A. GENERAL

- THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE. AND TO ENSURE THE STABILITY OF THE BUILDING AND ITS COMPONENT PARTS. AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS, DURING ERECTION. THIS INCLUDES THE ADDITION OF ANY SHORING, SHEETING, TEMPORARY GUYS, BRACING OR TIE DOWNS THAT MIGHT BE NECESSARY. SUCH MATERIAL IS NOT SHOWN ON THE DRAWINGS. IF APPLIED, THEY SHALL BE REMOVED AS CONDITIONS PERMIT, AND SHALL REMAIN THE CONTRACTOR'S PROPERTY. THE ENGINEER HAS NO EXPERTISE IN, AND TAKES NO RESPONSIBILITY FOR, CONSTRUCTION MEANS AND METHODS OR JOB SITE SAFETY DURING CONSTRUCTION. PROCESSING AND/OR APPROVING SUBMITTALS MADE BY THE CONTRACTOR WHICH MAY CONTAIN INFORMATION RELATED TO CONSTRUCTION METHODS OR SAFETY ISSUES, OR PARTICIPATION IN MEETINGS WHERE SUCH ISSUES MIGHT BE DISCUSSED, SHALL NOT BE CONSTRUED AS VOLUNTARY ASSUMPTION BY THE ENGINEER OF ANY RESPONSIBILITY FOR SAFETY
- 2. IT IS SOLELY THE RESPONSIBILITY OF EACH CONTRACTOR TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE ENGINEER IS NOT ENGAGED IN, AND DOES NOT SUPERVISE, CONSTRUCTION.
- 3. EQUIPMENT FRAMING LOADS, OPENINGS AND STRUCTURE IN ANY WAY RELATED TO HVAC, PLUMBING, OR ELECTRICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL COORDINATE THIS INFORMATION WITH THE INVOLVED TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. EXCESS COST RELATED TO VARIATION IN THESE REQUIREMENTS TO BE BORNE BY THE APPROPRIATE CONTRACTOR.
- SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THESE STRUCTURAL NOTES, THE SPECIFICATIONS, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.
- 5. ANCHOR BOLTS AND FOUNDATION DOWELS SHALL NOT BE REPAIRED, REPLACED, OR FIELD-MODIFIED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
- 6. EXISTING BUILDING: PROVIDE TEMPORARY SUPPORTS AND OTHER MEASURES AS REQUIRED TO PREVENT DAMAGE TO THE EXISTING BUILDING DURING CONSTRUCTION. FIELD VERIFY ALL EXISTING DIMENSIONS AND ELEVATIONS WHICH AFFECT THE NEW CONSTRUCTION.

B. BUILDING CODE AND DESIGN LOAD INFORMATION

- 1. GOVERNING CODE: 2018 MARYLAND BUILDING CODE/2018 INTERNATIONAL BUILDING CODE
- 2. CONTACT FOR PRINCE GEORGES COUNTY: PIAK WANATH, (301) 636-2000
- 3. AN ASTERISK (*) SIGNIFIES LOAD APPLICABLE TO THE CONVENTIONAL STEEL FRAMED STRUCTURE WHICH EXCLUDES THE PRE-ENGINEERED METAL BUILDING ROOF AND FRAMING.

4.	DESIGN ROOF DEAD LOAD*	=	25 PSF
5.	ROOF LIVE LOADS a. MINIMUM ROOF LIVE LOAD b. DESIGN ROOF LIVE LOAD	=	20 PSF 30 PSF
6.	FLOOR LIVE LOADS a. OFFICES b. ASSEMBLY AREAS c. PLATFORM STAGE d. LIGHT STORAGE	= = =	50 PSF 100 PSF 100 PSF 125 PSF
7.	ROOF SNOW DESIGN PARAMETERS a. GROUND SNOW LOAD Pg b. FLAT-ROOF SNOW LOAD Pf c. LOW SLOPE ROOF LOAD Pm d. SNOW LOAD IMPORTANCE FACTOR Is	= = =	35 PSF 27 PSF 22 PSF 1.1

- e. SNOW EXPOSURE FACTOR, Ce f. THERMAL FACTOR, Ct (FOR MAIN ROOF) = 1.0 q. THERMAL FACTOR, Ct (FOR CANOPIES) = 1.2
- h. ALL APPLICABLE EFFECTS DUE TO SNOW DRIFTING

8. WIND LOAD PARAMETER (ASCE 7-16)

- a. RISK CATEGORY III b. BASIC WIND SPEED (V) = 120 MPH c. BASIC WIND SPEED ASD (V-ASD) = 93 MPH d. WIND EXPOSURE CATEGORY
- e. INTERNAL PRESSURE COEFFICIENT, GCpi = + or -0.18
- 9. SEISMIC DESIGN PARAMETERS (ASCE 7-16) a. RISK CATEGORY III
- b. R = 3 (NO SPECIAL SEISMIC DETAILING REQUIRED)
- SITE CLASS = DMAXIMUM CONSIDERED EARTHQUAKE GROUND MOTION AT 0.2 SECOND PERIOD, Ss = 0.140
- e. MAXIMUM CONSIDERED EARTHQUAKE GROUND MOTION AT 1.0 SECOND PERIOD, S1 = 0.052 f. SEISMIC LOAD IMPORTANCE FACTOR, le = 1.25
- SEISMIC DESIGN CATEGORY = B ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE DESIGN BASE SHEAR = 25 KIPS

10. INTERIOR PARTITIONS

- a. UNIFORM LATERAL LOAD = 5 PSF
- 11. HANDRAILS AND GUARDS a. 50 PLF IN ANY DIRECTION OR 200 LB CONCENTRATED LOAD

12. GRAB BARS, AND BENCH SEAT SYSTEMS a. 250 LB CONCENTRATED LOAD APPLIED IN ANY DIRECTION AT ANY POINT

C. REINFORCED CAST-IN-PLACE CONCRETE

MATERIALS

a. SPECIFICATIONS: IN GENERAL, COMPLY WITH ACI 301-10 "SPECIFICATIONS FOR STRUCTURAL CONCRETE" b. STRUCTURAL CONCRETE

<u>CLASS</u>	LOCATION	F'c (PSI) @ 28 DAYS, U.N.O.
I	FOOTINGS, INTERIOR PIERS, BAPTISTERY FOUNDATION WALLS	3,000
11	INTERIOR SLABS ON GRADE, FILL OVER COMPOSITE STEEL/FORM DECK AND ALL INTERIOR CONCRETE NOT OTHERWISE SPECIFIED. WATER REDUCER REQUIRED. MINIMUM CEMENT CONTENT 520 LBS PER CUBIC YARD. POLYPROPYLENE FIBER REINFORCING AT 1.5 LBS PER CUBIC YARD PER MANUFACTURER'S DIRECTION.	3,500 @ 28 DAYS 1,800 @ 3 DAYS

- EXTERIOR SLABS ON GRADE, PIERS CAST 4,500 (WITH 6% AIR) INTEGRAL WITH FOUNDATION WALLS, EXTERIOR PIERS, AND ALL EXTERIOR CONCRETE NOT OTHERWISE IDENTIFIED. WATER REDUCER AND AIR-ENTRAINING ADMIXTURE REQUIRED. MINIMUM CEMENT CONTENT 564 LBS PER CUBIC YARD. MINIMUM WATER-CEMENTITIOUS MATERIAL RATIO 0.45.
- BACKFILL BELOW FOOTINGS (READY OR SITE MIXED)
- ALL DEFORMED REINFORCING BARS: FY = 60,000; ASTM A615 OR A706 EPOXY COATED REBAR: ASTM A775 OR ASTM A934, GREEN COLORED, COLD-BENDING PERMITTED.
- WELDED WIRE REINFORCEMENT: ASTM A1064, FLAT SHEETS NOT ROLLS FLY ASH: ASTM C618, TYPE F OR C. FLY ASH/TOTAL CEMENTITIOUS RATIO SHALL NOT EXCEED 25%.
- WATER REDUCING ADMIXTURE: ASTM C494 h. ADMIXTURES CONTAINING CHLORIDE ARE NOT PERMITTED.

a. PROVIDE AT LEAST ONE COPY OF THE ACI FIELD REFERENCE MANUAL, SP-15, IN THE FIELD OFFICE AT ALL

CONTINGENCIES:

a. INCLUDE AN ALLOWANCE IN THE BID TO PROVIDE AND INSTALL 1,000 ADDITIONAL POUNDS OF REINFORCING BARS. MATERIAL TO BE USED AND ITS APPLICATION SHALL BE DETERMINED BY THE ARCHITECT OR ENGINEER. BENT BARS, IF REQUIRED, SHALL BE BENT IN THE SHOP, UNLESS OTHERWISE APPROVED. b. Provide supports as required to maintain alignment of scheduled reinforcing. Such supports ARE TO BE REFLECTED IN THE BID, AND ARE NOT PART OF THE CONTINGENCY LISTED ABOVE.

a. OPENINGS SHOWN ARE FOR BIDDING PURPOSES ONLY. COORDINATE THEIR EXACT SIZES AND LOCATIONS

- WITH HVAC, PLUMBING, AND OTHER REQUIREMENTS BEFORE PROCEEDING WITH WORK. b. IF ANY OPENING NOT SHOWN ON THE PLANS IS REQUIRED, SECURE APPROVAL OF THE STRUCTURAL
- ENGINEER BEFORE PROCEEDING. c. PROVIDE TWO #5 BARS AROUND ALL SLAB AND WALL OPENINGS, EXTENDING 2 FEET BEYOND OPENING IN EVERY DIRECTION, U.N.O.. OPENINGS NOT EXCEEDING 16 INCHES x 16 INCHES MAY BE SLEEVED AS REQUIRED BY WORKING THE REINFORCING STEEL AROUND THEM.

5. FOOTINGS, PIERS, AND FOUNDATION STEM WALLS:

 DOWELS IN FOOTINGS TO MATCH VERTICAL PIER OR WALL REINFORCING AS APPLICABLE. PROVIDE CORNER BARS AT WALL AND FOOTING CORNERS TO MATCH HORIZONTAL REINFORCING. MINIMUM

O.C. FOR PARALLEL SURFACES, AT CENTERLINE OF MASONRY FOR PERPENDICULAR SURFACES.

- LAP LENGTH WITH HORIZONTAL REINFORCEMENT IS 45 TIMES THE BAR DIAMETER. c. BACKFILL AGAINST BOTH SIDES OF FOUNDATION OR RETAINING WALLS EQUALLY UNTIL THE LOWER ELEVATION
- d. PROVIDE LEAN CONCRETE (CLASS IV) UNDER FOUNDATIONS FOR ACCIDENTAL OVER EXCAVATION, SOFT SPOTS CAST IN CONTINOUS DOVETAIL ANCHOR SLOTS ON VERTICAL SURFACES WHERE MASONRY ABUTS, 16 INCHES

48 DIAMETERS

1-1/2 INCHES

6. SPLICES: UNLESS NOTED OTHERWISE, MINIMUM LAP SPLICE LENGTHS TO BE AS FOLLOWS:

- a. VERTICAL BARS IN WALLS & PIERS 30 DIAMETERS HORIZONTAL BARS IN SLABS & FOOTINGS 35 DIAMETERS HORIZONTAL BARS IN WALLS 45 DIAMETERS
- d. VERTICAL BARS IN PIERS THAT SUPPORT COLUMNS OF MOMENT RESISTING FRAMES OR BRACED FRAMES

- a. CONSTRUCTION JOINTS PERMITTED ONLY WHERE SHOWN OR AS APPROVED BY THE STRUCTURAL ENGINEER. ALL CONSTRUCTION JOINTS ARE TO BE KEYED. KEYWAYS SHALL BE 1-1/2 NCHES DEEP x 1/3 MEMBER
- 8. CONCRETE COVER: UNLESS NOTED OTHERWISE, DETAIL REINFORCING TO PROVIDE CONCRETE COVER AS FOLLOWS: a. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:

b. CONCRETE EXPOSED TO EARTH OR WEATHER (FORMED SURFACES): #5 BARS AND SMALLER 1-1/2 INCHES 2 INCHES

9. TESTING, INSPECTIONS, AND SUBMITTALS

c. CONCRETE NOT EXPOSED TO EARTH OR WEATHER:

- a. CONCRETE WORK AND TESTING SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 UNLESS MODIFIED BY THE STRUCTURAL GENERAL NOTES OR SPECIFICATIONS. REPORTS FROM TESTS REQUIRED BY SECTION 1.6 OF ACI 301 SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER, ARCHITECT, OWNER, CONTRACTOR, AND
- CONCRETE WORK IN COLD WEATHER SHALL CONFORM TO ALL REQUIREMENTS OF ACI 306.1, "STANDARD SPECIFICATION FOR COLD WEATHER CONCRETING AND AC1 306R, "GUIDE TO COLD WEATHER CONCRETING". c. CONCRETE WORK IN HOT WEATHER SHALL CONFORM TO ALL REQUIREMENTS OF ACI 305.1, "SPECIFICATION FOR HOT WEATHER CONCRETING", AND ACI 305R "GUIDE TO HOT WEATHER CONCRETING".
- d. SUBMIT SHOP DRAWINGS FOR REINFORCING STEEL. e. CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR EACH TYPE OF CONCRETE TO THE STRUCTURAL ENGINEER FOR APPROVAL IN ACCORDANCE WITH ACI 301, SECTION 4.2.3.4, FIELD TEST DATA OR TRIAL MIXTURES. SUBMITTAL DATA MUST INCLUDE FIELD TEST DATA FROM AT LEAST 10 TESTS OR A THREE POINT CURVE GENERATED USING TRIAL MIXTURES.
- OBTAIN CONCRETE FOR REQUIRED TESTS AT POINT OF PLACEMENT. DETERMINE SLUMP, AIR-CONTENT, AND TEMPERATURE FOR EACH STRENGTH TEST.
- DO NOT PLACE CONCRETE IF SLUMP, AIR-CONTENT, OR TEMPERATURE VARY FROM ALLOWABLE. SUPERPLASTICIZER MAY BE ADDED AT THE SITE TO IMPROVE CONCRETE WITH INADEQUATE SLUMP.

- a. Grout under bearing plates, setting plates, and column base plates shall be non-shrinking TYPE. THE USE OF LEVELING PLATES AT COLUMN BASES IS PROHIBITED. GROUT BELOW BEARING PLATES, SETTING PLATES, AND COLUMN BASE PLATES IS TO BE INSTALLED ONLY AFTER THE STEEL IS PLUMBED.
- REINFORCING BARS SHALL BE FREE FROM ALL DIRT AND RELEASE AGENTS. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR VAPOR BARRIER REQUIREMENTS.
- d. THE ELEVATED CONCRETE SLAB ON COMPOSITE STEEL DECK SHALL BE PLACED IN SUCH A MANNER TO ACHIEVE A UNIFORM SLAB THICKNESS. THE STEEL FLOOR FRAMING HAS NOT BEEN DESIGNED TO SUPPORT THE WEIGHT OF ANY ADDITIONAL CONCRETE DUE TO BEAM, JOIST, AND GIRDER DEFLECTION.
- FOOTINGS MAY BE CAST AGAINST EARTH CUTS WHEN SOIL CONDITIONS PERMIT. DO NOT EMBED OR CAST-IN ALUMINUM CONDUITS OF SLEEVES WITHOUT PRIOR APPROVAL OF COATING
- LOCATE CONTROL AND CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS. IN THE ABSENCE OF INFORMATION ON DRAWINGS, LOCATE AT OPENINGS, WALLS, COLUMNS, GRID LINES, INSIDE CORNERS AND AT 15 FEET ON CENTER GENERALLY. SCHEDULE SLAB PLACEMENTS AND SAW-CUTTING OPERATIONS SUCH THAT SAWING IS COMPLETED PRIOR TO ONSET OF SHRINKAGE CRACKING. COMPLETE SAW CUTTING WITHIN 12 HOURS AFTER PLACEMENT.

D. MASONRY

1. SPECIFICATIONS: MASONRY CONSTRUCTION AND MATERIALS SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATIONS FOR MASONRY STRUCTURES (TMS602-2016)." PUBLISHED BY THE AMERICAN CONCRETE INSTITUTE, DETROIT, MICHIGAN, EXCEPT AS MODIFIED BY THE REQUIREMENTS OF THESE CONTRACT DOCUMENTS.

- a. NET AREA COMPRESSIVE STRENGTH OF MASONRY (f'm) = 2,500 PSIb. CONCRETE BLOCK: ASTM C90. MINIMUM NET AREA COMPRESSIVE STRENGTH OF C.M.U. = 3,250 PSI.
- MORTAR: ASTM C270 (USING THE UNIT STRENGTH METHOD), TYPE S.
- d. BOND BEAM AND CORE FILL: ASTM C476, COARSE OR FINE TYPE, PLACED PER TMS-602 TABLE. MINIMUM 28 DAY COMPRESSIVE STRENGTH = 2,500 PSI. SLUMP 8" TO 11".
- e. JOINT REINFORCING: HOT-DIPPED GALVANIZED FINISH, 9 GAGE MINIMUM SIDE WIRES AND CROSS WIRES, EXCEPT USE 3/16 INCH DIAMETER SIDE WIRES WHERE "HEAVY-WEIGHT" IS REQUIRED. f. BAR REINFORCING: ASTM A615 OR A706, GRADE 60, UNLESS NOTED OTHERWISE.
- q. WIRE TIES AND ANCHORS: RECTANGULAR TYPE, 3/16" DIAMETER WIRE TIES (HOT DIPPED GALVANIZED).
- REINFORCED MASONRY: WHERE VERTICAL BARS ARE TO BE GROUTED INTO CORES, THE FOLLOWING
- REQUIREMENTS APPLY: a. PROVIDE DOWELS FROM FOOTINGS, SAME SIZE AND SPACING AS WALL BARS. LAP 12 INCHES MINIMUM WITH WALL BARS. EMBED INTO FOOTING 9 INCHES, MINIMUM.
- b. Provide a continuous vertical cavity, at least 3" x 4" in size, free of mortar droppings. PROVIDE REBAR ALIGNMENT DEVICES AT A MAXIMUM SPACING OF 96 BAR DIAMETERS (MINIMUM OF 2 PER
- d. AT SPLICES IN VERTICAL BARS, PROVIDE 48 BAR DIAMETER LAP. e. ALL REINFORCEMENT MUST BE INSTALLED AND SECURELY ANCHORED IN PLACE PRIOR TO PLACEMENT OF
- f. MAXIMUM HEIGHT OF GROUT LIFT = 5'-0". g. ALL C.M.U.'S USED IN REINFORCED MASONRY SHALL BE TWO CELL UNITS.

4. MISCELLANEOUS:

- a. MEET CONSTRUCTION TOLERANCE REQUIREMENTS PER TMS 602.
- b. RUNNING BOND PATTERN SHALL BE USED FOR ALL MASONRY WORK, U.N.O.
- c. ALL MORTAR JOINTS SHALL BE TOOLED. CRACKED OR UNBONDED JOINTS SHALL BE REMOVED AND REPLACED PRIOR TO GROUT PLACEMENT. d. EXCEPT FOR INSULATED CAVITY WALLS, VERTICAL COLLAR JOINTS SHALL BE FILLED SOLID WITH MORTAR OR
- e. PROVIDE 100% SOLID BEARING, MINIMUM THREE COURSES UNDER BEAMS, TWO COURSES UNDER LINTELS,
- AND ONE COURSE UNDER JOISTS, UNLESS DETAILED OTHERWISE. f. FILL CORE SOLID AROUND ANCHOR BOLTS. PROVIDE 100% SOLID BLOCKS OR SOLIDLY-FILLED HOLLOW BLOCKS FOR AT LEAST 4" ALL AROUND ALL
- POST INSTALLED ANCHORS SUCH AS SCREW ANCHORS, EXPANSION BOLTS, AND ADHESIVE ANCHORS. h. HOLLOW MASONRY UNITS TO BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. WEBS SHALL ALSO BE BEDDED IN ALL COURSES OF PIERS, COLUMNS, AND PILASTERS, AND IN THE STARTING COURSE ON FOOTINGS, AND WHEN ADJACENT TO CELLS OR CAVITIES TO BE REINFORCED OR FILLED WITH CONCRETE OR GROUT. SOLID UNITS TO BE LAID WITH FULL HEAD AND BED JOINTS.
- PROVIDE HORIZONTAL JOINT REINFORCING AT 16 INCHES, EXCEPT AS NOTED. LAP JOINT REINFORCING 6 INCHES FOR STANDARD.
- WHERE MASONRY UNITS ARE USED ABOVE HOLLOW UNITS OF A DIFFERENT THICKNESS, PROVIDE A CONTINUOUS COURSE OF 100% SOLID MASONRY AT LEAST 8 INCHES HIGH BELOW TRANSITION. WHERE MASONRY ABUTS CAST-IN-PLACE CONCRETE, PROVIDE CAST-IN DOVE-TAIL ANCHOR SLOTS AT 24
- m. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SPECIFICATIONS OF FIRE RATED MASONRY.

E. STRUCTURAL STEEL

1. THE STEEL FRAME IS NOT DESIGNED FOR SELF-SUPPORT DURING ERECTION. PER SECTION 7.10.3 AND 7.10.4 OF THE AISC CODE OF STANDARD PRACTICE. ERECTION EFFORTS REQUIRING TEMPORARY BRACING, TIE-DOWNS. SHORING, SHEETING, ETC., SHALL BE COORDINATED WITH OTHER BUILDING ELEMENTS REQUIRED FOR THE STRUCTURE'S STABILITY. SUCH BUILDING ELEMENTS INCLUDE BUT ARE NOT LIMITED TO THE PRE-ENGINEERED STEEL BUILDING BY OTHERS, ROOF TRUSSES, BRACED FRAMES, MOMENT FRAMES, STRUCTURAL DIAPHRAGMS OF SHEATHING OR COLD-FORMED STEEL DECKING, ETC.

 a. STRUCTURAL STEEL: ANGLES, PLATES, AND CHANNELS: ASTM A36; Fy = 36 KSI MIN.; WIDE FLANGE BEAMS: ASTM A992, Fy = 50 KSI MIN.; HIGH STRENGTH BOLTS: ASTM A325 OR A490; ANCHOR BOLTS: ASTM 1554, Fy = 36 KSI MIN. (SEE STRUCTURAL DRAWINGS FOR LOCATION OF BOLTS WITH Fy = 55 KSI); ELECTRODES: SERIES E70; STRUCTURAL PIPES: ASTM A53 OR A501, Fy = 35 KSI MIN.; SQUARE AND RECTANGULAR TUBING: ASTM A500 GRADE B, Fy = 46 KSI: MECHANICAL ANCHORS: SIMPSON TITEN HD THREADED BOLTS (DO NOT SUBSTITUTE EXPANSION ANCHORS FOR THREADED ANCHORS)

3. SUBMITTALS — INCLUDING DELEGATED DESIGN RESPONSIBILITIES OF THE FABRICATOR:

- a. CONTRACTOR SHALL SUBMIT ERECTION AND SHOP DRAWINGS FOR REVIEW BY THE ENGINEER OF RECORD. FABRICATION SHALL NOT BEGIN PRIOR TO SHOP DRAWING APPROVAL BY ENGINEER OF RECORD. b. CONTRACTOR SHALL SUBMIT STRUCTURAL CALCULATIONS FOR ITEMS TO BE DESIGNED BY A PROFESSIONAL ENGINEER RETAINED BY THE STEEL FABRICATOR. SUCH ITEMS ARE AS FOLLOWS: STRUCTURAL STEEL CONNECTIONS AS DEFINED IN SECTION 5 BELOW.
- c. FABRICATORS QUALIFICATIONS: THE OWNER OR GENERAL CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTION AGENCY TO VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES ACCORDING TO SECTION 8.5 OF AISC 303-16, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES. ALTERNATIVELY, SPECIAL INSPECTION OF THE FABRICATOR'S FACILITY IS NOT REQUIRED IF THE FABRICATOR PARTICIPATES IN THE AISC QUALITY CERTIFICATION PROGRAM AND IS DESIGNATED AN AISC-CERTIFIED PLANT, CATEGORY (BU); OR, IS ACCREDITED BY THE IAS FABRICATOR INSPECTION PROGRAM FOR STRUCTURAL STEEL (ACCEPTANCE CRITERIA 172).
- 4. SPECIFICATION: WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS D1.1. UNLESS
- SPECIFICALLY SHOWN OTHERWISE, DESIGN, FABRICATION AND ERECTION TO BE GOVERNED BY: a. AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, 15TH EDITION (AISC 360-16).
- AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES (AISC 303-16)
- STRUCTURAL WELDING CODE, AWS D1.1-15 OF THE AMERICAN WELDING SOCIETY (2015). d. SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS (RCSC) (2014).
- 5. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS): SEE THE SPECIFICATIONS SHEETS IN THE ARCHITECTURAL DRAWING SERIES, SECTION 05 1200, SECTION IV FOR REQUIREMENTS REGARDING AESS. SEE THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF AESS.

- a. FIELD CONNECTIONS TO BE BOLTED, UNLESS FIELD WELDS ARE SPECIFIED ON THE STRUCTURAL DRAWINGS. SHOP CONNECTIONS MAY BE WELDED OR BOLTED. CONNECTIONS SHALL CONFORM TO THE INSTRUCTIONS AND DETAILS PROVIDED ON THE STRUCTURAL DRAWINGS. SIMPLE SHEAR CONNECTIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND, RETAINED BY THE FABRICATOR, TO DEVELOP THE FULL UNIFORM LOAD CAPACITY OF THE MEMBER OR FORCES SHOWN ON PLANS. WHICHEVER IS GREATER. SIMPLE SHEAR CONNECTIONS SHALL BE CONFIGURED ACCORDING TO THE SELECTION TABLES PROVIDED IN PART 10 OF THE AISC MANUAL USING EITHER 1) DOUBLE ANGLES, 2) SINGLE SHEAR PLATES, OR 3) SEATED CONNECTIONS (DESIGNED FOR A FLEXIBLE SUPPORT CONDITION). SIMPLE SHEAR CONNECTIONS TO HSS TUBE COLUMNS SHALL BE FABRICATED WITH WT SECTIONS, OR BUILT-UP TEE SECTIONS, WELDED TO OR NEAR THE CORNERS OF THE TUBE; BUT ONLY WHEN A SINGLE SHEAR PLATE RESULTS IN OVERSTRESS IN THE TUBE WALLS. CONNECTIONS OF BEAMS FRAMING INTO A GIRDER FROM ONE SIDE ONLY, SUCH AS AT SPANDREL GIRDERS, SHALL BE MADE WITH DOUBLE ANGLE CONNECTIONS UNLESS SHOWN OTHERWISE ON THE DRAWINGS. FOLLOW INSTRUCTIONS ON DRAWINGS FOR GENERAL ARRANGEMENT OR MINIMUM REQUIREMENTS FOR CONNECTION DEPTH AND NUMBER OF BOLTS.
- b. IN THE EVENT CONNECTION INFORMATION IS MISSING OR VAGUE FOR A SPECIFIC CONDITION, THE FABRICATOR MAY EITHER SUGGEST A CONFIGURATION OR REQUEST ADDITIONAL INFORMATION IN WRITING IN ORDER TO COMPLY WITH THE CONNECTION DESIGN REQUIREMENTS PRIOR TO SUBMITTING SHOP DRAWINGS. c. Full penetration and partial penetration field welds in material over 5/16 inch thick and
- WELDED FIELD SPLICE OF MAIN MEMBERS SHALL BE SUBJECTED TO NON-DESTRUCTIVE TESTING (OTHER THAN VISUAL INSPECTION) BY AN INDEPENDENT LABORATORY. d. ALL BOLTS IN BRACED FRAMES AND BOLTS IN SHEAR CONNECTIONS USED IN CONJUNCTION WITH FULL OR

a. ALL SHELF ANGLES, LINTELS IN EXTERIOR WALLS, ALL EXTERIOR STEEL EXPOSED TO THE ELEMENTS, AND ALL ITEMS INDICATED ON THE DRAWINGS AS "GALVANIZED" SHALL BE GALVANIZED.

PARTIAL PENETRATION FLANGE WELDS SHALL BE SLIP CRITICAL (FRICTION) TYPE.

- a. DO NOT PAINT STEEL OR ANCHOR BOLTS WHICH WILL BE GALVANIZED, ENCASED IN CONCRETE, STEEL THAT WILL RECEIVE SPRAYED-ON FIREPROOFING OR ANY STEEL NOT EXPOSED TO VIEW IN THE FINISHED STRUCTURE, EXCEPT COLUMNS AND PORTIONS OF BEAMS EMBEDDED IN OR BUILT WITHIN EXTERIOR WALLS, WHICH SHALL BE PAINTED WITH TWO COATS OF PRIMER. ALL STEEL THAT IS IN DIRECT CONTACT WITH FIRE RETARDANT TREATED LUMBER SHALL BE PAINTED WITH
- TWO COATS OF RUST-INHIBITIVE PRIMER SUCH AS TNEMEC SERIES 10. MINIMUM DRY-FILM THICKNESS = 0.2 MILS PER COAT. ALSO STEEL SHALL BE PAINTED WITH TWO COATS OF TNEMEC UNIBOND DF SERIES 115 WITH MINIMUM DRY-FILM THICKNESS OF 0.2 MILS PER COAT.
- c. Prepare steel surfaces per SSPC-SP6 "Power tool cleaning" and paint with fabricators STANDARD PRIME COAT, SUCH AS TNEMEC 10-99 (RED), OR 10-1009 (GRAY), TOUCH UP AFTER ERECTION.
- SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR GALVANIZED STEEL SHAPES TO BE PAINTED, SUCH AS THE DECORATIVE CROSS AT THE MAIN ENTRANCE. PREPARATION OF GALVANIZED SURFACES, PRIMER, AND PAINT SHALL BE COMPATIBLE.

MISCELLANEOUS

- a. ANCHOR BOLTS AT STEEL COLUMN BASES ARE NOT DESIGNED TO PROVIDE, AND WILL NOT PROVIDE. STABILITY FOR THE STEEL FRAME DURING ERECTION. FOR SAFETY CONSIDERATIONS DURING ERECTION, SEE
- STRUCTURAL NOTE A.1. b. PROVIDE HOLES FOR OTHERS. SMALL PENETRATIONS IN ROOF DECK SHALL BE SUPPORTED BY A FRAME CONSISTING OF L3x3¼ STEEL ANGLES SPANNING BETWEEN ROOF FRAMING MEMBERS. IF AN OPENING LARGER THAN 16" SQUARE IS NOT SHOWN ON THE STRUCTURAL DRAWINGS, OBTAIN PRIOR APPROVAL.
- c. Steel supporting or connecting to hvac or other equipment and roof openings as shown on DRAWINGS ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL COORDINATE EXACT SIZE AND LOCATION BEFORE PROCEEDING WITH HIS WORK. d. THE USE OF LEVELING PLATES AT COLUMN BASES IS PROHIBITED. SEE THE REINFORCED CONCRETE NOTES
- ABOVE FOR GROUT AND GROUTING REQUIREMENTS. STEEL BELOW GRADE IS TO BE PROTECTED BY A MINIMUM OF 3 INCHES OF CONCRETE. PROVIDE 1/4 INCH THICK SETTING PLATES FOR ALL BEAMS BEARING ON MASONRY OR CONCRETE WHICH DO
- NOT REQUIRE A BEARING PLATE. PROVIDE HEAVY HEX NUTS AT EMBEDDED ENDS OF ALL ANCHOR BOLTS. HOOKS ARE NOT PERMITTED. PROVIDE BOLT HOLES FOR JOISTS BOLTED TO BEAMS AND ATTACHMENT FOR JOINING EXTENDED JOIST
- FINISH ENDS OF ALL COLUMNS, STIFFENERS, AND ALL OTHER MEMBERS IN DIRECT BEARING. A VERTICAL STABILIZER PLATE SHALL BE PROVIDED ON EACH COLUMN FOR STEEL JOISTS AND JOIST GIRDERS. THE STABILIZER PLATE SHALL BE A MINIMUM OF 6" x 6", SHALL EXTEND A MINIMUM OF 3" BELOW THE BOTTOM OF THE JOIST BOTTOM CHORD, AND SHALL EXTEND A MINIMUM OF 1" ABOVE THE TOP OF THE JOIST BOTTOM CHORD. THE PLATE IS REQUIRED TO HAVE A 13/6" DIAMETER HOLE FOR GUYING
- CABLE ATTACHMENT. EMBEDMENT LENGTH OF POST INSTALLED ANCHORS SUCH AS: SIMPSON TITEN HD, EXPANSION BOLTS, AND ADHESIVE ANCHORS INTO SOLIDLY GROUTED MASONRY OR CONCRETE SHALL BE AS FOLLOWS, U.N.O.:

1/2 INCH DIAMETER BOLTS 3 1/2 INCHES EMBEDMENT

3/4 INCH DIAMETER BOLTS

10. CONTINGENCY: a. INCLUDE AN ALLOWANCE IN THE BID TO PROVIDE AND ERECT 2000 ADDITIONAL POUNDS OF STRUCTURAL AND / OR MISCELLANEOUS STEEL (SHAPES, ANGLES, PLATES, ETC.). MATERIAL TO BE USED AND ITS APPLICATION SHALL BE DETERMINED BY THE ARCHITECT. CONNECTIONS, IF REQUIRED, SHALL BE

5 1/2 INCHES EMBEDMENT

FIELD-WELDED WITH APPROVAL BY THE ENGINEER OF RECORD. F. STEEL JOISTS

1. SPECIFICATION AND DESIGN:

- a. DESIGN, FABRICATION, AND ERECTION SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE SPECIFICATIONS ADOPTED BY THE STEEL JOISTS INSTITUTE (SJI).
- b. THE MANUFACTURER SHALL BE A MEMBER OF SJI. c. WIND UPLIFT: DESIGN STEEL JOISTS FOR A NET UPLIFT OF 20 PSF (ULTIMATE LOAD LEVEL PER ASCE7-16). PROVIDE ADDITIONAL BRIDGING AS REQUIRED TO BRACE BOTTOM CHORDS OR WEBS SUBJECT TO

a. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW BY THE ENGINEER OF RECORD. FABRICATION SHALL NOT BEGIN PRIOR TO SHOP DRAWING APPROVAL BY ENGINEER OF RECORD.

BRIDGING:

- a. NUMBER OF ROWS AS SHOWN ON THE CONTRACT DRAWINGS, BUT NOT LESS THAN REQUIRED BY SJI. b. UNLESS NOTED OTHERWISE, USE HORIZONTAL BRIDGING FOR K-SERIES (EXCEPT USE A DIAGONAL ROW NEAREST THE MID-SPAN WHERE FOUR OR FIVE ROWS ARE SHOWN OR REQUIRED BY SJI.) c. FOR LH OR DLH SERIES JOISTS, USE DIAGONAL BRIDGING.
- d. HORIZONTAL BRIDGING MAY BE WELDED TO THE JOISTS. DIAGONAL BRIDGING IS TO BE BOLTED TO THE JOISTS AND AT THEIR POINT OF INTERSECTION. ENDS OF DIAGONAL BRIDGING ARE TO BE ANCHORED WITH HORIZONTAL BRIDGING UNLESS SHOWN OTHERWISE. HORIZONTAL BRIDGING IN NO MORE THAN TWO CONSECUTIVE BAYS MAY BE USED TO PROVIDE PASSAGE FOR

f. AT EACH END OF EACH HORIZONTAL BRIDGING RUN, PROVIDE AT LEAST ONE BAY OF DIAGONAL BRIDGING

BETWEEN JOISTS, EXCEPT WHERE BRIDGING TERMINATES AT A MASONRY OR CONCRETE BEARING WALL.

a. WELD ALL JOISTS TO SUPPORTING STEEL WITH A MINIMUM OF 2 INCHES OF 1/8 INCH FILLET WELD FOR K-SERIES JOISTS EACH SIDE OF BEARING, AND A MINIMUM OF 3 INCHES OF 1/4 INCH FILLET WELD FOR LH- OR DLH-SERIES JOISTS EACH SIDE OF BEARING. ADDITIONALLY, WELD SHALL BE APPLIED TO THE INTERIOR EDGE OF BOLT HOLES WHERE JOISTS ARE NOT BOLTED TO SUPPORT. JOISTS ARE TO BE FIELD BOLTED AT COLUMN LINES, OR, IF THERE IS NO JOIST AT A COLUMN LINE, FIELD BOLT THE JOIST NEAREST THE COLUMN ON EACH SIDE OF THE BEAM. EXTEND BOTTOM CHORDS OF THE SAME JOISTS TO STABILIZER PLATES ON BEAM OR COLUMN.

ANCHOR BRIDGING TO INTERSECTING STRUCTURAL STEEL OR MASONRY/CONCRETE BEARING WALLS.

WHERE JOISTS SPAN GREATER THAN 60 FEET, AND ARE LOCATED AT STEEL COLUMNS, JOISTS SHALL BE

- b. EXTEND ALL JOISTS 2 INCHES MINIMUM PAST CENTERLINE OF SUPPORTING MEMBER WHERE POSSIBLE. BEARING CONDITIONS SHALL BE PER DRAWINGS, OR, WHERE SPECIAL INSTRUCTION IS NOT GIVEN,
- ACCORDING TO THE STANDARD SPECIFICATIONS OF SJI. c. K SERIES JOISTS SHALL HAVE 2-1/2 INCH DEEP BEARING SEATS, U.N.O. SLOPING K SERIES ROOF JOISTS SHALL HAVE 3 INCH DEEP BEARING SEATS, U.N.O.. LH— OR DLH—SERIES JOISTS SHALL HAVE MINIMUM 5" DEEP BEARING SEATS, U.N.O.
- d. UNLESS AN ALTERNATE DETAIL IS PROVIDED ON THE STRUCTURAL DRAWINGS; WHERE STEEL JOISTS DO NOT CONNECT TO A STEEL COLUMN CAP PLATE OR SEATED CONNECTION, OR AT THE CENTERLINE OF A COLUMN WHERE A GIRDER/BEAM IS CONTINUOUS OVER TOP OF THE COLUMN, A PAIR OF DIAGONAL L2x2x3/16 STEEL ANGLE BRACES SHALL BE WELDED TO THE TOP OF THE COLUMN. OR BOTTOM FLANGE OF CONTINUOUS BEAM, EXTENDING UP TO THE FIRST TOP CHORD PANEL POINT OF THE JOISTS ON EITHER SIDE OF THE COLUMN. CONNECT EA. END OF EA. ANGLE BRACE WITH A MINIMUM OF 2 INCHES OF 1/8 INCH FILLET WELD. ANGLES TO BE SUPPLIED BY THE STRUCTURAL STEEL FABRICATOR.

5. MISCELLANEOUS:

ERECTED IN PAIRS WITH ALL BRIDGING INSTALLED.

- a. ADJACENT JOISTS OF THE SAME DEPTH ARE TO HAVE WEB MEMBERS IN LINE TO PERMIT PASSAGE OF HVAC b. SEE DRAWINGS FOR SPECIAL BEARING SHOES, EXTENDED ENDS, LOAD DIAGRAMS, ETC.
- NO MODIFICATION THAT AFFECTS THE STRENGTH OF A JOIST SHALL BE MADE WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.

G. STEEL DECKING

- 1. SPECIFICATION AND DESIGN:
- a. DESIGN, FABRICATION, AND ERECTION OF ALL COLD-FORMED STEEL DECK SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE SPECIFICATIONS OF THE STEEL DECK INSTITUTE.
- DIAPHRAGM DESIGN MANUAL, FOURTH EDITION, BY THE STEEL DECK INSTITUTE ADDITIONAL REFERENCE STANDARDS: AISI S100-16, NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF
- COLD-FORMED STEEL STRUCTURAL MEMBERS. d. Structural welding code – Sheet Steel, aws D1.3 of the American welding society-2018.

SHALL NOT BEGIN PRIOR TO SHOP DRAWING APPROVAL BY ENGINEER OF RECORD.

a. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW BY THE ENGINEER OF RECORD. FABRICATION

- a. ROOF DECKING: 1½"-20 GA., WIDE-RIB, GALVANIZED, (VULCRAFT TYPE B OR EQUAL)
- b. PLATFORM/STAGE FLOOR DECK: 2"-20 GA., GALVANIZED, COMPOSITE DECK (VULCRAFT 2 VLI OR EQUAL) c. WALL SIDING: 1½"-22 GA. MIN. (TYPE B ROOF DECK), WIDE-RIB, GALVANIZED, ATTACHED TO FACE OF P.E.M.B. GIRTS FOR BRICK OR EIFS BACK-UP.

4. MATERIALS:

- a. STEEL SHEET CONFORMING TO ASTM A653, GALVANIZED G60; OR ASTM A1008 FOR PRIME-PAINTED. Fy = 33 KSI MINIMUM.
- ACCESSORIES: SAME MATERIAL AND FINISH AS DECK UNITS. SCREW FASTENERS (METAL TO METAL): ASTM C1513, ZINC COATED, SELF-DRILLING, SELF-TAPPING, STEEL

SCREW FASTENERS (METAL TO CMU): MANUFACTURED BY ITW BUILDEX OR EQUAL, CLIMASEAL BLUE

- 3. CONNECTIONS: CONNECT TO SUPPORTS FROM TOP SIDE ONLY. a. ROOF DECK: 3/4 INCH DIAMETER PUDDLE WELDS WITH A 36/5 PATTERN AT FLUTES ALONG SUPPORTS AND 6 INCHES ON CENTER ALONG EDGES. PROVIDE (4) #10 TEK SCREWS BETWEEN SUPPORTS AT SIDE-LAPS BUT NOT GREATER THAN 12 INCHES ON CENTER.
- b. PLATFORM/STAGE FLOOR DECK: 1/4 INCH DIAMETER MASONRY SCREWS x 1-3/4 INCH LONG, IN A 36/4 PATTERN AT FLUTES ALONG SUPPORTS AND 12 INCHES ON CENTER AT EDGES. PROVIDE #10 TEK SCREWS
- AT 12 INCHES ON CENTER ALONG SIDE LAPS BETWEEN SUPPORTS. c. WALL SIDING: #10 TEK SCREWS AT 6 INCHES ON CENTER ALONG SUPPORTS (GIRTS) AND (3) #10 TEK

SCREWS ALONG SIDELAPS AT BETWEEN GIRTS.

- UNITS ARE TO BE CONTINUOUS OVER AT LEAST THREE SPANS, WHERE POSSIBLE. WHERE UNITS ARE SINGLE OR DOUBLE SPAN, USE HEAVIER GAGE IF REQUIRED FOR STRESS OR DEFLECTION CONTROL. END
- LAPS ARE TO OCCUR OVER SUPPORTS. UNITS SHALL HAVE NESTED SIDE LAPS.
- c. DO NOT HANG ITEMS FROM THE UNDERSIDE OF METAL ROOF DECKS. HANG ITEMS FROM CONCRETE FLOORS NO SOONER THAN SEVEN DAYS AFTER CONCRETE IS PLACED. INSTALL CLOSURES IN DECK FLUTES OVER SUPPORTS OR OTHER CONSTRUCTION AT BUILDING PERIMETER AND AT PERIMETERS OF INTERIOR ROOMS. SET IN A TRUE EVEN LINE, FLUSH WITH CONSTRUCTION BELOW, ELIMINATING ANY SHELF OR POCKET. CLOSURES ARE TO BE ACCURATELY SHAPED AND INSTALLED, TO
- PROVIDE A TIGHT FIT. MINIMUM DECK END BEARING OVERS SUPPORTS SHALL BE 11/2".

GYPSUM SHEATHING USED FOR SHEAR-WALLS: ASTM C1396

MINIMUM DECK LAP OVER SUPPORT SHALL BE 4".

OF 1/8 INCH IN 10 FEET.

TOLERANCE OF 1/8 INCH.

WIDTH

H. COLD-FORMED STEEL STRUCTURAL FRAMING

- a. FRAMING MEMBERS: C-STUDS, TRACKS, JOISTS, ANGLES, CLIPS, BRIDGING, AND STRAPS; IN GENERAL COMPLY WITH ASTM C955.
- SHEET STEEL: ASTM A1003. OR ASTM A653. STRUCTURAL GRADE, TYPE H. METALLIC COATED G60. STEEL YIELD STRESS: MIN. 50 KSI FOR 16 GAGE AND HEAVIER, MIN. 33 KSI FOR 18 GAGE. SCREW FASTENERS (METAL TO METAL, OR WOOD TO METAL): ASTM C1513, ZINC COATED, SELF-DRILLING,
- SELF-TAPPING, STEEL DRILL SCREWS. SCREW FASTENERS (GYPSUM SHEATHING TO METAL): ASTM C954 OR ASTM C1002, #6 MINIMUM SELF-DRILLING, SELF-TAPPING, STEEL DRILL SCREWS WITH BUGLE HEAD OR WAFER HEAD.
- TOUCH-UP PAINT: #732 ZINC-RICH METAL PRIMER BY DEGRACO, OR APPROVED EQUAL. 2. SPECIFICATIONS: WELDING, PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS. DESIGN, FABRICATION, AND ERECTION TO BE GOVERNED BY THE LATEST REVISION OF:
- a. AISI S100-16, NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL AISI S202-15, CODE OF STANDARD PRACTICE FOR COLD-FORMED STEEL FRAMING
- d. AISI S240-15, NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL STRUCTURAL FRAMING. e. AWS D1.3, STRUCTURAL WELDING CODE - SHEET STEEL, OF THE AMERICAN WELDING SOCIETY.

3. TOLERANCES: FABRICATE ASSEMBLIES LEVEL, PLUMB, AND TRUE TO LINE TO A MAXIMUM ALLOWABLE VARIATION

AISI S220-15, NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - NONSTRUCTURAL

a. SPACING: SPACE INDIVIDUAL FRAMING MEMBERS NO MORE THAN PLUS OR MINUS 1/8 INCH FROM PLAN LOCATION. CUMULATIVE ERROR SHALL NOT EXCEED MINIMUM FASTENING REQUIREMENTS OR SHEATHING OR OTHER FINISHING MATERIALS. SQUARENESS: FABRICATE EACH COLD-FORMED STEEL FRAMING ASSEMBLY TO A MAXIMUM OUT-OF-SQUARE

lx(1N4)

Mr(IN-LB.)

LIGHT GAGE FRAMING MEMBER SIZES INDICATED ON DRAWINGS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:

3 5/8"	1 5/8"	18	0.710	7,340
3 5/8"	1 5 /8 "	16	0.873	13,300
6 "	1 5/8"	18	2.320	14,500
6 "	1 5/8"	16	2.860	25,900
6 "	1 5/8"	14	3.524	35,700
6 "	2"	14	4.100	39,700
HDS-6"	3"	16	4.856	41,604
HDS-3.63"	3 "	16	1.483	21,290
8"	1 5/8"	18	4.630	32,800
8 "	1 5/8"	16	5.740	45,100
8"	1 5/8"	12	11.200	89,800
8 "	2"	16	6.570	37,400
8"	2"	14	8.140	54,700
10 "	2"	16	11.300	46,600
10"	2 1/2"	14	15.700	82,900

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Architect is not responsible for any dimensions scaled from drawings. Dimensions noted take precedence.

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17 NOV 2023

DATE DRAWING X Bid Set

REVISIONS

STRUCTURAL GENERAL

NOTES

OF 18 SHEETS

216118

DEPTH	WIDTH	GAGE	lx(1N4)	Mr(IN-LB.)
3 5/8"	1 5/8"	18	0.710	7,340
3 5/8"	1 5/8"	16	0.873	13,300
6"	1 5/8"	18	2.320	14,500
6 "	1 5/8"	16	2.860	25,900
6 "	1 5/8"	14	3.524	35,700
6 "	2"	14	4.100	39,700
HDS-6"	3 "	16	4.856	41,604
HDS-3.63"	3 "	16	1.483	21,290
8"	1 5/8"	18	4.630	32,800
8"	1 5/8"	16	5.740	45,100
8"	1 5/8"	12	11.200	89,800
8"	2"	16	6.570	37,400
8"	2"	14	8.140	54,700
10 "	2"	16	11.300	46,600
10 "	2 1/2"	14	15.700	82,900
12 "	2"	14	22.000	76,600
12 "	2"	12	30.400	127,000

- 5. MISCELLANEOUS:
- a. PROVIDE CONTINUOUS 16 GAGE HORIZONTAL COLD—ROLLED CHANNEL BRIDGING AT MID—HEIGHT OF INTERIOR NON-LOAD-BEARING PARTITION WALLS AND AT 4'-0" O.C. FOR ALL EXTERIOR AND INTERIOR LOAD-BEARING WALLS OR WALLS THAT RESIST OUT-OF-PLANE WIND OR SEISMIC LOADING. b. EXTERIOR WALLS SHALL HAVE A LAYER OF GYPSUM SHEATHING APPLIED TO BOTH FACES. ATTACHMENT OF
- c. BALLOON FRAMED EXTERIOR WALLS SHALL BE LATERALLY BRACED AT THE TOP WITH MIN. 12 GAGE VERTICAL DEFLECTION CLIPS CAPABLE OF ACCOMMODATING UPWARD AND DOWNWARD VERTICAL DISPLACEMENT OF

SHEATHING TO WALL STUDS SHALL NOT BE LESS THAN #6 BUGLE HEAD SCREWS SPACED AT 12 INCHES ON

- PRIMARY STRUCTURE. d. INTERIOR NON-LOAD BEARING STUD WALLS SHALL HAVE DEFLECTION TRACK AT THE TOP OF THE WALL ATTACHED TO THE STRUCTURE CAPABLE OF PREVENTING CRACKING OF FINISHES APPLIED TO INTERIOR
- PARTITION FRAMING RESULTING FROM DEFLECTION OF STRUCTURE ABOVE. e. LOCATE JOISTS OR TRUSSES DIRECTLY OVER BEARING STUDS OR PROVIDE A LOAD DISTRIBUTION MEMBER AT THE TOP TRACK.
- PROVIDE WEB STIFFENERS AT REACTION POINTS WHERE SHOWN ON THE DRAWINGS. SIMPSON STRONG-TIE TB CROSS-BRIDGING OR FULL DEPTH JOIST BLOCKING SHALL BE INSTALLED AT THE MID-SPAN OF ALL CEILING OR FLOOR JOIST FRAMING BUT CONTINUOUS ROWS SHALL NOT BE SPACED APART GREATER THAN 5'-0" O.C. FOR 1%" FLANGE WIDTHS OR 7'-0" O.C. FOR 2" FLANGE WIDTHS. PROVIDE CONTINUOUS ROW AT JOIST BEARING ENDS NOT OTHERWISE RESTRAINED AGAINST ROTATION.
- h. PROVIDE BLOCKING IN FRAMING FOR ALL WALL-MOUNTED ITEMS, INCLUDING DOOR STOPS, EQUIPMENT OR
- CUT FRAMING MEMBERS BY SAWING OR SHEARING; DO NOT TORCH CUT. INSTALL FRAMING MEMBERS AND STRAPS IN ONE-PIECE LENGTHS UNLESS SPLICE CONNECTIONS ARE SPECIFICALLY INDICATED FOR TENSION MEMBERS.

J. STATEMENT OF SPECIAL INSPECTIONS

- 1. THE OWNER SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED BELOW. ITEMS LISTED BELOW ARE RELATED TO THE STRUCTURAL ENGINEERING DRAWINGS ONLY. ADDITIONAL INSPECTIONS MAY BE REQUIRED UNDER THE DRAWING SECTIONS OF OTHER DISCIPLINES SUCH AS ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, OR CIVIL.
- 2. THE SPECIAL INSPECTOR SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING HIS OR HER COMPETENCE AND RELATED EXPERIENCE OR TRAINING TO PERFORM THE INSPECTION TASKS LISTED
- REPORT REQUIREMENTS OF THE APPROVED AGENCY AND THE SPECIAL INSPECTOR: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS AND SHALL MAINTAIN PHOTOGRAPHS OF STRUCTURAL ELEMENTS AND SITE CONDITIONS DURING THE COURSE OF THE CONSTRUCTION PHASE. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS <u>INCLUDING WRITTEN DESCRIPTION AND PHOTOGRAPHS</u> OF CONFORMING CRITERIA AND CIRCUMSTANCES TO DEMONSTRATE AND JUSTIFY WHEN AN ITEM PASSES OR FAILS. FOR EXAMPLE, INCLUDE PHOTOGRAPHS OF INSTALLED REINFORCING STEEL FOR CONCRETE ITEMS OR STEEL CONNECTIONS, ETC.
- DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON PRIOR TO THE START OF WORK BY THE APPLICANT AND THE BUILDING OFFICIAL.
- 5. SCHEDULE OF SPECIAL INSPECTIONS: SPECIAL INSPECTOR SHALL PERFORM INSPECTIONS OF THE FOLLOWING

	SOILS				
	INSPECTION TASKS	EXTENT OF SERVICE			
1.	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	PERIODIC			
2.	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	PERIODIC			
3.	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	PERIODIC			
4.	VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	CONTINUOUS			
5.	PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	PERIODIC			

CONCRETE				
	INSPECTION TASKS	EXTENT OF SERVICE		
1.	INSPECTION OF REINFORCING STEEL, AND PLACEMENT.	PERIODIC		
2.	INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH AWS D1.4 AND ACI 318.	PERIODIC		
3.	INSPECTION OF ANCHORS CAST IN CONCRETE.	PERIODIC		
4.	INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS IN ACCORDANCE WITH ACI 355.2	PERIODIC		
5.	VERIFYING USE OF REQUIRED DESIGN MIX.	PERIODIC		
6.	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	CONTINUOUS		
7.	INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	PERIODIC		
8.	INSPECT FORM WORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	PERIODIC		

	MASONRY LEVEL B (PER ACI 530.1)
	MINIMUM TESTS PRIOR TO CONSTRUCTION
1.	VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDES (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH ACI 530.1 FOR SELF—CONSOLIDATING GROUT.

VEDICIONATION OF 42 IN ACCORDANCE WITH ACLESO 1 DDIOD TO CONSTRUCTION

	INSPECTION TASKS	EXTENT OF SERVICE
1.	VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS.	PERIODIC
2.	AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE. a. PROPORTIONS OF SITE PREPARED MORTAR. b. CONSTRUCTION OF MORTAR JOINTS. c. LOCATION OF REINFORCEMENT, CONNECTORS, AND ANCHORAGES.	PERIODIC
3.	PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE: a. GROUT SPACE. b. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS. c. PLACEMENT OF REINFORCEMENT AND CONNECTORS. d. CONSTRUCTION OF MORTAR JOINTS.	PERIODIC
4.	VERIFY DURING CONSTRUCTION a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS. b. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGES OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION. c. WELDING OF REINFORCEMENT. d. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (BELOW 40 DEGREES F) OR HOT WEATHER (ABOVE 90 DEGREES F)	PERIODIC
5.	OBSERVE PREPARATIONS OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS.	PERIODIC

STRUCTURAL	STEEL (P	ER AISC	360-16,	CHAPTER N)
FABRICA	TOR AND	ERECTOR	R QUALIFIC	CATIONS

- THE FABRICATOR AND ERECTOR SHALL COMPLY WITH ALL PROVISIONS OF AISC 360-16, CHAPTER N. ITEMS SPECIFICALLY LISTED BELOW ARE INTENDED TO HIGHLIGHT THE MOST IMPORTANT APPLICABLE PROVISIONS. THIS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH OTHER APPLICABLE PROVISIONS.
- THE FABRICATOR SHALL PROVIDE DOCUMENTATION THAT SHOP FABRICATION PROCEDURES COMPLY WITH CHAPTER N, SECTION N2.
- THE ERECTOR SHALL DEMONSTRATE THE COMPETENCE TO COMPLY WITH THE PROVISIONS OF CHAPTER N, SECTION N2 BY SUBMITTING ACTUAL QUALITY CONTROL INSPECTION RECORDS OF PAST PROJECTS PERFORMED BY THE SAME ERECTOR AS PREPARED BY A QUALIFIED QUALITY CONTROL INSPECTOR WHICH SUPPORTS COMPLIANCE
- FABRICATOR SHALL PREPARE AND ISSUE SHOP DRAWINGS ACCORDING TO CHAPTER N, SECTION N3.

	•	
	INSPECTION TASKS	EXTENT OF SERVICE
a b c d e	CONTINUITY RECORDS. WELDING PROCEDURE SPECIFICATIONS AVAILABLE. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE. MATERIAL IDENTIFICATION (TYPE/GRADE) WELDER IDENTIFICATION SYSTEM — THE FABRICATOR OR ERECTOR SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. FIT—UP GROOVE WELDS (INCLUDING JOINT GEOMETRY): JOINT PREPARATION, DIMENSIONS, CLEANLINESS, TACKING, BACKING TYPE AND FIT. CONFIGURATION AND FINISH OF ACCESS HOLES FIT—UP OF FILLET WELDS: DIMENSIONS, CLEANLINESS, TACKING.	CONTINUOUS CONTINUOUS PERIODIC PERIODIC PERIODIC PERIODIC PERIODIC PERIODIC PERIODIC
i.	CHECK WELDING EQUIPMENT	PERIODIC
а	OURING WELDING I. USE OF QUALIFIED WELDERS I. CONTROL AND HANDLING OF WELDING CONSUMABLES: PACKAGING, EXPOSURE CONTROL.	PERIODIC PERIODIC
	. NO WELDING OVER CRACKED TACK WELDS. I. ENVIRONMENTAL CONDITIONS: WIND SPEED	PERIODIC
е	WITHIN LIMITS, PRECIPITATION AND TEMPERATURE.	PERIODIC
f.	MAINTAINED, PROPER POSITION. WELDING TECHNIQUES: INTERPASS AND FINAL CLEANING, EACH PASS WITHIN PROFILE LIMITATIONS, EACH PASS MEETS QUALITY	PERIODIC
	REQUIREMENTS.	PERIODIC
a b c d e	AFTER WELDING I. ULTRASONIC TESTING ON CJP GROOVE WELDS IN BUTT, T-, AND CORNER JOINTS SUBJECE TO TRANSVERSELY APPLIED TENSION LOADING IN MATERIALS 5/16 INCH THICK OR GREATER. I. SIZE, LENGTH, AND LOCATION OF WELDS I. WELDS MEET VISUAL ACCEPTANCE CRITERIA: CRACK PROHIBITION, WELD/BASE-METAL FUSION, CRATER CROSS SECTION, WELD PROFILES, WELD SIZE, UNDERCUT, POROSITY. I. ARC STRIKES I. K-AREA BACKING REMOVED AND WELD TABS REMOVED	PERIODIC — MIN. 10% OF QUALIFYING JOINTS PER N5b THRU NFg CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS
g	REPAIR ACTIVITIES DOCUMENT ACCEPTANCE OR REJECTION OF	CONTINUOUS
	WELDED JOINT OF MEMBER.	CONTINUOUS
а	DETAIL (GRADE, TYPE, BOLT LENGTH, IF THREADS	PERIODIC PERIODIC
d		PERIODIC
е	JOINT DETAIL. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION IF SPECIFIED MEET	PERIODIC

HOLE PREPARATION, IF SPECIFIED, MEET

APPLICABLE REQUIREMENTS.

PERIODIC

	t.	PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND	
		METHOD USED.	CONTINUOUS
	g.	PROTECTED STORAGE PROVIDED FOR BOLTS,	
		NUTS, WASHERS, AND OTHER FASTENER	
		COMPONENTS.	PERIODIC
5.	DUR	ING BOLTING	
	a.	FASTENER ASSEMBLIES, OF SUITABLE CONDITION,	
		PLACED IN ALL HOLES AND WASHERS ARE	
		POSITIONED AS REQUIRED.	PERIODIC
	b.		
		PRIOR TO THE PRE-TENSIONING OPERATION.	PERIODIC
	c.	FASTENER COMPONENT NOT TURNED BY THE	DEDIODIO
		WRENCH PREVENTED FROM ROTATING.	PERIODIC
	d.	FASTENERS ARE PRE-TENSIONED IN ACCORDANCE WITH RCSC SPECIFICATION,	
		PROGRESSING SYSTEMATICALLY FROM THE MOST	
		RIGID POINT TOWARD THE FREE EDGES.	PERIODIC
		MOID FORM TOWARD THE TREE EDGES.	1 LINODIO
6.	AFTE	ER BOLTING	
	a.	DOCUMENT ACCEPTANCE OR REJECTION OF	
		BOLTED CONNECTIONS.	CONTINUOUS

A DDE INICTALLATION VEDICICATION TECTINIC DV

	STRUCTURAL STEEL CONSTRUCTION OTHER THAN STEEL					
	INSPECTION TASKS	EXTENT OF SERVICE				
1.	INSTALLATION OF OPEN WEB STEEL JOISTS AND GIRDERS ACCORDING TO SJI SPECIFICATIONS					
	 verify bearing end (seats) connections welded or Bolted 	PERIODIC				
	b. VERIFY IF HORIZONTAL AND/OR DIAGONAL BRIDGING IS STANDARD OR DIFFERS FROM SJI SPECIFICATIONS.	PERIODIC				
	c. VERIFY ANCHORAGE OF HORIZONTAL BRIDGING RUNS TO STRUCTURAL STEEL, MASONRY WALLS, OR DIAGONAL BRIDGED BAYS.	PERIODIC				
2.	INSTALLATION OF COLD—FORMED STEEL DECK SHALL BE IN CONFORMANCE WITH THE QA/QC STANDARD — "QUALITY CONTROL AND QUALITY INSURANCE FOR INSTALLATION OF STEEL DECK".	PERIODIC				
3.	MATERIAL VERIFICATION OF COLD—FORMED STEEL DECK: a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENT.	PERIODIC				
	b. MANUFACTURER'S CERTIFIED TEST REPORTS.	PERIODIC				
4.	INSPECTION OF WELDING: a. FLOOR AND ROOF DECK WELDS FOR COLD—FORMED STEEL DECK FROM TOP AND BOTTOM SIDES OF DECK.	PERIODIC				
	THIS INCLUDES SIZE, SPACING, AND QUALITY OF WELDS. b. REINFORCING STEEL — VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706.	PERIODIC				
	c. REINFORCING STEEL - SHEAR REINFORCEMENT	PERIODIC				

COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION (PER AISI S240-15, CHAPTER D)

OOLD	TORMED SIELE LIGHT TRAME CONSTRUCTION (I ER AIST 3240	15, CHAILER D)
	COMPONENT MANUFACTURER QUALIFICATIONS AND RESPON	SIBILITIES
2. P 3. P	STABLISH AND MAINTAIN A QUALITY CONTROL PROGRAM ACCORI PREPARE AND SUBMIT SHOP DRAWINGS ACCORDING TO SECTION PERFORM ALL QUALITY CONTROL INSPECTION TASKS AS REQUIRE 16.1 AND D6.2.	D3.1.
	INSPECTION TASKS FOR QUALITY ASSURANCE	EXTENT OF SERVICE
а	MATERIAL VERIFICATION DURING INSTALLATION I. VERIFY COMPLIANCE OF COLD—FORMED STEEL STRUCTURAL MEMBERS INCLUDING PRODUCT IDENTIFICATION ACCORDING TO SECTION A5.5. I. VERIFY COMPLIANCE OF CONNECTORS (AS DEFINED BY AISI S240). II. DOCUMENT ACCEPTANCE OR REJECTION CRITERIA OF COLD—FORMED STEEL STRUCTURAL MEMBERS AND CONNECTORS.	PERIODIC FOR ALL ITEMS
a b c d e	WELDING INSPECTIONS AND EXECUTION WELDING PROCEDURE SPECIFICATIONS ARE AVAILABLE. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE. MATERIAL IDENTIFICATION (TYPE/GRADE). CHECK WELDING EQUIPMENT. USE OF QUALIFIED WELDERS. CONTROL AND HANDLING OF WELDING CONSUMABLES.	PERIODIC FOR ALL ITEMS
	WELDING PROCEDURE SPECIFICATIONS FOLLOWED. VERIFY COMPLIANCE OF WELDS. WELDS MEET VISUAL ACCEPTANCE CRITERIA. N. VERIFY REPAIR ACTIVITIES.	
a b c d e f.	INSTALLATION. PROPER STORAGE FOR MECHANICAL FASTENERS. MECHANICAL FASTENERS ARE POSITIONED AS REQUIRED. MECHANICAL FASTENERS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. VERIFY COMPLIANCE OF MECHANICAL FASTENERS. REPAIR ACTIVITIES. DOCUMENT ACCEPTANCE OR REJECTION OF	PERIODIC FOR ALL ITEMS
C	MECHANICALLY FASTENED CONNECTIONS. AFTER INSTALLATION OF COLD—FORMED STEEL LIGHT—FRAME CONSTRUCTION. I. VERIFY COMPLIANCE OF COLD—FORMED STEEL LIGHT—FRAME CONSTRUCTION. DOCUMENT ACCEPTANCE OR REJECTION OF COLD—FORMED STEEL LIGHT—FRAME CONSTRUCTION.	PERIODIC FOR ALL ITEMS
a b c d	INSTALLED TAUGHT AND STRAPS ARE CONTINUOUS BETWEEN GUSSET PLATES WITHOUT SPLICES. VERIFY WELDER IDENTIFICATION SYSTEM IS BEING USED AND PROPERLY IMPLEMENTED. CHECK FIT—UP OF WELDS AND CONNECTED PARTS (ALIGNMENT, GAPS, CONDITION OF STEEL SURFACES). PROPER FASTENERS SELECTED	PERIODIC FOR ALL ITEMS
f. g h j.	I. CONNECTING ELEMENTS MEET APPLICABLE REQUIREMENTS. I. MATERIAL IDENTIFICATION (TYPE/GRADE). I. FOR JOINT CONNECTIONS, JOINT CLAMPED AND BROUGHT TIGHT TO AVOID GAPS BETWEEN PLIES.	

FOR SCREW CONNECTIONS, TOOL ADJUSTED TO AVOID

STRIPPED AND OVERDRIVEN FASTENERS.

k. FOR SCREW CONNECTIONS, TOOL ADJUSTED TO AVOID STRIPPED AND OVERDRIVEN FASTENERS. m. FOR POST-INTALLED CONNECTIONS TO CONCRETE, INSTALLATION PER MANUFACTURER'S INSTRUCTIONS. n. VERIFY COMPLIANCE OF COLD-FORMED STEEL LATERAL FORCE-RESISTING SYSTEM INSTALLATION o. DOCUMENT ACCEPTANCE OR REJECTION OF INSTALLATION OF COLD-FORMED STEEL LATERAL

K. ABBREVIATIONS: B. = BOTTOM; C.I.P. = CAST IN PLACE; CFS = COLD-FORMED STEEL; C.M.U. = CONCRETE MASONRY UNIT; (E) = EXISTING; E.E. = EACH END; E.F. = EACH FACE; E.W. = EACH WAY; GALV. = GALVANIZED; LLH = LONG LEG HORIZONTAL; LLV = LONG LEG VERTICAL; N.T.S. = NOT TO SCALE; O.C. = ON CENTER; S.O.G. = SLAB ON GRADE; T. = TOP; T.O.G.B. = TOP OF GRADE BEAM ELEVATION; T.O.P. = TOP OF PIER ELEVATION; T.O.S. = TOP OF SLAB ELEVATION; T.O.STL. = TOP OF STEEL ELEVATION; T.O.W. = TOP OF WALL ELEVATION; TYP. = TYPICAL; U.N.O. = UNLESS NOTED OTHERWISE; V.I.F. = VERIFY IN FIELD; P.E.M.B.M. = PRE-ENGINEERED METAL BUILDING MANUFACTURER.

L. LEGEND

CAST-IN-PLACE CONCRETE REINFORCED CMU

EXISTING WALL CONSTRUCTION

FORCE-RESISTING SYSTEM.

100% SOLIDLY GROUTED CMU

FOOTING STEP

McKnight

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Christopher P. Sekol, P.E., S.E.

30 Weymouth Lane Columbus, OH 43228



Architect is not responsible for any dimensions scaled from drawings. Dimensions noted take

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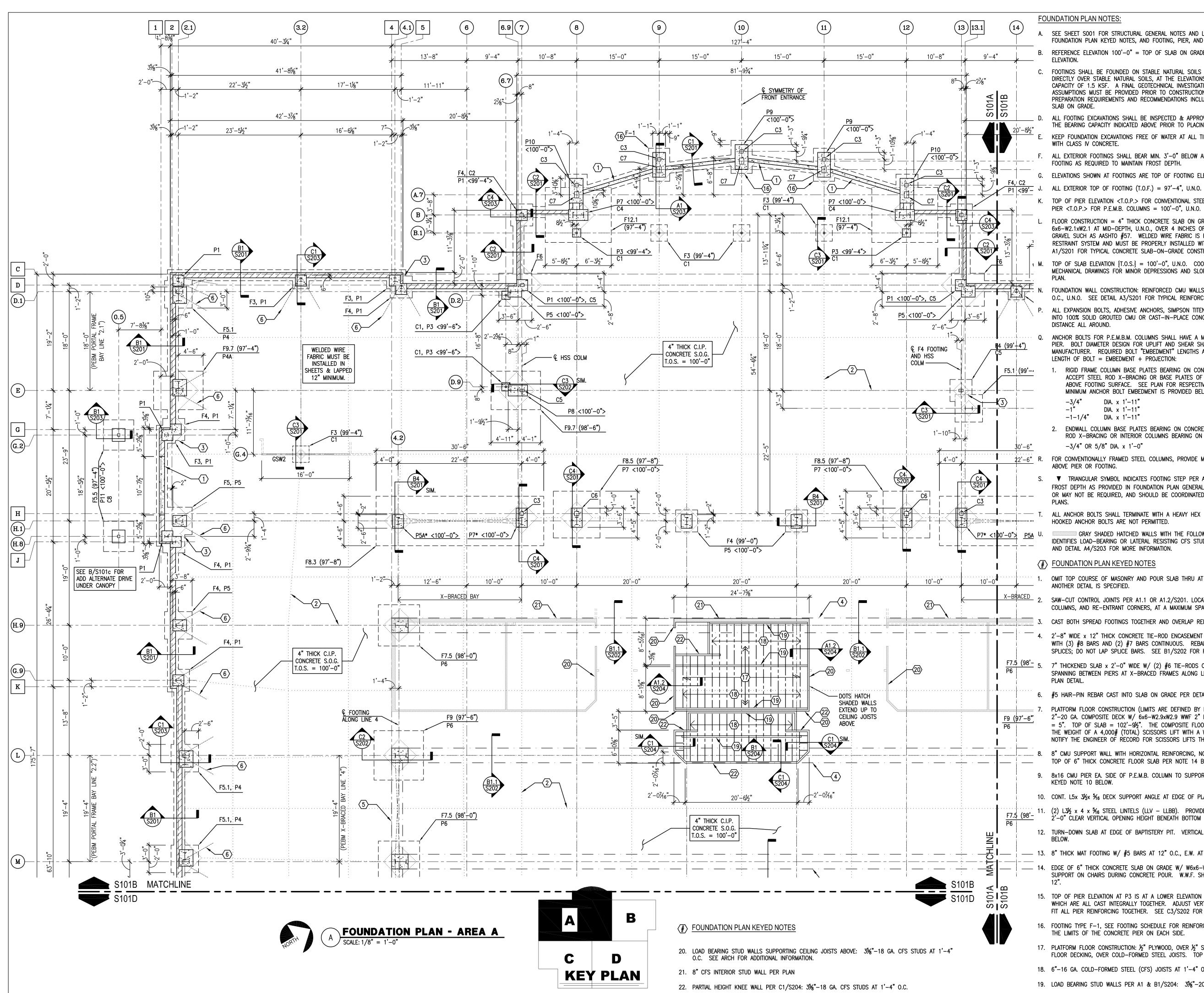
REVISIONS

STRUCTURAL GENERAL NOTES

S002

OF 18 SHEETS

216118



FOUNDATION PLAN NOTES:

- SEE SHEET S001 FOR STRUCTURAL GENERAL NOTES AND LEGEND. SEE SHEET S101A FOR FOUNDATION PLAN KEYED NOTES, AND FOOTING, PIER, AND COLUMNS SCHEDULES.
- REFERENCE ELEVATION 100'-0" = TOP OF SLAB ON GRADE. SEE CIVIL SITE PLAN FOR U.S.G.S
- C. FOOTINGS SHALL BE FOUNDED ON STABLE NATURAL SOILS OR NEW CONTROLLED FILLS PLACED DIRECTLY OVER STABLE NATURAL SOILS, AT THE ELEVATIONS SHOWN, WITH A PRESUMED BEARING CAPACITY OF 1.5 KSF. A FINAL GEOTECHNICAL INVESTIGATION WHICH VERIFIES THE ABOVE ASSUMPTIONS MUST BE PROVIDED PRIOR TO CONSTRUCTION. THE REPORT MUST PROVIDE SITE PREPARATION REQUIREMENTS AND RECOMMENDATIONS INCLUDING THE BASE PREPARATION FOR THE
- ALL FOOTING EXCAVATIONS SHALL BE INSPECTED & APPROVED BY A QUALIFIED SOILS ENGINEER FOR THE BEARING CAPACITY INDICATED ABOVE PRIOR TO PLACING CONCRETE.
- KEEP FOUNDATION EXCAVATIONS FREE OF WATER AT ALL TIMES. REPLACE SOFT OR WEAKENED SOIL WITH CLASS IV CONCRETE.
- ALL EXTERIOR FOOTINGS SHALL BEAR MIN. 3'-0" BELOW ADJACENT GRADE. ADJUST BOTTOM OF FOOTING AS REQUIRED TO MAINTAIN FROST DEPTH.
- G. ELEVATIONS SHOWN AT FOOTINGS ARE TOP OF FOOTING ELEVATION (T.O.F.).
- ALL EXTERIOR TOP OF FOOTING (T.O.F.) = 97'-4", U.N.O.
- K. TOP OF PIER ELEVATION <T.O.P.> FOR CONVENTIONAL STEEL COLUMNS = 99'-4", U.N.O. TOP OF
- FLOOR CONSTRUCTION = 4" THICK CONCRETE SLAB ON GRADE REINFORCED WITH WWF 6x6-W2.1xW2.1 AT MID-DEPTH, U.N.O., OVER 4 INCHES OF WELL GRADED CRUSHED STONE OR GRAVEL SUCH AS AASHTO #57. WELDED WIRE FABRIC IS PART OF THE STRUCTURAL LATERAL RESTRAINT SYSTEM AND MUST BE PROPERLY INSTALLED WITH 12" MINIMUM LAP SPLICES. SEE DETAIL A1/S201 FOR TYPICAL CONCRETE SLAB-ON-GRADE CONSTRUCTION.
- M. TOP OF SLAB ELEVATION {T.O.S.} = 100'-0", U.N.O. COORDINATE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS FOR MINOR DEPRESSIONS AND SLOPES TO DRAIN NOT SHOWN ON FOUNDATION
- FOUNDATION WALL CONSTRUCTION: REINFORCED CMU WALLS WITH #5 VERTICAL BARS AT 48 INCHES O.C., U.N.O. SEE DETAIL A3/S201 FOR TYPICAL REINFORCED CMU WALL CONSTRUCTION.
- ALL EXPANSION BOLTS, ADHESIVE ANCHORS, SIMPSON TITEN HD ANCHORS, ETC., MUST BE INSTALLED INTO 100% SOLID GROUTED CMU OR CAST-IN-PLACE CONCRETE WITH A MINIMUM OF 4" EDGE DISTANCE ALL AROUND.
- ANCHOR BOLTS FOR P.E.M.B.M. COLUMNS SHALL HAVE A MINIMUM OF 21/2" BOLT PROJECTION ABOVE PIER. BOLT DIAMETER DESIGN FOR UPLIFT AND SHEAR SHALL BE PROVIDED BY THE P.E.M.B. MANUFACTURER. REQUIRED BOLT "EMBEDMENT" LENGTHS ARE LISTED BELOW (GRADE 36). TOTAL LENGTH OF BOLT = EMBEDMENT + PROJECTION:
- RIGID FRAME COLUMN BASE PLATES BEARING ON CONCRETE PIERS OR ENDWALL COLUMNS THAT ACCEPT STEEL ROD X-BRACING OR BASE PLATES OF PORTAL FRAMES. STOP ANCHOR BOLTS 1" ABOVE FOOTING SURFACE. SEE PLAN FOR RESPECTIVE PIER AND FOOTING ELEVATIONS. MINIMUM ANCHOR BOLT EMBEDMENT IS PROVIDED BELOW.
 - DIA. x 1'-11"
- ENDWALL COLUMN BASE PLATES BEARING ON CONCRETE PIERS THAT DO NOT ACCEPT STEEL ROD X-BRACING OR INTERIOR COLUMNS BEARING ON ISOLATED SPREAD FOOTINGS. -3/4" OR 5/8" DIA. x 1'-0"
- FOR CONVENTIONALLY FRAMED STEEL COLUMNS, PROVIDE MIN. OF 4" OF ANCHOR BOLT PROJECTION ABOVE PIER OR FOOTING.
- ▼ TRIANGULAR SYMBOL INDICATES FOOTING STEP PER A2/S201 AS NEEDED TO MAINTAIN LOCAL FROST DEPTH AS PROVIDED IN FOUNDATION PLAN GENERAL NOTE "G" ABOVE. FOOTING STEPS MAY OR MAY NOT BE REQUIRED, AND SHOULD BE COORDINATED WITH THE FINAL CIVIL/SITE GRADING
- ALL ANCHOR BOLTS SHALL TERMINATE WITH A HEAVY HEX NUT AT THE EMBEDDED END PER A4/S201.
- ot GRAY SHADED HATCHED WALLS WITH THE FOLLOWING NOTATION, "GSW1" OR "GSW2", IDENTIFIES LOAD-BEARING OR LATERAL RESISTING CFS STUD WALLS. REFER TO ROOF FRAMING PLAN AND DETAIL A4/S203 FOR MORE INFORMATION.
- (#) FOUNDATION PLAN KEYED NOTES
- OMIT TOP COURSE OF MASONRY AND POUR SLAB THRU AT DOOR OPENINGS, PER C1/S201 UNLESS ANOTHER DETAIL IS SPECIFIED.
- SAW-CUT CONTROL JOINTS PER A1.1 OR A1.2/S201. LOCATE GENERALLY AT CENTERLINES OF COLUMNS, AND RE-ENTRANT CORNERS, AT A MAXIMUM SPACING OF 15'-0".
- CAST BOTH SPREAD FOOTINGS TOGETHER AND OVERLAP REINFORCING.
- 2'-8" WIDE x 12" THICK CONCRETE TIE-ROD ENCASEMENT CAST INTEGRAL WITH SLAB ON GRADE WITH (3) #8 BARS AND (2) #7 BARS CONTINUOUS. REBAR COUPLERS ARE REQUIRED AT ALL SPLICES; DO NOT LAP SPLICE BARS. SEE B1/S202 FOR RELATED DETAILS.
- F7.5 (98'- 5. 7" THICKENED SLAB x 2'-0" WIDE W/ (2) #6 TIE-RODS CONT. (LOCATED 4" BELOW TOP OF SLAB), SPANNING BETWEEN PIERS AT X-BRACED FRAMES ALONG LINES 4 & 16 ONLY. SEE B1/S202 FOR PLAN DETAIL.
 - 6. #5 HAIR-PIN REBAR CAST INTO SLAB ON GRADE PER DETAIL C1/S202.
 - PLATFORM FLOOR CONSTRUCTION (LIMITS ARE DEFINED BY DOTS HATCH PATTERN): 3" CONCRETE OVER 2"-20 GA. COMPOSITE DECK W/ 6x6-W2.9xW2.9 WWF 2" BELOW TOP OF SLAB. OVERALL THICKNESS = 5". TOP OF SLAB = $102'-9\frac{1}{2}$ ". THE COMPOSITE FLOOR DECK HAS BEEN DESIGNED TO SUPPORT THE WEIGHT OF A 4,000# (TOTAL) SCISSORS LIFT WITH A WHEEL BASE AS FOLLOWS: 2'-6" x 6'-0". NOTIFY THE ENGINEER OF RECORD FOR SCISSORS LIFTS THAT VARY FROM THESE SPECIFICATIONS.
 - 8" CMU SUPPORT WALL WITH HORIZONTAL REINFORCING, NOT VERTICAL REINFORCING, BEARING ON TOP OF 6" THICK CONCRETE FLOOR SLAB PER NOTE 14 BELOW.
 - 8x16 CMU PIER EA. SIDE OF P.E.M.B. COLUMN TO SUPPORT ENDS OF DECK SUPPORT ANGLE PER KEYED NOTE 10 BELOW.
 - 10. CONT. L5x 3½x ¾6 DECK SUPPORT ANGLE AT EDGE OF PLATFORM.
 - 11. (2) L3½ x 4 x ⅓6 STEEL LINTELS (LLV LLBB). PROVIDE 6" BEARING LENGTH, E.E. AND MAINTAIN 2'-0" CLEAR VERTICAL OPENING HEIGHT BENEATH BOTTOM SIDE OF LINTELS.
 - 12. TURN-DOWN SLAB AT EDGE OF BAPTISTERY PIT. VERTICAL FACE TERMINATES INTO MAT FOOTING
 - 13. 8" THICK MAT FOOTING W/ #5 BARS AT 12" O.C., E.W. AT MID-DEPTH (T.O.F. = 97'-10")
 - 14. EDGE OF 6" THICK CONCRETE SLAB ON GRADE W/ W6x6-W2.9xW2.9 W.W.F AT MID-DEPTH. SUPPORT ON CHAIRS DURING CONCRETE POUR. W.W.F. SHEETS MUST BE LAPPED A MINIMUM OF
 - 15. TOP OF PIER ELEVATION AT P3 IS AT A LOWER ELEVATION AS COMPARED TO THE OTHER PIERS WHICH ARE ALL CAST INTEGRALLY TOGETHER. ADJUST VERTICAL REINFORCING AND TIES AS REQ'D TO FIT ALL PIER REINFORCING TOGETHER. SEE C3/S202 FOR DETAILS.
 - 16. FOOTING TYPE F-1, SEE FOOTING SCHEDULE FOR REINFORCING. SIZE OF FOOTING IS 9" BEYOND THE LIMITS OF THE CONCRETE PIER ON EACH SIDE.
 - 17. PLATFORM FLOOR CONSTRUCTION: ½" PLYWOOD, OVER ½" SOUNDBOARD, OVER ¾" FRT PLYWOOD FLOOR DECKING, OVER COLD-FORMED STEEL JOISTS. TOP OF PLATFORM = 101'-9".
 - 18. 6"-16 GA. COLD-FORMED STEEL (CFS) JOISTS AT 1'-4" O.C.
 - 19. LOAD BEARING STUD WALLS PER A1 & B1/S204: 3%"-20 GA. CFS STUDS AT 1'-4" O.C.

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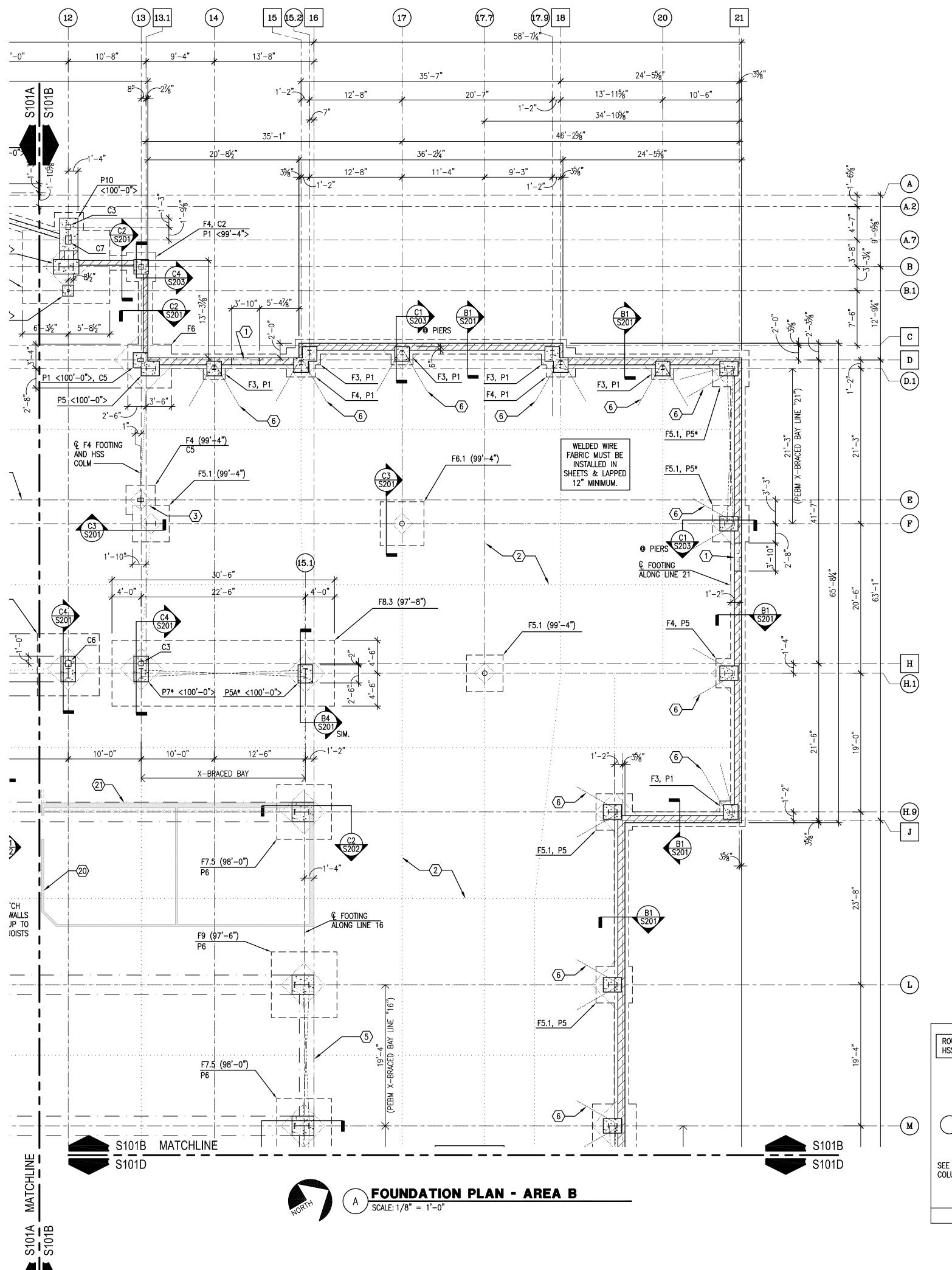
REVISIONS

FOUNDATION PLAN

S101A

216118

OF 18 SHEETS



SPREAD FOOTING SCHEDULE BOTTOM REINF. #5 @ 12" O.C., E.W. SEE PLAN (3) #5 E.W. F3 | 3'-0" x 3'-0" x 12" THICK F4 | 4'-0" x 4'-0" x 12" THICK (4) #5 E.W. (6) #5 E.W. (6) #5 E.W. F5.1 | 5'-0" x 5'-0" x 14" THICK F5.5 | 5'-6" x 5'-6" x 14" THICK (6) #5 E.W. (6) #5 E.W. F6 | 6'-0" x 6'-0" x 14" THICK (6) #5 E.W. F6.1 | 6'-0" x 6'-0" x 16" THICK (8) #6 E.W. (8) #5 E.W. F7.5 7'-6" x 7'-6" x 18" THICK (8) #6 E.W. (8) #5 E.W. F8.5 8'-6" x 8'-6" x 18" THICK (9) #6 E.W. (9) #6 E.W. #6 @ 10" O.C., E.W. #6 @ 10" O.C., E.W. | F8.30 | 8'-0" x 30'-6" x 20" THICK #6 @ 10" O.C., E.W. #6 @ 10" O.C., E.W. F9.7 | 9'-0" x 7'-0" x 18" THICK F9 | 9'-0" x 9'-0" x 20" THICK (12) #6 E.W. (12) #6 E.W. #6 @ 10" O.C., E.W. | F12.1 | 12'-0" x 10'-0" x 24" THICK | #6 @ 10" O.C., E.W.

PIER SCHEDULE				
MARK	SIZE	VERT. REINF.	TIES	REMARKS
P1	2'-0" x 2'-0"	(4) #7	#4 © 10" O.C.	NOTES 1, 2, 3
P2	2'-0" x 2'-0"	(8) #7	#4 @ 10" O.C.	NOTES 1, 2, 3, 4
P3	1'-6" x 1'-6"	(4) #7	#4 @ 10" O.C.	NOTES 1, 2, 3
P4	2'-6" x 3'-0"	(14) #7	#4 @ 10" O.C.	NOTES 1, 2, 3, 4, 5
P4A	2'-6" x 3'-0"	(14) #7	#4 @ 10" O.C.	NOTES 1, 2, 3, 4, 5, 6
P5	2'-0" x 2'-6"	(10) #7	#4 @ 10" O.C.	NOTES 1, 2, 3, 4
P5A	2'-0" x 2'-6"	(16) #7	#4 @ 10" O.C.	NOTES 1, 2, 3, 4, 5, 6
P6	2'-8" x 3'-0"	(14) #7	#4 @ 10" O.C.	NOTES 1, 2, 3, 4, 5, 6
P7	2'-0" x 3'-6"	(14) #7	#4 @ 10" O.C.	NOTES 1, 2, 3, 4, 5
P8	2'-0" x 3'-6"	(14) #7	#4 @ 10" O.C.	NOTES 1, 2, 3, 5, 6
P9	2'-2" x 4'-6"	(12) #7	#4 @ 10" O.C.	NOTES 1, 2, 3
P10	2'-6" x 4'-6"	(12) #7	#4 @ 10" O.C.	NOTES 1, 2, 3
P11	2'-4" x 2'-4"	(8) #7	#4 @ 10" O.C.	NOTES 1, 2, 3, 4, 5

PIER SCHEDULE NOTES:

SEE A4/S201 FOR TYPICAL ANCHOR BOLT DETAIL.

SEE DETAIL A1/S202 FOR TYPICAL PIER CONSTRUCTION.
 SEE "PIER REINFORCING LAYOUT" BELOW FOR CONFIGURATION OF PIER REINFORCING.
 WHERE PIERS ARE LABELED ON THE PLANS WITH AN ASTERISK THUS (P2*), THE PIER VERTICAL CORNER BARS (AND SELECT MIDDLE BARS ON CERTAIN PIERS) SHALL TERMINATE W/ 90° HOOK AT TOP OF PIER, SHOWN AS A DASHED LINE ON "PIER

REINFORCING LAYOUT" BELOW.
5. PROVIDE DOUBLE TIES AT TOP OF PIER.

6. PROVIDE TIES AT 4" O.C. IN THE TOP 1'-6" OF THE PIER HEIGHT.
7. ALL PIER VERTICAL BARS SHALL TERMINATE IN FOOTING WITH A STANDARD 90° HOOK

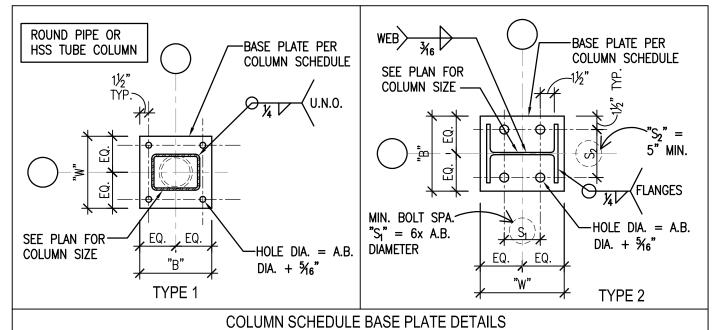
	COLUMN SCHEDULE				
MARK	SIZE	BASE PLATE SIZE (T x B x W)	BASE PLATE	ANCHOR BOLTS	
C1	HSS 4x4x1/4	尼¾ x 10" x 0'-10"	TYPE 1	(4) ¾" ø + 8" EMBED	
C2	HSS 8x8x1/4	足¾ x 1'-2" x 1'-2"	TYPE 1	(4) ¾" ø + 8" EMBED	
C3	HSS 8x8x3/k	尼¾ x 1'-2" x 1'-0"	TYPE 1	(4) ¾" ø + 12" EMBED	
C4	W24x104	P 11/4 x 1'-4" x 2'-81/2"	C4/S202	(4) 1" ø + 31" EMBED	
C5	HSS 10x6x5∕16	P_ 1 x 1'-0" x 1'-0"	TYPE 1	(4) ¾" ø + 12" EMBED	
C6	HSS 10x10x¾	PL 1 x 1'-4" x 1'-0"	TYPE 1	(4) ¾" ø + 12" EMBED	
C7	HSS 10x14x¾	P2 1 x 1'-4" x 1'-4"	TYPE 1	(4) ¾" ø + 12" EMBED	
C8	HSS 6x6x3/8	P2 1 x 1'-0" x 1'-0"	A3/S204	(8) ¾" ø + 18" EMBED	

COLUMN SCHEDULE NOTES

SEE A4/S201 FOR TYPICAL ANCHOR BOLT DETAIL.

UNLESS NOTE OTHERWISE, ANCHOR BOLTS SHALL BE ASTM F1554, GR 36 (Fy=36 KSI)

ANCHOR BOLTS MARKED WITH AN ASTERISK SHALL BE ASTM F1554, GR 50 (Fy=55 KSI)



FOUNDATION PLAN KEYED NOTES

- 1. OMIT TOP COURSE OF MASONRY AND POUR SLAB THRU AT DOOR OPENINGS, PER C1/S201 UNLESS ANOTHER DETAIL IS SPECIFIED.
- 2. SAW-CUT CONTROL JOINTS PER A1.1 OR A1.2/S201. LOCATE GENERALLY AT CENTERLINES OF COLUMNS, AND RE-ENTRANT CORNERS, AT A MAXIMUM SPACING OF 15'-0".
- 3. CAST BOTH SPREAD FOOTINGS TOGETHER AND OVERLAP REINFORCING.
- 4. 2'-8" WIDE x 12" THICK CONCRETE TIE-ROD ENCASEMENT CAST INTEGRAL WITH SLAB ON GRADE WITH (3) #8 BARS AND (2) #7 BARS CONTINUOUS. REBAR COUPLERS ARE REQUIRED AT ALL SPLICES; DO NOT LAP SPLICE BARS. SEE B1/S202 FOR RELATED DETAILS.
- 5. 7" THICKENED SLAB x 2'-0" WIDE W/ (2) #6 TIE-RODS CONT. (LOCATED 4" BELOW TOP OF SLAB), SPANNING BETWEEN PIERS AT X-BRACED FRAMES ALONG LINES 4 & 16 ONLY. SEE B1/S202 FOR PLAN DETAIL.
- 6. #5 HAIR-PIN REBAR CAST INTO SLAB ON GRADE PER DETAIL C1/S202.
- PLATFORM FLOOR CONSTRUCTION (LIMITS ARE DEFINED BY DOTS HATCH PATTERN): 3" CONCRETE OVER 2"-20 GA. COMPOSITE DECK W/ 6x6-w2.9xw2.9 wwf 2" BELOW TOP OF SLAB. OVERALL THICKNESS = 5". TOP OF SLAB = $102'-9\frac{1}{2}$ ". THE COMPOSITE FLOOR DECK HAS BEEN DESIGNED TO SUPPORT THE WEIGHT OF A 4,000# (TOTAL) SCISSORS LIFT WITH A WHEEL BASE AS FOLLOWS: $2'-6" \times 6'-0"$. NOTIFY THE ENGINEER OF RECORD FOR SCISSORS LIFTS THAT VARY FROM THESE SPECIFICATIONS.
- 8. 8" CMU SUPPORT WALL WITH HORIZONTAL REINFORCING, NOT VERTICAL REINFORCING, BEARING ON TOP OF 6" THICK CONCRETE FLOOR SLAB PER NOTE 14 BELOW.
- 9. 8x16 CMU PIER EA. SIDE OF P.E.M.B. COLUMN TO SUPPORT ENDS OF DECK SUPPORT ANGLE PER KEYED NOTE 10 BELOW.
- 10. CONT. L5x 3½x 5/16 DECK SUPPORT ANGLE AT EDGE OF PLATFORM.
- 11. (2) L $\frac{3}{2}$ x 4 x $\frac{5}{6}$ STEEL LINTELS (LLV LLBB). PROVIDE 6" BEARING LENGTH, E.E. AND MAINTAIN 2'-0" CLEAR VERTICAL OPENING HEIGHT BENEATH BOTTOM SIDE OF LINTELS.
- 12. TURN-DOWN SLAB AT EDGE OF BAPTISTERY PIT. VERTICAL FACE TERMINATES INTO MAT FOOTING
- 13. 8" THICK MAT FOOTING W/ #5 BARS AT 12" O.C., E.W. AT MID-DEPTH (T.O.F. = 97'-10")
- 14. EDGE OF 6" THICK CONCRETE SLAB ON GRADE W/ W6x6-W2.9xW2.9 W.W.F AT MID-DEPTH. SUPPORT ON CHAIRS DURING CONCRETE POUR. W.W.F. SHEETS MUST BE LAPPED A MINIMUM OF
- 15. TOP OF PIER ELEVATION AT P3 IS AT A LOWER ELEVATION AS COMPARED TO THE OTHER PIERS WHICH ARE ALL CAST INTEGRALLY TOGETHER. ADJUST VERTICAL REINFORCING AND TIES AS REQ'D TO FIT ALL PIER REINFORCING TOGETHER. SEE C3/S202 FOR DETAILS.
- 16. FOOTING TYPE F-1, SEE FOOTING SCHEDULE FOR REINFORCING. SIZE OF FOOTING IS 9" BEYOND THE LIMITS OF THE CONCRETE PIER ON EACH SIDE.
- 17. PLATFORM FLOOR CONSTRUCTION: ½" PLYWOOD, OVER ½" SOUNDBOARD, OVER ¾" FRT PLYWOOD FLOOR DECKING, OVER COLD-FORMED STEEL JOISTS. TOP OF PLATFORM = 101'-9".
- 18. 6"-16 GA. COLD-FORMED STEEL (CFS) JOISTS AT 1'-4" O.C.
- 19. LOAD BEARING STUD WALLS PER A1 & B1/S204: 35/8"-20 GA. CFS STUDS AT 1'-4" O.C.
- 20. LOAD BEARING STUD WALLS SUPPORTING CEILING JOISTS ABOVE: 35/8"-18 GA. CFS STUDS AT 1'-4" O.C. SEE ARCH FOR ADDITIONAL INFORMATION.
- 21. 8" CFS INTERIOR STUD WALL PER PLAN
- 22. PARTIAL HEIGHT KNEE WALL PER C1/S204: 3%"-18 GA. CFS STUDS AT 1'-4" O.C.

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PTIST CHURCH

JOODYARD ROAD

DATE

17 NOV 2023

DRAWING

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REVISIONS

A D D KEY PLAN

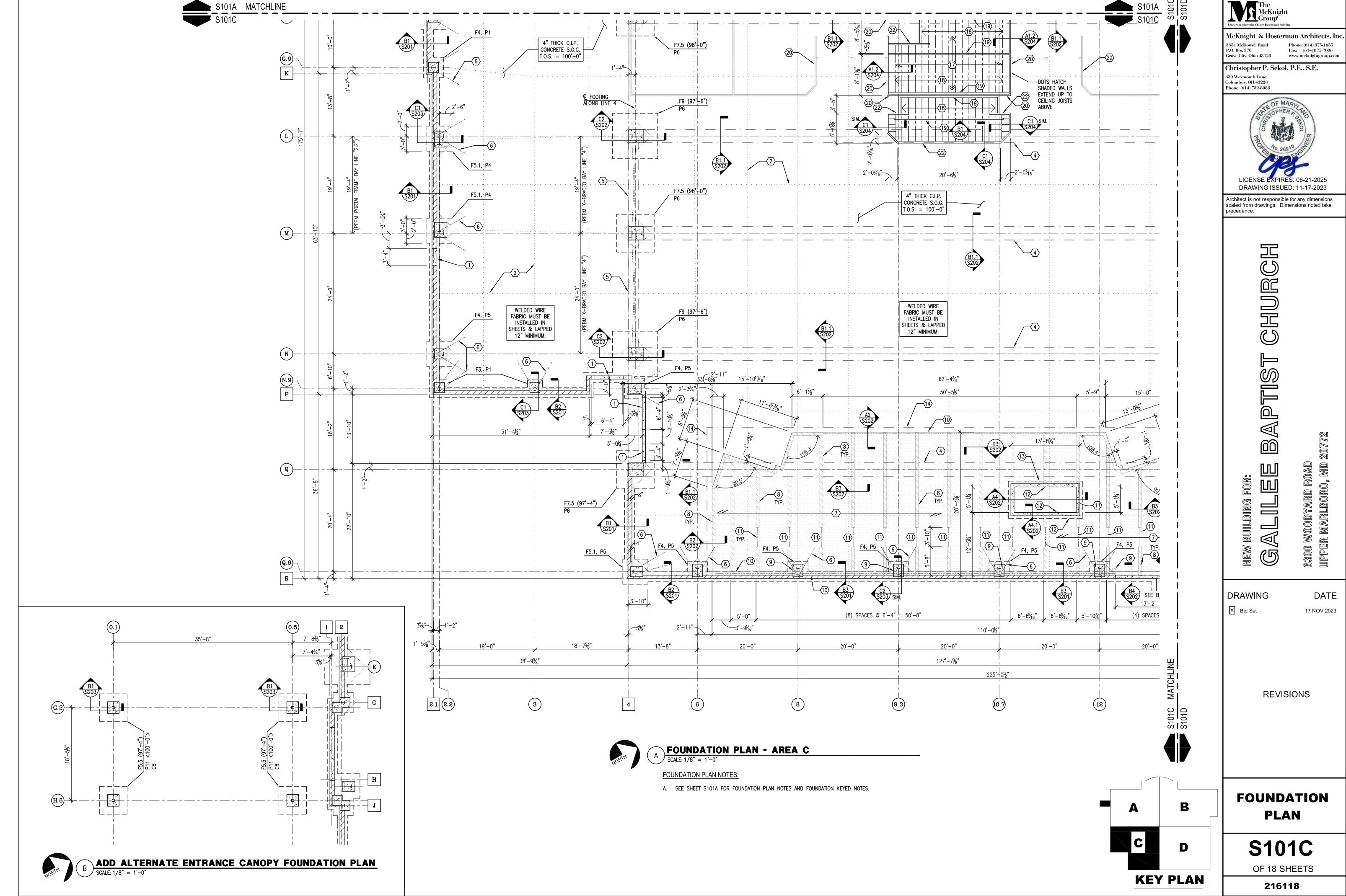
FOUNDATION PLAN

S101B

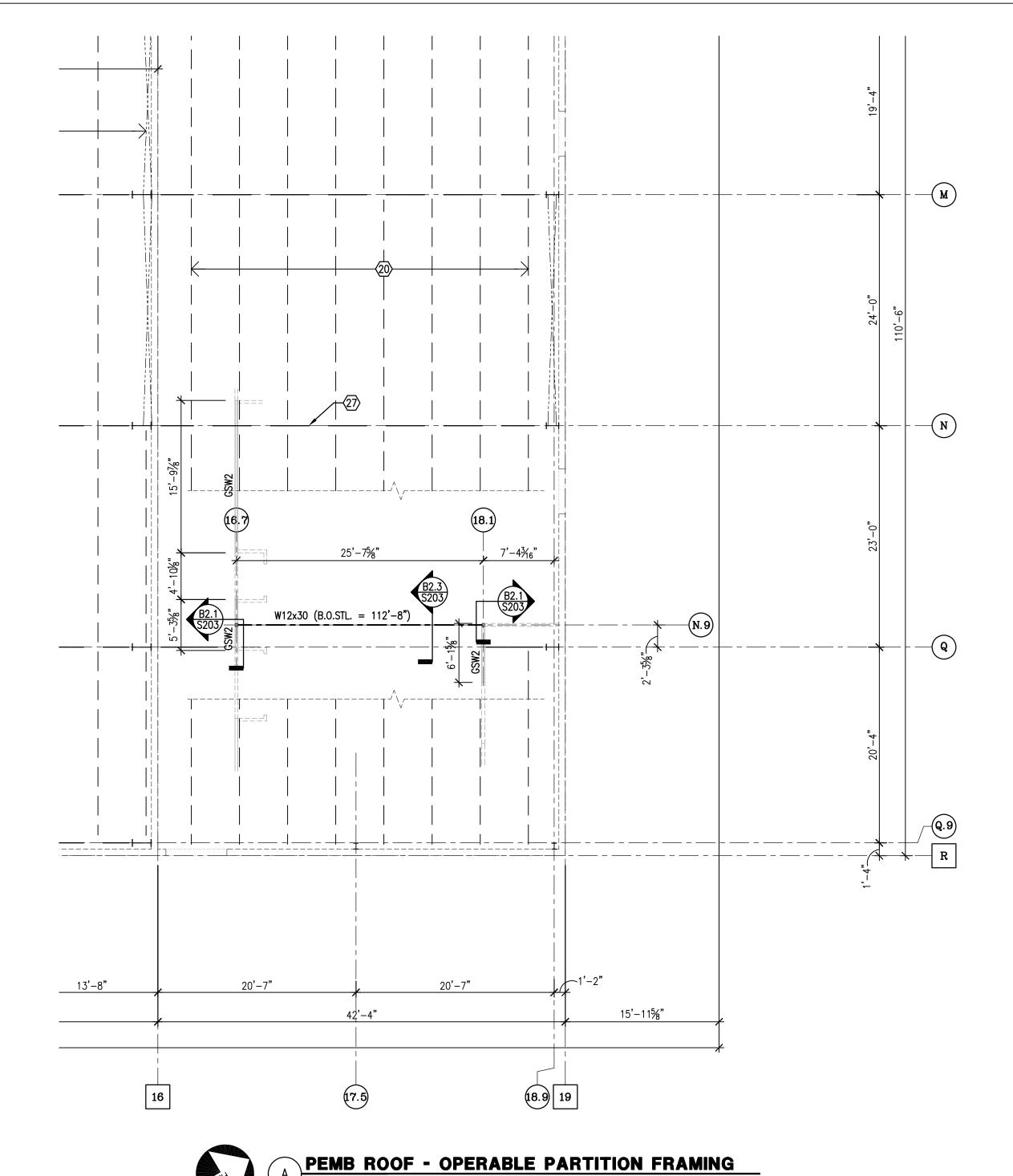
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OF 18 SHEETS

2023 1:36:U.S AM STUT-gamee baptist pians.awg unns sek



Plot Date: 11/9/2023 1:59:02 AM s101-galilee baptist plans.dwg Chris Sekol



P.E.M.B. COLUMN GRAVITY LOAD SCHE **ELEVATION APPLIED** WIND SNOW TO PEMB COLUMN Lv1 | +9.0 K | +5.0 K | +9.5 K | -7.0 K 133'-8" A.F.F. Lv2 +9.0 K +7.1 K +14.0 K -9.0 K 134'-2" A.F.F. Lv3 | +9.0 K | +7.1 K | +14.0 K | -9.0 K 134'-2" A.F.F. Lv4 | +9.0 K | +5.0 K | +9.5 K | -7.0 K 133'–8" A.F.F. Lv5 | +2.0 K | +2.5 K | +5.0 K | -4.5 K 115'-2" A.F.F.

OAD	MARK	WIND	EARTH QUAKE	COLUMN LINE	ELEVATION APPLIED TO PEMB COLUMN	NOTES/COMMENTS
LOAD CASE 1	Lh1	+/- 2.5K	+/- 1.4K	8	133'-8" A.F.F.	
	Lh2	+/- 3.8K	+/- 2.4K	9.3	134'-2" A.F.F.	
	Lh3	+/- 3.8K	+/- 2.4K	(0.7)	134'-2" A.F.F.	
	Lh4	+/- 2.5K	+/- 1.4K	12	133'-8" A.F.F.	
	Lh5	+/- 3.3K	+/- 1.0K	7	129'-0" A.F.F.	
	Lh6	+/- 3.0K	+/- 1.0K	8	129'-0" A.F.F.	
	Lh7	+/- 3.0K	+/- 1.0K	12	129'-0" A.F.F.	
	Lh8	+/- 3.3K	+/- 1.0K	13)	129'-0" A.F.F.	
	Lh9	NA	NA	H	134'-2" A.F.F.	
	Lh10	– 7.5K	NA	Н	129'-0" A.F.F.	
	Lh11	+ 7.5K	NA	Н	129'-0" A.F.F.	
	Lh1	+ 8.0K	NA	8	133'-8" A.F.F.	
	Lh2	+ 3.3K	NA	9.3	134'-2" A.F.F.	
	Lh3	+ 3.3K	NA	(0.7)	134'-2" A.F.F.	
2	Lh4	+ 1.9K	NA	12	133'-8" A.F.F.	
	Lh5	+ 1.5K	NA	7	129'-0" A.F.F.	
LOAD CASE	Lh6	– 1.8K	NA	8	129'-0" A.F.F.	
LOA	Lh7	+ 0.9K	NA	12	129'-0" A.F.F.	
	Lh8	– 2.1K	NA	13)	129'-0" A.F.F.	
	Lh9	+ 10.0K	+ 3.6K	H	134'-2" A.F.F.	
	Lh10	+ 5.9K	+ 2.0K	H	129'-0" A.F.F.	
	Lh11	+ 2.6K	+ 2.0K	Ξ	129'-0" A.F.F.	
LOAD CASE 3	Lh1	+ 1.9K	NA	8	133'-8" A.F.F.	
	Lh2	+ 3.3K	NA	9.3	134'-2" A.F.F.	
	Lh3	+ 3.3K	NA	(0.7)	134'-2" A.F.F.	
	Lh4	+ 8.0K	NA	12	133'-8" A.F.F.	
	Lh5	– 2.1K	NA	7	129'-0" A.F.F.	
	Lh6	+ 0.9K	NA	8	129'-0" A.F.F.	
	Lh7	– 1.8K	NA	12	129'-0" A.F.F.	
	Lh8	+ 1.5K	NA	13)	129'-0" A.F.F.	
	Lh9	- 10.0K	- 3.6K	Н	134'-2" A.F.F.	
	Lh10	– 5.9K	- 2.0K	Н	129'-0" A.F.F.	
	Lh11	– 2.6K	- 2.0K	Н	129'-0" A.F.F.	
	Lh12	- 1.0K	- 0.5K	2	115'-0" A.F.F.	

P.E.M.B. COLUMN LOAD SCHEDULE NOTES:

- WIND AND EARTHQUAKE LATERAL LOADS PROVIDED IN THIS TABLE REPRESENT ULTIMATE LEVEL LOADS PER ASCE 7-16. MULTIPLY THESE LOADS BY THE APPROPRIATE FACTORS FOR LOAD COMBINATIONS: 0.6 FOR WIND OR 0.7 FOR EARTHQUAKE PER ASCE 7-16.
- 2. DIRECTION OF LATERAL LOADS ARE INDICATED BY ARROWS ATTACHED TO THE PLAN MARK/NOTE. FORCES NOTED AS (+/-) ACT IN BOTH DIRECTIONS OR ARE REVERSIBLE. THE POSITIVE DIRECTION, IF INDICATED ON THE PLAN, IS INDICATED THUS: (+).
- 3. "BUILDING" NOTATION WHEN PROVIDED AS A WIND LOAD INDICATES THAT THE P.E.M.B. FRAME SHOULD BE DESIGNED FOR THE FULL LEEWARD OR WINDWARD PRESSURE. THUS, THE CONVENTIONAL STEEL BUILDING DOES NOT SHED OR REDUCE THE WIND LOAD TO THE P.E.M.B. STRUCTURAL FRAME.
- 4. GRAVITY LOADS SHOWN WITH A NEGATIVE SIGN (-) INDICATE UPWARD ACTING LOADS (WIND UPLIFT, ETC).

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EDULE	Leaders in
DTES/COMMENTS	McK 3351 M P.O. Bo
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CHURCH BAPTIST

BUILDING FOR:

ROAD 0, MD

DATE

17 NOV 2023

DRAWING

X Bid Set

REVISIONS

KEY PLAN

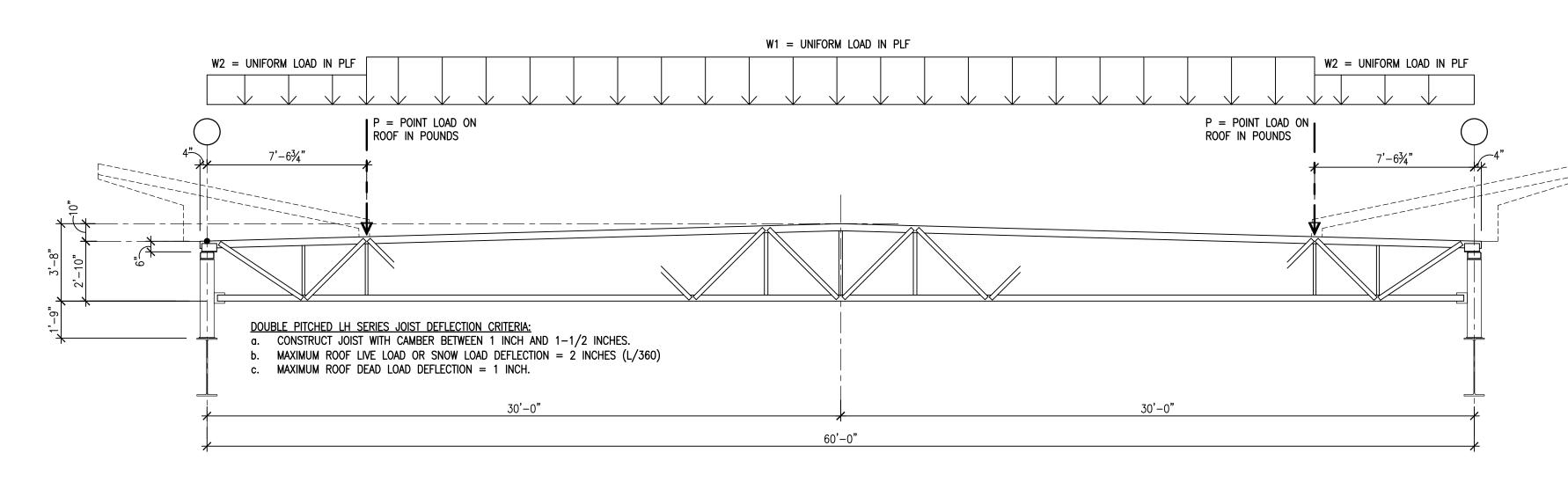
LH-SJ JOIST LOADING SCHEDULE W1 W2 P(lb) W1 W2 P(lb) W1 W2 P(lb) W1 W2 P(lb) LH-SJ1 163 pif | 163 pif | 320 | 195 pif | 65 pif | 780 | 176 pif | 0 pif | 710 | -40 pif | 0 pif LH-SJ2 | 163 pif | 163 pif | 320 | 195 pif | 65 pif | 780 | 240 pif | 0 pif | 960 | -40 pif | 0 pif | LH-SJ3 163 plf 163 plf 320 195 plf 65 plf 780 440 plf 0 plf 1640 -40 plf 0 plf -160

FOUNDATION PLAN

S102D

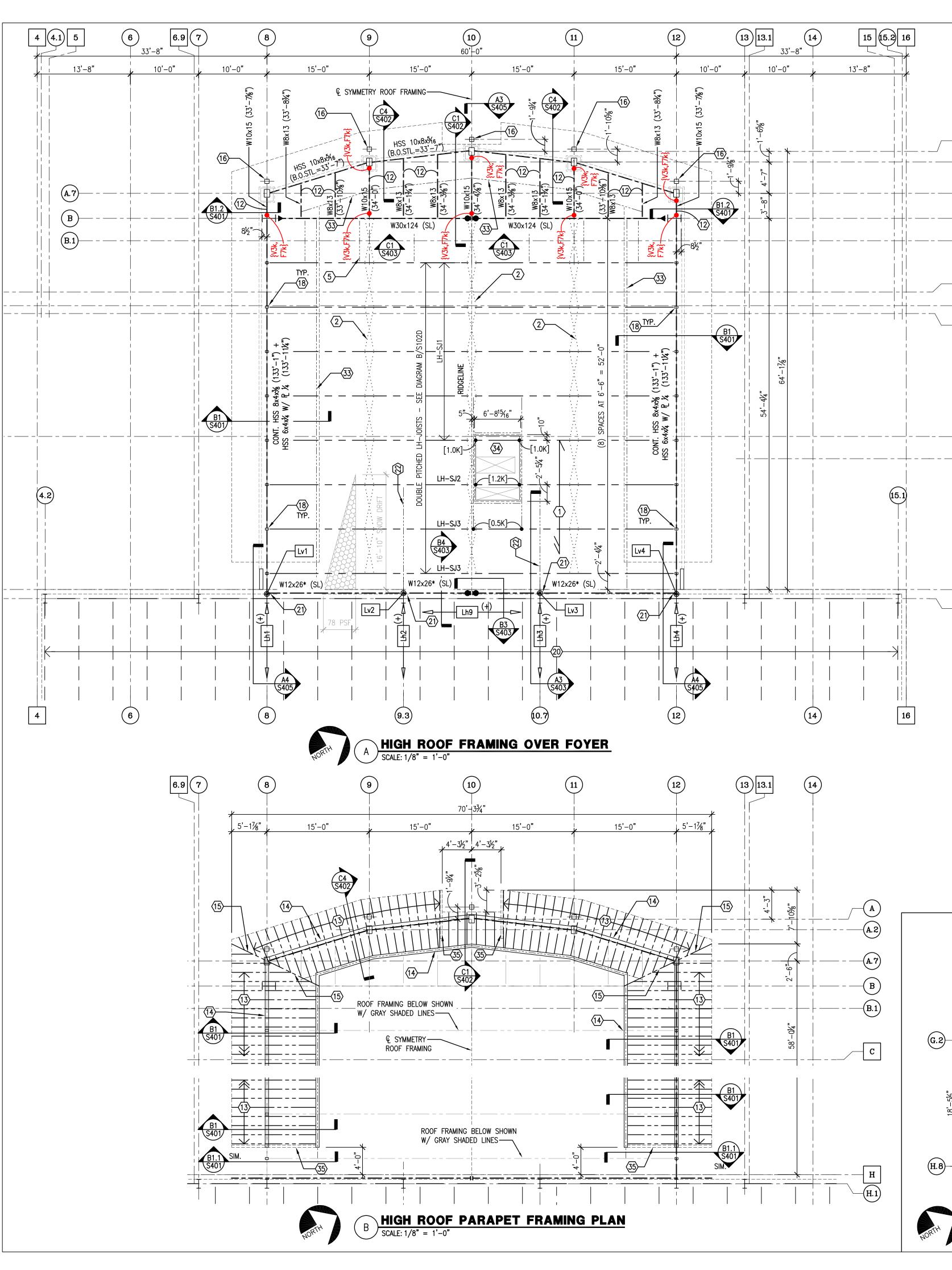
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OF 18 SHEETS



B LH JOIST PROFILE AND LOADING DIAGRAM

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



ROOF FRAMING PLAN GENERAL NOTES

- A. SEE SHEET SOO1, "STRUCTURAL GENERAL NOTES" FOR DESIGN ROOF LIVE LOADS, SNOW LOADS, AND LEGEND. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF "ARCHITECTURALLY EXPOSES STRUCTURAL STEEL" OR AESS. SEE SECTION 051200 FOR SPECIFICATIONS ON AESS.
- B. SEE SHEET S101B FOR COLUMN SCHEDULE. COLUMNS ARE NOTED ON THE FOLLOWING FOUNDATION PLANS, S101A, S101B, S101C, AND S101D. ALL COLUMNS ARE TO BE SHIPPED AS ONE SINGLE PIECE WITHOUT SPLICES.
- C. ROOF CONSTRUCTION: 1½" 20 GAGE, ACOUSTICAL (NON-CELLULAR), WIDE RIB, GALVANIZED STEEL ROOF DECK OVER STEEL BAR JOISTS AND BEAMS, U.N.O. EXAMPLE PRODUCT INCLUDES VULCRAFT 1.5-BIA OR EQUAL. USE STANDARD 1.5B DECK OVER ENTRANCE CANOPY AREAS. SEE PLAN FOR LOCATIONS OF HEAVIER GAGE DECK UNDER SNOW DRIFT LOADS.
- TOP OF STEEL ELEVATION (T.O.STL.) = 129'-0", U.N.O. ELEVATIONS PROVIDED IN PARENTHESIS ADJACENT TO BEAM SIZES, THUS (XXX'-XX") INDICATE RELATIVE HEIGHT ABOVE THE SLAB ON GRADE REFERENCE ELEVATION OF 100'-0". DUE TO LIMITED SPACE FOR TEXT ON THE PLANS, SOME ELEVATIONS ARE EXPRESSED WITHOUT THE LEADING 100'S PLACE; THUS (125'-0") WOULD BE EXPRESSED AS (25'-0").
- E. ELEVATIONS SHOWN INDICATE THE FOLLOWING:
- AT STEEL JOISTS: JOIST BEARING EL. AT STEEL BEAMS: TOP OF BEAM EL.
- SLOPING BEAMS ARE INDICATED THUS: (SL). TOP OF STEEL ELEVATIONS ARE PROVIDED IN PARENTHESES AT EACH END OF SLOPING BEAMS. TOP OF STEEL OF BEAMS LABELED WITH AN ASTERISK "*" SHALL MATCH SLOPING TOP PLANE OF ADJACENT STEEL JOISTS.
- WORK-POINTS AT SLOPING MEMBERS ARE AT CENTERLINES OF COLUMNS, OR SUPPORTING BEAMS AND AT INSIDE FACE OF WALLS, U.N.O.
- H. SIMPLE SHEAR CONNECTIONS AT THE ENDS OF BEAMS SHALL BE DESIGNED FOR HALF OF THE FULL UNIFORM LOAD CAPACITY OF THE MEMBER AS PUBLISHED BY AISC, EXCEPT WHERE END REACTIONS ARE PROVIDED (IN KIPS) AT THE END OF A BEAM AS RED COLORED TEXT CONTAINED IN CURLY BRACKETS, THUS: {V10k, F10K}. LOADS SHOWN NEXT TO THE BEAM SIZE SHALL BE APPLIED TO EACH END. THE NOTATION "V" INDICATES A VERTICAL SHEAR FORCE AND "F" INDICATES A HORIZONTAL REVERSIBLE AXIAL FORCE ALONG THE AXIS OF THE MEMBER (AXIAL LOADS ARE APPLICABLE ONLY IF LISTED). FORCES ARE EXPRESSED AT SERVICE (ASD) LEVEL AND ALL LOAD COMBINATION FACTORS HAVE BEEN APPLIED.
- → SYMBOL SHOWN ON PLAN INDICATES BEAM TO COLUMN MOMENT RESISTING CONNECTION PER DETAIL B2/S403.
- J. SYMBOL SHOWN ON PLAN INDICATES A BEAM TO BEAM, MOMENT RESISTING, SPLICE CONNECTION PER DETAIL A1/S403 (LINE B) OR B3/S403 (LINE H).
- K. → SYMBOL SHOWN ON PLAN INDICATES A BEAM TO BEAM, MOMENT RESISTING,
- SPLICE CONNECTION PER DETAIL B4/S204. L. LH-SERIES JOISTS SHALL HAVE 6 INCH DEEP BEARING SEATS, U.N.O.
- M. JOISTS MARKED AS "SJ" SHALL BE DESIGNED FOR SNOW DRIFTING OR OTHER
- "NON-UNIFORM" LOADING CONDITIONS AS LISTED IN THE "SJ JOIST LOADING SCHEDULE" ON SHEET S101D.
- N. JOISTS SHALL BE DESIGNED FOR THE ADDITIONAL WEIGHT OF ROOF TOP HVAC UNITS AS PROVIDED ON THE PLANS. SEE DETAILS A1/S405 AND B1/S405 FOR TYPICAL JOIST REINFORCING REQUIRED.
- O. {XX.X} NUMBERS IN CURVED BRACKETS REPRESENT DESIGN REACTIONS AS ENDS OF BEAMS THAT ARE LESS THAN HALF THE PUBLISHED UNIFORM LOAD CAPACITY OF THE
- R. PROVIDE L 5 x 3½ x 1/6 GALVANIZED BRICK LINTELS WHERE REQUIRED OVER EXTERIOR DOORS AND WINDOWS, U.N.O. PROVIDE A MIN. OF 6" BEARING LENGTH, E.E.
- S. EXTERIOR COLD-FORMED STEEL (CFS) STUD WALL CONSTRUCTION: 6"-16 GA. CFS STUDS (1%" FLANGE) AT 16" O.C., U.N.O.
- T. ALL COLD-FORMED STEEL STUD WALLS SHALL HAVE CONT. HORIZONTAL ROWS OF 1½"-16 GA. CFS U-CHANNEL BRIDGING AT 4'-0" O.C. AND %" SHEATHING SHALL BE APPLIED TO BOTH SIDES OF THE WALL WHERE POSSIBLE. FASTENER SPACING ALONG EACH STUD AND AT BOUNDARY EDGES SHALL NOT EXCEED 12" O.C.
- GRAY SHADED HATCHED WALLS WITH THE FOLLOWING NOTATION, "GSW1" OR "GSW2", IDENTIFIES LOAD-BEARING OR LATERAL RESISTING CFS STUD WALLS. REFER TO ROOF FRAMING PLAN AND DETAIL A4/S203 FOR MORE INFORMATION.
- Lv# SQUARE BOX KEYED NOTES INDICATE LOADS TRANSFERRED TO THE P.E.M.B. COLUMN BY CONVENTIONAL STEEL BEAMS (FRAMING NOT SUPPLIED BY THE

P.E.M.B.M.). SEE P.E.M.B. COLUMN LOAD SCHEDULE ON SHEET S102D.

- (#) ROOF FRAMING PLAN KEYED NOTES:
- 1. $1\frac{1}{2}$ "-18 Ga. CFS ROOF DECK IN THESE JOIST BAYS.
- 2. ROWS OF BOLTED DIAGONAL CROSS BRIDGING PER SJI REQUIREMENTS.
- 3. EXTEND BEAM OVER TOP OF COLUMN TO FORM A CANTILEVER AND, WHERE SHOWN

(#) ROOF FRAMING PLAN KEYED NOTES:

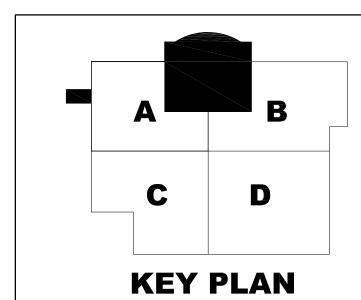
- 4. CONT. ROWS OF X-BRIDGING BETWEEN CFS JOISTS PER B3/S203.
- 5. L3x3x½ DIAGONAL BRACING ANGLES EXTENDING FROM BOTTOM FLANGE OF MOMENT FRAME GIRDER UPWARD TO TOP CHORD PANEL POINT OF LH-SERIES JOIST. EA. END OF BRACE ATTACHED BY FIELD WELDING. MAINTAIN SLOPE OF BRACE AT 45° (OR GREATER) W/ THE VERTICAL PLANE.
- 6. HSS 8x8x⁵√6 HEADER BEAM AT NEW ENTRANCE CANOPY ELEVATION (T.O.STL. =
- HSS 8x6x¼ HORIZONTAL GIRT SUPPORTING WINDOWS (T.O.STL. = 124'-4½"), 6"
- 8. HSS 6x6x/4 HORIZONTAL GIRT SUPPORTING WINDOWS AT THE FOLLOWING ELEVATIONS, (T.O.STL. = 110'-10" AND 124'-4%2").
- MITER OUTER CORNERS OF FRAME. ALL FRAME MEMBERS TO BE GALVANIZED.

9. C8x11.5 FRAME AROUND NEW CANOPY (T.O.STL. = 110'-10"). FULLY WELD AND

- 10. CANOPY INFILL JOISTS: 6"-16 GA. CFS JOISTS AT 1'-4" O.C. (T.O.JOIST = 110'-8")
- 11. INTERIOR ENTRY VESTIBULE CEILING JOISTS: 8"-18 GA. CFS JOISTS AT 1'-4" O.C. (T.O.JOIST = 110'-10"). PROVIDE ROWS OF X-BRIDGING AT 6'-0" O.C. PER DETAIL
- 12. ROTATE VERTICAL AXIS OF BEAM SO THAT TOP FLANGE IS ALIGNED WITH BOTTOM SURFACE OF ROOF DECK.
- 13. OVERHANG FRAMING, CFS JOISTS AT 1'-4" O.C. (1.625" FLANGES): TOP SURFACE, 6"-16 GA.; BOTTOM SURFACE, 3\%"-16 GA.
- 14. OVERHANG FRAMING SUPPORT WALLS: 6"-16 GA. CFS STUDS AT 1'-4" O.C.
- 15. (2) 8"-16 GA. STUD/JOISTS BACK TO BACK (1.625" FLANGES). FASTEN WEBS BACK TO BACK W/ #10 TEK SCREWS AT 12" O.C., STAGGERED T. & B.. INTERSECTING AND SUPPORTED CFS JOIST FRAMING SHALL BE ATTACHED W/ CLARK-DIETRICH S545 CLIPS.
- 16. SEE C4/S403 FOR DIMENSIONS TO HSS 8x8 COLUMNS FROM HSS 10x14 COLUMNS. SEE ARCH DRAWINGS FOR DIMENSIONS OF COLUMN ENCLOSURES.
- 17. W8x18 AT (E) ELEVATIONS: 1 = (129'-0"), 2 = (110'-10"). DESIGN END OF BEAM CONNECTIONS FOR 4 KIPS OF REVERSIBLE AXIAL LOAD DUE TO WIND.
- 18. HSS 8x4x5/6 STUB COLUMN SUPPORTING LH JOIST ABOVE, CENTERED ON JOIST SEAT.
- 19. (2) L3 x3½ x¼ DIAGONAL BRACE (LLV) W/ ¾" GAP. PROVIDE ½" DIA. STITCH FASTENERS AND 3x3x3/8 PLATE WASHERS AT MID-LENGTH BUT NOT GREATER THAN
- 20. CFS "Z" PURLINS AT 5'-0" O.C. +/- OR PER PEMBM DESIGN.
- 21. WELD W12x26 BEAM DIRECTLY TO FACE OF P.E.M.B. COLUMN FLANGE PER DETAIL A4/S403.
- 22. (2) L3x3x³/₆ COLLECTOR BRACED WELDED TO P.E.M.B. COLUMN PER DETAIL
- 23. SIDE ENTRANCE CANOPY ROOF: $1\frac{1}{2}$ " 20 GA. CFS ROOF DECK OVER 6"-16 GA. CFS JOISTS AT 1'-4" O.C. (1.625" FLANGES) + $3\frac{1}{6}$ "-18 GA. CEILING JOISTS BELOW AT 1'-4" O.C.
- 24. 3%"-16 GA. CFS STUD PARAPET AROUND LOWER CANOPY ROOF.
- 25. PROVIDE CONNECTION OF TUBE BEAM TO P.E.M.B. COLUMN PER DETAIL A4/S401.
- 26. CONNECT CONVENTIONAL STEEL BEAM TO P.EM.B. COLUMN PER DETAIL C3/S203.
- 27. P.E.M.B. MAIN FRAME GIRDER BEAM.
- 28. CEILING SUPPORT FRAMING: 6"-16 GA. CFS STUDS AT 2'-0" O.C. W/ 5/8" GYPSUM SHEATHING CAP. FASTEN SHEATHING W/ #6 BUGLE HEAD TEK SCREWS AT 8" O.C., ALONG ALL SUPPORTS.
- 29. CFS STUD WALL: 3%" CFS STUDS (1.625" FLANGES) AT 1'-4" O.C.
- 30. CFS STUD WALL: SEE ARCH FOR STUD SIZE, SPACING, AND GAGE. NOTE: GAGE
- 31. (2) 6"-18 GA. CFS STUD HEADER (1.625" FLANGES) PER DETAIL B4/S203.
- 32. (2) 8"-14 GA. CFS STUDS HEADER (2" FLANGES) SIMILAR TO DETAIL B4/S203. PROVIDE AT LEAST (1) JACK STUD.
- 33. CONT. C6x10.5, LEGS POINTING DOWN.

SHALL NOT BE LESS THAN 18 GAGE.

- 34. ROOF TOP MECHANICAL UNIT SUPPORT PER DETAILS A1/S405 & B1/S405. POINT LOAD LOCATIONS FOR DESIGN OF JOISTS ARE SHOWN W/ A SOLID DOT AND THE ASSOCIATED LOAD IN POUNDS IS PROVIDED ADJACENT TO EACH DOT.
- 35. CFS STUD WALL AT SIDE OF FRAMING: 3\%"-16 GA. CFS STUDS AT 16" O.C.
- FASTEN TO SIDE OF ROOF JOISTS PER DETAIL C1/S402. 36. SEE A4/S405 FOR GIRDER BEAM SUPPORT DETAIL. SIM CONDITION NOTED.
 - - 6"-18 GA. CFS CEILING JOISTS AT 2'-0" O.C.
 - 4. CFS STUD PARAPET: 3%" 18 GA. STUDS AT 1'-4" O.C.
 - CONNECT CONVENTIONAL STEEL BEAM TO FLANGE OF P.E.M.B. COLUMN W/ FIELD WELDED SINGLE SHEAR PLATE PER DETAIL C3/S203.
 - 6. GIRT WALL BY P.E.M.B.M.



FOYER ROOF FRAMING PLAN

REVISIONS

S102

ON THE PLANS, PROVIDE A BEAM TO BEAM SPLICE PER DETAIL A1/S402. SIM. (H.8) ADD ALTERNATE ENTRANCE CANOPY ROOF FRAMING PLAN

0.5 7'-8¾" 2'-0" TOP OF STEEL FOR CANOPY $= (115'-0\frac{3}{4}")$ U.N.O. W16x31 W16x31

(#) ADD ALTERNATE ENTRANCE CANOPY KEYED NOTES MOMENT RESISTING (♦) CONNECTION IN TWO DIRECTIONS PER DETAIL B4/S204.

2. L3x2x1/4 OUTRIGGERS AT 4'-0" O.C.

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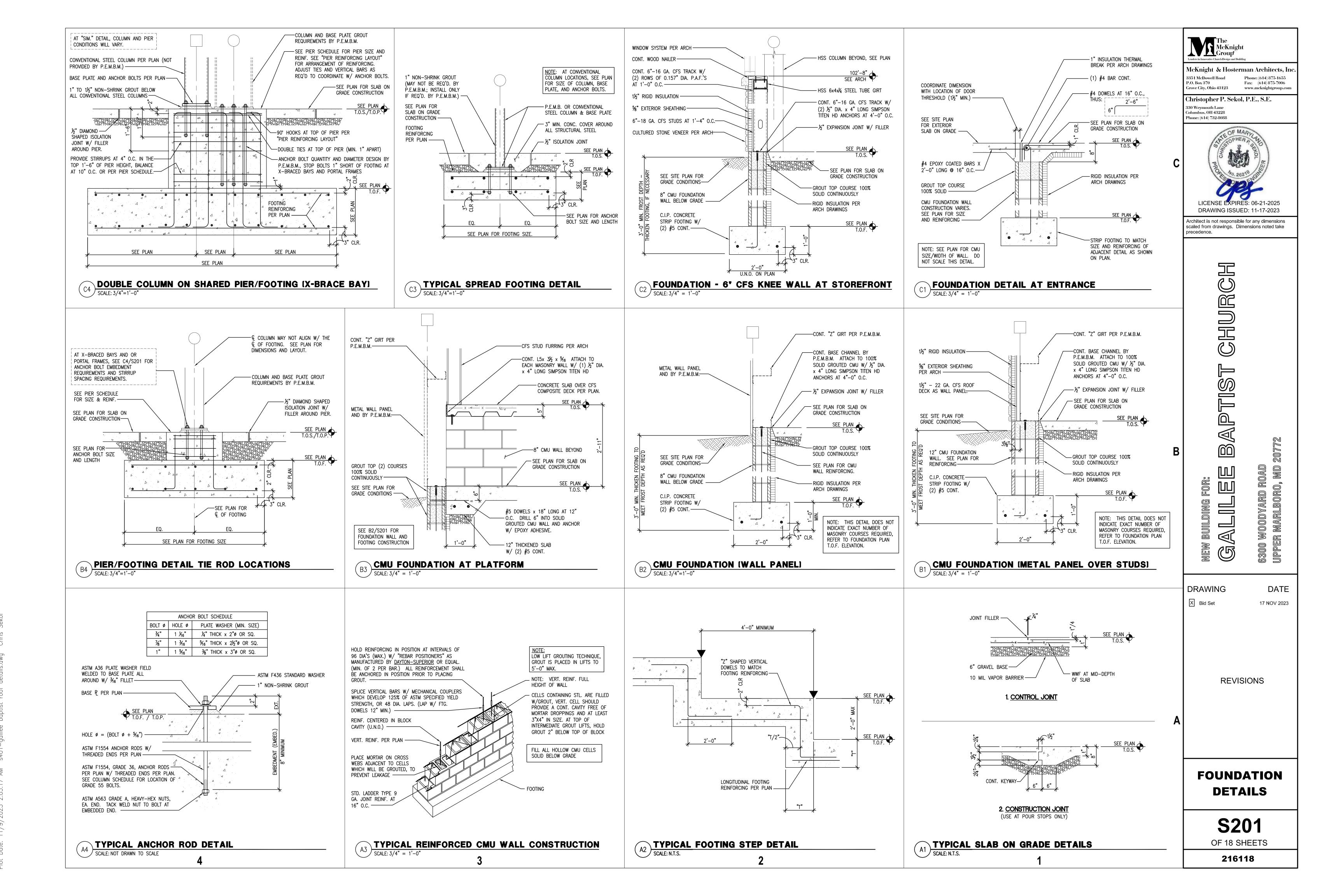
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Plot Date: 11/9/2023 2:04:10 AM s401—adilee bantist roof details dwa Chris Sekol

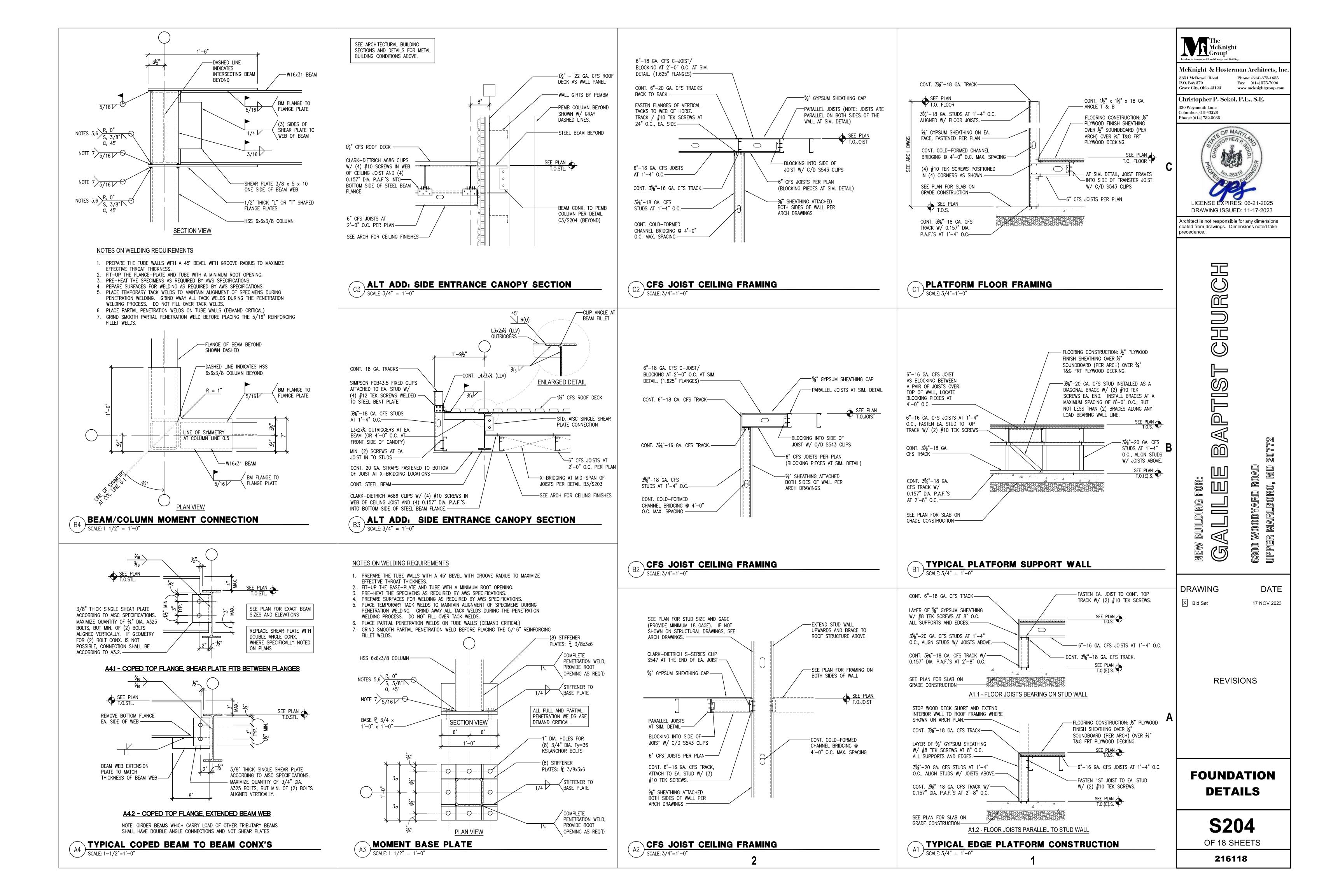
SEE C1/S203 FOR

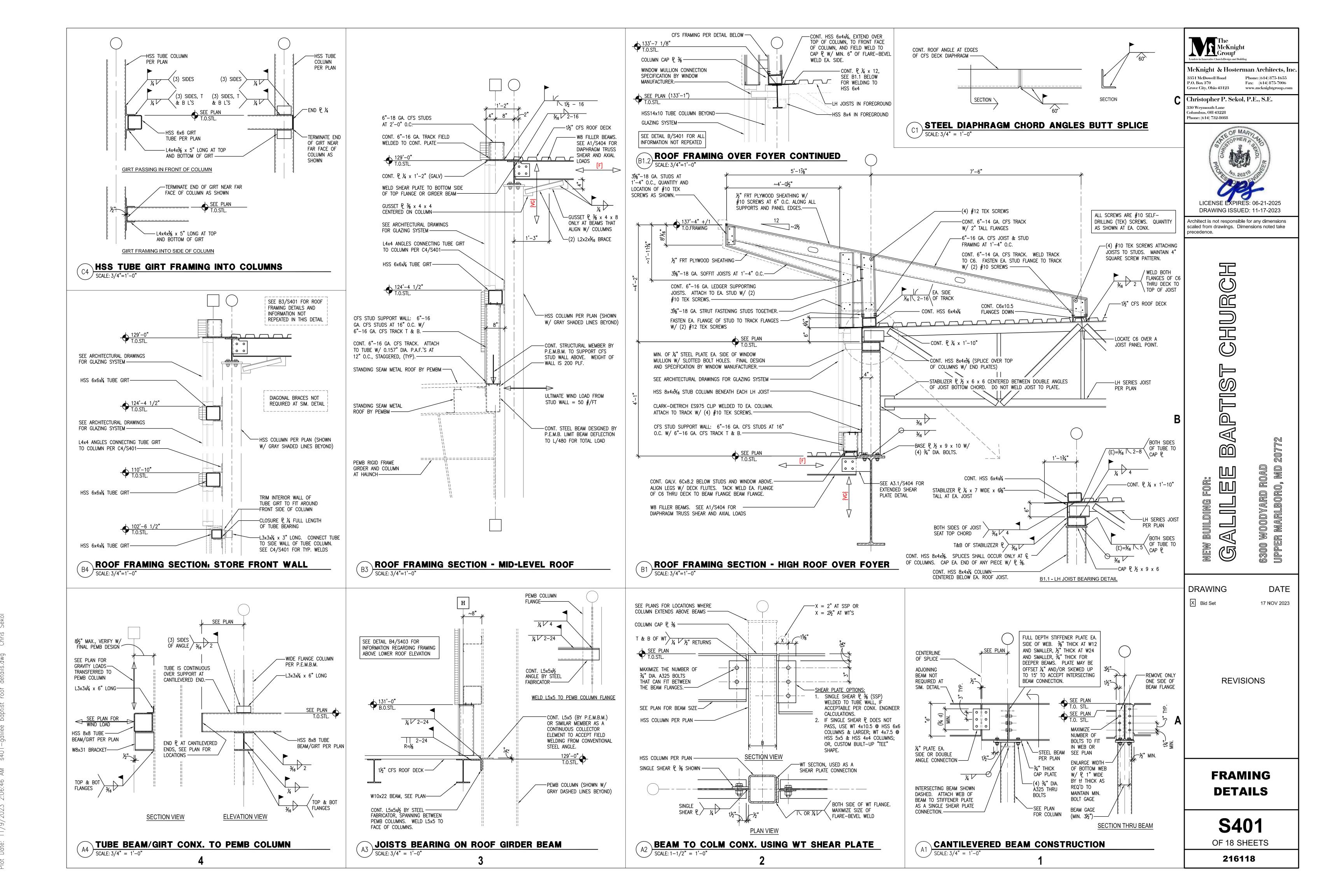
INFORMATION NOT

AT "SIM." DETAIL B3/S201

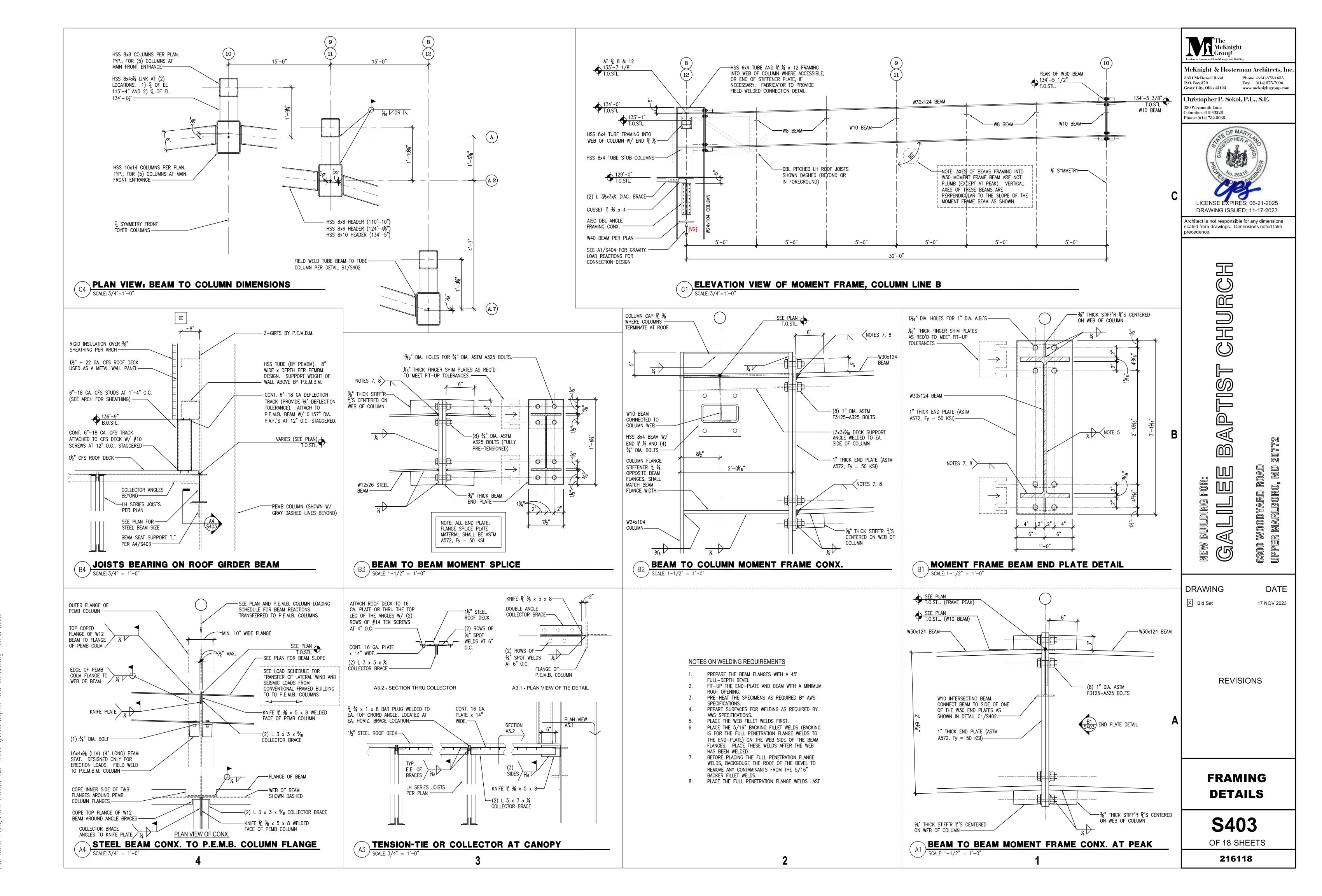
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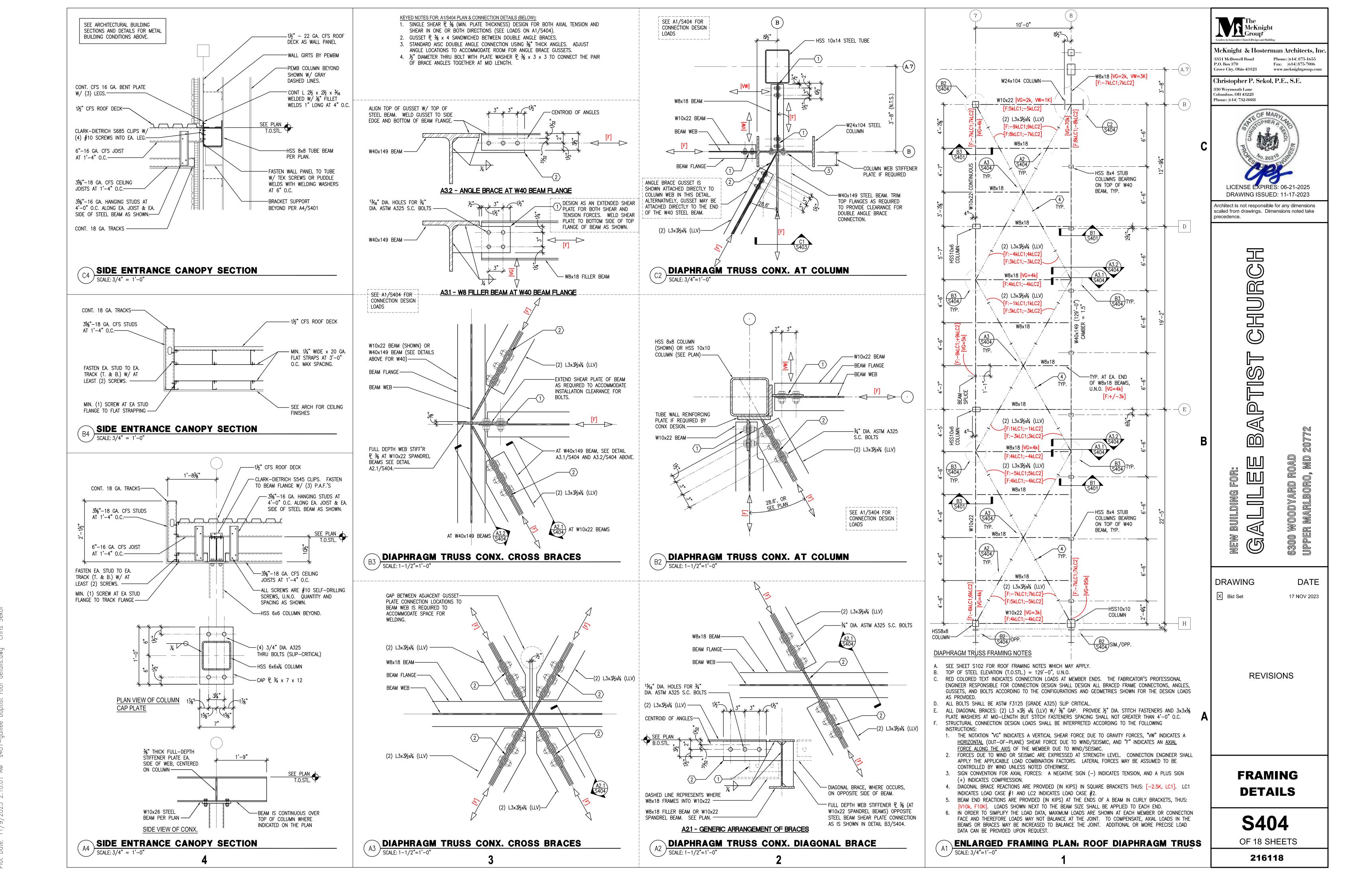


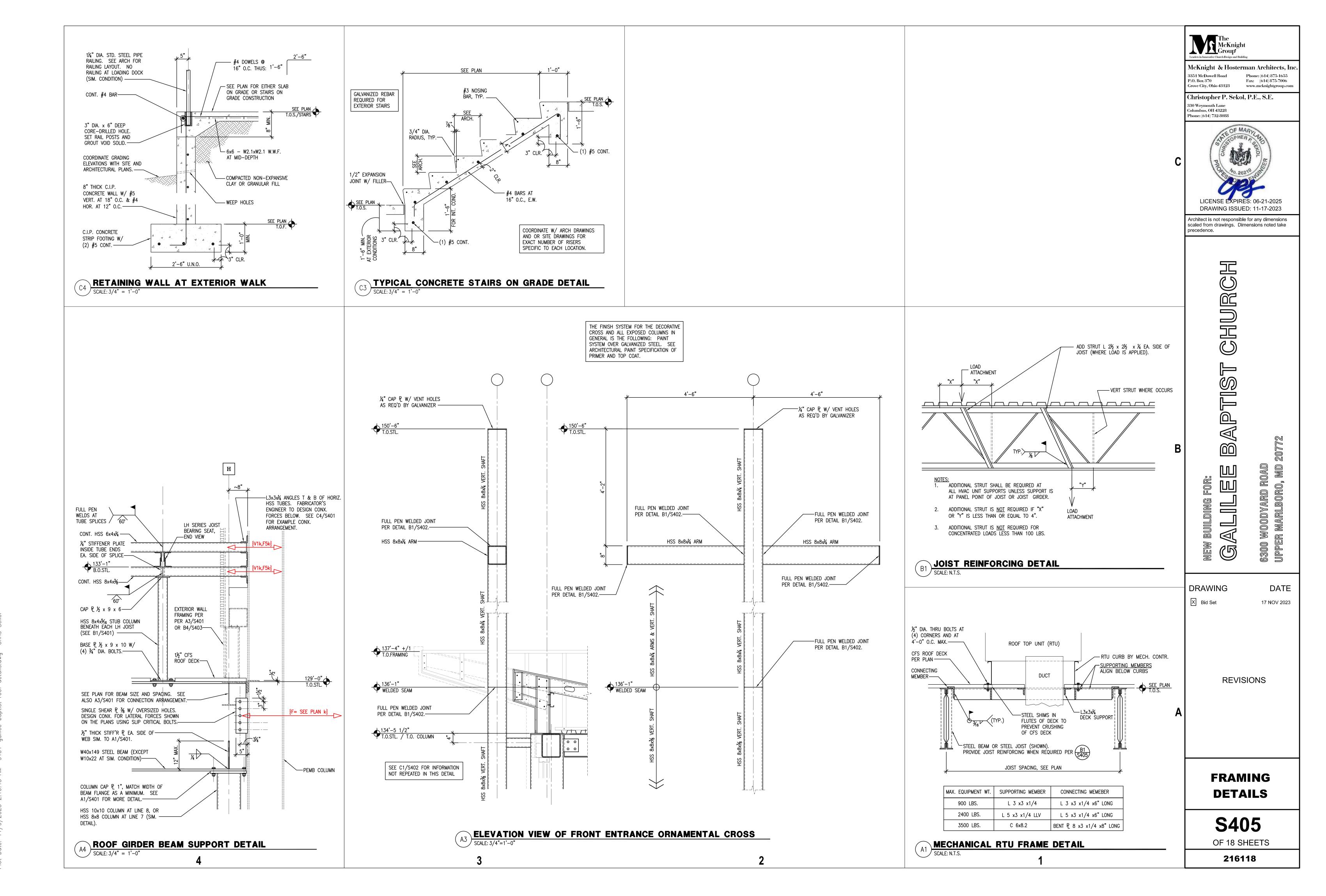


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