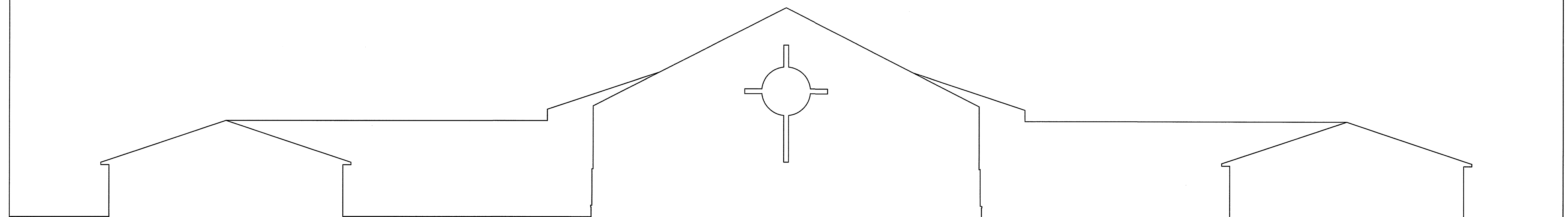


NEW BUILDING ADDITION FOR.....**FIRST BAPTIST CHURCH**
 LOCATION.....NEOSHO, MISSOURI



RUSSELL ARCHITECTS
 PROFESSIONAL CORPORATION
 300 JOHN Q HARMONS PARKWAY SUITE 506
 SPRINGFIELD, MISSOURI 65806 (417) 866-4600 FAX (417) 866-1305

BUILDING CODE USED FOR THIS PROJECT.....2012 INTERNATIONAL BUILDING CODE

COMMISSION NUMBER
15-103

SHEET INDEX.....

SITE

- C1...SITE GRADING PLAN
- C2...SITE UTILITIES PLAN
- SITE1...SITE DEMOLITION PLAN
- SITE2...SITE PLAN
- SITE3...SITE DETAILS

STRUCTURAL

- S0.0...GENERAL NOTES
- S1.1...FOUNDATION PLAN
- S2.1...FOUNDATION DETAILS
- S3.1...ROOF FRAMING PLAN
- S3.2...STAGE FRAMING PLAN
- S4.1...FRAMING DETAILS
- S4.2...FRAMING DETAILS

ARCHITECTURAL

- D1.1...DEMOLITION FLOOR PLAN
- A1.1...FLOOR PLAN
- A2.1...OVERALL EAST, NORTH, & WEST ELEVATIONS
- A2.2...NEW SANCTUARY EAST & WEST ELEVATIONS
- A2.3...NEW SANCTUARY & EXISTING FACADE NORTH ELEVATIONS
- A2.4...NEW SANCTUARY SOUTH ELEVATION
- A2.5...NEW CANOPY ELEVATIONS
- A3.1...REFLECTED CEILING PLAN
- A4.1...OVERALL FACILITY ROOF PLAN
- A6.1...OVERALL BUILDING SECTIONS
- A6.2...OVERALL BUILDING & CANOPY SECTIONS
- A6.3...CANOPY SECTIONS & DETAILS
- A6.4...WALL SECTIONS & DETAILS
- A6.5...WALL SECTIONS & DETAILS
- A6.6...WALL SECTIONS & DETAILS
- A6.7...REMOVABLE PLATFORM PARTITION DETAILS
- A8.1...DOOR & WINDOW SCHEDULES & DETAILS

MECHANICAL, ELECTRICAL, PLUMBING

- P1...UNDERGROUND PLUMBING PLAN
- P2...PLUMBING PLAN
- P3...PLUMBING SCHEDULE & DETAILS
- P4...PLUMBING SPECIFICATIONS
- M1...MECHANICAL PLAN
- M2...MECHANICAL SCHEDULES & DETAILS
- M3...MECHANICAL SPECIFICATIONS
- E1...LIGHTING PLAN
- E2...ELECTRICAL PLAN
- E3...ELECTRICAL SCHEDULES
- E4...ELECTRICAL DETAILS & SYMBOLS
- E5...ELECTRICAL SPECIFICATIONS

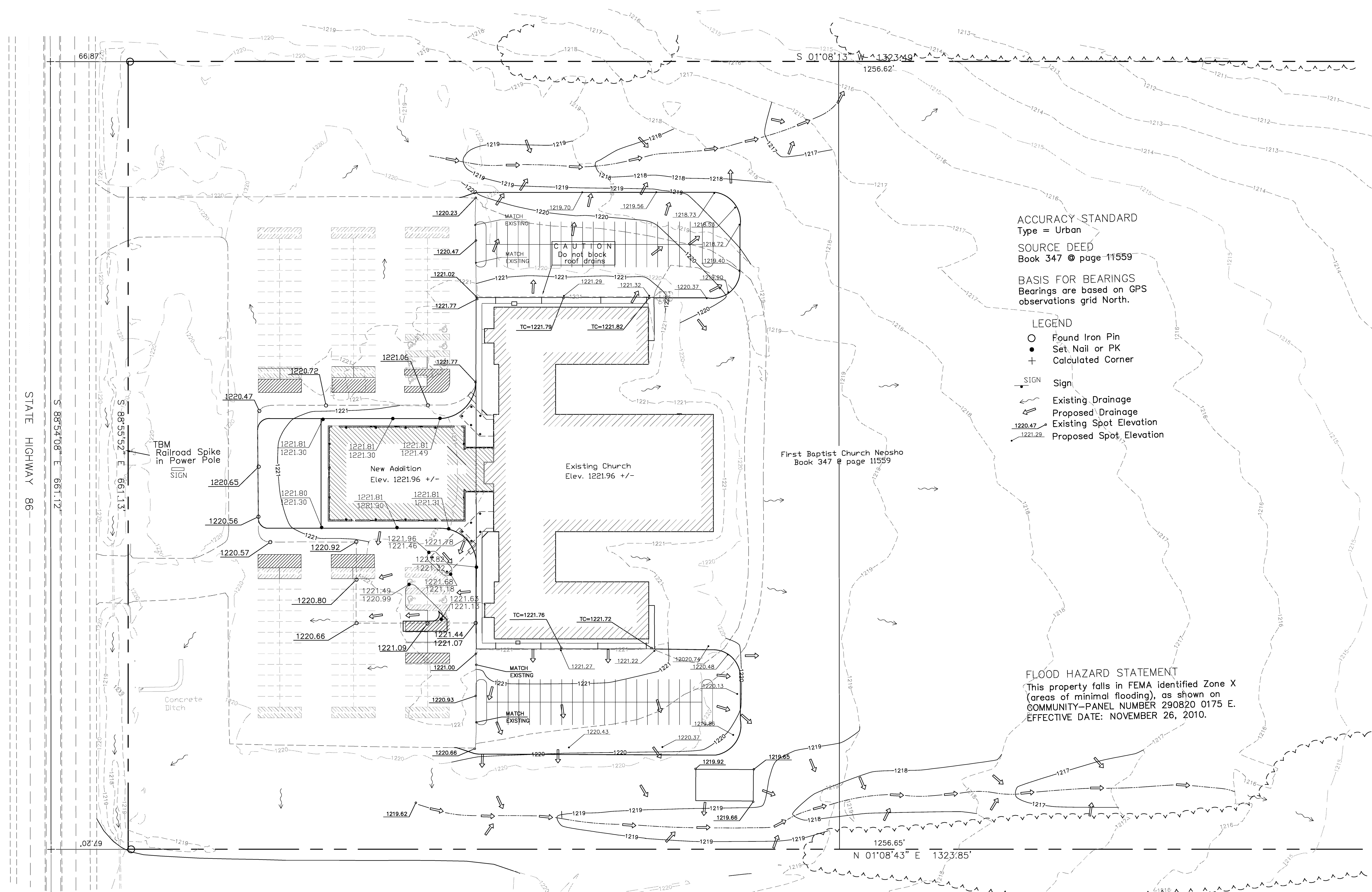
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
COVR

SCALE

DATE
08-15-16

REV. DATE



ACCURACY STANDARD
Type = Urban
SOURCE DEED
Book 347 @ page 11559

BASIS FOR BEARINGS
Bearings are based on GPS
observations grid North.

- LEGEND
- Found Iron Pin
 - Set Nail or PK
 - + Calculated Corner
 - SIGN Sign
 - ~ Existing Drainage
 - Proposed Drainage
 - 1220.47 Existing Spot Elevation
 - 1221.29 Proposed Spot Elevation

FLOOD HAZARD STATEMENT
This property falls in FEMA identified Zone X
(areas of minimal flooding), as shown on
COMMUNITY-PANEL NUMBER 290820 0175 E.
EFFECTIVE DATE: NOVEMBER 26, 2010.

STATE HIGHWAY 86
S 88°54'08" E 661.12'
S 88°55'52" E 661.13'

S 01°08'13" W 1323.49'
1256.62'

First Baptist Church Neosho
Book 347 @ page 11559

N 01°08'43" E 1323.85'
1256.65'

1 SITE SITE GRADING PLAN
1" = 40'-0"



RUSSELL ARCHITECTS
PROFESSIONAL CORPORATION
300 JOHN Q. HAMMONS PARKWAY SUITE 806
SPRINGFIELD, MISSOURI 65806 (417) 866-4000 FAX (417) 866-1905

COMMISSION NUMBER
15-103

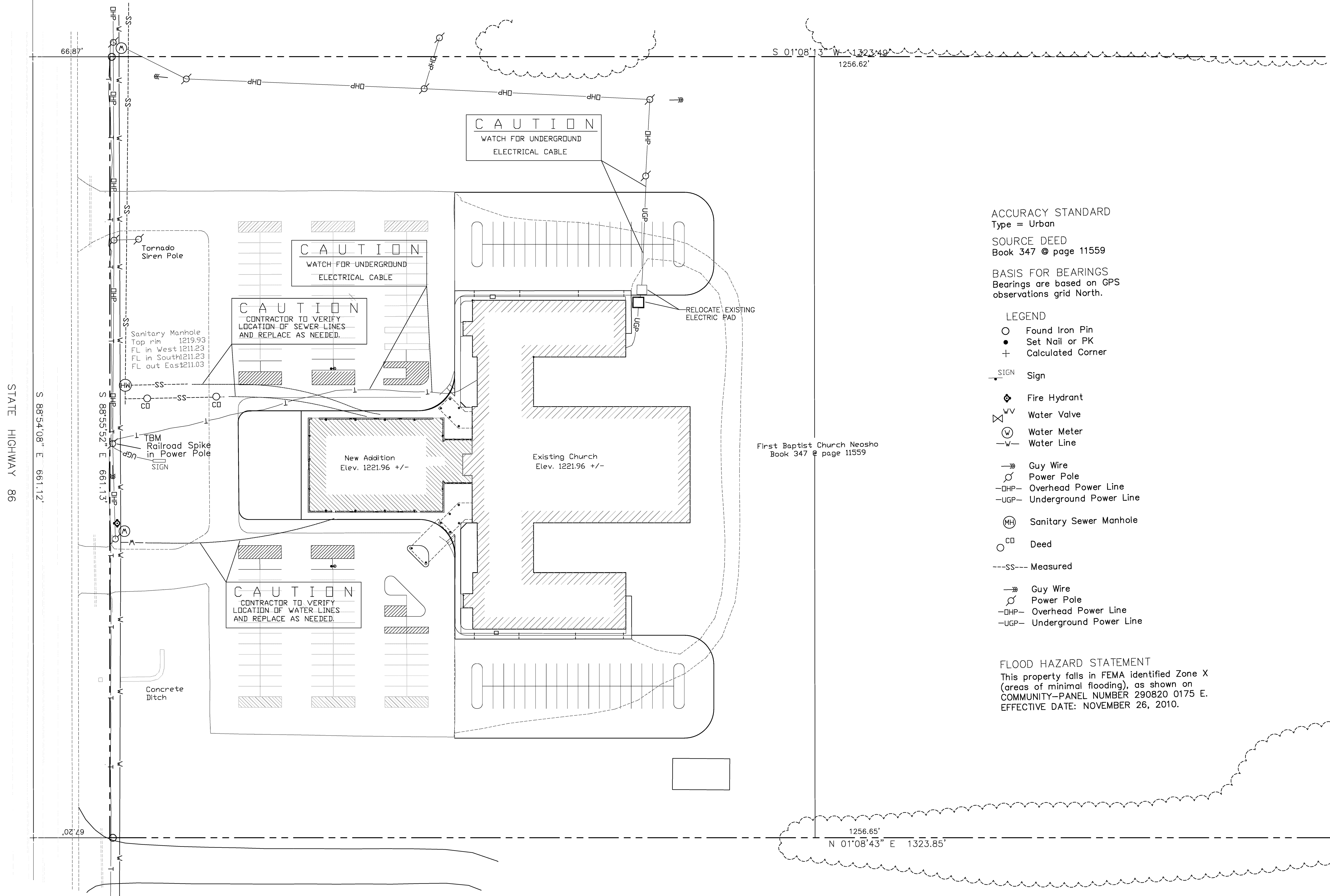
NEW SANCTUARY
FOR
FIRST BAPTIST CHURCH
NEOSHO, MO

SHEET
C1

SCALE
1" = 40'-0"

DATE
07-26-16

REV. DATE

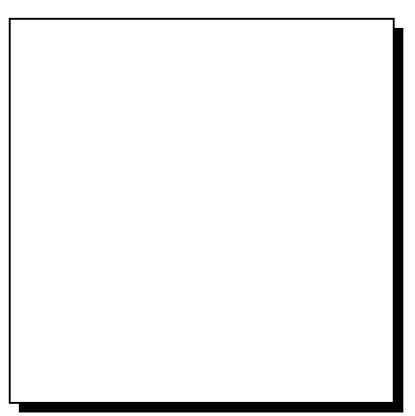
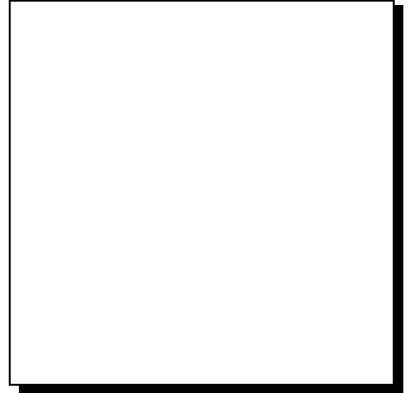


ACCURACY STANDARD
Type = Urban
SOURCE DEED
Book 347 @ page 11559

BASIS FOR BEARINGS
Bearings are based on GPS
observations grid North.

- LEGEND
- Found Iron Pin
 - Set Nail or PK
 - + Calculated Corner
 - SIGN Sign
 - ⊕ Fire Hydrant
 - ⊕ Water Valve
 - ⊕ Water Meter
 - W — Water Line
 - GUY — Guy Wire
 - DHP — Overhead Power Line
 - UGP — Underground Power Line
 - ⊕ Sanitary Sewer Manhole
 - CD Deed
 - SS --- Measured
 - GUY — Guy Wire
 - DHP — Overhead Power Line
 - UGP — Underground Power Line

FLOOD HAZARD STATEMENT
This property falls in FEMA identified Zone X
(areas of minimal flooding), as shown on
COMMUNITY-PANEL NUMBER 290820 0175 E.
EFFECTIVE DATE: NOVEMBER 26, 2010.



RUSSELL ARCHITECTS
PROFESSIONAL CORPORATION
300 JOHN Q. HAMMONS PARKWAY SUITE 506
SPRINGFIELD, MISSOURI 65806 (417) 866-4600 FAX (417) 866-1305

COMMISSION NUMBER
15-103

NEW SANCTUARY
FOR
FIRST BAPTIST CHURCH
NEOSHO, MO

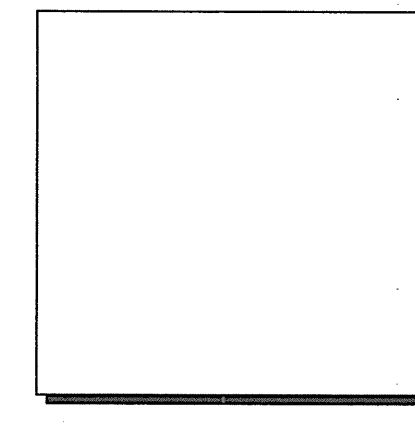
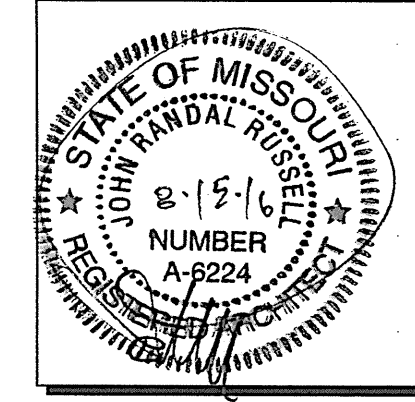
SHEET
C2

SCALE
1" = 40' - 0"

DATE
07-28-16

REV. DATE





RUSSELL ARCHITECTS
 PROFESSIONAL CORPORATION
 300 JOHN Q HAMMONS PARKWAY SUITE 506
 SPRINGFIELD, MISSOURI 65806 (417) 866-4600 FAX (417) 866-1305

COMMISSION NUMBER
 15-103

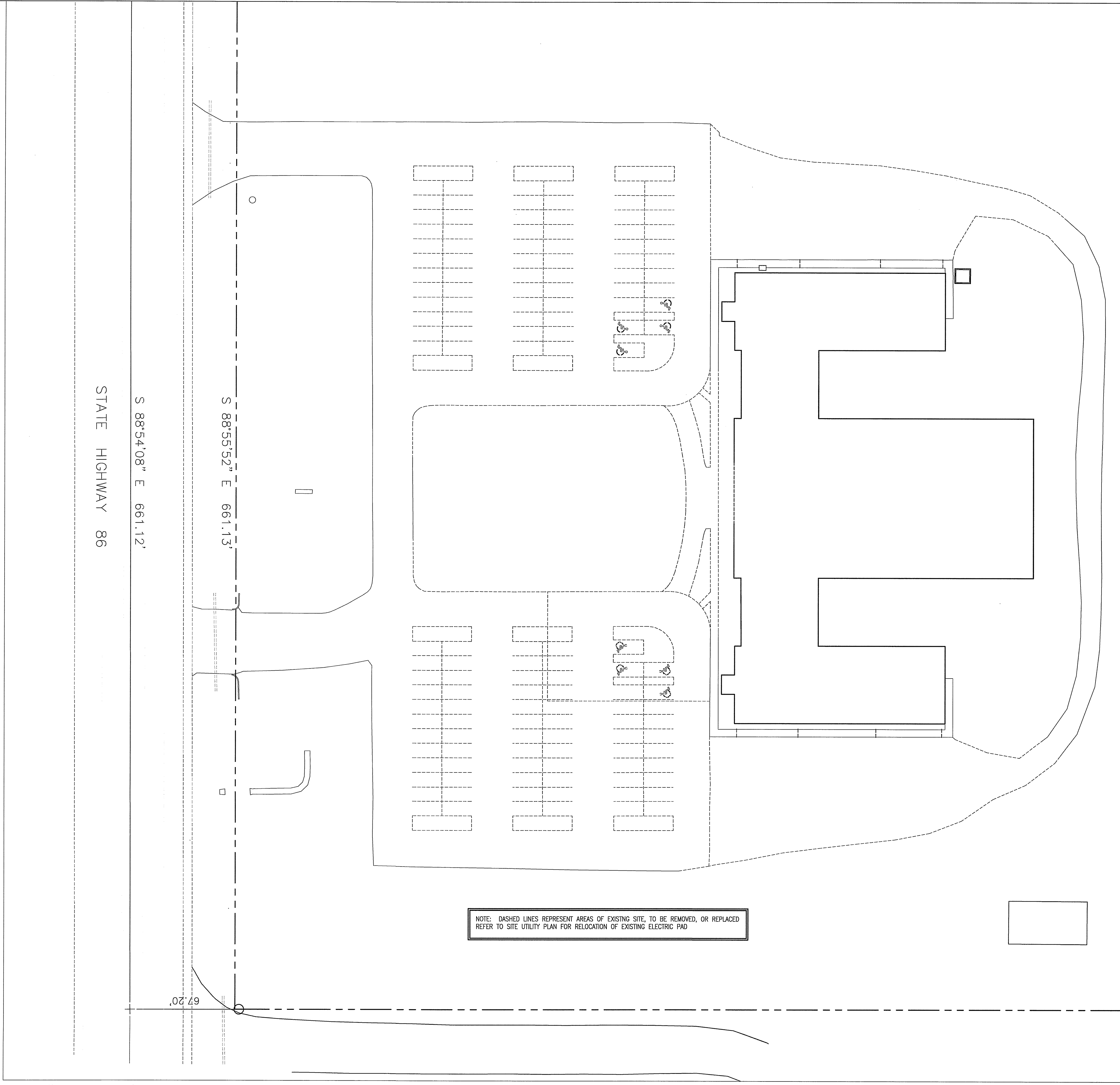
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
SITE 1

SCALE
 1" = 30'-0"

DATE
 08-15-16

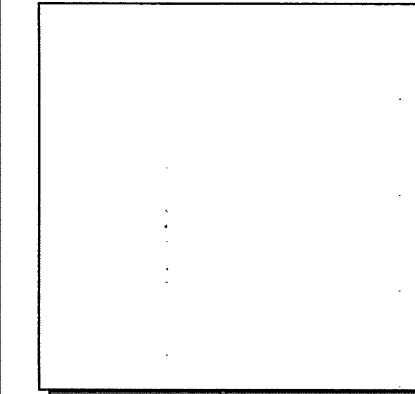
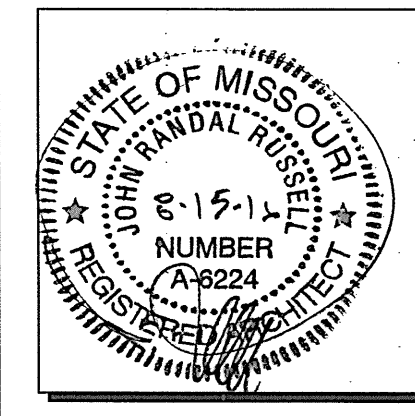
REV. DATE



NOTE: DASHED LINES REPRESENT AREAS OF EXISTING SITE, TO BE REMOVED, OR REPLACED
 REFER TO SITE UTILITY PLAN FOR RELOCATION OF EXISTING ELECTRIC PAD

1 SITE **SITE DEMOLITION PLAN**
 1" = 30'-0"





RUSSELL ARCHITECTS
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COMMISSION NUMBER
 15-103

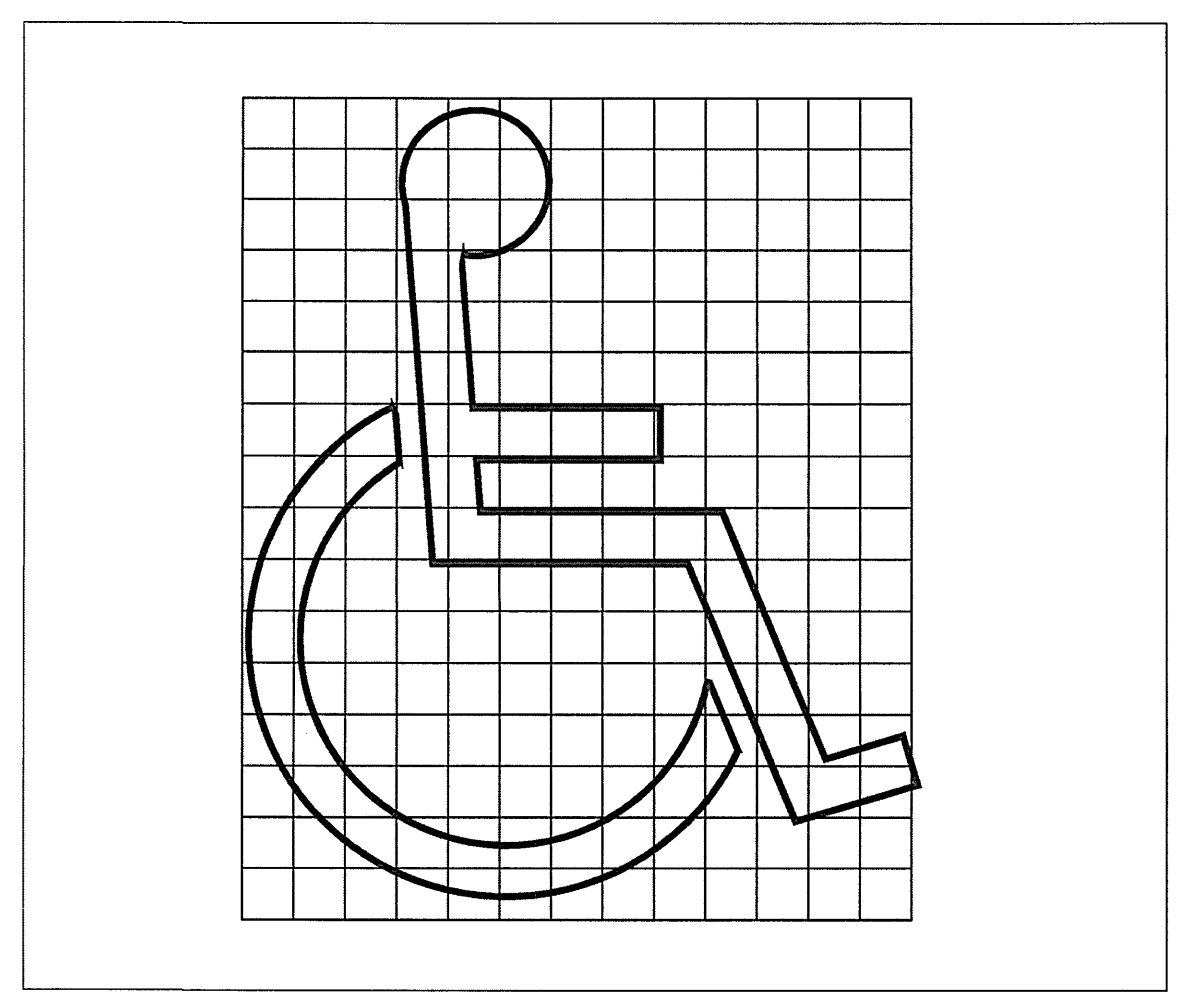
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
SITE 3

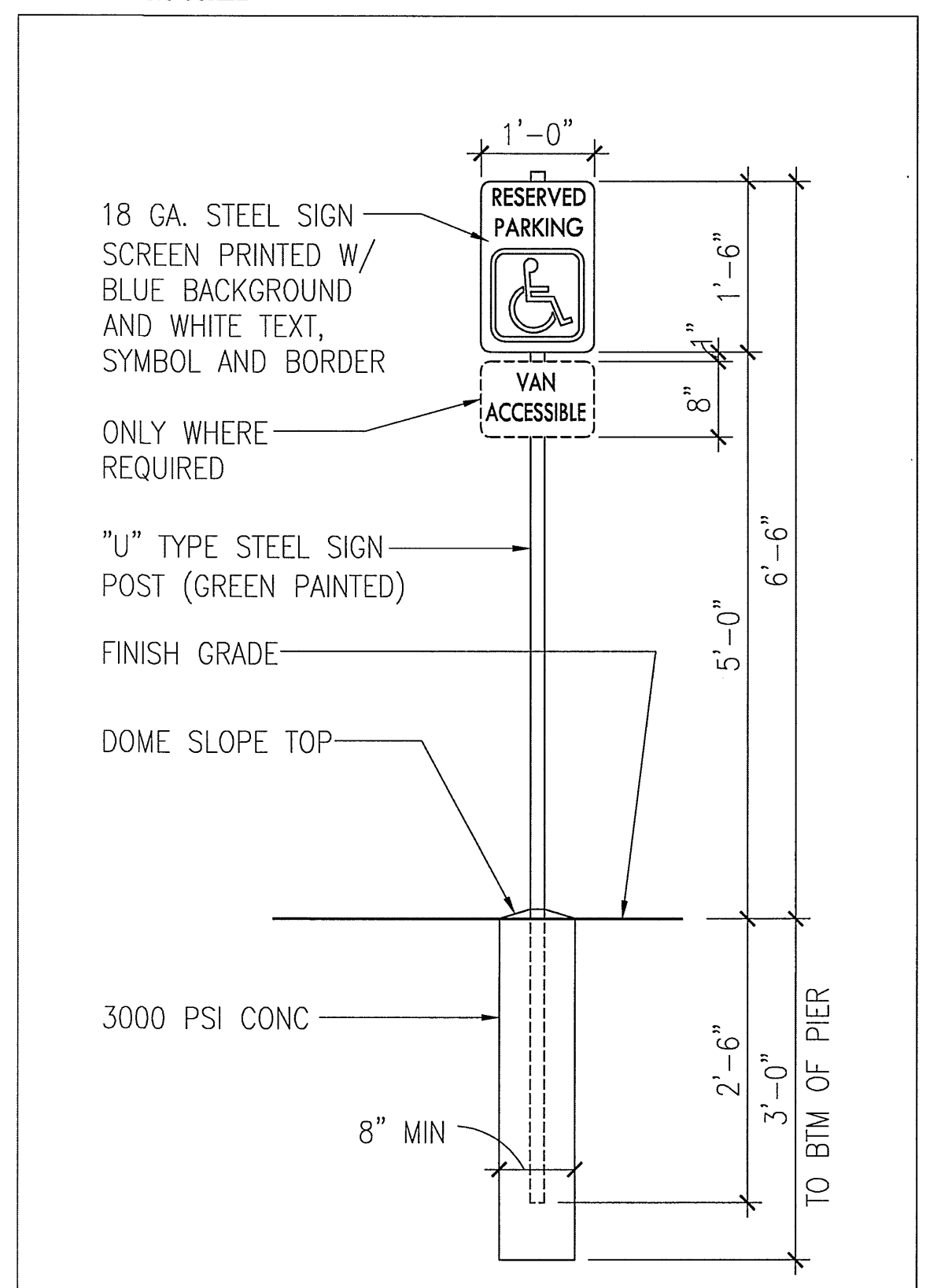
SCALE
 VARIES

DATE
 08-15-16

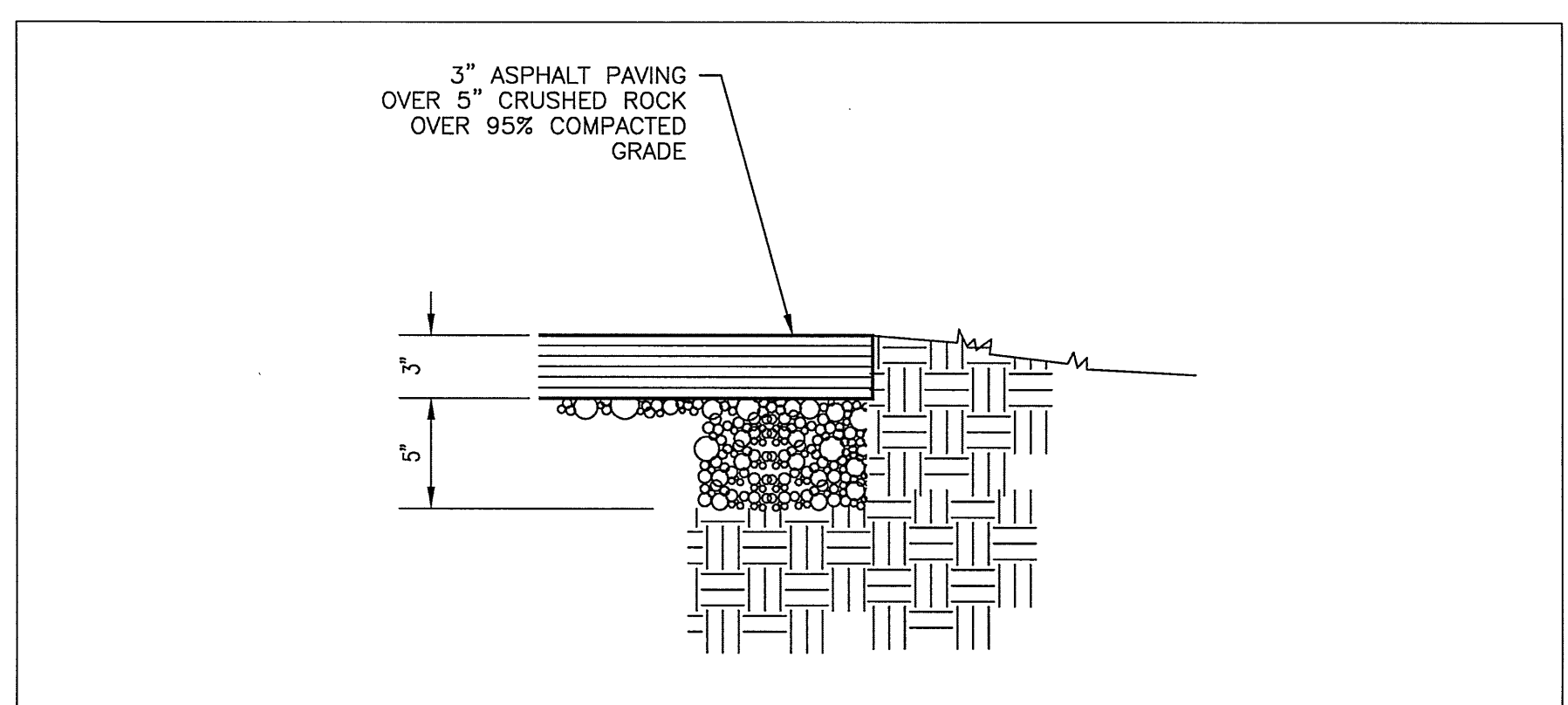
REV. DATE



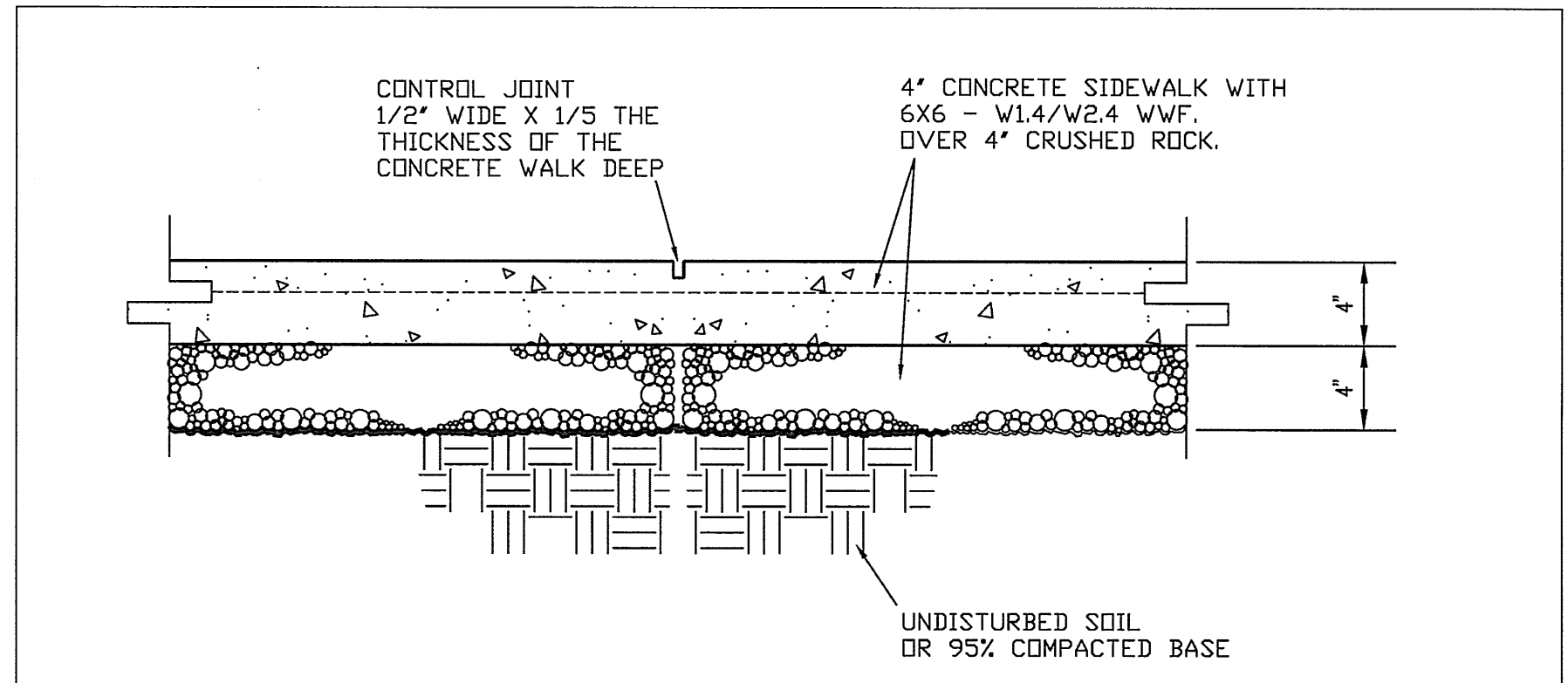
7 ADA SYMBOL
 NO SCALE



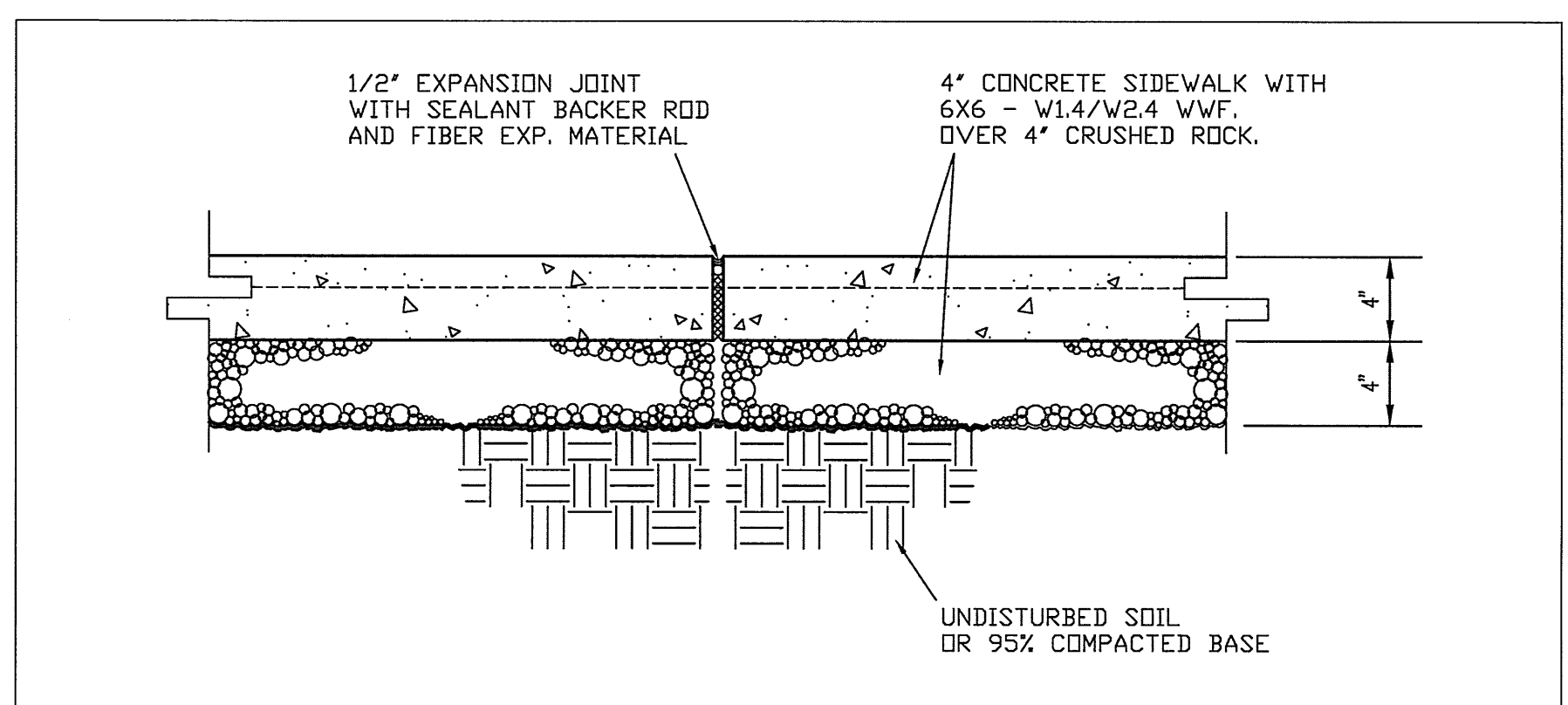
6 ADA POST MOUNTED SIGN
 3/4" = 1'-0"



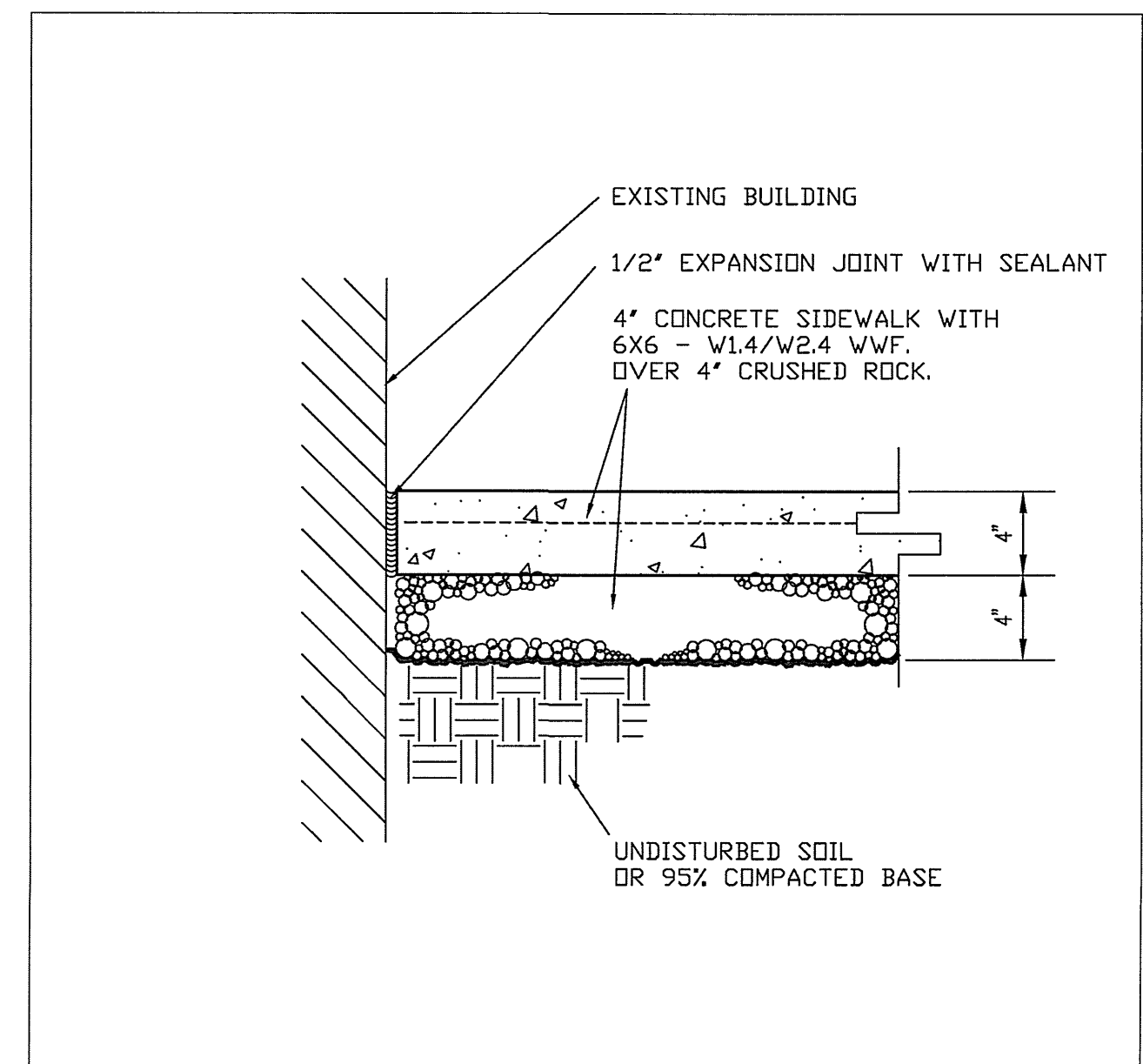
4 EDGE OF NEW ASPHALT PAVING @ GRADE
 1-1/2" = 1'-0"



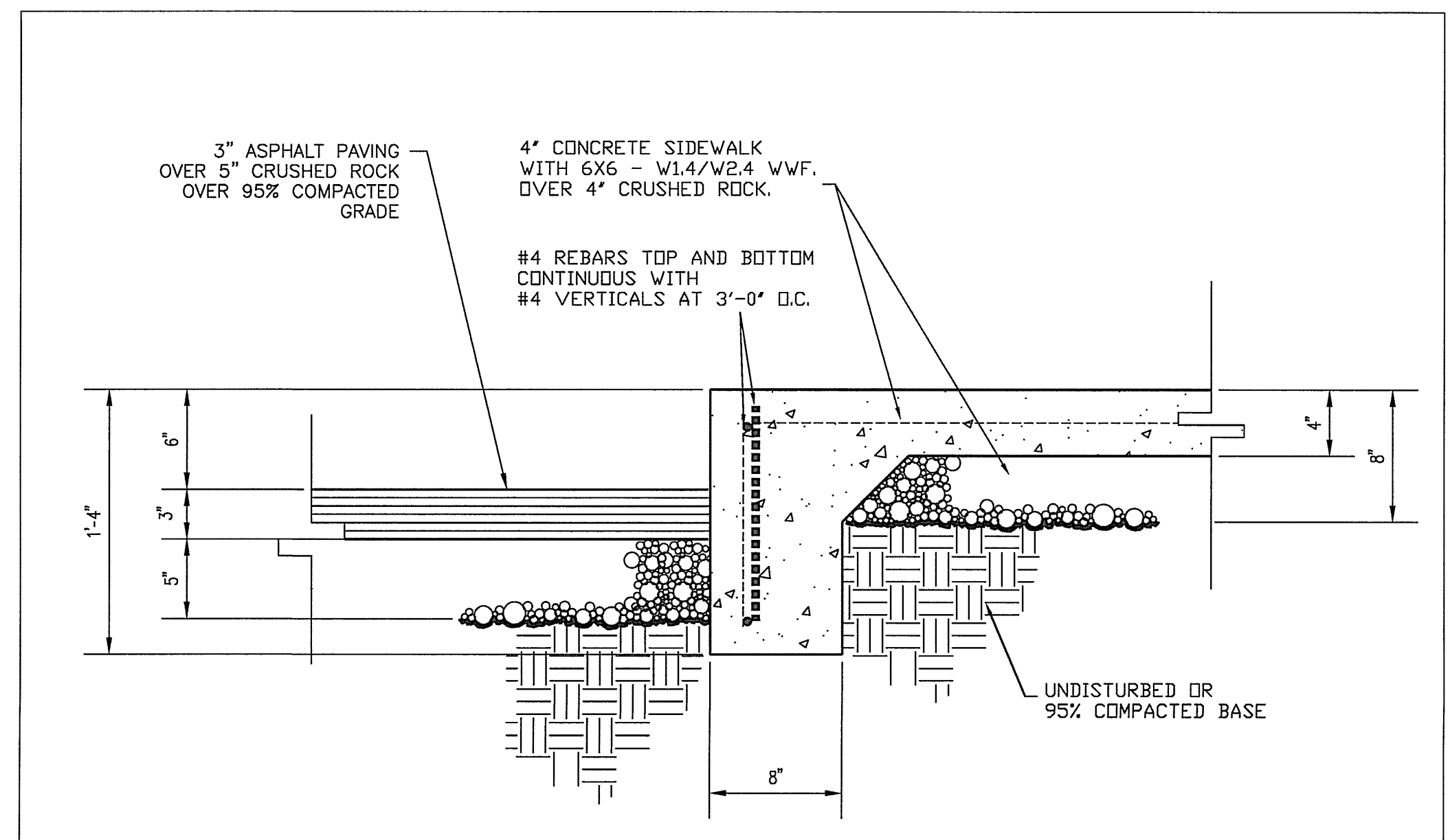
3 CONTROL JOINT @ NEW CONCRETE PAVING
 1-1/2" = 1'-0"



2 EXPANSION JOINT @ NEW CONCRETE PAVING
 1-1/2" = 1'-0"



5 NEW CONC. WALK @ BLDG
 1-1/2" = 1'-0"



1 NEW CONCRETE WALK & CURB @ ASPHALT PAVING
 1-1/2" = 1'-0"

SPECIAL CONDITIONS, REQUIREMENTS AND NOTES TO OWNER, DEVELOPER AND CONTRACTOR:

CONTRACTOR, BUILDER AND SUBCONTRACTORS INVOLVED IN ANY FORM OF CONSTRUCTION USING THESE DOCUMENTS SHALL BE INFORMED OF THE FOLLOWING RESPONSIBILITIES, PERFORMANCE CRITERIA, LIMITATIONS AND RISKS ASSOCIATED WITH CONSTRUCTION. IF THE OWNER, DEVELOPER OR CONTRACTOR IS NOT ABLE TO ACCEPT THE RESPONSIBILITIES OR PERFORMANCE CRITERIA AND LIMITATIONS, NOTIFY OUR OFFICE PRIOR TO START OF CONSTRUCTION. IT SHALL BE EXPRESSLY UNDERSTOOD THAT THE ENGINEER IS NOT RESPONSIBLE OR LIABLE FOR THE LACK OF PERFORMANCE OF MATERIALS, SYSTEMS OR DESIGNS NOT BEING LIMITED TO ITEMS OUTLINED BELOW. CONTRACTORS AND SUBCONTRACTORS SHALL THOROUGHLY REVIEW ALL CONDITIONS AND RESPONSIBILITIES STATED IN THESE NOTES, PLANS, SECTIONS AND DETAILS, AND SHALL NOTIFY THE ENGINEER AND OWNER IN WRITING PRIOR TO CONSTRUCTION OF ANY CONDITIONS OR RESPONSIBILITIES WHICH ARE NOT ACCEPTABLE OR NOT UNDERSTOOD.

1. PLAIN CONCRETE OR REINFORCED CONCRETE DEVELOPS CRACKS. THE CRACKS ARE DUE TO INHERENT SHRINKAGE, CREEP AND RESTRAINING EFFECTS. CRACKS ARE NORMALLY COSMETIC AND THE SYSTEM MAINTAINS SERVICEABILITY AND STRENGTH REQUIREMENTS. JOINTS MAY BE INDICATED TO CONTROL CRACKING, BUT ARE NOT MEANT TO ELIMINATE ALL CRACKING, AS THIS IS NOT PRACTICAL. THE CONTRACTOR SHALL USE ALL STANDARD MEANS TO INSURE PROPER PROTECTION AND CURING OF ALL CEMENTITIOUS MATERIALS TO REDUCE CRACKING, SURFACE SPALLING OR EXTREME CRACKING MAY BE CAUSED BY POOR MATERIAL OR PLACEMENT. CONTACT OUR OFFICE FOR POSSIBLE REPAIR REQUIREMENTS.

2. FOUNDATION SETTLEMENT MAY CAUSE DISTORTION AND DISTRESS TO THE SUPPORTED STRUCTURE AS WELL AS ADJACENT UTILITIES, SLABS OR FOUNDATIONS. THE SOIL REPORT MAY INDICATE A LEVEL OF DISPLACEMENT. ATTENTION TO PROPER SOIL PREPARATION AND GRADING, AS WELL AS PROPER DRAINAGE AWAY FROM STRUCTURE IS ESSENTIAL IN REDUCING EXPECTED SETTLEMENT.

3. VARIATION IN DIMENSIONS MAY OCCUR AS A RESULT OF THERMAL INFLUENCES, NATURAL DEFLECTIONS AND/OR CAMBERS OF MEMBERS. AS A RESULT, QUANTITIES MAY VARY AND ARCHITECTURAL FINISHES MAY BE AT RISK OF COSMETIC VARIATION OR DAMAGE.

4. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR VARIATIONS TO PLANS BETWEEN BID PROCESS AND FINALIZED APPROVED DOCUMENTS RELEASED FOR CONSTRUCTION. ADDITIONS AND ALTERATIONS MAY BE MADE BETWEEN RELEASE OF BID DOCUMENTS AND FINALIZED CONSTRUCTION DOCUMENTS.

5. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE STRUCTURAL ENGINEERS IN THIS OR SIMILAR LOCALITIES. THEY NECESSARILY ASSUME THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR, SUBCONTRACTOR AND/OR WORKPERSONS WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, IT IS UNDERSTOOD THAT THE CONTRACTOR WILL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR ALL WORK EXPLICITLY SHOWN.

6. CALCULATION AND DESIGN OF MISCELLANEOUS NON-STRUCTURAL ITEMS, SUCH AS RAILINGS, NON-STRUCTURAL WALLS AND PREFABRICATED STRUCTURAL ITEMS, SUCH AS FLOOR AND ROOF TRUSSES, ARE NOT INCLUDED AND ARE TO BE PROVIDED BY OTHERS UNLESS SPECIFICALLY NOTED ON THESE DRAWINGS.

7. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE, SHORING, BRACING, FORMWORK, ETC. AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. CONSTRUCTION MATERIALS SHALL BE UNIFORMLY SPREAD OUT SUCH THAT DESIGN LIVE LOAD PER SQUARE FOOT AS STATED HEREIN IS NOT EXCEEDED. VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE LOCAL BUILDING DEPARTMENT. ALL WORK OR CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE BUILDING CODES, REGULATIONS AND SAFETY REQUIREMENTS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, CONDITIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL INFORM THE ARCHITECT IN WRITING OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS. ANY SUCH DISCREPANCY, OMISSION OR VARIATION NOT REPORTED BEFORE THE START OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

10. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR APPENDIX.

11. OPTIONS ARE FOR CONTRACTORS CONVENIENCE. IF AN OPTION IS USED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS.

12. TYPICAL DETAILS AND NOTES SHALL APPLY, THOUGH NOT NECESSARILY AT A SPECIFIC LOCATION ON PLANS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT. DETAILS MAY ONLY SHOW ONE SIDE OF CONNECTION OR MAY OMIT INFORMATION FOR CLARITY. WHERE DISCREPANCIES OCCUR IN THESE DRAWINGS, NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.

13. ALL OPENINGS ARE NOT SHOWN ON THESE DRAWINGS. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION. OPENINGS MAY REQUIRE ADDITIONAL REINFORCING OR SUPPORTS AS SHOWN ON TYPICAL DETAILS. IF TYPICAL DETAILS FOR ALL CONDITIONS ARE NOT INCLUDED HEREIN, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REQUEST IN WRITING ADDITIONAL INFORMATION.

14. ALL INSPECTIONS REQUIRED BY THE BUILDING CODES, LOCAL BUILDING OFFICIALS, OR BY THESE PLANS SHALL BE PROVIDED BY AN INDEPENDENT INSPECTION COMPANY OR, THE BUILDING DEPARTMENT. INSPECTION REQUIREMENTS STATED HEREIN ARE PARTIAL. COMPLETE INSPECTION REQUIREMENTS SHALL BE AS DIRECTED BY THE LOCAL BUILDING DEPARTMENT. SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE AN INSPECTION, UNLESS SPECIFICALLY CONTRACTED FOR.

15. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS. SHOP DRAWINGS ARE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE STRUCTURAL DRAWINGS. REVIEW DOES NOT INDICATE THAT THE SHOP DRAWINGS ARE CORRECT OR COMPLETE. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM CONTRACT DRAWINGS SHALL BE CLOUDED. ANY OF THE FOREMENTIONED SHALL NOT BE CONSIDERED APPROVED AFTER ENGINEER'S REVIEW UNLESS SPECIFICALLY NOTED ACCORDINGLY. THE SHOP DRAWINGS DO NOT SUPERSEDE OR REPLACE THE ORIGINAL CONTRACT DRAWINGS. ANY ENGINEERING PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF AN APPROPRIATELY REGISTERED ENGINEER. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ADEQUACY OF ENGINEERING DESIGNS PERFORMED BY OTHERS. ALLOW 5 WORKING DAYS FOR THE ENGINEER'S REVIEW. ONE COPY OF EACH SUBMITTAL WILL BE RETAINED FOR THE ENGINEER'S RECORDS.

RENOVATIONS/REMODELS:

1. SELECTIVE DEMOLISHING HAS NOT BEEN COMPLETED ON THIS PROJECT TO ALLOW FOR FULL ACCESS TO THE EXISTING STRUCTURAL SYSTEM. THEREFORE, FRAMING LAYOUT AND LOAD BEARING ELEMENTS HAVE BEEN ASSUMED. GENERAL CONTRACTOR SHALL CONFIRM DURING DEMOLITION IF DESIGN ASSUMPTIONS ARE CORRECT.

2. IF DESIGN ASSUMPTIONS ARE CORRECT, GC SHALL PROVIDE A CONFIRMATION LETTER.

3. IF DESIGN ASSUMPTIONS ARE INCORRECT, GC SHALL NOTIFY AOR/EOR IMMEDIATELY FOR FURTHER REQUIREMENTS AT THIS LOCATION. THESE ARE CONSIDERED UNFORESEEABLE CONDITIONS FOR WHICH ADDITIONAL SERVICES WILL APPLY FOR THE AOR/EOR DESIGN TEAM AND A CHANGE ORDER FOR THE GENERAL CONTRACTOR AT THE OWNERS EXPENSE. ANY CONTINUATION OF CONSTRUCTION IN THIS AREA BY THE GC BEFORE DESIGN DIRECTION IS GIVEN WILL BE AT HIS OWN RISK.

FOUNDATIONS:

1. GEOTECHNICAL REPORT: NONE PROVIDED.

2. THE OWNER SHALL EMPLOY A GEOTECHNICAL ENGINEER TO PROVIDE SOIL TESTING AND REVIEW DURING CONSTRUCTION. THE GEOTECHNICAL ENGINEER SHALL REVIEW AND APPROVE THE FOUNDATION REQUIREMENTS OF THE CONTRACT DOCUMENTS. IF CONDITIONS VARY FROM THAT INDICATED HEREIN, THEN THE GEOTECHNICAL ENGINEER SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO FOUNDATION CONSTRUCTION.

3. THE BACKFILL SHALL BE PLACED AND COMPACTED ON EACH SIDE OF FOUNDATION WALLS SUCH THAT NO UNBALANCED LATERAL LOADS ARE INDUCED TO THE WALL.

4. BACKFILL SHALL BE PLACED EVENLY AGAINST EACH SIDE OF SUBGRADE STRUCTURAL ELEMENTS TO PRODUCE APPROXIMATELY EQUAL AND OPPOSITE LATERAL PRESSURES.

SLAB ON GRADE:

1. TYPICAL CONCRETE SLAB ON GRADE SHALL BE 4" THICK WITH 6x6-W1 4xw1.4 WWR OVER 10-MIL VAPOR BARRIER.

2. SLAB-ON-GRADE SUPPORT: 4-INCH LAYER OF GRANULAR BASE CONSISTING OF AN OPEN GRADED CRUSHED STONE (ASTM C33 OR SIMILAR).

3. UNLESS NOTED OTHERWISE IN THE GEOTECHNICAL REPORT, CONCRETE SLABS ON GRADE SHALL BE SUPPORTED ON SELECT FILL MATERIAL AS NOTED ABOVE. FILL MATERIAL SHOULD BE MOISTENED, BUT NOT SATURATED JUST PRIOR TO PLACING CONCRETE. CARE SHALL BE TAKEN IN PLACING SLABS ON GRADE SO AS NOT TO DISTURB FILL MATERIAL OR REINFORCING. THE FILL MATERIAL SHALL BE COMPACTED TO NO LESS THAN 95% COMPACTION @ MOISTURE CONTENT RANGE OF 3% BELOW TO 3% ABOVE OPTIMUM MOISTURE CONTENT BEFORE PLACEMENT OF SLABS.

SHALLOW SPREAD FOOTINGS:

1. FROST DEPTH IS 30 INCHES BELOW GRADE.

2. ASSUMED ALLOWABLE FOOTING BEARING IS 1500 PSF

3. ALL FOOTINGS SHALL EXTEND TO DEPTH NOTED ABOVE U.N.O. ON PLANS OR DETAIL. GRADE IS DEFINED AS TOP OF SLAB FOR INTERIOR FOOTINGS, AND LOWEST ADJACENT COMPACTED SUBGRADE (PAD GRADE BEFORE LANDSCAPING) OR NATURAL GRADE WITHIN 5 FEET OF BUILDING FOR PERIMETER FOOTINGS. GRADE IS DEFINED AS TOP OF EXTERIOR PAVING OR CONCRETE WHERE EXTERIOR PAVING OR CONCRETE IS PERMANENTLY LOCATED DIRECTLY ADJACENT TO BUILDING AND EXTENDS AT LEAST 5 FEET FROM BUILDING. FOOTING EXCAVATIONS SHALL BE CLEAN AND FREE FROM LOOSE DEBRIS, STANDING WATER, OR UNCOMPACTED MATERIAL AT TIME OF CONCRETE PLACEMENT.

4. EXCAVATION FOR FOOTINGS SHALL BE CUT TO ACCURATE SIZE AND DIMENSIONS AS SHOWN ON PLANS. ALL SOIL BELOW SLABS AND FOOTINGS SHALL BE PROPERLY COMPACTED AND SUBGRADE BROUGHT TO A REASONABLE TRUE AND LEVEL PLANE BEFORE PLACING CONCRETE.

5. SITE PREPARATION AND GRADING REQUIREMENTS OF THE GEOTECHNICAL REPORT AND ANY ADDENDA SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF FOUNDATIONS. ANY TESTS, INSPECTIONS, FIELD OBSERVATIONS, OR APPROVAL FROM THE GEOTECHNICAL ENGINEER SHALL BE PERFORMED PRIOR TO PLACEMENT OF FOUNDATION REINFORCING STEEL OR CONCRETE. ALTERATIONS TO SITE PREPARATION OR GRADING SHALL BE REPORTED TO THE ENGINEER PRIOR TO FOUNDATION CONSTRUCTION.

CONCRETE:

1. MINIMUM 28 DAY STRENGTH (f_c) SHALL BE AS FOLLOWS:

FOUNDATIONS 4000 PSI, W/C = 0.45 BY WEIGHT (AIR-ENTRAINED)
INT. SLABS ON GROUND 4000 PSI, W/C = 0.50 BY WEIGHT
OTHER EXPOSED CONCRETE 4000 PSI, W/C = 0.45 BY WEIGHT (AIR-ENTRAINED)

2. CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED LABORATORY AND APPROVED BY THE ENGINEER. MIX DESIGNS SHALL BE PROPORTIONED SO AS TO MINIMIZE SHRINKAGE CRACKING.

3. ALL CONCRETE SHALL BE REGULAR WEIGHT OF 145 POUNDS PER CUBIC FOOT USING HARDROCK AGGREGATES. AGGREGATE USED IN CONCRETE SHALL CONFORM TO ASTM C33, CONCRETE AGGREGATES.

4. MAXIMUM SLUMP FOR EXTERIOR SLABS SHALL BE 2-4 INCHES. MAXIMUM SLUMP FOR ALL OTHER CONCRETE SHALL BE 4 INCHES. WATER SHALL BE CLEAN AND POTABLE. IF ADDITIONAL FLOWABILITY IS REQUIRED FOR PLACEMENT OF ANY CONCRETE MIX, A WATER-REDUCING ADDITIVE CONFORMING TO ASTM C494, TYPE A, SHALL BE USED. NO ADDITIONAL WATER MAY BE ADDED TO THE MIX. SEE DIVISION 3 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

5. PORTLAND CEMENT SHALL CONFORM TO ASTM C 150. TYPE II CEMENT WITH A MAXIMUM CHLORIDE ION, PERCENT BY WEIGHT OF CEMENT, SHALL NOT EXCEED 0.15.

6. NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT, UNLESS APPROVED BY THE ENGINEER OR AUTHORIZED TESTING AGENCY.

7. CONCRETE MIXING, PLACEMENT AND QUALITY SHALL BE PER IBC SECTION 1904, ASTM C 94, ASTM C 895, AND ACI 302. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT SLABS ON GRADE NEED ONLY BE VIBRATED OR THOROUGHLY RODDED AROUND EMBEDDED STRAPS OR HARDWARE. BOLTS FOR HOLDINGS, PT ANCHORAGES (AS OCCUR), CURBS AND EDGES OF SLAB STEPS AND UNDER FLOOR DUCTS OR SIMILAR ELEMENTS. REMOVE ALL DEBRIS FROM FORMS BEFORE PLACING CONCRETE. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL (AS IN WALLS AND COLUMNS SO AS TO CAUSE SEGREGATION OF AGGREGATES. UNCONFINED FALL SHALL NOT EXCEED 5 FEET. CARE SHALL BE TAKEN IN PLACING SLABS ON GRADE SO AS CONCRETE DOES NOT DISTURB FILL MATERIAL.

8. ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC. SHALL BE SECURELY POSITIONED IN THE FORMS BEFORE PLACING THE CONCRETE.

9. CONCRETE SLAB ON GRADE CONTROL JOINTS SHALL BE AS SHOWN ON THE FOUNDATION PLAN OR TYPICAL DETAILS. WHERE CONTROL JOINTS ARE NOT SHOWN ON PLANS, ALL CONCRETE SLABS ON GRADE SHALL BE DOWELED OR SAW-CUT CONTROL JOINTS SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 144 SQUARE FEET. RATIO OF BOUNDARY DIMENSIONS SHALL NOT EXCEED 1.5:1. KEVED OR DOWELED CONTROL JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING POURING. ALL OTHER JOINTS MAY BE SAW CUT. SAW CUT JOINTS SHALL BE CUT IN SLABS ON GRADE AS SOON AS POSSIBLE AFTER SLAB FINISHING AS MAY BE SAFELY DONE WITHOUT DISLOGGING AGGREGATE.

10. CONSTRUCTION JOINTS OR POUR JOINTS IN STRUCTURAL ELEMENTS (BEAMS, COLUMNS, ELEVATED SLABS, ETC.) NOT SPECIFICALLY SHOWN OR NOTED ON THE DRAWINGS REQUIRE PROPER APPROVAL OF THE ENGINEER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING PROPOSED JOINTS TO ENGINEER FOR APPROVAL.

11. PIPES OTHER THAN ELECTRICAL CONDUITS SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER. MAXIMUM PIPE SIZE SHALL BE 1/3 OF THE SLAB THICKNESS AND LOCATED AT THE MID-DEPTH. MINIMUM SPACING SHALL BE 3 TIMES THE PIPE DIAMETER. PIPES SHALL NOT IMPAIR THE STRENGTH OF THE MEMBER.

12. PROTECT CONCRETE FROM DAMAGE OR REDUCED STRENGTH DUE TO HOT OR COLD WEATHER IN ACCORDANCE WITH ACI 305 AND 306 AND OBC SECTION 1905. CONTRACTOR SHALL TAKE SPECIAL CURING PRECAUTIONS TO MINIMIZE SHRINKAGE CRACKING OF CONCRETE SLABS.

13. WHERE DOWELS, BOLTS OR INSERTS ARE CALLED TO BE ANCHORED TO CAST IN PLACE CONCRETE ELEMENTS USING EPOXY ADHESIVES, FOLLOW ALL MANUFACTURERS RECOMMENDATIONS. ALTERNATE ANCHORAGE SYSTEMS MAY BE USED WITH ENGINEERS PRIOR APPROVAL.

SPECIAL INSPECTIONS

PER 2009 I.B.C. SECTION 1704

THE OWNER SHALL EMPLOY A REGISTERED ENGINEER OR TEST AGENCY WITH EXPERIENCED TECHNICIANS UNDER THE DIRECT SUPERVISION OF A REGISTERED ENGINEER TO PERFORM THE DUTIES OF THE SPECIAL INSPECTOR. THE SPECIAL INSPECTOR SHALL MEET THE QUALIFICATIONS AS STATED IN THE BUILDING CODE.

DUTIES AND RESPONSIBILITIES OF THE INSPECTOR:

THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS, AND THE FOLLOWING TABLE.

THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.

THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CURRENT BUILDING CODE. REPORTS SHALL COMPLY WITH THE REQUIREMENTS OF OBC SECTION 1704.1.

ITEM	SPECIAL INSPECTION	REMARKS
SOIL	YES	PER OBC 1704.7
CONCRETE CONSTRUCTION	YES	PER OBC 1704.4
MASONRY CONSTRUCTION	NO	
STEEL CONSTRUCTION	YES	PER OBC 1704.3

STRUCTURAL STEEL:

1. STRUCTURAL STEEL MEMBERS SHALL CONFORM WITH THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES UNLESS NOTED OTHERWISE:

SHAPE	STANDARD	F _y
ROLLED WIDE FLANGE SECTIONS:	ASTM A992	50 KSI
OTHER STANDARD STEEL SHAPES AND ROLLED SECTIONS:	ASTM A36	36 KSI
BARNS AND PLATES:	ASTM A336	36 KSI
TUBES:	ASTM A500	42 KSI
PIPE:	ASTM A53 GR.B OR A500 GR.B	36 KSI 42 KSI
BOLTS AT STEEL CONNECTIONS:	ASTM A325 OR A490	---

2. ALL BOLTS SHALL BE INSTALLED AS BEARING-TYPE CONNECTIONS WITH THREADS EXCLUDED FROM SHEAR PLANE (TYPE "X" CONNECTION), UNLESS NOTED OTHERWISE. HIGH-STRENGTH BOLTS SHALL BE TIGHTENED USING ANY AISC APPROVED METHOD.

3. ALL THREADED ROD, THREADED STUDS, FOUNDATION ANCHOR BOLTS, AND ALL BOLTED CONNECTIONS INVOLVING WOOD MEMBERS SHALL BE ASTM A-307 UNLESS NOTED OTHERWISE. ALL EXPANSION OR EPOXY BOLTS SHALL HAVE CURRENT ICBO RATING FOR MATERIAL INTO WHICH INSTALLATION OCCURS. HEADED STUDS SHALL CONFORM TO ALL REQUIREMENTS OF THE LATEST EDITION OF THE "RECOMMENDED PRACTICES FOR STUD WELDING" AND THE "STRUCTURAL WELDING CODE" PUBLISHED BY AMERICAN WELDING SOCIETY (AWS). ALL BOLTS, ANCHOR BOLTS, EXPANSION BOLTS, ETC. SHALL BE INSTALLED WITH STEEL WASHERS AT FACE OF WOOD.

4. ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, LATEST EDITION.

5. WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS. ALL WELDING SHALL USE E70 SERIES LOW HYDROGEN ELECTRODES UNLESS NOTED OTHERWISE. ALL WELDS INVOLVING REINFORCING BARS SHALL USE E90 SERIES ELECTRODES. ALL WELDING SHALL CONFORM TO THE LATEST AMERICAN WELDING SOCIETY (AWS) STANDARDS. WELDS ON DRAWINGS ARE SHOWN AS SHOP WELDS. CONTRACTOR MAY SHOP WELD OR FIELD WELD AT HIS DISCRETION. ALL FULL PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY.

6. GROUT BENEATH COLUMN BASES OR BEARING PLATES SHALL BE 5,000 PSI (MIN) NON-SHRINK FLOWABLE GROUT OR DRYPACK. INSTALL GROUT UNDER BEARING PLATES BEFORE FRAMING MEMBER IS INSTALLED. AT COLUMNS, INSTALL GROUT UNDER BASE PLATES AFTER COLUMN HAS BEEN PLUMBED BUT PRIOR TO FLOOR OR ROOF INSTALLATION. GROUT DEPTH SHALL BE SUFFICIENT TO ALLOW GROUT OR DRYPACK TO BE PLACED BENEATH PLATE WITHOUT VOIDS.

7. DETAILS OUTLINE BASIC CONNECTION TYPES. BEAM TO BEAM AND BEAM TO COLUMN CONNECTIONS NOT DETAILED IN DRAWINGS SHALL BE SIZED BY STEEL DETAILER AS STANDARD AISC, TYPE 2, BEARING CONNECTIONS CAPABLE OF SUPPORTING REACTIONS DEVELOPED BY MAXIMUM UNIFORM LOAD CAPACITY ON A SINGLE SPAN FOR BEAM AND BEAM SPAN GIVEN.

8. STEEL SHALL BE DESIGNED, DETAILED, FABRICATED AND ERECTED ACCORDING TO ALL APPLICABLE SECTIONS OF THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION. SHOP DRAWINGS SHALL BE SUBMITTED INDICATING COMPLETE INFORMATION REQUIRED FOR CONSTRUCTION OF STRUCTURAL STEEL. SHOP DRAWINGS SHALL INCLUDE LAYOUT AND DIMENSIONS OF FRAMING PLANS, CONNECTION DETAILS, AND SEQUENCE, ETC. SHOP DRAWINGS AND CALCULATIONS SHALL BE SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT SITE.

9. ANY CONCENTRATED LOADINGS WHICH ARE TO BE ATTACHED TO ROOF OR ELEVATED FLOOR STRUCTURE SUCH AS CEILINGS, PIPE HANGARS, MECHANICAL DUCTWORK, ELECTRICAL FIXTURES, ETC. SHALL BE ATTACHED TO PANEL POINTS OF BAR JOIST. DO NOT SUSPEND FROM CEILING OR METAL DECK.

10. HEAVY LOADS THAT EXCEED 75% OF ALLOWABLE LIVE LOADS SHOWN ON THE PLANS, FOR TEMPORARY EQUIPMENT, CONSTRUCTION MATERIALS, OR OTHER LOADS NOT SHOWN IN THE CONTRACT DOCUMENTS, SHALL NOT BE PLACED OR SUPPORTED FROM ELEVATED STRUCTURE WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

11. FOUNDATION ANCHOR RODS SHALL BE AS CALLED OUT IN THE COLUMN TABLE AND IN BASE PLATE DETAILS, WITH LEVELING NUTS. IF NOT CALLED OUT, USE F1554 3/4" DIAMETER WITH 8" EMBEDMENT AND EMBEDDED NUT.

12. FINISHES ON STRUCTURAL STEEL USED IN AREAS TO RECEIVE SPRAYED ON FIRE PROOFING SHALL BE COMPATIBLE WITH FIREPROOFING MATERIAL. STEEL SHALL BE DELIVERED TO THE SITE CLEAN AND FREE OF LOOSE RUST, SCALE, SLAG AND OIL. PREPARE AND CLEAN SURFACES, AS REQUIRED, BEFORE APPLICATION OF FIREPROOFING MATERIAL. COMPLY WITH FIREPROOFING ASSEMBLY REQUIREMENTS RE: PLANS AND DIVISIONS 05120 AND 07270 OF THE SPECIFICATIONS.

13. ALL HANGERS, CLIPS, INSERTS, ETC. SUSPENDED FROM THE FLOOR STRUCTURE AND THE ROOF STRUCTURE (BEAMS, JOISTS AND DECK) SHALL BE INSTALLED PRIOR TO THE APPLICATION OF THE SPRAYED-ON FIREPROOFING. PATCH ANY FIREPROOFING DAMAGED AFTER THE INITIAL APPLICATION.

14. INSPECTION OF STRUCTURAL STEEL CONNECTIONS SHALL BE PERFORMED BY A QUALIFIED INSPECTOR, APPROVED BY THE ENGINEER, RETAINED BY THE CONTRACTOR AND APPROVED BY THE OWNER INSPECTOR. QUALIFICATION SHALL BE BASED ON COMPLIANCE WITH APPROPRIATE PROVISIONS OF THE AWS CODE-D1.1. INSPECTION SHALL INCLUDE VISUAL INSPECTION OF ALL COMPLETED STRUCTURAL WELDED CONNECTIONS. THE INSPECTING AGENCY SHALL BE NOTIFIED BEFORE ANY WELDING WORK BEGINS AND SHALL BE RESPONSIBLE FOR VERIFICATION OF WELDERS CERTIFICATIONS, INSPECTION OF CONNECTIONS BEFORE WELDING BEGINS, AND INSPECTION DURING WELDING UNTIL THE INSPECTOR IS SATISFIED THAT THE WELDING PROCESS IS BEING PERFORMED PER AWS REQUIREMENTS.

15. FIELD CUTTING, DRILLING OR OTHER MODIFICATION OF STRUCTURAL STEEL COMPONENTS IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. WHERE BEAM PENETRATIONS CANNOT BE AVOIDED OR WHERE CUTTING IS REQUIRED, CONTRACTOR SHALL SUBMIT TO THE ENGINEER, ALL PERTINENT INFORMATION INCLUDING PENETRATION SHAPE, SIZE LOCATION AND METHOD OF CUTTING THE OPENING.

STEEL DECK: ROOF

1. TYPICAL STEEL ROOF DECK SHALL BE 1.582, U.N.O. THE FINISH ON STEEL ROOF DECKING MATERIAL SHALL BE PAINTED UNLESS NOTED OTHERWISE.

2. ANCHOR ROOF DECK TO SUPPORTS WITH #12 SCREWS AT 6" O.C. AT PERIMETER OF BUILDING, AT END LAP SPICES AND AROUND ALL OPENINGS AND AT 12" O.C. AT INTERMEDIATE SUPPORTS. PROVIDE (2)#10 TEK SIDELAP FASTENERS BETWEEN EACH JOIST.

3. LAYOUT ROOF DECK TO HAVE A MINIMUM OF THREE CONTINUOUS SPANS WHERE POSSIBLE. ATTACH TO JOIST AND BEAMS PER DECK ATTACHMENT DETAILS. WHERE DECK RISBS ARE CUT AT PENETRATIONS, PROVIDE DECK SUPPORT ANGLES OR DECK STIFFENERS AS REQUIRED.

DEFERRED SUBMITTALS:

1. IN ACCORDANCE WITH THE IBC SECTION 106.3.4.2, SPECIALTY ITEMS, PRE-ENGINEERED COMPONENTS, AND DESIGN/BUILD ELEMENTS MAY BE SUBMITTED FOR APPROVAL BY THE ENGINEER OF RECORD AND THE BUILDING OFFICIAL BY DEFERRED SUBMITTAL. SUCH ITEMS ARE DEFINED AS THOSE SPECIFIED IN CONSTRUCTION DOCUMENTS BUT WHICH REQUIRE DESIGN BY THE MANUFACTURER, SUPPLIER OR INSTALLER.

2. DEFERRED SUBMITTALS ARE REQUIRED FOR THE FOLLOWING:

PRE-ENGINEERED METAL BUILDING (PEMB)
PRE-ENGINEERED METAL ROOF TRUSSES

3. SUBMITTALS SHALL INCLUDE:
a) CALCULATIONS, PREPARED AND SEALED BY AN APPROPRIATELY REGISTERED ENGINEER (THE "SPECIALTY ENGINEER")
b) DIAGRAM PREPARED AND SEALED BY THE SPECIALTY ENGINEER, SHOWING LOAD MAGNITUDES AND LOCATIONS - SEPARATED INTO DEAD, LIVE, WIND AND/OR SEISMIC COMPONENTS - THAT ARE APPLIED TO THE PRIMARY STRUCTURE.
c) ERECTION OR DESIGN DRAWINGS BEARING THE SPECIALTY ENGINEER'S SEAL AND THE ARCHITECT'S STAMP INDICATING HIS REVIEW.

4. SUBMIT (1) REPRODUCIBLE COPY, ONE (1) WET SEALED COPY FOR THE STRUCTURAL ENGINEER OF RECORDS FILE, AND ADDITIONAL COPIES AS ARE NECESSARY FOR THE BUILDING DEPARTMENT. SUBMITTALS CONTAINING EXCEPTIONS, CORRECTIONS, OR OTHER REVIEW COMMENTS ARE NOT ACCEPTABLE FOR SUBMITTAL TO THE BUILDING DEPARTMENT.

5. THE STRUCTURAL ENGINEER OF RECORD'S REVIEW IS STRICTLY LIMITED TO THE FOLLOWING:

a) THE DRAWINGS AND CALCULATIONS ARE PROPERLY SEALED.
b) THE LOAD CRITERIA IS CONSISTENT WITH THE CONTRACT DOCUMENTS AND INTERNATIONAL BUILDING CODE REQUIREMENTS.
c) THE CONNECTIONS TO THE PRIMARY STRUCTURE ARE CONSISTENT WITH THE PRIMARY DESIGN.
d) THE BASE STRUCTURE IS CAPABLE OF SUPPORTING THE IMPOSED LOADS.

6. IF THE LOADS IMPOSED ON THE STRUCTURE EXCEED THE LOAD ALLOWANCE PROVIDED THE STRUCTURAL ENGINEER OF RECORD WILL REJECT THE SUBMITTAL. ONLY AT THE OWNER'S WRITTEN DIRECTION WILL MODIFICATIONS TO THE BASE STRUCTURE TO ACCOMMODATE THE SPECIALTY ITEM(S) BE MADE BY THE ENGINEER OF RECORD. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALL UNTIL THEIR DESIGN AND THE ENGINEER OF RECORD AND THE BUILDING OFFICIAL HAVE APPROVED SUBMITTAL DOCUMENTS.

PRE-ENGINEERED METAL BUILDING:

1. COMPONENT ROOFING, BRACING, HAT CHANNELS AND ZEE PURLINS SHALL BE ENGINEERED, DESIGNED AND FABRICATED PER METAL BUILDING INDUSTRY STANDARDS. SUBMIT COMPONENT INFORMATION INCLUDING SIZE, LAYOUT, DETAILS AND INSTALLATION PROCEDURES. ACCOMMODATIONS SHALL BE MADE FOR SUPPORT OF CONCENTRATED LOADS AS SHOWN ON DRAWINGS.

2. METAL BUILDING COMPONENTS SHALL CONFORM TO LOCATION, SIZE, CONFIGURATIONS AND CONTROLLING HEIGHTS AS SHOWN IN THE DRAWINGS. VARIATIONS MAY BE ALLOWED ONLY BY WRITTEN APPROVAL OF THE ARCHITECT.

3. THE FOUNDATIONS ARE DESIGNED TO SUPPORT THE ASSUMED MAXIMUM LOADS BASED ON THE SCHEDULES SHOWN ON S2.1. NOTIFY ARCHITECT/ENGINEER IF THE ACTUAL BUILDING DESIGN LOADS EXCEED THE ASSUMED LOADS. CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL RE-ENGINEERING AND CONSTRUCTION COST OF LARGER FOOTINGS IF THE SIZE HAS TO BE INCREASED TO SUPPORT HIGHER LOADS.

4. PEDESTAL SIZES FOR METAL BUILDING COLUMNS ARE SHOWN ON DETAILS AND SCHEDULES. REQUIRED DIMENSIONS MAY VARY FOR DIFFERENT METAL BUILDING MANUFACTURERS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND PROVIDE PEDESTALS PER MANUFACTURER REQUIREMENTS. SUBMIT ANY VARIATIONS FOR APPROVAL.

REINFORCING STEEL (FOR CONCRETE AND MASONRY):

1. REINFORCED CONCRETE DESIGNED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-05) BY THE AMERICAN CONCRETE INSTITUTE.

2. REINFORCING BAR DETAILING, FABRICATING, AND PLACING SHALL CONFORM TO THE "ACI STANDARD: DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" (ACI 315) AND THE "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" (ACI 315R) BY THE AMERICAN CONCRETE INSTITUTE. THE MOST CURRENT EDITIONS OF CONCRETE REINFORCING STEEL INSTITUTES "REINFORCING BAR DETAILING" AND "PLACING REINFORCING BARS" MAY ALSO BE USED.

3. REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615. REINFORCING SHALL BE GRADE 60 (FY=60 KSI) DEFORMED BARS FOR ALL BARS UNLESS NOTED OTHERWISE ON PLANS OR DETAILS. ALL REINFORCING TO BE WELDED SHALL BE ASTM A706. GRADE 60 LOW ALLOY WELDABLE STEEL.

4. ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS "CLEAR" OR "CLR" ARE TO CENTER OF STEEL. MINIMUM COVER FOR NON-PRESTRESSED CONCRETE REINFORCING SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON PLANS OR DETAILS:

EXPOSURE CONDITION:	MINIMUM COVER:	TOLERANCES (+/-):
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"	3/8"

EXPOSED TO EARTH OR WEATHER:
#5 AND SMALLER: 1 1/2"
#6 AND LARGER: 2"

NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND:
ROOF SLAB: 1"
STRUCTURAL SLABS & WALLS: 3/4"
BEAMS AND COLUMNS (PRIMARY REINFORCEMENT, TIES, STIRRUPS AND SPIRALS): 1 1/2"
SLABS ON GRADE: 1 1/2"

5. LAP SPICES OF REINFORCING STEEL IN ALL CONCRETE SHALL BE ACCORDING TO ACI 318 (CLASS B SPLICE), UNLESS NOTED OTHERWISE. STAGGER SPLICES A MINIMUM OF ONE LAP IN LENGTH. NO TACK WELDING OF REINFORCING BARS ALLOWED. LATEST ACI CODE AND DETAIL MANUAL APPLY. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS. VERTICAL WALL BARS SHALL BE SPLICED AT OR NEAR FLOOR LINES. SPLICE BARS TOP BARS AT CENTER LINE OF SPAN AND BOTTOM BARS AT THE SUPPORT IN SPANDRELS, BEAMS, GRADE BEAMS, ETC. UNLESS NOTED OTHERWISE.

6. ALL CONSTRUCTION JOINTS SHOWN ON THE DRAWINGS SHALL BE INCORPORATED IN THE STRUCTURE UNLESS THEIR ELIMINATION IS APPROVED BY THE ENGINEER. ADDITIONAL CONSTRUCTION JOINTS REQUIRED TO FACILITATE CONSTRUCTION SHALL BE LOCATED AND DETAILED ON SHOP DRAWINGS. WHEN CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THE DRAWINGS ARE REQUIRED, THE REINFORCEMENT SHALL PASS CONTINUOUSLY THROUGH THE JOINT AND A KEY SHALL BE PROVIDED FOR ADEQUATE SHEAR TRANSFER.

7. ALL REINFORCING SHALL BE BENT COLD. BARS SHALL NOT BE STRAIGHTENED AND RE-BENT. FIELD BENDING OF REBAR SHALL NOT BE ALLOWED UNLESS SPECIFICALLY NOTED OTHERWISE.

8. WELDING OF REINFORCING BARS, METAL INSERTS, AND CONNECTIONS SHALL CONFORM WITH IBC STANDARD 19-2, AND SHALL BE MADE ONLY AT LOCATIONS SHOWN ON PLANS OR DETAILS.

9. REINFORCING BAR SPACING SHOWN ON PLANS ARE AT MAXIMUM ON CENTERS. ALL BARS SHALL BE DETAILED AND PLACED PER CONCRETE REINFORCING STEEL INSTITUTE (CRSI) SPECIFICATIONS AND HANDBOOK. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.

10. MECHANICAL SPLICE COUPLERS, FLANGE COUPLERS, THREADED COUPLERS, ETC. SHALL HAVE CURRENT ICBO APPROVAL AND SHALL BE CAPABLE OF DEVELOPING 125% OF THE STRENGTH OF THE BAR.

BASIS FOR DESIGN:

BUILDING CODE: 2009 I.B.C.

1. DEAD LOADS

A. ROOF.....PEMB SELF WEIGHT (ASSUMED 3 PSF)
B. COLLATERAL LOAD.....7 PSF
C. CANOPY ROOF LOAD.....20 PSF

2. LIVE LOADS

A. ROOF (NO REDUCTION).....20 PSF
B. STAGE.....150 PSF

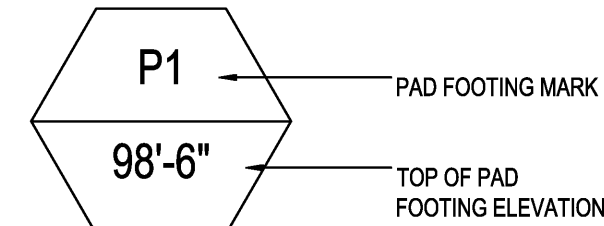
4. SNOW LOAD

A. GROUND SNOW,

GENERAL PLAN NOTES

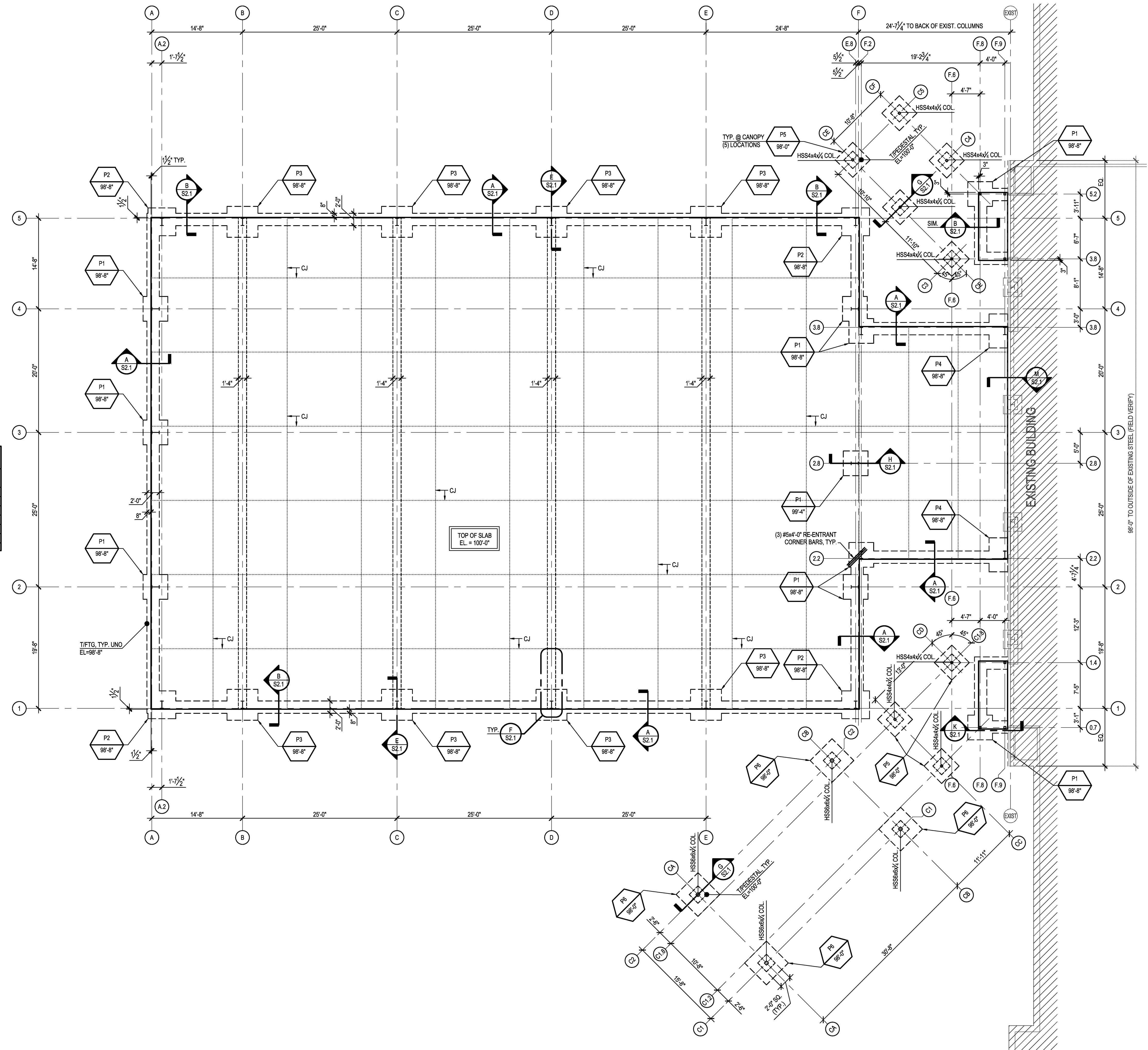
- 1 SLAB ON GRADE IS 4" THICK EXCEPT AS INDICATED WITH 6&XW1.4XW1.4 WWF OVER 10 ML VAPOR RETARDER OVER 4" OPEN GRADED GRAVEL (ASTM C33 No.57).
- 2 CJ - CONSTRUCTION OR CONTROL JOINT IN FLOOR SLAB, SEE C/S2.1 & D/S2.1 RESPECTIVELY.
- 3 SEE ARCHITECTURAL AND PLUMBING SHEETS FOR WATER-PROOFING AND STORM WATER DRAINAGE REQUIREMENTS.
- 4 SEE SHEET S0.0 FOR GENERAL STRUCTURAL NOTES.
- 5 SLOPE SLAB TO FLOOR DRAINS.
- 6 CENTER ALL SPREAD FOOTINGS ON CENTERLINE OF PRE-ENGINEERED STEEL COLUMNS.
- 7 GRID LINES ARE TO CENTERLINE OF COLUMN AND/OR OUTSIDE FACE OF BASE PLATE, AS INDICATED ON PLAN.
- 8 COLUMN PEDESTALS ARE 24"x24" UNLESS NOTED OTHERWISE.
- 9 THE BUILDING SHALL NOT BE LOCATED ON SITE OFF OF THE STRUCTURAL DOCUMENTS. REFER TO THE CIVIL SITE PLAN AND ARCHITECTURAL PLANS FOR BUILDING LOCATION INFORMATION.
- 10 PROVIDE (3) #4 BAR x 48" LONG IN SLAB ON GRADE AT RE-ENTRANT CORNERS, TYPICAL.

SYMBOL KEY

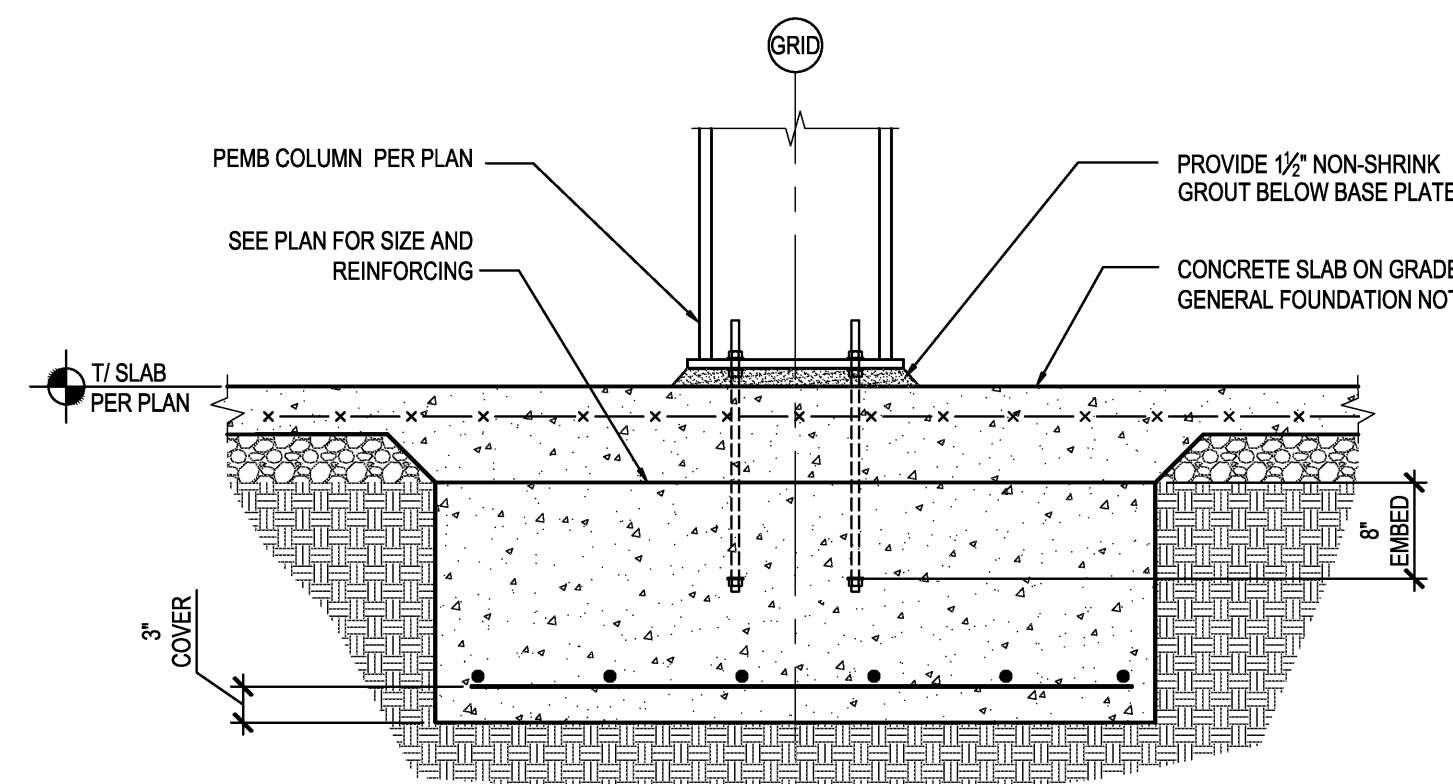
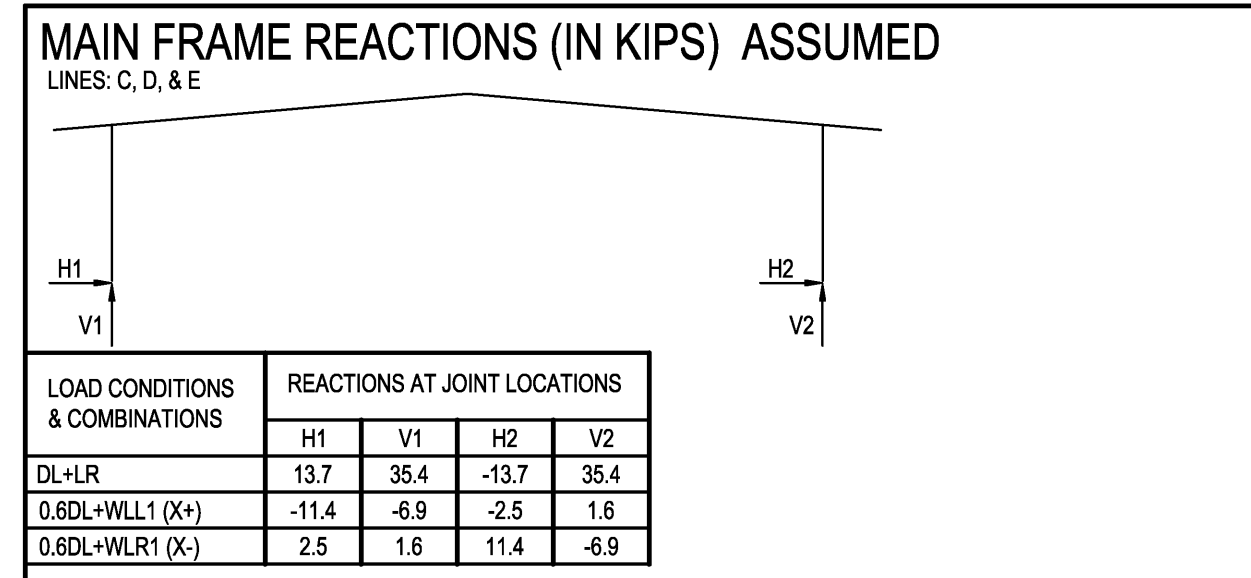
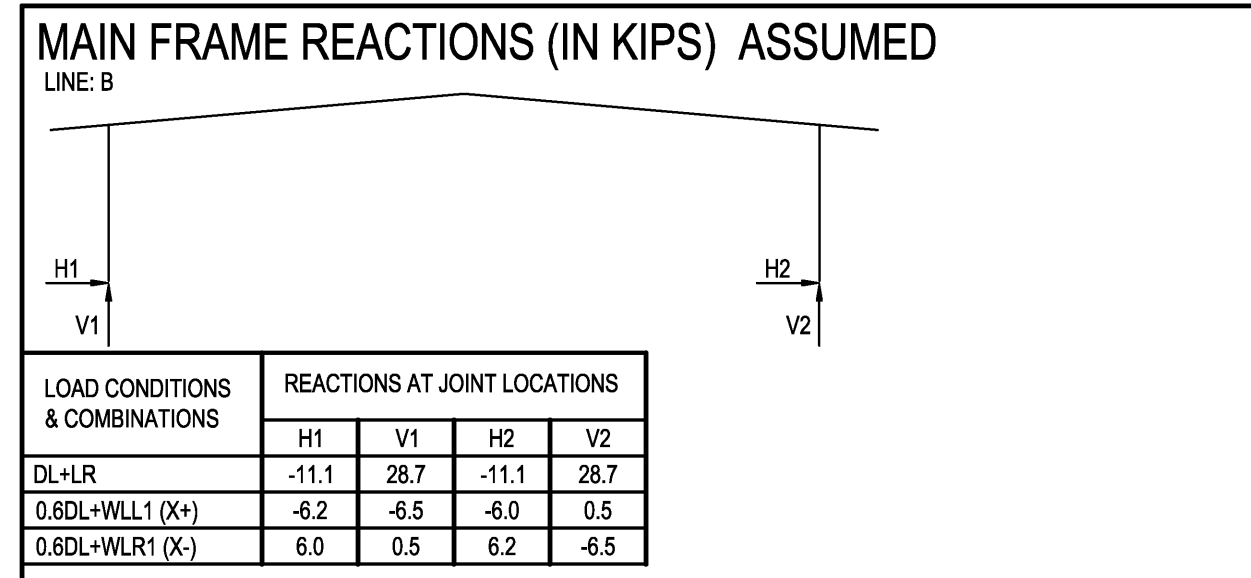
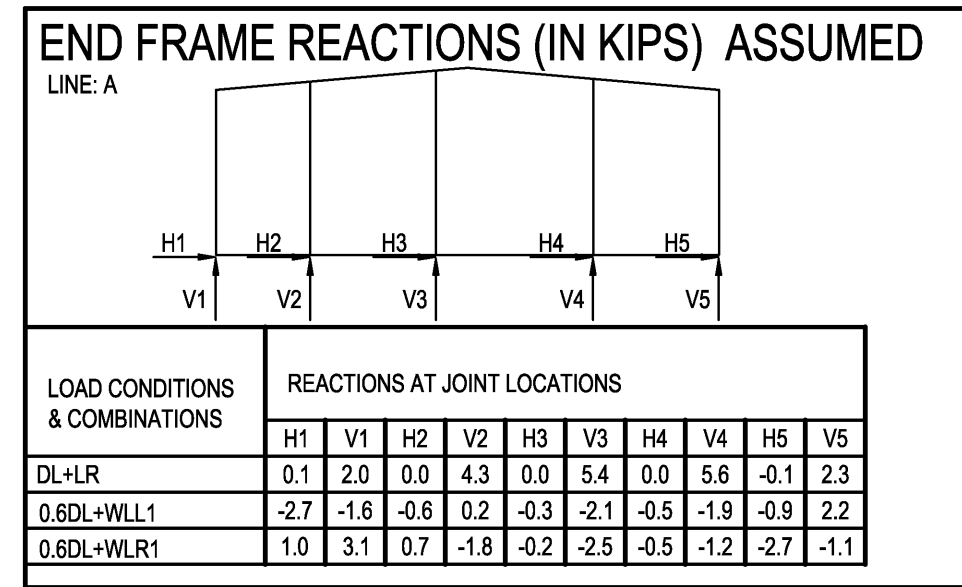
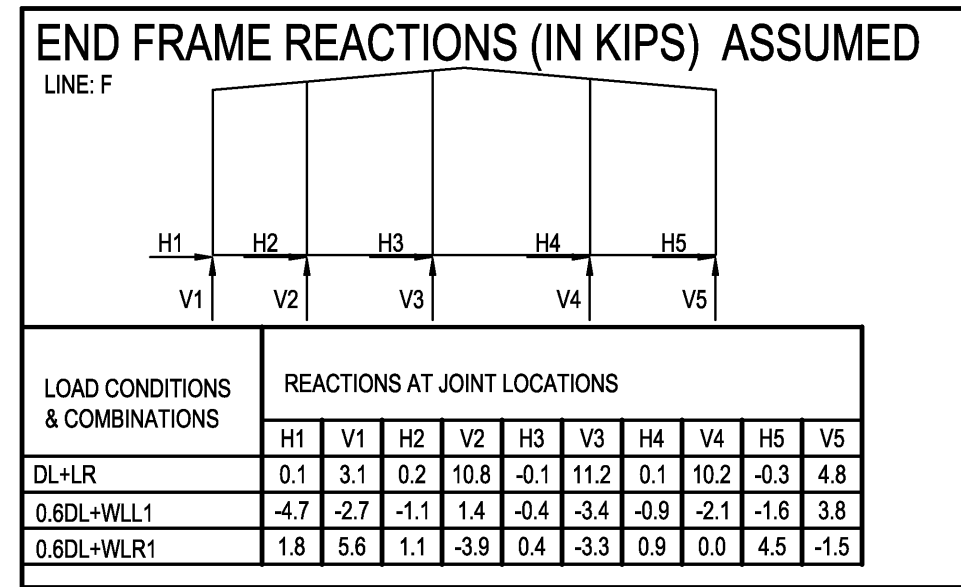


NOTE:
SEE PAD FOOTING SCHEDULE
FOR SIZES AND REINFORCEMENT

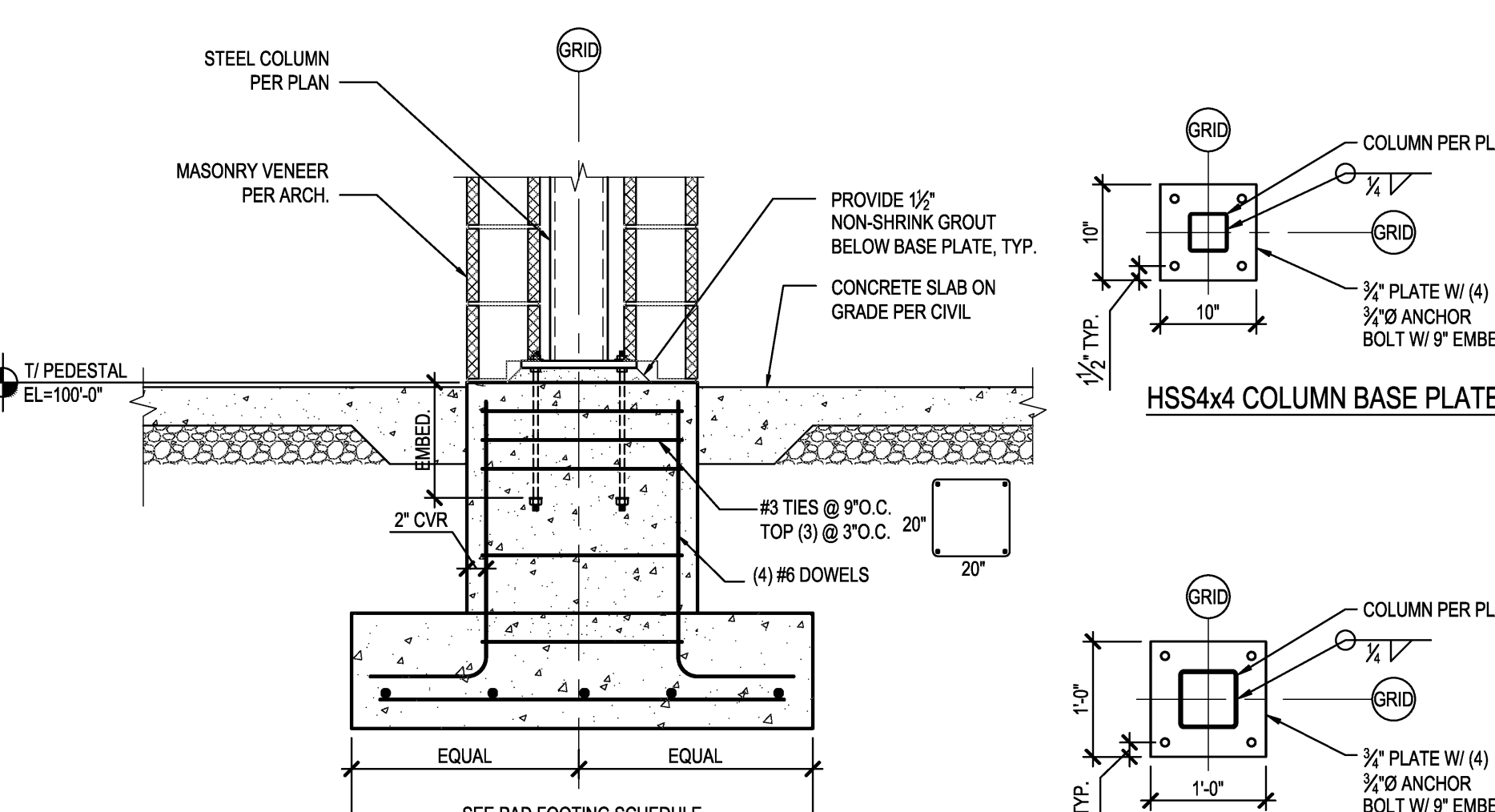
PAD FOOTING SCHEDULE					
MARK	LENGTH	WIDTH	DEPTH (ft.)	REINFORCEMENT	REMARKS
P1	4'-0"	4'-0"	2'-0"	(6) #5 BARS EA WAY, BOTTOM	
P2	4'-6"	4'-6"	2'-0"	(6) #5 BARS EA WAY, BOTTOM	
P3	5'-0"	5'-0"	2'-0"	(7) #5 BARS EA WAY, BOTTOM	
P4	3'-0"	5'-6"	2'-0"	#5 BARS @ 8" O.C. EA WAY, BOTTOM	
P5	4'-0"	4'-0"	1'-2"	(4) #5 BARS EA WAY, BOTTOM	
P6	5'-0"	5'-0"	1'-2"	(5) #5 BARS EA WAY, BOTTOM	



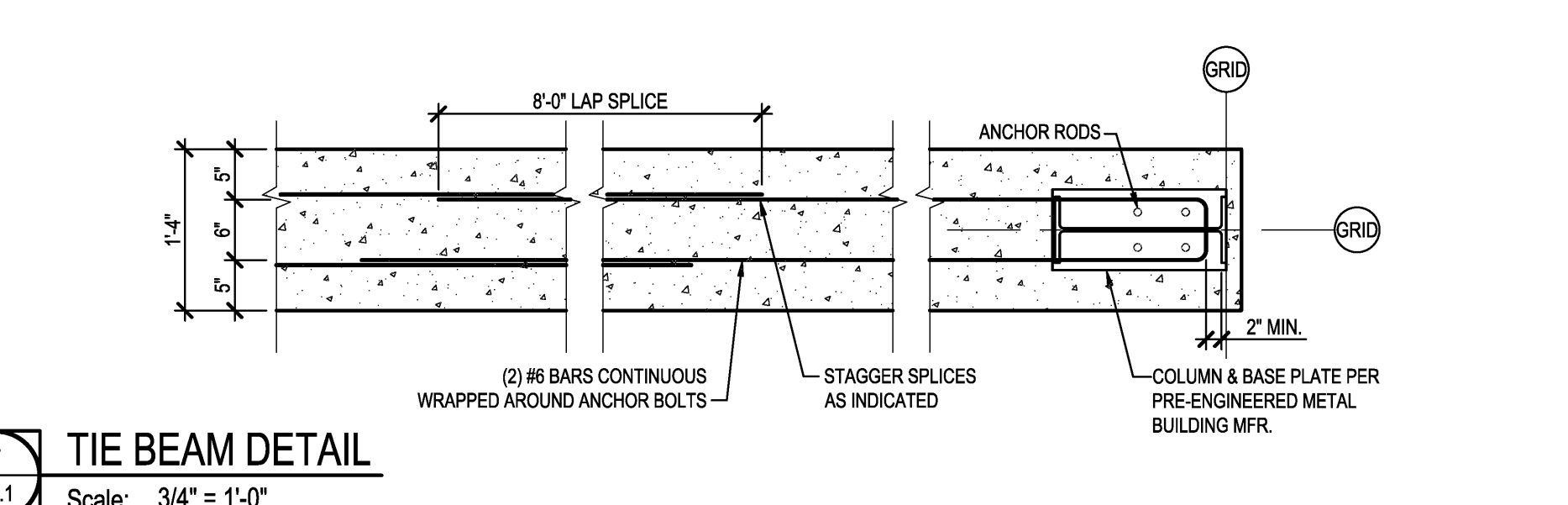
FOUNDATION PLAN
Scale: 1/8" = 1'-0"



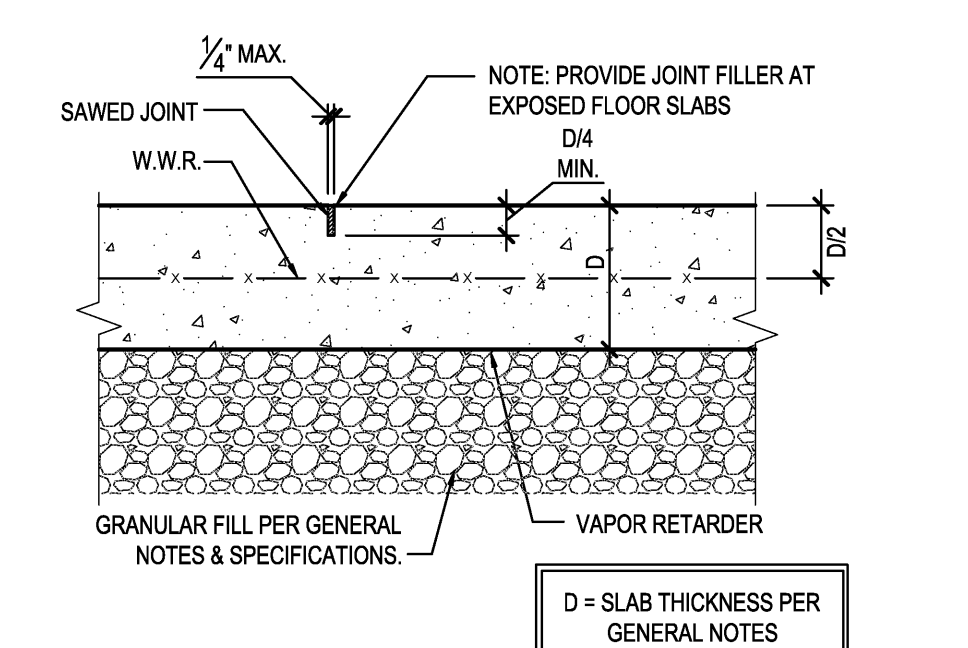
H INTERIOR PEMB COLUMN FNDN. DETAIL
Scale: 3/4" = 1'-0"



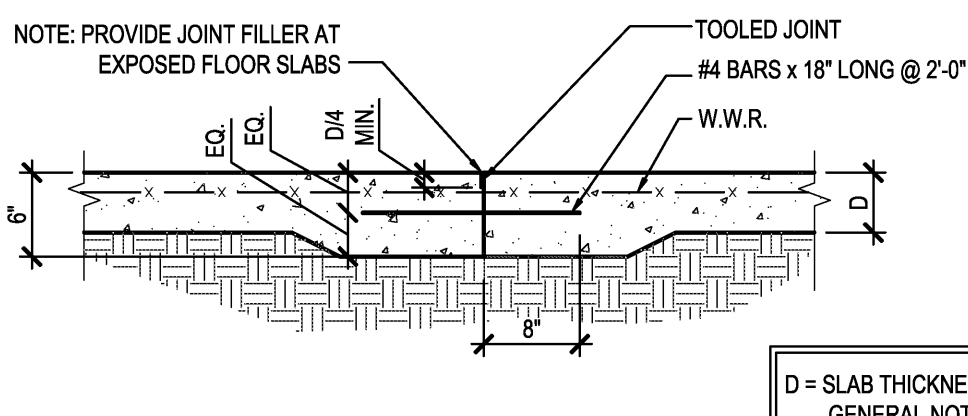
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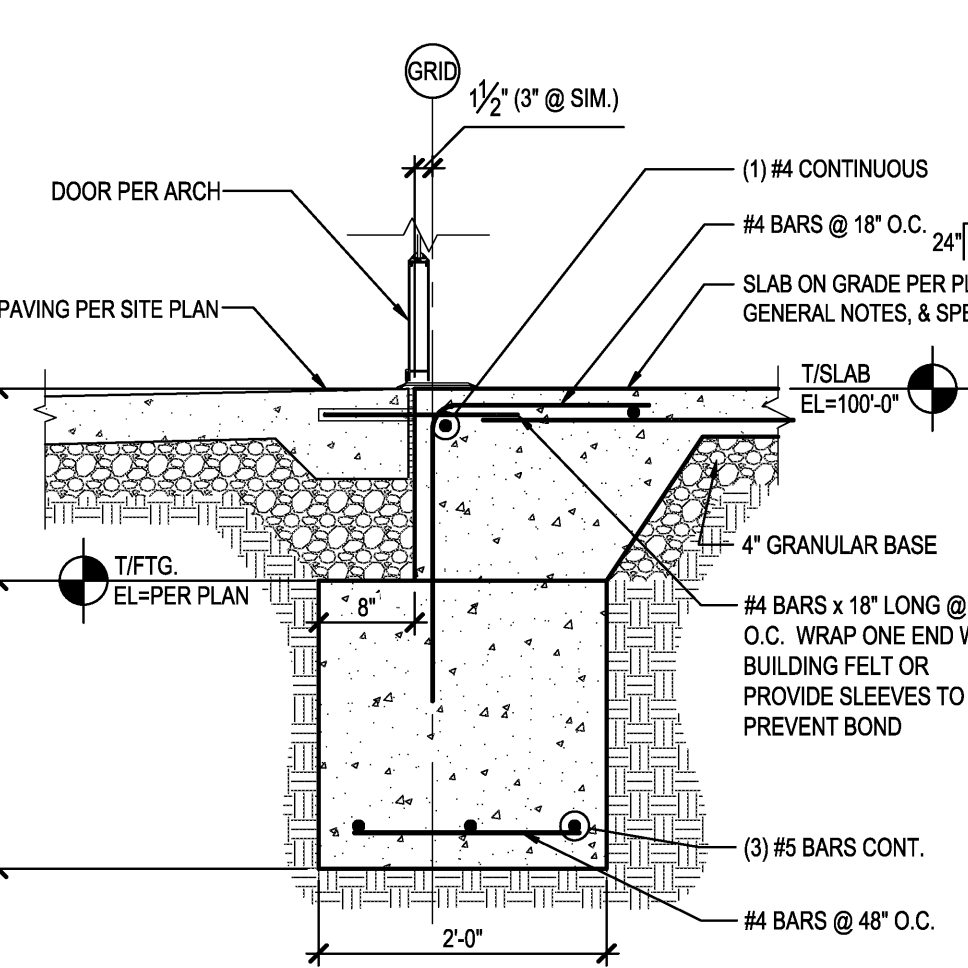
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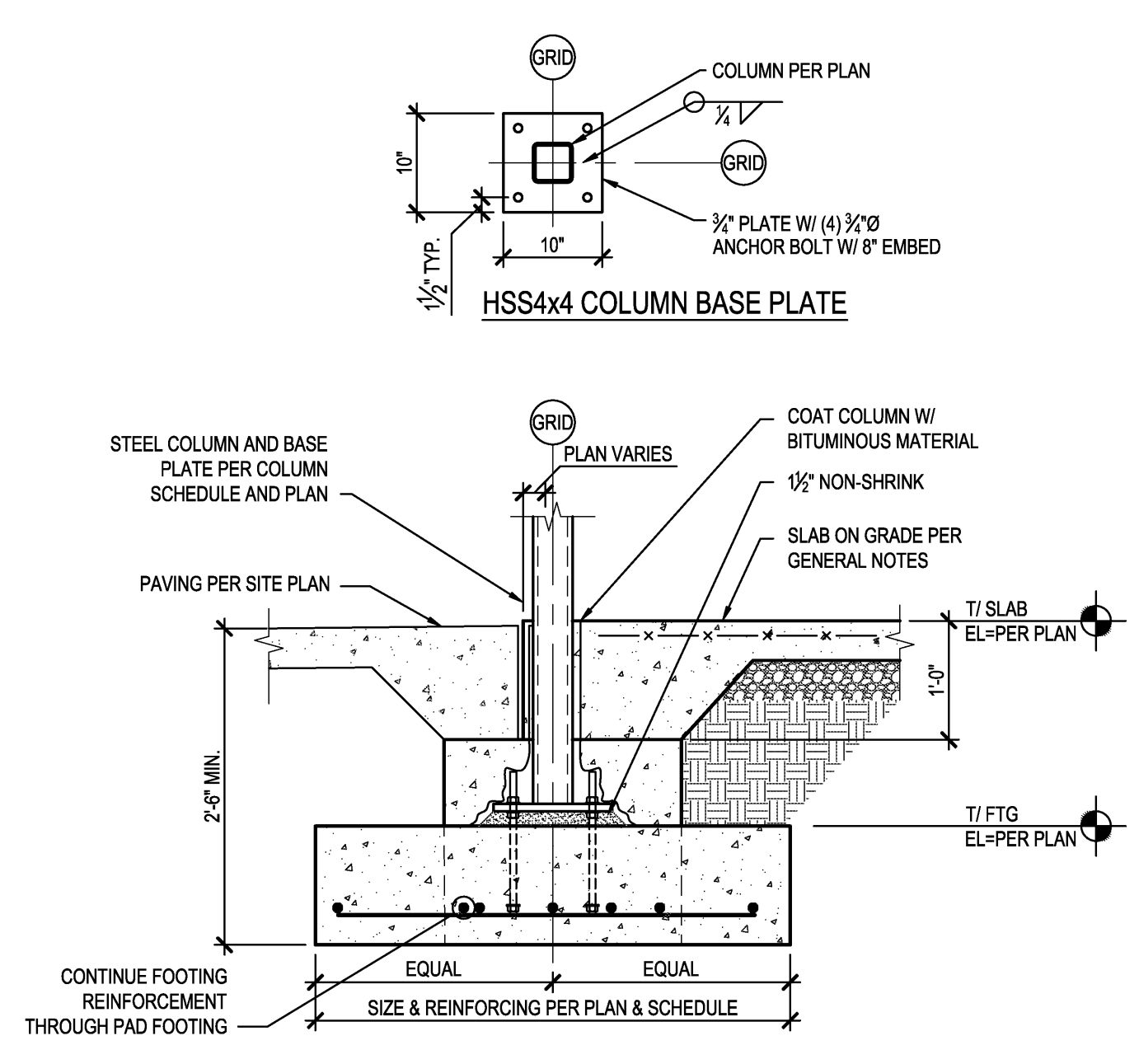
D CONTROL JOINT
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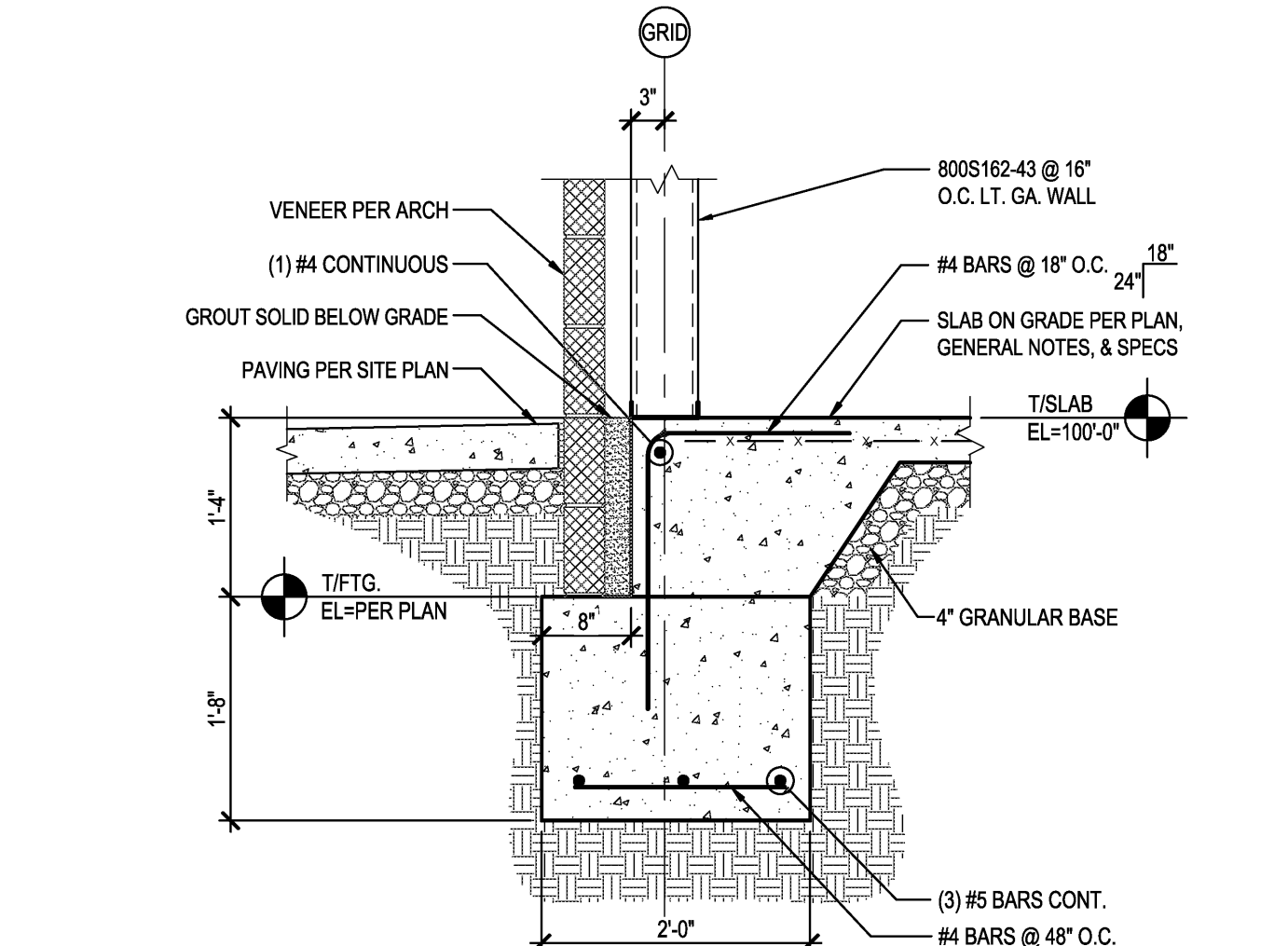
C CONSTRUCTION JOINT
Scale: 3/4" = 1'-0"



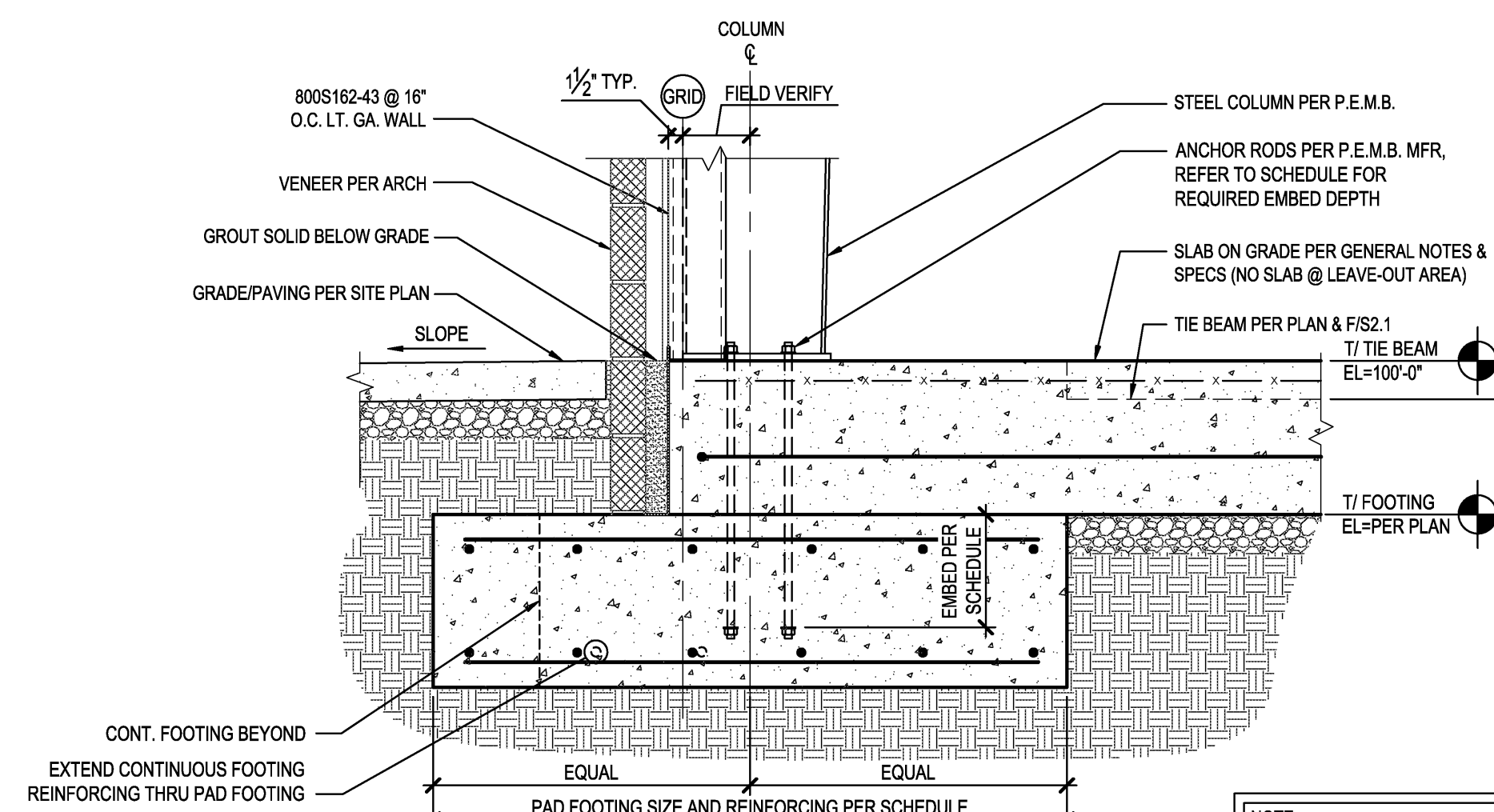
B SLAB EDGE @ DOOR
Scale: 3/4" = 1'-0"



K STEEL COLUMN EXTERIOR FNDN. DETAIL
Scale: 3/4" = 1'-0"



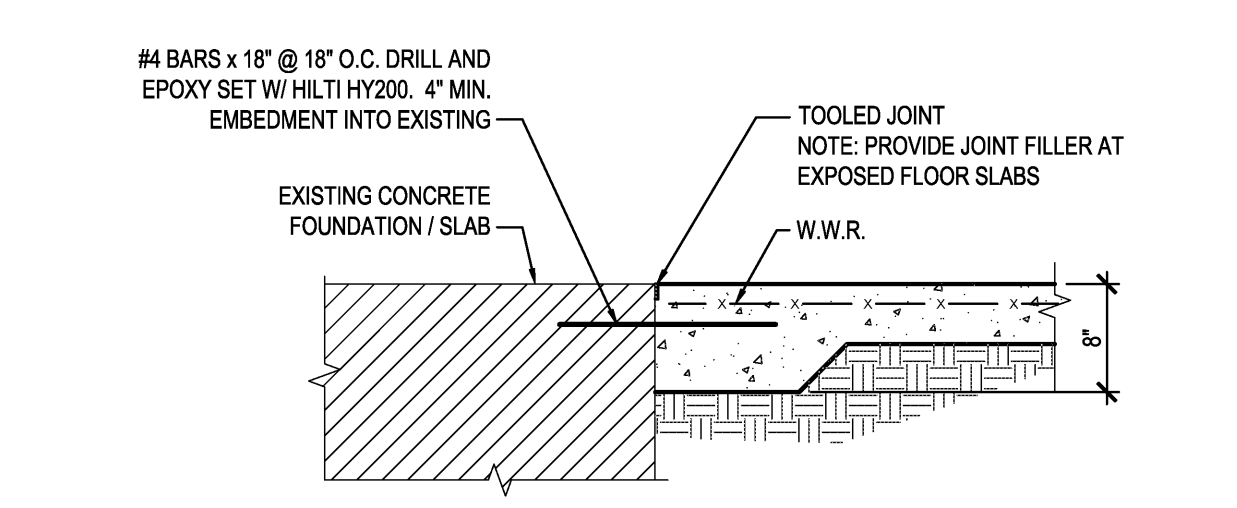
J TRENCH FOOTING DETAIL @ LT. GA. WALL
Scale: 3/4" = 1'-0"



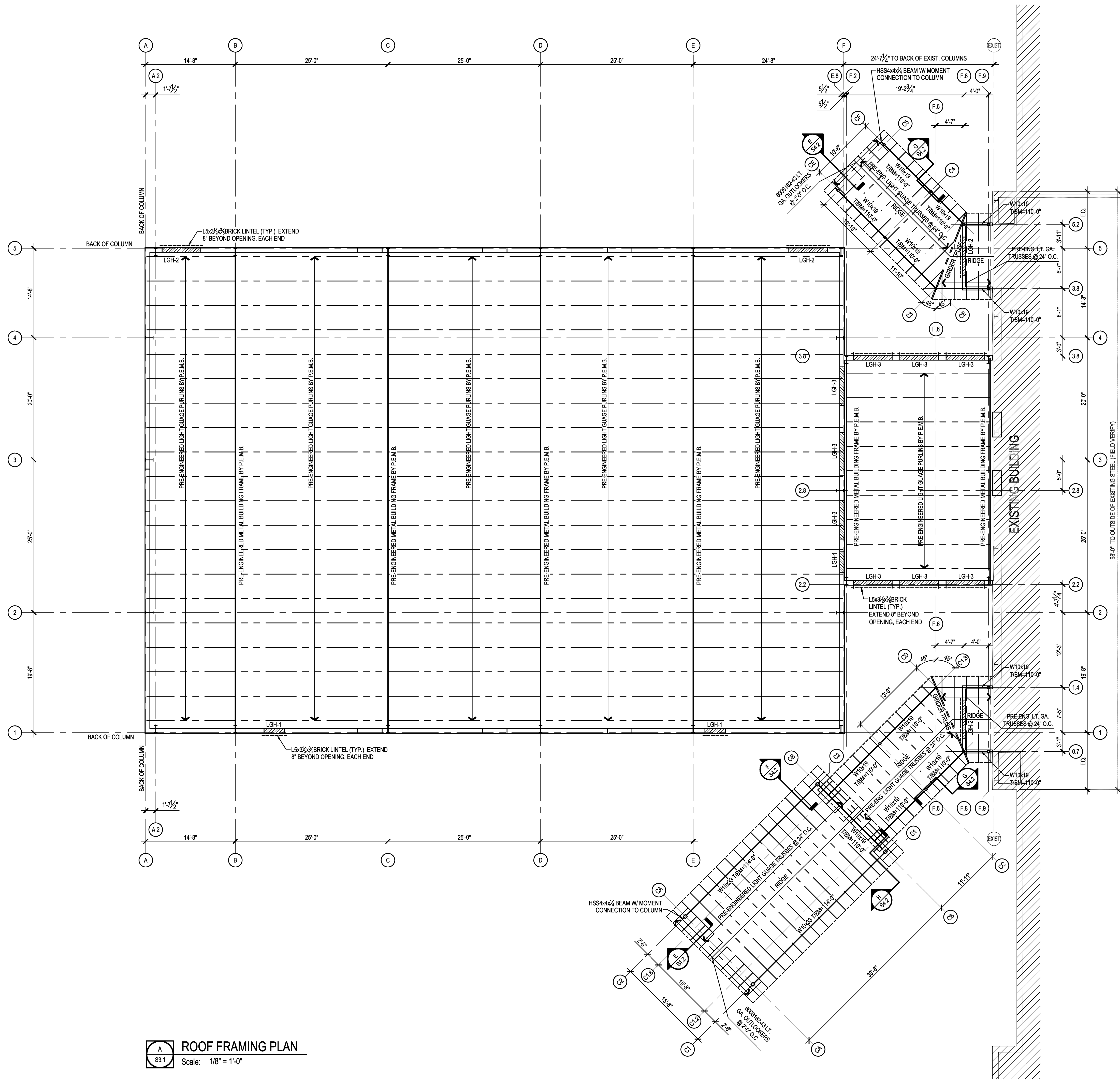
E P.E.M.B. COLUMN FOOTING DETAIL
Scale: 3/4" = 1'-0"

N FRAME REACTIONS
Scale: N.T.S.

L FRAME REACTIONS
Scale: N.T.S.



M SLAB EDGE @ EXISTING
Scale: 3/4" = 1'-0"

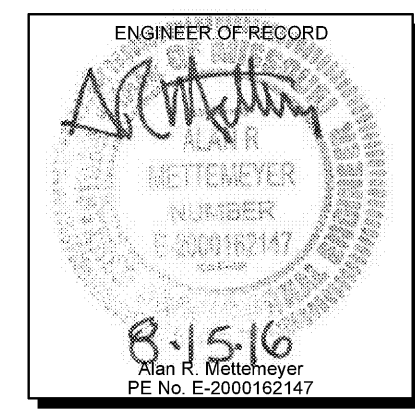
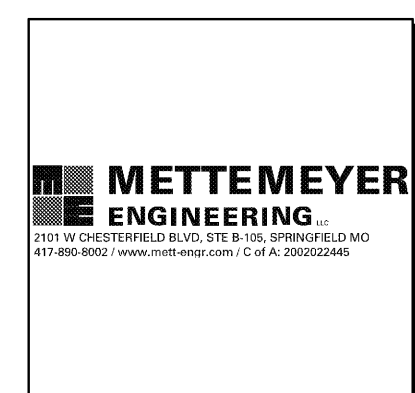


GENERAL PLAN NOTES

- 1 SEE SHEET S0.0 FOR GENERAL STRUCTURAL NOTES.
- 2 PRE-ENGINEERED TRUSSES ARE BOTTOM CHORD BEARING, U.N.O.
- 3 LIGHT GAUGE HEADERS ARE DEFINED IN SCHEDULE BELOW. PROVIDE NUMBER OF STUDS SHOWN IN SCHEDULE AT EACH END IF STEEL COLUMN IS NOT PRESENT.

LIGHT GAUGE BOXED BEAM LINTEL			
MARK	BEAM SIZE	TRACK	JAMB STUDS
LGH-1	(2) 600S162-43	(2) 800T162-43	2
LGH-2	(2) 800S162-54	(2) 800T162-54	3
LGH-3	(2) 1000S200-68	(2) 800T162-68	4

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



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COMMISSION NUMBER
15-103 (16-299)

NEW SANCTUARY
FOR
FIRST BAPTIST CHURCH
NEOSHO, MO

SHEET
S3.1

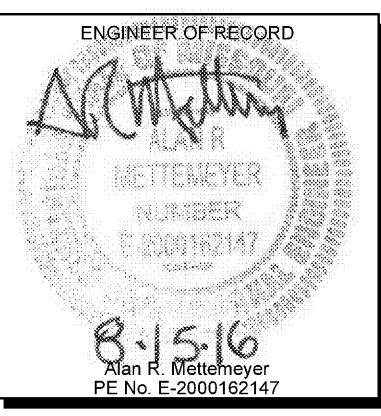
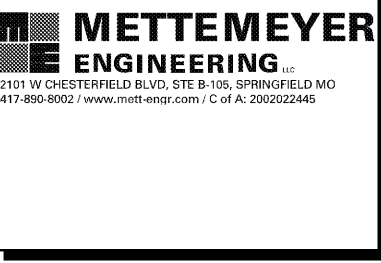
SCALE
1/8" = 1'-0"

DATE
08-15-2016

REV. DATE

GENERAL PLAN NOTES

- 1 SEE SHEET S0.0 FOR GENERAL STRUCTURAL NOTES.
- 2 GENERAL CONTRACTOR TO COORDINATE ELEVATION OF DECKING TO ESTABLISH THE TOP OF BAPTISTERY AS INDICATED ON THE ARCHITECTURAL DRAWINGS.
- 3 REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS OF STAGE.



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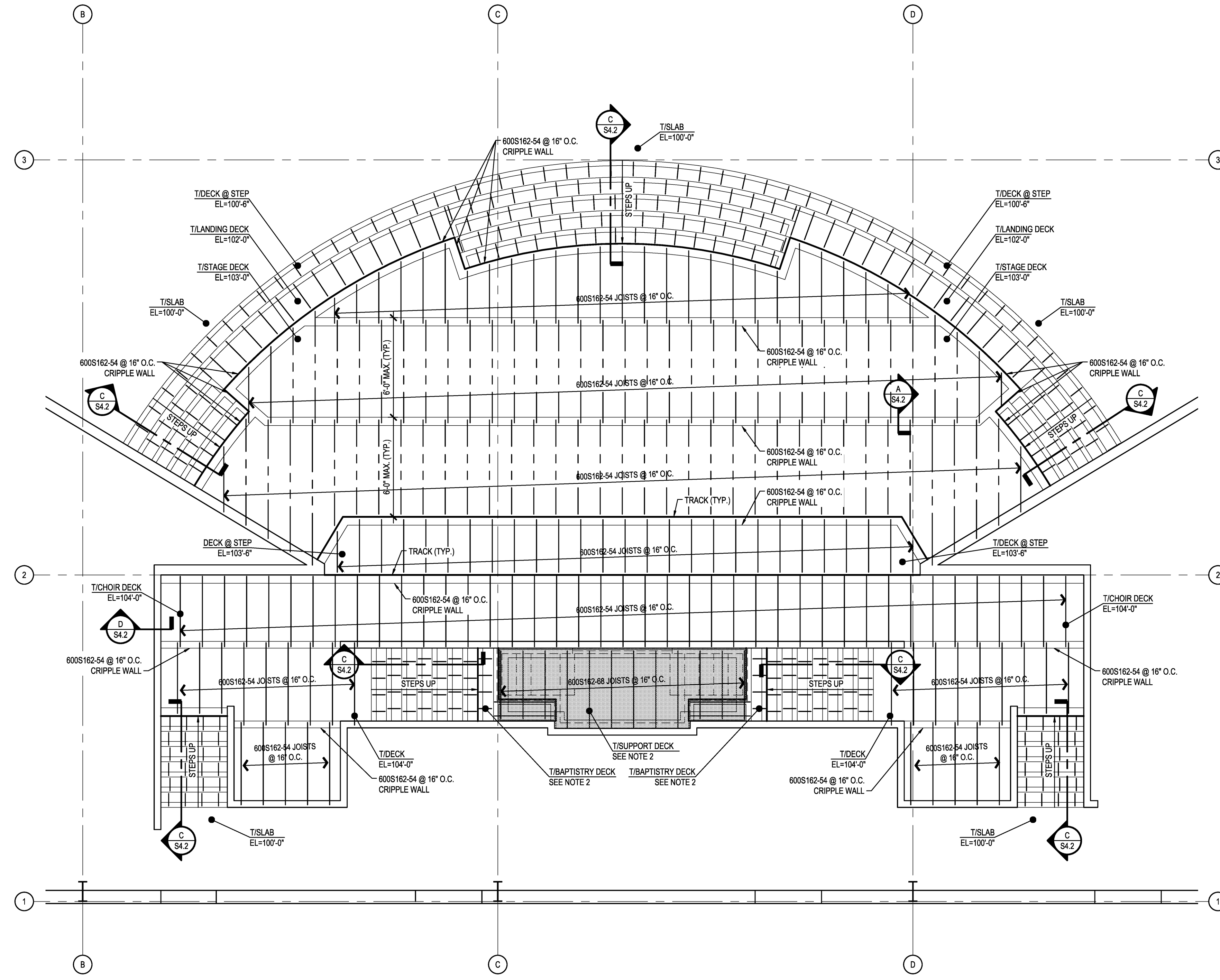
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
S3.2

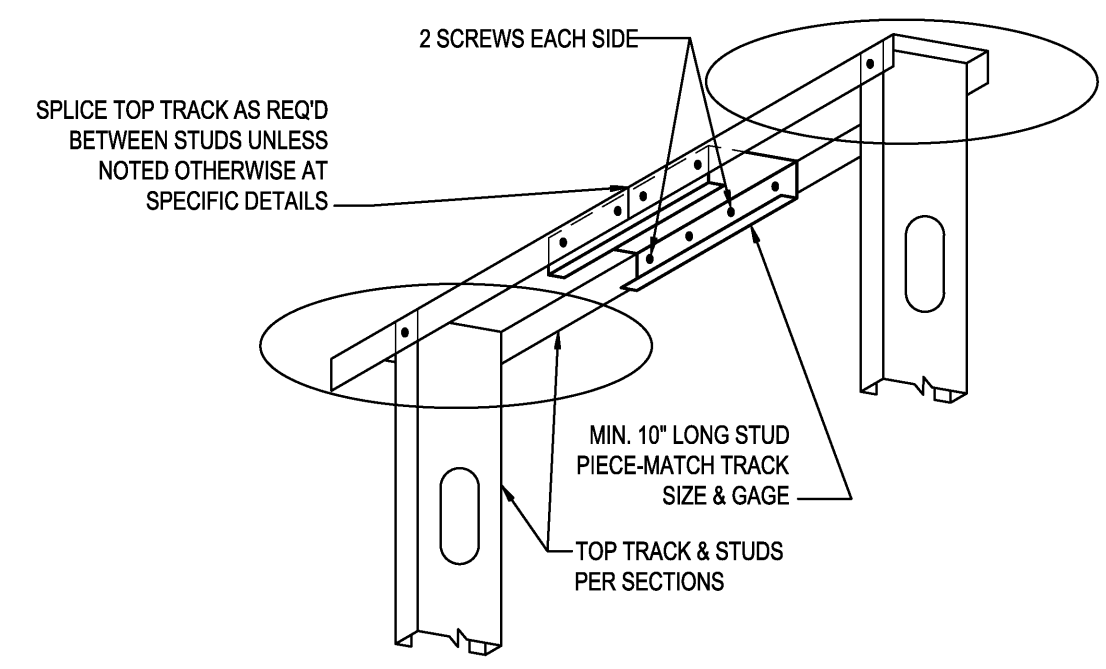
SCALE
1/8" = 1'-0"

DATE
08-15-2016

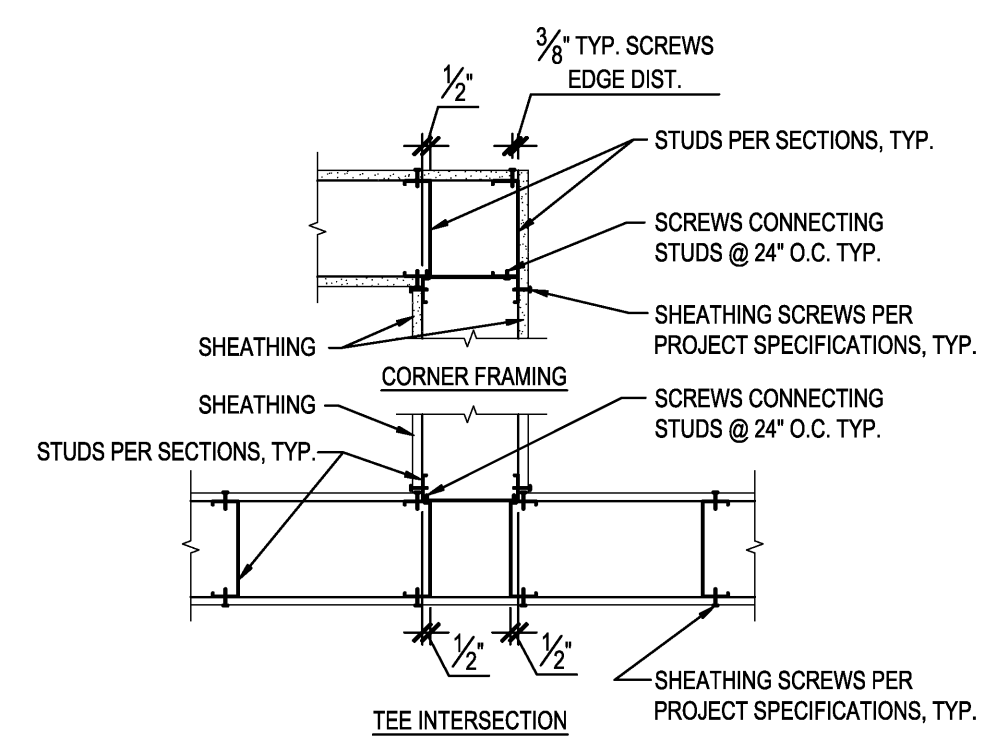
REV. DATE



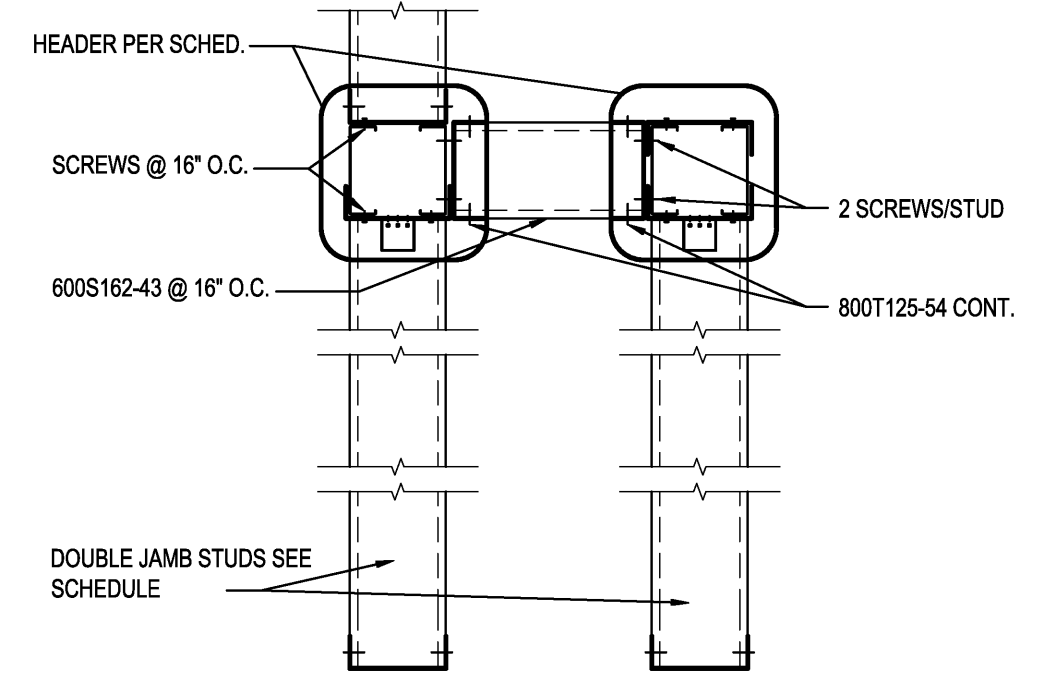
STAGE FRAMING PLAN
Scale: 1/4" = 1'-0"



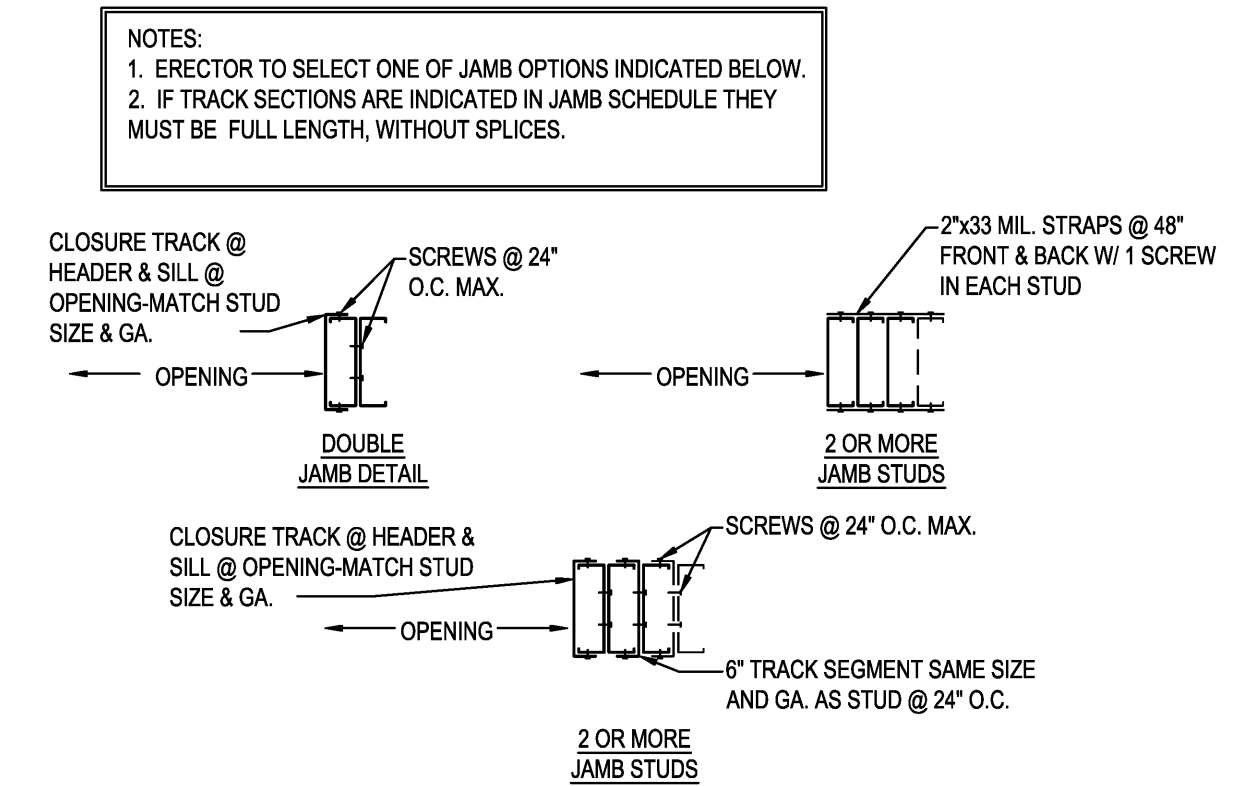
M TYPICAL UNSUPPORTED TRACK SPLICE DETAIL
S4.1 Scale: 1" = 1'-0"



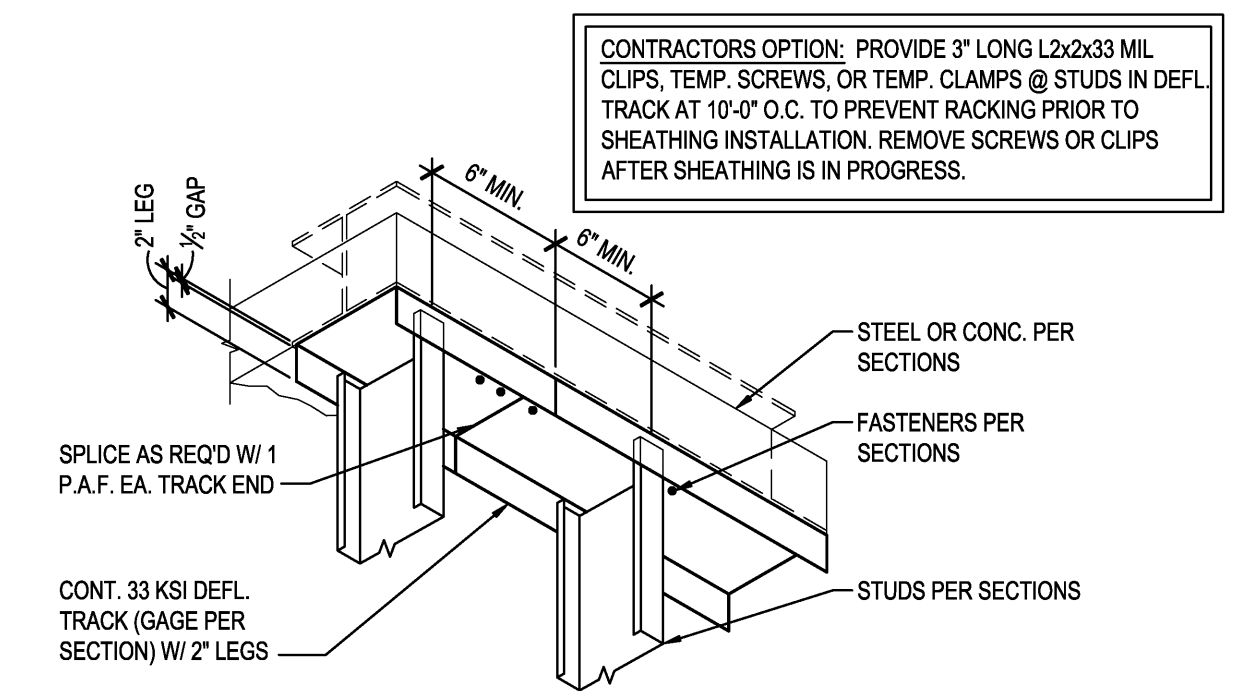
J TYPICAL CORNER WALL DETAILS
S4.1 Scale: 1" = 1'-0"



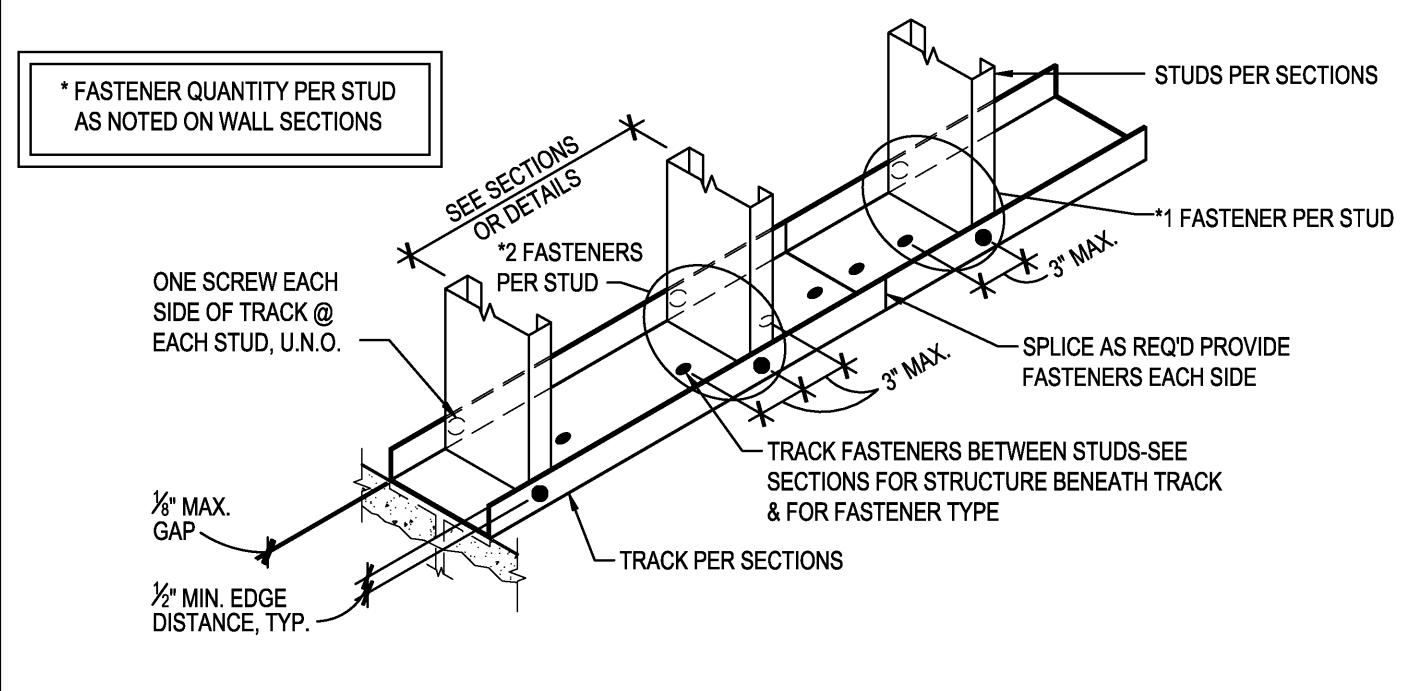
F TYPICAL WALL OPENING SECTION
S4.1 Scale: 1" = 1'-0"



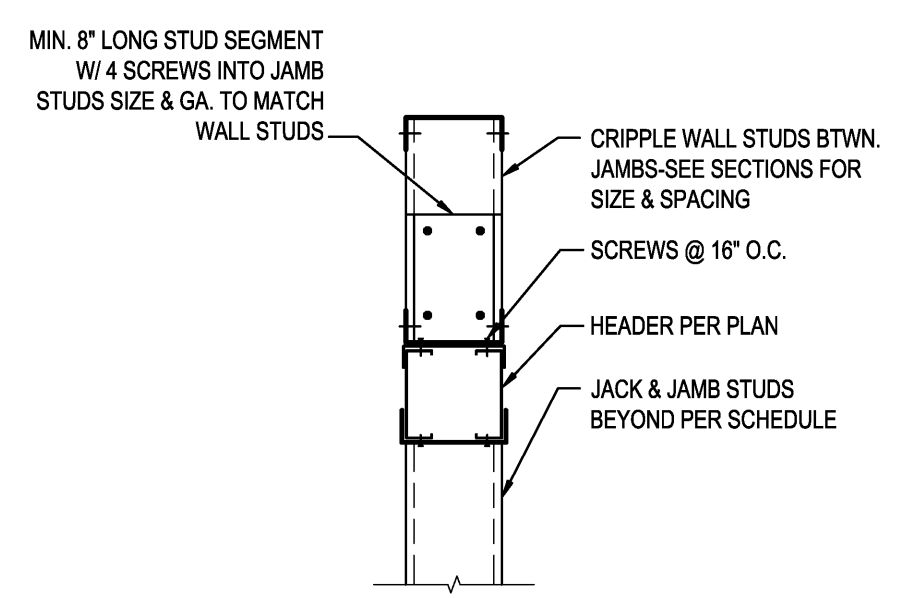
C ALTERNATE JAMB DETAILS
S4.1 Scale: 1" = 1'-0"



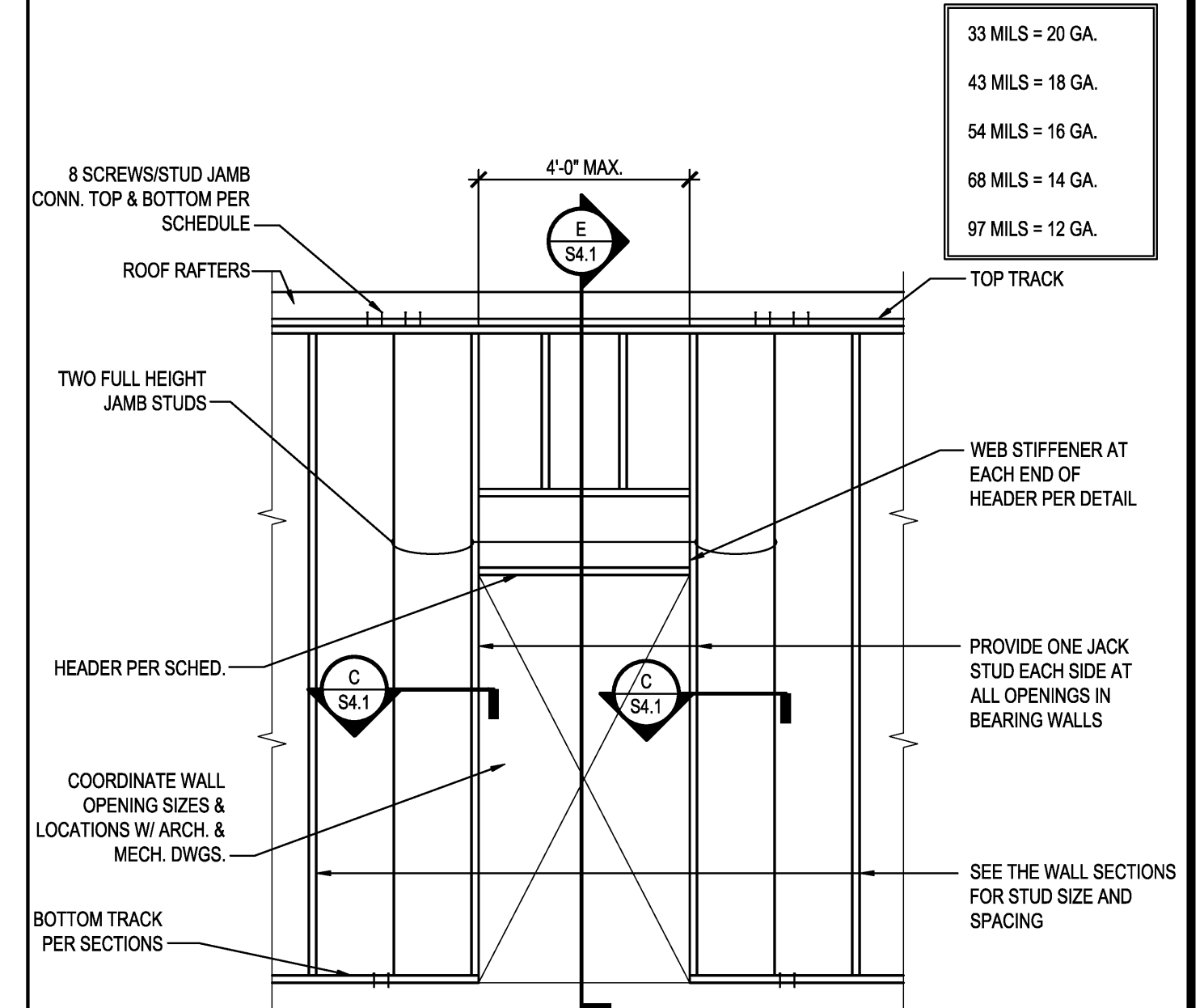
L TYPICAL DEFLECTION TRACK DETAIL
S4.1 Scale: 1" = 1'-0"



H TYPICAL TRACK TO STUD CONN. DETAIL @ STRUCTURE
S4.1 Scale: 1" = 1'-0"

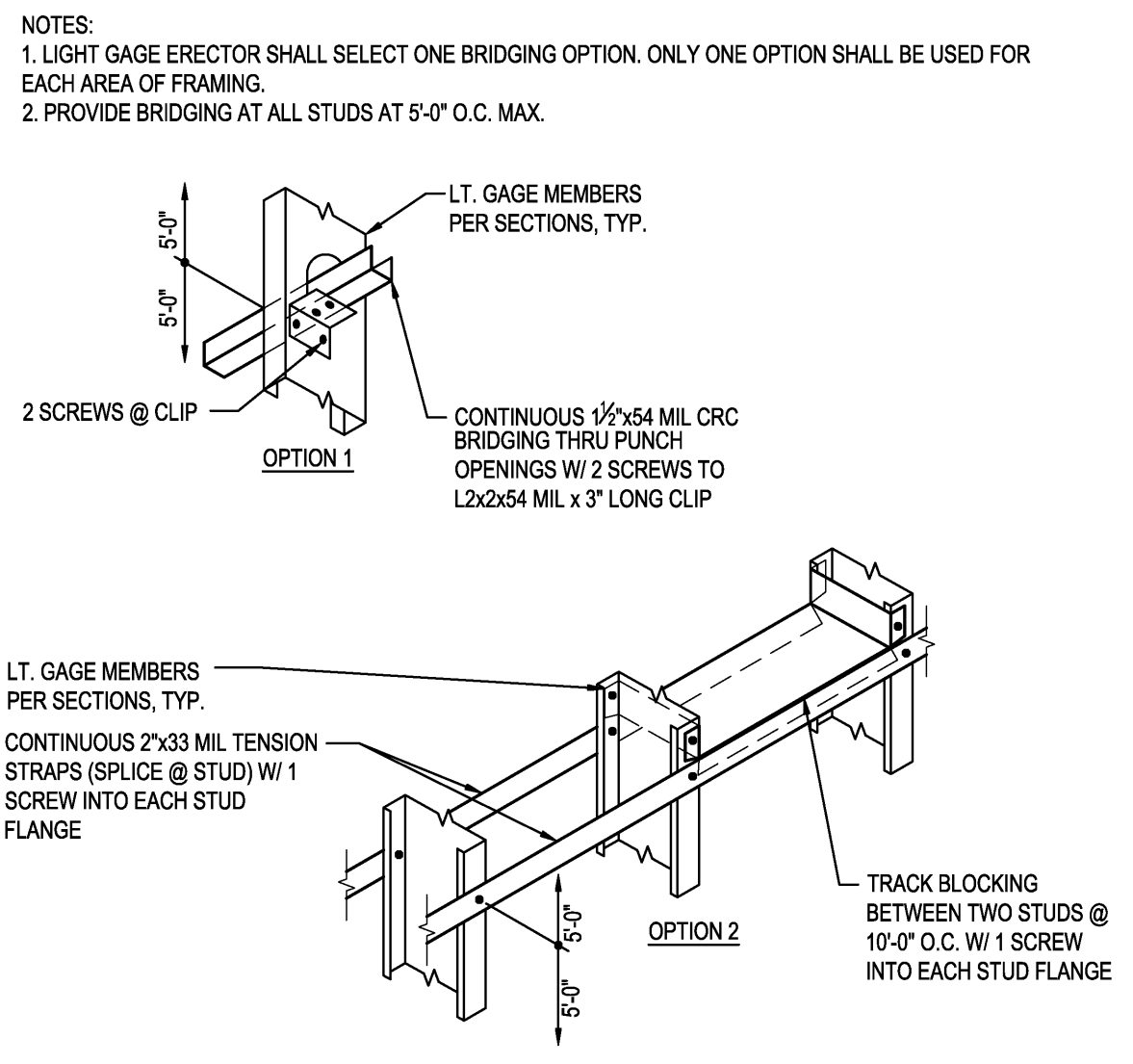


E TYPICAL BEARING WALL OPENING SECTION
S4.1 Scale: 1" = 1'-0"

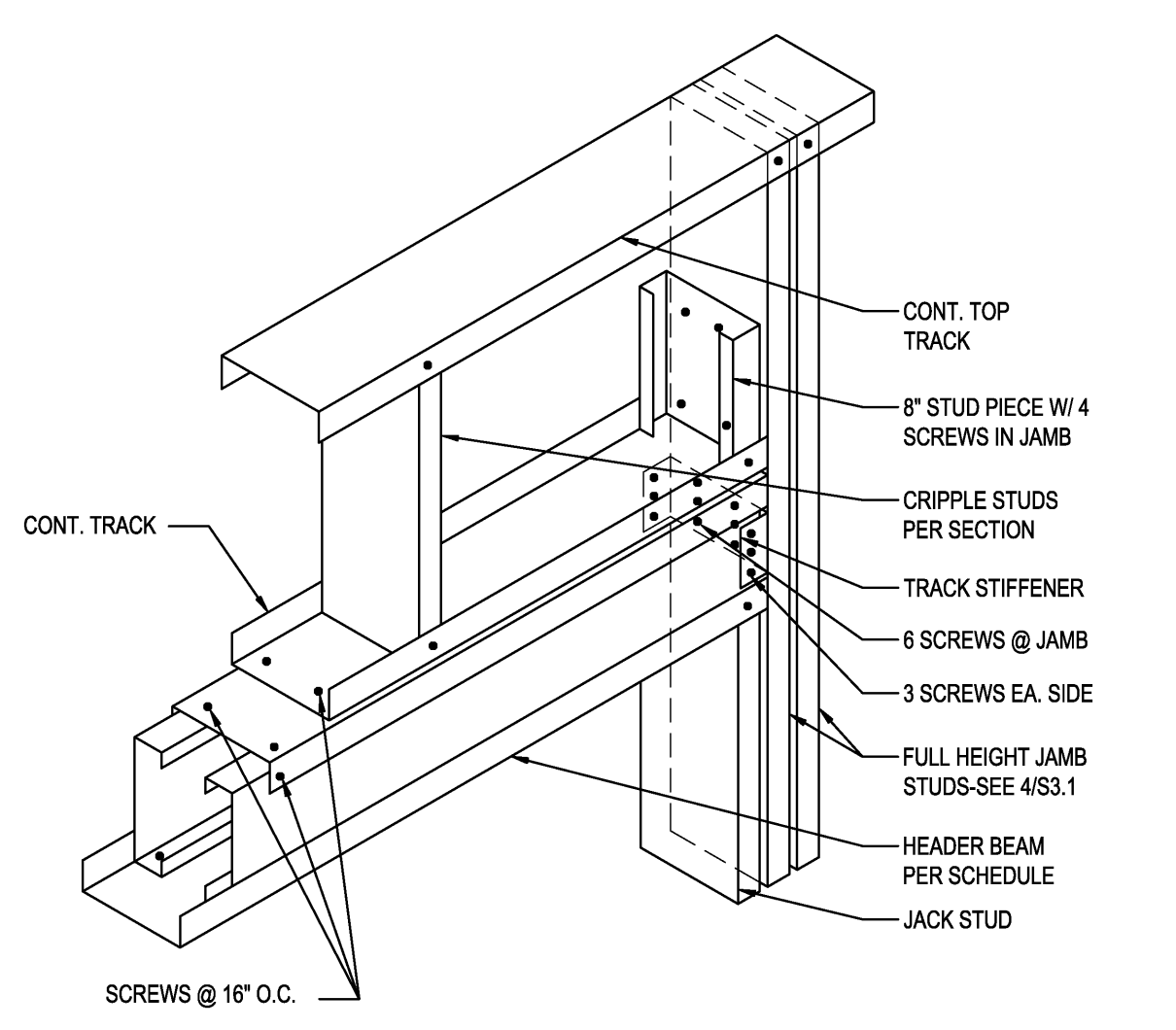


B TYPICAL WALL OPENING SECTION
S4.1 Scale: N.T.S.

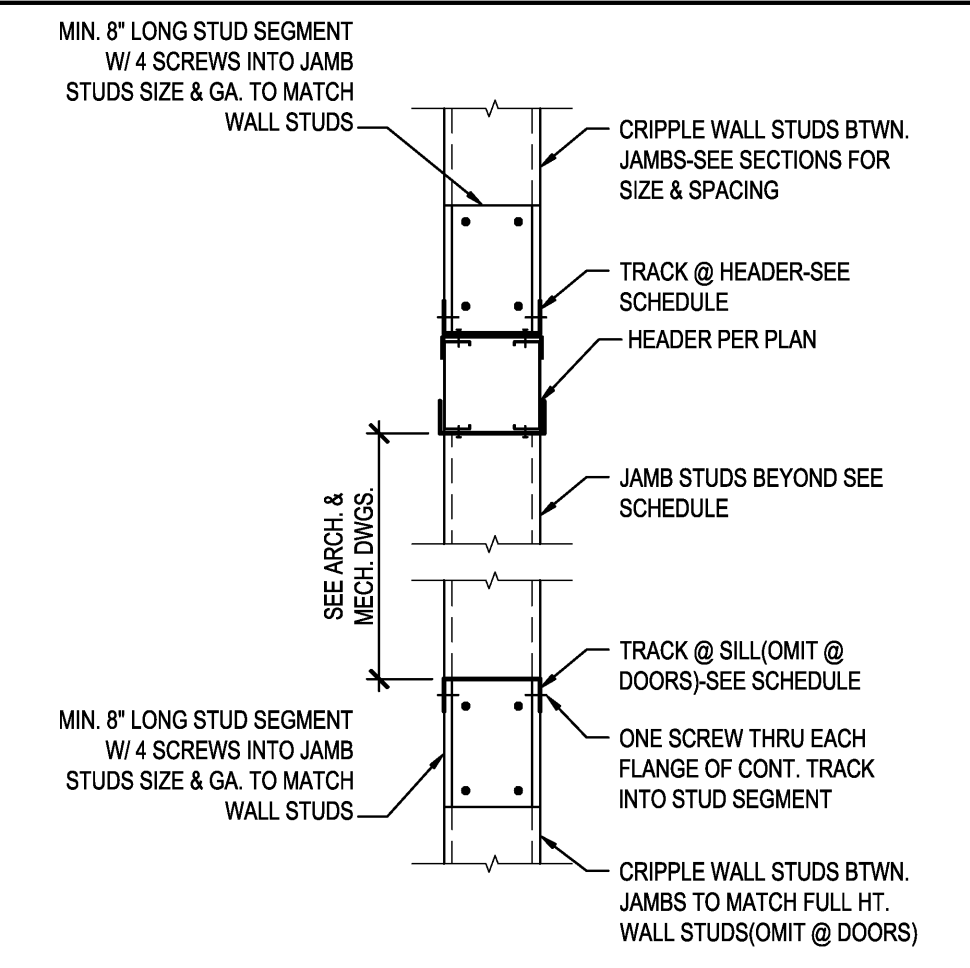
33 MILS = 20 GA.
43 MILS = 18 GA.
54 MILS = 16 GA.
68 MILS = 14 GA.
97 MILS = 12 GA.



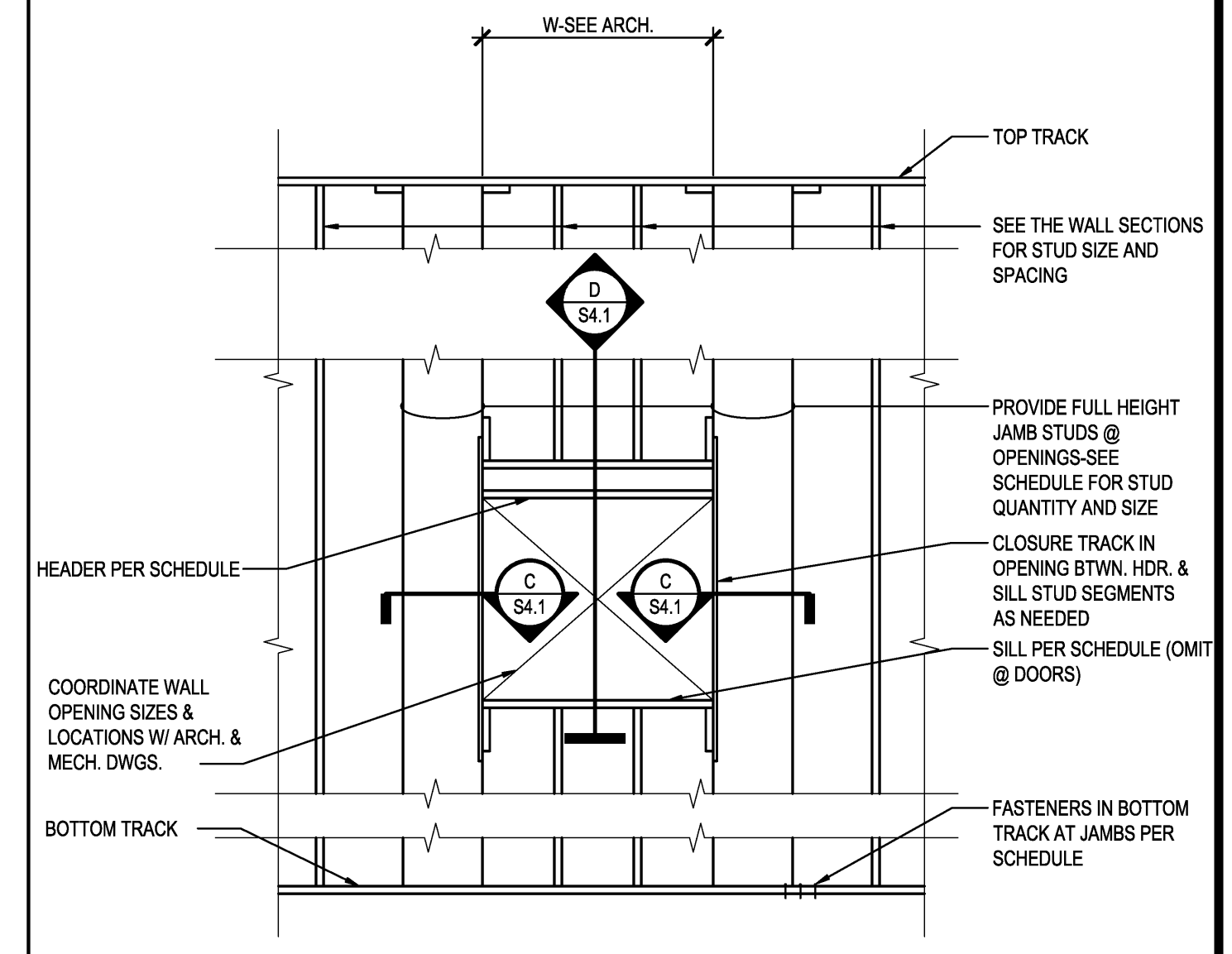
K TYPICAL STUD AND RAFTER BRIDGING DETAILS
S4.1 Scale: 1" = 1'-0"



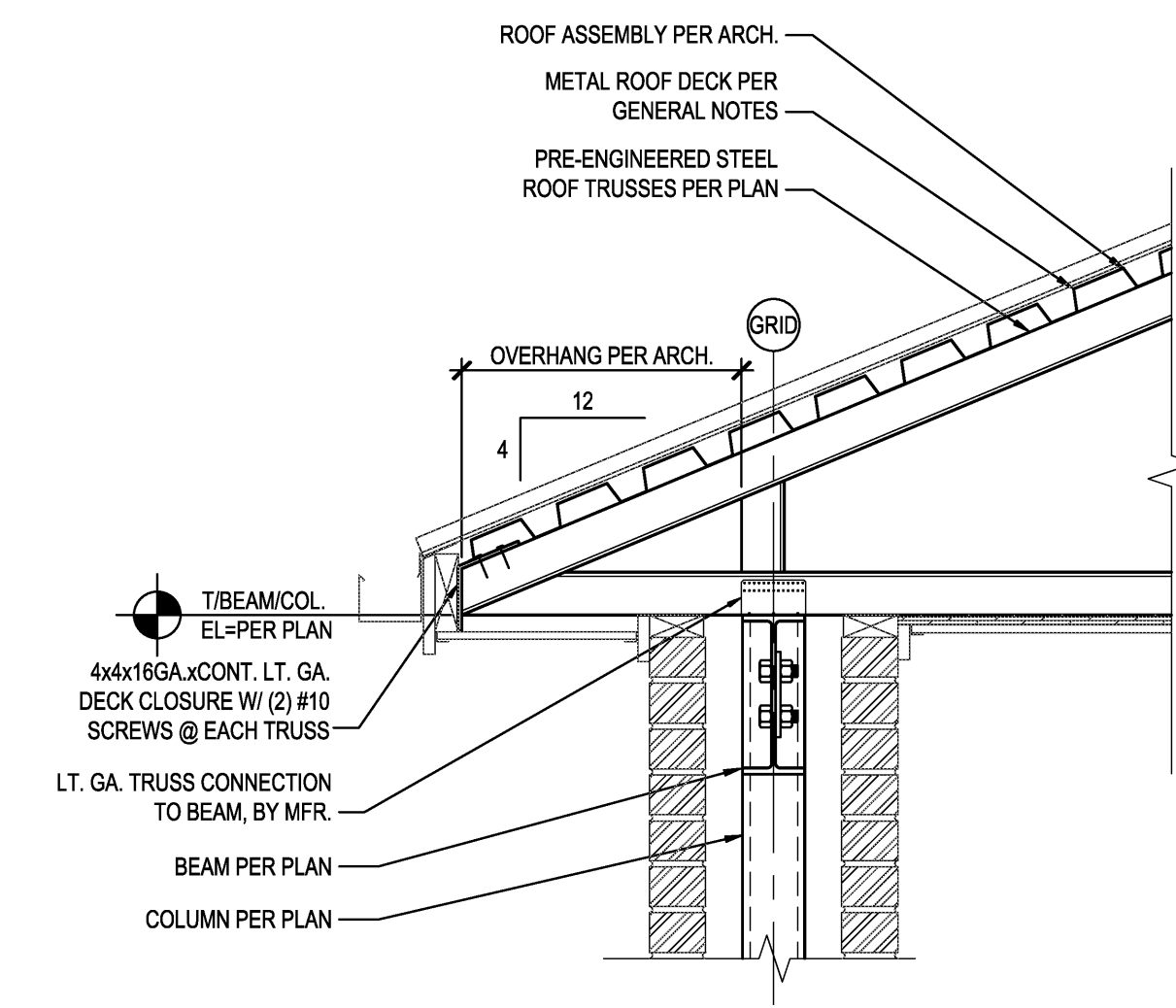
G HEADER TO JAMB CONNECTION DETAIL
S4.1 Scale: 1" = 1'-0"



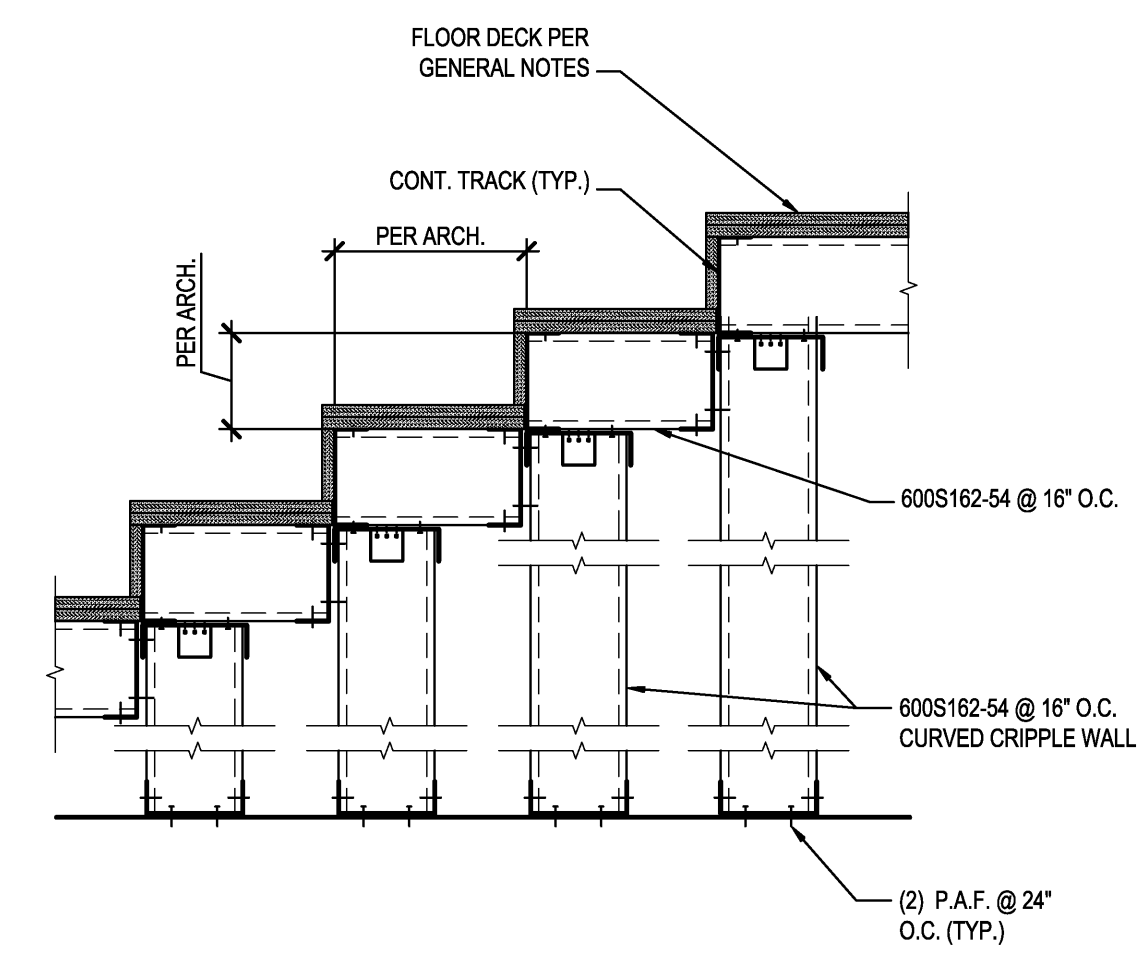
D TYPICAL WALL OPENING SECTION
S4.1 Scale: 1" = 1'-0"



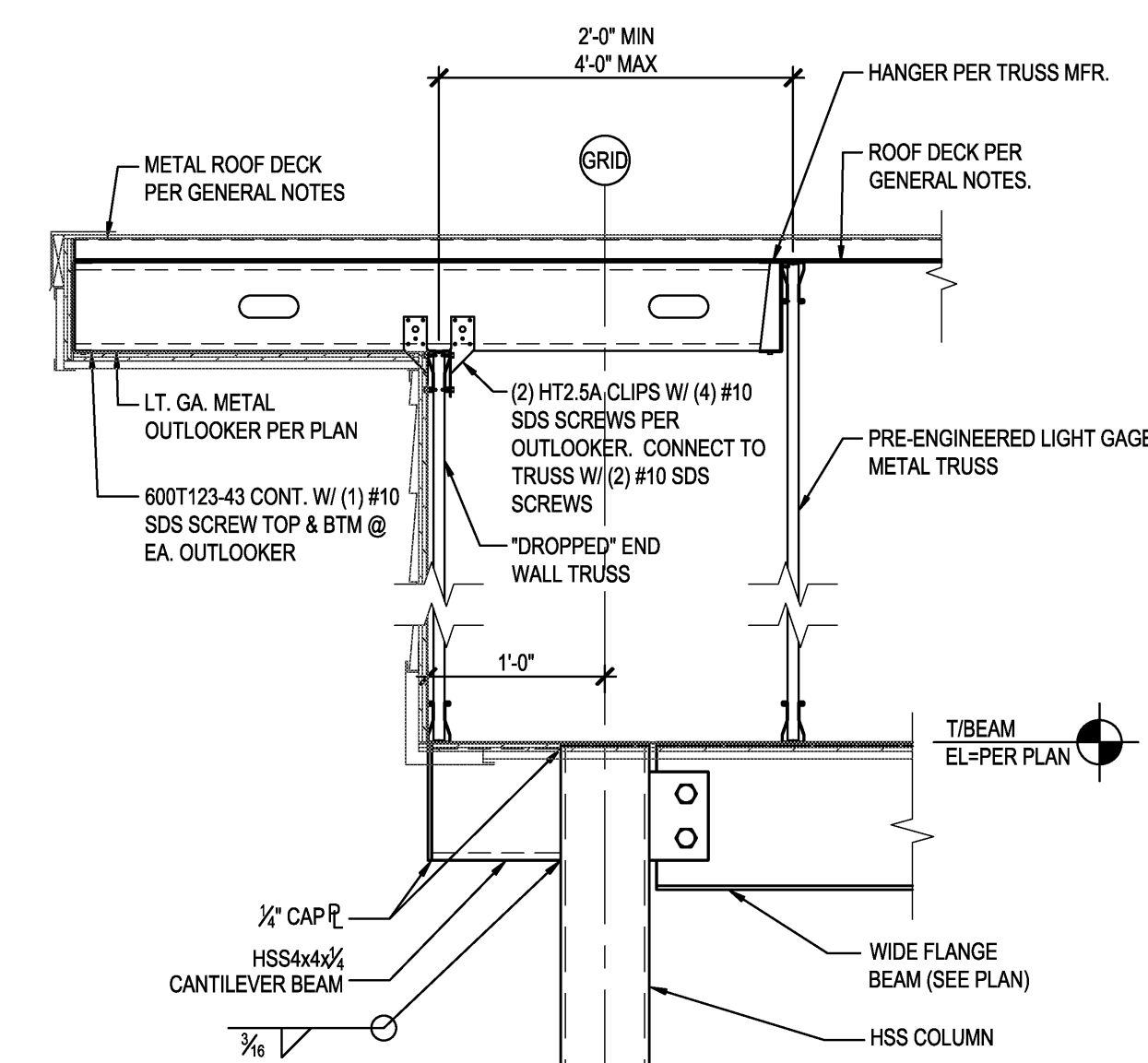
A TYP. LIGHT GA. STUD WALL ELEV. @ OPENING
S4.1 Scale: N.T.S.



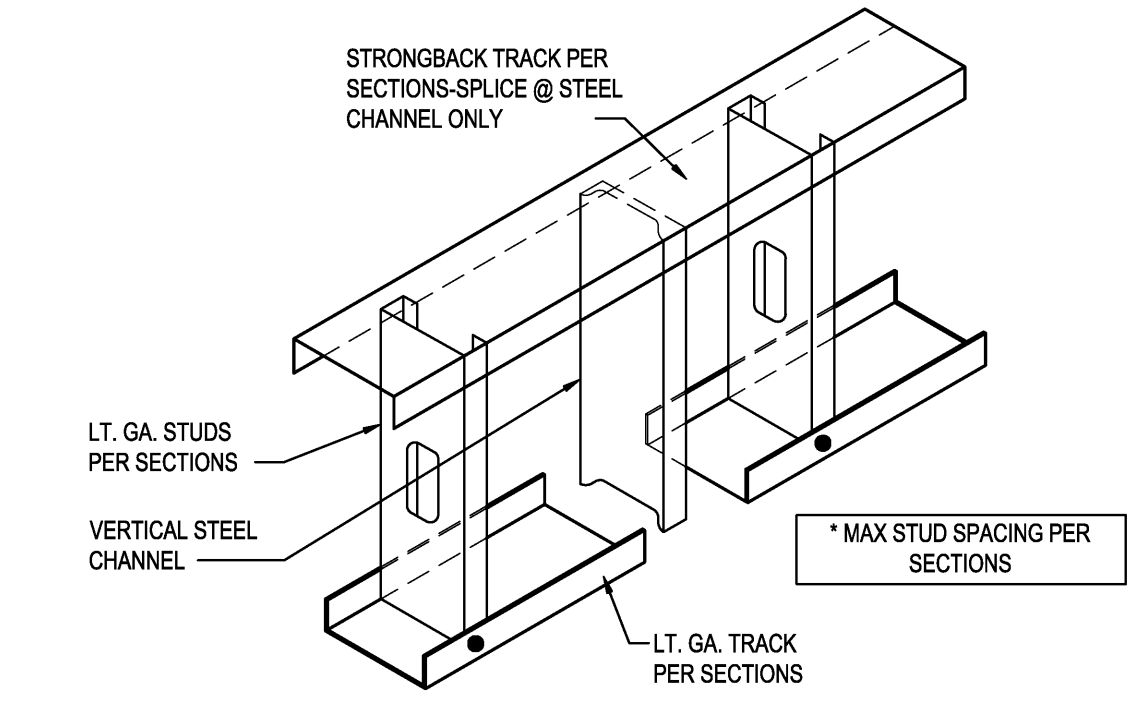
F TRUSS-BEAM-COLUMN CONNECTION
 S4.2 Scale: 1" = 1'-0"



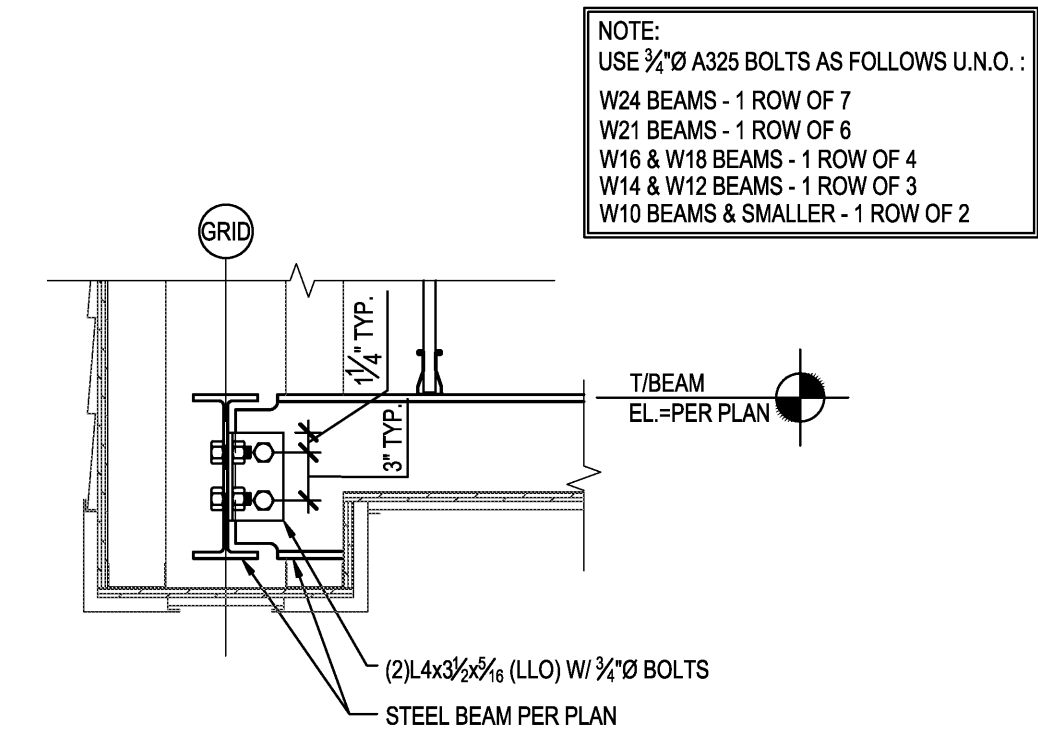
C STAIR SECTION
 S4.2 Scale: 1" = 1'-0"



E OUTLOOKER DETAIL
 S4.2 Scale: 1" = 1'-0"

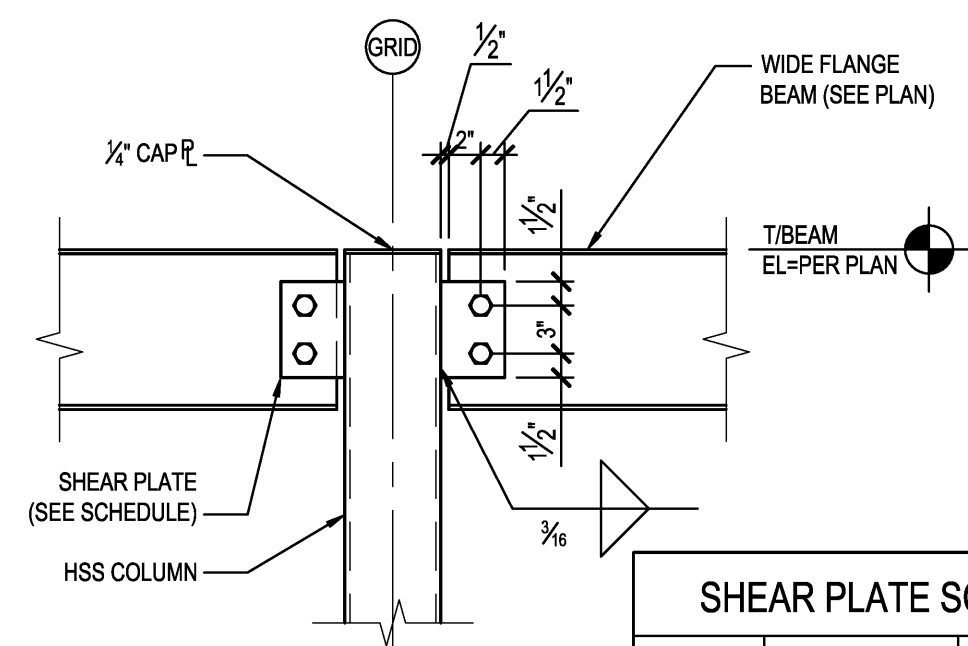


B TYPICAL SPANDREL CONNECTION DETAIL
 S4.2 Scale: 1" = 1'-0"



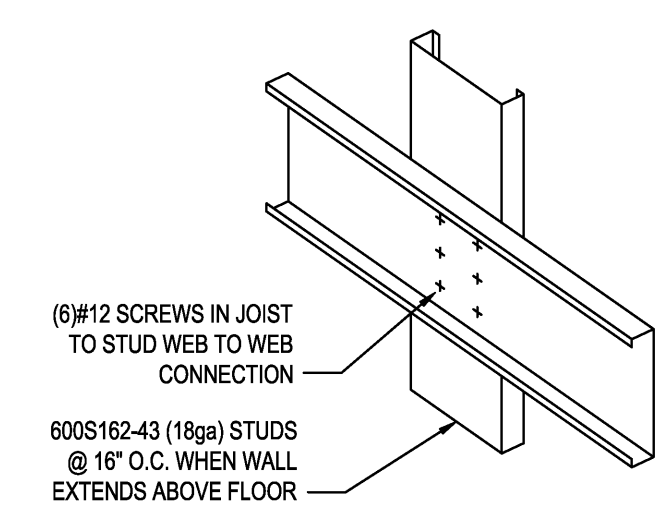
NOTE:
 USE 3/4" A325 BOLTS AS FOLLOWS U.N.O.:
 W24 BEAMS - 1 ROW OF 7
 W21 BEAMS - 1 ROW OF 6
 W16 & W18 BEAMS - 1 ROW OF 4
 W14 & W12 BEAMS - 1 ROW OF 3
 W10 BEAMS & SMALLER - 1 ROW OF 2

H BEAM TO BEAM CONNECTION
 S4.2 Scale: 1" = 1'-0"



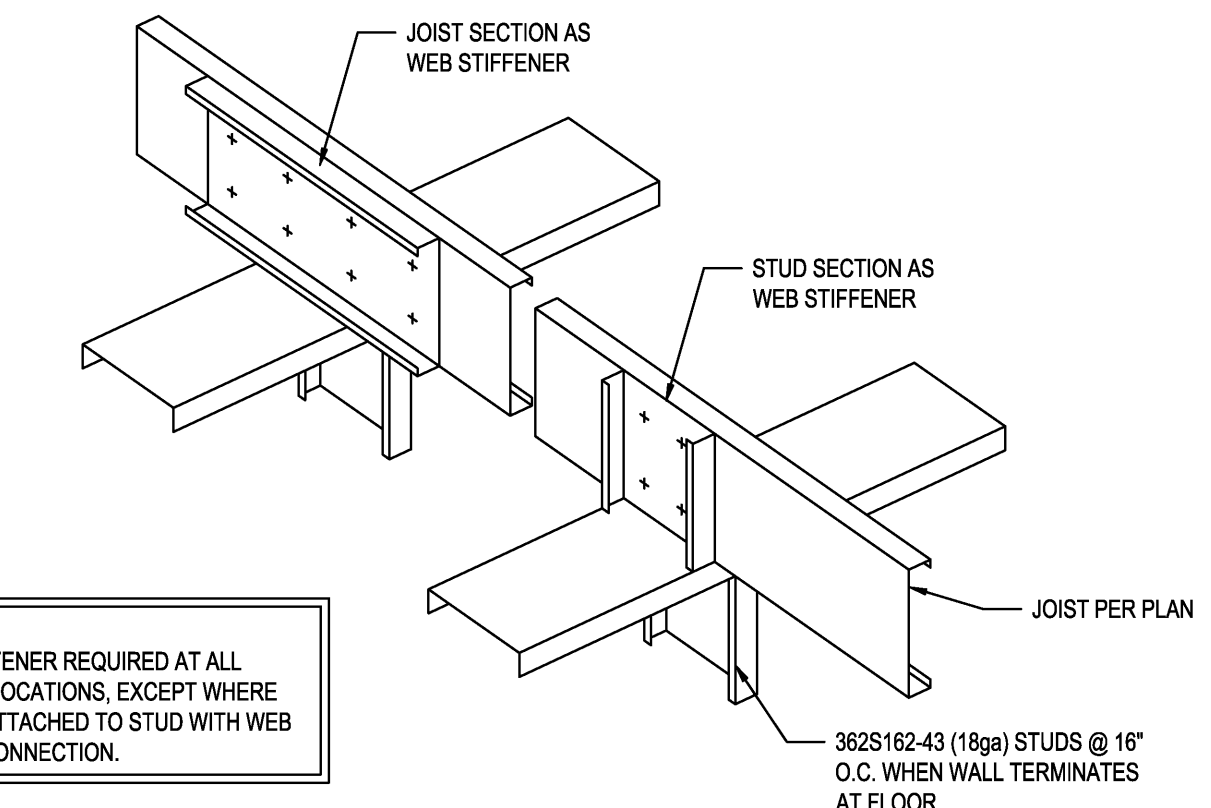
SHEAR PLATE SCHEDULE		
BEAM SHAPE	SHEAR PL THICKNESS	NUMBER OF BOLTS (n)
W10	3/8"	2

G BEAM TO COLUMN CONNECTION
 S4.2 Scale: 1" = 1'-0"



BY-PASS WALL

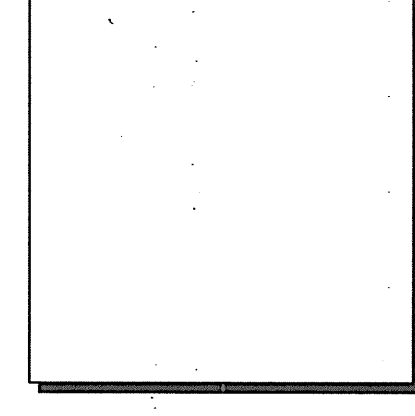
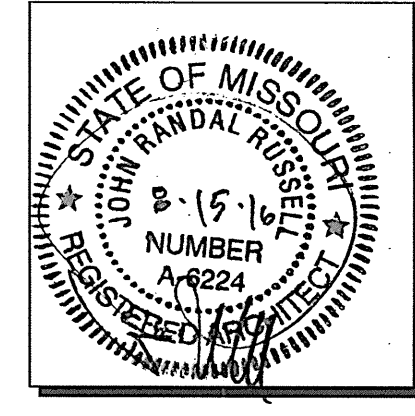
D LIGHT GAUGE JOIST BEARING
 S4.2 Scale: N.T.S.



NOTE:
 WEB STIFFENER REQUIRED AT ALL BEARING LOCATIONS, EXCEPT WHERE JOIST IS ATTACHED TO STUD WITH WEB TO WEB CONNECTION.

WEB STIFFENER OPTIONS

A LIGHT GAUGE JOIST BEARING
 S4.2 Scale: N.T.S.



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COMMISSION NUMBER
 15-103

NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

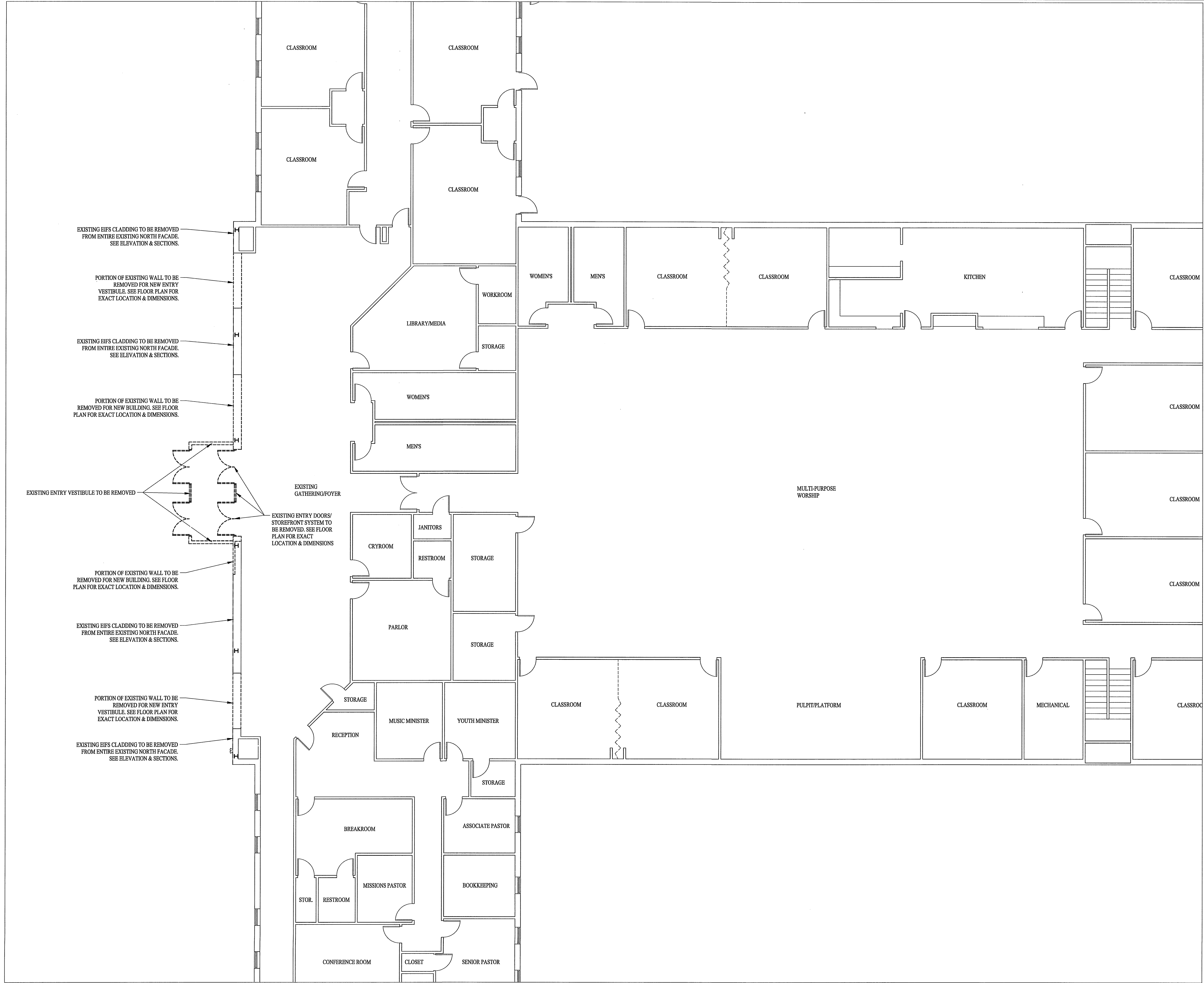
SHEET

D1.1

SCALE
 1/8" = 1'-0"

DATE
 08-15-16

REV. DATE



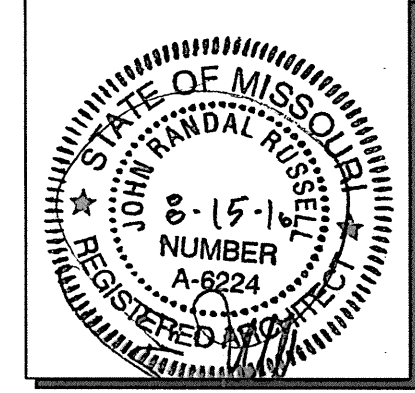
GENERAL DEMOLITION NOTES:

- ALL DASHED LINES SHOWN ON DEMOLITION PLANS REPRESENT EXISTING WALLS, DOORS, WINDOWS, ETC., TO BE REMOVED.
- ALL ROOM NAMES SHOWN ON DEMOLITION SHEETS ARE EXISTING AND HAVE BEEN LEFT ON DRAWINGS FOR COORDINATION PURPOSES ONLY.
- THE DRAWING DENOTING DEMOLITION ARE NOT INTENDED TO CONVEY ALL ITEMS OR CONDITIONS THAT THE CONTRACTOR MAY ENCOUNTER DURING THE COURSE OF DEMOLITION. THE INTENT OF THESE DRAWINGS IS TO CONVEY THE OBSERVABLE CONDITIONS WHICH WILL BE REMOVED/MODIFIED TO ACCOMMODATE NEW CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXISTING CONDITIONS AND TAKE THE APPROPRIATE NECESSARY MEASURES TO REMOVE ALL ITEMS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION.
- CONTRACTOR SHALL ERECT TEMPORARY PARTITIONS AT LOCATIONS AS REQUIRED DURING DEMOLITION ACTIVITIES TO PREVENT THE SPREAD OF DUST AND DEBRIS TO AREAS OUTSIDE THE CONSTRUCTION ZONE. TEMPORARY PARTITIONS SHALL BE CONSTRUCTED OF GYPSUM BOARD APPLIED TO OUTSIDE FACE OF 2X4 WOOD FRAMING. PARTITIONS SHALL BE A MINIMUM OF 8' IN HEIGHT.
- CONTRACTOR SHALL ERECT TEMPORARY WALKWAYS, AS REQUIRED, TO PROVIDE TEMPORARY PEDESTRIAN PASSAGE THRU & AROUND AREAS UNDER CONSTRUCTION TO ALLOW & MAINTAIN 24/7 OPERATION OF FACILITY THROUGHOUT THE COURSE OF CONSTRUCTION.
- OWNER SHALL HAVE FIRST RIGHT OF SALVAGE FOR ALL DEMOLISHED ITEMS. CONTRACTOR SHALL VERIFY WITH OWNER WHICH ITEMS THEY WISH TO KEEP. ALL OTHER DEMOLISHED ITEMS INDICATED BY THE CONTRACT DOCUMENTS AND THESE DRAWINGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROPERTY.
- ALL FINISHES TO REMAIN SHALL BE PATCHED/REPAIRED TO MATCH ADJACENT FINISHES AFTER REMOVAL OF ANY ABUTTING ITEMS. EXPOSED FINISHES TO REMAIN SHALL BE THOROUGHLY CLEANED OF ALL CONSTRUCTION MATERIALS, SEALANTS, DIRT, GREASE, ETC. TO MATCH ADJACENT FINISHES AND PROVIDE A UNIFORM FINISHED APPEARANCE.

DEMOLITION NOTES

1
D1.1
 1/8" = 1'-0"
DEMOLITION FLOOR PLAN





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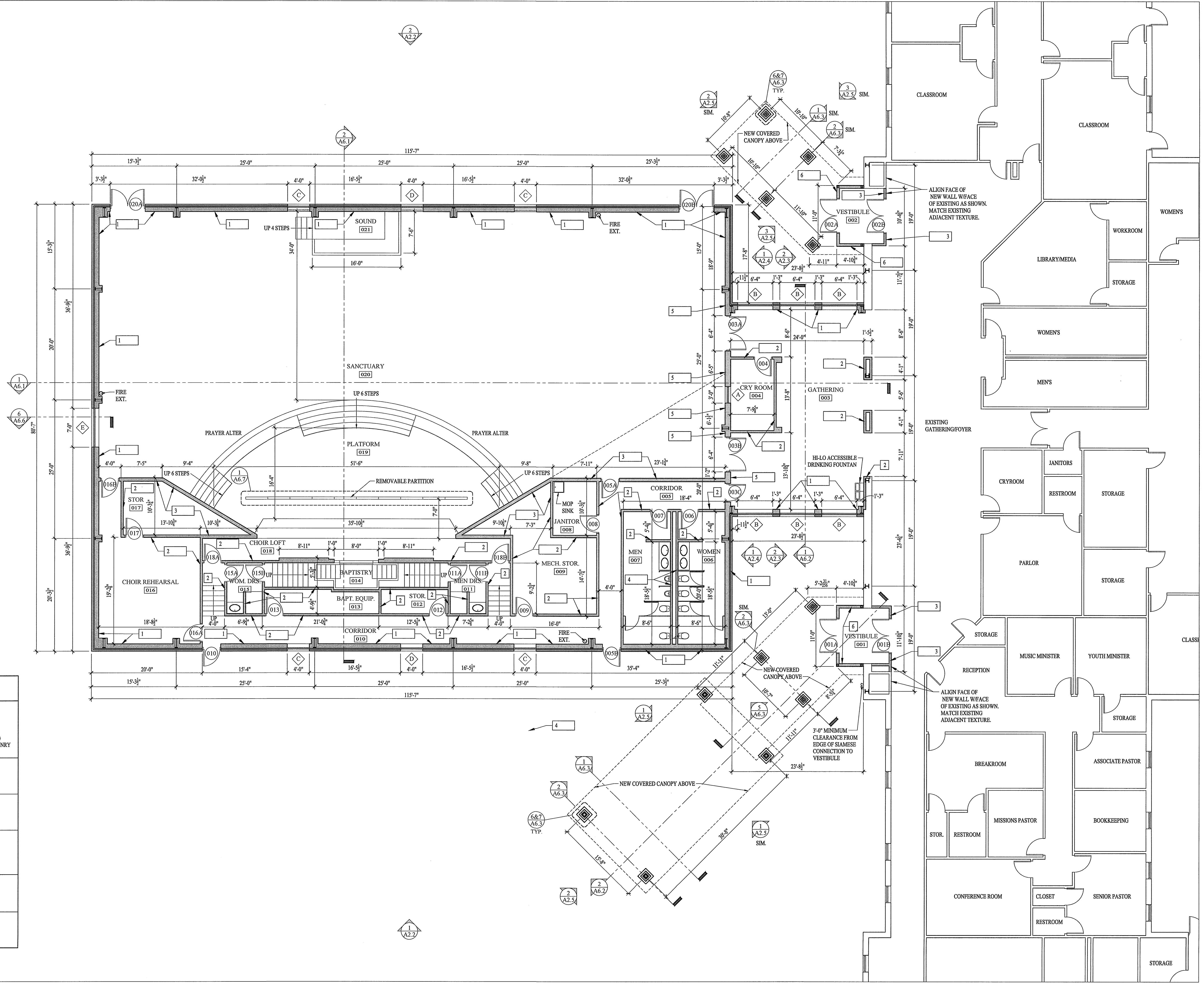
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
A1.1

SCALE
 1/8" = 1'-0"

DATE
 08-15-16

REV. DATE

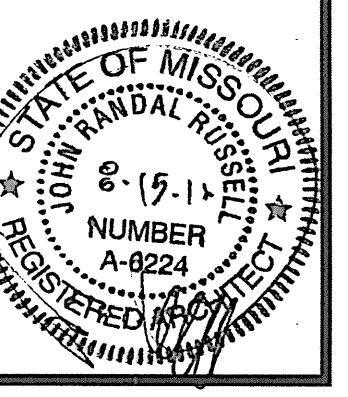


WALL MARK	WALL NOTE
1	1/2" GYPSUM BOARD OVER 3-1/2" METAL STUDS @ 16" O.C., (FILL VOID W/SOUND BATT INSULATION) OVER 2" AIR SPACE OVER 5-1/2" METAL STUDS @ 16" O.C., (FILL VOID W/SOUND BATT INSULATION) OVER 1 5/8" AIR SPACE OVER 3 5/8" MASONRY
2	1/2" GYPSUM BOARD OVER 3-1/2" METAL STUDS @ 16" O.C., (FILL VOID W/SOUND BATT INSULATION)
3	1/2" GYPSUM BOARD OVER 5-1/2" METAL STUDS @ 16" O.C., (FILL VOID W/SOUND BATT INSULATION)
4	1/2" GYPSUM BOARD OVER DOUBLE-ROW OF 3-1/2" METAL STUDS SPACED 1" APART, STAGGER STUDS (FILL VOID W/SOUND BATT INSULATION, BOTH ROWS OF STUDS)
5	2 HOUR RATED WALL UL DESIGN U411, (2) LAYERS 1/2" TYPE-X FIRE RATED GYPSUM BOARD OVER 5-1/2" METAL STUDS @ 16" O.C.
6	1/2" GYPSUM BOARD OVER 5-1/2" METAL STUDS @ 16" O.C., (FILL VOID W/SOUND BATT INSULATION)

FLOOR PLAN (SANCTUARY ADDITION IS 9,200 SQUARE FEET & GATHERING/FOYER ADDITION IS 900 SQUARE FEET)

1/8" = 1'-0"





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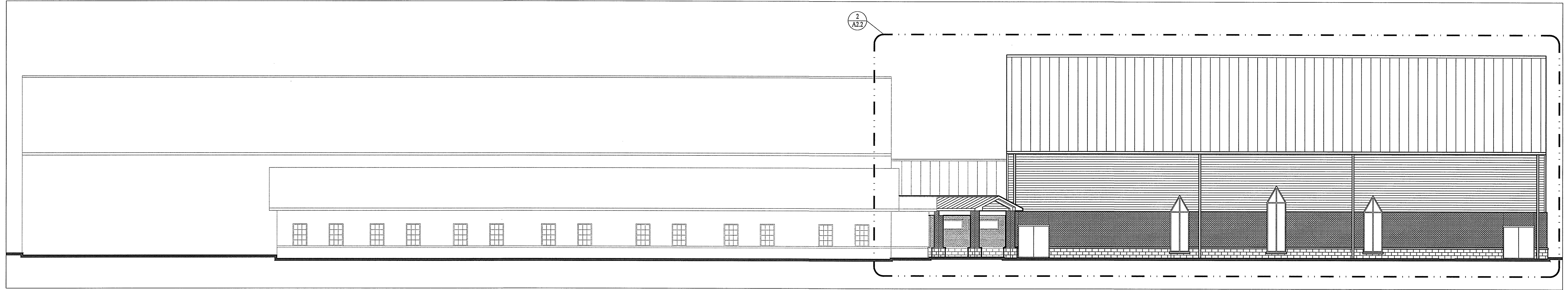
NEW SANCTUARY
FOR
FIRST BAPTIST CHURCH
NEOSHO, MO

SHEET
A2.1

SCALE
3/32" = 1'-0"

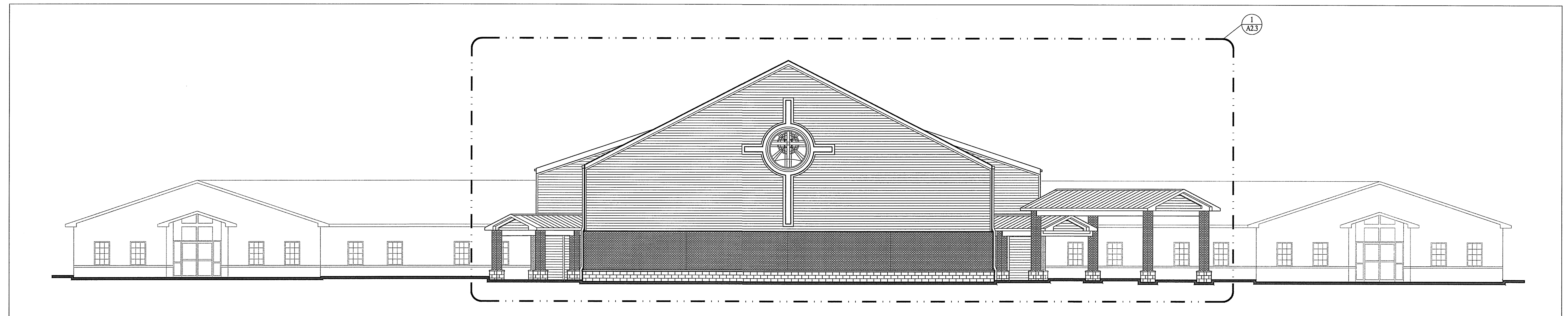
DATE
08-15-16

REV. DATE



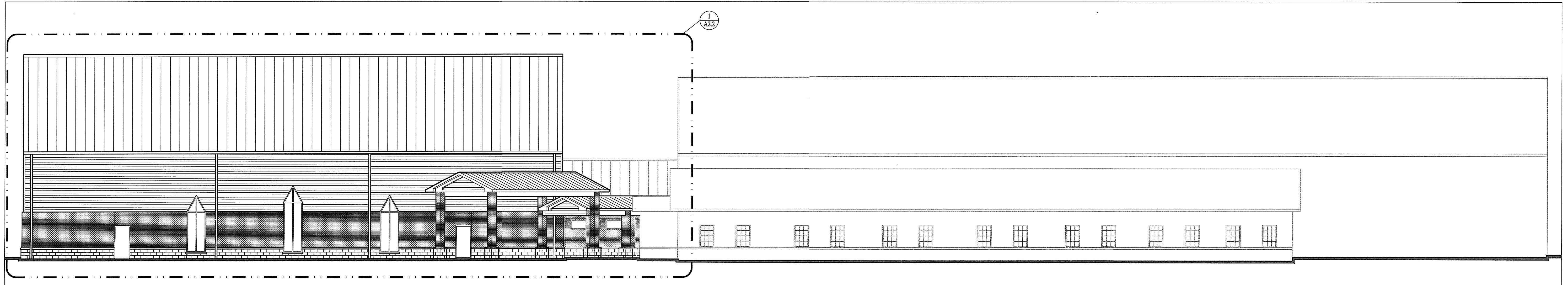
3 OVERALL WEST BUILDING ELEVATION

A2.1
3/32" = 1'-0"



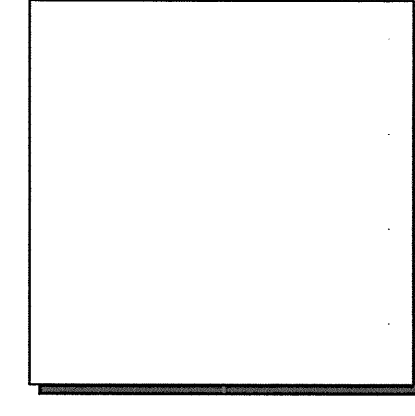
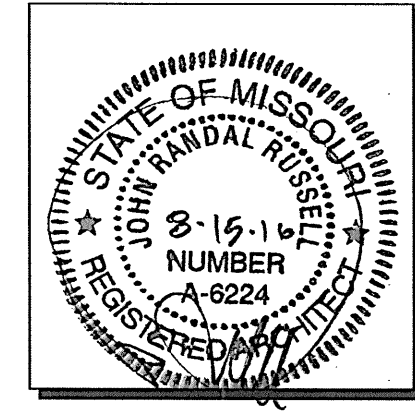
2 OVERALL NORTH BUILDING ELEVATION

A2.1
3/32" = 1'-0"



1 OVERALL EAST BUILDING ELEVATION

A2.1
3/32" = 1'-0"



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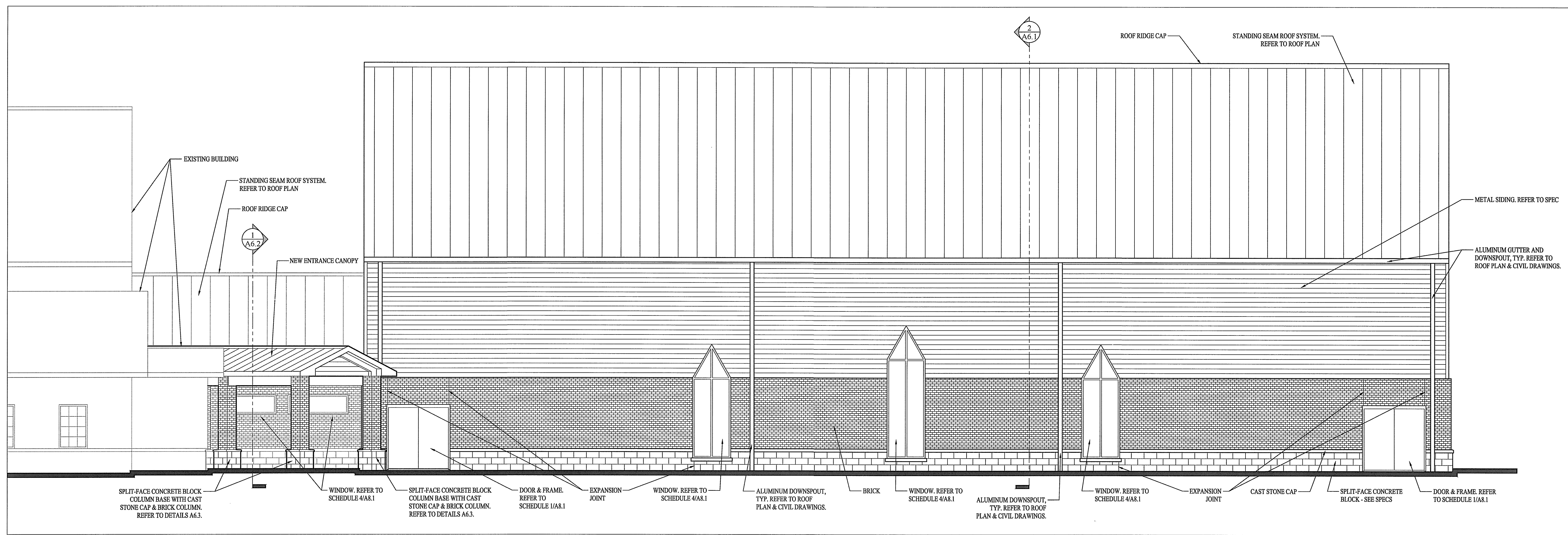
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
A2.2

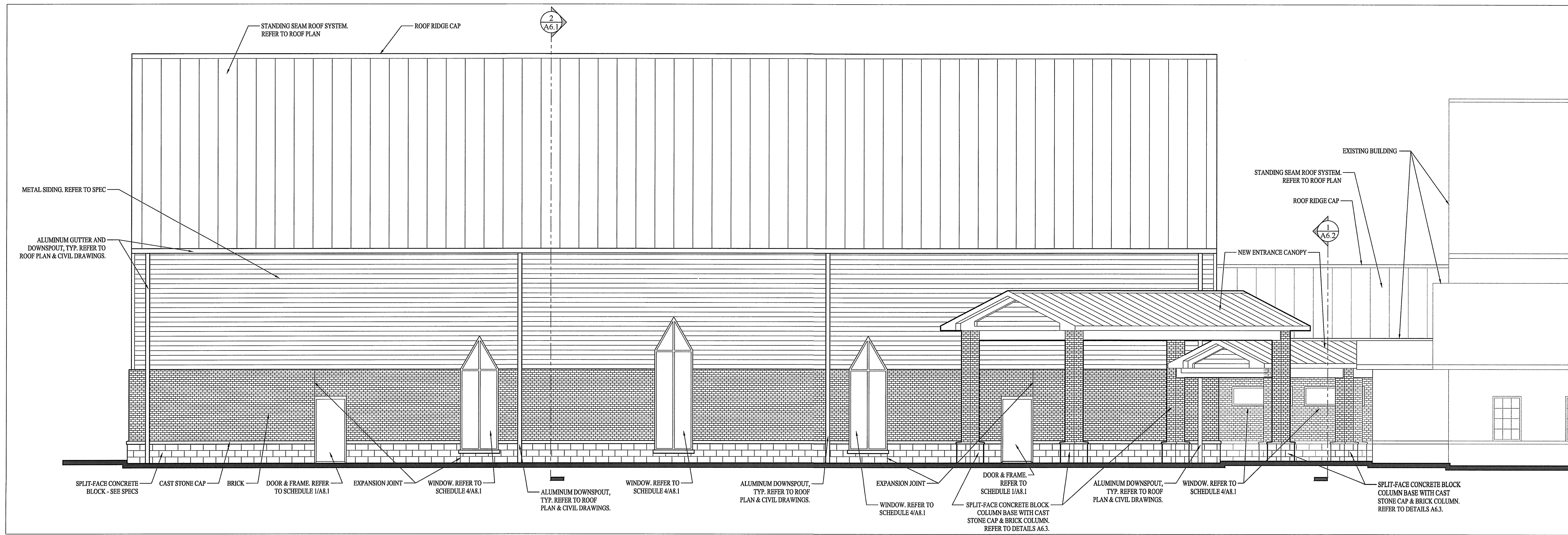
SCALE
 3/16" = 1'-0"

DATE
 08-15-16

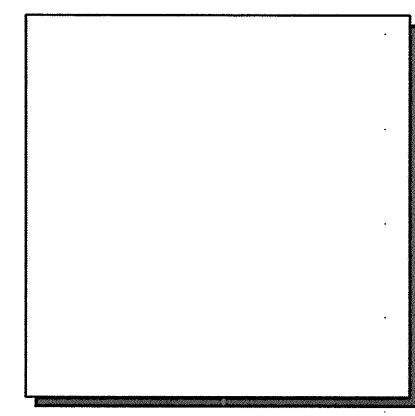
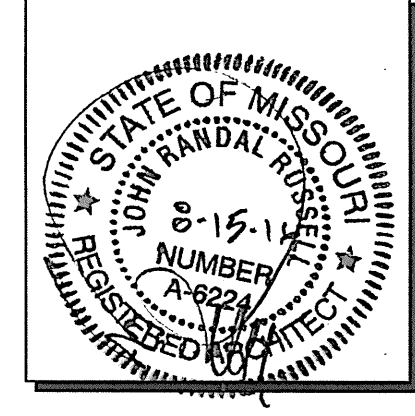
REV. DATE



2 WEST NEW SANCTUARY ELEVATION
 3/16" = 1'-0"



1 EAST NEW SANCTUARY ELEVATION
 3/16" = 1'-0"



RUSSELL ARCHITECTS
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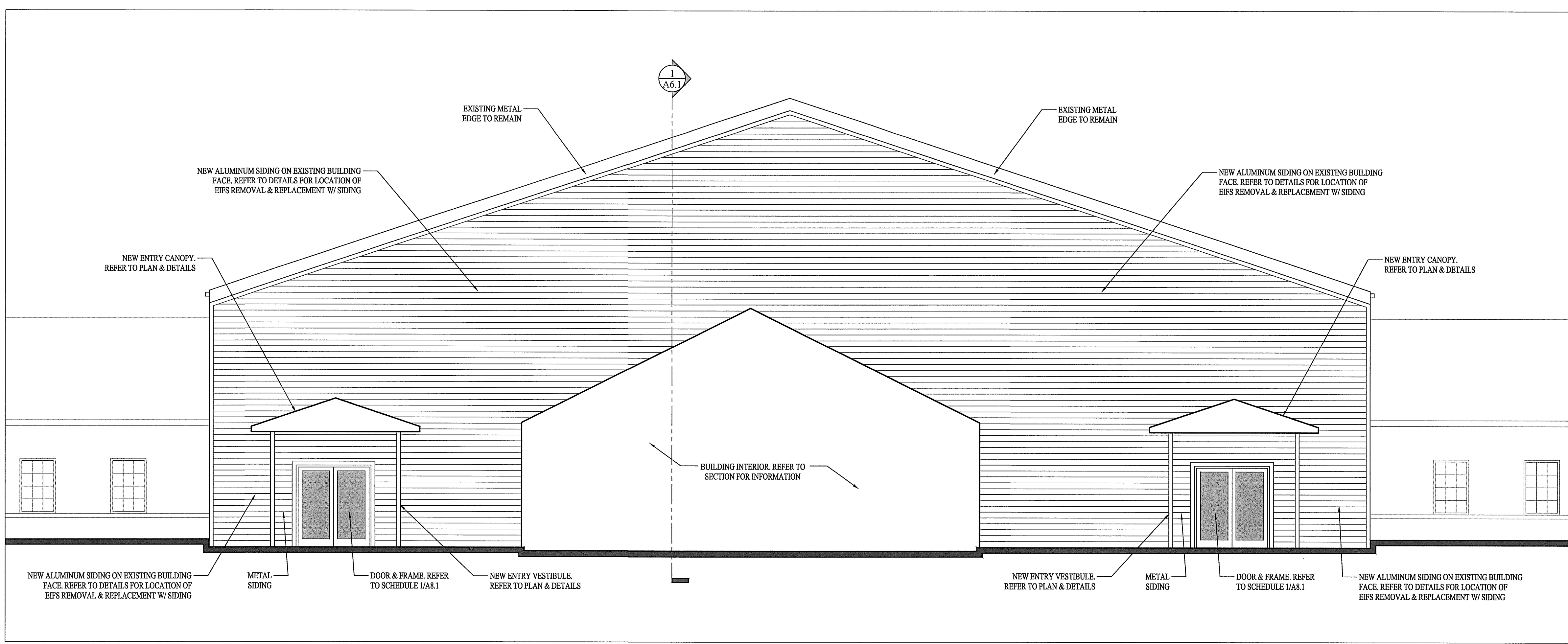
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
A2.3

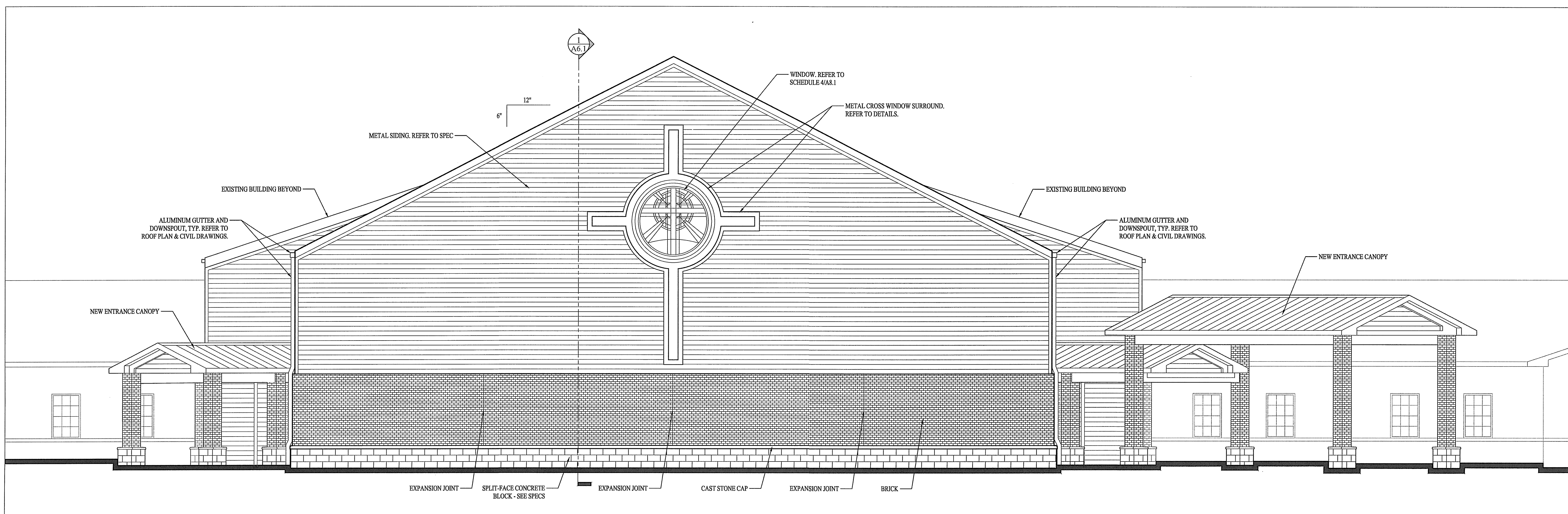
SCALE
 3/16" = 1'-0"

DATE
 08-15-16

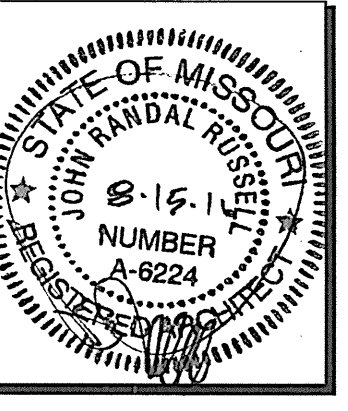
REV. DATE



2
A2.3
EXISTING NORTH FACADE ELEVATION
 3/16" = 1'-0"



1
A2.3
NORTH SANCTUARY ELEVATION
 3/16" = 1'-0"



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COMMISSION NUMBER
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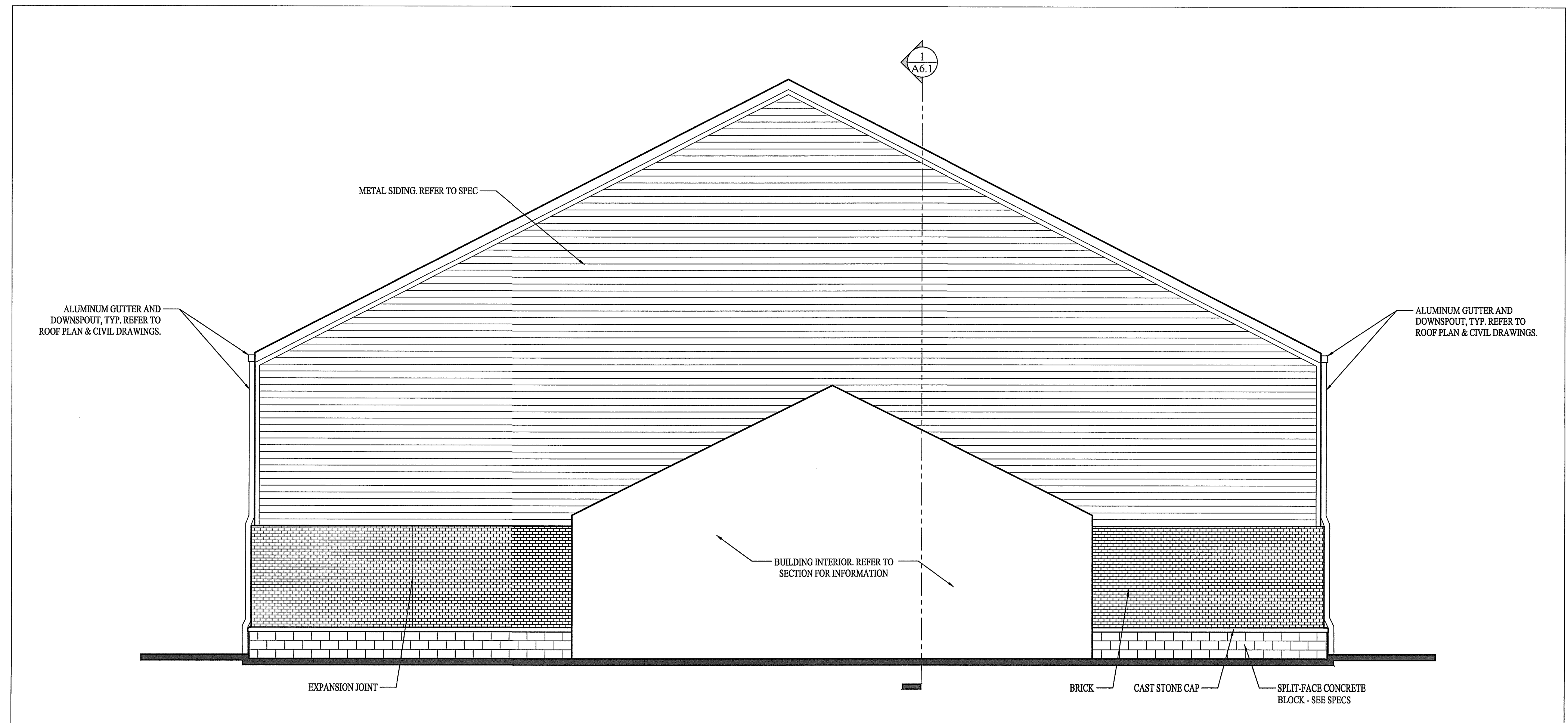
NEW SANCTUARY
FOR
FIRST BAPTIST CHURCH
NEOSHO, MO

SHEET
A2.4

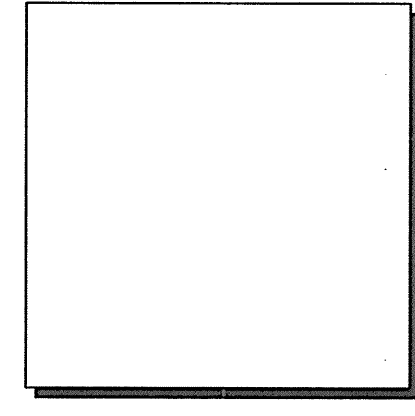
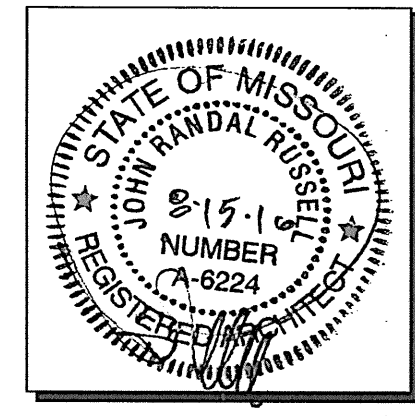
SCALE
3/16" = 1'-0"

DATE
08-15-16

REV. DATE



1
A2.4
SOUTH SANCTUARY ELEVATION
3/16" = 1'-0"



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 PROFESSIONAL CORPORATION
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 SPRINGFIELD, MISSOURI 65806 (417) 866-4600 FAX (417) 866-1305

COMMISSION NUMBER
 15-103

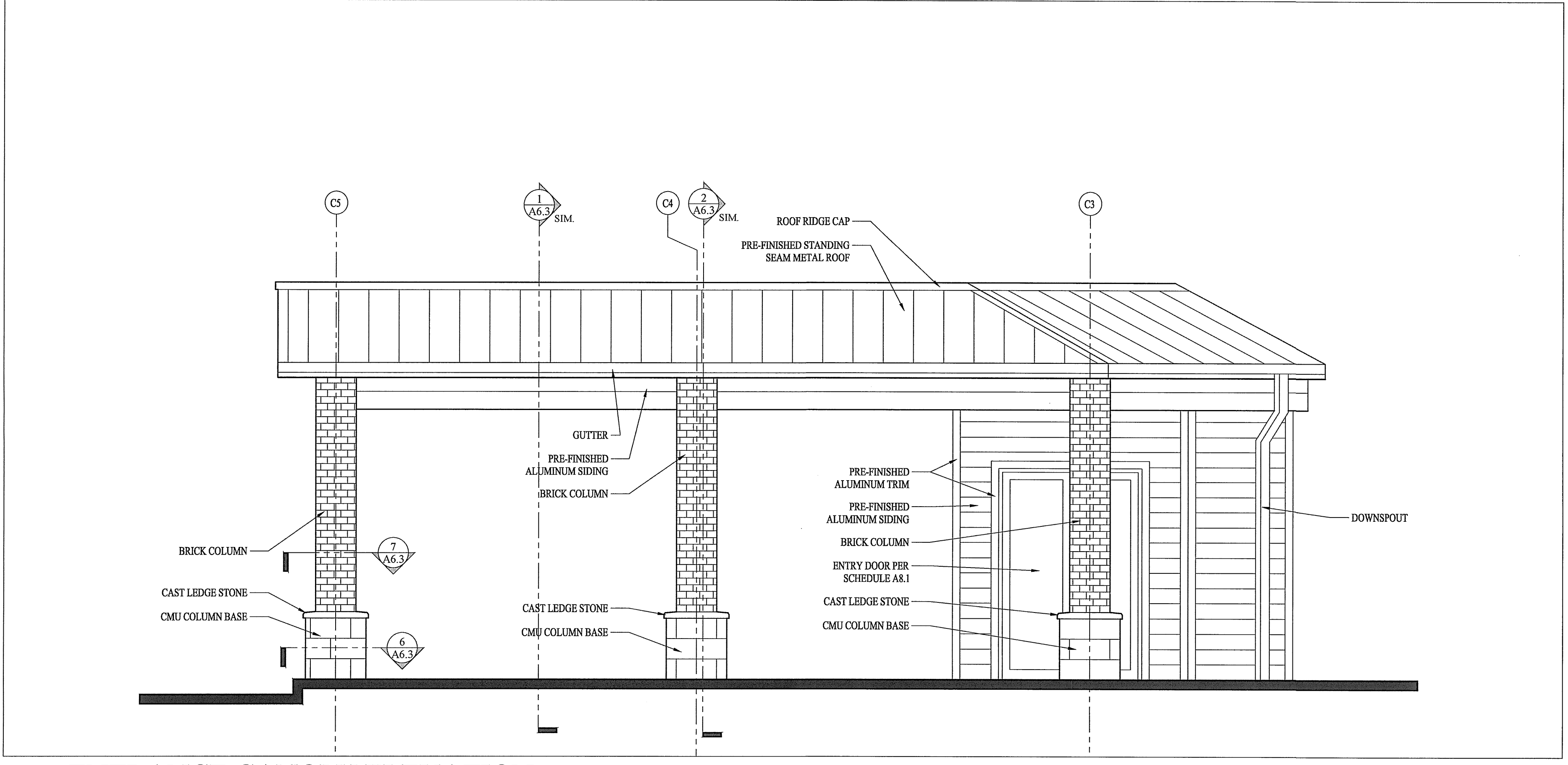
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
A2.5

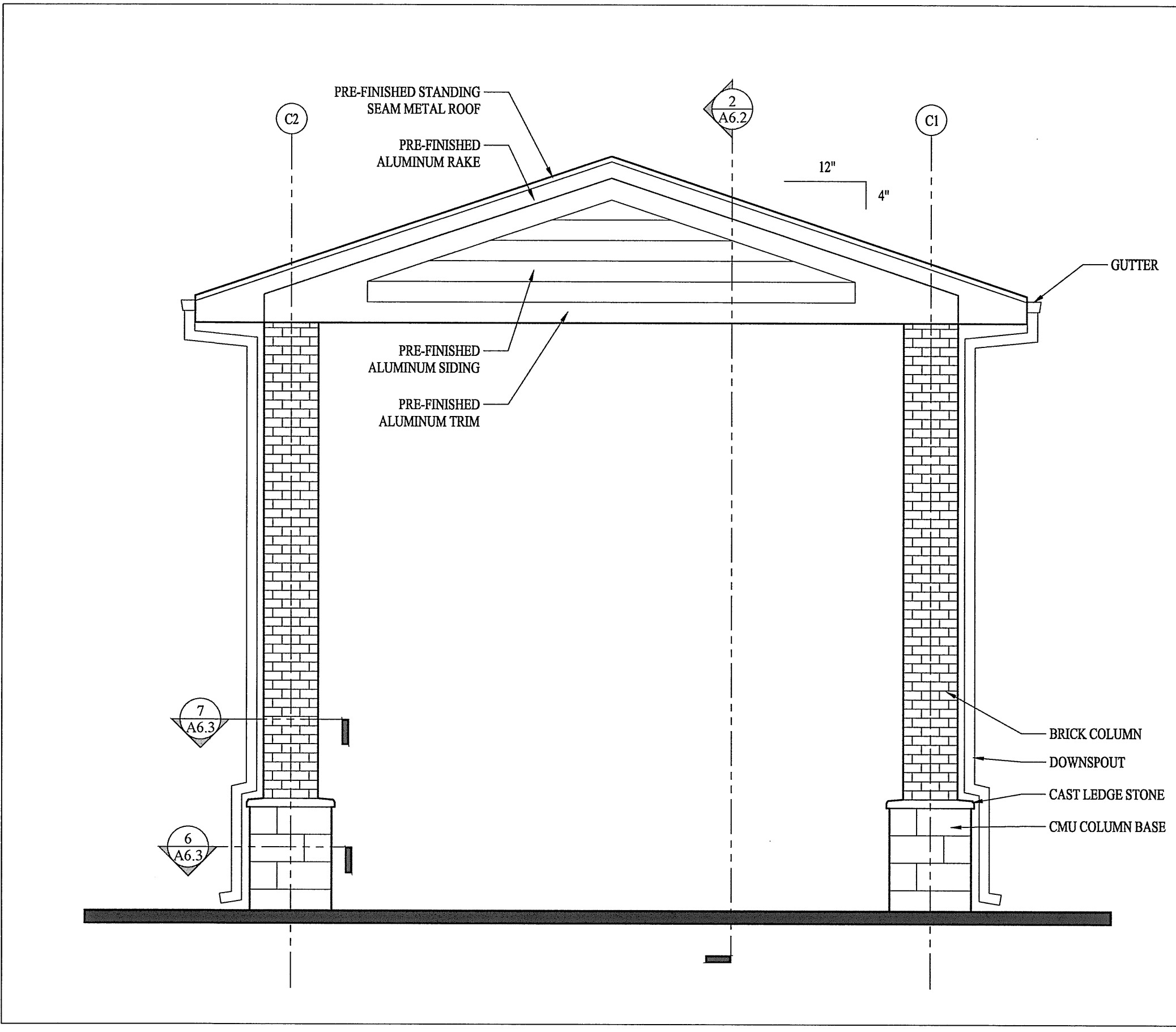
SCALE
 3/8" = 1'-0"

DATE
 08-15-16

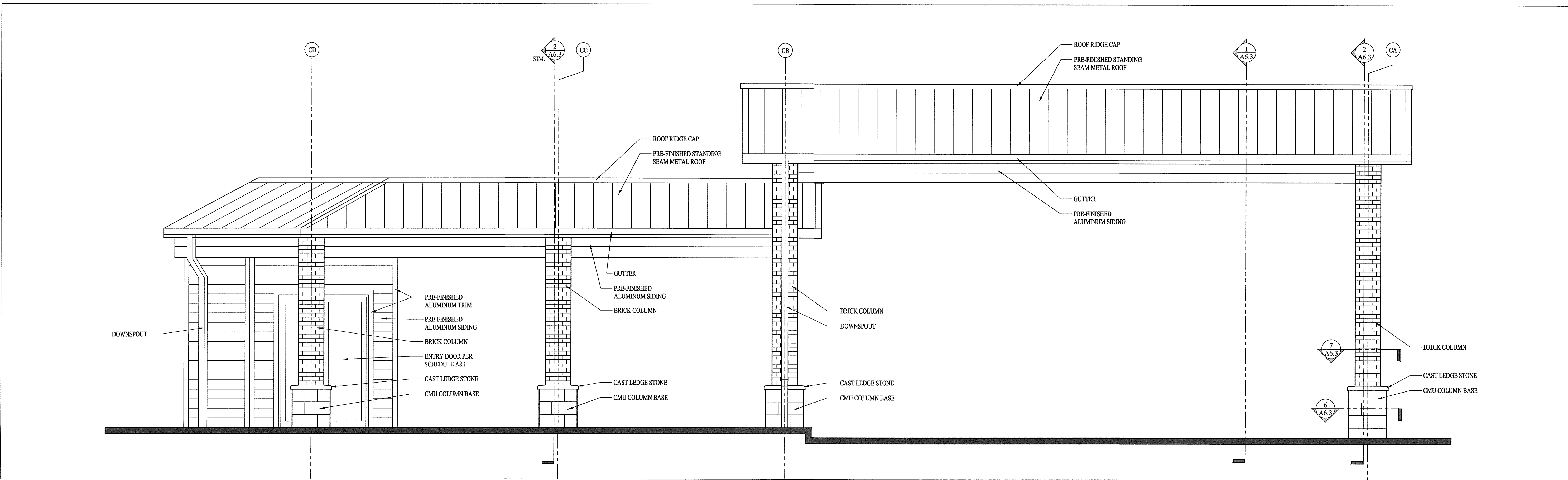
REV. DATE



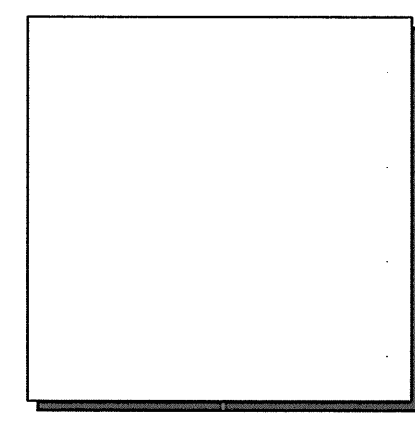
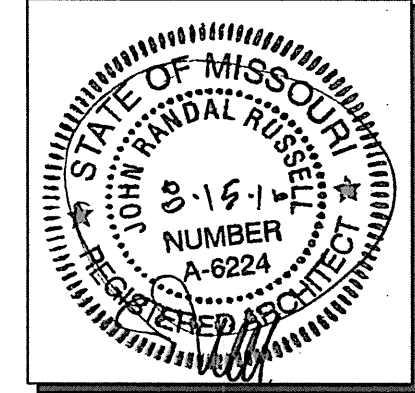
3
A2.4
ENTRANCE CANOPY ELEVATION
 3/8" = 1'-0"



2
A2.4
ENTRANCE CANOPY ELEVATION
 3/8" = 1'-0"



1
A2.4
ENTRANCE CANOPY ELEVATION
 3/8" = 1'-0"



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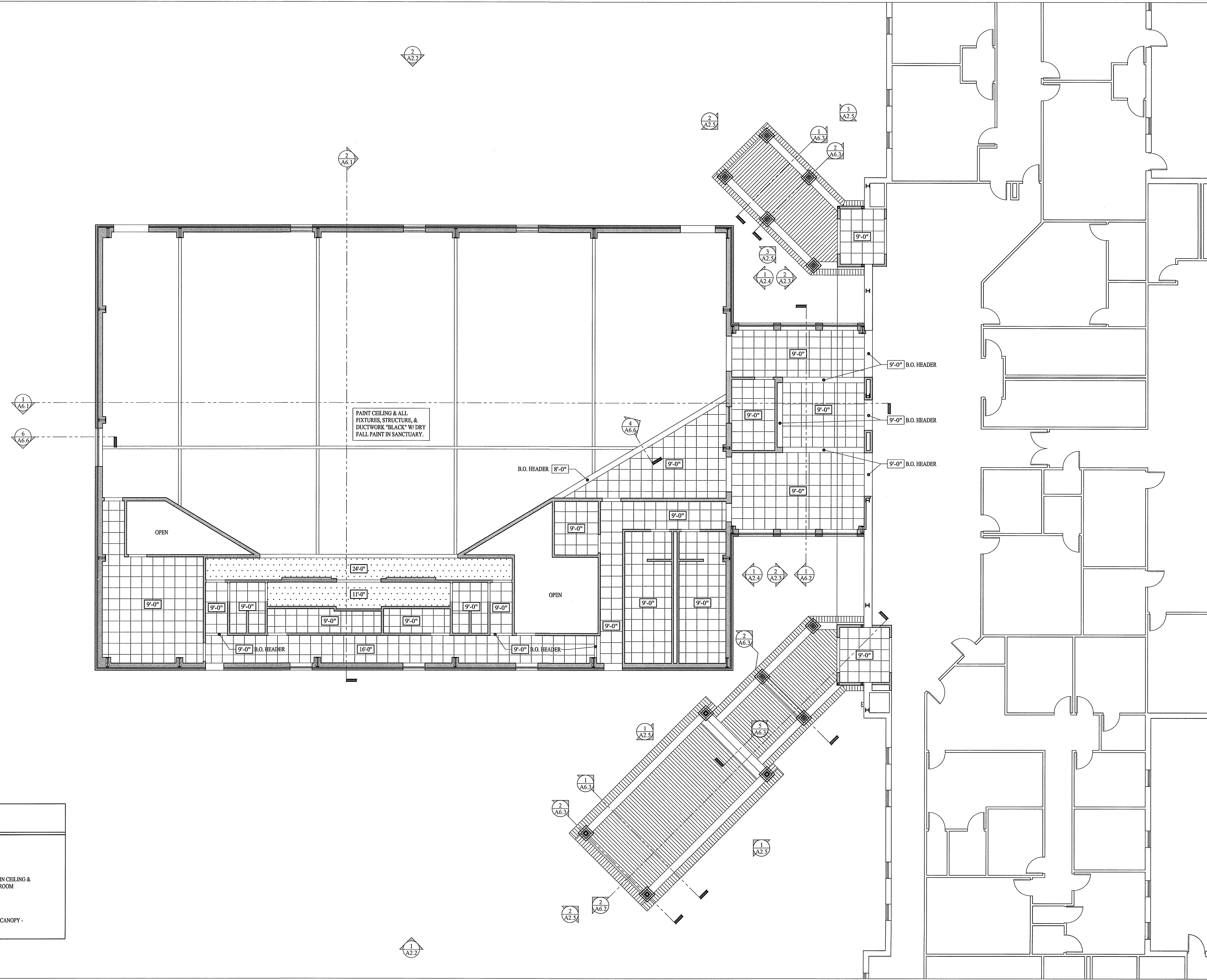
SHEET

A3.1

SCALE
 1/8" = 1'-0"

DATE
 08-15-16

REV. DATE

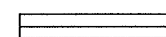

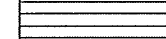
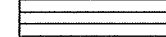
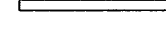


CEILING LEGEND	
	NEW 5/8\" GYPSUM CEILING
	NEW 2\"x2\" ACOUSTICAL LAY-IN CEILING & GRID, CENTER GRID WITHIN ROOM UNLESS NOTED OTHERWISE
	EXTERIOR SOFFIT AT ENTRY CANOPY - REFER TO SECTIONS

1 OVERALL REFLECTED CEILING PLAN
 1/8" = 1'-0"

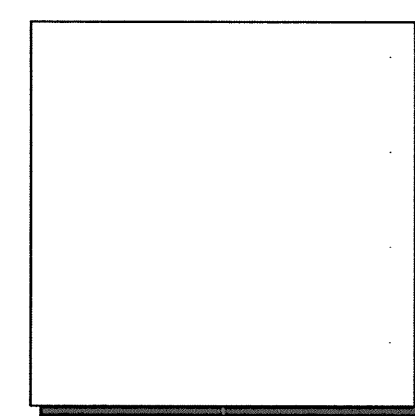
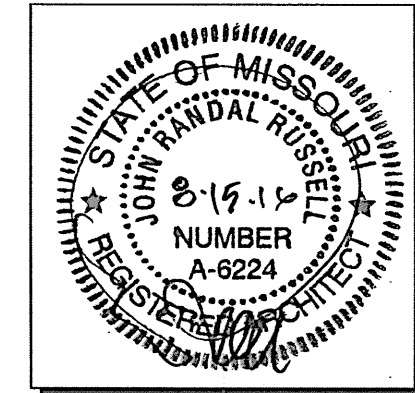
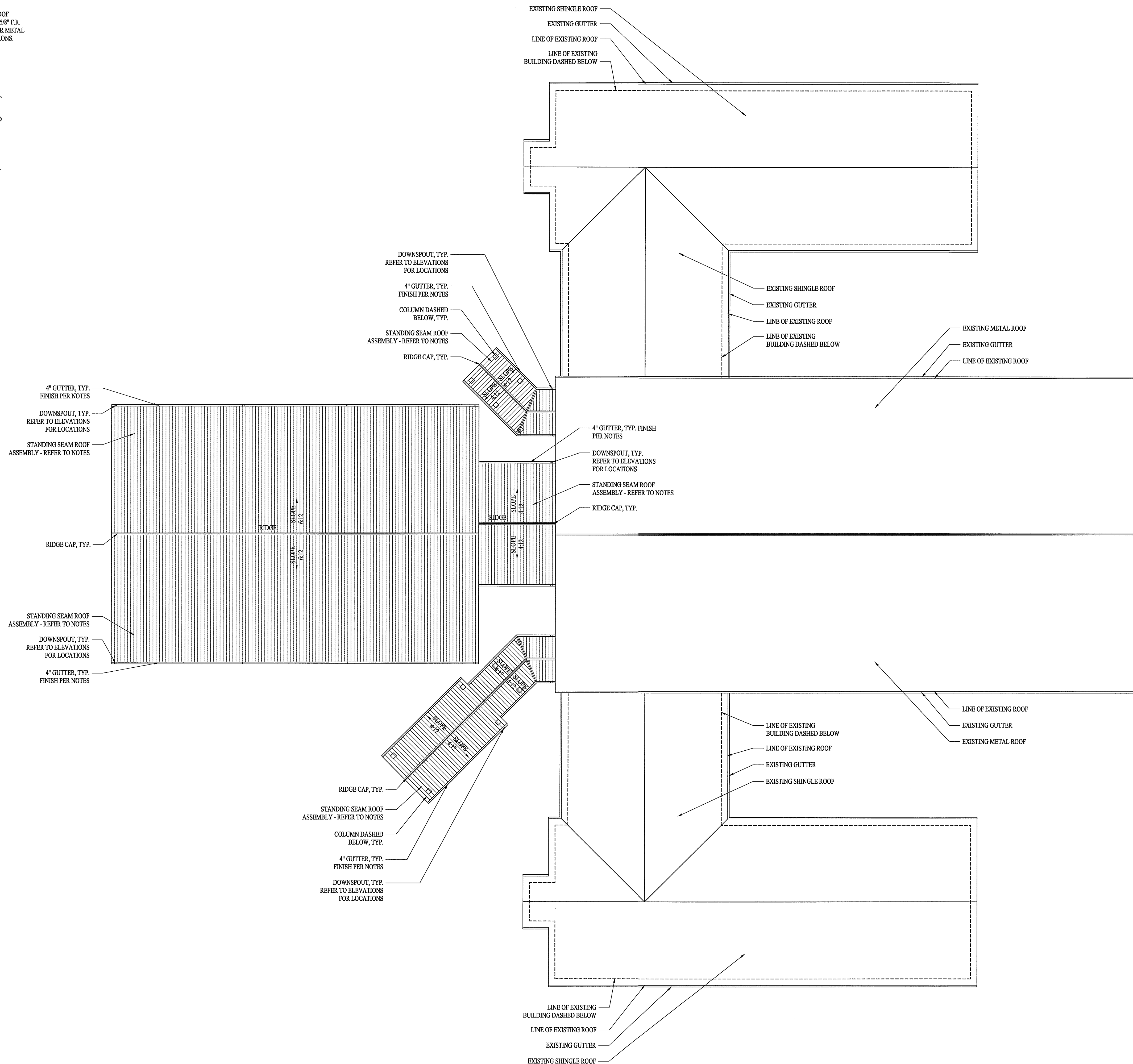


LEGEND

-  STANDING SEAM METAL ROOFING
-  ARCHITECTURAL STANDING SEAM ROOF
-  OVER ICE AND WATER SHIELD OVER 5/8" F.R.
-  TREATED PLYWOOD SHEATHING OVER METAL
-  FRAMING - REFER TO BUILDING SECTIONS.

GENERAL ROOF PLAN NOTES

1. ALL SLOPED ROOF GUTTERS SHALL BE 4" AND DOWN SPOUTS TO BE 3" UNLESS NOTED OTHERWISE. COORDINATE EXACT ROUTING WITH ELEVATIONS AND PLAN. ALL GUTTERS & DOWN SPOUTS SHALL BE PREFINISHED TO MATCH ALUMINUM SIDING AND ROOF MATERIAL. PROVIDE CLEATED CONNECTIONS AND BRACKETS @ 32" O.C. TYP. ALL GUTTERS TO HAVE A 1" SLOPE TYP.
2. THE NEW DOWNSPOUTS TO NEW 3" DIAMETER PVC DRAIN LINES. EXTEND DRAIN LINES BELOW NEW CONCRETE PAVEMENT & DAYLIGHT. SEE SITE PLAN.
3. ALL ROOF MECHANICAL UNITS, EXHAUST FANS, ETC. VISIBLE TO THE PUBLIC SHALL BE PAINTED TO MATCH ADJACENT WALL OR ROOF COLOR. VERIFY COLOR WITH ARCHITECT.
4. AT SLOPED ROOF PROVIDE ICE AND WATER SHIELD AT ALL VALLEY LOCATIONS AND UP THE EAVES 48" TYP. UNLESS NOTED OTHERWISE.
5. REFER TO MECHANICAL FOR RTU UNIT LOCATIONS.
6. ANY ROOF PENETRATIONS INCLUDING PLUMBING, ELECTRICAL, AND SLEEVES SHOULD BE PAINTED THE ROOF COLOR ON SLOPED VISIBLE ROOFS.



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NEW SANCTUARY
 FOR
 FIRST BAPTIST CHURCH
 NEOSHO, MO

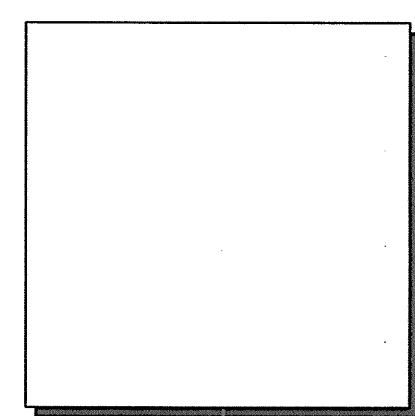
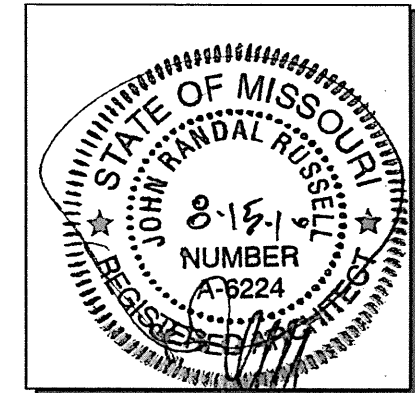
SHEET
A4.1

SCALE
 1/16" = 1'-0"

DATE
 08-15-16

REV. DATE





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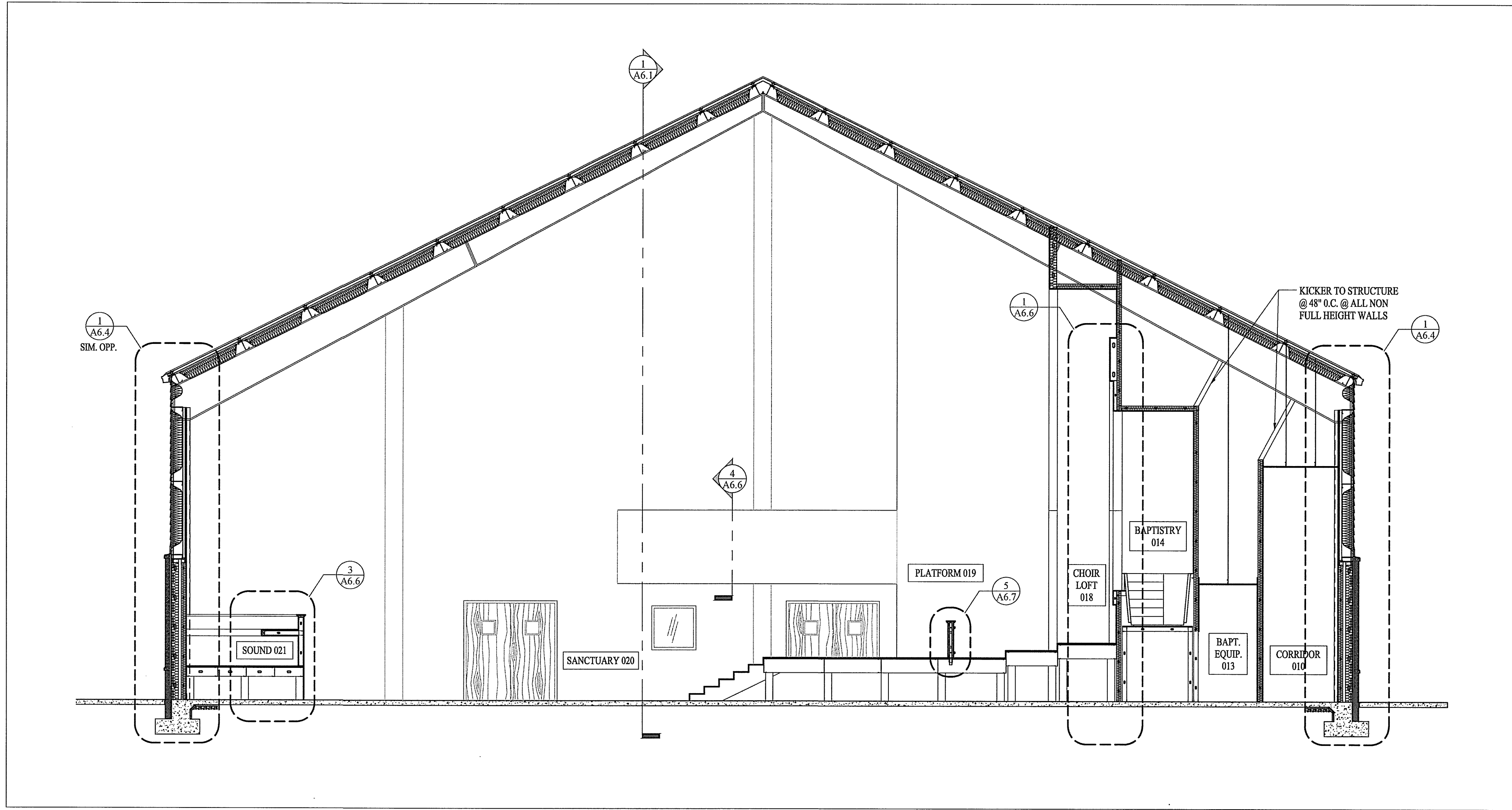
NEW SANCTUARY
 FOR
 FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
A6.1

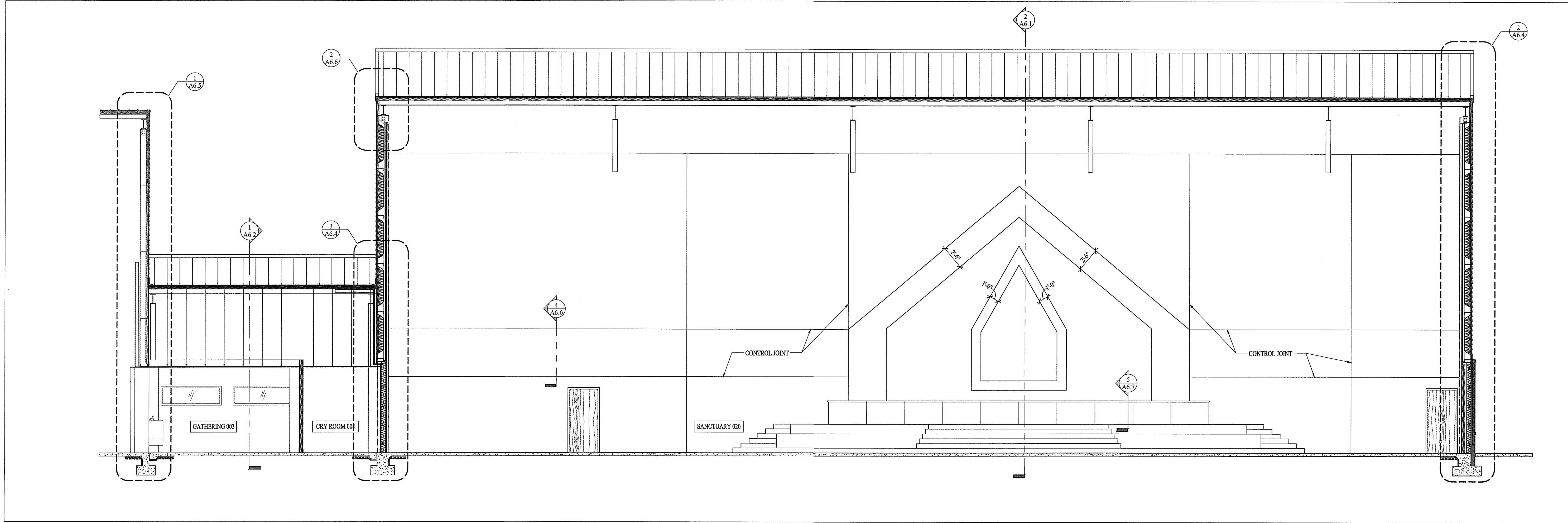
SCALE
 3/16" = 1'-0"

DATE
 08-15-16

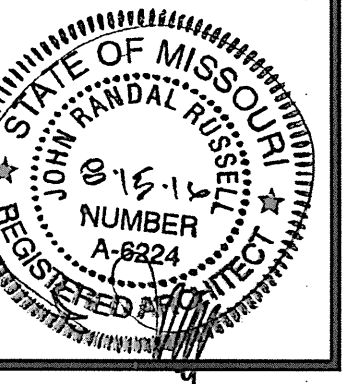
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2 SANCTUARY CROSS SECTION
 3/16" = 1'-0"



1 OVERALL LONGITUDINAL SECTION
 3/16" = 1'-0"



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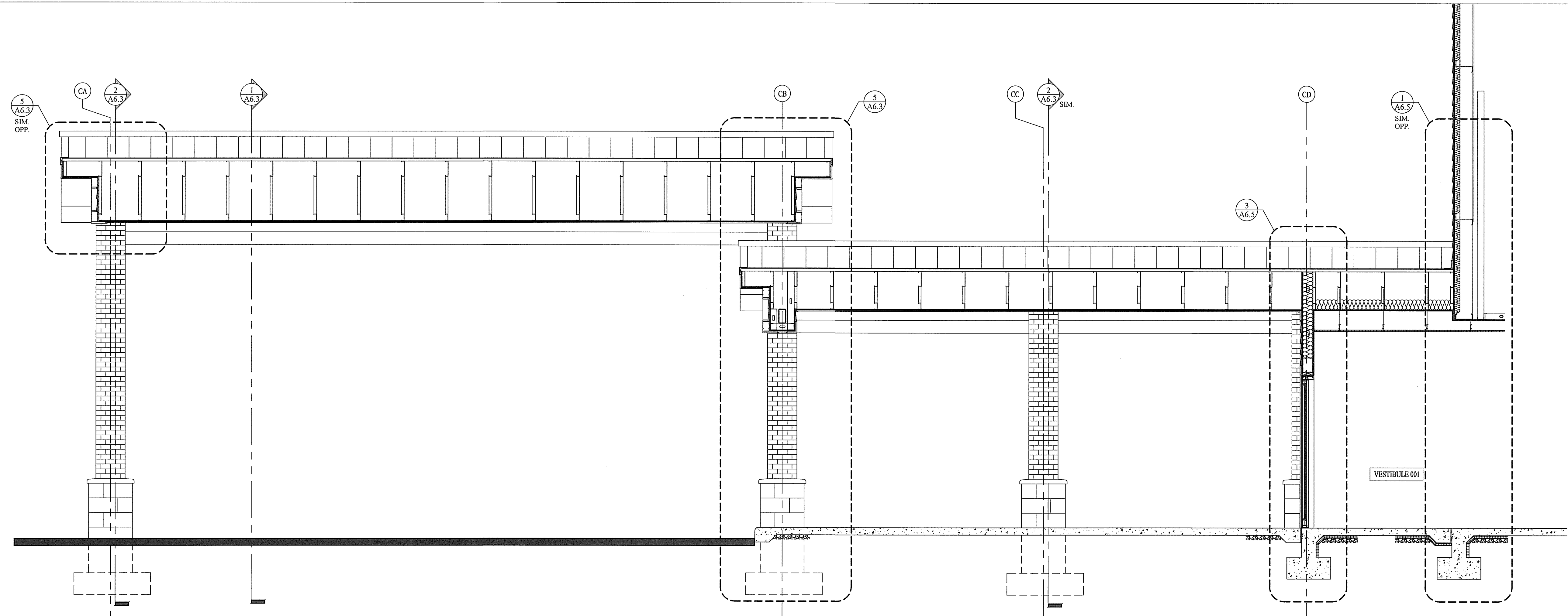
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
A6.2

SCALE
 3/8" = 1'-0"

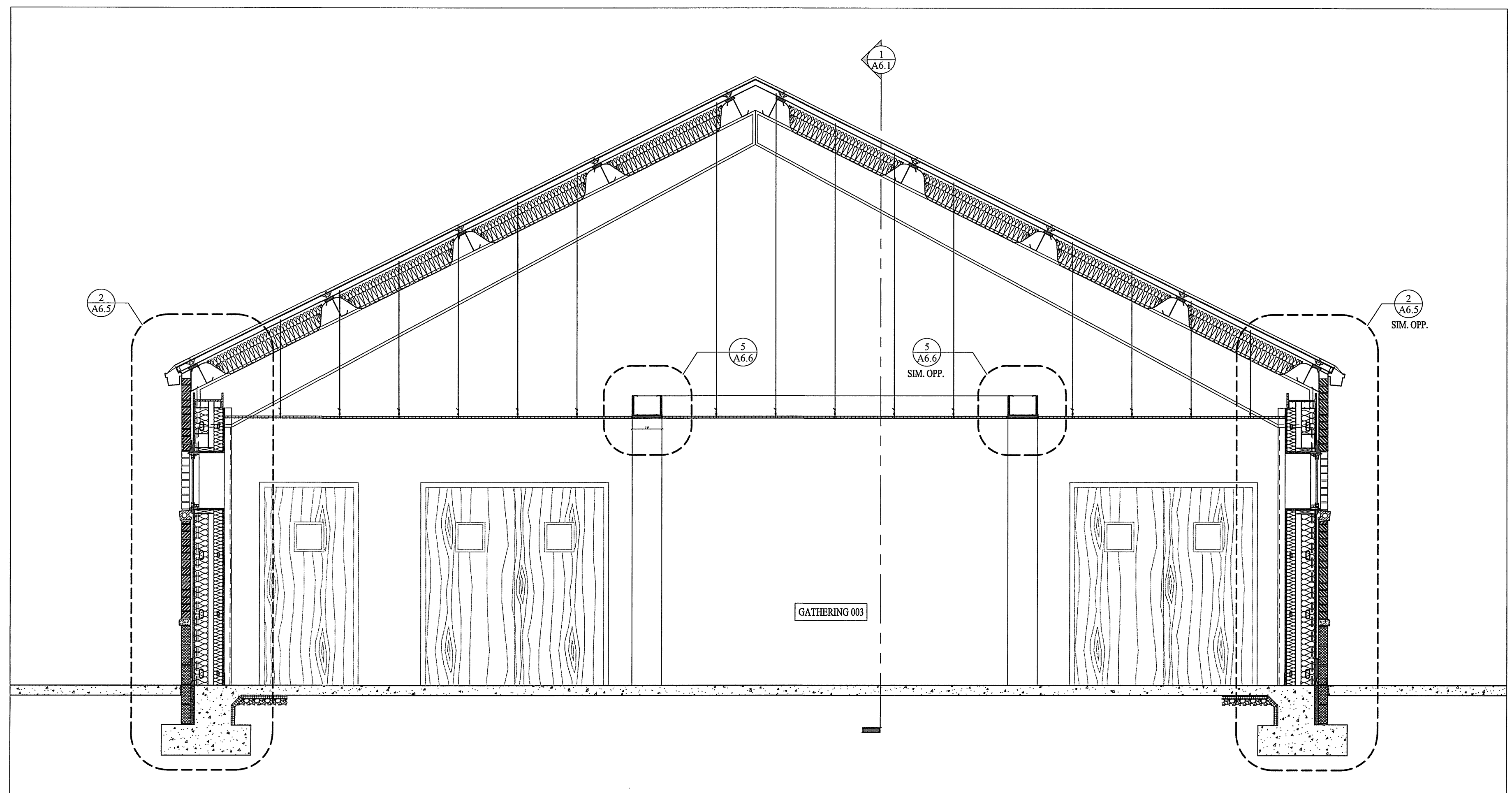
DATE
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REV. DATE



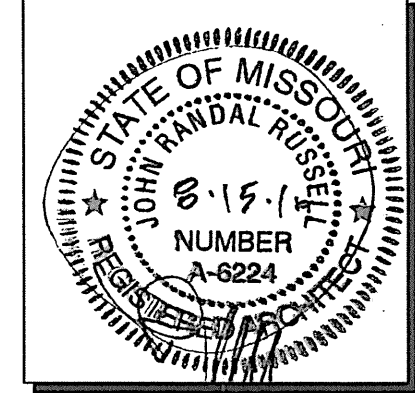
2 CANOPY/ OVERALL LONGITUDINAL SECTION

3/8" = 1'-0"



1 GATHERING CONNECTOR CROSS SECTION

3/8" = 1'-0"



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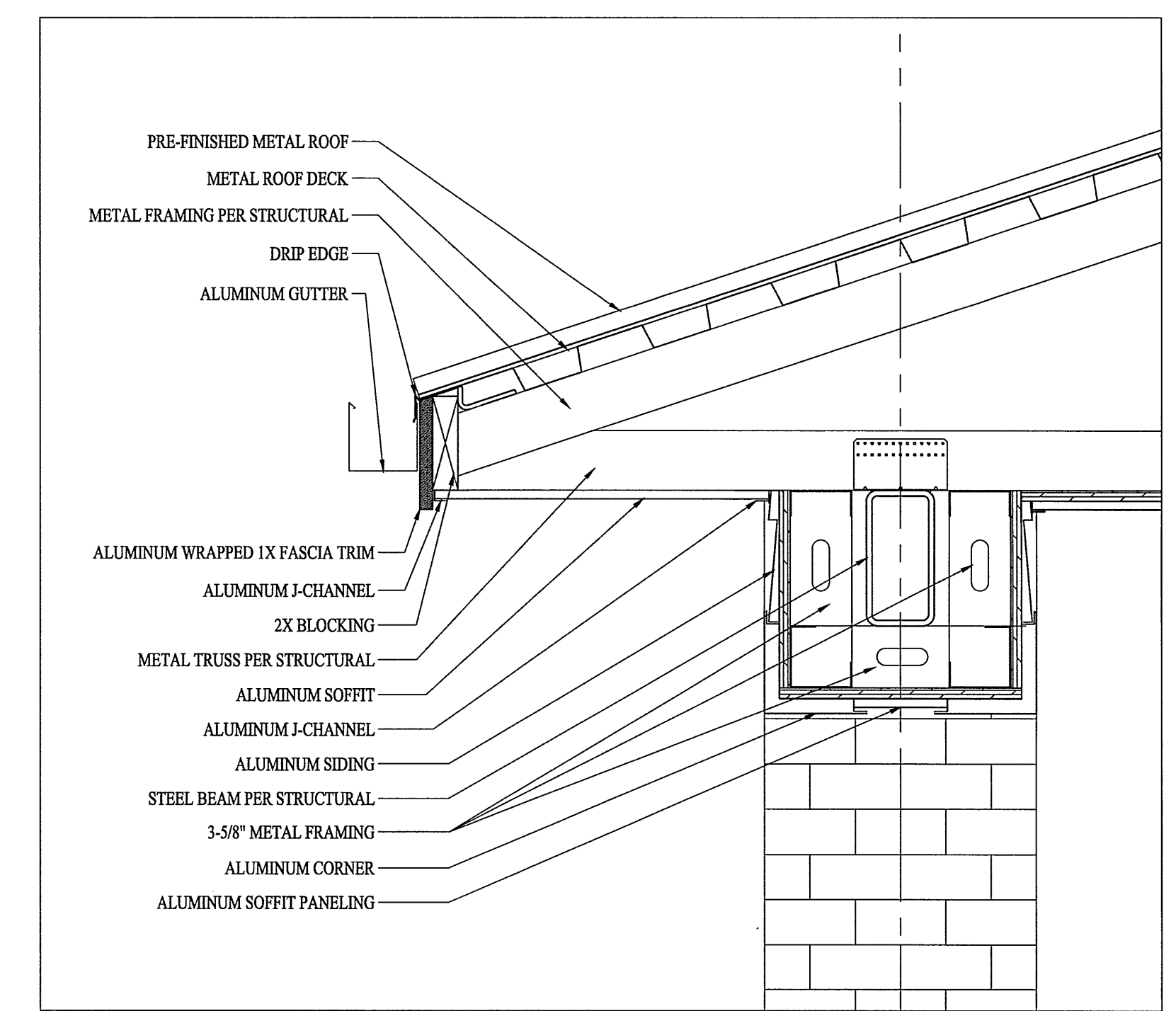
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
A6.3

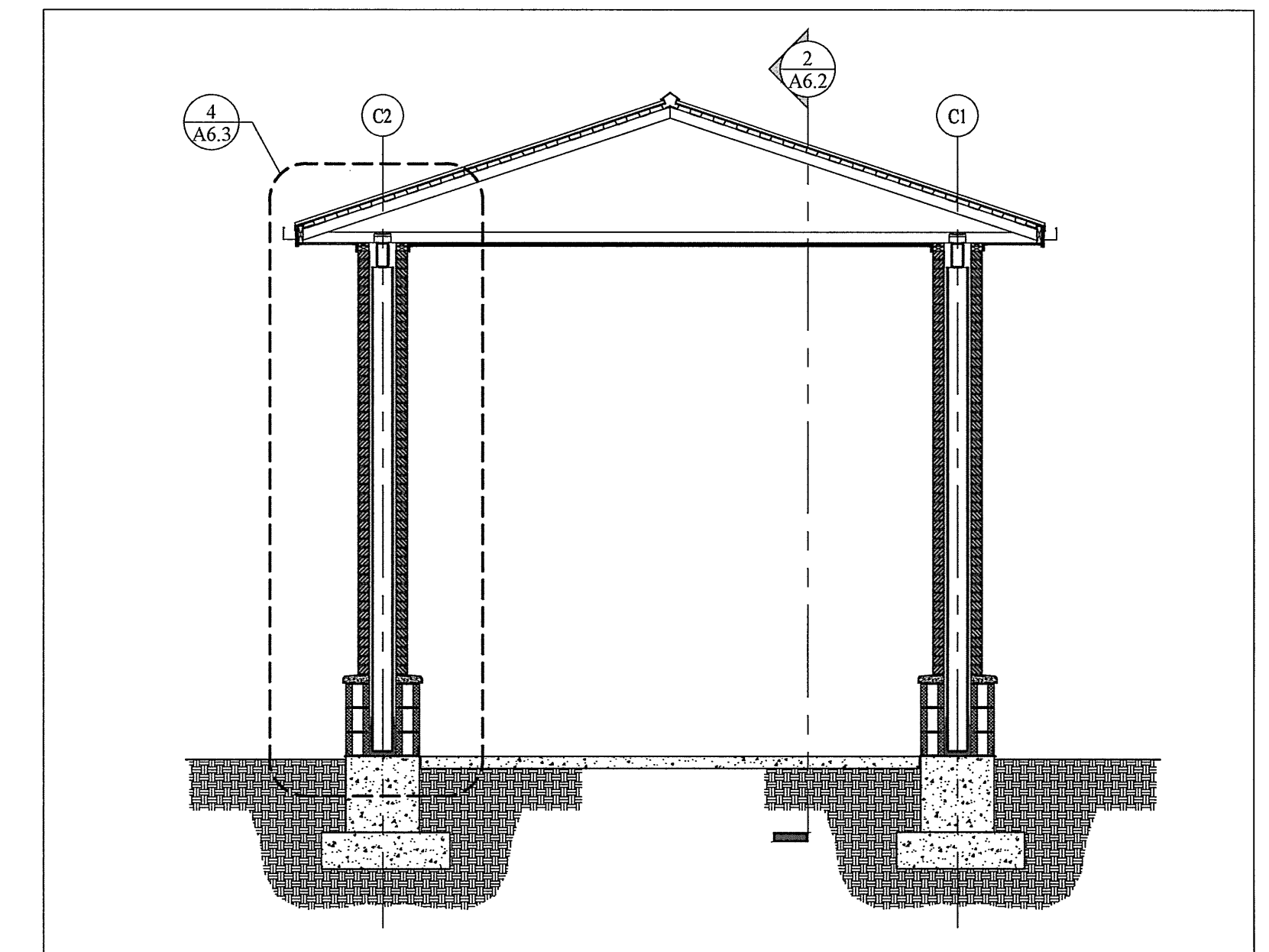
SCALE
 1 1/2" = 1'-0"

DATE
 08-15-16

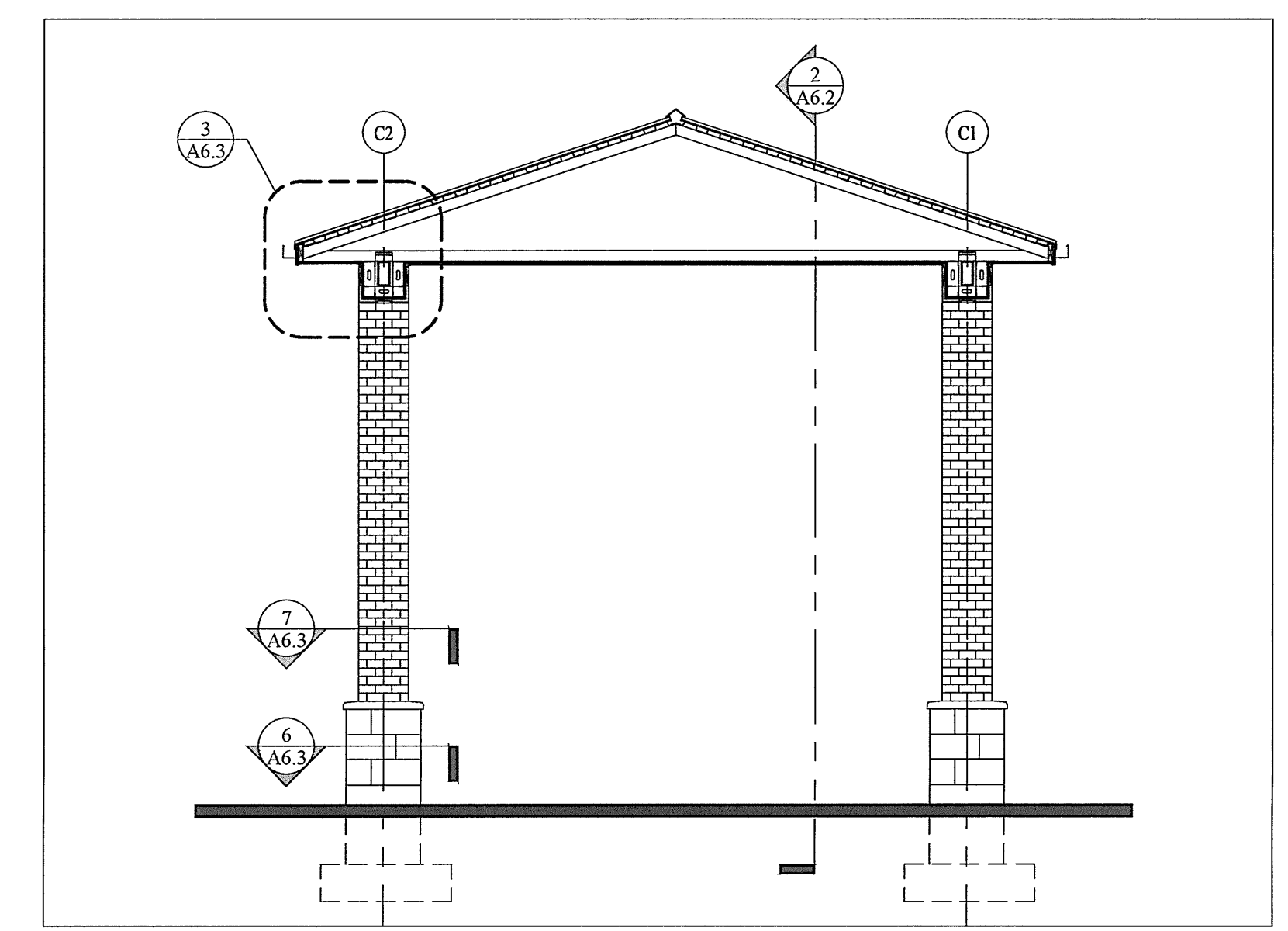
REV. DATE



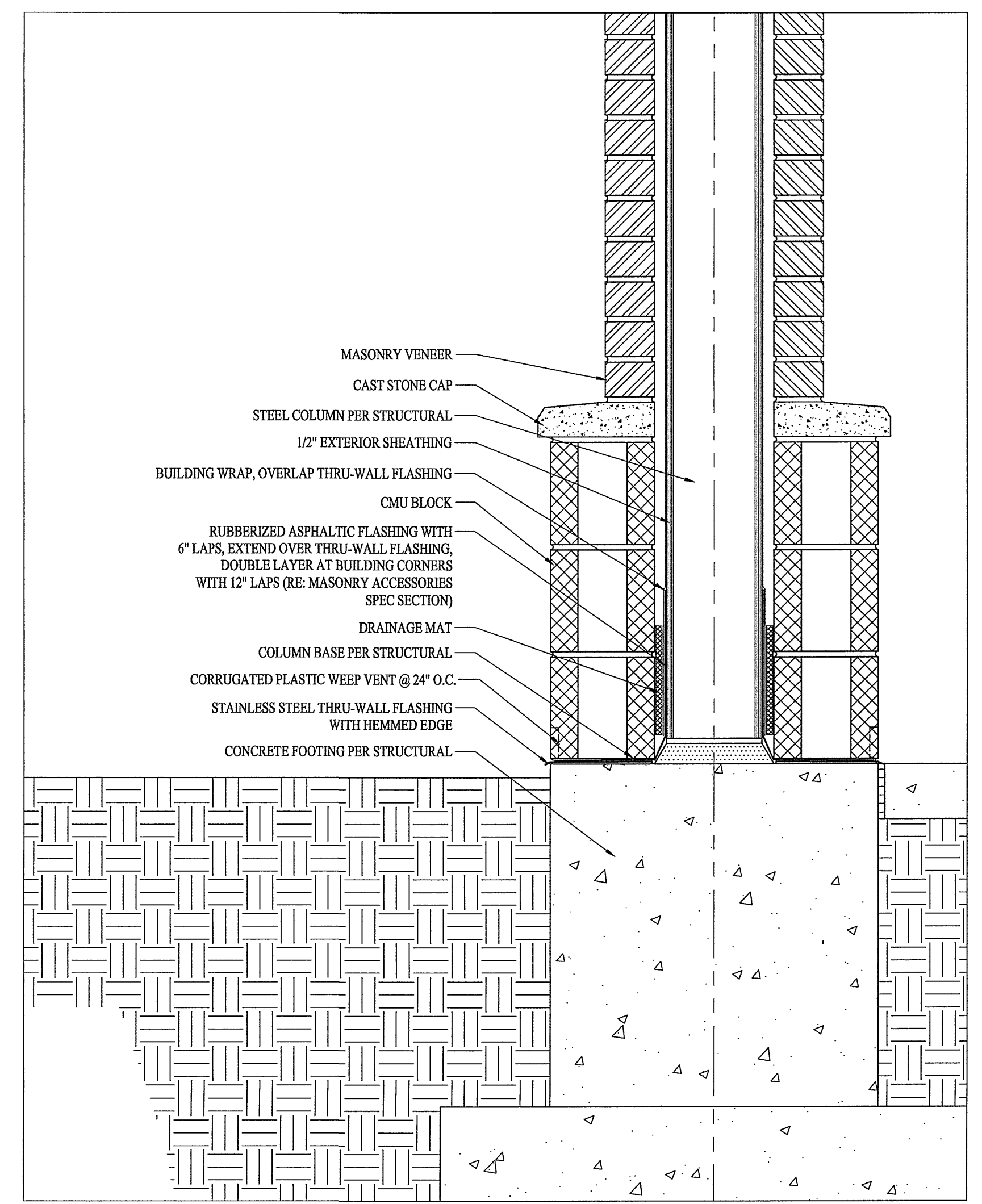
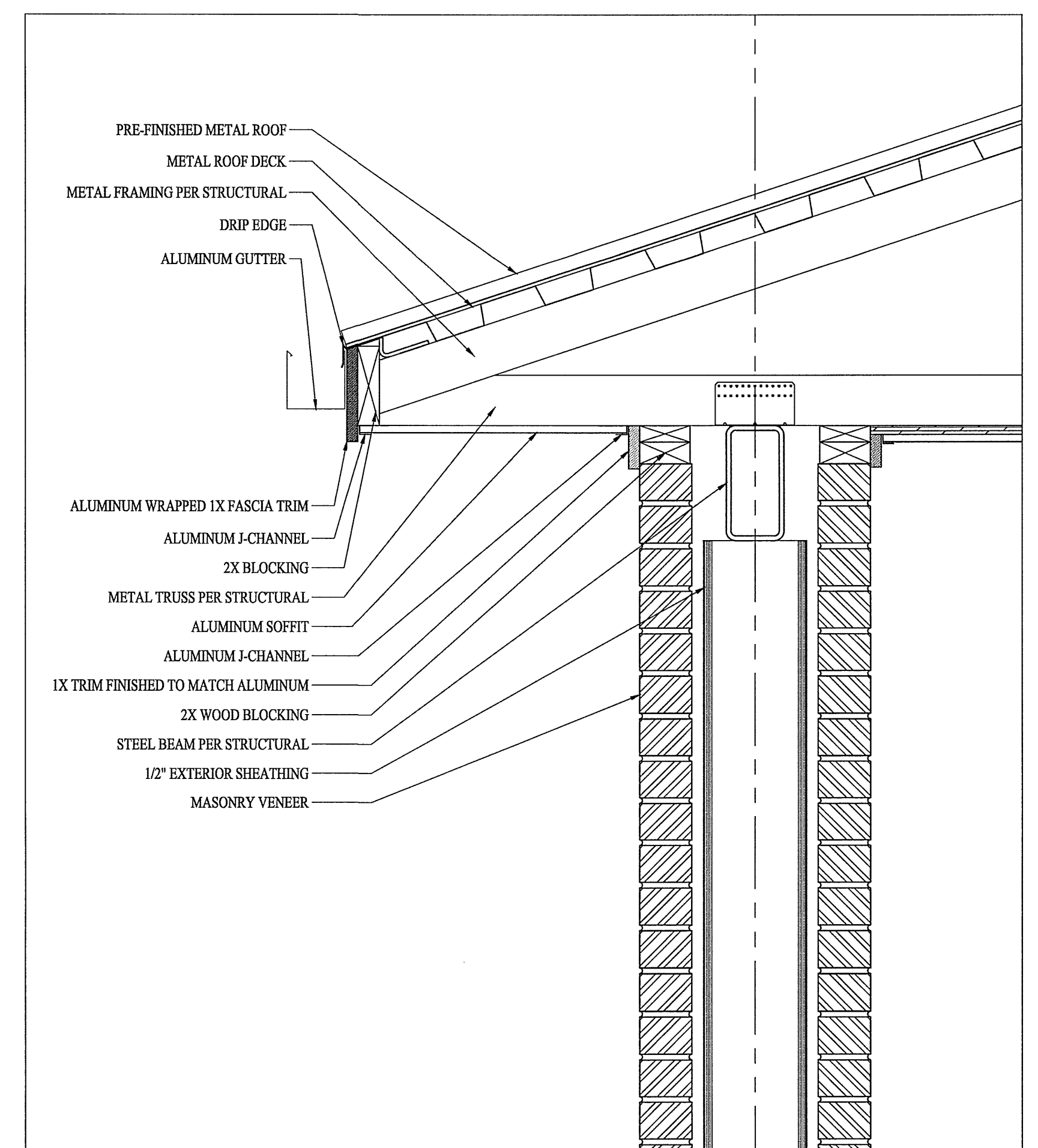
3 CANOPY SECTION
 1 1/2" = 1'-0"



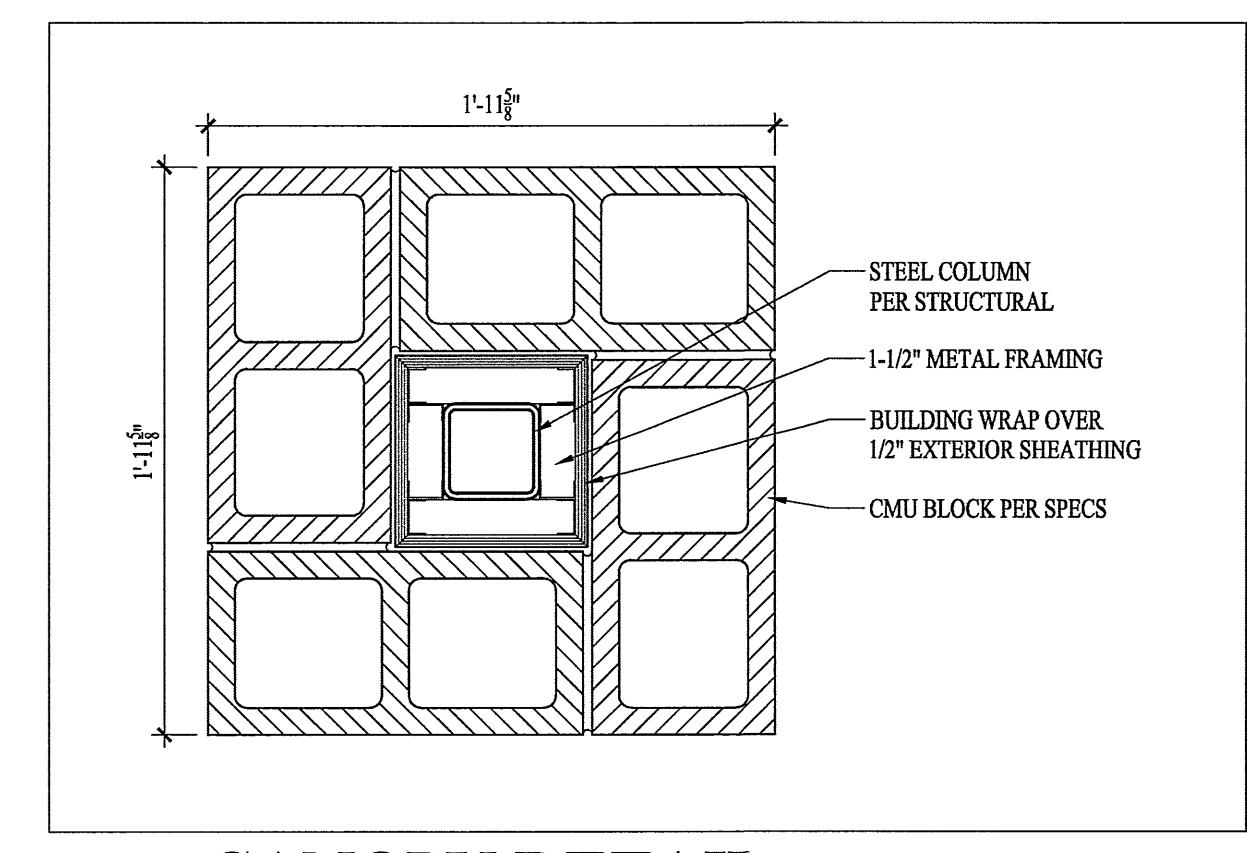
2 CANOPY CROSS SECTION
 1/4" = 1'-0"



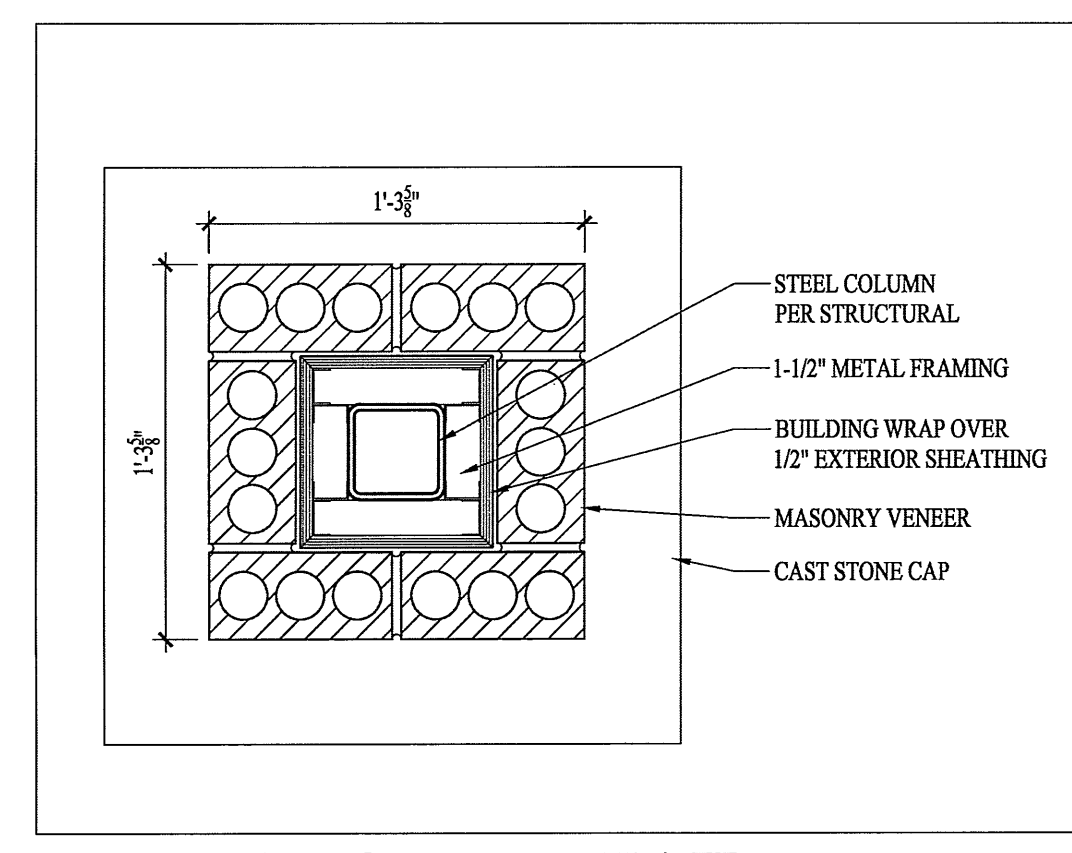
1 CANOPY CROSS SECTION
 1/4" = 1'-0"



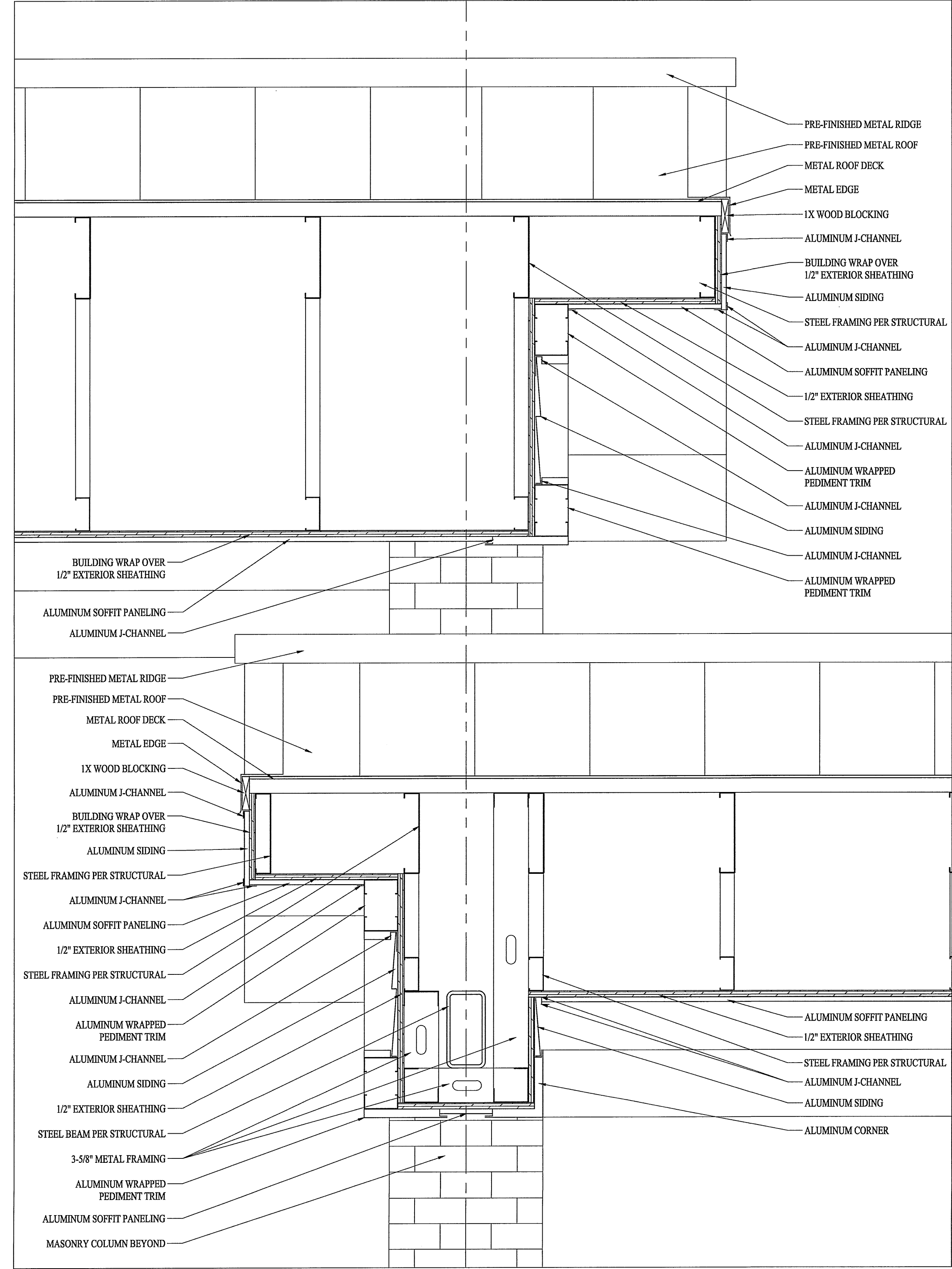
4 CANOPY SECTION
 1 1/2" = 1'-0"



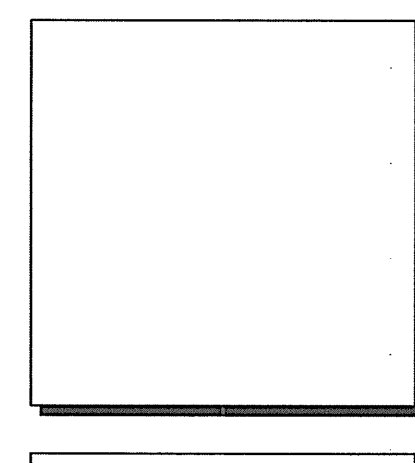
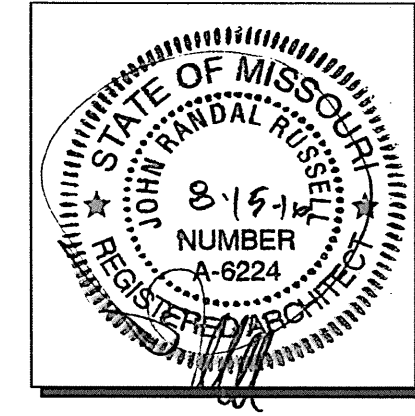
6 CANOPY DETAIL
 1 1/2" = 1'-0"



7 CANOPY DETAIL
 1 1/2" = 1'-0"



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



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NEW SANCTUARY
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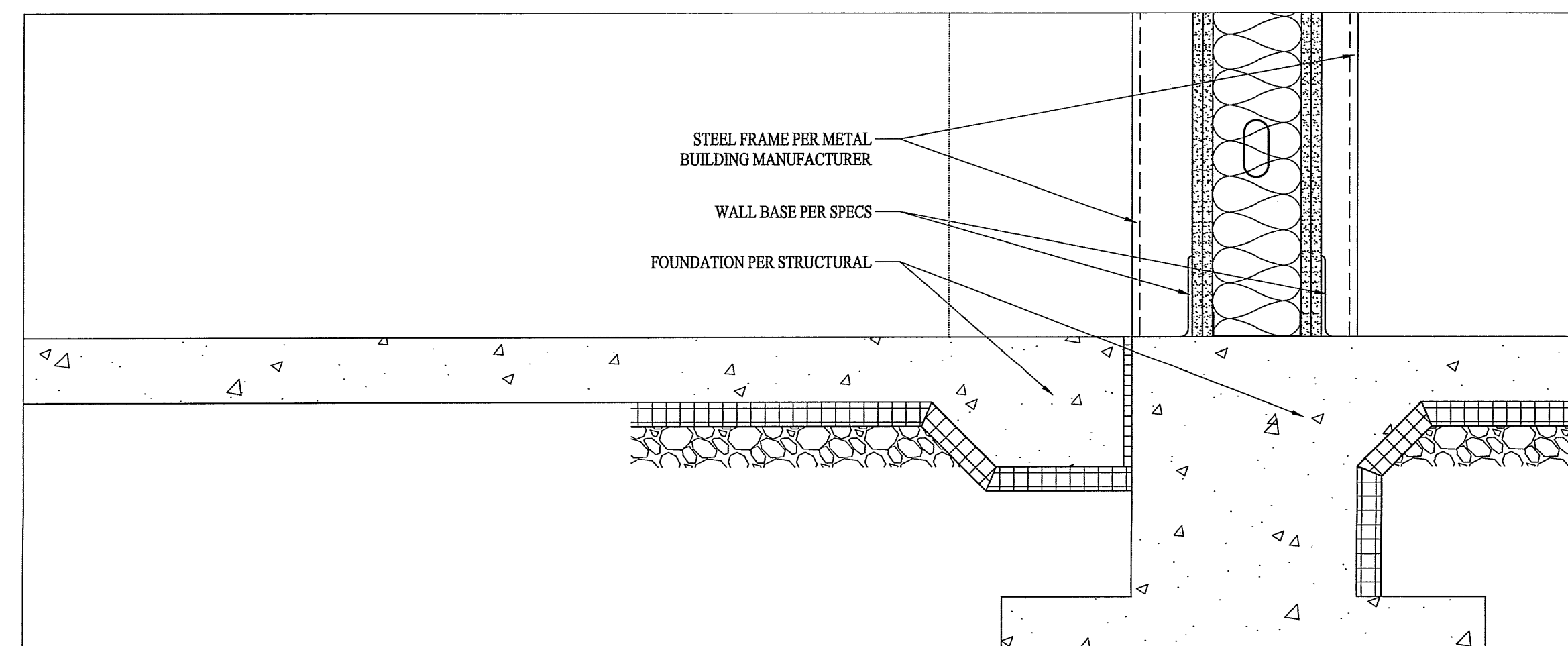
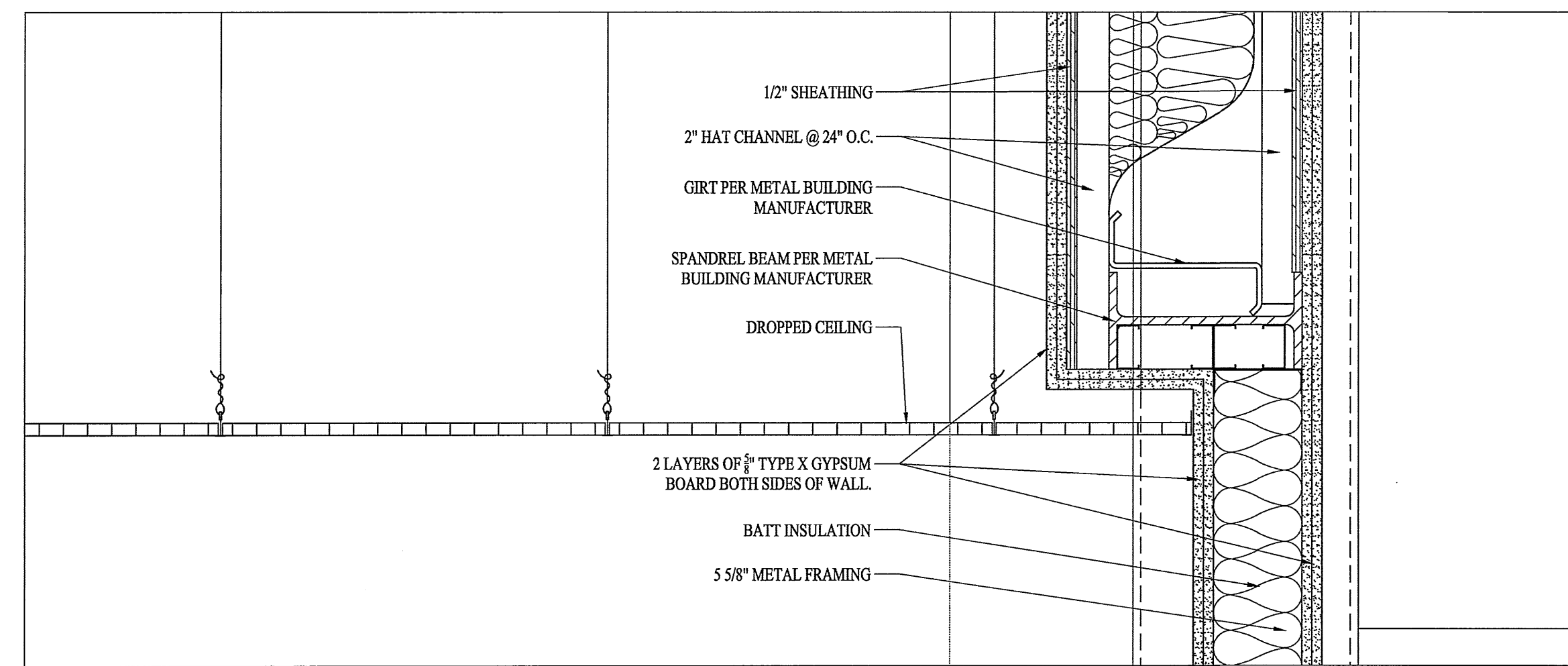
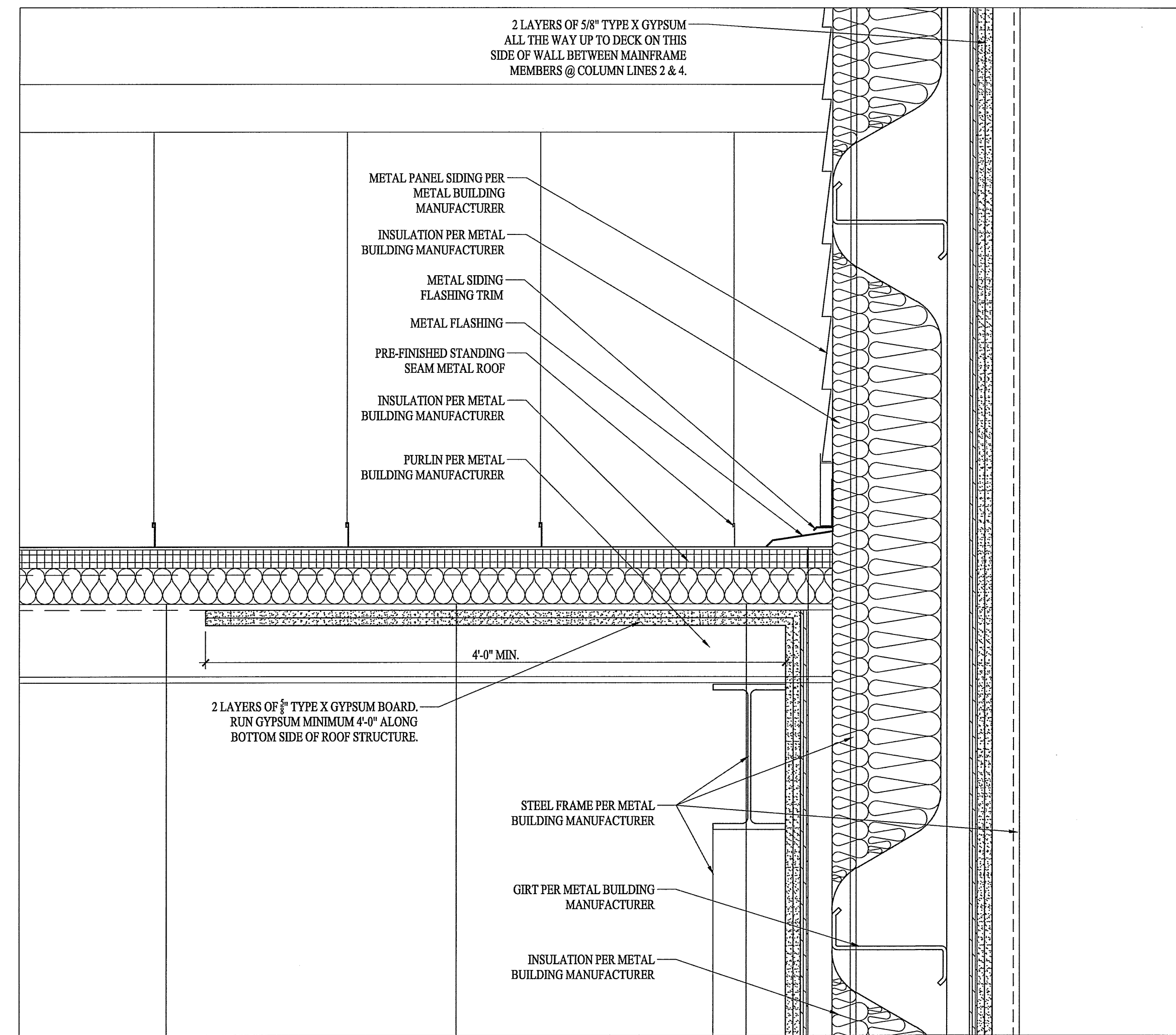
SHEET

A6.4

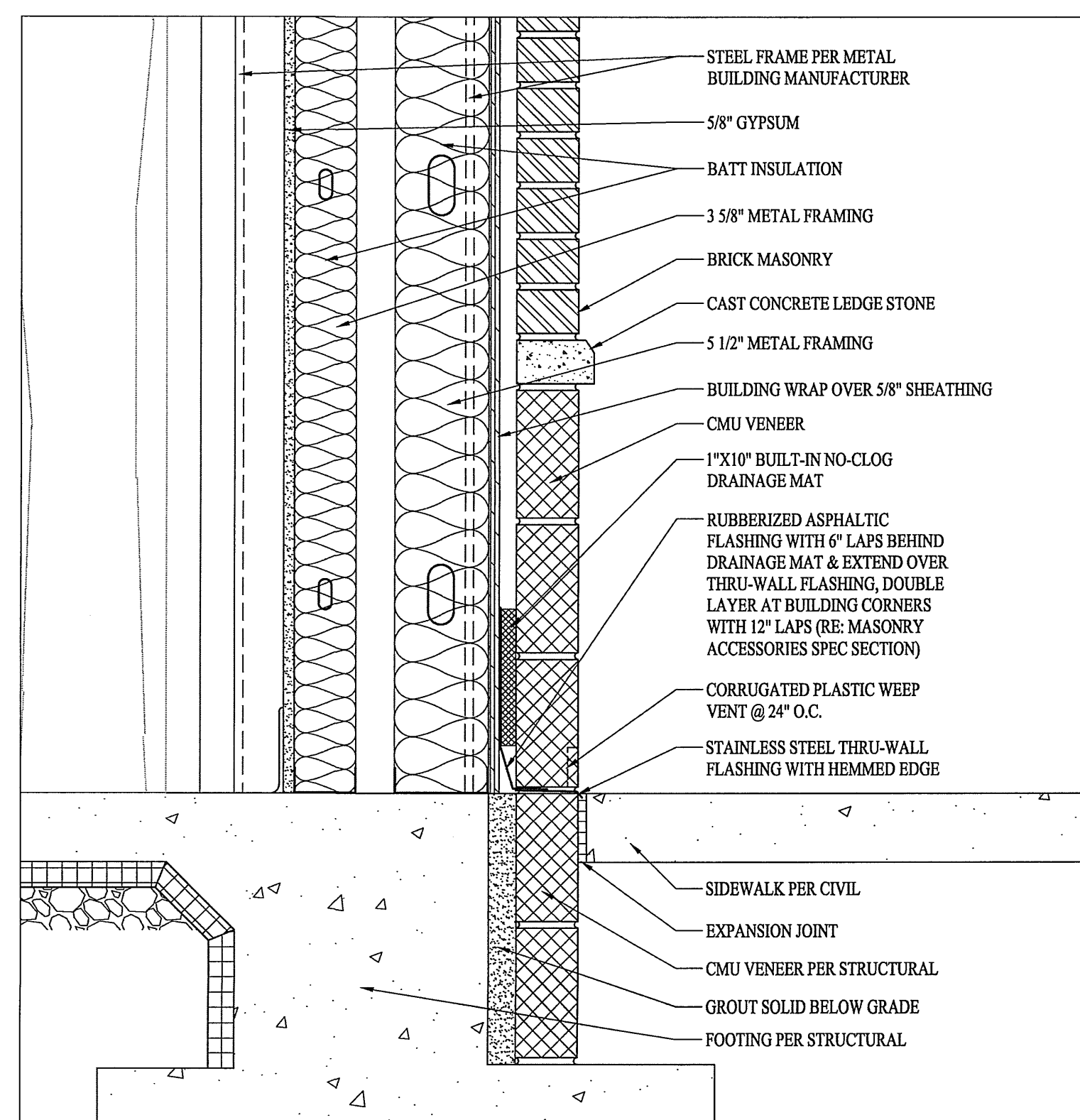
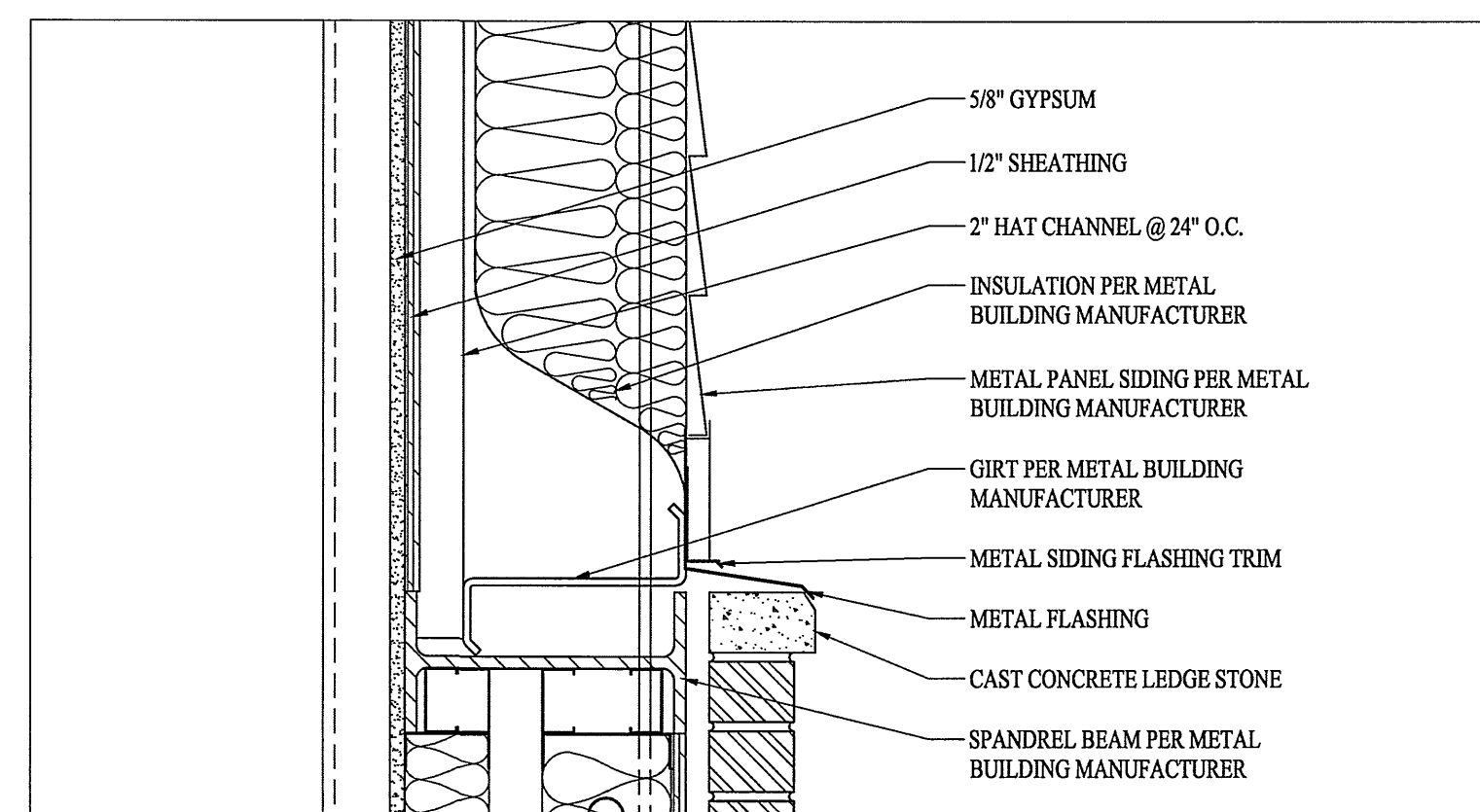
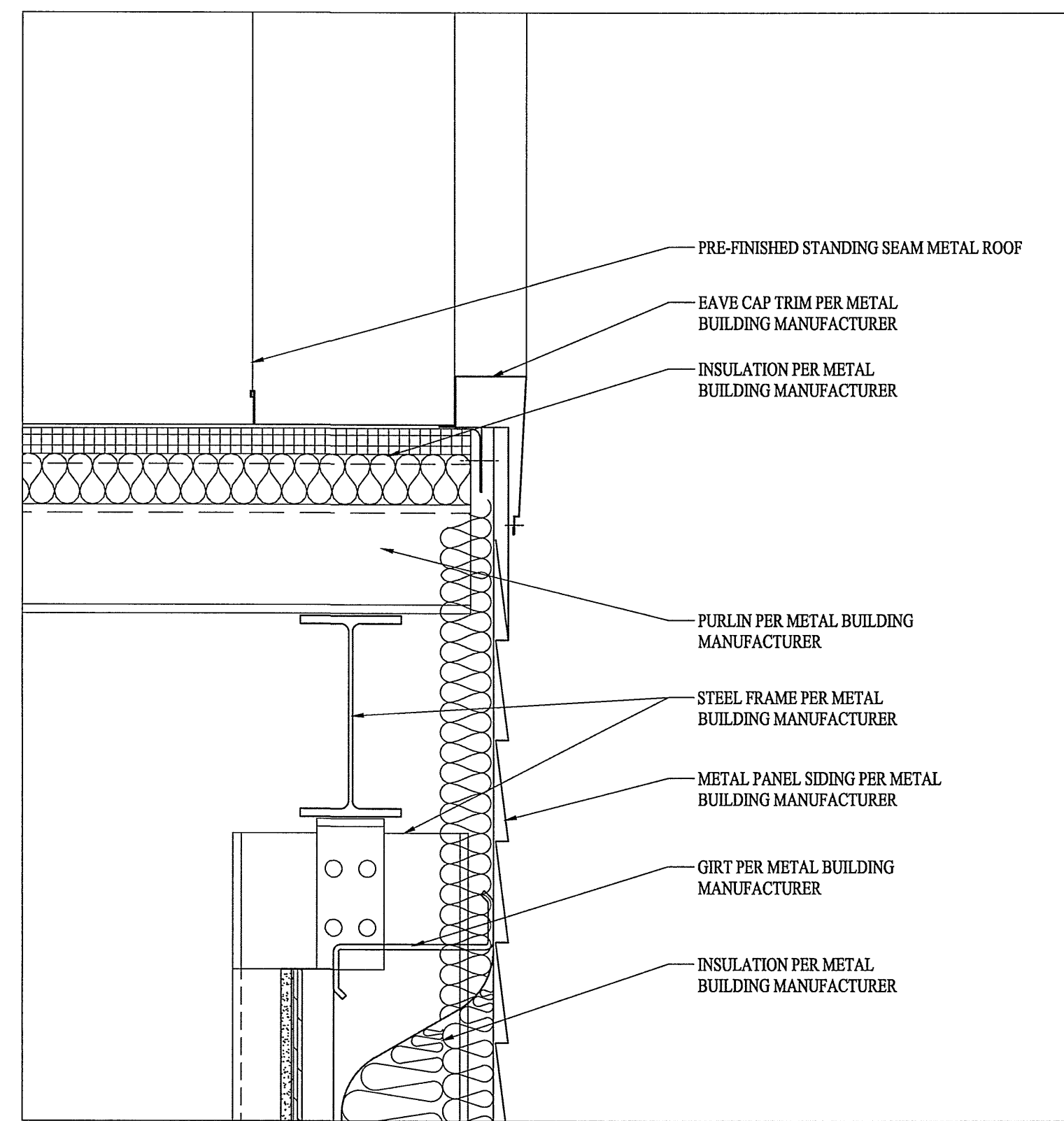
SCALE
 1 1/2" = 1'-0"

DATE
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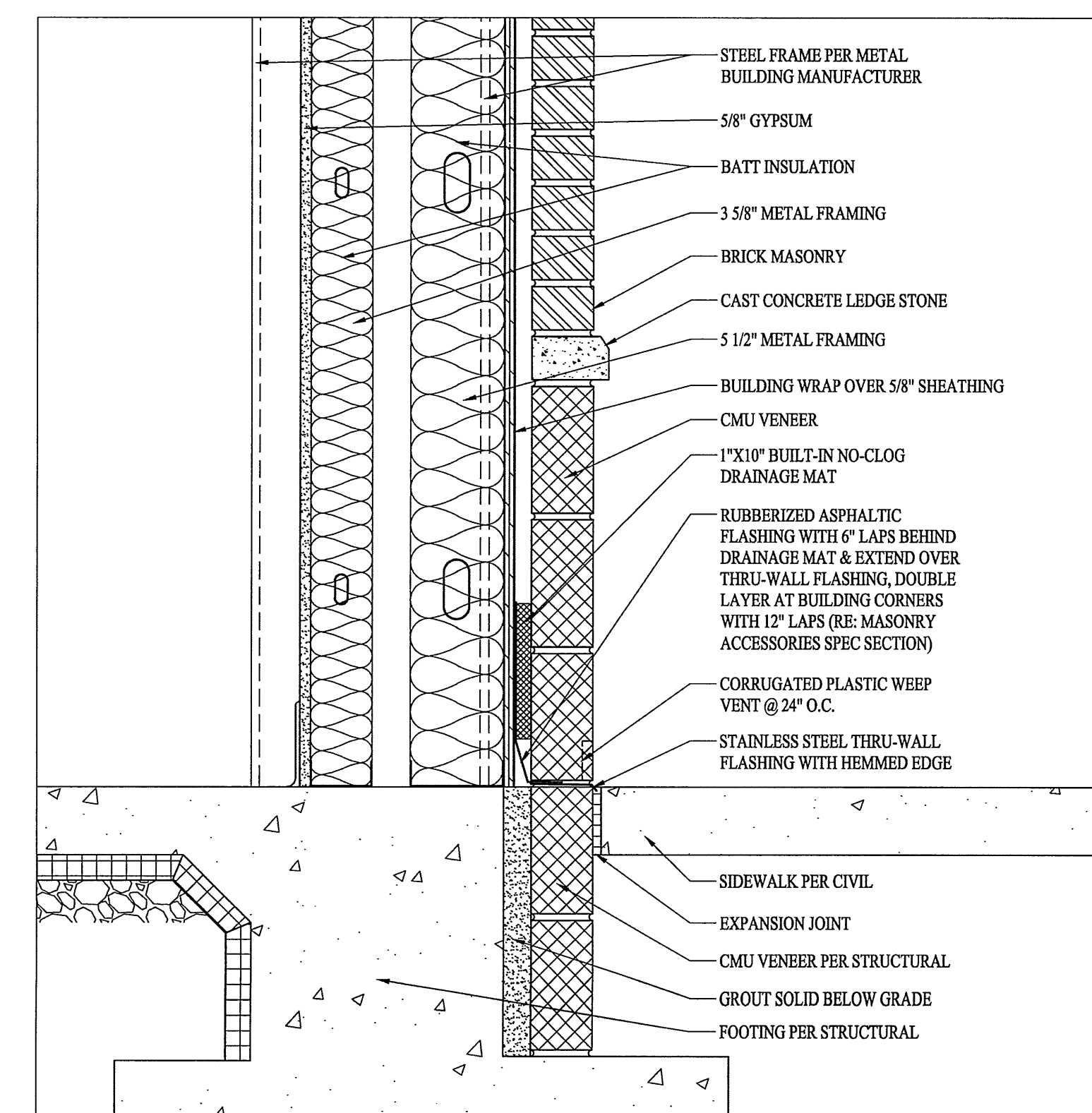
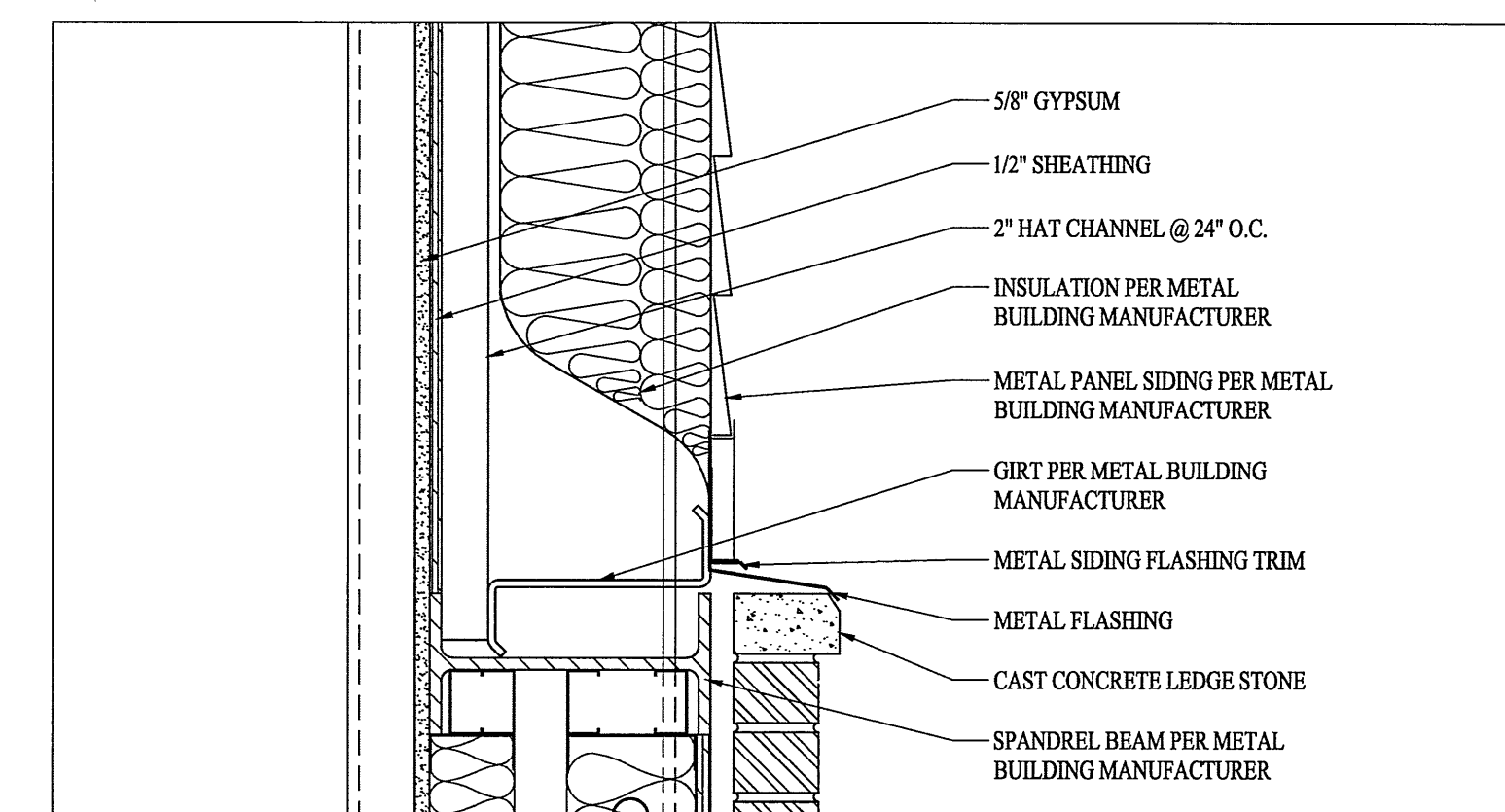
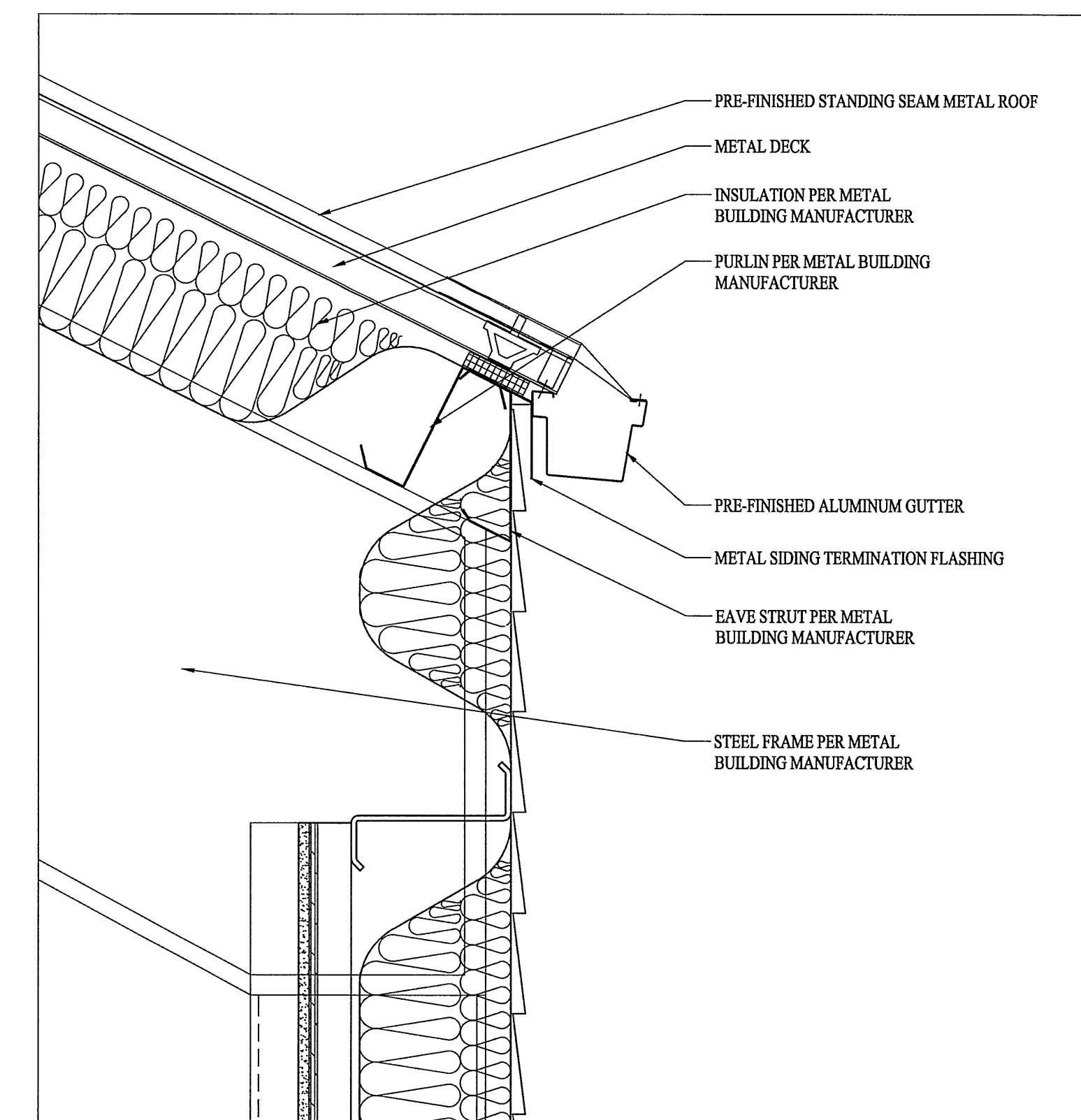
REV. DATE



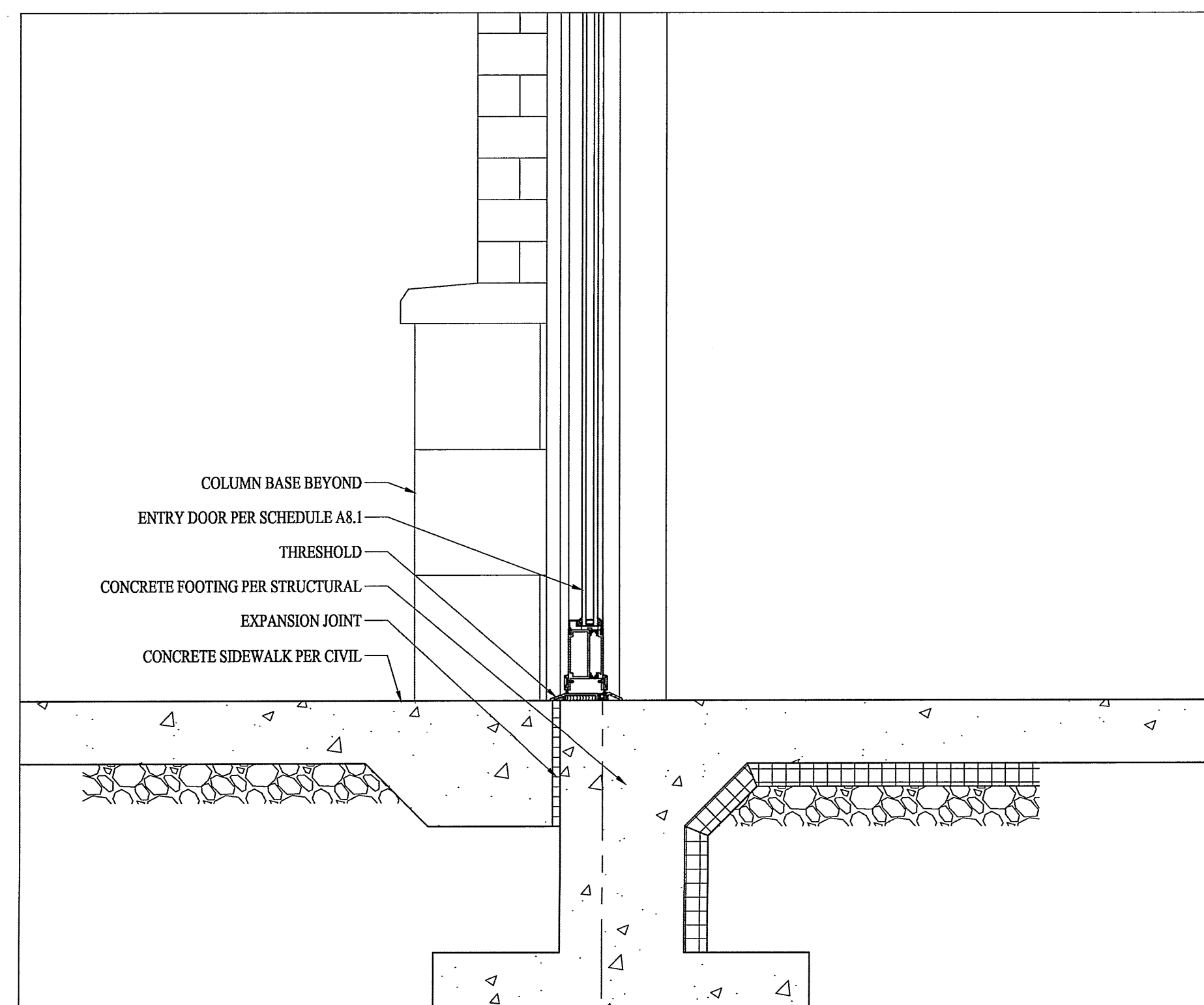
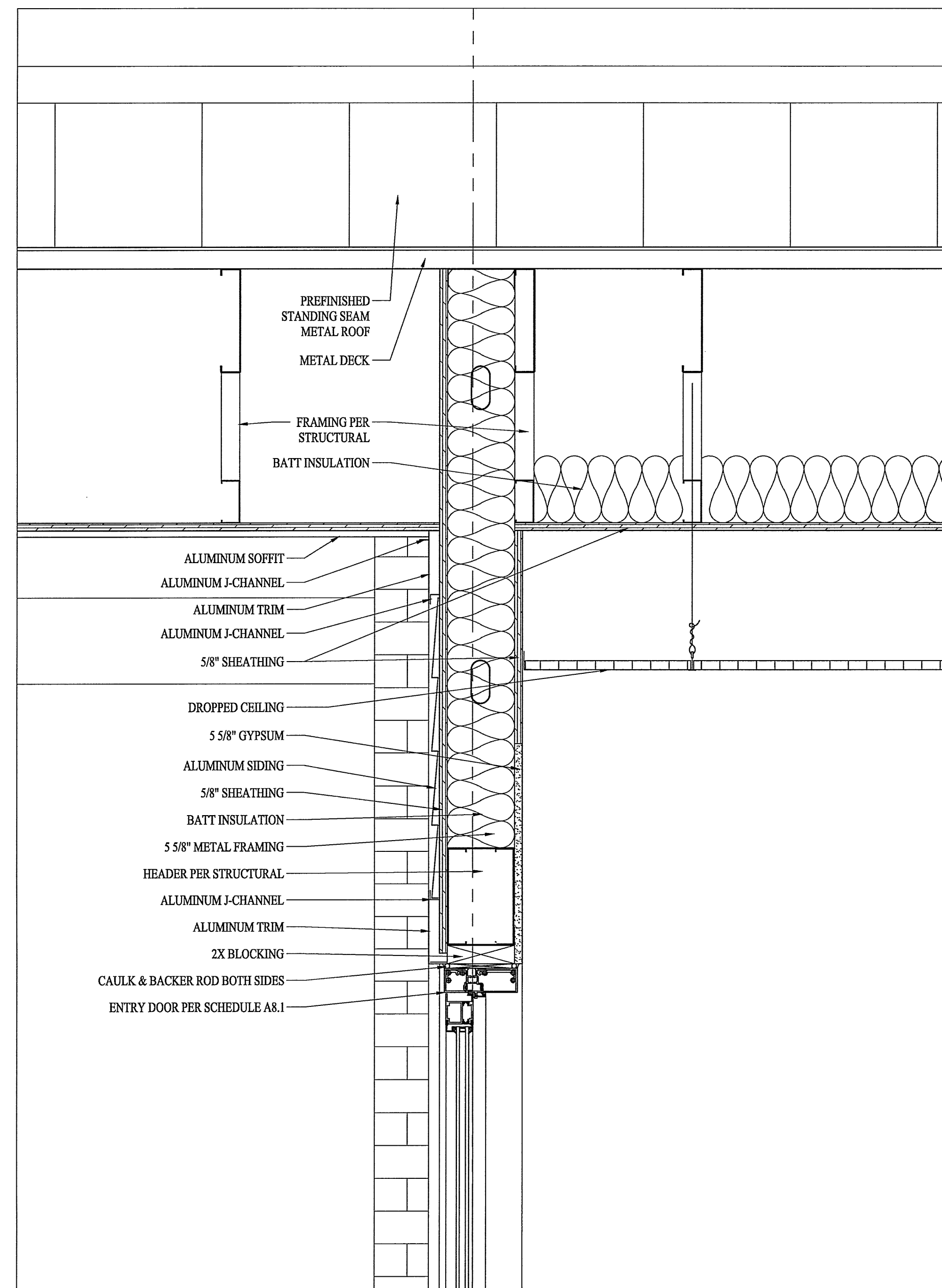
2
 A6.4 **2 HOUR FIRE WALL SECTION - SANCTUARY/ GATHERING**
 1 1/2" = 1'-0"



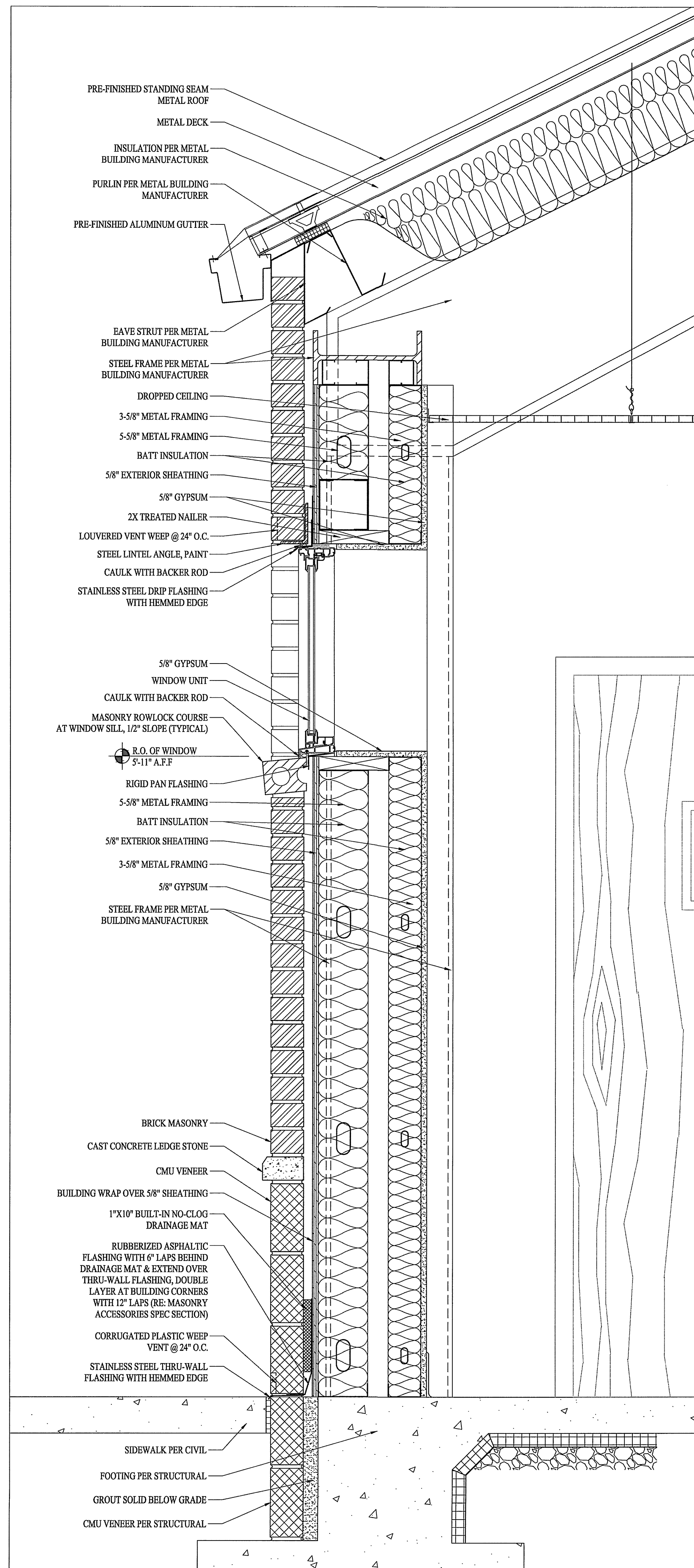
2
 A6.4 **SANCTUARY WALL SECTION**
 1 1/2" = 1'-0"



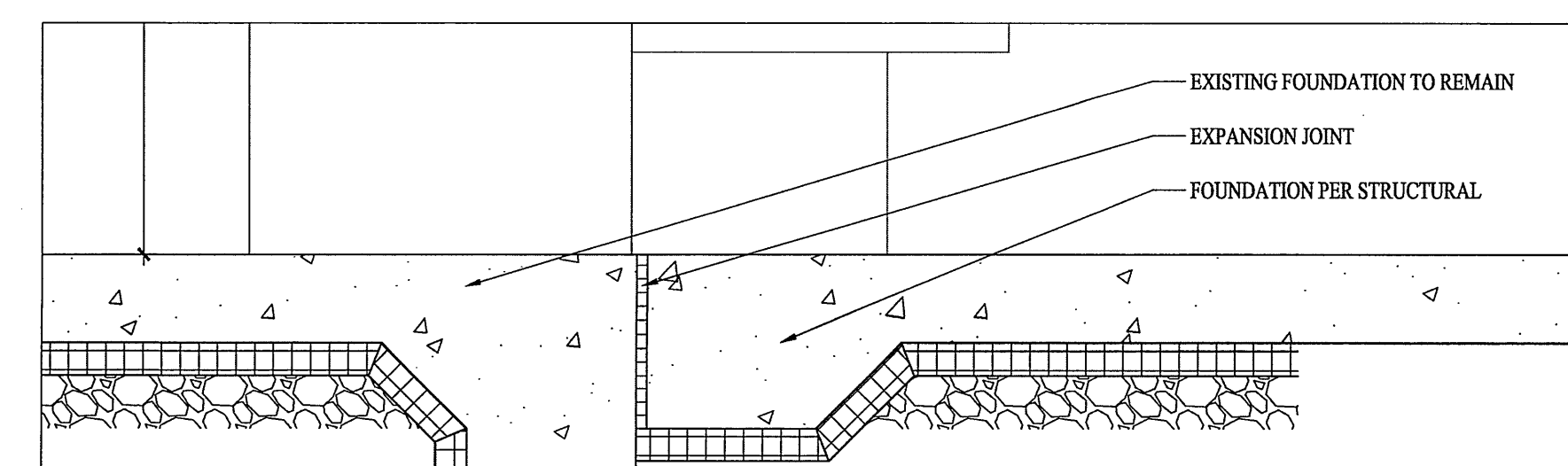
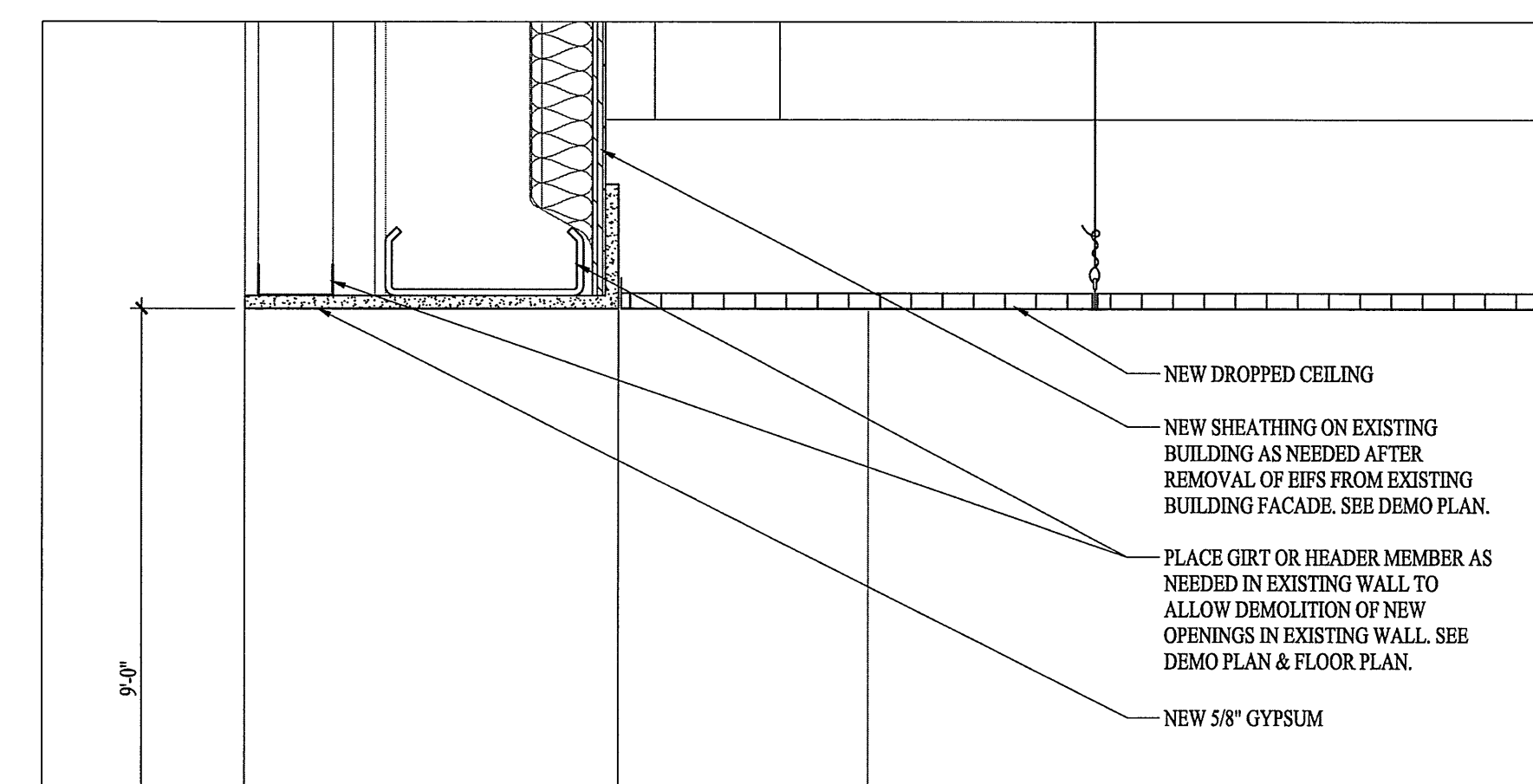
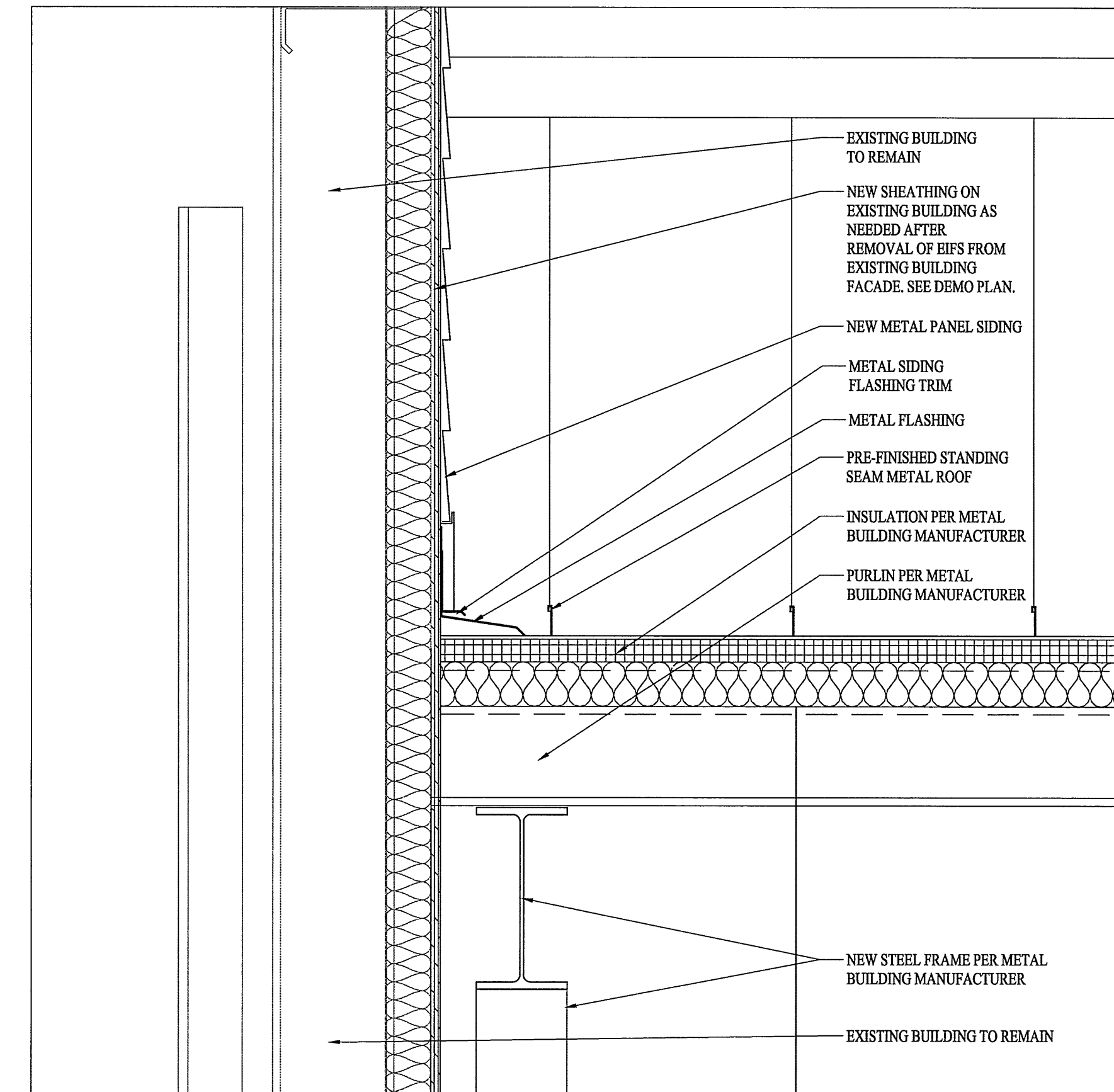
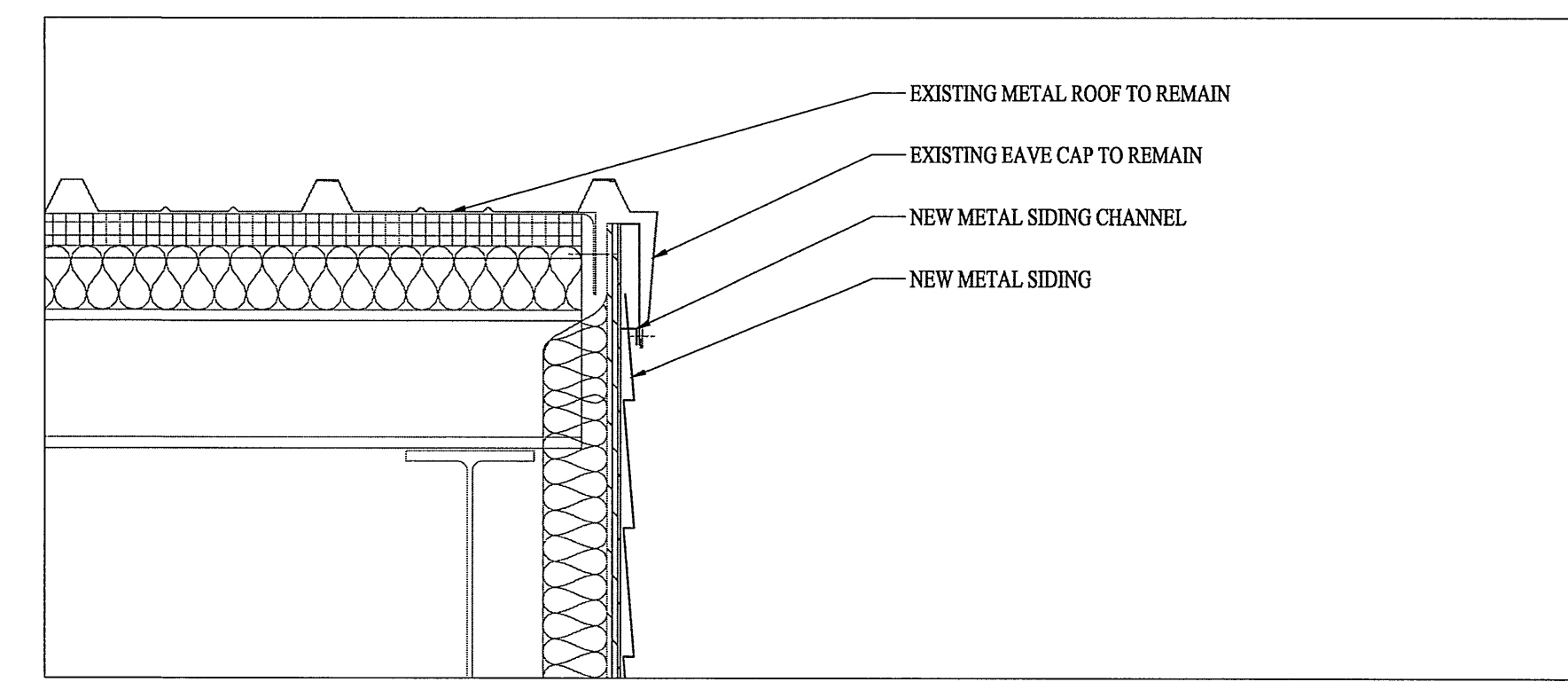
1
 A6.4 **SANCTUARY WALL SECTION**
 1 1/2" = 1'-0"



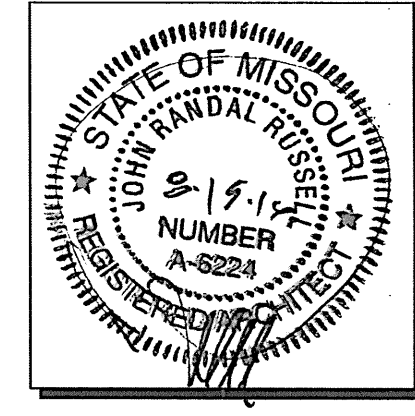
3 ENTRY VESTIBULE WALL SECTION
A6.5 1 1/2" = 1'-0"



2 CONNECTOR BUILDING WALL SECTION
A6.5 1 1/2" = 1'-0"



1 EXISTING BUILDING WALL SECTION
A6.5 1 1/2" = 1'-0"



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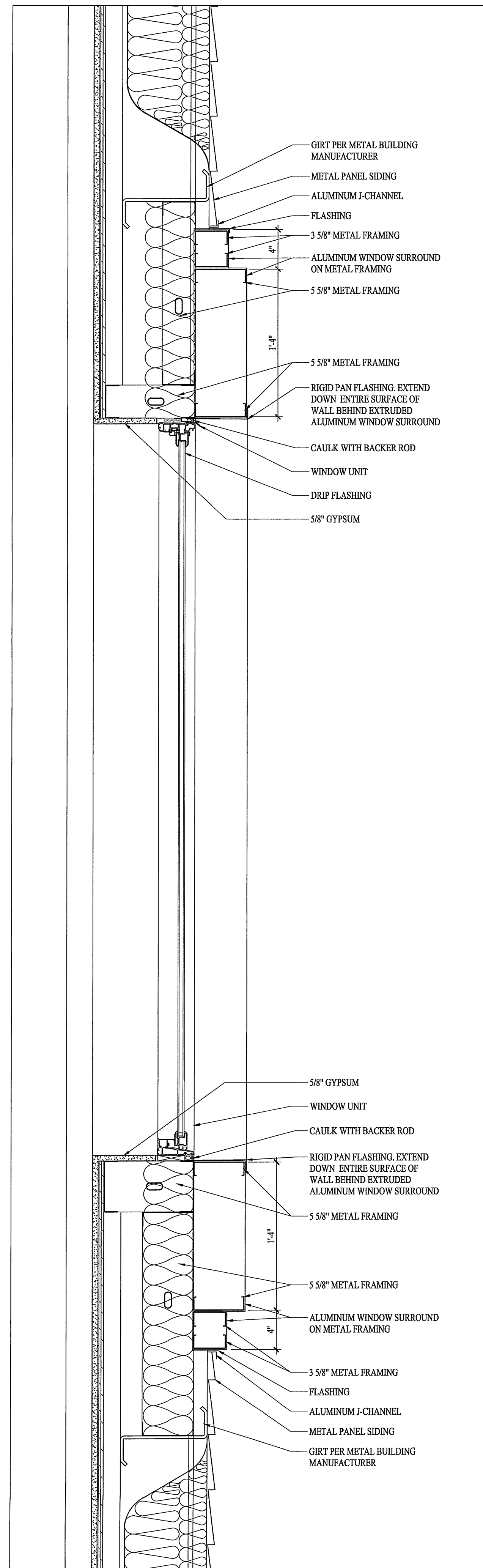
NEW SANCTUARY
FOR
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SHEET
A6.5

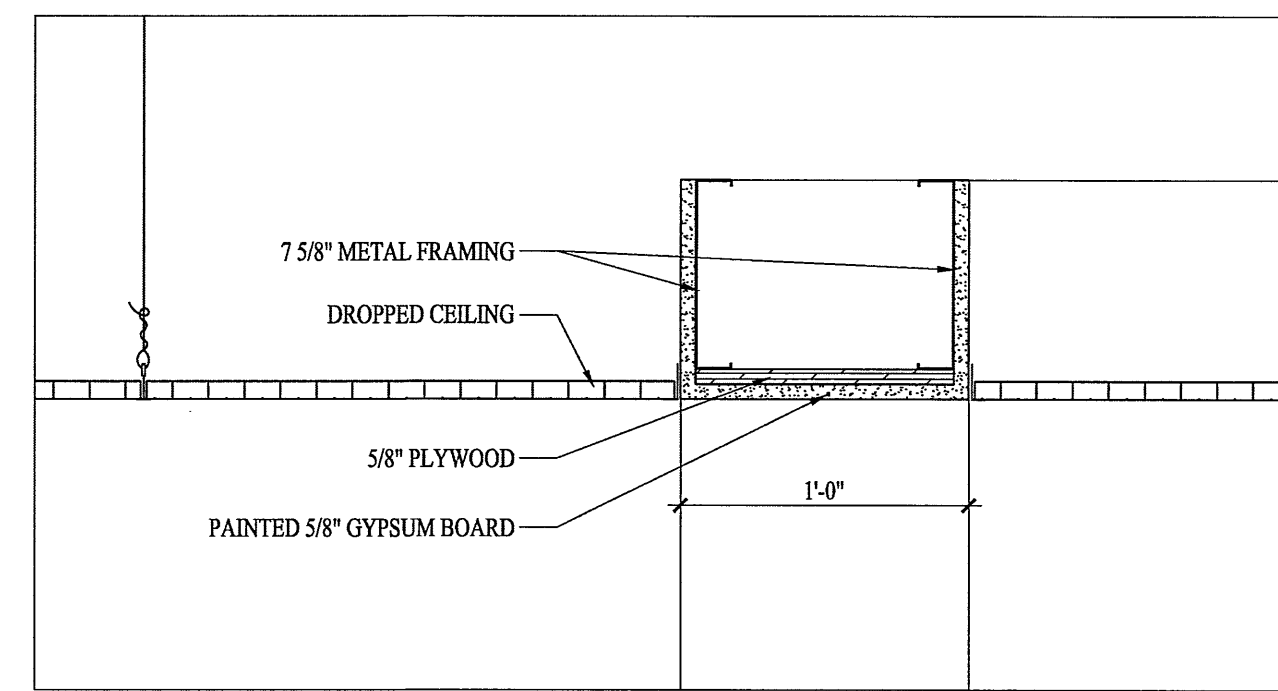
SCALE
1 1/2" = 1'-0"

DATE
08-15-16

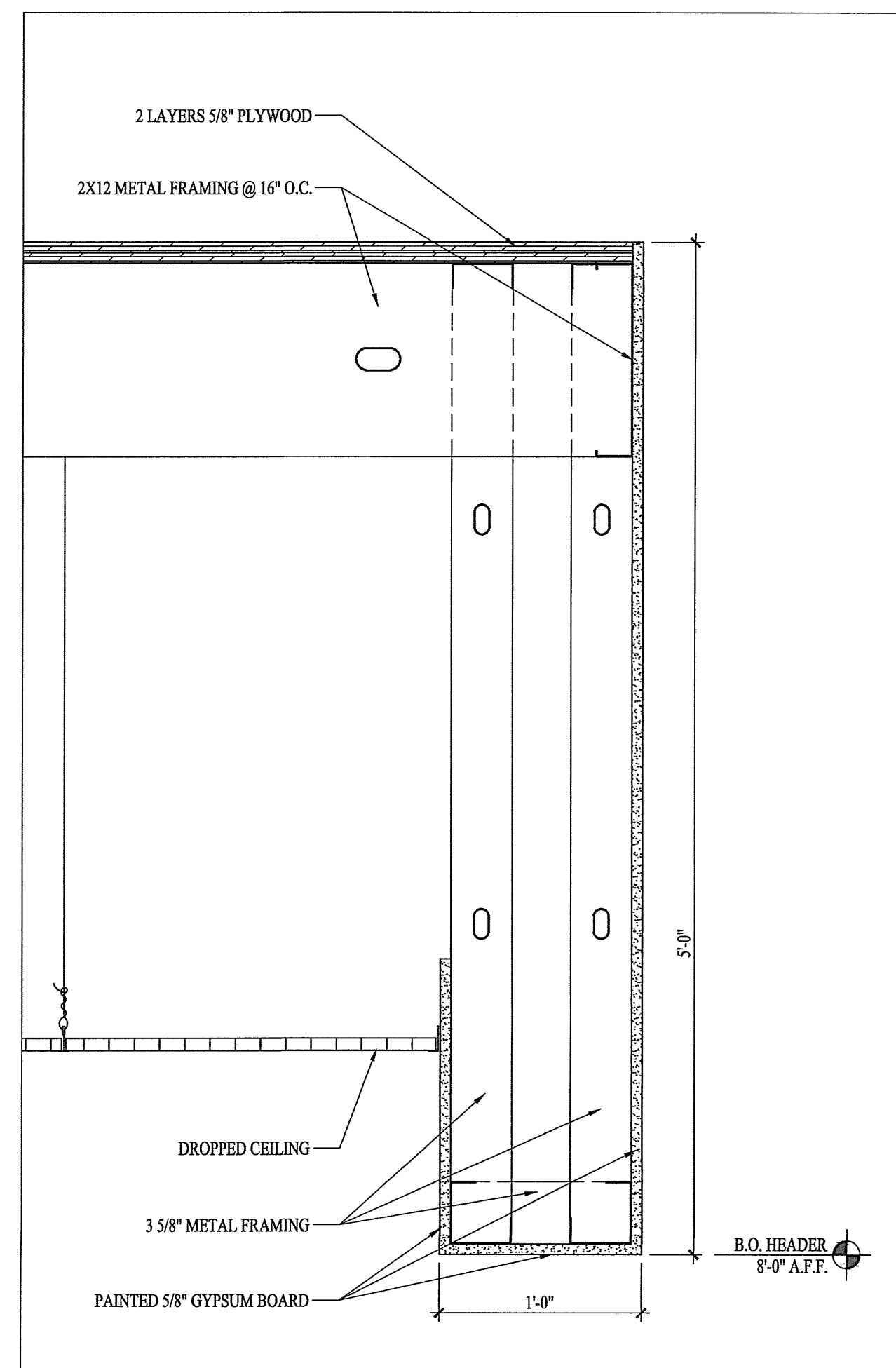
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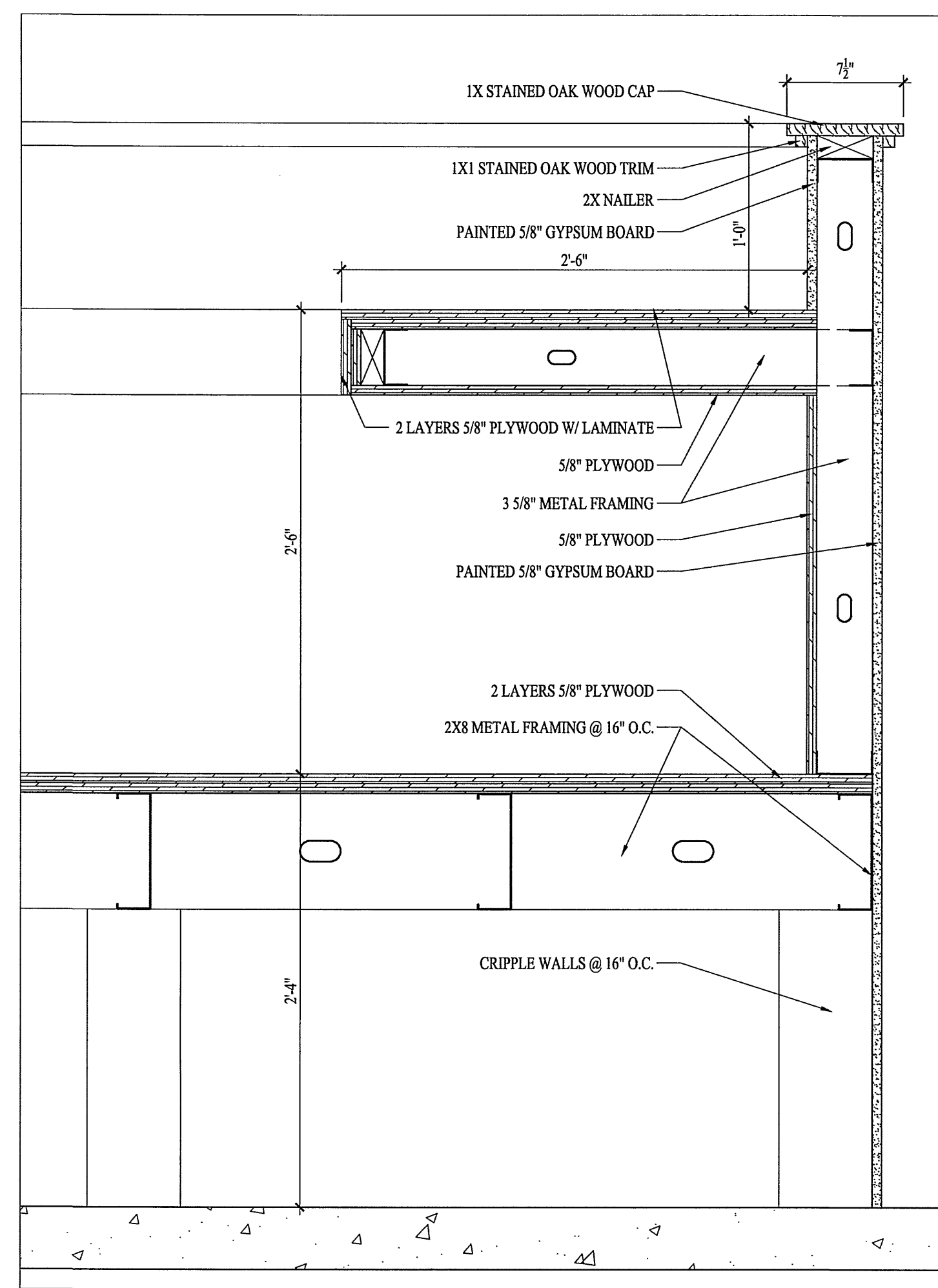
6 CROSS WINDOW DETAIL
A6.6 1 1/2" = 1'-0"



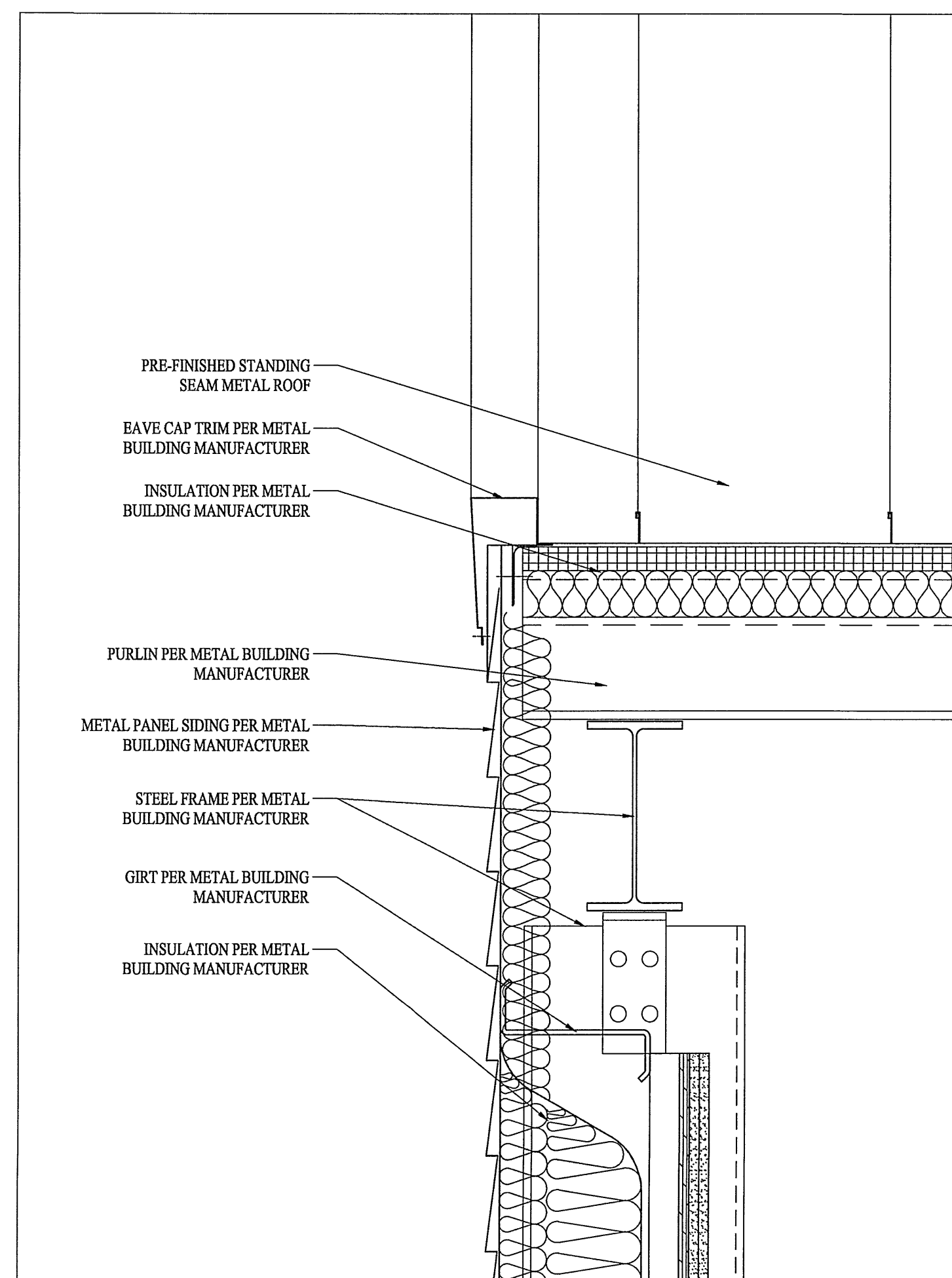
5 HEADER DETAIL
A6.6 1 1/2" = 1'-0"



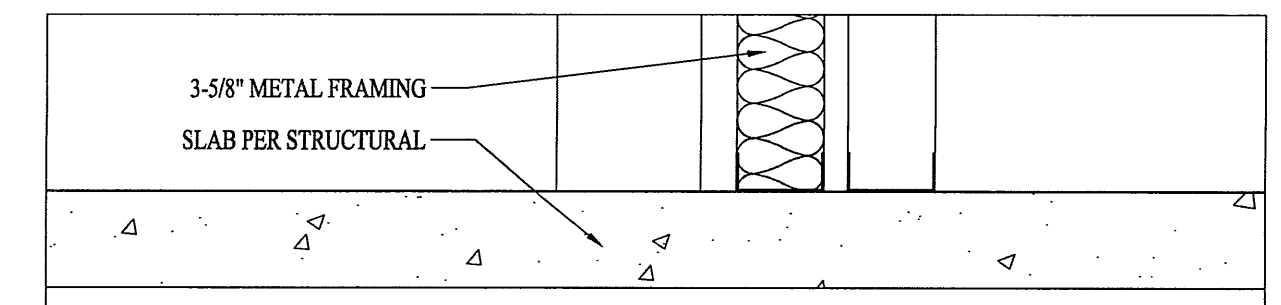
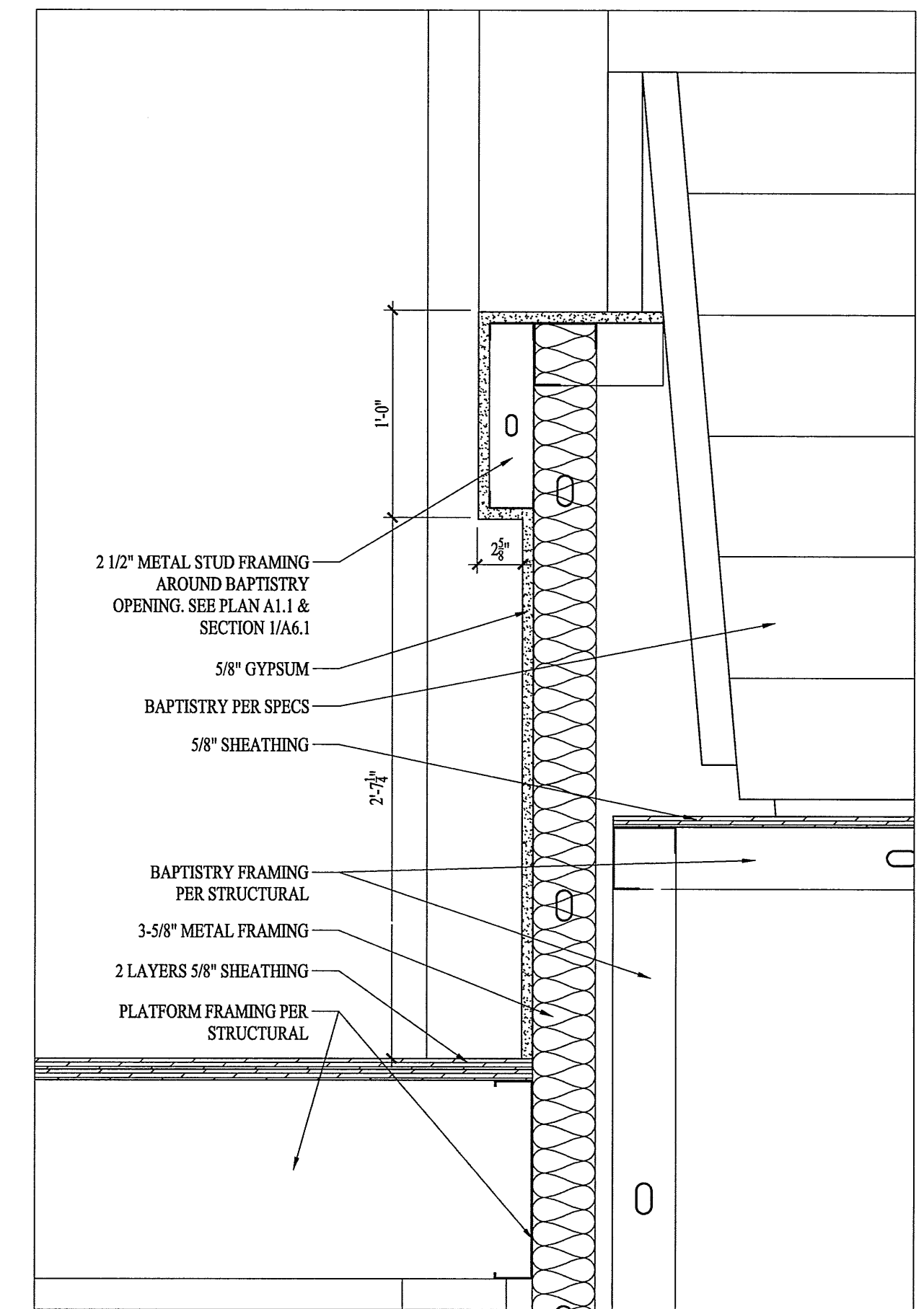
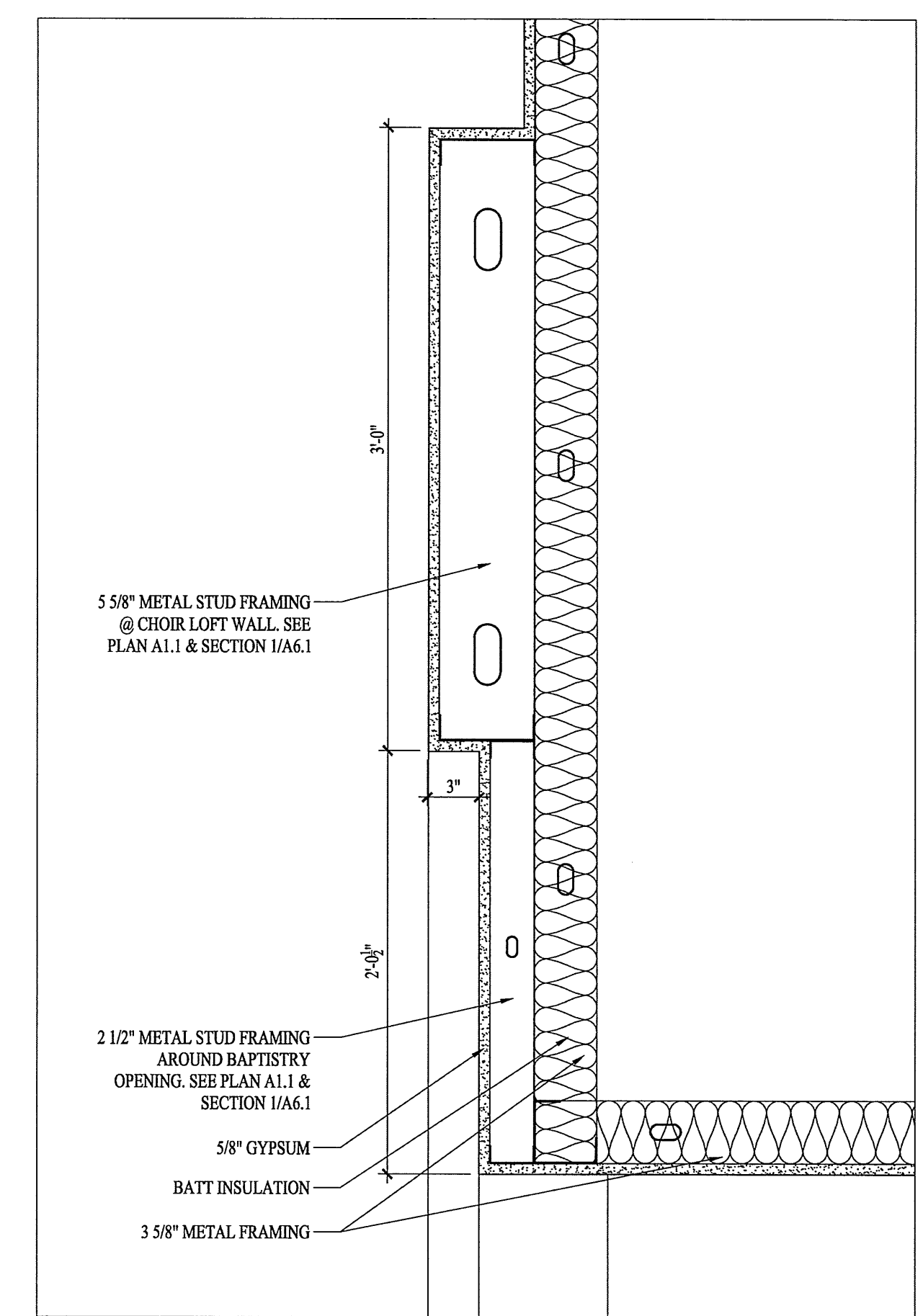
4 HEADER DETAIL
A6.6 1 1/2" = 1'-0"



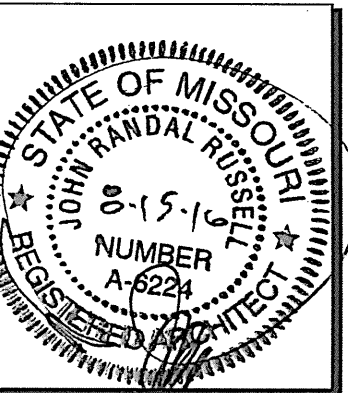
3 SOUND BOOTH DETAIL
A6.6 1 1/2" = 1'-0"



2 EAVE DETAIL
A6.6 1 1/2" = 1'-0"



1 BAPTISTRY WALL SECTION
A6.6 1 1/2" = 1'-0"



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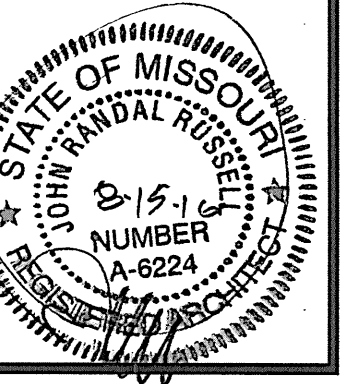
NEW SANCTUARY
 FOR
 FIRST BAPTIST CHURCH
 NEOSHO, MO

SHEET
A6.6

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

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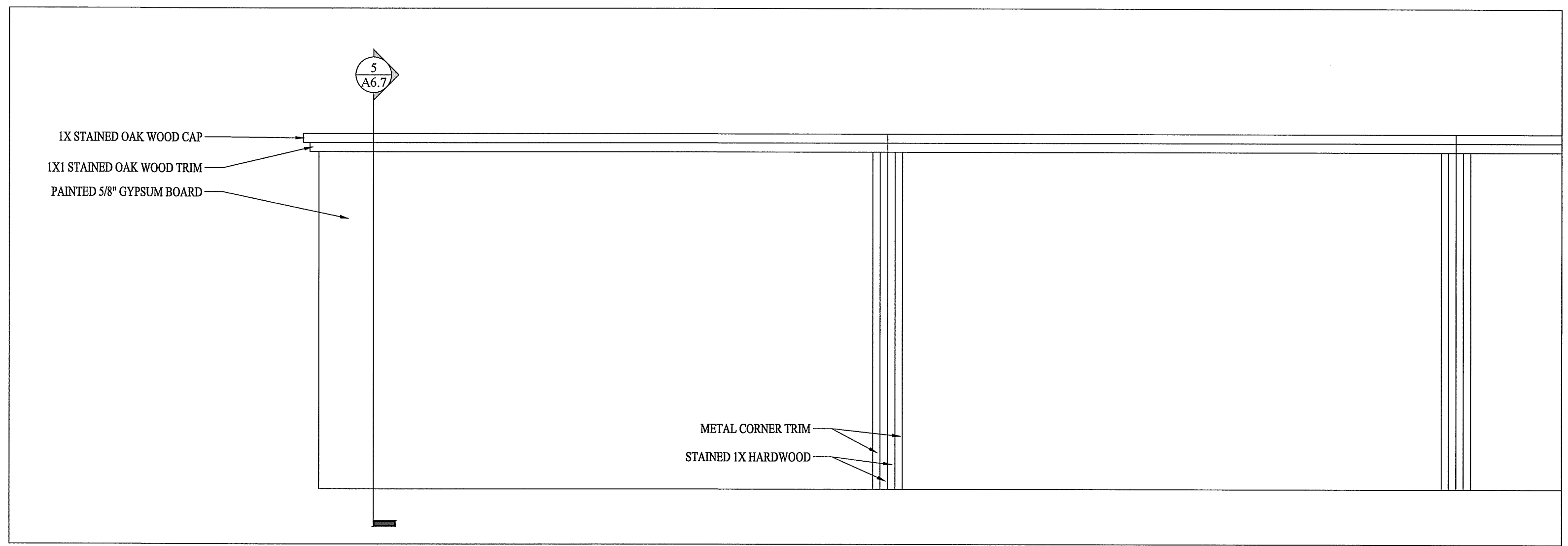
SHEET

A6.7

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

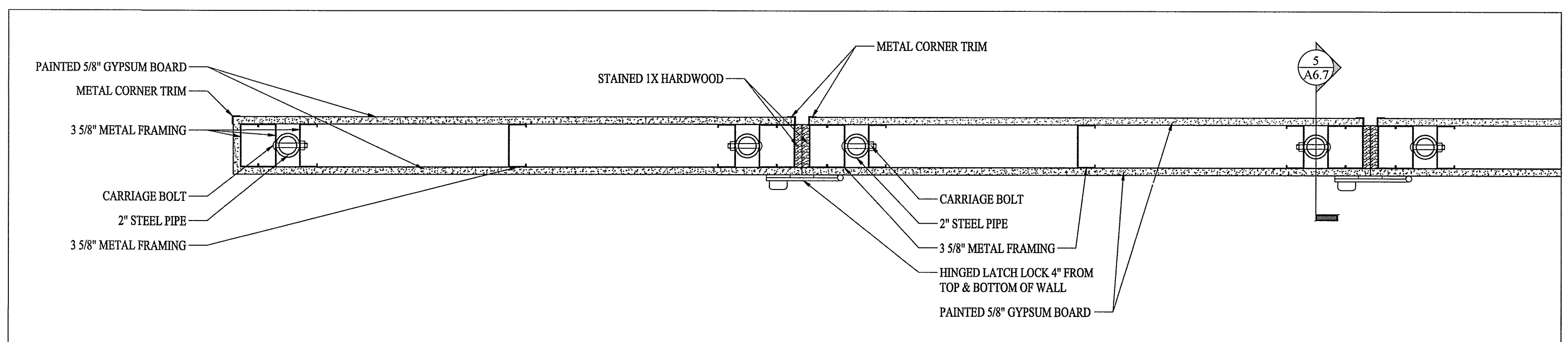
DATE
08-15-16

REV. DATE



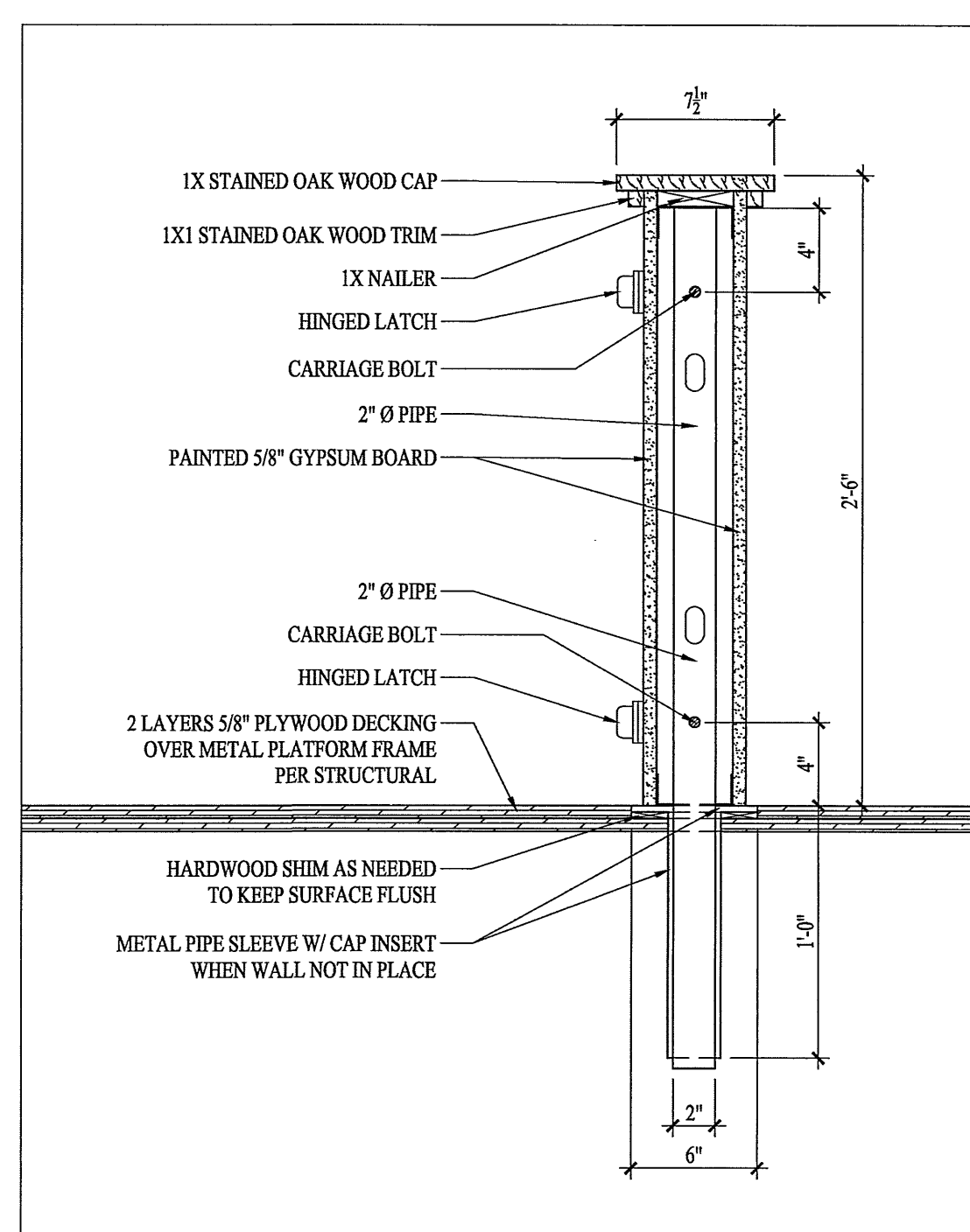
4 PLATFORM REMOVABLE PARTITION FRONT ELEVATION

1 1/2" = 1'-0"



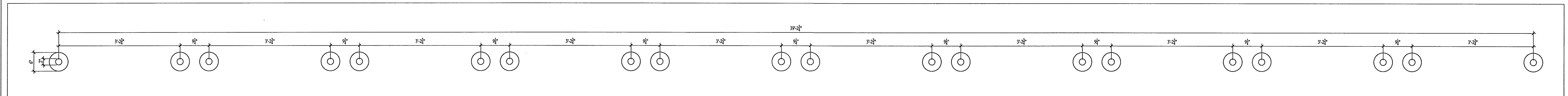
3 PLATFORM REMOVABLE PARTITION DETAIL

1 1/2" = 1'-0"



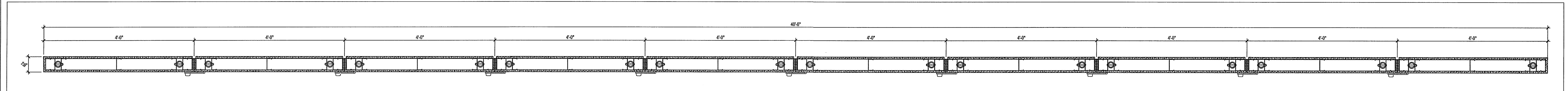
5 PARTITION SECTION

1 1/2" = 1'-0"



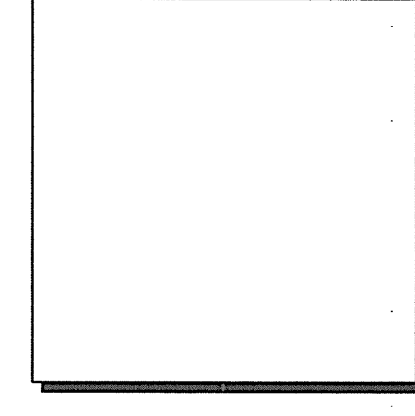
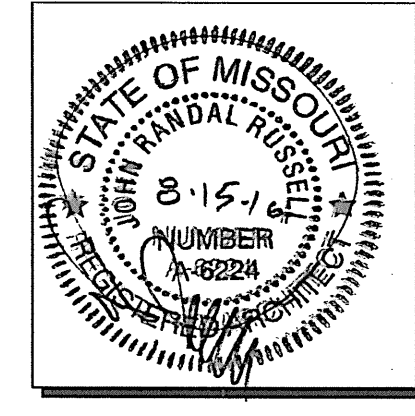
2 PLATFORM POST INSERT MOUNTS PLAN

3/4" = 1'-0"



1 PLATFORM REMOVABLE PARTITION PLAN

3/4" = 1'-0"



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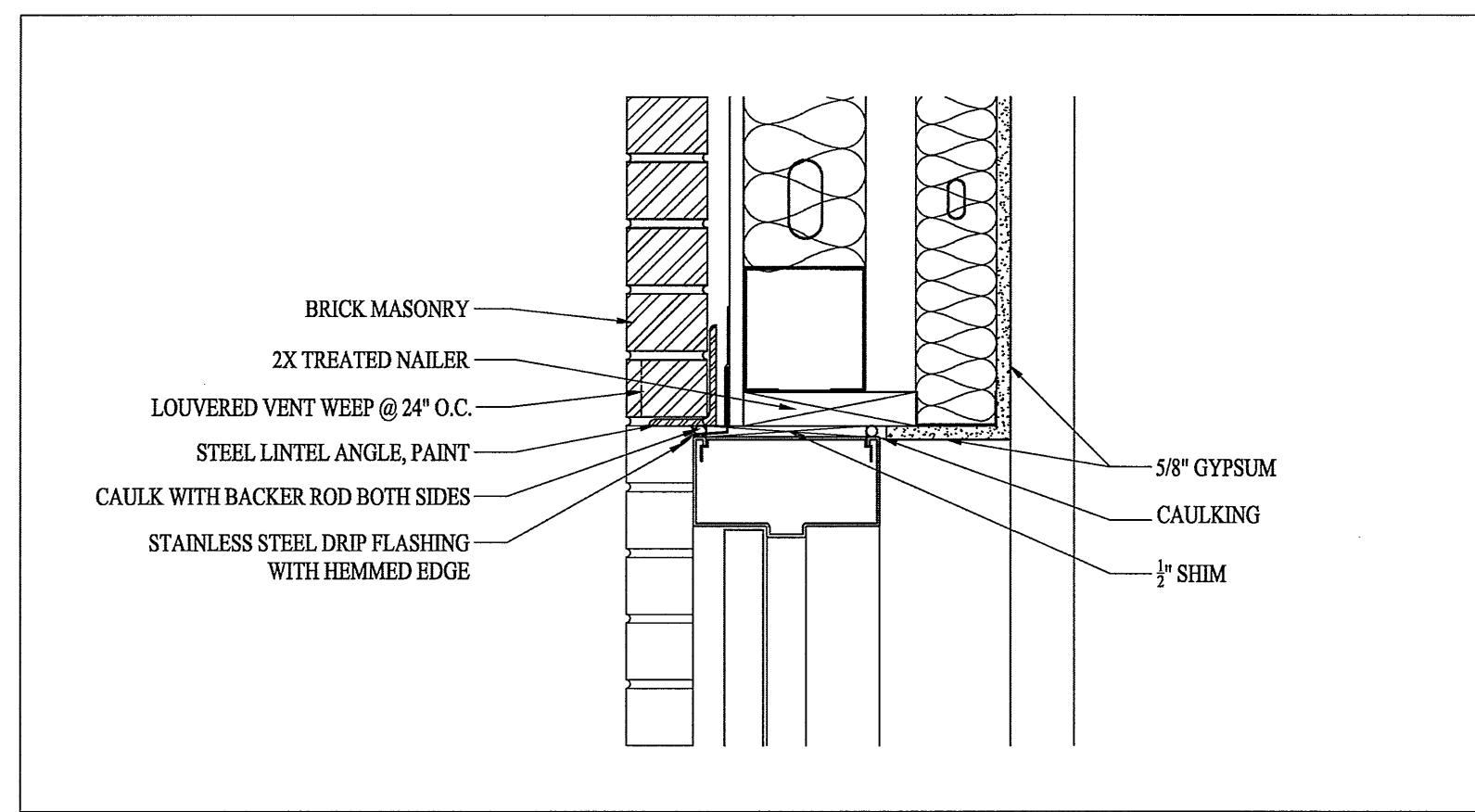
NEW SANCTUARY
FOR
FIRST BAPTIST CHURCH
NEOSHO, MO

SHEET
A8.1

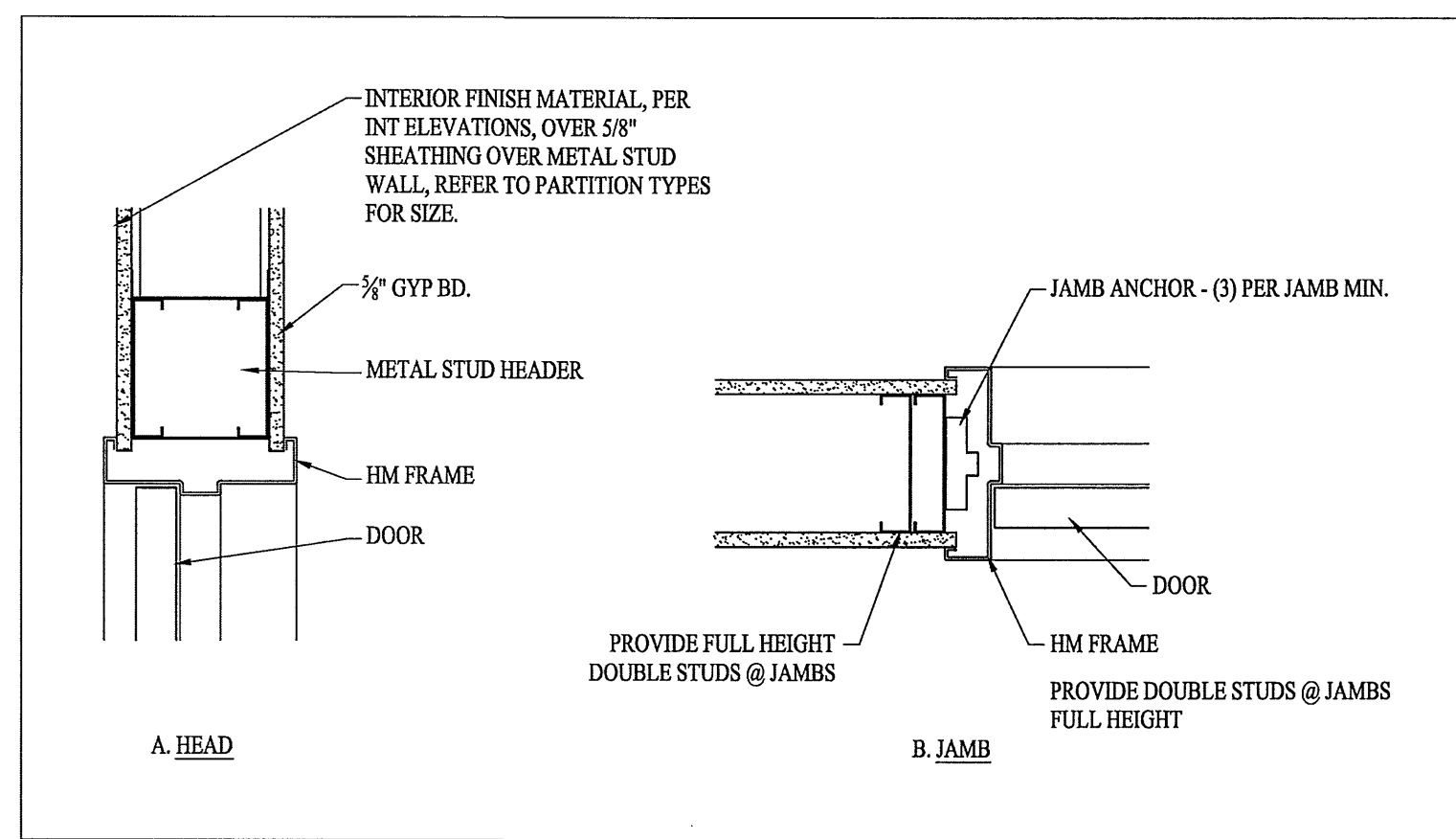
SCALE
1/4" = 1'-0"

DATE
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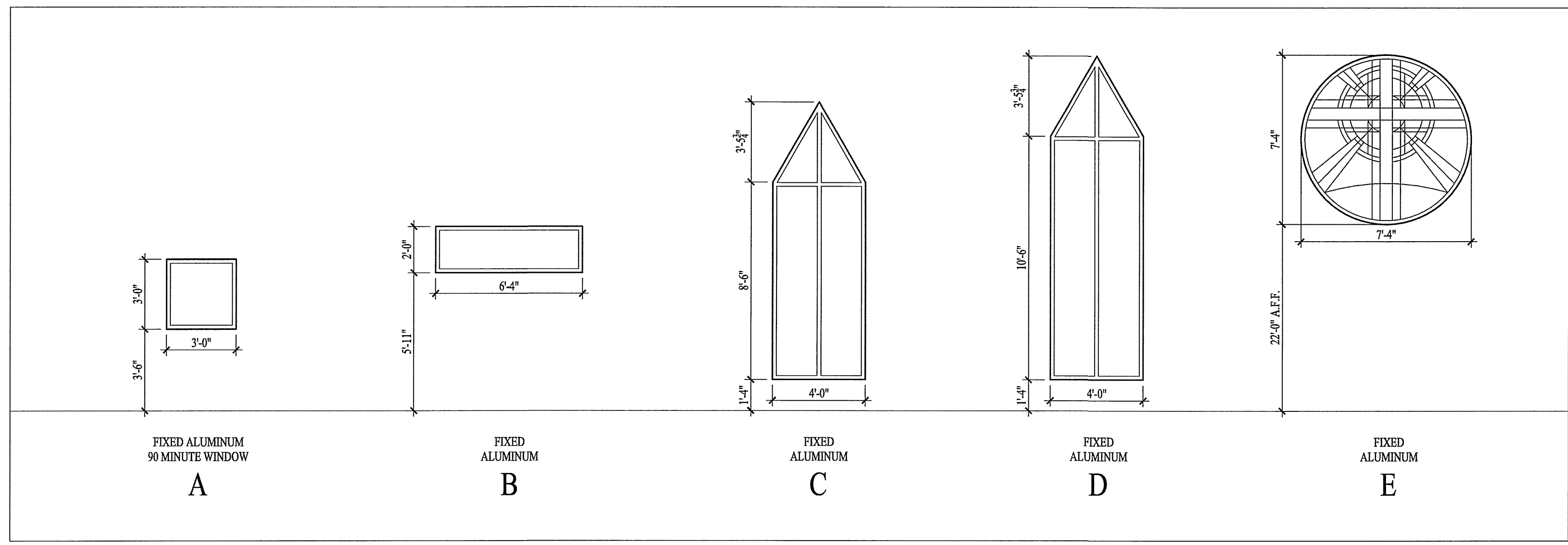
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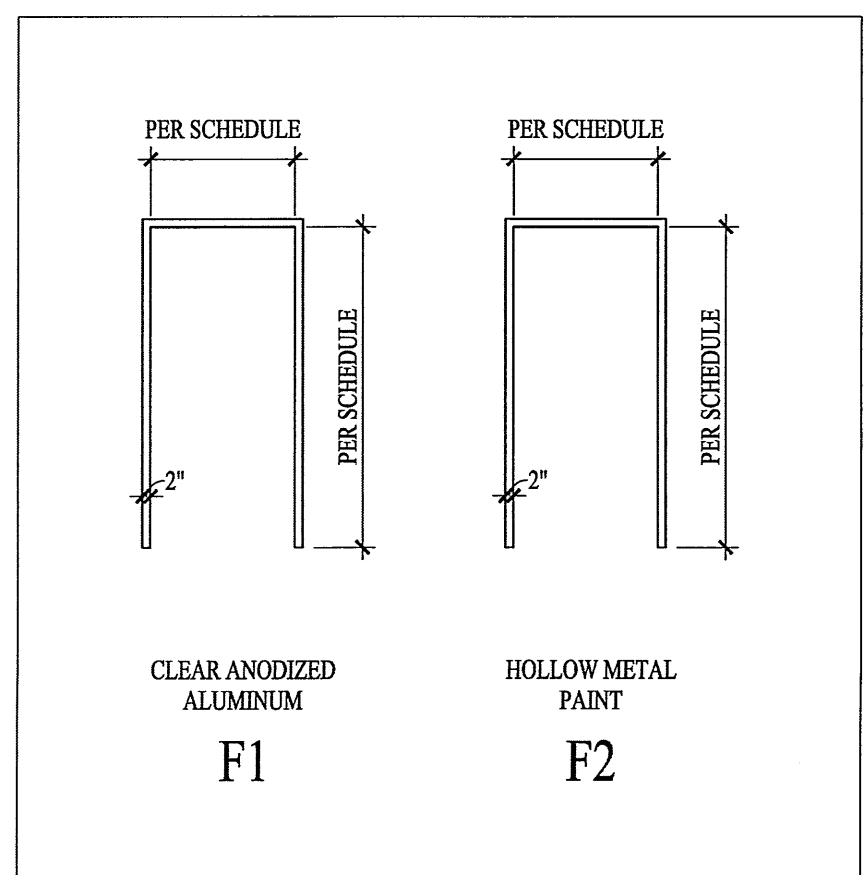
6
A8.1 HM FRAME HEAD @ EXT MASONRY WALL
1 1/2" = 1'-0"



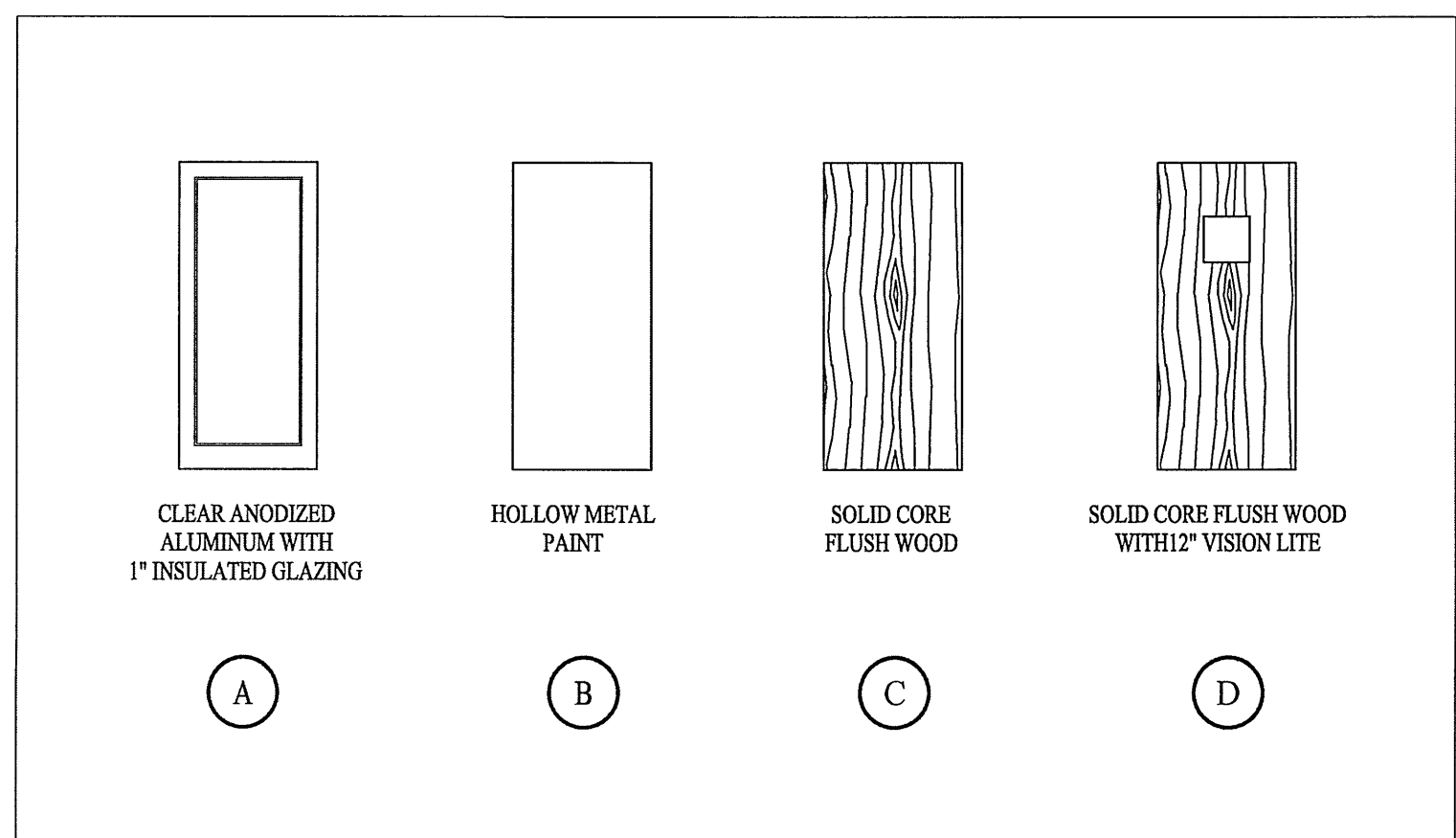
5
A8.1 HM FRAME @ INT MTL STUD WALL
1 1/2" = 1'-0"



4
A8.1 WINDOW TYPES
1/4" = 1'-0"
ALUMINUM WINDOWS - DIMENSIONS ARE APPROXIMATE, FIELD VERIFY EACH UNIT



3
A8.1 FRAME TYPES
1/4" = 1'-0"

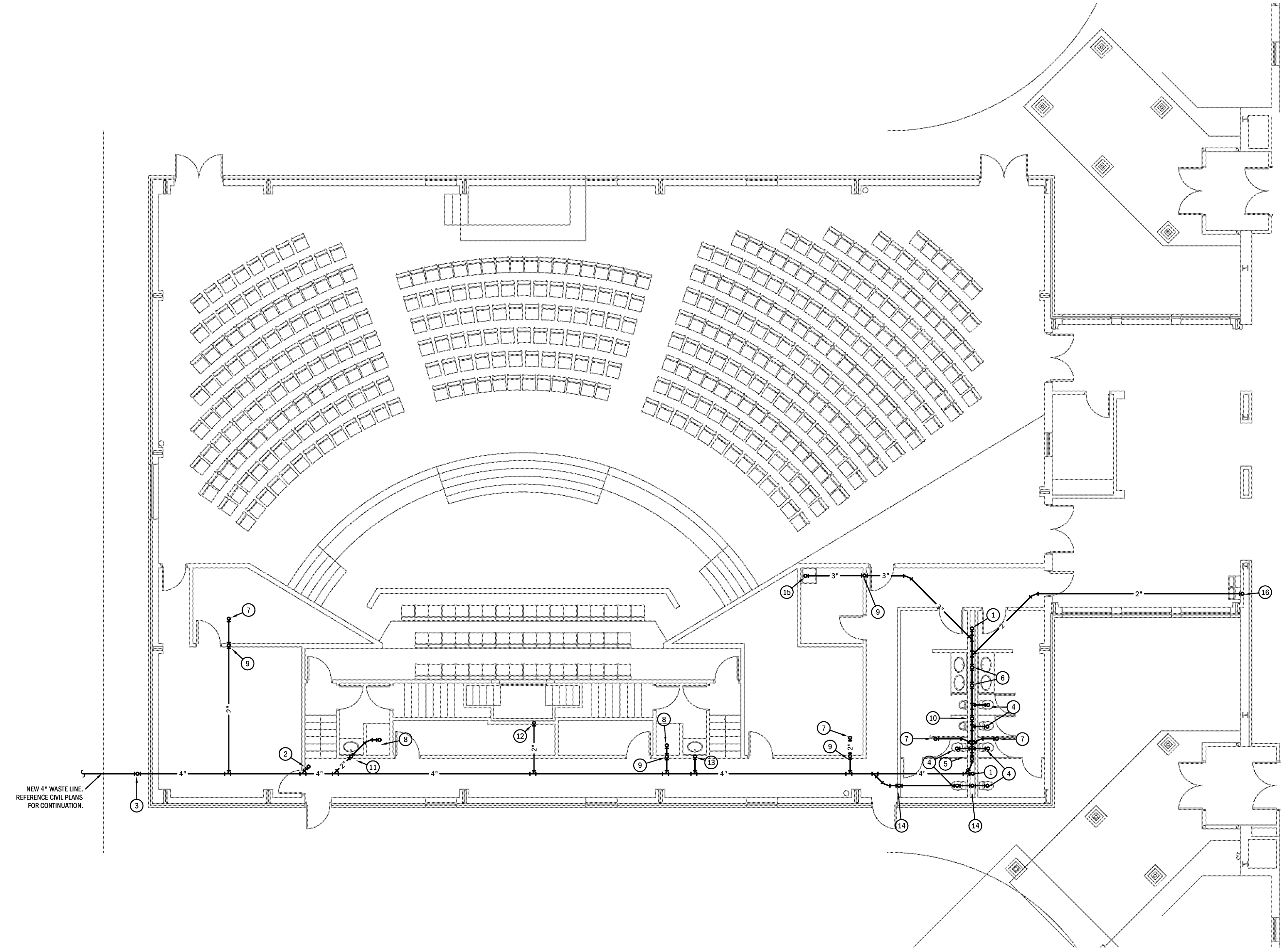


2
A8.1 DOOR TYPES
1/4" = 1'-0"

DOOR SCHEDULE				
DOOR #	SIZE	DR TYPE	FRAME TYPE	MARKED NOTES
001A	PR 3'-0" X 6'-8"	A	F1	EXTERIOR
001B	PR 3'-0" X 6'-8"	A	F1	EXTERIOR
002A	PR 3'-0" X 6'-8"	A	F1	EXTERIOR
002B	PR 3'-0" X 6'-8"	A	F1	EXTERIOR
003A	PR 3'-0" X 6'-8"	D	F2	90 MINUTE DOOR & FRAME
003B	PR 3'-0" X 6'-8"	D	F2	90 MINUTE DOOR & FRAME
003C	3'-0" X 6'-8"	C	F2	90 MINUTE DOOR & FRAME
004	3'-0" X 6'-8"	C	F2	
005A	3'-0" X 6'-8"	C	F2	
005B	3'-0" X 6'-8"	B	F2	EXTERIOR
006	3'-0" X 6'-8"	C	F2	
007	3'-0" X 6'-8"	C	F2	
008	3'-0" X 6'-8"	B	F2	
009	3'-0" X 6'-8"	B	F2	
010	3'-0" X 6'-8"	B	F2	EXTERIOR
011A	3'-0" X 6'-8"	C	F2	
011B	3'-0" X 6'-8"	C	F2	
012	3'-0" X 6'-8"	B	F2	
013	3'-0" X 6'-8"	C	F2	
015A	3'-0" X 6'-8"	C	F2	
015B	3'-0" X 6'-8"	C	F2	
016A	3'-0" X 6'-8"	B	F2	
016B	3'-0" X 6'-8"	C	F2	
017	3'-0" X 6'-8"	B	F2	
018A	3'-0" X 6'-8"	C	F2	
018B	3'-0" X 6'-8"	C	F2	
020A	3'-0" X 6'-8"	B	F2	EXTERIOR
020B	3'-0" X 6'-8"	B	F2	EXTERIOR

1
A8.1 DOOR SCHEDULE

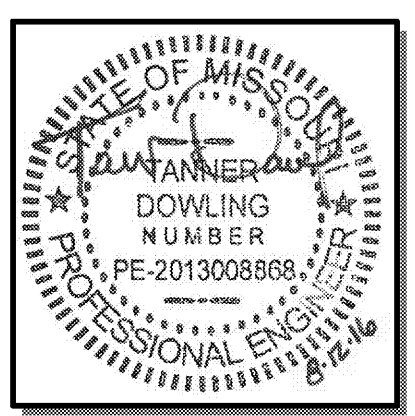
GENERAL NOTES:
1. ALL METAL FRAMES SHALL BE FULLY WELDED; MITERED OR COPED AND WELDED FACE CORNERS AND SEAMLESS FACE JOINTS.
2. ALL METAL FRAMES ARE TO BE PAINTED.
3. REFER TO THE SPECIFICATIONS FOR THE FINISH HARDWARE SETS.



- KEYNOTES:**
- ① 4" WASTE UP TO FINISHED WALL CLEANOUT
 - ② 4" WASTE UP TO FINISHED FLOOR CLEANOUT
 - ③ 4" WASTE UP TO FINISHED GRADE CLEANOUT
 - ④ 4" WASTE UP TO WATER CLOSET
 - ⑤ 3" WASTE UP, CONNECT 2" WASTE TO EACH URINAL
 - ⑥ 2" WASTE UP TO, EXTEND 2" TRAP ARM TO EACH LAVATORY.
 - ⑦ 2" WASTE UP TO FLOOR DRAIN
 - ⑧ 2" WASTE UP TO SHOWER DRAIN
 - ⑨ 1.5" VENT UP
 - ⑩ 3" CIRCUIT VENT UP
 - ⑪ 3" WET VENT UP TO SINK
 - ⑫ 2" WASTE UP TO BAPTISTRY. PLUMBING CONTRACTOR TO MAKE ALL FINAL CONNECTIONS TO BAPTISTRY.
 - ⑬ 2" WASTE UP TO LAVATORY.
 - ⑭ 2" VENT UP
 - ⑮ 3" WASTE UP TO MOP BASIN
 - ⑯ 2" WASTE UP TO WATER COOLER

NEW 4" WASTE LINE.
REFERENCE CIVIL PLANS
FOR CONTINUATION.

1 UNDERGROUND PLUMBING PLAN
SCALE: 1/8" = 1'-0"



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NEW SANCTUARY
FOR
FIRST BAPTIST CHURCH
NEOSHO, MISSOURI

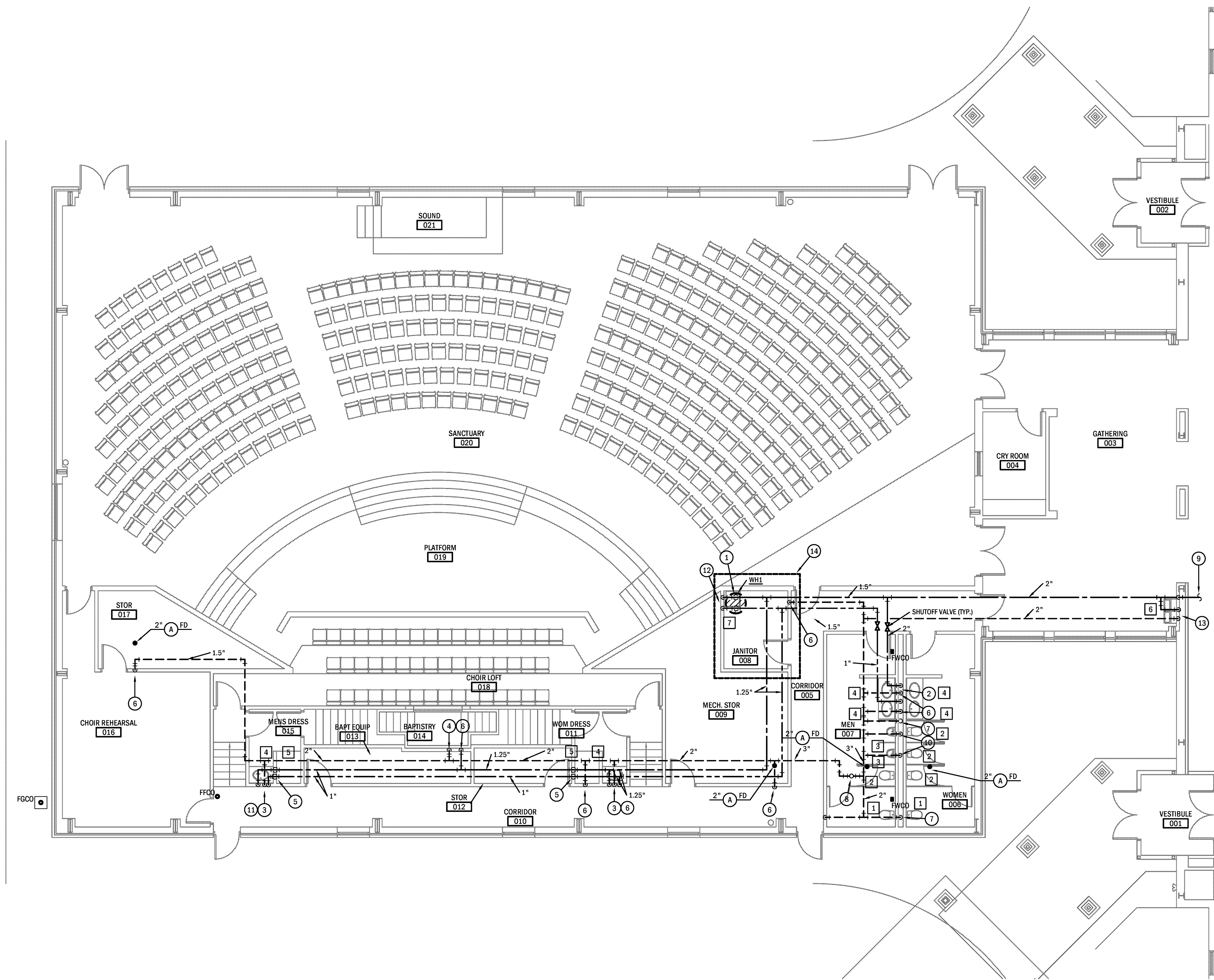
SHEET
P1

SCALE
1/8" = 1'-0"

DATE
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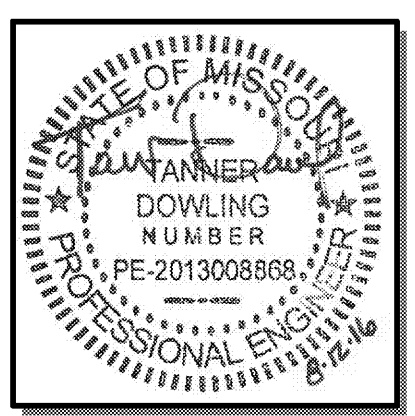
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417.631.4895 / www.interpresbuild.com



1 PLUMBING PLAN
 SCALE: 1/8" = 1'-0"
 NORTH

- KEYNOTES:**
- ① 1.25" HOT AND COLD WATER DOWN TO HOT WATER HEATER WH1 SUSPENDED ABOVE MOP BASIN
 - ② 1" HOT WATER AND 2" COLD WATER DOWN. TAP 0.5" HOT AND COLD WATER TO EACH LAVATORY, 0.75" COLD WATER TO EACH URINAL AND 0.5" COLD WATER TO EACH WATER CLOSET.
 - ③ 0.5" HOT AND COLD WATER DOWN.
 - ④ 1" COLD WATER DOWN TO BAPTISTRY.
 - ⑤ 0.5" HOT AND COLD WATER DOWN TO SHOWER VALVE
 - ⑥ 1.5" VENT DOWN
 - ⑦ 3" CIRCUIT VENT DOWN
 - ⑧ 3" VENT UP TO 4" VENT THROUGH ROOF.
 - ⑨ CONNECT TO EXISTING WATER SERVICE IN EXISTING JANITORS CLOSET APPROXIMATELY 75' FROM THIS LOCATION.
 - ⑩ 1.5" VENT DOWN TO URINAL
 - ⑪ 2" VENT DOWN
 - ⑫ 0.5" HOT AND COLD WATER DOWN TO MOP BASIN
 - ⑬ 0.5" COLD WATER WITH SHUTOFF VALVE AND 1.5" VENT DOWN TO WATER COOLER
 - ⑭ PLUMBING CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR TO VERIFY THAT NO PLUMBING RUNS OVER ELECTRICAL PANELS IN THIS AREA



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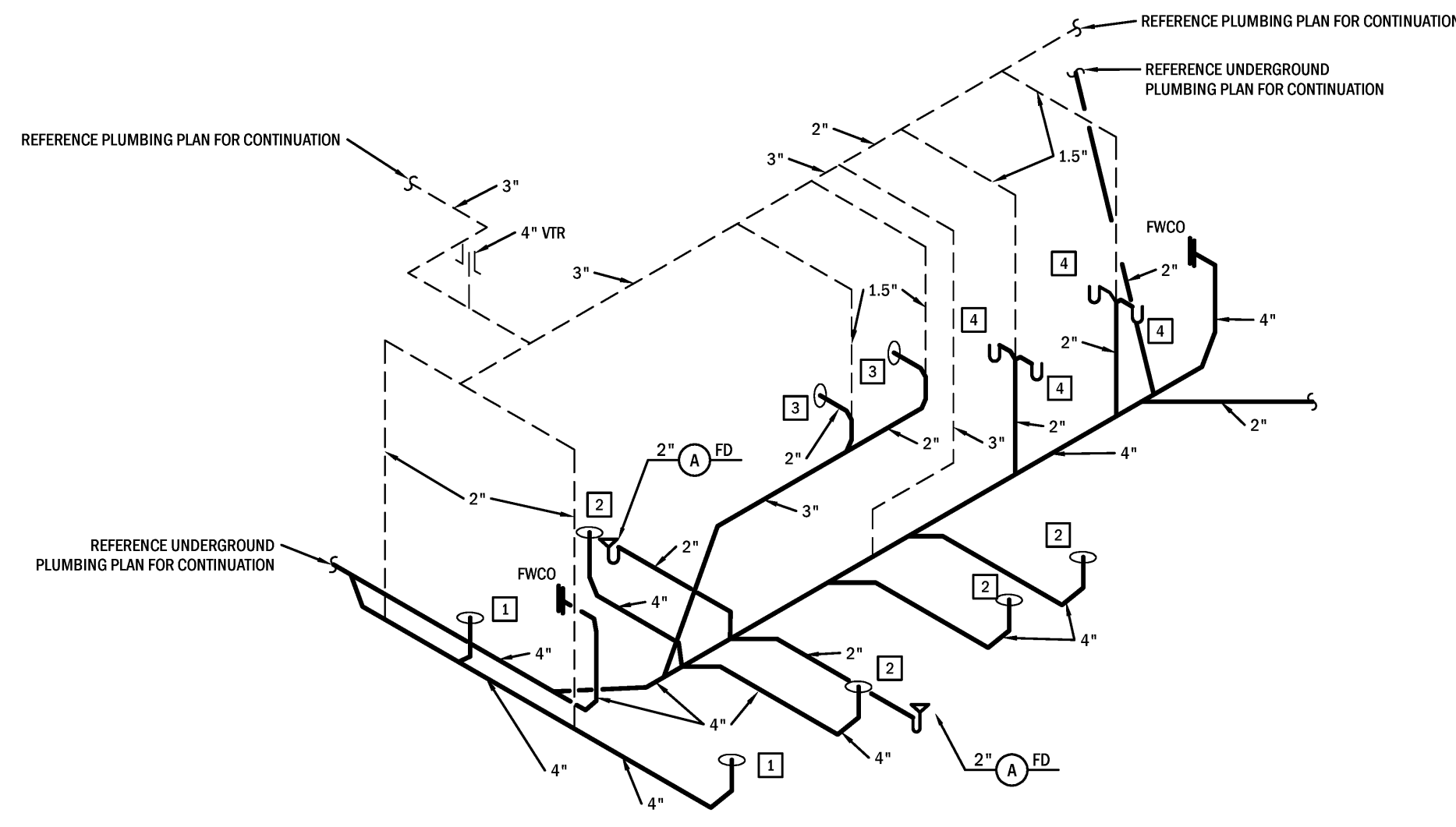
NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MISSOURI

SHEET
P2

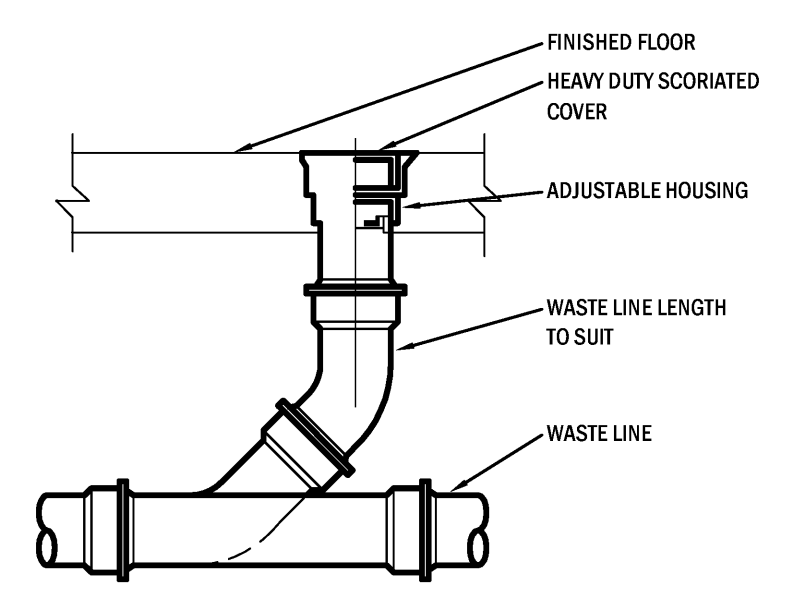
SCALE
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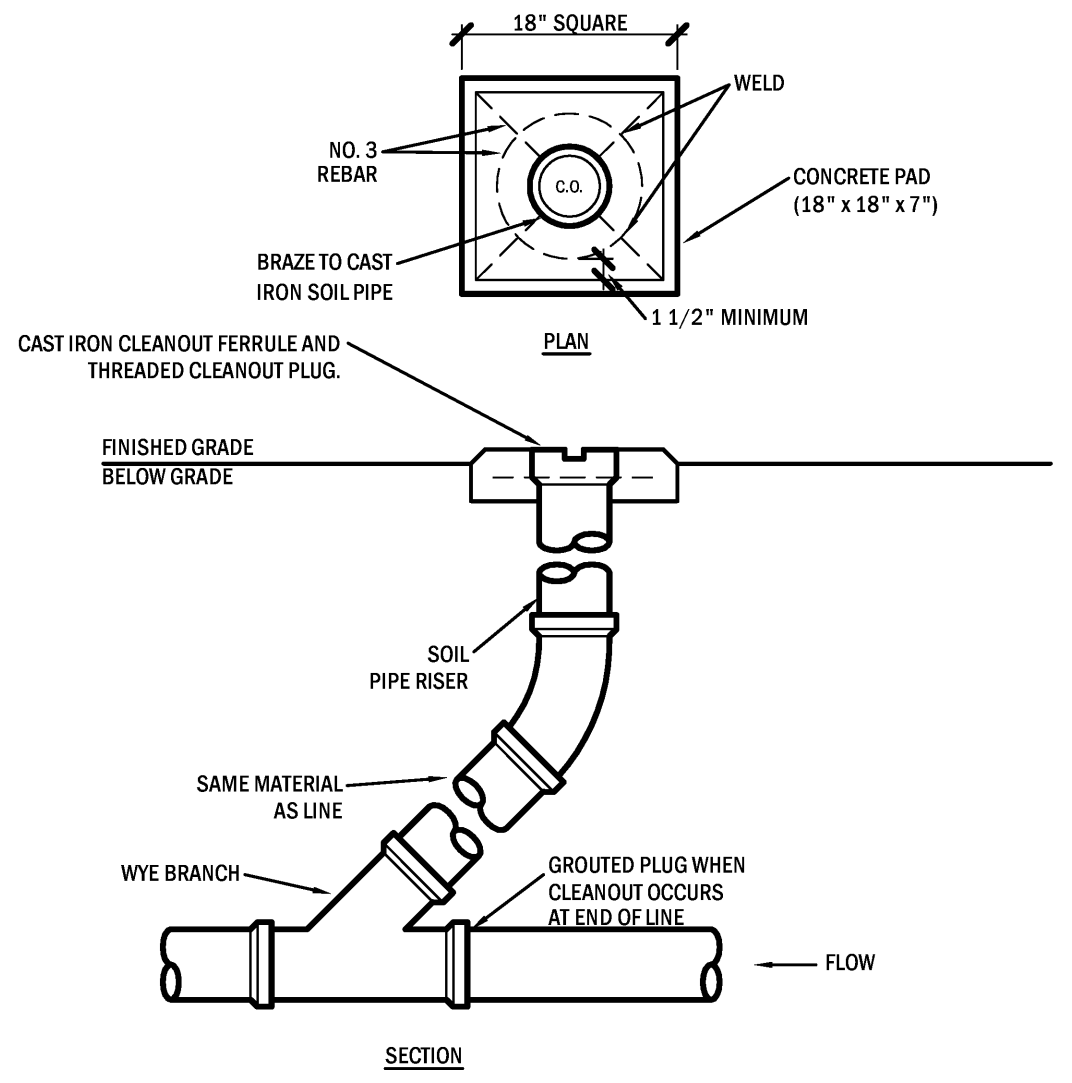
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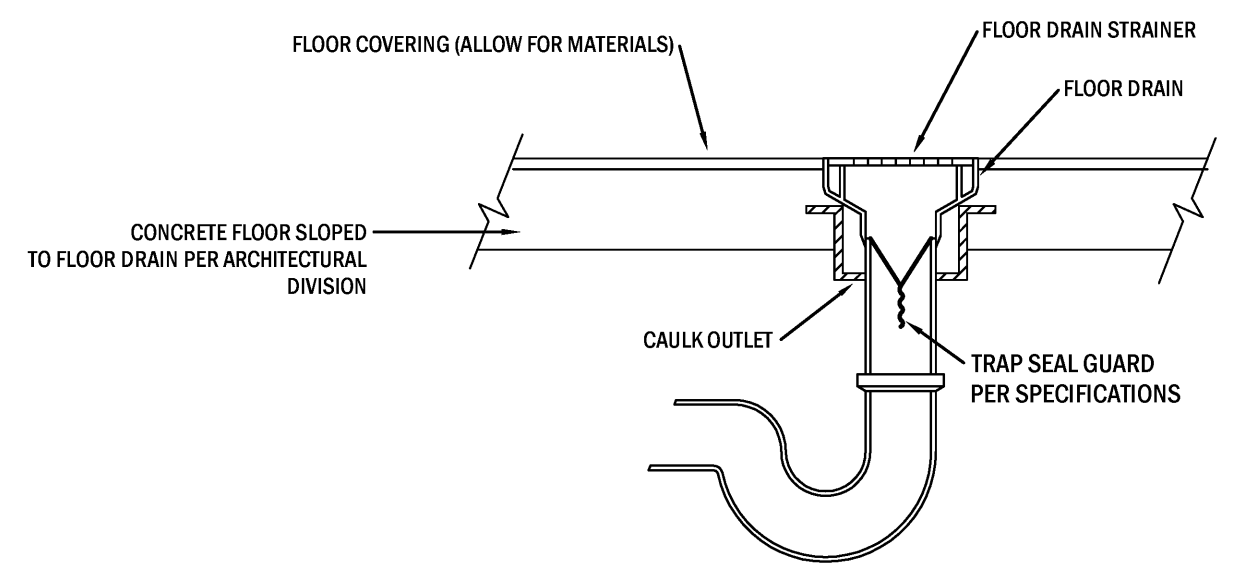
6 RESTROOM WASTE AND VENT RISER
SCALE: NTS



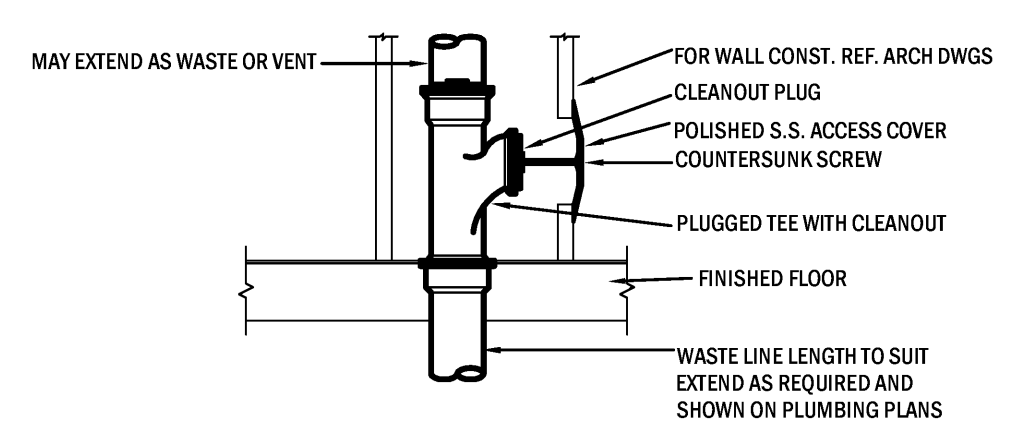
5 FLOOR CLEANOUT DETAIL
SCALE: NTS



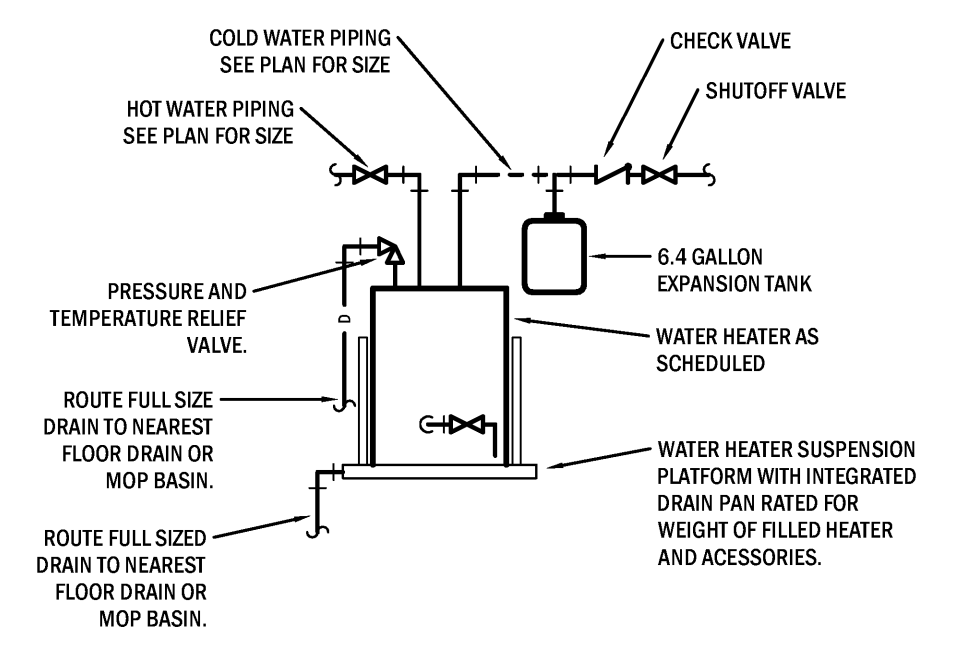
4 FINISHED GRADE CLEANOUT DETAIL
SCALE: NTS



3 FLOOR DRAIN DETAIL
SCALE: NTS



2 WALL CLEANOUT DETAIL
SCALE: NTS



1 SUSPENDED WATER HEATER DETAIL
SCALE: NTS

MARK	MANUFACTURER	MODEL NO.	TYPE	GALLON CAP.	GPH @ 100°F	INPUT KW	OUTPUT KW	VOLT/PH	ACCESSORIES
WH1	BRADFORD WHITE	LE140L3-3	ELEC	40	21	5.0	5.0	208/1	PTRV

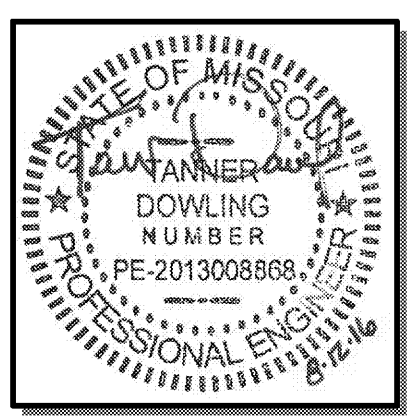
ABBREVIATIONS:
PTRV - PRESSURE & TEMPERATURE RELIEF VALVE
CV - CONCENTRIC VENT KIT

TYPE	SIZE	MATERIAL	FITTINGS		LABEL COLOR	
			MATERIAL	TYPE	BKG	TEXT
DOMESTIC COLD WATER ABOVE GRADE	ALL	TYPE L COPPER TUBING	WC	SL	BLUE	WHITE
DOMESTIC HOT WATER ABOVE GRADE	ALL	TYPE L COPPER TUBING	WC	SL	RED	WHITE
DOMESTIC WATER BELOW GRADE	ALL	TYPE K COPPER TUBING	WC	SL	--	--
DOMESTIC WATER BELOW GRADE	ALL	SCHEDULE 40 PVC	PVC	SW	--	--
DWV PIPING ABOVE GRADE	ALL	SCHEDULE 40 DWV PVC	DWV	SW	--	--
DWV PIPING BELOW GRADE	ALL	SCHEDULE 40 DWV PVC	DWV	SW	--	--
TEMPERATURE AND PRESSURE RELIEF	ALL	TYPE M COPPER	DWV/WC	DWV	--	--
CONDENSATE DRAIN	ALL	SCHEDULE 40 PVC	DWV	SW	--	--
REFRIGERANT PIPING	ALL	ACR COPPER TUBING - TYPE L	WC	BZ	ORANGE	BLACK

ABBREVIATIONS:
BF - BUTT FUSION
BKG - BACKGROUND
BZ - BRAZED
CI - CAST IRON
CR - CRIMPED
DWV - DRAINAGE WASTE AND VENT
FSFL - FORGED STEEL FLANGES
MAT - MATERIAL
MI - MALLEBLE IRON
MPE - MOLDED POLYETHYLENE
NH - NO HUB
RS - RESIN SOCKET
SL - SOLDERED
SW - SOLVENT WELD
TH - THREADED
WC - WROUGHT COPPER
WE - WELDED
WF - WELDED AND FLANGED
WSFL - WROUGHT STEEL FITTINGS
WCSL - WROUGHT CAST FLANGES

MARK	DESCRIPTION	MANUFACTURER	MODEL	OPTIONS AND ACCESSORIES	PIPING CONNECTION SIZES				NOTES
					COLD	HOT	WASTE	VENT	
1	HANDICAP FLUSH TANK WATER CLOSET	AMERICAN STANDARD	231BA.104	ELONGATED BOWL, WHITE, OLSONITE #95 OPEN FRONT SEAT, SUPPLY AND STOPS, 1.28 GPF, EPA WATERSENSE	0.5"	--	4"	2"	2,4
2	FLUSH TANK WATER CLOSET	AMERICAN STANDARD	211CA.104	ELONGATED BOWL, WHITE, OLSONITE #95 OPEN FRONT SEAT, SUPPLY AND STOPS, 1.28 GPF, EPA WATERSENSE	0.5"	--	4"	2"	2
3	WALL HUNG, SIPHON JET URINAL	AMERICAN STANDARD	6561.017	VITREOUS CHINA, SIPHON JET, 0.75" TOP SPUD, 2" OUTLET, SQUARE TUBE STRUCTURAL WALL CARRIER, SLOAN 186 FLUSH VALVE	0.75"	--	2"	1.5"	1,2
4	OVAL DROP IN LAVATORY	AMERICAN STANDARD	0476.028	WHITE, TRAP, TAILPIECE, HANDI LAV-GUARD ADA INSULATION KIT WHERE EXPOSED	--	--	2"	1.5"	1,2,3
	LAVATORY FAUCET	DELTA	501LF-WFMPU	CHROME, ESCUTCHEONS, SUPPLIES, AND STOPS	0.5"	0.5"	--	--	2
	SHOWER	AKER	KDS-3636	CURTAIN ROD	--	--	2"	1.5"	2,3
	SHOWER HEAD AND VALVE	DELTA	T-13220/RP38357	PRESSURE BALANCED MIXING VALVE, TEMPERATURE CONTROL, ALL PARTS REPLACEABLE FROM FRONT OF VALVE, ADJUSTABLE TEMPERATURE LIMIT, FULL BODY SPRAY SHOWERHEAD.	0.5"	0.5"	--	--	1,2,4
	HANDICAP ACCESSIBLE, DUAL LEVEL DRINKING FOUNTAIN	ELKAY	EZSTL8C	WHEELCHAIR ACCESSIBLE, WRAP AROUND PRESS BAR, ONE-PIECE SS TOP WITH DRAIN, SAFETY BUBBLER	0.5"	--	2"	1.5"	1,2,4
	MOP BASIN	FIAT	MSB-242410	MOLDED STONE, 3" DRAIN, SS STRAINER, 889-CC MOP HANGER, SS WALL GUARD	--	--	2"	1.5"	2,3
	LAVATORY FAUCET	FIAT	830-AA	INTEGRAL STOPS, HOSE THREAD ON SPOUT	0.5"	0.5"	--	--	2

NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.
2. PROVIDE ACCESSORIES TO SUPPORT FIXTURE AS RECOMMENDED BY MANUFACTURER.
3. SINK FAUCET HOLE OPENINGS SHALL MATCH FAUCET.
4. INSTALL ACCESSORIES AS RECOMMENDED BY MANUFACTURER FOR ADA COMPLIANCE.



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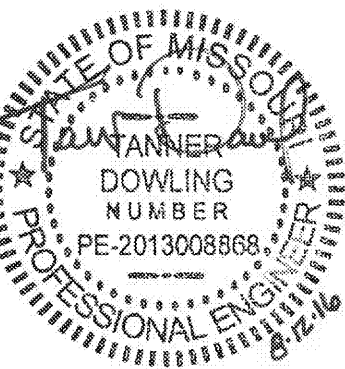
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SECTION 22000 – PLUMBING SPECIFICATIONS

A - GENERAL		
1. SCOPE OF WORK:	1.3. PIPING SHALL BE AS NOTED IN PIPING MATERIAL SCHEDULE	14. WATER CLOSETS, URINALS, LAVATORIES
1.1. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL PLUMBING PIPING WHERE REQUIRED. COMPLETE AS CALLED FOR OR INDICATED ON THE PLANS AND SPECIFICATIONS ACCORDING TO ALL LOCAL CODES, WITH THESE PLANS AS A MINIMUM REQUIREMENT.	1.4. IF ALLOWED LOCALLY, CONTRACTOR SHALL HAVE OPTION TO PROVIDE ALTERNATE PRICING FOR PEX PIPING AS MANUFACTURED AND TESTED ACCORDING TO NATIONAL CONSENSUS STANDARDS: ASTM F 876, F 877, AWWA C904 AND CSA B137.5. MAY BE USED. NO JOINTS UNDER SLAB. PIPES AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, SHALL HAVE NO LEAD CONTENT.	14.1. WATER CLOSETS SHALL BE PROVIDED WITH FLUSH LEVERS ON THE PROPER SIDE PER THE FLOOR PLAN TO MEET ALL ADA REQUIREMENTS.
2. REQUIREMENTS:	1.4.1. PEX CONNECTIONS SHALL BE PER THE TWO APPROVED STANDARD SPECIFICATIONS FOR PEX CONNECTIONS: ASTM F 1807 AND ASTM F 1960. BOTH REFERENCE MECHANICAL INSERT FITTINGS. THE CRIMP FITTINGS SPECIFIED IN ASTM F1807 ARE THE MOST WIDELY USED. PEX SHALL NOT BE JOINED BY SOLVENT CEMENT OR HEAT FUSION METHODS.	14.2. MANUFACTURERS:
2.1. GENERAL CONTRACTOR HEREINAFTER ABBREVIATED G/C SHALL MEAN THE PERSON OR COMPANY AND THEIR SUBCONTRACTORS WHO ENTER INTO CONTRACT WITH THE OWNER TO PERFORM THE GENERAL DIVISION WORK.	1.5. SOLDERED JOINTS SHALL BE DONE IN ACCORDANCE WITH ASTM B 828 WITH A LEAD FREE SOLDER THAT CONFORMS WITH ASTM B 32 AND FLUX THAT CONFORMS WITH ASTM B 813. LEAD FREE SHALL MEAN A CHEMICAL COMPOSITION EQUAL TO OR LESS THAN 0.2 PERCENT LEAD.	14.2.1. AMERICAN STANDARD, CRANE, KOHLER, TOTO, ZURN, GERBER
2.2. PLUMBING CONTRACTOR HEREINAFTER ABBREVIATED P/C SHALL MEAN THE PERSON OR COMPANY AND THEIR SUBCONTRACTORS WHO ENTER INTO CONTRACT WITH THE G/C TO PERFORM THE MECHANICAL DIVISION WORK.	1.6. PIPES PASSING THROUGH CONCRETE OR OTHER CORROSIVE MATERIALS SHALL BE PROTECTED FROM EXTERNAL CORROSION BY A PROTECTIVE SHEATHING OR WRAPPING OR OTHER MEANS THAT WILL WITHSTAND ANY REACTION FROM LIME OR ACID OF CONCRETE OR OTHER CORROSIVE MATERIAL. SHEATHING OR WRAPPING SHALL ALLOW FOR EXPANSION AND CONTRACTION OF PIPING TO PREVENT ANY RUBBING ACTION. MINIMUM WALL THICKNESS OF MATERIAL SHALL BE MINIMUM 0.025 INCHES.	15. SINKS
2.3. EQUIPMENT AND/OR MATERIALS MANUFACTURER HEREINAFTER ABBREVIATED E/M SHALL MEAN THE MANUFACTURER OR EQUIPMENT OR MATERIALS SPECIFIED OR REFERRED TO.	2. INSULATION:	15.1. MANUFACTURERS:
2.4. CONTRACTOR SHALL VERIFY SITE UTILITIES AND SANITARY INVERT ELEVATIONS PRIOR TO ANY WORK.	2.1. WATER PIPING TO BE RUN ON WARM SIDE OF EXTERIOR WALLS, WHEN NOT IN SLAB.	15.1.1. ELKAY, JUST
2.5. ALL PLUMBING INSTALLATIONS SHALL CONFORM WITH THE LOCAL PLUMBING CODE AS MENTIONED AT THE CODE/PROJECT DATA AND SUBSEQUENT AMENDMENTS THERETO EXCEPT WHEREIN THE SAME IS IN CONFLICT WITH EXISTING REGULATIONS AND THE AUTHORITY HAVING JURISDICTION.	2.2. INSULATE ALL HOT AND COLD WATER AND ROOF DRAIN PIPING.	16. MOP/JANITOR BASINS
2.6. PIPING LAYOUTS ARE DIAGRAMMATIC AND INTEND TO SHOW GENERAL ARRANGEMENT, SIZE AND CAPACITY. ALL OFFSETS ARE NOT NECESSARILY SHOWN. CONTRACTOR SHALL ARRANGE AND COORDINATE THE WORK, FURNISH NECESSARY OFFSETS, VALVES VENTS AND FITTINGS TO AVOID CONFLICTS WITH OTHER MECHANICAL AND ELECTRICAL SERVICES AND WITH STRUCTURAL AND ARCHITECTURAL ELEMENTS.	2.3. INSULATE ALL HOT AND COLD WATER PIPE IN EXTERIOR WALLS.	16.1. MANUFACTURERS:
2.7. LOCATIONS OF EQUIPMENT PIPING, AND OTHER MECHANICAL WORK ARE INDICATED DIAGRAMMATICALLY BY PLUMBING DRAWINGS. DETERMINE EXACT LOCATIONS ON JOB. SUBJECT TO STRUCTURAL CONDITIONS, WORK OF OTHER CONTRACTORS, ACCESS REQUIREMENTS FOR INSTALLATION AND MAINTENANCE, AND TO APPROVAL OF A/E	2.4. INSULATION SHALL BE 0.75" ARMSTRONG AP ARMAFLX ELASTOMERIC PIPE INSULATION WITH MINUS 50 DEG F TO PLUS 220 DEG F OPERATING TEMPERATURE RANGE AND AVERAGE THERMAL CONDUCTIVITY NOT EXCEED 0.27 BTU/HR AT 75 DEG F MEAN TEMPERATURE. TO GREATEST EXTENT POSSIBLE APPLY INSULATION WITHOUT LONGITUDINAL JOINT BY SLIPPING INSULATION OVER PIPING. SEAL ALL SEAMS AND BUTT JOINTS WITH ARMSTRONG 520 ADHESIVE. THICKNESS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS USING A MAXIMUM SEVERITY OF 90 DEG F AND 80 PERCENT RA.	16.1.1. ACORN, CRANE, STERN-WILLIAMS, FIAT
2.8. IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO REVIEW THE PLUMBING PLANS TO BECOME FAMILIAR WITH THE FULL SCOPE OF WORK.	2.5. EXPANSION JOINTS, LOOPS, ANCHORS, AND GUIDES:	17. FAUCETS
2.9. DO NOT SCALE PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR DIMENSIONS. ACCURATELY LAY OUT WORK FROM DIMENSIONS INDICATED ON ARCHITECTURAL DRAWINGS UNLESS SUCH IS FOUND IN ERROR.	2.5.1. PROVIDE FOR PROPER CONTROL OF EXPANSION AND CONTRACTION OF PIPING SYSTEMS BY MEANS OF EXPANSION LOOPS, EXPANSION JOINTS, OR BALL JOINTS. PIPING FROM MAINS TO EQUIPMENT, BRANCHES, AND RISERS SHALL BE PROVIDED WITH SWING, SWIVEL JOINTS, OR OFFSETS TO RELIEVE STRESSES DUE TO EXPANSION OR CONTRACTION OF PIPING.	17.1. MANUFACTURERS:
2.10. FINAL ACCEPTANCE OF WORK SHALL BE SUBJECT TO THE CONDITION THAT ALL SYSTEMS, EQUIPMENT, APPARATUS, AND APPLIANCES OPERATE SATISFACTORILY AS DESIGNED AND INTENDED. WORK SHALL INCLUDE REQUIRED ADJUSTMENT OF SYSTEMS AND CONTROL EQUIPMENT AND ALL REQUIRED PROGRAMMING INSTALLED UNDER THIS SPECIFICATION.	3. WASTE AND VENT PIPING:	17.1.1. CHICAGO, DELTA, AMERICAN STANDARD, MOEN
2.11. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AS REQUIRED BY PHASING OF CONSTRUCTION FOR INTENDED USE BY THE OWNER AS APPLICABLE.	3.1. PIPING SHALL BE ASTM D 2665 SCHEDULE 40 PVC PLASTIC WITH FITTINGS INSTALLED AS RECOMMENDED BY THE MANUFACTURER.	FIRE SPRINKLER REVISION:
2.12. THE INTENT OF THESE SPECIFICATIONS IS TO ALLOW AMPLE OPPORTUNITY FOR P/C TO USE HIS INGENUITY AND ABILITIES TO PERFORM THE WORK TO HIS AND THE OWNER'S BEST ADVANTAGE, AND TO PERMIT MAXIMUM COMPETITION IN BIDDING ON STANDARDS OF MATERIALS AND EQUIPMENT REQUIRED.	3.1.1. USE PVC SOLVENT CEMENT THAT HAS A VOC CONTENT OF 510 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24). USE ADHESIVE PRIMER THAT HAS A VOC CONTENT OF 550 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).	18.1. THE EXISTING BUILDING HAS A SPRINKLER SYSTEM THAT SHALL BE MODIFIED TO PROVIDE ADEQUATE PROTECTION FOR THE PROPOSED EXPANSION. THE EXISTING SYSTEM SHALL BE REVIEWED BY A LICENSED PROFESSIONAL ENGINEER TO DETERMINE THE EXTENT OF MODIFICATIONS NECESSARY. WHERE MODIFICATIONS ARE REQUIRED, THE SPRINKLER SYSTEM SHALL BE DESIGNED BY AND BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED BY THE APPLICABLE STATE. THE FIRE SPRINKLER SYSTEM CONTRACTOR SHALL PROVIDE DRAWINGS FOR A FIRE SPRINKLER SYSTEM PER NFPA-13 WHICH ARE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE APPLICABLE STATE. ALL PIPING FROM THE "POINT OF SERVICE" INCLUDING UNDERGROUND USED FOR SPRINKLER OR STANDPIPE SYSTEM MUST BE INSTALLED BY A REGISTERED SPRINKLER CONTRACTOR. SHOP DRAWINGS FOR SPRINKLER SYSTEM, UNDERGROUND WATER SUPPLY, AND FIRE ALARM SYSTEM SHALL BE SUBMITTED FOR A SEPARATE REVIEW AND APPROVAL.
2.13. MATERIAL AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE FIRST CLASS QUALITY, NEW, UNUSED, AND WITHOUT DAMAGE.	3.2. ALL WASTE AND VENT PIPING ABOVE GRADE IN A RETURN AIR PLENUM SPACE SHALL BE HUBBLESS CAST-IRON SOIL PIPE AND FITTINGS.	
3. COMMON INSTALLATION REQUIREMENTS	3.3. CONNECT TO THE CITY SEWER AS REQUIRED AND APPROVED BY LOCAL AUTHORITY.	
3.1. INSTALL PIPING TO PERMIT VALVE SERVICING.	4. VACUUM BREAKERS:	
3.2. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.	4.1. WHERE SHOWN ON THE DRAWINGS, OR AS REQUIRED, SHALL BE ANGLE PATTERN WITH BUILT-IN LIFT TYPE CHECK VALVE.	
3.3. INSTALL PIPING TO ALLOW APPLICATION OF INSULATION.	5. VALVES:	
3.4. SELECT SYSTEM COMPONENTS WITH PRESSURE RATING EQUAL TO OR GREATER THAN SYSTEM OPERATING PRESSURE.	5.1. PLUMBING CONTRACTORS SHALL FURNISH ALL VALVES OF ONE MANUFACTURER, FIGURE NUMBER AND TYPE THROUGHOUT THE ENTIRE INSTALLATION OF THE WORK, UNLESS OTHERWISE SPECIFIED. THE FOLLOWING NUMBERS ARE FROM THE NIBCO CATALOG. VALVES OF REPUTABLE MANUFACTURERS, SUCH AS CRANE CO., WATTS REGULATOR CO., AND WALWORTH CO. WILL BE ACCEPTABLE ALTERNATIVES, WHERE SHOWN TO BE EQUAL TO THOSE SPECIFIED. INSTALL GATE VALVES AT EACH EQUIPMENT CONNECTION.	
3.5. INSTALL EQUIPMENT TO ALLOW MAXIMUM POSSIBLE HEADROOM UNLESS SPECIFIC MOUNTING HEIGHTS ARE NOT INDICATED.	6. FLOW CONTROL VALVES:	
3.6. INSTALL EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS IN EXPOSED INTERIOR SPACES, UNLESS OTHERWISE INDICATED.	6.1. 2 INCH VALVES AND SMALLER: FLOW DESIGN INC. AUTOFLOW MODEL AC AUTOMATIC FLOW CONTROL VALVE, BRASS BODY, 400 PSI WP AT 250 DEG F WITH ELEC/LESS NICKEL AND STEEL WEAR SURFACES WITH STAINLESS STEEL SPRING, BUILT-IN STRAINER, PRESSURE/TEMPERATURE PORTS AND SHUT-OFF VALVE AND TEFLON PACKING. PROVIDE COMPLETE WITH POLYURETHANE INSULATION COVER.	
3.7. INSTALL PLUMBING EQUIPMENT TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS. CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM INTERFERENCE TO OTHER INSTALLATIONS. EXTEND GREASE FITTINGS TO ACCESSIBLE LOCATIONS.	7. UNIONS:	
3.8. INSTALL EQUIPMENT TO ALLOW RIGHT OF WAY FOR PIPING INSTALLED AT REQUIRED SLOPE.	7.0. PROVIDE UNIONS AT EACH EQUIPMENT CONNECTION, PROVIDE PROPER DIELECTRIC UNIONS WHERE CONNECTIONS ARE MADE BETWEEN MATERIALS OF DISSIMILAR METALS.	
3.9. DAMAGE AND TOUCHUP: REPAIR MARRED AND DAMAGED FACTORY-PAINTED FINISHES WITH MATERIALS AND PROCEDURES TO MATCH ORIGINAL FACTORY FINISH.	TRAP SEALS:	
4. PIPING SYSTEMS TESTING:	8.1. SEALS SHALL BE PREASSEMBLED AND HAVE ABS PLASTIC HOUSING, NEDPRENE RUBBER DIAPHRAGM WITH 2 SOFT RUBBER SEALING GASKETS. SEALS SHALL BE ASSE-1072 AF-GW FLOOR RATED.	
4.1. PIPING SHALL BE TESTED IN ACCORDANCE WITH ASTM TESTING REQUIREMENTS FOR MATERIAL LISTED IN PIPING B. MATERIAL SCHEDULE AND IN ACCORDANCE WITH ALL REQUIREMENTS OF LOCAL JURISDICTION. TEST PRESSURE SHALL BE 50 PSI ABOVE SYSTEM OPERATING PRESSURE AND SHALL BE HELD FOR A DURATION OF 4 HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED OR REPLACED.	8.2. MANUFACTURERS:	
5. PAINTING OF EQUIPMENT AND PIPING	8.2.1. SURE SEAL	
5.1. EQUIPMENT AND MATERIALS EXPOSED TO INTERIOR DRY ENVIRONMENT SHALL HAVE A MINIMUM OF ONE (1) PRIMER AND ONE (1) FINISH COAT. EQUIPMENT AND MATERIALS MOUNTED IN EXTERIOR LOCATION SHALL HAVE A MINIMUM OF ONE (1) PRIMER AND TWO (2) FINISH COATS WITH TOTAL THICKNESS OF AT LEAST 5 MILS. FINISH COAT COLORS IN FINISH AREAS SHALL BE AS SELECTED BY A/E.	CLEANOUTS:	
6. EQUIPMENT IDENTIFICATION	9.1. PROVIDE CLEANOUTS FULL SIZE OF SOIL PIPE UP TO AND INCLUDING 4-INCH ID. PROVIDE CLEANOUTS AT BASE OF STACKS, END OF SEWER MAIN, AND AT ELBOWS OVER 45 DEGREES AND IN ANY HORIZONTAL RUN OF PIPING EXCEEDING 100 FEET AT 50-FOOT INTERVALS. BLOCK OUT FLOOR PRIOR TO POURING OF CONCRETE AND THEN LEVEL CLEANOUT AFTER POUR IS SET, REMOVE FORMS, AND GROUT LEVEL. INSTALL CLEANOUTS SO THEY ARE ACCESSIBLE BY EXTENDING THEM THROUGH WALLS, FLOORS, AND ABOVE OR TO OUTSIDE OF BUILDING, AS REQUIRED. CLEANOUTS SHALL BE AS FOLLOWS:	
6.1. METAL LABELS FOR EQUIPMENT. MATERIAL AND THICKNESS - BRASS-0.022", STAINLESS STEEL-0.025", ALUMINUM-0.032". LABELS SHALL HAVE PREDRILLED OR STAMPED HOLES FOR ATTACHMENT. LENGTH AND WIDTH MAY VARY FOR REQUIRED LABEL CONTENT BUT NOT LESS THAN 2.5" X 0.75". MINIMUM LETTER SIZE NOT LESS THAN 0.5". ATTACH TO EQUIPMENT BY FASTENERS OR ADHESIVE BUT LABEL SHALL NOT COMPROMISE THE OPERATION OF LABELED EQUIPMENT.	9.1.1. WALL TYPE FINISHED AREAS: J.R. SMITH NO. 4532 CAST IRON CLEANOUT "T" WITH CLEANOUT PLUG AND STAINLESS STEEL ACCESS COVER.	
6.2. PLASTIC LABELS SHALL FOLLOW SAME GUIDELINES AS METAL LABELS BUT SHALL BE PLASTIC WITH MECHANICAL ENGRAVING AND BE MINIMUM OF 1/16" THICK. LABELS SHALL BE WHITE WITH BLACK LETTERING AND SHALL WITHSTAND TEMPERATURES UP TO 160° F.	9.1.2. WALL TYPE UNFINISHED AREAS: J.R. SMITH NO. 4512 CAST IRON CLEANOUT "T" WITH COUNTERSUNK PLUG.	
6.3. LABEL CONTENT: INCLUDE EQUIPMENTS DRAWING DESIGNATION OR UNIQUE EQUIPMENT NUMBER.	9.1.3. FLOOR TYPE HARD FLOORING AREAS: J.R. SMITH 4023 WITH ROUND CHROME PLATED SCORIALIZED COVER.	
7. PIPING IDENTIFICATION	9.1.4. FLOOR TYPE CARPET AREAS: J.R. SMITH 4023-X WITH NICKEL BRONZE TOP AND CARPET CLAMP.	
7.1. LABELS SHALL BE PREPRINTED, COLOR CODED, WITH LETTERING INDICATING SERVICE AND FLOW DIRECTION. LABELS SHALL BE PRINTED PLASTIC WITH CONTACT-TYPE, PERMANENT ADHESIVE BACKING. LABEL TEXT SHALL BE A MINIMUM OF 1.5"	9.1.5. FLOOR TYPE CARPET AREAS: J.R. SMITH 4023-Y WITH NICKEL BRONZE TOP AND CARPET MARKER.	
8. WARRANTY	9.1.6. EQUIVALENT CLEANOUTS BY WADE, WATTS, ZURN, JOSAM OR JONESPEC WILL BE ACCEPTABLE.	
8.1. P/C WARRANTIES TO OWNER AND ARCHITECT THE QUALITY OF MATERIALS, EQUIPMENT, WORKMANSHIP, AND OPERATION OF EQUIPMENT PROVIDED UNDER THIS SPECIFICATION DIVISION FOR A PERIOD OF ONE (1) YEAR FROM AND AFTER DATE OF SUBSTANTIAL COMPLETION OF BUILDING AND ACCEPTANCE OF MECHANICAL SYSTEMS BY OWNER.	9.1.7. VERIFY FLOOR MATERIALS USED FROM ARCHITECTURAL PLANS.	
8.2. WHERE MANUFACTURERS' WARRANTIES EXPIRE DURING THE ONE (1) YEAR WARRANTY PERIOD, ONE (1) YEAR WARRANTY PERIOD IS DEFINED AS YEAR AFTER DATE OF SUBSTANTIAL COMPLETION. P/C SHALL INCLUDE PROVISIONS FOR EXTENDING WARRANTY FOR THE FULL ONE (1) YEAR PERIOD AND SHALL COST FOR WARRANTY EXTENSION IN HIS BASE BID.	10. WATER HAMMER ARRESTORS: (SHOCK ABSORBERS)	
8.3. P/C WARRANTIES TO OWNER AND ARCHITECT THAT ON RECEIPT OF WRITTEN NOTICE FROM EITHER OF THEM WITHIN ONE (1) YEAR WARRANTY PERIOD FOLLOWING DATE OF ACCEPTANCE. ALL DEFECTS THAT HAVE APPEARED IN MATERIALS AND/OR WORKMANSHIP SHALL BE PROMPTLY CORRECTED TO CONDITION REQUIRED BY CONTRACT DOCUMENTS AT P/C'S EXPENSE.	10.1. MANUFACTURERS:	
8.4. THE ABOVE WARRANTY SHALL NOT SUPERSEDE ANY SEPARATELY STATED WARRANTY OR OTHER REQUIREMENTS BY LAW.	10.1.1. AMTROL, JOSAM, MIFAB, SIOUX CHIEF, JAY R SMITH, WATTS, ZURN, TYLER	
8.5. IF THE ARCHITECT'S SPECIFICATION INCLUDES A WARRANTY THAT EXCEEDS THE ABOVE WARRANTY REQUIREMENTS, THE ARCHITECT'S WARRANTY SHALL TAKE PRECEDENCE.	10.2. SIZED AND INSTALLED PER MANUFACTURER INSTRUCTIONS. REGARDLESS IF SHOWN ON THE PLANS OR NOT EACH RESTROOM GROUP IS REQUIRED TO HAVE END-OF-LINE ARRESTOR.	
B - PRODUCTS	11. WATER HEATER:	
1. WATER PIPING:	11.1. MANUFACTURERS:	
1.1. CONNECT TO THE CITY WATER MAIN AS REQUIRED AND APPROVED BY THE CITY AND WHERE APPLICABLE VERIFY EXISTING WATER UTILITY IS NOTIFIED OF NEW ADDITIONS TO WATER SERVICE DEMAND FOR NEW RENOVATIONS.	11.1.1. AO SMITH, BRADFORD WHITE, LOCHINVAR, STATE, FVI INDUSTRIES	
1.2. METER TO BE ADEQUATE SIZE FOR DEMAND INDICATED ON THE DRAWINGS.	11.2. PROVIDE WATER HEATERS AS SPECIFIED AND AS INDICATED ON CONSTRUCTION DRAWINGS. WATER HEATERS SHALL MEET ASHRAE 90A-1 980 AND SHALL BE ASME RATED. GAS WATER HEATERS SHALL BE CSA CERTIFIED. ELECTRIC WATER HEATERS SHALL BE UL LISTED.	
	12. EXPANSION TANK:	
	12.1. MANUFACTURERS:	
	12.1.1. AMTROL, BELL & GOSSET, TACO	
	13. FLOOR DRAINS:	
	13.1. MANUFACTURERS:	
	13.1.1. J.R. SMITH, ZURN	
	13.2. TYPE A: J.R. SMITH 2010-A	

PLUMBING SYMBOLS	
---	DOMESTIC COLD WATER
----	DOMESTIC HOT WATER
-----	DOMESTIC HOT WATER RETURN
W	WASTE PIPING
V	VENT PIPING
D	DRAIN
G	NATURAL GAS
F	FIRE SERVICE
RD	PRIMARY ROOF DRAIN
ORD	OVERFLOW ROOF DRAIN
A	COMPRESSED AIR
O2	OXYGEN
V	VACUUM
N2O	NITROUS OXIDE
	SHUTOFF VALVE
	ROOF PIPING SUPPORT
	SHOCK ABSORBER
	WATER METER
	PRESSURE REGULATOR
	FLOW CONTROL VALVE
HB	HOSE BIBB
RHB	RECESSED HOSE BIBB
WH	WALL HYDRANT
FFCO	FLUSH FLOOR CLEANOUT
FGCO	FLUSH GRADE CLEANOUT
CO	WALL CLEANOUT
	ELBOW UP WITH SHUTOFF VALVE
	ELBOW DOWN WITH SHUTOFF VALVE
	TEE UP WITH SHUTOFF VALVE
	TEE DOWN WITH SHUTOFF VALVE
	END CAP
	FLOOR DRAIN, TYPE & SIZE
	ROOF DRAIN, TYPE & SIZE
	INDICATES CONNECTION TO EXISTING SYSTEMS
	PLUMBING EQUIPMENT
	PLUMBING FIXTURE TAG



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COMMISSION NUMBER
 15-103

NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MISSOURI

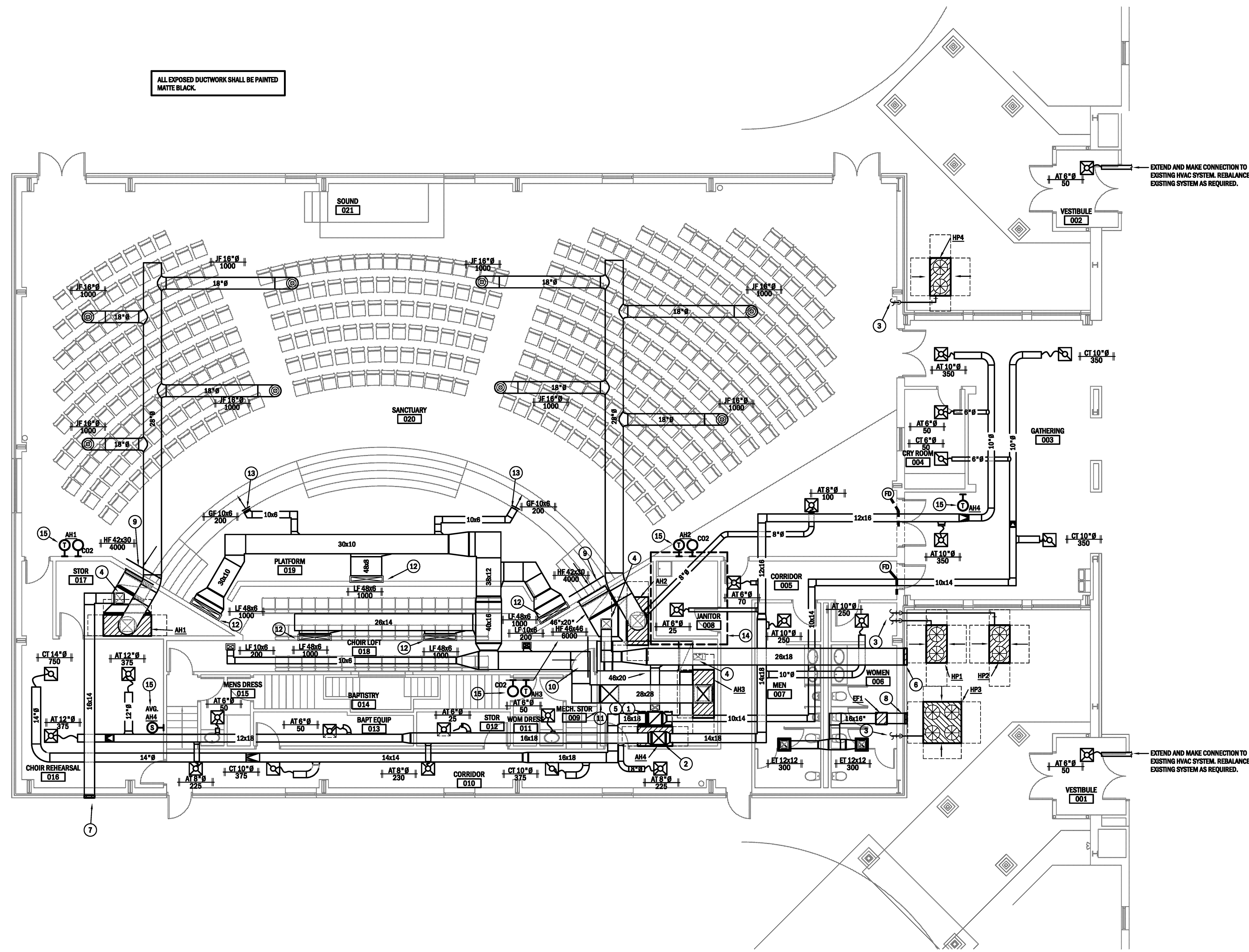
SHEET
P4

SCALE
 1/8" = 1'-0"

DATE
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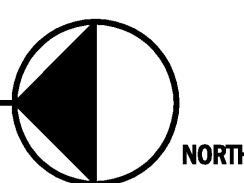


ALL EXPOSED DUCTWORK SHALL BE PAINTED MATTE BLACK.

EXTEND AND MAKE CONNECTION TO EXISTING HVAC SYSTEM. REBALANCE EXISTING SYSTEM AS REQUIRED.

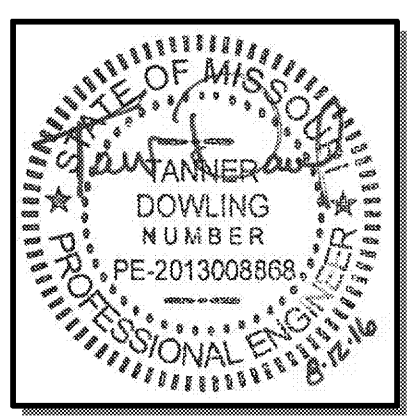
EXTEND AND MAKE CONNECTION TO EXISTING HVAC SYSTEM. REBALANCE EXISTING SYSTEM AS REQUIRED.

1 MECHANICAL PLAN
SCALE: 1/8" = 1'-0"



KEYNOTES:

- 1 20x20 RETURN AIR DUCT DOWN TO 52x21 RETURN AIR CONNECTION
- 2 20x20 SUPPLY AIR DUCT DOWN TO 14x16 SUPPLY AIR CONNECTION
- 3 ROUTE REFRIGERANT PIPING CONCEALED TO CORRESPONDING AIR HANDLER. SIZE AND INSTALL PER MANUFACTURERS RECOMMENDATIONS.
- 4 16"x14" OUTSIDE AIR DUCT DOWN. CONNECT TO RETURN AIR DUCT, PROVIDE BALANCING DAMPERS IN OUTSIDE AIR AND RETURN AIR DUCTS AND BALANCE TO 1300CFM.
- 5 14"x10" OUTSIDE AIR DUCT DOWN. CONNECT TO RETURN AIR DUCT. PROVIDE BALANCING DAMPERS IN OUTSIDE AIR AND RETURN AIR DUCTS AND BALANCE TO 660CFM.
- 6 PROVIDE 28"x18" LOUVER RATED FOR 3260CFM. MOUNT AT 18" ABOVE FINISHED GRADE. PAINT TO MATCH EXTERIOR WALL COLOR.
- 7 PROVIDE 18"x14" LOUVER RATED FOR 1300CFM. MOUNT AT 18" ABOVE FINISHED GRADE. PAINT TO MATCH EXTERIOR WALL COLOR.
- 8 PROVIDE 16" x 16" EXHAUST LOUVER RATED FOR 600CFM MOUNT AT 10" ABOVE FINISHED GRADE. MAINTAIN A 10" CLEARANCE FROM FRESH AIR INTAKES. PAINT TO MATCH EXTERIOR WALL COLOR.
- 9 MOUNT RETURN AIR GRILLE AT 25' AFF.
- 10 MOUNT RETURN AIR GRILLE AT 17' AFF.
- 11 28"x28" SUPPLY DUCT DOWN. ROUTE ALL DOWNSTREAM DUCT WORK UNDER PLATFORM.
- 12 INSTALL GRILLE IN STAGE FLOOR
- 13 INSTALL GRILLE IN FACE OF STAGE STAIRS
- 14 MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR TO VERIFY THAT NO DUCT RUNS OVER THE ELECTRICAL PANELS
- 15 PROVIDE CLEAR LOCKING COVER FOR CONTROL UNITS



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NEW SANCTUARY
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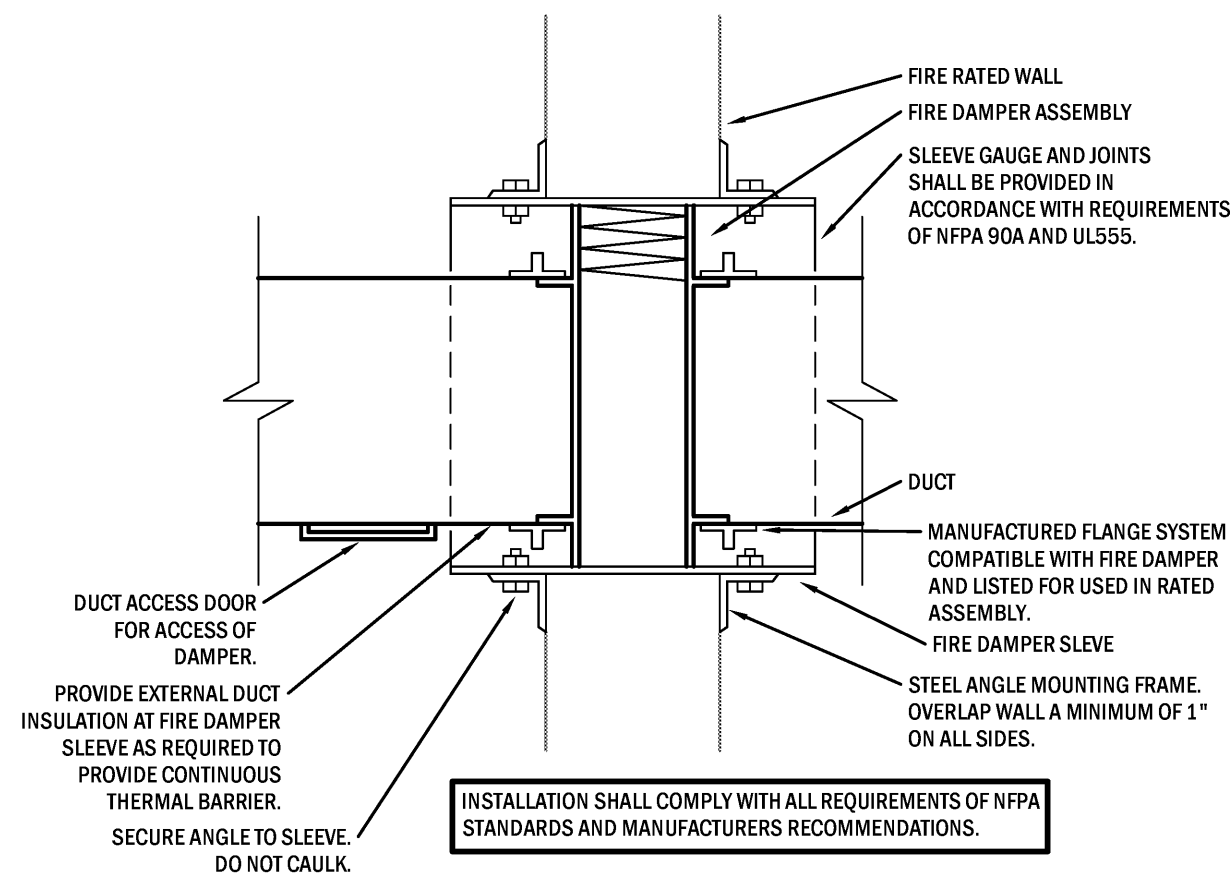
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SCALE
1/8" = 1'-0"

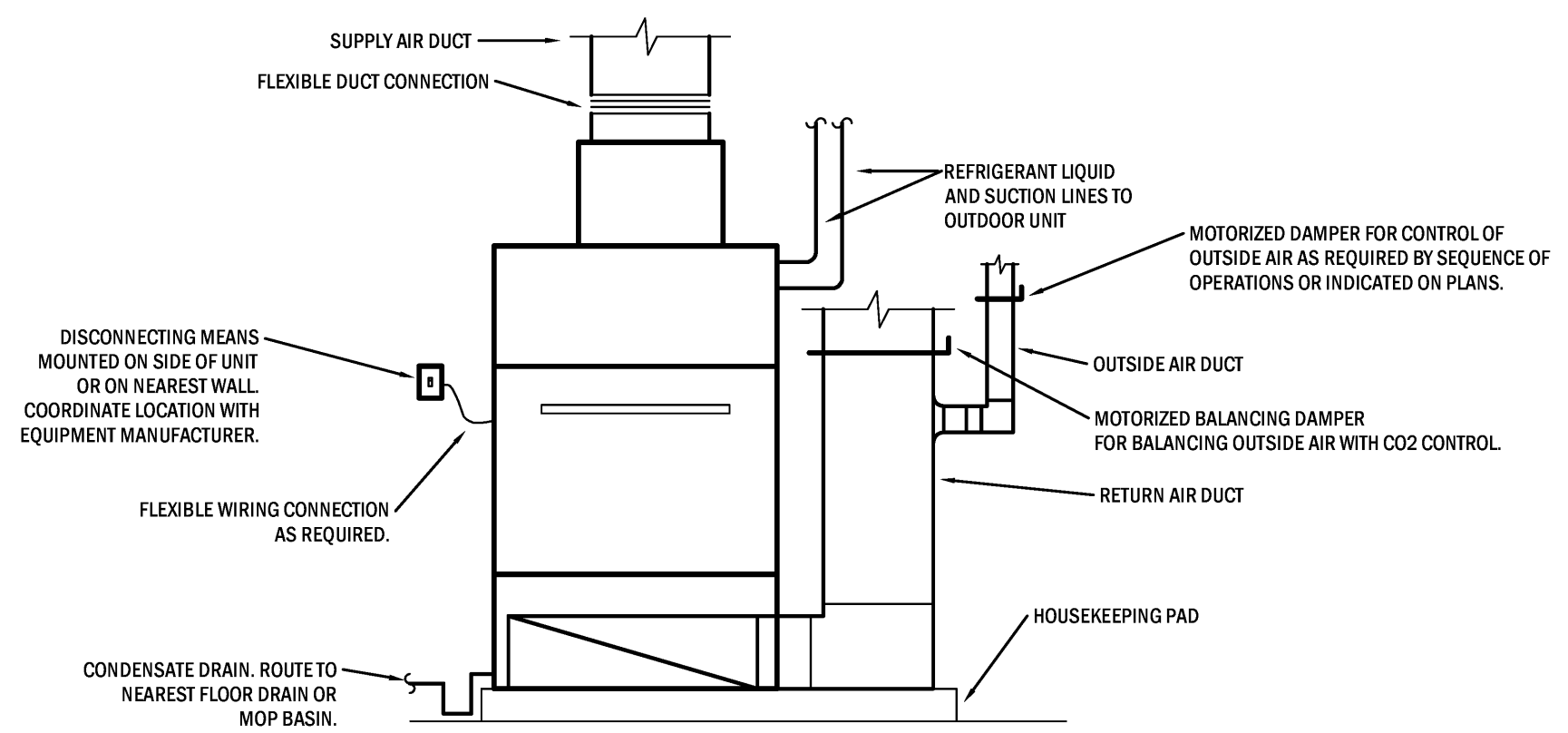
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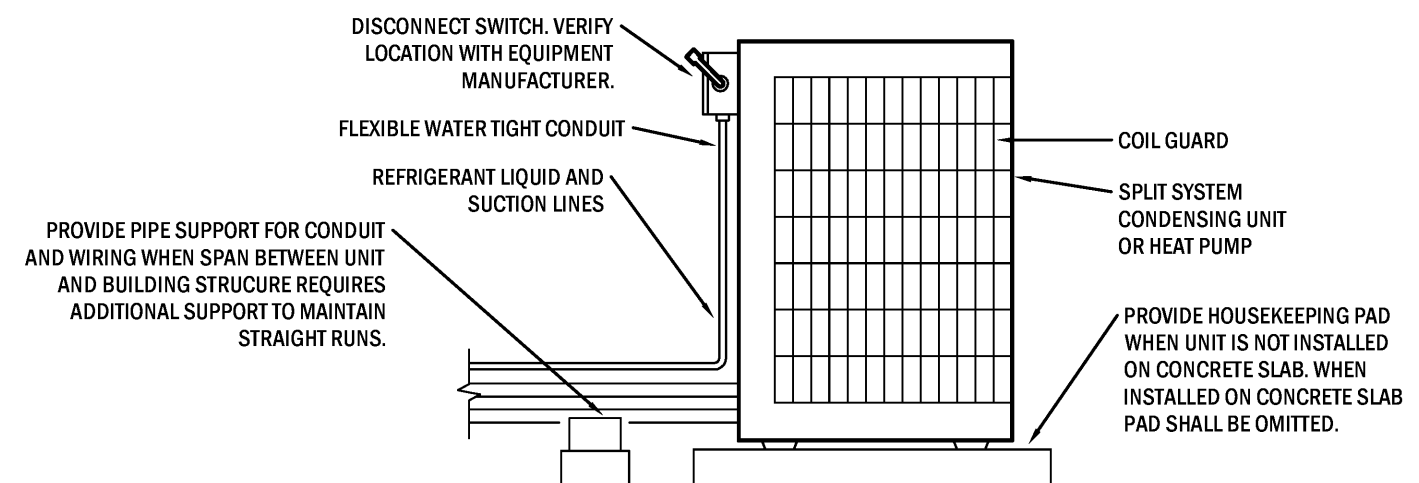
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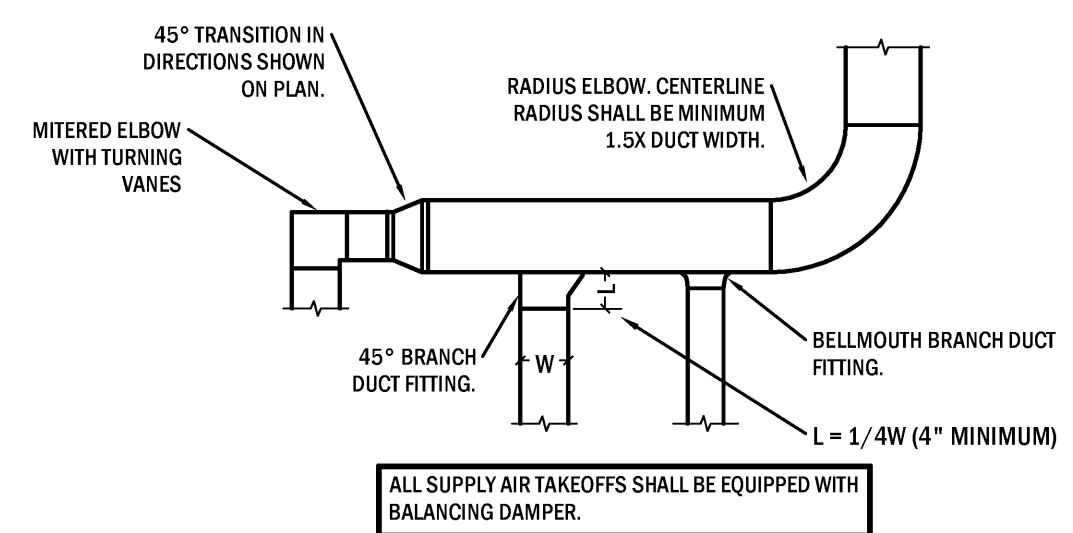
7 FIRE DAMPER DETAIL
SCALE: NTS



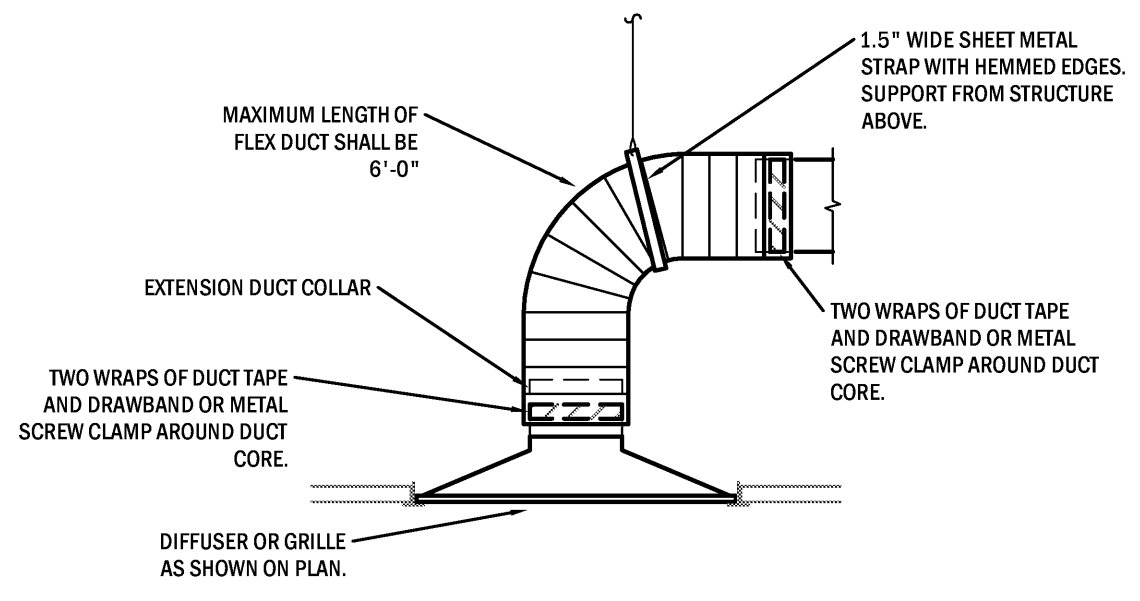
6 AIR HANDLER DETAIL
SCALE: NTS



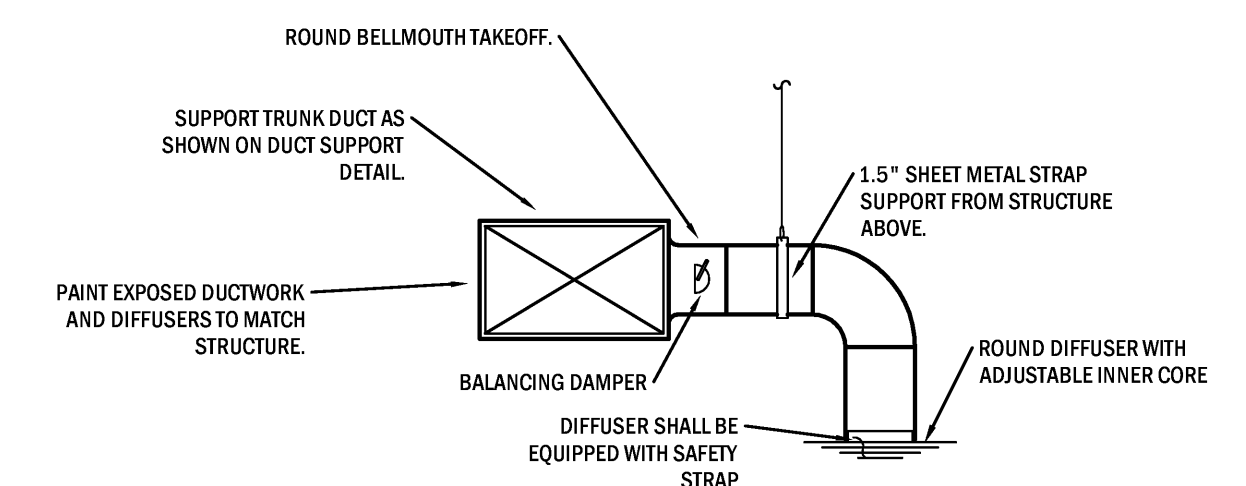
5 CONDENSING UNIT DETAIL
SCALE: NTS



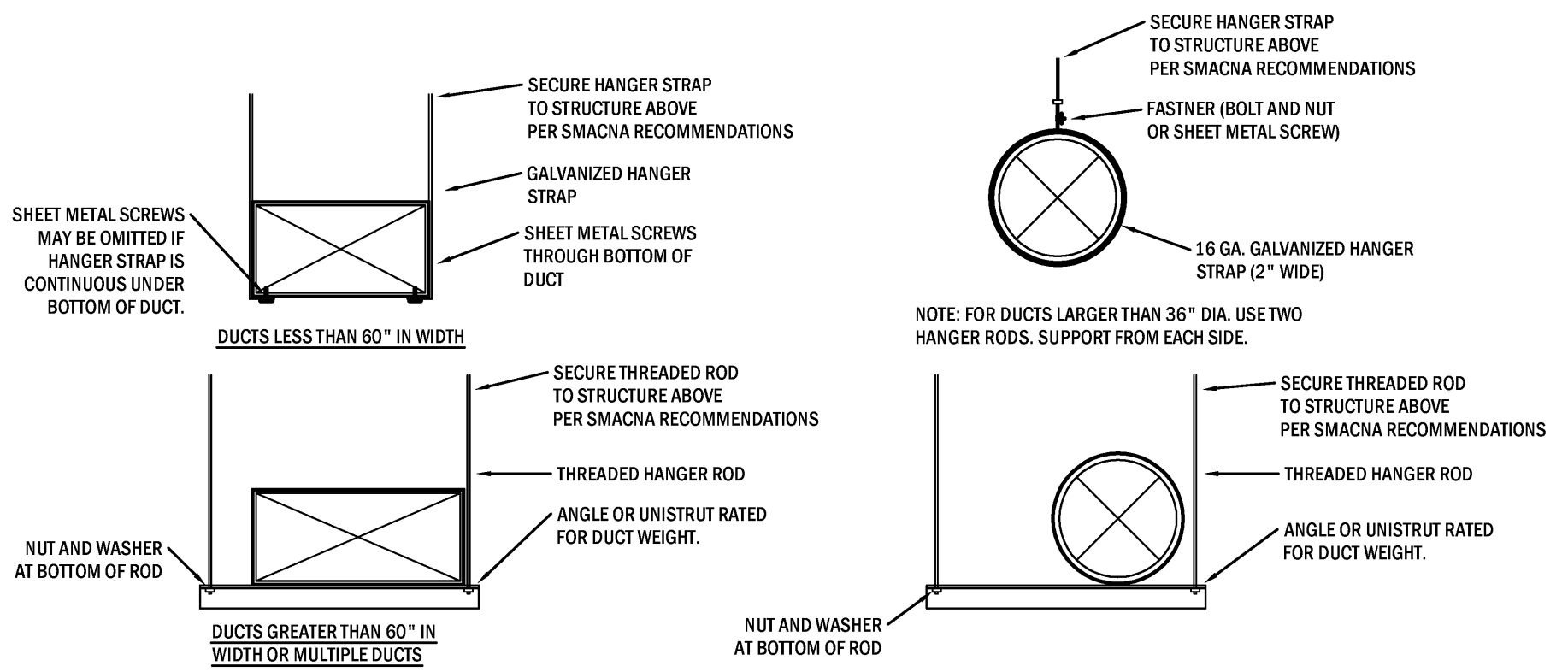
4 DUCT CONSTRUCTION DETAIL
SCALE: NTS



3 FLEX DUCT INSTALLATION DETAIL
SCALE: NTS



1 ROUND EXPOSED DIFFUSER DETAIL
SCALE: NTS



2 DUCT SUPPORT DETAIL
SCALE: NTS

SPLIT SYSTEM HEAT PUMP SCHEDULE

AIR HANDLER													
MARK	MANUFACTURER	MODEL #	BLOWER				HEATER KW	ELECTRICAL			ACC.		
			CFM	OA CFM	OA CFM MIN	*E.S.P.		HP	VOLT/PH	MCA		MOCF	
AH1	YORK	NC120C00C6AAA3	4000	1200	485	0.6	5	36	208/3	101.9	110	T,CO2,FA	
AH2	YORK	NC120C00C6AAA3	4000	1200	485	0.6	5	36	208/3	101.9	110	T,CO2,FA	
AH3	YORK	NC180C00D6AAA2	5000	1500	485	0.6	5	36	208/3	105.7	110	T,CO2,FA	
AH4	YORK	NC090C00B6AAA2	3000	660	180	0.6	1.5	26	208/3	73.9	80	T,FA	

EVAPORATOR-HEAT PUMP													
MARK	MANUF	COOLING CAP		HTG. CAPACITY	CLG. CAPACITY		HEAT PUMP - INDOOR COIL					AMB TEMP	
		DB	WB		SENS	TOTAL	MODEL #		V/PH	MCA	MOCF		
HP1	YORK	80	67	109	63	93.0	124.0	PC120C00A2AAA4	208/3	41.4	50	95	
HP2	YORK	80	67	109	63	93.0	124.0	PC120C00A2AAA4	208/3	41.4	50	95	
HP3	YORK	80	67	168	104	124.0	176.3	PC180C00A2AAA4	208/3	64.7	80	95	
HP4	YORK	80	67	82	49	69.8	92.0	PC090C00A2ALA4	208/3	35.5	45	95	

ABBREVIATIONS:
 CH - CRANKCASE HEATER
 LA - LOW AMBIENT CONTROL (0°F)
 CB - CIRCUIT BREAKER
 T - WEB ENABLED 7 DAY PROGRAMMABLE THERMOSTAT WITH AVERAGING SENSORS EQUAL TO ECOBEE3
 DM - DISCONNECTING MEANS
 EFF - EFFICIENCY
 OA - OUTSIDE AIR
 EAT - COIL ENTERING AIR TEMPERATURE
 CO2 - CO2 SENSOR FOR CONTROL OF OUTSIDE AIR DAMPER
 FA - DUCT SMOKE DETECTOR AND FAN SHUTDOWN

*E.S.P. - DOES NOT INCLUDE FILTER LOSS

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	CFM	EST. ESP.	VOLTS/ PHASE	MOTOR	ACCESSORIES
EF1	COOK	90SQ15D	600	0.55	120/1	1/6	DM,GBD,HK

ABBREVIATIONS:
 CG - WHITE ALUMINUM CEILING GRILLE
 DM - DISCONNECT MEANS
 GBD - GRAVITY BACKDRAFT DAMPER
 VSC - VARIABLE SPEED CONTROLLER
 GK - GREASE TERMINATION KIT
 HB - HINGED BASE
 RC - 18" INSULATED ROOF CURB
 HK - HANGING KIT WITH VIBRATION ISOLATORS

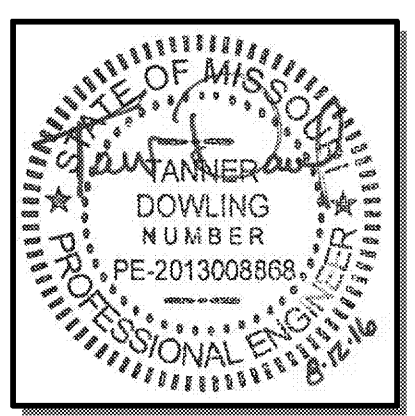
GRILLES, REGISTERS & DIFFUSER SCHEDULE

MARK	MANUFACTURER	CATALOG #	APP	FINISH	FRAME TYPE	VOLUME DAMPER	MAX NC (DB)	MIN THROW (FT)	MAX THROW (FT)	MAX PRESS DROP
A	KRUEGER	SH/SHR 24x24	SUP	WHITE	T-BAR/FLANGE	YES	30	9	24	0.10
B	KRUEGER	SH/SHR 12x12	SUP	WHITE	T-BAR/FLANGE	YES	30	9	24	0.10
C	KRUEGER	6490/6690 24x24	RET	WHITE	T-BAR/FLANGE	NO	30	-	-	0.10
D	KRUEGER	6490/6690 12x12	RET	WHITE	T-BAR/FLANGE	NO	30	-	-	0.10
E	KRUEGER	6490/6690 24x24	EXH	WHITE	T-BAR/FLANGE	NO	30	-	-	0.10
F	KRUEGER	6490/6690 12x12	EXH	WHITE	T-BAR/FLANGE	NO	30	-	-	0.10
G	KRUEGER	880 - 22.5°	SUP	PAINT	FLANGE	NO	30	23	60	0.10
H	KRUEGER	S80H - 22.5°	RET	PAINT	FLANGE	NO	30	-	-	0.10
I	KRUEGER	S80H - 22.5°	EXH	PAINT	FLANGE	NO	30	-	-	0.10
J	KRUEGER	RM2	SUP	PAINT	DUCT	NO	30	7	36	0.10
K	KRUEGER	DMGDRH-01	SUP	PAINT	DUCT	NO	30	11	37	0.20
L	KRUEGER	1800	SUP	PAINT	FLANGE	NO	25	11	37	0.20

ABBREVIATIONS:
 EXH - EXHAUST
 RET - RETURN
 SUP - SUPPLY

NOTES:
 1. THROWS ARE BASED ON 50 FEET PER MINUTE VELOCITY.
 2. OPPOSED BLADE DAMPERS SHALL BE PROVIDED ON ALL DIFFUSERS REQUIRING VOLUME DAMPERS.
 3. PROVIDE T-BAR OR FLANGE FRAME AS NOTED BY "T" OR "F" DESIGNATION IN DIFFUSER TAG ON PLANS.

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SECTION 23000 – MECHANICAL SPECIFICATIONS

A - GENERAL

1. DESCRIPTION OF WORK:

1.1. THE EXTENT OF THE MECHANICAL WORK IS INDICATED ON THE DRAWINGS

1.2. RELATED WORK NOT INCLUDED IN THIS SECTION:

1.2.1. ELECTRICAL WIRING. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPERVISION OF ALL WIRING OF EQUIPMENT AND SHALL FURNISH ALL NECESSARY DIAGRAMS.

2. SUBMITTALS:

2.1. MAINTENANCE MANUALS AND INSTRUCTIONS: FURNISH THREE (3) SETS OF COMPLETE OPERATING INSTRUCTIONS COVERING ENTIRE HVAC SYSTEM. INCLUDE A COPY OF THE CONTROL DIAGRAMS AND A COMPLETE DESCRIPTION OF THE OPERATION OF THE CONTROL SYSTEM. INSTRUCT OWNERS DESIGNATED REPRESENTATIVE AS TO PROPER OPERATION AND CARE OF SYSTEM.

3. REQUIREMENTS:

3.1. THE HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A COMPLETE AND FUNCTIONAL HVAC SYSTEM. PROVIDE ALL COMPONENTS REQUIRED FOR OPERATION OF THE SYSTEM AS OUTLINED BY THE INTENT OF THE PLANS. IN ANY CASE IN WHICH THE INTENT IS UNCLEAR, CONTRACTOR SHALL REQUEST VERIFICATION FROM A/E PRIOR TO BID.

3.2. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS RELATED TO MECHANICAL SCOPE. INCLUDE ALL COSTS AND FEES REQUIRED FOR PERMIT IN BID.

3.3. NOISE AND VIBRATION: EQUIPMENT SHALL OPERATE QUIETLY AND THE DESIGN OF THE SUPPORTS SHALL BE SUCH THAT THE OPERATION OF THE EQUIPMENT SHALL CAUSE NO PERCEPTIVE VIBRATION IN THE FLOORING ADJACENT TO THE EQUIPMENT, NOR CAUSE, DIRECTLY OR INDIRECTLY, VIBRATION OR OBJECTIONABLE NOISE IN ANY OTHER PORTION OF THE BUILDING AND/OR IN THE BUILDING STRUCTURE ITSELF.

3.4. FOUNDATIONS: FURNISH ALL FOUNDATIONS FOR EQUIPMENT COVERED IN THE SPECIFICATIONS, AS A PART OF THIS SECTION, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

3.5. MECHANICAL CONTRACTOR SHALL COORDINATE WORK WITH OTHER CONTRACTORS AND TRADES TO PREVENT CONFLICTS CAUSING UNNECESSARY EXPENSES OR DELAYS IN THE INSTALLATION OF THE WORK UNDER OTHER CONTRACTS.

3.6. PLANS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED.

3.7. THE CONTRACTOR SHALL SCHEDULE AND EXECUTE ALL WORK WITH REGARD TO THE OWNER'S USE OF THE BUILDING.

3.8. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONSTRUCTION PRIOR TO SUBMITTING BID. NO EXTRAS WILL BE PAID DUE TO UNANTICIPATED CONDITIONS.

3.9. ALL WORK SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE CODES SHOWN ON THE TITLE SHEET AND ANY ORDINANCES ADOPTED BY THE CITY OR COUNTY AND IN ACCORDANCE WITH APPLICABLE SMACNA STANDARDS.

3.10. NO DUCTWORK, PIPING, ETC IS TO PENETRATE LOAD BEARING STRUCTURAL MEMBERS EXCEPT THROUGH FACTORY FABRICATED OPENINGS.

3.11. MAINTAIN A MINIMUM OF 15'-0" BETWEEN EXHAUST OUTLETS & ALL FRESH AIR INLETS, WINDOWS & DOORS (TYPICAL AT ALL LOCATIONS). EXHAUST OUTLETS SHALL BE INSTALLED A MINIMUM OF 7'-0" ABOVE GRADE.

3.12. PAINT ALL EXTERIOR VENTS LOUVERS, FLUES, CAPS TO MATCH ADJACENT WALL SURFACES. COORDINATE COLOR WITH OWNER PRIOR TO PAINTING.

3.13. COORDINATE LOCATION OF DIFFUSERS WITH LIGHT FIXTURE LOCATIONS SHOWN ON PLANS. REVISE LOCATION OF DIFFUSERS AND GRILLES AS REQUIRED FOR INSTALLATION OF LIGHT FIXTURES WHERE SPECIFIED.

3.14. UNDERCUT ALL DOORS 1.5" WHERE REQUIRED FOR RETURN AIR PATH.

4. PIPING SYSTEMS TESTING:

4.1. PIPING SHALL BE TESTED IN ACCORDANCE WITH ASTM TESTING REQUIREMENTS FOR MATERIAL LISTED IN PIPING MATERIAL SCHEDULE AND IN ACCORDANCE WITH ALL REQUIREMENTS OF LOCAL JURISDICTION. TEST PRESSURE SHALL BE 50 PSIG ABOVE SYSTEM OPERATING PRESSURE AND SHALL BE HELD FOR A DURATION OF 4 HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED OR REPLACED.

5. DEMOLITION:

5.1. INFORMATION ON THESE DRAWINGS REPRESENTS INFORMATION FROM OLD DRAWINGS AND LIMITED SITE INSPECTIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BID. NO EXTRAS SHALL BE PAID DUE TO UNANTICIPATED CONDITIONS.

5.2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORING, PATCH AND REPAIR OF ALL WALL AND FLOOR SYSTEM AS REQUIRED DUE TO NEW CONSTRUCTION. MAINTAIN ALL FIRE RATINGS.

5.3. FOR ALL EXISTING FIXTURES, EQUIPMENT, ETC. SHOWN TO BE REMOVED, THE OWNER SHALL HAVE THE FIRST RIGHT OF REFUSAL.

6. WARRANTY:

6.1. FURNISH A FIVE (5) YEAR WARRANTY ON ALL COMPRESSORS AND A ONE (1) YEAR SERVICE AND GUARANTEE ON ALL CONTROLS, EQUIPMENT AND MATERIALS.

7. MECHANICAL SUBMITTALS:

7.1. SUBMITTALS ARE REQUIRED ON THE FOLLOWING ITEMS:

- 7.1.1. AIR CONDITIONING EQUIPMENT
- 7.1.2. EXHAUST FANS
- 7.1.3. GRILLES REGISTERS AND DIFFUSERS
- 7.1.4. FLEXIBLE DUCT AND FITTINGS
- 7.1.5. CONTROL SYSTEM

B - PRODUCTS

1. LOW PRESSURE DUCTWORK:

1.1. DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS.

1.2. RECTANGULAR DUCTWORK: GALVANIZED SHEET METAL DUCTWORK WITH 1.5" INSULATION WRAP, FOIL FACING AND MINIMUM R VALUE OF 4.2.

1.3. ROUND DUCTWORK CONCEALED ABOVE CEILING: ROUND GALVANIZED SNAPLOCK PIPE WITH 1.5" INSULATION WRAP, FOIL FACING AND MINIMUM R VALUE OF 4.2

1.4. EXPOSED ROUND DUCTWORK: PERFORMATED DOUBLE WALL SPIRAL DUCTWORK WITH 1/2" INTERNAL INSULATION, PERFORATED INNER WALL AND PAINT GRIP FINISH.

1.5. ROUND FLEXIBLE DUCTWORK: PRE INSULATED AND TESTED IN ACCORDANCE WITH U.L. 181. FURNISH WITH CLASS 1 POLYETHYLENE OR METALIZED JACKET. CONNECTIONS TO AIR TERMINALS SHALL BE LIMITED TO 6'.

1.6. PROVIDE TWO LAYERS OF INSULATION WRAP 1" AND 1.5" RESPECTIVELY FOR ALL DUCTS INSTALLED IN UNINSULATED CEILING OR ATTIC SPACE.

1.7. PROVIDE TWO LAYERS OF ELASTOMERIC DUCT WRAP FOR ALL EXTERIOR MOUNTED DUCTWORK. LAYERS SHALL BE 1.5" EACH IN THICKNESS.

1.8. BRANCH DUCTS SHALL BE THE SAME SIZE AS DIFFUSER NECKS UNLESS OTHERWISE NOTED.

1.9. PROVIDE TURNING VANES AT ALL ELBOWS.

1.10. DUCT DIMENSIONS SHOWN ON PLANS ARE FREE CLEAR AREA. CONTRACTOR SHALL FABRICATE DUCT AS REQUIRED TO ACCOMMODATE SPECIFIED INSULATION WHILE MAINTAINING FREE AREA SPECIFIED ON PLANS.

2. PIPING INSULATION:

2.1. ALL PIPING INCLUDING CONDENSATE DRAINAGE SHALL BE INSULATED.

2.4. INSULATION SHALL BE 0.75" ARMSTRONG AP ARMAFLEX ELASTOMERIC PIPE INSULATION

WITH MINUS 50 DEG F TO PLUS 220 DEG F OPERATING TEMPERATURE RANGE AND AVERAGE THERMAL CONDUCTIVITY NOT EXCEED 0.27 BTU/HR AT 75 DEG F MEAN TEMPERATURE. TO GREATEST EXTENT POSSIBLE APPLY INSULATION WITHOUT LONGITUDINAL JOINT BY SLIPPING INSULATION OVER PIPING. SEAL ALL SEAMS AND BUTT JOINTS WITH ARMSTRONGS 520 ADHESIVE. THICKNESS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. USING A MAXIMUM SEVERITY OF 90 DEG F AND 80 PERCENT RA.

3. BALANCING DAMPERS:

3.1. PROVIDE DAMPERS WHERE NECESSARY FOR THE PROPER REGULATION OF THE AIR HANDLING SYSTEM AND WHERE SHOWN ON PLANS AND DETAILS. DAMPER SHALL BE LOCATED AS TO BE ACCESSIBLE AFTER THE BUILDING IS COMPLETED, BY REMOVING A MARKED TILE, ACCESS PANEL OR OTHER APPROVED MEANS.

3.2. RECTANGULAR DUCTS: PROVIDE LOUVER TYPE DAMPER WITH LOCKING ADJUSTMENT HANDLE. PROVIDE STANDOFF FOR DAMPER HANDLE WHERE REQUIRED FOR ACCESS THROUGH INSULATION.

3.3. ROUND: PROVIDE MANUAL BUTTERFLY TYPE DAMPER WITH LOCKING HANDLE PROVIDE STANDOFF FOR DAMPER HANDLE WHERE REQUIRED FOR ACCESS THROUGH INSULATION.

4. EXHAUST FANS:

4.1. THIS CONTRACTOR SHALL INSTALL ALL SUPPLY OR EXHAUST FANS AS SCHEDULED ON THE CONTRACT DOCUMENTS.

4.2. MANUFACTURERS:

4.2.1. COOK, GREENHECK, CARNES, JENI, CAPTIVE AIRE

5. CONTROLS:

5.1. WEB CONNECTED CONTROL SYSTEM: WEB CONNECTED CONTROL SYSTEM SHALL CONSIST OF WIRELESS NETWORK OF CONTROL DEVICES ALLOWING WEB ACCESSIBLE CONFIGURATION OF CONTROL FROM ANY NETWORK CONNECTED DEVICE VIA WEB BROWSER INCLUDING MOBILE BROWSERS. WEB INTERFACE SHALL BE PASSWORD PROTECTED. NO SPECIAL SOFTWARE SHALL BE REQUIRED ON DESKTOP COMPUTER. ANY FEES FOR MOBILE APP FOR EQUIPMENT CONTROL SHALL BE INCLUDED IN BID. SYSTEM SHALL HAVE CAPABILITY FOR SETPOINT LIMITING. CONTRACTOR SHALL PROVIDE ALL INTERCONNECTING WIRING FOR COMPLETE SYSTEM OPERATION. GATEWAY SHALL SUPPORT QUANTITY OF DEVICES SHOWN ON PLANS. CONTRACTOR SHALL PROVIDE ADDITIONAL GATEWAYS AS REQUIRED FOR SYSTEM OPERATION. SYSTEM COMPONENTS SHALL BE EQUIPPED WITH THE FOLLOWING FEATURES:

5.1.1. ZONE CONTROL DEVICE (THERMOSTAT):

- 5.1.1.1. COLOR TOUCH SCREEN WITH CUSTOM BACKGROUND CAPABILITY.
- 5.1.1.2. ZONE TEMPERATURE ADJUSTMENT AND DISPLAY.
- 5.1.1.3. WIRELESS TRANSMISSION IN WEB CONNECTED GATEWAY.
- 5.1.1.4. HUMIDITY SENSOR
- 5.1.1.5. FAN OFF/ON/AUTO MODE ADJUSTMENT
- 5.1.1.6. COOL/HEAT/AUTO EQUIPMENT MODE ADJUSTMENT
- 5.1.1.7. SCREEN LOCKOUT CAPABILITY.
- 5.1.1.8. BATTERY POWERED OPERATION.

5.1.2. GATEWAY:

- 5.1.2.1. OPEN PROTOCOL WIRELESS COMMUNICATION WITH ZONE CONTROL DEVICES AND OTHER BUILDING AUTOMATION DEVICES.
- 5.1.2.2. PLUG IN TRANSFORMER FOR GATEWAY POWER.
- 5.1.2.3. WALL, CEILING OR RACK MOUNTING CAPABILITIES.
- 5.1.2.4. 300' TRANSMISSION RADII.

5.1.3. EQUIVALENT SHALL BE BY SCHNEIDER ELECTRIC (C&G GROUP SPRINGFIELD, MO), ECOCBEE OR HONEYWELL.

6. FIRE DAMPERS:

6.1. FIRE DAMPERS SHALL BE INSTALLED IN ALL DUCTS PENETRATING FIRE RATED WALLS AND CEILINGS. DAMPER SIZE SHALL MATCH DUCT OPENING SIZE SHOWN ON PLANS.

7. PIPING:

7.1. PIPING LINES SHALL BE INSULATED WITH 0.5" ELASTOMERIC INSULATION EQUAL TO ARMSTRONG AP ARMAFLEX.

8. SMOKE DETECTORS:

8.1. SMOKE DETECTORS REQUIRED IN DUCTWORK SHALL BE IONIZATION TYPE AND LISTED BY UL OR FM FOR DUCT INSTALLATION. DUCT DETECTORS SHALL BE PROVIDED WITH AN APPROVED DUCT HOUSING MOUNTED EXTERIOR TO THE DUCT, AND SHALL BE PROVIDED WITH PERFORATED SAMPLING TUBES EXTENDING ACROSS THE WIDTH OF THE DUCT. ALSO PROVIDE SMOKE DETECTORS WITH A MEMOTE AUDIO VISUAL LED LIGHT IN CEILING BELOW DETECTOR ALARM INDICATOR WITH KEY SWITCH FOR RESET. MOUNT KEY SWITCH 5' AT WHERE INDICATED ON PLANS. ACTIVATION OF A DUCT DETECTOR SHALL CAUSE SHUTDOWN OF ITS RESPECTIVE AIR CONDITIONING UNIT. CONTROL AND INTERLOCK WIRING SHALL RUN IN CONDUIT WHICH SHALL BE SIZED TO SUIT THE NUMBER, TYPE AND SIZE OF CONDUCTORS. SHALL BE PROVIDED BY THE CONTROL CONTRACTOR. CONTROL AND INTERLOCK WIRING SHALL BE SEPARATE FROM POWER WIRING OF DIVISION 26000. ALL WIRING SHALL BE IN ACCORDANCE WITH DIVISION 26000. INSTALL IN ACCORDANCE WITH ALL CODE REQUIREMENTS. DUCT SMOKE DETECTOR SHALL BE WIRED AND INTERLOCKED WITH BUILDING FIRE ALARM SYSTEM. DUCT SMOKE DETECTOR SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. FIRE ALARM WIRING SHALL BE INSTALLED BY ELECTRICAL CONTRACTOR.

9. LOUVERS:

9.1. ALL LOUVERS SHALL BE EQUIPPED WITH BIRDSCREENS.

9.2. PROVIDE EXTRUDED DRAINABLE ALUMINUM LOUVERS AT SIZE INDICATED ON PLANS.

9.3. MANUFACTURERS:

9.3.1. AMERICAN WARMING AND VENTILATING, RUSKIN, CARNES, OR EQUAL

10. GRILLES REGISTERS AND DIFFUSERS:

10.2. ALL SUPPLY, RETURN AND EXHAUST GRILLES SHALL BE OF ALUMINUM CONSTRUCTION OR AS SCHEDULED ON DRAWINGS.

10.3. MANUFACTURERS:

10.3.1. TITUS, KRUEGER, PRICE

11. FLEXIBLE DUCT:

11.1. FLEXIBLE DUCT RUNS SHALL BE LIMITED TO RUNS OF NO LONGER THAN 6' REGARDLESS OF INDICATION ON PLANS.

11.2. ALL FLEXIBLE DUCT SHALL BE SUPPORTED ACCORDING TO MANUFACTURER RECOMMENDED SUPPORT METHODS.

12. SPLIT SYSTEMS:

12.1. ELECTRIC FURNACE:

12.1.1. PROVIDE UNIT CAPACITIES AND ACCESSORIES AS SHOWN IN EQUIPMENT SCHEDULE. UNIT SHALL BE PROVIDED WITH OVERCURRENT PROTECTION AND DISCONNECTING MEANS FOR ELECTRIC HEATER CIRCUITS. UNLESS OTHERWISE NOTED, UNIT SHALL BE EQUIPPED WITH SEPARATE POWER SUPPLY FOR EACH ELECTRIC HEATER, AND FAN CABINET SHALL BE STEEL FINISHED WITH BAKED ENAMEL WITH REMOVABLE PANELS. EVAPORATOR COIL SHALL BE COPPER TUBE WITH MECHANICALLY BONDED ALUMINUM FINS. SURFACES IN CONTACT WITH AIRSTREAM SHALL COMPLY WITH LATEST VERSION OF ASHRAE 62.1. AIRFLOW CONFIGURATION SHALL BE AS REQUIRED BY DUCT ROUTING AND UNIT ORIENTATION SHOWN ON PLANS. ELECTRIC HEATING COIL SHALL BE NICKEL CHROME RESISTANCE WIRE WITH CERAMIC SUPPORT BUSHINGS, AUTOMATIC RESET THERMAL CUTOFF, AIRFLOW PROVING DEVICE. PROVIDE FILTER SECTION ON RETURN AIR CONNECTION OF UNIT, UNLESS NOTED ELSEWHERE ON PLANS. CONTRACTOR SHALL HAVE OPTION OF FIELD FABRICATION OF FILTER SECTION, OR INTEGRAL FACTORY CONSTRUCTED FILTER SECTION. IF SPECIFIC FILTER LOCATION IS NOTED ON PLANS, CONTRACTOR SHALL FIELD FABRICATE FILTER SECTION WHERE LOCATED ON PLANS. PROVIDE ALL NECESSARY HANGERS AND/OR SUPPORTS TO INSTALL UNIT AS SHOWN ON PLANS. WHERE HORIZONTAL UNIT IS SHOWN PROVIDE EXTERNAL SECONDARY DRAIN PAN WITH FLOAT SWITCHES AND SUPPORTS TO INSTALL AS SHOWN ON PLANS.

12.1. CONDENSING UNIT/HEAT PUMP:

12.1.1. PROVIDE UNIT CAPACITIES AND ACCESSORIES AS SHOWN IN EQUIPMENT SCHEDULE. CASING SHALL BE STEEL FINISHED WITH BAKED ENAMEL WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS. WEEP HOLES FOR DRAINAGE AND MOUNTING HOLES IN BASE. COMPRESSOR SHALL BE MOUNTED ON VIBRATION ISOLATION AND SHALL BE HERMETICALLY SEALED. COMPRESSOR MOTOR SHALL HAVE THERMAL AND CURRENT SENSITIVE OVERLOAD DEVICES, START CAPACITOR, RELAY AND CONTACTOR. UNIT SHALL BE EQUIPPED WITH REMOVABLE COIL GUARD. REFRIGERANT COIL SHALL BE COPPER WITH ALUMINUM FINS. FAN SHALL BE ALUMINUM DIRECTLY CONNECTED TO FAN MOTOR. HEAT PUMPS SHALL BE EQUIPPED WITH REVERSING VALVE AND LOW-TEMPERATURE AIR CUT-OFF THERMOSTAT WITH FIELD ADJUSTABLE TEMPERATURE SETTING.

12.2. ACCEPTABLE MANUFACTURERS SHALL BE:

12.2.1. AAO, CARRIER, LENOX, TRANE, YORK

13. TEST AND BALANCE:

13.1. GENERAL

13.1.1. BUILDING AIR SYSTEMS SHALL BE BALANCED PER DATA INCLUDED ON THE DRAWINGS TO ACHIEVE RELATIVE AIR VOLUMES AS INDICATED ON THE DRAWINGS AND SCHEDULED HEREIN.

13.2. PERFORMANCE:

13.1.1. THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT AIR BALANCING AGENCY SUBSEQUENT TO THE APPROVAL OF THE OWNERS REPRESENTATIVE. THE T&B AGENCY CAN ONLY ACT AS HIS OWN REPORTING AGENCY IF SUITABLE INSTRUMENTS HEREINAFTER REQUIRED ARE DEMONSTRATED TO BE PART OF HIS NORMAL PROCEDURE TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE. THE T&B AGENCY SHALL BE AABC OR NEBB CERTIFIED.

13.2. MEASURING TECHNIQUES:

13.1.1. PITOT TUBE TRAVERSE SHALL BE PERFORMED TO DETERMINE THE TOTAL FLOW OF ALL HVAC SYSTEMS AND HOOD MAKE UP AIR FANS.

13.1.2. ALL DIFFUSERS, REGISTERS AND GRILLES WITH A FACE DIMENSION OF 24" OR LESS SHALL BE MEASURED BY UTILIZING A HOOD AXIAL VANE VELOMETER.

13.1.3. USE VOLUME DAMPERS LOCATED IN DUCTS AND BALANCE DIFFUSERS.

13.1.4. DUCT SMOKE DETECTORS SHALL ACTIVATE A VISIBLE AND AUDIBLE SIGNAL AT A NORMALLY OCCUPIED LOCATION AND SHALL BE MONITORED BY THE FACP AND REPORT AS A SUPERVISORY SIGNAL IN ACCORDANCE WITH ALL CODE REQUIREMENTS.

13.1.5. DUCT SMOKE DETECTORS REQUIRE A REMOTE LED INDICATOR IN THE CEILING ADJACENT TO THE DUCT SMOKE DETECTOR.

13.1.6. DUCT SMOKE DETECTORS TO PROVIDE SHUT DOWN OF EQUIPMENT SUPPLY FAN IN 30 SECONDS OR LESS.

13.2. SUBMITTALS:

13.1.1. IT SHALL BE THE RESPONSIBILITY OF THE T&B AGENCY TO PROVIDE THE LOCAL BUILDING DEPARTMENT AND OWNER WITH PROPER TEST & BALANCE DATA ON AABC OR NEBB COMPLIANT FORMS.

C - EXECUTION

1. SUPERVISION OF ELECTRICAL WORK:

1.1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR SUPERVISION OF ALL WIRING OF EQUIPMENT INCLUDED IN THIS SECTION AND SHALL FURNISH ALL NECESSARY DIAGRAMS REQUIRED FOR INSTALLATION.

2. PIPING, EQUIPMENT, INSTALLATION:

2.1. ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS AND APPLICABLE REQUIREMENTS OF THE MANUFACTURERS OF THE EQUIPMENT AND SHALL PERFORM SATISFACTORILY AT THE COMPLETION OF THE WORK.

3. PAINTING:

3.1. EXCEPT AS SPECIFIED HERIN, ALL PAINTING WILL BE DONE BY OTHERS. LEAVE WORK FREE FROM RUST, DIRT, GREASE AND PLASTER.

3.2. EQUIPMENT WITH A FACTORY APPLIED FINISH SHALL HAVE SCRATCHES, CHIPS, ETC. PRIMED AND TOUCHED UP WITH MATERIALS WHICH WILL PROTECT THE SURFACE AND MATCH ADJACENT AREAS.

4. CLEANING AND ADJUSTMENTS:

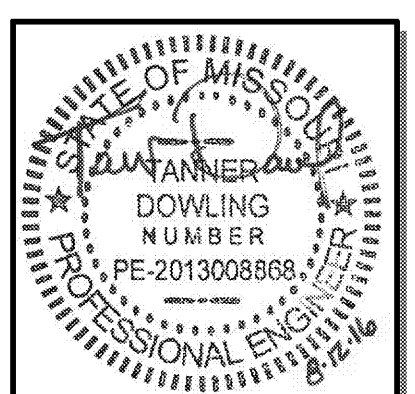
4.1. UPON COMPLETION OF WORK, CLEAN, OIL AND GREASE ALL FANS, MOTORS, OTHER RUNNING EQUIPMENT AND APPARATUS AND MAKE CERTAIN THAT ALL SUCH APPARATUS AND MECHANISMS ARE IN PROPER WORKING ORDER AND MADE READY FOR TEST.

HVAC SYMBOLS

	CEILING SUPPLY DIFFUSER ROUND NECK
	CEILING RETURN/ EXHAUST GRILLE ROUND NECK
	CEILING RETURN/ EXHAUST GRILLE ROUND NECK
	CEILING RETURN/ EXHAUST GRILLE ROUND NECK
	CEILING RETURN/ EXHAUST GRILLE SQUARE NECK
	WALL SUPPLY/ RETURN/ EXHAUST GRILLE
	TEMPERATURE OVERRIDE SENSOR
	HUMIDISTAT
	REMOTE AVERAGING TEMPERATURE SENSOR
	CO2 SENSOR
	THERMOSTAT
	DIFFUSER TAG - LETTER & CEILING DESIGNATION NECK SIZE AND CFM
	DIFFUSER OR GRILL WITH FLEX DUCT. SIZE OF FLEX DUCT SHALL EQUAL SIZE OF UPSTREAM DUCT.
	MECHANICAL EQUIPMENT
	INDICATES CONNECTION TO EXISTING SYSTEMS
	FIRE DAMPER
	SMOKE DAMPER
	MOTORIZED DAMPER

ABBREVIATIONS:

AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
CU	CONDENSING UNIT
HP	HEAT PUMP
DN	DOWN
EF	EXHAUST FAN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR



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NEW SANCTUARY
 FOR
FIRST BAPTIST CHURCH
 NEOSHO, MISSOURI

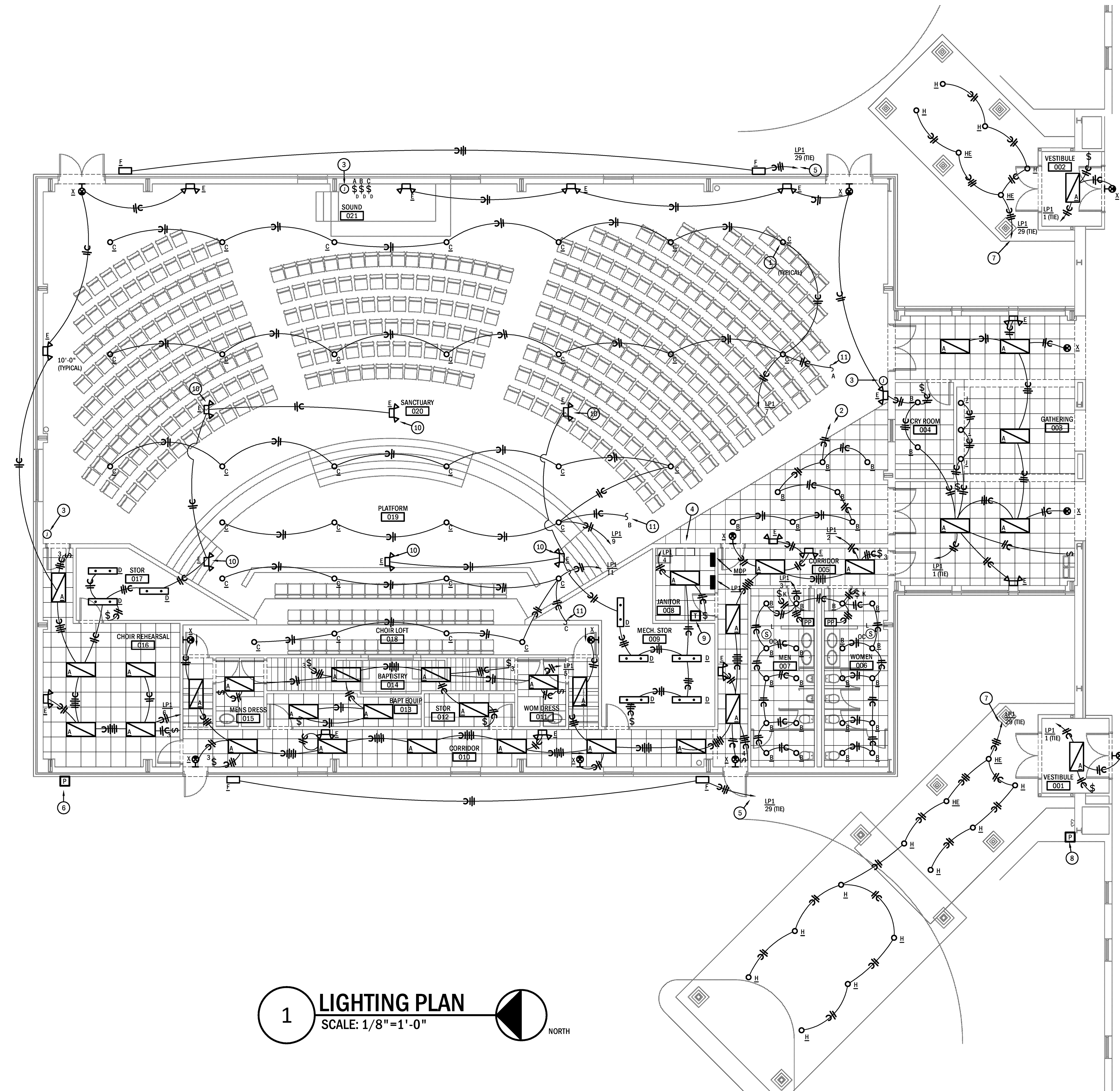
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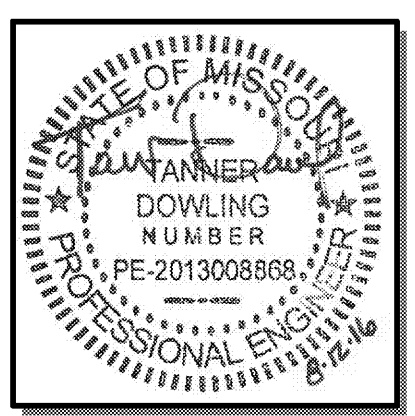
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1 LIGHTING PLAN
 SCALE: 1/8" = 1'-0"
 NORTH

- KEYNOTES:**
- ① MOUNT AT 22' AFF.
 - ② WIRE THROUGH DIMMER RACK. VERIFY EXACT REQUIREMENTS WITH DIMMER RACK SUPPLIER.
 - ③ JUNCTION BOX FOR DIMMER RACK CONTROL. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH DIMMER RACK SUPPLIER.
 - ④ APPROXIMATE DIMMER RACK LOCATION
 - ⑤ WIRE THROUGH PHOTOCELL P1
 - ⑥ PHOTOCELL P1. MOUNT AT 20' ABOVE FINISHED GRADE. WIRE THROUGH TIME SWITCH TS1. REFERENCE EXTERIOR LIGHTING CONTROL DETAIL.
 - ⑦ WIRE THROUGH PHOTOCELL P2
 - ⑧ PHOTOCELL P2. MOUNT AT 10' ABOVE FINISHED GRADE. WIRE THROUGH TIME SWITCH TS2. REFERENCE EXTERIOR LIGHTING CONTROL DETAIL.
 - ⑨ TIME SWITCHES TS1 AND TS2 STACKED.
 - ⑩ INSTALL ON BOTTOM OF ROOF STRUCTURE
 - ⑪ CONNECT TO CORRESPONDING DIMMER CAPABLE SWITCH LOCATED IN SOUND BOOTH



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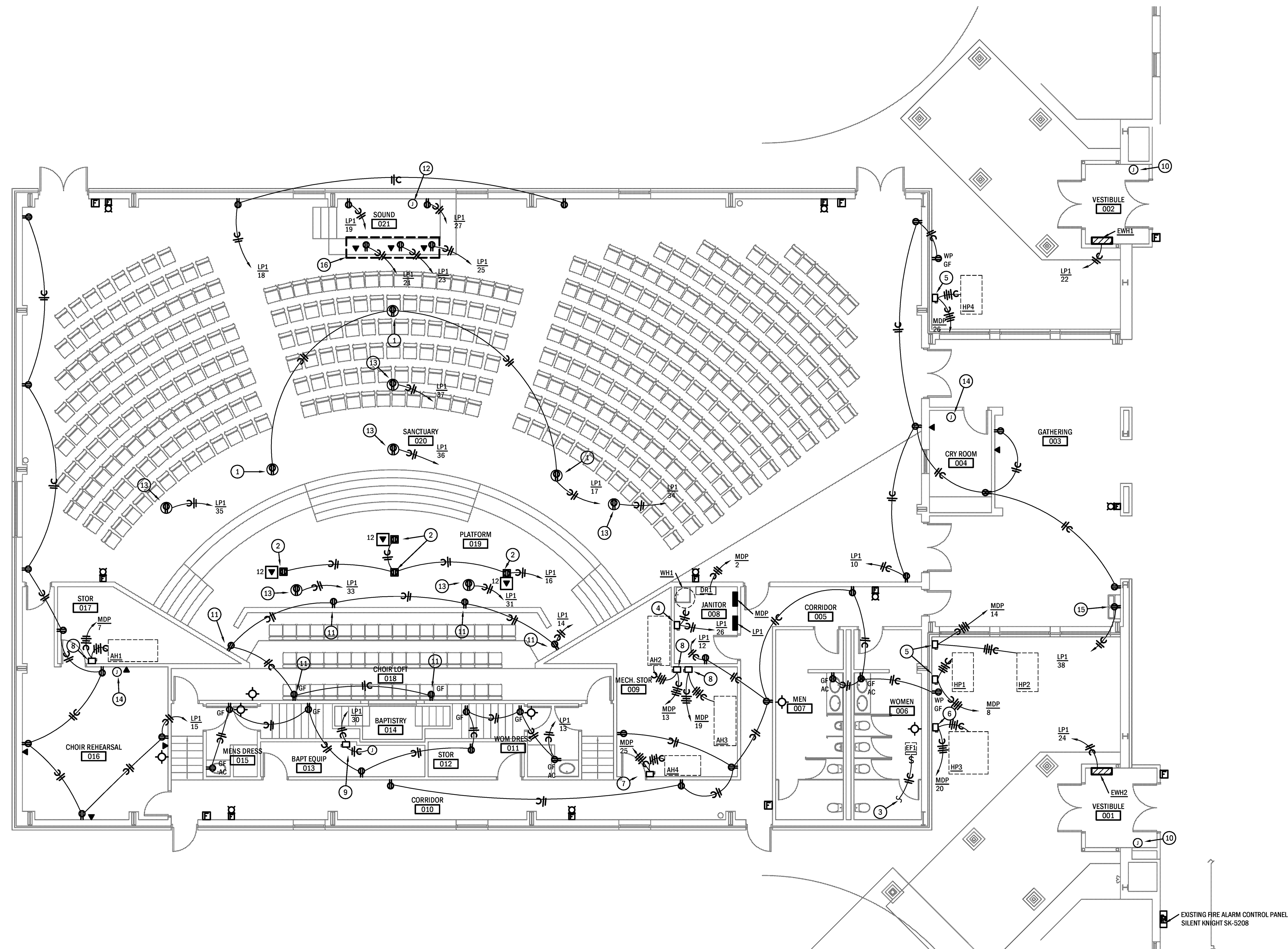
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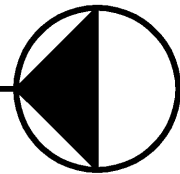
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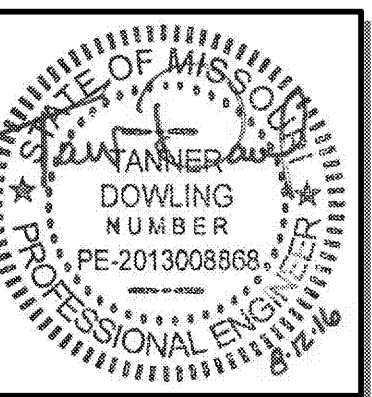
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1 **ELETRICAL PLAN**
 SCALE: 1/8" = 1'-0"  NORTH

KEYNOTES:

- 1 CEILING MOUNTED PROJECTOR RECEPTACLE. COORDINATE WITH OWNER FOR EXACT INSTALLATION LOCATION.
- 2 FLOORBOX PER SPECIFICATIONS. COORDINATE WITH OWNER FOR EXACT INSTALLATION LOCATION.
- 3 WIRE TO ACCORDING TO EXHAUST FAN CONTROL DETAIL.
- 4 PROVIDE NEW 30A, 208V, 3 POLE, NEMA 1, NON-FUSED DISCONNECT SWITCH
- 5 PROVIDE NEW 60A, 208V, 3 POLE, NEMA 3R, NON-FUSED DISCONNECT SWITCH
- 6 PROVIDE NEW 100A, 208V, 3 POLE, NEMA 3R, NON-FUSED DISCONNECT SWITCH
- 7 PROVIDE NEW 100A, 208V, 3 POLE, NEMA 1, NON-FUSED DISCONNECT SWITCH
- 8 PROVIDE NEW 200A, 208V, 3 POLE, NEMA 1, NON-FUSED DISCONNECT SWITCH
- 9 PROVIDE NEW 30A, 208V, 2 POLE, NEMA 1, NON-FUSED DISCONNECT SWITCH FOR BAPTISTRY POWER, COORDINATE EXACT LOCATION WITH BAPTISTRY PROVIDER. ELECTRICAL CONTRACTOR TO MAKE ALL FINAL CONNECTIONS TO THE BAPTISTRY.
- 10 JUNCTION BOX FOR INTERCOM SYSTEM
- 11 INSTALL AT 18" ABOVE STAGE ELEVATION
- 12 PROVIDE 12x8x4 JUNCTION BOX WITH FOUR 2" CONDUITS UP TO STRUCTURE AND TERMINATE HIGH IN STRUCTURE FOR A, V WIRING.
- 13 CEILING MOUNTED RECEPTACLE FOR STAGE LIGHTING. COORDINATE WITH OWNER FOR EXACT LOCATION.
- 14 JUNCTION BOX FOR A, V WIRING
- 15 RECESS RECEPTACLE IN WATER COOLER HOUSING
- 16 INSTALL UNDER COUNTER IN MILLWORK



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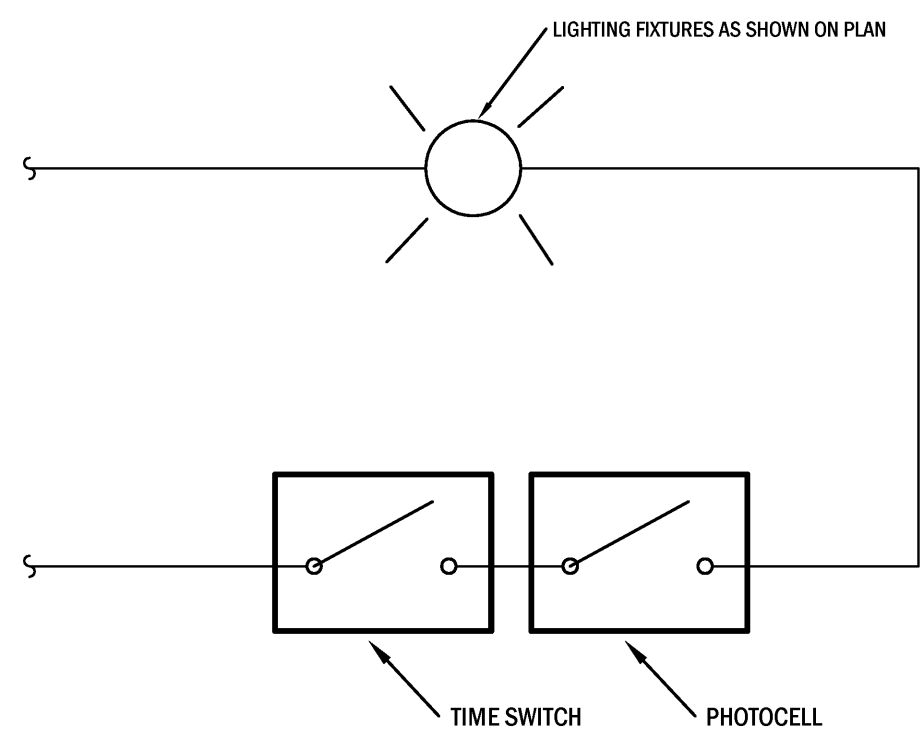
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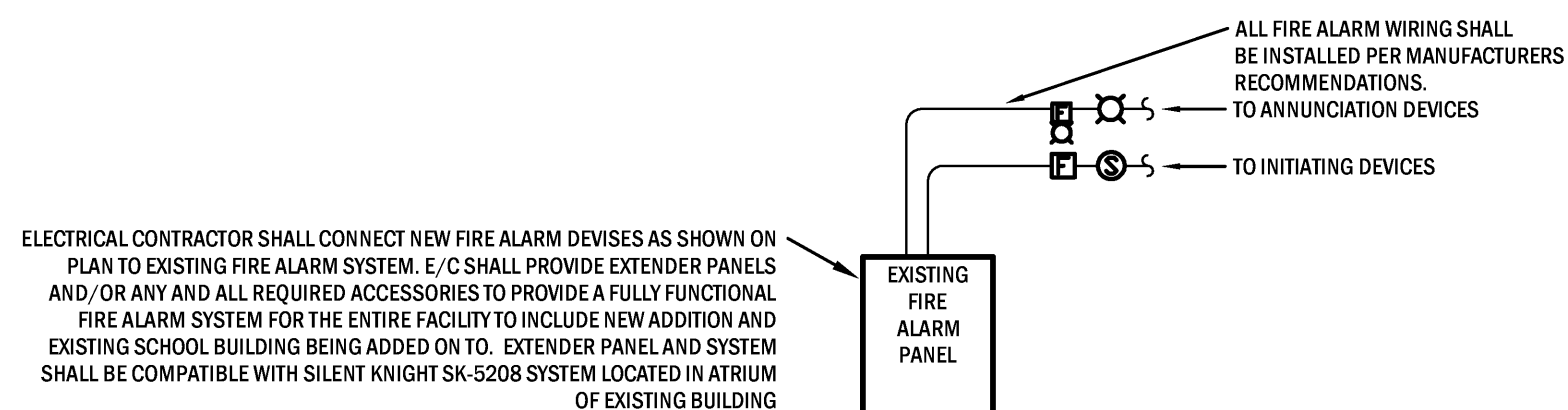
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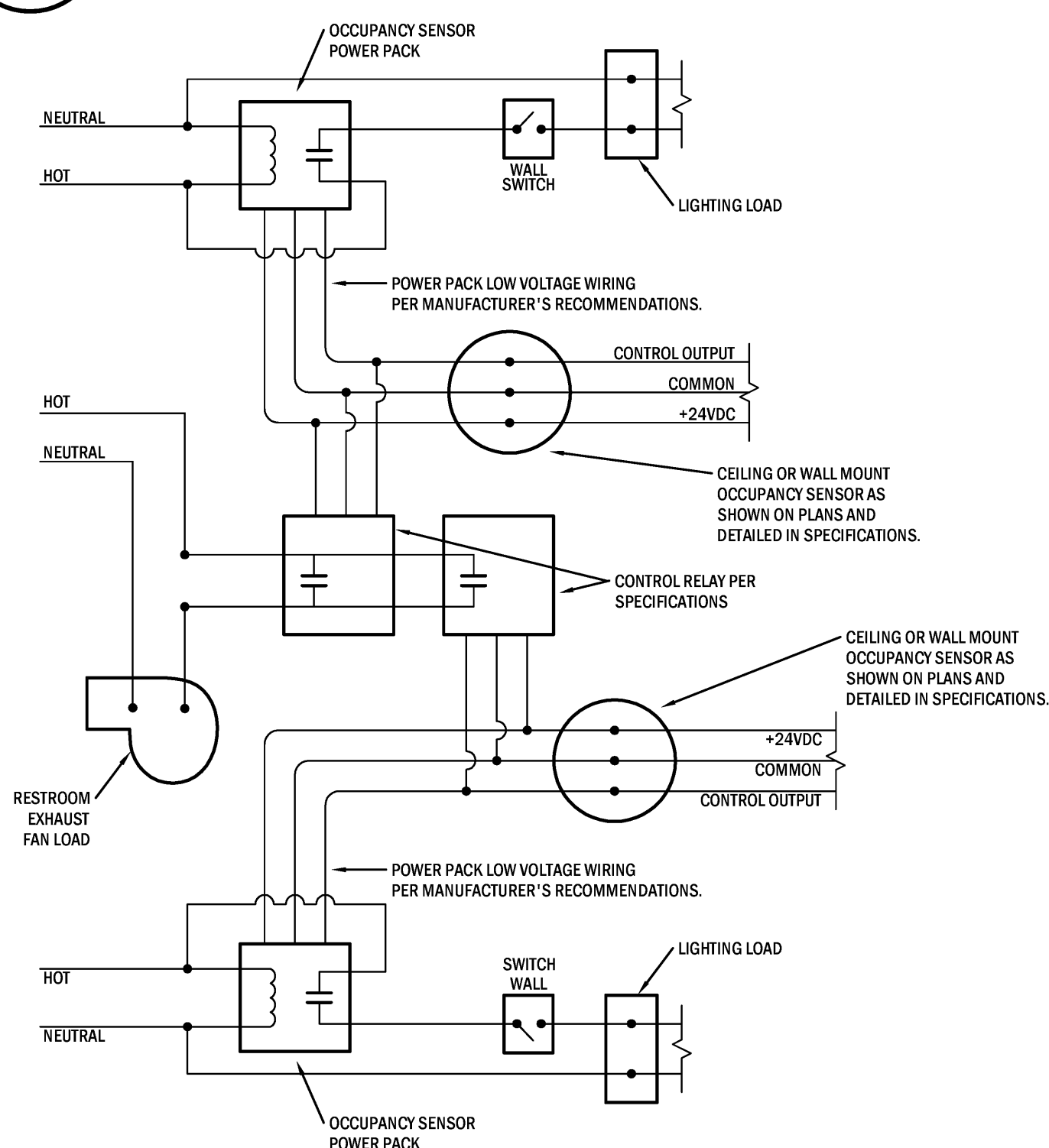
6 EXTERIOR LIGHTING CONTROL DETAIL
SCALE: NTS



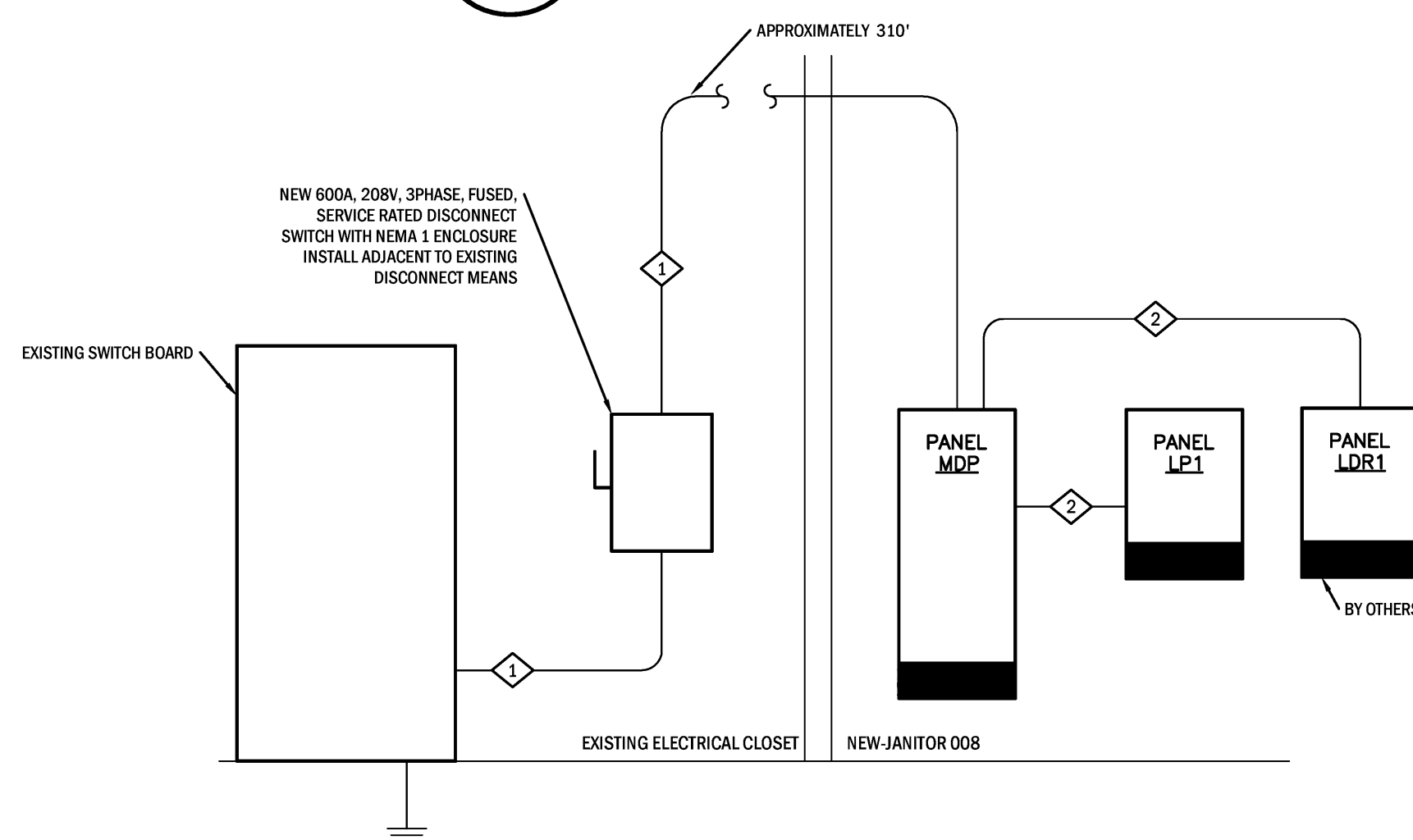
NOTES:

1. PROVIDE ALL POWER SUPPLIES REQUIRED FOR OPERATION OF ALL DEVICES SHOWN ON PLANS AND INSTALLED AS PART OF FULLY FUNCTIONAL AND CODE COMPLIANT SYSTEM. ALL 120V POWER CIRCUITS REQUIRED FOR OPERATION OF SYSTEM SHALL BE PROVIDED BY FIRE ALARM CONTRACTOR WHERE NOT ALREADY INDICATED ON PLANS AND SHALL BE INCLUDED IN BASE BID.
2. ALL FIRE ALARM EQUIPMENT SHALL BE BY THE SAME MANUFACTURER.
3. WHERE BUILDING IS EQUIPPED WITH AUTOMATIC SPRINKLER SYSTEM, QUANTITY OF FLOW SWITCHES AND TAMPER SWITCHES SHALL BE COORDINATED WITH FIRE PROTECTION SYSTEM INSTALLER. WHERE INSTALLED AS PART OF AN ADDRESSABLE SYSTEM, EACH FLOW AND TAMPER SWITCH SHALL BE MONITORED BY AN INDIVIDUAL MODULE.
4. SOUND PRESSURE LEVELS AND CANDELA LEVELS OF ALL ANNUNCIATION DEVICES SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72 AS REQUIRED FOR COMPLETE COVERAGE OF BUILDING.
5. WHERE THE BUILDING IS EQUIPPED WITH DOOR HOLD OPENS, PROVIDE SMOKE DETECTORS ON EITHER SIDE OF FIRE DOORS. SYSTEM SHALL RELEASE HOLD OPENS UPON INITIATION OF FIRE ALARM SYSTEM AND SMOKE DETECTION AT SMOKE DETECTORS ASSOCIATED WITH FIRE DOORS.
6. IN A ZONED FIRE ALARM SYSTEM, PROVIDE SEPARATE ZONE FOR EACH TYPE OF INITIATION DEVICE.

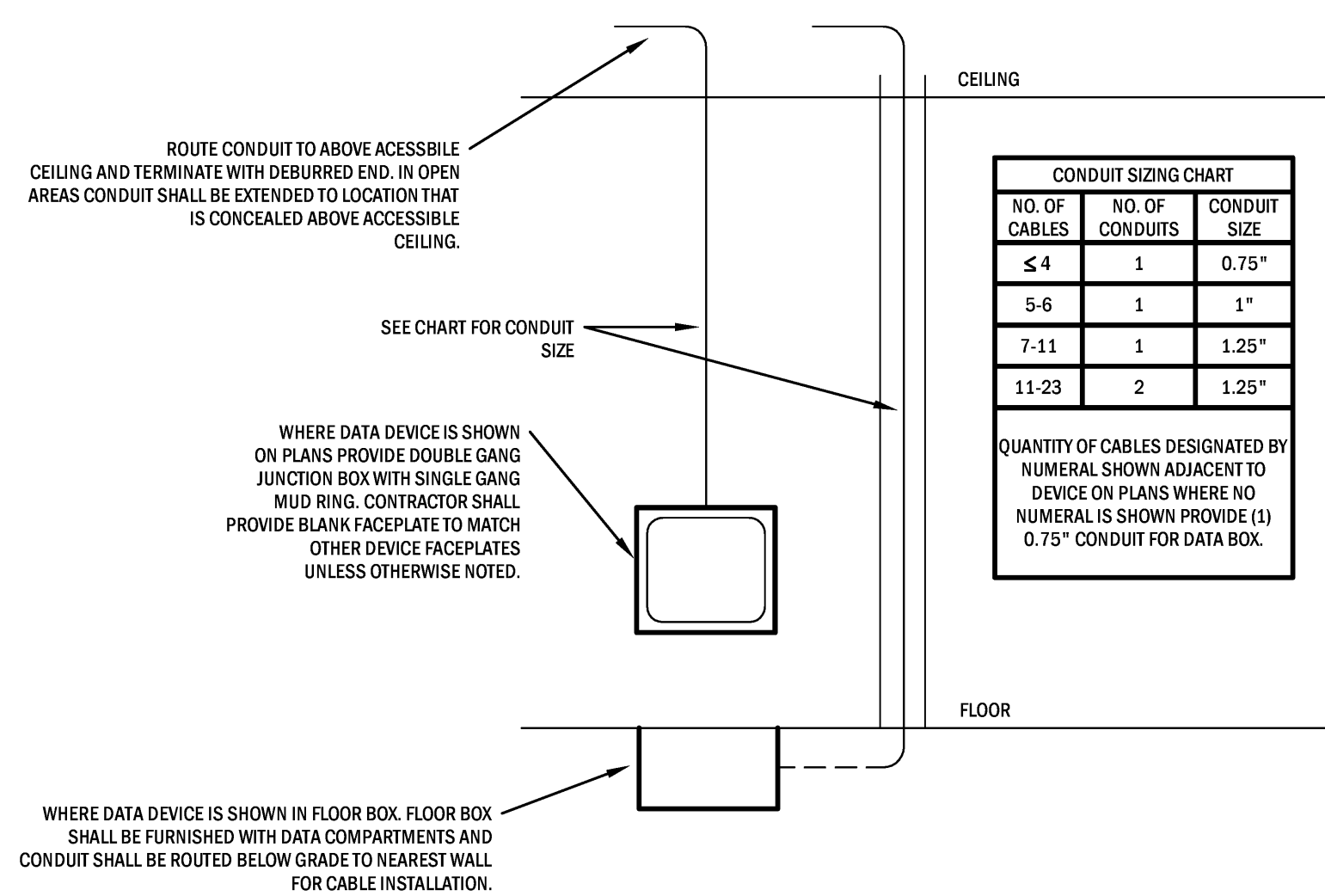
3 FIRE ALARM DETAIL
SCALE: NTS



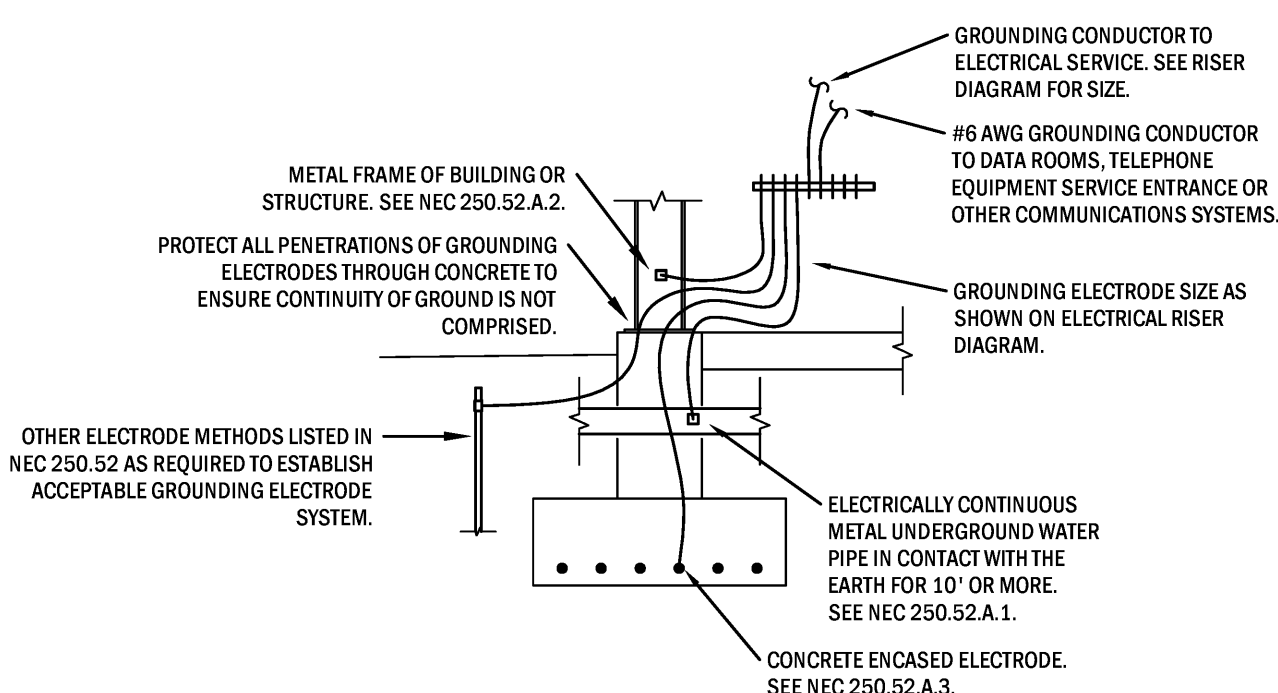
5 EXHAUST FAN CONTROL DETAIL
SCALE: NTS



2 ELECTRICAL RISER DETAIL
SCALE: NTS



7 DATA ROUGH IN DETAIL
SCALE: NTS



NOTES:

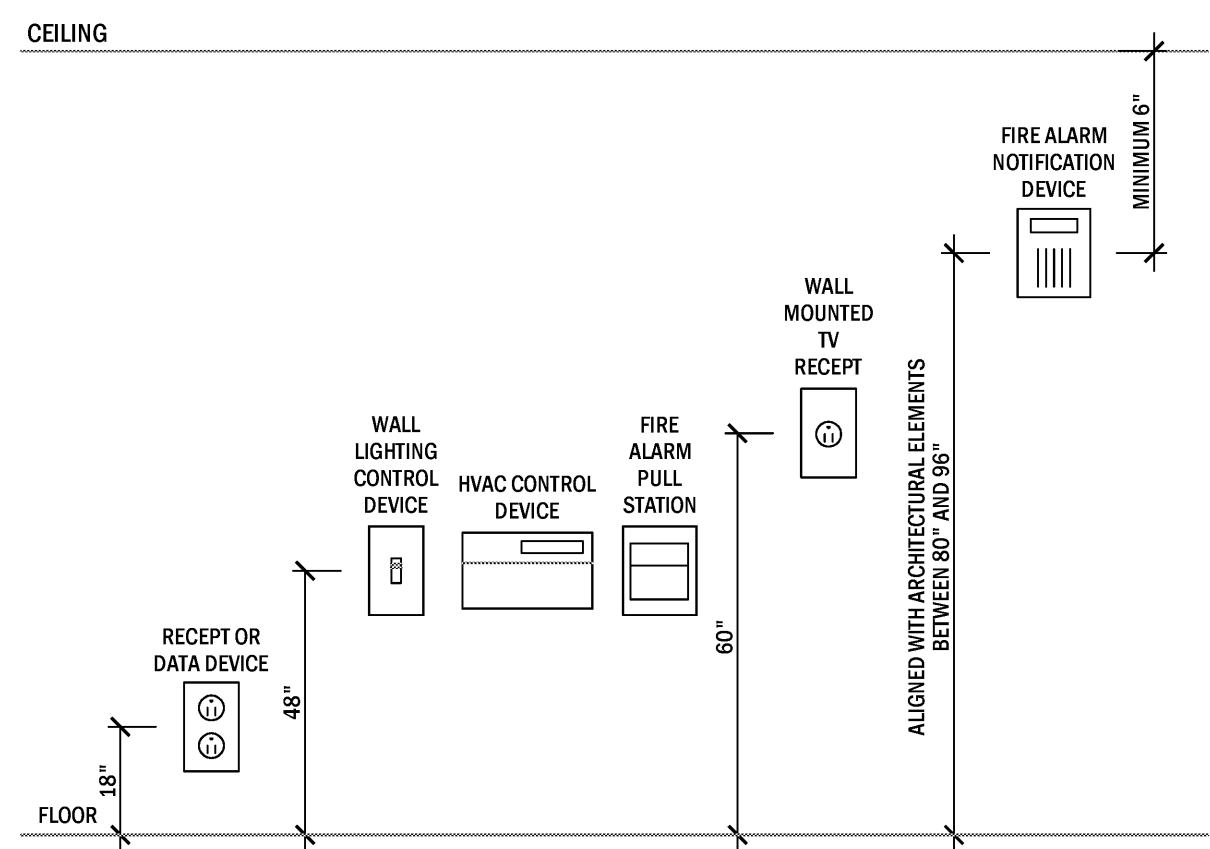
GROUNDING SYSTEM SHALL COMPLY WITH ALL REQUIREMENTS NEC SECTION 250.

ALL GROUNDING ELECTRODES THAT ARE PRESENT AT EACH BUILDING OR STRUCTURE BEING SERVED SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRODE SYSTEM.

CONCRETE INSTALLED WITH INSULATION, VAPOR BARRIERS, FILMS OR SIMILAR ITEMS SEPARATING THE CONCRETE FROM THE EARTH ARE NOT CONSIDERED TO BE IN "DIRECT CONTACT" WITH THE EARTH.

ALL CONNECTIONS SHALL BE MADE WITH EXOTHERMIC WELDS OR LISTED PRESSURE CONNECTIONS.

4 GROUNDING DETAIL
SCALE: NTS



NOTES:

1. MOUNTING HEIGHTS NOTED ON PLANS SHALL SUPERSEDE THOSE LISTED ON THIS DETAIL.
2. ALL ELECTRICAL LIGHTING CONTROL DEVICES SHALL BE LOCATED WITHIN 12" OF DOOR FRAME.
3. FOR DEVICES RECESSED IN MASONRY ADJUST MOUNTING HEIGHTS OF DEVICES TO MASONRY JOINT TO MINIMIZE CUTTING.
4. CENTER THERMOSTATS ABOVE LIGHT SWITCHES WHENEVER POSSIBLE.
5. IF DEVICE IS SHOWN TO BE INSTALLED ON A COLUMN, DEVICE SHALL BE CENTERED ON COLUMN.
6. LOCATE ASSOCIATED DATA AND RECEPTACLE BOXES WITHIN 12" OF EACH OTHER.
7. CONTRACTOR SHALL COORDINATE ALL BOX LOCATIONS WITH MILLWORK TO MAINTAIN FULL ACCESSIBILITY PER NEC.
8. ALL BOX MOUNTING HEIGHTS SHALL BE COORDINATED WITH ARCHITECTURAL ELEVATIONS INCLUDING MILLWORK, AND INTERIOR ELEVATIONS.
9. ROTATE BOXES AS NEEDED WHERE CONFLICT OCCURS WITH OTHER BUILDING COMPONENTS.
10. WHEN A DEVICE IS INDICATED TO BE INSTALLED ABOVE COUNTER (AC) ALL ADJACENT DEVICES SHOWN AT THAT COUNTER SHALL BE INSTALLED ABOVE COUNTER AS WELL UNLESS OTHERWISE NOTED. IF INTENT OF MOUNTING HEIGHT IS UNCLEAR, CONTRACTOR SHALL VERIFY PRIOR TO ROUGH IN.

1 DEVICE HEIGHT DETAIL
SCALE: NTS

FEEDER SCHEDULE:

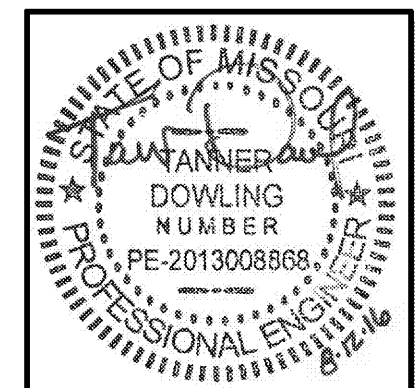
- 1 3 SETS OF 4-#3/0 AND 1 #1 GROUND EACH IN 2" CONDUIT
- 2 4 - #3 WIRES AND 1 - #8 GROUND IN 1.25" CONDUIT

ELECTRICAL SYMBOLS

	ELECTRICAL DEVICE MOUNTED IN FLOORBOX. REFERENCE SPECIFICATIONS		2x4 LIGHT FIXTURE
	ELECTRICAL DEVICE MOUNTED IN BOX AT CEILING OR UP IN STRUCTURE		ROUND LIGHT FIXTURE, SURFACE MOUNTED OR RECESSED DEPENDING ON FIXTURE TYPE
	20A, 120V DUPLEX RECEPTACLE		LINEAR LIGHT FIXTURE, SURFACE MOUNTED OR RECESSED DEPENDING ON FIXTURE TYPE
	NEMA #4 20A, 120V QUADPLEX RECEPTACLE		TRACK LIGHT FIXTURE COMPLETE WITH ALL MOUNTING ACCESSORIES REQUIRED FOR OPERATION
	DEVICE INSTALLED ABOVE COUNTER. COORDINATE COUNTER HEIGHT WITH ARCHITECTURAL PLANS.		EMERGENCY LIGHT FIXTURE
	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE		CEILING MOUNTED EXIT SIGN
	WEATHERPROOF RECEPTACLE		WALL MOUNTED EXIT SIGN
	WHILE-IN-USE COVER WEATHERPROOF RECEPTACLE		ELECTRICAL EQUIPMENT
	TAMPER PROOF RECEPTACLE		ELECTRICAL PANEL - SURFACE MOUNT
	TV WIRING LOCATION		ELECTRICAL PANEL - RECESSED
	CEILING SPEAKER		WALL MOUNT OCCUPANCY SENSOR
	CONCEALED SERVICE FLOOR BOX WITH DEVICE SHOWN		WALL MOUNT LOW VOLTAGE OCCUPANCY SENSOR
	SURFACE SERVICE FLOOR BOX WITH DEVICE SHOWN		CEILING MOUNT LOW VOLTAGE OCCUPANCY SENSOR
	SURFACE SERVICE FLOOR BOX WITH DEVICE SHOWN		CEILING MOUNT LINE VOLTAGE OCCUPANCY SENSOR
	DATA OUTLET		WALL SWITCH, SINGLE POLE UNLESS NOTED OTHERWISE WITH NUMERAL DESIGNATION
	DOOR HOLD-OPEN		KEYED WALL SWITCH
	FLOW SWITCH		WALL DIMMER SWITCH
	TAMPER SWITCH		MULTIPLE LIGHT SWITCHES INSTALLED UNDER SINGLE COVER PLATE
	FIRE ALARM HORN/STROBE		GROUNDING ELECTRODE
	FIRE ALARM STROBE		DISCONNECT SWITCH
	SMOKE DETECTOR		TIMESWITCH
	HEAT DETECTOR		PHOTOCELL
	FIRE ALARM BELL		LIGHTING CONTACTOR
	FIRE ALARM ANNUNCIATOR PANEL		WHERE SHOWN, WIRE ADJACENT FIXTURE AS UNSWITCHED NIGHT LIGHT.
	FIRE ALARM PANEL		CLOCK
	EQUIPMENT OR FIXTURE TAG		PANIC ALARM TROUBLE STROBE
	BELOW GRADE CONDUIT AND WIRING. SEE PANEL SCHEDULE FOR WIRE SIZE.		ACCESS CONTROL CARD SWIPE
	HOMERUN PANEL AND CIRCUIT DESIGNATION. SEE PANEL SCHEDULE FOR WIRE SIZE.		ACCESS CONTROL DOOR POWER SUPPLY
	CONDUIT AND WIRING WITH QUANTITY OF WIRES PLUS GROUND. SEE PANEL SCHEDULE FOR WIRE SIZE.		ACCESS CONTROL CENTRAL CONTROLLER
	CONDUIT AND WIRING WITH QUANTITY OF WIRES. SEE PANEL SCHEDULE FOR WIRE SIZE.		

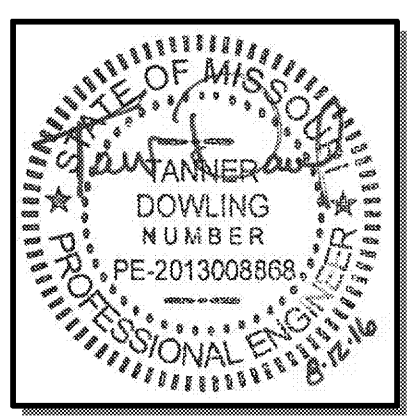
ABBREVIATIONS:

AC	ABOVE COUNTER INSTALL 4" ABOVE BACKSLASH UNLESS OTHERWISE NOTED.
WP OR WPI	WEATHERPROOF. PROVIDE WHETHERPROOF WHILE IN USE ENCLOSURE AND GFCI DEVICE.
60"	DIMENSIONS ADJACENT TO ANY SYMBOL INDICATES MOUNTING HEIGHT TO CENTERLINE OF DEVICE.
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ASC	AVAILABLE SHORT CIRCUIT CURRENT
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED



SECTION 26000 - ELECTRICAL SPECIFICATIONS

A - GENERAL					
1. GENERAL:					
1.1. THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETELY INSTALL ELECTRICAL AND RELATED WORK INDICATED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.	11.0.1. CHECK ALL MOTORS AND ROTATING EQUIPMENT FOR PROPER ROTATION. 11.0.2. TEST ALL FEEDERS WITH MEGGER PRIOR TO ENERGIZING TO ASSURE CODE RESISTANCE IS MET. 11.0.3. CHECK ALL FUSES AND OVERLOADS FOR PROPER SIZING. 11.0.4. CHECKING OF ALL ELECTRICAL POWER AND CONTROL WIRING, INTERLOCKS, ETC. RELATED TO MECHANICAL INSTALLATIONS TO DETERMINE THAT ALL WIRING IS CORRECT.	3.2.4. SURFACE. 3.2.5. EXPOSED AND KITCHEN EQUIPMENT: PROVIDE FS OR FD BOXES WITH SUITABLE WEATHERPROOF COVERS. 3.2.6. RAISED PLATFORM FLOOR: WHERE SHOWN IN FLOOR OF RAISED PLATFORM, 9" 75"X65" FSC RFL4-5-D2G RECESSED FLOOR BOX WITH TWO DOUBLE GANG OPENINGS, INSERT BRACKETS, BLACK DUAL DOOR COVER WITH SOLID COVER. 3.2.7. SURFACE SERVICE FLOOR BOX: ROUND BOX WITH STEEL POKE THROUGH CONSTRUCTION. BOX SHALL BE FIRE RATED AND UL LISTED FOR USE IN 1-4 HOUR RATED FLOORS. BOX SHALL BE ADJUSTABLE FOR CONCRETE FLOOR THICKNESS BETWEEN 2.25" AND 7" FLOOR THICKNESS AND SHALL BE EQUIPPED WITH (2) 1" EMT CONDUIT ENTRIES MINIMUM. PROVIDE CONCRETE CAP AND UNIVERSAL COVER. PROVIDE DEVICE BRACKETS AND COVER PLATE AS REQUIRED TO INSTALL DEVICES SHOWN ON PLANS. COVER PLATE SHALL BE BLACK UNLESS OTHERWISE NOTED. 3.2.8. CONCEALED SERVICE FLOOR BOX FOR CONCRETE FLOORS: STEEL, RECTANGULAR BOX WITH FOUR COMPARTMENT, SHALLOW STAMPED CONSTRUCTION. MAXIMUM BOX DEPTH SHALL BE 2.5" WITH CONDUIT ENTRY SIZE UP TO 1.25". PROVIDE DEVICE BRACKETS AS REQUIRED TO INSTALL DEVICES SHOWN ON PLANS. BOX SHALL BE DESIGNED FOR FEED THROUGH TUNNELING TO ADJACENT COMPARTMENTS. PROVIDE COVER ASSEMBLY WITH FLANGED COVER FOR USE IN TILE OR CARPETED INSTALLATION. COVER SHALL BE EQUIPPED WITH INSERT IN LID TO ALLOW FOR CARPET OR TILE CUTOUTS TO MATCH FINISHED FLOOR. PROVIDE BLACK COVER UNLESS OTHERWISE NOTED. WHERE DEVICES SHOWN ON PLAN CANNOT BE INSTALLED IN SINGLE BOX, PROVIDE ADDITIONAL BOXES AS REQUIRED TO ACCEPT INSTALLATION OF SPECIFIED DEVICES.	7.2.3. DOOR HINGES. EQUIP WITH INTERIOR CIRCUIT DIRECTOR FRAME AND CARD WITH CLEAR PLASTIC COVERING. PROVIDE BAKED GRAY ENAMEL FINISH OVER A RUST INHIBITOR COATING. PROVIDE ENCLOSURES FABRICATED BY SAME MANUFACTURER AS PANEL BOARDS. 7.2.4. WHEN PANEL SCHEDULE INDICATES "MC" - PANEL SHALL BE EQUIPPED WITH MAIN CIRCUIT BREAKER. CIRCUIT BREAKER RATING SHALL BE EQUAL TO THE RATING OF THE PANEL UNLESS OTHERWISE NOTED. PROVIDE AVAILABLE SHORT CIRCUIT CURRENT ON ENGRAVED PLASTIC LABEL AFFIXED TO FRONT OF PANEL.	8. LIGHTING FIXTURES	8.1. GENERAL:
1.2. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLATION A COMPLETE AND FUNCTION SYSTEM IN ACCORDANCE WITH THE INTENT OF THE PLANS. WHETHER OR NOT EVERY ELEMENT THEREOF IS SPECIFICALLY CALLED OUT - PROVIDE ALL HARDWARE AND ACCESSORIES FOR A COMPLETE ELECTRICAL INSTALLATION.	B - PRODUCTS	3.3. PULL AND JUNCTION BOXES: 3.3.1. PROVIDE BOXES WHERE REQUIRED TO FACILITATE THE PULLING OF WIRES OR CABLES. BOXES SHALL BE IN ACCORDANCE WITH ARTICLE 370 OF THE NEC.	7.3. ALL NEW AND EXISTING PANELS EFFECTED BY THE WORK OF THIS PROJECT SHALL BE PROVIDED WITH A TYPED CIRCUIT DIRECTORY.	8.1.1. HANDLE LIGHTING FIXTURES CAREFULLY TO PREVENT DAMAGE, BREAKING AND SCORING. DO NOT INSTALL DAMAGED FIXTURES OR COMPONENTS. REPLACE WITH NEW. 8.1.2. STORE LIGHTING FIXTURES IN A CLEAN DRY PLACE. PROTECT FROM WEATHER, DIRT, DEBRIS, WATER, CONSTRUCTION DEBRIS AND PHYSICAL DAMAGE. 8.1.3. SHIP FIXTURES FACTORY ASSEMBLED WITH PARTS REQUIRED FOR A COMPLETE INSTALLATION. 8.1.4. FLUORESCENT BALLAST SHALL BE CLASS P, LOW ENERGY RAPID START SOUND RATED A. 8.1.5. PROVIDE HID LAMP BALLAST CAPABLE OF OPERATING LAMP TYPES WITH RATINGS INDICATED. REACTOR TYPE, HIGH POWER FACTOR CORE AND COIL ASSEMBLY. ENCAPSULATED IN NON MELT RESIN. 8.1.6. PROVIDE FLUORESCENT LAMPS OF TYPES INDICATED. 8.1.7. PROVIDE HID LAMPS IN WATTAGES AND TYPES INDICATED. 8.1.8. PROVIDE INCANDESCENT LAMPS IN THE SIZES AND RATED FOR 130 VOLTS AND WITH WATTAGE AS INDICATED. 8.1.9. PROVIDE FIXTURES (AND/OR FIXTURE OUTLET BOXES WITH HANGERS TO PROPERLY SUPPORT FIXTURE WEIGHT). 8.1.10. INSTALL FLUSH MOUNTED FIXTURES TO ELIMINATE LIGHT LEAKAGE BETWEEN FRAME AND FINISHED SURFACE. 8.1.11. AT DATE OF SUBSTANTIAL COMPLETION REPLACE LAMPS IN ALL FIXTURES WHICH ARE OBSERVED TO BE INOPERATIVE OR NOTICEABLE DIMMED AFTER CONTRACTORS USE AS JUDGED BY THE OWNER'S REPRESENTATIVE.	9. FIRE ALARM
1.3. CONTRACTORS SHALL INSPECT THE JOB SITE AND REVIEW THE PLANS. ANY DEVIATIONS, ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING. REQUESTS FOR ADDITIONAL FUNDS FOR EXTRA WORK WILL NOT BE HONORED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER. FIELD VERIFY ALL EXISTING AND NEW CONDITIONS.	1. RACEWAYS:	3.4. ACCESSORIES: 3.4.1. PROVIDE CORROSION-RESISTANT KNOCKOUT CLOSURES, CONDUIT LOCKNUTS AND MALLEABLE IRON CONDUIT BUSHINGS, OF SPECIFIED CONDUIT, OF TYPES AND SIZES, TO SUIT RESPECTIVE INSTALLATION REQUIREMENTS AND APPLICATIONS.		9.1. GENERAL:	9.1.1. SIMPLEX, NOTIFIER, SILENT KNIGHT, SIEMENS
1.4. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL ADDITIONAL OR SPECIAL REQUIREMENTS MADE BY THE MANUFACTURER OF THE EQUIPMENT THAT THEY ARE PURCHASING AND INSTALLING AS PART OF THEIR SCOPE OF WORK. THIS INCLUDES ADDITIONAL COSTS FOR BOTH MATERIAL AND LABOR.	1.1. MC CABLE	3.5. INSTALLATION OF BOXES AND FITTINGS: 3.5.1. POSITION RECESSED OUTLET BOXES ACCURATELY TO ALLOW FOR SURFACE FINISH THICKNESS. 3.5.2. FASTEN ELECTRICAL BOXES FIRMLY AND RIGIDLY TO SUBSTRATES OR STRUCTURAL SURFACES TO WHICH ATTACHED OR SOLIDLY EMBED ELECTRICAL BOXES IN CONCRETE OR MASONRY.		9.2. REQUIREMENTS:	9.2.1. FIRE ALARM SHALL BE ADDRESSABLE SYSTEM. PROVIDE ALL INITIATION AND ANNUNCIATION DEVICES AS SHOWN ON PLANS. 9.2.2. SPRINKLER FLOW AND TAMPER SWITCHES ARE NOT SHOWN ON PLANS BUT ARE REQUIRED. CONTRACTOR SHALL PROVIDE TAMPER AND FLOW SWITCHES AT EACH SPRINKLER SHUT OFF VALVE BASED ON ACTUAL SPRINKLER LAYOUT. COORDINATE WORK WITH SPRINKLER CONTRACTOR. 9.2.3. FIRE ALARM SIGNAL SHALL INITIATE THE FOLLOWING: 9.2.3.1. ALARM NOTIFICATION APPLIANCES. 9.2.3.2. SWITCH HVAC EQUIPMENT TO FIRE ALARM MODE. 9.2.3.3. ACTIVATE VOICE EVACUATION ANNUNCIATION SYSTEM (WHERE APPLICABLE) 9.2.3.4. RECALL ELEVATORS TO PRIMARY OR ALTERNATE FLOORS (WHERE APPLICABLE) 9.2.3.5. IDENTIFY ALARM AT FIRE ALARM CONTROL UNIT.
1.5. ELECTRICAL CONTRACTOR SHALL PROVIDE A ROUGH-IN CONDUIT FOR CABLE SERVICE AS INDICATED ON DRAWINGS. WHERE NOT INDICATED ON DRAWINGS CLARIFY WITH ENGINEER PRIOR TO BID.	1.2. INSTALLATION	3.6. LOCATIONS OF OUTLETS: 3.6.1. IN GENERAL THE VARIOUS OUTLETS ARE TO BE LOCATED AT THE FOLLOWING HEIGHTS ABOVE FINISHED FLOOR TO THE CENTER LINE OF BOX, UNLESS NOTED OTHERWISE AT AN INDIVIDUAL OUTLET ON THE DRAWINGS. 3.6.1.1. WALL SWITCHES: 44" AFF 3.6.1.2. RECEPTACLES: 18" AFF 3.6.1.3. DATA/VOICE OUTLETS: 18" AFF 3.6.1.4. OUTLETS ABOVE COUNTERS: 6" ABOVE BACKSPASH 3.6.2. OUTLET MOUNTING HEIGHTS INDICATED ON THE DRAWINGS AT THE OUTLETS TAKE PRECEDENCE. REFER TO DRAWINGS FOR DETAILS OF OTHER EQUIPMENT MOUNTING HEIGHTS. MOUNTING HEIGHTS FOR FLUSH OUTLETS IN BLOCK WALLS MAY BE CHANGED FOR INSTALLATION. CONSULT OWNER'S REPRESENTATIVE IN FIELD PRIOR TO ANY SUCH INSTALLATION. 3.6.3. ALL RECEPTACLES INSTALLED IN A KITCHEN OR RESTROOM OR FOR USE BY A WATER COOLER IN A COMMERCIAL FACILITY SHALL BE PROVIDED WITH GFCI PROTECTION REGARDLESS IF NOTED ON THE PLANS. 3.6.4. ALL RECEPTACLES INSTALLED IN A KITCHEN OR RESTROOM OF A NON-COMMERCIAL FACILITY SHALL BE PROVIDED WITH GFCI PROTECTION AS REQUIRED BY NEC REGARDLESS IF NOTED ON THE PLANS.		9.2.4. FIRE ALARM CONTROL PANEL SHALL BE FIELD PROGRAMMABLE MICRO PROCESSOR BASED MODULAR UNIT LISTED AND LABELED BY AN NRTL. SYSTEM SOFTWARE AND PROGRAMS SHALL BE STORED IN FLASH READ-ONLY MEMORY. UNIT SHALL BE EQUIPPED WITH REAL TIME CLOCK FOR EVENT LOGGING AND SHALL BE EQUIPPED WITH LCD DISPLAY AND KEYPAD ARRANGED TO PERMIT ENTRY AND EXECUTION OF PROGRAMMING, DISPLAY AND CONTROL COMMANDS. 9.2.5. INITIATING CIRCUITS SHALL BE RATED FOR APPLIANCE TYPES UTILIZED ON CIRCUITS AND SHALL COMPLY WITH ALL REQUIREMENTS OF NFPA FOR CLASS A AND CLASS B CIRCUITS. 9.2.6. ELEVATOR SHALL BE RECALLED UPON SMOKE DETECTION AT ELEVATOR LOBBY SMOKE DETECTOR, SMOKE DETECTOR IN ELEVATOR MACHINE ROOM (OR OUTSIDE OF ELEVATOR MACHINE ACCESS PANEL) OR SMOKE DETECTOR IN ELEVATOR HOISTWAY. ELEVATOR SHALL BE RECALLED TO APPROPRIATE FLOOR BASED ON SMOKE DETECTION AT ELEVATOR LOBBIES. 9.2.7. DOOR HOLD OPEN DEVICES SHALL BE RELEASED UPON INITIATION OF FIRE ALARM SYSTEM OR DETECTION OF SMOKE AT DOOR HOLD OPEN LOCATIONS. 9.2.8. MANUAL FIRE ALARM BOXES SHALL COMPLY WITH UL38 AND SHALL BE EQUIPPED WITH DOUBLE ACTION MANNING. ALARM BOXES SHALL BE EQUIPPED WITH ADDRESSABLE TO COMMUNICATE MANUAL STATION STATUS. 9.2.9. SMOKE DETECTORS SHALL COMPLY WITH UL 268. DETECTORS SHALL BE INTEGRATED WITH ADDRESSABLE MODULE FOR COMMUNICATION OF DETECTOR STATUS. DETECTORS SHALL BE PHOTOELECTRIC TYPE. DUCT SMOKE DETECTORS SHALL BE EQUIPPED WITH WEATHERPROOF DUCT HOUSING. 9.2.10. HEAT DETECTORS SHALL COMPLY WITH UL 521. DETECTORS SHALL BE COMBINATION TYPE ACTUATED BY FIXED TEMPERATURE OR RATE OF TEMPERATURE RISE. 9.2.11. NOTIFICATION HORNS SHALL COMPLY WITH UL 464. RATED SOUND OUTPUT SHALL BE FIELD SELECTABLE. VISIBLE NOTIFICATIONS SHALL COMPLY WITH UL 1971. RATED LIGHT OUTPUT SHALL BE FIELD SELECTABLE. MAGNETIC DOOR HOLD OPENS SHALL BE PROVIDED WITH FINISH TO MATCH DOOR HARDWARE. 9.2.14. FIRE ALARM INSTALLATION SHALL COMPLY WITH THE FOLLOWING: 9.2.14.1. EQUIPMENT INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OR NFPA 72. INSTALL FIRE ALARM PANEL RECESSED IN WALL WHERE SHOWN ON PLANS. 9.2.14.2. SMOKE AND HEAT DETECTOR SPACING SHALL COMPLY WITH NFPA 72 9.2.14.3. DUCT SMOKE DETECTORS SHALL BE EQUIPPED WITH SAMPLING TUBES THAT EXTEND THE FULL WIDTH OF THE DUCT. 9.2.14.4. HEAT DETECTORS IN ELEVATOR SHAFT SHALL BE COORDINATED WITH LOCATION AND TEMPERATURE RATING OF SPRINKLER HEAD.	
1.6. ELECTRICAL CONTRACTOR TO COORDINATE WITH THE INTERIOR DESIGNER, GC AND ARCHITECT FOR PLACEMENT OF ALL WIRING DEVICE BOXES (SWITCH, RECEPTACLE, TELEPHONE/COMMUNICATION) PRIOR TO INSTALLATION OF ROUGH-IN. IT IS THE E/C'S RESPONSIBILITY TO CONFIRM WITH THE INTERIOR DESIGNER, G.C. AND ARCHITECT FOR FINAL LAYOUT	1.2.1. EXTENT OF RACEWAY WORK IS INDICATED DIAGRAMMATICALLY ON THE DRAWINGS AND IN THE SCHEDULES. WHEN THE SIZE IS NOT INDICATED ON PLANS, CONDUIT SHALL BE SIZED FOR CONDUCTORS IN ACCORDANCE WITH TABLES 3(A)(B)(C), CHAPTER 9 OF THE N.E.C. 1.2.2. THE ROUTING AND METHOD OF INSTALLATION OF ALL CONDUITS SHALL BE CO-ORDINATED SO AS NOT TO INTERFERE WITH OTHER EQUIPMENT INSTALLATIONS AND SHALL MEET WITH THE COMPLETE SATISFACTION OF THE OWNER'S REPRESENTATIVE. 1.2.4. THE USE OF INTERMEDIATE METAL CONDUIT (IMS), ELECTRICAL NON-METALLIC TUBING (EMT), ARMORED CABLE (AC), METAL CLAD CABLE (MC), OR MANUFACTURED CABLE ASSEMBLIES SHALL NOT BE INCORPORATED INTO THE WORK. 1.2.5. USE ONLY THE TYPES OF RACEWAYS SPECIFIED HEREIN. 1.2.6. TYPES OF RACEWAYS SPECIFIED IN THIS SECTION INCLUDE THE FOLLOWING: 1.2.6.1. ELECTRICAL METALLIC TUBING (EMT); MINIMUM TRADE SIZE 0.5" 1.2.6.2. FLEXIBLE METAL CONDUIT; MINIMUM TRADE SIZE 0.5" 1.2.6.3. LIQUID-TIGHT FLEXIBLE METAL CONDUIT (SEALIGHT); MINIMUM TRADE SIZE 0.5" 1.2.6.4. RIGID METAL CONDUIT; MINIMUM TRADE SIZE 0.5" 1.2.6.5. RIGID NONMETALLIC CONDUIT (PVC) SCHEDULE 40; MINIMUM TRADE SIZE 0.5"	4. CONNECTIONS FOR EQUIPMENT: 4.1. GENERAL: FOR EACH ELECTRICAL CONNECTION INDICATED PROVIDE COMPLETE ASSEMBLY OF MATERIALS, INCLUDING BUT NOT NECESSARILY LIMITED TO, PRESSURE CONNECTORS, TERMINALS (LUGS), ELECTRICAL INSULATING TAPE, HEAT-SHRINKABLE INSULATING TUBING, CABLE TIES, SOLIDRESS WIRE-NUTS, AND OTHER ITEMS AND ACCESSORIES AS NEEDED TO COMPLETE SPICES AND TERMINATIONS OF TYPES INDICATED. 5. WIRING DEVICES: 5.1. GENERAL: 5.1.1. THE EXTENT OF WIRING DEVICE WORK IS INDICATED BY THE DRAWINGS AND SCHEDULES. 5.1.2. PROVIDE WIRING DEVICES WHICH ARE UL LISTED AND LABELED. 5.2. ACCEPTABLE MANUFACTURERS: 5.2.1. HUBBELL, INTERMATIC, GENERAL ELECTRIC, LEVITON, COOPER WIRING DEVICES 5.3. FABRICATED WIRING DEVICES: 5.3.1. SWITCHES SHALL BE 20 AMP, 120/277 VOLT RATED, HUBBELL #1221 - IVORY OR WHITE. 5.3.2. DIMMER SWITCHES SHALL BE 20 AMP, 120/277 VOLT RATED, LEVITON #P106-10 - IVORY OR WHITE, SLIDE DIMMER SWITCH WITH ON/OFF BUTTON. 5.3.3. RECEPTACLES SHALL BE 20 AMP, 125 VOLT RATED, HUBBELL #5362 - IVORY OR WHITE. FOR OTHER APPLICATIONS REFER TO THE DRAWINGS. 5.3.4. PROVIDE SMOOTH FINISH PLATES FOR ALL DEVICES WITH APPROPRIATE MOUNTING ARRANGEMENTS FOR GAUGED DEVICES. FOR TELEPHONE AND COMPUTER/AMX AND MICROPHONE OUTLETS, PROVIDE BUSHED HOLE COVER PLATE. PLATES SHALL BE IVORY, WHITE OR STAINLESS STEEL. 5.3.5. ELECTRONIC TIMER SWITCHES SHALL BE INTERMATIC #2235 15, 30, 45, 60, 120 MINUTE TIMER WITH 120V RATING, 1800W MAXIMUM WATTAGE AND COLOR TO MATCH OTHER DEVICES.		9.3. CONTROL RELAYS 10.1. RESTROOM EXHAUST FAN CONTROL RELAYS SHALL BE EQUAL TO HUBBELL AAR ADD-A-RELAY.	
1.7. ALL ITEMS EXPOSED TO THE EXTERIOR ARE TO BE PAINTED TO MATCH ADJACENT MATERIALS. IT IS THE CONTRACTORS RESPONSIBILITY TO INCLUDE THIS IN THERE BID.	1.3. FITTINGS	4.2. REFER TO EQUIPMENT SPECIFICATIONS IN ALL SPECIFICATION DIVISIONS FOR ROUGH-IN REQUIREMENTS.		11. OCCUPANCY SENSORS 11.1. ACCEPTABLE MANUFACTURERS 11.1.1. LEVITON, WATT STOPPER, HUBBELL, COOPER 11.1. LINE VOLTAGE CEILING OCCUPANCY SENSOR 11.1.1. OCCUPANCY SENSOR SHALL BE DUAL TECHNOLOGY WITH ADJUSTABLE LIGHT SENSOR 11.1.2. IR RANGE ON AXIS SHALL BE 1000 SQUARE FEET. 11.1.3. SENSOR SHALL BE RATED FOR 1500 VA. 11.1.4. RESPONSE TIME SHALL BE ADJUSTABLE FROM 5 TO 30 MINUTES. 11.1.5. UNIT SHALL BE RATED FOR 120, 230, 277 VOLTS 11.2. LINE VOLTAGE WALL SWITCH OCCUPANCY SENSOR 11.2.1. OCCUPANCY SENSOR SHALL BE DUAL TECHNOLOGY TYPE. 11.2.2. SENSOR SHALL BE RATED FOR 120, 240, 277 VOLTS. 11.2.3. SENSOR SHALL BE RATED FOR 1200 VA. 11.2.4. IR RANGE ON AXIS SHALL BE 2400 SQUARE FEET. 11.3. LOW VOLTAGE CEILING OCCUPANCY SENSOR 11.3.1. OCCUPANCY SENSOR SHALL BE DUAL TECHNOLOGY TYPE WITH ADJUSTABLE LIGHT SENSOR. 11.3.2. INFRARED RANGE SHALL BE 1000 SQUARE FEET. 11.4. LOW VOLTAGE WALL OCCUPANCY SENSOR 11.4.1. OCCUPANCY SENSOR SHALL BE DUAL TECHNOLOGY TYPE WITH ADJUSTABLE LIGHT SENSOR. 11.4.2. INFRARED RANGE ON AXIS SHALL BE 2000 SQUARE FEET. 11.4.3. RESPONSE TIME SHALL BE ADJUSTABLE FROM 5 TO 30 MINUTES. 11.5. POWER PACK 11.5.1. CONTACT PACK BE RATED FOR 120V OR 277V AS REQUIRED. 11.5.2. POWER PACK SHALL ACCEPT INPUT FROM LOW VOLTAGE WALL SWITCHES, OCCUPANCY SENSORS, DAYLIGHT SENSORS AND OTHER DEVICES SHOWN IN AREA OF POWER PACK. 11.5.3. POWER PACK SHALL BE RATED FOR MINIMUM LOAD OF 1500 VA.	
2. CODE:	1.4. CONDUIT INSTALLATION:	2. CODE: 2.1. ALL EQUIPMENT, WIRING AND THE ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), A.S.H.A. REQUIREMENTS, LIFE SAFETY CODE AND ALL APPLICABLE LOCAL AND STATE ORDINANCES. 2.2. THE CONTRACTOR SHALL PAY ALL INSPECTION FEES AND PURCHASE ALL PERMITS REQUIRED FOR THIS WORK.		11.5. OCCUPANCY SENSORS 11.5.1. CONTACT PACK BE RATED FOR 120V OR 277V AS REQUIRED. 11.5.2. POWER PACK SHALL ACCEPT INPUT FROM LOW VOLTAGE WALL SWITCHES, OCCUPANCY SENSORS, DAYLIGHT SENSORS AND OTHER DEVICES SHOWN IN AREA OF POWER PACK. 11.5.3. POWER PACK SHALL BE RATED FOR MINIMUM LOAD OF 1500 VA.	
3. LOCATION OF EQUIPMENT:	1.4.1. USE RIGID METAL CONDUIT FOR ALL WEATHER EXPOSED WORK. FOR ALL STUB-UPS IN KITCHEN AREA, FOR ALL ROOF PENETRATIONS THROUGH PATE PLUGS AND FOR FREEZER/COOLER PENETRATIONS. 1.4.2. USE EMT FOR ALL INTERIOR CONCEALED AND FOR EXPOSED WORK NOT SUBJECT TO MECHANICAL INJURY. 1.4.3. USE SCHEDULE 40 PVC FOR ALL UNDERGROUND WORK OR WORK INSTALLED IN CONCRETE. USE RIGID METAL CONDUIT AT STUB-UP LOCATIONS. TRANSITION TO RIGID CONDUIT BEFORE STUB-UP. NO PVC SHALL BE EXPOSED ABOVE GRADE. 1.4.4. USE FLEXIBLE METAL CONDUIT FROM OUTLET BOXES TO RECESSED LIGHTING FIXTURE AND FINAL 24" OF CONNECTION TO ITEMS SUBJECT TO MOVEMENT OR VIBRATION. 1.4.5. USE LIQUID-TIGHT FLEXIBLE CONDUIT FOR FINAL 24" CONNECTION TO ITEMS WHERE SUBJECTED TO ONE OR MORE OF THE FOLLOWING CONDITIONS: 1.4.5.1. EXTERIOR LOCATION. 1.4.5.2. MOIST OR HUMID ATMOSPHERE WHERE CONDENSATE CAN BE EXPECTED TO ACCUMULATE. 1.4.5.3. CORROSIVE ATMOSPHERE. 1.4.5.4. SUBJECT TO WATER SPRAY OR DRIPPING OIL, WATER OR GREASE. 1.4.5.5. FINAL CONNECTION TO ROTATING OR VIBRATING EQUIPMENT. 1.4.6. CUT CONDUITS STRAIGHT, PROPERLY REAM AND CUT THREADS FOR HEAVY WALL CONDUIT DEEP AND CLEAN. 1.4.7. FIELD BEND CONDUIT WITH BENDERS DESIGNED FOR THE PURPOSE SO AS NOT TO DISTORT NOR VARY INTERNAL DIAMETER.	3. LOCATION OF EQUIPMENT: 3.1. THE CONTRACTOR SHALL NOTE THAT THE ELECTRICAL DRAWINGS ARE INTENDED TO INDICATE ONLY THE EXTENT DIAGRAMMATICALLY. GENERAL CHARACTER AND LOCATION OF THE WORK, WORK INTERED, BUT HAVING MINOR DETAIL OBVIOUSLY OMITTED, SHALL BE FURNISHED AND INSTALLED COMPLETE BY THIS CONTRACTOR AT THEIR EXPENSE. 3.2. THE CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND THOROUGHLY REVIEW ALL DRAWINGS, SPECIFICATIONS AND POSSIBLE ADDENDA PRIOR TO BIDDING ON THE WORK. NO EXTRAS TO HIS CONTRACTOR WILL BE ALLOWED FOR FAILURE TO COMPLY WITH THIS REQUIREMENT. 4. ROUGH-IN: 4.1. VERIFY FINAL LOCATIONS FOR ROUGH-INS WITH SHOP DRAWINGS, FIELD MEASUREMENTS AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT TO BE CONNECTED PRIOR TO ROUGH-IN. 4.2. REFER TO EQUIPMENT SPECIFICATIONS IN ALL SPECIFICATION DIVISIONS FOR ROUGH-IN REQUIREMENTS. 5. INSTALLATION: 5.1. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN A NEAT AND FIRST CLASS MANNER, LEVEL AND PLUMB AND SECURELY SUPPORTED. THE ENTIRE INSTALLATION AND MANNER OF INSTALLATION SHALL MEET THE COMPLETE SATISFACTION OF THE OWNER'S REPRESENTATIVE OR IT SHALL BE REMOVED AND REWORKED AS DIRECTED BY THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. 5.2. ALL WIRING SHALL BE IN CONDUIT. EMT SHALL BE ALLOWED WHERE A NEW DEVICE IS INDICATED ON PLANS TO BE INSTALLED IN AN EXISTING WALL. THE USE OF BX, NM, OR PREMANUFACTURED CABLE ASSEMBLIES SHALL NOT BE PERMITTED. 5.3. ALUMINUM WIRE SHALL NOT BE PERMITTED FOR BRANCH CIRCUIT WIRING. 5.4. COORDINATE CONNECTION OF ELECTRICAL SYSTEMS WITH UTILITIES AS INDICATED ON THE DRAWINGS. 6. CUTTING AND PATCHING: 6.1. ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF ELECTRICAL WORK SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. 6.2. NO ADDITIONAL COMPENSATION WILL BE AUTHORIZED FOR CUTTING AND PATCHING WORK THAT IS NECESSITATED BY ILL-TIMED, DEFECTIVE, OR NON-COFORMING INSTALLATIONS. 6.3. CONTRACTOR SHALL VERIFY TRANSFORMER LOCATION AND METERING SCHEME WITH LOCAL UTILITY PRIOR TO BID. 7. ELECTRICAL SUBMITTALS: 7.1. REFER TO THE CONDITIONS OF THE CONTRACT (GENERAL AND SUPPLEMENTARY) AND DIVISION 10000, SECTION: SHOP DRAWINGS, PRODUCT DATA AND SAMPLES FOR SUBMITTAL DEFINITIONS, REQUIREMENTS AND PROCEDURES. 7.2. IN ADDITION TO THE REQUIREMENTS OF DIVISION 10000 THE FOLLOWING APPLIES TO THE SUBMITTALS OF THIS DIVISION: 7.2.1. NO ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN THE PROJECT UNTIL SUBMITTALS HAVE BEEN ACCEPTABLY REVIEWED BY THE OWNER'S REPRESENTATIVE AND STAMPED ACCORDINGLY. 7.2.2. MAKE ALL ELECTRICAL SUBMITTALS AT ONE TIME WITH WITHIN (14) CALENDAR DAYS OF OWNER'S NOTICE TO PROCEED TO THE GENERAL CONTRACTOR. 7.2.3. SUBMIT SIX (6) COMPLETE SETS TO OWNER'S REPRESENTATIVE. ONE SET SHALL BE DELIVERED TO THE OWNER AND THE OTHERS WILL BE RETURNED TO THE CONTRACTOR TO DISTRIBUTE AS REQUIRED. 7.2.4. CONTRACTOR SHALL RESUBMIT ENTIRE SUBMITTAL SET UNLESS COMPLETE RE-SUBMITTAL IS SPECIFICALLY NOTED TO BE NOT REQUIRED. 7.2.5. SUBMITTALS OF CUT SHEET AND TECHNICAL DATA SHALL BE MADE ON THE FOLLOWING ITEMS: LIGHTING EQUIPMENT, PANELS, WIRING DEVICES, DISCONNECT SWITCHES, MOTOR STARTERS, TRANSFORMERS. ALL SUBMITTALS SHALL BE ORIGINALS. COPIES OF CUT SHEETS ARE NOT ACCEPTABLE. 7.2.6. IN CASE OF DISCREPANCIES BETWEEN SETS OF SUBMITTALS, THE SET RETAINED BY THE OWNER'S REPRESENTATIVE SHALL HAVE PRECEDENCE. 8. IDENTIFICATION NAME PLATES: 8.0. FURNISH AND INSTALL NAMEPLATES ON ALL ITEMS OF ELECTRICAL EQUIPMENT. NAMEPLATES SHALL BE MADE FROM WHITE ENGRAVING STOCK WITH BLACK LETTERS AND BLACK FOUR EDGE BEVEL. WORDING SHALL SUITABLY DESCRIBE ITEMS AND NAMEPLATES SHALL BE ATTACHED USING PROPER SIZE AND TYPE STAINLESS STEEL BOLTS, GLUE ON, TAPE ON, OR TAPE TYPE NAMEPLATES ARE NOT ACCEPTABLE. 9. WARRANTIES: 9.0. GUARANTEE ALL ELECTRICAL SYSTEM MATERIALS AND WORKMANSHIP TO BE FREE FROM DEFECTS FOR A PERIOD OF TIME OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE AND PROPERLY CORRECT LATENT DEFECTS ARISING WITHIN THIS PERIOD UPON NOTIFICATION BY THE OWNER'S REPRESENTATIVE WITHOUT ADDITIONAL COMPENSATION. 10. CLEANING: 10.0. REGULARLY REMOVE REFUSE AND DEBRIS ACCUMULATING FROM ELECTRICAL CONSTRUCTION AND PRIOR TO ACCEPTANCE OF THIS WORK. LEAVE THE PREMISES BROOM CLEAN INsofar AS AFFECTED BY ELECTRICAL WORK. 10.1. CLEAN ALL LIGHT FIXTURES, LAMPS AND LENSES AND PANELBOARD INTERIORS PRIOR TO FINAL ACCEPTANCE. 11. TEST AND ADJUSTMENT: 11.0. FURNISH ALL LABOR, INSTRUMENTS AND OTHER SERVICES REQUIRED FOR COMPLETE AND SATISFACTORY TEST AND ADJUSTMENT OF ELECTRICAL SYSTEMS AND RELATED WORK FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.	1.3. INSTALLATION OF RACEWAYS: 1.3.1. ALL CONDUITS SHALL BE INSTALLED CONCEALED, EXCEPT IN EQUIPMENT ROOM, CHASES OR AS INDICATED ON THE DRAWINGS. ALL CONDUITS, EXPOSED AND CONCEALED SHALL BE RUN PARALLEL AND PERPENDICULAR TO BUILDING LINES AND SHALL BE GROUPEDED TOGETHER AS MUCH AS POSSIBLE. 1.3.2. A SEPARATE GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL RUNS. WHERE SIZES LARGER THAN #12 AWG ARE REQUIRED BY THE NEC. THE CONDUCTOR SHALL BE SIZED AS INDICATED IN THE N.E.C. ALL GROUNDING CONDUCTORS SHALL HAVE A GREEN OUTER COVERING, OR GREEN MARKING TAPE OVER THEIR ENTIRE EXPOSED LENGTHS. 1.3.3. MECHANICALLY FASTEN TOGETHER METAL CONDUITS, ENCLOSURES AND RACEWAYS FOR CONDUCTORS TO FORM A CONTINUOUS ELECTRICAL CONDUCTOR. CONNECT TO ELECTRICAL BOXES, FITTINGS AND CABINETS TO PROVIDE ELECTRICAL CONTINUITY AND FIRM MECHANICAL ASSEMBLY. 1.3.4. AVOID USE OF DISSIMILAR METALS THROUGH SYSTEM TO ELIMINATE POSSIBILITY OF ELECTROLYSIS. 1.3.5. INSTALL EXPANSION FITTINGS IN RACEWAYS EVERY 200' LEAK RUN OR WHEREVER STRUCTURAL EXPANSION JOINTS ARE CROSSED. PROVIDE NYLON PULL CORD IN ALL EMPTY CONDUITS. 1.4. CONDUIT INSTALLATION: 1.4.1. USE RIGID METAL CONDUIT FOR ALL WEATHER EXPOSED WORK. FOR ALL STUB-UPS IN KITCHEN AREA, FOR ALL ROOF PENETRATIONS THROUGH PATE PLUGS AND FOR FREEZER/COOLER PENETRATIONS. 1.4.2. USE EMT FOR ALL INTERIOR CONCEALED AND FOR EXPOSED WORK NOT SUBJECT TO MECHANICAL INJURY. 1.4.3. USE SCHEDULE 40 PVC FOR ALL UNDERGROUND WORK OR WORK INSTALLED IN CONCRETE. USE RIGID METAL CONDUIT AT STUB-UP LOCATIONS. TRANSITION TO RIGID CONDUIT BEFORE STUB-UP. NO PVC SHALL BE EXPOSED ABOVE GRADE. 1.4.4. USE FLEXIBLE METAL CONDUIT FROM OUTLET BOXES TO RECESSED LIGHTING FIXTURE AND FINAL 24" OF CONNECTION TO ITEMS SUBJECT TO MOVEMENT OR VIBRATION. 1.4.5. USE LIQUID-TIGHT FLEXIBLE CONDUIT FOR FINAL 24" CONNECTION TO ITEMS WHERE SUBJECTED TO ONE OR MORE OF THE FOLLOWING CONDITIONS: 1.4.5.1. EXTERIOR LOCATION. 1.4.5.2. MOIST OR HUMID ATMOSPHERE WHERE CONDENSATE CAN BE EXPECTED TO ACCUMULATE. 1.4.5.3. CORROSIVE ATMOSPHERE. 1.4.5.4. SUBJECT TO WATER SPRAY OR DRIPPING OIL, WATER OR GREASE. 1.4.5.5. FINAL CONNECTION TO ROTATING OR VIBRATING EQUIPMENT. 1.4.6. CUT CONDUITS STRAIGHT, PROPERLY REAM AND CUT THREADS FOR HEAVY WALL CONDUIT DEEP AND CLEAN. 1.4.7. FIELD BEND CONDUIT WITH BENDERS DESIGNED FOR THE PURPOSE SO AS NOT TO DISTORT NOR VARY INTERNAL DIAMETER. 2. CONDUCTORS 2.1. ALUMINUM FEEDERS: 2.1.1. WHERE ALLOWED BY LOCAL AUTHORITIES, CONTRACTOR SHALL HAVE OPTION TO PROVIDE ALTERNATE PRICING FOR ALUMINUM FEEDERS FROM UTILITY TRANSFORMER TO MAIN DISTRIBUTION PANEL. CONTRACTOR SHALL REVISE FEEDER SIZE ACCORDINGLY TO ACCOMMODATE ADDITIONAL VOLTAGE DROP AND ALUMINUM FEEDER RATED AMPACITIES. 2.2. CONDUCTORS: 2.2.1. CONDUCTOR SIZES SHALL BE AS INDICATED IN PANEL SCHEDULE. 2.2.2. GROUNDING CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH NEC TABLE 250.122. 2.2.3. ALL WIRE SHALL BE COPPER WITH THIN INSULATION. 2.2.4. THE USE OF ARMORED, BX, NM OR ANY MANUFACTURED CABLE ASSEMBLY (EXCEPT MC) SHALL NOT BE INCORPORATED INTO THE WORK. 2.2.5. ALL WIRING SHALL BE IN CONDUIT. 2.2.6. COLOR CODING OF CONDUCTORS SHALL BE AS FOLLOWS: 2.2.6.1. 120/208V SYSTEMS: PHASE A - BLACK, PHASE B - RED, PHASE C - BLUE, NEUTRAL - WHITE, GROUND - GREEN. 2.2.6.2. 277/480V SYSTEMS: PHASE A - YELLOW, PHASE B - BROWN, PHASE C - ORANGE, NEUTRAL - NATURAL GRAY, GROUND - GREEN. 2.2.7. AWG #10 AND SMALLER SHALL BE SOLID. AWG #8 AND LARGER SHALL BE STRANDED. 2.3. WIRE CONNECTIONS: 2.3.1. ALL FEEDER AND SUB FEEDER WIRING CONNECTIONS SHALL BE MADE WITH COMPRESSION CONNECTORS BY SQUARE D OR ACCEPTABLE EQUIVALENT. 2.3.2. ALL BRANCH WIRING CONNECTION SHALL BE 3M SCOTCH LOCK CONNECTORS OR ACCEPTABLE EQUIVALENT. 2.3.3. WHERE CABLE CONNECTIONS REQUIRE INSULATION, SCOTCH #93, ELECTRICAL TAPE SHALL BE USED FOR WRAPPING. 3. BOXES AND FITTINGS 3.1. BOXES AND FITTINGS: 3.1.1. EXTENT OF ELECTRICAL BOX AND ASSOCIATED FITTING WORK IS INDICATED BY DRAWINGS AND SCHEDULES. 3.2. OUTLET BOXES: 3.2.1. CEILING: 4" SQUARE, 2-1/8" DEEP FOR EXPOSED OR FURRED WORK, 3" DEEP FOR BOXES POURED IN CONCRETE. PROVIDE CONCRETE POUR BOXES OF THE TYPE SPECIALLY DESIGNED FOR THE APPLICATION. PROVIDE PLASTER RINGS WHERE REQUIRED. 3.2.2. WALL: 4" SQUARE, 2-1/8" DEEP BOXES. PROVIDE EXTENSION RINGS OR COVERS OF SUFFICIENT DEPTH TO BRING COVERS FLUSH WITH THE FINISHED SURFACE. 3.2.3. MASONRY: FOR FLUSH MOUNTED BOXES IN EXPOSED MASONRY OR TILE, PROVIDE COVERS WITH SQUARE CORNERS ON THE RAISED PORTION AND WITH SUFFICIENT DEPTH TO TRIM OUT FLUSH WITH FINISHED		



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COMMISSION NUMBER
15-103

NEW SANCTUARY
FOR
FIRST BAPTIST CHURCH
NEOSHO, MISSOURI

SHEET
E5

SCALE
1/8" = 1'-0"

DATE
08-15-16

REV. DATE

