GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC) 2021, INCLUDING (WHEN REQUIRED) SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17.
2. WHERE A SECTION OR DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY TO ALL SIMILAR CONDITIONS.
3. ALL OF THE STRUCTURAL ELEMENTS SHOWN ON DRAWINGS HAVE BEEN DESIGNED TO RESIST THE REQUIRED VERTICAL AND LATERAL FORCES FOR THE FINAL CONFIGURATION ONLY. THE DESIGN ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC, SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. DO NOT SCALE DRAWINGS, FOLLOW DIMENSIONS SHOWN ON PLANS.
5. CONTRACTOR SHALL COORDINATE ALL DIMENSIONS AND ELEVATIONS SHOWN IN SECTIONS & DETAILS PRIOR TO CONSTRUCTION OR MATERIAL PURCHASE AND SHALL NOTIFY ARCHITECT OR ENGINEER IN WRITING OF DISCREPANCIES. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND ELEVATIONS NOT SHOWN HEREIN.
6. DIMENSIONS INDICATED RELATIVE TO EXISTING STRUCTURE ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OR MATERIALS PURCHASE. CONTRACTOR SHALL NOTIFY ARCHITECT OR ENGINEER IN WRITING OF DISCREPANCIES.
7. SPECIFIED ANCHOR SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. SPECIAL ATTENTION SHALL BE GIVEN TO THE DRILLING, CLEANING, AND PREPARATION OF HOLES. WHERE ADHESIVE ANCHORS ARE SHOWN, SPECIAL ATTENTION SHALL BE GIVEN TO THE REQUIRED MIXING, APPLICATION, AND CURING TIME OF ADHESIVE TYPE SPECIFIED.

STRUCTURAL STEEL

1. APPLICABLE STRUCTURAL STEEL CODES:
   A. AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, 15TH EDITION
   B. AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES
2. MATERIALS:
   A. "W" SHAPES.....ASTM A992, GRADE 50
   B. ALL OTHER.....ASTM A36
   C. WELDING ELECTRODES.....E70 SERIES
3. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED ACCORDING TO THE LATEST EDITION OF AISC "SPECIFICATION, DESIGN, AND ERECTION OF STRUCTURAL STEEL FOR BUIILDINGS" AND RELATED PUBLICATIONS SPECIFIED THEREIN.
4. TEMPORARY BRACING OF STEEL STRUCTURAL ELEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURAL STABILITY SHALL BE MAINTAINED AT ALL TIMES DURING THE ERECTION PROCESS.
5. FIELD CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED AS DETAILED. NO FIELD WELDING OF HOT-DIPPED GALVANIZED MEMBERS WILL BE ALLOWED. USE 1/4" FILLET WELD MINIMUM.
6. CONTRACTOR SHALL SUBMIT THE FOLLOWING FOR REVIEW:
   A. SHOP DRAWINGS OF STEEL DETAILS PRIOR TO FABRICATING STRUCTURAL STEEL.
   B. STRUCTURAL DESIGN CALCULATIONS AND MEMBER SIZES FOR ALL STAIR MEMBERS AND CONNECTIONS NOT SHOWN HEREIN.
   C. ERECTION DRAWINGS FOR ALL STAIR MEMBERS SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE APPLICABLE TO THE PROJECT.
7. ALL SHOP AND FIELD WELDS SHALL BE PERFORMED BY A CERTIFIED WELDER IN ACCORDANCE WITH AWS D1.1.
8. A GAS CUTTING TORCH SHALL NOT BE USED FOR CUTTING HOLES OR CORRECTING MANUFACTURING ERRORS IN THE FIELD WITHOUT THE WRITTEN CONSENT OF THE ENGINEER OF RECORD FOR EACH OCCURENCE.

STEEL ROOF DECK & NON COMPOSITE FLOOR DECK

1. STEEL DECK DESIGN, DETAILING, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE METAL BUILDING SYSTEM MANUAL (2018) PUBLISHED BY THE METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA).
2. STEEL DECK SHALL CONFORM TO ASTM A792 GRADE 80
3. A SHOP COAT PRIMER SHALL BE PROVIDED BY THE MANUFACTURER.
4. PROVIDE A MINIMUM END BEARING OF 2" OVER SUPPORTS. END LAPS OF SHEETS SHALL BE A MINIMUM OF 1 1/2" AND SHALL OCCUR OVER SUPPORTS.
5. ALL OPENINGS LARGER THAN 12", AND AS DETAILED, SHALL HAVE STEEL FRAMING SUPPORTING ALL EDGES.
6. DECK SHALL BE FABRICATED SO THAT DECK RUNS CONTINUOUSLY OVER OPENINGS. THE OPENINGS SHALL NOT BE CUT UNTIL NEEDED.
7. SUSPENDED CEILINGS, LIGHT FIXTURES, DUCTS AND OTHER PERMANENT SUSPENDED LOADS SHALL NOT BE SUPPORTED BY THE METAL DECKING.
8. SUBMIT DETAILED SHOP DRAWINGS PRIOR TO FABRICATION SHOWING LAYOUT, TYPES OF METAL DECK UNITS, CONNECTION DETAILS, ACCESSORIES AND OTHER RELATED ITEMS.
9. ROOF DECK SIDELAPS SHALL BE ATTACHED AT ENDS OF CANTILEVERS AND AT A MAXIMUM SPACING OF 12" O.C. FROM CANTILEVERED ROOF DECK ENDS. THE ROOF DECK MUST BE COMPLETELY ATTACHED TO THE SUPPORTS AND AT THE SIDE LAPS BEFORE ANY LOAD IS APPLIED TO THE CANTILEVER.

REQUIRED SPECIAL INSPECTIONS AND TESTS OF STEEL CONSTRUCTION PER IBC 2021 CH. 17

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. FABRICATOR AND ERECTOR DOCUMENTS (VERIFY REPORTS AND CERTIFICATES AS LISTED IN AISC 360, SECTION N 3.2 FOR COMPLIANCE WITH CONSTRUCTION DOCUMENTS)	EACH SUBMITTAL	
2. MATERIAL VERIFICATION OF STRUCTURAL STEEL	–	X
3. STRUCTURAL STEEL WELDING:		
A. INSPECTION TASKS PRIOR TO WELDING (OBSERVE, OR PERFORM FOR EACH WELDED JOINT OR MEMBER, THE QA TASKS LISTED IN AISC 360, TABLE N5.4-1)	–	–
B. INSPECTION TASKS DURING WELDING (OBSERVE, OR PERFORM FOR EACH WELDED JOINT OR MEMBER, THE QA TASKS LISTED IN AISC 360, TABLE N5.4-2)	–	–
C. INSPECTION TASKS AFTER WELDING (OBSERVE, OR PERFORM FOR EACH WELDED JOINT OR MEMBER, THE QA TASKS LISTED IN AISC 360, TABLE N5.4-3)	–	–
D. NONDESTRUCTIVE TESTING (NDT) OF WELDED JOINTS:		
1) COMPLETE PENETRATION GROOVE WELDS 5/16" OR GREATER IN RISK CATEGORY III OR IV	–	–
2) COMPLETE PENETRATION GROOVE WELDS 5/16" OR GREATER IN RISK CATEGORY II	–	–
3) WELDED JOINTS SUBJECT TO FATIGUE WHEN REQUIRED BY AISC 360, APPENDIX 3, TABLE A-3.1	–	–
4) FABRICATOR'S NDT REPORTS WHEN FABRICATOR PERFORMS NDT	–	–
4. STRUCTURAL STEEL BOLTING:		
A. INSPECTION TASKS PRIOR TO BOLTING (OBSERVE, OR PERFORM TASKS FOR EACH BOLTED CONNECTION, IN ACCORDANCE WITH QA TASKS LISTED IN AISC 360, TABLE N5.6-1)	–	–
B. INSPECTION TASKS DURING BOLTING (OBSERVE THE QA TASKS LISTED IN AISC 360, TABLE N5.6-2):	–	–
1) PRE-TENSIONED AND SLIP-CRITICAL JOINTS	–	–
A) TURN-OF-NUT WITH MATCHING MARKINGS	–	–
B) DIRECT TENSION INDICATOR	–	–
C) TWIST-OFF TYPE TENSION CONTROL BOLT	–	–
E) CALIBRATED WRENCH	–	–
2) SNUG-TIGHT JOINTS	–	X
C. INSPECTION TASKS AFTER BOLTING (PERFORM TASKS FOR EACH BOLTED CONNECTION IN ACCORDANCE WITH QA TASKS LISTED IN AISC 360, TABLE N5.6-3)	–	–
5. VISUAL INSPECTION OF EXPOSED CUT SURFACES OF GALVANIZED STRUCTURAL STEEL MAIN MEMBERS AND EXPOSED CORNERS OF THE RECTANGULAR HSS FOR CRACKS SUBSEQUENT TO GALVANIZING.	–	–
6. EMBEDMENTS (VERIFY DIAMETER, GRADE, TYPE, LENGTH, EMBEDMENT. SEE 1705.3 FOR ANCHORS)	–	X
7. VERIFY MEMBER LOCATIONS, BRACES, STIFFENERS, AND APPLICATION OF JOINT DETAILS AT EACH CONNECTION COMPLY WITH CONSTRUCTION DOCUMENTS	–	X

DESIGN CRITERIA

1. BUILDING CODE:
   2021 INTERNATIONAL BUILDING CODE
2. GRAVITATIONAL LOADS (ASCE 7-16):

	CONCENTRATED	DISTRIBUTED
1 ST FLOOR		
	LL = N/A	LL = 100 PSF
	DL = N/A	DL = 62.5 PSF

3. WIND LOADS (ASCE 7-16):
   BASIC WIND SPEED (3 SEC GUST) = 123 MPH
   RISK CATEGORY = III
   EXPOSURE CATEGORY = B
   GC_p= ± 0.18
4. SEISMIC LOADS (ASCE 7-16):
   RISK CATEGORY = III
   IMPORTANCE FACTOR = 1.25
   DESIGN CATEGORY = A
   SITE CLASS = D
   S_S = 0.286
   S_1 = 0.102
   S_{DS} = 0.300
   S_{D1} = 0.163
   SEISMIC FORCE RESISTING SYSTEM = STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
   SEISMIC RESPONSE COEFFICIENT, C_S = 0.106
   RESPONSE MODIFICATION FACTOR R = 3.0
   ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE
   SEISMIC BASE SHEAR = C_SW. WHERE W = WEIGHT OF STRUCTURE

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PROJECT TITLE:
USC AIKEN SCIENCE BUILDING FRAMING REPAIR
208 SCHOLAR LOOP, AIKEN, S.C. 29801

REVISIONS

REV #	DATE	APRVD BY	REVISION
	02/17/25	JRH	ISSUE FOR BID

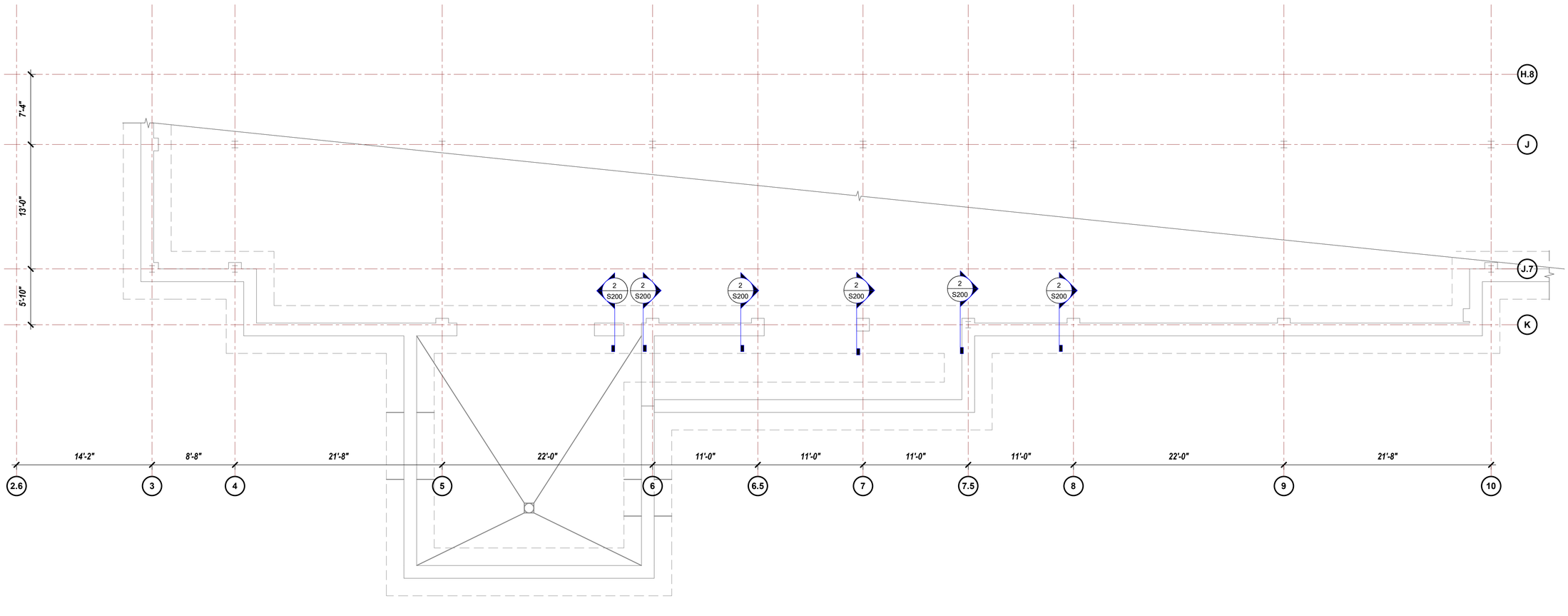
SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 33204
JOSE R. HERNANDEZ
02/17/2025

SOUTH CAROLINA
PRYCO STRUCTURAL LLC
No. 6552
CERTIFICATE OF AUTHORIZATION

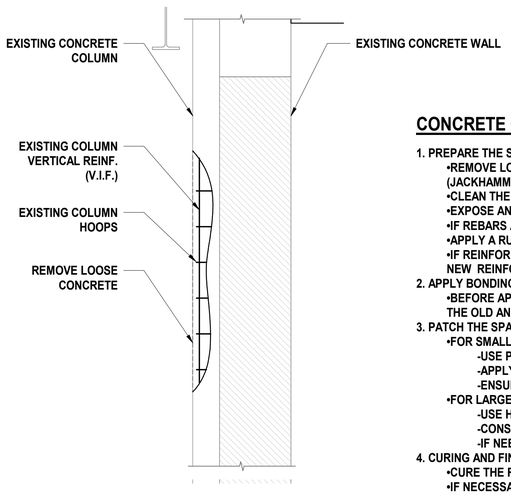
DRAWING TITLE:
STRUCTURAL NOTES

DRAWING NO:
S100

PROJECT # 24.048



1 S200 FOUNDATION PLAN
3/16" = 1'-0"



CONCRETE COLUMN REPAIR INSTRUCTIONS

1. PREPARE THE SURFACE:
   - •REMOVE LOOSE CONCRETE: USE A HAMMER AND CHISEL OR A POWER TOOL (JACKHAMMER, GRINDER) TO REMOVE ALL LOOSE, DAMAGED, OR DELAMINATED CONCRETE.
   - •CLEAN THE AREA: USE A WIRE BRUSH OR AIR BLOWER TO REMOVE DUST AND DEBRIS.
   - •EXPOSE AND TREAT REINFORCEMENT:
   - •IF REBARS ARE EXPOSED, CLEAN THEM THOROUGHLY USING A WIRE BRUSH OR SANDBLASTING.
   - •APPLY A RUST CONVERTER OR ANTI-CORROSION PRIMER IF THERE IS CORROSION.
   - •IF REINFORCEMENT BARS ARE SIGNIFICANTLY CORRODED OR HAVE LOST CROSS-SECTION, REPLACE THEM OR ADD NEW REINFORCEMENT BARS.
2. APPLY BONDING AGENT
   - •BEFORE APPLYING NEW CONCRETE, APPLY A BONDING AGENT OR EPOXY ADHESIVE TO IMPROVE ADHESION BETWEEN THE OLD AND NEW CONCRETE.
3. PATCH THE SPALLED AREA
   - •FOR SMALL REPAIRS (LESS THAN 2 INCHES DEEP):
     - -USE POLYMER-MODIFIED REPAIR MORTAR OR CEMENTITIOUS REPAIR MORTAR.
     - -APPLY THE MORTAR WITH A TROWEL AND COMPACT IT PROPERLY.
     - -ENSURE THE FINISH MATCHES THE EXISTING COLUMN SURFACE.
   - •FOR LARGER REPAIRS (MORE THAN 2 INCHES DEEP OR IF REINFORCEMENT IS EXPOSED):
     - -USE HIGH-STRENGTH REPAIR CONCRETE OR NON-SHRINK GROUT.
     - -CONSIDER FORMWORK AND POURABLE REPAIR CONCRETE FOR EXTENSIVE DAMAGE.
     - -IF NEEDED, PLACE ADDITIONAL TIES OR REBARS TO STRENGTHEN THE REPAIR AREA.
4. CURING AND FINISHING
   - •CURE THE REPAIRED AREA PROPERLY BY KEEPING IT MOIST FOR AT LEAST 7 DAYS.
   - •IF NECESSARY, APPLY A PROTECTIVE COATING OR SEALANT TO ENHANCE DURABILITY AND PREVENT FUTURE SPALLING.

2 S200 EXISTING CONCRETE COLUMN REPAIR
3/4" = 1'-0"

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DRAWING TITLE:
FOUNDATION REPAIR DETAILS

DRAWING NO:
S200

PROJECT # 24.048

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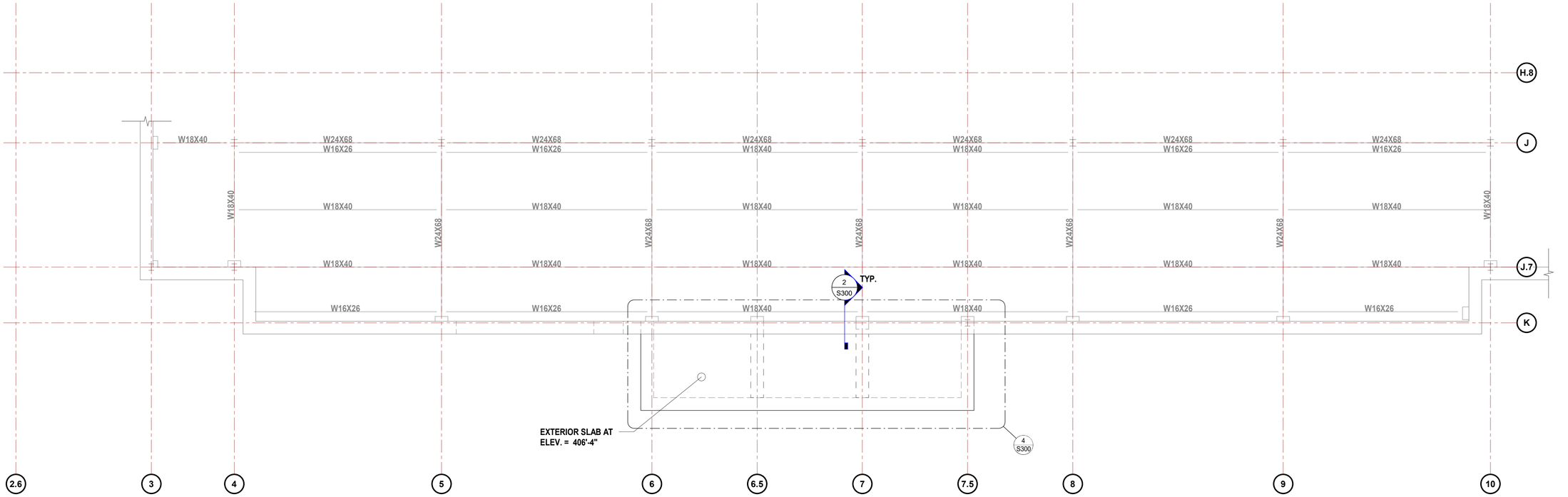
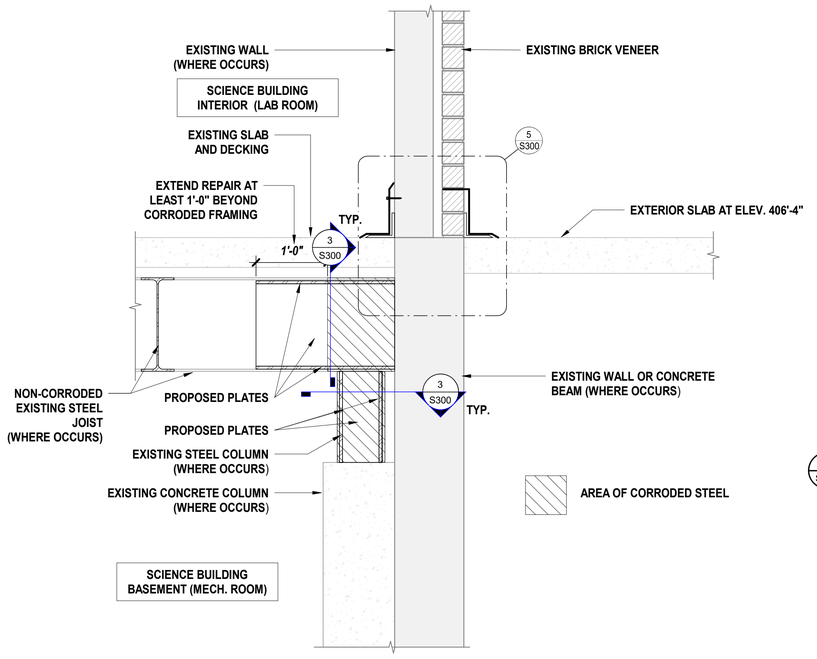
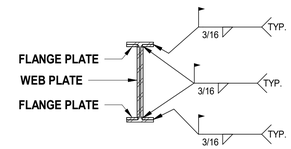


1 S300 LOWER LEVEL FRAMING PLAN
3/16" = 1'-0"



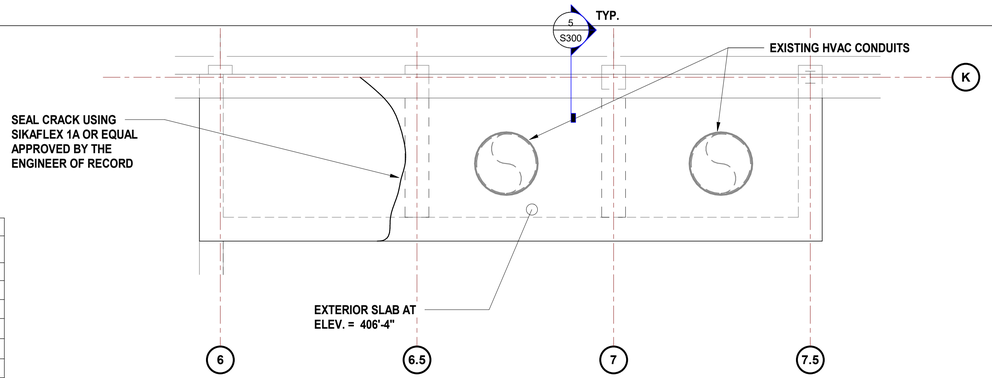
2 S300 FRAMING RERPAIR DEATIL
1" = 1'-0"



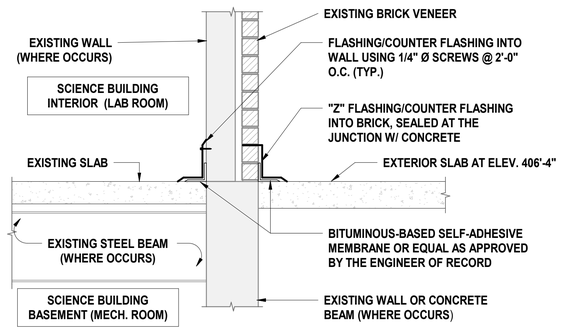
REPAIR PLATE THICKNESS SCHEULE		
MEMBER	WEB PL. THICKNESS	FLANGE PL. THICKNESS
W24x68	3/8"	3/8"
W24x79	3/8"	3/8"
W18x40	1/4"	3/8"
W16x26	3/16"	1/4"
W8x28	3/8"	5/8"
W8x10	3/16"	3/16"

NOTES:
1. PERFORM AN UT TEST BEFORE IMPLEMENTING STEEL FRAMING REPAIRS. RESULTS SHALL BE FORWARDED TO ENGONEER OF RECORD FOR REVIEW.
2. FLANGE PLATES TO BE CUT AT LEAST 1/4" SHORTER THAN THE FLANGE TO ALLOW FOR ADEQUATE WELDING
3. REMOVE RUST, PAINT, FIREPROOFING, AND ANY CONTAMINATS TO PREPARE THE STEEL SURFACE

3 S300 STEEL FRAMING REINFORCEMENT & SCHEDULE
3/4" = 1'-0"



4 S300 EXTERIO SLAB REPAIR DETAIL
1/4" = 1'-0"



5 S300 SLAB JOINT SEAL DETAIL
3/4" = 1'-0"

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LOWER LEVEL REPAIR PLAN AND DETAILS
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