

- ALL COMPONENTS ARE ERECTED AND ALL CONNECTIONS ARE FULLY MADE. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FRAMING IS COMPLETED AND ALL MASONRY CONSTRUCTION AT PERIMETER IS COMPLETED AND THE ROOF DECK CONNECTIONS ARE COMPLETED. CONTRACTOR SHALL BRACE ALL WALLS DURING CONSTRUCTION AGAINST WIND OR CONSTRUCTION LOADS.
- THE GENERAL CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL OPENINGS THROUGH ROOFS, FLOORS AND WALLS. VERIFY WITH THE TENANT, ARCHITECT AND VARIOUS TRADES AS REQUIRED. OPENINGS NOT SO VERIFIED SHALL BE MODIFIED, IF REQUIRED, AT NO ADDITIONAL COST.
- 4. EQUIPMENT PADS SHALL BE PROVIDED BY THE MECHANICAL, ELECTRICAL, OR PLUMBING CONTRACTORS REQUIRING
- 5. CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, PROCEDURES AND SAFETY ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 6. THE GENERAL CONTRACTOR SHALL VERIFY ALL NEW AND EXISTING DIMENSIONS PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENTS. NOTIFY ARCHITECT IMMEDIATELY IF DIMENSIONAL CONFLICTS EXIST.
- 7. BACKFILL SHALL NOT BE PLACED AGAINST BASEMENT WALLS UNTIL ALL BRACING FLOORS ARE CONSTRUCTED AND THE CONCRETE HAS REACHED DESIGN STRENGTH.

CONCRETE TESTING

- TESTING AGENCY: OWNER CAN EMPLOY AND PAY FOR A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO SAMPLE MATERIALS, PERFORM TESTS, AND SUBMIT TEST REPORTS DURING CONCRETE PLACEMENT SAMPLING AND TESTING FOR QUALITY CONTROL MAY INCLUDE THOSE SPECIFIED IN THIS ARTICLE.
- 2. TESTING SERVICES: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C172
- SHALL BE PERFORMED ACCORDING TO THE FOLLOWING REQUIREMENTS: A. TESTING FREQUENCY: OBTAIN AT LEAST ONE COMPOSITE SAMPLE FOR EACH 100 CU. YD. OR FRACTION
- B. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE-STRENGTH TESTS FOR EACH CONCRETE MIX, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.

SPECIAL INSPECTIONS

THEREOF OF EACH CONCRETE MIX PLACED EACH DAY

- . THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED UNDER CHAPTER 17. SPECIAL INSPECTIONS ARE NOT REQUIRED FOR WORK OF A MINOR NATURE OR AS WARRANTED BY CONDITIONS IN THE JURISDICTION AS APPROVED BY THE BUILDING
- THE SPECIAL INSPECTOR SHALL BE A QUALIFIED (REGISTERED PROFESSIONAL OR ICBO CERTIFIED SPECIAL INSPECTOR) PERSON WHO SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL.
- FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCT ION OR OPERATION REQUIRING SPECIAL INSPECTION.
- 3. THE FOLLOWING ELEMENTS OF CONSTRUCTION REQUIRE SPECIAL INSPECTIONS FOR THIS PROJECT: SOILS AND FOUNDATIONS SPRAY FIRE RESISTANT MATERIAL
- CAST-IN-PLACE CONCRETE WOOD CONSTRUCTION PRECAST CONCRETE EXTERIOR INSULATION AND FINISH SYSTEM MASONRY MECHANICAL & ELECTRICAL SYSTEMS STRUCTURAL STEEL ARCHITECTURAL SYSTEMS COLD-FORMED STEEL FRAMING ____ SPECIAL CASES
- NO SPECIAL INSPECTIONS ARE NEEDED

- SLUMP: ASTM C143; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY
- 4. AIR CONTENT: ASTM C231, PRESSURE METHOD, FOR NORMAL-WEIGHT CONCRETE; ASTM C 173, VOLUMETRIC METHOD, FOR STRUCTURAL LIGHTWEIGHT CONCRETE; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX
- CONCRETE TEMPERATURE: ASTM C1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEGREES AND BELOW AND WHEN 80 DEGREES AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.
- 6. UNIT WEIGHT: ASTM C567, FRESH UNIT WEIGHT OF STRUCTURAL LIGHTWEIGHT CONCRETE; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX.
- 7. COMPRESSION TEST SPECIMENS: ASTM C31/C31M; CAST AND LABORATORY CURE ONE SET OF FIVE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE. A. CAST AND FIELD CURE ONE SET OF FIVE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
- B. TWO CYLINDERS SHALL BE BROKEN AT 7 AND TWO AT 28 DAYS. THE FIFTH CYLINDER SHALL BE HELD IN RESERVE AND BROKEN AT THE DIRECTION OF THE STRUCTURAL ENGINEER. C. WHEN STRENGTH OF FIELD-CURED CYLINDERS IS LESS THAN 85 PERCENT OF COMPANION LABORATORY-CURED
- PROTECTING AND CURING IN-PLACE CONCRETE. D. STRENGTH OF EACH CONCRETE MIX WILL BE SATISFACTORY IF EVERY AVERAGE OF ANY THREE CONSECUTIVE COMPRESSIVE-STRENGTH TESTS EQUALS OR EXCEEDS SPECIFIED COMPRESSIVE STRENGTH AND NO

COMPRESSIVE-STRENGTH TEST VALUE FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500

CYLINDERS, CONTRACTOR SHALL EVALUATE OPERATIONS AND PROVIDE CORRECTIVE PROCEDURES FOR

- E. TEST RESULTS SHALL BE REPORTED IN WRITING TO ARCHITECT, CONCRETE MANUFACTURER, AND CONTRACTOR WITHIN 48 HOURS OF TESTING. REPORTS OF COMPRESSIVE-STRENGTH TESTS SHALL CONTAIN PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING AND INSPECTING AGENCY, LOCATION OF CONCRETE BATCH IN WORK, DESIGN COMPRESSIVE STRENGTH AT 28
- DAYS, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7-AND 28-DAY TESTS. NONDESTRUCTIVE TESTING: IMPACT HAMMER, SONOSCOPE, OR OTHER NONDESTRUCTIVE DEVICE MAY BE PERMITTED
- BY ARCHITECT BUT WILL NOT BE USED AS SOLE BASIS FOR APPROVAL OR REJECTION OF CONCRETE. ADDITIONAL TESTS: TESTING AND INSPECTING AGENCY SHALL MAKE ADDITIONAL TESTS OF CONCRETE WHEN TEST RESULTS INDICATE THAT SLUMP, AIR ENTRAINMENT, COMPRESSIVE STRENGTHS, OR OTHER REQUIREMENTS HAVE NOT BEEN MET, AS DIRECTED BY ARCHITECT. TESTING AND INSPECTING AGENCY MAY CONDUCT TESTS TO

DETERMINE ADEQUACY OF CONCRETE BY CORED CYLINDERS COMPLYING WITH ASTM C42 OR BY OTHER METHODS AS

DIRECTED BY ARCHITECT.

- TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO INSPECT FIELD WELDS AND HIGH-STRENGTH BOLTED CONNECTIONS.
- 2. FIELD WELDS (INCLUDING DECK WELDS) WILL BE VISUALLY INSPECTED ACCORDING TO AWS D1.1.
- 3. BOLTED CONNECTIONS WILL BE VISUALLY INSPECTED. A. HIGH-STRENGTH, FIELD-BOLTED CONNECTIONS WILL BE TESTED AND VERIFIED ACCORDING TO PROCEDURES IN RCSC'S "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A 325 OR
- 4. CORRECT DEFICIENCIES IN WORK THAT INSPECTIONS AND TEST REPORTS HAVE INDICATED ARE NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.
- 5. ADDITIONAL TESTING WILL BE PERFORMED TO DETERMINE COMPLIANCE OF CORRECTED WORK WITH SPECIFIED
- SUBMIT SHOP DRAWINGS ON ALL MATERIALS FOR REVIEW BEFORE FABRICATION. THE CONTRACT DRAWINGS SHALL NOT BE USED AS BASE DRAWINGS FOR SHOP DRAWINGS. SHOP DRAWINGS SUBMITTED FOR REVIEW WHICH WERE
- PREPARED WITH CONTRACT DRAWINGS USED AS BASE DRAWINGS WILL BE REJECTED. ALL SUBMITTALS TO ENGINEER FOR REVIEW SHALL BE PREVIOUSLY REVIEWED BY THE CONTRACTOR, WITH HIS APPROVAL STAMPED ON THE DRAWINGS, DATED AND SIGNED. SUBMITTALS NOT CONFORMING SHALL BE SUFFICIENT REASON FOR REJECTION BY THE ENGINEER.
- REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A 615, AND SHALL BE GRADE 60. REINFORCING STEEL THAT IS
- TO BE WELDED OR OTHERWISE INDICATED, SHALL BE ASTM A 706 GRADE 60. 2. WELDED WIRE FABRIC SHALL BE NEW BILLET STEEL, COLD DRAWN CONFORMING TO THE ASTM SPECIFICATIONS A 185 AND A 82.
- 3. BAR SUPPORTS, DESIGN, DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE CODE AND DETAILING MANUAL, LATEST EDITION.
- SUPPORT ALL REINFORCING ON METAL CHAIRS OR BOLSTERS. 4. ALL REINFORCING STEEL LAPS FOR MASONRY SHALL BE AS INDICATED IN THE SCHEDULE BELOW UNLESS NOTED OTHERWISE, 18" MINIMUM. USE CORNER BARS IN BOND BEAMS AND AT CORNERS OF EACH RUN OF LONGITUDINAL
- REINFORCING. CORNER BARS SHALL BE THE SAME SIZE AND SPACING AS LONGITUDINAL BARS. OVERLAP STEPS IN BOND BEAMS BY 8 FEET. 5. ALL REINFORCING STEEL LAPS FOR CONCRETE REINFORCING SHALL BE CONSIDERED A CLASS B SPLICE UNLESS
- NOTED OTHERWISE, 16" MINIMUM.

1. PROVIDE MINIMUM CONCRETE COVER FOR ALL REINFORCING IN ACCORDANCE WITH ACI 117.

- ALL AGGREGATES SHALL CONFORM TO ASTM C33 WITH A MAXIMUM COARSE AGGREGATE SIZE OF 1" (NO. 57 STONE) FOR SLABS-ON-GRADE AND FOOTINGS AND A MAXIMUM COARSE AGGREATE SIZE OF 3/4" (NO. 67) FOR ALL OTHER CONCRETE. ALL MATERIALS SHALL BE PROPORTIONED TO PRODUCE A WELL GRADED MIXTURE OF HIGH DENSITY AND MAXIMUM WORKABILITY
- 3. FLY ASH SHALL CONFORM TO ASTM C 618, CLASS C OR F AND SHALL BE LIMITED, BY WEIGHT, TO A MAXIMUM 0F 20% OF THE TOTAL CEMENT PLUS FLY ASH. OTHER POZZOLAN MATERIALS SHALL NOT BE PERMITTED WITH OUT THE
- APPROVAL OF THE STRUCTURAL ENGINEER.
- 4. THE MAXIMUM WATER TO CEMENTITOUS MATERIALS RATIO SHALL BE, AS SPECIFIED BELOW, FOR THE RESPECTIVE LOCATIONS. INTERIOR CONDITION ----- 0.50
- EXTERIOR CONDITION ----- 0.45
- ALL CONCRETE SHALL BE NORMAL WEIGHT (N.W.) WITH A MAXIMUM UNIT WEIGHT OF 150 POUNDS PER CUBIC FOOT OR LIGHT WEIGHT (L.W.) WITH A MAXIMUM UNIT WEIGHT OF 110 POUNDS PER CUBIC FOOT AND SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH, AS SPECIFIED BELOW, FOR THE RESPECTIVE LOCATIONS.
- --- 3,000 PSI N.W. SLABS-ON-GRADE (INTERIOR) -SLABS-ON-GRADE (EXTERIOR) ------ 4,000 PSI N.W CONCRETE FILL ON METAL DECK ----- 3,500 PSI L.W.
- CONCRETE (NOT OTHERWISE SPECIFIED) ----- 4,000 PSI N.W. ALL EXPOSED CONCRETE SHALL BE AIR-ENTRAINED (6%, +/- 1%).
- 7. MIX DESIGNS SHALL BE SUBMITTED FOR APPROVAL IN CONFORMANCE WITH ACI 301. SUBMITTALS NOT CONFORMING WILL BE REJECTED. CONCRETE SHALL BE PLACED ONLY WITH AN APPROVED MIX DESIGN FOR THE
- LOCATION TO BE USED. 8 ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACL 301. SPECIFICATIONS FOR STRUCTURAL CONCRETE BUILDINGS. UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS OR IN THE SPECIFICATIONS COORDINATE CONCRETE WORK WITH OTHER TRADES BEFORE BEGINNING WORK. VIBRATE ALL CONCRETE PLACED IN FOOTING EXCAVATIONS. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE OWNER AND ARCHITECT ANY REQUIREMENTS BY THE OWNER, OR VARIOUS TRADES FOR TRENCHES, PITS, INSERT ITEMS, OPENINGS, ETC.
- ALL COLD WEATHER CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 306R, COLD WEATHER CONCRETING. HOT WEATHER CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 305R, HOT WEATHER CONCRETING.

WHICH MAY BE REQUIRED IN THE FLOOR SLABS BEFORE PLACING CONCRETE.

10. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER FAR ENOUGH IN ADVANCE OF THE TIME EACH THE ACTUAL POUR, BUT NOT IN ADVANCE OF THE TIME THAT 90% OF THE STEEL FOR THAT POUR HAS BEEN

- 1. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 FOR ALL W SHAPES AND ASTM A36 FOR ALL OTHER SHAPES. RECTANGULAR HOLLOW STRUCTURAL STEEL (TUBE) SHALL CONFORM TO ASTM A500, GRADE B (Fy=46 ksi). ROUND HOLLOW STRUCTURAL STEEL (PIPE) SHALL CONFORM TO ASTM A53, TYPE E OR S, GRADE B. ANCHOR BOLTS SHALL BE WELDARLE AND SHALL CONFORM TO ASTM F1554 GRADE 36 OR 55 WITH WELDARILITY SUPPLEMENT S1
- THE STRUCTURAL STEEL SHALL BE FABRICATED BY A QUALIFIED FABRICATOR WHO PARTICIPATES IN THE AISC CERTIFICATION PROGRAM AND IS DESIGNATED AN AISC CERTIFIED PLANT, CATEGORY STD AT TIME OF BID OR THE STRUCTURAL STEEL FABRICATOR MUST DEMONSTRATE A CONSISTENT RECORD OF AT LEAST 10 (TEN) SUCCESSFUL PROJECTS OR EQUAL OR GREATER MAGNITUDE OVER THE PRECEDING 2 YEARS. THE CONTRACTOR SHALL SUBMIT EVIDENCE IN WRITING VERIFYING ONE OF THE ABOVE REQUIRED QUALIFICATIONS.
- THE STRUCTURAL STEEL SHALL BE ERECTED BY A QUALIFIED INSTALLER WHO PARTICIPATES IN THE AISC CERTIFICATION PROGRAM AND IS DESIGNATED AN AISC CERTIFIED ERECTOR, CATEGORY CSE [ACSE] AT TIME OF
- 3. BOLTED CONNECTIONS 3/4 INCH DIAMETER A325-X, TYPE 1 BOLTS UNLESS NOTED OTHERWISE. USE 3/4 INCH DIAMETER A325-X. TYPE 3 BOLTS FOR EXPOSED EXTERIOR CONDITIONS. NON-FRAME BEAM CONNECTIONS MAY BE DESIGNED FOR THE REACTIONS SHOWN ON THE PLANS. IF NO REACTION IS SHOWN. THE CONNECTION SHALL BE DESIGNED ACCORDING 60% OF THE MAXIMUM TOTAL FACTORED UNIFORM LOAD FOR THE APPROPRIATE BEAM SECTION AND SPAN AS DETERMINED FROM THE STEEL BEAM SELECTION TABLES IN THE AISC MANUAL, THIRTEENTH EDITION. FRAME MEMBERS SHALL BE DESIGNED ACCORDING TO THE NOTES
- AND LOADS INDICATED IN THE PLANS AND ELEVATIONS. BOLTED CONNECTIONS SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, APPROVED JUNE 23, 2000. ALTERNATE DESIGN BOLTS OR DIRECT TENSION INDICATOR DEVICES WILL BE ACCEPTED ONLY BY WRITTEN APPROVAL OF THE ENGINEER. INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 8 OF THE SPECIFICATION. AN INDEPENDENT TESTING AGENCY SHALL INSPECT ALL BOLTED CONNECTIONS IN ACCORDANCE WITH SECTION 9 OF THE SPECIFICATION AND REPORT IN WRITING TO THE
- ALL SHOP AND FIELD WELDING SHALL BE BY CERTIFIED WELDERS AND SHALL CONFORM TO AWS STANDARDS. USE E70XX ELECTRODES UNLESS NOTED OTHERWISE. CURRENT AWS CERTIFICATIONS SHALL BE AVAILABLE AT THE JOB SITE FOR REVIEW BY THE ARCHITECT OR ENGINEER. NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS BY ANY
- TRADE WILL BE ALLOWED WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER. 6. ALL BEAMS AND PRIMARY BRACING MEMBERS SHALL BE SECURED WITH AT LEAST 2 BOLTS PRIOR TO REMOVAL OF
- HOISTING CABLES. IN CONDITIONS WHERE BEAMS FRAME WITH DOUBLE ANGLE FRAMING CONNECTIONS FROM BOTH SIDES OF A COLUMN WEB, OR BEAM WEB OVER A COLUMN, THE FABRICATOR SHALL FABRICATE THE CONNECTION SO THAT THE FIRST BEAM ERECTED TO THE CONNECTION SHALL HAVE AT LEAST ONE BOLT AND WRENCH-TIGHTENED NUT SECURING THE FIRST BEAM AT ALL TIMES, THE CONNECTION SHALL BE DETAILED SO THAT FITHER BEAM MAY BE CONSIDERED THE FIRST BEAM ERECTED. ALTERNATIVELY, A SEAT ANGLE AT THE FACE OF THE COLUMN FOR ERECTION, OR OTHER METHOD SATISFYING OSHA REQUIREMENTS, MAY BE USED IF CONDITIONS PERMIT.
- 8. ALL EXPOSED STRUCTURAL STEEL SHALL BE GALVANIZED. SUBMIT WITH SHOP DRAWINGS FOR REVIEW.
- 9. ALL STRUCTURAL STEEL SHALL RECEIVE A STANDARD SHOP PRIMER PAINT, EXCEPT AT WELDING LOCATIONS. SUBMIT WITH SHOP DRAWINGS FOR REVIEW.
- 1. THE METAL BUILDING SHALL BE DESIGNED BY AN ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA. THE DRAWINGS AND CALCULATIONS SHALL BEAR HIS SIGNED SEAL. CONSTRUCTION OF FOOTINGS AND METAL BUILDING MAY NOT BEGIN UNTIL DRAWINGS AND CALCULATIONS HAVE BEEN SUBMITTED AND REVIEWED. DESIGN SHALL BE IN CONFORMANCE WITH THE METAL BUILDING MANUFACTURERS ASSOCIATION AND THE 2012 EDITION OF THE
- 2. ANCHOR BOLTS SHALL BE WELDABLE AND SHALL CONFORM TO ASTM F1554 GRADE 36 OR 55 WITH WELDABILITY
- 3. THE METAL BUILDING SHALL BE DESIGNED USING PINNED COLUMN BASE REACTIONS WITH NOT MOMENT FIXITY
- 4. THE METAL BUILDING COMPONENTS AND MAIN FRAMES SHALL BE DESIGNED TO SUPPORT ALL APPLIED LOADS FROM SUPPORTED MECHANICAL EQUIPMENT.
- METAL BUILDING DEFLECTION CRITERIA: L D+L S W ROOF FRAMING (MTL. ROOFING) PURLINS (w/ CEILING) 1/240 1/180 1/240 1/240 PURLINS (NO CEILING) I/150 I/60 I/180 I/180 FRAME BEAMS 1/240 1/180 1/240 1/240 FLOOR FRAMING JOISTS **GIRDERS** I/360 I/240 **EXTERIOR WALLS** 1/240 METAL STUD 1/240 WIND POSTS 1/240
- NOTE: THE WIND IS PERMITTED TO BE TAKEN AS 0.42 TIMES THE "COMPONENT AND CLADDING" LOADS FOR THE PURPOSES OF DETERMINING LIMITS HEREIN. PER ASCE 7-10 SECTION 12.12 H/100 OCCUPANCY CATEGORY = III
- COLD FORMED METAL FRAMING NON-LOAD BEARING CURTAIN WALLS:
- (Delegated Engineer For Exterior Curatin Wall Framing)
- ENGINEERED CALCULATIONS AND DESIGN SHALL BE PERFORMED BY AND SHALL BE SIGNED BY A REGISTERE PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF NORTH CAROLINA AND EXPERIENCED IN THE DESIGN OF COLD FORMED STEEL MEMBERS. THE DESIGN SHALL BE IN CONFORMANCE THE 2012 EDITION OF THE INTERNATIONAL BUILDING CODE AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- CALCULATIONS AND DESIGN SHALL INCLUDE (1) DESIGN CRIETERIA; (2) MEMBER DESIGN ACCORDING TO THE STRUCTURAL ANALYSIS OF THE LIGHT GAGE FRAMING SYSTEM AND; (3) ALL CONNECTIONS OF COLD FORMED MEMBERS TO OTHER COLD FORMED MEMBERS, TO CONCRETE, TO MASONRY, AND TO STRUCTURAL STEEL.
- 3. SHOP DRAWINGS SHALL HAVE FRAMING PLANS AND DETAILS WHICH SHOW MEMBER SIZES, SPACINGS AND LOCATIONS, AND CONNECTIONS.
- 4. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BE SEALED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF SOUTH CAROLINA. 5. GIVEN SIZES ARE MINIMUM REQUIREMENTS OF MEMBER SIZE. ENGINEERING FOR GIVEN LOADING CONDITIONS MAY
- REQUIRE HEAVIER GAUGES AND SIZES. COLD FORMED METAL FRAMING - LOAD BEARING C.F. FRAMING:
- (STAGE AND SOUND BOOTH)
- 1. COLD FORMED METAL FRAMING SHALL CONFORM TO ASTM A653 ZINC COATED (GALVANIZED) IN THE FOLLOWING GRADE 33 - 33 AND 43 MIL THICKNESS
- GRADE 50 54 AND 68 MIL THICKNESS MINIMUM YIELD STRENGTH (Fy) AND ULTIMATE (Fu) TENSILE STRENGTH SHALL BE AS FOLLOWS. GRADE 33 - Fv = 33 KSI, Fu = 45 KSI GRADE 50 - Fy = 50 KSI, Fu = 65 KSI MINIMUM GALVANIZED COATING THICKNESS IS G60

- SSMA MEMBER DESIGNATION IS USED IN THESE DRAWINGS IS AS FOLLOWS (EXAMPLE: 600S162-54) THE FIRST THREE OR FOUR NUMBERS INDICATE THE SIZE (NOMINAL MEMBER DEPTH). THE NEXT LETTER A) S = C-STUD/JOIST (C-SECTIONS WITH LIPS FOR LOAD BEARING AND CURTAIN WALL APPLICATIONS) B) T = TRACK (C-SECTIONS WITHOUT LIPS FOR TRACK AND CLOSURE APPLICATIONS) C) U = CHANNEL (U-SECTIONS FOR BRIDGING AND BRACING APPLICATIONS) D) F = FURRING CHANNEL (HAT-SECTIONS FOR FURRING APPLICATIONS)
- THE LAST TWO NUMBERS INDICATE THE MINIMUM DELIVERED STEEL THICKNESS IN MILS (1/1000 INCHES). STUDS SHALL BE INSTALLED PLUMB AND SPACED AS SHOWN ON THE DRAWINGS BUT SHALL NOT BE SPACED GREATER THAN 16" oc.
- 4. ENDS OF STUDS SHOULD SEAT SQUARLY AND FIRMLY IN RUNNER TRACK WHICH MUST HAVE FULL BEARING ON STRUCTURE.
- ATTACH EACH RUNNER TRACK LEG TO EACH STUD FLANGE WITH ONE (1) #10 PANHEAD SCREW. 6. NO NOTCHING OR COPING OF STUDS IS NOT ALLOWED EXCEPT AS INDICATED ON THE DRAWINGS.
- 7. STUDS AND HEADERS SHALL BE INSTALLED FULL LENGTH WITHOUT SPLICING. PROVIDE STUDS WITH PUNCHOUTS FOR LATERAL BRACING AT SPACING SPECIFIED IN THE DRAWINGS.
- PROVIDE HEADERS AND TRACKS WITHOUT PUNCHOUTS. DO NOT USE STUDS WITH PUCHOUTS FOR HEADERS. 10. PROVIDE 1-1/2" X 16 GA. COLD ROLLED CHANNELS AT 48" OC FOR LATERAL BRIDGING. CHANNELS ARE INSERTED THROUGH WEB PUNCHOUTS AND SECURED TO WEB STUD WITH SCREW ATTACHED WITH BRIDGE CLIP BY TSN OR 2" X 2" X 16 GAUGE CLIP ANGLES CUT TO LENGTH (STUD WIDTH - 1/2"). ATTACH CLIP ANGLES TO STUDS

WITH TWO #10 SCREWS LOCATED 1/2" FROM EACH SIDE OF THE CLIP. ATTACH TO THE BRIDGING CHANNEL WITH

- 11. ALL HORIZONTAL AND DIAGONAL BRACING SHALL BE INSTALLED AT THE TIME THE WALL IS ERECTED. FAILURE
- TO INSTALL BRACING AT THIS TIME MAY COMPROMISE THE STRUCTURAL INTEGRITY OF THE BUILDING. USE LOW PROFILE (PAN HEAD OR PANCAKE HEAD) SCREWS FOR ALL STEEL TO STEEL CONNECTIONS BEHIND SHEATHING. TEK (HEX HEAD) SCREWS MAY BE USED WHERE SHEATHING IS NOT APPLIED OVER THE SCREW. #12 SCREWS (DIA.=0.216") SHALL BE USED TYPICALLY EXCEPT WHERE #10 (DIA.=0.190") ARE SPECIFIED. #12 SCREWS MAY BE SUBSTITUTED FOR #10 SCREWS. STEEL TO STEEL SCREWS SHALL BE SELF-TAPPING / SELF-
- A 3/4" (MINIMUM) CLEARANCE MUST BE MAINTAINED FROM ALL EDGES OF THE STEEL MEMBERS IN LOCATING SCREWS. A 3/4" (MINIMUM) ON CENTER SPACING MUST BE MAINTAINED BETWEEN ADJACENT SCREWS.
- USE #12 BUGLE HEAD, SCREWS FOR ATTACHMENT OF WOOD SHEATHING TO METAL STUDS. WOOD TO STEEL SCREWS SHALL BE SELF-REAMING AND SELF-TAPPING/SELF-DRILLING.
- 15. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1, D1.3, AND E1.3. WELDING OF COLD FORMED METAL SHALL ONLY BE PERFORMED BY A CERTIFIED WELDER.
- 16. APPLY A ZINC RICH PAINT TO THE WELD AREA AFTER WELDING TO PROVIDE CORROSION RESISTANCE.
- 17. ALL CONNECTIONS SHALL BE COMPLETE AS PER THE PLANS AND SPECIFICATIONS AT THE TIME OF INSTALLATION. 18. RUNNER TRACKS SHALL BE SPLICED BY LAPPING AND SCREWING. SEE DRAWINGS FOR DETAILS.

FOUNDATION:

- 1. THE MAXIMUM NET ALLOWABLE BEARING PRESSURE USED IN DESIGN IS 2,000 PSF ON SUITABLE RESIDUAL SOIL OR PROPERLY COMPACTED STRUCTURAL FILL FOR WALL AND COLUMN FOOTINGS. STRUCTURAL FILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8" AND COMPACTED TO A MINIMUM OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). THE UPPER 12" OF STRUCTURAL FILL DIRECTLY BENEATH FLOOR SLABS SHALL BE COMPACTED TO 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. ADDITIONAL FILL PLACEMENT REQUIREMENTS ARE A PART OF THE SPECIFICATIONS. ALL FILL MATERIAL SHALL BE PLACED UNDER THE SUPERVISION AND CONTROL OF AN INDEPENDENT TESTING LABORATORY. THE INDEPENDENT SOILS TESTING LABORATORY SHALL VERIFY IN WRITING THAT THE MINIMUM SAFE ALLOWABLE SOIL BEARING PRESSURE IS AVAILABLE BEFORE FOUNDATIONS ARE PLACED. IN THE EVENT THAT THE DESIGN ALLOWABLE BEARING PRESSURE IS NOT AVAILABLE, THE ENGINEER SHALL BE NOTIFIED AND THE SOIL CONDITION AND FOUNDATION SHALL BE EVALUATED AND FOOTING SIZES ADJUSTED IF REQUIRED.
- 2. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEERS
- ALL FILL MATERIAL SHALL BE FREE OF ROOTS, WOOOD, OR OTHER ORGANIC MATERIAL. MATERIALS USED FOR FILL UNDER FOOTINGS AN WITHIN THE BUILDING LIMITS SHALL BE TESTED AND APPROVED FOR USE BY THE

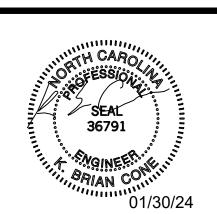
ANCHOR BOLT NOTES:

INDEPENDENT TESTING AGENCY.

- 1. ANCHOR BOLTS SHALL BE WELDABLE AND SHALL CONFORM TO ASTM F1554 GRADE 55 W/ WELDABILITY SUPPLEMENT
- 2. THE METAL BUILDING SHALL BE DESIGNED USING PINNED COLUMN BASE REACTIONS WITH NOT MOMENT FIXITY ASSUMED AT THE BASE. 3. PROVIDE A MINIMUM 3" OF CONCRETE COVER BELOW THE BOTTOM OF THE ANCHOR BOLTS. EXCAVATE IF REQUIRED
- TO PROVIDE COVERAGE AT THE A.B. PATTERN. 4. PROVIDE A MINIMUM 5" SPACING BETWEEN ANCHOR BOLT. DO NOT USE HOOKED ANCHOR BOLTS.



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PROJECT TEAM

General Contractor ECCLESIA CONSTRUCTION www.ecclesiaconstruction.com 803.327.5670

Civil Engineering HILLIARD ENGINEERING, PLLC www.isaacsgrp.com 919.352.2834

Structural Engineering PROVIDENCE PARTNERS www.providencepartnersinc.com

Mechanical, Electrical, Plumbing & Fire Protection ENGITECTURE www.engitecture.com 704.287.2193

 \triangle Date Description

704.266.6621

01/30/24 FOR CONSTRUCTION

Project making church come alive

3D COMMUNITY CHURCH

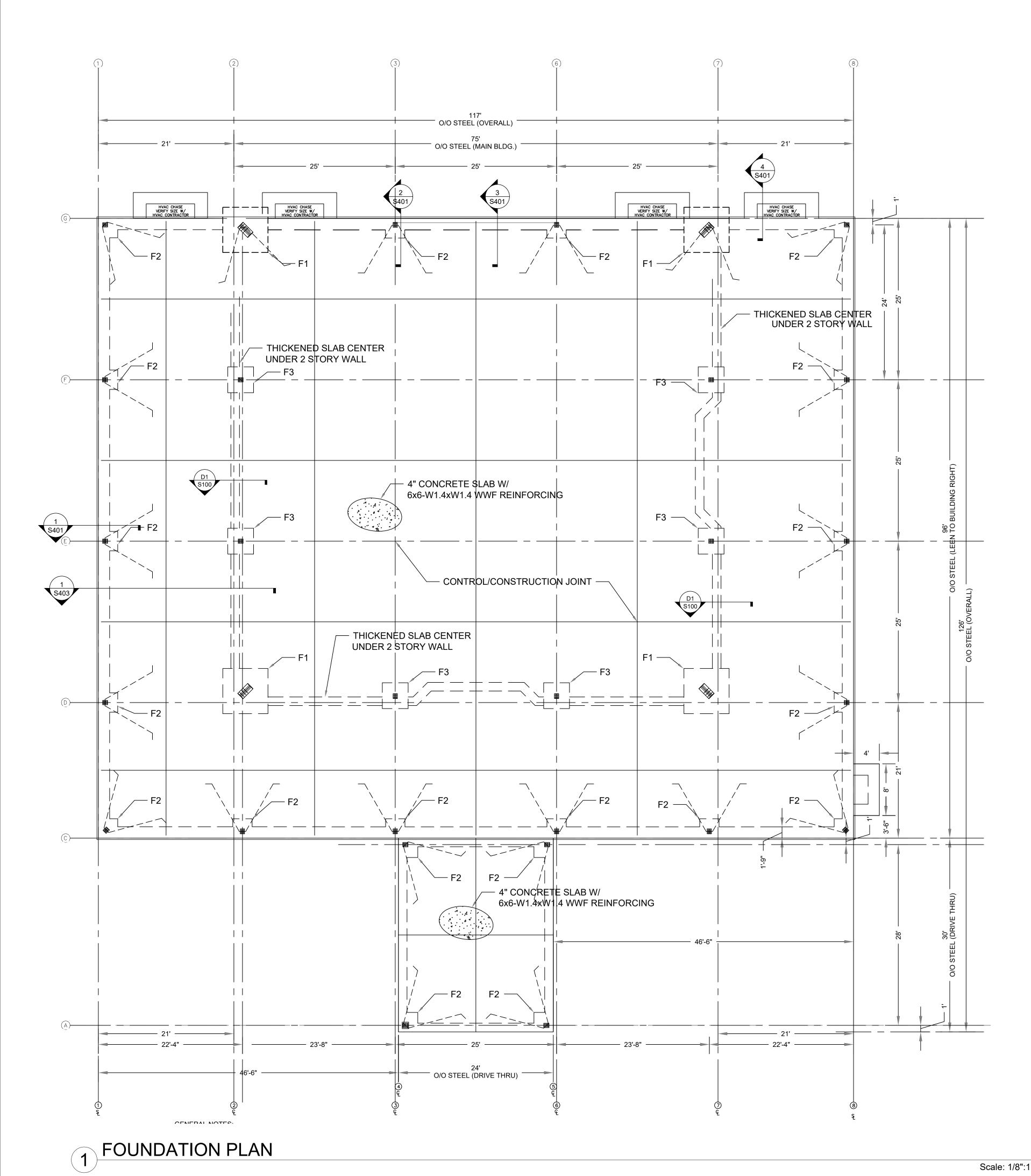
658 GRAHAM ROAD

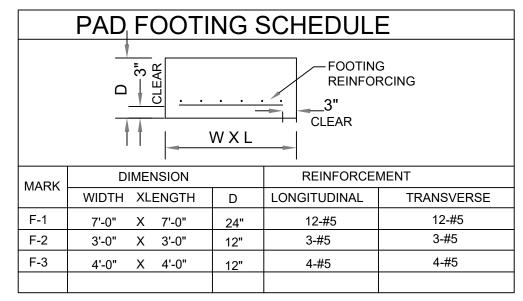
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Description NOTES

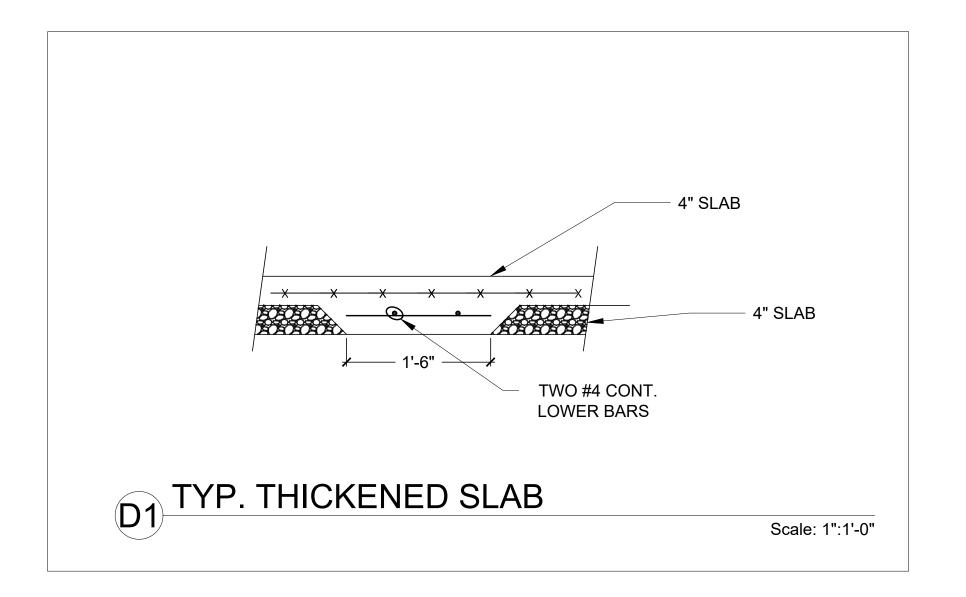
As

indicated





NOTE: PAD FOOTINGS TO BE CENTER UNDER COLUMN UNLESS NOTED OTHERWISE.





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PROJECT TEAM

General Contractor ECCLESIA CONSTRUCTION www.ecclesiaconstruction.com 803.327.5670

Civil Engineering HILLIARD ENGINEERING, PLLC www.isaacsgrp.com 919.352.2834

Structural Engineering PROVIDENCE PARTNERS www.providencepartnersinc.com 704.266.6621

Mechanical, Electrical, Plumbing & Fire Protection ENGITECTURE www.engitecture.com 704.287.2193

 \triangle Date Description

01/30/24 FOR CONSTRUCTION



SANFORD NC 27311

3D COMMUNITY CHURCH

Project Number 23024.00

Description FOUNDATION PLAN

indicated

©20240ssa Studio

Scale: 1/8":1'-0"

FRAMING NOTES:

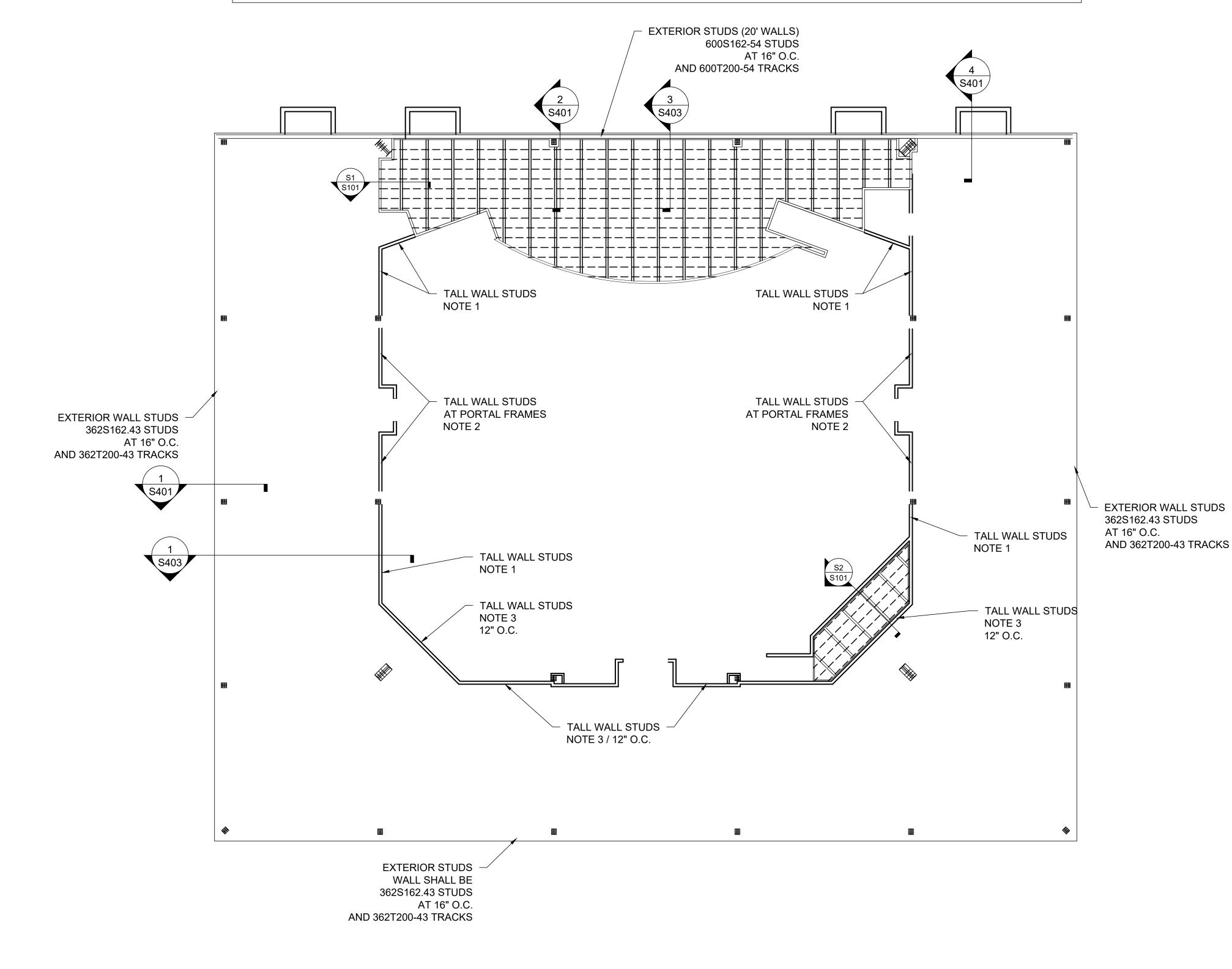
ALL TALL SANCTUARY STUDS ARE 362S200-43 AT 16" O.C. UNLESS NOTED OTHERWISE

ALL OF THESE WALL TO HAVE CNC BRACING AT 48" O.C.

NOTE 1: STUDS ARE ATTACHED TO THE OUTER WALL PER THE DETAIL ON S402

NOTE 2: STUDS AND TOP TRACK ARE ATTACHED TO THE PORTAL FRAME. FILL IN FRAMING OVER THE PORTAL FRAME

NOTE 3: THE STUDS SHOULD BE TRIMMED TO FIT INTO TRACKS FASTENED TO THE ROOF PURLINS. 12" O.C. SPACING



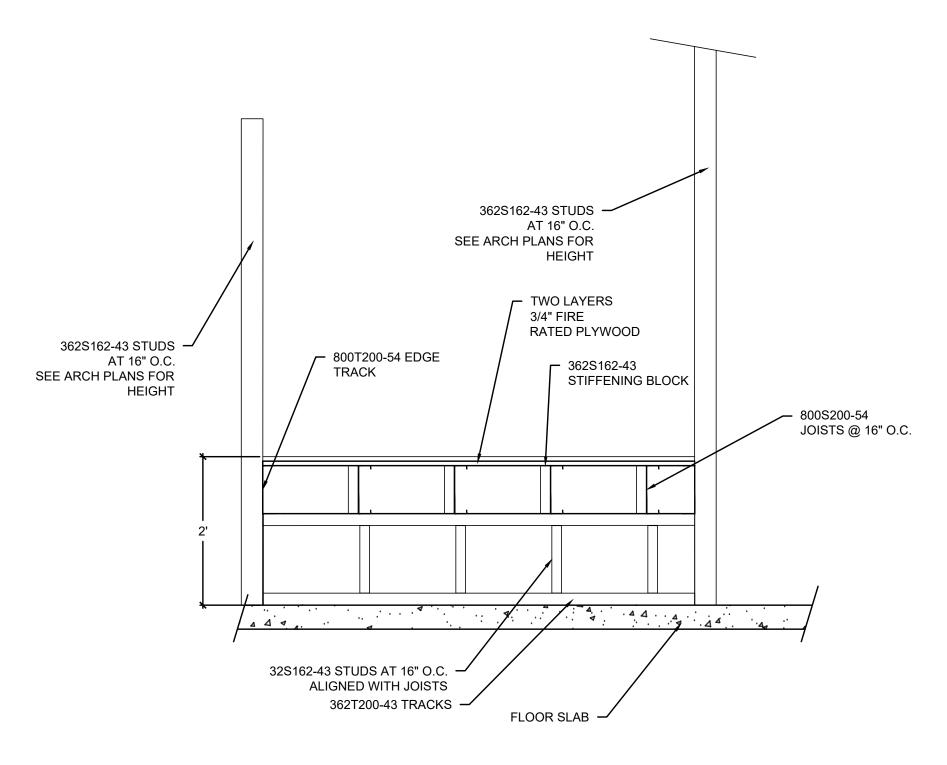
TWO LAYERS
OF 3/4" FIRE RATED PLYWOOD
362S162-43 STIFFENING BLOCK
800T200-54 EDGE
TRACK

800S200-54 JOISTS @ 16" O.C.

800S200-54 JOISTS @ 16" O.C.
362S162-43 BRACING
ALIGNED WITH JOISTS
362S162-43 BRACING
AT 8" O.C.
(4)#10 SCREWS

S1 STAGE SECTION

Scale: 3/4":1'-0"

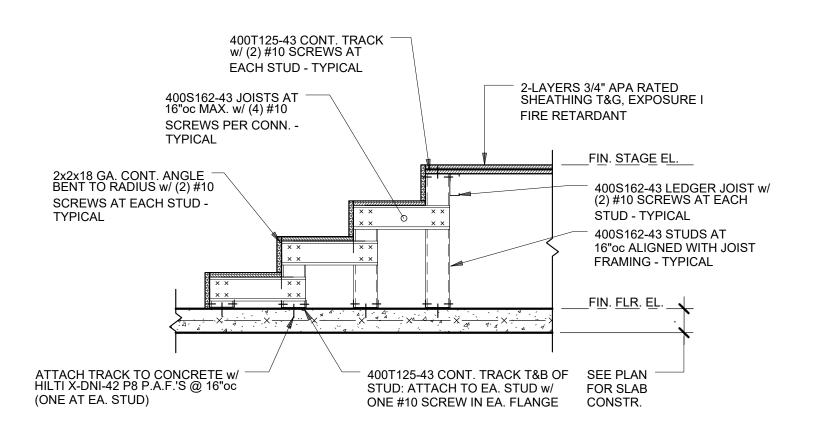


S2 SOUND BOOTH SECTION

Scale: 3/4":1'-0"

PARTIAL FLOOR PLAN WITH FRAMING NOTES

Scale: 1/8":1'-0"



S3 TYPICAL STAIR DETAIL

Scale: 3/4":1'-0"



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01/30/24 FOR CONSTRUCTION

Project
Name

Community Church
making church come alive

658 GRAHAM ROAD

SANFORD NC 27311

Client

3D COMMUNITY CHURCH

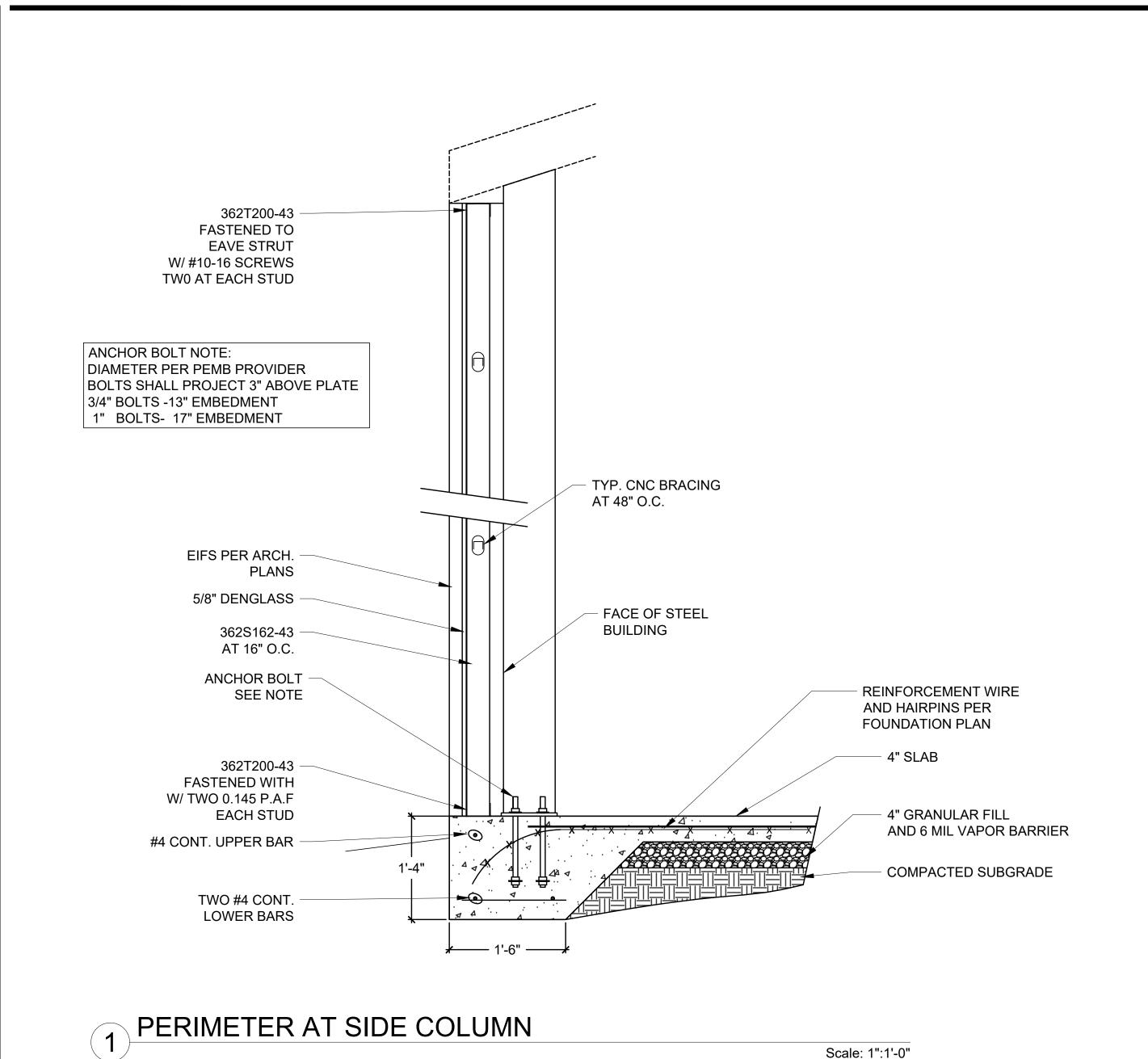
23024.00
Description

Project Number

FRAMING AND STAGE PLAN

Scale As indicated

200040



PERIMETER AT STAGE Scale: 1":1'-0"

TYP. CNC BRACING

- FACE OF STEEL

SEE STAGE FRAMING

REINFORCEMENT PER

- 4" SLAB

4" GRANULAR FILL

AND 6 MIL VAPOR BARRIER

COMPACTED SUBGRADE

FOUNDATION PLAN

DETAIL

BUILDING

AT 48" O.C.

600T200-54 FASTENED TO **EAVE STRUT**

W/ #12-14 SCREWS TW0 AT EACH STUD

ANCHOR BOLT NOTE:

DIAMETER PER PEMB PROVIDER

3/4" BOLTS -13" EMBEDMENT

1" BOLTS- 17" EMBEDMENT

EIFS PER ARCH.

5/8" DENGLASS -

600S162-54

AT 16" O.C.

ANCHOR BOLT

600T200-54 -

EACH STUD

TWO #4 CONT.

LOWER BARS

FASTENED WITH

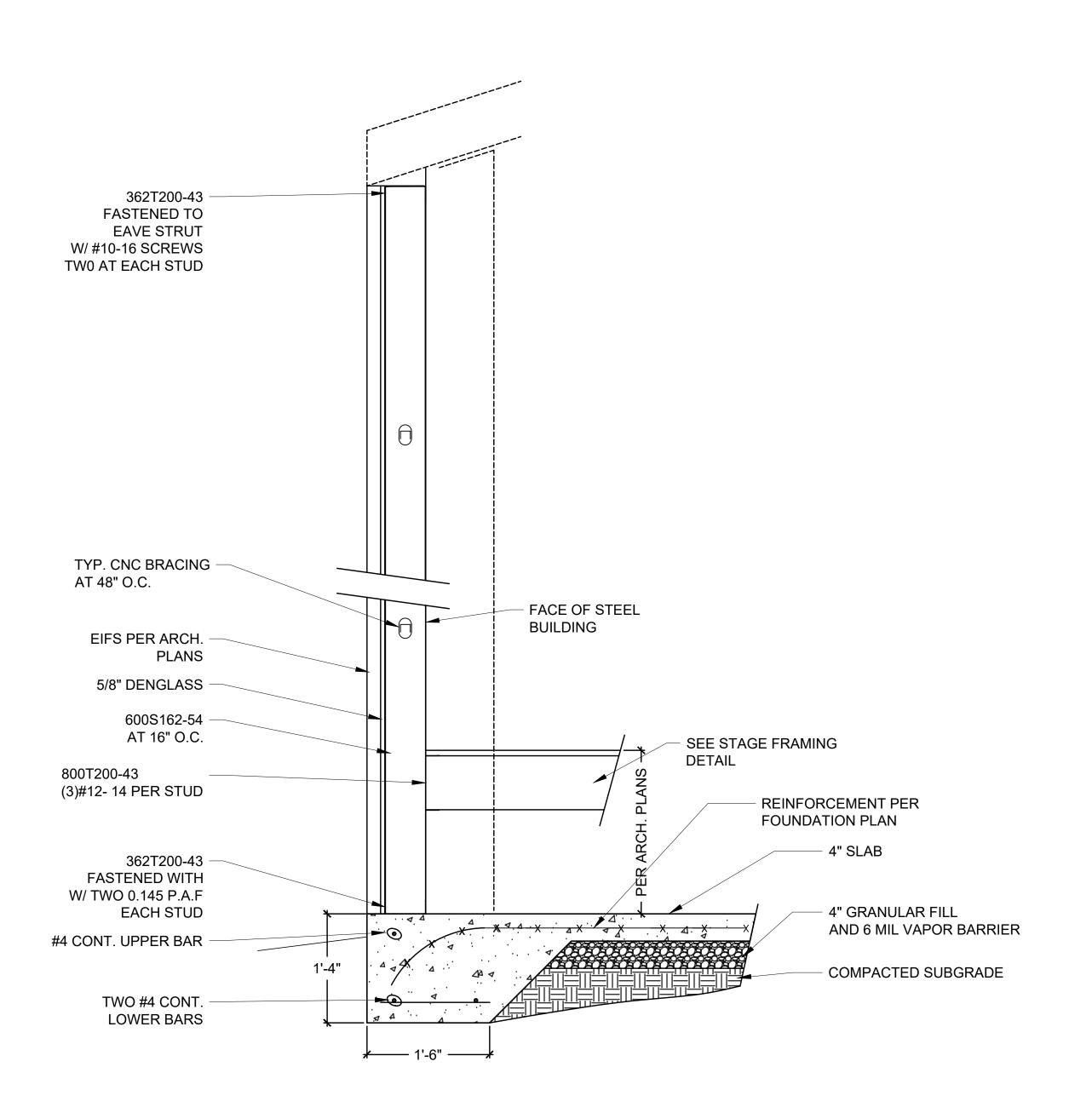
W/ TWO 0.150 P.A.F

#4 CONT. UPPER BAR

SEE NOTE

PLANS

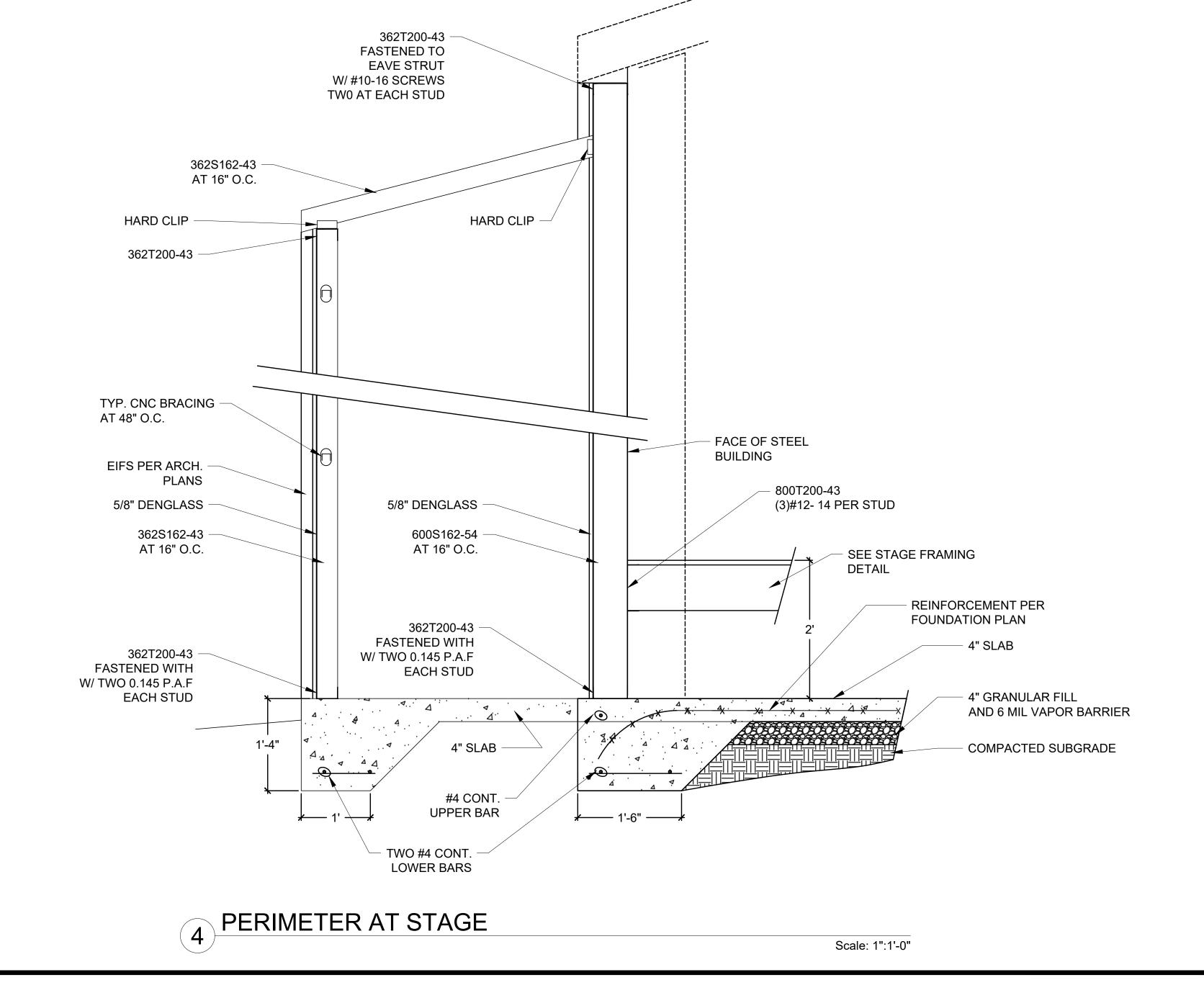
BOLTS SHALL PROJECT 3" ABOVE PLATE



PERIMETER AT STAGE WITH COLUMN

Scale: 1":1'-0"

Scale: 1":1'-0"





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658 GRAHAM ROAD SANFORD NC 27311

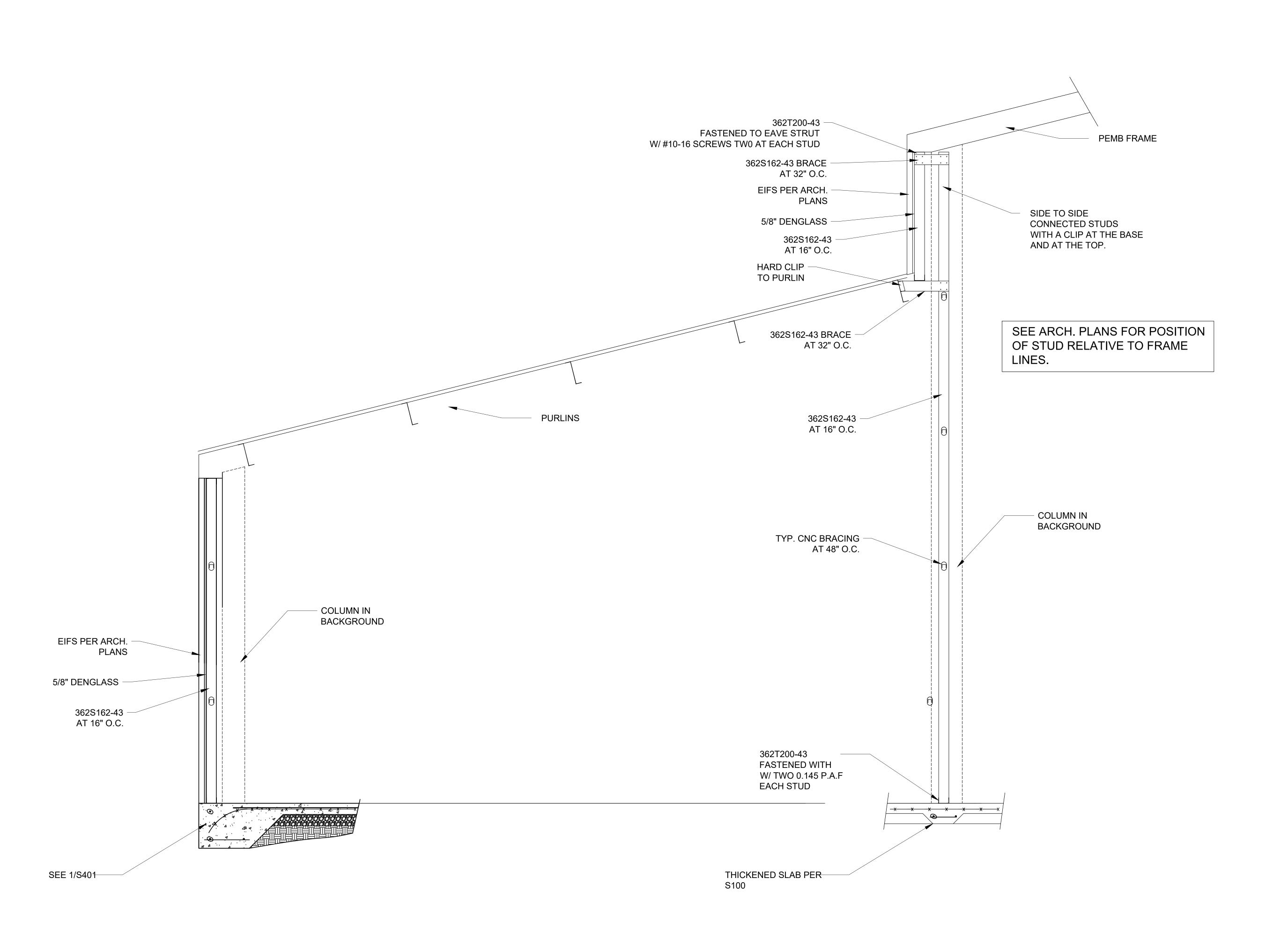
3D COMMUNITY CHURCH

Project Number 23024.00

Description SECTIONS

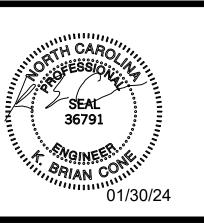
> Scale As indicated

5401





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Description SECTION

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PERIMETER AT SIDE WITH INTERNAL WALL

Scale: 3/4":1'-0"