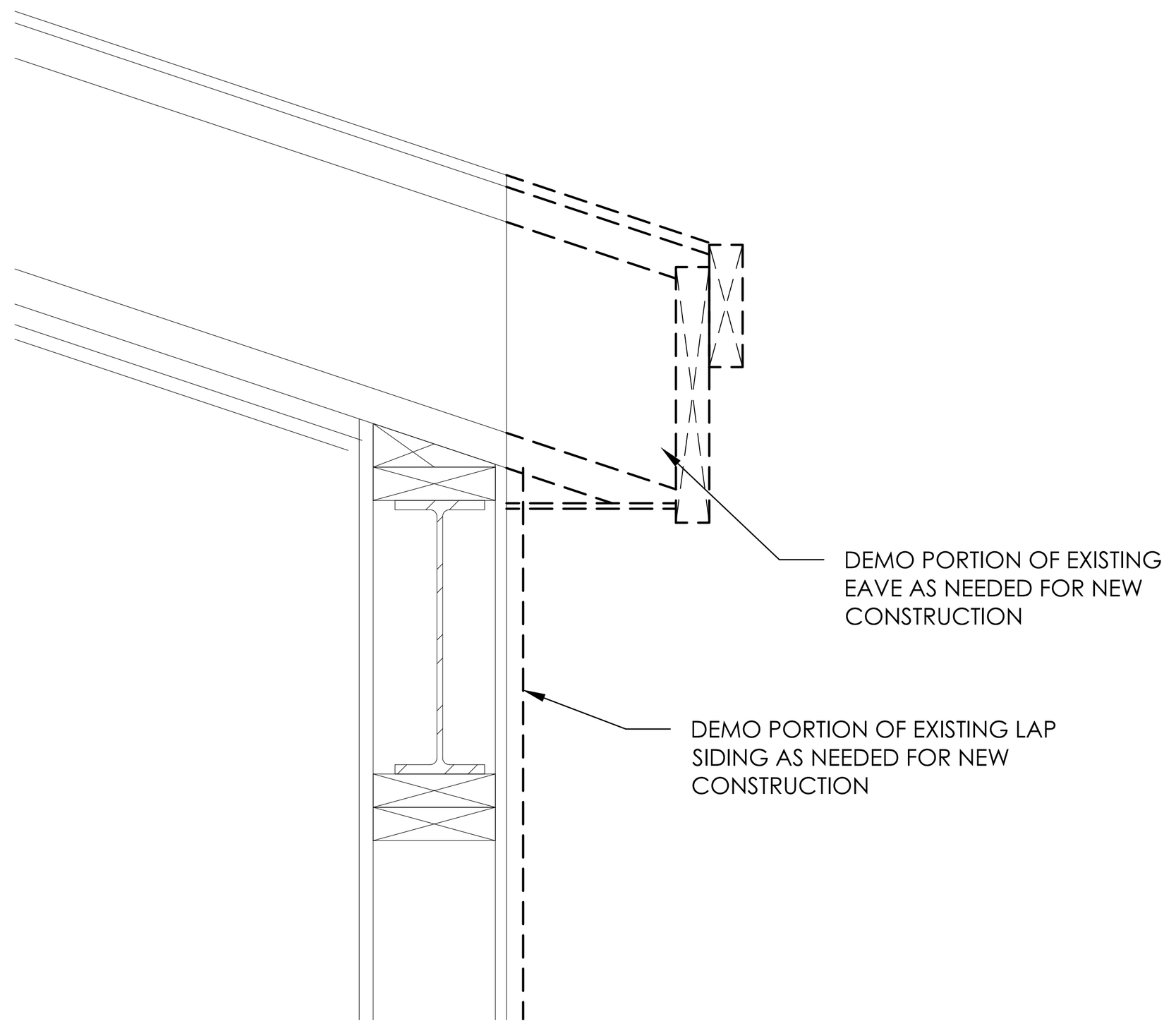
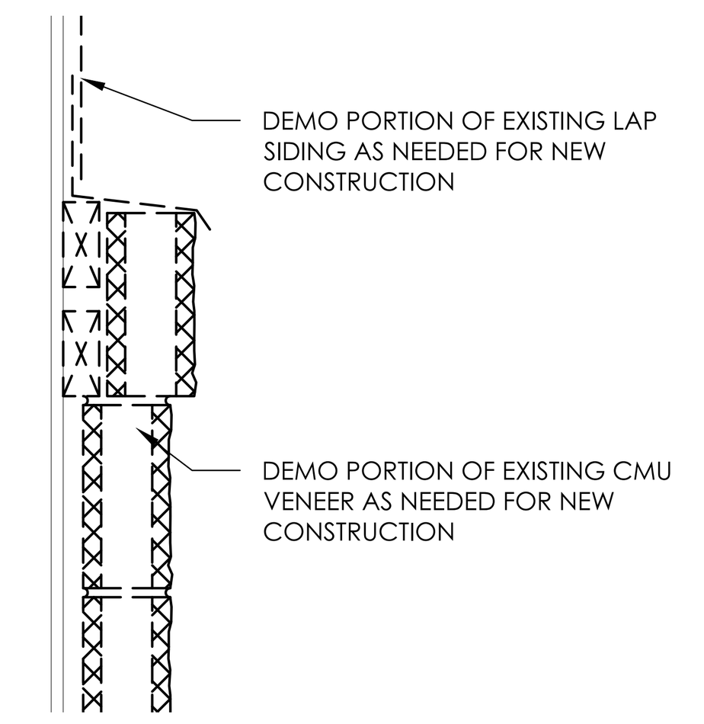
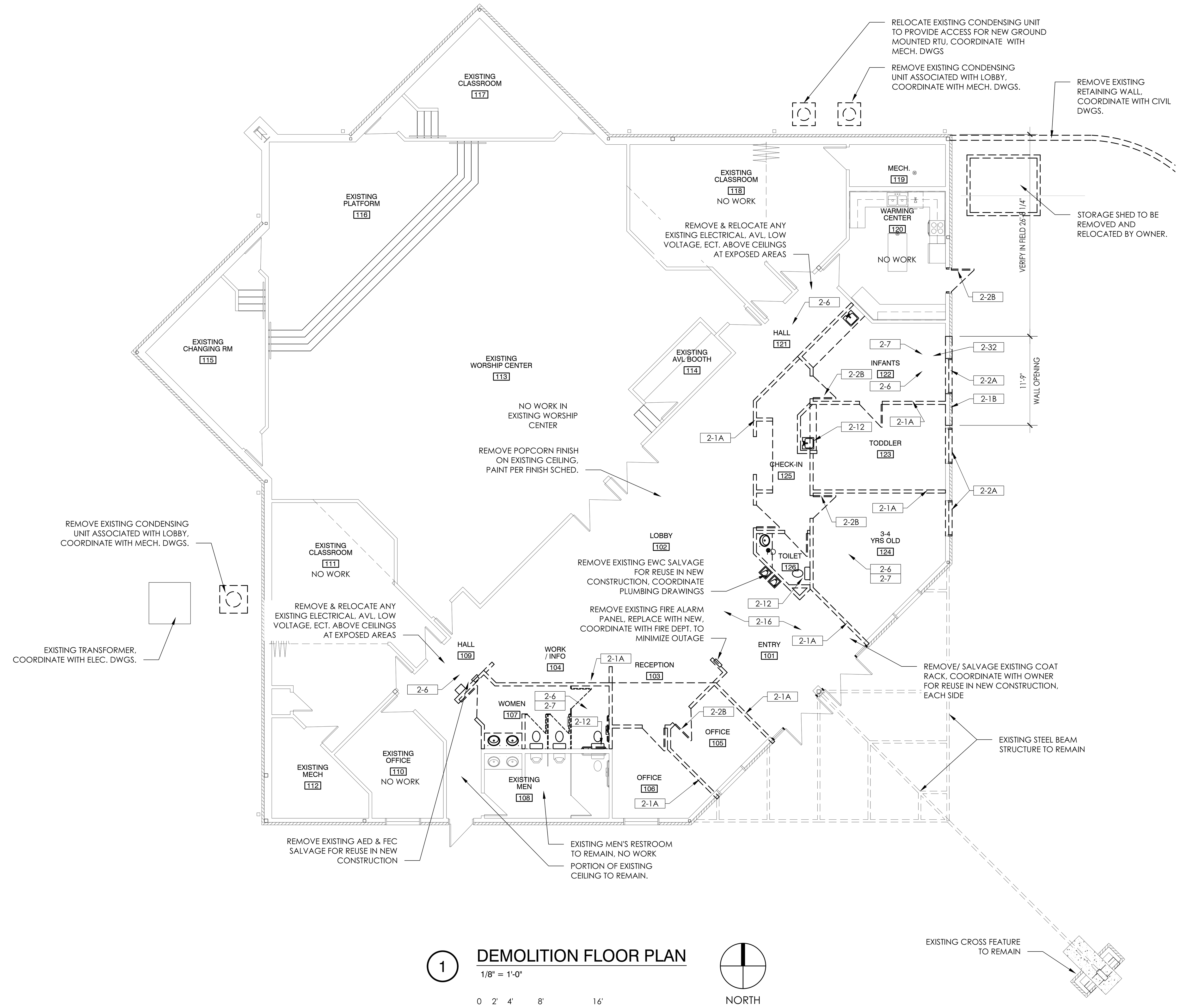


2 (E) EAVE DEMO DETAIL
1 1/2" = 1'-0"



3 (E) WALL DEMO DETAIL
1 1/2" = 1'-0"



1 DEMOLITION FLOOR PLAN
1/8" = 1'-0"

NORTH

0 2' 4' 8' 16'
1/8" = 1'-0"

DEMOLITION GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONSTRUCTION RELATED CONDITIONS PRIOR TO STARTING DEMOLITION.
2. CONTRACTOR SHALL AT ALL TIMES MAINTAIN THE BUILDING IN WEATHER TIGHT CONDITION.
3. ALL SITE DEMOLITION ACTIVITIES SHALL BE COORDINATED WITH THE CITY ENGINEER TO MINIMIZE DISRUPTION OF THE ADJACENT PROPERTIES. CONSTRUCTION ACTIVITIES SHALL BE DURING NORMAL BUSINESS HOURS UNLESS COORDINATED IN ADVANCE WITH THE CITY ENGINEER AND ADJACENT PROPERTY OWNERS.
4. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO PROPERTIES ADJACENT TO WORK AREAS AND IS RESPONSIBLE FOR DAMAGE CAUSED BY NATURAL FORCES.
5. THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING FROM THE BUILDING AND THE CONSTRUCTION SITE ALL CONSTRUCTION DEBRIS AND/OR ITEMS NOT RETAINED BY THE OWNER.
6. THE CONTRACTOR IS RESPONSIBLE FOR STORAGE AND PROTECTION OF ALL SALVAGE ITEMS WHICH WILL BE REUSED.
7. TEMPORARY BARRICADES SEPARATING CONSTRUCTION ACTIVITIES SHALL BE INSTALLED TO PREVENT POSSIBLE INJURY TO PERSONS IN AND AROUND DEMOLITION AND CONSTRUCTION AREAS IN ACCORDANCE WITH OSHA REQUIREMENTS. COORDINATE WITH THE CITY ENGINEER. DUST PARTITIONS SHALL BE INSTALLED. IN ACCORDANCE WITH OSHA FIRE PROTECTION AND EGRESS REQUIREMENTS. ON COMPLETION OF WORK, REMOVE PARTITIONS AND REPAIR DAMAGED SURFACES TO MATCH ADJACENT MATERIALS.
8. COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGUILATIONS PERTAINING TO SAFETY OF PERSONS, PROPERTY AND ENVIRONMENTAL PROTECTION.
9. WHERE REMOVAL OF FLOOR COVERINGS AND WALL BASE ARE REQUIRED, DEMOLITION INCLUDES REMOVAL OF ADHESIVES, GROUTING BEDS, ETC. AND REQUIRES REMAINING SURFACES TO BE PREPARED FOR NEW CONSTRUCTION.
10. ALL ACOUSTICAL CEILINGS AND RELATED SUPPORT SYSTEMS TO BE REMOVED SHALL INCLUDE CEILING TILES, LIGHT FIXTURES, GRILLES, DIFFUSERS, EXIT SIGNS, ELECTRICAL, COMMUNICATIONS, ETC.
11. WALLS TO BE REMOVED SHALL BE FROM FLOOR TO STRUCTURE ABOVE AND SHALL INCLUDE ALL MECHANICAL, ELECTRICAL EQUIPMENT, ETC. PREPARE ALL DISTURBED AREAS FOR NEW CONSTRUCTION.
12. REMOVE ALL MISCELLANEOUS EQUIPMENT ATTACHED TO WALLS, FLOORS OR CEILINGS SUCH AS TACK BOARDS, SHELVING, CURTAIN TRACKS, TOILET PARTITIONS, FREEZERS, REFRIGERATED ROOMS, ETC. COORDINATE WITH OWNER REGARDING ITEMS TO BE SALVAGED.
13. ALL NON-ATTACHED ITEMS SUCH AS MOBILE EQUIPMENT, DESKS, TABLES, CHAIRS, SHELVING, ETC. SHALL BE REMOVED BY CONTRACTOR.
14. REMOVAL OF EXISTING PLUMBING FIXTURES TO INCLUDE PIPING, WASTE LINES, ETC. LINES SHALL BE CAPPED AS REQUIRED. SEE PLUMBING DRAWINGS FOR FURTHER INFORMATION.
15. REMOVAL OF EXISTING HVAC SHALL INCLUDE DUCT WORK HANGERS, GRILLES, DIFUSSERS, THERMOSTATS, ETC. AS REQUIRED. SEE MECHANICAL DRAWINGS FOR FURTHER INFORMATION.
16. ALL EXISTING WIRING, CONDUIT, TELEPHONES, P.A. SYSTEMS, INTERCOMS, ETC., OR PORTIONS THEREOF, REMOVED DURING DEMOLITION UNLESS SHOWN OTHERWISE SHALL NOT BE REUSED.
17. REMOVAL OF EXISTING ELECTRICAL WORK SHALL INCLUDE CONDUIT, BOXES, WIRE, CABLE, SUPPORTS, WIRING DEVICES, SAFETY SWITCHES, FIRE ALARM EQUIPMENT, TELEPHONE OUTLETS AND LIGHTING FIXTURES. BRANCH CIRCUIT REMOVAL SHALL BE BACK TO PANEL BOARD OR FIRST REMAINING ACTIVE JUNCTION BOX. SEE ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.
18. PROVIDE AND MAINTAIN BARRICADES, LIGHTING, AND GUARDRAILS AS REQUIRED BY APPLICABLE CODES AND REGULATIONS TO PROTECT OCCUPANTS OF ADJACENT PROPERTIES AND WORKERS.
19. ANY AND ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT.
20. NOISE DURING DEMOLITION AND CONSTRUCTION SHALL BE KEPT TO A MINIMUM.
21. ALL EXISTING SERVICES AND UTILITIES SHALL BE MAINTAINED TO ADJACENT PROPERTY OWNERS THAT ARE IN OPERATION AND SERVED BY THESE UTILITIES AND SERVICES. COORDINATE ALL DISRUPTIONS OR DISCONTINUATIONS OF UTILITIES AND SERVICES WITH THE CITY ENGINEER.
22. EXISTING ITEMS, EQUIPMENT, RAILINGS, PLUMBING, FIXTURES, ETC. TO REMAIN IN PLACE SHALL BE PROTECTED FROM DIRT AND DAMAGE DURING DEMOLITION AND CONSTRUCTION.
23. REFER TO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR MORE INFORMATION REGARDING DEMOLITION OF MECHANICAL, PLUMBING AND ELECTRICAL ITEMS.
24. ALL AREAS TO BE DEMOLISHED OR DISTURBED BY ANY DEMOLITION ARE TO BE PATCHED AND PREPARED FOR NEW FINISHES IF PAINTING IS REQUIRED, ENTIRE WALL SHALL RECEIVE PAINT (TO NEAREST LOGICAL STOPPING POINT) TO AVOID MISMATCH OF COLOR.
25. IF DEMOLITION IS PERFORMED IN EXCESS OF THAT REQUIRED, RESTORE AFFECTED AREAS AT NO COST TO THE OWNER. REMOVAL OF CONCRETE SLABS SHALL INCLUDE PREPARATION FOR NEW CONSTRUCTION.
26. ALL OPENINGS AND VOIDS LEFT BY THE REMOVAL OF EXISTING CONSTRUCTION, EQUIPMENT, PIPING, DUCTS, ETC. SHALL BE PROPERLY PATCHED AND CLOSED OFF TO MAINTAIN PROPER FIRE RATING IN WALL OR FLOOR. PREPARE PATCHES TO RECEIVE NEW FINISHES AS INDICATED.
27. WHEN PATCHING OF EXISTING FLOOR IS REQUIRED, SLOPING OR RAMPING IN EXCESS OF CONTRACT TOLERANCES WILL NOT BE ALLOWED (1/8" PER 10 FEET MAXIMUM), UNLESS NOTED OTHERWISE.
28. COMPLETELY CLOSE ALL ABANDONED EXISTING CEILING, WALL AND FLOOR OPENINGS AND PATCH TO MATCH EXISTING CONSTRUCTION.
29. REMOVE FROM SITE DAILY AND LEGALLY DISPOSE OF REFUSE, DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS.
30. THROUGH ENTIRE CONSTRUCTION DURATION CONTRACTOR TO PROVIDE LABOR AND MATERIALS TO REPAIR ALL DISTURBED ELEMENTS.
31. WHERE A FIRE RATING HAS BEEN GIVEN TO AN EXISTING WALL, ALL PENETRATIONS (EXISTING OR NEW) MUST BE SEALED PROPERLY AND FIREPROOFED PER THAT FIRE RATING REQUIREMENT.
32. PROVIDE WALK-OFF MATS AT ENTRIES TO CONSTRUCTION AREA. DAMP MOP DURING DEMOLITION AND CONSTRUCTION ACTIVITIES.
33. AIR EXHAUST FROM THE AREA OF WORK SHALL BE DIRECTED AWAY FROM ADJACENT OCCUPIED PROPERTIES.
34. ABATEMENT PERMITS ARE REQUIRED WHEN REMOVING FRIABLE OR NON-FRIABLE ACM ABOVE STATE OF COLORADO TRIGGER LEVELS.
34. CONTRACTOR TO COORDINATE WITH OWNER REGARDING ITEMS TO BE SALVAGED AND REUSED, INCLUDING BUT NOT LIMITED TO FIRE EXTINGUISHERS, DRINKING FOUNTAINS, OVERHEAD DOORS, PLUMBING FIXTURES & FITTINGS, DOORS & HARDWARE, BATHROOM ACCESSORIES, ETC...

NOTE: ALL CONTRACTORS SHALL BE CAUTIONED THAT THERE ARE EXTENSIVE AUDIO VISUAL SYSTEMS AND THEATRICAL LIGHTING SYSTEMS INSTALLED AS PART OF THIS PROJECT. CARE MUST BE TAKEN TO MINIMIZE ANY INTERACTION BETWEEN THE AV SYSTEMS AND M & E SYSTEMS THROUGH CONDUIT OR BY OTHER MEANS

DRAWING NOTES

1-11	DIMENSIONS ARE NOMINAL AND ARE TO GRID LINE OR FACE OF GYP BD, MASONRY OR CONCRETE UNO. AT EXTERIOR WALL STUDS, DIMENSIONS ARE TO FACE OF STUD. RE: PARTITION TYPES FOR ACTUAL WALL THICKNESSES.
2-1A	REMOVE EXISTING INTERIOR WALL CONSTRUCTION AS SHOWN. COORDINATE WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR DEMOLITION OF ITEMS LOCATED IN THESE WALLS. REFER TO NEW CONSTRUCTION FOR EXTENT OF VERTICAL DEMOLITION AND POSSIBLE SALVAGE ITEMS.
2-1B	REMOVE EXISTING EXTERIOR WALL CONSTRUCTION AS SHOWN. FIELD VERIFY EXISTING STRUCTURAL COMPONENTS IN WALL AND VERIFY WITH STRUCTURAL ENGINEER. COORDINATE WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR DEMOLITION OF ITEMS LOCATED IN THESE WALLS. REFER TO NEW CONSTRUCTION FOR EXTENT OF VERTICAL DEMOLITION AND POSSIBLE SALVAGE ITEMS.
2-2A	REMOVE EXISTING WINDOW AND FRAME. PREP FOR NEW CONSTRUCTION. SALVAGE AND RE-INSTALL AS INDICATED.
2-2B	REMOVE EXISTING DOOR, FRAME AND ASSOCIATED HARDWARE.
2-6	REMOVE PORTION OF EXISTING CEILING SYSTEM ABOVE AS REQ'D FOR NEW CONSTRUCTION. RE: ELEC / MECH DRAWINGS ON RECONFIGURING EXISTING BUILDING SYSTEMS.
2-7	REMOVE EXISTING FLOOR FINISH AND PREP FOR NEW FINISH.
2-12	REMOVE EXISTING TOILET AND WALL BRACKET, CAP EXISTING PLUMBING STUBS IN WALL AND BENEATH FLOOR.
2-14	SALVAGE EXISTING FIRE EXTENGUISHERS AND CABINETS FOR RE-USE IN NEW PLAN.
2-16	OWNER SHALL REMOVE ALL EXISTING FURNITURE, DISPLAY STANDS, NON-ATTACHED ITEMS ETC. GC TO REMOVE BUILT-IN CASEWORK, MILLWORK ITEMS, TOILET ROOM ACCESSORIES, ETC. PROTECT ITEMS DESIGNATED FOR RE-USE IN NEW PLAN.
2-18	PROTECT EXISTING WALLS/ HALF WALLS DURING CONSTRUCTION, TYP.
2-20	EXISTING COLUMN AND STRUCTURAL MEMBERS TO REMAIN. PROTECT DURING CONSTRUCTION.
2-21	EXISTING GYP. AND LAY-IN CEILINGS TO REMAIN. PROTECT DURING CONSTRUCTION. PATCH/ REPAIR AS REQ'D. TO HAVE LIKE NEW APPEARANCE.
2-24	PROTECT EXISTING STOREFRONT SYSTEM DURING CONSTRUCTION, TYP.
2-26	PROTECT EXISTING CARPET NOT OTHERWISE INDICATED FOR REMOVAL DURING CONSTRUCTION AS REQUIRED.
2-29	PROTECT EXISTING DOWNSPOUTS AND UNDERGROUND DRAINAGE. TIE INTO NEW DRAINAGE SYSTEM, RE: CIVIL DRAWINGS.
2-32	PROTECT EXISTING SLAB

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION
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CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by: KC
Checked by: KC

Title
DEMOLITION FLOOR PLAN

D100

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kcalme

QC by:

Opened by:
kcalme

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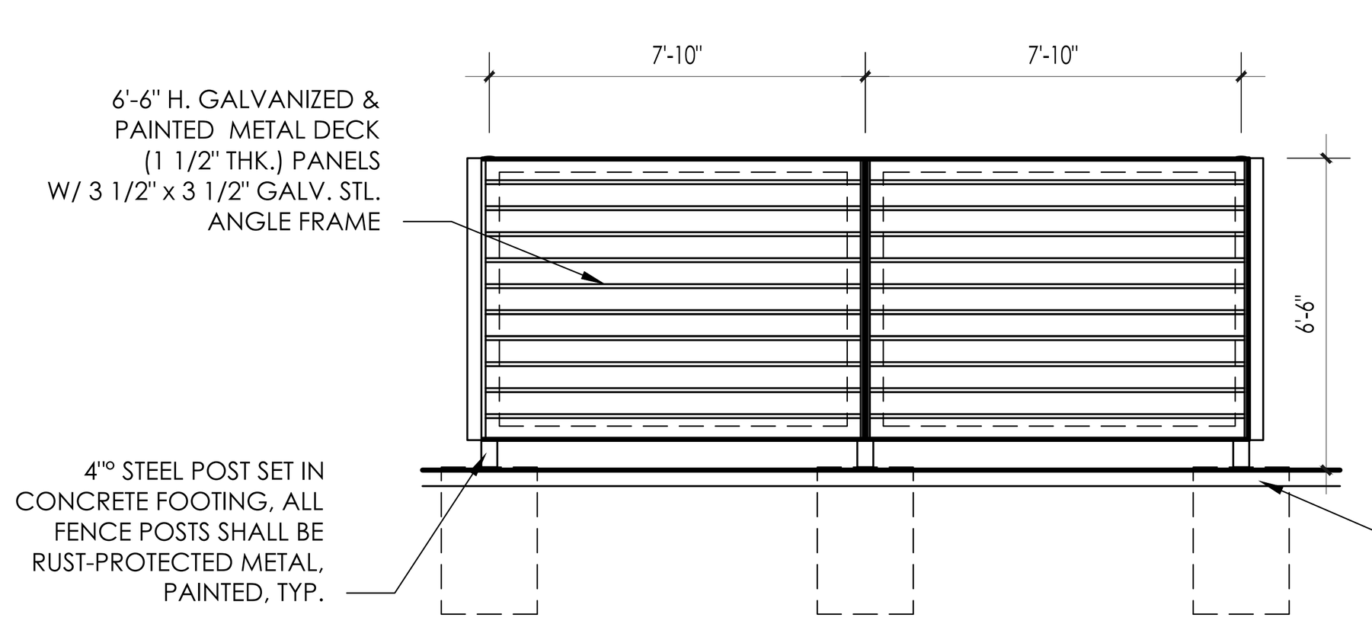
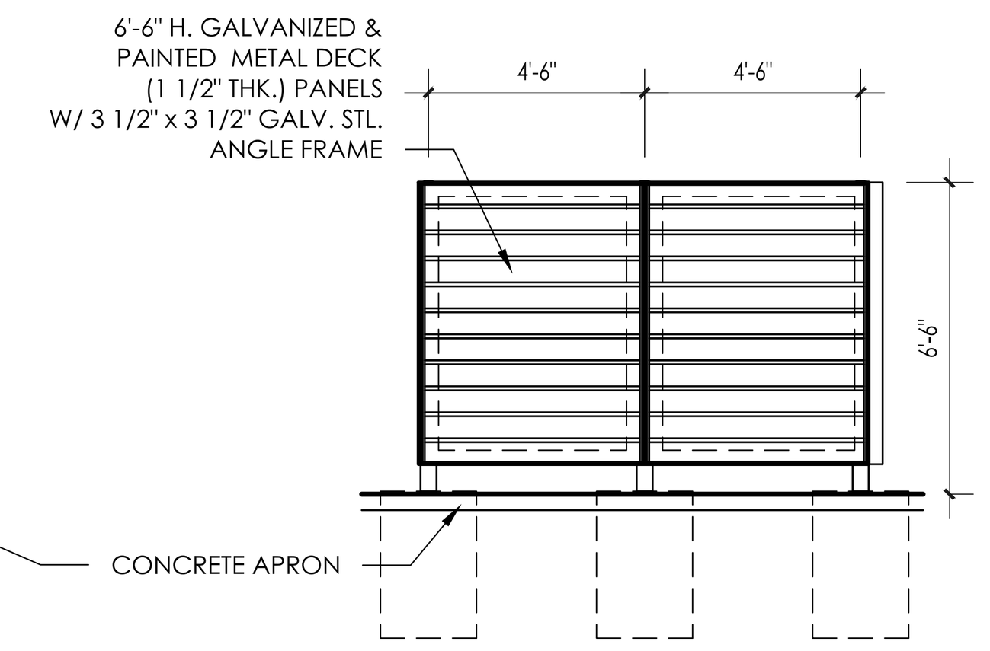
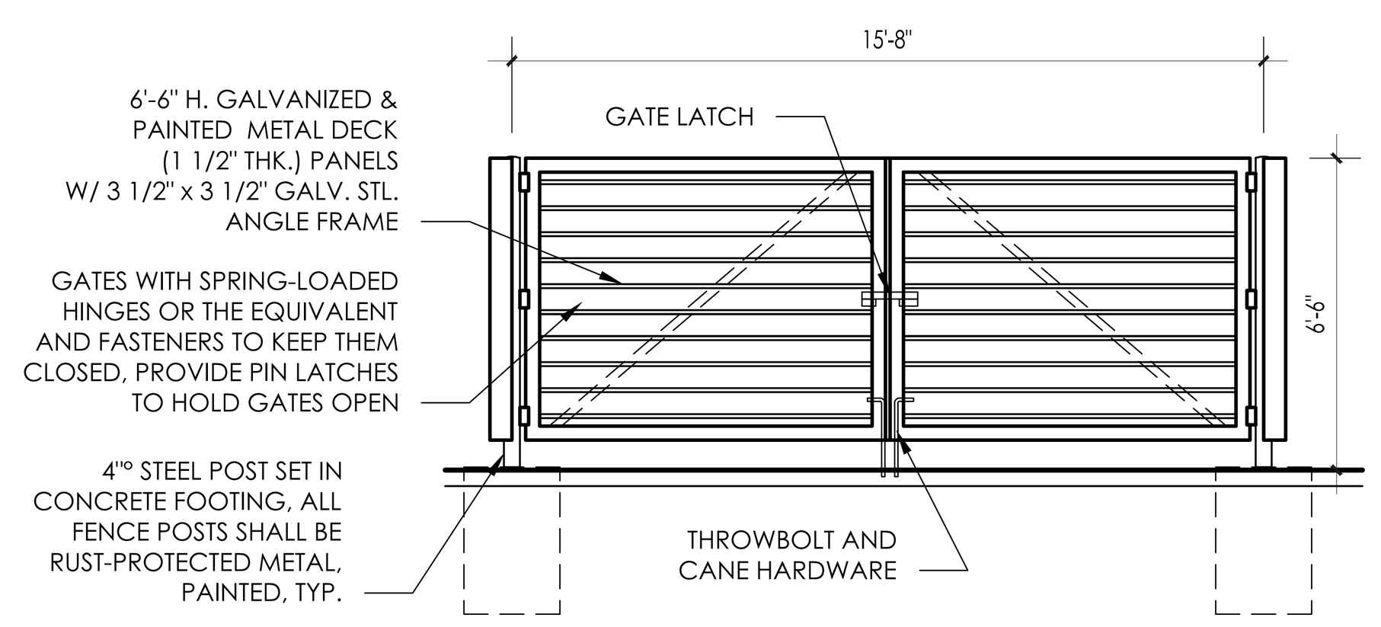


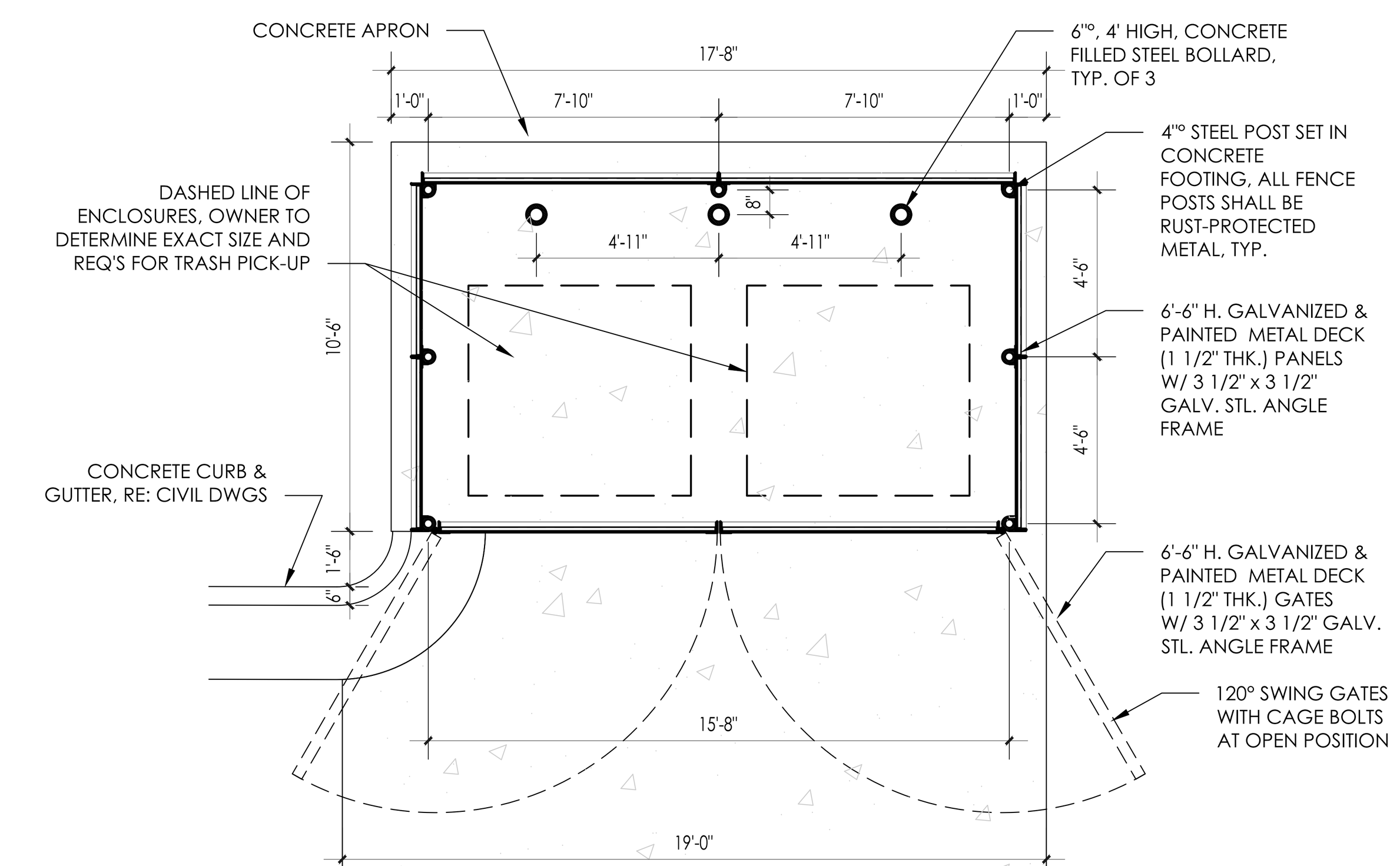
5 BACK
1/4" = 1'-0"



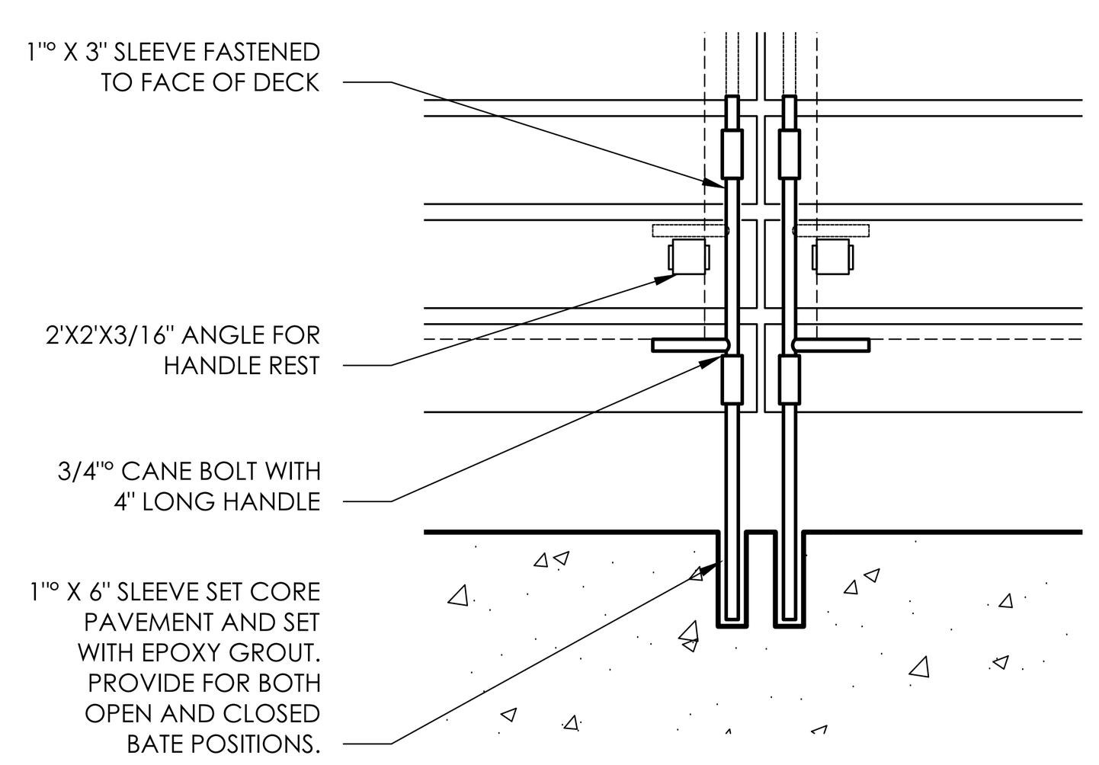
4 SIDE
1/4" = 1'-0"



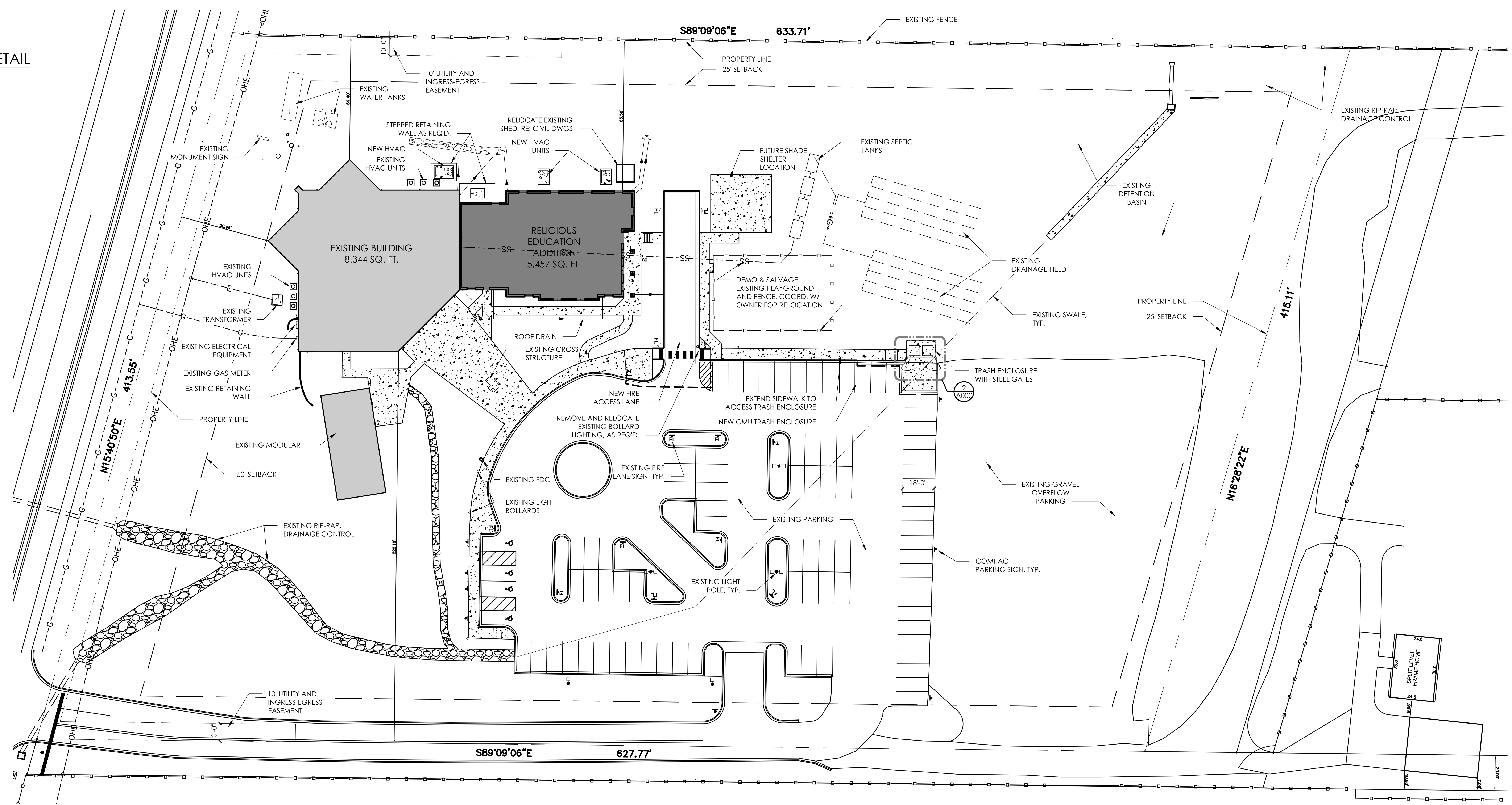
3 FRONT
1/4" = 1'-0"



2 TRASH ENCLOSURE
1/4" = 1'-0"



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



1 ARCHITECTURAL SITE PLAN
1" = 30'

0 15' 30' 60'
1" = 30'-0"

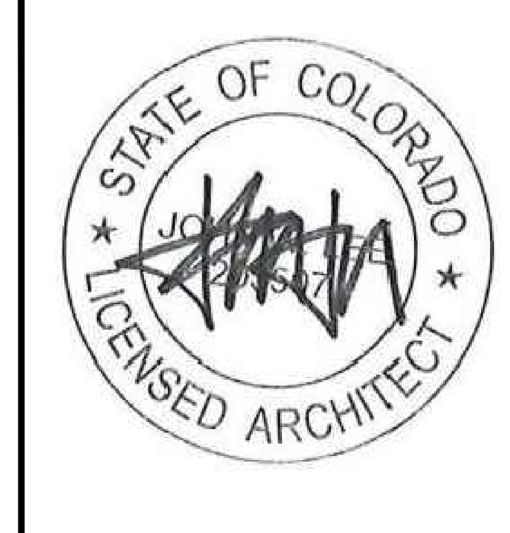
NORTH

SITE PLAN NOTES

A	THIS ARCHITECTURAL SITE PLAN IS FOR REFERENCE ONLY. REFER TO THE CIVIL DRAWINGS FOR ADDITIONAL SITE DIMENSIONS, GRADING / EROSION CONTROL, UTILITY, LANDSCAPE AND IRRIGATION DESIGN INFORMATION.
B	PRIOR TO PROCEEDING W/ ROUGH GRADING, THE CONTRACTOR TO COORDINATE CIVIL GRADES W/ THE ARCHITECTURAL GRADES IN BUILDING DISCIPLINE. COMPARE TOP OF FINISH GRADES AT PERIMETER OF BUILDINGS, FLAT WORK & ADJOINING SITE AREAS, IMMEDIATELY REPORT ANY DISCREPANCIES TO THE ARCHITECT.
C	BUILDING PADS TO BE ROUGH GRADED AND RECOMPACTED PER THE SOILS REPORT AS PART OF THE SITE WORK.
D	ALL GRADING & CONCRETE PAVING SHALL SLOPE AWAY FROM THE BUILDING. CONTACT THE ARCHITECT OR CIVIL ENGINEER FOR ANY AREAS THAT CANNOT SLOPE AWAY DUE TO EXISTING CONDITIONS.
E	IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ADEQUATE DRAINAGE THROUGHOUT THE SITE DURING THE PROCESS OF EXCAVATION & GRADING. THE GRADES SHALL BE MAINTAINED IN SUCH CONDITION THAT IT IS WELL DRAINED AT ALL TIMES.
F	VERIFY ALL DIMENSIONS TO BOUNDARY & SETBACK INFORMATION W/ PARCEL MAP ALTA SURVEY OF RECORD & NOTIFY ARCHITECT /CIVIL ENGINEER IMMEDIATELY IF DISCREPANCIES ARE FOUND.
G	ALL SITE UTILITIES STUBBED TO 5'-0" MINIMUM FROM BUILDING LIMIT LINE, TYPICAL, U.N.O.
H	VERIFY LOCATIONS OF EXISTING UTILITIES BEFORE PROCEEDING W/ EXCAVATIONS.
I	ALL MATERIALS & WORKMANSHIP FOR PUBLIC FACILITIES TO CONFORM TO THE LOCAL JURISDICTION STANDARD CONSTRUCTION SPECIFICATIONS.
J	THE CONTRACTOR SHALL COMPLY W/ ALL ORDINANCES AFFECTING THE PROJECT INCLUDING BUT NOT LIMITED TO HOURS OF WORK, SAFETY, DUST MITIGATION, ETC.
K	THE CONTRACTOR SHALL COORDINATE W/ THE TOWN /SIP ON ALL WORK IN PUBLIC RIGHT-OF-WAY AREAS.
L	VEHICULAR ACCESS DRIVES MUST BE PROVIDED & MAINTAINED SERVICEABLE THROUGHOUT CONSTRUCTION.
M	THE CONTRACTOR SHALL COORDINATE & IMPLEMENT ALL SAFETY MEASURES REQUESTED & REQUIRED BY THE LOCAL FIRE MARSHAL, HEALTH DEPARTMENT, BUILDING OFFICIALS & OTHER GOVERNING AGENCIES.
N	THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS TO REMAIN FROM DAMAGE. DAMAGED ITEMS SHALL BE REPLACED, REPARED OR RESTORED BY THE CONTRACTOR. IF, IN THE OPINION OF THE CONTRACTOR, EXISTING IMPROVEMENTS TO REMAIN WILL BE DAMAGED OR REQUIRE REMOVAL, THE GENERAL CONTRACTOR SHALL IDENTIFY THESE TO THE OWNER PRIOR TO PRECEDING W/ REMOVAL.
O	LANDSCAPING BY OWNER.

PARKING COUNTS

TYPE	REQUIRED	PROVIDED
ONSITE	84	85 (+78 OVERFLOW)
ADA	4	4
PARKING CALCULATIONS:		
1 SPACE FOR EACH 3 FIXED SEATS IN MAIN ASSEMBLY:		250 SEATS/ 3 = 84 SPACES
TOTAL PARKING:		163 SPACES



ARCHITECTS
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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION

2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

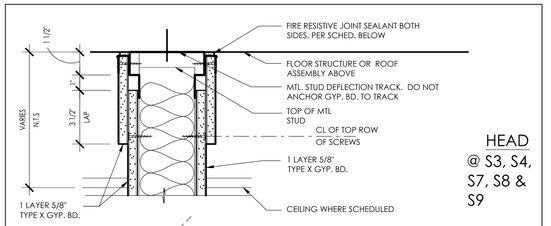
Drawn by: KC
Checked by: KC

Title
ARCHITECTURAL SITE PLAN

A000

PARTITION GENERAL NOTES

1.	METAL STUD GAUGES AT 24" O.C. AS FOLLOWS: 25 GA: 12'-9" MAX. HGT. 22 GA: 14'-0" MAX. HGT. 20 GA: 15'-0" MAX. HGT. (NOTE: GAUGES ARE BASED ON 24" O.C., CHANGE SPACING TO 16" O.C. OR PROVIDE STRUCTURAL GAUGE STUDS AS REQ'D. WHERE INDICATED GAUGE AND HEIGHT LIMITS EXCEED MFR. RECOMMENDATION. COORDINATE WITH ARCHITECT AND SPECS.)
2.	CONSTRUCT RATED PARTITIONS IN ACCORDANCE WITH REQUIREMENTS OF NOTED U.L. DESIGN.
3.	MAXIMUM HEIGHT OF METAL STUDS BASED ON A MAXIMUM DEFLECTION OF L/120.
4.	SET FLOOR TRACK ON CONTINUOUS BEADS OF ACOUSTICAL SEALANT ON BOTH SIDES.
5.	ALL GYPSUM BOARD TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS, SHALL BE TAPED, BEDDED, PRIMED, FINISHED TO LEVEL 5 QUALITY AND PAINTED WHERE NO OTHER WALL COVERING IS SPECIFIED. COORDINATE WITH ARCHITECT PRIOR TO COMMENCING WITH WORK. PROVIDE LEVEL 4 QUALITY FINISH @ STORAGE ROOM WALLS (NOT CEILINGS), MECHANICAL & ELECTRICAL ROOMS, PROVIDE FIRE TAPE AT FIRE RATED PARTITIONS. PROVIDE WATER RESISTANT GYPSUM BOARD AT TOILET ROOMS.
6.	FILL STUD CAVITY WITH SOUND BATT INSULATION IN ALL WALLS WHICH DEMISE WORSHIP CENTER, OFFICES, TOILETS, MECHANICAL, LIBRARY, CONF. ROOMS, AND CLASSROOMS. PROVIDE MIN. 3 1/2" SOUND BATT INSULATION ABOVE CEILINGS IN THESE ROOMS WHERE OCCURS.
7.	PROVIDE FRT WOOD BLOCKING IN PARTITIONS AS REQ'D. BY CASEWORK AND MARKER BOARDS, ETC. COORD. WITH OWNER ON ITEMS /FIXTURES AND CASEWORK INSTALLED BY OWNER THAT MAY REQ. BLOCKING.
8.	ALL SURFACES MUST BE CLEANED AND DUST FREE PRIOR TO CAULKING.
9.	REFER TO SLIP JOINTS FOR PARTITION CONDITIONS @ FLOOR AND STRUCTURE ABOVE.
10.	ALL PARTITIONS TERMINATE 6" ABOVE ADJACENT CEILING UNLESS NOTED OTHERWISE.
11.	ALL GYP. BD. 5/8" FIRE RATED UNLESS NOTED OTHERWISE.
12.	USE MOISTURE RESISTANT GYP. BD. OR CEMENTITIOUS BACKER BD. IN LIEU OF STANDARD GYP. BD. WHERE CT IS SHOWN ON FINISH PLANS OR AT HIGH MOISTURE AREAS.
13.	USE PLENUM RATED / 25 LOW FLAME SPREAD BATT INSULATION IN WALLS AND CEILINGS, AT ALL EXPOSED AREAS.



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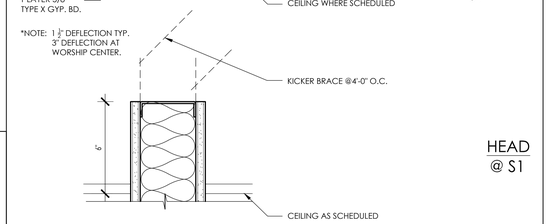
@ S3, S4, S7, S8 & S9



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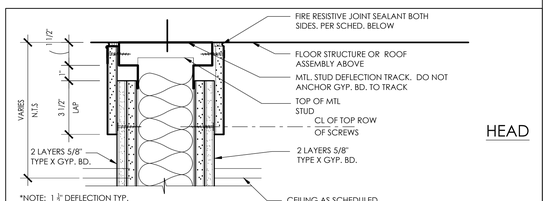

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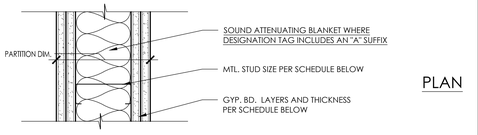
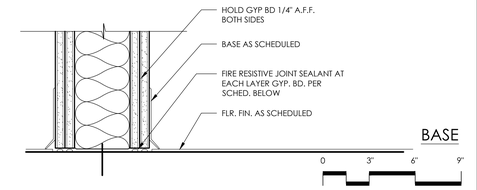


PLAN



BASE

MARK	RATING	DIM.	DESCRIPTION
S11	2 HR ASSEMBLY GA 600-2006 GA File No WP 1522	6-1/8"	2 LAYERS OF 5/8" TYPE X GYP. BD. EA. SIDE 3-5/8" 25 GA. MTL STUDS @ 24" O.C. TO UNDERSIDE OF DECK ABOVE. PROVIDE 2 HR LISTED FIRE RESISTIVE JOINT SEALANT
S12	2 HR ASSEMBLY GA 600-2006 GA File No WP 1522	8-1/2"	2 LAYERS OF 5/8" TYPE X GYP. BD. EA. SIDE 6" 25 GA. MTL STUDS @ 24" O.C. TO UNDERSIDE OF DECK ABOVE. PROVIDE 2 HR LISTED FIRE RESISTIVE JOINT SEALANT
S13	NOT RATED	8-1/2"	2 LAYERS OF 5/8" TYPE X GYP. BD. EA. SIDE 6" 25 GA. MTL STUDS @ 24" O.C. TO UNDERSIDE OF DECK.
S14	NOT RATED	10-1/2"	2 LAYERS OF 5/8" GYP. BD. EA. SIDE 8" 18 GA. MTL STUDS @ 16" O.C. TO UNDERSIDE OF DECK (RE: DETAILS).
S15	2 HR ASSEMBLY GA 600-2006 GA File No WP 1522	10-1/2"	2 LAYERS OF 5/8" GYP. BD. EA. SIDE 8" 18 GA. MTL STUDS @ 16" O.C. TO UNDERSIDE OF DECK (RE: DETAILS). PROVIDE 2 HR LISTED FIRE RESISTIVE JOINT SEALANT

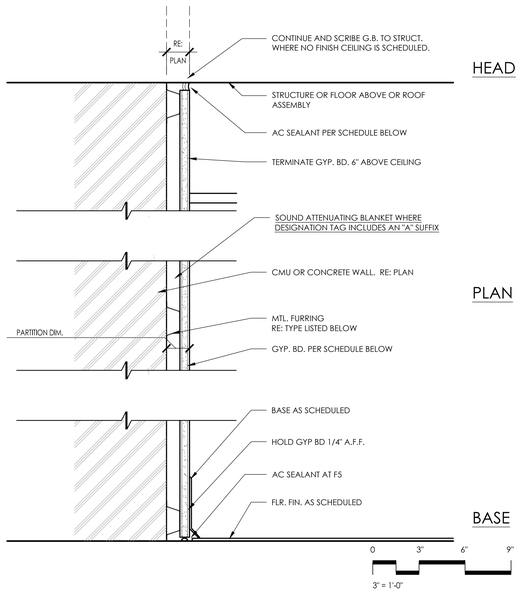
A010.dwg

	PARTITION TYPE S
3"=1'-0"	NOT ALL PARTITION TYPES ARE USED, RE: A101 FOR PARTITION TYPE CALL OUTS

MARK	RATING	DIM.	DESCRIPTION
S1	NOT RATED	4-7/8"	1 LAYER OF 5/8" GYP. BD. EACH SIDE ON 3-5/8" 25 GA. MTL STUDS @ 24" O.C. USE 20 GA. MTL STUDS FOR UNSUPPORTED WALL HEIGHTS > 12'- 0". STUDS TO UNDERSIDE OF TURSS ABOVE AND GYP BD TO 6" ABOVE HIGHEST ADJ CEILING.
S2	NOT RATED	4-7/8"	1 LAYER OF 5/8" GYP. BD. EACH SIDE ON 3-5/8" 25 GA. MTL STUDS @ 24" O.C. TO UNDER-SIDE OF CEILING. USE 20 GA. MTL STUDS FOR UNSUPPORTED WALL HEIGHTS > 12'- 0".
S3	1 HR ASSEMBLY GA 600-2006 GA File No WP 1072	4-7/8"	1 LAYER OF TYPE X 5/8" GYP. BD. EACH SIDE ON 3-5/8", 25 GA. MTL STUDS @ 24" O.C. TO UNDERSIDE OF DECK ABOVE. USE 20 GA. MTL STUDS FOR UNSUPPORTED WALL HEIGHTS > 12'- 0". PROVIDE 1 HR LISTED FIRE RESISTIVE JOINT SEALANT
S4	NOT RATED	4-7/8"	1 LAYER OF 5/8" GYP. BD. EACH SIDE ON 3-5/8" 25 GA. MTL STUDS @ 24" O.C. TO UNDERSIDE OF TRUSS ABOVE. USE 20 GA. MTL STUDS FOR UNSUPPORTED WALL HEIGHTS > 12'- 0".
S5	NOT RATED	4-7/8"	1 LAYER OF 5/8" GYP. BD. EACH SIDE ON 3-5/8" 25 GA. MTL STUDS @ 24" O.C. PARTIAL HEIGHT (RE: PLANS AND DETAILS)
S6	NOT RATED	7-1/4"	1 LAYER OF 5/8" GYP. BD. EACH SIDE ON 6" 25 GA. MTL STUDS @ 24" O.C. USE 20 GA. MTL STUDS FOR UNSUPPORTED WALL HEIGHTS > 12'- 0". STUDS AND GYP BD TO 6" ABOVE HIGHEST ADJ CEILING.
S7	1 HR ASSEMBLY GA 600-2021 GA File No WP 1072	7-1/4"	1 LAYER OF TYPE X 5/8" GYP. BD. EACH SIDE ON 6", 25 GA. MTL STUDS @ 24" O.C. TO UNDERSIDE OF DECK ABOVE. PROVIDE 1 HR LISTED FIRE RESISTIVE JOINT SEALANT
S8	NOT RATED	7-1/4"	1 LAYER OF 5/8" GYP. BD. EACH SIDE ON 6" 25 GA. MTL STUDS @ 24" O.C. TO UNDERSIDE OF TRUSS ABOVE.
S9	NOT RATED (EXCEPT WHERE NOTED)	9- 1/4"	1 LAYER OF 5/8" GYP. BD. EA. SIDE 8" 20 GA. MTL STUDS @ 16" O.C. TO UNDERSIDE OF DECK (RE: DETAILS).
S10	NOT RATED (EXCEPT WHERE NOTED)	9- 1/4"	1 LAYER OF 5/8" GYP. BD. EA. SIDE 8" 20 GA. MTL STUDS @ 16" O.C. TO UNDERSIDE OF DECK (RE: DETAILS). USE IMPACT RESISTANT GYP. BD. ON GYMNASIUM SIDE

A010.dwg

	PARTITION TYPE S
3"=1'-0"	NOT ALL PARTITION TYPES ARE USED, RE: A101 FOR PARTITION TYPE CALL OUTS



HEAD

PLAN

BASE

MARK	RATING	DIM.	DESCRIPTION
F1	NOT RATED	1-1/2"	1 LAYER 5/8" GYP. BD. AS SHOWN ON 7/8" MTL. FURRING CHANNELS @ 24" O.C.
F2	NOT RATED	2-1/4"	AS SHOWN 1 LAYER 5/8" GYP. BD. ON 1-5/8" MTL. STD @ 24" O.C.
F3	NOT RATED	5"	AS SHOWN 1 LAYER 5/8" GYP. BD. ON 3-5/8" MTL. STD @ 24" O.C.
F4	NOT RATED	1-5/8"	1 LAYER 5/8" GYP. BD. AS SHOWN ON 1" MTL. Z FURRING VERTICAL CHANNELS @ MAX. 24" O.C. ADD RIGID INSULATION IN THE CAVITY WHERE NOTED ON PLANS.

P-F.DWG

	PARTITION TYPE F
3"=1'-0"	NOT ALL PARTITION TYPES ARE USED, RE: A101 FOR PARTITION TYPE CALL OUTS

STATE OF COLORADO
JOHN C. LEE
LICENSED ARCHITECT

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION

2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by KC
Checked by KC

Title

PARTITION TYPES

A010

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Last saved by:
kcalme

QC by:

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kcalme

11.19.24
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Xrefs:
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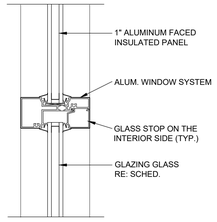
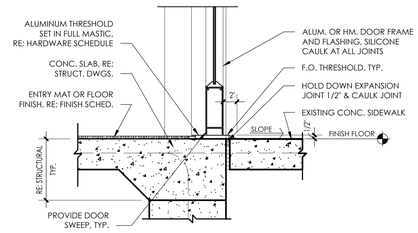
DOOR TYPES
XD003DOOR
XWINDOW DETAILS
XD007DOOR
XD004DOOR
XD802STOREFRONT SILL DETAIL AT CMU
XD803STOREFRONT HEAD DETAIL AT CMU
XD805STOREFRONT SILL DETAIL
XD806STOREFRONT HEAD DETAIL
XD801STOREFRONT JAMB DETAIL AT CMU
XD804STOREFRONT JAMB DETAIL
ADA Clearances



12 ALUM MULLION WINDOW DETAIL
3" = 1'-0"



8 DOOR THRESHOLD
1 1/2" = 1'-0"

DOOR SCHEDULE REMARKS LEGEND

1	PANIC HARDWARE /CLOSURE /HOLD OPEN
2	PUSH-PULL BARS
3	NON-LATCHING
4	DOUBLE ACTING
5	ACCESS CONTROL, INTEGRATE WITH SECURITY SYSTEM
6	DOOR CLOSURE/ HOLD OPEN
7	PROVIDE SOUND ISOLATION, DOOR GASKETS, ACOUSTICAL DOOR SWEEP/SEAL
8	POWER OPERATED
9	POWER OPERATED, INCLUDE WEATHER STRIPPING

GLAZING LEGEND

A	1" INSULATED TINTED GLASS, LOW 'E' (MATCH EXISTING)
B	1" INSULATED SAFETY, TINTED GLASS, LOW 'E' (MATCH EXISTING)
C	1/4" CLEAR FLOAT GLASS.
D	1/4" SAFETY CLEAR FLOAT GLASS.
E	1/4" SAFETY, TINTED GLASS

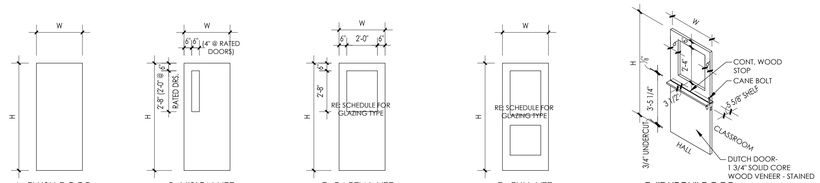
DOOR & WINDOW NOTES

1	FIELD VERIFY ALL DIMENSIONS.
2	ALUMINUM FINISH TO BE ANODIZED, COLOR GREEN TO MATCH EXISTING.
3	PROVIDE FITTINGS AND ACCESSORIES FOR A COMPLETE FUNCTIONAL AND WATER-TIGHT FRAME INSTALLATION.
4	PROVIDE MATCHING ALUMINUM BREAK METAL CLOSURES AND FLASHING WHERE DETAILED AND REQUIRED.
5	REFER TO DOOR SCHEDULE AND SPECIFICATIONS FOR DOOR HAREWARE SETS.
6	REFER TO SPECIFICATIONS FOR GLAZING DESCRIPTIONS AND SEALANT /GASKETING REQUIREMENTS.
7	ALL DOORS, INCLUDING EXISTING DOORS THAT REMAIN SHALL BE COORDINATED IN THE KEYING SCHEDULE WITH THE GENERAL CONTRACTOR AND CHURCH.
8	WOOD DOOR SPECIES TO BE PLAIN SLICED WHITE BIRCH.
9	FENESTRATION PERFORMANCE TO COMPLY WITH ENERGY CODE. ALUM. WINDOWS - 0.28 U-FACTOR, SHGC 0.38

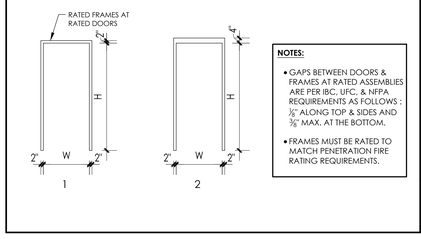
DOOR AND FRAME SCHEDULE

NO	SIZE	DOOR				FRAME				DETAIL			FIRE	HW	REMARKS
	W x H x T	TYPE	MATL	FINISH	GLASS	TYPE	MATL	FINISH	GLASS	HEAD	JAMB(S)	SILL	RATING		
C125A	3'-0" x 7'-0" x 1 3/4"	A	HM	PD	--	2	HM	PD	--	--	--	8/A011	--	02	1
C125B	PR 3'-0" x 7'-0" x 1 3/4"	C	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	101	1,5
C126	3'-0" x 7'-0" x 1 3/4"	A	SCWD	PRE-FIN	--	1	HM	PD	--	11/A011	7/A011	--	--	107	2,3,6
C127	PR 3'-0" x 8'-0" x 1 3/4"	A	SCWD	PRE-FIN	--	1	HM	PD	--	11/A011	7/A011	--	--	102	6
C128	3'-0" x 7'-0" x 1 3/4"	A	SCWD	PRE-FIN	--	1	HM	PD	--	11/A011	7/A011	--	--	105	--
C129	3'-0" x 7'-0" x 1 3/4"	A	SCWD	PRE-FIN	--	1	HM	PD	--	11/A011	7/A011	--	--	105	--
C130	3'-0" x 7'-0" x 1 3/4"	A	SCWD	PRE-FIN	--	1	HM	PD	--	11/A011	7/A011	--	--	106	6
C131	3'-0" x 7'-0" x 1 3/4"	A	SCWD	PRE-FIN	--	1	HM	PD	--	11/A011	7/A011	--	--	106	6
C133	3'-0" x 7'-0" x 1 3/4"	E	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	104	--
C134	PR 3'-0" x 7'-0" x 1 3/4"	C	HM	PD	B	2	HM	PD	--	--	1/A810	8/A011	--	01	1,5
C135A	3'-0" x 7'-0" x 1 3/4"	E	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	104	--
C135B	3'-0" x 7'-0" x 1 3/4"	E	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	108	--
C136A	3'-0" x 7'-0" x 1 3/4"	E	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	104	--
C136B	3'-0" x 7'-0" x 1 3/4"	A	SCWD	PRE-FIN	--	1	HM	PD	--	11/A011	7/A011	--	--	107	2,3,6
C136C	3'-0" x 7'-0" x 1 3/4"	E	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	108	--
C138A	3'-0" x 7'-0" x 1 3/4"	E	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	104	--
C138B	3'-0" x 7'-0" x 1 3/4"	A	SCWD	PRE-FIN	--	1	HM	PD	--	11/A011	7/A011	--	--	107	2,3,6
C138C	3'-0" x 7'-0" x 1 3/4"	E	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	108	--
C139	3'-0" x 7'-0" x 1 3/4"	E	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	104	--
C140A	3'-0" x 7'-0" x 1 3/4"	C	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	103	1
C140B	3'-0" x 7'-0" x 1 3/4"	C	SCWD	PRE-FIN	D	1	HM	PD	--	11/A011	7/A011	--	--	103	1
C141	PR 3'-0" x 8'-0" x 1 3/4"	A	SCWD	PRE-FIN	--	1	HM	PD	--	11/A011	7/A011	--	--	102	--

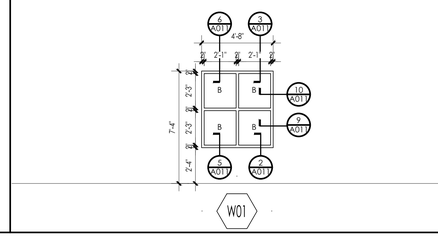
DOOR TYPES

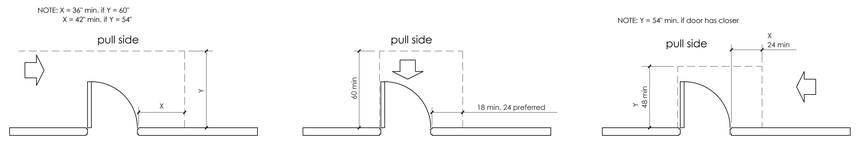


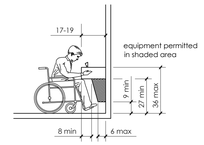
HM FRAME TYPES

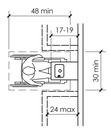


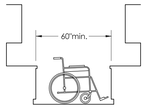
STOREFRONT TYPES





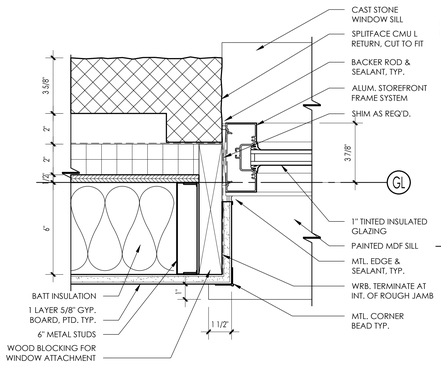






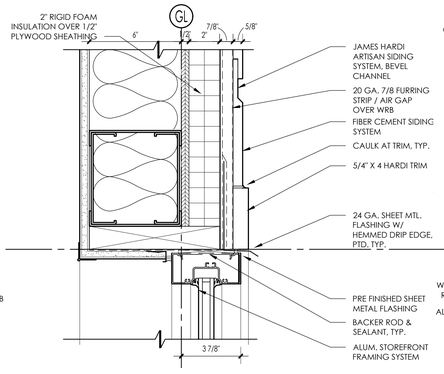
1 TYPICAL ACCESSIBILITY CLEARANCES
1/4" = 1'-0"

11 HM DOOR HEAD
3" = 1'-0"



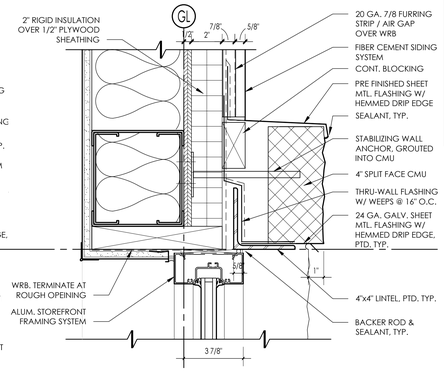
10 ALUM. WINDOW JAMB @ CMU VENEER
3" = 1'-0"

7 HM DOOR JAMB
3" = 1'-0"

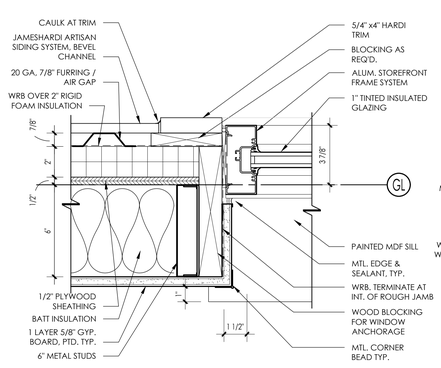


6 ALUM. WINDOW HEAD @ SIDING
3" = 1'-0"

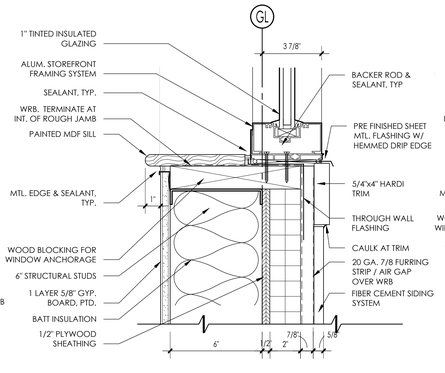
4 ALUM DOOR WINDOW MULLION
3" = 1'-0"



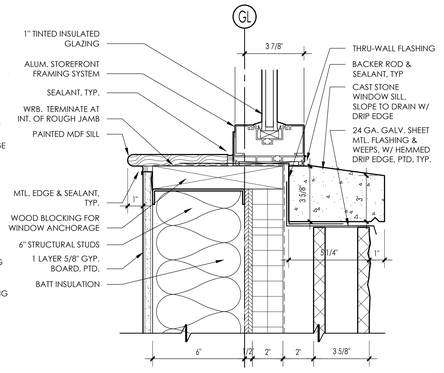
3 ALUM. WINDOW HEAD @ CMU VENEER
3" = 1'-0"



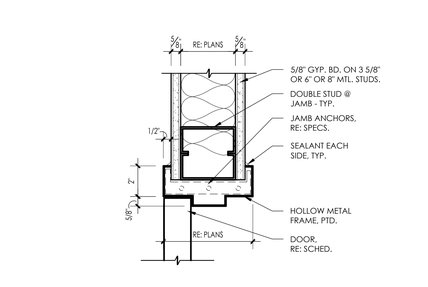
9 ALUM. WINDOW JAMB @ SIDING
3" = 1'-0"



5 ALUM. WINDOW SILL @ SIDING
3" = 1'-0"



2 ALUM. WINDOW SILL @ CMU VENEER
3" = 1'-0"



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CREEKSIDE BIBLE CHURCH
RENOVATION & ADDITION
2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by KC | Checked by KC

Title
DOOR & FRAME SCHEDULE

A011

B. Do not permit adjacent work to damage hardware or finish.

3.07 DOOR HARDWARE

Manufacturer List

Code	Name
AB	ABH Manufacturing Inc.
BE	Best Access Systems
BY	By Related Section
DM	Dorma Door Controls
NA	National Guard
PR	BEST Precision Exit Devices
SH	dormakaba Commercial Hardware
ST	BEST Hinges and Sliding
TR	Trimco

Option List

Code	Description
B4E-HEAVY-KP	Beveled 4 Edges - Kick Plates
BF	BF (Best SFIC) Keyway
CE-12EA	Easy Access Panel
CK	Construction Keyed (Sgl)
CMK	Construction Master Keyed (Sgl)
CSK	Counter Sinking Of Kick And Mop Plates
JAMB/BRKT/FILLER	Jamb Brkt Filler/Shim
MLR	Electrified Latch Retraction
X	Request to Exit Function

Finish List

Code	Description
26D	Satin Chrome
626	Satin Chromium Plated
630	Satin Stainless Steel
689	Aluminum Painted
AL	Aluminum
BLACK	Black
US32D	Stainless Steel, Dull

Hardware Sets

Set #01
Doors: C134

2	Continuous Hinge	661HD UL 94" CE-12EA	AL	ST
1	Exit Device	QED124 MLR X	626	SH
1	Exit Device	QED125 BF CK X	626	SH
2	Exit Trim	QET170 E EF CK	626	SH
3	Final Core	1C-7	626	BE
2	Concealed Closer	RTS Series	689	DM
2	Overhead Stop	9000 Series | JAMB/BRKT/FILLER	US32D	AB
1	Power Supply (QED)	8Q00312		SH
1	Card Reader	BY SECURITY CONTRACTOR		BY
2	Door Position Switch	BY SECURITY CONTRACTOR		BY
2	Harness	WH-192P		ST
2	Harness	WH-12P		ST
2	Harness	WH-6E		ST
1	Gasketing	BY ALUM. FRAME MANUFACTURER		NA
2	Length Pile Astragal	336 P		NA
2	Door Sweep	200 SA		NA
1	Threshold	8425	AL	NA

NOTE: DOOR NORMALLY CLOSED AND LOCKED.
PRESENTING VALID CREDENTIAL RETRACTS LATCH FOR INGRESS.
EMERGENCY KEY OVERRIDE.
X SWITCH :N PUSHBAR TO SHUNT ALARM.
EXIT DEVICE IS FAIL SECURE.
FREE EGRESS AT ALL TIMES.

Set #02
Doors: C125A

1	Continuous Hinge	661HD UL 83"	AL	ST
1	Exit Device	QED112 BF CK	626	SH
1	Exit Trim	QET170 E EF CK	626	SH
1	Concealed Closer	RTS Series	689	DM
1	Overhead Holder	9012 A JAMB/BRKT/FILLER	US32D	AB
1	Gasketing	BY ALUM FRAME MANUFACTURER		NA
1	Door Sweep	200 SA		NA
1	Threshold	8425	AL	NA

Set #101
Doors: C125B

6	Butt Hinge	FBB179 4.5" x 4.5" NRP	26D	ST
1	Exit Device	QED124 MLR X	626	SH
1	Exit Device	QED125 BF CK X	626	SH
2	Exit Trim	QET170 E EF CK	626	SH
3	Final Core	1C-7	626	BE
2	Closer	ITS 9613	689	DM
2	Kick Plate	K0050 10" x 2" LDW B4E CSK	630	TR
2	Wall Bumper	1270CV	626	TR
2	Power Transfer	EPT-12C	630	PR
1	Power Supply (QED)	8Q00312		SH
1	Card Reader	BY SECURITY CONTRACTOR		BY
2	Door Position Switch	BY SECURITY CONTRACTOR		BY
2	Harness	WH-192P		ST

2	Harness	WH-12P		ST
2	Harness	WH-6E		ST
1	Gasketing	5050 B Head & Jambs		NA
2	Length Pile Astragal	336 P		NA

NOTE: DOOR NORMALLY CLOSED AND LOCKED.
PRESENTING VALID CREDENTIAL RETRACTS LATCH FOR INGRESS.
EMERGENCY KEY OVERRIDE.
X SWITCH :N PUSHBAR TO SHUNT ALARM.
EXIT DEVICE IS FAIL SECURE.
FREE EGRESS AT ALL TIMES.

Set #102
Doors: C127, C141

8	Butt Hinge	FBB168 4.5" x 4.5" NRP	26D	ST
1	Automatic Flush Bolt	3810 X 3810	626	TR
1	Lockset	9K3-7D15D STD	626	BE
1	Coordinator	3094B1	BLACK	TR
2	Door Closer	QDC120	689	SH
2	Kick Plate	K0050 10" x 1" LDW B4E CSK	630	TR
2	Mounting Bracket	3095/3096 AS REQ'D	BLACK	TR
1	Dust Proof Strike	3910	626	TR
1	Gasketing	5050 B Head & Jambs		NA
1	Astragal	139 SP		NA

Set #103
Doors: C140A, C140B

3	Butt Hinge	FBB179 4.5" x 4.5" NRP	26D	ST
1	Exit Device	QED112 BF CK	626	SH
1	Exit Trim	QET160 E EF CMK	626	SH
2	Final Core	1C-7	626	BE
1	Closer	ITS 9613 HO	689	DM
1	Kick Plate	K0050 10" x 2" LDW B4E CSK	630	TR
1	Gasketing	5050 B Head & Jambs		NA

Set #104
Doors: C133, C135A, C136A, C138A, C139

4	Butt Hinge	FBB179 4.5" x 4.5"	26D	ST
1	Deadbolt	8T3-7M STD	626	BE
	NOTE: Bolt to project into the bottom door leaf.			
1	Lockset	9K3-7R15D STD	626	BE
2	Wall Bumper	1270CV	626	TR
1	Gasketing	5050 B Head & Jambs		NA

Set #105
Doors: C128, C129

3	Butt Hinge	FBB179 4.5" x 4.5"	26D	ST
1	Lockset	9K3-7D15D STD	626	BE
1	Closer	ITS 9613	689	DM
1	Kick Plate	K0050 10" x 2" LDW B4E CSK	630	TR
1	Wall Bumper	1270CV	626	TR
1	Gasketing	5050 B Head & Jambs		NA

Set #106
Doors: C130, C131

3	Butt Hinge	FBB179 4.5" x 4.5"	26D	ST
1	Privacy Set	9K3-0L15D	626	BE
1	Closer	ITS 9613 HO	689	DM
1	Kick Plate	K0050 10" x 2" LDW B4E CSK	630	TR
1	Wall Bumper	1270CV	626	TR
1	Gasketing	5050 B Head & Jambs		NA

Set #107
Doors: C126, C136B, C138B

3	Butt Hinge	FBB179 4.5" x 4.5"	26D	ST
1	Push Plate	1001-3	630	TR
1	Pull Plate	1018-3B	630	TR
1	Closer	ITS 9613 HO	689	DM
1	Kick Plate	K0050 10" x 2" LDW B4E CSK	630	TR
1	Mop Plate	KM050 6" x 1" LDW B4E CSK	630	TR
1	Wall Bumper	1270CV	626	TR
1	Gasketing	5050 B Head & Jambs		NA

Set #108
Doors: C135B, C136C, C138C

4	Butt Hinge	FBB179 4.5" x 4.5"	26D	ST
1	Deadbolt	8T3-7M STD	626	BE
	NOTE: Bolt to project into the bottom door leaf.			
1	Lockset	9K3-7G15D STD	626	BE
2	Wall Bumper	1270CV	626	TR
1	Gasketing	5050 B Head & Jambs		NA

Opening List

Opening	Hdw Set
C126	107
C127	102
C128	105
C129	105
C130	106
C131	106
C133	104
C134	01
C139	104
C141	102
C125A	02
C125B	101
C135A	104
C135B	108
C136A	104
C136B	107
C136C	108
C138A	104
C138B	107
C138C	108
C140A	103
C140B	103

END OF SECTION

STATE OF COLORADO
JOHN C. LEE
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CREEKSIDE BIBLE CHURCH
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CREEKSIDE
BIBLE CHURCH

Job No: 24010

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Title
HARDWARE
SPECS & SETS

A012

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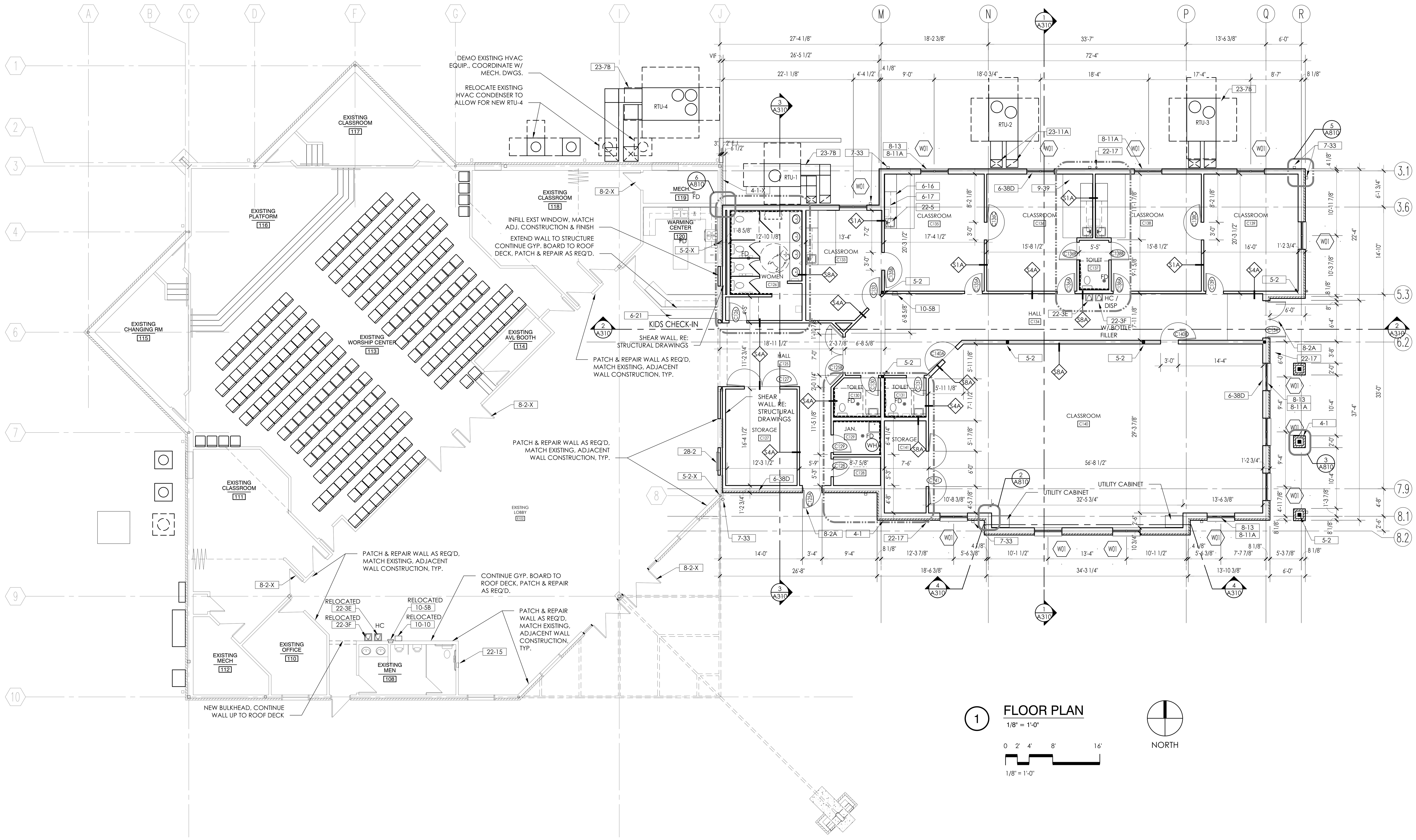

1 FLOOR PLAN
1/8" = 1'-0"

DRAWING NOTES

1-2	REFER TO LANDSCAPE DRAWINGS FOR LANDSCAPE LAYOUT AND NOTES.
1-5	CONSULT GOVERNING AUTHORITIES FOR SPECIFIC REQUIREMENTS REGARDING GOVERNING CODES, RULES REGULATIONS AND STANDARDS.
1-7	REFER TO CIVIL DRAWINGS FOR GRADING AND EROSION CONTROL.
1-11	DIMENSIONS ARE NOMINAL AND ARE TO GRID LINE OR FACE OF GYP BD, MASONRY OR CONCRETE UNO. AT EXTERIOR WALL STUDS, DIMENSIONS ARE TO FACE OF STUD. RE: PARTITION TYPES FOR ACTUAL WALL THICKNESSES.
1-12	REFER TO DRAWING A010 FOR PARTITION TYPES & NOTES
1-14	REFER TO DRAWING A800 FOR PENETRATION DETAILS THRU FIRE RATED PARTITIONS.
1-15	ALL GYP BD TO BE TYPE X U.O.N.
1-16	ALL DOOR R.O. TO BE 4" FROM PERPENDICULAR WALL U.O.N.
1-17	PROVIDE MIN. R-13 SOUND BATT INSULATION IN ALL WALLS AROUND FULL HEIGHT OFFICE WALLS, TOILETS, CONFERENCE ROOMS, AND MECHANICAL OR ELECTRICAL ROOMS
1-18	PROVIDE SEALANT AT ALL DISSIMILAR MATERIALS.
1-19	ALL GYPSUM BOARD TO BE INSTALLED PER MFR RECOMMENDATIONS. SHALL BE TAPED, BEDDED, FINISHED TO LEVEL 5 STANDARD, AND PAINTED. PROVIDE FIRE TAPE AT FIRE RATED PARTITONS. PROVIDE WATER RESISTANT GYPSUM BOARD AT WET WALLS.
1-20	REFER TO DRAWING A011 FOR DOOR SCHEDULE AND DOOR TYPES.
1-21	REFER TO DRAWING A900 FOR ROOM FINISH PLANS AND FINISH SCHEDULE.
1-22	ELECTRICAL BOXES SHALL NOT BE MOUNTED BACK TO BACK. BOXES SHALL BE SEALED TO GYP. BD. WITH RESILIENT CAULK.
1-24	METAL STUD GAUGES AT 24" O.C. AS FOLLOWS: 25 GA: 12'-9" MAX. HGT. 22 GA: 14'-0" MAX. HGT. 20 GA: 15'-0" MAX. HGT. (NOTE: GAUGES ARE BASED ON 24" O.C.. CHANGE SPACING TO 16" O.C. OR PROVIDE STRUCTURAL GUAGE STUDS AS REQ'D. WHERE INDICATED GUAGE AND HEIGHT LIMITS EXCEED MFR. RECOMMENDATION, COORDINATE WITH ARCHITECT AND SPECS.)
1-25	MAXIMUM HEIGHT OF METAL STUDS BASED ON A MAXIMUM DEFLECTION OF L/120.
1-27	SET FLOOR TRACK ON CONTINUOUS BEADS OF ACOUSTICAL SEALANT ON BOTH SIDES.
1-28	PROVIDE MIN. R-13 PLENUM RATED SOUND BATT INSULATION ABOVE CEILING OR ABOVE ALL "SOUND ISOLATED" (SEE NOTE 1-17) ROOMS FOR A DISTANCE OF 6' EA. SIDE OF WALL - UNLESS ALL PERIMETER DEMISING WALLS ARE CONTINUOUS TO STRUCTURE ABOVE.
1-29	PROVIDE FIRE RETARDANT WD. BLOCKING IN PARTITIONS AS REQ'D BY CASEWORK AND MARKER BOARDS, ETC.. COORD. WITH OWNER ON ITEMS/FIXTURES AND CASEWORK INSTALLED BY OWNER THAT MAY REQ. BLOCKING.
1-30	ALL SURFACES MUST BE CLEANED AND DUST FREE PRIOR TO CAULKING AND/OR PAINTING.
1-31	REFER TO SLIP JOINTS DETAILS FOR PARTITION DEFLECTION CONDITIONS @ FLOOR AND STRUCTURE ABOVE.
2-27	EXISTING ROOF HATCH AND LADDER TO REMAIN.
4-1	CONCRETE MASONRY UNITS - RE: WALL TYPES AND WALL SECTIONS FOR SIZE U.O.N. & ELEVATIONS FOR FACE TEXTURE AND COLOR.
4-1-X	CONCRETE MASONRY UNITS (EXISTING)
5-2	STEEL COLUMN
5-2-X	STEEL COLUMN (EXISTING)
6-16	PLAM BASE CABINET
6-17	PLAM WALL CABINET
6-21	PLAM COUNTER TOP WITH SPLASH
6-38D	PAINTED MDF SILL
7-33	24 GA. PREFINISHED MTL. GUTTER
8-2A	EXTERIOR HOLLOW METAL DOOR AND FRAME
8-2-X	EXISTING DOOR TO REMAIN
8-11A	ALUM. STOREFRONT WINDOW
8-13	1" TINTED INSULATING GLASS
9-39	VINYL COMPOSITION TILE
10-5B	SEMI RECESSED FIRE EXTINGUISHER & CABINET
10-10	AED & SEMI RECESSED AED CABINET
22-3E	SURFACE MOUNTED DRINKING FOUNTAIN
22-3F	SURFACE MOUNTED EWC ADA COMPLIANT
22-5	SINK
22-15	WATER HOOK UP FOR OWNER PROVIDED COFFEE MAKER
22-17	FREEZELESS WALL HYDRANT
23-7B	GROUND MOUNTED HVAC UNIT
23-11A	INSULATED METAL MECH. DUCT
27-3	PLYWD PATCH PANEL BOARD
28-2	FIRE ALARM ANNUNCIATOR PANEL

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION
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CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

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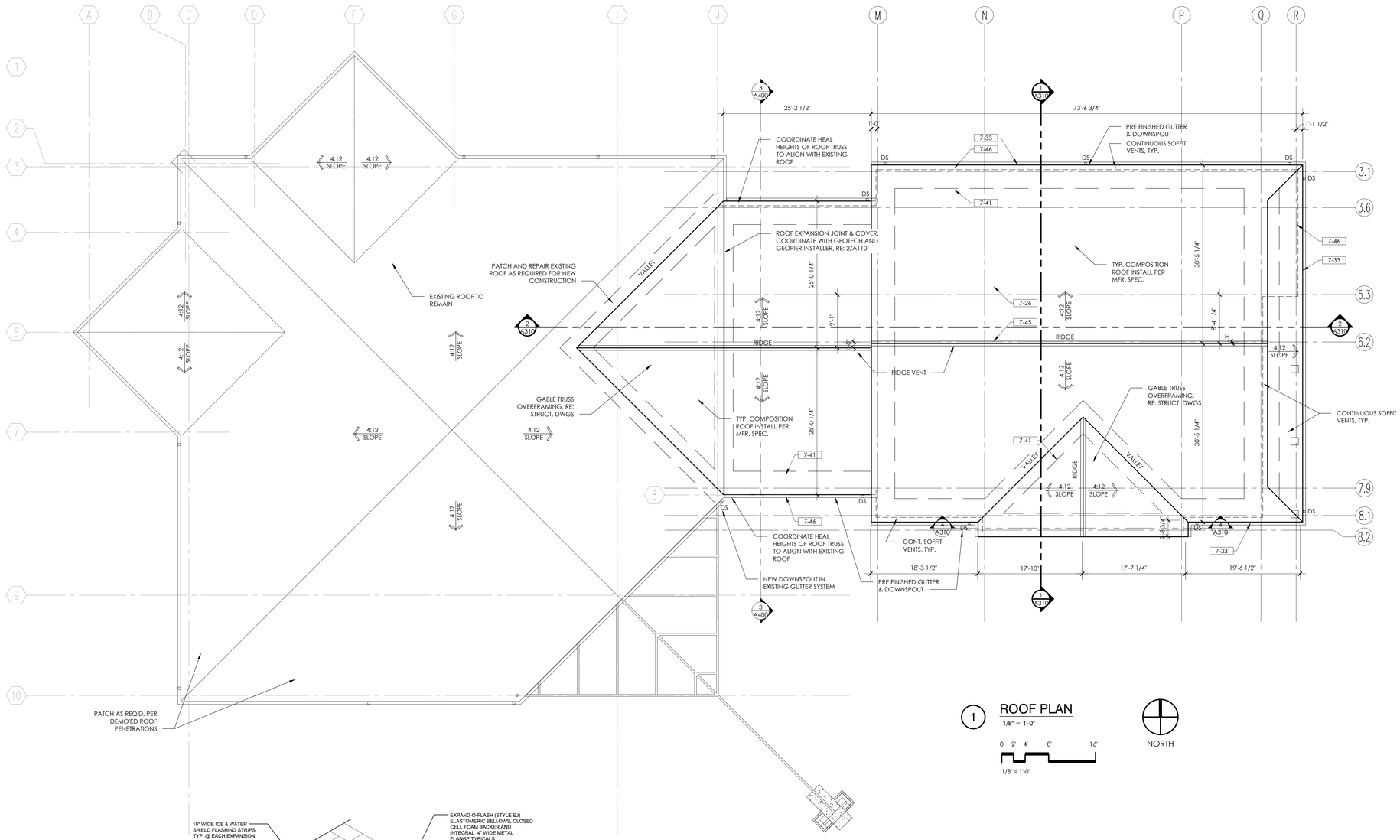
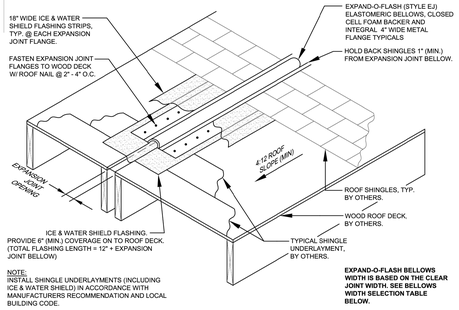
11/18/2024

Drawn by KC
Checked by KC

Title
FLOOR PLAN

A100





2 ROOF EXPANSION JOINT COVER
N.T.S

THIS DRAWING IS FOR REPRESENTATION PURPOSES ONLY. CONSULT MANUFACTURER FOR DEVIATIONS FOR THE ABOVE DETAIL

DRAWING NOTES

1-11	DIMENSIONS ARE NOMINAL AND ARE TO GRID LINE OR FACE OF GYP BD, MASONRY OR CONCRETE UNO. AT EXTERIOR WALL STUDS, DIMENSIONS ARE TO FACE OF STUD. RE: PARTITION TYPES FOR ACTUAL WALL THICKNESSES.
1-81	COORDINATE ALL LOCATIONS OF MECHANICAL ROOFTOP EQUIPMENT & OPENINGS W/ MECHANICAL & STRUCTURAL DWGS. PRIOR TO INSTALLATION.
1-82	ALL FLASHING DETAILS SHALL BE PAINTED & SHALL COMPLY WITH THE "ARCHITECTURAL SHEET MANUAL", 7TH EDITION, AS PUBLISHED BY SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA).
1-83	ALL ROOFING MATERIALS TO MEET FLAME SPREAD AND FIRE RATING REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE.
7-26	COMPOSITION ROOF SHINGLE SYSTEM
7-33	24 GA. PREFINISHED MTL. GUTTER
7-41	4'-0" WIDE ICE AND WATER SHIELD AT FULL PERIMETER & VALLEYS OF SHINGLE ROOF
7-45	ROOF VENT
7-46	SOFFIT VENT

1 ROOF PLAN
1/8" = 1'-0"

0 2' 4' 8' 16'
1/8" = 1'-0"

NORTH

ROOF NOTES

1. VERIFY & COORDINATE DUCT CURB AND ROOF PENETRATION LOCATIONS; SEE MECHANICAL / ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS AND COORDINATION.
2. ADD ICE & WATER SHIELD AT EAVES, 24" MIN. INSIDE HEATED WALLS.
3. PLUMBING VENTS OR EXHAUST UNITS ARE NOT ALLOWED WITHIN 10'-0" OF AIR INTAKES OR 5'-0" OF EXTERIOR WALLS.
4. ALL ROOF PENETRATIONS SHALL BE LOCATED 3'-0" OR MORE FROM FLOW LINES.
5. COORDINATE WITH STRUCTURAL DRAWINGS FOR ROOF STRUCTURE BEARING HEIGHTS. ROOF SLOPES SHALL NOT BE LESS THAN 1/4" PER FOOT.
6. ALL SHEET METAL FLASHING TO COMPLY WITH THE "ARCHITECTURAL SHEET METAL MANUAL", 2012 EDITION AS PUBLISHED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA).
7. ROOFING CONTRACTOR SHALL FURNISH & INSTALL ALL REQUIRED REGLETS.
8. ALL SHEET METAL FLASHING AND CAPS EXPOSED TO THE PUBLIC SHALL BE PAINTED OR PREFINISHED TO MATCH ADJACENT FINISH COLOR. SEE BUILDING ELEVATION FOR COLOR SPECIFICATIONS. ALL OTHER FLASHING TO BE GALVANIZED.
9. NO ROOFING PENETRATIONS TO OCCUR WITHIN 1'-6" OF VALLEYS, HIPS, OR RIDGES.
10. ROOF MATERIAL TO BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.

STATE OF COLORADO
JOHN C. LEE
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Title
ROOF PLAN

A110

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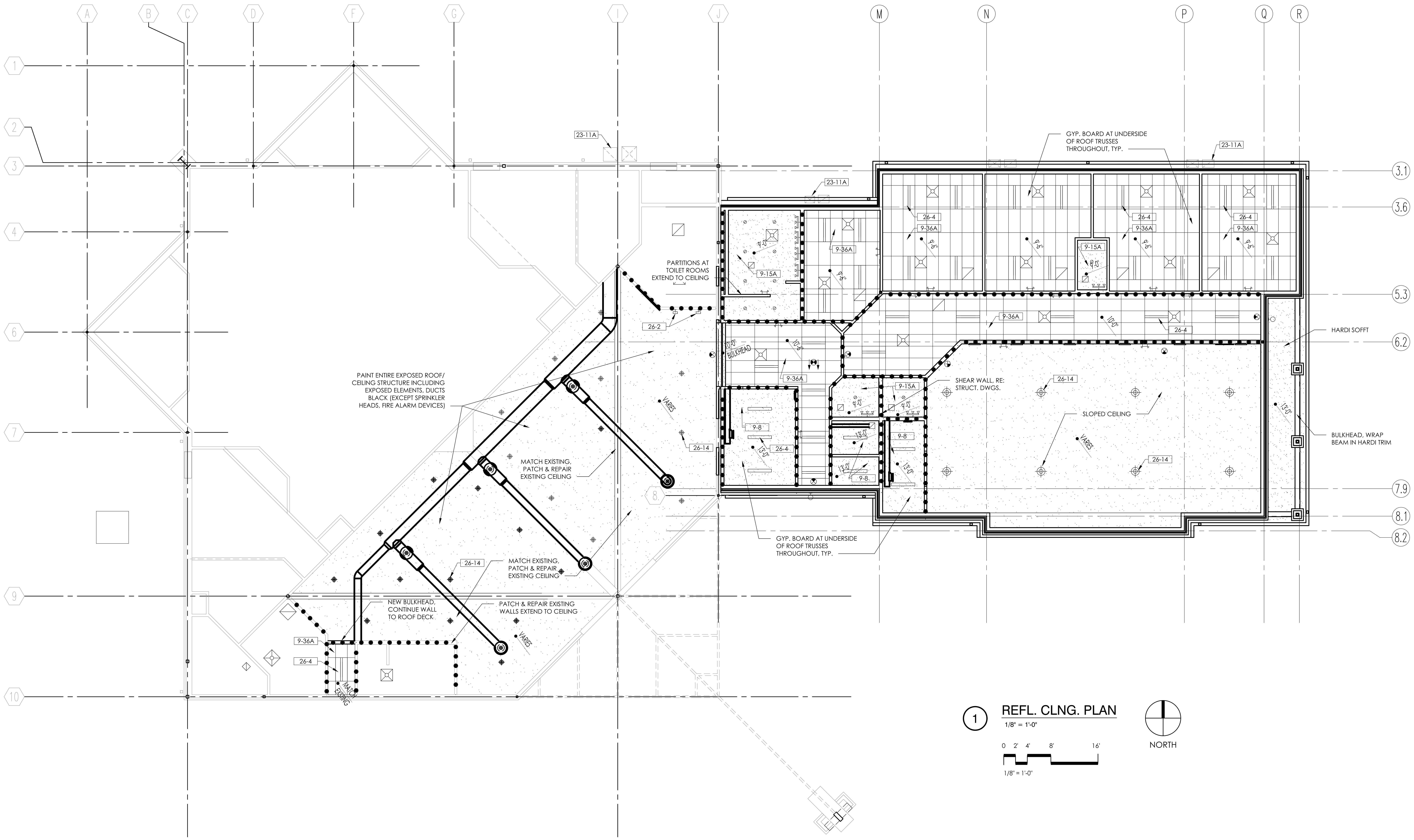

1 REFL. CLNG. PLAN
1/8" = 1'-0"

DRAWING NOTES

1-11	DIMENSIONS ARE NOMINAL AND ARE TO GRID LINE OR FACE OF GYP BD, MASONRY OR CONCRETE UNO. AT EXTERIOR WALL STUDS, DIMENSIONS ARE TO FACE OF STUD. RE: PARTITION TYPES FOR ACTUAL WALL THICKNESSES.
1-17	PROVIDE MIN. R-13 SOUND BATT INSULATION IN ALL WALLS AROUND FULL HEIGHT OFFICE WALLS, TOILETS, CONFERENCE ROOMS, AND MECHANICAL OR ELECTRICAL ROOMS
1-28	PROVIDE MIN. R-13 PLENUM RATED SOUND BATT INSULATION ABOVE CEILING OR ABOVE ALL "SOUND ISOLATED" (SEE NOTE 1-17) ROOMS FOR A DISTANCE OF 6' EA. SIDE OF WALL - UNLESS ALL PERIMETER DEMISING WALLS ARE CONTINUOUS TO STRUCTURE ABOVE.
1-40	CEILING NOTES:
1-41	CEILINGS @ 9'-6" ABOVE FINISH FLOOR U.O.N. TYPICAL.
1-42	PROVIDE AND INSTALL ACCESS PANELS AT OR NEAR SUPPLY AIR DIFFUSERS LOCATED IN GYP BD CEILING AS REQ'D FOR BALANCING. COORDINATE WITH HVAC.
1-43	LOCATE ALL CEILING TILE GRID SYSTEM IN THE CENTER OF EACH ROOM AS INDICATED ON CEILING PLANS UNLESS NOTED OTHERWISE.
1-44	COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS ON LOCATIONS OF CEILING FIXTURES PRIOR TO INSTALLATION. NOTIFY ARCHITECT OF DISCREPANCIES AS SOON AS POSSIBLE.
1-45	ALL GYPSUM BOARD CEILINGS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SHALL BE TAPED, BEDDED, PRIMED TEXTURED WITH LEVEL 4 FINISH AND PAINTED. PROVIDE FIRE RATED TAPE AT FIRE RATED CEILINGS, PROVIDE WATER RESISTANT GYPSUM BOARD AT TOILET ROOMS, KITCHEN AND LOCKER ROOMS.
1-46	ALL CEILING ELEVATIONS ARE ABOVE FINISH FLOOR U.O.N.
9-8	1 LAYER 5/8" GYP. BD.
9-15A	SUSPENDED GYP. BD. CEILING SYSTEM
9-36A	SUSPENDED 2X4 A.C.T SYSTEM
23-11A	INSULATED METAL MECH. DUCT
26-2	WALL MOUNTED DEVICE RE: ELEC.
26-4	LIGHT FIXTURE, TYP. REFER TO ELECTRICAL SCHEDULE.
26-14	PENDANT LIGHT, RE: ELEC LIGHT SCHEDULE

CEILING LEGEND

- WALL MOUNTED FIXTURE
- RECESS MOUNTED DOWNLIGHT
- RECESS MOUNTED 2' X 4'
- RECESS MOUNTED 2' X 2'
- RECESS MOUNTED 1' X 4'
- PENDANT FIXTURE
- STRIP FIXTURE
- TRACK LIGHT
- CEILING MOUNTED EXIT SIGN
- WALL MOUNTED EXIT SIGN
- SUPPLY AIR DIFFUSER
- RETURN AIR GRILLE
- SMOKE DETECTOR
- HEAT DETECTOR
- PROJECTOR
- EMERGENCY LIGHT PACK
- GYPSUM BOARD CEILING
- ELEVATION MARK
- CHANGE IN ELEVATION
- ACCESS DOOR
- 1 HOUR PARTITION
- SMOKE BARRIER, EXTEND TO STRUCTURE
- NON-RATED PARTITION, EXTEND TO STRUCTURE

NOTES

1	**CEILINGS HEIGHTS 9'-6" U.O.N. HEIGHTS LABELED ARE ABOVE FINISH FLOOR U.O.N.**	7	ALL GYPSUM BOARD CEILINGS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SHALL BE TAPED, BEDDED, LEVEL 4 FINISH AND PAINTED. PROVIDE FIRE RATED TAPE AT FIRE RATED CEILINGS, PROVIDE WATER RESISTANT GYPSUM BOARD AT TOILET ROOMS, WARMING CENTER AND BAPTISTERY FILL STATION.
2	ALL ACOUSTICAL CEILING TILE ACT-1 U.N.O. REFER TO FINISH SCHEDULE AND PLANS		
3	EXPOSED STRUCTURE TO BE CLEANED AND PAINTED U.N.O. REFER TO FINISH SCHEDULE AND PLANS	8	ALL ELECTRICAL OR MECHANICAL FIXTURES LOCATED IN ONE HOUR CEILING ASSEMBLIES REQUIRE A ONE HOUR RATING. COORDINATE WITH M.E.P. DRAWINGS.
4	FIRE SPRINKLER SYSTEM TO BE INSTALLED THROUGHOUT ENTIRE BUILDING & ROOF OVERHANGS, PIPING SHALL BE CONCEALED WITHIN WALLS AND CEILING PLENUMS TO THE MAXIMUM EXTENT POSSIBLE. EXPOSED PIPING SHALL BE PAINTED TO MATCH ADJACENT SURFACES.	9	PROVIDE VENTILATION FOR ENCLOSED EXTERIOR BULKHEADS AND SOFFITS IN ACCORDANCE WITH 2018 IBC, SECTION 1202.2.1
		10	ALL ROOMS WITH AIR RETURN CEILING GRILLES SHALL INCORPORATE 90 DEGREE FIBERGLASS INSULATED ELBOWS ABOVE CEILING TO MINIMIZE ROOM-TO-ROOM SOUND TRANSMISSION DUE TO PLENUM AIR SPACE.
5	LOCATE ALL CEILING TILE GRID SYSTEM IN THE CENTER OF EACH ROOM AS INDICATED ON CEILING PLANS U. N. O.		
6	COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS ON LOCATIONS OF CEILING FIXTURES PRIOR TO INSTALLATION. NOTIFY ARCHITECT OF DISCREPANCIES AS SOON AS POSSIBLE.	11	PROVIDE BLACK DIFFUSERS AND RETURN AIR GRILLES AT LOCATIONS WHERE CEILING/ EXPOSED STRUCTURE IS BLACK.

NOTE: ALL CONTRACTORS SHALL BE CAUTIONED THAT THERE ARE EXTENSIVE AUDIO VISUAL SYSTEMS AND THEATRICAL LIGHTING SYSTEMS INSTALLED AS PART OF THIS PROJECT. CARE MUST BE TAKEN TO MINIMIZE ANY INTERACTION BETWEEN THE AV SYSTEMS AND M & E SYSTEMS THROUGH CONDUIT OR BY OTHER MEANS

NOTE: DUCTS AND DIFFUSERS MUST BE MOUNTED HIGHER THAN LIGHT FIXTURES

RE: AV AND STRUCTURAL DRAWINGS FOR EQUIPMENT LOCATIONS, HANGING REQUIREMENTS AND ACOUSTIC TREATMENT REQUIREMENTS

STATE OF COLORADO LICENSED ARCHITECT

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION

2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE
BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024
Drawn by KC
Checked by KC
Title
REFLECTED CEILING PLAN

A200

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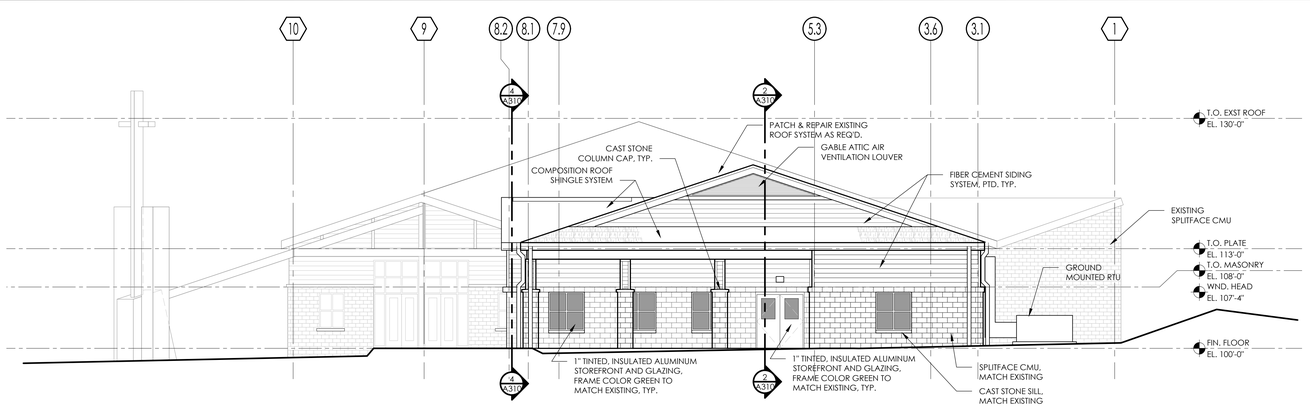
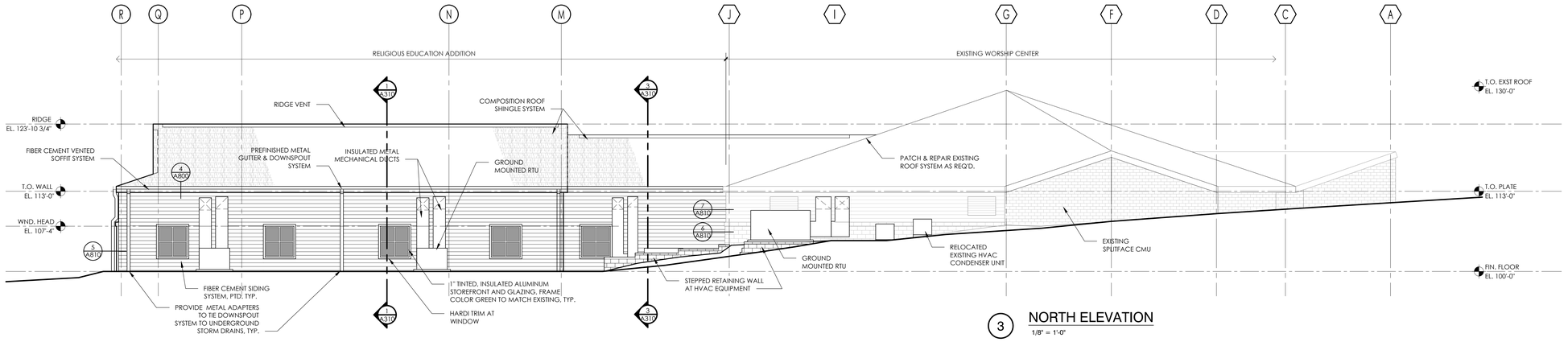


4 EAST ELEVATION
1/8" = 1'-0"



3 NORTH ELEVATION
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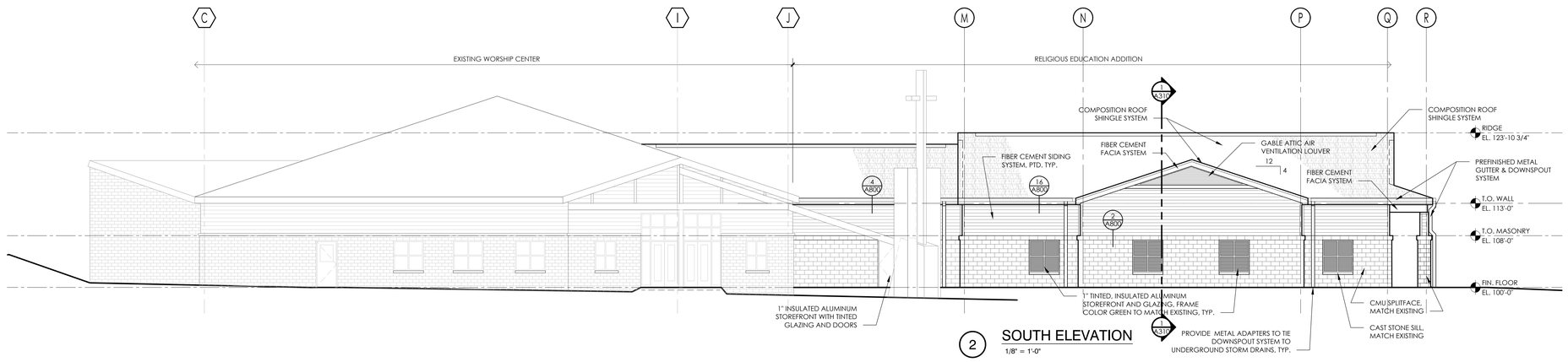
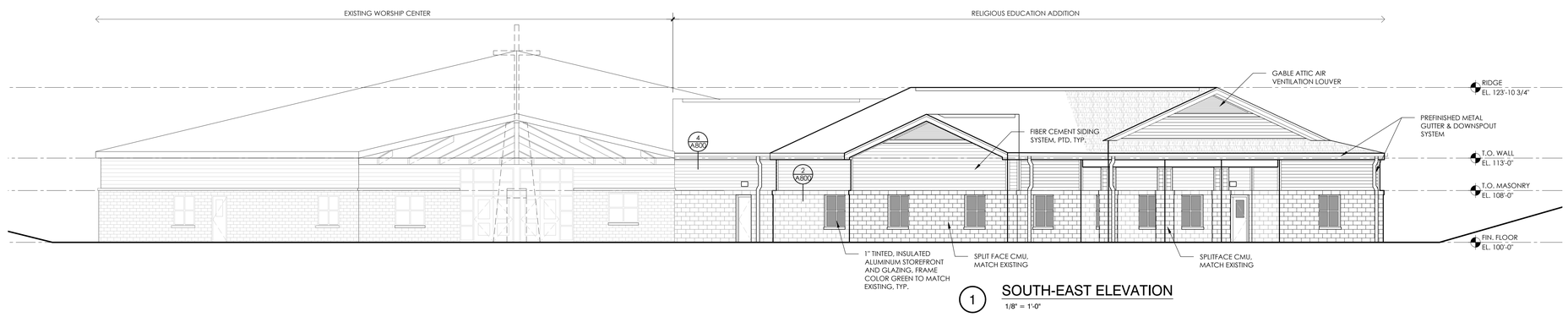


2 SOUTH ELEVATION
1/8" = 1'-0"



1 SOUTH-EAST ELEVATION
1/8" = 1'-0"

DRAWING NOTES

1-2	REFER TO LANDSCAPE DRAWINGS FOR LANDSCAPE LAYOUT AND NOTES.
1-4	REFER TO CIVIL FOR SITE SURVEY INFORMATION.
1-7	REFER TO CIVIL DRAWINGS FOR GRADING AND EROSION CONTROL.
1-9	COORDINATE WITH CIVIL DRAWINGS ON ALL SITE INFORMATION.
1-11	DIMENSIONS ARE NOMINAL AND ARE TO GRID LINE OR FACE OF GYP BD, MASONRY OR CONCRETE U.N.O. AT EXTERIOR WALL STUDS, DIMENSIONS ARE TO FACE OF STUD. RE: PARTITION TYPES FOR ACTUAL WALL THICKNESSES.
1-20	REFER TO DRAWING A011 FOR DOOR SCHEDULE AND DOOR TYPES.
1-61	ALUMINUM WINDOW FRAMING SYSTEM BASED ON KAWNEER TRIFAB II 451 SYSTEM.
1-63	PROVIDE FITTINGS AND ACCESSORIES FOR A COMPLETE FUNCTIONAL & WATER-TIGHT FRAME INSTALLATION.
1-64	PROVIDE MATCHING ALUMINUM BREAK METAL CLOSURES AND FLASHING WHERE DETAILED AND REQUIRED.
1-66	REFER TO SPECIFICATIONS FOR GLAZING DESCRIPTIONS & SEALANT/ GASKETING REQUIREMENTS.

EXTERIOR BUILDING FINISHES

	SPLIT FACE CMU: MATCH EXISTING ANCHOR BLOCK CO. - SANTA FE #506
	HORIZONTAL SIDING: JAMES HARDI ATRISAN SIDING, BEVEL CHANNEL, 7" EXPOSURE, PAINTED - COLOR TO MATCH EXISTING
	COMPOSITION ROOF SHINGLE SYSTEM: MATCH EXISTING OWENS CORNING, DURATION, CHATEAU GREEN

FINISH NOTES:

- CAST STONE SILL:
  COLOR TO MATCH EXISTING
- HM DOORS, FRAMES AND FLASHING:
  PAINTED TO MATCH EXISTING
- METAL GUTTER & DOWNSPOUT SYSTEM:
  PAINTED TO MATCH EXISTING
- HARDI FACIA & TRIM:
  PAINTED COLOR TO MATCH EXISTING

STATE OF COLORADO
JOHN KENNETH CALME
LICENSED ARCHITECT

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION

2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by: KC
Checked by: KC

Title
EXTERIOR ELEVATIONS

A300

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QC by:

Opened by:
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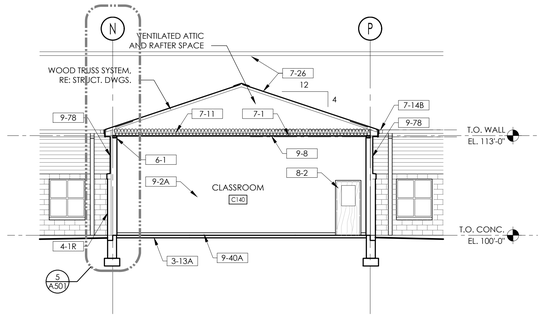
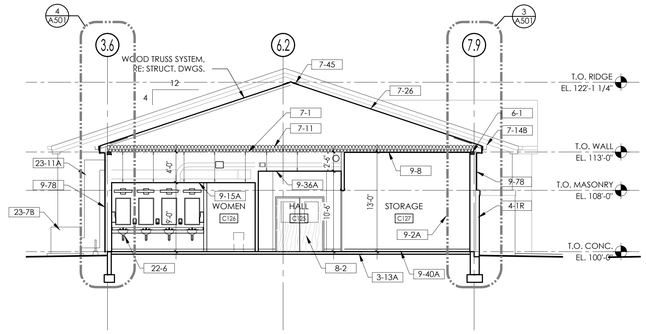


4 BUILDING SECTION 04
1/8" = 1'-0"



3 BUILDING SECTION 03
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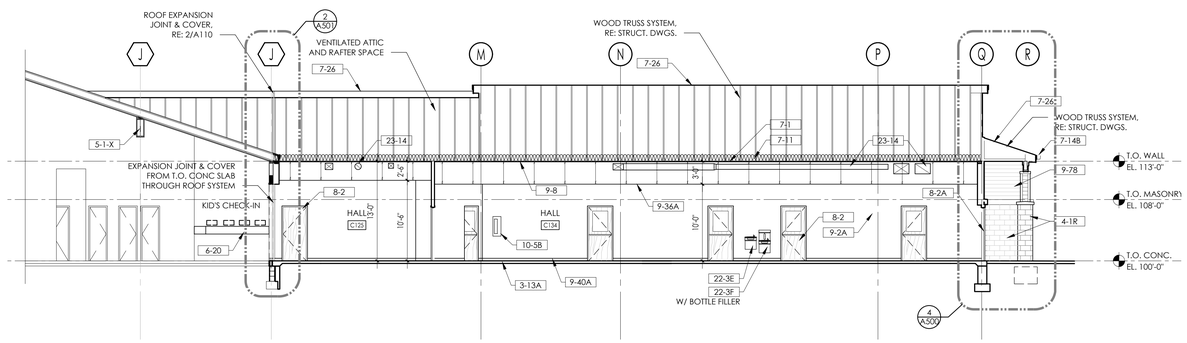

2 BUILDING SECTION 02
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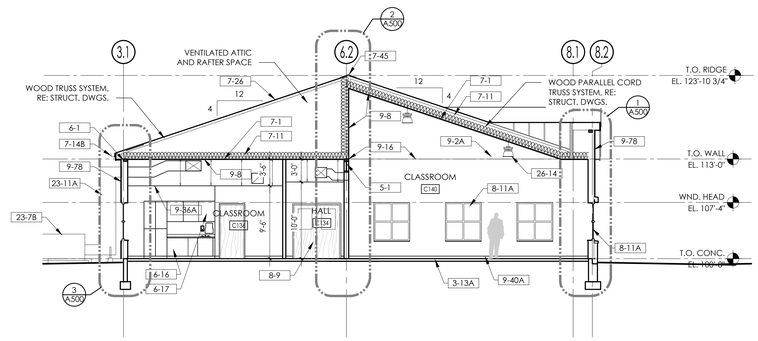

1 BUILDING SECTION 01
1/8" = 1'-0"

DRAWING NOTES

1-5	CONSULT GOVERNING AUTHORITIES FOR SPECIFIC REQUIREMENTS REGARDING GOVERNING CODES, RULES REGULATIONS AND STANDARDS.
1-11	DIMENSIONS ARE NOMINAL AND ARE TO GRID LINE OR FACE OF GYP BD, MASONRY OR CONCRETE UNO. AT EXTERIOR WALL STUDS, DIMENSIONS ARE TO FACE OF STUD. RE: PARTITION TYPES FOR ACTUAL WALL THICKNESSES.
1-12	REFER TO DRAWING A010 FOR PARTITION TYPES & NOTES
1-14	REFER TO DRAWING A800 FOR PENETRATION DETAILS THRU FIRE RATED PARTITIONS.
1-15	ALL GYP BD TO BE TYPE X U.O.N.
1-16	ALL DOOR R.O. TO BE 4" FROM PERPENDICULAR WALL U.O.N.
1-17	PROVIDE MIN. R-13 SOUND BATT INSULATION IN ALL WALLS AROUND FULL HEIGHT OFFICE WALLS, TOILETS, CONFERENCE ROOMS, AND MECHANICAL OR ELECTRICAL ROOMS
1-18	PROVIDE SEALANT AT ALL DISSIMILAR MATERIALS.
1-19	ALL GYPSUM BOARD TO BE INSTALLED PER MFR RECOMMENDATIONS. SHALL BE TAPED, BEDDED, FINISHED TO LEVEL 5 STANDARD, AND PAINTED. PROVIDE FIRE TAPE AT FIRE RATED PARTITONS. PROVIDE WATER RESISTANT GYPSUM BOARD AT WET WALLS.
1-20	REFER TO DRAWING A011 FOR DOOR SCHEDULE AND DOOR TYPES.
1-21	REFER TO DRAWING A900 FOR ROOM FINISH PLANS AND FINISH SCHEDULE.
1-22	ELECTRICAL BOXES SHALL NOT BE MOUNTED BACK TO BACK. BOXES SHALL BE SEALED TO GYP. BD. WITH RESILIENT CAULK.
1-24	METAL STUD GAUGES AT 24" O.C. AS FOLLOWS: 25 GA: 12'-9" MAX. HGT. 22 GA: 14'-0" MAX. HGT. 20 GA: 15'-0" MAX. HGT. (NOTE: GAUGES ARE BASED ON 24" O.C.. CHANGE SPACING TO 16" O.C. OR PROVIDE STRUCTURAL GUAGE STUDS AS REQ'D. WHERE INDICATED GUAGE AND HEIGHT LIMITS EXCEED MFR. RECOMMENDATION. COORDINATE WITH ARCHITECT AND SPECS.).
1-25	MAXIMUM HEIGHT OF METAL STUDS BASED ON A MAXIMUM DEFLECTION OF L/120.
1-27	SET FLOOR TRACK ON CONTINUOUS BEADS OF ACOUSTICAL SEALANT ON BOTH SIDES.
1-28	PROVIDE MIN. R-13 PLENUM RATED SOUND BATT INSULATION ABOVE CEILING OR ABOVE ALL "SOUND ISOLATED" (SEE NOTE 1-17) ROOMS FOR A DISTANCE OF 6' EA. SIDE OF WALL - UNLESS ALL PERIMETER DEMISING WALLS ARE CONTINUOUS TO STRUCTURE ABOVE.
1-29	PROVIDE FIRE RETARDANT WD. BLOCKING IN PARTITIONS AS REQ'D BY CASEWORK AND MARKER BOARDS, ETC., COORD. WITH OWNER ON ITEMS/FIXTURES AND CASEWORK INSTALLED BY OWNER THAT MAY REQ. BLOCKING.
1-30	ALL SURFACES MUST BE CLEANED AND DUST FREE PRIOR TO CAULKING AND/OR PAINTING.
1-31	REFER TO SLIP JOINTS DETAILS FOR PARTITION DEFLECTION CONDITIONS @ FLOOR AND STRUCTURE ABOVE.
2-27	EXISTING ROOF HATCH AND LADDER TO REMAIN.
3-13A	4" CONCRETE SLAB ON GRADE
4-1R	4" NOMINAL SPLIT FACE SINGLE SIDE CMU
5-1	STEEL BEAM
5-1-X	STEEL BEAM (EXISTING)
6-1	WOOD BLOCKING
6-16	PLAM BASE CABINET
6-17	PLAM WALL CABINET
6-20	PLAM COUNTER TOP
7-1	VAPOR RETARDER
7-11	ROOF INSULATION
7-14B	20 GA. METAL DOWNSPOUT, PAINT
7-26	COMPOSITION ROOF SHINGLE SYSTEM
7-45	ROOF VENT
8-2	DOOR AS SCHEDULED
8-2A	EXTERIOR HOLLOW METAL DOOR AND FRAME
8-9	ALUM. DOOR AND GLAZING
8-11A	ALUM. STOREFRONT WINDOW
9-2A	GYP. BD. PAINTED - RE: ROOM FINISH SCHEDULE & PLANS (RE: FLOOR PLANS FOR PARTITION TYPE)
9-8	1 LAYER 5/8" GYP. BD.
9-15A	SUSPENDED GYP. BD. CEILING SYSTEM
9-16	CONTROL JOINT
9-36A	SUSPENDED 2X4 A.C.T SYSTEM
9-40A	WALL BASE - RE: ROOM FINISH SCHEDULE & PLANS
9-78	CEMENTITIOUS SIMULATED WOOD SIDING FINISH SYSTEM
10-5B	SEMI RECESSED FIRE EXTINGUISHER & CABINET
22-3E	SURFACE MOUNTED DRINKING FOUNTAIN
22-3F	SURFACE MOUNTED EWC ADA COMPLIANT
22-6	LAVATORY
23-7B	GROUND MOUNTED HVAC UNIT
23-11A	INSULATED METAL MECH. DUCT
23-14	EXHAUST/INTAKE DUCT, RE: MECHANICAL
26-14	PENDANT LIGHT, RE: ELEC LIGHT SCHEDULE
27-3	PLYWD PATCH PANEL BOARD

STATE OF COLORADO
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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION

2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by KC | Checked by KC

Title
BUILDING SECTIONS

A310

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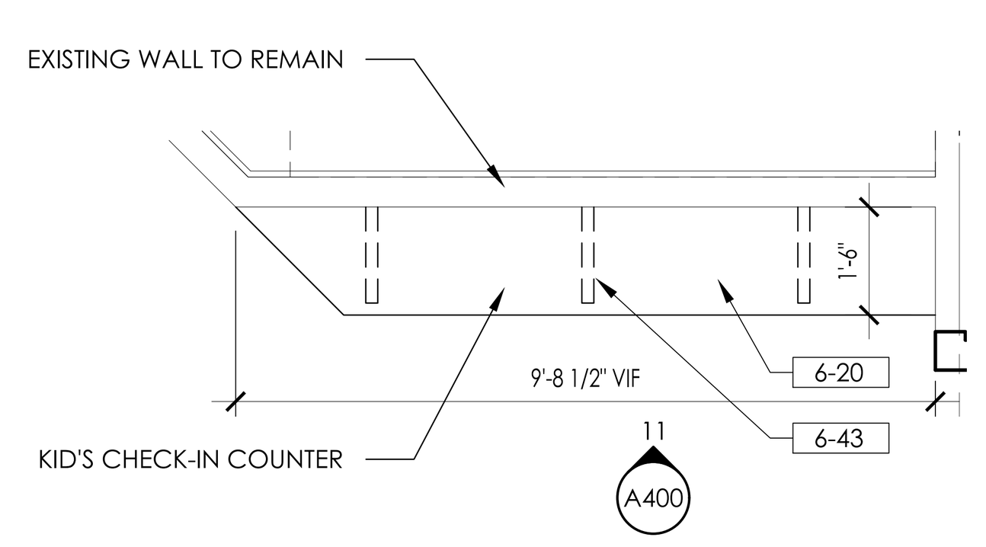
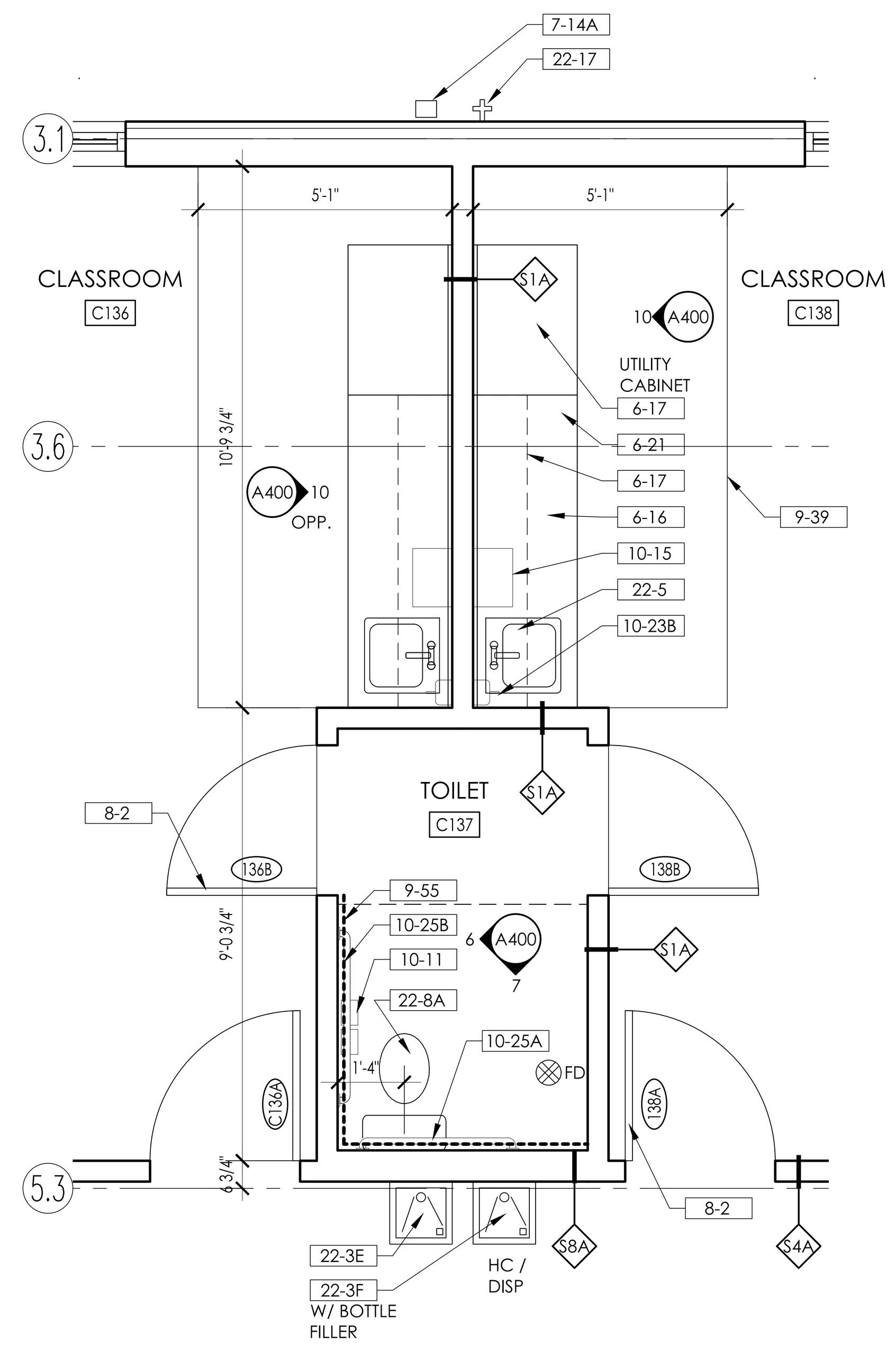
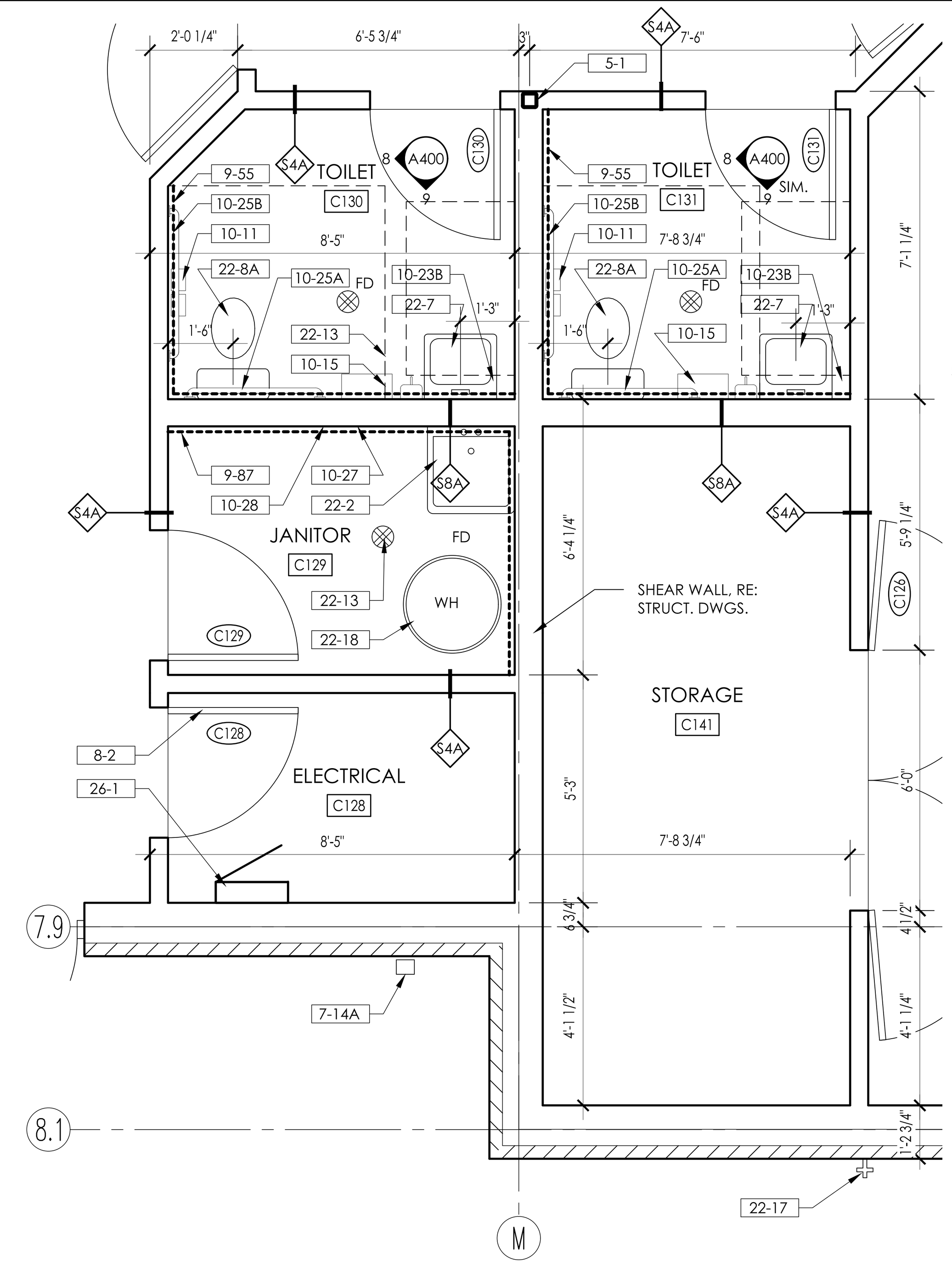


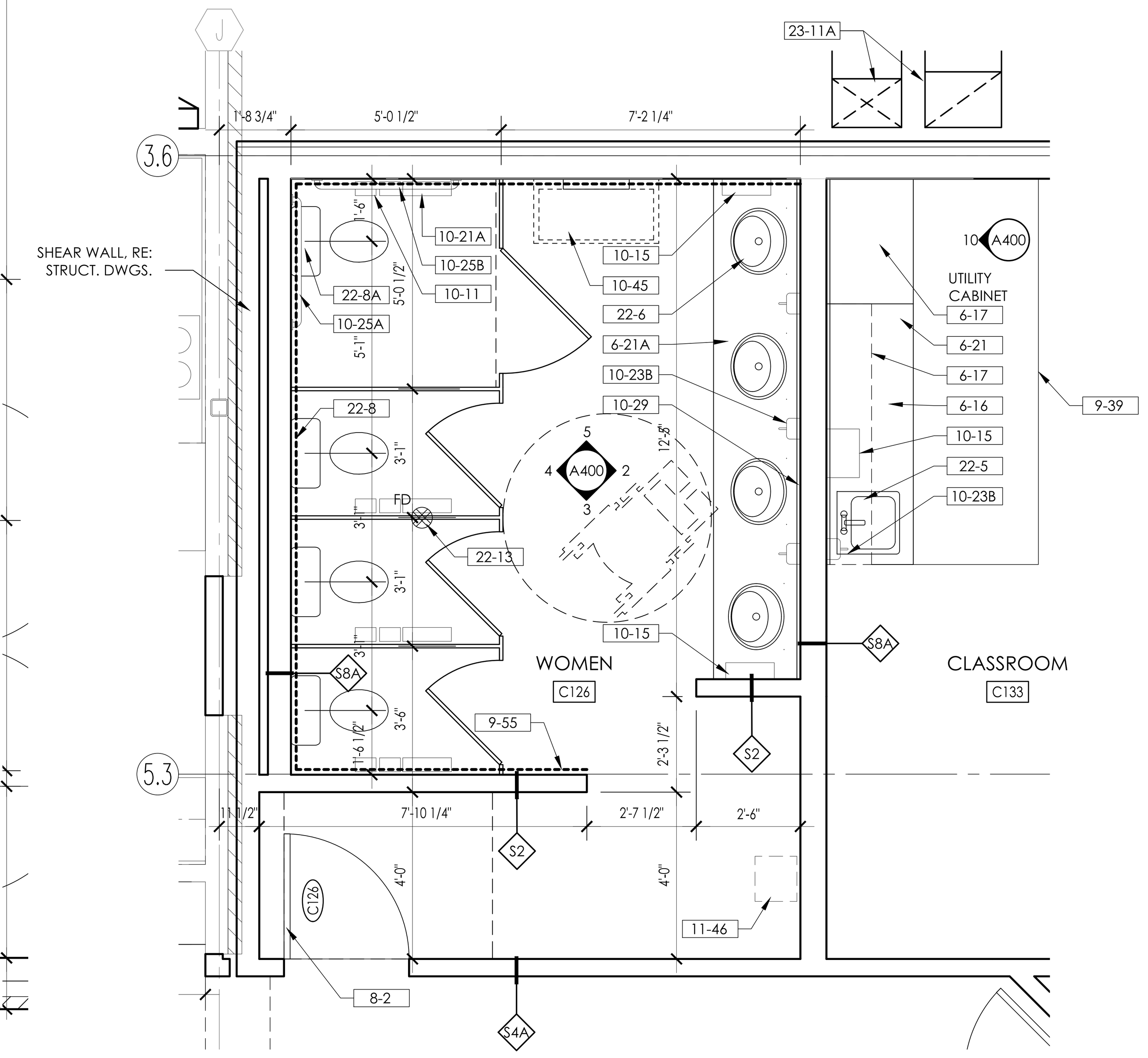
15 **KID'S CHECK-IN**
3/8" = 1'-0"



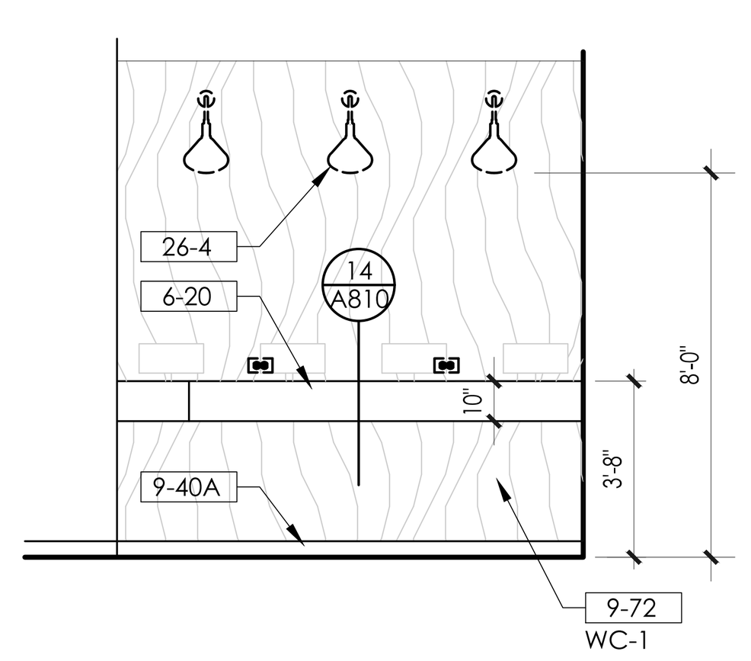
14 **CHILDREN'S TOILET C137**
3/8" = 1'-0"



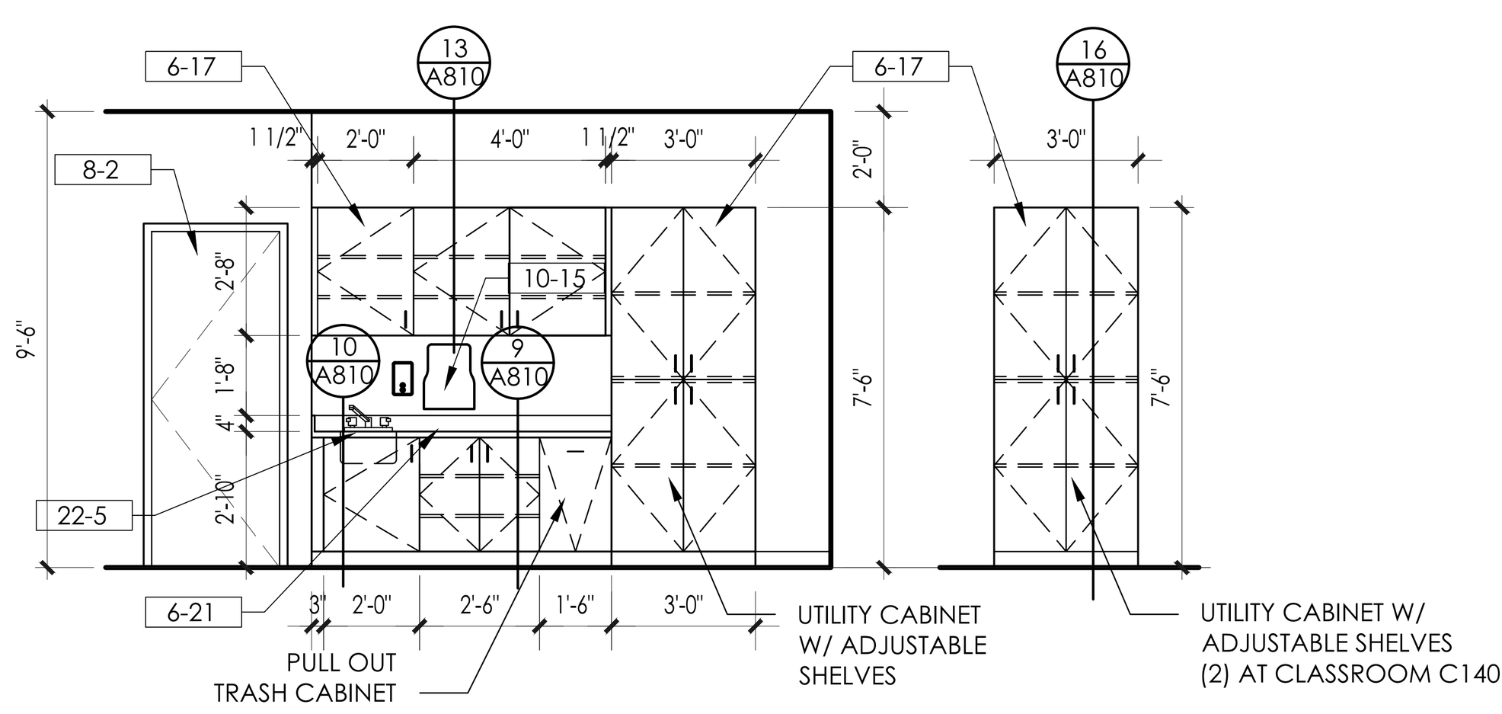
13 **TOILET RM C130 & C131**
3/8" = 1'-0"



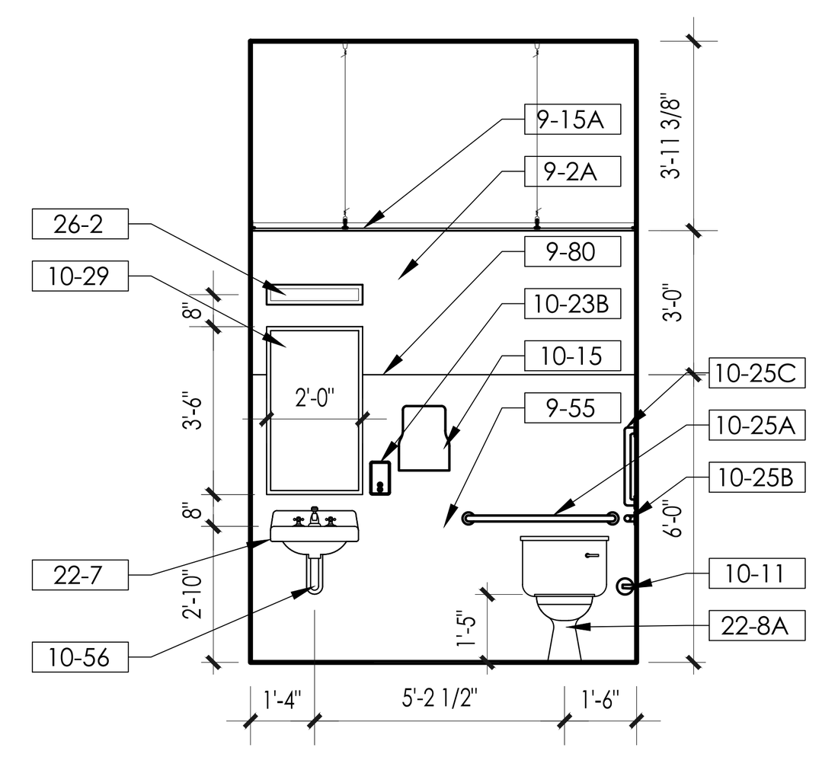
12 **WOMEN C126**
3/8" = 1'-0"



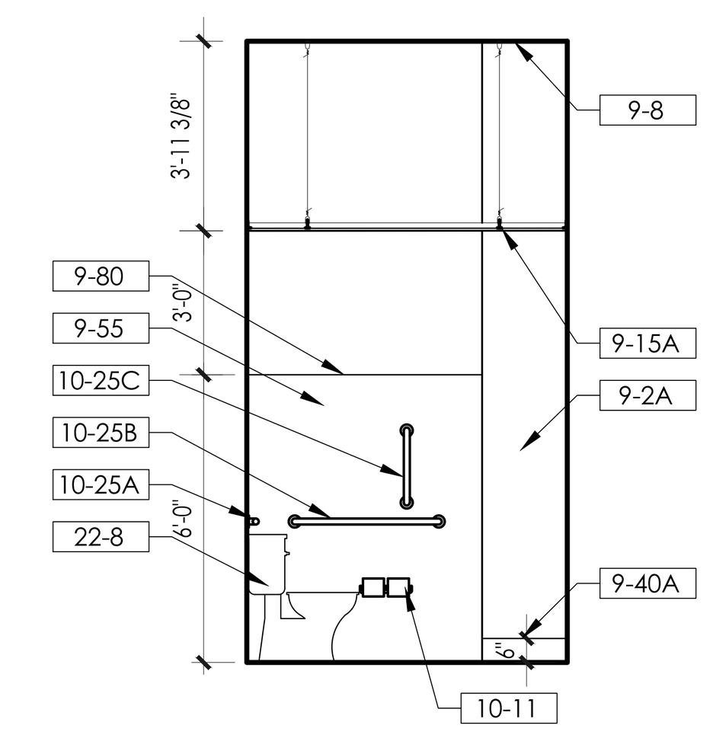
11 **KIDS CHECK-IN**
1/4" = 1'-0"



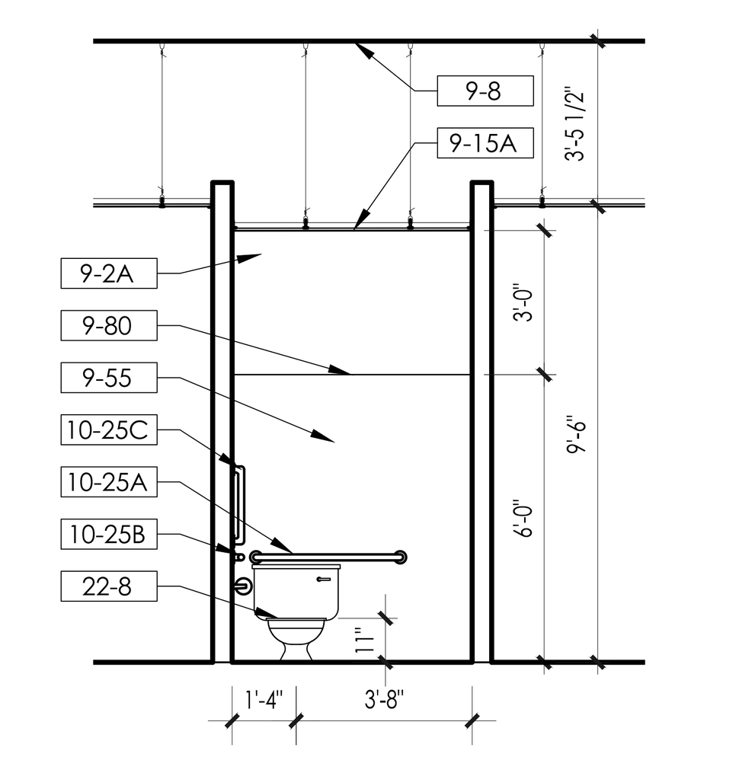
10 **CLASSROOMS CASEWORK**
1/4" = 1'-0"



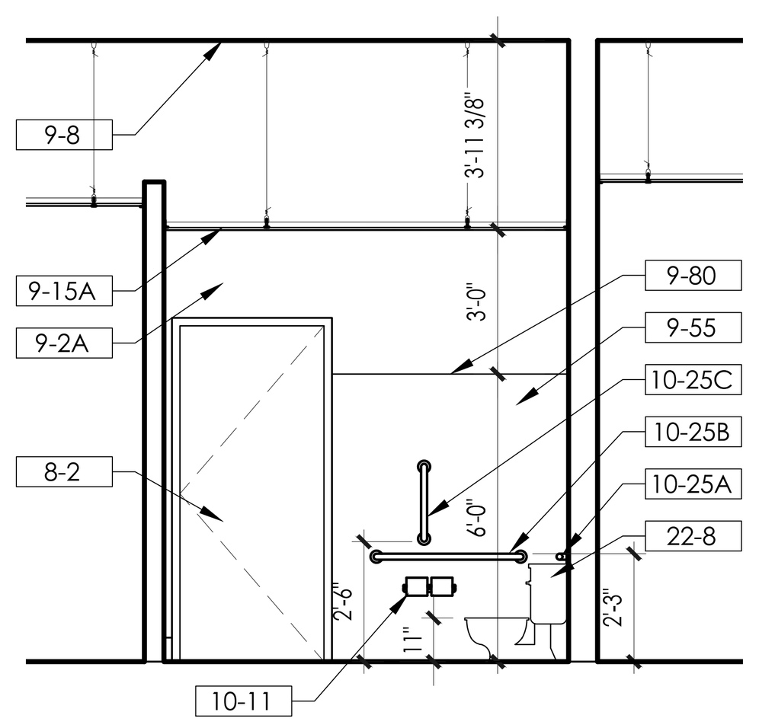
9 **TOILET C130**
1/4" = 1'-0" C131 SIM.



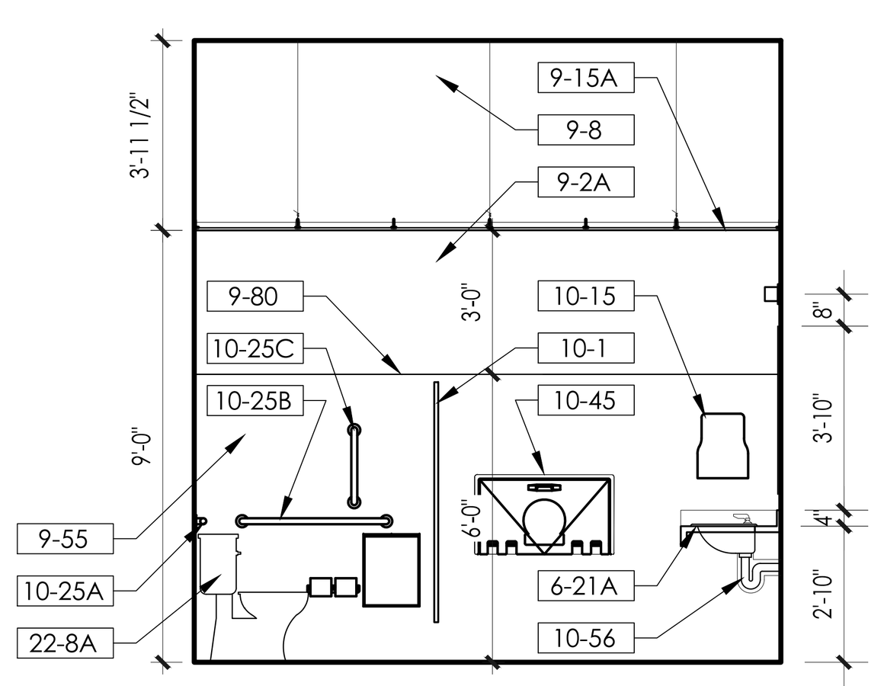
8 **TOILET C130**
1/4" = 1'-0" C131 SIM.



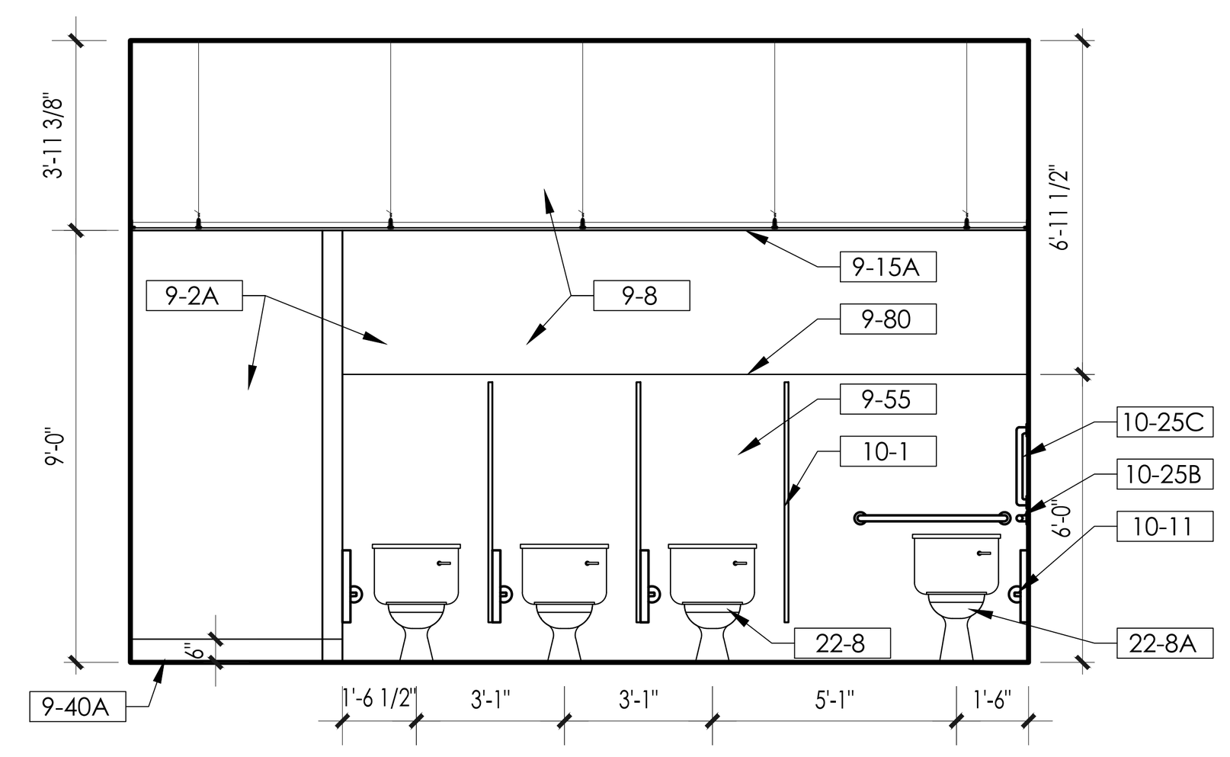
7 **CHILDRENS TOILET C137**
1/4" = 1'-0"



6 **CHILDRENS TOILET C137**
1/4" = 1'-0"



5 **WOMEN C121 04**
1/4" = 1'-0"



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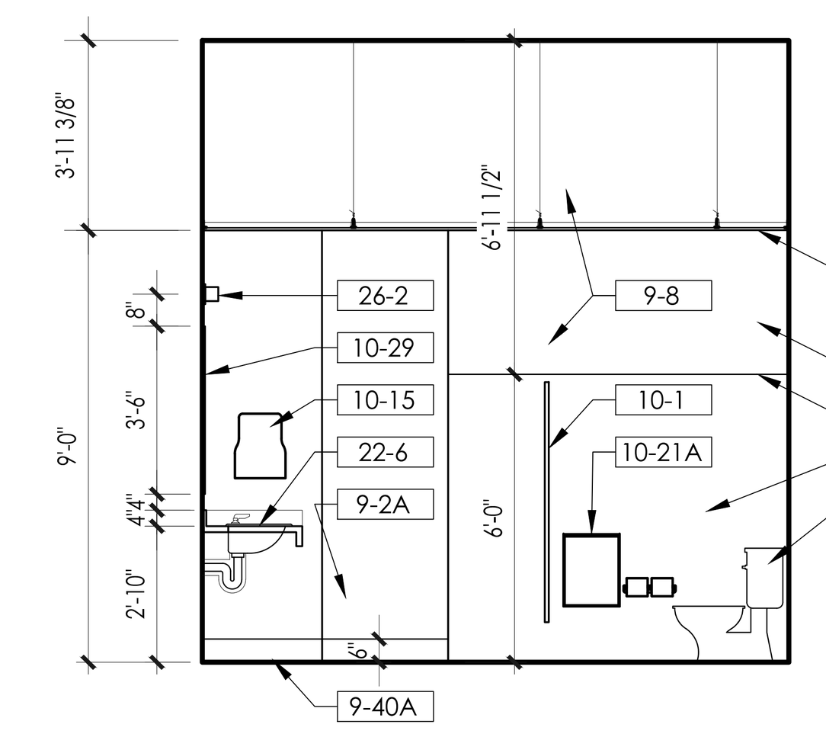

3 **WOMEN C121 02**
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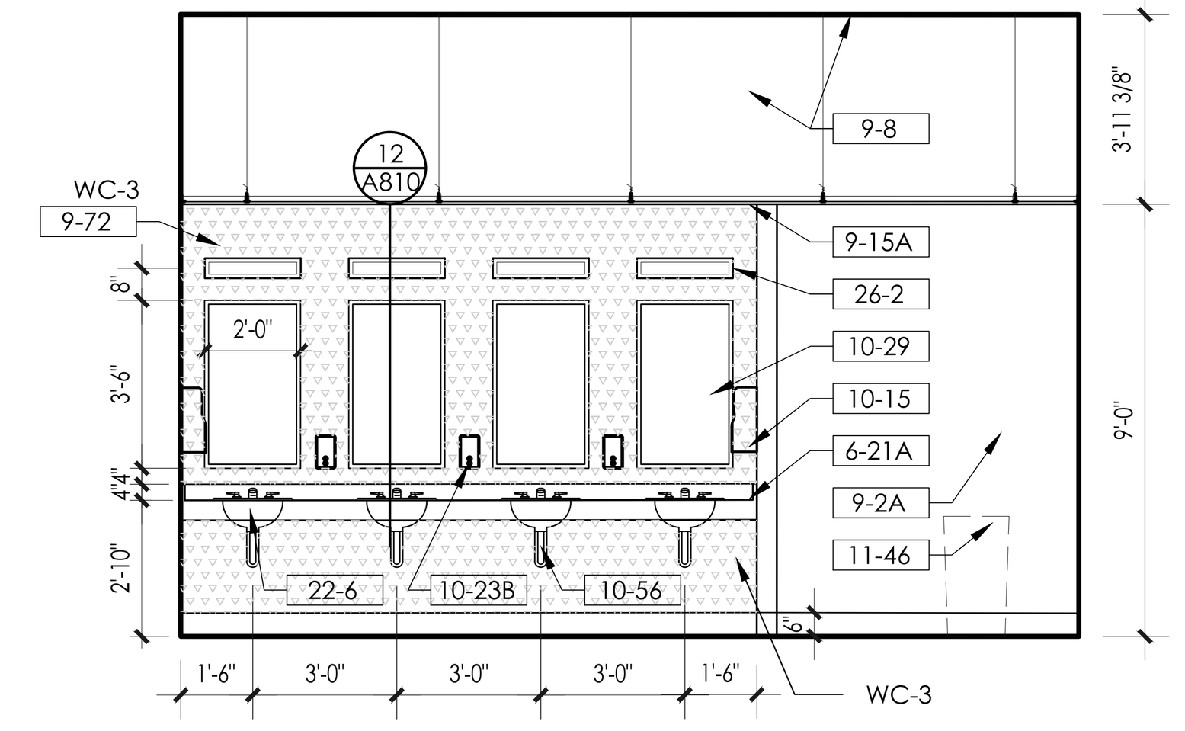

2 **WOMEN C121 01**
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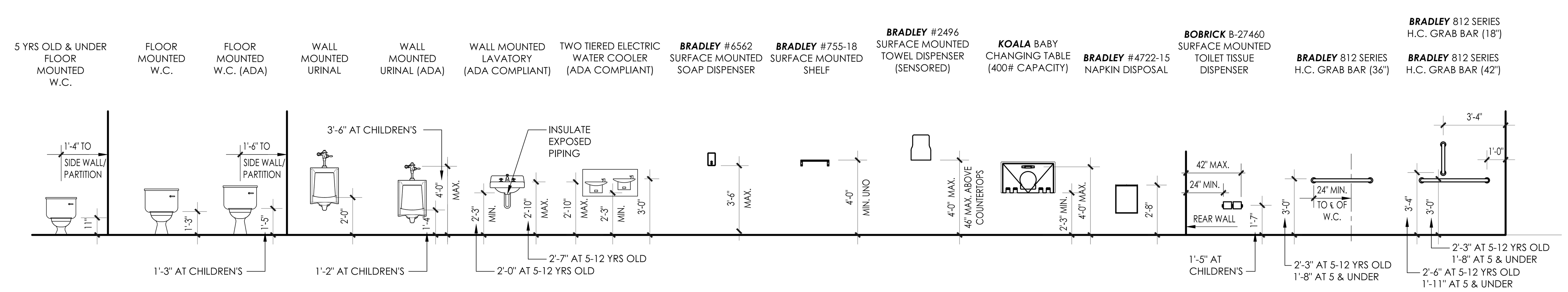

1 **TYPICAL FIXTURE MOUNTING HEIGHTS**
1/4" = 1'-0"

DRAWING NOTES

1-11	DIMENSIONS ARE NOMINAL AND ARE TO GRID LINE OR FACE OF GYP BD, MASONRY OR CONCRETE UNO. AT EXTERIOR WALL STUDS, DIMENSIONS ARE TO FACE OF STUD. RE: PARTITION TYPES FOR ACTUAL WALL THICKNESSES.
1-12	REFER TO DRAWING A010 FOR PARTITION TYPES & NOTES
1-15	ALL GYP BD TO BE TYPE X U.O.N.
1-16	ALL DOOR R.O. TO BE 4" FROM PERPENDICULAR WALL U.O.N.
1-17	PROVIDE MIN. R-13 SOUND BATT INSULATION IN ALL WALLS AROUND FULL HEIGHT OFFICE WALLS, TOILETS, CONFERENCE ROOMS, AND MECHANICAL OR ELECTRICAL ROOMS
1-19	ALL GYPSUM BOARD TO BE INSTALLED PER MFR RECOMMENDATIONS. SHALL BE TAPED, BEDDED, FINISHED TO LEVEL 5 STANDARD, AND PAINTED. PROVIDE FIRE TAPE AT FIRE RATED PARTITONS. PROVIDE WATER RESISTANT GYPSUM BOARD AT WET WALLS.
1-20	REFER TO DRAWING A011 FOR DOOR SCHEDULE AND DOOR TYPES.
1-21	REFER TO DRAWING A900 FOR ROOM FINISH PLANS AND FINISH SCHEDULE.
1-24	METAL STUD GAUGES AT 24" O.C. AS FOLLOWS: 25 GA: 12'-9" MAX. HGT. 22 GA: 14'-0" MAX. HGT. 20 GA: 15'-0" MAX. HGT. (NOTE: GAUGES ARE BASED ON 24" O.C.. CHANGE SPACING TO 16" O.C. OR PROVIDE STRUCTURAL GUAGE STUDS AS REQ'D. WHERE INDICATED GUAGE AND HEIGHT LIMITS EXCEED MFR. RECOMMENDATION, COORDINATE WITH ARCHITECT AND SPECS.)
1-25	MAXIMUM HEIGHT OF METAL STUDS BASED ON A MAXIMUM DEFLECTION OF L/120.
1-29	PROVIDE FIRE RETARDANT WD. BLOCKING IN PARTITIONS AS REQ'D BY CASEWORK AND MARKER BOARDS, ETC.. COORD. WITH OWNER ON ITEMS/FIXTURES AND CASEWORK INSTALLED BY OWNER THAT MAY REQ. BLOCKING.
5-1	STEEL BEAM
6-16	PLAM BASE CABINET
6-17	PLAM WALL CABINET
6-20	PLAM COUNTER TOP
6-21	PLAM COUNTER TOP WITH SPLASH
6-21A	SOLID SURFACE / QUARTZ COMPOSITE COUNTER TOP WITH SPLASH, RE: FINSIH SCHED.
6-43	COUNTERTOP SUPPORT BRACKET
7-14A	18 GA. METAL DOWNSPOUT - PREFINISHED
8-2	DOOR AS SCHEDULED
9-2A	GYP. BD. PAINTED - RE: ROOM FINISH SCHEDULE & PLANS (RE: FLOOR PLANS FOR PARTITION TYPE)
9-8	1 LAYER 5/8" GYP. BD.
9-15A	SUSPENDED GYP. BD. CEILING SYSTEM
9-39	VINYL COMPOSITION TILE
9-40A	WALL BASE - RE: ROOM FINISH SCHEDULE & PLANS
9-55	CERAMIC TILE WAINSCOT - RE: ROOM FINISH SCHEDULE & PLANS
9-72	VINYL WALL COVERING
9-80	SCHLUTER EDGE
9-87	FRP WAINSCOT - RE: ROOM FINISH SCHEDULE & PLANS
10-1	TOILET PARTITION
10-11	SURF. MOUNT. TOILET PAPER DISP. (BY OWNER)
10-15	SURF. MOUNT. PAPER TOWEL DISP. (BY OWNER)
10-21A	SURFACED MOUNTED FEMININE NAPKIN DISPENSER
10-23B	SOAP DISPENSER (WALL MOUNTED - BY OWNER)
10-25A	36" HORIZONTAL GRAB BAR (W.C. BACK)
10-25B	42" HORIZONTAL GRAB BAR (W.C. SIDE)
10-25C	18" VERTICAL GRAB BAR (W.C. SIDE)
10-27	UTILITY SHELF
10-28	MOP HOLDER
10-29	FRAMED MIRROR
10-45	WALL MOUNTED PLASTIC DIAPER CHANGING TABLE
10-56	ADA COMPLIANT UNDER-SINK PROTECTORS ON SUPPLY LINES AND P-TRAP
11-46	TRASH CAN (BY OWNER)
22-2	MOP SERVICE SINK
22-3E	SURFACE MOUNTED DRINKING FOUNTAIN
22-3F	SURFACE MOUNTED EWC ADA COMPLIANT
22-5	SINK
22-6	LAVATORY
22-7	WALL MOUNTED LAVATORY (ADA)
22-8	FLOOR MOUNTED FLUSH VALVE WC
22-8A	FLOOR MOUNTED FLUSH VALVE WC (ADA)
22-13	FLOOR DRAIN
22-17	FREEZELESS WALL HYDRANT
22-18	WATER HEATER
23-11A	INSULATED METAL MECH. DUCT
26-1	PANEL BOARD - PROVIDE PLYWOOD BACKING AS REQ'D
26-2	WALL MOUNTED DEVICE RE: ELEC.
26-4	LIGHT FIXTURE, TYP. REFER TO ELECTRICAL SCHEDULE.

STATE OF COLORADO LICENSED ARCHITECT

LEE
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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION
2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by: KC
Checked by: KC

Title
ENLRG PLANS & INT ELEVATIONS

A400

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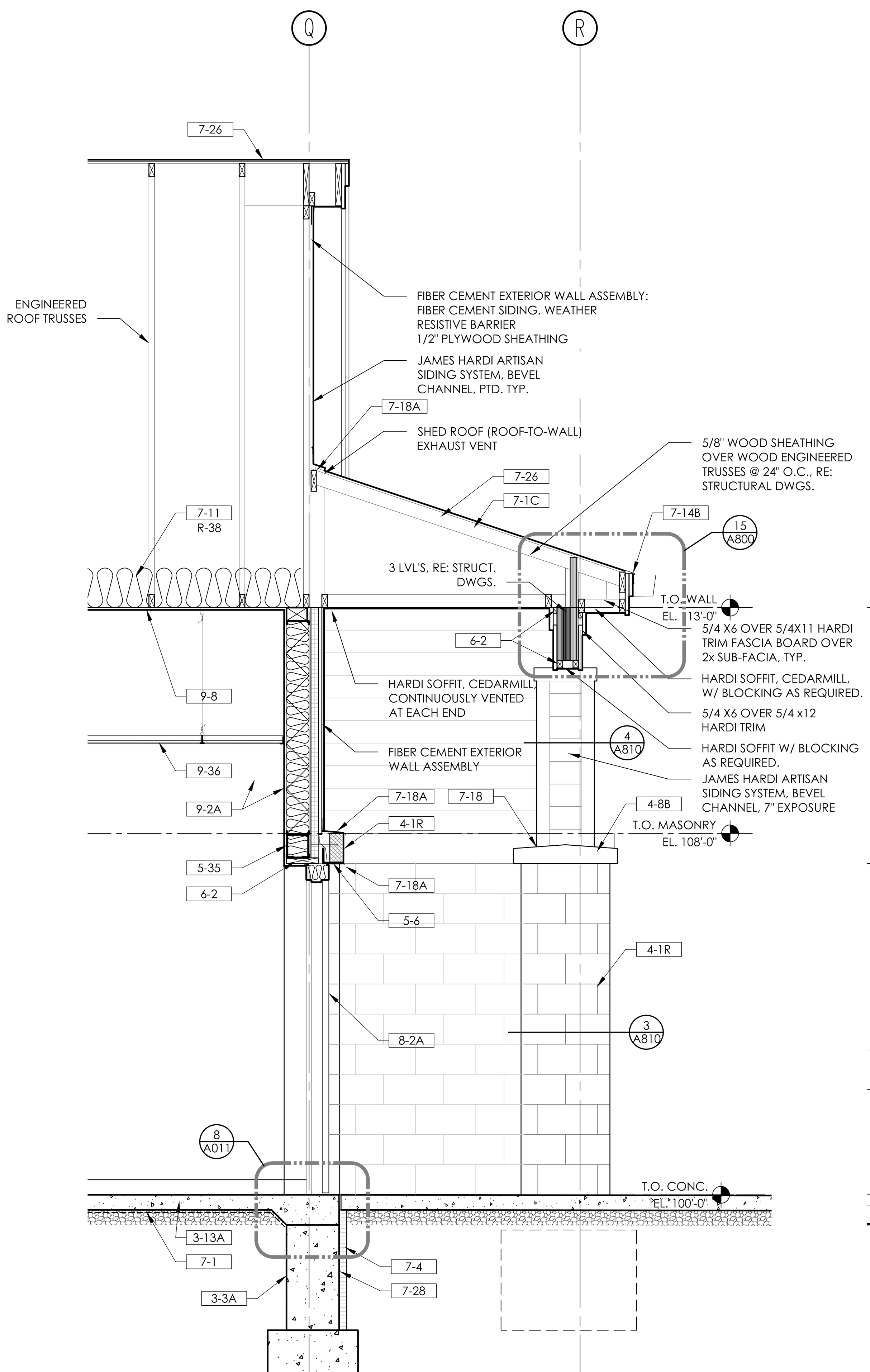
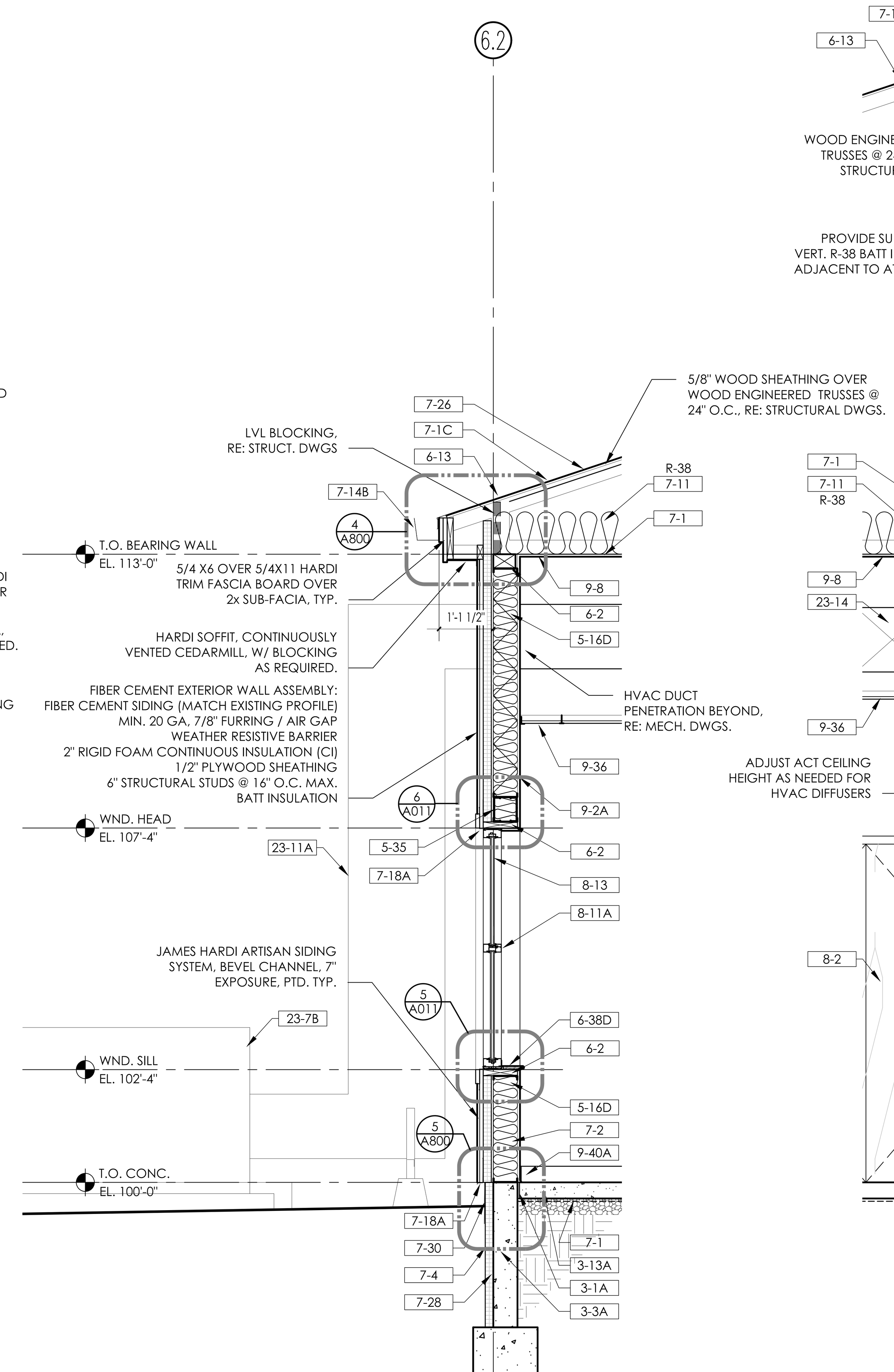


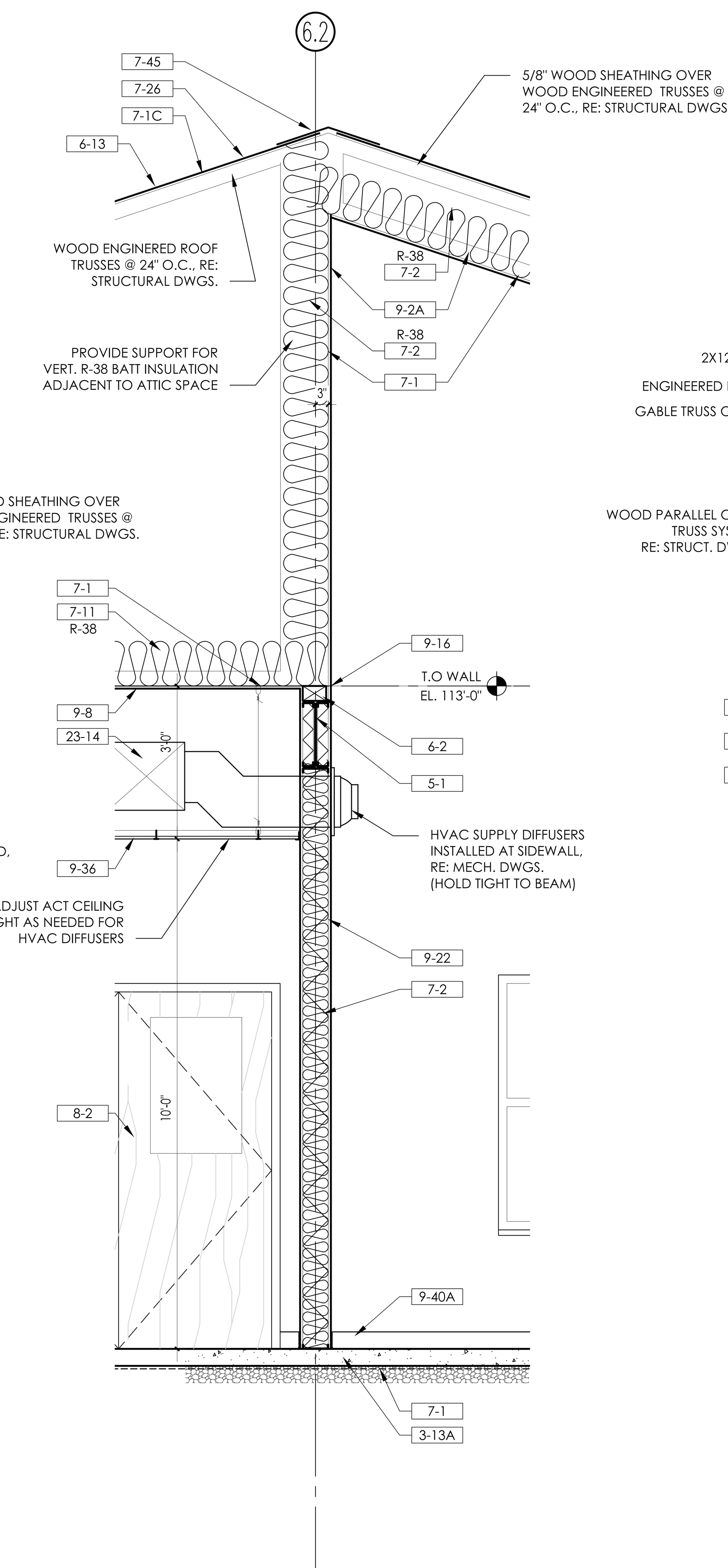
4 WALL SECTION

1/2" = 1'-0"



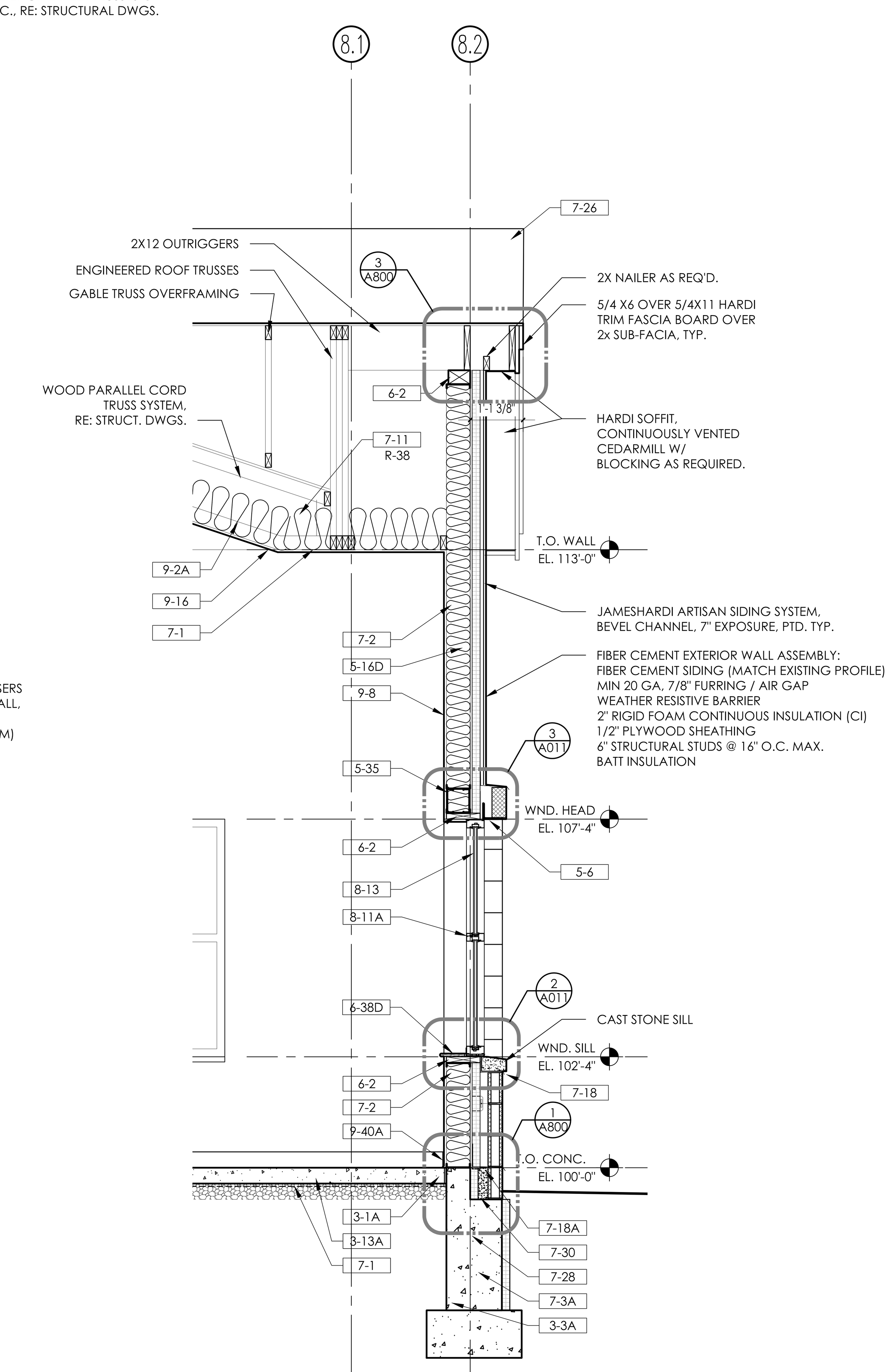
3 WALL SECTION

1/2" = 1'-0"



2 WALL SECTION

1/2" = 1'-0"



1 WALL SECTION

1/2" = 1'-0"

DRAWING NOTES

1-5	CONSULT GOVERNING AUTHORITIES FOR SPECIFIC REQUIREMENTS REGARDING GOVERNING CODES, RULES REGULATIONS AND STANDARDS.
1-11	DIMENSIONS ARE NOMINAL AND ARE TO GRID LINE OR FACE OF GYP BD, MASONRY OR CONCRETE UNO. AT EXTERIOR WALL STUDS, DIMENSIONS ARE TO FACE OF STUD. RE: PARTITION TYPES FOR ACTUAL WALL THICKNESSES.
1-12	REFER TO DRAWING A010 FOR PARTITION TYPES & NOTES
1-14	REFER TO DRAWING A800 FOR PENETRATION DETAILS THRU FIRE RATED PARTITIONS.
1-15	ALL GYP BD TO BE TYPE X U.O.N.
1-16	ALL DOOR R.O. TO BE 4" FROM PERPENDICULAR WALL U.O.N.
1-17	PROVIDE MIN. R-13 SOUND BATT INSULATION IN ALL WALLS AROUND FULL HEIGHT OFFICE WALLS, TOILETS, CONFERENCE ROOMS, AND MECHANICAL OR ELECTRICAL ROOMS
1-18	PROVIDE SEALANT AT ALL DISSIMILAR MATERIALS.
1-19	ALL GYPSUM BOARD TO BE INSTALLED PER MFR RECOMMENDATIONS. SHALL BE TAPED, BEDDED, FINISHED TO LEVEL 5 STANDARD, AND PAINTED. PROVIDE FIRE TAPE AT FIRE RATED PARTITONS. PROVIDE WATER RESISTANT GYPSUM BOARD AT WET WALLS.
1-20	REFER TO DRAWING A011 FOR DOOR SCHEDULE AND DOOR TYPES.
1-21	REFER TO DRAWING A900 FOR ROOM FINISH PLANS AND FINISH SCHEDULE.
1-22	ELECTRICAL BOXES SHALL NOT BE MOUNTED BACK TO BACK. BOXES SHALL BE SEALED TO GYP. BD. WITH RESILIENT CAULK.
1-24	METAL STUD GAUGES AT 24" O.C. AS FOLLOWS: 25 GA: 12'-9" MAX. HGT. 22 GA: 14'-0" MAX. HGT. 20 GA: 15'-0" MAX. HGT. (NOTE: GAUGES ARE BASED ON 24" O.C.. CHANGE SPACING TO 16" O.C. OR PROVIDE STRUCTURAL GUAGE STUDS AS REQ'D. WHERE INDICATED GUAGE AND HEIGHT LIMITS EXCEED MFR. RECOMMENDATION, COORDINATE WITH ARCHITECT AND SPECS.)
1-25	MAXIMUM HEIGHT OF METAL STUDS BASED ON A MAXIMUM DEFLECTION OF L/120.
1-27	SET FLOOR TRACK ON CONTINUOUS BEADS OF ACOUSTICAL SEALANT ON BOTH SIDES.
1-28	PROVIDE MIN. R-13 PLENUM RATED SOUND BATT INSULATION ABOVE CEILING OR ABOVE ALL "SOUND ISOLATED" (SEE NOTE 1-17) ROOMS FOR A DISTANCE OF 6' EA. SIDE OF WALL - UNLESS ALL PERIMETER DEMISING WALLS ARE CONTINUOUS TO STRUCTURE ABOVE.
1-29	PROVIDE FIRE RETARDANT WD. BLOCKING IN PARTITIONS AS REQ'D BY CASEWORK AND MARKER BOARDS, ETC.. COORD. WITH OWNER ON ITEMS/FIXTURES AND CASEWORK INSTALLED BY OWNER THAT MAY REQ. BLOCKING.
1-30	ALL SURFACES MUST BE CLEANED AND DUST FREE PRIOR TO CAULKING AND/OR PAINTING.
1-31	REFER TO SLIP JOINTS DETAILS FOR PARTITION DEFLECTION CONDITIONS @ FLOOR AND STRUCTURE ABOVE.
2-27	EXISTING ROOF HATCH AND LADDER TO REMAIN.
3-1A	1/2" COMPRESSIBLE FILLER
3-3A	C.I.P. CONCRETE FOUNDATION
3-13A	4" CONCRETE SLAB ON GRADE
4-1R	4" NOMINAL SPLIT FACE SINGLE SIDE CMU
4-8B	PRE-CAST CAP
5-1	STEEL BEAM
5-6	STEEL LINTEL
5-16D	6" STRUCTURAL STUDS AT 16" O.C. MAX. RE: STRUCT.
5-35	18 GA STRUCTURAL JOIST HEADER, RE: STRUCT. DWGS.
6-2	CONTINUOUS WOOD BLOCKING
6-13	5/8" PLYWOOD SHEATHING
6-38D	PAINTED MDF SILL
7-1	VAPOR RETARDER
7-1C	WATER RESISTIVE BARRIER
7-2	BATT INSULATION RE: SPECS
7-3A	2" RIGID INSULATION
7-4	PERIMETER INSULATION
7-11	ROOF INSULATION
7-14B	20 GA. METAL DOWNSPOUT, PAINT
7-18	24 GAUGE GALV. SHEET MTL. FLASHING - PAINT
7-18A	PREFINISHED SHEET METAL FLASHING
7-26	COMPOSITION ROOF SHINGLE SYSTEM
7-28	DAMPPROOFING
7-30	PROTECTION BOARD
7-45	ROOF VENT
8-2	DOOR AS SCHEDULED
8-2A	EXTERIOR HOLLOW METAL DOOR AND FRAME
8-11A	ALUM. STOREFRONT WINDOW
8-13	1" TINTED INSULATING GLASS
9-2A	GYP. BD. PAINTED - RE: ROOM FINISH SCHEDULE & PLANS (RE: FLOOR PLANS FOR PARTITION TYPE)
9-8	1 LAYER 5/8" GYP. BD.
9-16	CONTROL JOINT
9-22	6" METAL STUD AT MAX 24" O.C.
9-36	SUSPENDED ACT CLG. SYSTEM RE: REFLECTED CEILING PLANS & FINISH PLANS
9-40A	WALL BASE - RE: ROOM FINISH SCHEDULE & PLANS
23-7B	GROUND MOUNTED HVAC UNIT
23-11A	INSULATED METAL MECH. DUCT
23-14	EXHAUST/INTAKE DUCT. RE: MECHANICAL
27-3	PLYWD PATCH PANEL BOARD

STATE OF COLORADO LICENSED ARCHITECT

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION

2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by: KC
Checked by: KC

Title
WALL SECTIONS

A500

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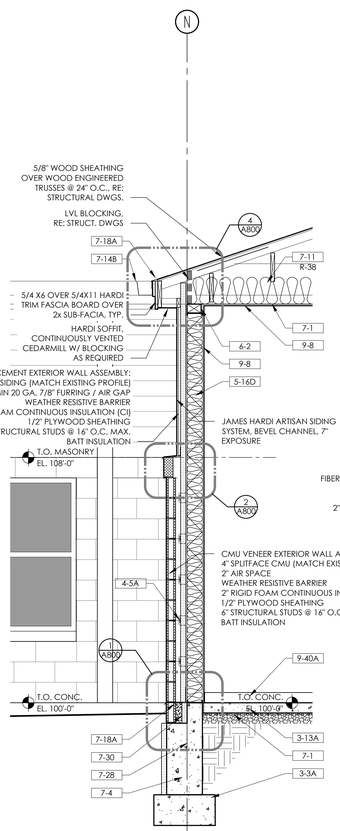
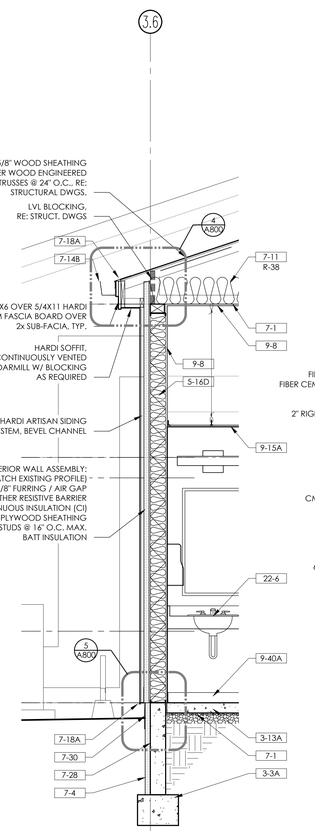
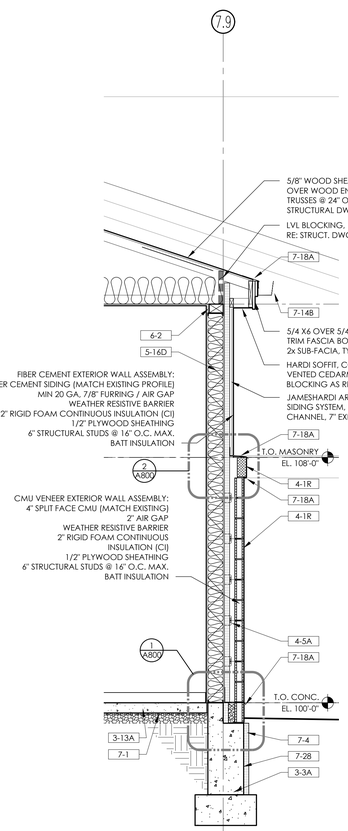


5 WALL SECTION
1/2" = 1'-0"



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



3 WALL SECTION
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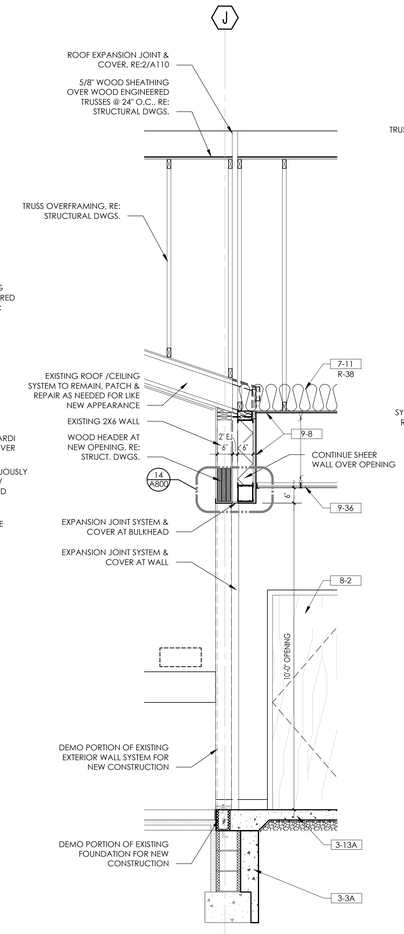
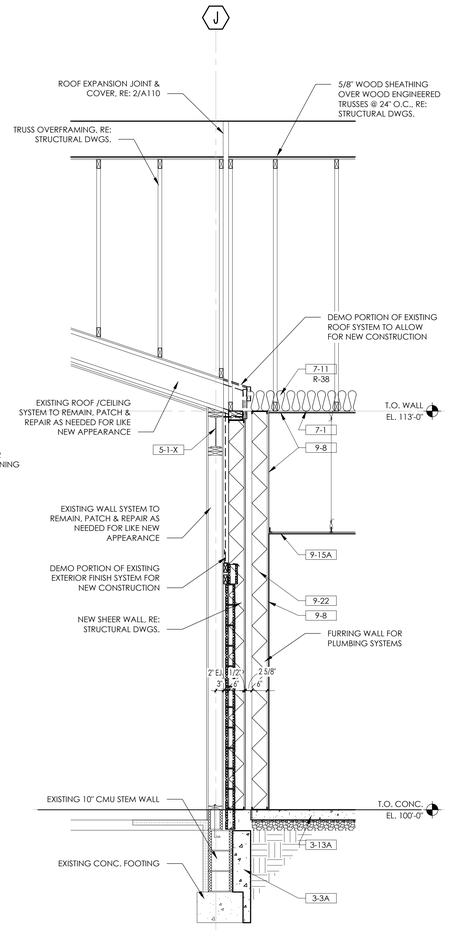


2 WALL SECTION
1/2" = 1'-0"



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DRAWING NOTES

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1-28	PROVIDE MIN. R-13 PLENUM RATED SOUND BATT INSULATION ABOVE CEILING OR ABOVE ALL "SOUND ISOLATED" (SEE NOTE 1-17) ROOMS FOR A DISTANCE OF 6' EA. SIDE OF WALL - UNLESS ALL PERIMETER DEMISING WALLS ARE CONTINUOUS TO STRUCTURE ABOVE.
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1-31	REFER TO SLIP JOINTS DETAILS FOR PARTITION DEFLECTION CONDITIONS @ FLOOR AND STRUCTURE ABOVE.
2-27	EXISTING ROOF HATCH AND LADDER TO REMAIN.
3-3A	C.I.P. CONCRETE FOUNDATION
3-13A	4" CONCRETE SLAB ON GRADE
4-1R	4" NOMINAL SPLIT FACE SINGLE SIDE CMU
4-5A	ADJUSTABLE MASONRY TIE @ 16" O.C.
5-1-X	STEEL BEAM (EXISTING)
5-16D	6" STRUCTURAL STUDS AT 16" O.C. MAX. RE: STRUCT.
6-2	CONTINUOUS WOOD BLOCKING
7-1	VAPOR RETARDER
7-4	PERIMETER INSULATION
7-11	ROOF INSULATION
7-14B	20 GA. METAL DOWNSPOUT, PAINT
7-18A	PREFINISHED SHEET METAL FLASHING
7-28	DAMPPROOFING
7-30	PROTECTION BOARD
8-2	DOOR AS SCHEDULED
9-8	1 LAYER 5/8" GYP. BD.
9-15A	SUSPENDED GYP. BD. CEILING SYSTEM
9-22	6" METAL STUD AT MAX 24" O.C.
9-36	SUSPENDED ACT CLG. SYSTEM RE: REFLECTED CEILING PLANS & FINISH PLANS
9-40A	WALL BASE - RE: ROOM FINISH SCHEDULE & PLANS
22-6	LAVATORY
27-3	PLYWD PATCH PANEL BOARD

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION

2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by: KC
Checked by: KC

Title
WALL SECTIONS

A501

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XD046NONRATEDGYPBDCONTROLJNT
X801 BULKHEAD DETAIL
X803 BULKHEAD DETAIL
XD037IHRRATEDCONTROLJNT
XD040DUCT1HRGYPBDPART
X802 BULKHEAD EXPANSION DETAIL
XD819EXPANSION JOINT COVER
XD810EAVE DETAIL
XD811RAKE DETAIL
XD810 BRICK LEDGE DETAIL AT FOUNDATION
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XD815 FOUNDATION DETAIL @ SIDING
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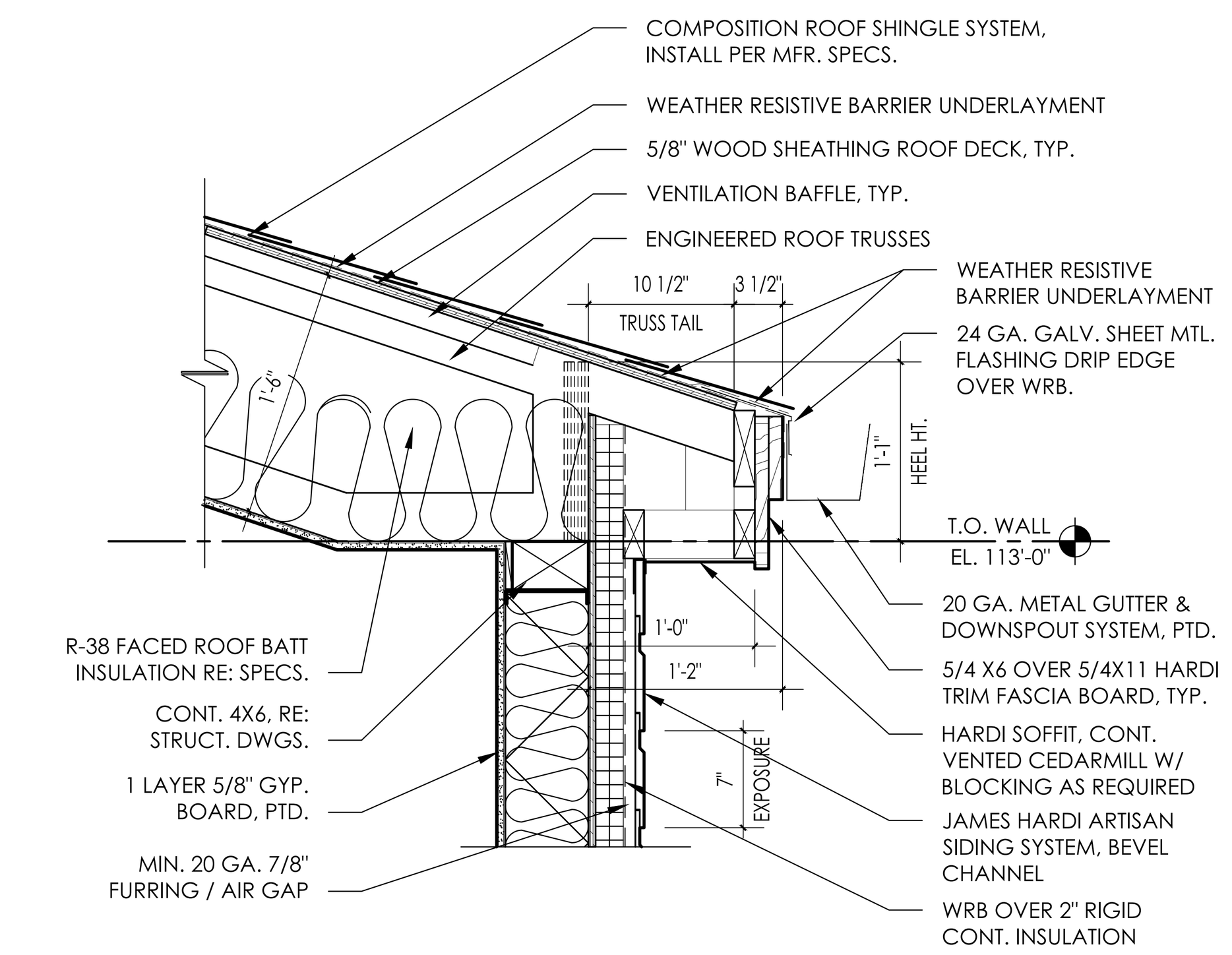
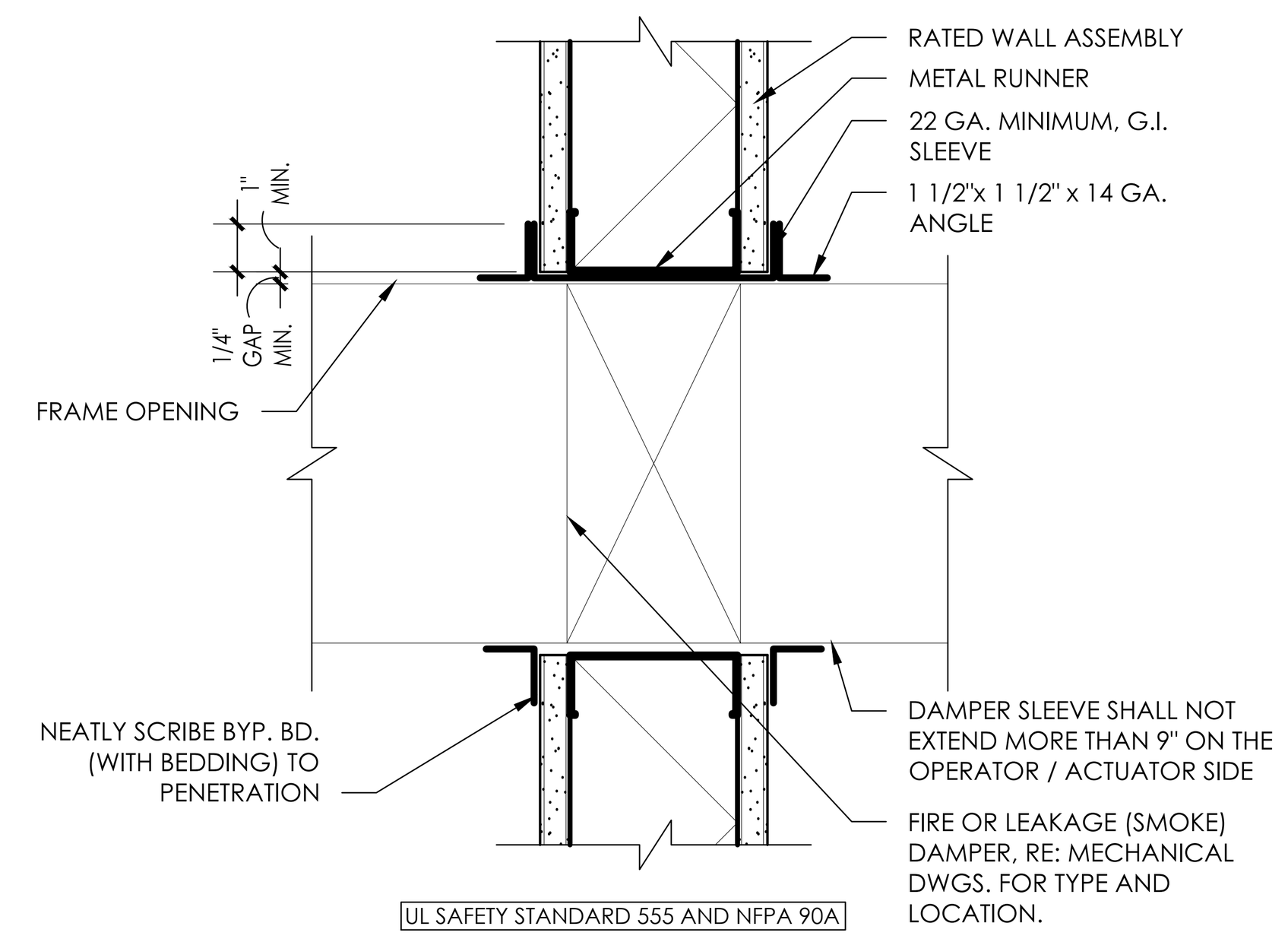
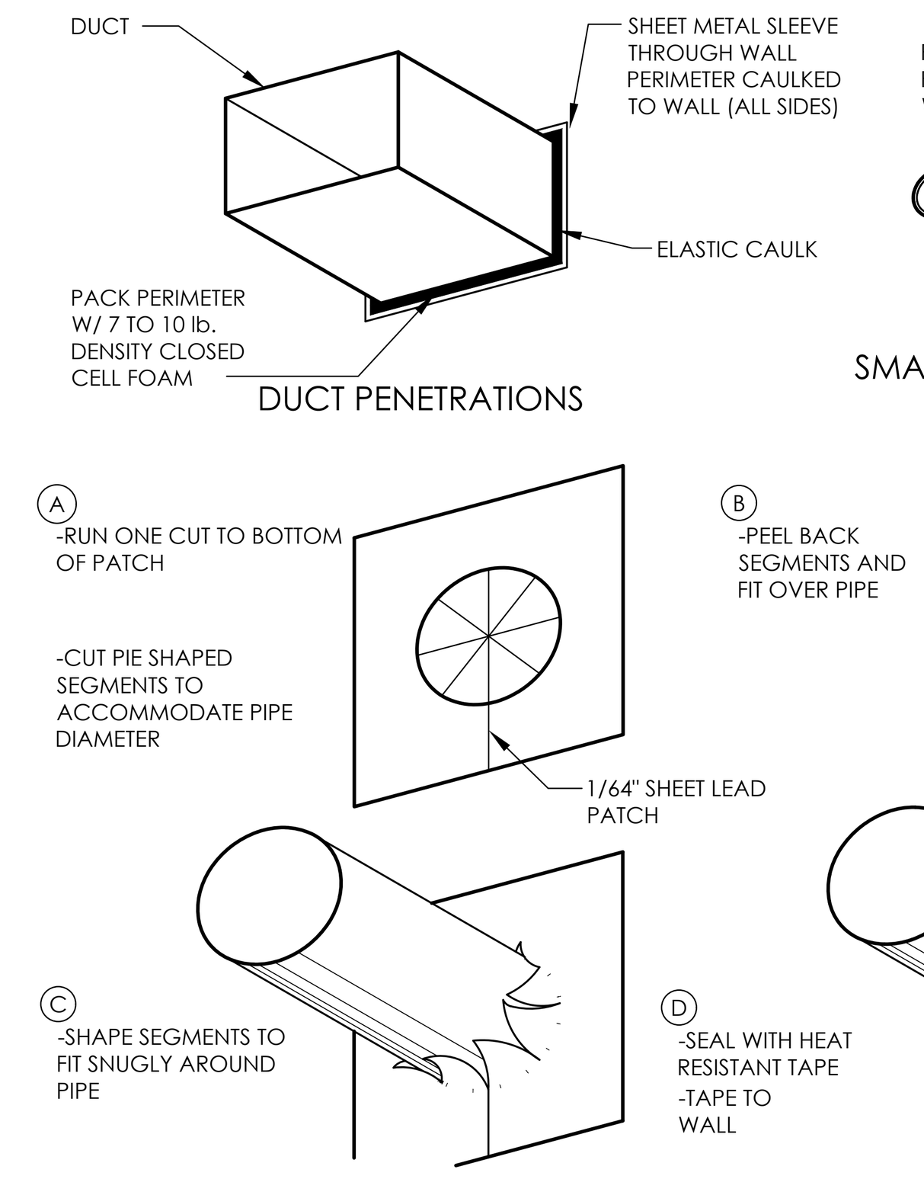


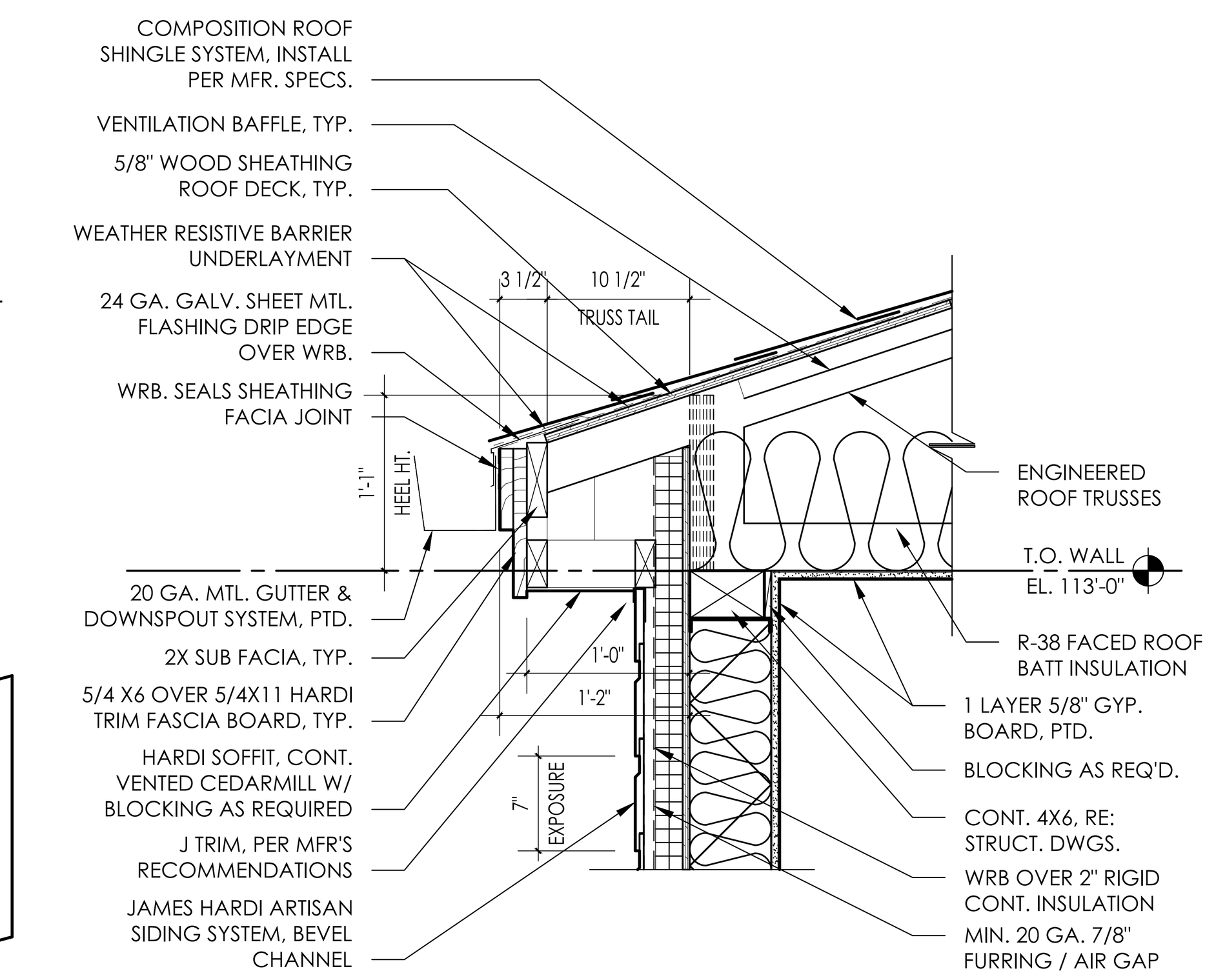
16 EAVE DETAIL @ CATH. CLNG
1" = 1'-0"



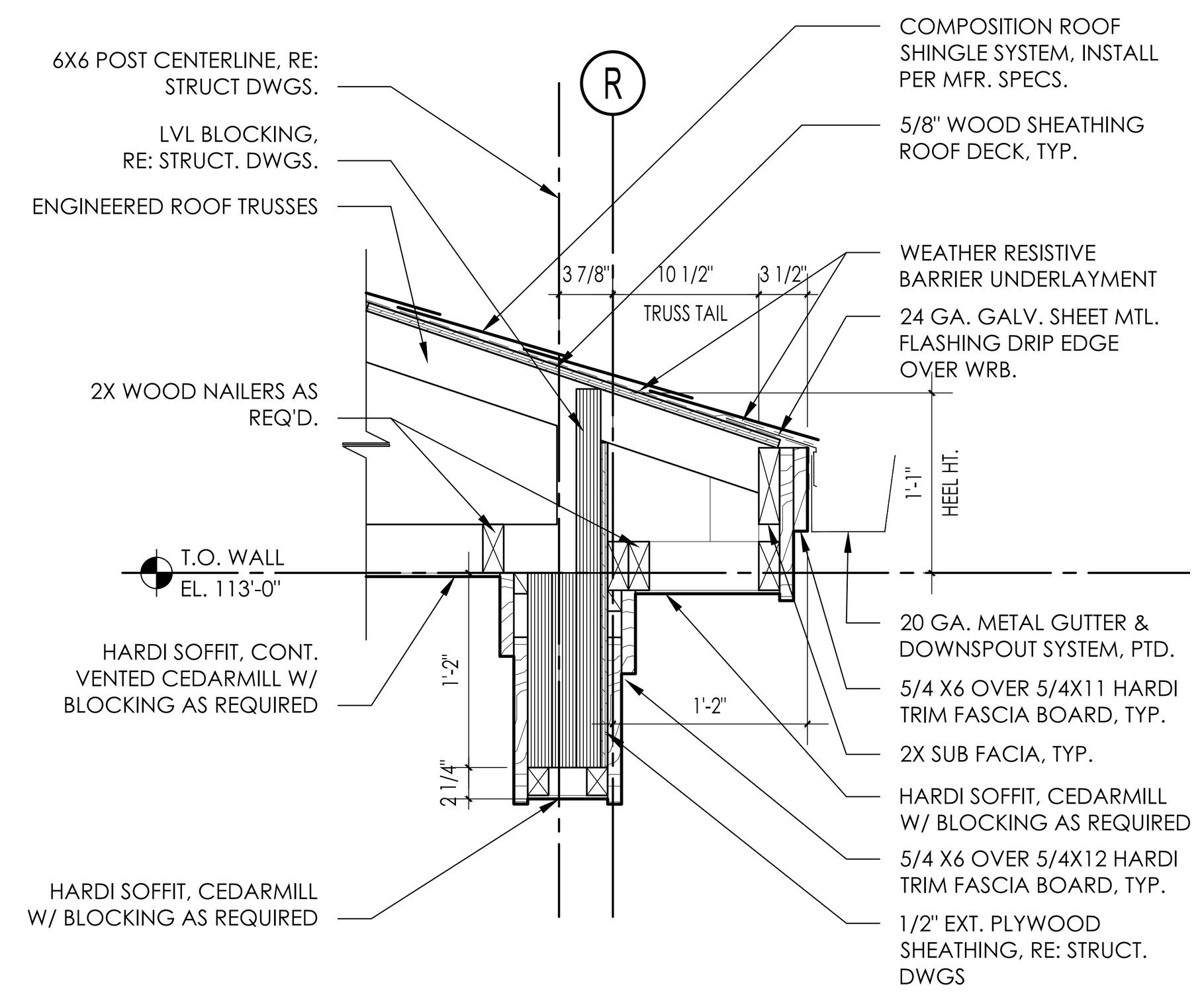
12 DUCT @ RATED GYP. BD. PARTITION
3" = 1'-0"



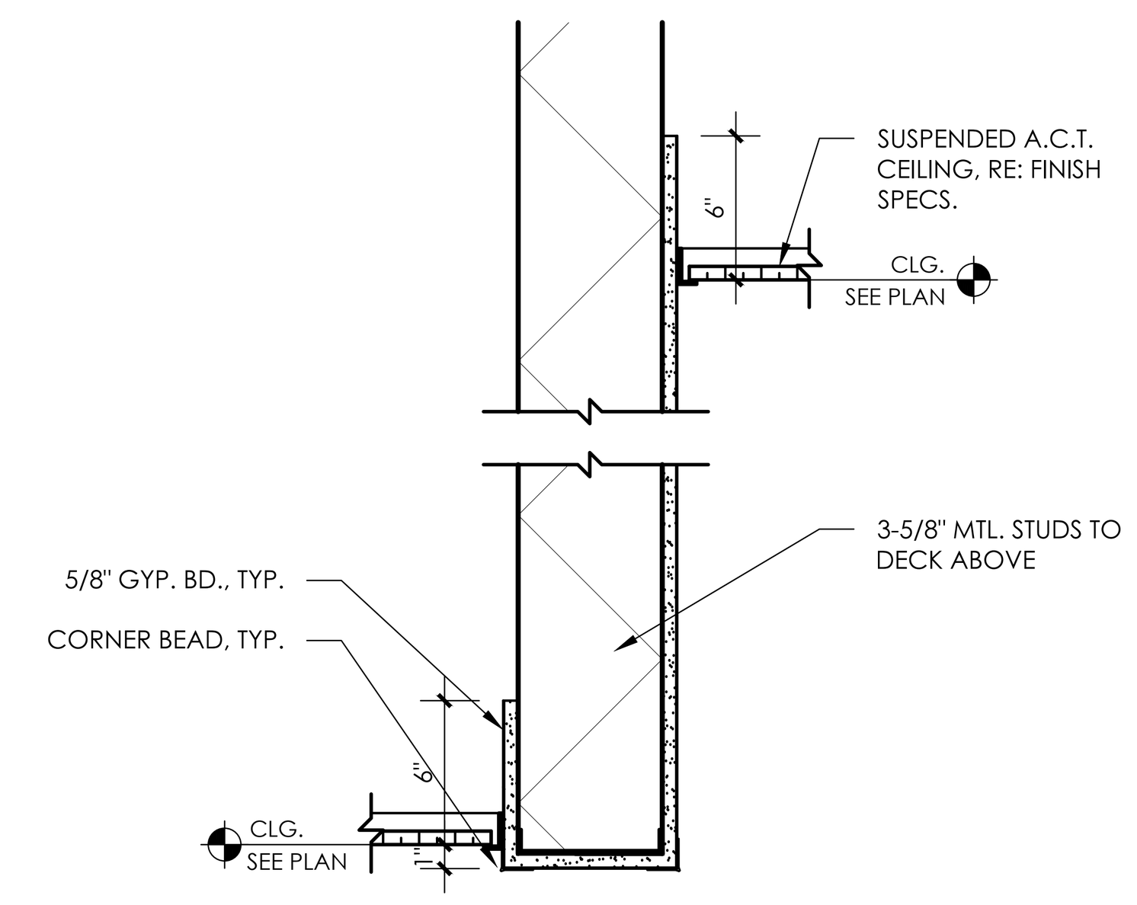
8 SOUND WALL PENETRATIONS
3/4" = 1'-0"



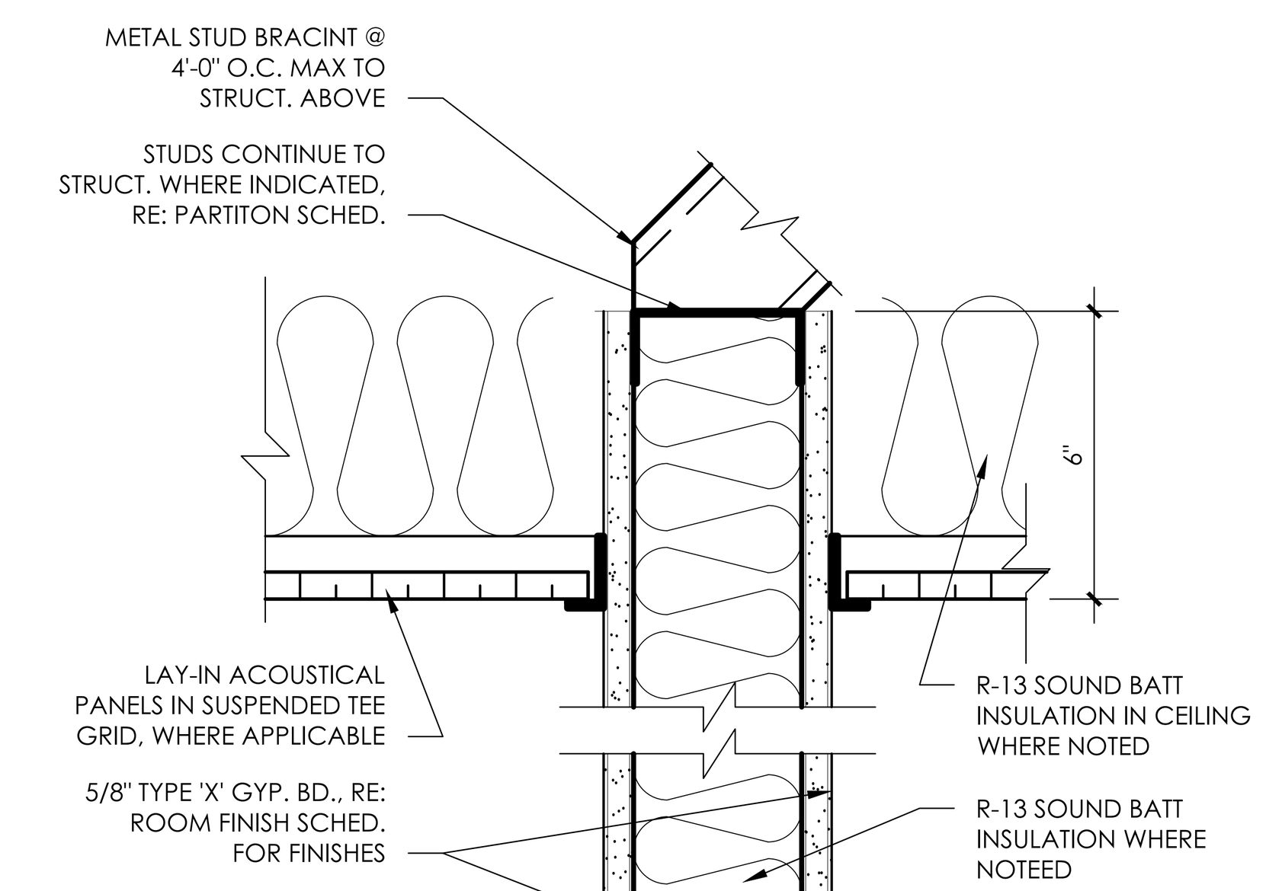
4 TYPICAL EAVE DETAIL
1" = 1'-0"



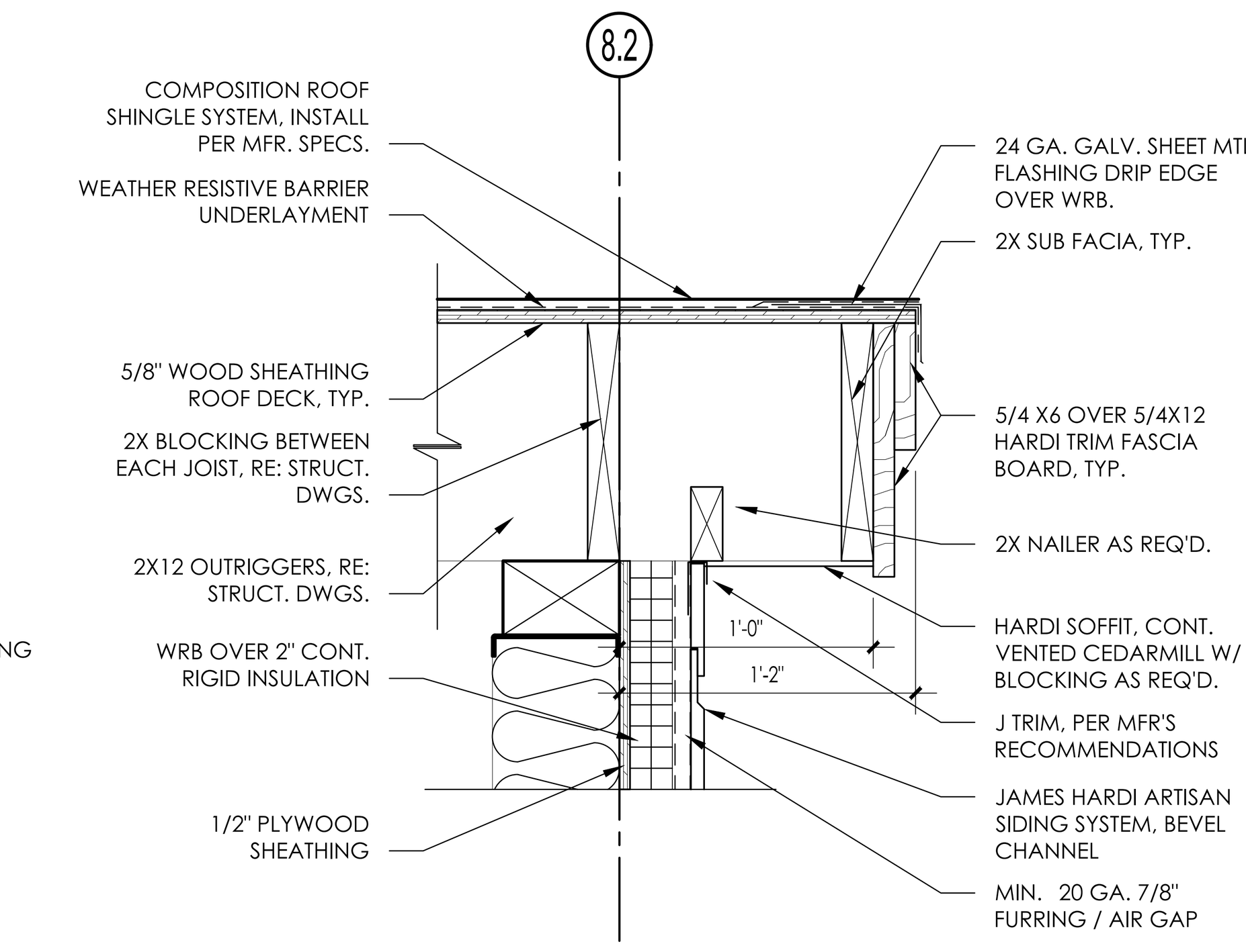
15 EAVE DETAIL @ PORCH
1" = 1'-0"



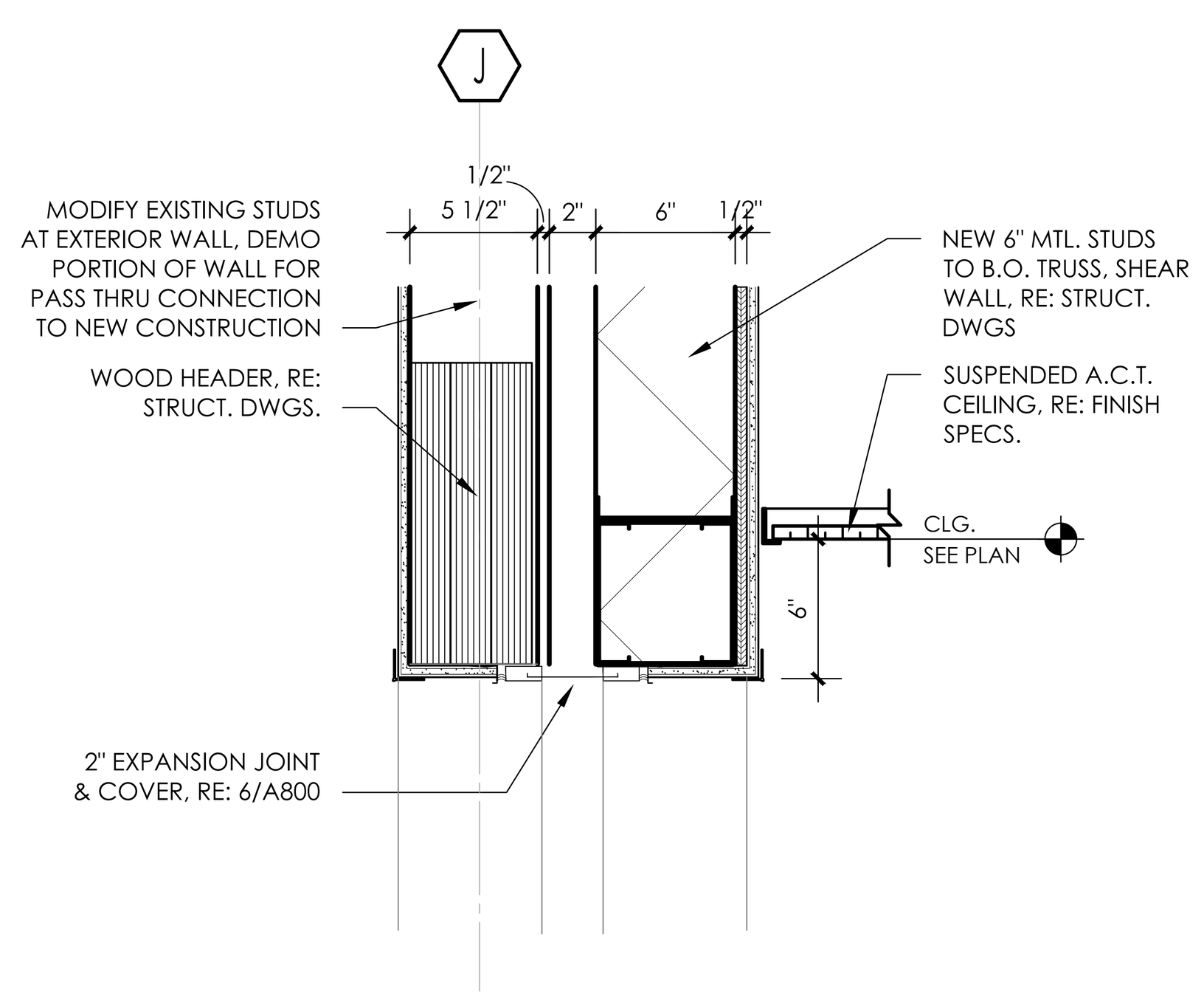
11 BULKHEAD DETAIL(2)
1 1/2" = 1'-0"



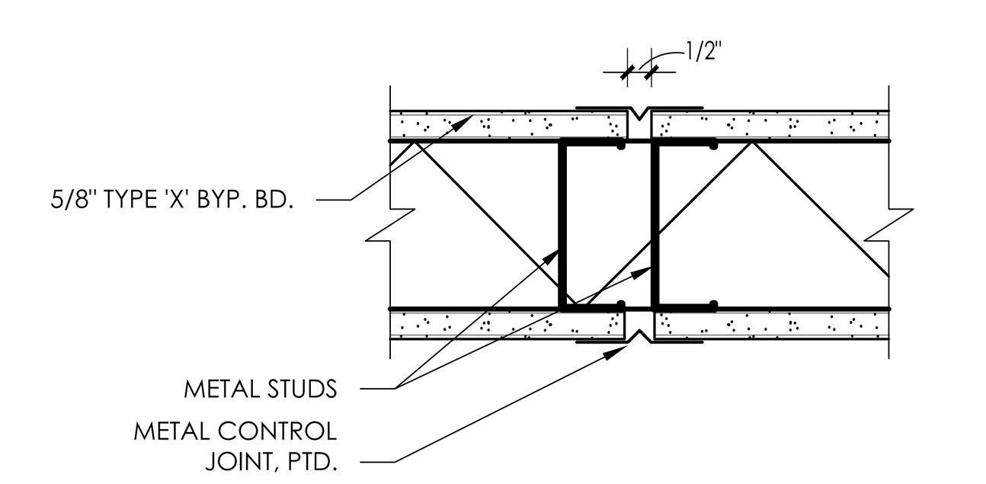
7 CEILING DETAIL
3" = 1'-0"



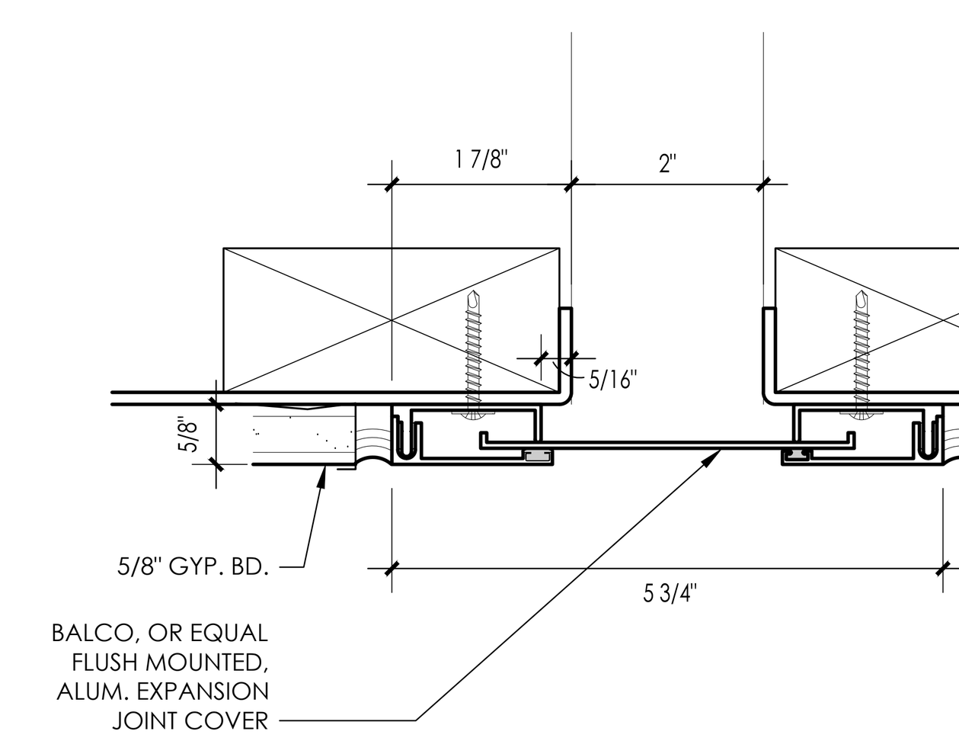
3 RAKE DETAIL
1 1/2" = 1'-0"



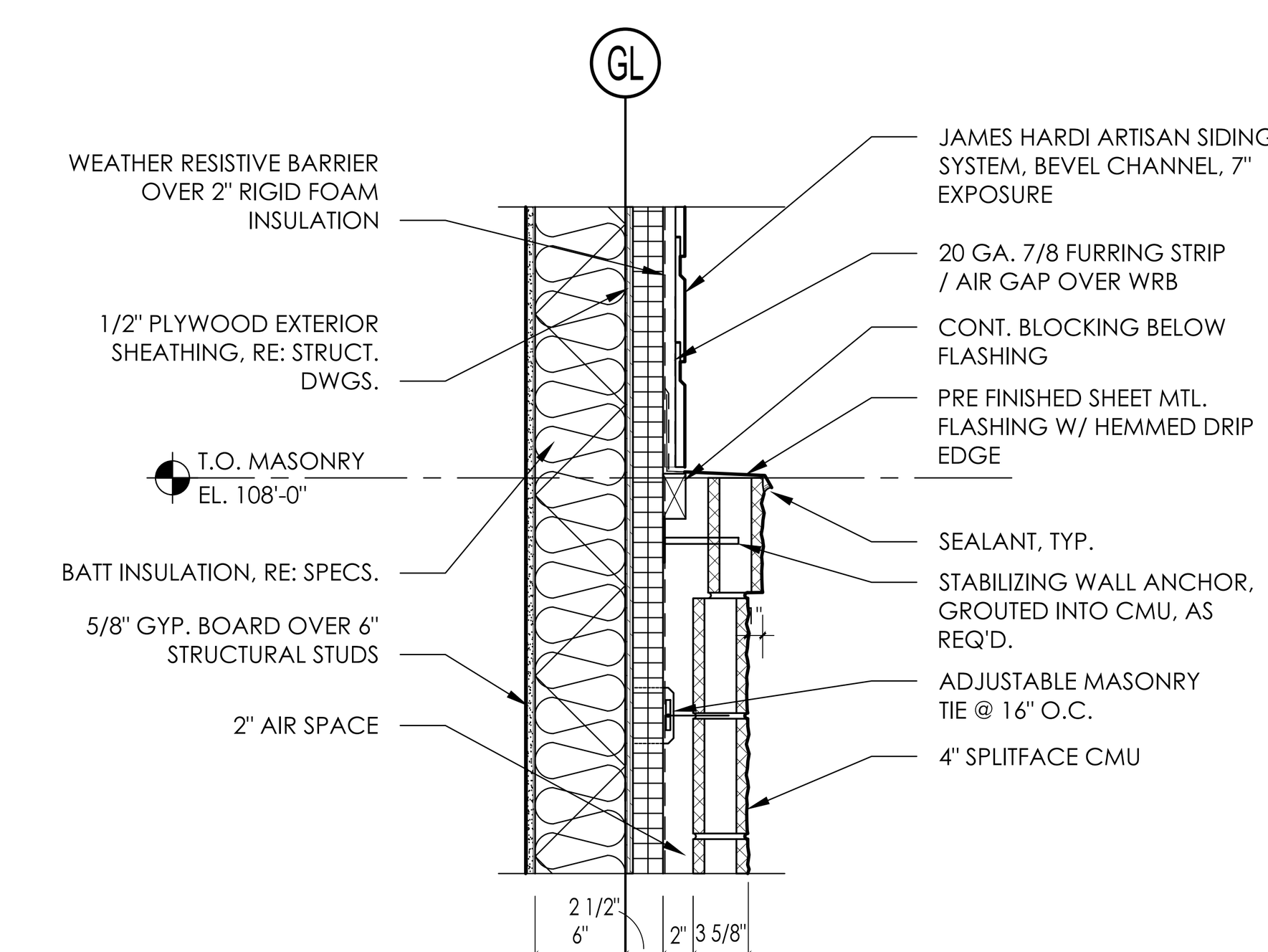
14 EXPANSION JT. @ BULKHEAD DETAIL
1 1/2" = 1'-0"



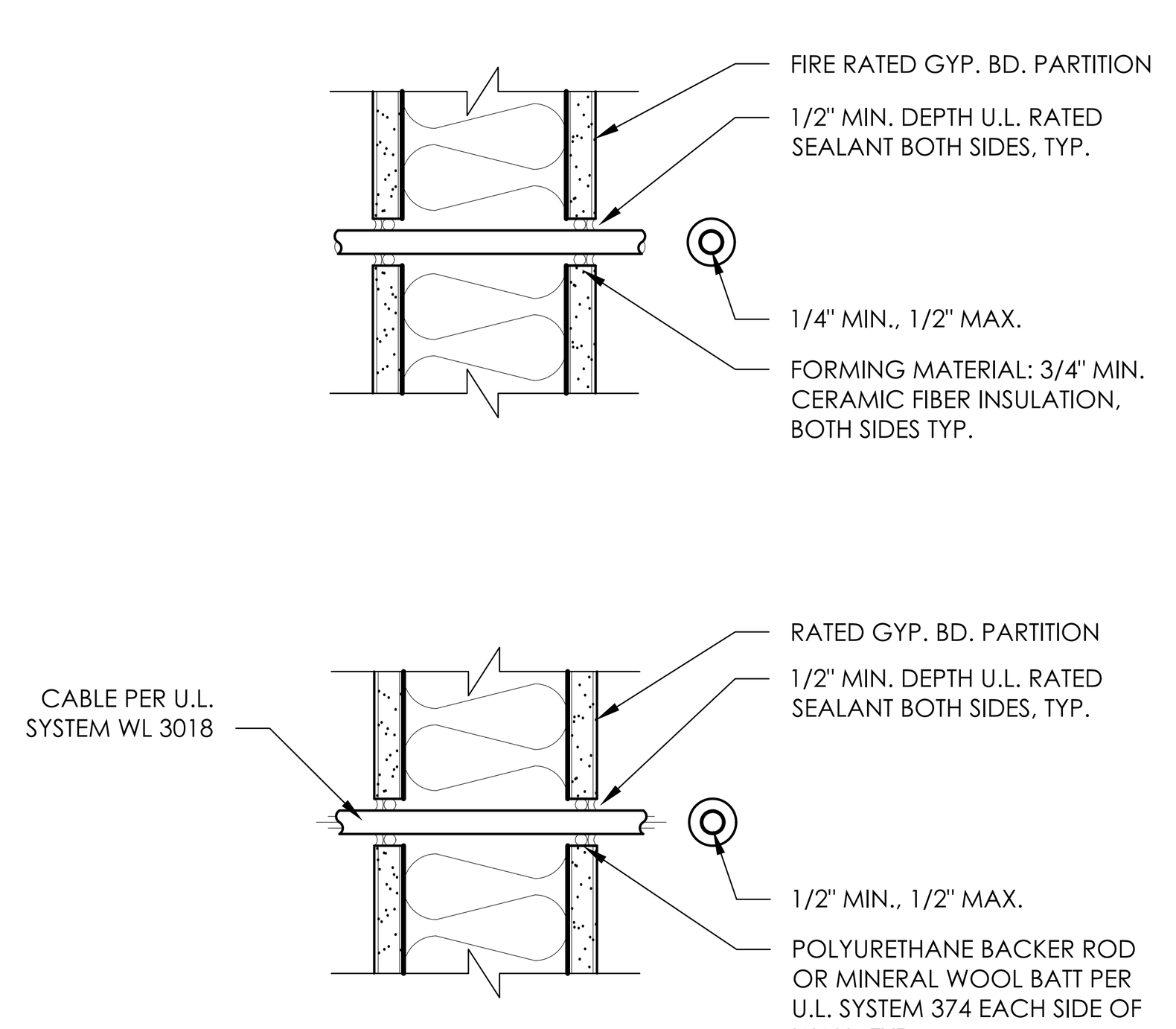
10 NON-RATED GYP. BD. CONTROL JOINT
3" = 1'-0"



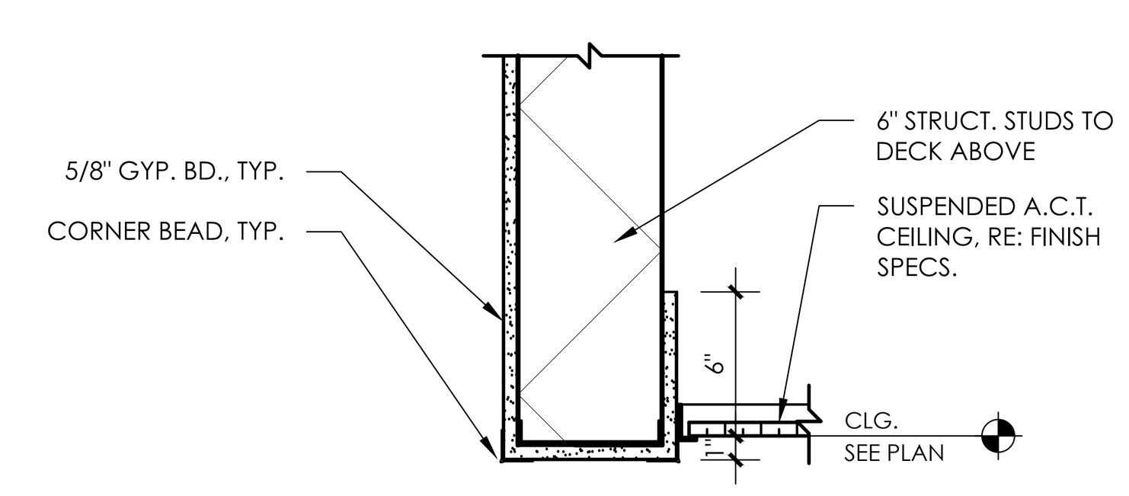
6 EXPANSION JOINT COVER
6" = 1'-0"



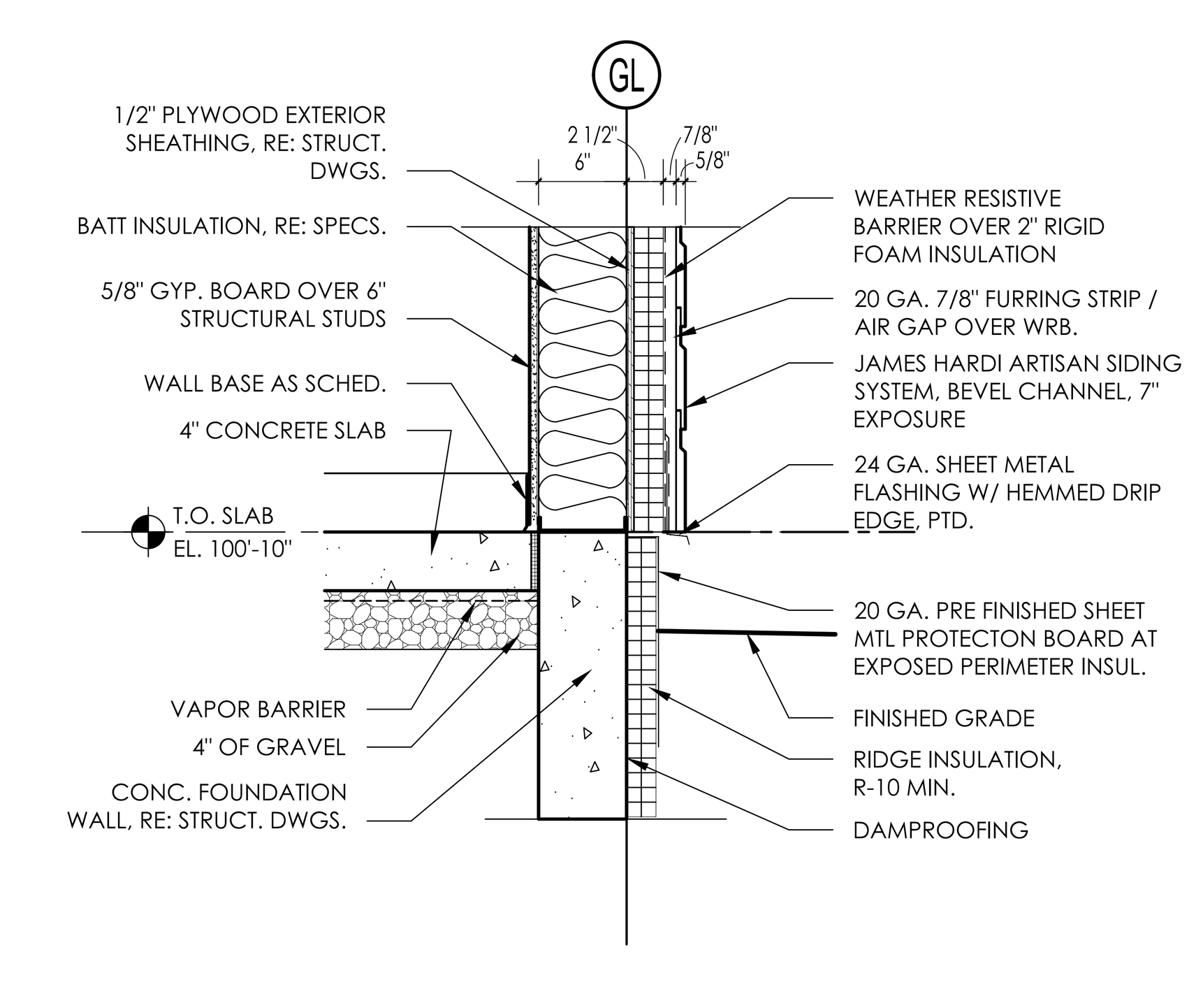
2 SIDING TO CMU DETAIL
1" = 1'-0"



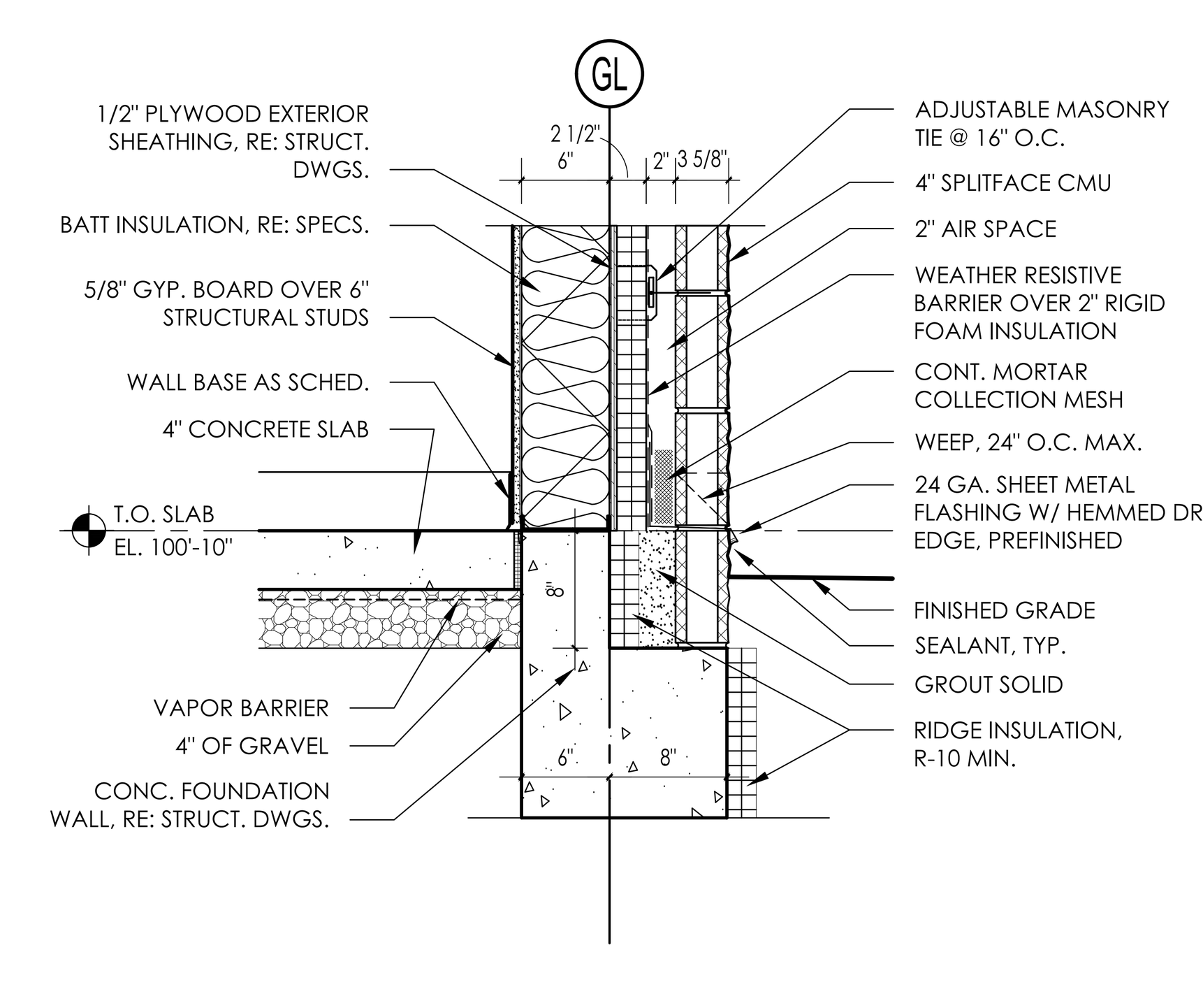
13 PIPE & CABLE @ GYP. BD. PARTITION
3" = 1'-0"



9 BULKHEAD DETAIL
1 1/2" = 1'-0"



5 SIDING DETAIL @ FOUND.
1" = 1'-0"



1 CMU LEDGE DETAIL @ FOUND.
1" = 1'-0"

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDITION
2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
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Drawn by KC
Checked by KC

Title
DETAILS

A800

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Last saved by:
kcalme

QC by:

Opened by:
kcalme

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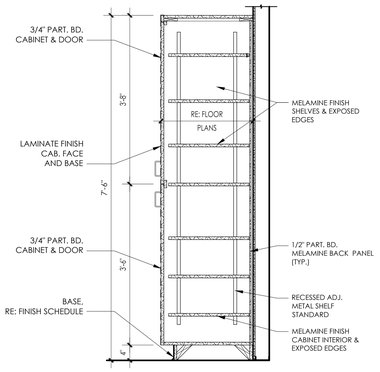
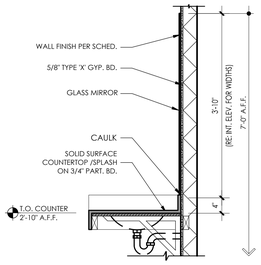
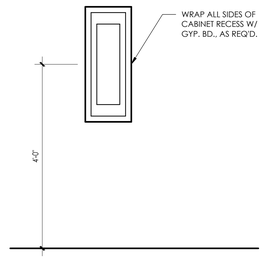
XD824PLAN DETAIL
CASEWORK DETAILS
XD607 CABINET



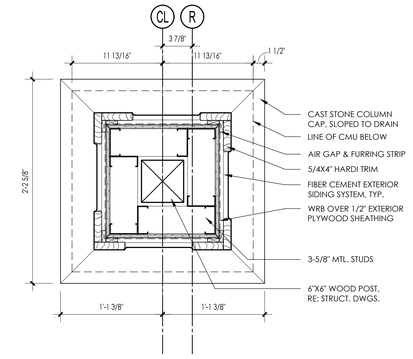
16 UTILITY CABINET
3/4" = 1'-0"



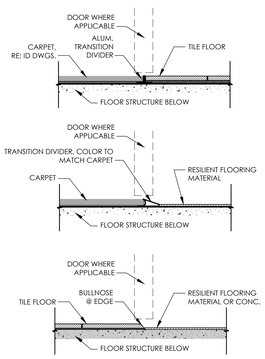
12 VANITY MIRROR
3/4" = 1'-0"



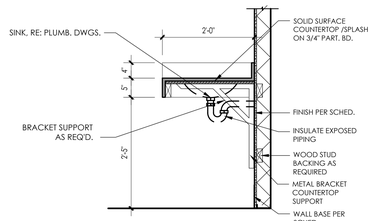
8 RECESSED FIRE EXTINGUISHER CABINET
3/4" = 1'-0"



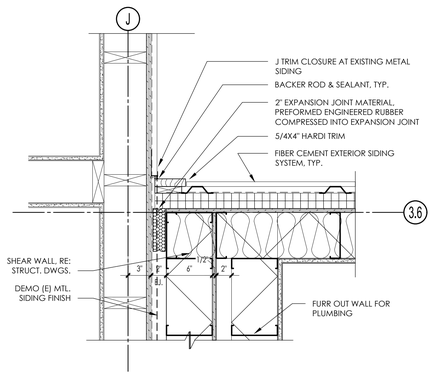
4 COLUMN DETAIL @ SIDING
1 1/2" = 1'-0"



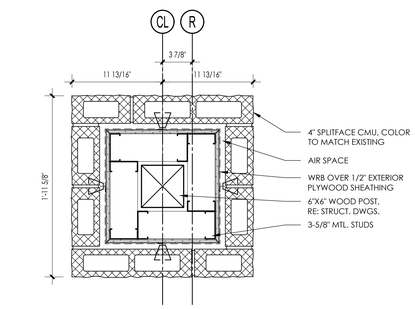
15 FLOOR TRANSITION
3" = 1'-0"



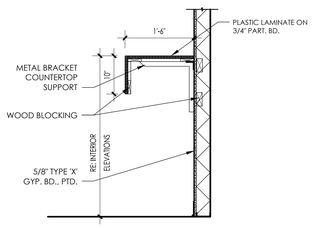
11 VANITY
3/4" = 1'-0"



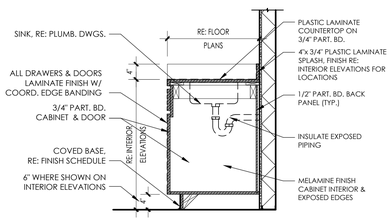
7 DETAIL @ EXPANSION JT. (MTL. SIDING)
1 1/2" = 1'-0"



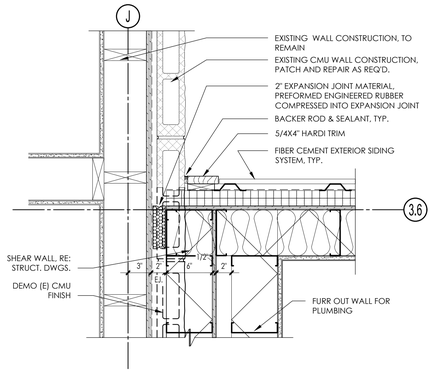
3 COLUMN DETAIL @ CMU
1 1/2" = 1'-0"



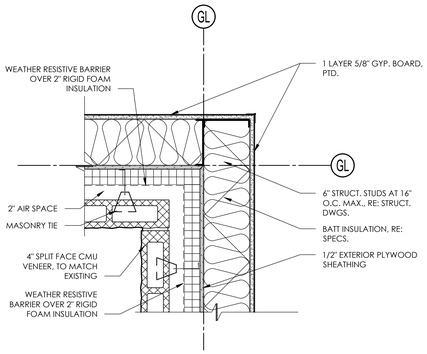
14 COUNTER SECTION
3/4" = 1'-0"



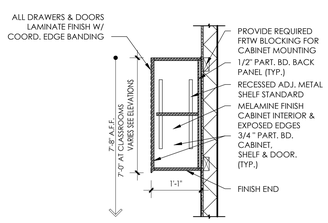
10 CABINET WITH SINK
3/4" = 1'-0"



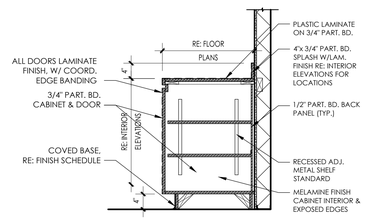
6 DETAIL @ EXPANSION JT. (CMU)
1 1/2" = 1'-0"



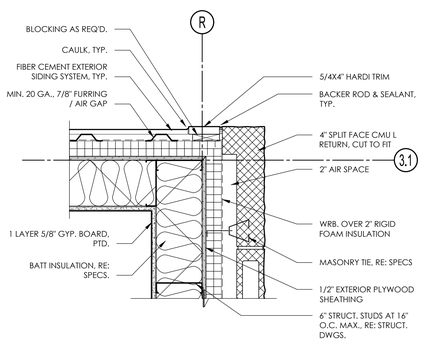
2 PLAN DETAIL
1 1/2" = 1'-0"



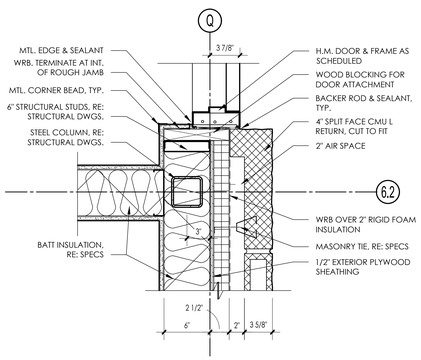
13 UPPER WALL CABINET (TALL)
3/4" = 1'-0"



9 BASE CABINET
3/4" = 1'-0"



5 PLAN DETAIL
1 1/2" = 1'-0"



1 H.M. DOOR JAMB @ CMU DETAIL
1 1/2" = 1'-0"

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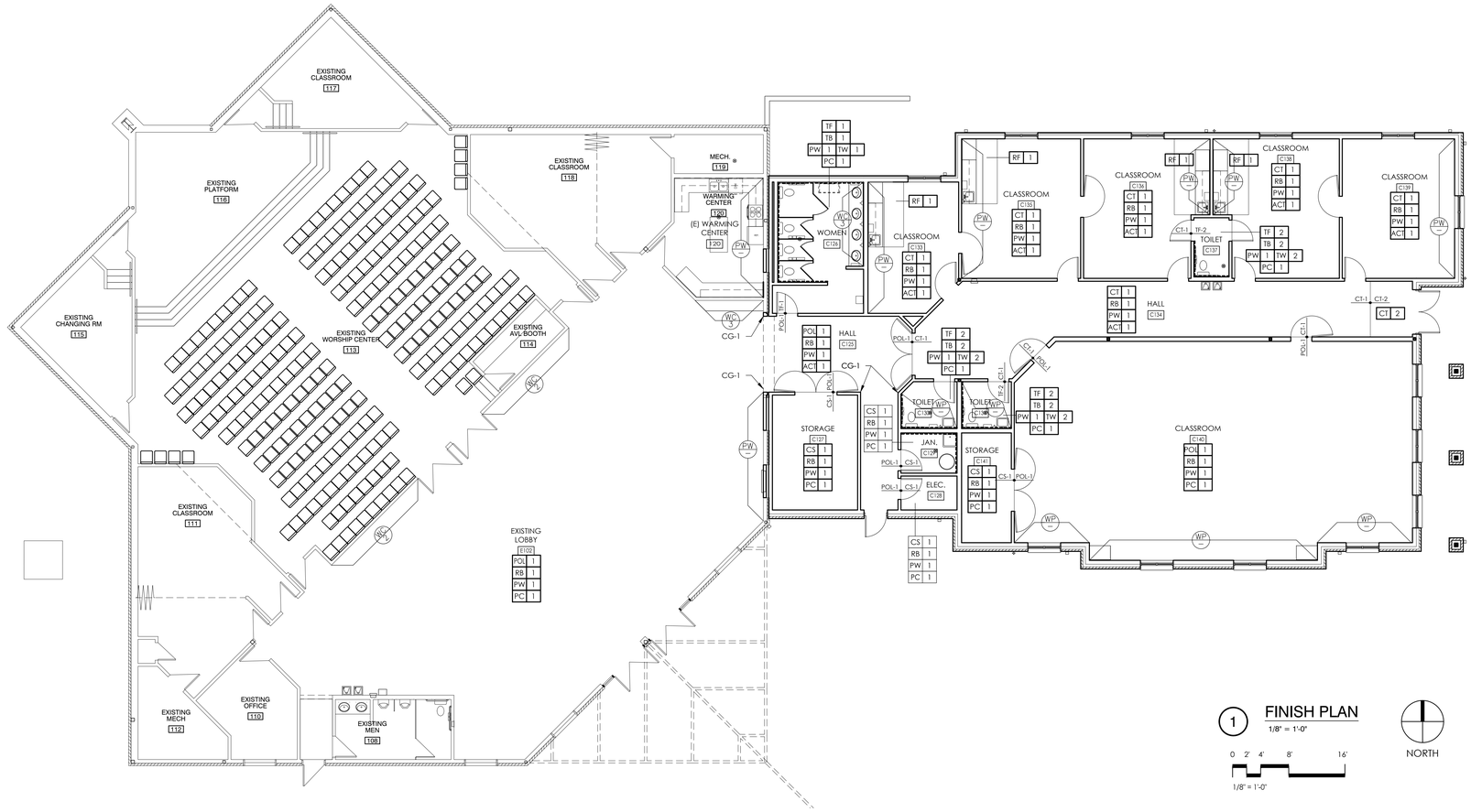


1 FINISH PLAN
1/8" = 1'-0"

0 2' 4' 8' 16'
1/8" = 1'-0"

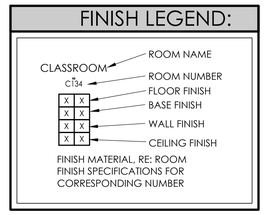
NORTH

GENERAL NOTES:

1. FLOOR TRANSITIONS SHALL OCCUR AT THE CENTERLINE OF DOOR, UNLESS OTHERWISE NOTED.
2. ALL DRYWALL TO HAVE EGGSHELL FINISH EXCEPT SURFACES RECEIVING WALL COVERINGS.
3. ALL CEILING HEIGHTS 9'-6" ABOVE FINISH FLOOR U.O.N.
4. ALL GYPSUM BOARD TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SHALL BE TAPED, BEDDED, PRIMED AND TEXTURED AND PAINTED WHERE NO OTHER WALL COVERING IS SPECIFIED. WALLS AND CEILING TO GET LEVEL "4" FINISH IN STORAGE, MECHANICAL AND ELECTRICAL ROOMS. DO NOT APPLY TEXTURE WHERE PROJECTION SCREENS WILL BE APPLIED. TEXTURE, ADJACENT TO EXISTING WALLS & AT PATCH /REPAIR WORK, TO MATCH EXISTING. COORDINATE WITH ARCHITECT PRIOR TO COMMENCMENT WITH WORK.
5. ALL SURFACES MUST BE CLEANED AND DUST FREE PRIOR TO CAULKING AND PAINTING.
6. NOTE: ALL FINISHES ARE TO BE APPROVED WITH OWNER PRIOR TO FINAL SUBMITTALS.
7. CARPET OR CARPET TILE SHALL BE SECURELY ATTACHED AND SHALL HAVE A FIRM CUSHION, PAD, OR BACKING. CARPET OR CARPET TILE SHALL HAVE A LEVEL LOOP, TEXTURED LOOP, LEVEL CUT PILE, OR LEVEL CUT /UNCUT PILE TEXTURE. PILE HEIGHT SHALL BE 1/2" (13mm) MAXIMUM. EXPOSED EDGES OF CARPET SHALL BE FASTENED TO FLOOR OR GROUND SURFACES AND SHALL HAVE TRIM ALONG THE ENTIRE LENGTH OF THE EXPOSED EDGE. CARPET EDGE TRIM SHALL COMPLY WITH I.B.C. SECTION 303.
8. ALL CEILING ACOUSTICAL TILE AND GRID SHALL BE ACT-1 U.O.N.
9. ALL CARPET SHALL BE CT-1 U.O.N
10. ALL CONCRETE FLOORS SHALL RECEIVE CS-1 CONCRETE SEALER U.O.N
11. ALL GROUT SHALL BE GR-1 U.O.N.
12. ALL WALL PAINT SHALL BE P-1 U.O.N.
13. ACCENT PAINT COLORS WILL OCCUR ON ADDITIONAL WALLS IN MISCELLANEOUS AREAS THROUGHOUT THE BUILDING. EXACT LOCATIONS ARE NOTED.
14. ALL CEILING GYP BD SHALL BE PAINTED P-7 U.O.N.
15. ALL H.M. DOOR FRAMES, EXPOSED STEEL COLUMNS, STAIR STRINGERS, STAIR RISERS, GUARDRAILS, AND HANDRAILS SHALL BE PAINTED U.O.N.
16. ALL PLASTIC LAMINATE SHALL BE PL-1 U.O.N.
17. ALL WALL BASE SHALL BE RB-2 U.O.N.
18. ALL WALL TILE SHALL BE T-1 U.O.N.
19. SEE FINISH SPECIFICATIONS FOR TILE TRANSITION AND FLOORING TRANSITION TRIM SELECTIONS ("TT").
20. REFER TO DRAWING A920 FOR CASEWORK DETAILS.
21. FLOORING CONTRACTOR TO PROVIDE AND CONTINUE SCHEDULED FLOORING FROM PARTITION TO PARTITION AND UNDER MILLWORK UNLESS OTHERWISE NOTED.
22. SEAM SEALER REQUIRED AT ALL CARPET SEAMS IN ACCORDANCE WITH THE CRI INSTALLATION INSTRUCTIONS.

PAINT ALL DOOR FRAMES, HM DOORS, RAILINGS, AND EXPOSED STEEL COLUMNS

FINISH LEGEND:



ABBREVIATIONS:

ACT	=	ACOUSTICAL TILE
ALUM	=	ALUMINUM
CONC	=	CONCRETE
CG	=	CORNER GUARDS
CT	=	CARPET TILES
CS	=	CONCRETE SEALED
ER	=	EXISTING TO REMAIN
EM	=	ENTRANCE MAT
EP	=	EPOXY FLOORING
ES	=	EXPOSED STRUCTURE
F	=	FABRIC
FRP	=	FIBERGLASS REINFORCED PANEL
PC	=	PAINT, CEILING
PD	=	PAINT, DOOR FRAME
PF	=	PREFINISHED
PL	=	PLASTIC LAMINATE
POL	=	POLISHED CONCRETE
PS	=	PAINT, STEEL
PW	=	PAINT, WALL
RB	=	RESILIENT BASE
RF	=	RESILIENT FLOORING
SC	=	STAINED CONCRETE
TB	=	TILE, BASE
TF	=	TILE, FLOOR
TW	=	TILE, WALL
UF	=	UNFINISHED
U/S	=	UNDERSIDE OF STRUCTURE
VCT	=	VINYL COMPOSITION TILE
WD	=	WOOD FINISH
WS	=	WOOD STAIN

FINISH SPECIFICATIONS

ACOUSTICAL CEILING TILE AND SUSPENSION GRID SYSTEM
ACT-1
MANUFACTURER: CERTAINTEED, SYMPHONY m 80 Rx
PATTERN: REVEAL CORNER BEVEL EDGE
COLOR: WHITE
MAT SIZE: 24" X 48"
GRID: TRIM 15/16" WHITE GRID

CARPET
CT-1
MANUFACTURER: -
PATTERN: -
COLOR: -
CONSTRUCTION: -
SIZE: -
INSTALLATION: -
LOCATION: CLASSROOMS & CORRIDORS

CT-2
MANUFACTURER: -
PATTERN: -
COLOR: -
CONSTRUCTION: ENTRY MAT
SIZE: -
INSTALLATION: -
LOCATION: HALL C134

RESILIENT FLOORING
RF-1
MANUFACTURER: -
PATTERN: -
COLOR -
SIZE: -
INSTALLATION:
LOCATION: CLASSROOMS C132, C136

CONCRETE SEALED
CS-1
MANUFACTURER: SCOFIELD, CEMENTONE CLEAR SEALER
LOCATION: STORAGE 127, JAN C129, ELEC C128, STORAGE C141

CONCRETE POLISHED
CP-1
MANUFACTURER: CERT-SHINE
FINISH: MEDIUM REFLECTIVITY / SEMI POLISHED
COLOR: CLEAR
LOCATION: (E) LOBBY E102, HALL C125, CLASSROOM C140

TILE WALL
TW-1
MANUFACTURER: -
PATTERN: -
COLOR: -
SIZE: -
INSTALLATION: -
LOCATION: WOMEN'S RESTROOM C126, WALLS PER PLANS

TW-2
MANUFACTURER: -
PATTERN: -
COLOR: -
SIZE: -
INSTALLATION: -
LOCATION: TOILET ROOMS C130, C131, C137

TILE FLOOR
TF-1
MANUFACTURER: -
PATTERN: -
COLOR: -
SIZE: -
INSTALLATION: -
LOCATION: WOMEN'S RESTROOM C126

TF-2
MANUFACTURER: -
PATTERN: -
COLOR: -
SIZE: -
INSTALLATION: -
LOCATION: TOILET ROOMS C130, C131, C137

TILE BASE
TB-1
MANUFACTURER: -
PATTERN: -
COLOR: -
SIZE: FLAT TOP, COVE BASE
LOCATION: WOMEN'S RESTROOM C126

TB-2
MANUFACTURER: -
PATTERN: -
COLOR: -
SIZE: FLAT TOP, COVE BASE
LOCATION: TOILET ROOMS C130, C131, C137

TRANSITION TRIMS
TT-1
MANUFACTURER: SCHLUTER
PATTERN: JOLLY
COLOR: SATIN ANODIZED ALUMINUM
INSTALLATION: TOP & SIDE OF UNFINISHED EDGES OF TW-1 & TB-1

TT-2
MANUFACTURER: SCHLUTER
PATTERN: RENO-TK
COLOR: SATIN ANODIZED ALUMINUM
INSTALLATION: LVT TO CARPET, TILE TO CARPET

TT-3
MANUFACTURER: SCHLUTER
PATTERN: RENO-RAMP/-K
COLOR: SATIN ANODIZED ALUMINUM
INSTALLATION: CARPET/TILE/LVT TO CONCRETE

CORNER GUARDS
CG-1 HALF-HEIGHT, STAINLESS STEEL CORNER GUARD, 1" WINGS

FRP (FIBERGLASS REINFORCED PANELS)
FRP-1
MANUFACTURER: MARLITE
COLOR: P151 LIGHT GRAY
HEIGHT: 4'-0"
LOCATION: JANITOR'S CLOSETS, INCLUDE ALL COORDINATING EDGE TRIM

GROUT
GR-1
MANUFACTURER: MAPEI
COLOR: -
SIZE: 1/8" GROUT JOINTS
LOCATION: FOR WALL TILE T-1

GR-2
MANUFACTURER: MAPEI
COLOR: -
SIZE: 1/8" GROUT JOINTS
LOCATION: FOR WALL/FLOOR TILE T-2

PAINT
PW-1
MANUFACTURER: SHERWIN WILLIAMS
NUMBER/ COLOR: -
FINISH: EG-SHEL FINISH
LOCATION: FIELD

PW-2
MANUFACTURER: SHERWIN WILLIAMS
NUMBER/ COLOR: -
FINISH: EG-SHEL FINISH
LOCATION: ACCENT

PW-3
MANUFACTURER: SHERWIN WILLIAMS
NUMBER/ COLOR: -
FINISH: EG-SHEL FINISH
LOCATION: ACCENT

PW-4
MANUFACTURER: SHERWIN WILLIAMS
NUMBER/ COLOR: -
FINISH: EG-SHEL FINISH
LOCATION: ACCENT

PC-1
MANUFACTURER: SHERWIN WILLIAMS
NUMBER/ COLOR: SW7005 (255-C1), PURE WHITE
FINISH: FLAT FINISH
LOCATION: GYP. BOARD CEILINGS IN RESTROOMS

PD-1
MANUFACTURER: SHERWIN WILLIAMS
NUMBER/ COLOR: -
FINISH: SEMI GLOSS FINISH
LOCATION: METAL DOORS & FRAMES

PLASTIC LAMINATE
PL-1
MANUFACTURER: -
COLOR: -
LOCATION: CABINET FRONTS

PL-2
MANUFACTURER: -
LOCATION: CLASSROOM, CHECK-IN COUNTER TOPS

RUBBER BASE
RB-1
MANUFACTURER: -
COLOR: -
SIZE: 4" HIGH, COVED
LOCATION: AT ALL CARPETS, CONCRETE & RF

SOLID SURFACE
SS-1
MANUFACTURER: WISLONART
COLOR: -
SIZE: 30"W X 144"L SLAB, 1/2" THICKNESS, PENCIL EDGES, APRON FRONT
LOCATION: WOMEN'S RESTROOM C126

TOILET PARTITIONS
TP-1
MANUFACTURER: HADRIAN METAL PARTITIONS
COLOR: POWDER COATED, TBD
INSTALLATION: FLOOR MOUNT WITH HEADRAIL BRACING
LOCATION: RESTROOMS

PRE-FINISHED WOOD DOORS
MANUFACTURER: VT INDUSTRIES (OR EQUAL)
MATERIAL: FLUSH WOOD VENEER, SOLID CORE DOOR
SPECIES: SELECT WHITE BIRCH
COLOR: TBD

WALL COVERING
WC-1
MANUFACTURER: MDC
MATERIAL: VINYL
COLOR: TBD
LOCATION: KIDS CHECK-IN WALL AT LOBBY

WC-2
MANUFACTURER: NATIONAL
MATERIAL: VINYL
COLOR: TBD
LOCATION: ACCESS TO WORSHIP CENTER SIDE WALLS

WC-3
MANUFACTURER: KOROSEAL
MATERIAL: VINYL
COLOR: TBD
LOCATION: WOMEN'S RESTROOM C126

STATE OF COLORADO
JOHN C. LEE
LICENSED ARCHITECT

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Drawn by KC | Checked by KC

Title
FINISH PLAN & SPECIFICATIONS

A900

GENERAL NOTES

DESIGN CRITERIA

1. All work shall conform to the minimum standards of the International Building Code, 2021 edition and any other regulatory agencies that have authority over any portion of the work.
2. Design Loads
    Dead Loads
        Roof total dead load 25 psf
        Mechanical equipment actual weight

        Roof Snow Load
            Snow Criteria:
                Pf = 39, Ce = 0.9 , Ct = 1.1, Is = 1.1

    Risk Category III

    Wind Criteria
        120 mph (3 second gust, Ultimate) 72 mph (ASD), Exposure C
        Building Category = Enclosed
        Internal Pressure Coefficient = ± 0.18

COMPONENTS AND CLADDING WIND PRESSURES[1,2]

	Effective Area			
Zones[3]	10 sf	20 sf	50 sf	100 sf
Zone 1 - Roof Interior	46 (28)	46 (28)	28 (17)	16 (10)
Zone 2 - Roof Edge	67 (40)	58 (35)	46 (28)	37 (23)
Zone 3 - Roof Corner	80 (48)	68 (41)	53 (32)	42 (26)
Zone 4 - Wall Typical	27 (16)	26 (16)	25 (15)	23 (14)
Zone 5 - Wall Corner	34 (21)	31 (19)	28 (17)	26 (16)
Parapet	NA	NA	NA	NA

    Seismic Criteria
        Site Class D, Design Category B, Equivalent Lateral Force Procedure
        Seismic Force Resisting System = Light-frame walls sheathed with wood structural panels
        R = 6.5, Fa = 1.6, Fv = 2.4, Ss = 0.215, S1 = 0.058, SDS = 0.229, SD1 = 0.093, Ie = III

    Footnotes:
    1. Pressures shown are determined using ASCE 7-16 and are ultimate with ASD level pressures shown in parentheses.
    2. Refer to details for wind loading on miscellaneous rooftop structures, etc. Roof overhangs shall be designed for applicable component and cladding loads per 30.9-1 for ASCE 7-16.
    3. Refer to Figure 30.3-1 through 30.4-1 in ASCE 7-16 for description of each zone.

FIRE RESISTANCE RATINGS

1. Building construction type: Type V-B
2. Fire-resistance rating requirements for building elements:
    a. Primary structural frame: 0 hour
    b. Floor construction: 0 hour
    c. Roof construction: 0 hour

SHOP DRAWINGS AND SUBMITTALS

1. The Contractor shall coordinate, review and submit shop drawings that identify all penetrations for all trades through structural walls, slabs, beams, and columns. A single drawing of each portion of the structure identifying locations and sizes of all sleeves and blockouts shall be submitted for review and approval six weeks prior to placing concrete in these structural elements. Penetrations not shown on the approved shop drawings will not be permitted in the field. Penetrations include all pipes, sleeves, conduit, blockouts, elements exceeding 1/3 the slab thickness, and other openings through concrete including slab-on-metal deck. Prior approval must be obtained from engineer for all coring of concrete and shall be reviewed on a case-by-case basis.
2. Shop drawings and calculations for all informational and action submittals as noted in project specifications shall be submitted to the Architect/Engineer for approval prior to fabrication or construction of all structural items including the following: concrete and masonry reinforcement, embedded steel items, structural steel, metal decking, shear stud layout, stairs, pre-engineered wood and pre-engineered cold-formed steel. Approved shop drawings shall be submitted to the local Building Department by the contractor for record only. Allow 2 weeks for review of shop drawings.
3. The general contractor shall submit any substitution request to the Architect/Engineer prior to making any changes. The request shall include all information required for the engineer to fully evaluate the substitution and determine any required compensation for the evaluation.
4. Design, materials, equipment, and products other than those described below or indicated on the drawings may be considered for use, provided prior approval is obtained from the Owner, Architect/Engineer, and the applicable governing code authority.

SPECIAL INSPECTIONS

1. Special inspection, in accordance with the International Building Code or as required by the construction documents, shall be performed by a qualified inspector from an approved agency. Reports shall be issued to the Architect/Engineer and the Building Department at the completion of each type of work stating whether the work was performed in conformance with the approved plans and specifications. See inspection schedules for specific requirements.
2. Any item that is listed as a discrepancy by the independent testing agency shall be kept in a log by the General Contractor throughout the project. the log shall include the discrepancy number, date of discrepancy, and description of discrepancy. The General Contractor shall contact the engineer in a timely manner to address each discrepancy and keep a record of the required corrections. The letter of substantial completion provided by the engineer cannot be released until every item listed in the discrepancy log has been addressed and resolved.

CONSTRUCTION

1. All omissions or conflicts between the various elements of the working drawings and/or specifications shall be brought to the attention of the Architect/Engineer before proceeding with any work so involved.
2. A detail, section, or elevation reference may be indicated only once on a structural construction drawing, but is to be used at all like and similar conditions. Typical and/or standard detail references may not be indicated on plan. Contractor is responsible for determining which details apply.
3. No modification shall be made to any structural member without the approval of the Architect/Engineer. This also applies to any openings for plumbing, electrical, and mechanical trades.
4. Contractor must check all dimensions, framing conditions, and site conditions before starting work. Architect/Engineer shall be notified immediately of any discrepancies or possible deficiencies.
5. The structural drawings have been completed using the available information regarding existing conditions. The structural engineer has not field verified any existing conditions. It is the responsibility of the General Contractor to field verify the existing conditions and notify the architect and engineer of any discrepancies before proceeding with work.
6. The Contractor shall be responsible for all excavation procedures and protection of adjacent property, structures, utilities, etc. in accordance with all national, state, and local ordinances.
7. Stability of the structural frame during construction is the responsibility of the General Contractor. The structural frame is not complete until all connections to lateral force resisting elements have been made, inspected as required by the building official, and accepted by the engineer. This includes all diaphragm elements such as metal deck, plywood and gypsum board wall sheathing, metal straps, concrete topping, tie rods, and the like. All concrete elements must have reached their required strength. Temporary bracing of the structure during construction should be provided by the General Contractor and their Sub-Contractors as necessary.
8. Do not place backfill against basement walls until basement and first floors are in place or wall has been adequately shored. Forces due to hydrostatic pressure have not been included in the design of foundation walls.
9. All mechanical and electrical equipment purchases shall be coordinated with the structural drawings by the General Contractor. This includes equipment size, weight, openings, required support, etc. Any discrepancies shall be brought to the architect's and engineer's attention prior to equipment purchase.
10. The contractor shall not stockpile any building materials or equipment in a manner that will exceed the load carrying capacity, cause damage, or create excessive deflection to any structural element. The contractor shall contact the engineer for evaluation of locations where it may be necessary for heavy equipment or building material stockpiles prior to placement of these items on any structural element.
11. For any item that requires a change or correction due to contractor error or deficiency in construction, the contractor shall submit plans, details, and calculations for the proposed solution. These shall be reviewed by the Architect/Engineer prior to completion of the work. Some corrections may require submitted documentation to be stamped and signed by a professional engineer who is registered in the project jurisdiction.
12. Nothing contained within the contract documents shall relieve the general contractor and the subcontractors of:
    a. responsibility to determine any aspect of how the work is to be performed
    b. dealing with matters of safety of personnel
    c. safety of property
    d. superintending of the work
    e. construction means and methods

DEFERRED SUBMITTALS

The design of the following building components shall be treated as deferred submittals. All associated drawings and calculations shall be stamped and signed by the engineer responsible for their preparation. After review, the GC shall forward the deferred submittal documents to the Building Department. Deferred submittal items shall not be installed until their design and submittal documents have been approved by the building official:

1. Wood roof trusses.
2. Rammed aggregate piers.
3. Miscellaneous prefabricated architectural elements (ie handrails)

SPREAD FOOTING FOUNDATIONS

DESIGN CRITERIA

1. Foundation design is based upon owner's accepted recommendations for spread footings on rammed aggregate pier ground improvements as contained in the geotechnical report prepared by Ground Engineering, report number 24-3566 dated July 11, 2024.
2. The frost depth is 36 inches. All exterior foundations shall be deeper than this.
3. Allowable bearing pressure used in design is 6,000 psf.
4. Allowable bearing pressure used in design of load combinations involving wind or seismic forces is 8,000 psf.

CONSTRUCTION

1. All foundation excavations, compaction, fill material, testing and inspection of foundation bearing strata shall be performed under supervision of a licensed Geotechnical Engineer. Inspections shall be performed prior to placement of reinforcement and pouring of concrete.
2. Contractor shall provide for de-watering of excavations to remove water from any source prior to pouring concrete.
3. Do not place concrete for foundation on frozen soil.

CONCRETE

DESIGN CRITERIA

1. Concrete work shall conform to all requirements of the International Building Code and ACI 318, Building Code Requirements for Structural Concrete, latest approved editions.
2. Prepare concrete mix designs for each type and strength of concrete, using either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method is used, use an independent testing facility acceptable to Engineer for preparing and reporting of proposed mix designs.
3. Submit written reports to Engineer of each proposed mix design at least 15 days prior to start of work. Do not begin concrete production until Engineer has reviewed mix designs.

PRODUCTS AND MATERIALS

1. Design mixes shall provide concrete with the following properties as indicated on drawings and schedules:

CONCRETE MIX MATRIX[1,2]

Mix Type	Intended Use of Concrete	Compressive Strength[2]	Maximum Aggregate Size	Exposure Class				Maximum CO_2e (kg/m^3)[5]	Required Admixtures
A	Footings	3000 (56-day)	1"	F0	S0	W0	C0		
C	Interior slab-on-grade	3000psi (56-day)	3/4"	F0	S0	W0	C0		
D	Exterior slab-on-grade	4500psi (56-day)	3/4"	F3	S0	W1	C2		AEA[4]

Footnotes:
1. Normal weight concrete unless noted otherwise.
2. Testing age is 28 days unless noted otherwise.
3. Slump to be determined by Contractor and Mix Supplier with final approval by Engineer. Recommended slump of 5-8" for drilled piers.
4. Air entraining admixture.
5. CO_2e content shall be documented by a product specific Type III Environmental Product Declaration for each unique mix design. Maximum CO_2e shall be achieved through use of accepted practices that might include but are not limited to: approved blended cements (see below), supplemental cementitious materials such as fly ash, slag, or natural pozzolans, and injected carbon products or the like. Added products shall be included in Concrete mix designs and shall include product information and qualified test data for review.

2. Portland Cement shall conform to ASTM C150, Type I / II. Blended Cements, if used, shall conform to ASTM C595 Type IL, or ASTM C1157 (GU). Aggregate for normal weight concrete shall conform to all requirements and tests of ASTM C33. Aggregate for lightweight concrete shall conform to all requirements and tests of ASTM C330. Concrete mixing operations, etc., shall conform to ASTM C94 and ACI 304.
3. Non-shrink grout shall conform to ASTM C1107.
4. Water-reducing admixtures shall conform to ASTM C494, and be used in strict accordance with the manufacturer's recommendations. An air-entraining agent conforming to the ASTM C260 shall be used in all concrete mixes for work which is exposed to weather.
5. Use accelerating admixtures in cold weather only when approved by Architect/Engineer. Use of admixtures will not relax cold weather placement requirements. Do not use calcium chloride. Use set retarding admixtures during hot weather only when approved by Architect/Engineer.
6. For concrete mix types with Exposure Class F3, supplementary cementitious materials shall have a maximum percentage of total cementitious materials by mass equal to 25% for fly ash or natural pozzolans per ASTM C618, 50% for slag cement per ASTM C989, 10% for silica fume per ASTM C1240, 35% for total of fly ash or natural pozzolans and silica fume, and 50% for total of fly ash or natural pozzolans, slag cement, and silica fume.

CONSTRUCTION

CONCRETE COVER

Clear concrete coverage for reinforcing bars shall be as follows unless noted otherwise:

Concrete exposed to earth without forms	3"
Concrete poured in forms but exposed to earth or weather:	
#5 bars or smaller	1 1/2"
Bars larger than #5	2"
Concrete not exposed to earth or weather:	
Slabs, walls and joists	3/4"
Beams and column bars (principal reinf., ties and stirrups)	1 1/2"

CONSTRUCTION JOINTS AND CONTROL JOINTS

1. Control joints shall be provided in all slabs-on-grade at a maximum spacing of 10'-0" OC for 4" slabs and 12'-0" OC for 5" slabs, unless noted otherwise. Joints shall be 1/8" wide x (thickness/4)" deep continuous sawed joint or pre-molded joint. Joints shall be provided at all column centerlines, corners and ends of walls, re-entrant corners and any other areas with high crack potential. Proposed joint locations shall be submitted to the architect for approval prior to completion of work.
2. Slabs, walls, footings and beams shall not have joints in a horizontal plane. Any stop in concrete work must be made at quarter point of span with vertical bulkheads and horizontal keys, unless otherwise shown. All construction joints shall be as detailed or as approved by the Engineer.

CONCRETE TOLERANCES

Concrete tolerances shall be as specified in ACI 117 and as follows:

Tops of walls and columns	-3/4", +0"
Plumbness	1/4" in 10 feet, 1" maximum total
Plan alignment	1/2" in 20 feet, 1" maximum total
Cross-sectional dimension	-1/4", +1/2"
Size and location of sleeves and blockouts	±1/4"
Slab and beam soffits	1/4" in 10 feet, 3/4" maximum total

CONDUITS, PIPES, AND SLEEVES

Embedded conduits, pipes, and sleeves in concrete:

- a. Any and all conduits, pipes, and sleeves embedded in structural concrete shall be shown in plan or thoroughly described in writing and provided to the Structural Engineer for written approval a minimum of six weeks prior to installation. See General Notes Shop Drawings and Submittals Item 1.
- b. All blockouts in foundation walls and footings must be approved by the Structural Engineer prior to construction.
- c. All embedded items shall be located as to not impair the strength of the construction of the concrete member.
- d. Contractor shall coordinate the installation of all embedded items and penetrations. Cost of additional reinforcement or where conduit is to be provided with Schedule 40 uncoated or galvanized steel pipe (ASTM 53) shall be borne by the contractor.
- e. Elevated concrete slabs:
    1. Horizontal runs of conduits shall not be embedded in any slabs less than 7" thick or any slabs on metal deck.
    2. For other conditions, proposed conduits less than or equal to 1 1/2" outside diameter shall conform to the following:
        a. No embedment shall disrupt the placement of the reinforcing steel or PT tendons, where applicable.
        b. The conduit shall be placed within the middle third of the slab thickness.
        c. Parallel runs of conduits shall have a clear spacing of three times their outside diameter. No more than eight parallel conduit runs shall occur in a single bay. Conduit runs parallel to structural beams or walls shall be a minimum of 3'-0" away from the face of the member.
        d. Conduits shall be installed without excess length and may only cross adjacent conduit one time within the middle third of the slab.
        e. Conduits shall not be placed through a column or within 3'-0" of a column face and shall not run through a stud rail.
    3. Conduits with an outside diameter greater than 1 1/2" are not permitted in the slab unless specifically approved by the Structural Engineer.
    4. Sleeves of any size and vertical conduit penetrations of the slab are not permitted within 4 times the slab thickness from the face of a column unless specifically approved by the Structural Engineer.
- f. Concrete slabs on grade:
    1. Horizontal conduit shall not be embedded within a slab on grade.
- g. Concrete columns:
    1. Conduits shall not penetrate or be embedded in columns unless specifically approved by the Structural Engineer.
- h. Concrete walls:
    1. Conduits shall not be embedded horizontally in any wall, length wise.
    2. Conduits shall not be embedded vertically in any wall less than 8" thick.
    3. For other conditions, proposed conduits less than or equal to 1 1/2" outside diameter shall conform to the following:
        a. No embedment shall disrupt the placement of the reinforcing steel.
        b. The conduit shall be placed between vertical reinforcement layers. The conduit shall be placed in the middle third of the wall for single layer vertical reinforcement.
- i. Concrete beams:
    1. Conduits shall not be embedded vertically or horizontally, length wise, in any beam.
    2. All horizontal, width wise, sleeves in beams shall be submitted to the Engineer for written approval and if approved shall be installed with Schedule 40 uncoated or galvanized steel pipe (ASTM 53) sleeve.

ARCHITECTURAL REQUIREMENTS

1. Provide 3/4" chamfers at all exposed corners.
2. Refer to Architectural drawings for reveals, areas of textured concrete or special finishes, items required to be cast into the concrete, curbs and slab depressions.

CONCRETE PLACEMENT

1. All concrete shall be consolidated by vibration, spading, rodding, or forking so that concrete is thoroughly worked around the reinforcement and embedded items and into corners of forms without segregation of materials.
2. <Delete if not required> All elements with a least dimension of <48"> or greater shall comply with the following temperature limits per ACI 301:
    a. Maximum temperature in concrete after placement shall not exceed 160° F.
    b. Maximum temperature differential between center and surface of placement shall not exceed 35° F.

FORMWORK AND SHORING

1. The Contractor shall design all forms and supporting shores in conformance with ACI 347. Design shall include rate and method of placing concrete and construction loads, including vertical, horizontal, and impact loads. Forms shall be substantial and sufficiently tight to prevent leakage of mortar and properly braced or tied to maintain position and shape.
2. Forms shall be removed in such a manner as not to impair safety and serviceability of the structure. All concrete to be exposed by form removal shall have sufficient strength not to be damaged thereby. Reshore until 28 days after placement , and for full duration where construction loads exceed specified service loads. Reshoring shall conform to ACI 347. Reshoring required for 3 floors minimum.

MISCELLANEOUS

1. Cracking of concrete slabs due to shrinkage is expected. The general contractor shall anticipate repairing cracks in all slabs but particularly at the parking levels. Rout and seal all cracks 0.01 inch wide and greater as described in the specifications.

REINFORCING STEEL

PRODUCTS AND MATERIALS

1. Reinforcing steel shall conform to ASTM A615, Grade 60. Reinforcing to be welded or field bent shall be ASTM A706, Grade 60.
2. Reinforcing to be welded or field bent shall be ASTM A706, Grade 60. Welding of reinforcing steel shall conform to AWS D1.4, using proper low hydrogen electrodes.
3. Epoxy-coated reinforcing steel shall conform to ASTM A775 and shall be coated prior to fabrication.
4. Welded wire reinforcement (WWR) shall conform to ASTM A1064, Fy=65 ksi. WWR must lap one full mesh plus 2" at side and end laps, but not less than 6" and shall be wired together. WWR shall be placed in the center of slabs-on-grade or in the center of the concrete thickness above the deck for slabs on form deck, unless noted otherwise.
5. Studrail shear reinforcing shall be made of Low Carbon Steel, C1015 in accordance with ASTM A1044, ASTM A36, and ASTM A29 with a minimum yield of 50,000 psi and a minimum tensile strength of 60,000 psi and a maximum 20% elongation in 2" as manufactured by Decon or Suncoast. The complete and finished studrail shall be ICBO evaluated and all welding must take place in an ICC approved and audited facility.

SHOP DRAWINGS

1. Detail reinforcing elements in accordance with the latest editions of the ACI Detailing Manual and ACI Building Code Requirements for Structural Concrete.

CONSTRUCTION

REINFORCING DEVELOPMENT AND SPLICES

1. <All bars in concrete shall be lapped a minimum of 36 bar diameters (2'-0" min.) at all splices.> <OR> <All bars in concrete shall be lapped in accordance with the "Concrete Reinforcing Tension Lap Splice Length (Class B)" schedule provided in these drawings unless specifically noted otherwise.>
2. Extend and anchor all horizontal bars at corners and intersections to fully develop the bar. All top reinforcing shall terminate with standard hooks at ends of slabs, construction joints, beams, walls, and foundations unless noted otherwise.
3. Continuous bars in walls, beams and grade beams shall be spliced as follows:
    a. Top bars - at midspan
    b. Bottom bars - over supports

REINFORCING AT OPENINGS

1. Provide 2- #5 bars (1 each face) with 2'-0" projection around all openings greater than 10" in any dimension in concrete slabs and walls, unless noted otherwise.
2. Provide 2- #5 bars at all reentrant and opening corners.

GENERAL REINFORCING REQUIREMENTS

1. All reinforcing bar bends shall be made cold with a bar bender at the ACI 318 specified minimum radius. Do not use added heat to bend bars.
2. Dowels for walls and columns shall be the same size and spacing as the wall/column reinforcing, unless noted otherwise.
3. Corner bars shall be provided at each mat of horizontal wall reinforcing and shall match horizontal bar size and spacing.
4. All stirrups shall have a minimum of 2- #4 horizontal reinforcing bars provided as spacers when no other horizontal reinforcing is provided.
5. Provide all accessories necessary to support reinforcing at positions shown on the plan.

POST-INSTALLED ANCHORS AND REBAR

1. Mechanical and adhesive anchors in concrete and masonry shall be as specified by the Structural Engineer.
2. Doweling of deformed rebar into concrete shall be as specified by the Structural Engineer.
3. All post-installed anchors shall meet ICC-ES compliance for each type of application.
4. If requested, ICC ES reports indicating conformance with ICC-ES Acceptance Criteria shall be provided.
5. The contractor shall arrange for onsite installation training from a manufacturer’s representative who is certified in accordance with the ACI/CRSI Adhesive Anchor Installer certification program. If requested, the contractor shall submit certificates of the on-site personnel who will be installing the anchors to the Structural Engineer.
6. All post-installed anchors in concrete shall be approved for use in seismic and cracked concrete applications.
7. Drill and install post-installed anchors and rebar per manufacturer's printed installation instructions and on-site training.
8. Unless otherwise specified, do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength, or a minimum age of 21 days, whichever is longer.

STRUCTURAL STEEL

PRODUCTS AND MATERIALS

1. Wide flange shapes shall be ASTM A992.
2. Round hollow structural sections shall be ASTM A500 Grade C (46 ksi).
3. Square and rectangular hollow structural sections (HSS) shall be ASTM A500 Grade C (50 ksi).
4. Pipe sections shall be ASTM A53 Grade B (35 ksi).
5. Miscellaneous structural steel such as angles and channels shall be ASTM A36 / ASTM A572-50.
6. Plates shall be ASTM A36 unless noted otherwise. Plates used for any type of moment connection shall be ASTM A572-50.
7. All welding electrodes shall conform to ASTM E70XX. The minimum fillet weld size shall be 3/16", unless noted otherwise.
8. Headed anchor studs shall conform to ASTM A108 (60 ksi).
9. Anchor rods and unfinished rods shall conform to ASTM F1554, Grade 36.
10. Bolted connections are to be of high-strength ASTM A325-N bolts, unless noted otherwise. A minimum of two bolts is required for all beam connections. Minimum required connection capacity is 12 kips LRFD factored load unless noted otherwise.
11. High-strength bolts shall conform to the provisions of the "Specification for Structural Joints Using High-Strength Bolts", latest edition, as approved by the Research Council on Structural Connections.
12. All structural steel exposed to weather shall be hot-dip galvanized, unless noted otherwise. See specifications for additional galvanizing information.
13. All structural steel shall be shop coated with an approved rust inhibitive primer. Do not prime beams that are to receive fireproofing.

SHOP DRAWINGS

1. Shop drawings for all structural steel indicated on the structural drawings shall be submitted for review to the Structural Engineer prior to fabrication.
2. Connections shall be as shown in schedules and sections in the drawings. Any changes to the connections proposed by the contractor shall be submitted with the structural steel shop drawings. This connection submittal shall include calculations stamped and signed by the contractor's engineer.

CONSTRUCTION

FABRICATION AND ERECTION

1. All fabrication and erection shall conform to the latest edition of the AISC Manual of Steel Construction.
2. All members are to be erected with natural mill camber or induced camber up, unless noted otherwise on the plans.
3. <For composite steel beam floors only>. Screed concrete topping to a constant thickness over the beams. Do not screed to a constant elevation.

HOLES AND OPENINGS

1. No holes other than those specifically detailed shall be allowed through structural steel members. No cutting or burning of structural steel shall be permitted without written consent from the Architect/Engineer.

WELDING

1. A Certified Welder approved by the authority having jurisdiction in accordance with AWS, Structural Welding Code D1.1, shall perform all welding.

BOLTING

1. All high-strength bolts in bearing type connections shall be snug tight. The snug tight condition is defined as the tightness that exists when all plies in a joint are in firm contact. A few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench may attain this. All high-strength bolts shown on the drawings as slip critical or subject to tension loads shall be tightened to a bolt tension not less than that given in Table 8.1 for the RCSC Specification for Structural Joints using High-Strength Bolts. Tightening shall be done by the turn-of-nut method, by a direct tension indicator, or by properly calibrated wrenches. Provide hardened washers under the nut or bolt head, whichever is the element turned in tightening. Bolts not indicated as slip critical shall not be pre-tensioned.
2. For slip-critical bolted assemblies the assembly surface, including those adjacent to the washer, shall be free of mill scale, oil, paint or other coatings.

ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS)

1. Structural steel noted as AESS on the structural drawings shall conform to project specifications for detailing, fabrication, and erection of AESS.
2. All AESS shall be free of mill marks, have welds ground smooth, and piece marks covered. The surface preparation of AESS shall conform to SSPC-SP 3 power tool cleaning.
3. All exposed field welds shall be uniform and smooth with any field welding aids removed.

MISCELLANEOUS STRUCTURAL STEEL

1. Miscellaneous structural steel includes any steel that is not specifically included in the framing of the building superstructure. Superstructure steel may include beams, columns, trusses, girders, joists, braces, frames, and any associated connections, parts, and subparts.
2. The structural steel supplier shall supply all necessary steel items, whether indicated on the drawings or not, that fulfill the structural design and architectural design intent for the structure. These items may include edge angles, closure angles, deck support, miscellaneous plates, etc.
3. For SOMD projects only: <Openings in roof or floor decks with concrete may be as shown on structural, architectural, or MEP drawings. If openings are not dimensioned on structural plans, refer to architectural or MEP drawings. Unless noted otherwise, openings in decks 24”x24” or less shall be reinforced with 1- #5 in concrete above flutes on all four sides of opening. Reinforcement shall extend 2’-0” minimum beyond edge of opening or have a standard hook. All openings shall have 2’-0” minimum clear between them. For any opening that does not meet this requirement, refer to plans and details for required reinforcing.>
4. Openings in metal roof deck without concrete may be as shown on structural, architectural, or MEP drawings. If openings are not dimensioned on structural plans, refer to architectural or MEP drawings. Openings in deck shall be reinforced as shown in the structural drawings.

STEEL JOISTS

1. Steel joists shall be designed, fabricated, and erected in accordance with Steel Joist Institute (SJI) Specification. Where steel joists bear on structural steel framing the joist nearest each column on each side of the beam shall be bolted to the beam. Joist bridging shall conform to SJI specifications unless otherwise shown on plans. Joist supplier shall verify that the metal deck, joists, and joist girders meet any size, spacing, support, and/or bridging restrictions imposed by Underwriters Laboratories designated floor or roof systems listed in the architectural drawings. All welds shall be by joist supplier unless noted otherwise.
2. Joist Supplier shall submit calculations for all non-uniformly loaded joists.
3. Install all required bridging and miscellaneous steel prior to installing deck.

WOOD FRAMING

PRODUCTS AND MATERIALS

1. All structural lumber shall be of the following grade, conforming to Standard Grading Rules for <Western Wood Products Association, grade marked by W.W.P.A>.

Douglas Fir	
Studs, blocking, plates (2x and 3x)	No. 2 (Fb =900 psi, E =1,600 ksi)
Joist and rafters (2x and 3x)	No. 2 (Fb =900 psi, E =1,600 ksi)
Post and columns (5" and larger)	No. 1 (Fb =1,200 psi, E = 1,600 ksi)
Beams and Stringers (5" and larger)	No. 1 (Fb = 1,350 psi, E = 1,600 ksi)

Hem Fir	
Studs, blocking, plates (2x and 3x)	No. 2 (Fb =850 psi, E =1,300 ksi)
Joist and rafters (2x and 3x)	No. 2 (Fb =850 psi, E =1,300 ksi)
Post and columns (5" and larger)	No. 1 (Fb =975 psi, E = 1,300 ksi)
Beams and Stringers (5" and larger)	No. 1 (Fb = 1,050 psi, E = 1,300 ksi)

SprucePine Fir	
Studs, blocking, plates (2x and 3x)	No. 2 (Fb =875 psi, E =1,400 ksi)
Joist and rafters (2x and 3x)	No. 2 (Fb =875 psi, E =1,400 ksi)
Post and columns (5" and larger)	No. 1 (Fb =850 psi, E = 1,300 ksi)
Beams and Stringers (5" and larger)	No. 1 (Fb = 900 psi, E = 1,300 ksi)

<Engineer Note: If specifying Spruce-Pine Fir, change grading to Northern Softwood Lumber Bureau: grade marked N.L.G.A.>

Southern Pine	
Studs, blocking, plates (2x and 3x)	No. 2 (Fb =1,100 psi, E =1,400 ksi)
Joist and rafters (2x and 3x)	No. 2 (Fb =1,100 psi, E =1,400 ksi)
Post and columns (5" and larger)	No. 1 (Fb =1,350 psi, E = 1,600 ksi)
Beams and Stringers (5" and larger)	No. 1 (Fb = 1,350 psi, E = 1,600 ksi)

<Engineer Note: If specifying Southern Pine, change grading to Southern Pine Inspection Bureau: grade marked SPIB>

2. Laminated veneer lumber (LVL) shall be erected in accordance with the manufacturer's recommendations. The manufacturer shall furnish all plates, blocking, bridging, and other related items. LVL's shall have a modulus of elasticity (E) of $1.9x10^6$ and an allowable flexural stress (Fb) of 2600 psi. Any substitutions shall provide equal or better member properties and require Architect/Engineer approval.
3. Parallam (PSL) shall be erected in accordance with the manufacturer's recommendations. The manufacturer shall furnish all plates, blocking, bridging, and other related items. PSL's shall have a modulus of elasticity (E) of $2.2x10^6$ and an allowable flexural stress (Fb) of 2900 psi. Any substitutions shall provide equal or better member properties and require Architect/Engineer approval.
4. Laminated strand lumber (LSL) shall be erected in accordance with the manufacturer's recommendations. The manufacturer shall furnish all plates, blocking, bridging, and other related items. LSL's shall have a modulus of elasticity (E) of $1.3x10^6$ and an allowable flexural stress (Fb) of 1700 psi. Any substitutions shall provide equal or better member properties and require Architect/Engineer approval.
5. I-joist sizes, series, and structural properties based on TJI by Weyerhaeuser. Erect in accordance with the manufacturer's recommendations. The manufacturer shall furnish all plates, blocking, bridging, and other related items. Any substitutions shall provide equal or better member properties and require Architect/Engineer approval.
6. All wood sheathing shall conform to U.S. product standard PS 1 or PS 2 and shall be identified by a registered stamp of the American Plywood Association.
7. All wood sheathing shall be Span Rated, Exposure I per PS 1 or PS 2. All sheets shall be grade marked.
8. All wood in contact with concrete or masonry shall be preservative treated. All bolts, nails and connectors in contact with preservative treated wood shall be hot-dipped galvanized or stainless steel unless preservative does not require special finishes on connectors.
9. All metal connectors shall be Simpson Strong-Tie connectors. The nails for these connectors shall be joist hanger nails as specified by the Simpson Strong-Tie Company, unless noted otherwise.

CONSTRUCTION

GENERAL

1. Framing members shall not be notched, dapped, or otherwise cut or reduced in size unless specifically detailed or approved. For engineered lumber, refer to manufacturer's recommendations for allowable hole size and locations.
2. 3- 2x6 shall be provided below all girder trusses, hip trusses, valley trusses, or beams unless noted otherwise.
3. Interior non-bearing partitions resting on slab-on-grade shall be provided with a slip joint at the top or bottom of the wall.

ANCHOR BOLTS, NAILS, BOLTS, AND LAG SCREWS

1. Foundation plates or sills shall be bolted to the foundation with not less than 5/8"Ø A307 galvanized steel "L" bolts embedded at least 7" into the concrete and spaced not more than 4'-0" OC There shall be a minimum of two bolts per piece with a bolt located within 12" of each end of each piece. Bolts shall be galvanized unless not required by the sill manufacturer and the IBC.
2. Nailing shall be per the International Building Code, unless noted otherwise on the plans. Holes for nails shall be pre-drilled for nails larger in diameter than 16d or where driving causes splitting.
3. All bolt holes in wood shall be 1/16" maximum larger than the bolt size. Washers shall be placed under all nuts and heads of all bolts and lag screws. All holes for lag screws shall first be drilled to the same depth and diameter as the shank. The remainder of the holes occupied by the threaded portion shall have a diameter equal to 75% of the shank diameter. Do not over-install lag screws.

SHEATHING

1. Roof, floor and wall sheathing nails or other approved fasteners shall be driven so that their head or crown is flush with the surface of sheathing. Place nails @6" OC along panel edges and @12" OC at intermediate framing members unless noted otherwise.
2. Roof Sheathing: Stagger all wood sheathing panel joints. Apply sheets with face grain perpendicular to rafters and joists. Use 8d ring-shank nails (0.131" diameter x 2 1/2") with 3/8" edge distance. Use 2x4 flat blocking at interior supported panel edges where indicated "blocked" on drawings. All hips, valleys, and ridges shall have 2x4 slope cut blocking at plywood edges to allow the diaphragm to be continuous. Roof sheathing shall be continuous under overframing.
3. Floor Sheathing: Stagger all wood sheathing panel joints. Apply sheets with face grain perpendicular to trusses and joists. Use 8d common nails (0.131" diameter x 2 1/2") with 3/8" edge distance. Use 2x4 flat blocking at interior supported panel edges where indicated "blocked" on drawings. Floor sheathing shall be tongue and groove sheathing, glued and nailed to joist.
4. Wall Sheathing: Sheathing can be applied vertically or horizontally. Provide blocking at every horizontal joint. Use 8d common nails (0.131" diameter x 2 1/2") with 3/8" edge distance.

FLOOR JOISTS

1. Coordinate joist locations with plumbing and mechanical penetrations. Provide additional joists as required to maintain maximum joist spacing.
2. Provide double joists under all partitions longer than 10'-0" running parallel to joist.

BLOCKING

1. Provide solid blocking between joist or rafters at all points of support. Provide approved crossbridging between solid sawn floor joist @ 8'-0"OC maximum, and between solid sawn roof rafters @10'-0"OC maximum.
2. Posts and multiple studs at upper levels shall have matching and aligned posts and multiple studs at each level of framing below. Tight fitting, solid blocking shall be provided between levels under all such posts and multiple studs. Area of blocking shall equal area of post above and below and be aligned vertically. All posts and multiple studs shall be continuous.

SPECIAL INSPECTIONS

1. The Special Inspector, prior to the placing of coverage, shall inspect all floor, roof and wall sheathing and nailing. See inspection schedule for additional inspections required.

WOOD TRUSSES

1. All trusses shall be erected in accordance with manufacturer's specifications.
2. No live load reductions shall be taken in design of trusses.
3. All bridging and blocking shall be per BCSI and must be in place prior to installing sheathing.
4. All roof trusses shall be secured to supporting elements with steel hurricane/seismic anchors.
5. Bearing stress shall not exceed 625 psi <405 psi>. Truss manufacturer is responsible for coordinating and verifying adequate bearing area at all supports.
6. Roof and floor trusses shall be fabricated using special metal connector plates and shall conform to the National Design Standard for Metal Plate Connected Wood Truss Construction as prepared by the Truss Plate Institute.
7. Minimum member sizes for trusses shall be 2x4 (nominal) unless noted otherwise.
8. Metal connection plates shall be at least 20 gage galvanized steel.
9. Truss manufacturer shall provide all connectors, hangers, bearing enhancers, and hurricane anchors required to support and anchor trusses. Manufacturer shall design and supply all truss to truss connections.
10. Girder trusses shall be located where shown on structural drawings. A location change may be requested in writing prior to drawing submittal, and is subject to approval of the structural engineer.
11. Design loading for roof trusses shall be as follows:
    Superimposed Dead Load = 21 psf, 13 psf top chord, 8 psf bottom chord
    Snow Load = 39 psf + drift top chord
    Live Load = 10 psf, bottom chord, non-concurrent with top chord snow load
    Add 5 psf dead load at over-framed areas
    Include additional loads shown on plans and details

GLUED LAMINATED WOOD

1. All glued laminated beams shall be Douglas Fir, Combination 24F. Core laminations may be Hem-Fir. Use combination 24F-V4 or 24F-V5 for simply supported beams and combinations 24F-V8 or 24F-V10 for cantilevered or continuous beams.
2. X beams shall be manufactured by Rosboro and shall be erected in accordance with the manufacturer's recommendations. X beams shall be glu-lam combination 24F-V4 for simply supported beams and 24F-V8 or 24F-V10 for cantilevered or continuous beams.
3. All laminations shall be 1 1/2" thick and of the width shown on the structural drawings. All laminations shall be parallel to the bottom edge of the beam.
4. All glued laminated columns shall be Western Species, 1 DF L3.
5. All glued laminated wood beams shall be cambered as noted on the structural drawings. All members are to be erected with natural mill camber or induced camber up, unless noted otherwise.
6. All exterior glued laminated wood shall be manufactured with exterior glue and shall be painted or sealed per architectural drawings or specifications.
7. All fabrication and workmanship shall conform to the requirements of the International Building Code, the American Institute of Timber Construction, and the current edition of the Standard Specifications for Structural Glued Laminated Timber of Softwood Species.
8. All work shall be done in the shop of an approved Type I licensed fabricator.

SHOP DRAWINGS

1. Truss manufacturer shall design and fabricate trusses in accordance with the dimensions, slopes, spacing, and superimposed loads shown on the drawings. Manufacturer shall submit shop drawings and calculations stamped by a professional engineer for review prior to fabrication.
2. Contractor shall submit shop drawings showing Simpson Strong-Tie ATS System or approved equivalent including rod locations, rod sizes, anchorage size, and shrinkage takeup devices used.
3. Contractor shall submit shop drawing of all engineered beam products including LVL, LSL, PSL, and glued laminated beams. A certificate of inspection for each glued laminated beam from an approved testing agency shall be submitted to and approved by the local Building Department and by the Engineer prior to erection.

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Title
GENERAL NOTES

S001

COLD-FORMED STEEL FRAMING

PRODUCTS AND MATERIALS

1. All metallic coated metal studs 16 gage and heavier shall be formed from steel that corresponds to the minimum requirements of ASTM A1003, Grade 50, Type H. All metallic coated 16 gage tracks and heavier shall be formed from steel that corresponds to the requirements of ASTM A570 or A611, Grade 33.
2. All metallic coated 18 gage studs and lighter, all painted track, bridging, end closures, and accessories shall be formed from steel that corresponds to the requirements of ASTM A1003, Grade 33, Type H.
3. All galvanized metal studs 16 gage and heavier shall be formed from steel that corresponds to the minimum requirements of ASTM A653, Grade 50. All galvanized 16 gage and heavier tracks shall be formed from steel that corresponds to the requirements of ASTM A653, Grade 33.
4. All galvanized 18 gage studs and lighter, all painted track, bridging, end closures, and accessories shall be formed from steel that corresponds to the requirements of ASTM A653, Grade 33.
5. All painted material and accessories shall be primed with rust inhibitive paint meeting the performance requirements specified by the Architect.
6. Minimum effective section properties of metal studs shall be as shown in the current Steel Stud Manufacturer's Association (SSMA) Publication.

SHOP DRAWINGS

1. Metal stud contractor shall submit structural calculations and drawings for all non-load bearing framing members and connections to the Engineer prior to fabrication.

CONSTRUCTION

1. All corners shall be framed with a minimum of 3 studs of the same gage as wall studs, unless noted otherwise.
2. Multiple studs shall be secured together with either #10 screws at 18" OC staggered or 1 1/2" of weld at each flange @18" OC.
3. Load bearing studs shall be square cut and bear on both upper and lower tracks. Wall panels shall be precompressed or oversized track shall be provided (Clark Dietrich Panelrak or similar). Proposed track shall be submitted to Architect/Engineer for approval. Maximum allowable gap is 1/8".
4. Interior non-bearing partitions resting on slab-on-grade shall be provided with a slip joint at the top or bottom of the wall.
5. Holes in studs are not allowed within 10" of the top or bottom of the stud. No punched holes are permitted in members used as beams.
6. No holes shall be cut in structural studs, joists, or headers without written approval from structural engineer.
7. Coordinate joist locations with plumbing and mechanical penetrations. Provide additional joists as required to maintain joist spacing./
8. Joist webs shall be located directly above stud webs unless noted otherwise.
9. Web stiffeners shall be constructed of unpunched studs or track, gage to match stud below, unless noted otherwise. No holes are allowed in web stiffeners.
10. Splices in metal studs, joists, and headers will not be permitted.
11. Do not bend or cut flanges of studs, joist or headers. Any damaged members shall be replaced.
12. Provide bridging as required by the manufacturer's recommendations.
13. Bracing straps shall be flat with no bows or splices. They shall be attached to all intermediate studs with 3- #10 screws.
14. Touch up all welds with zinc-rich paint.

SYMBOL LEGEND

SYMBOL	
F#	FOOTING TYPE
X: XX' - XX" / XX"	DRILLED PIER TYPE (MARK); TOP OF PIER; PENETRATION INTO BEDROCK
XX EL(THIS SIDE OF LINE ONLY) / EL(THIS SIDE OF LINE ONLY) STEP TYPE:	TC = CONCRETE; BW = BOTTOM OF WALL; TF = TOP OF FOOTING; BL = BRICK LEDGE
XXX' - XX"	TOP OF SLAB / FLOOR
C# or C# - XX"-XX"	CONCRETE COLUMN TYPE
	INDICATES CAST-IN-PLACE CONCRETE WALL
2" 3.5" XXT	STRESSING END; DISTANCE FROM BOTTOM OF SLAB TO CGS OF TENDON; DEAD END; TENDON QUANTITY
X	STUDRAIL TYPE ID
? 1-R	STEEL COLUMN TYPE AND STARTING AND TERMINATING LEVEL OF COLUMN. COLUMNS SPLICED 3'-0" ABOVE FINISH FLOOR. SEE DETAILS
TS XXX' - XX"	TOP OF STEEL ELEVATION AT SLOPING STEEL
	MOMENT FRAME CONNECTION
	DRAG CONNECTION
	STEEL BRACED FRAME STARTING AT THIS LEVEL
	STEEL BRACED FRAME BELOW THIS LEVEL
	STEEL CHEVRON BRACED FRAME BELOW THIS LEVEL
2- #5	ADD'L END REINF
	BEARING WALL
	BEARING WALL BELOW
#' - SW-T# #	SHEAR WALL; ATS CALLOUT; SHEAR WALL TYPE AND EXTENTS. SEE PLANS AND SCHEDULE; HDU CALLOUT –NUMBER ONLY
	SHEAR WALL BELOW
	INDICATES WOOD POST
	INDICATES WOOD POST BELOW
FH#	FLUSH HEADER
H#	DROPPED HEADER
RTU XXX#	MECHANICAL ROOF TOP UNIT AND WEIGHT

STANDARD ABBREVIATIONS

AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
APA	AMERICAN PLYWOOD ASSOCIATION
ARCH	ARCHITECT / ARCHITECTURAL
ASD	ALLOWABLE STRESS DESIGN
B	BOTTOM
BETW	BETWEEN
BF	BOTTOM OF FOOTING
BL	BRICK LEDGE
BLDG	BUILDING
BLKG	BLOCKING
BRG	BEARING
BW	BOTTOM OF WALL
CFS/CFMF	COLD FORMED STEEL/COLD FORMED METAL FRAMING
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT, CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DBA	DEFORMED BAR ANCHOR
DBS	DOWEL BAR SUBSTITUTE
DL	DEAD LOAD
DN	DOWN
DT	DRAG TRUSS
DWG	DRAWING
(E)	EXISTING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEV	ELEVATOR
EQ	EQUAL
EW	EACH WAY
EXP	EXPANSION
EXT	EXTERIOR
(E)	EXISTING
FD	FLOOR DRAIN
FDN	FOUNDATION
FF	FINISHED FLOOR
FTG	FOOTING
FV	FIELD VERIFY
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GET	GABLE END TRUSS
GL	GLULAM BEAM OR COLUMN
GT	GIRDER TRUSS
HAS	HEADED ANCHOR STUD
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
HGT	HEIGHT
HT	HIP TRUSS
IBC	INTERNATIONAL BUILDING CODE
IF	INSIDE FACE
JT	JOINT
k	KIPS
LL	LIVE LOAD
LLBB	LONG LEG BACK-TO-BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LVL	LAMINATED VENEER LUMBER
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MR	MILD REINFORCING
MTL	METAL
(N)	NEW
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON-CENTER
OH	OPPOSITE HAND
OPNG	OPENING
PAF	POWDER ACTUATED FASTENER
PC	PRECAST
PEWRT	PRE-ENGINEERED WOOD ROOF TRUSS
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLWD	PLYWOOD
PT	POST TENSION
QTY	QUANTITY
R	RADIUS
RD	ROOF DRAIN
REINF	REINFORCING
REQD	REQUIRED
RO	ROUGH OPENING
SCHED	SCHEDULE
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SL	STONE LEDGE
SLBB	SHORT LEGS BACK-TO-BACK
SOG	SLAB-ON-GRADE
SP	SPACE(S)
SPECS	SPECIFICATIONS
STD	STANDARD
STFR	STIFFENER
STL	STRUCTURAL
SYM	SYMMETRICAL
TC	TOP OF CONCRETE
TF	TOP OF FOOTING
THK	THICKNESS
TL	TOP OF LEDGE
TM	TOP OF MASONRY
TP	TOP OF PLATE
TS	TOP OF STEEL
TW	TOP OF WALL
T&B	TOP AND BOTTOM
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VT	VALLEY TRUSS
W/	WITH
WD	WOOD
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCEMENT
#	POUNDS

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SCHEDULES

S002

REQUIRED THIRD PARTY VERIFICATION AND INSPECTIONS FOR COLD-FORMED STEEL CONSTRUCTION - 2021 IBC

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
1. Pre-fabricated cold-formed steel structural elements and assemblies.				
a. size, spacing	-	X	-	Sec. 1704.5
b. connections and welds	-	X		
2. Site built assemblies				
a. grade, size, spacing	-	X	-	Sec. 1704.5
b. connections and welds	-	X		
c. blocking	-	X		
3. lateral system				
a. member size at panel edges	-	X	-	Sec. 1704.13.3
b. diaphragm and shearwall fastener diameter and length	-	X		
c. diaphragm and shearwall fastener spacing	-	X		

STATEMENT OF SPECIAL INSPECTIONS - 2021 IBC

1. SPECIAL INSPECTIONS AND STRUCTURAL TESTING SHALL BE PROVIDED BY A THIRD PARTY AGENCY EMPLOYED BY THE OWNER. SPECIAL INSPECTIONS AND TESTING SHALL BE PROVIDED AS REQUIRED IN CHAPTER 17 OF THE IBC AND BY THE ENGINEER OF RECORD. REQUIREMENTS ARE NOTED IN CHARTS PROVIDED ON THE CONSTRUCTION DOCUMENTS, AS WELL AS IN THE SPECIFICATIONS.
2. THE NAMES AND CREDENTIALS OF THE SPECIAL INSPECTORS TO BE USED SHALL BE SUBMITTED TO THE BUILDING OFFICIAL.
   A. ALL SPECIAL INSPECTORS SHALL BE QUALIFIED TO INSPECT MATERIALS BASED ON CERTIFICATION, TRANING OR EXPERIENCE AS REQUIRED, AND MUST MEET SPECIFICATION STANDARDS.
3. SPECIAL INSPECTOR DUTIES:
   A. SPECIAL INSPECTOR SHALL REVIEW ALL WORK REQUIRED ON THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS.
   B. SPECIAL INSPECTOR SHALL FURNISH SPECIAL INSPECTION REPORTS TO THE ENGINEER OF RECORD, ARCHITECT, CONTRACTOR, OWNER, AND BUILDING OFFICIAL ON A WEEKLY BASIS OR MORE FREQUENTLY. ALL ITEMS NOT IN COMPLIANCE SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF UNCORRECTED, THEY SHALL BE REPORTED TO THE EOR.
   C. SPECIAL INSPECTOR SHALL KEEP A LOG OF ALL NON-COMPLIANCE ITEMS, INCLUDING THOSE NOTED ON STRUCTURAL OBSERVATION REPORTS.
   D. SPECIAL INSPECTOR SHALL REINSPECT ALL NON-COMPLIANCE ITEMS UPON REPAIR BY THE CONTRACTOR TO MEET THE CONSTRUCTION DOCUMENTS OR REPAIR BASED ON ENGINEER OF RECORD DIRECTIVES.
   E. SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT.
   F. SPECIAL INSPECTOR SHALL FURNISH A FINAL LETTER TO THE EOR AT THE COMPLETION OF THE PROJECT STATING THAT ALL INSPECTIONS HAVE BEEN COMPLETED AND ALL DISCREPANCIES HAVE BEEN RESOLVED.
4. CONTRACTOR DUTIES:
   A. CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER AND BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF WORK. THE STATEMENT SHALL CONTAIN ACKNOWLEDGEMENT OF THE SPECIAL INSPECTION REQUIREMENTS ON THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS.
   B. CONTRACTOR SHALL NOTIFY THE RESPONSIBLE SPECIAL INSPECTOR THAT WORK IS READY FOR INSPECTION A MINIMUM OF 24 HOURS BEFORE SUCH INSPECTION IS REQUIRED.
   C. ALL WORK, INCLUDING REPAIRS, SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL IT HAS BEEN OBSERVED BY THE SPECIAL INSPECTOR.
   D. CONTRACTOR SHALL PROVIDE CURRENT DRAWINGS AND SPECIFICATIONS TO THE SPECIAL INSPECTOR. THIS INCLUDES ALL STRUCTURAL OBSERVATIONS, REPORTS, AND REPAIR DOCUMENTATION.
   E. ALL REPAIRS SHALL BE INSPECTED AT THE COST OF THE CONTRACTOR. NON-COMPLIANCE ITEMS SHALL BE RESOLVED IN A TIMELY MANNER.

REQUIRED THIRD PARTY SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION - 2021 IBC

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1. Inspect reinforcment, including prestressing tendons, and verify placement.	-	X	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	-
2. Reinforcing bar welding:	-	-	AWS D1.4 ACI 318: 26.6.4	-
a. Verify weldability of reinforcing bars other than ASTM A706.	-	X	AWS D1.4 ACI 318: 26.6.4	-
b. Inspect single-pass fillet welds, maximum 5/16"; and	-	X	AWS D1.4 ACI 318: 26.6.4	-
c. Inspect all other welds.	X	-	AWS D1.4 ACI 318: 26.6.4	-
3. Inspect anchors cast in concrete.	-	X	ACI 318: 17.8.2	-
4. Inspect anchors post-installed in hardened concrete members.	-	-		-
a. Adhesive anchors installed in horizontally or upwardly inclined orientatations to resist sustained tension loads.	X	-	ACI 318: 17.8.2.4	-
b. Mechanical anchors and adhesive anchors not defined in 4.a.	-	X	ACI 318: 17.8.2	-
5. Verifying use of required design mix.	-	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2,
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	-	ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	1908.10
7. Inspect concrete and shotcrete placement for proper application techniques.	X	-	ACI 318: 26.5	-
8. Verify maintenance of specified curing temperature and techniques.	-	X	ACI 318: 26.5.3-26.5.5	-
9. Inspect prestressed concrete for:	-	-		-
a. Application of prestressing forces; and	X	-	ACI 318: 26.10	-
b. Grouting of bonded prestressing tendons.	X	-	ACI 318: 26.10	-
10. Inspect erection of precast concrete members.	-	X	ACI 318: Ch. 26.9	-
11. For precast concrete diaphragm connections for reinforcement at joints classified as moderate or high deformability elements (MDE HDE) in structures assigned to Seismic Design Category C,D,E or F, inspect such connections and reinforcement in the field for : a. Installation of the embedded parts b. Completion of the continuity of reinforcement across joints. c. Completion of connections in the field	 X X X	 - - -	ACI 318: Ch. 26.13.1.3 ACI 550.5	
12. Inspect installation tolerances of precast concrete diaphragm connctions for compliance with ACI 550.5	-	X	ACI 318: 26.13.1.3	:
13. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	-	X	ACI 318: 26.11.2	-
14. Inspect formwork for shape, location and dimensions of the concrete member being formed.	-	X	ACI 318: 26.11.1.2 (b)	-

REQUIRED THIRD PARTY SPECIAL INSPECTIONS AND TESTS OF SOILS - 2021 IBC TABLE 1705.6

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	-	X
2. Verify excavations are extended to proper depth and have reached proper material.	-	X
3. Perform classification and testing of compacted fill materials.	-	X
4. During fill placement, verify use of proper materials and procedures in accordance with the provisions of the approved geotechnical report. Verify densities and lift thicknesses during placement and compaction of compacted fill.	X	-
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	-	X

REQUIRED THIRD PARTY VERIFICATION AND INSPECTIONS FOR WOOD CONSTRUCTION - 2021 IBC

VERIFICATION AND INSPECTION	PERIODIC
1. Pre-fabricated wood structural elements and assemblies.	X
a. grade, size, spacing	X
b. connections	X
c. restraint/bracing of depths ≥60 inches or lengths ≥60 feet	X
2. Site built assemblies.	
a. grade, size, spacing	X
b. connections	X
c. blocking	X
3. Wood diaphragms and shear walls.	
a. panel grade and thickness	X
b. member size at panel edges	X
c. fastener diameter and length	X
d. fastener spacing	X
e. check for overdrilling or overshooting of fasteners	X
4. Holdown hardware at shearwalls	
a. type, location	X
b. connections	X
c. post size and type	X
5. Steel straps at diaphragms	
a. type, length, location	X
b. connections	X
c. blocking	X

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INSPECTION SCHEDULES 2021 IBC

S003

REQUIRED THIRD PARTY VERIFICATION AND INSPECTION FOR STEEL CONSTRUCTION - 2021 IBC

TASK	QUALITY CONTROL[1]	QUALITY ASSURANCE[2]	REFERENCED STANDARD
INSPECTION TASKS PRIOR TO WELDING			
Welder qualification records and continuity records	P[3]	O[4]	AISC 360 TABLE N5.4-1
WPS available	P	P	AISC 360 TABLE N5.4-1
Manufacturer certifications for welding consumables available	P	P	AISC 360 TABLE N5.4-1
Material identification (type/grade)	O	O	AISC 360 TABLE N5.4-1
Welder identification system [5]	O	O	AISC 360 TABLE N5.4-1
Fit-up of groove welds (including joint geometry)	O	O	AISC 360 TABLE N5.4-1
Fit-up of CJP groove welds of HSS T-, Y- and K-joints without backing (including joint geometry)	P	O	AISC 360 TABLE N5.4-1
Configuration and finish of access holes	O	O	AISC 360 TABLE N5.4-1
Fit-up of fillet welds	O	O	AISC 360 TABLE N5.4-1
Check welding equipment	O	-	AISC 360 TABLE N5.4-1
INSPECTION TASKS DURING WELDING			
Control and handling of welding consumables	O	O[4]	AISC 360 TABLE N5.4-2
No welding over cracked tack welds	O	O	AISC 360 TABLE N5.4-2
Environmental conditions	O	O	AISC 360 TABLE N5.4-2
WPS followed	O	O	AISC 360 TABLE N5.4-2
Welding techniques	O	O	AISC 360 TABLE N5.4-2
Placement and installation of steel headed stud anchors	P[3]	P	AISC 360 TABLE N5.4-2
INSPECTION TASKS AFTER WELDING			
Welds cleaned	O	O[4]	AISC 360 TABLE N5.4-3
Size, length and location of welds	P[3]	P	AISC 360 TABLE N5.4-3
Welds meet visual acceptance criteria	P	P	AISC 360 TABLE N5.4-3
Arc strikes	P	P	AISC 360 TABLE N5.4-3
k-area [6]	P	P	AISC 360 TABLE N5.4-3
Weld access holes in rolled heavy shapes and built-up heavy shapes [7]	P	P	AISC 360 TABLE N5.4-3
Backing removed and weld tabs removed (if required)	P	P	AISC 360 TABLE N5.4-3
Repair activities	P	P	AISC 360 TABLE N5.4-3
Document acceptance or rejection of welded joint or member	P	P	AISC 360 TABLE N5.4-3
No prohibited welds have been added without the approval of the EOR	O	O	AISC 360 TABLE N5.4-3
INSPECTION TASKS PRIOR TO BOLTING			
Manufacturer's certifications available for fastener materials	O	P	AISC 360 TABLE N5.6-1
Fasteners marked in accordance with ASTM requirements	O	O[4]	AISC 360 TABLE N5.6-1
Correct fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O	AISC 360 TABLE N5.6-1
Correct bolting procedure selected for joint detail	O	O	AISC 360 TABLE N5.6-1
Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O	AISC 360 TABLE N5.6-1
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P[3]	O	AISC 360 TABLE N5.6-1
Protected storage provided for bolts, nuts, washers and other fastener components	O	O	AISC 360 TABLE N5.6-1
INSPECTION TASKS DURING BOLTING			
Fastener assemblies placed in all holes and washers and nuts are positioned as required	O	O[4]	AISC 360 TABLE N5.6-2
Joint brought to the snug-tight condition prior to the pretensioning operation	O	O	AISC 360 TABLE N5.6-2
Fastener component not turned by the wrench prevented from rotating	O	O	AISC 360 TABLE N5.6-2
Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	O	O	AISC 360 TABLE N5.6-2
INSPECTION TASKS AFTER BOLTING			
Document acceptance or rejection of bolted connections	P[3]	P	AISC 360 TABLE N5.6-3

NOTES:
1. QUALITY CONTROL (QC) AS SPECIFIED IN THIS CHAPTER SHALL BE PROVIDED BY THE FABRICATION AND ERECTOR.
2. QUALITY ASSURANCE (QA) AS SPECIFIED IN THIS CHAPTER SHALL BE PROVIDED BY OTHERS WHEN REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ), APPLICABLE BUILDING CODE, PURCHASER, OWNER OR ENGINEER OF RECORD (EOR).
3. OBSERVE(O): THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED TO BE DELAYED PENDING THESE INSPECTIONS.
4. PERFORM (P): THESE TALKS SHALL BE PERFORMED FOR EACH WELDED JOINT OR MEMBER.
5. THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW STRESS TYPE.
6. WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE k-AREA, VISUALLY INSPECT THE WEB k-AREA FOR CRACKS WITHIN 3" OF THE WELD.
7. AFTER ROLLED HEAVY SHAPES (PER AISC 360 SECTION A3.1c) AND BUILT-UP HEAVY SHAPES (PER AISC 360 SECTION A3.1d) ARE WELDED, VISUALLY INSPECT THE WELD ACCESS HOLES FOR CRACKS.

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RENOVATION & ADDTION
2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE
BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

Drawn by MAR | Checked by JDB

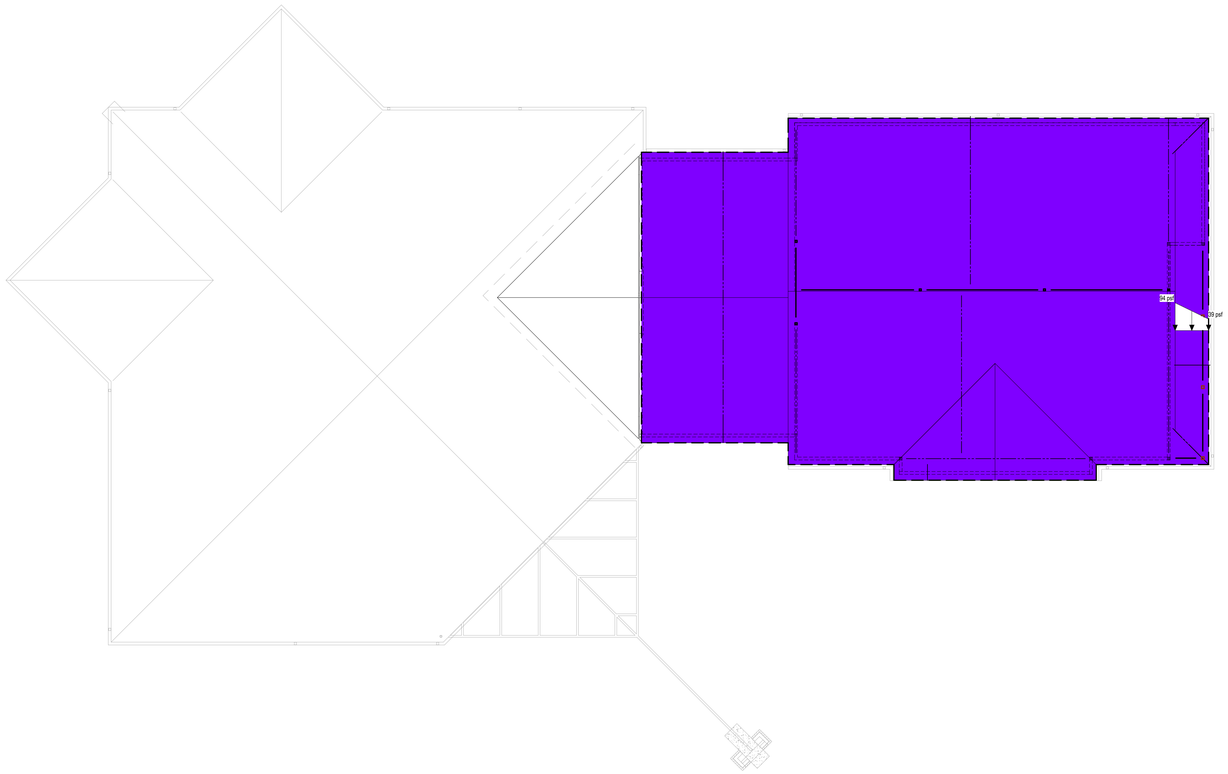
Title
INSPECTION SCHEDULES 2021 IBC

S004

LOADING DIAGRAM SCHEDULE

PATTERN	AREA	TOTAL DEAD LOAD	SNOW LOAD	NOTES
	ROOF	25 psf	39 psf SNOW (non-reducible)	WIND UPLIFT OF 15 PSF

NOTES:
1. ALL LIVE LOADS ARE REDUCIBLE UNLESS NOTED OTHERWISE.
2. SNOW DRIFT DIAGRAMS INCLUDE THE 39 psf BASE SNOW LOAD.
3. ALL OVERFRAMED AREAS SHALL INCLUDE AN ADDITIONAL 5 psf DEAD LOAD. SEE ROOF FRAMING PLANS.
4. TOTAL LOAD DEFLECTION LIMITS FOR FLOOR TRUSSES SHALL INCLUDE BOTH DEAD LOAD AND CREEP ALONG WITH LIVE LOAD. SEE GENERAL NOTES.



1 ROOF LOADING PLAN
3/32" = 1'-0"

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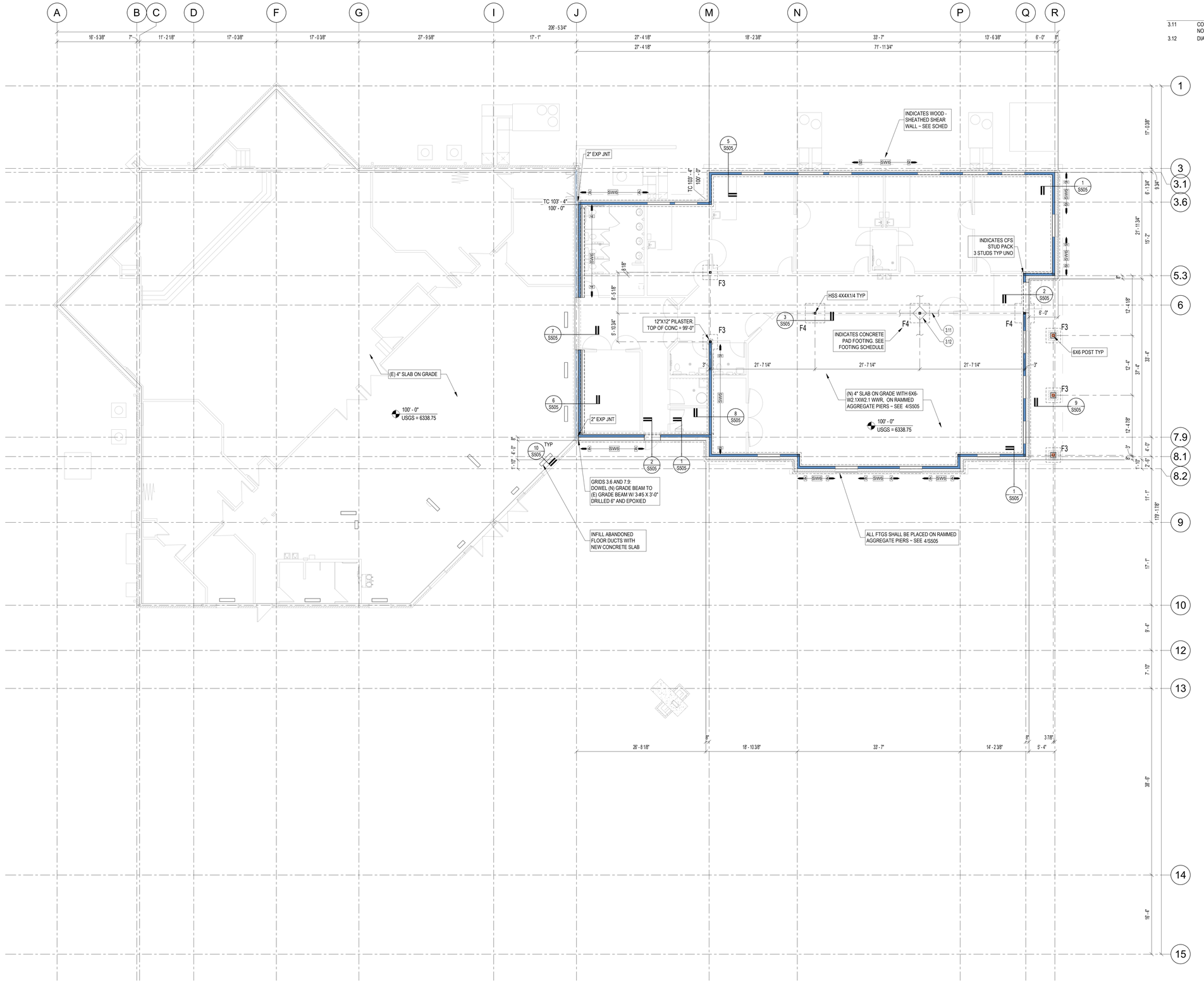
Title
LOADING PLAN

S005



KEYNOTES

3.11	CONTROL JOINTS AT ALL COLUMN LINES AND BALANCE OF SLAB NOT TO EXCEED 10'-0"OC EACH WAY. SEE SOILS REPORT.
3.12	DIAMOND SHAPED ISOLATION JOINTS AT ALL COLUMNS.

SPREAD FOOTING SCHEDULE

TYPE	WIDTH	LENGTH	THICKNESS	REINFORCING
F3	3' - 0"	3' - 0"	1' - 0"	4 - #5 EW B
F4	4' - 0"	4' - 0"	1' - 0"	5 - #5 EW B

1 FOUNDATION PLAN
1/8" = 1'-0"

NORTH

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Date 11/18/2024

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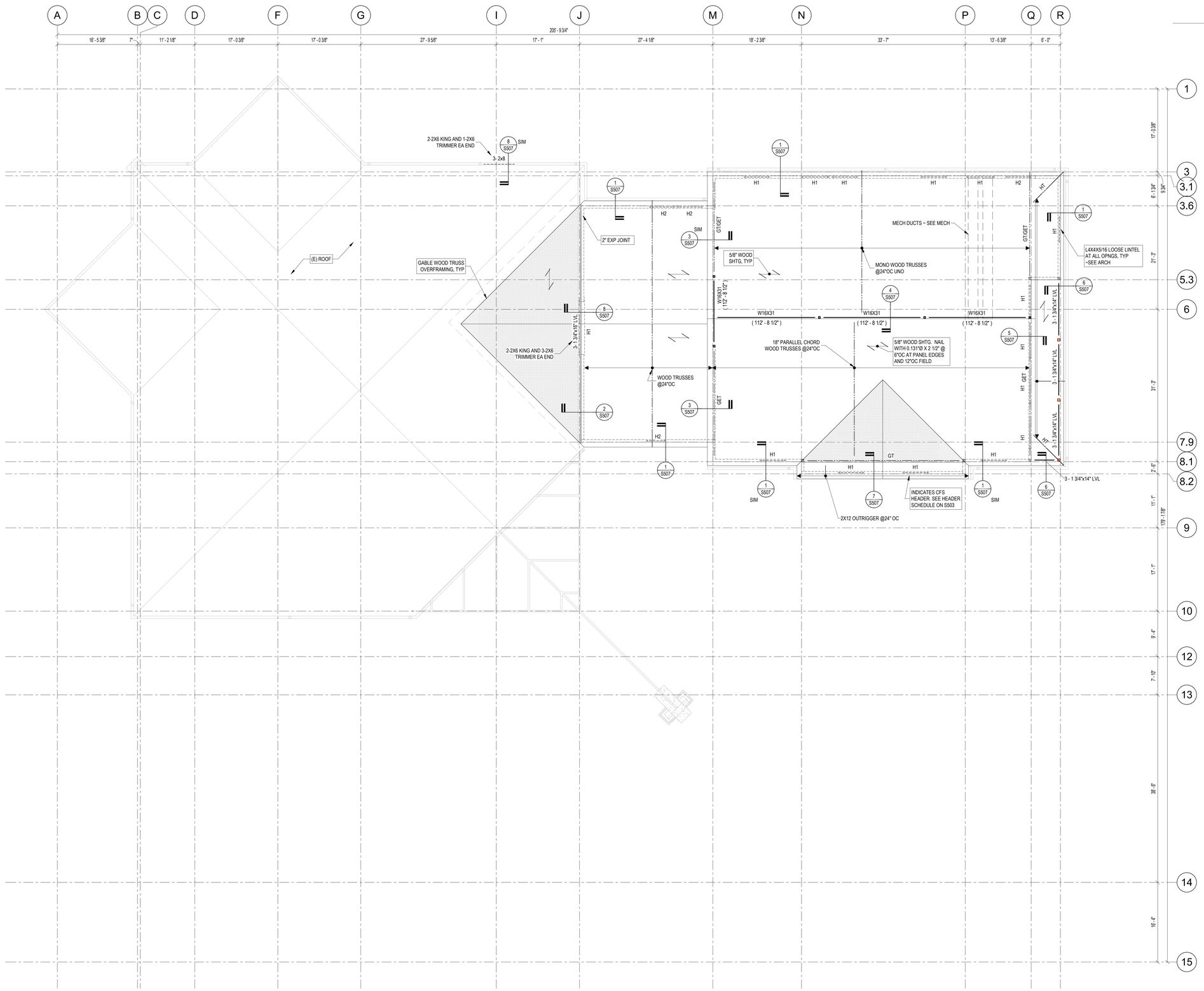
Title
FOUNDATION PLAN

S100



KEYNOTES

1 ROOF FRAMING PLAN
1/8" = 1'-0"

NORTH

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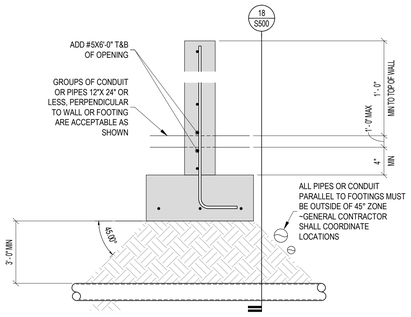
Title
ROOF FRAMING PLAN

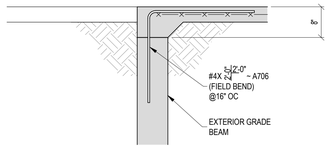
S101

BOXED NOTES INDICATE A TYPICAL CONDITION EXISTS UNLESS NOTED OTHERWISE

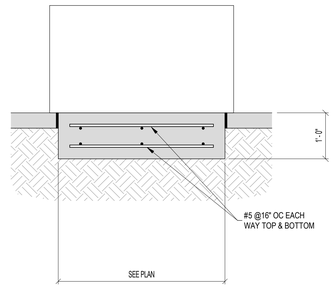
WELDS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE



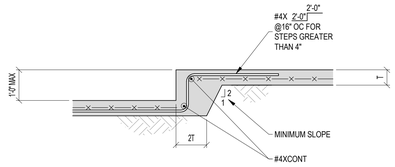
17 PIPE/CONDUIT ADJACENT TO FOOTINGS
3/4" = 1'-0"



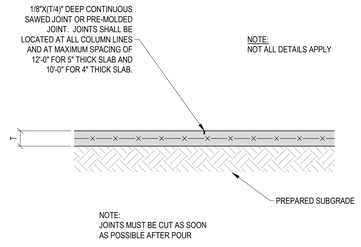
13 THRESHOLD
3/4" = 1'-0"



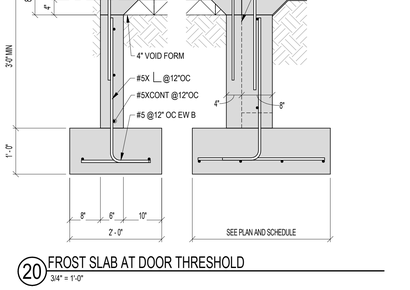
9 EQUIPMENT PADS / FIREPLACE FOOTING
3/4" = 1'-0"



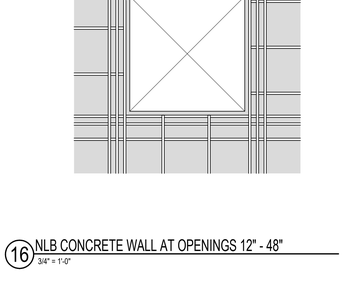
5 SMALL SLAB STEP
3/4" = 1'-0"



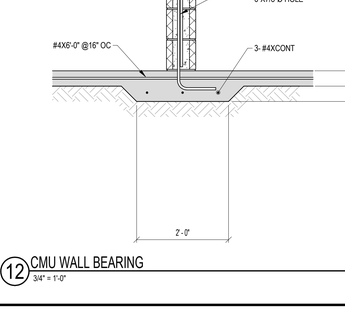
1 CONTROL JOINT
3/4" = 1'-0"



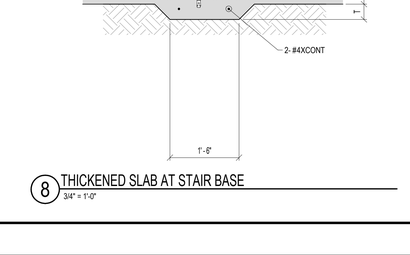
18 PIPE/CONDUIT ADJACENT TO FOOTINGS
3/4" = 1'-0"



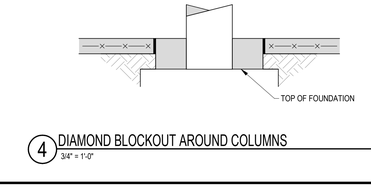
14 DOCK LEVELER
3/4" = 1'-0"



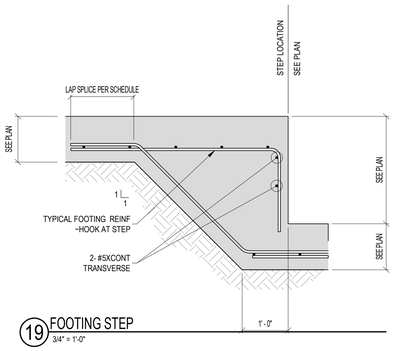
10 STAIR ON GRADE
3/4" = 1'-0"



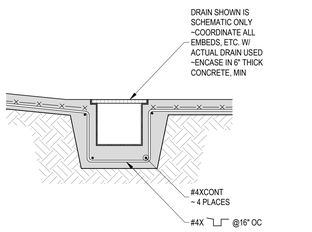
6 LARGE SLAB STEP - TYPE 1
3/4" = 1'-0"



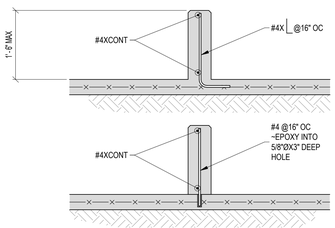
2 CONSTRUCTION JOINT
3/4" = 1'-0"



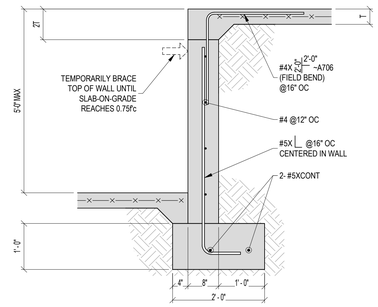
19 FOOTING STEP
3/4" = 1'-0"



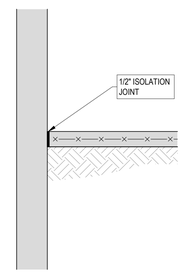
15 TRENCH DRAIN
3/4" = 1'-0"



11 CURBS / MONOLITHIC & POST-INSTALLED
3/4" = 1'-0"



7 LARGE SLAB STEP - TYPE 2
3/4" = 1'-0"

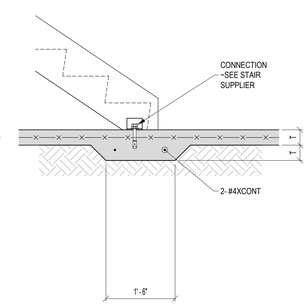


3 SLAB-ON-GRADE ABUTTING VERTICAL CONCRETE
3/4" = 1'-0"

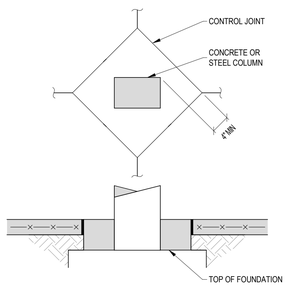
20 FROST SLAB AT DOOR THRESHOLD
3/4" = 1'-0"

16 NLB CONCRETE WALL AT OPENINGS 12" - 48"
3/4" = 1'-0"

12 CMU WALL BEARING
3/4" = 1'-0"



8 THICKENED SLAB AT STAIR BASE
3/4" = 1'-0"



4 DIAMOND BLOCKOUT AROUND COLUMNS
3/4" = 1'-0"

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CREEKSIDE BIBLE CHURCH

Job No: 24010

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1	11/18/2024	Permit Issue Set

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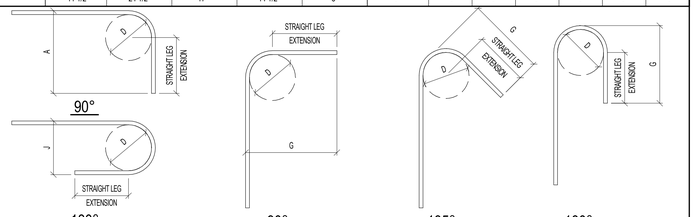
Drawn by MAR
Checked by JDB

Title
SLAB-ON-GRADE AND TYPICAL CONCRETE DETAILS

S500

REBAR HOOK SCHEDULE

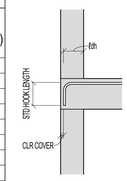
BAR SIZE	STANDARD HOOKS					STIRRUP/TIE HOOKS						
	D	90° HOOKS		180° HOOKS		D	90° HOOKS		135° HOOKS		180° HOOKS	
		A	STRAIGHT LEG	J	STRAIGHT LEG		G	STRAIGHT LEG	G	STRAIGHT LEG	G	STRAIGHT LEG
#3	2 1/4"	6"	4 1/2"	3"	2 1/2"	1 1/2"	4 1/2"	3"	4 1/2"	3"	4"	2 1/2"
#4	3"	8"	6"	4"	2 1/2"	2"	4 1/2"	3"	4 1/2"	3"	4 1/2"	2 1/2"
#5	3 3/4"	10"	7 1/2"	5"	2 1/2"	2 1/2"	6"	4"	6"	4"	5"	2 1/2"
#6	4 1/2"	12"	9"	6"	3"	4 1/2"	12"	9"	7 1/2"	4 1/2"	7"	3"
#7	5 1/4"	14"	10 1/2"	7"	3 1/2"	5 1/4"	14"	10 1/2"	9"	5 1/2"	8"	3 1/2"
#8	6"	16"	12"	8"	4"	6"	16"	12"	10"	6"	9"	4"
#9	9 1/2"	20"	14"	12"	5"	-	-	-	-	-	-	-
#10	10 3/4"	22 1/2"	15 1/2"	13 1/2"	5 1/2"	-	-	-	-	-	-	-
#11	11 1/2"	24 1/2"	17"	14 1/2"	6"	-	-	-	-	-	-	-

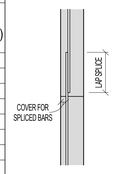


CONCRETE REINFORCING TENSION LAP SPLICE LENGTH (CLASS B) - 60 ksi REBAR

BAR SIZE ENGLISH (METRIC)	f'c=3000 psi (3/4" COVER)		f'c=3000 psi (1 1/2" COVER)		f'c=3000 psi (2" COVER)		STD HOOK LENGTH	ℓdh (f'c = 3000psi)
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS		
#3 (10)	17	13	17	13	17	13	6	6
#4 (13)	29	22	23	17	23	17	8	6
#5 (16)	42	32	28	22	28	22	10	8
#6 (19)	56	43	34	26	34	26	12	11
#7 (22)	90	69	55	43	49	38	14	14
#8 (25)	112	86	70	54	56	43	16	16
#9 (29)	135	104	86	66	69	53	19	20
#10 (32)	163	125	105	81	85	66	22	23
#11 (36)	190	146	126	97	102	79	24	27
BAR SIZE ENGLISH (METRIC)	f'c=4000 psi (3/4" COVER)		f'c=4000 psi (1 1/2" COVER)		f'c=4000 psi (2" COVER)		STD HOOK LENGTH	ℓdh (f'c = 4000psi)
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS		
#3 (10)	16	12	15	12	15	12	6	6
#4 (13)	25	19	20	15	20	15	8	6
#5 (16)	36	28	24	19	24	19	10	8
#6 (19)	48	37	29	23	29	23	12	10
#7 (22)	78	60	48	37	42	33	14	13
#8 (25)	96	74	61	47	49	37	16	15
#9 (29)	117	90	75	57	60	46	19	18
#10 (32)	140	108	91	70	74	57	22	22
#11 (36)	165	127	109	84	89	68	24	26
BAR SIZE ENGLISH (METRIC)	f'c=5000 psi (3/4" COVER)		f'c=5000 psi (1 1/2" COVER)		f'c=5000 psi (2" COVER)		STD HOOK LENGTH	ℓdh (f'c = 5000psi)
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS		
#3 (10)	16	12	13	12	13	12	6	6
#4 (13)	22	17	18	14	18	14	8	6
#5 (16)	33	25	22	17	22	17	10	8
#6 (19)	44	34	26	20	26	20	12	10
#7 (22)	70	54	43	33	38	29	14	12
#8 (25)	87	67	54	42	43	33	16	15
#9 (29)	105	81	67	51	54	41	19	18
#10 (32)	126	97	82	63	66	51	22	21
#11 (36)	148	114	97	75	79	61	24	25
BAR SIZE ENGLISH (METRIC)	f'c=6000 psi (3/4" COVER)		f'c=6000 psi (1 1/2" COVER)		f'c=6000 psi (2" COVER)		STD HOOK LENGTH	ℓdh (f'c = 6000psi)
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS		
#3 (10)	16	12	16	12	16	12	6	6
#4 (13)	21	16	17	13	17	13	8	6
#5 (16)	30	23	21	16	21	16	10	7
#6 (19)	40	31	25	19	25	19	12	10
#7 (22)	64	49	39	30	35	27	14	12
#8 (25)	79	61	49	38	40	31	16	15
#9 (29)	96	74	61	47	49	38	19	17
#10 (32)	114	88	75	58	61	47	22	21
#11 (36)	135	104	90	69	73	56	24	24
BAR SIZE ENGLISH (METRIC)	f'c=7000 psi (3/4" COVER)		f'c=7000 psi (1 1/2" COVER)		f'c=7000 psi (2" COVER)		STD HOOK LENGTH	ℓdh (f'c = 7000psi)
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS		
#3 (10)	16	12	16	12	16	12	6	6
#4 (13)	18	14	16	12	16	12	8	6
#5 (16)	27	21	18	14	18	14	10	7
#6 (19)	36	28	22	17	22	17	12	9
#7 (22)	60	46	36	28	33	25	14	11
#8 (25)	73	56	46	35	36	28	16	14
#9 (29)	88	68	57	44	46	35	19	16
#10 (32)	107	82	69	53	56	43	22	19
#11 (36)	125	96	83	64	68	52	24	22
BAR SIZE ENGLISH (METRIC)	f'c=8000 psi (3/4" COVER)		f'c=8000 psi (1 1/2" COVER)		f'c=8000 psi (2" COVER)		STD HOOK LENGTH	ℓdh (f'c = 8000psi)
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS		
#3 (10)	16	12	16	12	16	12	6	6
#4 (13)	18	14	16	12	16	12	8	6
#5 (16)	26	20	18	14	18	14	10	7
#6 (19)	35	27	21	16	21	16	12	8
#7 (22)	56	43	34	26	30	23	14	10
#8 (25)	69	53	43	33	35	27	16	13
#9 (29)	83	64	53	41	43	33	19	15
#10 (32)	100	77	65	50	53	41	22	18
#11 (36)	117	90	77	59	64	49	24	21

NOTES:
1. TABULATED VALUES ARE BASED ON NON-EPOXY COATED GRADE 60 REINFORCING BARS AND NORMAL WEIGHT CONCRETE. LENGTHS ARE IN INCHES.
2. TENSION DEVELOPMENT LENGTHS AND TENSION LAP SPLICE LENGTHS ARE CALCULATED PER ACI 318-19.
3. CLEAR SPACING OF BARS MUST BE AT LEAST DOUBLE THE CONCRETE COVER.
4. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
5. FOR LIGHT WEIGHT AGGREGATE CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.33.
6. DEVELOPMENT LENGTH (ℓd) = TENSION LAP SPLICE LENGTH DIVIDED BY 1.3 BUT NOT LESS THAN 12" MINIMUM.
7. FOR CONDITIONS WITH SIDE COVER NORMAL TO PLANE OF HOOK LESS THAN 2.5" IN COLUMNS OR LESS THAN 6ℓdb IN OTHER CONDITIONS, ℓdh MUST BE INCREASED BY 1.25.
8. SEE CONCRETE COLUMN SCHEDULE FOR COMPRESSION LAP SPLICE LENGTHS.





TYPICAL DETAILS

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2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
1	11/18/2024	Permit Issue Set

Date 11/18/2024

Drawn by MAR | Checked by JDB

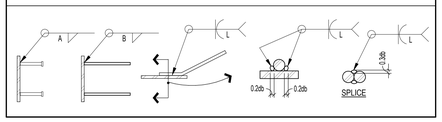
Title
GENERAL CONCRETE SCHEDULES

S501

HEADED ANCHOR STUD CONNECTOR AND DEFORMED BAR ANCHOR SCHEDULE

STUD OR DEFORMED BAR ANCHOR DIAMETER (A706 REBAR EQUIVALENT)	FILLET WELD SIZE		FLARE BEVEL WELD LENGTH
	SHEAR STUD (WELD "A")	DEFORMED BAR ANCHOR (WELD "B")	DEFORMED BAR ANCHOR (WELD "L")
1/4"	3/16	-	-
3/8" (#3)	3/16	1/4	1 1/2
1/2" (#4)	1/4	5/16	2
5/8" (#5)	5/16	3/8	2 1/2
3/4" (#6)	5/16	7/16	3
7/8" (#7)	5/16	1/2	3 1/4
1" (#8)	3/8	9/16	3 3/4
1 1/8" (#9)	-	5/8	4 1/4
1 1/4" (#10)	-	11/16	4 3/4
1 3/8" (#11)	-	3/4	5 3/4

NOTES:
1. SHEAR CONNECTORS AND DEFORMED BAR ANCHORS MUST BE AUTOMATICALLY END WELDED EXCEPT FOR REPAIRS OR DEFORMED BAR ANCHORS EXCEEDING 24 INCHES IN LENGTH. SEE SPECIFICATION.
2. WELDING SHALL BE PERFORMED PER AWS D1.4 FOR SHEAR STUD CONNECTORS AND AWS D1.4 FOR DEFORMED BAR ANCHORS.

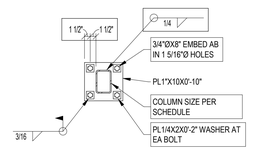


STEEL COLUMN SCHEDULE

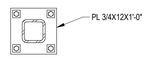
MARK	SIZE	BASEPLATE TYPE

NOTES:
1. PROVIDE 1 1/2" NON-SHRINK GROUT UNDER ALL BASE PLATES BEARING ON CONCRETE

BASE PLATE SCHEDULE



TYPE 1



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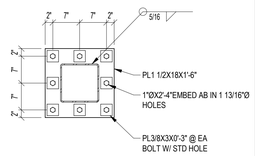
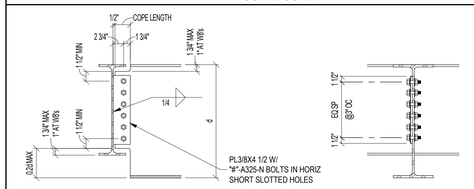


TYPE 3

SINGLE PLATE W/ 3/4"Ø A325-N BOLTS - LRFD

BEAM TO GIRDER CONNECTION

DOUBLE COPED



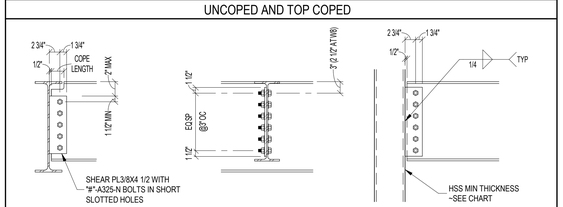
"#"- 3/4"Ø A325-N BOLTS	BEAM SIZES	MIN BEAM WEB THICKNESS	3" COPE CAPACITY (KIPS)	4" COPE CAPACITY (KIPS)	5" COPE CAPACITY (KIPS)	6" COPE CAPACITY (KIPS)	8" COPE CAPACITY (KIPS)	
2	W8's, MC10's, MC12's	0.170	12	9	8	6	5	
2	W10's[4], C10's[4]	0.190	19	14	12	10	7	
3	W12×14,[4] W12×16	0.200	33	26	21	18	13	
3	W12×19 AND HEAVIER[4] C12's, C15's, W14's, W16's, W18's	0.230	42	33	27	22	17	
4	W16's, W18's, W21's, W24's, C18's	0.250	63	62	50	42	32	
5	W18's,[5] W21's, W24's, W27's, W30's	0.300	79	79	79	74	57	
6	W21's, W24's, W27's, W30's, W33's, W36's	0.350	95	95	95	95	95	
7	W24's, W27's,[5] W30's, W33's, W36's	0.395	-	111	111	111	111	
8	W27's,[5] W30's, W33's, W36's, W40's	0.460	-	-	127	127	127	
9	W30's,[5] W33's, W36's, W40's	0.470	-	-	143	143	143	
10	W33's,[5] W36's, W40's	0.550	-	-	-	159	159	
11	W36's,[5] W40's	0.600	-	-	-	175	175	

NOTES:
1. LRFD CAPACITIES ARE BASED ON THE AISC MANUAL FOR STEEL CONSTRUCTION - THIRTEENTH EDITION FOR STRENGTH (LRFD) LOADS.
2. Fy OF BEAMS AND GIRDERS = 50 ksi.
3. GIRDER WEB THICKNESS MUST BE ≥ BEAM WEB THICKNESS.
4. INTERPOLATION BETWEEN WEB THICKNESSES GIVEN IS NOT PERMITTED.
5. 1 1/2" COPE DEPTH.
6. BEAMS MAY BE SKEWED UP TO 30° FROM PERPENDICULAR WITH NO REDUCTION IN CAPACITY OR INCREASE IN WELD SIZE.

SINGLE PLATE W/ 3/4"Ø A325-N BOLTS - LRFD

BEAM TO GIRDER OR COLUMN CONNECTION

UNCOPED AND TOP COPED



"#"- 3/4"Ø A325-N BOLTS	BEAM SIZES	MIN BEAM WEB THICKNESS	UNCOPED CAPACITY (KIPS)	3" COPE CAPACITY (KIPS)	4" COPE CAPACITY (KIPS)	5" COPE CAPACITY (KIPS)	6" COPE CAPACITY (KIPS)	8" COPE CAPACITY (KIPS)
2	MC8's, MC10's, MC12's, W8×10, W10×12	0.170	29	25	20	16	14	11
2	C8's, C10's, W8×13 AND HEAVIER, W10×15 AND HEAVIER, W10's, W12's	0.230 (W12's≥0.20)	31	31	28	23	19	15
3	W12×14, W12×16	0.200	47	42	42	38	32	22
3	W12×19 AND HEAVIER, C12's, C15's, W14's, W16's, W18's	0.230	47	47	47	47	42	32
4	W16's, W18's, W21's, W24's, C18's	0.250	63	63	63	63	63	58
5	W18's, W21's, W24's, W27's, W30's	0.300	79	-	79	79	79	79
6	W21's, W24's, W30's, W33's, W36's	0.350	95	-	95	95	95	95
7	W24's, W27's, W30's, W33's, W36's, W40's	0.395	111	-	-	111	111	111
8	W27's, W30's, W33's, W36's, W40's	0.460	127	-	-	-	127	127
9	W33's, W36's, W40's	0.550	143	-	-	-	143	143
10	W36's, W40's	0.630	159	-	-	-	159	159

HSS MIN WIDTH	MIN WALL THICKNESS
HSS3× - HSS6×	0.1875
HSS7× - HSS8×	0.25
HSS10×	0.3125
HSS12×	0.375
HSS14× - HSS16×	0.50
IF WALL THICKNESS < REQ'D FOR HSS10 AND UP, USE ANGLE CONNECTIONS	

NOTES:
1. LRFD CAPACITIES ARE BASED ON THE AISC MANUAL FOR STEEL CONSTRUCTION - THIRTEENTH EDITION FOR STRENGTH (LRFD) LOADS.
2. Fy OF BEAMS AND GIRDERS = 50 ksi.
3. GIRDER WEB THICKNESS MUST BE ≥ BEAM WEB THICKNESS.
4. INTERPOLATION BETWEEN WEB THICKNESSES GIVEN IS NOT PERMITTED.
5. BEAMS MAY BE SKEWED UP TO 15°.

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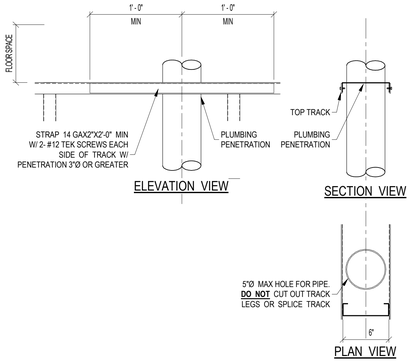
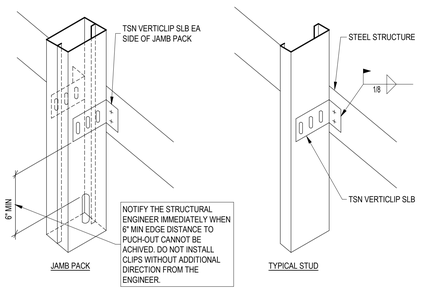
Drawn by MAR | Checked by JDB

Title
TYPICAL STEEL SCHEDULES AND DETAILS

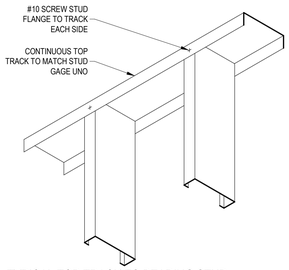
S502



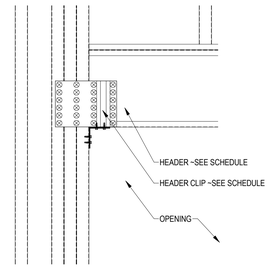
11 VERTICAL PLUMBING PENETRATIONS THRU TRACK
1 1/2" = 1'-0"



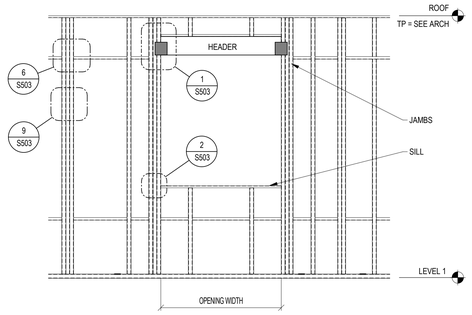
7 TYPICAL DEFLECTION BYPASS CONNECTION
1 1/2" = 1'-0"



4 TYPICAL TOP TRACK TO BEARING STUD
1 1/2" = 1'-0"



1 TYP DROPPED HEADER CONNECTION
1 1/2" = 1'-0"

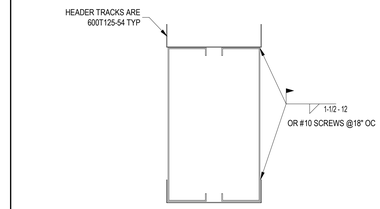


CFS DROPPED HEADER WALL ELEVATION

COLD FORMED HEADER SCHEDULE AND ELEVATION

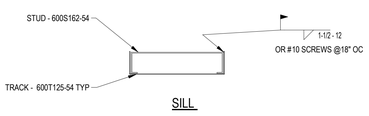
MARK	HEADER[3]	JAMBS	HEADER CLIP[2]
H1	2 - 600S162-54	(2) 600S162-54	2 - 16 SCREW HE(L) STIFF CLIP
H2	2 - 600S200-68	(3) 600S162-54	2 - 16 SCREW HE(L) STIFF CLIP

NOTES:
1. INSULATION REQUIRED IN ALL HEADERS
2. FOR REQUIRED SCREW PATTERN SEE THE STEEL NETWORK CATALOG
3. NO PUNCHOUTS OR HOLES ALLOWED IN HEADER
4. JAMB STUD GAGE SHALL MATCH TYPICAL STUD FRAMING AT THAT LEVEL
5. FHX INDICATES FLUSH HEADER. STIFFENERS REQUIRED EACH END OF FLUSH HEADERS.

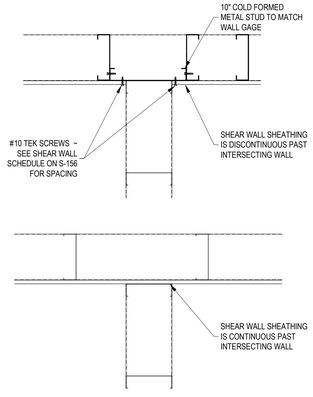


SECTION AT HEADER
T&B TRACK AND JOISTS

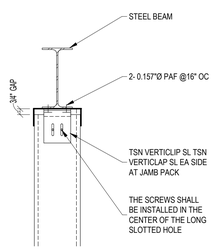
TYPE 1 ~ DROPPED HEADERS



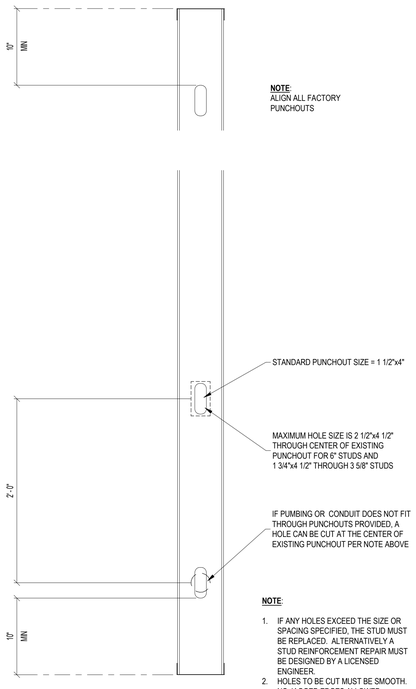
SILL



12 SHEAR WALLS AT INTERSECTING WALLS
1 1/2" = 1'-0"

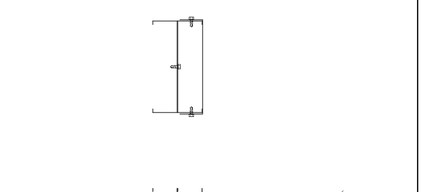


8 TYPICAL DEFLECTION CONNECTION AT STEEL
1 1/2" = 1'-0"



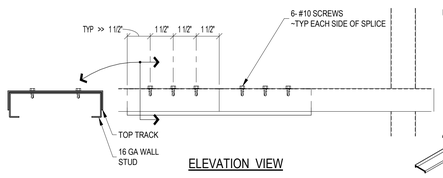
NOTE:
1. IF ANY HOLES EXCEED THE SIZE OR SPACING SPECIFIED, THE STUD MUST BE REPLACED. ALTERNATIVELY A STUD REINFORCEMENT REPAIR MUST BE DESIGNED BY A LICENSED ENGINEER.
2. HOLES TO BE CUT MUST BE SMOOTH. NO JAGGED EDGES ALLOWED.

5 ALLOWABLE HOLES FOR CFS STUDS
1 1/2" = 1'-0"



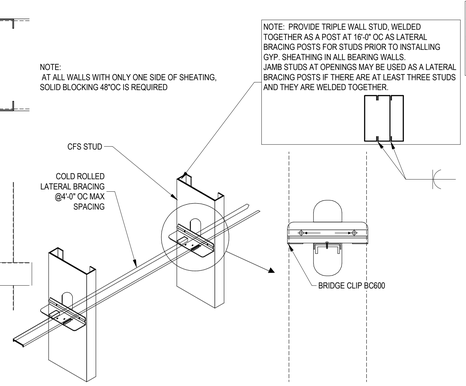
2 WIND HEADER OR SILL CONNECTION
3" = 1'-0"

PLAN VIEW

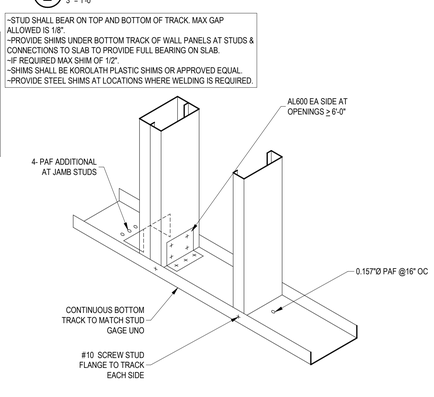


ELEVATION VIEW

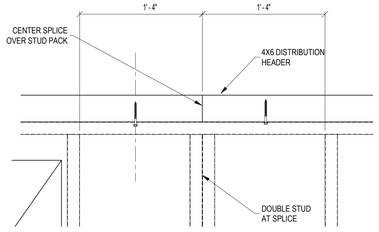
10 TYPICAL TOP TRACK SPLICE
3" = 1'-0"



6 CONSTRUCTION BRIDGING
1 1/2" = 1'-0"

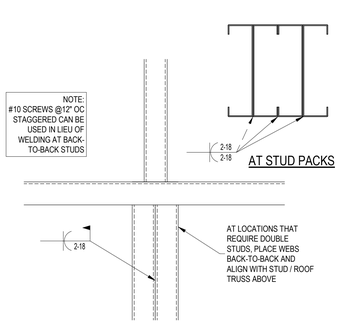


3 TYPICAL BOTTOM TRACK TO BEARING STUD
1 1/2" = 1'-0"



NOTES:
1. DISTRIBUTION HEADER SHALL BE 10'-0" MIN LENGTH UNLESS WALL IS < 10'-0" LONG.
2. DISTRIBUTION HEADER SPLICE SHALL OCCUR ≥ 16" PAST OPENINGS.
3. NO HOLES CAN BE CUT IN DISTRIBUTION HEADER. PLUMBING, ELECTRICAL, ETC. MUST BE RUN IN NON-BEARING WALLS.
4. DOUBLE STUDS ARE REQUIRED AT ALL DISTRIBUTION HEADER SPLICES.

13 DISTRIBUTION HEADER SPLICE
1 1/2" = 1'-0"



9 MULTIPLE STUDS
3" = 1'-0"

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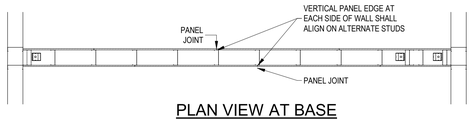
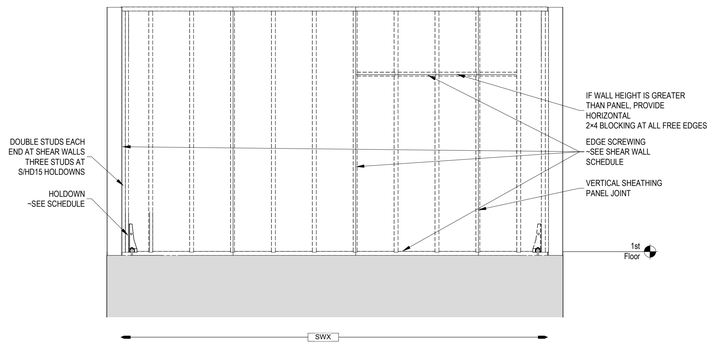
Drawn by Standard | Checked by Checker

Sheets Title
CFS WALL SCHEDULES AND DETAILS

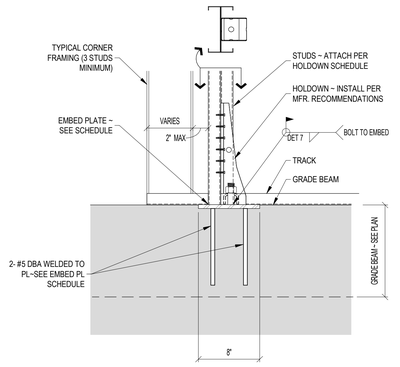
S503



PLAN VIEW AT BASE



1 SHEAR WALL ELEVATION - SEGMENTED
1/2" = 1'-0"



2 HOLDOWN DETAIL AT EMBED GRADE BEAM
1 1/2" = 1'-0"

SHEAR WALL SCHEDULE

TYPE[2]	SHEATHING ATTACHMENT W/ #8 SCREWS[3]			
	EDGE SPACING	INTERMEDIATE SPACING	PAF	SERVICE CAPACITY
SW6	6" OC	12" OC	0.145"Ø @4" OC	678 plf

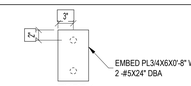
NOTES:
1. BLOCK ALL UNSUPPORTED EDGES.
2. PANELS SHALL BE INSTALLED HORIZONTALLY OR VERTICALLY AND SHALL BE AT LEAST 16" WIDE X 96".
3. SCREWS SHALL BE LONG #8 SELF DRILLING / SELF TAPPING SCREWS SHANK DIAMETER (0.138") MINIMUM 0.3145" HEAD DIAMETER AND BE 1 1/4" LONG. SCREWS SHALL COMPLY WITH SAE J78 AND ASTM C954. SCREW FASTENER HEAD MUST BE FLUSH WITH PANEL SURFACE AND PENETRATE INTO THE COLD FORMED STEEL FRAMING MEMBER A MINIMUM OF THREE EXPOSED THREADS. FASTENER MUST BE INSTALLED AT A MINIMUM 3/8" EDGE DISTANCE.
4. DOUBLE STUDS ARE REQUIRED AT EACH END OF ALL SHEAR WALLS.
5. STEEL FACE OF PANEL SHALL ABUT STUD.

CFS HOLDOWN SCHEDULE

MARK	HOLDOWN	THREADED ANCHOR	STUD FASTENERS	EMBED PLATES	ALLOWABLE HOLDOWN CAPACITY (LBS)[5]
4	S/HDU4	5/8"Ø	6- #14	TYPE I	2550
9	S/HDU9	5/8"Ø	18- #14	TYPE I	6750

NOTES:
1. PROVIDE ALL SPECIFIED FASTENERS AND ANCHOR BOLTS AS REQUIRED BY HOLDOWN.
2. PROVIDE DOUBLE (BACK-TO-BACK) STUD MEMBERS AT EACH END OF SHEAR WALL TO FASTEN EACH HOLDOWN, UNLESS NOTED OTHERWISE.
3. USE STD #14 SELF DRILLING SCREWS TO FASTEN STUD (OR 1/4" SELF DRILLING SCREWS CAN BE SUBSTITUTED).
4. ANCHOR BOLT WASHER IS NOT REQUIRED.
5. HOLDOWN TENSION CAPACITY IS GIVEN IN ASD.
6. USE TYPE 2 EMBED PLATE AT DOUBLE S/HDU9 HOLDOWN.
7. THREE STUDS REQUIRED AT S/HD15 HOLDOWNS.

EMBED PLATE SCHEDULE



TYPE 1

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COLORADO LICENSED
JEFFREY DEAN BEARD
31636
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CREEKSIDE BIBLE CHURCH
RENOVATION & ADDTION
2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE
BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

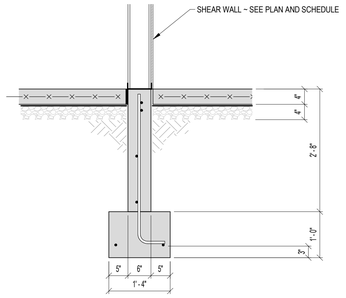
No.	Date	Description
1	11/18/2024	Permit Issue Set

Date
11/18/2024

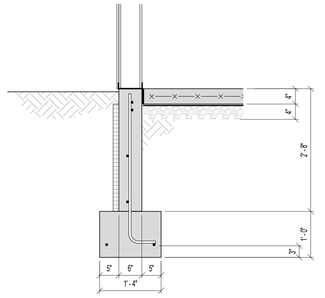
Drawn by Standard | Checked by Checker

Sheets Title
CFS SHEAR WALL
TYPICAL DETAILS

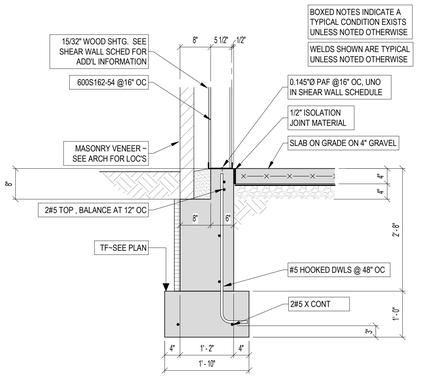
S504



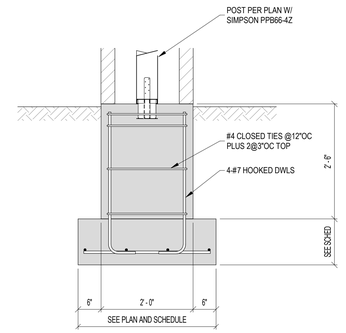
8 INTERIOR SHEAR WALL
3/4" = 1'-0"



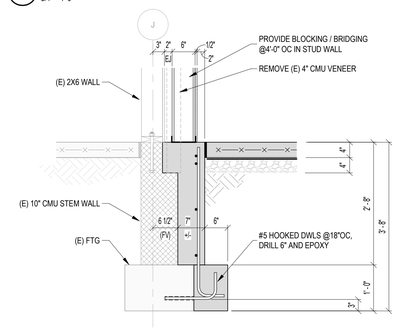
5 GRADE BEAM AND FOOTING - NO MASONRY
3/4" = 1'-0"



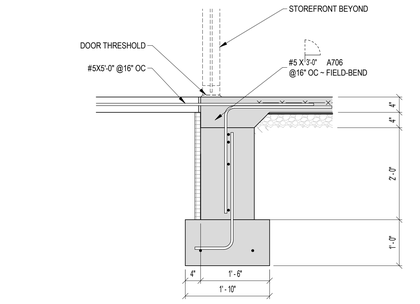
1 GRADE BEAM AND FOOTING WITH MASONRY
3/4" = 1'-0"



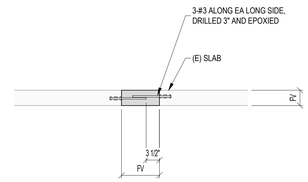
9 EXTERIOR PEDESTAL
3/4" = 1'-0"



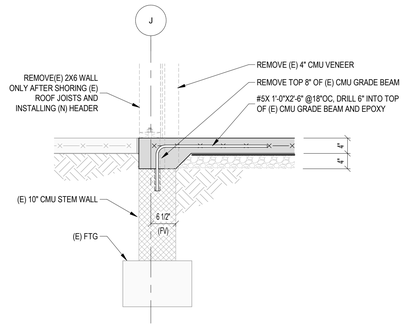
6 FOUNDATION AT EXISTING WALL
3/4" = 1'-0"



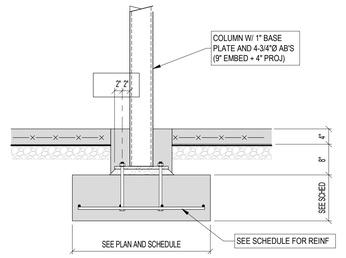
2 THRESHOLD
3/4" = 1'-0"



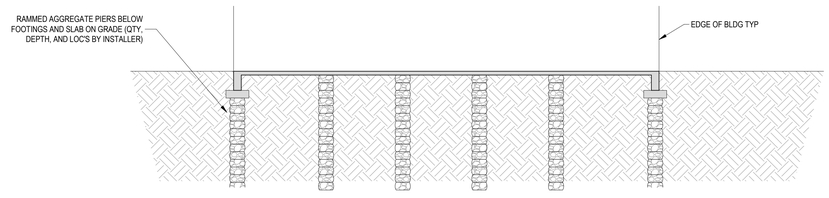
10 FLOOR DUCT INFILL
3/4" = 1'-0"



7 NEW SLAB POUR OVER AT EXSTG GRADE BEAM
3/4" = 1'-0"



3 INTERIOR FOOTING
3/4" = 1'-0"



4 RAMMED AGGREGATE PIERS BELOW BUILDING
1/8" = 1'-0"

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Drawn by MAR | Checked by JDB

Title
FOUNDATION DETAILS

S505

NAILING SCHEDULE - 2021 IBC

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENERS	SPACING AND LOCATION
ROOF		
1. BLOCKING BETWEEN CEILING JOISTS, RAFTERS OR TRUSSES TO TOP PLATE OR OTHER FRAMING BELOW	3- 8d COMMON (2 1/2"X0.131"); OR3- 10d BOX (3"X0.128"); OR 3- 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	EACH END, TOENAIL
BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	2- 8d COMMON (2 1/2"X0.131"); OR2- 3"X0.131" NAILS; OR 2- 3" 14 GAGE STAPLES	EACH END, TOENAIL
	2- 16d COMMON (3 1/2"X0.162"); OR3- 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES	END NAIL
FLAT BLOCKING TO TRUSS AND WEB FILLER	16d COMMON (3 1/2"X0.162"); OR @6" OC 3"X0.131" NAILS @6" OC 3"X14 GAGE STAPLES @6" OC	FACE NAIL
2. CEILING JOISTS TO TOP PLATE	3- 8d COMMON (2 1/2"X0.131"); OR3- 10d BOX (3"X0.128"); OR 3- 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	EACH JOIST, TOENAIL
3. CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS (NO THRUST) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1)	3- 16d COMMON (3 1/2"X0.162"); OR 4- 10d BOX (3"X0.128"); OR 4- 3"X0.131" NAILS; OR 4- 3" 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
4. CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1)	PER TABLE 2308.7.3.1	FACE NAIL
5. COLLAR TIE TO RAFTER	3- 10d COMMON (3"X0.148"); OR 4- 10d BOX (3"X0.128"); OR 4- 3"X0.131" NAILS; OR 4- 3" 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
6. RAFTER OR ROOF TRUSS TO TOP PLATE (SEE SECTION 2308.7.5, TABLE 2308.7.5)	3- 10d COMMON (3"X0.148"); OR 3- 16d BOX (3 1/2"X0.135"); OR 4- 10d BOX (3"X0.128"); OR 4- 3"X0.131" NAILS; OR 4- 3" 14 GAGE STAPLES, 7/16" CROWN	TOENAIL[c]
7. ROOF RAFTERS TO RIDGE VALLEY OR HIP RAFTERS; OR ROOF RAFTER TO 2-INCH RIDGE BEAM	2- 16d COMMON (3 1/2"X0.162"); OR 3- 10d BOX (3"X0.128"); OR 3- 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	END NAIL
	3- 10d COMMON (3"X0.148"); OR 4- 16d BOX (3 1/2"X0.135"); OR 4- 10d BOX (3"X0.128"); OR 4- 3"X0.131" NAILS; OR 4- 3" 14 GAGE STAPLES, 7/16" CROWN	TOENAIL
WALL		
8. STUD TO STUD (NOT AT BRACED WALL PANELS)	16d COMMON (3 1/2"X0.162")	24" OC FACE NAIL
	10d BOX (3"X0.128"); OR 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	16" OC FACE NAIL
9. STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16d COMMON (3 1/2"X0.162")	16" OC FACE NAIL
	16d BOX (3 1/2"X0.135")	12" OC FACE NAIL
	3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	12" OC FACE NAIL
10. BUILT-UP HEADER (2" TO 2" HEADER)	16d COMMON (3 1/2"X0.162")	16" OC EACH EDGE FACE NAIL
	16d BOX (3 1/2"X0.135")	12" OC EACH EDGE FACE NAIL
11. CONTINUOUS HEADER TO STUD	4- 8d COMMON (2 1/2"X0.131"); OR 4- 10d BOX (3"X0.128")	TOENAIL
12. TOP PLATE TO TOP PLATE	16d COMMON (3 1/2"X0.162")	16" OC FACE NAIL
	10d BOX (3"X0.128"); OR 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	12" OC FACE NAIL
13. TOP PLATE TO TOP PLATE, AT END JOINTS	8- 16d COMMON (3 1/2"X0.162"); OR 12- 10d BOX (3"X0.128"); OR 12- 3"X0.131" NAILS; OR 12- 3" 14 GAGE STAPLES, 7/16" CROWN	EACH SIDE OF END JOINT, FACE NAIL (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
14. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	16d COMMON (3 1/2"X0.162")	16" OC FACE NAIL
	16d BOX (3 1/2"X0.135"); OR 3"X0.131" NAILS; OR 3" 14 GAGE STAPLES, 7/16" CROWN	12" OC FACE NAIL
15. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING AT BRACED WALL PANELS	2- 16d COMMON (3 1/2"X0.162"); OR 3- 16d BOX (3 1/2"X0.135"); OR 4-3"X0.131" NAILS; OR 4- 3" 14 GAGE STAPLES, 7/16" CROWN	16" OC FACE NAIL
16. STUD TO TOP OR BOTTOM PLATE	4- 8d COMMON (2 1/2"X0.131"); OR 4- 10d BOX (3"X0.128"); OR 4-.3"X0.131" NAILS; OR 4- 3" 14 GAGE STAPLES, 7/16" CROWN	TOENAIL
	2- 16d COMMON (3 1/2"X0.162"); OR 3- 10d BOX (3"X0.128"); OR 3- 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	END NAIL
17. TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	2- 16d COMMON (3 1/2"X0.162"); OR3- 10d BOX (3"X0.128"); OR 3- 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
18. 1" BRACE TO EACH STUD AND PLATE	2- 8d COMMON (2 1/2"X0.131"); OR 2- 10d BOX (3"X0.128"); OR 2- 3"X0.131" NAILS; OR 2- 3" 14 GAGE STAPLES, 7/16" CROWN	FACE NAIL
19. 1"X6" SHEATHING TO EACH BEARING	2- 8d COMMON (2 1/2"X0.131"); OR 2- 10d BOX (3"X0.128")	FACE NAIL
20. 1"X8" AND WIDER SHEATHING TO EACH BEARING	3- 8d COMMON (2 1/2"X0.131"); OR 3- 10d BOX (3"X0.128")	FACE NAIL

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENERS	SPACING AND LOCATION
FLOOR		
21. JOIST TO SILL, TOP PLATE, OR GIRDER	3- 8d COMMON (2 1/2"X0.131"); OR 3- 10d BOX (3"X0.128"); OR 3- 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	TOENAIL
22. RIM JOIST, BAND JOIST, OR BLOCKING TO TOP PLATE, SILL OR OTHER FRAMING BELOW	8d COMMON (2 1/2"X0.131"); OR 10d BOX (3"X0.128"); OR 3"X0.131" NAILS; OR 3" 14 GAGE STAPLES, 7/16" CROWN	6" OC, TOENAIL
23. 1"X6" SUBFLOOR OR LESS TO EACH JOIST	2- 8d COMMON (2 1/2"X0.131"); OR 2- 10d BOX (3"X0.128")	FACE NAIL
24. 2" SUBFLOOR TO JOIST OR GIRDER	2- 16d COMMON (3 1/2"X0.162")	FACE NAIL
25. 2" PLANKS (PLANK & BEAM - FLOOR & ROOF)	2- 16d COMMON (3 1/2"X0.162")	EACH BEARING, FACE NAIL
26. BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20d COMMON (4"X0.192")	32" OC, FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
	10d BOX (3"X0.128"); OR 3"X0.131" NAILS; OR 3" 14 GAGE STAPLES, 7/16" CROWN	24" OC, FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
	AND: 2- 20d COMMON (4"X0.192"); OR 3- 10d BOX (3"X0.128"); OR 3- 3"X0.131" NAILS; OR 3- 3" 14 GAGE STAPLES, 7/16" CROWN	ENDS AND AT EACH SPLICE, FACE NAIL
27. LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	3- 16d COMMON (3 1/2"X0.162"); OR 4- 10d BOX (3"X0.128"); OR 4- 3"X0.131" NAILS; OR 4- 3" 14 GAGE STAPLES, 7/16" CROWN	EACH JOIST OR RAFTER, FACE NAIL
28. JOIST TO BAND JOIST OR RIM JOIST	3- 16d COMMON (3 1/2"X0.162"); OR 4- 10d BOX (3"X0.128"); OR 4- 3"X0.131" NAILS; OR 4- 3" 14 GAGE STAPLES, 7/16" CROWN	END NAIL
29. BRIDGING OR BLOCKING TO JOIST, RAFTER OR TRUSS	2- 8d COMMON (2 1/2"X0.131"); OR 2- 10d BOX (3"X0.128"); OR 2- 3"X0.131" NAILS; OR 2- 3" 14 GAGE STAPLES, 7/16" CROWN	EACH END, TOENAIL

WOOD STRUCTURAL PANELS (WSP), SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING AND PARTICLEBOARD WALL SHEATHING TO FRAMING[a]		EDGES (INCHES)	INTERMEDIATE SUPPORTS (INCHES)
30. 3/8" - 1/2"	6d COMMON OR DEFORMED (2"X0.113"); OR (SUBFLOOR AND WALL)	6	12
	8d BOX OR DEFORMED (2 1/2"X0.113") (ROOF) RSRS-01 (2 3/8"X0.113") NAIL (ROOF)[d]	6	12
	2 3/8"X0.113" NAIL (SUBFLOOR AND WALL)	6	12
	1 3/4" 16 GAGE STAPLE, 7/16" CROWN (SUBFLOOR AND WALL)	4	8
	2 3/8"X0.113" NAIL (ROOF)	4	8
	1 3/4" 16 GAGE STAPLE, 7/16" CROWN (ROOF)	3	6
31. 19/32" - 3/4"	8d COMMON (2 1/2"X0.131"); OR 6d DEFORMED (2"X0.113") (SUBFLOOR AND WALL)	6	12
	8d COMMON OR DEFORMED (2 1/2"X0.131") (ROOF); OR RSRS-01 (2 3/8"X0.113") NAIL (ROOF)[d].	6	12
	2 3/8"X0.113" NAIL 2" 16 GAGE STAPLE, 7/16" CROWN	4	8
32. 7/8" - 1 1/4"	10d COMMON (3"X0.148"); OR 8d DEFORMED (2 1/2"X0.131")	6	12
OTHER EXTERIOR WALL SHEATHING			
33. 1/2" FIBERBOARD SHEATHING[b]	1 1/2" GALVANIZED ROOFING NAIL (7/16" HEAD DIAMETER); OR 1 1/4" 16 GAGE STAPLE WITH 7/16" OR 1" CROWN	3	6
34. 25/32" FIBERBOARD SHEATHING[b]	1 3/4" GALVANIZED ROOFING NAIL (7/16" HEAD DIAMETER) 1 1/2" 16 GAGE STAPLE WITH 7/16" OR 1" CROWN	3	6
WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING			
35. 3/4" AND LESS	8d COMMON (2 1/2"X0.131"); OR 6d DEFORMED (2"X0.113")	6	12
36. 7/8" - 1"	8d COMMON (2 1/2"X0.131"); OR 8d DEFORMED (2 1/2"X0.131")	6	12
37. 1 1/8" - 1 1/4"	10d COMMON (3"X0.148"); OR 8d DEFORMED (2 1/2"X0.131")	6	12
PANEL SIDING TO FRAMING			
38. 1/2" OR LESS	6d CORROSION-RESISTANT SIDING (1 7/8"X0.106"); OR 6d CORROSION-RESISTANT CASING (2"X0.099")	6	12
39. 5/8"	8d CORROSION-RESISTANT SIDING (2 3/8"X0.128"); OR 8d CORROSION-RESISTANT CASING (2 1/2"X0.113")	6	12
INTERIOR PANELING			
40. 1/4"	4d CASING (1 1/2"X0.080"); OR 4d FINISH (1 1/2"X0.072")	6	12
41. 3/8"	6d CASING (2"X0.099"); OR 6d FINISH (PANEL SUPPORTS AT 24")	6	12

FOR SI: 1 INCH = 25.4mm

a. NAILS SPACED AT 6" AT INTERMEDIATE SUPPORTS WHERE SPANS ARE 48" OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.

b. SPACING SHALL BE 6" OC ON THE EDGES AND 12" OC AT INTERMEDIATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS. PANEL SUPPORTS AT 16" (20" IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE NOTED.)

c. WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE AND THE CEILING JOIST IS FASTENED TO THE TOP PLATE IN ACCORDANCE WITH THIS SCHEDULE, THE NUMBER OF TOENAILS IN THE RAFTER SHALL BE PERMITTED TO BE REDUCED BY ONE NAIL.

d. RSRS-01 IS A ROOF SHEATHING RING SHANK NAIL MEETING THE SPECIFICATIONS IN ASTM F1667.

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Date
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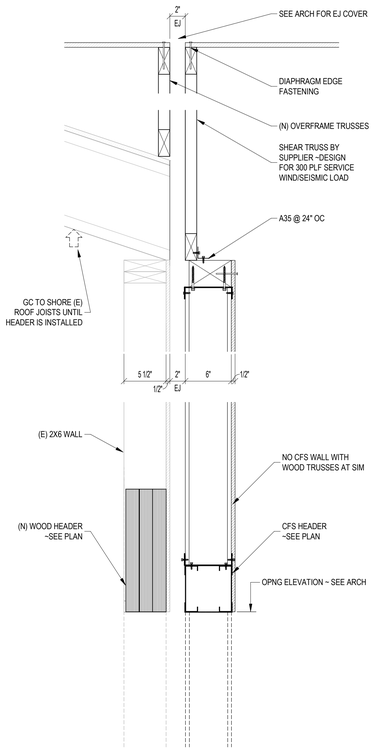
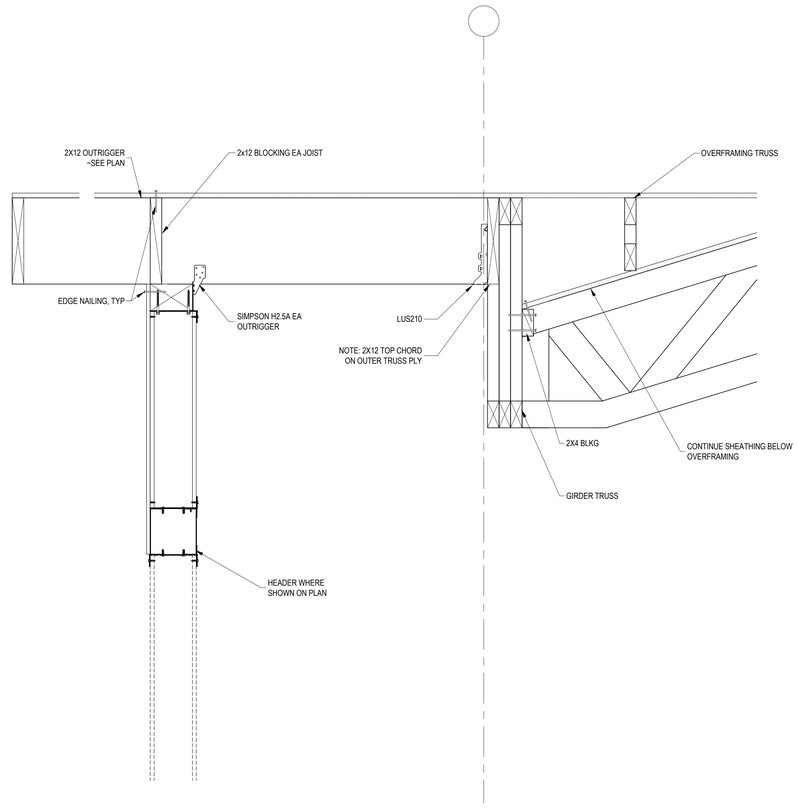
Drawn by Author | Checked by Checker

Title
2021 IBC NAILING SCHEDULES

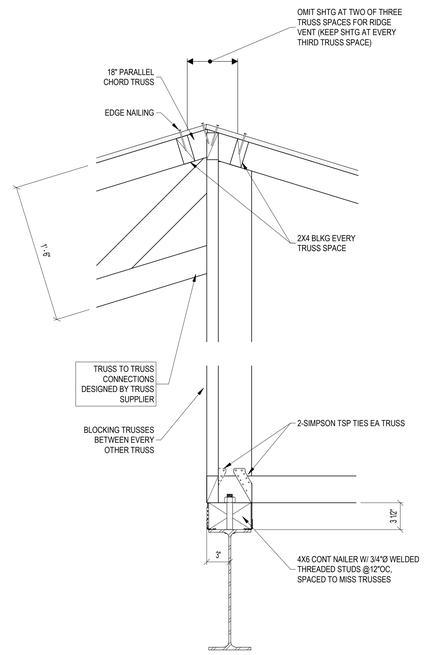
S506



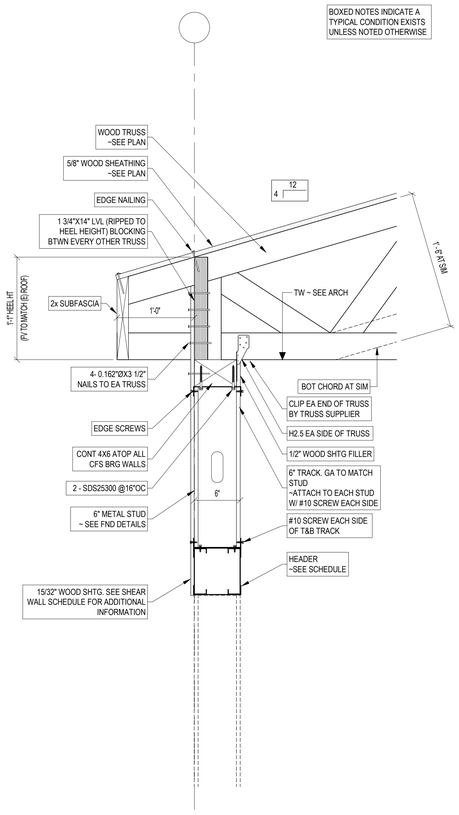
8 NEW ROOF AT EXSTG ROOF wITH HEADERS
1 1/2" = 1'-0"



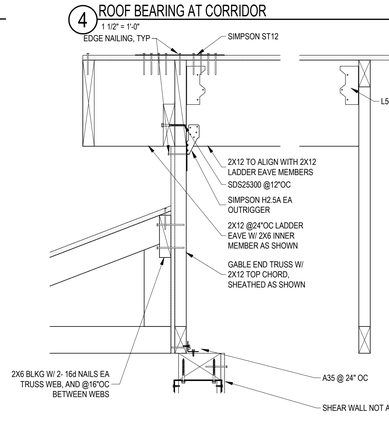
7 GIRDER TRUSS AT BUMP OUT
1 1/2" = 1'-0"



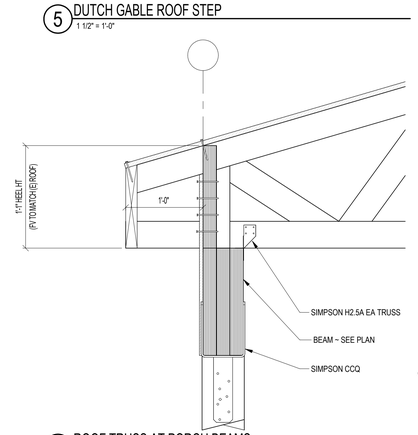
4 ROOF BEARING AT CORRIDOR
1 1/2" = 1'-0"



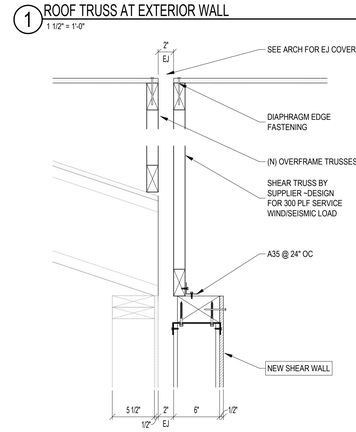
1 ROOF TRUSS AT EXTERIOR WALL
1 1/2" = 1'-0"



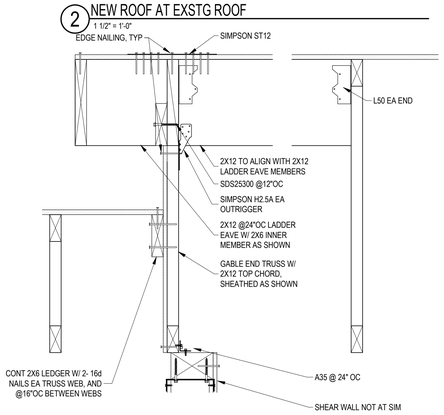
5 DUTCH GABLE ROOF STEP
1 1/2" = 1'-0"



6 ROOF TRUSS AT PORCH BEAMS
1 1/2" = 1'-0"



2 NEW ROOF AT EXSTG ROOF
1 1/2" = 1'-0"



3 GABLE ROOF STEP
1 1/2" = 1'-0"

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Drawn by Structural | Checked by rjt

System title

ROOF DETAILS

S507

MECHANICAL SHEET SPECIFICATIONS

THIS SHEET SPECIFICATION SHALL GOVERN IN LIEU OF SEPARATE BOUND SPECIFICATIONS. UPON ISSUANCE SHOULD CONFLICTS ARISE BETWEEN THE SHEET AND THE BOUND SPECIFICATION THEN THE MORE STRINGENT OF THE TWO SHALL PREVAIL.

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1. BASIC REQUIREMENTS

A. MECHANICAL PLANS MAY INCLUDE SCOPE INFORMATION FOR OTHER TRADES. GENERAL CONTRACTOR TO FACILITATE COORDINATION OF PERTINENT INFO TO REQUIRED CONTRACTORS. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES PRIOR TO BID TO CONFIRM A COMPLETE SYSTEM IS INCLUDED.

B. MECHANICAL DESIGN SHALL CONFORM TO ADOPTED CODES AND LOCAL AMENDMENTS. PROJECT SHALL BE COORDINATED WITH BUILDING SERVICES AND SHALL INCLUDE ITEMS NECESSARY FOR COMPLETE AND FULLY OPERATIONAL MECHANICAL SYSTEMS. MAKE CONNECTIONS TO AND EXTEND SYSTEMS INSTALLED BY OTHERS AND/OR FURNISHED BY OTHERS. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM WHETHER OR NOT SPECIFICALLY SPECIFIED AND/OR SHOWN ON THE PLANS.

C. DO NOT SCALE FROM THESE DRAWINGS. REFER TO ARCHITECTURAL, STRUCTURAL OR CIVIL DRAWINGS BY OTHER DESIGN PROFESSIONALS FOR DIMENSIONS AND FOR ESTIMATING DISTANCES. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH RELEVANT DRAWINGS AND SPECIFICATIONS RELATING TO THE JOB WHETHER OR NOT INDICATED ON THESE DRAWINGS.

D. SCALES, DIMENSIONS OR QUANTITIES SHOWN ON THE DRAWINGS ARE FOR ENGINEERING CALCULATION PURPOSES ONLY. DESIGN IS DIAGRAMMATIC IN NATURE AND IS PROVIDED TO CONVEY DESIGN INTENT ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE SITE CONDITIONS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ESTIMATING AND DETERMINING DISTANCES AND QUANTITIES RELATED TO THE PROJECT. REFER TO DRAWINGS BY OTHERS AND VERIFY EXISTING CONDITIONS ON SITE PRIOR TO BID FOR ESTIMATING PURPOSES.

E. COORDINATE WITH OTHER TRADES FOR A COORDINATED INSTALLATION WITHIN THE AVAILABLE SPACE. WHERE CROWDED CONDITIONS EXIST, PREPARE COORDINATION DRAWINGS SHOWING TRADE CONFLICTS AND SUBMIT TO ARCHITECT/ENGINEER FOR APPROVAL AND DIRECTION PRIOR TO ROUGH-IN AND/OR INSTALLATION. RELOCATION OF WORK MADE PRIOR TO ROUGH-IN SHALL BE DONE AT NO ADDITIONAL COST. PROVIDE OFFSETS AT CHANGES OF DIRECTION AND TO AVOID OBSTRUCTIONS AT NO ADDITIONAL COST TO OWNER.

F. WORK SHALL BE PERFORMED BY PROPERLY LICENSED CONTRACTORS OR UNDER THEIR DIRECT SUPERVISION. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS OF UL, ASTM, ETC. AND SHALL BEAR THE LABEL AS EVIDENCE THAT THE MATERIAL AND/OR EQUIPMENT MEETS THIS REQUIREMENT.

G. CONFIRM ACTUAL VOLTAGES, PHASE AND CHARACTERISTICS OF EQUIPMENT AND APPARATUS FURNISHED BY CONTRACTOR, TENANT, OTHER TRADES, DIVISIONS AND/OR EXISTING. CONFIRM PRIOR TO ROUGH-IN. IF DISCREPANCIES ARE NOTED TO THE INSTRUCTIONS OF THESE PLANS AND SPECIFICATIONS, SUBMIT THE NOTED DISCREPANCIES TO THE ARCHITECT/ENGINEER FOR DIRECTION PRIOR TO PROCEEDING.

H. INSTALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS AND DETAILS UNLESS OTHERWISE NOTED IN THESE PLANS. IF DISCREPANCIES EXIST CONTACT THE ARCHITECT/ENGINEER PRIOR TO ORDERING EQUIPMENT AND ROUGH-IN.

I. CONTRACTOR TO ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICES ON ALL EQUIPMENT AND PROVIDE ALL NECESSARY ADJUSTMENTS FOR PROPER OPERATION.

J. SUBMIT MANUFACTURER'S LITERATURE (SHOP DRAWINGS) FOR MATERIALS AND EQUIPMENT. SUBMITTAL SHALL INCLUDE EQUIPMENT PERFORMANCE DATA AT ELEVATION AND/OR LOCAL CONDITIONS. EQUIPMENT CUTSHEETS OR CATALOG COPIES ARE NOT ACCEPTABLE. SUBMITTAL SHALL BEAR THE APPROVAL OF THE GENERAL CONTRACTOR FOR COMPLIANCE WITH COORDINATION AND THESE SPECIFICATIONS PRIOR TO SUBMITTAL TO ARCHITECT AND/OR THEIR AGENCIES. ANY SUBSTITUTED EQUIPMENT FROM SCHEDULED SHALL BE EQUAL TO THAT SCHEDULED IN CONTROLS, ACCESSORIES, AND PERFORMANCE REGARDLESS OF MANUFACTURER. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE SUBSTITUTED EQUIPMENT REALIZED BY OTHER CONTRACTORS OR THE DESIGN TEAM.

K. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE NEW EQUIPMENT, DUCT SYSTEMS, AND DEVICES IN A LIKE NEW STATE AT TIME OF PROJECT CLOSEOUT. PROTECT EQUIPMENT AND DEVICES AS REQUIRED AGAINST PHYSICAL DAMAGE, DEBRIS, RAIN, SNOW, WIND, DIRT, SUN FADING, RUST, CORROSION OR ANY OTHER DEGRADATION. CONTRACTOR TO REPAIR OR REPLACE ANY EQUIPMENT OR DEVICES AS REQUIRED.

L. FOR COMMERCIAL SPACES, AFTER COMPLETING SYSTEM INSTALLATION AND INSPECTION, CLEAN DUCT SYSTEMS AND AIR-MOVING EQUIPMENT IN ACCORDANCE WITH NATIONAL AIR DUCT CLEANERS' ASSOCIATION (NADCA) SPECIFICATIONS. THE CLEANING AGENCY SHALL BE A CERTIFIED MEMBER OF NADCA OR SHALL BE CERTIFIED BY A NATIONALLY RECOGNIZED PROGRAM AND ORGANIZATION.

2. BASIC MATERIALS

A. PROVIDE MECHANICAL SYSTEM CONTROLS, CONTROLLERS, CONTROL TRANSFORMERS, DISCONNECTS, STARTERS, CONTROL WIRING, ASSOCIATED CONTROL POWER WIRING, AND ALL WORK NECESSARY FOR A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM. CONTRACTOR IS REQUIRED TO COORDINATE WITH OTHER TRADES OR RETAIN SUB-CONTRACTORS AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM PRIOR TO BID.

B. PROVIDE SUPPLEMENTAL STEEL AND SUPPORTS AS REQUIRED FOR INSTALLATION OF MECHANICAL MATERIALS, EQUIPMENT, AND APPARATUS.

C. PROVIDE VIBRATION ISOLATION ON MECHANICAL EQUIPMENT.

D. ALL WORK IN FINISHED AREAS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED AS EXPOSED ON THE PLANS. PRIOR TO THE INSTALLATION OF ANY EXPOSED WORK THE CONTRACTOR SHALL VERIFY AND OBTAIN ARCHITECTURAL APPROVAL OF LOCATION, ELEVATION, EXTENT, MATERIAL, AND FINISH.

E. UTILIZE AN INDEPENDENT BALANCER WITH NEBB AND/OR AABC CERTIFICATION. MECHANICAL SYSTEM SHALL BE BALANCED TO 10% DISCREPANCY OF THE VALUES INDICATED ON THE PLANS. IF THERE IS A DISCREPANCY GREATER THAN 10%, BALANCE CONTRACTOR SHALL CONTACT ENGINEER. A BALANCING METHOD MUST BE PROVIDED FOR ALL EQUIPMENT. PROVIDE A FINAL COPY OF THE BALANCE REPORT TO THE BUILDING DEPARTMENT AND ENGINEER OF RECORD UPON COMPLETION OF THE HVAC SYSTEM. RESIDENTIAL UNITS SHALL BE PROVIDED WITH A PROJECT SPECIFIC BALANCING PLAN AS REQUIRED BY THE RESPECTIVE ENERGY PROGRAM AND AUTHORITY HAVING JURISDICTION.

F. FIRE STOP ALL PIPING, DUCTING, AND WIRING MATERIALS PASSING THROUGH RATED STRUCTURES OR ASSEMBLIES USING U.L. LISTED PRODUCTS FOR ALL APPLICABLE PENETRATIONS IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

G. PROVIDE DUCT SMOKE DETECTORS FOR AUTOMATIC EQUIPMENT SHUTOFF IN AIR-MOVING SYSTEMS THAT RETURN IN EXCESS OF 2,000 CFM TO ENCLOSED SPACES WITHIN BUILDINGS. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE AIR HANDLING UNIT AUTOMATIC SHUT-DOWN WIRING AND DUCT/SMOKE DETECTOR WIRING WHEN REQUIRED, DETECTORS SHALL BE COMPATIBLE WITH BUILDING FIRE ALARM SYSTEM.

H. SMOKE, FIRE, RADIATION, AND COMBINATION FIRE/SMOKE DAMPERS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. UNITS SHALL BE 120V AND ALL 120V WIRING SHALL BE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. SMOKE, FIRE AND COMBINATION FIRE/SMOKE DAMPERS FURNISHED SHALL BE COMPATIBLE WITH BUILDING FIRE ALARM SYSTEM. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AT TIME OF BID TO ENSURE ALL LINE VOLTAGE AND FIRE ALARM CONNECTIONS ARE INCLUDED IN THE BID SCOPE.

I. CEILING RADIATION DAMPERS, FIRE DAMPERS, AND SMOKE DAMPERS SHALL BE UL LISTED FOR DYNAMIC USE IN CONFORMANCE WITH UL 555C, UL 555, AND UL 555S, RESPECTIVELY. THE CONTRACTOR SHALL MAKE APPROPRIATE PROVISIONS IF A DYNAMICALLY RATED DAMPER IS NOT AVAILABLE FOR USE IN THE INSTALLED UL LISTED ASSEMBLY. PROVISIONS TO UTILIZE A STATIC DAMPER INCLUDE BUT ARE NOT LIMITED TO, A MEANS FOR THE HVAC UNIT BLOWER(S) TO SHUT DOWN IN THE CASE OF A FIRE AND/OR SMOKE EVENT. ALL DAMPERS TO BE LISTED FOR USE WITH THE INSTALLED RATED WALL, FLOOR/CEILING OR ROOF/CEILING ASSEMBLY. IF A DISCREPANCY EXISTS, ARCHITECT/ENGINEER TO BE NOTIFIED IMMEDIATELY.

J. COMBINATION FIRE/SMOKE DAMPERS AND/OR SMOKE DAMPERS SHALL BE FURNISHED WITH REMOTE COMMAND STATION EQUIPPED WITH TEST SWITCH, THERMAL TEST RESET SWITCH, OPEN/CLOSE PILOT LIGHT INDICATORS. FIRE/SMOKE DAMPERS OR SMOKE DAMPERS ARE TO BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR.

K. WHERE ROOFTOP HVAC EQUIPMENT OR DUCTWORK PENETRATES A RATED CEILING/ROOF STRUCTURE THEN THE MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO PROVIDE MEMBRANE EXTENSIONS UP TO THE ROOF DECK AT TIME OF BID. IF IMPRACTICAL OR COST PROHIBITIVE THEN FIRE DAMPERS MAY BE USED, AND COORDINATED AT TIME OF BID, AT THE MEMBRANE PENETRATION IN WHICH CASE THE MECHANICAL CONTRACTOR AND GENERAL CONTRACTOR SHALL COORDINATE PROPER ACCESS FOR DAMPER MAINTENANCE.

L. THE CONTRACTOR SHALL LOCATE AND FURNISH FOR INSTALLATION BY OTHERS, ALL ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES, DAMPERS, MOTORS, ETC AND THE PROPER SERVICING OF EQUIPMENT INSTALLED UNDER THIS CONTRACT. AT TIME OF BID THE MECHANICAL CONTRACTOR AND GENERAL CONTRACTOR SHALL COORDINATE TO ENSURE THAT ALL ACCESS PANELS (INCLUDING FIRE AND/OR SMOKE RATED MODELS) ARE INCLUDED. IN LIEU OF ACCESS PANELS IN HARD LID ARCHITECTURAL CEILINGS, PROVIDE REMOTE CABLE DAMPERS FOR BALANCING DEVICES.

M. PROVIDE SEISMIC AND/OR WIND LOADING SECUREMENT DETAILS AS REQUIRED BY THE LOCAL JURISDICTION. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT AND/OR CURB SUPPLIER(S) TO OBTAIN THE DRAWINGS AND INSTALL THE SYSTEM AS REQUIRED BY THE MANUFACTURER. MECHANICAL CONTRACTOR TO SELECT ATTACHMENT AND MOUNTING SYSTEM(S) BASED ON ATTACHING TO THE DESIGNED SUBSTRATE AND STRUCTURE WITHOUT REQUIRING ADDITIONAL REINFORCEMENT BY OTHERS. IF ANY SUBSTRATE AND/OR STRUCTURE IS REQUIRED FOR PROPER REINFORCEMENT, MECHANICAL CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR ALL POTENTIAL REQUIREMENTS PRIOR TO BID.

N. PROVIDE PRE-ENGINEERED DUCT STAND SYSTEMS WITH A PROFESSIONAL ENGINEER STAMP & SIGNATURE THAT CERTIFIES DUCT STAND SYSTEM COMPLIES WITH ASCE7/SBC WIND LOADING BUILDING CODE REQUIREMENTS. REFER TO WIND LOADING REQUIREMENTS PER STRUCTURAL DESIGN CRITERIA. IF DUCT STAND MANUFACTURER REQUIRES AN ADDITIONAL FEE FOR WIND LOADING DESIGN, THIS FEE SHALL BE INCLUDED IN CONTRACTOR'S BID. SHOP DRAWINGS OF ROOFTOP DUCT SYSTEM AND DUCT STAND LAYOUT WITH ENGINEER STAMP TO BE SUBMITTED TO ARCHITECT/ENGINEER OF RECORD FOR REVIEW.

O. FIELD LABEL ALL MECHANICAL EQUIPMENT AND PIPING AS INDICATED ON THE PLANS PER MECHANICAL AND LOCAL CODE REQUIREMENTS. INDICATE DIRECTION OF FLOW ON PIPING.

P. PROVIDE 2" DEEP AUXILIARY DRAIN PAN WITH SEPARATE DRAIN LINE UNDER HEATING AND COOLING COILS (AIR HANDLING UNITS, FAN COIL UNITS, INLINE PUMPS, ETC) AND PROVIDE A WATER-LEVEL MONITORING DEVICE ON ALL DOWNFLOW EQUIPMENT WITHOUT A SECONDARY COIL WHERE CONDENSATION OR LEAKAGE CAN OCCUR. ALTERNATELY, IF ALLOWED IN LOCAL JURISDICTION, PROVIDE A UL 508 OVERFLOW CONDENSATE KILL SWITCH.

Q. PROVIDE MANUFACTURERS RECOMMENDED MODIFICATIONS (SUCH AS HEAT TRACE AND ROUTING CHANGES) TO CONDENSING GAS FIRED EQUIPMENT LOCATED IN POTENTIAL FREEZING SPACES (SUCH AS ATTICS). COORDINATE WITH ELECTRICAL CONTRACTOR FOR HEAT TRACE CIRCUITING & INSTALLATION.

R. ALL PROVIDED MATERIALS LOCATED IN A RETURN AIR PLENUM SHALL HAVE A FLAME SPREAD OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS AS DETERMINED BY AN INDEPENDENT TESTING LAB. CONTRACTOR SHALL COORDINATE AT TIME OF BID WITH OTHER TRADES.

3. PIPING

A. PIPING MATERIALS, FITTINGS, VALVES, AND SPECIALTIES SHALL BE PROVIDED PER THE SYSTEM, MAXIMUM PRESSURE AT LOWEST POINT IN PIPING SYSTEM, AND SIZE UNLESS NOTED OTHERWISE

B. REFRIGERANT PIPING 1-3/8" AND SMALLER SHALL BE ASTM B280 ACR OR ASTM B88 TYPE K ACR, ANNEALED COPPER TUBE WITH WROUGHT COPPER FITTINGS AND SILVER ALLOY (BAg-1) BRAZED JOINTS.

C. REFRIGERANT PIPING LARGER THAN 1-3/8" TO 4" SHALL BE ASTM B42, HARD-DRAWN COPPER PIPE WITH WROUGHT COPPER FITTINGS AND SILVER ALLOY (BAg-1) BRAZED JOINTS.

D. CONDENSATE DRAIN PIPING MATERIALS SHALL BE:
  A. TYPE M COPPER WITH SOLDERED JOINTS OR
  B. CPVC PER MANUFACTURER'S REQUIREMENTS.

E. PROVIDE EXPANSION LOOPS, SWING JOINTS, OR MECHANICAL EXPANSION COMPENSATING DEVICES AS REQUIRED TO ACCOUNT FOR THERMAL EXPANSION OF ALL PIPING SYSTEMS. EXPANSION SYSTEM SIZING SHALL BE IN ACCORDANCE WITH MATERIALS DATA SHEETS AND MANUFACTURER RECOMMENDATIONS.

F. SYSTEMS INSTALLED WITH DIS-SIMILAR MATERIALS MUST BE JOINED WITH DIELECTRIC FITTINGS PER MANUFACTURERS' REQUIREMENTS TO PREVENT GALVANIC CORROSION.

G. SLEEVES MUST BE PROVIDED FOR PIPING SYSTEMS ROUTED THROUGH MASONRY OR CONCRETE ASSEMBLIES. SLEEVES SIZES, MATERIALS AND FIRE-STOPPING SHALL BE COORDINATED PER PLAN WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ARCHITECTURAL ASSEMBLIES' REQUIREMENTS.

H. ANY PIPING SYSTEM OR SUPPORT/HANGER LOCATED IN A RETURN AIR PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NO MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALTERNATIVELY, COMBUSTIBLE MATERIALS SHALL BE FULLY ENCLOSED IN MATERIALS LISTED AND LABELED FOR INSTALLATION WITHIN A PLENUM AND LISTED FOR THE APPLICATION.

1. ALL 2" DIAMETER AND GREATER PIPING MUST BE VIBRATION ISOLATED WHERE LOCATED WITHIN MECHANICAL EQUIPMENT ROOMS AND/OR FOR A MINIMUM DISTANCE OF 50' FROM CONNECTION TO ANY VIBRATING EQUIPMENT WITH ISOLATION HANGERS WITH A MINIMUM ¾" STATIC DEFLECTION. THE FIRST THREE HANGERS FROM THE EQUIPMENT SHALL HAVE A STATIC DEFLECTION EQUAL TO THAT OF THE ISOLATORS ON THE EQUIPMENT TO WHICH THE PIPE IS ATTACHED, OR 2" MAXIMUM. SMALLER PIPING REQUIRES RESILIENT MEANS OF ATTACHMENT BY USING A 3" LONG SECTION OF ½" THICK, CLOSED-CELL, SYNTHETIC FOAM RUBBER PIPE INSULATION.

4. DUCTWORK – ENVIRONMENTAL AIR AND GENERAL EXHAUST.

A. DUCTWORK SERVING ENVIRONMENTAL AIR FOR HVAC SYSTEMS AND FOR GENERAL EXHAUST PURPOSES SUCH AS TOILET, NON-COMMERCIAL KITCHEN, OR NON-HAZARDOUS EXHAUST SHALL BE CONSTRUCTED, INSTALLED, AND SEALED IN ACCORDANCE WITH SMACNA STANDARDS. LOCATE DUCTS WITH SUFFICIENT SPACE AROUND EQUIPMENT TO ALLOW NORMAL OPERATING AND MAINTENANCE ACTIVITIES. FINISHES FOR EXPOSED DUCTWORK, JOINT CONNECTION, AND SEALING METHODS SHALL BE COORDINATED WITH ARCHITECT/OWNER PRIOR TO BID. MINIMUM DUCT THICKNESS SHALL BE 26 GAGE OR THICKER AS REQUIRED BY SMACNA OR NOTED OTHERWISE.

B. DUCT MATERIALS SHALL BE PROVIDED PER THE SYSTEM TYPE, MAXIMUM OPERATING PRESSURE OF THE SYSTEM, AND SIZE UNLESS NOTED OTHERWISE:

1. GALVANIZED STEEL SHEET WITH A MINIMUM G90 ZINC COATING CONFORMING TO ASTM A924 & ASTM A653.

2. ALUMINUM SHEET CONSTRUCTED OF 3003-H14 CONFORMING TO ASTM B209.

3. STAINLESS STEEL CONSTRUCTED OF TYPE 304 OR 316 SHEET CONFORMING TO ASTM A480.

4. ANY NON-METALLIC DUCT AND FLEXIBLE DUCT SHALL BE CLASS 0 OR CLASS 1 DUCT MATERIALS AND UL 181 LISTED.

5. FLEXIBLE CONNECTIONS SHALL BE CONSTRUCTED OF FLAME-RESISTANT MATERIAL, AND COMPLYING WITH NFPA-701. FLEXIBLE CONNECTORS INSTALLED EXPOSED TO WEATHER SHALL BE UV RESISTANT.

6. FIBERGLASS DUCT BOARD SHALL BE CONSTRUCTED CONFORMING TO ASTM 1071, ASTM E84 AND LISTED FOR UL 181 CLASS 1.

7. FABRIC, UNDERGROUND, AND PREFAB ENVIRONMENTAL DUCTWORK AS SPECIFIED SHALL BE CONSTRUCTED AND INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS AND METHODS.

C. DUCT SYSTEM MATERIAL SCHEDULE SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

1. SUPPLY, RETURN AND EXHAUST DUCTWORK SHALL BE GALVANIZED STEEL UNLESS NOTED OTHERWISE.

2. ALL DUCTWORK SERVING OR WITHIN A HIGH HUMIDITY ENVIRONMENT (NATATORIUM, SPA, LOCKER/SHOWER ROOM, ETC.) SHALL BE ALUMINUM OR STAINLESS STEEL.

3. DUCT BOARD IS APPROVED FOR TRANSFER DUCTS AND RETURN AIR BOOTS. TURNING VANES ARE NOT REQUIRED IN TRANSFER AIR DUCTS.

4. DUCTWORK SERVING NON-COMMERCIAL ENVIRONMENTAL KITCHEN OR LAUNDRY EXHAUST SHALL BE RIGID GALVANIZED OR ALUMINUM.

D. DUCT CONSTRUCTION, FITTINGS, AND ACCESSORIES SHALL BE PROVIDED PER THE SYSTEM TYPE, MAXIMUM OPERATING PRESSURE OF THE SYSTEM, AND SIZE UNLESS NOTED OTHERWISE:

1. ALL DUCTWORK, TRANSVERSE JOINTS, LONGITUDINAL SEAMS, AND DUCT WALL PENETRATIONS SHALL BE SEALED AIRTIGHT. THE DUCT PRESSURE CLASS SHALL BE AS NOTED ON PLANS OR CORRESPONDING TO THE MAXIMUM EQUIPMENT EXTERNAL STATIC PRESSURE ON EACH SYSTEM. DUCT SYSTEMS WITH PRESSURE CLASSIFICATIONS GREATER THAN 2 INWC SHALL BE LEAKAGE-TESTED AND PROVED AIRTIGHT TO STANDARDS ESTABLISHED BY SMACNA PRIOR TO APPLYING EXTERNAL INSULATION.

2. DUCT SIZES GIVEN ARE NET INSIDE FREE AREA. WHERE INTERNAL DUCT LINING IS USED, INCREASE DUCT SIZES ACCORDINGLY TO PROVIDE THE INDICATED NET FREE AREA.

3. UNLESS NOTED OTHERWISE, CONNECTIONS TO AIR DEVICES AND AIR-MOVING EQUIPMENT TO BE THE FULL SIZE OF THE EQUIPMENT CONNECTION.

4. EXPOSED ROUND OR OVAL DUCTWORK SHALL BE SPIRAL CONSTRUCTION. EXPOSED RECTANGULAR DUCTWORK JOINTS AND FITTINGS SHALL BE FLANGED CONNECTIONS. ALL DUCT SEALING MATERIALS AND METHODS SHALL BE APPLIED IN A WORKMANSHIP LIKE MANNER WITH NO VISIBLE SEALANT. COORDINATE WITH ARCHITECT IF DUCTWORK SHALL BE PAINTABLE.

5. INSTALL TURNING VANES IN ALL 90-DEGREE SQUARE ELBOWS AND TEE FITTINGS WITHIN COMMERCIAL AND MULTI-FLOOR RESIDENTIAL DWELLING UNITS' DUCTWORK. SINGLE FLOOR DWELLING UNITS LESS THAN 1,800 SQUARE FEET SHALL NOT BE REQUIRED TO HAVE TURNING VANES. ALL TURNING VANES SHALL HAVE SMOOTH EDGES AND BE OF WORKMANSHIP LIKE QUALITY.

6. ALL DUCT TAPS AND RUNOUTS TO ANY SUPPLY, RETURN, OR EXHAUST TERMINAL SHALL BE PROVIDED WITH A MEANS OF BALANCING AIRFLOW.

7. ALL ROUND DUCTWORK SERVING DISHWASHER, KITCHEN OR LAUNDRY EXHAUST SHALL BE UNVANED SMOOTH RADIUS WITH A RADIUS EQUAL TO 1-1/2 TIMES THE DIAMETER OF THE DUCT.

8. INSTALL DUCT ACCESS DOORS FOR INSPECTION AND CLEANING FILTERS, COILS, DAMPERS, AND EQUIPMENT, ETC. PROVIDE AN APPROVED MEANS OF ACCESS, LARGE ENOUGH TO PERMIT INSPECTION AND MAINTENANCE.

E. INSTALL FLEXIBLE DUCT CONNECTORS ON ALL AIR HANDLING AND VAV TYPE EQUIPMENT DUCT CONNECTIONS. CONNECTORS SHALL HAVE A MAXIMUM LENGTH OF 10 INCHES.

F. FLEXIBLE DUCTWORK TO AIR DEVICES IN COMMERCIAL SPACES SHALL HAVE A MAXIMUM STRETCHED LENGTH OF 6 FEET. REFER TO FLEX DUCT ROUTING NOTES FOR CONNECTIONS WITHIN RESIDENTIAL UNITS.

G. PRESSURIZED EXHAUST DUCTWORK LOCATED RETURN AIR PLENUM SHALL BE SEALED WITH SMACNA SEAL CLASS "A" DUCT SEALANT.

H. MECHANICAL CONTRACTOR MUST COORDINATE WITH ALL TRADES AND STRUCTURAL MEMBERS TO MAINTAIN ALL EXHAUST AND INTAKE CLEARANCES PER AUTHORITY HAVING JURISDICTION REQUIREMENTS. COORDINATE ANY FIELD MODIFICATIONS REQUIRED PRIOR TO FABRICATION AND INSTALLATION WITH THE DESIGN TEAM.

5. DUCTWORK – PRODUCT CONVEYING & SPECIALTY DUCTWORK

A. TYPE 2 HEAT & VAPOR EXHAUST.

1. TYPE 2 HEAT EXHAUST DUCT SHALL BE GALVANIZED, ALUMINUM OR STAINLESS STEEL.

2. TYPE 2 MOISTURE LADEN AIR EXHAUST DUCT SHALL BE ALUMINUM OR STAINLESS STEEL

6. THERMAL INSULATION

A. PIPING INSULATION MATERIALS, COATINGS, ADHESIVES AND SPECIALTIES SHALL BE PROVIDED PER THE SYSTEM AND MAXIMUM TEMPERATURE. UNLESS NOTED OTHERWISE:

1. FIBERGLASS PIPE INSULATION SHALL BE MOLDED MINERAL FIBER WITH A FACTORY-APPLIED SELF SEALING, ALL SERVICE VAPOR RETARDER JACKET. MINERAL FIBER INSULATION AND JACKETING SHALL CONFORM TO ASTM C1136, ASTM C547 AND ASTM E84.

2. CLOSED CELL ELASTOMERIC FOAM PLASTIC INSULATION SHALL CONFORM TO ASTM C534 TYPE I AND ASTM E84. ALL SEAMS AND JOINTS SHALL BE SEALED AND TAPED PER THE MANUFACTURER'S INSTRUCTIONS. POLYETHYLENE (PE) SHALL NOT BE AN ACCEPTABLE SUBSTITUTION.

3. CELLULAR GLASS INSULATION SHALL BE PREFORMED, SEALED CELLULAR GLASS BEAD PIPE WITH FACTORY APPLIED ALL SERVICE JACKET. ALL SEAMS AND JOINTS SHALL BE SEALED AND TAPED PER THE MANUFACTURER'S INSTRUCTIONS. CELLULAR GLASS INSULATION SHALL CONFORM TO ASTM C552 AND ASTM E84.

4. CALCIUM SILICATE BLOCK AND PREFORMED PIPING INSULATION SHAL CONFORM TO ASTM C533

5. PIPING EXPOSED TO WEATHER SHALL BE INSTALLED WITH AN ALL-SERVICE JACKET AND SELF ADHERING, FOIL FACED, UV RESISTANT WEATHER BARRIER RATED FOR EXTERIOR USE.

6. VISIBLE PIPING NOT EXPOSED TO WEATHER SHALL BE INSTALLED WITH AN IMPACT RESISTANT PIPE PVC JACKET AND TAPE ALL SEAMS.

B. DUCT INSULATION MATERIALS, COATING, ADHESIVES AND SPECIALTIES SHALL BE PROVIDED PER THE SYSTEM AND TYPE PER THE DUCT INSULATION SCHEDULE. MATERIALS FOR EACH TYPE OF INSULATION SHALL BE AS FOLLOWS:

1. INSULATION INTERNAL TO DUCT SHALL BE A MATT-FACED, ANTI-MICROBIAL TREATED, FLEXIBLE GLASS FIBER BLANKET ATTACHED WITH MECHANICAL FASTENERS. FIBROUS GLASS DUCT LINER SHALL CONFORM TO ASTM E84 AND ASTM C1071.

2. INSULATION EXTERNAL TO DUCT, NOT EXPOSED TO WEATHER SHALL BE A FLEXIBLE MINERAL FIBER BLANKET WITH A FACTORY-APPLIED FSK JACKET. MINERAL FIBER BLANKET SHALL CONFORM TO ASTM E84, ASTM C553 AND ASTM C1290.

3. INSULATION EXTERNAL TO DUCT AND EXPOSED TO WEATHER SHALL BE MINERAL FIBER BOARD INSULATION WITH FACTORY INSTALLED ALL-SERVICE JACKET (ASJ+) AND SELF ADHERING, FOIL FACED, UV RESISTANT WEATHER BARRIER RATED FOR EXTERIOR USE. MINERAL FIBER BOARD INSULATION SHALL CONFORM TO ASTM E84 AND ASTM C612.

4. ALL DUCTWORK EXPOSED TO WEATHER SHALL BE PROVIDED WITH A SELF ADHERING, FOIL FACED, UV RESISTANT WEATHER BARRIER RATED FOR EXTERIOR USE.

C. EXHAUST PIPING SERVING A GENERATOR SHALL BE PREFORMED CALCIUM SILICATE CONFORMING TO ASTM C533

D. CONDENSATE DRAIN PIPING SHALL BE 1/2-INCH-THICK INSULATION. PROVIDE WITH AN ALL-SERVICE JACKET WHEN EXPOSED.

E. INSULATE REFRIGERANT SUCTION LINES WITH 3/4" FOAM PLASTIC CLOSED CELL INSULATION.

7. AIR INLETS AND OUTLETS

A. FURNISH AND INSTALL AIR INLETS AND OUTLETS AS SCHEDULED ON THE PLANS.

B. OUTLETS SHALL HAVE A WHITE BAKED ENAMEL FINISH TO MATCH CEILING OR WALL.

C. AIR DEVICES SERVING SWIMMING POOL AREAS SHALL BE ALUMINUM OR GALVANIZED COATED STEEL.

8. EXHAUST FANS

A. FURNISH AND INSTALL CENTRIFUGAL EXHAUST FANS AS SCHEDULED ON THE PLANS.

B. FURNISH AND INSTALL ROOF CURBS AND BACKDRAFT DAMPERS.

C. FURNISH AND INSTALL UNITS COMPLETE WITH ALL OPERATIONAL AND SAFETY CONTROL NECESSARY FOR PROPER OPERATION.

9. ROOFTOP HVAC UNITS

A. FURNISH AND INSTALL ROOF TOP PACKAGED ELECTRIC A/C UNITS WITH NATURAL GAS HEATING SECTIONS AS SCHEDULED ON THE PLANS. ACCEPTABLE MANUFACTURERS ARE TRANE, CARRIER, DAIKIN, OR YORK. ANY SUBSTITUTED MODELS MUST BE EQUAL IN CONTROLS, ACCESSORIES, AND PERFORMANCE TO SCHEDULED MODELS.

B. FURNISH AND INSTALL UNITS COMPLETE WITH ALL OPERATIONAL AND SAFETY CONTROLS FOR SATISFACTORY OPERATION. PROVIDE PHASE REVERSAL PROTECTION ON ANY UNITS WITH SCROLL COMPRESSORS.

C. FURNISH PROGRAMMABLE SPACE THERMOSTAT WITH NIGHT SETBACK OPERATION OR DIGITAL CONTROL SYSTEM FOR VAV APPLICATIONS AS APPLICABLE. MOUNT AT +42-INCHES AFF.

D. FURNISH ALL UNITS WITH 100% OUTDOOR AIR ECONOMIZER PACKAGE UNLESS OTHERWISE NOTED.

E. FURNISH ALL UNITS WITH 14-INCH ROOF CURBS.

10. ELECTRIC HEATING UNITS

A. FURNISH AND INSTALL ELECTRIC HEATING EQUIPMENT AS SCHEDULED AND INDICATED ON THE PLANS

B. ELECTRIC UNIT HEATERS SHALL BE FURNISHED COMPLETE WITH ALL MOUNTING HARDWARE AND ACCESSORIES INCLUDING SPACE THERMOSTAT AND/OR SELF-CONTAINED THERMOSTAT AS REQUIRED FOR OPERATION.

C. PROVIDE WHITE COLOR FINISH UNLESS OTHERWISE INDICATED.

D. ALL UNITS SHALL BE UL LISTED.

E. MC SHALL REVIEW SURFACE VERSUS RECESS MOUNTING OPTIONS WITH GC PRIOR TO ORDERING EQUIPMENT. ASK FOR CLARIFICATION IF CONFLICTS ARISE DUE TO RATED WALLS, RATED CEILING, STRUCTURE, ETC.

11. EXISTING WET PIPE SPRINKLER SYSTEM

A. THE EXISTING SPACE IS PRESENTLY COVERED BY A WET PIPE SPRINKLER SYSTEM. CONTRACTOR SHALL MODIFY AND EXTEND THE EXISTING SYSTEM AS REQUIRED TO INCORPORATE NEW TENANT SPRINKLED AREAS AND COORDINATE WITH NEW TENANT ARCHITECTURAL, MECHANICAL, AND ELECTRICAL RENOVATIONS.

B. DEMOLITION: REMOVE AND REINSTALL EXISTING SPRINKLER SYSTEM TO COORDINATE WITH NEW MECHANICAL, ELECTRICAL SYSTEM BEING INSTALLED.

C. REQUIREMENTS:
1. *ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL CODES, ORDINANCES, REGULATIONS AND NFPA 13.*
2. *PROJECT SHALL BE COORDINATED WITH OTHER TRADES AND SHALL INCLUDE ALL ITEMS NECESSARY FOR A COMPLETE AND FULLY OPERATIONAL FIRE SUPPRESSION SYSTEM FOR THE TENANT SPACE AS REQUIRED. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR A COMPLETE SYSTEM WHETHER OR NOT SPECIFICALLY SPECIFIED OR SHOWN.*
3. *PROVIDE REVISED HYDRAULIC CALCULATIONS AS NECESSARY TO OBTAIN CITY APPROVAL OF MODIFICATION TO EXISTING SYSTEMS FOR TENANT SPACE. MAKE CONNECTION AND REPLACE SYSTEM COMPONENTS (INCLUDING PIPE SIZES) AS NECESSARY TO INSTALL AN ACCEPTABLE SYSTEM.*
4. *INSTALL CONCEALED TYPE HEADS WITH WHITE COVER PLATES TO MATCH CEILING OR WALL.*
5. *DO NOT SCALE DRAWINGS. COORDINATE WITH OTHER TRADES FOR A FULLY COORDINATED INSTALLATION.*
6. *CONTRACTOR SHALL DOCUMENT EXACT FIELD CONDITIONS. IF CONFLICTS EXIST, CONTRACTOR SHALL PREPARE COORDINATION DRAWING FOR APPROVAL, PRIOR TO EXECUTION.*
7. *FINAL LOCATION OF ALL SPRINKLER HEADS SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL. RELOCATE AND/OR ADD HEADS AS NECESSARY TO OBTAIN LOCATION SPACING DESIRED BY ARCHITECT.*
8. *LOCATE SPRINKLER HEADS IN CENTER OF CEILING TILE.*

12. NEW WET PIPE SPRINKLER SYSTEM

A. DESIGN WET PIPE FIRE SPRINKLER SYSTEM.

B. REQUIREMENTS:
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL CODES, ORDINANCES, REGULATIONS AND NFPA 13.
2. PROJECT SHALL BE COORDINATED WITH OTHER TRADES AND SHALL INCLUDE ALL ITEMS NECESSARY FOR A COMPLETE AND FULLY OPERATIONAL FIRE SUPPRESSION SYSTEM FOR THE TENANT SPACE AS REQUIRED. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR A COMPLETE SYSTEM WHETHER OR NOT SPECIFICALLY SPECIFIED OR SHOWN.
3. PROVIDE HYDRAULIC CALCULATIONS AS NECESSARY TO OBTAIN CITY APPROVAL.
4. INSTALL CONCEALED TYPE HEADS WITH WHITE COVER PLATES TO MATCH CEILING OR WALL.
5. INSTALLATION SHALL BE COORDINATED WITH ALL OTHER TRADES.
6. FINAL LOCATION OF ALL SPRINKLER HEADS SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL.
7. LOCATE SPRINKLER HEADS IN CENTER OF CEILING TILE AT REQUEST OF OWNER.

13. CONTROL SYSTEM

A. FURNISH AND INSTALL A COMPLETE SYSTEM OF ELECTRIC/ELECTRONIC CONTROL FOR THE SYSTEMS INSTALLED TO PROVIDE THE FOLLOWING SEQUENCES OF OPERATION.

B. SYSTEMS SHALL BE INDEPENDENT AND STAND ALONE IN OPERATION AND SEQUENCE. SOME SYSTEMS SHALL BE INTEGRATED WITH BAS (BUILDING AUTOMATION SYSTEM) AS NOTED ON PLANS.

C. SINGLE ZONE ROOFTOP UNITS

1. C.1. UNIT SHALL BE STARTED AND STOPPED FROM AN INDEPENDENT PROGRAMMABLE THERMOSTAT. ALL OPERATIONAL AND SAFETY INTERLOCKS SHALL BE WIRED INCLUDING UNIT SHUT DOWN FROM DUCT SMOKE DETECTORS FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR IN ACCORDANCE WITH LOCAL CODE JURISDICTIONS.
2. C.2. UNITS SHALL MAINTAIN LOCAL SPACE TEMPERATURE BY THE USE OF ELECTRIC REFRIGERATION, ECONOMIZER OPERATION AND NATURAL GAS HEATING SECTIONS.
3. C.3. UNITS SHALL MAINTAIN MINIMAL OUTDOOR AIR SETTINGS WHENEVER THEY ARE OPERATIONAL.
4. C.4. PROVIDE NIGHT SET BACK OPERATION TO MAINTAIN A REDUCED NIGHT OPERATION CONDITION UTILIZING THE SPACE SENSOR WHENEVER THE SYSTEM IS IN AN UNOCCUPIED PROGRAM.

D. ELECTRIC HEAT
1. LOCAL ELECTRIC UNIT HEATERS SHALL BE CONTROLLED BY LOCAL SPACE THERMOSTATS WITH HEAT OFF; FAN AUTO AND CONTINUOUS SWITCHES OR SELF-CONTAINED UNIT SPACE THERMOSTATS AS APPROPRIATE.

E. EXHAUST FANS
1. EXHAUST FANS TO BE CONTROLLED AS INDICATED ON THE SCHEDULES.

14. COMMISSIONING

A. PROVIDE FOLLOWING DOCUMENTS TO THE BUILDING OWNER WITHIN 90 DAYS OF THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY:

1. CONSTRUCTION DOCUMENTS INDICATING THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT

2. OPERATING AND MAINTENANCE MANUAL FOR EACH PIECE OF EQUIPMENT INCLUDING: MANUFACTURER'S LITERATURE (SHOP DRAWINGS) INCLUDING EQUIPMENT PERFORMANCE DATA AT ELEVATION AND/OR LOCAL CONDITIONS ALONG WITH SELECTED OPTIONS, MANUFACTURERS OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, NAME AND ADDRESS OF AT LEAST ONE LOCAL SERVICE AGENCY, HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCES WITH SETPOINT PERMANENTLY RECORDED ON CONTROL DRAWINGS, AND A NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE.

3. A SYSTEM BALANCING REPORT DESCRIBING THE ACTIVITIES AND MEASUREMENTS PERFORMED DURING FINAL TESTING AND BALANCING.

4. FINAL TAB REPORT MUST BE UPLOADED TO TOWN OF CASTLE ROCK eTRAKIT SYSTEM AND BE AVAILABLE ON-SITE FOR INSPECTIONS.

B. A FINAL COMMISSIONING REPORT INCLUDING: RESULTS OF FUNCTIONAL PERFORMANCE TESTS, ISPOSITION OF DEFICIENCIES FOUND DURING TESTS INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED, AND THE FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE, PROVIDED HEREIN FOR REPEATABILITY.

END

DESIGN CRITERIA

JURISDICTION	CASTLE ROCK, CO
PROJECT ALTITUDE	5300'
MECHANICAL CODE	2018 INTERNATIONAL MECHANICAL CODE
ENERGY CODE	2018 INTERATIONAL ENERGY CONSERVATION CODE
DESIGN WEATHER STATION	ELBERT NMONUMENT (722155)
CLIMATE ZONE	5B
SUMMER DESIGN TEMP DB / MCWB	91°F / 61°F
WINTER DESIGN TEMP DB	-2°F
INDOOR COOLING SET POINT	76°F DB / 61°F WB
INDOOR HEATING SET POINT	68°F
NUMBER OF FLOORS	1

MECHANICAL SHEET LIST

NUMBER	TITLE
M0.01	SHEET SPECIFICATIONS
M0.02	MECHANICAL SCHEDULES & LEGENDS
M1.01	FLOOR PLAN - MECHANICAL DEMO
M2.01	FLOOR PLAN - MECHANICAL
M2.02	ROOF PLAN - MECHANICAL
M5.01	MECHANICAL DIAGRAMS
M5.02	MECHANICAL DIAGRAMS
M6.01	MECHANICAL ENERGY CALCULATIONS
SHEET TOTAL: 8	

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11/19/2024

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BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

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Date
11-18-2024

Drawn by
Checked by

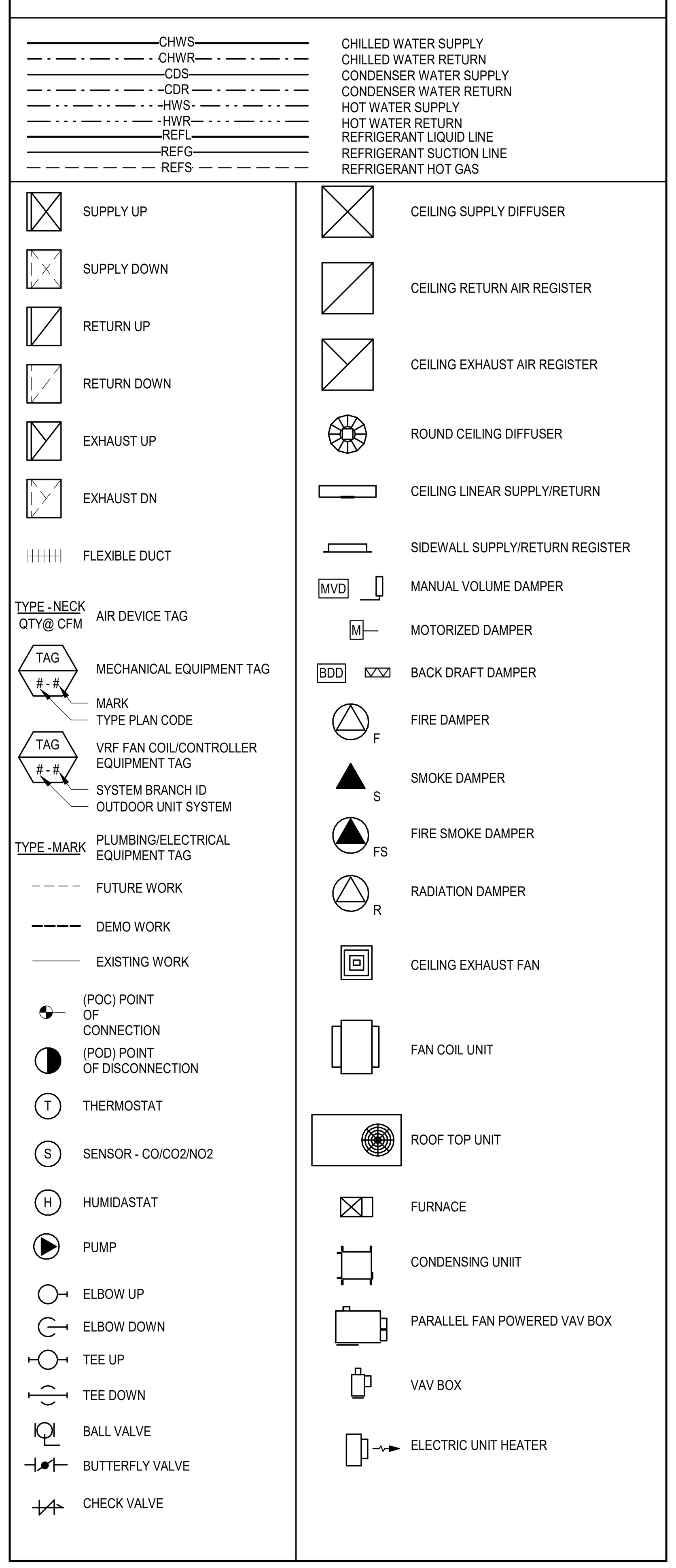
Title
SHEET
SPECIFICATIONS

M0.01

ABBREVIATIONS

(D)	DEMO
(E)	EXISTING
(N)	NEW
AAV	AIR ADMITTANCE VALVE
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
B	BOILER
BB	BASEBOARD
BF	BOOSTER FAN
BFP	BACKFLOW PREVENTER
BT	BATH TUB
BV	BALL VALVE
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CS	CLINICAL SINK
CU	CONDENSING UNIT
CV	CHECK VALVE
CUH	CABINET UNIT HEATER
DCW	DOMESTIC COLD WATER
DF	DRINKING FOUNTAIN
DHW	DOMESTIC HOT WATER
DSN	DOWN SPOUT NOZZLE
EVC	EVAPORATIVE COOLER
EC	ELECTRICAL CONTRACTOR
ECO	END OF LINE CLEANOUT
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
ERU	ENERGY RECOVERY UNIT
ER	EXISTING REMOVED
ERR	EXISTING REMOVED & RELOCATED
EW	EMERGENCY EYEWASH
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
F	FURNACE
FCO	FLOOR/GRADE CLEANOUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FS	FLOOR SINK
G	GAS
GC	GENERAL CONTRACTOR
GM	GAS METER
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GAS REGULATOR
GUH	GAS UNIT HEATER
GW	GREASE WASTE
GWH	GAS WATER HEATER
HB	HOSE BIB
HP	HEAT PUMP
HX	HEAT EXCHANGER
IM	ICE MAKER BOX
LAV	LAVATORY
LS	LAUNDRY SINK
MAU	MAKE-UP AIR UNIT
MC	MECHANICAL CONTRACTOR
MF	MEASURE FLOW
NIC	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OP. BLD	OPPOSED BLADE DAMPER
ORD	OVER FLOW ROOF DRAIN
P	PUMP
PC	PLUMBING CONTRACTOR
PFT	PARALLEL FAN TERMINAL
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	PRESSURE GAUGE
RA	RETURN AIR
RAR	RETURN AIR REGISTER
RD	ROOF DRAIN
RE	RELOCATE EXISTING
REFL/S	REFRIGERANT LIQUID/SUCTION LINE
RH	RADIANT HEATER
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SAR	SUPPLY AIR REGISTER
SF	SUPPLY FAN
SFT	SERIES FAN TERMINAL
SH	SHOWER
SK	SINK
SOI	SAND/OIL INTERCEPTOR
SS	SERVICE SINK
T&P	TEMPERATURE & PRESSURE
TD	TRENCH DRAIN
TYP	TYPICAL
UR	URINAL
VAV	VARIABLE AIR VOLUME
VVT	VARI TRAC
WB	WASHER BOX
WC	WATER CLOSET/WATER COLUMN
WC0	WALL CLEANOUT COLUMN
WH	WALL HYDRANT

MECHANICAL LEGEND



ROOFTOP UNIT SCHEDULE - DX/ELECTRIC COOLING & NATURAL GAS

REMARKS:
(1) REFERS TO COOLING CAPACITIES BASED ON 95F OADB, 80F EADB, 67F EAWB @ PROJECT ELEVATION.
(2) PROVIDE MANUFACTURER'S 14" CURB SUITABLE FOR GROUND MOUNTING WITH HORIZONTAL DISCHARGE, BELT DRIVE, HAIL GUARDS, AND 100% OA ECONOMIZER.
(3) PROVIDE CONVENIENCE OUTLET.
(4) PROVIDE RETURN DUCT SMOKE DETECTOR.
(5) PROVIDE C02 SENSOR IN SPACE FOR DEMAND CONTROLLED VENTILATION. MINIMUM OA SETTING SHALL BE 10% OF TOTAL SUPPLY AIRFLOW, MAXIMUM OA SETTING SHALL BE PER SCHEDULE.
(6) PROVIDE FACTORY INSTALLED POWER EXHAUST WITH SINGLE POINT POWER CONNECTION.
(7) PROVIDE STAINLESS STEEL HEAT EXCHANGER.

								HEATING CAPACITY						NET COOLING CAPACITY									ELECTRICAL DATA					
PLAN MARK	MANUFACTURER	MODEL #	SUPPLY AIRFLOW (CFM)	MAX OA AIRFLOW (CFM)	BLWR (HP)	ESP. (inH20)	GAS NAT/PROP	INPUT (MBH,SL)	OUTPUT (MBH,ALT)	EAT (°F)	LAT (°F)	EFF	STG	TOTAL (MBH)	SENS (MBH)	EADB (°F)	EAWB (°F)	LADB (°F)	LAWB (°F)	REFRIG	EFFICIENCY STD/HI	IEER RATING	VOLT	PH	MCA	MOCP	OPERATING WEIGHT (LBS)	REMARK
RTU-1	CARRIER	48FCTM07F3M5-8U2A0	2300	250	1.6	1.0	NAT	150	114	55	99	80	2	64.64	52.95	80	63	54	53	R-410A	STD	15	208	3	37	50	1000	(1)(2)(3)(4)
RTU-2	CARRIER	48FCTM08F3M5-8U2A0	3000	900	1.8	1.0	NAT	224	137.8	35	86.6	81	2	79.95	63.91	80	63	56	53	R-410A	STD	15	208	3	49	60	1250	(1)(2)(3)(4)(5)(7)
RTU-3	CARRIER	48FCTM08F3M5-8U2A0	3000	1150	1.8	1.0	NAT	224	137.8	41	91	81	2	79.95	63.91	85.6	63	55	53	R-410A	STD	15	208	3	49	60	1250	(1)(2)(3)(4)(5)(6)(7)
RTU-4	CARRIER	48FCTM16F3M5-8UA20	6000	1700	3.04	1.0	NAT	350	215.8	50	90	81	2	163	133	80	63	55	53	R-410A	STD	14.5	208	3	81	100	2000	(1)(2)(3)(4)(5)(6)(7)

FAN SCHEDULE

REMARKS:
(1) SELECTION BASED ON PROJECT ELEVATION.
(2) PROVIDE WITH BACKDRAFT DAMPER, EC MOTOR AND ROOF CAP.
(3) FAN SHALL BE INTERLOCKED WITH LIGHT SWITCH.
(4) PROVIDE VIBRATION ISOLATION HANGERS, BACKDRAFT DAMPER, EC MOTOR.
(5) FAN TO OPPERATE ON TIME CLOCK TO RUN CONTINUOUSLY DURING OCCUPIED HOURS.

				AIRFLOW				ELECTRICAL DATA					
PLAN MARK	MANUFACTURER	MODEL #	STYLE	CFM	ESP (inH20)	RPM	SONES	VOLT	PH	MOTOR SIZE (HP)	MOTOR SIZE (WATTS)	OPERATING WEIGHT (LBS)	REMARKS
EF-1	PANASONIC	FV-0511VK2	CEILING	75	0.3	1112	0.4	120	1	-	7	15	(1)(2)(3)
EF-2	GREENHECK	SQ-98-VG	INLINE	350	0.75	1692	12	120	1	1/4	-	58	(1)(4)(5)

AIR DEVICE SCHEDULE

REMARKS:
(1) VERIFY FINISH TYPE & COLOR WITH ARCHITECT / ID PRIOR TO SUBMITTING FOR APPROVAL.
(2) COORDINATE FRAME SELECTION WITH FINAL RCP.

PLAN MARK	MANUFACTURER	MODEL #	NOMINAL SIZE	CONNECTION SIDE (IN)	FACE PATTERN	DAMPER	MATERIAL	FINISH	NC MAX (dB)	REMARKS
A	PRICE	RCD	NOTED	SAME	LVR	MVD	STL	MILL	<35	(1)(2)
B	PRICE	SCD	24X24	NOTED	LVR	MVD	STL	WHITE	<35	(1)(2)
C	PRICE	520	NOTED	SAME	LF	MVD	STL	MILL	<35	
D	PRICE	85	8X8	NOTED	PERF	NONE	STL	MILL	<35	(1)
E	PRICE	PDDR	24X24	NOTED	PERF	NONE	STL	WHITE	<35	(1)
F	PRICE	85	10X10	SAME	EGG	NONE	STL	MILL	<35	(1)(2)
G	PRICE	530	NOTED	SAME	LF	MVD	STL	WHITE	<35	(1)(2)
H	PRICE	ND	NOTED	SAME	NOZZLE	MVD	STL	MILL	<35	(1)

ELECTRIC UNIT HEATER SCHEDULE

REMARKS:
(1) PROVIDE WITH FACTORY MOUNTING ACCESSORIES. VERIFY MOUNTING HEIGHTS PRIOR TO FIELD INSTALLATION.
(2) INTEGRAL T-STAT TO ENERGIZE HEATER AT A TEMPERATURE AT 60°F (ADJ) OR BELOW.

					ELECTRICAL DATA				
PLAN MARK	MFR	MODEL	STYLE	CONTROL	VOLT	PH	WATTS	OPERATING WEIGHT (LBS)	REMARKS
EUH-1	BERKO	FRC1512F	WALL HEATER	INTEGRAL TSTAT	120 V	1	1,500	25	(1)(2)
EUH-2	BERKO	FRC48203F	WALL HEATER	INTEGRAL TSTAT	208 V	3	4,800	25	(1)(2)

EXISTING AIR COOLED CONDENSING UNIT SCHEDULE (FOR REFERENCE)

REMARKS:

							ELECTRICAL DATA					
PLAN MARK	MANUFACTURER	MODEL #	REFRIGERANT	NOMINAL COOLING CAPACITY (MBH)	SEER	AMB. AIR (°F)	VOLT.	PH	MCA	MOCP	OPERATING WEIGHT (LBS)	REMARKS
(E)CU	CARRIER	38CKC-060-5	R22	60	10	95	208	1	24.3	30	220	
(E)CU	CARRIER	38CKC-060-5	R22	60	10	95	208	1	24.3	30	220	
(E)CU	CARRIER	38CKC-060-5	R22	60	10	95	208	1	24.3	30	220	
(R)CU	CARRIER	38CKC-060-5	R22	60	10	95	208	1	24.3	30	220	

EXISTING GAS FURNACE/DX UNIT SCHEDULE (FOR REFERENCE)

REMARKS:

													COOLING COIL			ELECTRICAL DATA				
PLAN MARK	MANUFACTURER	MODEL #	AIRFLOW (CFM)	OA (CFM)	ESP (inH2O)	MOTOR SIZE (HP)	FUEL	INPUT (MBH,SL)	OUTPUT (MBH,ELEV)	EFF %	COMB. INLET SIZE (IN Ø)	FLUE CONN. SIZE (IN Ø)	MODEL	TOTAL COOLING (MBH)	APD (inH20)	VOLTAGE	PH	MCA	OPERATING WEIGHT (LBS)	REMARKS
(E)FUR	CARRIER	58MXA 120-20	1635	N/A	0.8	3/4	NG	132	100	92.5	3	3	CD5AXA060024	60	0.8	120	1	24.3	200	
(E)FUR	CARRIER	58MXA 120-20	1635	N/A	0.8	3/4	NG	132	100	92.5	3	3	CD5AXA060024	60	0.8	120	1	24.3	200	
(E)FUR	CARRIER	58MXA 120-20	1635	N/A	0.8	3/4	NG	132	100	92.5	3	3	CD5AXA060024	60	0.8	120	1	24.3	200	
(E)FUR	CARRIER	58MXA 120-20	1635	N/A	0.8	3/4	NG	132	100	92.5	3	3	CD5AXA060024	60	0.8	120	1	24.3	200	

OUTDOOR AIR VENTILATION SCHEDULE

SYSTEM - TYPE / ZONE	FLOOR	SPACE TYPE	AREA (SF)	Rp	Ra	# / 1000SF	# OCCUPANTS	Vbz	Ez	Voz	Ev	Vot
RTU-1												
C125 - HALL	LEVEL 1	Corridors	315	0	0.06	0	0	19	0.8	24	1	24
C131 - STORAGE	LEVEL 1	Storage rooms	100	0	0.12	0	0	12	0.8	15	1	15
C127 - STORAGE	LEVEL 1	Storage rooms	200	0	0.12	0	0	24	0.8	30	1	30
C133 - CLASSROOM	LEVEL 1	Classrooms (age 9 plus)	153	10	0.12	35	6	78	0.8	98	1	98
C134 - HALL	LEVEL 1	Corridors	617	0	0.06	0	0	37	0.8	46	1	46
										TOTAL REQUIRED		213
										TOTAL SUPPLIED		250
RTU-2												
C135 - CLASSROOM	LEVEL 1	Classrooms (age 9 plus)	342	10	0.12	35	12	161	0.8	201	1	201
C136 - CLASSROOM	LEVEL 1	Classrooms (age 9 plus)	344	10	0.12	35	13	171	0.8	214	1	214
C138 - CLASSROOM	LEVEL 1	Classrooms (age 9 plus)	344	10	0.12	35	13	171	0.8	214	1	214
C139 - CLASSROOM	LEVEL 1	Classrooms (age 9 plus)	320	10	0.12	35	12	158	0.8	198	1	198
										TOTAL REQUIRED		828
										TOTAL SUPPLIED		900
RTU-3												
C140 - CLASSROOM	LEVEL 1	Classrooms (age 9 plus)	1710	10	0.12	35	60	805	0.8	1007	1	1007
										TOTAL REQUIRED		1007
										TOTAL SUPPLIED		1150
RTU-4												
110 - CLASSROOM	LEVEL 1	Classrooms (age 9 plus)	155	10	0.12	35	6	79	0.8	98	1	98
L103 - EXISTING WARMING CENTER	LEVEL 1	Kitchen (cooking)	221	7.5	0.12	20	5	64	0.8	80	1	80
L102 - LOBBY	LEVEL 1	Lobbies / prefunction	3665	7.5	0.06	30	110	1045	0.8	1306	0.9	1451
										TOTAL REQUIRED		1630
										TOTAL SUPPLIED		1700

Vbz = Rp * Pz + Ra * Az
Rp = OUTDOOR AIRFLOW RATE PER PERSON (CFM/ PERSON)
Ra = OUTDOOR AIRFLOE RATE REQUIRED PER UNIT AREA (CFM/ SQFT)
Az = ZONE FLOOR AREA (sqft)
Pz = ZONE POPULATION; OCCUPANTS
Vbz (CFM) = BREATHING ZONE OUTDOOR AIR FLOW
Voz = Vbz/ Ez
Ez = ZONE AIR DISTRIBUTION EFFECTIVENESS
Voz (CFM) = ZONE OUTDOOR AIR FLOW
Vot = Vbz/ Ev
Ev = SYSTEM VENTILATION EFFICIENCY
Vot (CFM) = REQUIRED OUTDOOR AIR INTAKE FLOW
** FLOOR AREA BASED ON NET OCCUPIABLE AREA.

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COLORADO LICENSED JEFF A. GIVEN 32961 PROFESSIONAL ENGINEER
11/19/2024

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CREEKSIDE BIBLE CHURCH

Job No: 24010

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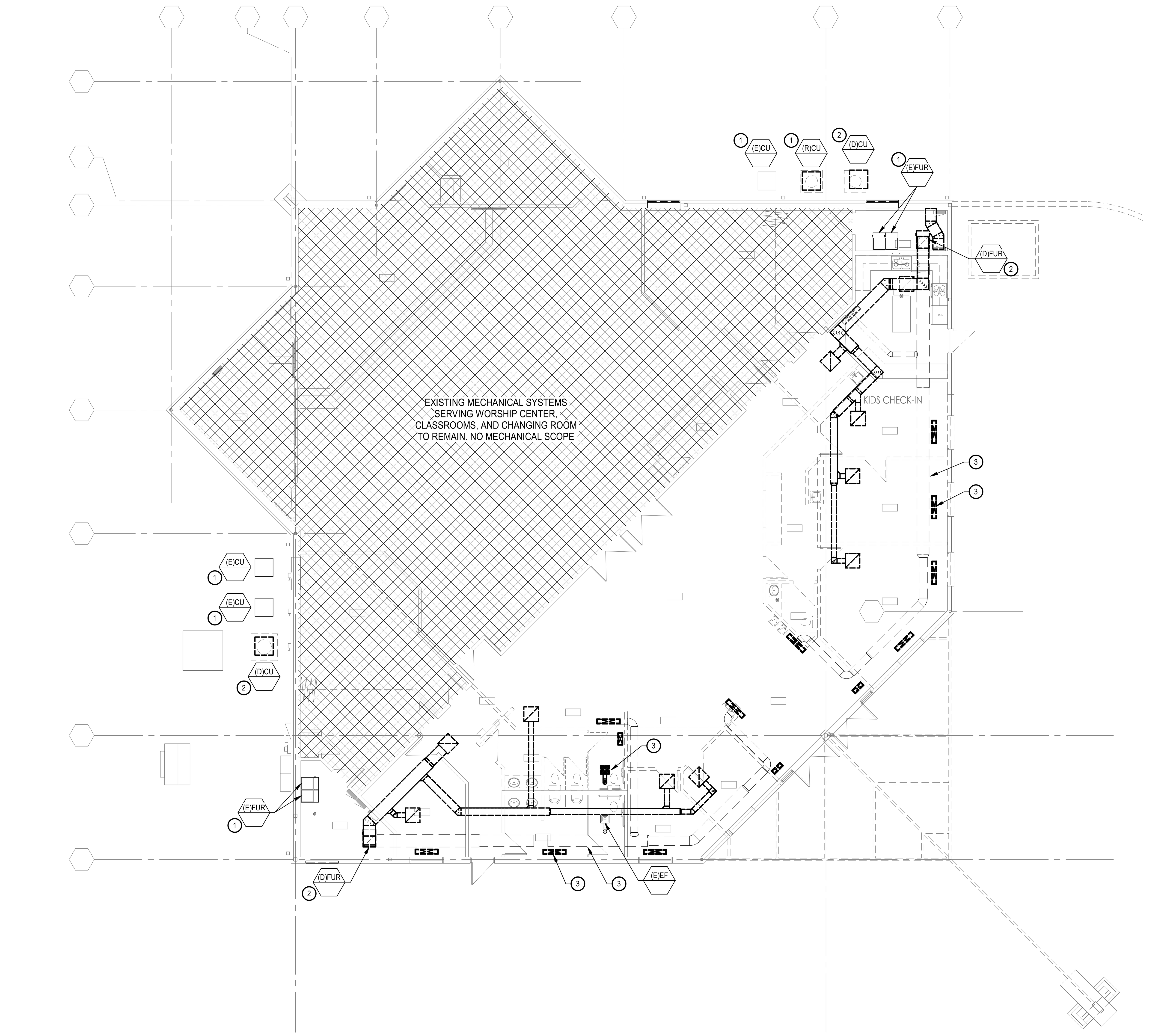
M0.02



NORTH

1 FLOOR PLAN - MECHANICAL DEMO
1/8" = 1'-0"

KEY NOTES:

1. MECHANICAL SYSTEMS SERVING EXISTING WORSHIP AREA TO REMAIN.
2. DEMOLISH CONDENSING UNIT ASSOCIATED WITH FURNACE SERVING LOBBY. FIELD VERIFY WHICH CONDENSING UNIT TO BE DEMOLISHED.
3. DEMOLISH ALL FLOOR MOUNTED DIFFUSERS. CAP AND ABANDON UNDERGROUND DUCTWORK.
4. DEMOLISH RETURN DUCTWORK AND GRILLES. RETURN GRILLES TO BE USED IN NEW CONSTRUCTION PHASE. REPAIR OR REPLACE AS NEEDED.
5. DEMOLISH EXISTING RESTROOM EXHAUST FAN AND ASSOCIATED DUCT WORK, PATCH ROOF AS REQUIRED.

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2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

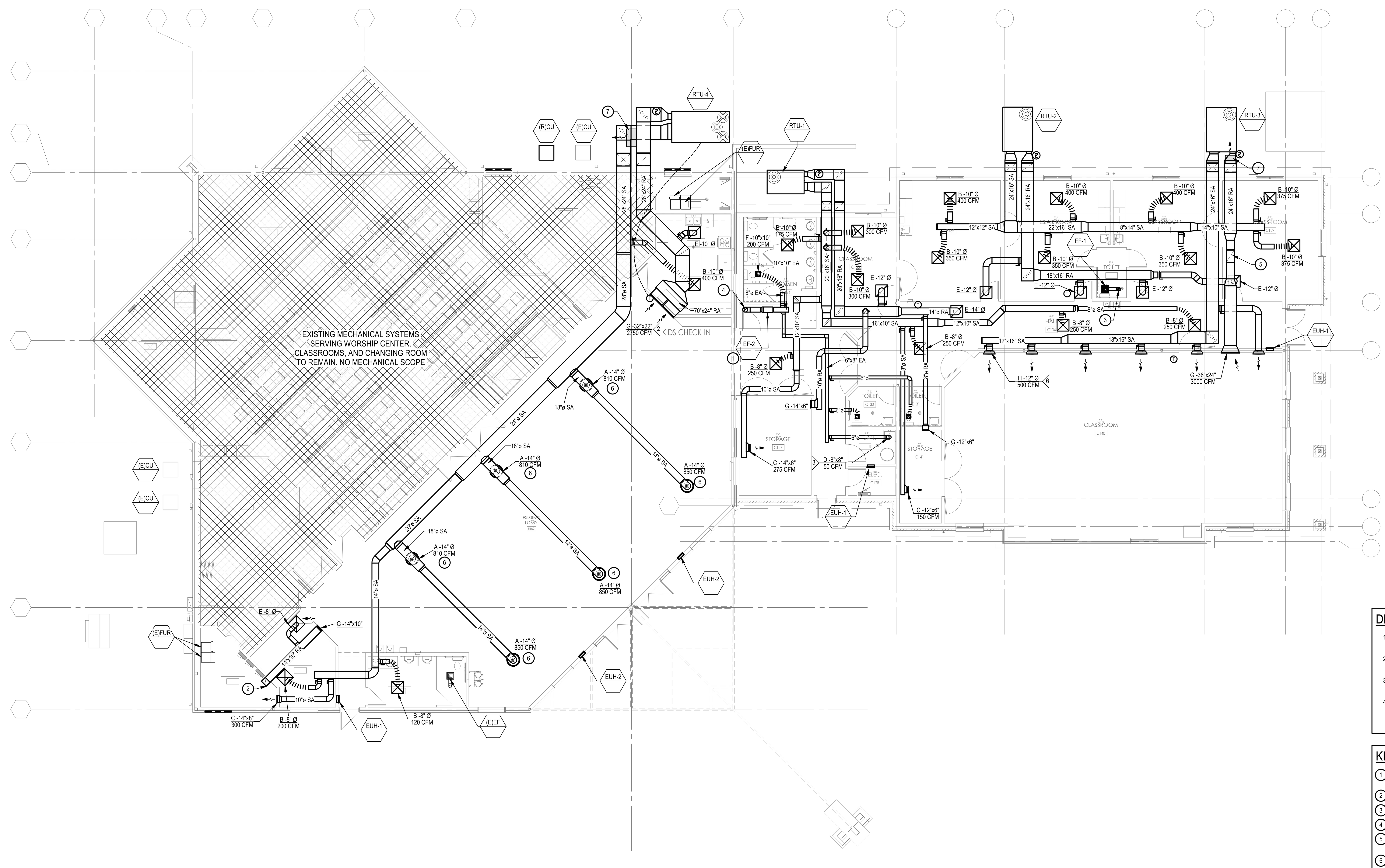
No.	Date	Description
	11/18/2024	Permit Issue Set

Date 11-18-2024

Drawn by Checked by

Title
FLOOR PLAN - MECHANICAL DEMO

M1.01



NORTH

1 FLOOR PLAN - MECHANICAL

1/8" = 1'-0"

DRAWING NOTES:

1. PROVIDE 7-DAY PROGRAMMABLE THERMOSTATS IN VENTILATED LOCKABLE COVERS.
2. OUTDOOR AIR INTAKES TO BE LOCATED 10' MINIMUM FROM EXHAUST TERMINATIONS.
3. CEILING DIFFUSERS SHALL BE 36" MIN FROM CEILING MOUNTED SMOKE DETECTORS. COORDINATE WITH FIRE ALARM CONTRACTOR.
4. UNDERCUT RESTROOM AND JANITOR CLOSET DOORS 3/4" FOR TRANSFER AIR PATHWAY.

KEY NOTES:

1. PROVIDE AND INSTALL 24V ACTUATED MOTORIZED DAMPER INTERLOCKED WITH EXHAUST FAN.
2. TERMINATE DUCT HIGH AND PROVIDE BIRDSCREEN.
3. 6"Ø EA UP THRU ROOF, TERMINATE WITH ROOF CAP.
4. 10"Ø EA UP THRU ROOF, TERMINATE WITH ROOF CAP.
5. OFFSET RA UP INTO TRUSS SPACE, INSULATE DUCT WHILE IN TRUSS SPACE PER SPECS.
6. COORDINATE HEIGHT OF DIFFUSER WITH LIGHTING IN LOBBY AREA, DIFFUSER ELEVATION TO MATCH LIGHTING.
7. POWER EXHAUST LOCATED ON SIDE OF RA DUCT.

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COLORADO LICENSED JEFF A. GIVEN 32961 PROFESSIONAL ENGINEER
11/19/2024

CREEKSIDE BIBLE CHURCH RENOVATION & ADDTION

2180 I-25
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CREEKSIDE BIBLE CHURCH

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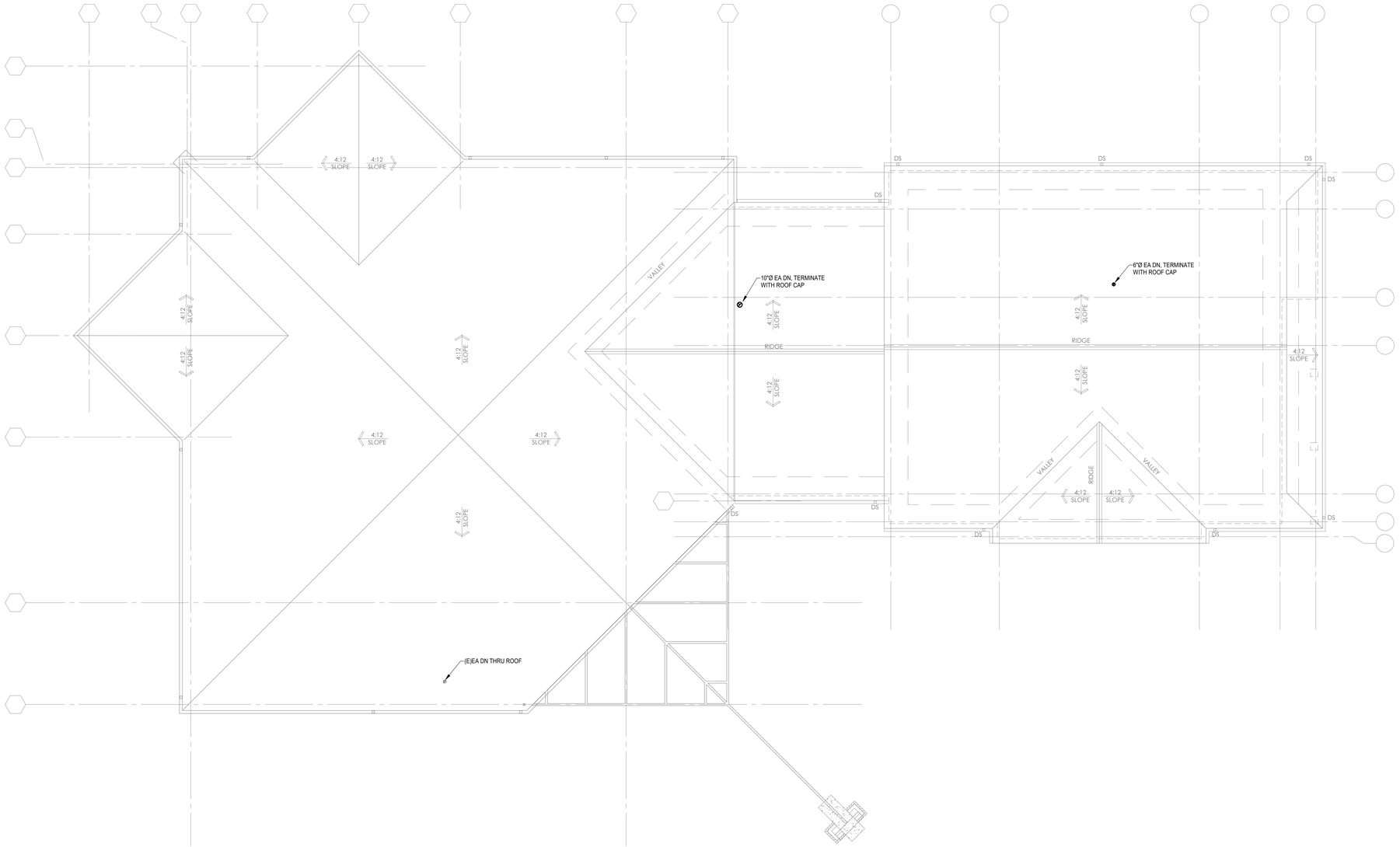
Title FLOOR PLAN - MECHANICAL

M2.01



NORTH

1 ROOF PLAN - MECHANICAL

1/8" = 1'-0"

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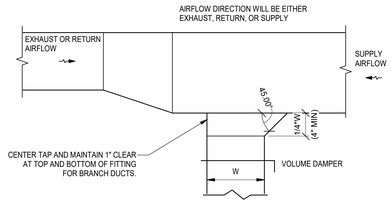
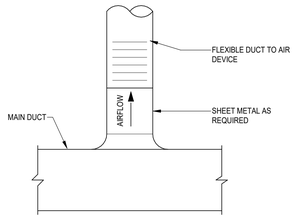
Title
ROOF PLAN - MECHANICAL

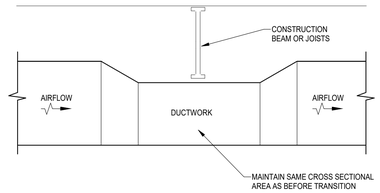
M2.02



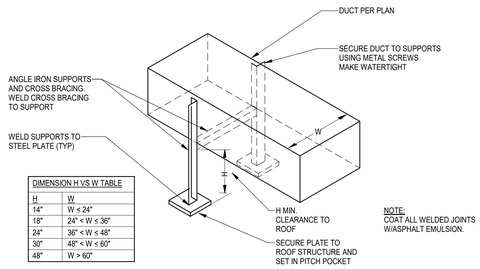
1 BRANCH DUCT DETAIL
N.T.S.



2 CIRCULAR BRANCH DUCT DETAIL
N.T.S.



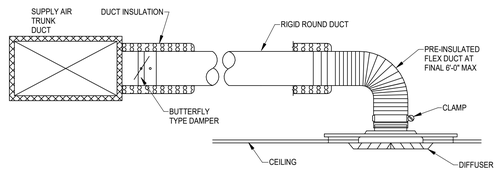
3 DUCT OFFSET DETAIL
N.T.S.



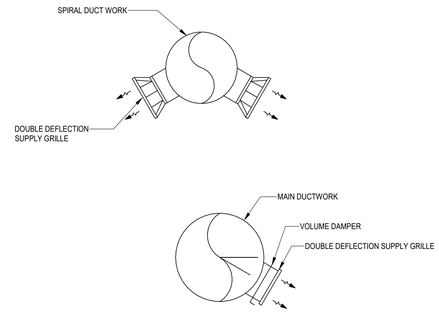
DIMENSION H VS W TABLE	
H	W
14"	W ≤ 24"
18"	24" < W ≤ 36"
24"	36" < W ≤ 48"
30"	48" < W ≤ 60"
48"	W > 60"

NOTE:
COAT ALL WELDED JOINTS
W/ASPHALT EMULSION.

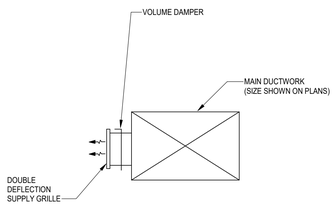
4 DUCT SUPPORT DETAIL
N.T.S.



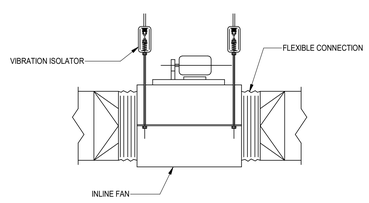
5 DIFFUSER INSTALLATION DETAIL
N.T.S.



6 EXPOSED DUCT INSTALLTION DETAIL
N.T.S.



7 EXPOSED DUCT INSTALLTION DETAIL
N.T.S.



8 INLINE FAN SUPPORT DETAIL
N.T.S.

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDTION
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CREEKSIDE BIBLE CHURCH

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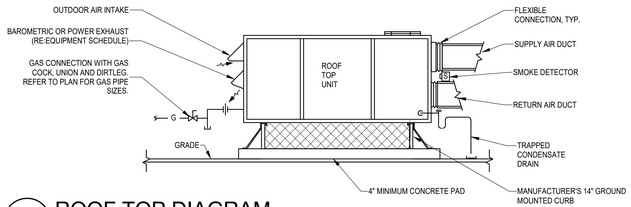
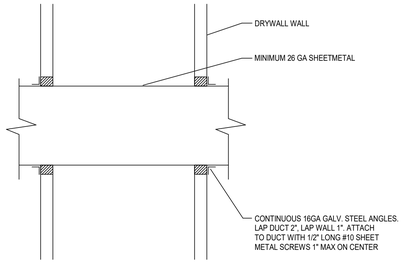
MECHANICAL
DIAGRAMS

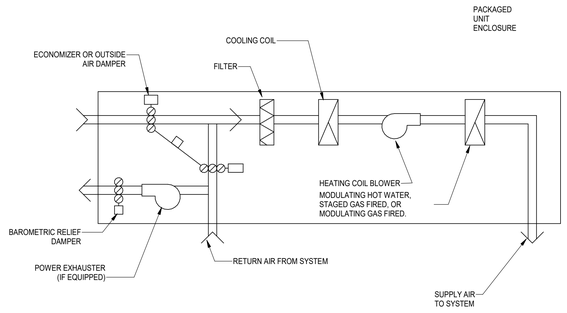
M5.01



1 ROOF TOP DIAGRAM
N.T.S.



2 DUCT THROUGH 1 HOUR WALL DETAIL
N.T.S.



3 RTU CONTROL DETAIL
N.T.S.

SEQUENCES

UNOCCUPIED MODE:
WHEN UNOCCUPIED THE UNIT SHALL SHUT DOWN AND THE OUTSIDE DAMPERS SHALL CLOSE. IF AN UNOCCUPIED CALL FOR HEATING OR COOLING IS RECEIVED THEN THE UNIT SHALL RUN AS IN THE OCCUPIED MODE FOR COOLING OR WARM-UP MODE FOR HEATING UNTIL THE UNOCCUPIED SETPOINTS ARE SATISFIED - THE OUTSIDE AIR DAMPERS SHALL REMAIN CLOSED UNLESS THE ECONOMIZER IS ACTIVE.

WARM-UP SEQUENCE:
A WARM-UP SEQUNCE SHALL BE ENABLED WHEN THE UNIT SWTCHES FROM UNOCCUPIED TO OCCUPIED. DURING THIS SEQUENCE THE SYSTEM WILL SWITCH TO HEATING FROM THE RTU/AHU, OUTSIDE AIR DAMPERS WILL CLOSE, AND LOCAL HEAT SOURCES SHALL BE DISABLED. THE SWITCH FROM WARM-UP TO NORMAL OCCUPIED SHALL OCCUR EITHER ON A CRITICAL ZONE REACHING HEATING SETPOINT OR THE MAIN RETURN REACHING WARM-UP SETPOINT - THE SYSTEM SHALL BE CAPABLE OF EITHER OPTION. IF EQUIPPED WITH MODULATING HEAT THEN THE SYSTEM SHALL HAVE A VAV WARM-UP CYCLE WHERE THE SYSTEM SHALL SHALL WARM-UP UNTIL ALL ZONES REACH THEIR HEATING SETPOINT BEFORE SWITCHING TO OCCUPIED COOLING. HEATING STAGES AND/OR MODULATION SHALL CYCLE TO MAINTAIN A DISCHARGE HEATING SETPOINT THAT CAN BE USER ADJUSTABLE.

OCCUPIED MODE:
WHEN THE UNIT IS OCCUPIED, THE SUPPLY FAN WILL RUN CONTINUOUSLY. THE UNIT SHALL OPERATE TO MAINTAIN AN OCCUPIED COOLING DISCHARGE AIR TEMPERATURE SETPOINT. IF EQUIPPED WITH A FULL BAS THE SYSTEM SHALL HAVE THE ABILITY TO RESET THE DISCHARGE AIR SETPOINT BASED ON OUTSIDE TEMPERATURES. IF EQUIPPED WITH A RETURN FAN THE RETURN FAN SHALL MODULATE IN CONJUNCTION WITH THE SUPPLY FAN. THE RETURN FAN SHALL LAG THE SUPPLY FAN BY A PERCENTAGE DIFFERENTIAL.

SUPPLY FAN CONTROL:
THE SUPPLY FAN SHALL HAVE VFD CONTROL. THE FAN SHALL BE CONTROLLED TO MAINTAIN A POSITIVE PRESSURE IN THE DUCTWORK (APPROXIMATELY 2/3 DOWN LONGEST RUN) SUITABLE FOR PROPER OPERATION AND BALANCING OF VAV BOXES AND GRD'S.

DISCHARGE AIR CONTROL:
IF THE DISCHARGE AIR TEMPERATURE RISES ABOVE THE DISCHARGE AIR COOLING SETPOINT, THE ECONOMIZER MODULE WILL BE ENABLED. IF OUTSIDE AIR CONDITIONS ARE SUITABLE, THE MIXED AIR DAMPERS WILL MODULATE TO MAINTAIN SETPOINT. IF OUTSIDE AIR CONDITIONS ARE NOT SUITABLE, THE FIRST STAGE OF COOLING WILL BE ENERGIZED. IF EQUIPPED WITH DIFFERENTIAL ENTHALPY ECONOMIZER CONTROLS THEN THE UNIT WILL USE OUTSIDE AIR RATHER THAN RETURN AIR IN CONJUNCTION WITH MECHANICAL COOLING. A FURTHER RISE IN DISCHARGE AIR TEMPERATURE WILL BRING ON ADDITIONAL COOLING STAGES IF EQUIPPED. COOLING STAGES WILL OPERATE WITH MINIMUM OFF AND ON TIMES. AS THE DISCHARGE AIR TEMPERATURE FALLS BELOW THE DISCHARGE AIR COOLING SETPOINT, STAGES OF COOLING WILL DE-ENERGIZE IN REVERSE ORDER. IF THE DISCHARGE AIR TEMPERATURE DROPS BELOW THE DISCHARGE AIR HEATING SETPOINT THE FIRST STAGE OF HEATING WILL BE ENERGIZED. A FURTHER DROP IN DISCHARGE AIR TEMPERATURE WILL BRING ON ADDITIONAL HEATING STAGES, IF EQUIPPED. HEATING STAGES WILL OPERATE WITH MINIMUM OFF AND ON TIMES. AS THE DISCHARGE AIR TEMPERATURE RISES ABOVE THE DISCHARGE AIR HEATING SETPOINT, STAGES OF HEATING WILL DE-ENERGIZE IN REVERSE ORDER. IF EQUIPPED WITH MODULATING HEAT THEN THE UNIT SHALL MODULATE HEAT OUTPUT TO MAINTAIN THE DISCHARGE AIR SETPOINT.

OUTSIDE AIR CONTROL:
THE OUTSIDE AIR DAMPER SHALL HAVE A MINIMUM POSITION SET BY BALANCER TO ACHIEVE MINIMUM OUTSIDE AIR SETTING AS NOTED IN SCHEDULES.
IF EQUIPPED WITH CO2 SENSOR(S) THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE MINIMUM CO2 LEVELS (1,000 PPM ADJ) IN THE SPACE. A MINIMUM SETTING OF 10% (ADJ) ON THE OUTSIDE AIR DAMPER SHALL BE MAINTAINED TO KEEP THE SPACE PRESSURIZED.

IF EQUIPPED WITH OUTSIDE AIR MONITORING STATION THEN THE OUTSIDE AIR DAMPERS SHALL MODULATE TO MAINTIAN THE MINIMUM OUTSIDE AIR CFM AS INDICATED IN THE SCHEDULES. THE MIXED AIR TEMPERATURE AND DISCHARGE AIR TEMPERATURE SHALL BE MONITORED. OVERRIDE THE OUTSIDE AIR DAMPERS IF THE MIXED AIR FALLS BELOW 35F (ADJ) OR DISCHARGE AIR EXCEEDS 60F (ADJ). ALARM THE BAS IF EITHER OCCURS.

PRESSURE CONTROL:

IF EQUIPPED WITH BAROMETRIC RELEIF THE RELEIF DAMPER SHALL OPEN TO RELEIVE AIR FROM THE BUILDING. THE DAMPER SHALL BE ADJUSTABLE FROM 0.00" TO 0.10" STATIC PRESSURE. BALANCER TO SET RELIEF DEPENDING ON RETURN DUCTS TO MAINTAIN 0.05-0.10" POSITIVE IN THE SPACE.
IF EQUIPPED WITH STANDARD SINGLE STAGE POWER EXHAUSTERS THE FANS SHALL ENERGIZE BASED ON THE ECONOMIZER POSITION. WHEN THE ECONOMIZER (OR OUTSIDE AIR) DAMPER EXCEEDS 30% OPEN (ADJ) THE EXHAUST FANS SHALL ENERGIZE.

IF EQUIPPED WITH MODULATING POWER EXHAUSTERS THE FANS SHALL BE CONTROLLED BY DIFFERENTIAL PRESSURE SENSORS - ONE PLACED IN THE OCCUPIED SPACE AND ONE OUTDOORS. THE FANS SHALL MODULATE TO MAINTAIN 0.05" ADJ) POSITIVE PRESSURE INSIDE THE SPACE.

IF THE MODULATING POWER EXHAUSTER IS EXTERNAL (BOLT-ON OR OTHER) TO THE UNIT THE ATC SHALL INCORPORATE CONTROLS TO MEET THESE STRATEGIES.

IF EQUIPPED WITH A RETURN FAN THEN THE RETURN FAN SHALL TRACK AS INDICATED ABOVE. THE RETURN AIR / EXHAUST AIR DAMPERS SHALL BE CONTROLLED BY DIFFERENTIAL PRESSURE SENSORS - ONE PLACED IN THE OCCUPIED SPACE AND ONE OUTDOORS. THE EXHAUST DAMPER SHALL MODULATE TO MAINTAIN 0.05" (ADJ) POSITIVE PRESSURE INSIDE THE SPACE.

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Title
MECHANICAL DIAGRAMS

M5.02

COM*check* Software Version COMcheckWeb

Mechanical Compliance Certificate

Project Information

Energy Code:	2018 IECC
Project Title:	Creekside Bible Church Renovation and Addition
Location:	Castle Rock, Colorado
Climate Zone:	5b
Project Type:	Addition

Construction Site:	Owner/Agent:	Designer/Contractor:
Castle Rock, Colorado 80104		

Mechanical Systems List

Quantity System Type & Description

1 RTU-1 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 150 kBtu/h
Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE
Cooling: 1 each - Single Package DX Unit, Capacity = 65 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 15.00 EER, Required Efficiency = 11.00 EER
Proposed Part Load Efficiency = 15.00 IEER, Required Part Load Efficiency = 12.60 IEER
Fan System: RTU-1 | Classroom/Hallway -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 1 Supply, Constant Volume, 2300 CFM, 2.0 motor nameplate hp, 67.0 fan efficiency grade, 80.0 total fan efficiency, 75.0 design fan efficiency

1 RTU-2 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 224 kBtu/h
Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE
Cooling: 1 each - Single Package DX Unit, Capacity = 80 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 15.00 EER, Required Efficiency = 11.00 EER
Proposed Part Load Efficiency = 15.00 IEER, Required Part Load Efficiency = 12.60 IEER
Fan System: RTU-2 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 2 Supply, Constant Volume, 3000 CFM, 2.0 motor nameplate hp, 67.0 fan efficiency grade, 80.0 total fan efficiency, 75.0 design fan efficiency

1 RTU-3 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 224 kBtu/h
Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE
Cooling: 1 each - Single Package DX Unit, Capacity = 80 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 15.00 EER, Required Efficiency = 11.00 EER
Proposed Part Load Efficiency = 15.00 IEER, Required Part Load Efficiency = 12.60 IEER
Fan System: RTU-3 | Classroom -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 3 Supply, Constant Volume, 3000 CFM, 2.0 motor nameplate hp, 67.0 fan efficiency grade, 80.0 total fan efficiency, 75.0 design fan efficiency

1 RTU-4 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 350 kBtu/h
Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et
Cooling: 1 each - Single Package DX Unit, Capacity = 163 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 14.50 EER, Required Efficiency = 10.80 EER
Proposed Part Load Efficiency = 14.50 IEER, Required Part Load Efficiency = 12.20 IEER
Fan System: RTU-4 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 4 Supply, Constant Volume, 6000 CFM, 3.5 motor nameplate hp, 67.0 fan efficiency grade, 80.0 total fan efficiency, 75.0 design fan efficiency

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title ______ Signature ______ Date ______

Project Title: Creekside Bible Church Renovation and Addition Report date: 11/18/24
Data filename:

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MECHANICAL ENERGY CALCULATIONS

M6.01

THIS SHEET SPECIFICATION SHALL GOVERN IN LIEU OF SEPARATE BOUND SPECIFICATIONS. UPON ISSUANCE SHOULD CONFLICTS ARISE BETWEEN THE SHEET AND THE BOUND SPECIFICATION THEN THE MORE STRINGENT OF THE TWO SHALL PREVAIL.

01. BASIC REQUIREMENTS

A. PLUMBING PLANS MAY INCLUDE SCOPE INFORMATION FOR OTHER TRADES. GENERAL CONTRACTOR TO FACILITATE COORDINATION OF PERTINENT INFO TO ALL REQUIRED CONTRACTORS. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO BID TO CONFIRM A COMPLETE SYSTEM IS INCLUDED.

B. PLUMBING DESIGN SHALL CONFORM TO ADOPTED CODES AND ALL LOCAL AMENDMENTS. PROJECT SHALL BE COORDINATED WITH ALL BUILDING SERVICES AND SHALL INCLUDE ALL ITEMS NECESSARY FOR COMPLETE AND FULLY OPERATIONAL PLUMBING SYSTEMS. MAKE CONNECTIONS TO AND EXTEND SYSTEMS INSTALLED BY OTHERS AND/OR FURNISHED BY OTHERS. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM WHETHER OR NOT SPECIFICALLY SPECIFIED AND/OR SHOWN ON THE PLANS.

C. DO NOT SCALE FROM THESE DRAWINGS. REFER TO ARCHITECTURAL, STRUCTURAL OR CIVIL DRAWINGS BY OTHER DESIGN PROFESSIONALS FOR DIMENSIONS AND FOR ESTIMATING DISTANCES. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS RELATING TO THE JOB WHETHER OR NOT INDICATED ON THESE DRAWINGS.

D. ANY SCALE, DIMENSION OR QUANTITIES SHOWN ON THE DRAWINGS ARE FOR ENGINEERING CALCULATION PURPOSES ONLY. DESIGN IS DIAGRAMMATIC IN NATURE AND IS PROVIDED TO CONVEY DESIGN INTENT ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE SITE CONDITIONS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ESTIMATING AND DETERMINING ALL DISTANCES AND QUANTITIES RELATED TO THE PROJECT. REFER TO ALL DRAWINGS BY OTHERS AND VERIFY EXISTING CONDITIONS ON SITE PRIOR TO BID FOR ALL ESTIMATING PURPOSES.

E. COORDINATE WITH OTHER TRADES FOR A COORDINATED INSTALLATION WITHIN THE AVAILABLE SPACE. WHERE CROWDED CONDITIONS EXIST, PREPARE COORDINATION DRAWINGS SHOWING ALL TRADE CONFLICTS AND SUBMIT TO ARCHITECT/ENGINEER FOR APPROVAL AND DIRECTION PRIOR TO ROUGH-IN AND/OR INSTALLATION. RELOCATION OF WORK MADE PRIOR TO ROUGH-IN SHALL BE DONE AT NO ADDITIONAL COST. PROVIDE OFFSETS AT CHANGES OF DIRECTION AND TO AVOID OBSTRUCTIONS AT NO ADDITIONAL COST TO OWNER.

F. ALL WORK SHALL BE PERFORMED BY PROPERLY LICENSED CONTRACTORS OR UNDER THEIR DIRECT SUPERVISION. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS OF UL, ASTM, CISPI, ETC. AND SHALL BEAR THE LABEL AS EVIDENCE THAT THE MATERIAL AND/OR EQUIPMENT MEETS THIS REQUIREMENT.

G. CONFIRM ACTUAL VOLTAGES, PHASE AND CHARACTERISTICS OF EQUIPMENT, FIXTURES AND APPARATUS FURNISHED BY CONTRACTOR, TENANT, OTHER TRADES, DIVISIONS AND/OR EXISTING. CONFIRM PRIOR TO ROUGH-IN. IF DISCREPANCIES ARE NOTED TO THE INSTRUCTIONS OF THESE PLANS AND SPECIFICATIONS, SUBMIT THE NOTED DISCREPANCIES TO THE ARCHITECT/ENGINEER FOR DIRECTION PRIOR TO PROCEEDING.

H. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS, RECOMMENDATIONS AND DETAILS UNLESS OTHERWISE NOTED IN THESE PLANS. IF DISCREPANCIES EXIST CONTACT THE ARCHITECT/ENGINEER PRIOR TO ORDERING EQUIPMENT AND ROUGH-IN.

I. CONTRACTOR TO ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICES ON ALL EQUIPMENT AND PROVIDE ALL NECESSARY ADJUSTMENTS FOR PROPER OPERATION.

J. SUBMIT MANUFACTURER'S LITERATURE (SHOP DRAWINGS) FOR MATERIALS AND EQUIPMENT. SUBMITTAL SHALL INCLUDE EQUIPMENT PERFORMANCE DATA AT ELEVATION AND/OR LOCAL CONDITIONS. EQUIPMENT CUTSHEETS OR CATALOG COPIES ARE NOT ACCEPTABLE. SUBMITTAL SHALL BEAR THE APPROVAL OF THE GENERAL CONTRACTOR FOR COMPLIANCE WITH COORDINATION AND THESE SPECIFICATIONS PRIOR TO SUBMITTAL TO ARCHITECT AND/OR THEIR AGENCIES. ANY SUBSTITUTED EQUIPMENT FROM SCHEDULED SHALL BE EQUAL TO THAT SCHEDULED IN CONTROLS, ACCESSORIES, AND PERFORMANCE REGARDLESS OF MANUFACTURER. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE SUBSTITUTED EQUIPMENT REALIZED BY OTHER CONTRACTORS OR THE DESIGN TEAM.

K. AT TIME OF BID THE CONTRACTORS SHALL ENSURE THE SITE TO BUILDING UTILITY CONNECTIONS ARE INCLUDED. CONTRACTORS TO COORDINATE INVERT AND SIZING OF ALL PLUMBING LEAVING OR ENTERING THE BUILDING. CONTRACTORS SHALL CONTACT DESIGN TEAM DURING THE BID PROCESS IF THERE IS A DISCREPANCY BETWEEN THE CIVIL DOCUMENTS AND THE PLUMBING DOCUMENTS. COORDINATE WITH SITE CONTRACTOR TO BRING ALL UNDERGROUND PLUMBING TO A MINIMUM OF 5' OFF OF BUILDING FOUNDATION UNLESS NOTED OTHERWISE.

L. IT IS THE CONTRACTOR’S RESPONSIBILITY TO PROVIDE ALL NEW EQUIPMENT, FIXTURES AND DEVICES IN A LIKE NEW STATE AT TIME OF PROJECT CLOSEOUT. PROTECT EQUIPMENT, FIXTURES AND DEVICES AS REQUIRED AGAINST PHYSICAL DAMAGE, DEBRIS, RAIN, SNOW, WIND, DIRT, SUN FADING, RUST, CORROSION OR ANY OTHER DEGRADATION. CONTRACTOR TO REPAIR OR REPLACE ANY EQUIPMENT OR DEVICES AS REQUIRED.

02. BASIC MATERIALS

A. PROVIDE PLUMBING SYSTEM CONTROLS, CONTROLLERS, CONTROL TRANSFORMER, DISCONNECTS, STARTERS, CONTROL WIRING, ASSOCIATED CONTROL POWER WIRING, AND ALL WORK NECESSARY FOR A COMPLETE AND OPERATIONAL PLUMBING SYSTEM. CONTRACTOR IS REQUIRED TO COORDINATE WITH OTHER TRADES OR RETAIN SUB-CONTRACTORS AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM PRIOR TO BID.

B. PROVIDE SUPPLEMENTAL STEEL AND SUPPORTS AS REQUIRED FOR INSTALLATION OF PLUMBING MATERIALS, EQUIPMENT, AND APPARATUS.

PROVIDE VIBRATION ISOLATION AND FLEXIBLE CONNECTIONS ON ALL EQUIPMENT WITH ROTATING OR OSCILLATING COMPONENTS AND PUMPS OVER 1 HORSEPOWER.

C. ALL WORK IN FINISHED AREAS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED AS EXPOSED ON THE PLANS. PRIOR TO THE INSTALLATION OF ANY EXPOSED WORK THE CONTRACTOR SHALL VERIFY AND OBTAIN ARCHITECTURAL APPROVAL OF LOCATION, ELEVATION, EXTENT, MATERIAL, AND FINISH.

D. UNLESS NOTED ELSEWHERE ON PLAN, PROVIDE ASSE 1003 PRESSURE REDUCING VALVE ASSEMBLY AT BUILDING WATER SERVICE ENTRY. OUTLET PRESSURE TO BE SET TO MAINTAIN A MAXIMUM STATIC PRESSURE OF 80 PSI AT ANY FIXTURE.

E. PROVIDE DRAINAGE SYSTEM CLEANOUTS AS REQUIRED BY LOCAL CODES.

F. PROVIDE QUARTER TURN BRANCH AND ZONE SHUT-OFF VALVES ON ALL WATER LINES EXTENDING FROM MAINS.

G. THE CONTRACTOR SHALL LOCATE AND FURNISH FOR INSTALLATION BY OTHERS, ALL ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES, ACTUATORS, MOTORS, DEVICES, ETC AND THE PROPER SERVICING OF EQUIPMENT INSTALLED UNDER THIS CONTRACT. AT TIME OF BID THE CONTRACTOR AND GC SHALL COORDINATE TO ENSURE THAT ALL ACCESS PANELS (INCLUDING FIRE AND/OR SMOKE RATED MODELS) ARE INCLUDED.

H. PROVIDE SEISMIC AND/OR WIND LOADING SECUREMENT DETAILS AS REQUIRED BY THE LOCAL JURISDICTION. THE CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT SUPPLIER(S) TO OBTAIN THE DRAWINGS AND INSTALL THE SYSTEM AS REQUIRED BY THE MANUFACTURER. CONTRACTOR TO SELECT ATTACHMENT AND MOUNTING SYSTEM(S) BASED ON ATTACHING TO THE DESIGNED SUBSTRATE AND STRUCTURE WITHOUT REQUIRING ADDITIONAL REINFORCEMENT BY OTHERS. IF ANY SUBSTRATE AND/OR STRUCTURE IS REQUIRED FOR PROPER REINFORCEMENT, CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR ALL POTENTIAL REQUIREMENTS PRIOR TO BID.

I. FIRE STOP ALL PIPING AND WIRING MATERIALS PASSING THROUGH RATED STRUCTURES OR ASSEMBLIES USING U.L. LISTED PRODUCTS FOR ALL APPLICABLE PENETRATIONS IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

J. FIELD LABEL ALL PLUMBING EQUIPMENT AND PIPING AS INDICATED ON THE PLANS PER PLUMBING AND LOCAL CODE REQUIREMENTS. INDICATE DIRECTION OF FLOW ON PIPING.

K. TAG ALL ZONE VALVES WITH CONSECUTIVE NUMBERING ON PERMANENT HARD PLASTIC OR METAL TAB AND PROVIDE SCHEDULE LISTING ITEMS, AREA SERVED, SIZE AND VALVE TYPE. SUBMIT FINAL VALVE SCHEDULE FOR REVIEW.

L. ALL PROVIDED MATERIALS LOCATED IN A RETURN AIR PLENUM SHALL HAVE A FLAME SPREAD OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS AS DETERMINED BY AN INDEPENDENT TESTING LAB. CONTRACTOR SHALL COORDINATE AT TIME OF BID WITH OTHER TRADES.

M. UTILIZE AN INDEPENDENT BALANCER WITH NEBB AND/OR AABC CERTIFICATION. RECIRCULATING PLUMBING SYSTEM SHALL BE BALANCED TO 10% DISCREPANCY OF THE GPM INDICATED ON THE PLANS. IF THERE IS A DISCREPANCY GREATER THAN 10%, BALANCE CONTRACTOR SHALL CONTACT ENGINEER. A BALANCING METHOD MUST BE PROVIDED FOR ALL CIRCULATING SYSTEMS. PROVIDE A FINAL COPY OF THE BALANCE REPORT TO THE ENGINEER OF RECORD UPON COMPLETION OF THE PLUMBING SYSTEMS. RESIDENTIAL UNITS SHALL BE PROVIDED WITH A PROJECT SPECIFIC BALANCING PLAN AS REQUIRED BY THE RESPECTIVE ENERGY PROGRAM AND AHJ.

03. PIPING

A. SANITARY AND VENT PIPING ABOVE AND BELOW GRADE SOLID CORE (NO CELL CORE) PVC: SCHEDULE 40 PIPE (140F MAX) AND SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1784, ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED PVC DWV FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED PVC DWV FITTINGS SHALL CONFORM TO ASTM F 1866. PIPE AND FITTINGS SHALL BE MANUFACTURED AS A SYSTEM AND BE THE PRODUCT OF ONE MANUFACTURER. ALL PIPE AND FITTINGS SHALL BE MANUFACTURED IN THE UNITED STATES. ALL SYSTEMS SHALL UTILIZE A SEPARATE WASTE AND VENT SYSTEM. PIPE AND FITTINGS SHALL CONFORM TO NSF INTERNATIONAL STANDARD 14. INSTALLATION SHALL COMPLY WITH THE LATEST INSTALLATION INSTRUCTIONS PUBLISHED BY MANUFACTURER AND SHALL CONFORM TO ALL APPLICABLE PLUMBING, BUILDING, AND FIRE CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D 2321 AND ASTM F 1668. SOLVENT CEMENT JOINTS SHALL BE MADE IN A TWO STEP PROCESS WITH COLORED PRIMER CONFORMING TO ASTM F 656 AND SOLVENT CEMENT CONFORMING TO ASTM D 2564. THE SYSTEM SHALL BE PROTECTED FROM CHEMICAL AGENTS, FIRE STOPPING MATERIALS, THREAD SEALANT, PLASTICIZED VINYL PRODUCTS, OR OTHER AGGRESSIVE CHEMICAL AGENTS NOT COMPATIBLE WITH PVC COMPOUNDS. SYSTEMS SHALL BE HYDROSTATICALLY TESTED AFTER INSTALLATION.

B. DOMESTIC WATER PIPING (WATER ENTRY, MECH ROOMS) ABOVE GRADE SHALL BE ASTM B 88, TYPE L COPPER WITH WROUGHT OR FORGED FITTINGS AND LEAD FREE SOLDERED OR MECHANICALLY PRESSED-CONNECTED JOINT PRO PRESS OR EQUAL.

C. DOMESTIC WATER PIPING (MAINS, DISTRIBUTION) ABOVE/BELOW GRADE: SOLVENT SOCKET WELDED CPVC PIPE MEETING ASTM D2846 W/ CELL CLASS 24448 PER ASTM D1784 FOR FLOWGUARD GOLD CTS (1/2” THRU 2”) PIPE UTILIZING A 1-STEP SOLVENT CEMENT CONFORMING TO ASTM F493. IF THE AHJ REQUIRES PRIMER, THEN A PRIMER CONFORMING TO ASTM F656 SHOULD BE USED. CONTRACTOR SHALL HAVE ALL INSTALLERS BE BONDED QUALIFIED TO ASME B 31.3. CORZAN CPVC SCHEDULE 80 PIPE W/ CELL CLASS 24448 UP TO 6” AND 23447 8” AND G. ALL PRIMERS AND CEMENTS SHALL BE LISTED WITH NSF FOR POTABLE WATER.

a. REVIEW ALL ANCILLARY PRODUCT (CAULK, FIRE SEALANT, COATED HANGERS, ETC…) WITH THE LUBRIZOL SYSTEM COMPATIBLE PROGRAM AND/OR RECEIVE WRITTEN DOCUMENTATION FROM ANCILLARY PRODUCT MANUFACTURER SHOWING “COMPATIBILITY” WITH CPVC.
b. CONTRACTOR SHALL SUBMIT PROOF OF TRAINING BY CPVC MANUFACTURER WITHIN LAST 2-YEARS OF START OF THIS PROJECT FOR “RECOMMENDED INSTALLATION PRACTICES”.

A. CONDENSATE DRAIN PIPING SHALL BE TYPE M COPPER WITH SOLDERED JOINTS, OR CPVC IF ALLOWED BY LOCAL AUTHORITY HAVING JURISDICTION.

B. GAS PIPING USED FOR THE INSTALLATION, EXTENSION, ALTERATION, AND/OR REPAIR OF ANY GAS PIPING SYSTEM SHALL BE BLACK STEEL PIPE ASTM A53 ERW (TYPE E) GRADE B, OR FURNACE-WELDED (TYPE F) GRADE A, STANDARD WALL, SCHEDULE 40. ALL A53 PIPING SHALL BE THIRD PARTY TESTED TO MEET THE CODE AND EACH LENGTH SHALL BE STENCILED WITH MFG., LENGTH, ASTM 53 & PIPE TYPE.

C. GAS PIPING 3 INCHES AND LARGER SHALL BE SCHEDULE 40 STEEL WITH WELDED JOINTS. GAS PIPING 2-1/2 INCHES AND SMALLER SHALL BE SCHEDULE 40 STEEL. MALLEABLE THREADED FITTINGS OR MECHANICALLY PRESS-CONNECTED (MEGA PRESS) MEETING ASTM A53.

D. GAS PIPING BELOW GRADE SHALL BE SCHEDULE 40 STEEL, AND WRAPPED WITH PROTECTIVE PIPE COVERING AND VENTED IN ACCORDANCE WITH LOCAL JURISDICTIONS HAVING AUTHORITY.

E. SEMI RIGID FLEXIBLE GAS PIPING BY TRACPIPE MAY BE USED IF APPROVED BY LOCAL JURISDICTIONS. SYSTEM RESIZING FOR CSST SUBSTITUTIONS IS THE PC'S RESPONSIBILITY.

F. PROVIDE EXPANSION LOOPS, SWING JOINTS, OR MECHANICAL EXPANSION COMPENSATING DEVICES AS REQUIRED TO ACCOUNT FOR THERMAL EXPANSION OF ALL PIPING SYSTEMS. EXPANSION SYSTEM SIZING SHALL BE IN ACCORDANCE WITH MATERIALS DATA SHEETS AND MANUFACTURER RECOMMENDATIONS.

G. ANY PIPING SYSTEM LOCATED IN A RETURN AIR PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NO MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.

H. FIRE STOP ALL PIPING MATERIALS PASSING THROUGH FIRE RATED STRUCTURES OR FIRE RATED ASSEMBLIES IN ACCORDANCE WITH THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. USE CURRENTLY LISTED U.L. CLASSIFIED PRODUCTS, TESTED BY ASTM E814. USE FOR ALL APPLICABLE PIPE PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS, OR FLOOR CEILING ASSEMBLIES IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

04. INSULATION

A. PIPING INSULATION TO BE INSTALLED AS PER BELOW. WHEN CONFLICTING INSULATION REQUIREMENTS ARE LISTED, THE MORE STRINGENT SHALL BE USED.

B. INSULATION SHALL BE INSTALLED PER IECC SECTION & TABLE C403 MINIMUM PIPE INSULATION THICKNESS AND TABLE C404 PIPING VOLUME AND MAXIMUM PIPING LENGTHS. HOT & RETURN WATER PIPING (105°-140°) 1-1/4" AND SMALLER SHALL HAVE 1" FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET, 1-1/2" AND LARGER SHALL HAVE 1-1/2" FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET (K-VALUE OF 0.21-0.28). 141°-200° 1 1/4" AND SMALLER SHALL HAVE 1 1/2" FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET, 1-1/2" AND LARGER SHALL HAVE 2" FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET (K-VALUES OF 0.25-0.29). EXCEPTION: PIPING SURROUNDED BY BUILDING INSULATION WITH A THERMAL RESISTANCE OF NOT LESS THAN R-3.

C. DOMESTIC COLD & HOT WATER PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING ATTICS, COVERED PARKING AND CRAWL SPACES SHALL BE INSULATED WITH MINIMUM 2-INCH FIBERGLASS INSULATION.

D. SANITARY, DOMESTIC COLD, AND HOT WATER PIPING IN AN EXTERIOR WALL, CEILING, OR FLOOR THAT IS ADJACENT TO AN UNCONDITIONED SPACE SHALL BE INSTALLED TO THE WARM SIDE OF THE BUILDING INSULATION

E. IN COLD ENVIRONMENTS (99% WINTER DESIGN DB <34F):

1. HORIZONTAL SANITARY AND STORM PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING COVERED PARKING AND CRAWL SPACES SHALL BE HEAT-TRACED AND INSULATED WITH 1-INCH FIBERGLASS INSULATION.

2. VERTICAL SANITARY AND STORM PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING EXTERIOR WALLS, COVERED PARKING AND CRAWL SPACES SHALL BE INSULATED WITH 1-INCH FIBERGLASS INSULATION.

3. DOMESTIC COLD & HOT WATER PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING ATTICS, COVERED PARKING AND CRAWL SPACES SHALL BE HEAT-TRACED AND INSULATED WITH MINIMUM 2-INCH FIBERGLASS INSULATION.

4. PROVIDE MINIMUM 1-INCH THICK INSULATION ON DOMESTIC WATER LINES IN AN EXTERIOR WALL, CEILING, OR FLOOR THAT IS ADJACENT TO AN UNCONDITIONED SPACE.

05. PLUMBING FIXTURE

A. FURNISH AND INSTALL PLUMBING FIXTURES AS SCHEDULED ON THE PLANS.

B. PROVIDE CHROME PLATED ANGLE STOPS AND ESCUTCHEON PLATES ON ALL EXPOSED FIXTURE RUNOUTS

C. PROVIDE INSULATION AND ROUGH IN AS REQUIRED FOR COMPLIANCE WITH ADA REQUIREMENTS.

D. PROVIDE ALL ACCESSORIES AND SPECIALTY ITEMS AS REQUIRED FOR A COMPLETE FIXTURE INSTALLATION.

06. REDUCED PRESSURE BACKFLOW PREVENTER

A. FURNISH AND INSTALL REDUCED PRESSURE BACKFLOW PREVENTER FOR THE PRIMARY DOMESTIC COLD WATER SERVICE IN ACCORDANCE WITH STATE, LOCAL, AND JURISDICTIONAL WATER DISTRICT REQUIREMENTS.

B. FURNISH AND INSTALL REDUCED PRESSURE BACKFLOW PREVENTER FOR MECHANICAL EQUIPMENT REQUIRED OF THIS OR OTHER SECTIONS OF THESE SPECIFICATIONS.

07. ELECTRIC WATER HEATERS

A. FURNISH AND INSTALL A GLASS LINED ELECTRIC WATER HEATER AS SCHEDULED ON THE PLANS.

a. FURNISH HEATER WHICH ARE UL LABELED AND MEET THE REQUIREMENTS OF LOCAL MUNICIPALITIES.

b. WATER HEATER LOCATED IN CEILING SHALL BE PROVIDED WITH 2 1/2" DRAIN PAN. TERMINATE DRAIN TO NEAREST FLOOR DRAIN, FLOOR SINK OR LAV TRAP.

B. MINIMUM 2FT OF DOMESTIC WATER PIPE SHALL BE COPPER OFF ALL WATER CONNECTIONS TO WATER HEATER. REFER TO SHEET SPEC SECTION 3 PIPING TO VERIFY MATERIALS ACCEPTABLE IN MECHANICAL/WATER ENTRY ROOM.

08. CIRCULATING PUMP

A. FURNISH AND INSTALL A NSF RATED DOMESTIC HOT WATER RETURN CIRCULATOR AS SCHEDULED ON THE PLANS. PROVIDE RETURN LINE AQUASTAT AND WIRE COMPLETE TO CYCLE CIRCULATOR TO PROVIDE 120 OR 140 DEGREES RETURN WATER TEMPERATURE (ADJUSTABLE).

09. CONDENSATE PUMP

A. FURNISH AND INSTALL A SELF CONTAINED CONDENSATE PUMP WHERE INDICATED ON THE PLANS

B. PUMP SHALL BE CAPABLE OF LIFTING CONDENSATE FROM EQUIPMENT INDICATED ON PLANS FOR PIPED DISPOSAL TO AVAILABLE DRAIN LOCATION.

C. PROVIDE HIGH WATER ALARM.

PLUMBING LEGEND

BC	BICARB
CT	CONCENTRATE
CND	CONDENSATE
DCW	DOMESTIC COLD WATER
120°	DOMESTIC HOT WATER
120°R	DOMESTIC HOT WATER RECIRC
GW	GREASE WASTE
MCA	MEDICAL COMPRESSED AIR
G	GAS
O2	OXYGEN
RO	REVERSE OSMOSIS
RD	ROOF DRAIN
ORD	OVERFLOW ROOF DRAIN
SOI	SAND OIL
SS	SANITARY SEWER
V	VENT
SCA	SCAVENGER AIR
VAC	VACUUM SUCTION
(A)XX	TYPICAL PIPE ABOVE/ON ROOF
(B)XX	TYPICAL PIPE BELOW/UNDERGROUND
(E)XX	TYPICAL PIPE EXISTING

VALVES

- BALL VALVE
- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- PRESSURE REDUCING VALVE (PRV)
- MEASURE FLOW
- TEE UP
- TEE DOWN
- ELBOW UP
- ELBOW DOWN

MISC.

- POINT OF CONNECTION (POC)

FIXTURES

- WALL CLEAN OUT
- FLOOR CLEANOUT
- AREA DRAIN
- FLOOR DRAIN
- FLOOR SINK FULL COVER
- FLOOR SINK 3/4 COVER
- FLOOR SINK 1/2 COVER
- GAS METER
- HOSE BIB
- BATH TUB/SHOWER/MOP SINK
- SINK/LAV
- 2-COMPARTMENT SINK
- DRINKING FOUNTAIN/URINAL
- WASHER BOX
- ICE BOX
- WATER CLOSET STACK
- WATER CLOSET

GENERAL NOTES:

1. ALL ITEMS CONNECTING TO POTABLE WATER SHALL MEET THE LEAD FREE STANDARD OF .25% OR LESS LEAD.
2. PLUMBING PLANS REFERENCE FINISHED FLOOR TO FINISHED FLOOR ABOVE. SANITARY SHOWN IS FOR FIXTURES ABOVE UNLESS NOTED OTHERWISE.
3. FIELD VERIFY ALL ROUTING OF PLUMBING LINES WITH OTHER TRADES. FIELD ADJUST ROUTING ACCORDINGLY TO MAKE SYSTEM WORK WITH OTHER TRADES.
4. PROVIDE ASSE1070 MIXING VALVE AT ALL PUBLIC FIXTURES AS REQUIRED PER LOCAL CODE.
5. PC TO PROVIDE VACUUM BREAKERS AT LOCATIONS WHERE HOSES AND NOZZLES ARE USE, I.E. JANITOR SINKS, BEAUTY SINKS, KITCHEN SPRAYERS, DISHWASHERS, AND BATHS. INSTALL CHECK VALVES ON BOTH COLD AND HOT WATER LINES TO FIXTURE.
6. ALL DRAINAGE LINES 2-1/2" AND UNDER TO BE SLOPED AT 1/4" PER FOOT, 3"-6" TO BE SLOPED AT 1/8" PER FOOT, AND 8" AND OVER TO BE SLOPED AT 1/16" PER FOOT UNLESS NOTED OTHERWISE. GREASE WASTE SHALL BE SLOPED AT 1/4" ONLY PER CODE.
7. START TRENCHING FOR NEW SANITARY LINE AT FURTHEST FIXTURE (HIGHEST POINT IN SYSTEM) FROM CIVIL CONNECTION POINT TO BUILDING.
8. FIELD ROUTE ALL CONDENSATE LINES, T&P VALVES, AND DRAIN VALVES FROM MECHANICAL AND PLUMBING EQUIPMENT TO SANITARY SEWER RECEPTOR OR STORM/GRADE PER LOCAL CODE AND JURISDICTION.
9. REFER TO ARCHITECTURAL DRAWINGS FOR FINAL HEIGHTS AND/OR LOCATIONS OF SHOWER FIXTURES.
10. WATER CLOSETS ON BEAMS OR COLUMNS TO BE OFFSET 18" OFF FINISHED WALL.
11. PEX PIPING IS AN APPROVED PIPING MATERIAL FOR DISTRIBUTION TO ALL FIXTURES OFF WATER MAINS.
12. DO NOT SECURE ANY PIPING TO EXPANSION JOINT WALLS.
13. ENSURE THAT THE DOMESTIC HOT WATER PIPING AND COIL SERVING THE POOL AIR HANDLER REHEAT ARE OPEN DURING PIPING SYSTEM CHLORINATION BY KILLING THE POWER TO THE VALVE DURING THE FLUSHING (IT WILL SPRING OPEN).
14. MC TO FURNISH AND INSTALL REFRIGERANT LINES BETWEEN ICE MACHINES AND THEIR RESPECTIVE REMOTE CONDENSING UNITS.

ABBREVIATIONS

(D)	DEMO
(E)	EXISTING
(F)	FUTURE
(N)	NEW
AAV	AIR ADMITTANCE VALVE
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
B	BOILER
BB	BASEBOARD
BF	BOOSTER FAN
BFP	BACKFLOW PREVENTER
BT	BATH TUB
BV	BALL VALVE
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CS	CLINICAL SINK
CU	CONDENSING UNIT
CV	CHECK VALVE
CUH	CABINET UNIT HEATER
DCW	DOMESTIC COLD WATER
DF	DRINKING FOUNTAIN
DHW	DOMESTIC HOT WATER
DSN	DOWN SPOUT NOZZLE
EVC	EVAPORATIVE COOLER
EC	ELECTRICAL CONTRACTOR
ECO	END OF LINE CLEANOUT
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
ERU	ENERGY RECOVERY UNIT
ER	EXISTING REMOVED
ERR	EXISTING REMOVED & RELOCATED
EW	EMERGENCY EYEWASH
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
F	FURNACE
FCO	FLOOR/GRADE CLEANOUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FS	FLOOR SINK
G	GAS
GC	GENERAL CONTRACTOR
GM	GAS METER
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GAS REGULATOR
GUH	GAS UNIT HEATER
GW	GREASE WASTE
GWH	GAS WATER HEATER
HB	HOSE BIB
HP	HEAT PUMP
HX	HEAT EXCHANGER
IM	ICE MAKER BOX
LAV	LAVATORY
LS	LAUNDRY SINK
MAU	MAKE-UP AIR UNIT
MC	MECHANICAL CONTRACTOR
MF	MEASURE FLOW
NIC	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
ORD	OVER FLOW ROOF DRAIN
P	PUMP
PC	PLUMBING CONTRACTOR
PFT	PARALLEL FAN TERMINAL
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	PRESSURE GAUGE
PV	PLUG VALVE
RA	RETURN AIR
RAR	RETURN AIR REGISTER
RD	ROOF DRAIN
RE	RELOCATE EXISTING
RH	RADIANT HEATER
RTU	ROOF TOP UNIT
RVM	RADON/VAPOR MITIGATION
SA	SUPPLY AIR
SAR	SUPPLY AIR REGISTER
SF	SUPPLY FAN
SFT	SERIES FAN TERMINAL
SH	SHOWER
SK	SINK
SOI	SAND/OIL INTERCEPTOR
SS	SERVICE SINK
T&P	TEMPERATURE & PRESSURE
TD	TRENCH DRAIN
TYP	TYPICAL
UR	URINAL
VAV	VARIABLE AIR VOLUME
VVT	VARI TRAC
WB	WASHER BOX
WC	WATER CLOSET/WATER COLUMN
WCO	WALL CLEANOUT COLUMN
WH	WALL HYDRANT

CODE & DESIGN CRITERIA

JURSIDICTION:	CASTLE ROCK, COLORADO
PLUMBING CODE(S):	2018 IPC, IFGC, IECC
LOCAL ADDENDUMS:	NO
WATER PRESSURE:	80 PSI STATIC - WELL PUMP
GAS PRESSURE:	LESS THAN 2 PSI
PEAK RAINFALL RATE:	3" PER HOUR
S-O-I DISCHARGE TO:	N/A
ELEVATOR PUMP REQUIRED:	N/A
CONDENSATE DISCHARGE:	SANITARY
FULLY SPRINKLERED:	YES
NUMBER OF FLOORS:	1

PLUMBING SHEET LIST

NUMBER	TITLE
P0.01	PLUMBING SPECS & LEGENDS
P0.02	PLUMBING SCHEDULES
P1.01	FLOOR PLAN - PLUMBING DEMO
P2.00	UNDERGROUND PLAN - PLUMBING
P2.01	FLOOR PLAN - PLUMBING
P2.02	ROOF PLAN - PLUMBING
P5.01	WASTE & VENT ISOMETRIC
P5.05	PLUMBING DIAGRAMS
SHEET TOTAL: 8	

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BIBLE CHURCH

Job No: 24010

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No.	Date	Description
	11/18/2024	Permit Issue Set

Date
11-18-2024

Drawn by
Checked by

Title
PLUMBING SPECS & LEGENDS

P0.01

PLUMBING FIXTURE SCHEDULE

NOTES:

1. FIXTURES REQUIRING WATER SENSE LISTING PER JURISDICTION: TANK TYPE WATER CLOSETS, PRIVE USE LAVATORY FAUCETS, SHOWER HEADS INCLUDING HAND HELD, AND URINALS.
2. ALL PUBLIC LAVATORIES TO HAVE OPEN GRID STRAINERS AND BE PROVIDED WITH ASSE1070 MIXING VALVE., PRIVATE LAVATORIES TO HAVE POP-UP STRAINERS.
3. ALL FIXTURES TO BE PROVIDED W/ FLEXIBLE WATER LINES, 1/4 TURN ANGLE STOPS (INCLUDING DISHWASHER CONNECTIONS), TRAP WRAP, ESCUTCHEON PLATES AS REQUIRED PER FIXTURE INSTALL AND CODE.
4. ALL INSTALLATIONS SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS, AND STATE AND LOCAL CODES.
5. PROVIDE BACKFLOW PROTECTION ON FIXTURES AS REQUIRED PER LOCAL CODE.
6. TRIP LEVERS SHALL BE TO WIDE/OPEN SIDE OF TOILET.
7. GOOSE NECK FAUCETS TO BE PROVIDE WITH SPOUT SWIVEL RESTRICTION SETTING OR SHALL BE SET STATIONARY WITHOUT SWIVEL.
8. PROVIDE TRIM KIT ON OPEN SHOWER FLANGE OR EXTEND FINISHING DRYWALL OVER FLANGE AS REQUIRED AT RATED WALLS.
9. ANY FIXTURES WITH POTENTIAL OF WATER SYSTEMS CROSSING DUE TO FAUCET REMAINING OPEN WHEN NOT IN USE SHALL BE PROVIDED WITH INLINE CHECK VALVES ON SUPPLY LINES.

ALTERNATE MFR'S.: ACORN, AMERICAN STANDARD, CRANE, DELTA, ELKAY, HAWS, HALSEY TAYLOR, J.R.SMITH, KOHLER, LASCO, MOEN, SIOUX CHIEF, STING RAY, SYMMONS, TOTO, WADE, ZURN.

			CONNECTION SIZE (IN)				FIXTURE									
PLAN MARK	ADA	DESCRIPTION	DCW	DHW	WASTE	VENT	MANUFACTURER	MODEL NAME	MODEL #	FLOW RATE	DIMENSIONS (IN)	MOUNTING	RIM HEIGHT (IN)	FINISH	MISC	REMARKS
EWC-1	YES	ELECTRIC WATER COOLER	1/2"	-	1-1/2"	1-1/2"	ELKAY	EZH2O	LZSTL8WSSP		36-3/4"x19"x39-1/2"	WALL		STAINLESS STEEL	120V/1 POWER, 370 WATTS, 5 AMPS, ELECTRONIC BOTTLE FILLER, FRONT & SIDE PUSHPARS, VISUAL FILTER MONTIOR	
		WALL HANGER					ZURN		Z1225			FLOOR		DURA-COATED STEEL	TOP & BOTTOM PLATES, WELDED STEEL UPRIGHTS & FEET, ADJUSTABLE SUPPORT PLATES, MOUNTING FASTYENERS	
FD-1	NO	FLOOR DRAIN			2"	2"	ZURN		ZN415B-VP		5" DIA. STRAINER	FLOOR		NICKEL BRONZE	DURA COATED CAST IRON BODY, VANDAL-PROOF SECURED TOP, PROVIDE WITH TRAP GUARD	
FS-1	NO	FLOOR SINK			2"	2"	ZURN		ZN-1901-2-VPS		12"X12"x11-1/8"	FLOOR		NICKEL BRONZE	DURA COATED CAST IRON BODY, VANDAL-PROOF STRAINER, PROVIDE WITH TRAP GUARD	
LAV-1	YES	DROP-IN LAVATORY			2"	2"	AMERICAN STD	AQUALYN	0476.028		20-3/8"X17-3/8", 16"x10"x5-5/8" BOWL	DROP-IN		WHITE VITREOUS CHINA	3-HOLE, 4" CENTERS, FRONT OVERFLOW	
	YES	FAUCET	1/2"	1/2"			AMERICAN STD	INNSBROOK SELECTRONIC	6055.204	0.35 GPM	4-9/16" SPOUT	DECK		POLISHED CHROME	BATTERY POWERED IR SENSOR FAUCET, PROVIDE WITH LEONARD S-170A-LF MIXING VALVE	
LAV-2	YES	WALL MOUNT LAVATORY			2"	2"	AMERICAN STD	DECLYN	0321.075			WALL		WHITE VITREOUS CHINA	3-HOLE, 4" CENTERS, FRONT OVERFLOW	
	YES	FAUCET	1/2"	1/2"			AMERICAN STD	INNSBROOK SELECTRONIC	6055.204	0.35 GPM	4-9/16" SPOUT	DECK		POLISHED CHROME	BATTERY POWERED IR SENSOR FAUCET, PROVIDE WITH LEONARD S-170A-LF MIXING VALVE	
		WALL HANGER					ZURN		Z1231			FLOOR		DURA-COATED STEEL	CONCEALED ARMS SUPPORT SYSTEM, ADJUSTABLE HEADERS, MOUNTING FASTENERS	
MSB-1	NO	MOP SERVICE BASIN			3"	2"	FIAT	MOLDED STONE	MSBID2424		24"x10"x10"	FLOOR		WHITE	PROVIDE WITH 832AA HOSE & HOSE BRACKET, 889CC, MOP HANGER & MSG2424 STAINLESS STEEL WALL GUARD	
	NO	SINK FAUCET					FIAT		830-AA	2.2 GPM	8" CENTERS	WALL		POLISHED CHROME	VACUUM BREAKER, INTERGRAL STOPS, ASJUSTABLE WALL BRACE, PAIL HOOK	
SK-2	YES	1-COMPARTMENT SINK	-	-	1-1/2"	1-1/2"	ELKAY	CELEBRITY	BCR15		15"x15"c6-1/8", 12"x10"x6" BOWL	DROP-IN			2-FAUCET HOLE, 4" CENTERS, CENTER DRAIN, BOTTOM ONLY SOUND PADS	
	YES	SINK FAUCET	1/2"	1/2"			MOEN		4903 SERIES	1.5 GPM	10-1/2" GOOSENECK SPOUT	DECK		POLISHED CHROME	MINI BLADE HANDLES W/HOT & COLD INDICATORS	
WB-1	NO	SUPPLY WALL BOX	1/2"	-	-	-	SIOUX CHIEF	OX BOX	696-G1010CF		5-3/4"X7-1/4"X3-1/2"	WALL		WHITE FIRE-RATED ABS	1/4 TURN VALVE W/SHOCK ARRESTER	
WC-1	NO	WATER CLOSET	1/2"		3"	2"	AMERICAN STD	CADET 3	270CA.101	1.28 GPF	30-3/16"x15-13/16"x30-11/16", 12" ROUGH-IN	FLOOR	16-1/2"	WHITE VITREOUS CHINA	SIPHON JET FLUSH, CHROME TRIP LEVER	
		SEAT					AMERICAN STD		5901.100			BOWL		WHITE PLASTIC	ELONGATED OPEN FRONT SEAT LESS COVER	
WC-2	YES	WATER CLOSET	1/2"		3"	2"	AMERICAN STD	CADET 3	270AA.101	1.28 GPF	30-3/16"x15-13/16"x30-11/16", 12" ROUGH-IN	FLOOR	16-1/2"	WHITE VITREOUS CHINA	SIPHON JET FLUSH, CHROME TRIP LEVER	
		SEAT					AMERICAN STD		5901.100			BOWL		WHITE PLASTIC	ELONGATED OPEN FRONT SEAT LESS COVER	
WC-3	NO	CHILD HEIGHT WATER CLOSET	1/2"		3"	2"	AMERICAN STD	BABY DEVORO	2315.228	1.28 GPF	25"x17-1/4"x24-1/2", 10" ROUGH-IN	FLOOR	10-1/4"	WHITE VITREOUS CHINA	ROUND FRONT SIPHON ACTION, CHROME TRIP LEVER	
		SEAT					AMERICAN STD	BABY DEVORO	5001G.055			BOWL		WHITE PLASTIC	OPEN FRONT SEAT LESS COVER	
WH-1		WALL HYDRANT	3/4"	-	-	-	WOODFORD		B67		7-1/2"x6-1/2"x2-5/8" BOX, 10-1/2" SHANK	WALL		CHROME	VACUUM BREAKER, DUAL INDEPENDENT CHECK VALVES, LOOSE TEE KEY OPERATION	

PLUMBING PUMP SCHEDULE

REMARKS:

(1) 3-SPEED PUMP, SPEED SETTING 2, INTERLOCK WITH AQUASTAT, SET TO MAINTAIN 120F ADJ.
(2) CANNED ROTOR PUMP, CERAMIC SHAFT & BEARINGS, STAINLESS STEEL ROTOR CAN & BEARING PLATE, CORROSION RESISTANT IMPELLER, STAINLESS STEEL PUMP HOUSING.
(3) PROVIDE ALL VALVES REQUIRED PER LOCAL CODE ON PIPING.

						ELECTRICAL DATA					
PLAN MARK	MANUFACTURER	MODEL #	FLOW RATE (GPM)	DIFFERENTIAL PRESSURE (FTHD)	RPM	VOLTS	PHASE	HP	WATTS	OPERATING WEIGHT (LBS)	REMARKS
CP-1	GRUNDFOS	UPS 15-35 SFC	2	6	1750	120	1		84		1,2,3

ELECTRIC WATER HEATER SCHEDULE

REMARKS:

(1) PROVDE 2 1/2" DEEP DRAIN PAN. ROUTE 3/4"DRAIN TO FLOOR SINK.
(2) 3YR LIMITED TANK & PARTS WARRANTY. NO ANODE RODS, & HARD WATER/SCALE OR RUST IN SYSTEM SHALL NOT VOID WARRANTY.
(3) 1ST YR SHALL COVER ANY FREIGHT, PARTS, DIAGNOSTICS, AND LABOR WITH ANY WATER HEATER ISSUES, PROVIDED BY MANUFACTURER.
(4) STARTUPS TO BE PERFORMED BY FACTORY AUTHORIZED REPRESENTATIVE THEN SUBMITTED TO DESIGN ENGINEER FOR APPROVAL.
(5) SET WATER HEATER TO MAINTAIN SET POINT OF 120F (ADJUSTABLE).

						ELECTRICAL DATA					
PLAN MARK	MANUFACTURER	MODEL #	NOMINAL TANK VOLUME (GAL)	RECOVERY RATE (GPH)	TEMPERATURE RISE (°F)	VOLTS	PHASE	WATTS	FLA	OPERATING WEIGHT (LBS)	REMARKS
EWH-1	A.O. SMITH	DEL-30	33	23	80	208 V	3	4500	12.5	418	

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11/19/2024

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CREEKSIDE BIBLE CHURCH

Job No: 24010

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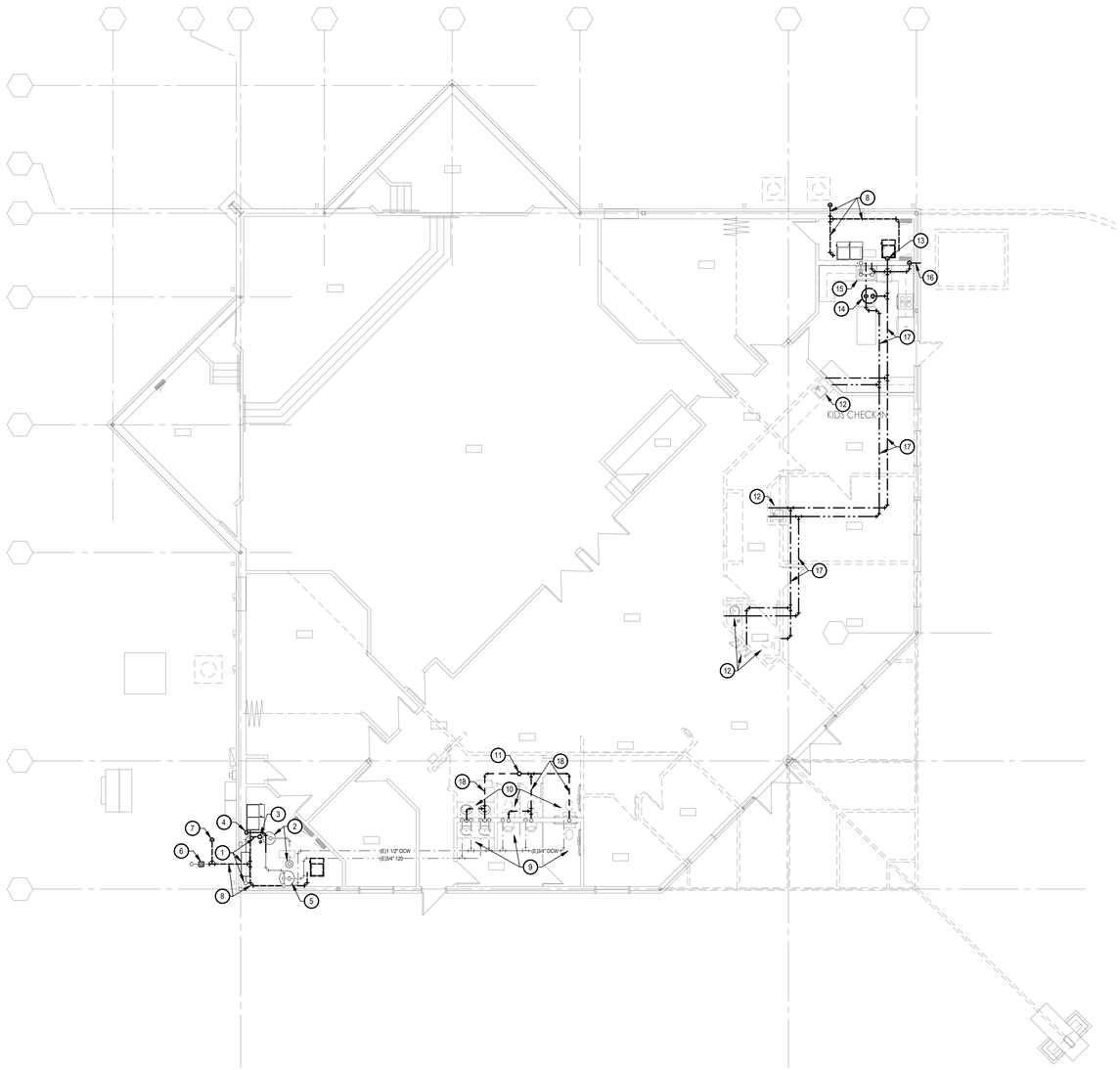
P0.02



NORTH

1 FLOOR PLAN - PLUMBING DEMO
1/8" = 1'-0"

DRAWING NOTES:

1. PLUMBING PLANS ARE BASED ON ORIGINAL BUILDING PLANS DATED 06/31/2002 & LIMITED SITE SURVEY CONDUCTED ON 11/20/2023. PC SHALL FIELD VERIFY ALL EXISTING CONDITIONS ON WHICH NEW WORK IS DEPENDENT INCLUDING PIPE SIZE, MATERIAL, LOCATION & ELEVATION/INVERT PRIOR TO STARTING WORK.
2. ALL EXISTING ROOF DRAINAGE PIPING SHALL REMAIN IN PLACE AND IN SERVICE FOR EXISTING BUILDING UNLESS OTHERWISE NOTED. ALL ROOF DRAINAGE FOR ADDITION TO BE HANDLED BY ARCHITECTURAL GUTTERS & DOWNSPOUTS. COORDINATE DOWNSPOUT CONNECTIONS WITH BELOW GRADE STORM PIPING. SEE CIVIL SHEET C6.0 FOR DOWNSPOUT CONNECTION LOCATIONS.
3. ALL SANITARY SEWER PIPING TO BE SLOPED TO COMPLY WITH IPC TABLE 704.1.
4. NATURAL GAS PIPING IS BASED ON 2018 IFGC TABLE 402.4(2), 6" W.C. OUTLET PRESSURE, 0.5" W.C. PRESSURE DROP, 400' TOTAL EQUIVALENT LENGTH OF PIPING.

KEY NOTES:

1. (E)2" DOMESTIC WATER ENTRY W/(E)WELL PUMP ASSEMBLY & (E)2"REDUCED PRESSURE BACKFLOW PREVENTER SHALL REMAIN IN SERVICE.
2. (E)WATER SOFTENER TANKS & CONTROLS SHALL REMAIN.
3. REMOVE (E)1-1/2"DCW PIPING FROM BACKFLOW TO WATER SOFTENER SYSTEM FOR REPLACEMENT. REMOVE (E)1-1/2"DCW PIPING FROM WATER SOFENER OUTLET TO POINTS SHOWN FOR REPLACEMENT. SEE NEW PLANS FOR ADDITIONAL INFORMATION.
4. REMOVE (E)1-1/4"DCW VALVED BRANCH PIPING ROUTING THRU SLAB IN THIS AREA. BELOW SLAB DCW PIPING SHALL BE DRAINED, CAPPED & ABANDONED IN PLACE.
5. (E)ELECTRIC WATER HEATER & ALL ASSOCIATED PIPING, VALVES & FITTINGS SHALL REMAIN, NO WORK.
6. (E)GAS METER ASSEMBLY SHALL REMAIN.
7. REMOVE (E)GAS BRANCH PIPING ROUTING DOWN THRU GRADE. BELOW GRADE GAS PIPING SHALL BE PURGED, CAPPED & ABANDONED IN PLACE.
8. REMOVE (E)GAS BRANCH PIPING INTO MECHANICAL ROOM SERVING (E)EQUIPMENT FOR REPLACEMENT. SEE NEW PLANS FOR ADDITIONAL INFORMATION.
9. (E)PLUMBING FIXTURES & ASSOCIATED DOMESTIC WATER, WASTE & VENT PIPING IN THIS AREA SHALL REMAIN. REMOVE (E)VENT PIPING ABOVE WALL LEVEL.
10. (E)PLUMBING FIXTURES IN THIS AREA SHALL BE REMOVED. ALL DOMESTIC WATER & WASTE STUBS TO FIXTURES IN WALL/FLOOR SHALL BE CAPPED & SEALED WATER TIGHT.
11. REMOVE (E)3"V UP THRU ROOF TO (D)3"VTR. ROOF REPAIR BY GC.
12. (E)PLUMBING FIXTURES & ASSOCIATED DOMESTIC WATER, WASTE & VENT PIPING IN THIS AREA SHALL BE REMOVED. CAP WASTE PIPING BELOW SLAB AT MAINS.
13. REMOVE (E)1-1/4"DCW VALVED BRANCH PIPING ROUTING UP THRU SLAB IN THIS AREA. BELOW SLAB DCW PIPING SHALL BE DRAINED, CAPPED & ABANDONED IN PLACE.
14. REMOVE (E)ELECTRIC WATER HEATER & ASSOCIATED VALVES, FITTINGS & PIPING ABOVE CEILING.
15. (E)SINK & ASSOCIATED WASTE & VENT PIPING SHALL REMAIN UP IN WALL/DN THRU SLAB.. REMOVE (E)DOMESTIC WATER BRANCH PIPING FOR REPLACEMENT.
16. REMOVE (E)WALL HYDRANT & ASSOCIATED PIPING.
17. REMOVE (E)DOMESTIC WATER PIPING ABOVE CEILING.
18. REMOVE (E)VENT PIPING ABOVE CEILING IN THIS AREA.

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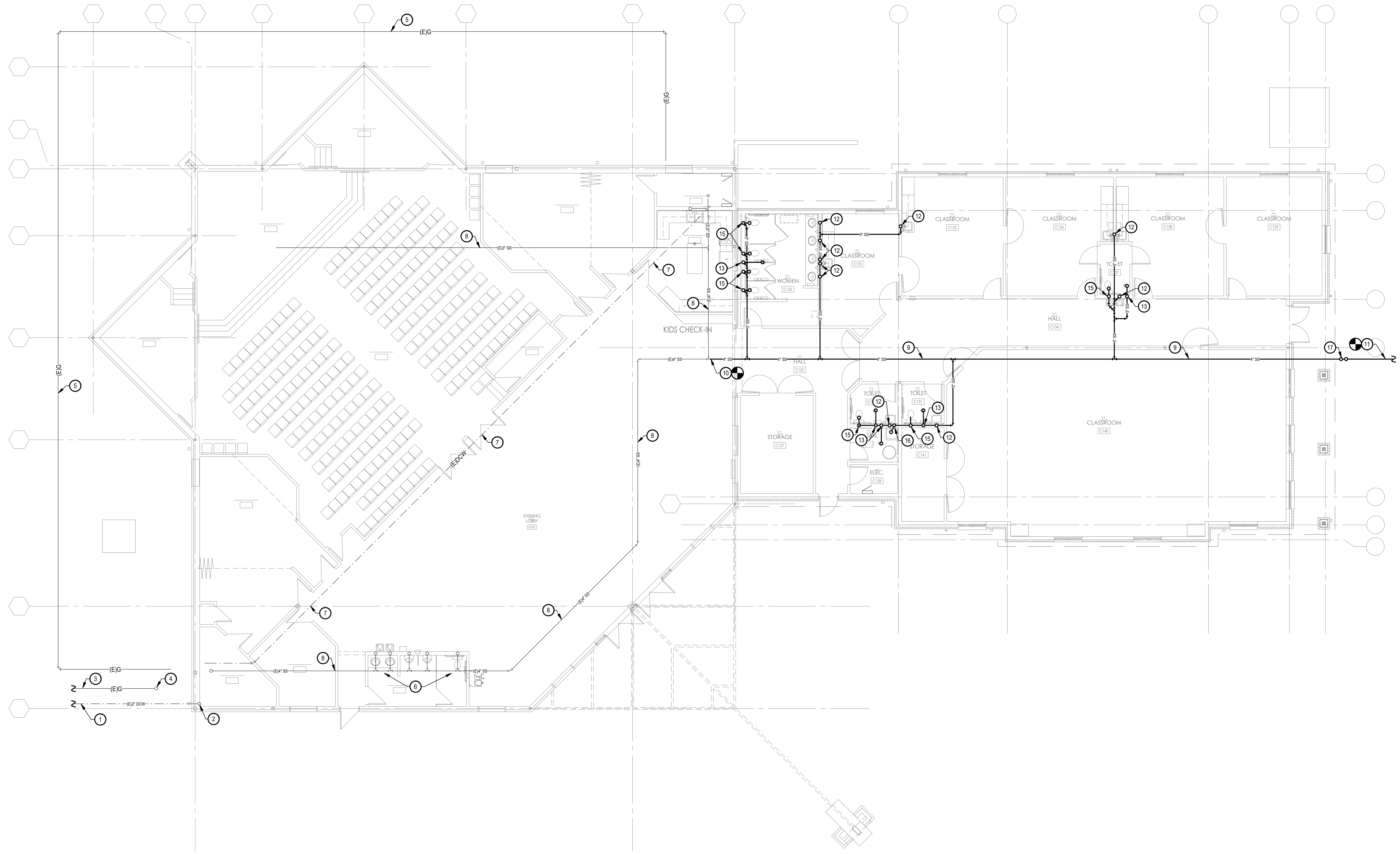
FLOOR PLAN - PLUMBING DEMO

P1.01



NORTH

1 UNDERGROUND PLAN - PLUMBING

1/8" = 1'-0"

DRAWING NOTES:

1. PLUMBING PLANS ARE BASED ON ORIGINAL BUILDING PLANS DATED 05/31/2002 & LIMITED SITE SURVEY CONDUCTED ON 11/20/2023. PC SHALL FIELD VERIFY ALL EXISTING CONDITIONS ON WHICH NEW WORK IS DEPENDENT INCLUDING PIPE SIZE, MATERIAL, LOCATION & ELEVATION/INVERT PRIOR TO STARTING WORK.
2. ALL EXISTING ROOF DRAINAGE PIPING SHALL REMAIN IN PLACE AND IN SERVICE FOR EXISTING BUILDING UNLESS OTHERWISE NOTED. ALL ROOF DRAINAGE FOR ADDITION TO BE HANDLED BY ARCHITECTURAL GUTTERS & DOWNSPOUTS. COORDINATE DOWNSPOUT CONNECTIONS WITH BELOW GRADE STORM PIPING. SEE CIVIL SHEET C6.0 FOR DOWNSPOUT CONNECTION LOCATIONS.
3. ALL SANITARY SEWER PIPING TO BE SLOPED TO COMPLY WITH IPC TABLE 704.1.
4. NATURAL GAS PIPING IS BASED ON 2018 IFGC TABLE 402.4(2), 6" W.C. OUTLET PRESSURE, 0.5" W.C. PRESSURE DROP, 400' TOTAL EQUIVALENT LENGTH OF PIPING.

KEY NOTES:

(1) (E)2" DOMESTIC WATER SERVICE FROM (E)WELL SHALL REMAIN.

(2) (E)2" DOMESTIC WATER SERVICE UP THRU SLAB SHALL REMAIN.

(3) (E)NATURAL GAS SERVICE BY BLACK HILLS ENERGY SHALL REMAIN.

(4) (E)NATURAL GAS PIPING UP THRU GRADE TO (E)GAS METER ASSEMBLY SHALL REMAIN.

(5) BELOW GRADE (E)GAS PIPING SHALL BE PURGED, CAPPED & ABANDONED IN PLACE.

(6) (E)SANITARY PIPING SERVING (E)PLUMBING FIXTURES IN THIS AREA SHALL REMAIN.

(7) (E)DOMESTIC WATER PIPING BELOW SLAB SHALL BE DRAINWESD, CAPPED & ABANDONED IN PLACE.

(8) (E)SANITARY PIPING BELOW SLAB IN THIS AREA SHALL REMAIN.

(9) REMOVE (E)SANITARY LINE IN THIS AREA & REPLACE W/(N)4"SS BELOW SLAB/GRADE.

(10) CONNECT 4"SS TO (E)4"SS BELOW SLAB AT LOCATION SHOWN.

(11) 4"SS BELOW GRADE. CONNECT TO (E)REMOTE SEPTIC TANK. FIELD VERIFY EXACT TANK LOCATION & CONNECTION POINTS PRIOR TO STARTING WORK.

(12) 2"SS DN THRU SLAB FROM ABOVE.

(13) 2"V UP THRU SLAB FROM 2"FLOOR DRAIN/FLOOR SINK WASTE CONNECTION.

(14) 2"V UP THRU SLAB FROM 4"FLOOR DRAIN WASTE CONNECTION.

(15) 2"V UP THRU SLAB FROM 3"WATER CLOSET WASTE CONNECTION.

(16) 2"V UP THRU SLAB FROM 3" MOP SINK WASTE CONNECTION.

(17) 2-WAY 4" GRADE CLEANOUT.

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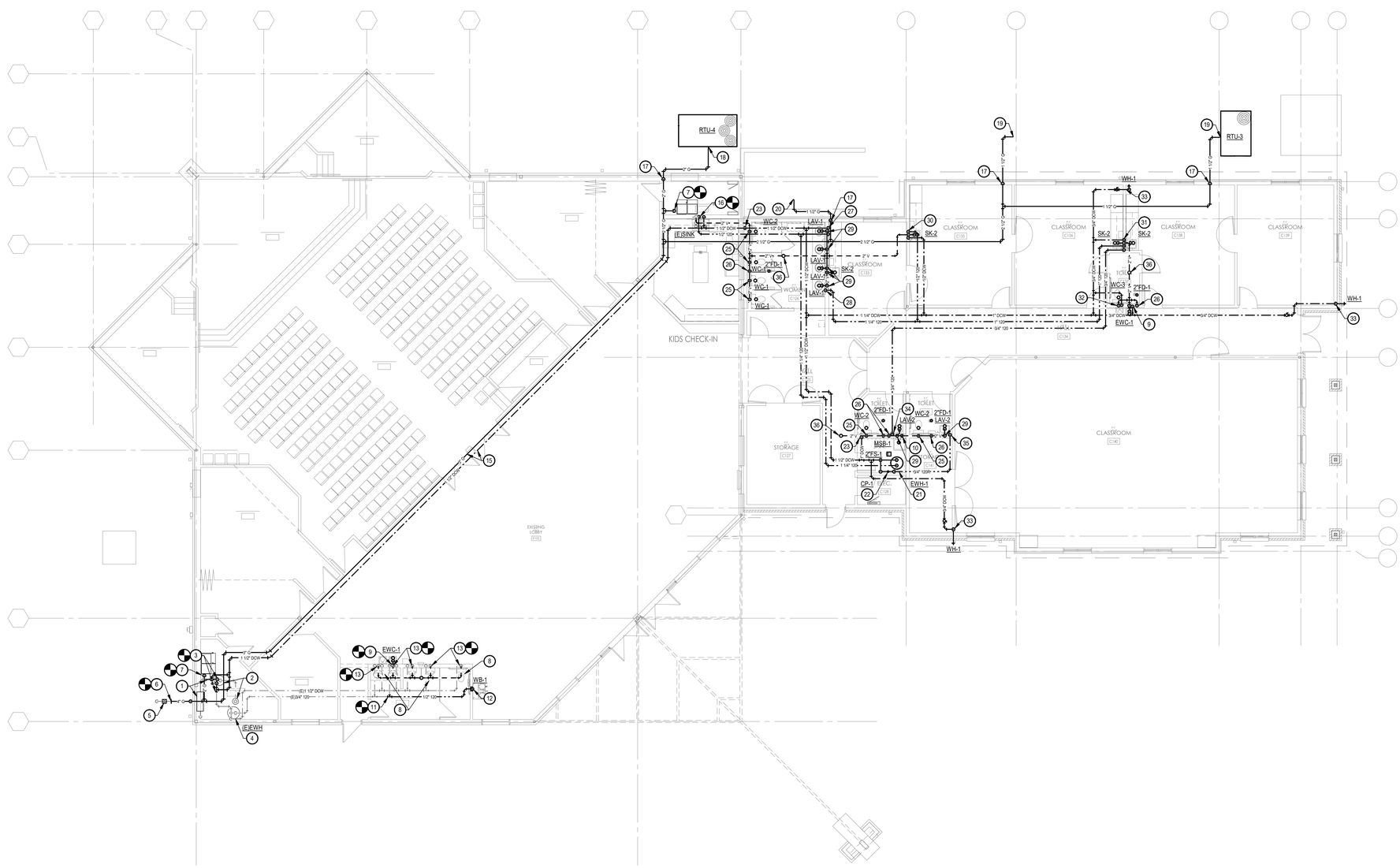
P2.00



NORTH

1 FLOOR PLAN - PLUMBING
1/8" = 1'-0"

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KEY NOTES:

① (E)2" DOMESTIC WATER ENTRY W/(E)WELL PUMP ASSEMBLY & (E)2"REDUCED PRESSURE BACKFLOW PREVENTER SHALL REMAIN IN SERVICE.

② (E)WATER SOFTENER TANKS & CONTROLS SHALL REMAIN.

③ EXTEND & CONNECT 2"DCW W/BYPASS FULL SIZE TO (E)FILTER & (E) WATER SOFTENER CONNECTIONS. RECONFIGURE BRANCH PIPING DOWNSTREAM OF SOFTENER TO CONNECT TO (E)ELECTRIC WATER HEATER SERVING MEN'S BATHROOM & BAPTISTRY BACKFLOW PREVENTER & SERVICE LINE.

④ (E)ELECTRIC WATER HEATER & ALL ASSOCIATED PIPING, VALVES & FITTINGS SHALL REMAIN, NO WORK.

⑤ (E)GAS METER, SERVICE REGULATOR, VALVES, ETC. SHALL REMAIN. (N)TOTAL CONNECTED GAS LOAD = 1476.0 MBH/ 1776 CFH. P.C. SHALL COORDINATE WITH BLACK HILLS ENERGY ANY REQUIRED ADJUSTMENT/REPLACEMENT OF GAS METER TO ACCOMODATE (N)GAS LOAD.

⑥ CONNECT 4"G (1476.0 MBH/ 1776 CFH) TO (E)GAS LINE AT POINT SHOWN.

⑦ 2"G (264.0 MBH/ 318 CFH) DN TO (E)FURNACES. CONNECT TO EACH FURNACE INLET W/UNION, GAS VALVE & 6" DIRT LEG. SEE DIAGRAM.

⑧ (E)PLUMBING FIXTURES & ASSOCIATED DOMESTIC WATER, WASTE & VENT PIPING IN THIS AREA SHALL REMAIN.

⑨ INSTALL EWC-1 AT LOCATION SHOWN. CONNECT 1/2"DCW FROM (E)DCW IN WALL TO WATER COOLER SUPPLY CONNECTION. CONNECT 2" WATER COOLER DRAIN TO (E)2"SS SERVING LAVATORY IN WALL.

⑩ 2"V UP IN WALL & DN THRU FLOOR TO 2"MOP SINK WASTE CONNECTION.

⑪ CONNECT 1/2"DHW TO (E)3/4"DHW ABOVE CEILING.

⑫ 1/2"DHW DN IN WALL TO WB-1 SUPPLY CONNECTION.

⑬ CONNECT 2"V TO (E)VENT RISERS FROM EXISTING FIXTURES ABOVE CEILING.

⑭ 3"V UP THRU ROOF TO 3"VTR.

⑮ ROUTE 2"DCW & 3"G (1212.0 MBH/ 1458 CFH) AS HIGH AS POSSIBLE IN ARCHITECTURAL SOFFIT ACROSS (E)LOBBY.

⑯ (E)SINK & ASSOCIATED WASTE & VENT PIPING SHALL REMAIN UP IN WALL/DN THRU SLAB.. 1/2"DCW & 1/2"DHW DN IN WALL TO (E)SINK FAUCET CONNECTIONS. CONNECT (E)2"V RISE TO 2"V ABOVE CEILING.

⑰ ROUTE GAS PIPING DN IN EXTERIOR WALL & OFFSET OUT THRU WALL AT MINIMUM 18"A.F.G. SUPPORT GAS PIPING EVERY 10'-0" O.C., MAXIMUM, SEE DIAGRAM.

⑱ CONNECT 2"G (350.0 MBH/ 421 CFH) TO MECHANICAL UNIT WITH UNION, GAS VALVE & 6" DIRT LEG, SEE DIAGRAM.

⑲ CONNECT 1-1/2"G (224.0 MBH/ 270 CFH) TO MECHANICAL UNIT WITH UNION, GAS VALVE & 6" DIRT LEG, SEE DIAGRAM.

⑳ CONNECT 1-1/2"G (150.0 MBH/ 181 CFH) TO MECHANICAL UNIT WITH UNION, GAS VALVE & 6" DIRT LEG, SEE DIAGRAM.

㉑ INSTALL EWH-1 AT LOCATION SHOWN. 1-1/4"DCW & 1-1/4"DHW TO WATER HEATER CONNECTIONS. SEE DIAGRAM.

㉒ RECIRCULATION PUMP MOUNTED ON WALL.

㉓ 1"DCW DN IN WALL TO FULL SIZE HEADER. OFFSET HEADER IN WALL & CONNECT TO FIXTURES AS REQUIRED.

㉔ 2"V UP IN WALL & DN THRU FLOOR TO 4"FLOOR DRAIN WASTE CONNECTION.

㉕ 2"V UP IN WALL & DN THRU FLOOR TO 3"WATER CLOSET WASTE CONNECTION.

㉖ 2"V UP IN WALL & DN THRU FLOOR TO 2"FLOOR SINK/DRAIN WASTE CONNECTION.

㉗ 1"DCW & 1-1/4"DHW DN IN WALL TO FULL-SIZE HEADERS. EXTEND HEADERS IN WALL & CONNECT TO LAVATORY MIXING VALVES/SINK FAUCET CONNECTIONS AS REQUIRED.

㉘ CONNECT 1-1/4"DHW TO HEADER DOWNSTREAM OF LAST FIXTURE CONNECTION & RISE UP IN WALL. OFFSET ABOVE CEILING.

㉙ 2"V UP IN WALL, 2"SS DN THRU FLOOR.

㉚ 1/2"DCW & 1/2"DHW DN IN WALL TO SINK FAUCET CONNECTIONS. 2"V UP IN WALL, 2"SS DN THRU FLOOR.

㉛ 3/4"DCW, 1"DHW & 3/4"DHW DN IN WALL. ROUTE 1/2"DCW & 1/2"DHW BRANCHES TO SINK FAUCET CONNECTIONS. CONNECT 3/4"DHW TO 1"DHW DOWNSTREAM OF BRANCH CONNECTIONS TO FORM CIRCULATED LOOP. 2"V UP IN WALL, 2"SS DN THRU FLOOR.

㉜ 1/2"DCW DN IN WALL TO WATER CLOSET SUPPLY CONNECTION. 2'V UP IN WALL & DN THRU FLOOR TO 3"WATER CLOSET WASTE CONNECTION.

㉝ 3/4"DCW DN IN WALL TO WH-1 SUPPLY CONNECTION AT MINIMUM 18"A.F.G.

㉞ 3/4"DHW DN IN WALL TO FULL-SIZE HEADER. OFFSET HEADER IN WALL & CONNECT TO LAVATORY MIXING VALVES AS REQUIRED.

㉟ CONNECT 3/4"DHWR TO DHW HEADER DOWNSTREAM OF LAST FIXTURE CONNECTION & RISE UP IN WALL. OFFSET ABOVE CEILING.

㊱ 3"V UP THRU ROOF TO 3"VTR. SEE DIAGRAM.

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COLORADO LICENSED PROFESSIONAL ENGINEER
JEFF A. GIVEN
3296
11/19/2024

CREEKSIDE BIBLE CHURCH
RENOVATION & ADDTION
2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE
BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

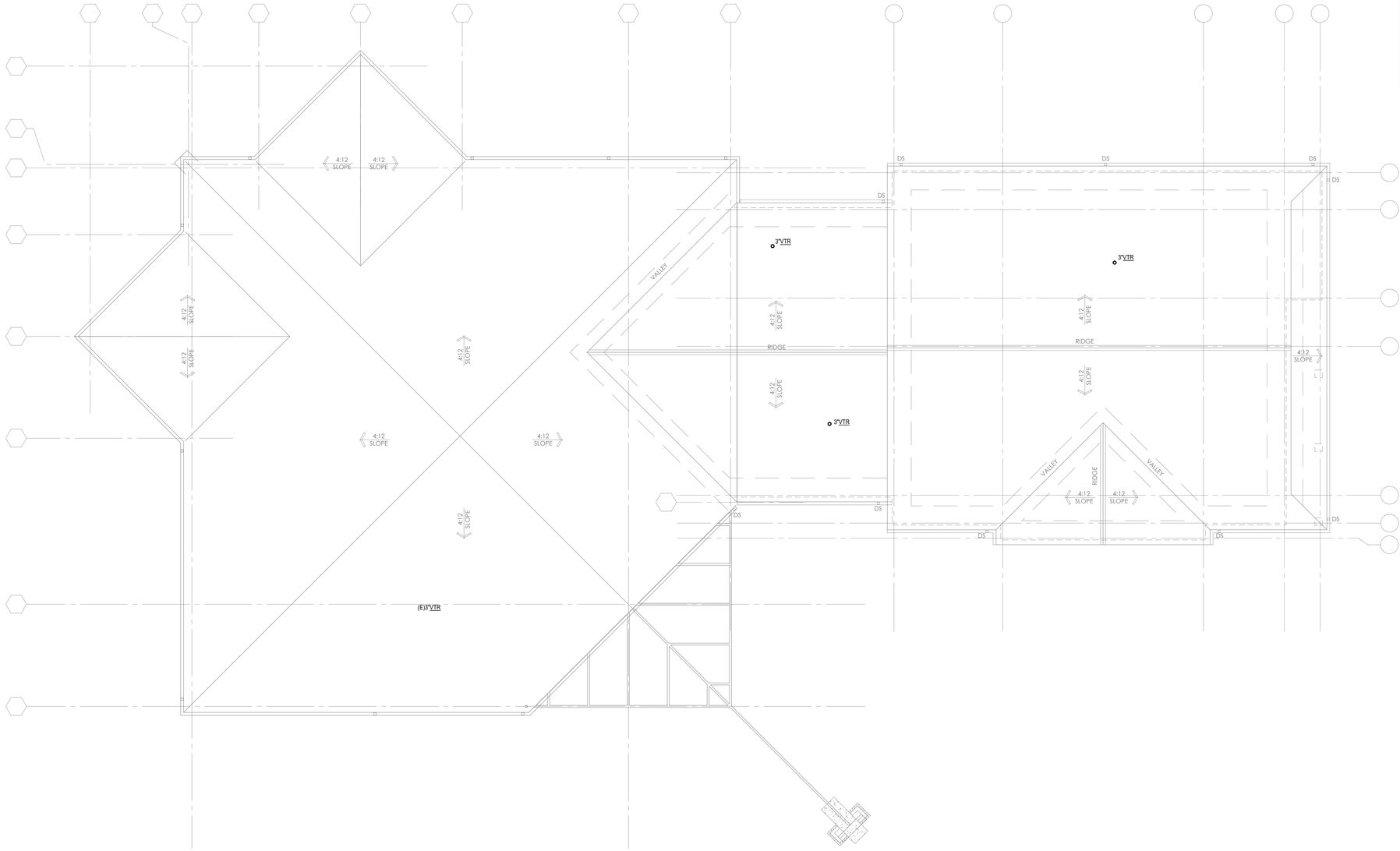
No.	Date	Description
	11/18/2024	Permit Issue Set

Date
11-18-2024

Drawn by
Checked by

Title
FLOOR PLAN -
PLUMBING

P2.01



DRAWING NOTES:

1. PLUMBING PLANS ARE BASED ON ORIGINAL BUILDING PLANS DATED 05/31/2002 & LIMITED SITE SURVEY CONDUCTED ON 11/20/2023. PC SHALL FIELD VERIFY ALL EXISTING CONDITIONS ON WHICH NEW WORK IS DEPENDENT INCLUDING PIPE SIZE, MATERIAL, LOCATION & ELEVATION/INVERT PRIOR TO STARTING WORK.
2. ALL EXISTING ROOF DRAINAGE PIPING SHALL REMAIN IN PLACE AND IN SERVICE FOR EXISTING BUILDING UNLESS OTHERWISE NOTED. ALL ROOF DRAINAGE FOR ADDITION TO BE HANDLED BY ARCHITECTURAL GUTTERS & DOWNSPOUTS. COORDINATE DOWNSPOUT CONNECTIONS WITH BELOW GRADE STORM PIPING. SEE CIVIL SHEET C6.0 FOR DOWNSPOUT CONNECTION LOCATIONS.
3. ALL SANITARY SEWER PIPING TO BE SLOPED TO COMPLY WITH IPC TABLE 704.1.
4. NATURAL GAS PIPING IS BASED ON 2018 IFGC TABLE 402.4(2), 6" W.C. OUTLET PRESSURE, 0.5" W.C. PRESSURE DROP, 400' TOTAL EQUIVALENT LENGTH OF PIPING.

NORTH

1 ROOF PLAN - PLUMBING
1/8" = 1'-0"

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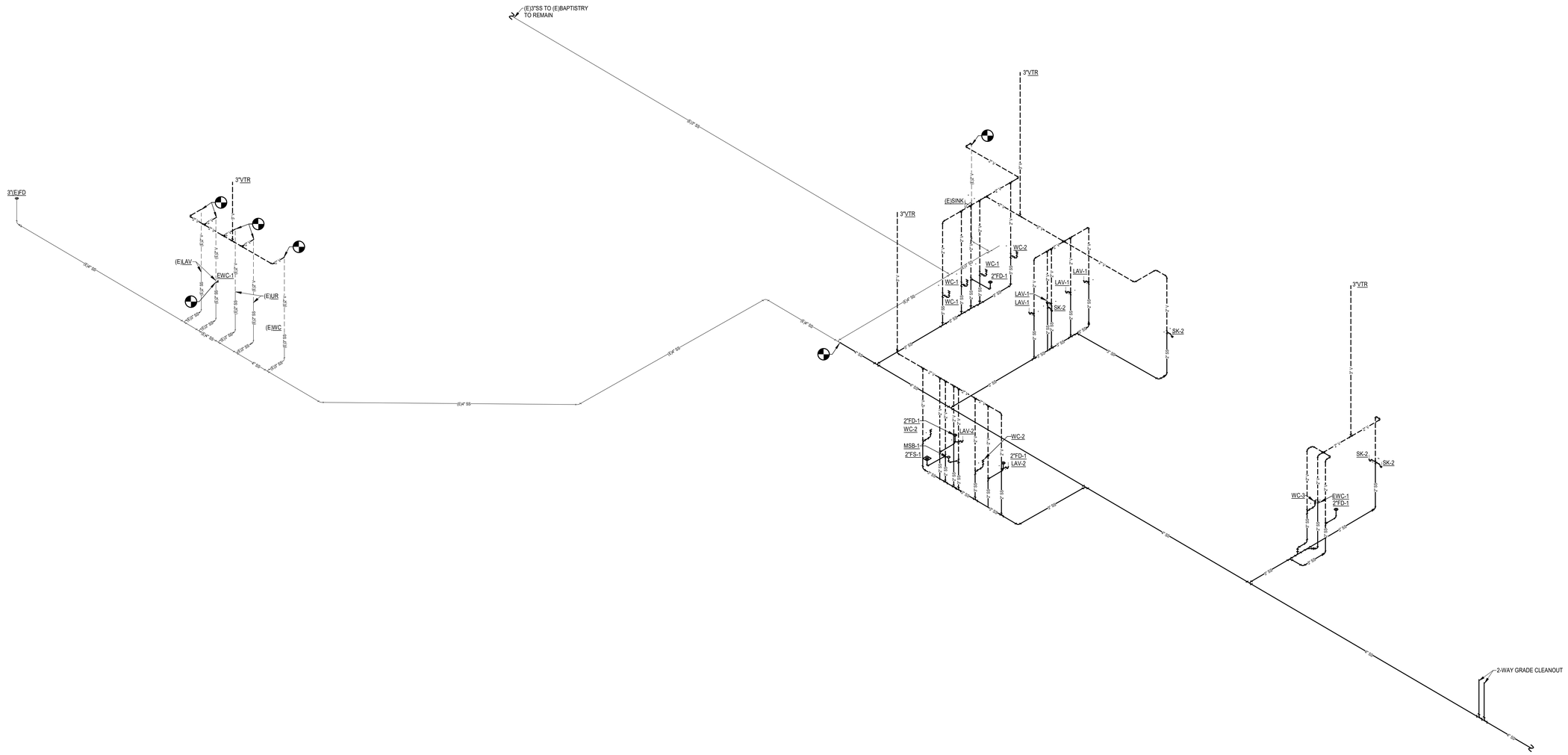
Title
ROOF PLAN - PLUMBING

P2.02



1 WASTE & VENT ISOMETRIC
N.T.S.

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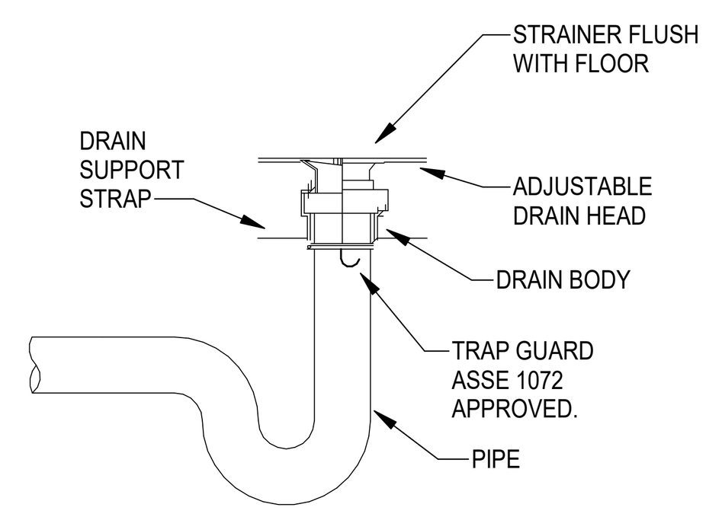
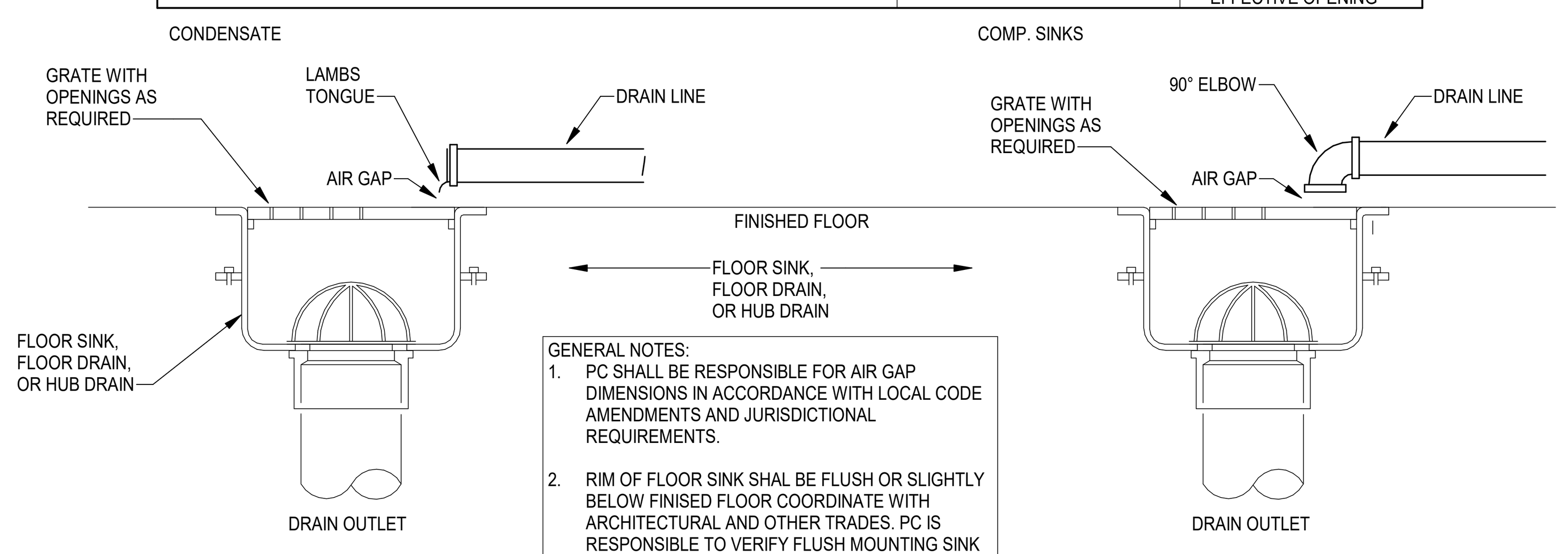
WASTE & VENT ISOMETRIC

P5.01



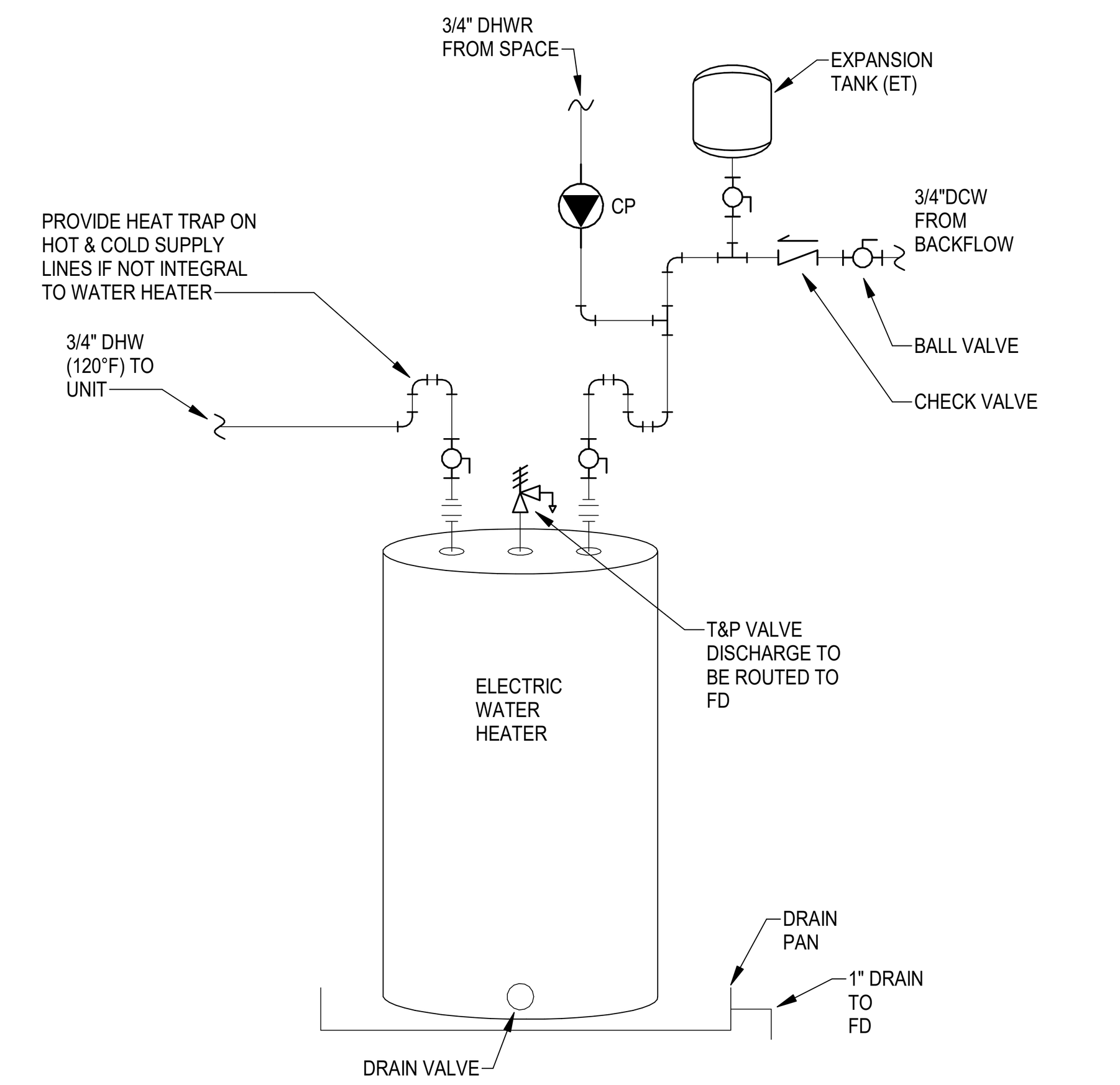
9 FLOOR DRAIN W/ TRAP GUARD DETAIL
N.T.S.

MINIMUM REQUIRED AIR GAPS: PER IPC & UPC		
FIXTURE	MINIMUM AIR GAP	
	AWAY FROM A WALL (INCHES)	CLOSE TO A WALL (INCHES)
LAVATORIES AND OTHER FIXTURES WITH EFFECTIVE OPENING NOT GREATER THAN 1/2" IN DIAMETER	1	1 1/2
SINK, LAUNDRY TRAYS, GOOSENECK BACK FAUCETS AND OTHER FIXTURES WITH EFFECTIVE OPENINGS GREATER THAN 3/4" IN DIAMETER	1 1/2	2 1/2
OVER-RIM BATH FILLERS AND OTHER FIXTURES WITH EFFECTIVE OPENINGS NOT GREATER THAN 1" IN DIAMETER	2	3
DRINKING WATER FOUNTAINS, SINGLE ORIFICE NOT GREATER THAN 7/16" IN DIAMETER OR MULTIPLE ORIFICES WITH A TOTAL AREA OF 0.150 SQUARE INCH (AREA OF CIRCLE 7/16" IN DIAMETER	1	1 1/2
EFFECTIVE OPENINGS GREATER THAN 1"	TWO TIMES THE DIAMETER OF THE EFFECTIVE OPENING	THREE TIMES THE DIAMETER OF THE EFFECTIVE OPENING

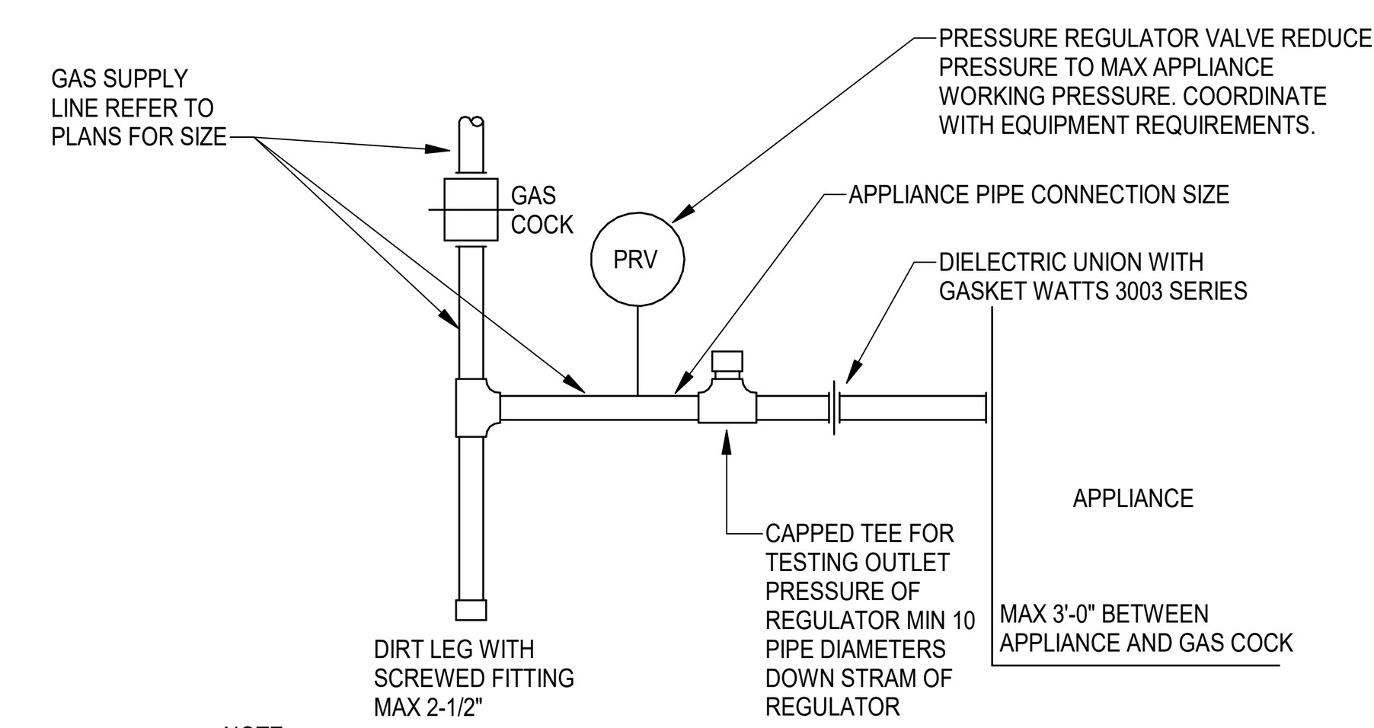


GENERAL NOTES:
1. PC SHALL BE RESPONSIBLE FOR AIR GAP DIMENSIONS IN ACCORDANCE WITH LOCAL CODE AMENDMENTS AND JURISDICTIONAL REQUIREMENTS.
2. RIM OF FLOOR SINK SHAL BE FLUSH OR SLIGHTLY BELOW FINISED FLOOR COORDINATE WITH ARCHITECTURAL AND OTHER TRADES. PC IS RESPONSIBLE TO VERIFY FLUSH MOUNTING SINK WITH LOCAL CODES AND JURISDICTION. IF FLUSH MOUNTING FLOOR SINK IS NOT ALLOWED NOTIFY ENGINEER PRIOR TO ROUGH IN.

10 INDIRECT PIPE DISCHARGE DETAIL
N.T.S.

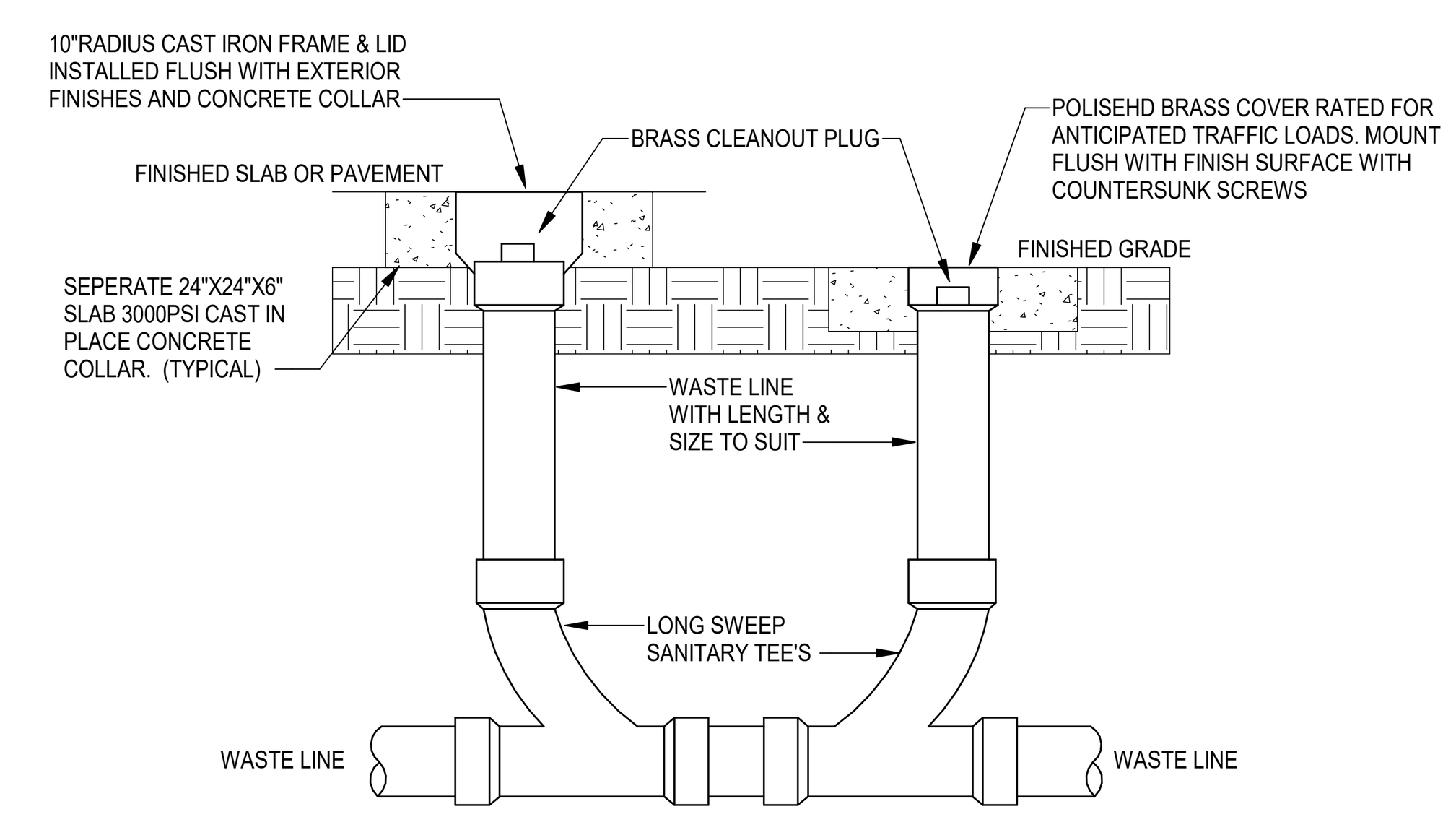


5 ELECTRIC WATER HEATER DETAIL
N.T.S.

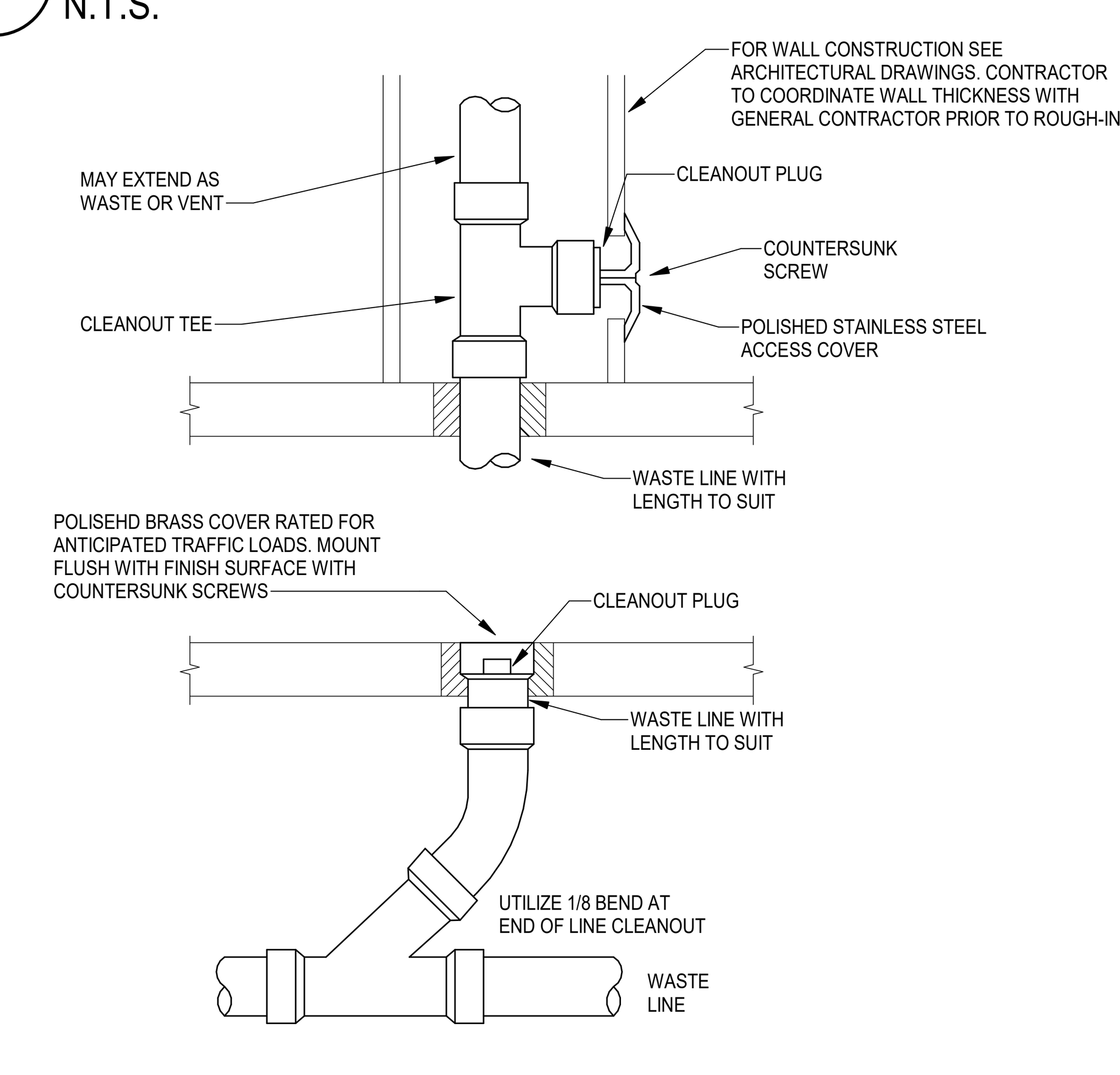


NOTE:
-PC SHALL REFER TO MFG FOR REGULATOR VENT REQUIREMENTS; INCLUDING MATERIAL AND SIZE.
-PC SHALL DISCHARGE VENT PER CODE AT ROOF OR EXTERIOR WALL OF BUILDING OR USE VENT LIMITERS IF ALLOWED PER JURISDICTION.
-GAS COCK SHALL BE LOCATED WHERE ACCESSIBLE FROM STANDING ON THE FLOOR

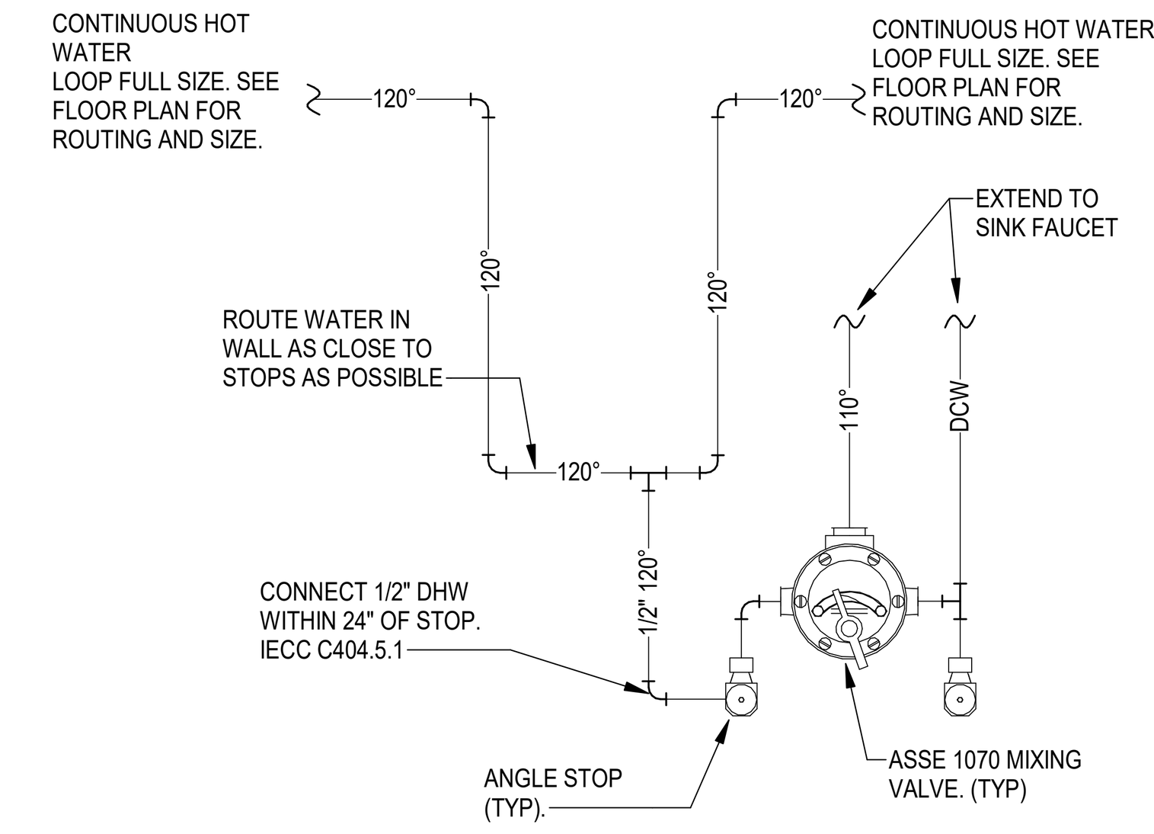
6 TYPICAL GAS PIPE CONNECTION DETAIL
N.T.S.



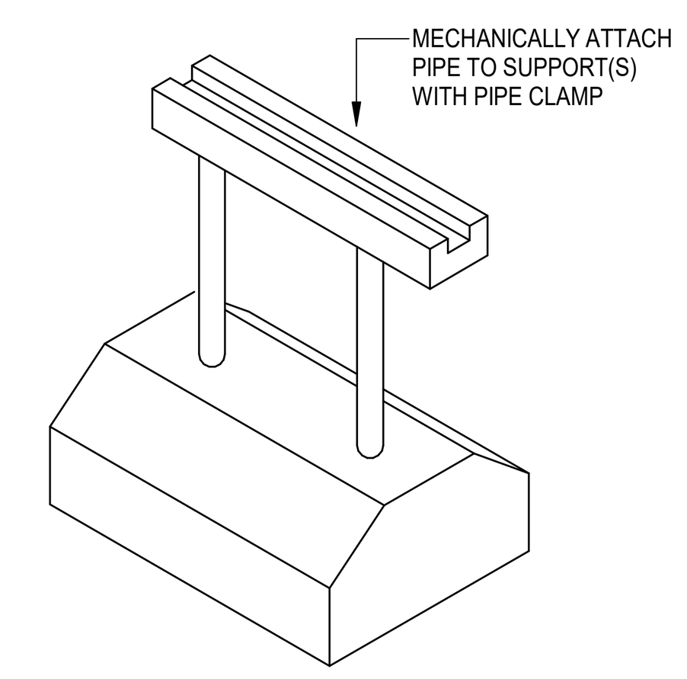
7 2-WAY BUILDING CLEANOUT DETAIL
N.T.S.



8 INTERIOR WALL/FLOOR CLEANOUT DETAIL
N.T.S.

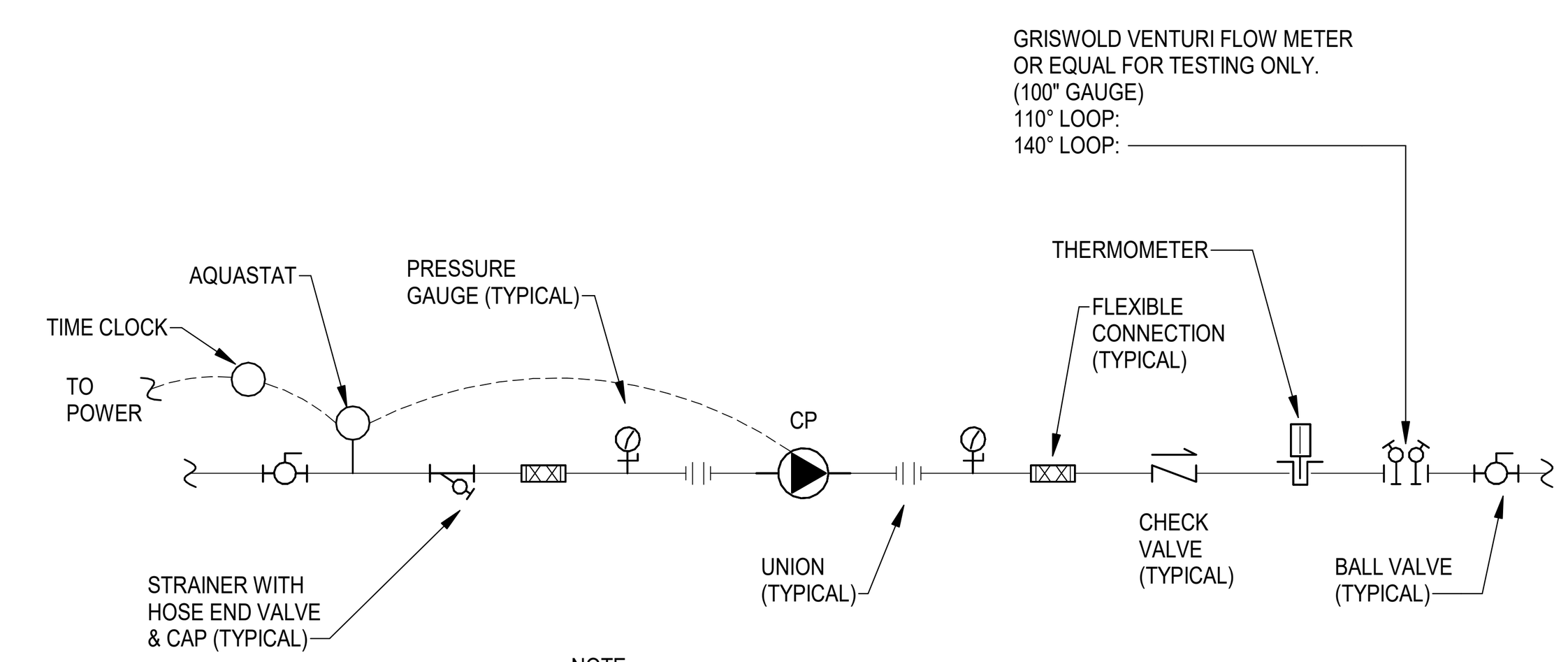


1 HOT WATER TO PUBLIC FIXTURE DETAIL
N.T.S.



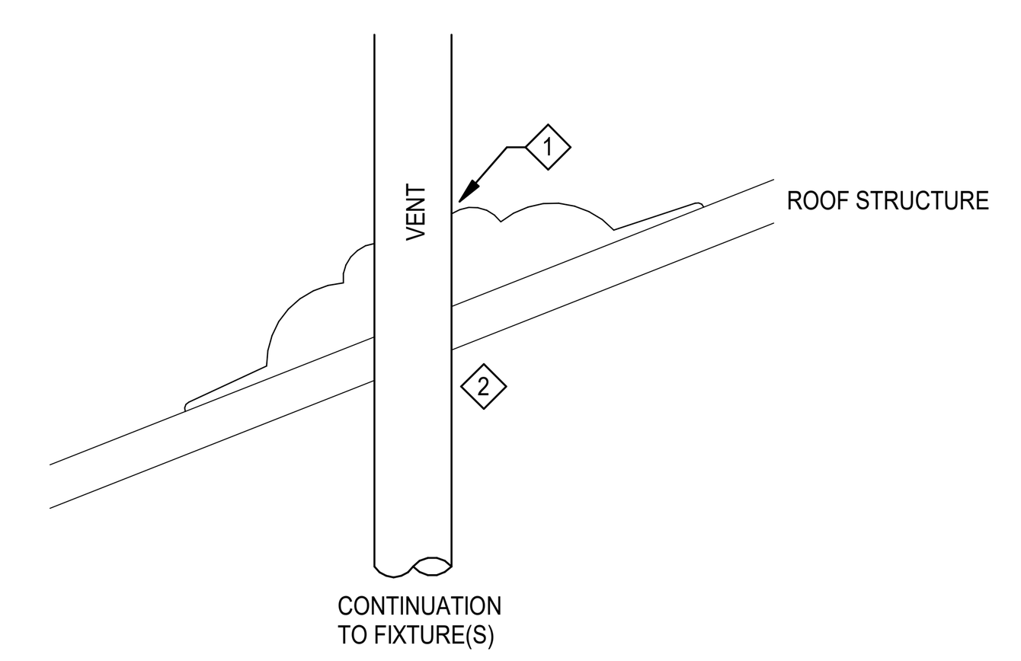
1. PROVIDE B-LINE DBE10-12 (OR EQUAL)
2. SUPPORT INTERVALS SHALL BE AS DIRECTED BY LOCAL CODES FOR SYSTEM AND PIPE MATERIAL UTILIZED OR AS DIRECTED BY MANUFACTURER(S), WHICHEVER IS LESS
3. BOTTOM OF PIPE MINIMUM 12 INCHES TO GRADE/ROOF SURFACE.
4. FOR LARGER PIPES, CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR TO CONFIRM LOADING WILL NOT DEFORM OR DAMAGE ROOF. ADDITIONAL SUPPORTS MAY BE REQUIRED.

2 EXTERIOR PIPE SUPPORT DETAIL
N.T.S.



NOTE:
- INDEPENDENTLY SUPPORT PUMP & PIPING. PROVIDE VIBERATION ISOLATION ON HANGERS.
- THERMOMETERS & AQUASTATS STEMS SHALL BE IN THE WATER STREAM.

3 INLINE PUMP WITH AQUASTAT DETAIL
N.T.S.



1. VENT STACK MINIMUM 3" DIAMETER
2. VENT PIPES SHALL NOT TEMINATE WITHIN 10 FEET HORIZONTALLY OF AN OPERABLE OPENING OR AIR INTAKE. TERMINATE MINIMUM 3 FEET ABOVE OPENING OR OFFFSET VENT PIPING IN BUILDING AS REQUIRED.
3. IF VENT PIPES ARE INSTALLED INSIDE OF ROOF WELL OR SCREENED AREA AND AN OUTDOOR INTAKE IS WITHIN 25' EXTEND TO WITHIN 6" OF THE TOP OF THE WALL.
4. TERMINATE VENT PIPES MINIMUM 12" ABOVE ROOF SURFACE (HIGH SIDE FOR PITCHED ROOFS) UNLESS DIRECTED OTHERWISE BY LOCAL AMENDMENTS.
5. VENT TERMINATION PIPE DIAMETER SHALL BE MAINTAINED MINIMUM 12" INSIDE THERMAL ENVELOPE.
6. MAINTAIN PIPE PENETRATION RATINGS THROUGH STRUCTURE.

4 ROOF PENETRATION DETAIL
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PLUMBING DIAGRAMS

P5.05

ELECTRICAL SYMBOL LEGEND

- SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE (WALL MTD)
- DUPLEX RECEPTACLE (FLOOR MTD)
- DUPLEX RECEPTACLE (CEILING MTD)
- DUPLEX (SWITCHED)
- 4-PLEX RECEPTACLE (WALL MTD)
- 4-PLEX RECEPTACLE (FLOOR MTD)
- 4-PLEX RECEPTACLE (CEILING MTD)
- SPECIAL PURPOSE RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE (FLOOR MTD)
- JUNCTION BOX (WALL MTD)
- JUNCTION BOX (FLOOR MTD)
- JUNCTION BOX (CEILING MTD)
- DATA OUTLET
- DATA OUTLET (FLOOR MTD)
- TELEPHONE OUTLET (WALL MTD)
- TELEPHONE OUTLET (FLOOR MTD)
- TELEPHONE/DATA OUTLET
- TELEPHONE/DUPLEX OUTLET (FLOOR MTD)
- TELEPHONE/DATA/DUPLEX OUTLET (FLOOR MTD)
- $ SWITCH
- $3 3-WAY SWITCH
- $4 4-WAY SWITCH
- $D DIMMER SWITCH
- $T THERMAL OVERLOAD SWITCH
- $a CONTROLLING OUTLET OR FIXTURE ON SWITCH LEG 'a'
- $K KEYED SWITCH
- $OV MANUAL OVERRIDE SWITCH
- PC PHOTOCELL
- OS1 OCCUPANCY SENSOR (WALL MTD) WITH (1) INTEGERAL SWITCH
- OS2 OCCUPANCY SENSOR (WALL MTD) WITH (2) INTEGERAL SWITCHES
- OC1 OCCUPANCY SENSOR (CEILING MTD)
- OC2 OCCUPANCY SENSOR (CEILING MTD) WITH CORRIDOR SENSING PATTERN
- SSx DIGITAL LIGHTING CONTROL SOFT SWITCH 'x' REFERS TO CONTROL SCHEDULE ID#

- DOWNLIGHT (CEILING MTD)
- WALL WASHER (CEILING MTD)
- SCONCE (WALL MTD, LINEAR)
- SCONCE (WALL MTD, ROUND)
- SCONCE (WALL MTD, HALF ROUND)
- SURFACE GLOBE
- PENDANT (SMALL)
- PENDANT (LARGE)
- PENDANT (LINEAR)
- CEILING FIXTURE (RECESSED)
- CEILING FIXTURE (SURFACE/SUSPENDED)
- STRIP FIXTURE (WALL MOUNTED)
- TRACK MOUNTED FIXTURE
- POLE MOUNTED FIXTURE (SINGLE ARM)
- POLE MOUNTED FIXTURE (POST TOP)
- EMERGENCY EGRESS FIXTURE
- EXIT SIGN (SHADING INDICATES ILLUMINATED FACE(S))
- CEILING FAN
- IN-GRADE UPLIGHT
- BOLLARD
- SPOT LIGHT
- STEP LIGHT

LIGHTING FIXTURE NOTATION (EXAMPLE)

- A1E — INDICATES FIXTURE TYPE
- DIAGONAL HATCH & 'E' SUFFIX INDICATE FIXTURE PROVIDED W/ EMERGENCY BATTERY BACKUP
- H1-12a — INDICATES CIRCUIT NUMBER; LOWERCASE LETTER INDICATES SWITCH LEG DESIGNATION

- MOTOR
- DISCONNECT SWITCH (NON-FUSED)
- DISCONNECT SWITCH
- DISCONNECT STARTER
- THERMOSTAT
- 'C' PANEL ('C' INDICATES PANEL NAME)
- TV TELEVISION OUTLET
- EV ELECTRIC VEHICLE CHARGING STATION
- TC TIME CLOCK WITH BATTERY
- FACP FIRE ALARM CONTROL PANEL
- FAA FIRE ALARM ANNUNCIATOR (REMOTE)
- FIRE ALARM HORN
- FIRE ALARM STROBE
- FIRE ALARM STROBE/HORN
- F FIRE ALARM PULL STATION
- FS FIRE/SMOKE DAMPER
- DH MAGNETIC DOOR HOLDER
- SMOKE DETECTOR
- CO COMBINATION SMOKE/CO DETECTOR
- SECURITY CAMERA
- SINGLE PUSH BUTTON
- 3 PUSH BUTTON

CIRCUITING/CONDUIT LINETYPES

- A1-1 HOMERUN CIRCUIT, PANEL AND CIRCUIT NUMBER INDICATED
- CONCEALED CONDUIT
- UNDERGROUND/UNDERSLAB CONDUIT
- EXPOSED CONDUIT
- CONDUIT RUN TURNED DOWN
- CONDUIT RUN TURNED UP
- CONDUIT CONTINUATION MARK
- CONDUIT STUB-OUT

NEW/EXISTING/DEMOLITION/FUTURE LINETYPES

- NEW WORK
- EXISTING WORK
- DEMOLITION WORK
- FUTURE WORK

- PAD MOUNTED UTILITY TRANSFORMER ###/###V, #PH, #W ### kVA
- G 125/3 STANDBY/EMERGENCY GENERATOR ###/###V, #PH, #W ### kW, ### kVA
- AUTOMATIC TRANSFER SWITCH ###AMP
- DRY-TYPE TRANSFORMER
- M UTILITY METER
- M UTILITY METER & CT's
- M UTILITY METER (INTEGRAL)
- M UTILITY METER & CT's (INTEGRAL)
- 125/2 M HOUSE — METER STACK
- ###/3 FUSED SWITCH (DIAGRAMMATIC)
- ###/3 CIRCUIT BREAKER (DIAGRAMMATIC)
- CLASS T ###/3 PULL OUT FUSED SWITCH (DIAGRAMMATIC)
- PANEL 'A' PANEL BOARD (DIAGRAMMATIC)
- GFP MAIN OCPD GROUND FAULT PROTECTION
- FEEDER TAG
- F0 FAULT CALCULATION NODE

ABBREVIATIONS

x' x"	MOUNTING HEIGHT
A / AMP	AMPERE
AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AG	ABOVE COUNTER GFI DEVICE
AHU	AIR HANDLING UNIT
AIC	FAULT CURRENT CAPACITY
AL	ALUMINUM
C	CONDUIT
CLG	CEILING
CU	COPPER
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
DYR	DRYER
DW	DISHWASHER
(E)	EXISTING
E.C.	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EM	EMERGENGY
EWC	WATER COOLER
EXP	EXPLOSION PROOF
G	GROUND
GD	GARBAGE DISPOSER
GFI	GROUND FAULT INTERRUPTER
HD	EXHAUST HOOD
HP	HORSEPOWER
MW	MICROWAVE
MDP	MAIN DISTRIBUTION PANELBOARD
MH	MANHOLE
MTD	MOUNTED
MVOLT	MULTI-VOLTAGE
N	NEUTRAL
NL	NITE LIGHTING
PH	PHASE
REF	REFRIGERATOR
RNG	RANGE
(RL)	RELOCATE(D)
RTU	ROOF TOP UNIT
TS	THERMAL SWITCH
TTB	TELEPHONE TERMINAL BOARD
UG	UNDERGROUND
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
W	WALL
WG	WEATHERPROOF GFI
WP	WEATHERPROOF
WRM	WARMING DRAWER
WSH	WASHER

CODES AND DESIGN CRITERIA

JURISDICTION	CASTLE ROCK, CO
ELECTRICAL CODE	2020 NEC
ENERGY CODE	2018 IECC
LOCAL AMENDMENTS	TITLE 15 OF MUNICIPAL CODE
ELECTRIC UTILITY	CORE ELECTRIC
OCCUPIED LEVELS	1

ELECTRICAL SHEET LIST

NUMBER	TITLE
E0.01	ELECTRICAL SPECS & LEGENDS
E0.02	ELECTRICAL ONE-LINE DIAGRAM
E1.01	FLOOR PLAN - POWER DEMO
E1.02	FLOOR PLAN - LIGHTING DEMO
E2.01	FLOOR PLAN - POWER
E2.02	ROOF PLAN - POWER
E3.01	FLOOR PLAN - LIGHTING
E6.01	ELECTRICAL ENERGY CALCULATIONS
SHEET TOTAL: 8	

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ELECTRICAL SPECS & LEGENDS

E0.01

EQUIPMENT CONNECTION SCHEDULE

GENERAL NOTES:

A. PROVIDE DISCONNECTING MEANS FOR EACH PIECE OF EQUIPMENT AS INDICATED IN THE 'DISC' COLUMN.

REMARKS:

1.

PLAN MARK	DESCRIPTION	VOLT	PHASE	ELECTRIC HEAT WATTS	SINGLE MOTOR		UNIT EQUIPMENT			OVERCURRENT PROTECTION				FEEDER	REMARKS
					WATTS	HP	WATTS	FLA	MCA	MOCP	CB	DISC	FUSE		
EF-1	EXHAUST FAN	120 V	1		7	-				15	20A1P	HPRS	--	(2#12 AWG CU + 1#12 AWG CU GND) 3/4"C.	
EF-2	EXHAUST FAN	120 V	1		-	1/4		.63	.78	15	20A1P	PLUG	--	(2#12 AWG CU + 1#12 AWG CU GND) 3/4"C.	
EWH-1	ELECTRIC WATER HEATER	208 V	3				4500	12.5	16	20	20A3P	20A3P	20A	(4#12 AWG CU + 1#12 AWG CU GND) 3/4"C.	
RTU-1	ROOF TOP UNIT	208 V	3						37	50	50A3P	60A3P	50A	(4#6 AWG CU + 1#8 AWG CU GND) 1-1/4"C.	
RTU-2	ROOF TOP UNIT	208 V	3						49	60	60A3P	60A3P	--	(4#4 AWG CU + 1#8 AWG CU GND) 1-1/4"C.	
RTU-3	ROOF TOP UNIT	208 V	3						49	60	60A3P	60A3P	--	(4#4 AWG CU + 1#8 AWG CU GND) 1-1/4"C.	
RTU-4	ROOF TOP UNIT	208 V	3						81	100	100A3P	100A3P	--	(4#1 AWG CU + 1#6 AWG CU GND) 1-1/2"C.	
CP-1	CIRCULATION PUMP	120 V	1				84			20	20A1P	HPRS	--	(2#12 AWG CU + 1#12 AWG CU GND) 3/4"C.	
EUH-1	ELECTRIC UNIT HEATER	120 V	1	1,500				8.3	10.4	15	20A1P	HPRS	--	(2#12 AWG CU + 1#12 AWG CU GND) 3/4"C.	
EUH-1	ELECTRIC UNIT HEATER	120 V	1	1,500				8.3	10.4	15	20A1P	HPRS	--	(2#12 AWG CU + 1#12 AWG CU GND) 3/4"C.	
EUH-1	ELECTRIC UNIT HEATER	120 V	1	1,500				8.3	10.4	15	20A1P	HPRS	--	(2#12 AWG CU + 1#12 AWG CU GND) 3/4"C.	
EUH-2	ELECTRIC UNIT HEATER	208 V	3	4,800				13.3	16.6	20	20A3P	HPRS	--	(3#12 AWG CU + 1#12 AWG CU GND) 3/4"C.	
EUH-2	ELECTRIC UNIT HEATER	208 V	3	4,800				13.3	16.6	20	20A3P	HPRS	--	(3#12 AWG CU + 1#12 AWG CU GND) 3/4"C.	

LUMINAIRE SCHEDULE

REMARKS:

1.

TAG	DESCRIPTION	MOUNTING	MANUFACTURER	MODEL	VOLT	LAMP						REMARKS
						QTY	WATTS	SOURCE	TEMP	LUMENS	DIMMING	
A	2'X4' TROFFER	RECESSED	LITHONIA	CPX 2X4 4000LM 35K M2	120 V		39	LED	3500K	4543	0-10V	-
C	HIGH BAY	CEILING, SUSPENDED	LITHONIA	JEBL 12L 40K 80CRI WH	120 V		95	LED	4000K	12000	0-10V	-
D	6" DOWNLIGHT	RECESSED	LITHONIA	LDN6 35/20 MVOLT GZ10 HSG	120 V		22	LED	3500K	2000	0-10V	-
E	EMERGENCY FIXTURE	SURFACE	LITHONIA	ELM4L	120 V		7	LED	-	-	-	-
F	VANITY	SURFACE	LITHONIA	FMVTSL 24IN MVOLT 30K 90CRI BN M4	120 V		10	LED	3000K	1300	-	-
G	6"X4' LINEAR	SURFACE	LITHONIA	FML4W 48 ALO6 SEF 840 MVOLT	120 V		50	LED	4000K	5000	0-10V	-
K	2' LINEAR	SURFACE	COOPER LIGHTING	A02-SI-A-1-LED-30K-D-120-S-RC3	120 V		21	LED	3000K	1990	Y	-
L	EM SCONCE	SURFACE	LITHONIA	WPX1 LED P1 30K MVOLT	120 V		11	LED	3000K	1550	-	-
P	PENDANT	SUSPENDED, 13' AFF	LITHONIA	LDN6CYL 30/50 LO6AR LD MVOLT GZ10 PM	120 V		60	LED	3000K	4975	0-10V	-
X	EXIT SIGN	SURFACE	LITHONIA	LQM S 3 G MVOLT	120 V		5	LED	-	-	-	-

PANEL: PB6

VOLTAGE: 120/208 WYE
PHASE: 3
WIRES: 4
ENCLOSURE: NEMA 1
SUPPLY FROM: PB1
MOUNTING: SURFACE
A.I.C. RATING: 22K
MAINS TYPE: MCB
MAINS RATING: 400
MCB RATING: 400A

CIRCUIT DESCRIPTION	BKR RATING		BKR TYPE	CKT	A		B		C		CKT	BKR TYPE	BKR RATING		CIRCUIT DESCRIPTION
EWH-1	20	3		1	1500	4440					2		3	50	RTU-1
				3			1500	4440			4				
				5					1500	4440	6				
CP-1	20	1		7	84	5880					8		3	60	RTU-2
LIGHTING	20	1		9			1209	5880			10				
LIGHTING	20	1		11					1174	5880	12				
LIGHTING	20	1		13	312	5880					14		3	60	RTU-3
LIGHTING	20	1		15			1419	5880			16				
EUH-1 SOUTH	20	1		17					1000	5880	18				
EUH-1 EAST	20	1		19	1000	9720					20		3	100	RTU-4
EUH-1 ELEC ROOM	20	1		21			1000	9720			22				
EF-1, EF-2	20	1		23					703	9720	24				
RECEPTACLES	20	1		25	500	1600					26		3	20	EUH-2 ENTRANCE EAST
RECEPTACLES	20	1		27			500	1600			28				
RECEPTACLES	20	1		29					1080	1600	30				
RECEPTACLES	20	1		31	1080	1600					32		3	20	EUH-2 ENTRANCE WEST
RECEPTACLES	20	1		33			1080	1600			34				
RECEPTACLES	20	1		35					1080	1600	36				
RECEPTACLES	20	1		37	1080	1080					38		1	20	RECEPTACLES
RECEPTACLES	20	1		39			1080	720			40		1	20	RECEPTACLES
RECEPTACLES	20	1		41					1080	540	42		1	20	RECEPTACLES
COFFEE MAKER	20	1		43	900	--					44	--	1	--	SPACE
SPARE	20	1	--	45			0	--			46	--	1	--	SPACE
SPARE	20	1	--	47					0	--	48	--	1	--	SPACE
SPARE	20	1	--	49	0	--					50	--	1	--	SPACE
SPARE	20	1	--	51			0	--			52	--	1	--	SPACE
SPARE	20	1	--	53					0	--	54	--	1	--	SPACE

	A	B	C
TOTAL CONNECTED VOLT-AMPS PER PHASE	36656	37628	37277
TOTAL CONNECTED AMPS PER PHASE	305	314	311
TOTAL ESTIMATED DEMAND AMPS PER PHASE	306	314	311

PHASE IMBALANCE

PHASE A	1	%
PHASE B	1	%
PHASE C	0	%

LOAD CLASSIFICATION	LOAD	DF	DEMAND
LIGHTING	4114	125.00%	5143
RECEPTACLES	11800	92.37%	10900
MOTORS	703	124.75%	877
KITCHEN	0	0.00%	0
MISCELLANEOUS	0	0.00%	0
ELECTRIC HEAT	17100	100.00%	17100
HVAC	77760	100.00%	77760

PANEL TOTALS

TOTAL CONN. LOAD (VA):	111561 VA
TOTAL DEMAND (VA):	111864 VA
TOTAL CONN. LOAD (AMPS):	310 A
TOTAL DEMAND (AMPS):	311 A

BREAKER TYPE ABBREVIATIONS:
A - AFCI; G - GFCI; AG - COMBINATION AFCI/GFCI; ST - SHUNT TRIP; LK - LOCKING PROVISIONS; ET - ELECTRONIC TRIP

NOTES:

EXISTING SERVICE LOAD CALCULATION:

HIGHEST PEAK DEMAND OVER PAST 12 MONTHS:	64.20 KVA
HIGHEST PEAK DEMAND OVER PAST 12 MONTHS * 1.25:	71.33 KVA
TOTAL ADDED LOAD ON SERVICE:	111.86 KVA
TOTAL PROPOSED LOAD ON EXISTING SERVICE:	183.19 KVA
TOTAL PROPOSED AMPERAGE ON EXISTING 600A SERVICE:	508.86 A

KEY NOTES:

1. INSTALL NEW CIRCUIT BREAKER IN SPACE AT TOP OF EXISTING PANELBOARD PB1 SECTION 2.
2. PROVIDE NEW FEED BETWEEN NEW CIRCUIT BREAKER AND NEW PANELBOARD PB6.
3. PROVIDE NEW PANELBOARD PB6.

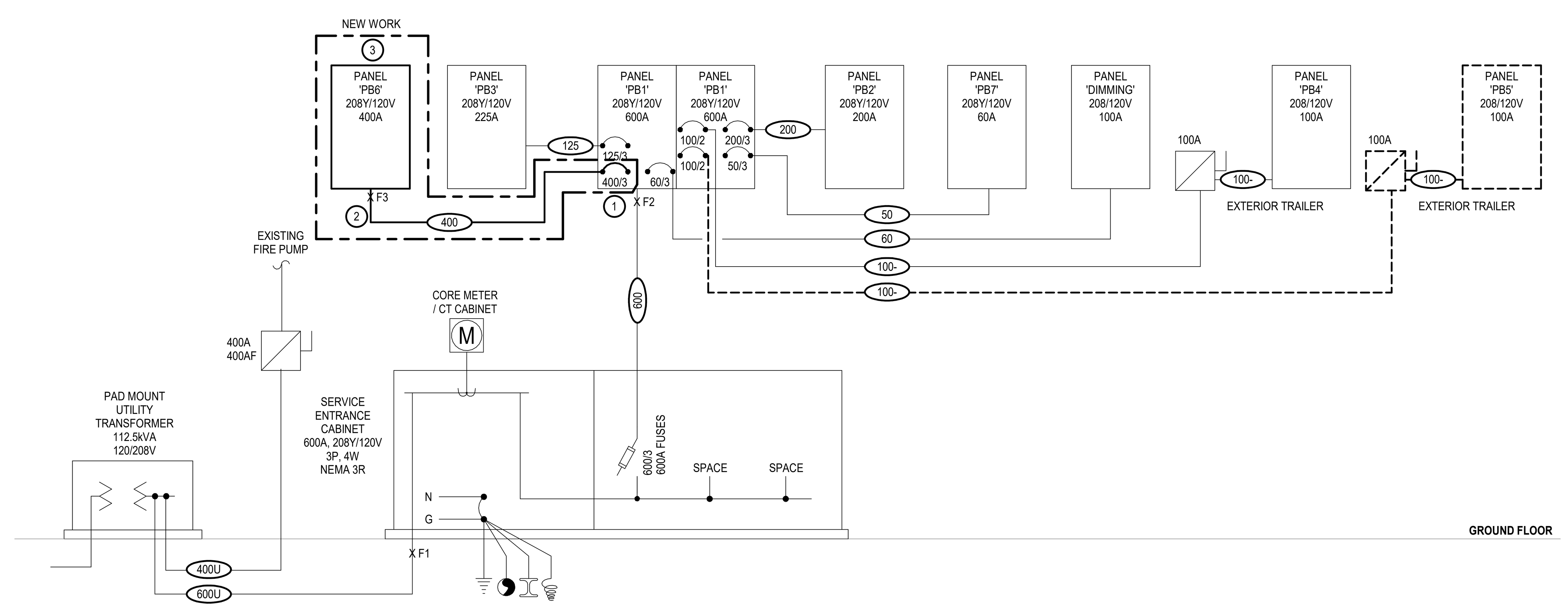
FEEDER SCHEDULE

1000U	3 [(4 400 KCMIL CU) 3"PVC.]
600U	2 [(4 350 KCMIL CU) 2-1/2"PVC.]
600	2 [(4 350 KCMIL CU + 1 #1 AWG CU G.) 2-1/2"C.]
400U	2 [(4 #3/0 AWG CU) 2"PVC.]
400	2 [(4 250 KCMIL AL + 1 #1 AWG AL G.) 2-1/2"C.]
200	(4 #3/0 AWG CU + 1 #6 AWG CU G.) 2"C.
125	(4 #1 AWG CU + 1 #6 AWG CU G.) 1-1/2"C.
100-	(3 #1 AWG CU + 1 #6 AWG CU G.) 1-1/2"C.
60	(4 #4 AWG CU + 1 #8 AWG CU G.) 1-1/4"C.
50	(4 #6 AWG CU + 1 #10 AWG CU G.) 1"C.

SHORT CIRCUIT CALCULATIONS

	Isc	DIST (FT)	%VD
F0	20,725 A	-	-
F1	18,734 A	28	0.00%
F2	17,309 A	24	0.00%
F3	10,280 A	115	0.00%

* DISTANCES ARE ESTIMATED.
** VOLTAGE DROP IS CALCULATED FROM THE SERVICE ENTRANCE TO THE REFERENCED POINT.



1 ELECTRICAL ONE-LINE DIAGRAM
NO SCALE

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11/19/2024

CREEKSIDE BIBLE CHURCH
RENOVATION & ADDTION
2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

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Title
ELECTRICAL ONE-LINE DIAGRAM

E0.02

1 FLOOR PLAN - POWER DEMO
1/8" = 1'-0"

DRAWING NOTES:

1. EQUIPMENT SHOWN IN SOLID, LIGHT LINETYPE IS EXISTING TO REMAIN, U.O.N. E.C. SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND COORDAINATE THE INSTALLATION OF NEW EQUIPMENT WITH CURRENT FIELD CONDITIONS.
2. EQUIPMENT SHOWN IN DASHED, BOLD LINETYPE IS EXISTING TO BE DEMOLISHED UNDER NEW WORK, U.O.N. E.C. TO VERIFY THE DEMOLITION OF ALL EQUIPMENT WITH OWNER PRIOR TO REMOVAL.
3. EXISTING EQUIPMENT OR DEVICE TAGGED WITH '(RL)' SHALL BE REMOVED, SALVAGED, AND RELOCATED TO NEW LOCATION.

KEY NOTES:

1. EXISTING PANELBOARD TO REMAIN, LOCATED WITHIN TRAILER.
2. EXISTING DISCONNECT TO REMAIN, LOCATED ON EXTERIOR OF TRAILER.
3. EXISTING PANELBOARD TO BE DEMOLISHED, LOCATED WITHIN TRAILER.
4. EXISTING DISCONNECT TO BE DEMOLISHED, LOCATED ON EXTERIOR OF TRAILER.
5. EXISTING SIMPLEX 4010 FIRE ALARM PANEL TO BE REMOVED.

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CREEKSIDE BIBLE CHURCH

Job No: 24010

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Drawn by

Checked by

Title
FLOOR PLAN - POWER DEMO

E1.01

1 FLOOR PLAN - LIGHTING DEMO

1/8" = 1'-0"

DRAWING NOTES:

1. LIGHTING FIXTURES AND DEVICES SHOWN IN SOLID, LIGHT LINETYPE ARE EXISTING TO REMAIN, U.O.N.
2. LIGHTING FIXTURES AND DEVICES SHOWN IN DASHED, BOLD LINETYPE ARE EXISTING TO BE DEMOLISHED UNDER NEW WORK, U.O.N. E.C. TO VERIFY THE DEMOLITION OF ALL FIXTURES WITH OWNER PRIOR TO APPROVAL.
3. EXISTING FIXTURES TAGGED WITH '(RL)' SHALL BE REMOVED, SALVAGED, AND RELOCATED TO NEW LOCATION.

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDTION

21801-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

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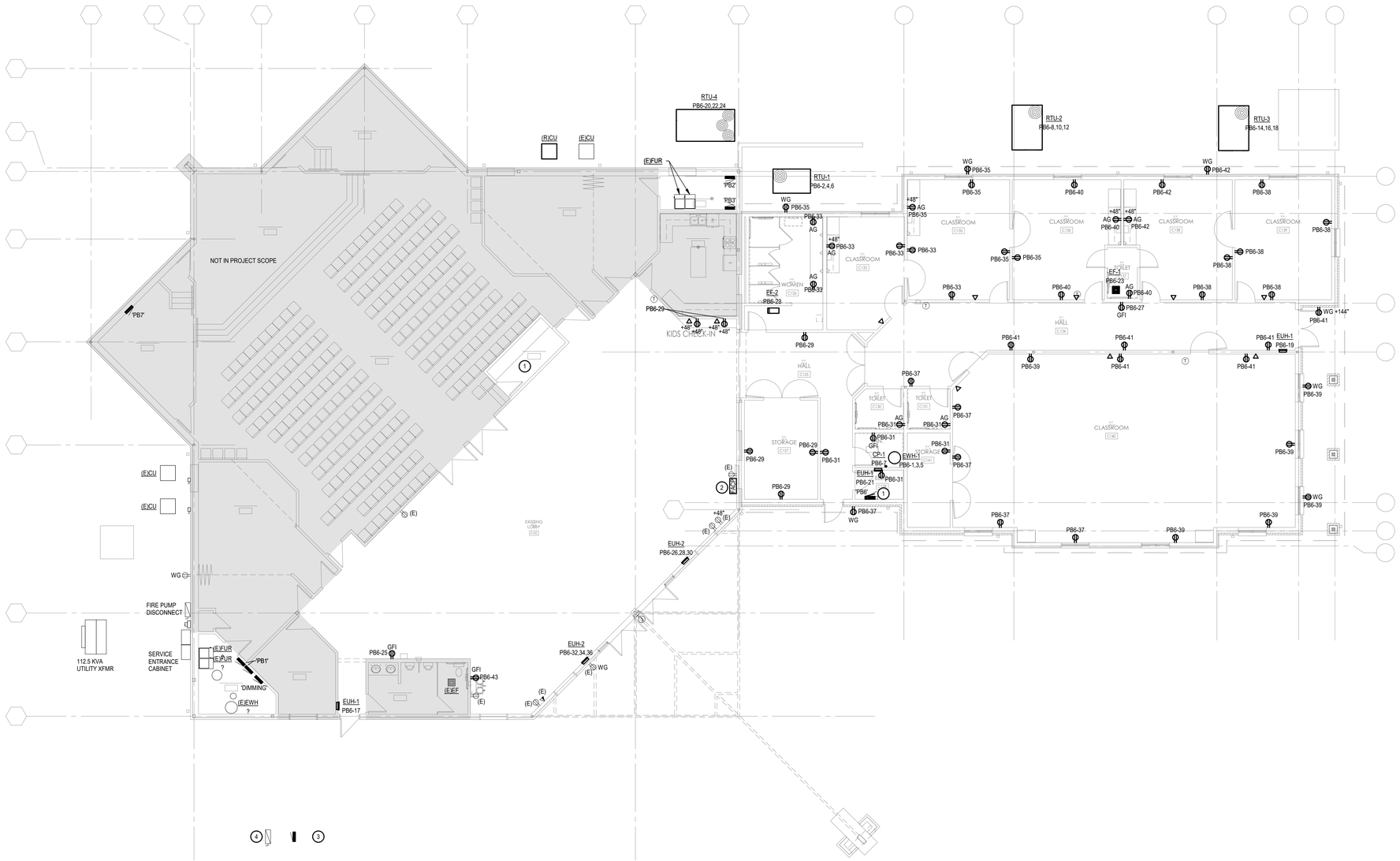
FLOOR PLAN - LIGHTING DEMO

E1.02



DRAWING NOTES:

1. EQUIPMENT SHOWN IN SOLID, LIGHT LINETYPE IS EXISTING TO REMAIN, U.O.N. E.C. SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND COORDINATE THE INSTALLATION OF NEW EQUIPMENT WITH CURRENT FIELD CONDITIONS.
2. EQUIPMENT SHOWN IN SOLID, BOLD LINETYPE IS TO BE INSTALLED UNDER NEW WORK, U.O.N.
3. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER U.O.N. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET. ALL WIRING SHALL BE IN APPROVED RACEWAY.
4. ALL OUTLETS, FIXTURES AND EQUIPMENT SHALL BE CIRCUITED TO PANEL AS NOTED. NUMBERS INDICATE CIRCUITING.
5. VERIFY MOUNTING AND LOCATION OF ALL OUTLETS WITH ARCHITECT AND COORDINATE WITH MECHANICAL DUCTWORK AS REQUIRED PRIOR TO ROUGH-IN.
6. COORDINATE TELEPHONE, CATV OUTLETS LOCATIONS AND REQUIREMENTS WITH OWNER/ARCHITECT.
7. COORDINATE INSTALLATION REQUIREMENTS WITH MECHANICAL AND PROVIDE ALL FINAL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
8. REFER TO EQUIPMENT SCHEDULE , ON SHEET E0.02, FOR FEEDER, DISCONNECT, AND CIRCUIT BREAKER SIZES FOR MECHANICAL AND PLUMBING EQUIPMENT. REFER TO MECHANICAL AND PLUMBING PLANS FOR EXACT EQUIPMENT LOCATIONS.
9. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF HVAC EQUIPMENT.
10. '(RL)' INDICATES EXISTING EQUIPMENT OR DEVICE TO BE RELOCATED.
11. ALL EXTERIOR MOUNTED RECEPTACLES, JUNCTION BOXES, AND CONDUIT SHALL BE WATERPROOF.
12. NO EQUIPMENT, DEVICES, FURNITURE, OR THE LIKE SHALL BE INSTALLED OR PLACED IN FRONT OF ELECTRICAL PANELS OR EQUIPMENT THAT WOULD VIOLATE CODE REQUIREMENTS FOR WORKING CLEARANCE.
13. AT LEAST ONE RECEPTACLE SHALL BE WITHIN 25' OF EACH PIECE OF SERVICEABLE EQUIPMENT FOR MAINTENANCE PURPOSES. FIELD VERIFY EXACT EQUIPMENT LOCATIONS AND PROVIDE ADDITIONAL RECEPTACLES AS REQUIRED FOR INSTALLED CONDITIONS. COORDINATE CIRCUITING WITH EOR AS REQUIRED.

KEY NOTES:

1. PROVIDE NEW FIBER LINE, BEGINNING AT EXISTING AVL BOOTH 114 AND TERMINATING AT NEW PANELBOARD PB6 IN NEW ELECTRICAL ROOM C128.
2. NEW LOCATION FOR NEW FIRE ALARM PANEL.
3. EXISTING PANELBOARD TO REMAIN, LOCATED WITHIN TRAILER.
4. EXISTING DISCONNECT TO REMAIN, LOCATED ON EXTERIOR OF TRAILER.

NORTH

1 FLOOR PLAN - POWER
1/8" = 1'-0"

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDTION

2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

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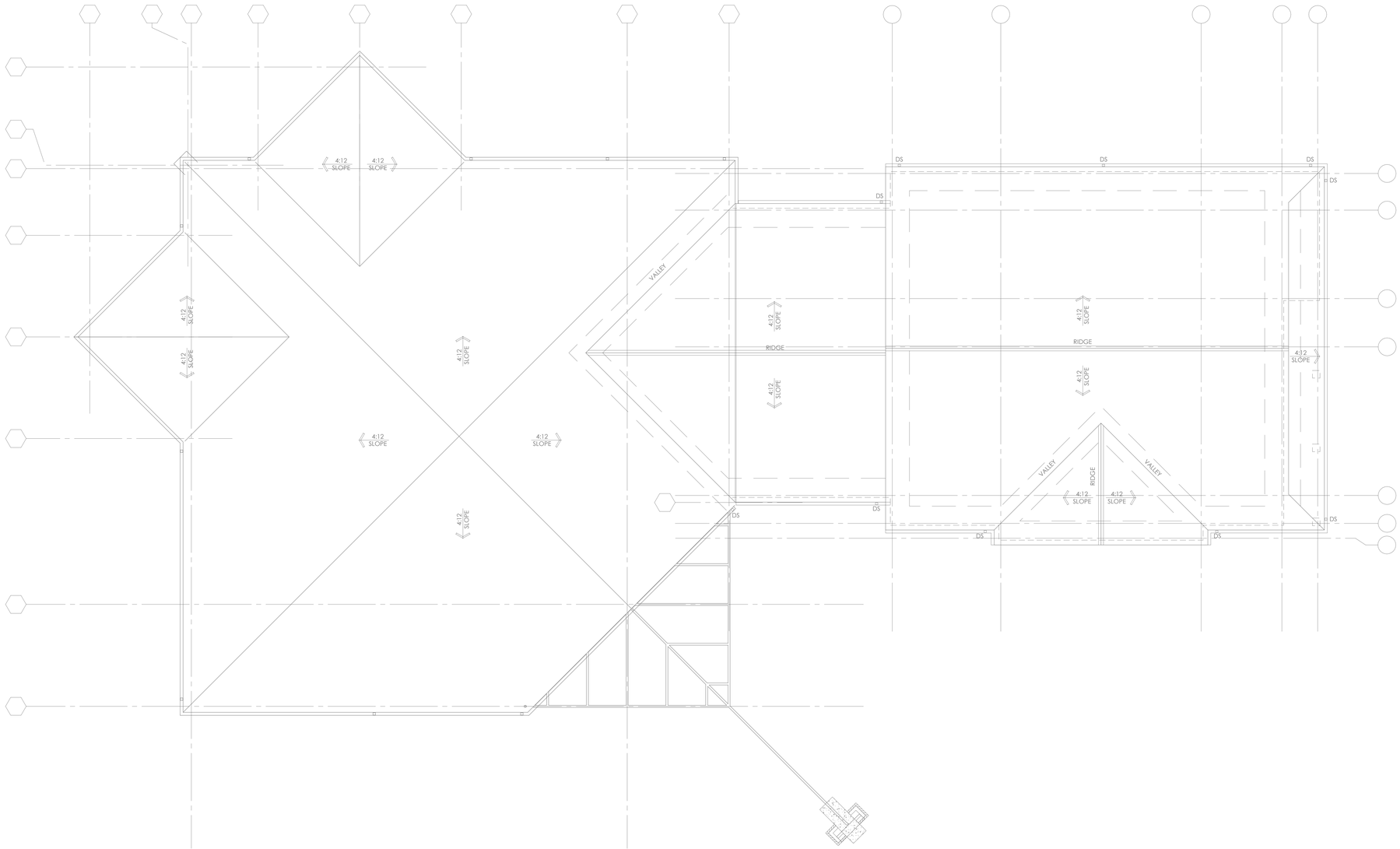
Title
FLOOR PLAN - POWER

E2.01



DRAWING NOTES:

1. EQUIPMENT SHOWN IN SOLID, LIGHT LINETYPE IS EXISTING TO REMAIN, U.O.N. E.C. SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND COORDINATE THE INSTALLATION OF NEW EQUIPMENT WITH CURRENT FIELD CONDITIONS.
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4. ALL OUTLETS, FIXTURES AND EQUIPMENT SHALL BE CIRCUITED TO PANEL AS NOTED. NUMBERS INDICATE CIRCUITING.
5. VERIFY MOUNTING AND LOCATION OF ALL OUTLETS WITH ARCHITECT AND COORDINATE WITH MECHANICAL DUCTWORK AS REQUIRED PRIOR TO ROUGH-IN.
6. COORDINATE TELEPHONE, CATV OUTLETS LOCATIONS AND REQUIREMENTS WITH OWNER/ARCHITECT.
7. COORDINATE INSTALLATION REQUIREMENTS WITH MECHANICAL AND PROVIDE ALL FINAL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
8. REFER TO EQUIPMENT SCHEDULE, ON SHEET E0.02, FOR FEEDER, DISCONNECT, AND CIRCUIT BREAKER SIZES FOR MECHANICAL AND PLUMBING EQUIPMENT. REFER TO MECHANICAL AND PLUMBING PLANS FOR EXACT EQUIPMENT LOCATIONS.
9. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF HVAC EQUIPMENT.
10. '(RL)' INDICATES EXISTING EQUIPMENT OR DEVICE TO BE RELOCATED.
11. ALL EXTERIOR MOUNTED RECEPTACLES, JUNCTION BOXES, AND CONDUIT SHALL BE WATERPROOF.
12. NO EQUIPMENT, DEVICES, FURNITURE, OR THE LIKE SHALL BE INSTALLED OR PLACED IN FRONT OF ELECTRICAL PANELS OR EQUIPMENT THAT WOULD VIOLATE CODE REQUIREMENTS FOR WORKING CLEARANCE.
13. AT LEAST ONE RECEPTACLE SHALL BE WITHIN 25' OF EACH PIECE OF SERVICEABLE EQUIPMENT FOR MAINTENANCE PURPOSES. FIELD VERIFY EXACT EQUIPMENT LOCATIONS AND PROVIDE ADDITIONAL RECEPTACLES AS REQUIRED FOR INSTALLED CONDITIONS. COORDINATE CIRCUITING WITH EOR AS REQUIRED.

NORTH

1 ROOF PLAN - POWER
1/8" = 1'-0"

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CREEKSIDE BIBLE CHURCH RENOVATION & ADDTION

2180 I-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

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Title: ROOF PLAN - POWER

E2.02

DRAWING NOTES:

1. LIGHTING FIXTURES AND DEVICES SHOWN IN SOLID, LIGHT LINETYPE ARE EXISTING TO REMAIN, U.O.N. E.C. SHALL FIELD VERIFY ALL EXISITNG CONDITIONS AND COORDINATE THE INSTALLATION OF NEW EQUIPMENT WITH CURRENT FIELD CONDITIONS.
2. LIGHTING FIXTURES AND DEVICES SHOWN IN SOLID, BOLD LINETYPE ARE TO BE INSTALLED UNDER NEW WORK, U.O.N.
3. '(RL)' INDICATES AN EXISTING FIXTURE TO BE RELOCATED.
4. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER U.O.N. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET. ALL WIRING SHALL BE IN APPROVED RACEWAY.
5. ALL LIGHT FIXTURES SHALL BE CIRCUITED TO PANEL AS NOTED. NUMBERS INDICATE CIRCUITING.
6. VERIFY LIGHT FIXTURE SCHEDULES, LOCATIONS, QUANTITIES, AND LIGHTING CONTROL REQUIREMENTS. PROVIDE LIGHTING AND CONTROLS AS REQUIRED.
7. ALL EXIT SIGNS AND EGRESS LIGHTS SHALL BE CONNECTED TO LIGHTING CIRCUIT IN AREA AND WIRED TO AN UN-SWITCHED HOT LEG.
8. NO EQUIPMENT, DEVICES, FURNITURE, OR THE LIKE SHALL BE INSTALLED OR PLACED IN FRONT OF ELECTRICAL PANELS OR EQUIPMENT THAT WOULD VIOLATE CODE REQUIRMENTS FOR WORKING CLEARANCE.

KEY NOTES:

(1) EXISTING PANELBOARD TO REMAIN, LOCATED WITHIN TRAILER.

(2) P-TYPE LIGHT FIXTURES TO BE HUNG AT 13' AFF. COORDINATE EXACT LOCATIONS WITH MECHANICAL DUCTING.

(3) UTILITZE EXISTING SWITCH STATION AND EXISTING SHUTOFF CONTROLS TO CONTROL LIGHTING IN LOBBY.

NORTH

1 FLOOR PLAN - LIGHTING
1/8" = 1'-0"

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11/19/2024

CREEKSIDE BIBLE CHURCH RENOVATION & ADDTION

21801-25
CASTLE ROCK, CO 80104

CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

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Date
11-18-2024

Drawn by
Checked by

Title
FLOOR PLAN - LIGHTING

E3.01

COM*check* Software Version COMcheckWeb
Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Creekside Bible Church
Project Type: Addition

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Religious Building	8299	0.94	7801
		Total Allowed Watts =	7801

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Religious Building				
LED: A: Other:	1	32	39	1248
LED: C: Other:	1	8	95	760
LED: D: Other:	1	11	22	242
LED: F: Other:	1	7	10	70
LED: G: Other:	1	7	50	350
LED: K: Other:	1	2	21	42
LED: P: Other:	1	23	60	1380
			Total Proposed Watts =	4092

Interior Lighting PASSES: Design 48% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

COM*check* Software Version COMcheckWeb
Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Creekside Bible Church
Project Type: Addition
Exterior Lighting Zone 2 (Neighborhood business district (LZ2))

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Dining area	100 ft2	0.65	Yes	65
			Total Tradable Watts (a) =	65
			Total Allowed Watts =	65
			Total Allowed Supplemental Watts (b) =	400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Dining area (100 ft2): Tradable Wattage				
LED: L: Other:	1	3	11	33
			Total Tradable Proposed Watts =	33

Exterior Lighting PASSES: Design 93% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

COM*check* Software Version COMcheckWeb
Inspection Checklist

Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C103.2 [PR8][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2.2 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.2 [EL19][1]	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.3 [EL20][1]	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2, C405.2.2.1, C405.2.2.2 [EL21][2]	Each area not served by occupancy sensors (per C405.2.1) have time-switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3, C405.2.3.1, C405.2.3.2 [EL23][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL26][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL27][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.5 [EL28][null]	Manual controls required by the energy code are in a location with ready access to occupants and located where the controlled lights are visible, or identify the area served and their status.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.6 [EL30][null]	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.3 [EL6][1]	Exit signs do not exceed 5 watts per face.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.6 [EL26][2]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.7 [EL27][2]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.8.2, C405.8.2.1 [EL28][2]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.9 [EL29][2]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.4.1 [FI18][1]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Interior Lighting fixture schedule for values.*
C405.5.1 [FI19][1]	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Exterior Lighting fixture schedule for values.*
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.5.1 [FI16][3]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

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CREEKSIDE BIBLE CHURCH

Job No: 24010

Revisions / Submittals:

No.	Date	Description
	11/18/2024	Permit Issue Set

Date 11-18-2024
Drawn by Checked by

Title ELECTRICAL ENERGY CALCULATIONS

E6.01