



DULUTH INTERNATIONAL AIRPORT

Director of Airports: Brian Ryks
4701 GRINDEN DRIVE - DULUTH INTERNATIONAL AIRPORT
DULUTH, MINNESOTA 55811

FAA AIP No. - 3-27-0024-48-10
RS&H PROJ. No. - 213.1882.091
CITY OF DULUTH BID No. - 11-4403

DULUTH AIRPORT AUTHORITY BOARD OF DIRECTORS

- President: John Eagleton
- Vice President: Robert Pearson
- Secretary: Michael Lundstrom
- Conrad Firling
- Roy Niemi
- Sue Ross
- Roger Wedin



NEW PASSENGER TERMINAL BID PACKAGE 2B - ISSUED FOR BID VOLUME 1 OF 3 CIVIL, STRUCTURAL

AUGUST 23, 2011



Construction Managers:
KRAUS-ANDERSON.
3716 Oneota Street
Duluth MN 55807
TEL: (218) 722-3775 / FAX: (218) 722-3778



Architects and Civil Engineers:
REYNOLDS, SMITH & HILLS, INC.
4525 Airport Approach Road,
Duluth MN 55811
TEL: (218) 722-1227 / FAX: (218) 722-1052

Interior Architects:
SJA ARCHITECTS
11 E Superior Street Suite 340,
Duluth MN 55802
TEL: (218) 724-8578 / FAX: (218) 724-8717

Structural Engineers:
MBJ CONSULTING ENG.
501 Lake Avenue South, Suite 300,
Duluth MN 55802
TEL: (218) 722-1056 / FAX: (218) 722-9306

M/E/P/FP Engineers:
COSENTINI ASSOCIATES INC.
1 South Wacker Drive, 37th Floor,
Chicago IL 60606
TEL: (312) 201-7408 / FAX: (312) 201-0031

Baggage Handling Systems Consultants:
BNP ASSOCIATES INC.
101 East Ridge Office Park, Suite 103,
Danbury CT 06810
TEL: (203) 792-3000 / FAX: (203) 792-4900

Public Address Consultants:
SHEN, MILSOM & WILKE, LLC
2 N. Riverside Plaza #1460
Chicago IL 60606
TEL: (312) 559-4585 / FAX (312) 559-5393

DRAWING LIST – VOLUME 1

G101 DRAWING LIST

CIVIL

C002 SAFETY AND SECURITY NOTES AND DETAILS
C003 CONSTRUCTION SAFETY PHASING PLAN
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P303 WASTE AND VENT RISER DIAGRAM

P401 PLUMBING DETAILS
P402 PLUMBING DETAILS
P403 PLUMBING DETAILS

P501 PLUMBING SCHEDULES

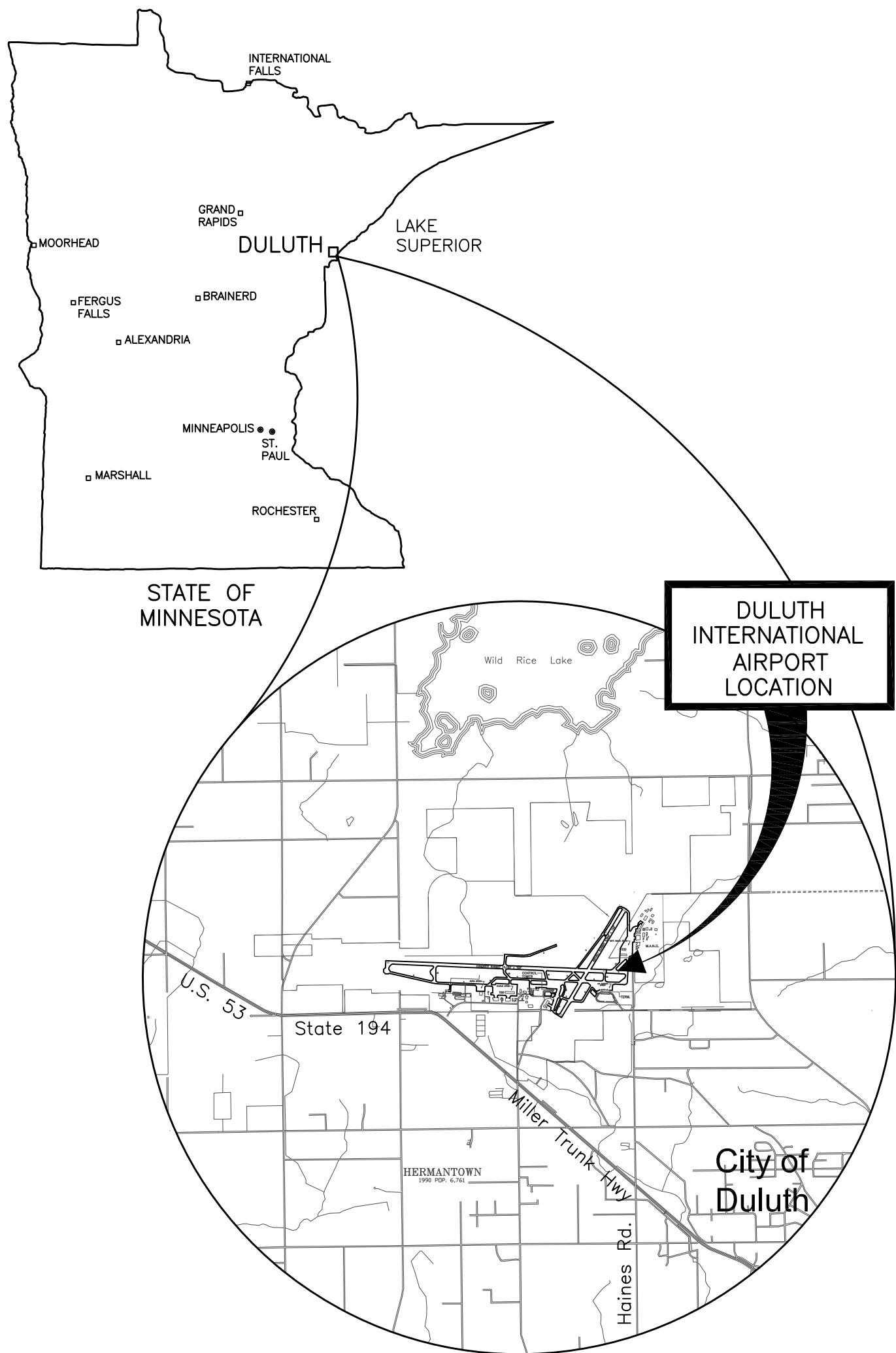
FIRE PROTECTION

F001 FIRE PROTECTION SYMBOL LIST, ABBREVIATIONS AND DRAWING INDEX

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F401 FIRE PROTECTION DETAILS

F501 FIRE PROTECTION SCHEDULES AND RISER DIAGRAM



N
1 LOCATION MAP
N.T.S.

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.

4525 Airport Approach Rd, Ste A
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www.rsandh.com

**DULUTH AIRPORT
AUTHORITY**

**DULUTH
INTERNATIONAL
AIRPORT
DULUTH, MN**

**NEW PASSENGER
TERMINAL**

CONSULTANTS

Interior Architects:

SJA ARCHITECTS
11 E Superior Street Suite 340, Duluth MN 55802
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BNP ASSOCIATES INC.
101 East Ridge Office Park, Suite 103, Danbury CT 06810
TEL: (203) 792-3000 / FAX: (203) 792-4900

Landscaping Consultants:

APPOLD DESIGN
2432 East First Street, Duluth MN 55812
TEL: (218) 591-5079

ARCHITECTURAL CERTIFICATION

I hereby certify that the architectural plans, specifications or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Architect under the laws of the State of Minnesota.

Print Name: Mark Ip

Signature:

Date: 06-03-10 Reg. No.: 46001

REVISIONS

NO.	DESCRIPTION	DATE
BID PACKAGE 1		5.12.10
FOUNDATION PERMIT		6.11.10
1,2,3	NOT CHANGED	
CONFIRMANCE SET		7.12.10
BUILDING PERMIT		8.16.10
4	BUILDING PERMIT REVISIONS	11.12.10
BID PACKAGE 2A		12.4.11
BP2A CONFIRMANCE SET		5.2.11
BID PACKAGE 2B REVIEW		7.6.11

DATE ISSUED: 08-23-11

REVIEWED BY: SBS/TC

DRAWN BY: MKG/MI

DESIGNED BY: SBS/TC

AEP PROJECT NUMBER

213-1882-091

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SHEET TITLE

**DRAWING
LIST**

SHEET NUMBER

G101

**BID PACKAGE 2B
ISSUED FOR BID**

SAFETY REQUIREMENTS

1. ALL CONTRACTOR VEHICLES SHALL DISPLAY IN FULL VIEW A FLASHING AMBER (YELLOW) DOME-TYPE LIGHT AND/OR ABOVE THE VEHICLE A 3' X 3' OR LARGER, ORANGE AND WHITE CHECKERBOARD FLAG, EACH CHECKERBOARD COLOR BEING 1-FOOT SQUARE, (SEE CONSTRUCTION SAFETY FLAG DETAIL, THIS SHEET).
2. DEBRIS, WASTE AND LOOSE MATERIAL CAPABLE OF CAUSING DAMAGE TO AIRCRAFT LANDING GEARS, PROPELLERS OR BEING INGESTED IN JET ENGINES SHALL NOT BE ALLOWED ON AIRSIDE PAVEMENTS. IF THESE MATERIALS ARE OBSERVED TO BE ON AIRSIDE PAVEMENTS, THEY WILL BE REMOVED IMMEDIATELY AND/OR CONTINUOUSLY BY THE CONTRACTOR DURING CONSTRUCTION.
3. THE CONTRACTOR IS DIRECTED TO COMPLY WITH AND ACQUAINT HIS/HER EMPLOYEES WITH THE FOLLOWING SAFETY GUIDELINES, RELATED MATERIALS AND FAA ADVISORY CIRCULARS:
- 150/5200-18C "AIRPORT SAFETY-SELF INSPECTION"
150/5210-5D "PAINTING, MARKING & LIGHTING OF VEHICLES USED ON AIRPORTS"
150/5370-2E "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION"

COPIES OF THESE DOCUMENTS ARE PROVIDED IN THE CONTRACT SPECIFICATIONS.

4. CONSTRUCTION DURING THE PROJECT MAY BE HALTED AT ANY TIME BY RPR, ENGINEER, AND/OR AIRPORT OPERATIONS IF IT IS DETERMINED TO BE IN THE BEST INTEREST OF AIRPORT OPERATIONS OR SAFETY. THE CONTRACTOR MAY BE DIRECTED TO REMOVE EQUIPMENT AND/OR EVACUATE THE SITE IN ORDER TO ENABLE AIRCRAFT OPERATIONS; COMMERCIAL, MILITARY OR GENERAL AVIATION NECESSARY EXTENSIONS IN CONTRACT TIME WILL BE GRANTED OR A STOP WORK ORDER WILL BE ISSUED DUE TO THESE DELAYS, HOWEVER, THERE WILL BE NO ADJUSTMENTS IN CONTRACT PRICE DUE TO THESE DELAYS.

IN ADDITION TO THE ABOVE, THE FOLLOWING SPECIAL REQUIREMENTS WILL APPLY FOR NIGHT CONSTRUCTION:

- a. A DAILY SAFETY AND PROGRESS MEETING SHALL BE HELD BETWEEN THE ENGINEER AND THE CONTRACTOR'S SUPERINTENDENT TO DISCUSS REQUIREMENTS FOR THE NEXT NIGHTTIME WORK PERIOD.
- b. THE CONTRACTOR SHALL PREPARE A SAFETY PLAN SPECIFIC TO NIGHTTIME CONSTRUCTION OPERATIONS, AS WELL AS A CONTINGENCY PLAN TO ADDRESS CASES OF ABNORMAL FAILURES OR UNEXPECTED DISASTERS USING APPENDIX 3 OF AC 150/5370-2E AS A GUIDE.
5. THE CONTRACTOR SHALL INSTALL ALL REQUIRED BARRICADES AT LOCATIONS DESIGNATED BY ENGINEER, HAVE ALL AOA ACCESS GATES GUARDED AND LOCKABLE, HAVE ALL EQUIPMENT EITHER FLAGGED OR FITTED WITH FLASHING YELLOW DOME-TYPE LIGHTS ON TOP OF THE VEHICLES. ALL THESE ITEMS SHALL CONSIST OF THE SAFETY AND SECURITY SYSTEM. THE CONTRACTOR SHALL INSTALL THE COMPONENTS OF THE SYSTEM AT THE APPROPRIATE TIMES AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL INSPECT EVERY ASPECT OF THE SAFETY AND SECURITY SYSTEM ON AT LEAST A DAILY BASIS AND ENSURE ALL COMPONENTS ARE FUNCTIONING PROPERLY. THE RESIDENT PROJECT REPRESENTATIVE (RPR) SHALL ALSO DAILY INSPECT THE SYSTEM AND IF ANY DEFICIENCIES ARE NOTED, THE CONTRACTOR SHALL HAVE THAT DAY'S PRORATED SAFETY AND SECURITY COST DEDUCTED FROM THE CONTRACTOR'S EARNINGS. THE SYSTEM ELEMENTS TO BE INSPECTED AND DEFICIENCIES NOTED ARE AS FOLLOWS:

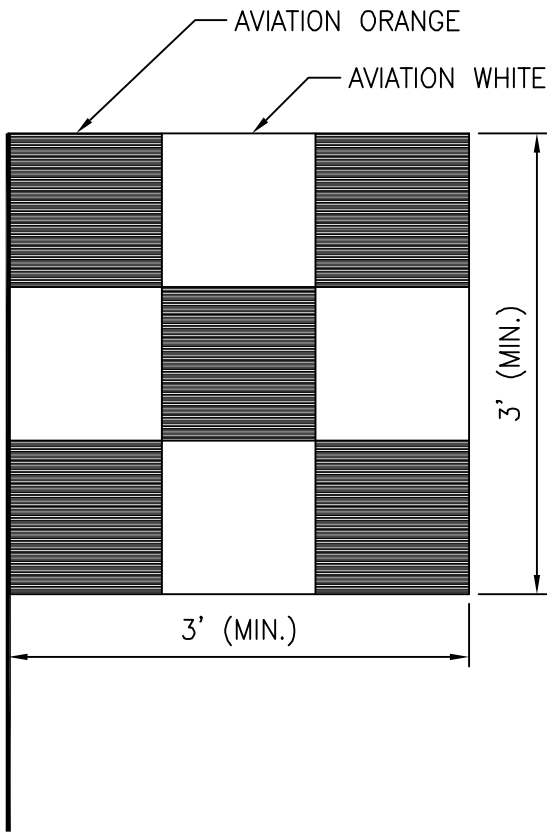
- *BARRICADES SET PROPERLY PER APPROVED CONTRACTOR SAFETY PLAN AND ALL FLASHING WARNING LIGHTS OPERATING PROPERLY.
*ALL CONTRACTOR PERSONNEL AND EQUIPMENT ACCESS GATES MANNED OR LOCKED AND SECURITY PROCEDURES IN PLACE.
*ALL EQUIPMENT FLAGGED OR OUTFITTED WITH FLASHING YELLOW DOME-TYPE LIGHTS.
*CONTRACTOR USE OF UNAUTHORIZED AIRPORT ACCESS GATES CHECKED.

ANY OF THE ABOVE SAFETY AND SECURITY ITEMS FOUND TO BE DEFICIENT AT THE BEGINNING OF THE DAY BY THE RPR AND/OR AIRPORT OPERATIONS STAFF WILL RESULT IN THAT DAY'S PRORATED SAFETY AND SECURITY BID ITEM LOST AND BEING DEDUCTED PERMANENTLY FROM THE CONTRACTOR'S EARNINGS. THE CONTRACTOR SHALL MAKE A CONSIDERED EFFORT TO ENSURE ALL SAFETY AND SECURITY ITEMS ARE IN PROPER WORKING ORDER EACH DAY DUE TO THE HEIGHTENED SECURITY STATUS OF THE AIRPORT AND THE CONSIDERABLE LIABILITY ASSOCIATED WITH THE SAFETY AND SECURITY WORK.

6. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO ENSURE THE SAFETY OF THE TRAVELING PUBLIC AS WELL AS HIS OWN EQUIPMENT AND PERSONNEL. SPECIAL CONSIDERATIONS SHOULD BE GIVEN TO FLIGHT SCHEDULES. THE CONTRACTOR SHALL OBEY ALL INSTRUCTIONS AS TO ROUTES TO BE TAKEN BY EQUIPMENT TRAVELING WITHIN THE AIRPORT AREA AND KEEP SUCH VEHICLES AND EQUIPMENT MARKED WITH THE SPECIFIED AIRPORT SAFETY FLAGS. THE CONTRACTOR SHALL MAKE HIS OWN ESTIMATE OF ALL DIFFICULTIES TO BE ENCOUNTERED. EQUIPMENT NOT ACTUALLY IN OPERATION SHALL BE KEPT CLEAR OF LANDING AREAS. PERSONNEL SHALL NOT ENTER AREAS OF THE AIRPORT WHERE AIRCRAFT ARE OPERATING WITHOUT SPECIFIC PERMISSION.
7. THE CONTRACTOR SHALL TAKE ALL STEPS TO PROTECT THE EXISTING UNDERGROUND CABLES AND COMMERCIAL, AIRPORT AUTHORITY AND MILITARY UTILITIES DURING CONSTRUCTION TO ASSURE CONTINUOUS OPERATION OF LIGHTS AND NAVIGATIONAL AIDS WHEN NEEDED.
8. MATERIALS STORED OR STOCKPILED ON THE AIRPORT SHALL BE SO PLACED AND THE WORK SHALL, AT ALL TIMES, BE SO CONDUCTED AS TO CAUSE NO GREATER OBSTRUCTION TO THE TRAVELING PUBLIC THAN IS CONSIDERED NECESSARY BY THE ENGINEER.
9. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL NECESSARY BARRICADES, SIGNS, DANGER SIGNALS AND LIGHTS FOR THE PROTECTION OF THE WORK AND THE SAFETY OF THE TRAVELING PUBLIC IN ACCORDANCE WITH THE SPECIFICATIONS (AC 150/5370-2E).
10. THE CONTRACTOR SHALL HAVE PERSONNEL ON CALL 24 HOURS PER DAY FOR EMERGENCY MAINTENANCE OF HAZARD LIGHTING AND BARRICADES.
11. THE AIRPORT DIRECTOR, WORKING THROUGH THE ENGINEER, SHALL, AT ALL TIMES, HAVE COMPLETE JURISDICTION OVER THE SAFETY OF ALL OPERATIONS DURING THE WORK. WHEREVER THE SAFETY OF THE TRAVELING PUBLIC IS CONCERNED, THE DECISIONS OF THE AIRPORT DIRECTOR OR HIS DESIGNATED REPRESENTATIVE, SHALL BE FINAL AS TO METHODS, PROCEDURES AND MEASURES USED.
12. THE CONTRACTOR SHALL CONTACT THE MINNESOTA AIRWAY FACILITIES SECTOR POINT OF CONTACT (POC) (ANDY GOMEZ AT 218-722-2826) TO PROVIDE FIELD LOCATIONS OF EXISTING FACILITY CABLES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAND DIGGING TO LOCATE FACILITY CABLING, AND PROTECTION OF THOSE CABLES THROUGHOUT THE PROJECT.
13. THE CONTRACTOR SHALL CONFINE HIS PERSONNEL, EQUIPMENT, OPERATIONS AND TRAVEL TO THE AREA WITHIN THE DEFINED WORK LIMITS SHOWN ON THE PLANS.
14. THE CONTRACTOR SHALL INFORM ALL CONSTRUCTION PERSONNEL AS TO THE PROPER ROUTES, SPEEDS AND PROCEDURES FOR TRANSPORTING EQUIPMENT AND MATERIALS TO THE CONSTRUCTION SITE. ON A DAILY BASIS AND MORE OFTEN IF NECESSARY ALL PERSONNEL SHALL BE ADVISED OF ANY CHANGES IN AIRPORT OPERATIONS THAT MAY FURTHER RESTRICT HIS MOVEMENT.
15. ACCESS OR HAUL ROUTES SHALL BE EXISTING ROADWAYS TO THE EXTENT THAT THEY ARE AVAILABLE. THE CONTRACTOR SHALL CORRECT ANY DAMAGE TO THE ROADS USED AND SHALL RESTORE THOSE ROADS TO THE SAME OR BETTER CONDITION AS THEY EXISTED PRIOR TO THE START OF WORK. THE CONTRACTOR MAY ESTABLISH ADDITIONAL HAUL OR ACCESS ROUTES AT HIS OWN EXPENSE AND RESPONSIBILITY IF APPROVED BY THE SPONSOR. UPON COMPLETION OF THE WORK, ANY ADDITIONAL ROADS SHALL EITHER BE LEFT OR GRADED AS DIRECTED SO THAT THEY DO NOT IMPEDE THE EXISTING DRAINAGE OR ACCESS ROUTES. CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING EXISTING DISTRESS WITH PHOTOS, LOCATION, AND/OR VIDEO.

16. MEASURES SHALL BE ADOPTED TO PREVENT POTENTIAL POLLUTANTS FROM ENTERING ANY DRAINAGE SYSTEM OR WATERWAY. MATERIALS AND DEBRIS SHALL NOT BE STORED IN THE WORK AREA IN A MANNER THAT WOULD ALLOW THEM TO ENTER THE DRAINAGE SYSTEM AS A RESULT OF SPILLAGE, NATURAL RUNOFF OR FLOODING. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMMEDIATELY NOTIFY THE SPONSOR SHOULD THERE BE A SPILLAGE OF MATERIAL WHICH MIGHT CONTAMINATE THE DRAINAGE SYSTEM. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND CLEAR UP SUCH SPILLAGE IN A MANNER ACCEPTABLE TO THE SPONSOR. MATERIAL SHALL BE SECURED SO THAT IT WILL NOT BE BLOWN BY THE WIND ONTO THE AIRFIELD SURFACES.
17. SPECIAL ATTENTION TO DUST CONTROL WILL BE REQUIRED WHEN EARTHWORK OR HAULING OPERATIONS ARE IN PROGRESS OR WHEN WIND AND WEATHER CONDITIONS CAUSE EXCESSIVE BLOWING OF DUST. IN THIS REGARD, THE CONTRACTOR SHALL APPLY WATER OR CALCIUM CHLORIDE SOLUTION TO THE AFFECTED SITES AS DIRECTED.
18. VEHICLES WITHIN THE SECURITY FENCE SHALL BE VISIBLY IDENTIFIABLE AS CONTRACTOR VEHICLES WHICH HAVE BEEN PROPERLY CLEARED FOR ENTRY (LOGO AND FLAGS ON AUTHORIZED EQUIPMENT AND VEHICLES WOULD BE ACCEPTABLE.)
19. CONSTRUCTION EQUIPMENT SHALL HAVE A MAXIMUM HEIGHT OF TWENTY-FIVE (25) FEET.
20. THE CONTRACTOR SHALL SUBMIT A SAFETY AND SECURITY PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL BY THE AIRPORT AUTHORITY PRIOR TO CONSTRUCTION COMMENCING.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING UTILITY LINES AND HAND DIGGING TO LOCATE FAA CABLING AND SHALL PROVIDE ADEQUATE PROVISIONS TO PROTECT ALL FAA CABLES EXPOSED DURING THE PROPOSED WORK. THE SPONSOR/CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE AIRWAY FACILITY SMO AT THE PROJECT PRECONSTRUCTION MEETING SHOULD CABLE RELOCATION BE NECESSARY.
22. ANY DAMAGE TO FAA CABLES, ACCESS ROADS, OR TO FAA FACILITIES DURING THE CONSTRUCTION WILL REQUIRE THE CONTRACTOR TO REPLACE THE DAMAGED CABLES, ACCESS ROAD, OR FAA FACILITIES TO THE AF SMO'S REQUIREMENTS, AND AT THE CONTRACTORS' EXPENSE.
23. IF ANY FAA POWER, CONTROL, OR SIGNAL CABLES ARE DAMAGED, THE SPONSOR/CONTRACTOR SHALL REPLACE THE CABLE IN ITS ENTIRETY. THE SPLICING OF CABLES IS NOT AN ACCEPTABLE FORM OF REPAIR.

NOTE: SAFETY FLAG SHALL BE PROMINENTLY DISPLAYED ON ALL CONSTRUCTION EQUIPMENT. (SEE NOTE 1 UNDER SAFETY)



CONSTRUCTION SAFETY FLAG

N.T.S.

SECURITY REQUIREMENTS

1. **GENERAL INTENT:** IT IS INTENDED THAT THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE AIRPORT SECURITY PLAN AND WITH THE SECURITY REQUIREMENTS SPECIFIED HEREIN BY AIRPORT OPERATIONS. THE CONTRACTOR SHALL DESIGNATE TO THE ENGINEER AND AIRPORT OPERATIONS, IN WRITING, THE NAME OF HIS "CONTRACTOR SECURITY AND SAFETY OFFICER (CSSO)." THE CSSO SHALL REPRESENT THE CONTRACTOR ON THE SECURITY REQUIREMENTS FOR THE CONTRACT.
2. **CONTRACTOR PERSONNEL SECURITY ORIENTATION:** THE CSSO SHALL BE RESPONSIBLE FOR BRIEFING ALL CONTRACTOR PERSONNEL ON SECURITY REQUIREMENTS. ALL NEW CONTRACTOR EMPLOYEES SHALL BE BRIEFED ON SECURITY REQUIREMENTS PRIOR TO WORKING IN THE CONSTRUCTION AREA. THE AIRPORT SHALL BRIEF AND/OR TRAIN CONSTRUCTION RELATED VEHICLE EQUIPMENT DRIVERS ON OPERATIONS WITHIN AN AIRPORT/AIRCRAFT ENVIRONMENT. AIRPORT MANAGEMENT SHOULD PROVIDE PRINTED MATERIAL TO EACH VEHICLE OPERATOR THAT DEPICTS HAUL ROUTES, PROHIBITED MOVEMENT AREAS, AND DESCRIBES THE CONSEQUENCES FOR NON-COMPLIANCE WITH ESTABLISHED PROCEDURES. THE AIRPORT HAS IMPLEMENTED A ZERO TOLERANCE APPROACH TO DRIVING VIOLATIONS.
3. **ACCESS TO THE SITE:** CONTRACTOR'S ACCESS TO THE SITE SHALL BE AS SHOWN ON THE PLANS. NO OTHER ACCESS POINTS SHALL BE ALLOWED UNLESS APPROVED BY AIRPORT OPERATIONS. ALL CONTRACTOR TRAFFIC AUTHORIZED TO ENTER THE SITE SHALL BE EXPERIENCED IN THE ROUTE OR GUIDED BY CONTRACTOR PERSONNEL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL TO AND FROM THE VARIOUS CONSTRUCTION AREAS ON THE SITE, AND FOR THE OPERATION AND SECURITY OF THE ACCESS GATE TO THE SITE. A CONTRACTOR'S FLAGMAN OR TRAFFIC CONTROL PERSON SHALL MONITOR AND COORDINATE ALL CONTRACTOR TRAFFIC AT THE ACCESS GATE WITH SECURITY. THE CONTRACTOR SHALL NOT PERMIT ANY UNAUTHORIZED CONSTRUCTION PERSONNEL OR TRAFFIC ON THE SITE. ACCESS GATES TO THE SITE SHALL BE LOCKED AND SECURED AT ALL TIMES WHEN NOT ATTENDED BY THE CONTRACTOR. IF THE CONTRACTOR CHOOSES TO LEAVE ANY ACCESS GATE OPEN, IT SHALL BE ATTENDED BY CONTRACTOR PERSONNEL WHO ARE FAMILIAR WITH THE REQUIREMENTS OF THE AIRPORT OPERATIONS SECURITY PROGRAM. THE CONTRACTOR IS RESPONSIBLE FOR THE IMMEDIATE CLEANUP OF ANY DEBRIS DEPOSITED ALONG THE ACCESS ROUTE AS A RESULT OF HIS CONSTRUCTION TRAFFIC. DIRECTIONAL SIGNING FROM THE ACCESS GATE ALONG THE DELIVERY ROUTE TO THE STORAGE AREA, PLANT SITE OR WORK SITE SHALL BE AS DIRECTED BY AIRPORT OPERATIONS.
4. **MATERIALS DELIVERY TO THE SITE:** ALL CONTRACTOR'S MATERIAL ORDERS FOR DELIVERY TO THE WORK SITE WILL USE AS A DELIVERY ADDRESS, THE STREET NAME ASSIGNED TO THE ACCESS POINT AT THE CONTRACTOR'S STAGING SITE AT THE AIRPORT. THE NAME "DULUTH INTERNATIONAL AIRPORT" SHALL NOT BE USED IN THE DELIVERY ADDRESS AT ANY TIME. THIS WILL PRECLUDE DELIVERY TRUCKS FROM ENTERING INTO THE TERMINAL COMPLEX, OR TAKING SHORT CUTS THROUGH THE PERIMETER GATES AND ENTERING INTO AIRCRAFT OPERATIONS AREAS INAPPROPRIATELY.
5. **CONSTRUCTION AREA LIMITS:** THE LIMITS OF CONSTRUCTION, MATERIAL STORAGE AREAS, PLANT SITE, EQUIPMENT STORAGE AREA, PARKING AREA AND OTHER AREAS DEFINED AS REQUIRED FOR THE CONTRACTOR'S EXCLUSIVE USE DURING CONSTRUCTION SHALL BE MARKED BY THE CONTRACTOR. THE CONTRACTOR SHALL ERECT AND MAINTAIN AROUND THE PERIMETER OF THESE AREAS SUITABLE FENCING, MARKING AND/OR WARNING DEVICES VISIBLE FOR DAY/NIGHT USE. TEMPORARY BARRICADES, FLAGGING AND FLASHING WARNING LIGHTS WILL BE REQUIRED AT CRITICAL ACCESS POINTS. TYPE OF MARKING AND WARNING DEVICES SHALL BE APPROVED BY AIRPORT OPERATIONS.
6. **IDENTIFICATION--PERSONNEL:** ALL EMPLOYEES, AGENTS, VENDORS, INVITEES, ETC. OF THE CONTRACTOR OR SUBCONTRACTORS REQUIRING ACCESS TO THE AIRCRAFT OPERATIONS AREA (AOA) SHALL, IN ACCORDANCE WITH THE AIRPORT OPERATIONS SECURITY PROGRAM, BE REQUIRED TO DISPLAY AIRPORT ISSUED IDENTIFICATION OR BE UNDER ESCORT BY PROPERLY BADGED PERSONNEL. THESE BADGES WILL BE IDENTIFIED NUMERICALLY AND ISSUED TO INDIVIDUAL EMPLOYEES WITH A PERMANENT RECORD MAINTAINED ON EACH INDIVIDUAL TO WHOM A BADGE IS ISSUED. AT THE COMPLETION OF THE CONTRACT ALL BADGES WILL BE RETURNED TO THE AIRPORT AND A CHARGE OF \$50 PER BADGE WILL BE ASSESSED FOR ALL BADGES NOT RETURNED. IN ADDITION, A \$65 NON-REFUNDABLE PROCESSING FEE WILL BE REQUIRED FOR EACH BADGE. THIS FEE WILL BE PAID BEFORE BADGE IS ISSUED. NO BADGE WILL BE ISSUED TO ANY PERSON UNTIL A REVIEW OF REQUIRED PAPERWORK BY AIRPORT SECURITY AND ALL REQUIREMENTS ARE MET. PAPERWORK SHALL BE SUBMITTED A MINIMUM OF 24 HOURS BEFORE ISSUANCE OF BADGE. IDENTIFIABLE HARD HATS OR OTHER IDENTIFICATION SHALL ALSO BE WORN AT ALL TIMES IF REQUIRED BY AIRPORT OPERATIONS. THE CONTRACTOR AND ITS STAFF IS RESPONSIBLE FOR ATTENDING TRAINING AND COMPLETING SECURITY BADGE APPLICATIONS, WHICH WILL INCLUDE AIR/GROUND RADIO, TAXIWAY AND AIRPORT FAMILIARIZATION. ESTIMATED TIME FOR COMPLETION IS 2 HOURS.
7. **IDENTIFICATION--VEHICLES:** THE CONTRACTOR, THROUGH THE CSSO, SHALL ESTABLISH AND MAINTAIN A LIST OF CONTRACTOR AND SUBCONTRACTOR VEHICLES AUTHORIZED TO OPERATE ON THE SITE AND SHALL ISSUE A PERMIT TO EACH VEHICLE TO BE MADE AVAILABLE UPON DEMAND BY AIRPORT OPERATIONS THE RPR OR ANY AIRPORT REPRESENTATIVES. A BLOCK OF VEHICLE PERMITS SHALL BE ISSUED BY AIRPORT OPERATIONS TO THE CONTRACTOR AND AT THE COMPLETION OF THE CONTRACT ALL PERMITS WILL BE RETURNED TO THE AIRPORT AND A CHARGE OF \$25 PER PERMIT WILL BE ASSESSED FOR ALL PERMITS NOT RETURNED. CONTRACTOR EMPLOYEE VEHICLES SHALL BE RESTRICTED TO THE CONTRACTOR'S EMPLOYEE PARKING AREA AND ARE NOT ALLOWED ON THE AOA AT ANY TIME.
8. **FINES:** PAYMENT OF ALL FINES ASSESSED TO DULUTH INTERNATIONAL AIRPORT DUE TO VIOLATIONS BY THE CONTRACTOR OF FAA/TSA SECURITY OR SAFETY REQUIREMENTS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DEDUCTED FROM MONIES DUE THE CONTRACTOR.
- A. IF THE RESTRICTED AREA GATE IS FOUND TO BE OPEN OR UNLOCKED AND UNATTENDED, AIRPORT SECURITY POLICE AND/OR TSA MAY ISSUE THE CONTRACTOR A CITATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COURT COSTS IMPOSED FINES. IN ADDITION, A CHARGE OF UP TO \$10,000.00 MAY BE LEVIED BY THE DULUTH AIRPORT AUTHORITY AND/OR TSA FOR EACH VIOLATION SO DOCUMENTED AND UPON THE REQUEST FOR FINAL PAYMENT THE TOTAL OF ANY SUCH CHARGES WILL BE DEDUCTED FROM MONIES DUE THE CONTRACTOR.
- B. IN THE EVENT THE CONTRACTOR DEVIATES FROM THE IDENTIFIED CONSTRUCTION LIMITS AND/OR DESIGNATED HAUL ROUTES ONTO AN ACTIVE RUNWAY OR TAXIWAY THE CONTRACTOR WILL BE FINED \$1,000 PER OCCURRENCE WHICH WILL BE DEDUCTED FROM THE FINAL CONTRACT AMOUNT DUE THE CONTRACTOR.
9. A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION OR BORINGS, THE CONTRACTOR SHALL CONTACT THE FOLLOWING LOCAL CABLE OWNERS AS WELL AS A PRIVATE LOCATOR TO VERIFY ALL UNDERGROUND CABLE LOCATIONS IN THE VICINITY OF THE PROPOSED WORK:
- | CABLE OWNER | CONTACT PERSON | PHONE NUMBER |
|---------------------------------|-----------------------|--------------|
| FEDERAL AVIATION ADMINISTRATION | ANDY GOMEZ | 218-727-2826 |
| Mn AIR NATIONAL GUARD | WORK CONTROL | 218-788-7292 |
| DULUTH AIRPORT AUTHORITY | TOM WERNER | 218-727-6522 |
| OTHERS | GOPHER STATE ONE-CALL | 800-252-1166 |
10. **RESPONSIBILITY FOR TEMPORARY LIGHTING AND MARKING**
- THE CONTRACTOR WILL BE RESPONSIBLE FOR FURNISHING AND MAINTAINING THE NECESSARY BARRICADES AND HAZARD LIGHTING AS REQUIRED BY THE SPECIFICATIONS TO MARK CONSTRUCTION AREAS, HAZARDS, ETC. REFLECTORIZED ORANGE PLASTIC BARRELS WITH ATTACHED FLASHING RED LIGHTS FOR NIGHT USE ARE THE PREFERRED TYPE OF BARRICADE FOR USE ON THE AIRPORT.
11. **CONSTRUCTION ACTIVITY IN THE VICINITY OF NAVIGATIONAL AIDS**

48 HOURS PRIOR TO THE PRE CONSTRUCTION CONFERENCE AND/OR CONSTRUCTION START, THE CONTRACTOR SHALL CONTACT THE LOCAL AIRWAY FACILITIES MANAGER AT (218) 727-2826. HE OR HIS REPRESENTATIVE WILL MEET WITH THE CONTRACTOR TO IDENTIFY FAA FACILITIES AND FAA CABLES.

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AUTHORITY**

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Structural Engineers:
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Landscaping Consultants:
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REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 08-23-11
REVIEWED BY: JEH
DRAWN BY: RDRE
DESIGNED BY: JEH

AEP PROJECT NUMBER
213-1882-091

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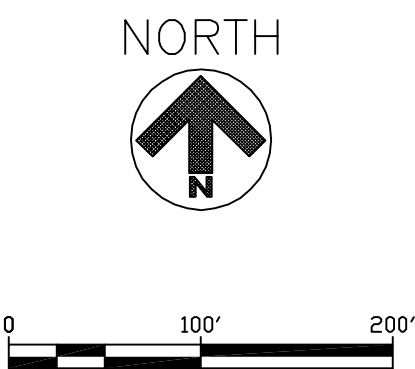
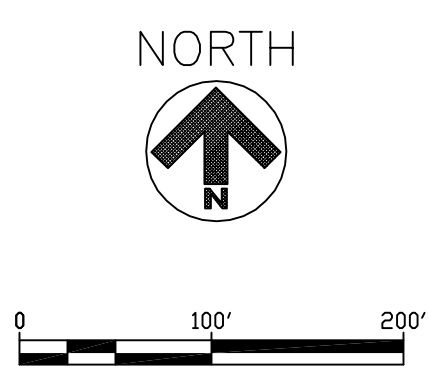
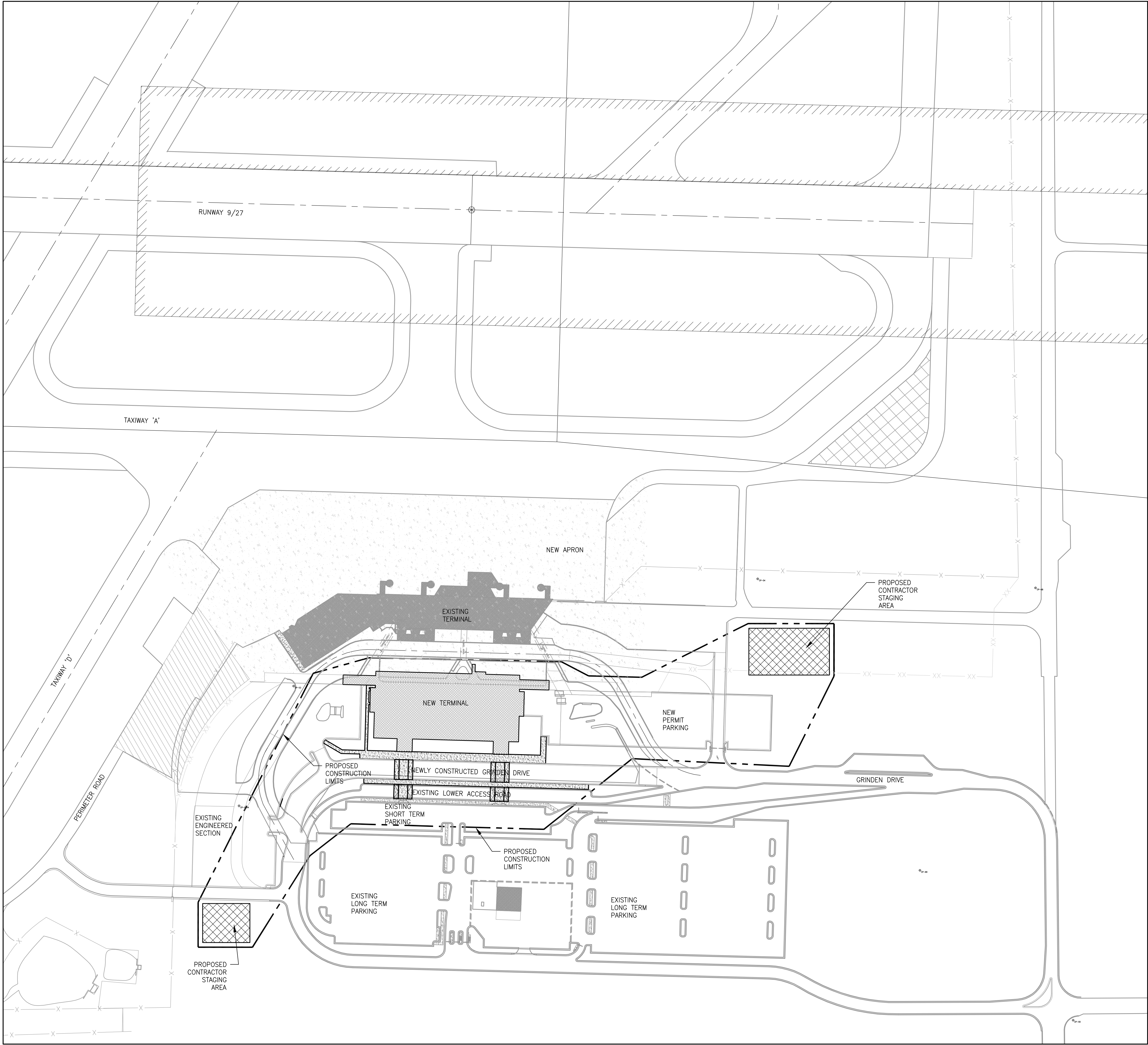
SHEET TITLE

**SAFETY AND
SECURITY NOTES
AND DETAILS**

SHEET NUMBER

C002

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**



LEGEND

- PROPOSED GRADING LIMITS
- PROPOSED CONTRACTOR STAGING AREA
- PROPOSED TERMINAL
- EXISTING TERMINAL & BUILDINGS
- FUTURE APRON (N.I.C.)
- PROPOSED CONCRETE PAVEMENT

CSPP NOTES

- GRINDEN DRIVE WILL BE THE ONLY HAUL ROUTE USED BY THE CONTRACTOR.
- ALL CONSTRUCTION FOR BID PACKAGE 2A WILL TAKE PLACE OUTSIDE OF THE AIRPORT OPERATIONS AREA.
- NORTHINGS AND EASTINGS GIVEN IN PROJECT ARE IN MINNESOTA STATE PLANE NORTH COORDINATES.



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213-1882-091
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SHEET TITLE
**CONSTRUCTION
SAFETY
PHASING
PLAN**

SHEET NUMBER
C003

**BID PACKAGE 2B
ISSUED FOR BID
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REVISIONS

[illegible]

DATE ISSUED: 08-23-11

REVIEWED BY: JEH

DRAWN BY: RDF

DESIGNED BY: JEH

AEP PROJECT NUMBER

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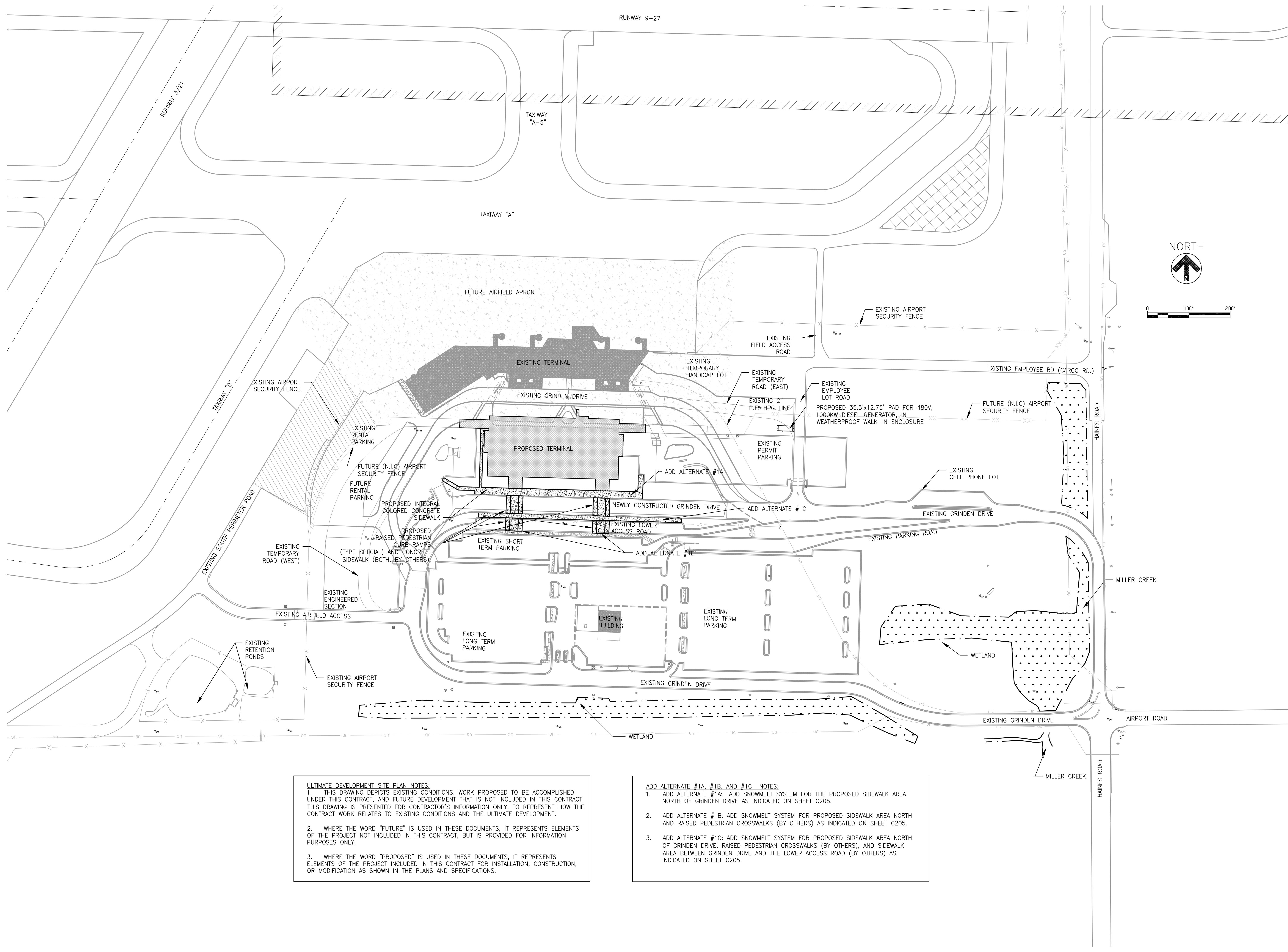
SHEET TITLE

ULTIMATE DEVELOPMENT SITE PLAN

SHEET NUMBER

C004

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**



ULTIMATE DEVELOPMENT SITE PLAN NOTES:

1. THIS DRAWING DEPICTS EXISTING CONDITIONS, WORK PROPOSED TO BE ACCOMPLISHED UNDER THIS CONTRACT, AND FUTURE DEVELOPMENT THAT IS NOT INCLUDED IN THIS CONTRACT. THIS DRAWING IS PRESENTED FOR CONTRACTOR'S INFORMATION ONLY, TO REPRESENT HOW THE CONTRACT WORK RELATES TO EXISTING CONDITIONS AND THE ULTIMATE DEVELOPMENT.

2. WHERE THE WORD "FUTURE" IS USED IN THESE DOCUMENTS, IT REPRESENTS ELEMENTS OF THE PROJECT NOT INCLUDED IN THIS CONTRACT, BUT IS PROVIDED FOR INFORMATION PURPOSES ONLY.

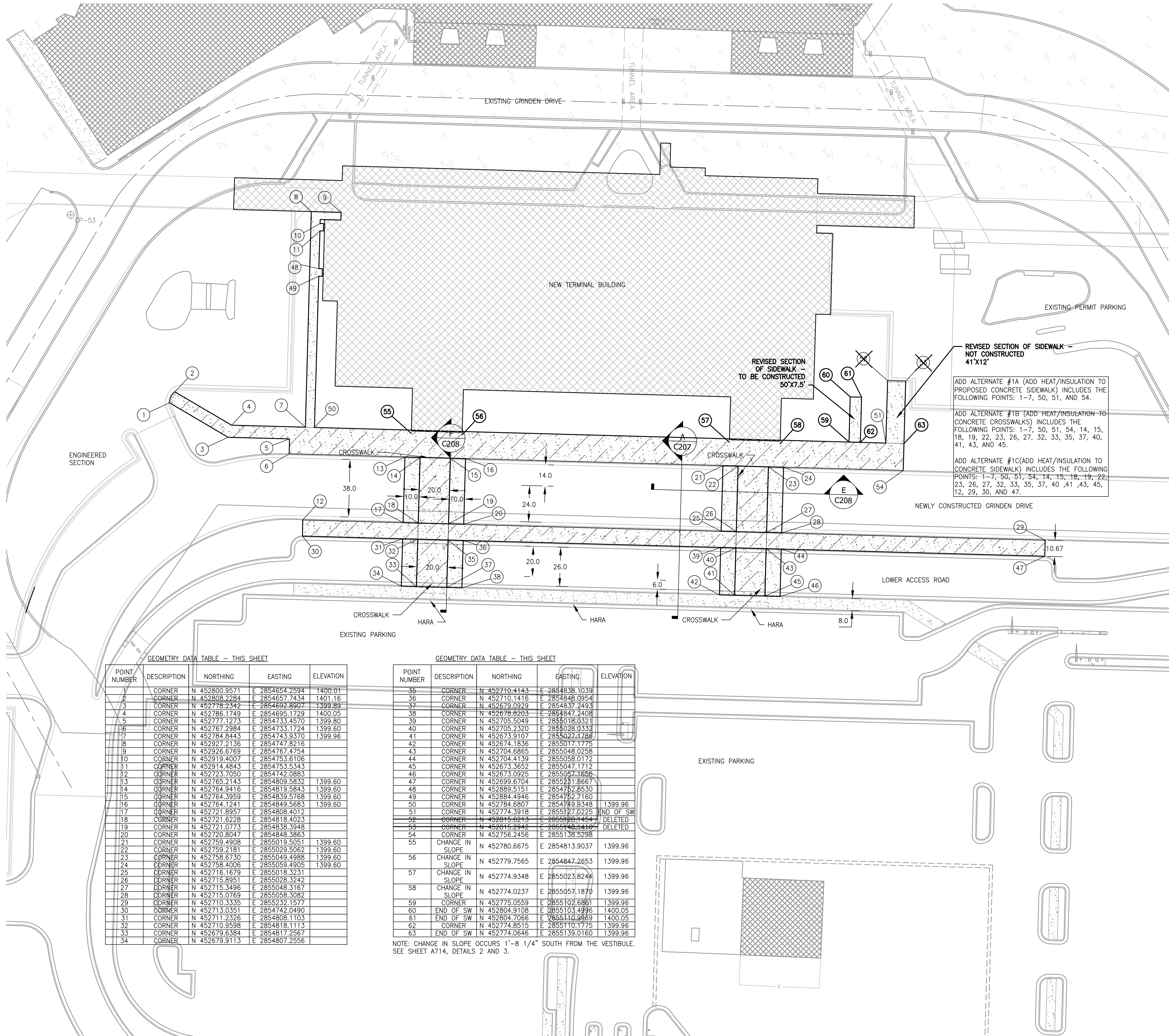
3. WHERE THE WORD "PROPOSED" IS USED IN THESE DOCUMENTS, IT REPRESENTS ELEMENTS OF THE PROJECT INCLUDED IN THIS CONTRACT FOR INSTALLATION, CONSTRUCTION, OR MODIFICATION AS SHOWN IN THE PLANS AND SPECIFICATIONS.

ADD ALTERNATE #1A #1B AND #1C NOTES:

1. ADD ALTERNATE #1A: ADD SNOWMELT SYSTEM FOR THE PROPOSED SIDEWALK AREA NORTH OF GRINDEN DRIVE AS INDICATED ON SHEET C205.

2. ADD ALTERNATE #1B: ADD SNOWMELT SYSTEM FOR PROPOSED SIDEWALK AREA NORTH AND RAISED PEDESTRIAN CROSSWALKS (BY OTHERS) AS INDICATED ON SHEET C205.

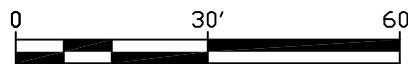
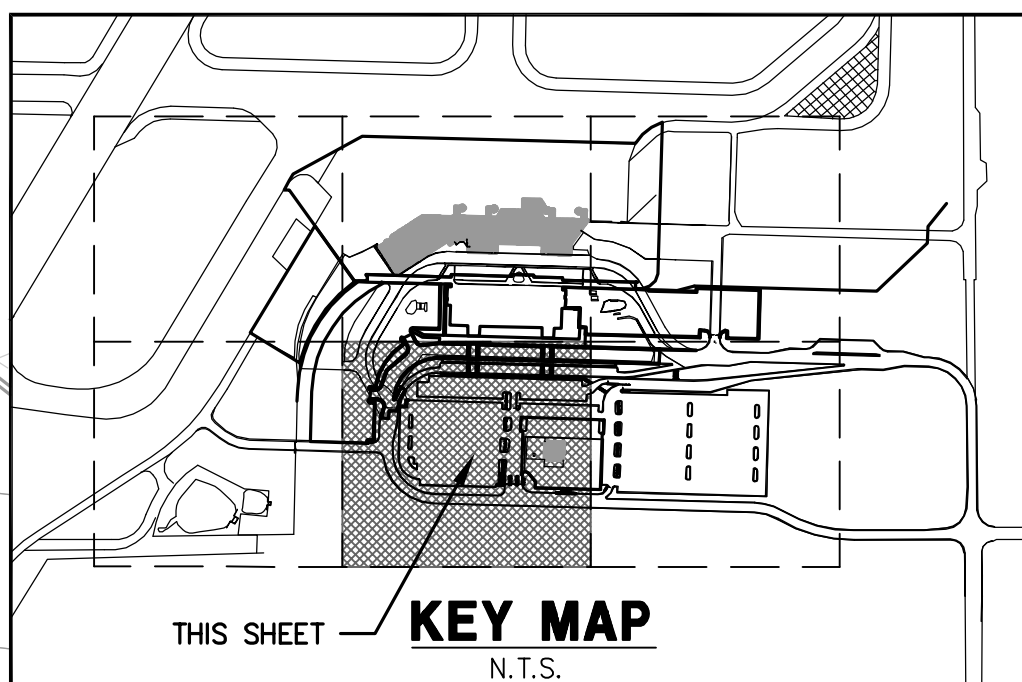
3. ADD ALTERNATE #1C: ADD SNOWMELT SYSTEM FOR PROPOSED SIDEWALK AREA NORTH OF GRINDEN DRIVE, RAISED PEDESTRIAN CROSSWALKS (BY OTHERS), AND SIDEWALK AREA BETWEEN GRINDEN DRIVE AND THE LOWER ACCESS ROAD (BY OTHERS) AS INDICATED ON SHEET C205.



GEOMETRY DATA TABLE - THIS SHEET				
POINT NUMBER	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	CORNER	N 452800.9571	E 2854654.2594	1400.01
2	CORNER	N 452808.2284	E 2854657.7434	1401.16
3	CORNER	N 452778.2342	E 2854692.8907	1399.89
4	CORNER	N 452786.1749	E 2854695.1729	1400.05
5	CORNER	N 452777.1273	E 2854733.4570	1399.80
6	CORNER	N 452767.2984	E 2854733.1724	1399.60
7	CORNER	N 452784.8443	E 2854743.9370	1399.96
8	CORNER	N 452927.2136	E 2854747.8216	
9	CORNER	N 452926.6769	E 2854767.4754	
10	CORNER	N 452919.4007	E 2854753.6106	
11	CORNER	N 452914.4843	E 2854753.5343	
12	CORNER	N 452723.7050	E 2854742.0883	
13	CORNER	N 452765.2143	E 2854809.5832	1399.60
14	CORNER	N 452764.9416	E 2854819.5843	1399.60
15	CORNER	N 452764.3959	E 2854839.5768	1399.60
16	CORNER	N 452764.1241	E 2854849.5683	1399.60
17	CORNER	N 452721.8957	E 2854808.4012	
18	CORNER	N 452721.6228	E 2854818.4023	
19	CORNER	N 452721.0773	E 2854838.3948	
20	CORNER	N 452720.8047	E 2854848.3863	
21	CORNER	N 452759.4908	E 2855019.5051	1399.60
22	CORNER	N 452759.2181	E 2855029.5062	1399.60
23	CORNER	N 452758.6730	E 2855049.4988	1399.60
24	CORNER	N 452758.4006	E 2855059.4905	1399.60
25	CORNER	N 452716.1679	E 2855018.3231	
26	CORNER	N 452715.8951	E 2855028.3242	
27	CORNER	N 452715.3496	E 2855048.3167	
28	CORNER	N 452715.0769	E 2855058.3082	
29	CORNER	N 452710.3335	E 2855232.1577	
30	CORNER	N 452713.0351	E 2854742.0490	
31	CORNER	N 452711.2326	E 2854808.1103	
32	CORNER	N 452710.9598	E 2854818.1113	
33	CORNER	N 452679.6384	E 2854817.2567	
34	CORNER	N 452679.9113	E 2854807.2556	

GEOMETRY DATA TABLE - THIS SHEET				
POINT NUMBER	DESCRIPTION	NORTHING	EASTING	ELEVATION
35	CORNER	N 452770.4143	E 2854838.1039	
36	CORNER	N 452710.1416	E 2854848.0954	
37	CORNER	N 452679.0929	E 2854837.2493	
38	CORNER	N 452678.8203	E 2854847.2408	
39	CORNER	N 452705.5049	E 2855018.0321	
40	CORNER	N 452705.2320	E 2855028.0332	
41	CORNER	N 452673.9107	E 2855027.4786	
42	CORNER	N 452674.1836	E 2855017.1775	
43	CORNER	N 452704.6865	E 2855048.0258	
44	CORNER	N 452704.4139	E 2855058.0172	
45	CORNER	N 452673.3652	E 2855047.1712	
46	CORNER	N 452673.0925	E 2855057.1656	
47	CORNER	N 452699.6704	E 2855231.8667	
48	CORNER	N 452889.5151	E 2854752.8530	
49	CORNER	N 452884.4946	E 2854752.7160	
50	CORNER	N 452784.6807	E 2854749.9348	1399.96
51	CORNER	N 452774.3918	E 2855127.0225	END OF SW
52	CORNER	N 452815.6213	E 2855128.1454	DELETED
53	CORNER	N 452815.2942	E 2855140.1419	DELETED
54	CORNER	N 452756.2456	E 2855138.5298	
55	CHANGE IN SLOPE	N 452780.6675	E 2854813.9037	1399.96
56	CHANGE IN SLOPE	N 452779.7565	E 2854847.2653	1399.96
57	CHANGE IN SLOPE	N 452774.9348	E 2855023.8244	1399.96
58	CHANGE IN SLOPE	N 452774.0237	E 2855057.1870	1399.96
59	CORNER	N 452775.0559	E 2855102.6861	1399.96
60	END OF SW	N 452804.9108	E 2855103.4996	1400.05
61	END OF SW	N 452804.7066	E 2855110.9669	1400.05
62	CORNER	N 452774.8515	E 2855110.1775	1399.96
63	END OF SW	N 452774.0646	E 2855139.0160	1399.96

NOTE: CHANGE IN SLOPE OCCURS 1'-8 1/4" SOUTH FROM THE VESTIBULE. SEE SHEET A714, DETAILS 2 AND 3.



LEGEND

- PROPOSED CONCRETE PAVEMENT
- PROPOSED HEATED CONCRETE PAVEMENT
- PROPOSED TERMINAL
- EXISTING TERMINAL & BUILDINGS
- FUTURE APRON (N.I.C.)

- CONSTRUCTION SURVEY AND STAKEOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- NORTHINGS AND EASTINGS GIVEN IN PROJECT ARE IN MINNESOTA STATE PLANE NORTH COORDINATES.
- SEE TYPICAL PAVEMENT SECTION AND DETAILS SHEETS C207-C209.
- PROVIDE HANDICAP ACCESS RAMPS IN LOCATIONS AS SHOWN.
- CONCRETE SIDEWALK AND CROSSWALK TO BE CONSTRUCTED AS SHOWN ON PLANS AND DETAILS. ADD ALTERNATES #1 & #2 ARE ALTERNATES TO ADD HEATING AND INSULATION UNDER THE CONCRETE PER THE DETAIL ON SHEET C208 AND THE MECHANICAL DRAWINGS.
- ALL SIDEWALK CONCRETE IS TO BE INTEGRAL COLORED CONCRETE. SEE TYPICAL SECTION 'D' SHEET C207 FOR LIMITS OF INTEGRAL COLORED CONCRETE ON RAISED PEDESTRIAN CROSSWALK.

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**DULUTH INTERNATIONAL AIRPORT
DULUTH, MN**

NEW PASSENGER TERMINAL

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Baggage Handling Systems Consultants:
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TEL: (203) 792-3000 / FAX: (203) 792-4900

Landscaping Consultants:
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2432 East First Street, Duluth MN 55812
TEL: (218) 591-5079

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 08-23-11
REVIEWED BY: JEH
DRAWN BY: RDRE
DESIGNED BY: JEH

AEP PROJECT NUMBER
213-1882-091

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SHEET TITLE

**CIVIL
GEOMETRY
PLAN**

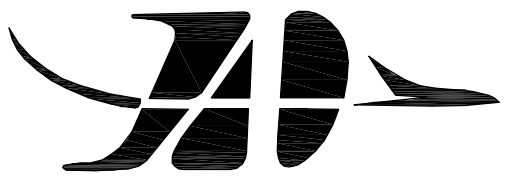
SHEET NUMBER

C205

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REVISIONS

[illegible]

DATE ISSUED: 08-23-11

REVIEWED BY: JEH

DRAWN BY: **RDR**

DESIGNED BY: JEH

AEP PROJECT NUMBER

213-1882-091

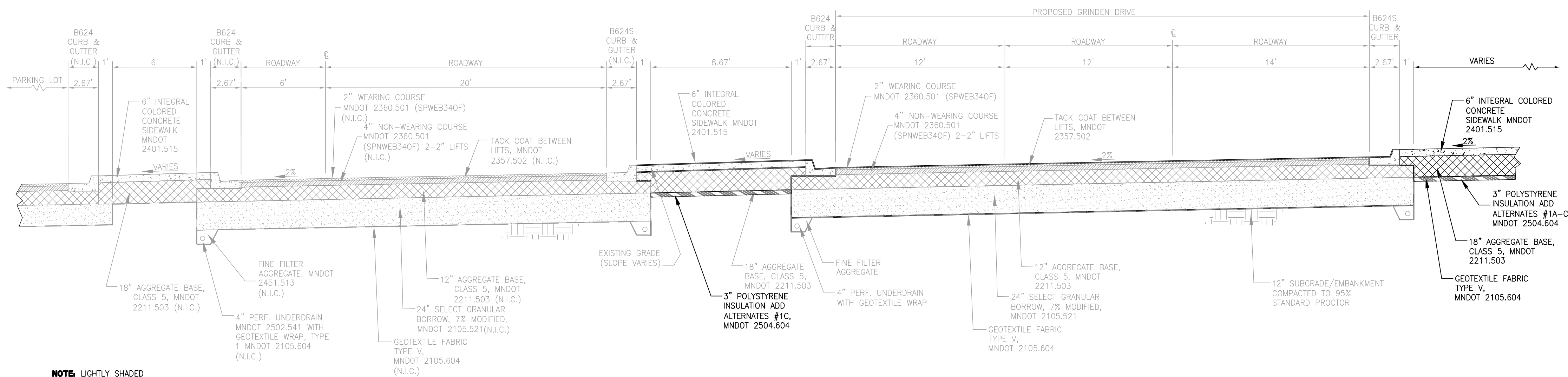
SHEET TITLE

**SIDEWALK/CROSSWALK
TYPICAL SECTION
AND JOINT
LAYOUT**

SHEET NUMBER

C207

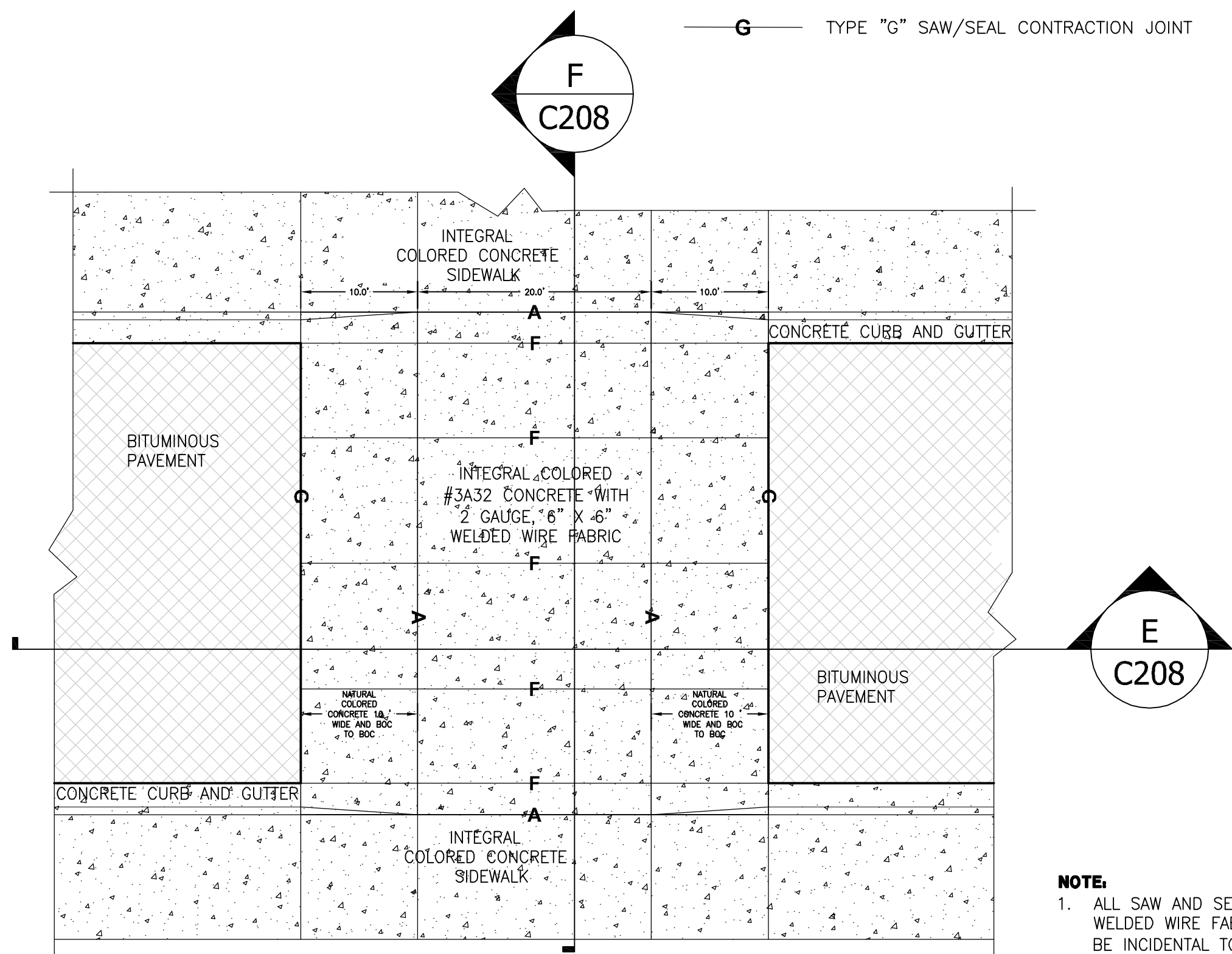
**BID PACKAGE 2B
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PROPOSED TYPICAL SECTION 'A'
PROPOSED SIDEWALK ADJACENT
TO NORTH SIDE OF GRINDEN DRIVE
N.T.S.

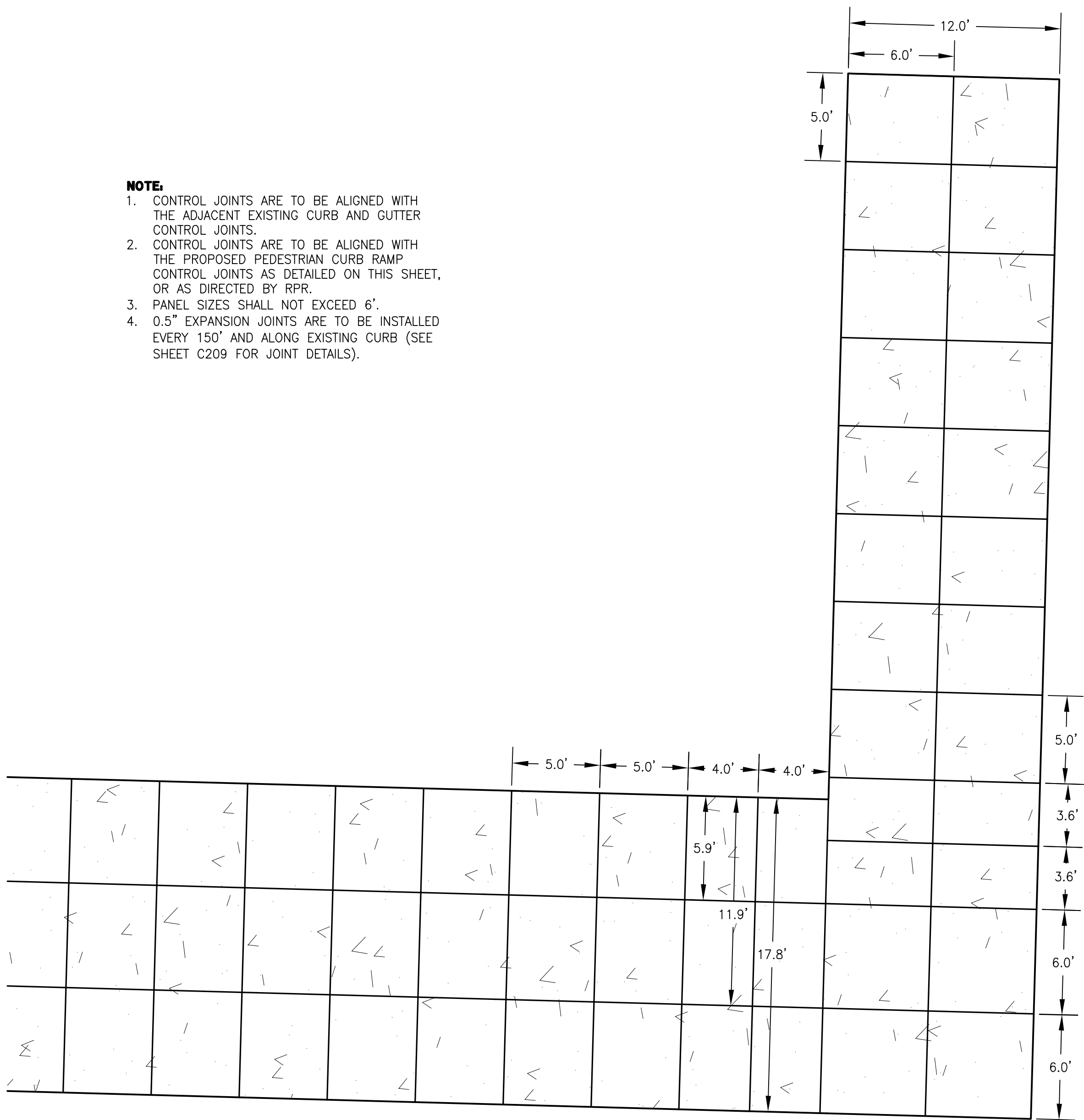
LEGEND

- | | |
|----------|-------------------------------------|
| A | TYPE "A" DOWELED EXPANSION JOINT |
| D | TYPE "D" DOWELED CONSTRUCTION |
| E | SPECIAL THICKENED EDGE |
| F | TYPE "F" DOWELED CONTRACTION |
| G | TYPE "G" SAW/SEAL CONTRACTION JOINT |



PROPOSED TYPICAL SECTION 'D' PEDESTRIAN CURB RAMP
(TYPE SPECIAL) PLAN VIEW

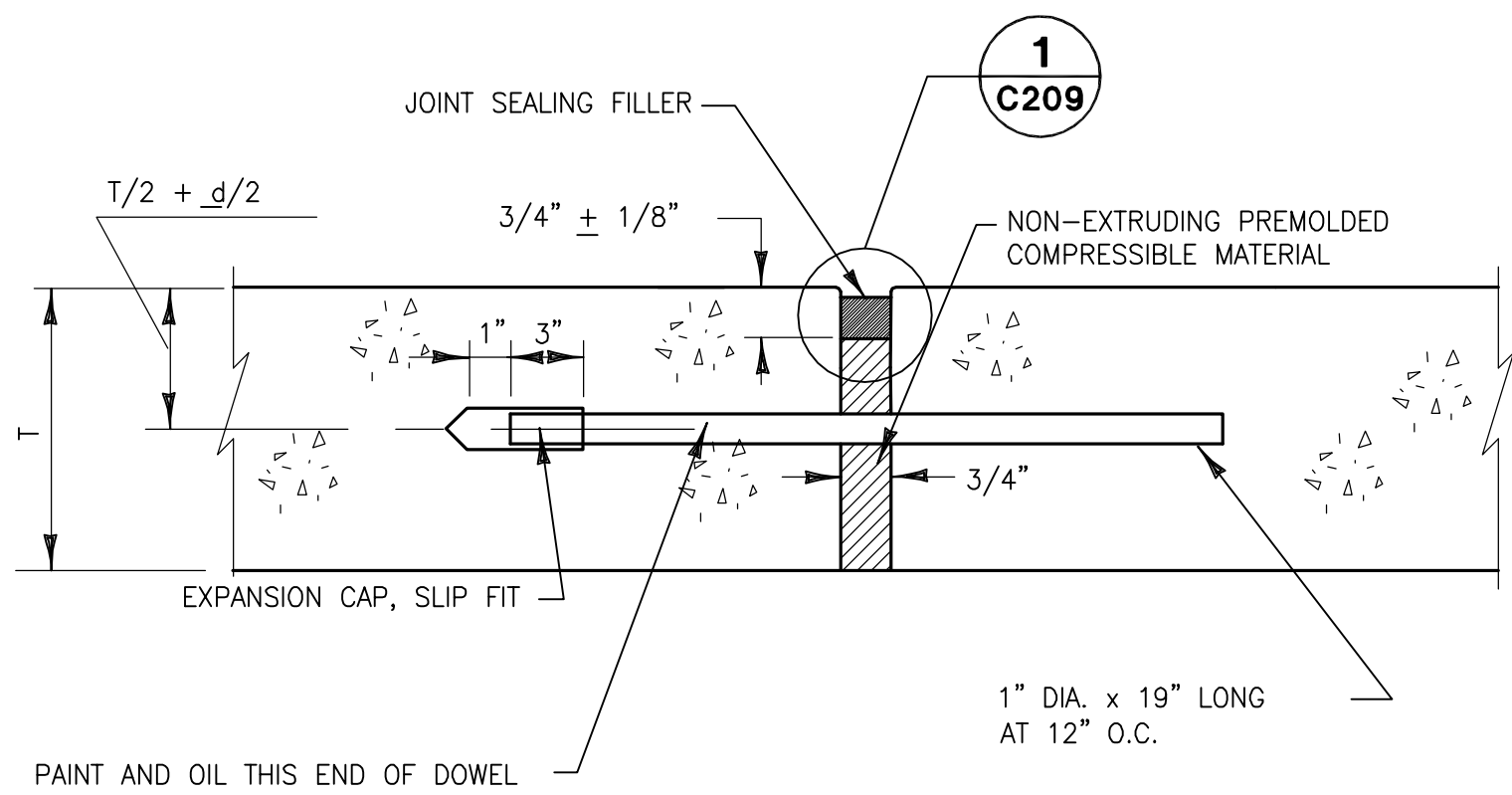
N.T.S.



PROPOSED JOINT LAYOUT FOR SIDEWALK

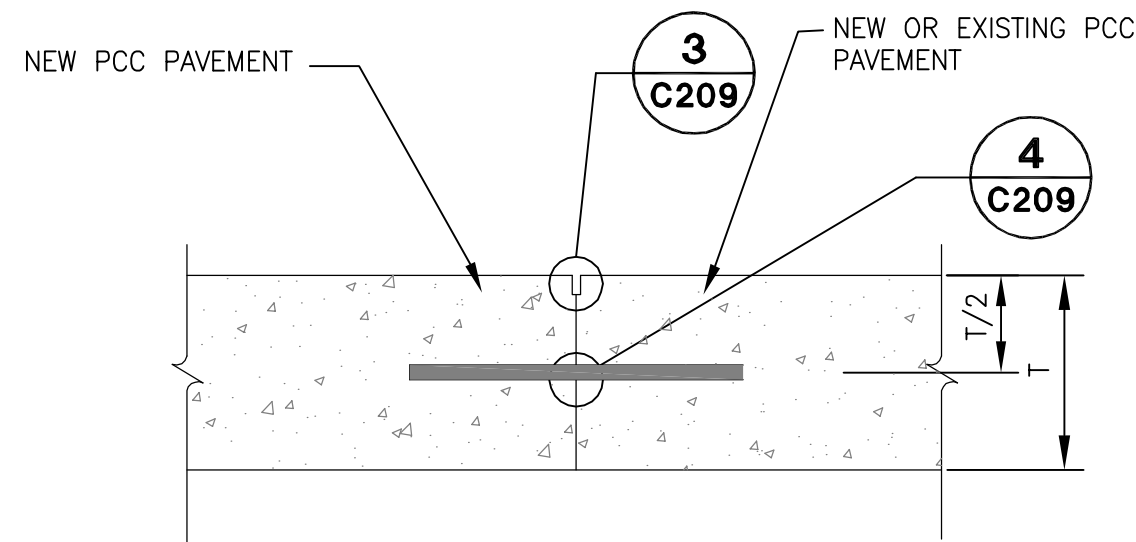
N.T.S.

Drawing: T:\P\2131882.099 DLH Terminal Design Phase 2\TERMINAL BID PKG 2B\CAD\C\DLH-C207.dwg Plotted on: 8/24/2011 4:22 PM Plotted by: Erdmann, Ryan

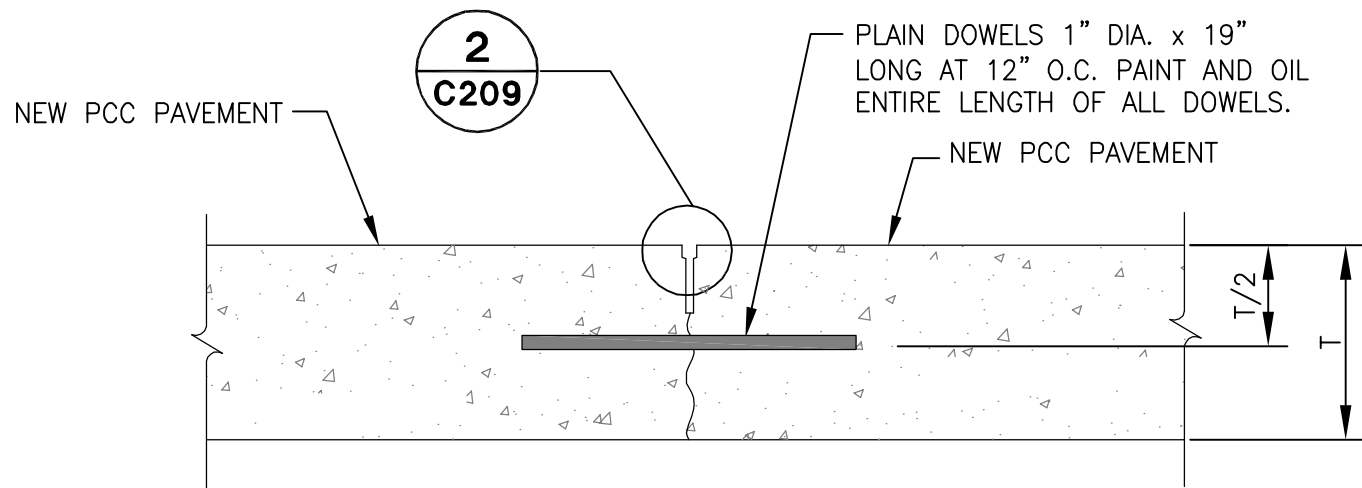


A TYPE A - DOWELED JOINT
N.T.S.

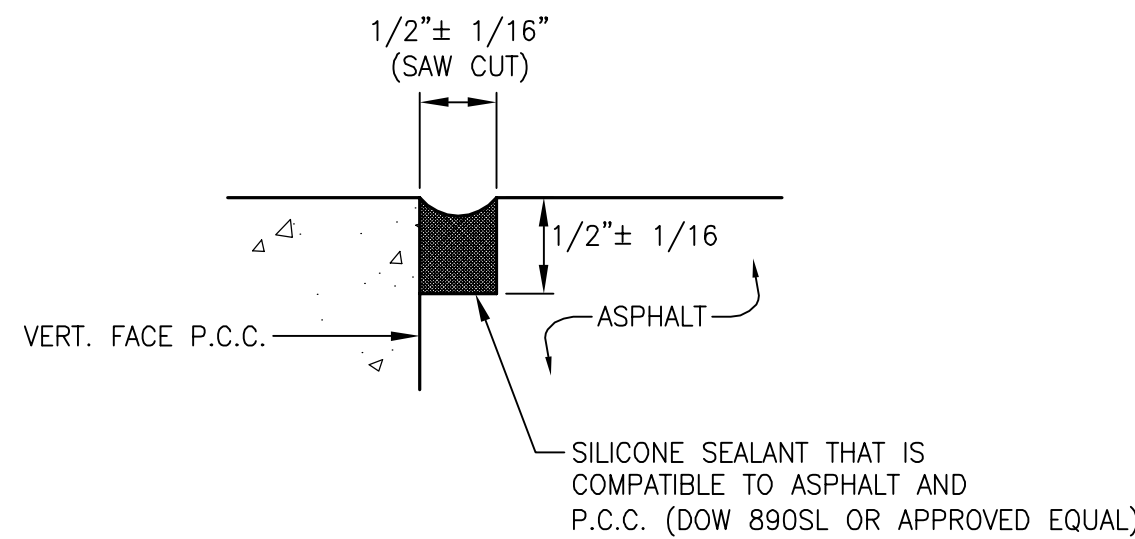
NOTE:
ALL JOINTS MUST BE ADEQUATELY CLEANED AFTER SAWCUTTING,
IMMEDIATELY PRIOR TO THE INSTALLATION OF JOINT SEALANT.



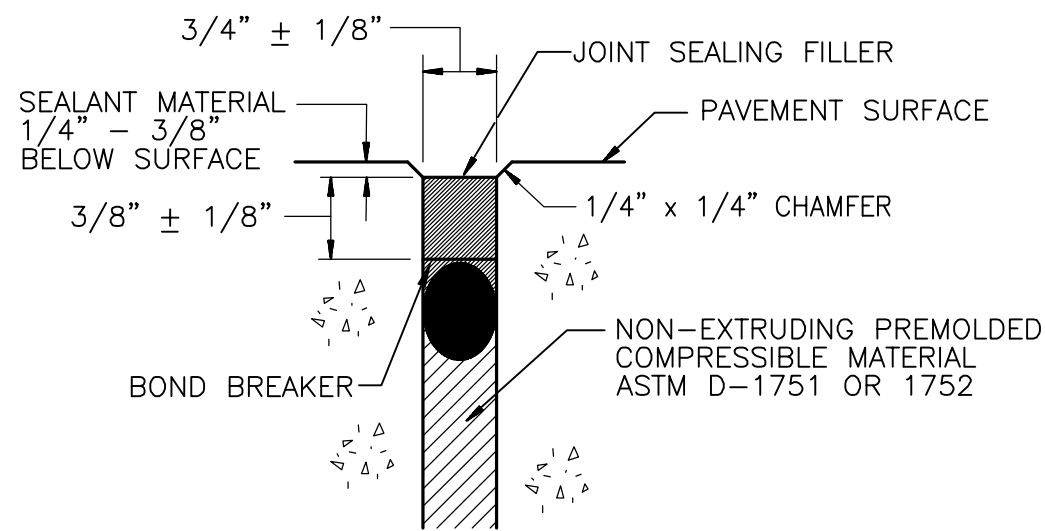
D TYPE D CONSTRUCTION JOINT DETAIL
N.T.S.



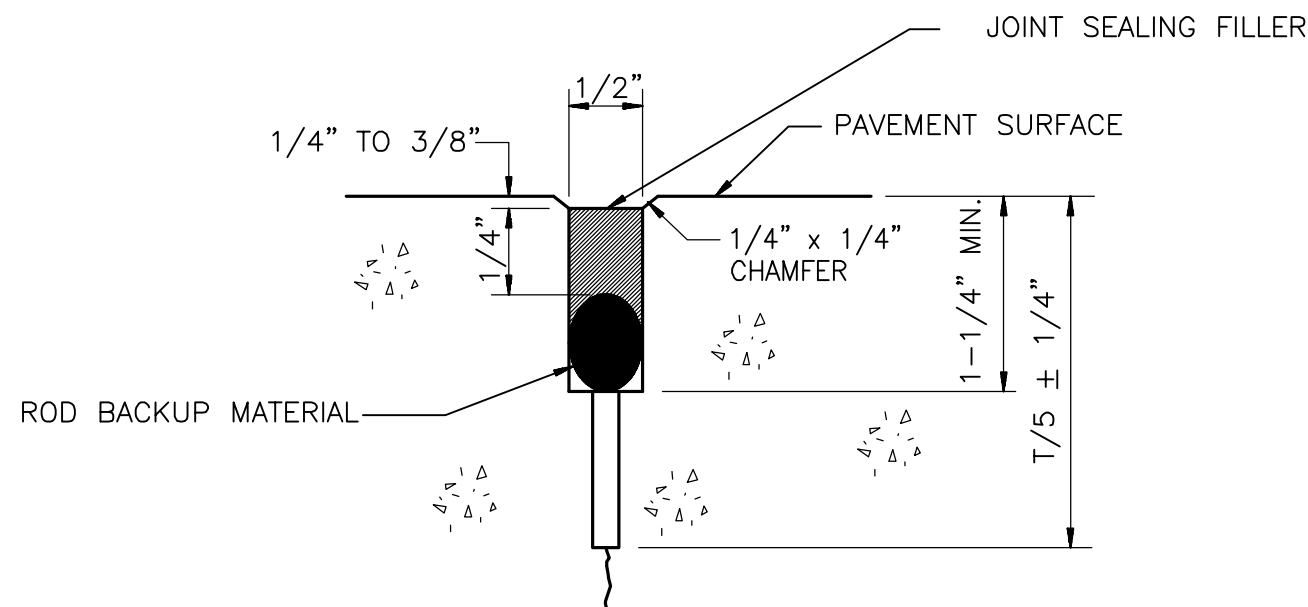
F TYPE F CONTRACTION JOINT DETAIL
N.T.S.



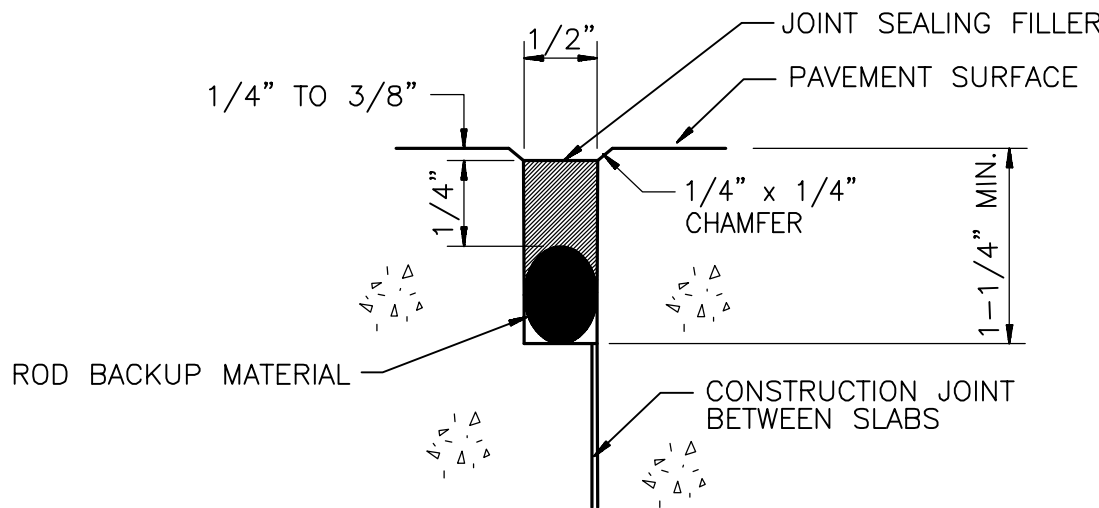
G TYPICAL SAW/SEAL CONTRACTION JOINT DETAIL
N.T.S.
NOTE:
THE CONTRACTOR SHALL FORM THE P.C.C. TO PROVIDE A VERTICAL
FACE AFTER PLACEMENT OF ASPHALT, THE CONTRACTOR SHALL SAW
AND SEAL, AS SHOWN.



DETAIL 1 - EXPANSION JOINT
N.T.S.

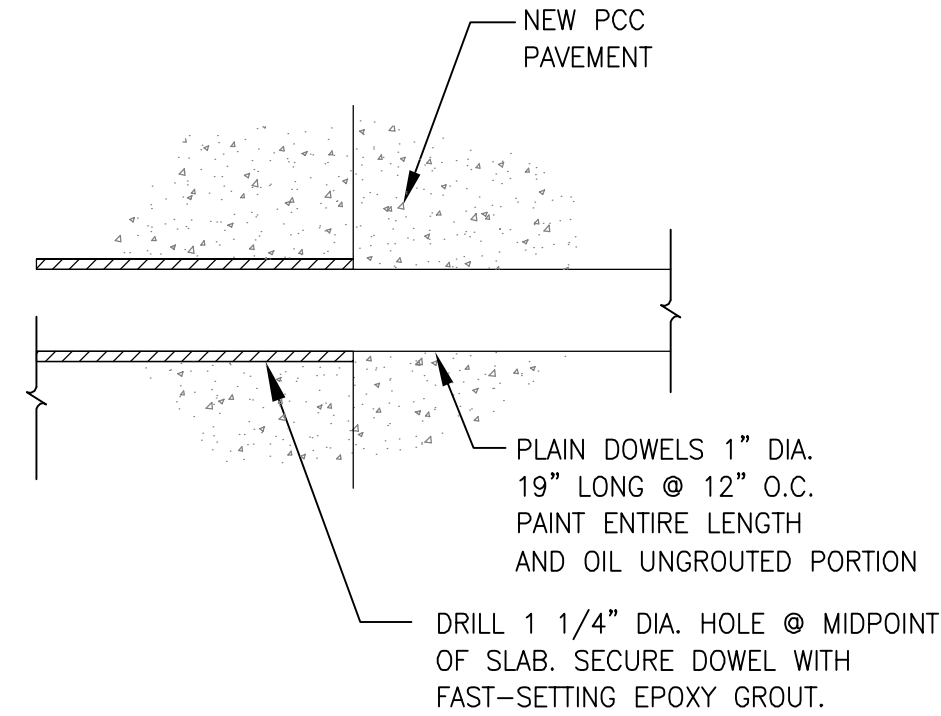


DETAIL 2 - CONTRACTION JOINT
N.T.S.

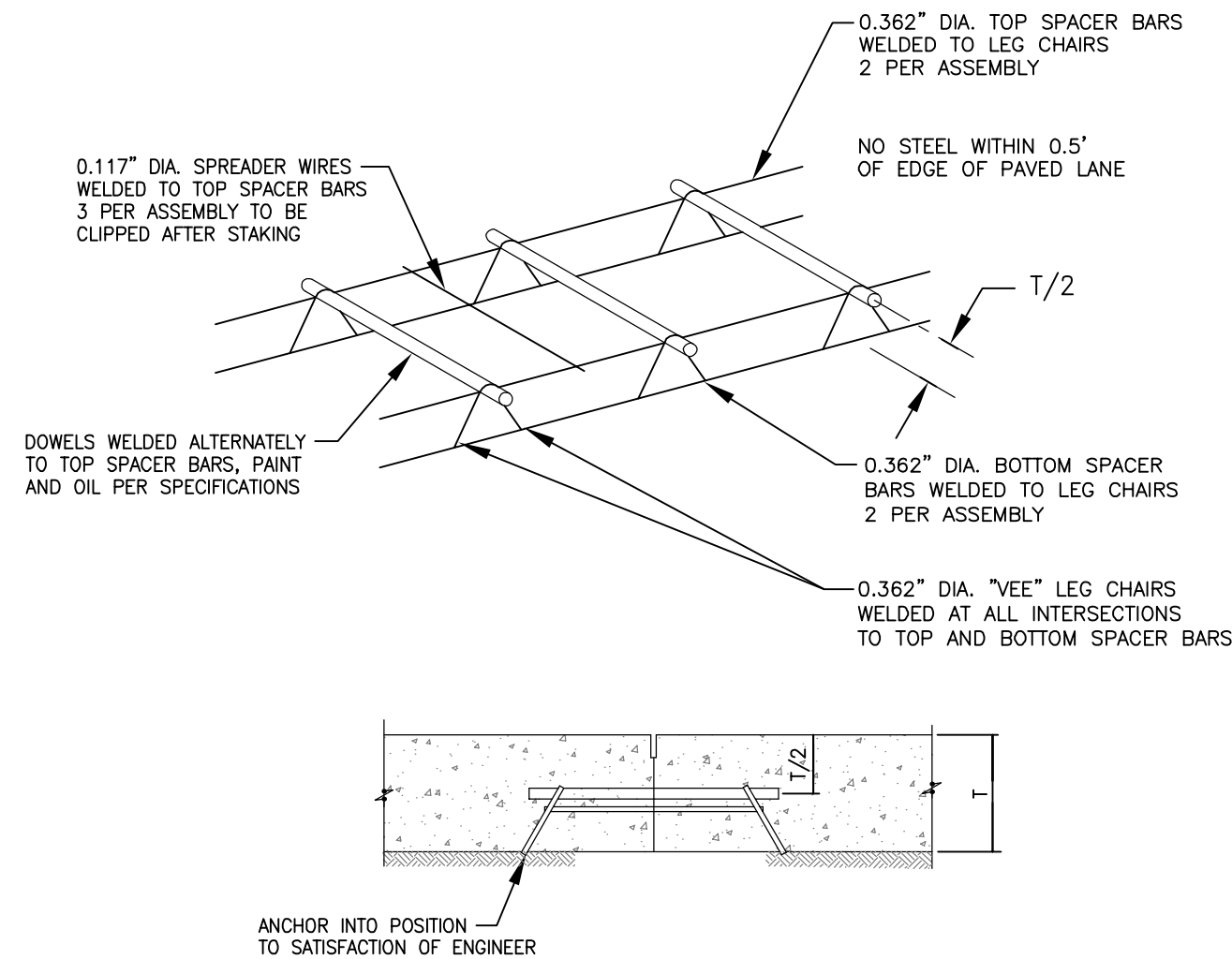


DETAIL 3 - CONSTRUCTION JOINT
N.T.S.

NOTE:
ALL SEALANT SHALL BE DOW 890SL OR APPROVED EQUAL.



DETAIL 4 - DOWEL DETAIL
N.T.S.



TYPICAL DOWEL AND TIE-BAR BASKET
N.T.S.

NOTES:
1. BASKET MUST BE FIRMLY ATTACHED TO EXISTING OR NEW BASE PRIOR TO PLACING PCC.
2. ALL WIRE SIZES SHOWN ARE MINIMUM SIZE.
3. DOWELS SHALL BE HELD FIRMLY IN THE ABOVE WELDED ASSEMBLY.
4. THE TOLERANCE FOR DOWEL ALIGNMENT IN EITHER HORIZONTAL OR VERTICAL PLANE IS 1/4" FT.
5. DOWEL BARS SHALL BE EVENLY SPACED ACROSS EACH PANEL WITH NO BAR BEING LESS THAN ONE FOOT FROM THE PANEL EDGE.

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REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 08-23-11

REVIEWED BY: JEH

DRAWN BY: RDRE

DESIGNED BY: JEH

AEP PROJECT NUMBER

213-1882-091

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SHEET TITLE

**CONCRETE
PAVEMENT
JOINT DETAILS**

SHEET NUMBER

C209

**BID PACKAGE 2B
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TYPICAL NOTES:
These notes specify the requirements for the design represented in these documents. The construction and materials shall comply with all the pertinent codes and references, plans, and details, including (but not limited to) those shown in architectural, civil, mechanical and electrical drawings.

The contractor shall verify all dimensions and existing conditions in the field that affect construction prior to commencing work on the affected element or shop drawing submittals. Resolve any discrepancies with the architect prior to construction.

The contract structural drawings and specifications represent the completed structure. The contractor is responsible for bracing and shoring (without overstressing) all structural elements as necessary at any stage of construction until completion of the project. The Structural Engineer is not responsible for the contractor's means, methods, sequences or procedures of construction. Contractor shall recognize and consider effects of thermal movements of structural elements during construction period.

The contractor is solely responsible for site safety including all temporary precautionary measures and safety programs. Site observation visits by the Structural Engineer do not include review of the contractor's safety precautions.

Refer to architectural, mechanical and electrical drawings for locations, elevations, dimensions, and details of sleeves, inserts, openings, recesses, curbs, housekeeping pads, etc. that are not shown on the structural drawings and do not damage structural members.

Information shown in the structural drawings regarding existing conditions represents the current and general field conditions related to the new work, to the best of our knowledge. Report all discrepancies to the Architect for resolution prior to performing related new work.

Requests for information shall be submitted in writing and shall reference the part of the construction documents that is in question.

SPECIAL INSPECTIONS:
Contractor shall read and understand their duties in the specification and under the building code for special inspections and coordinate as necessary the owner's responsibilities.

The special inspectors shall be provided and shall only use approved shop drawings.

Special inspection reports are to be submitted immediately to the SER, Architect, and Contractor daily when inspections are performed.

The general contractor shall provide timely notice to the special inspector and sufficient time for the inspector to perform their inspection.

SHOP DRAWINGS:
All engineering design provided by others and submitted for review shall bear the certification stamp and signature of a qualified professional engineer who is licensed in the state of Minnesota.

Submit shop drawing schedule with construction schedule that includes consideration for review period. See specification for additional information.

DEFERRED SUBMITTALS:
The following items shall be issued as deferred submittals per IBC: Steel Connections

Light gage metal framing

All items issued as deferred submittals shall be issued a minimum of 30 days prior to installation and shall not be installed until their design and submittal documents have been reviewed for general conformance to the drawings by the general contractor, the engineer of record and the building official. A copy of the deferred submittal shall be forwarded to the city after the engineer of record has reviewed the documents and prior to erection of the deferred submittal items.

DESIGN CODES AND STANDARDS:
Minnesota State Building Code, MSBC 2007

2006 International Building Code, as amended and adopted by the MSBC 2007

ACI 318-05 Building Code Requirements for Reinforced Concrete

ACI 530-05 Building Code Requirements for Masonry Structures, Allowable Stress Design

ACI 530.1-05 Masonry Structures

AISC 360-05 Specification for Structural Steel Buildings

AISI NAS-01 North American Specification for the design of Cold-Formed Steel Structural Members including 2004 supplement.

ASCE 7-05 Minimum design loads for buildings and other structures including supplement NO. 1 and excluding Chapter 14 and Appendix 11A.

ASCE 3-01 Structural Design of Composite Slabs

MATERIAL PROPERTIES:
Reinforcing Steel (Fy):
Typical 60,000 psi
Weldable 60,000 psi
ASTM A615 Grade 60
ASTM A706 Grade 60

Cast-in-Place Concrete (f'c) at 28 days, UNO:

Controlled Low Strength Material (CLSM)	1,200 psi (at 5 days)	Maximum
Footings	500 psi (at 5 days)	Minimum
Piers and Walls	4,000 psi	
Columns	4,000 psi	
Concrete placed over Metal Floor Deck	4,000 psi	
Slabs on Grade	4,000 psi	
Exterior Concrete	4,000 psi	
Masonry Corefill Concrete	3,000 psi	
All Concrete not otherwise noted	4,000 psi	

Concrete Masonry- Prism (f'm):
Typical Units: 2,000 psi

Structural Steel (Fy): Wide Flanges Angles, Channels Grade B Rectangular HSS Grade B Round HSS Grade B Steel Pipe Plates, Bars	50,000 psi 36,000 psi 46,000 psi 42,000 psi 35,000 psi 50,000 psi	ASTM A992 ASTM A36 ASTM A500 ASTM A500 ASTM A53 ASTM A572 or A36 as indicated
--	--	--

Structural Fasteners: Typical High-Strength Bolts High-Strength Bolts as noted on plan Grade 36 Anchor Rods, UNO Threaded Rods Direct-Tension Indicator Washers as noted on plan	92,000 psi 150,000 psi 36,000 psi 36,000 psi 36,000 psi	ASTM A325 ASTM A490 ASTM F1554 ASTM A36 ASTM F959
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Cold-Formed Light Gauge Metal Framing (Fy): Studs, Joists, Braces-16 ga. and heavier Studs, Joists, Braces-18 ga. and lighter Track, Channels and Accessories	50,000 psi 33,000 psi 33,000 psi	ASTM A653 ASTM A653 ASTM A653
--	--	-------------------------------------

DESIGN LOADS: LATERAL LOADS: Primary Frame Wind Data: Basic Wind Speed: Wind Importance Factor: Exposure: 90 mph 1.15 C

Primary Seismic Data: No design required

Component Loads:
Exterior Component/Cladding: Supplier to develop based on MSBC 2007 and to indicate on shop drawings.

GRAVITY LOADS: Roof Snow Load: Ground Snow Load, Pg: Flat-Roof Snow Load, Pf: Snow Exposure Factor, Ce: Snow Load Importance Factor, I: Unbalanced/Drift Snow Load:	60 psf 46 psf 0.70 1.1 As required by ASCE 7
--	--

Floor Loads: Live Load: Hanging loads at underside of 2nd floor:	100 psf (not reducible) 40 psf superimposed
Stairs, Corridors and Lobbies: Stair Tread Concentrated Load:	100 psf (not reducible) 300 lbs
Mechanical Rooms:	150 psf (not reducible)
Light Storage:	125 psf (not reducible)
Exterior Site Surcharge Loads: Fire Trucks: Sidewalk: North terminal retaining wall and north tug tunnel retaining wall:	250 psf 250 psf HS20-44 axle load as defined by IBC 2006 table 1607.6 at a distance of 5 feet from the north wall edge.

Provisions For Future Expansion:
Design for additional 30' bay (3 story) between grids "E" and "G", east of grid 12 and west of grid 1.
Design for one story expansion of 3rd floor office space north of grid "G".

FOUNDATIONS:
Refer to Geotechnical report number AET #07-04216.2 by American Engineering Testing, Inc., dated October 14, 2009 and the subsequent addendum (AET project #07-04216.3) dated January 29, 2010.

The contractor shall verify the location of all existing and new underground utilities and tanks prior to beginning excavation and contact Gopher State One Call.

The minimum dimension from exterior grade to bottom of footing and foundation shall be 72" in unheated areas.

For underground utilities adjacent to foundations and through foundations reference drawings for detail showing step footings below utilities as required to avoid undermining of structure by utilities.

See geotechnical report for water table elevations. Contractor to make adequate provisions for dewatering as required.

CONVENTIONAL FOOTINGS:
Footings are designed for a maximum allowable soil bearing pressure of 8000 pounds per square foot on undisturbed native soil or lean mix concrete/controlled low strength material fill. Soil bearing pressure is to be verified in the field during construction by a qualified Geotechnical Engineer.

All topsoil, fill, organic swamp deposits, and/or other unsuitable bearing material shall be removed below the footings and/or within the building area to the depths indicated in the geotechnical engineering report and extent of removal shall be field verified by the Geotechnical Engineer.

All excavations shall be observed by a qualified geotechnical engineer to verify removal of unsuitable material and confirm the proper preparation of bearing conditions.

For footings that do not bear on natural undisturbed soil, extend engineered fill laterally beyond bottom edge of footing for a distance equal to the depth of engineered fill. Reference drawings for details.

Foundation and retaining walls shall be back filled with free draining fill approved by the Geotechnical Engineer. Provide drain tile required by the contract documents and verify with architect and civil engineer.

Backfill equally on both sides of foundation walls to prevent overturning or lateral wall movement, or temporarily brace as necessary until permanent bracing elements are complete and cured to design strength.

All temporary bracing, cribbing, shoring or underpinning not fully designed or detailed on these drawings shall be designed by a licensed specialty engineer engaged directly by the contractor.

For stepping of wall footings reference drawings for detail.

REINFORCED CONCRETE:
The detailing, fabrication and erection of all reinforcing shall be done in accordance with the latest edition of ACI-315, "Manual of Standard Practice for Detailing Reinforced Concrete Structures and ACI-318, "Building Code Requirements for Structural Concrete."

All reinforcing bars are deformed and continuous, unless noted otherwise. Refer to drawings for reinforcing lap length schedule.

Provide suitable wire spacers, chairs, etc. for support of reinforcing steel in proper position while placing concrete. All bars shall be tied to prevent displacement while placing concrete. All chairs and slab bolsters shall be plastic or steel with plastic tips. When reinforcing steel is epoxy coated or p/t tendons are fully encapsulated, all chairs and slab bolsters shall be epoxy coated or plastic and all support bars shall be epoxy coated. Chairs are to be stable and resist tipping. Acceptable products are GT1 or approved equal.

The fabricator shall submit a complete list of accessories and placing details with the shop drawings.

No horizontal construction joints shall be placed in beams, joists, or slabs, unless shown on drawings.

Locate vertical construction joints in beams and slabs at central one third of span. Refer to drawings for details. Submit proposed construction joint locations to the Structural Engineer of Record for review prior to placement of concrete. Where new concrete is placed against existing concrete, the existing concrete shall be roughened to a minimum 1/4" amplitude.

Refer to drawings and ACI 318 Chapter 6 for placement guidelines of embedded pipes, sleeves, and conduits. Conduits are not permitted in slabs 3 inches or less in thickness. The maximum size of conduits within any slab shall be 1 1/4" outside diameter and shall be spaced no closer to each other or any reinforcing steel than 4" unless prior approval is obtained from the structural engineer. Additional reinforcing steel and chairs may be required to support embedded conduit. All conduit shall be placed in the middle 1/3 of the slab thickness above the metal deck, typical. Conduit may not be tied to parallel reinforcing steel. Conduit may not be paced in deck flutes. Conduit may not cross within slabs 5" or less in thickness. Conduit placement drawings may be required in areas of high conduit concentricity.

Provide a 3/4 inch chamfer for all exposed concrete corners. See Architectural drawings for details and additional requirements.

The general contractor shall notify the Special Inspector a sufficient period in advance of placing concrete to allow required inspections and testing to occur in a timely fashion.

Formwork and all shoring for flatwork shall be left in place until the concrete reaches at least 75 percent of the 28-day compressive strength. Design of shoring and reshoring is the responsibility of the contractor and shall conform to ACI 347R-88.

Aluminum conduit, aluminum sleeves and aluminum embeds are not permitted in concrete.

Exterior concrete to have 6% +/- 1% entrained air.

Calcium chloride is not permitted as a concrete additive.

Concrete Cover on Reinforcing:

Topping Slab: 3/4" clear top. See drawings for cover at composite slabs
Slab on Grade: 3" bottom

Footings: 3" clear bottom and sides
2" clear top
Walls: #5 and smaller 1 1/2" clear earth or weather face
#6 and greater 2" clear earth or weather face
3/4" interior face
Columns and Beams: 1 1/2" clear to ties or stirrups

CONCRETE SLABS ON GRADE:

Slabs on grade shall be place in lane fashion.

The control or construction joints shall be placed as shown on the drawings. The joints shall align with the column grids and be spaced as noted below:

Exterior slabs	24 times slab thickness, maximum;
Interior slabs	36 times slab thickness, maximum;
Interior slabs	48 times slab thickness, maximum, with carpeting

The panels formed by control or construction joints shall not be "L" shaped and a rectangular panel's aspect ratio shall not exceed 1.5.

Refer to the drawings for the typical slab on grade construction and saw cut control joint detail. Control and construction joints must be continuous and not offset.

Refer to drawings for detail of isolation diamonds or circles at columns.

Refer to drawings for reinforcing at re-entrant corners. Bend bars as necessary at obstructions.

Refer to the specification for the existence, type, and thickness of interior ground vapor retarder. Locate a vapor retarder directly beneath the slab on grade on top of a 6 inch compactable granular base. Refer to the specification for requirements for the compactable granular base.

Mechanically vibrate concrete around trench drains, floor ducts, construction joint dowels, loading docks, architectural features and other embedded items.

Refer to the specification for slab on grade pre-placement meeting.

Refer to the specification for acceptable methods of curing the concrete.

Refer to flooring manufacturer's specification for levelness, flatness and curing of concrete slabs on grade to receive special architectural floor finishes.

REINFORCED MASONRY:
All masonry units are placed in running bond fashion. Corners shall have a standard bond by overlapping units.

Special shapes shall be provided for jambs, columns, pilasters, control joints, corners, and lintels.

All masonry walls shall have horizontal joint reinforcing spaced at 16" o.c. Horizontal joint reinforcing shall be truss style and fabricated with galvanized nine-gauge wire and shall include corner and intersecting wall pieces. Provide minimum 6" laps at all splices.

Vertical reinforcing shall be held in place by rebar positioners, crossties, chairs, or tying to every other layer of horizontal reinforcing steel. Refer to the detail in the drawings for vertical reinforcing bar location in a core.

Provide concrete cover of minimum 1/2" to face shell.

Refer to detail in the drawings for reinforcing bar lap lengths.

Extend vertical reinforcing from footings to 2" clear top of wall or to beam bearing. Extend vertical reinforcing into the next level of construction and lap in accordance with the lap schedule.

When typical vertical wall reinforcing is interrupted by long wall openings, provide typical vertical wall reinforcing above and below opening, and extend into horizontal bond beams. Refer to the schedule on the drawings, for masonry wall opening lintels. Refer to the detail in the drawings for masonry openings minimum jamb reinforcing.

Provide vertical reinforcing at the ends of walls and at wall intersections to match specified reinforcing. Run reinforcing full height of walls.

All masonry units shall be placed with full face shell mortar coverage on horizontal and vertical face shells. Webs shall also have full mortar coverage around all grouted cells.

Fill block core at vertical reinforcing (8" minimum length along wall) with concrete grout. Filling cores with mortar is not allowed. Vibrate in place. Rodding and puddling are not allowed.

Maximum lift height is four feet. For concrete core fill pour height up to maximum 8'-0", provide cleanouts if pour height exceeds 5'-0".

Masonry cement mortar is not allowed.

Calcium chloride or admixtures containing chloride shall not be used in mortar or grout.

For reinforced masonry bond beams, provide bent corner bars at corners and intersections that match reinforcing. Step bond beams as necessary to match roof slopes. Lap reinforcing bars per schedule.

For construction of masonry control joints refer to detail in drawings.

Unless noted otherwise on the drawings place control joints in masonry walls such that no straight run of wall exceeds 24'-0" and within 4'-0" of corners. Do not place control joints within 48 inches of a masonry opening jamb or a steel bearing plate.

Place bond beam reinforcing continuously through control joints. Do not splice bond beam reinforcing within 6'-0" of a control joint.

Provide bond beam with reinforcing at all floor lines, roof lines, and top of walls. Refer to details in the drawings.

Grout below steel bearing plate and refer to the drawings for additional information.

Refer to drawings for reinforcing schedule, top of wall bracing, thickened bearing slab and lintel schedule for non-bearing masonry walls. Refer to Architectural drawings for location and extent.

MASONRY BEAMS (HIGH-LOW BOND BEAMS):
For all masonry beams use lintel blocks.

Masonry beams are to bear 8" minimum at jambs. Extend vertical reinforcing through masonry beam bearing.

Extend horizontal reinforcing full length.

Grout masonry beams solid. Mechanically vibrate grout in place.

EXPANSION AND ADHESIVE ANCHORS:

Anchors in concrete or concrete masonry when not exposed to earth, weather, or corrosive environment shall be as noted below:

Expansion anchors shall be stud type with a single piece three section wedge and zinc plated in accordance with ASTM B633.

Threaded anchor rod for adhesive anchors in concrete shall be ASTM A193, Grade B7, or ASTM A36, as noted in the drawings. The adhesive used for anchors shall be a structural grade, two part epoxy or acrylic material that meets the requirement of ASTM C-881 Types I, II, IV, and V, Grade 3, Classes B and C as noted on plans.

Holes shall be drilled with a bit and cleaned using a method that complies with the manufacturer's guidelines, and specifications. Do not cut or damage reinforcing steel or P-T tendons.

Upon the request of the structural engineer the anchors shall be proof tested by the manufacturer to verify capacity of anchors that do not meet the conditions in the construction documents.

Minimum embedment depths in concrete and concrete masonry for expansion and adhesive anchors shall be as noted below:

Concrete base material:
For 1/2", 5/8", and 3/4" diameter expansion anchors provide 4 3/4" embed, UNO on plan.

For 1/2" and 5/8" diameter adhesive anchors provide 5" embed. For 3/4" diameter adhesive anchors provide 7" embed, UNO on plan.

Grouted solid concrete masonry unit material:
For 1/2", 5/8", and 3/4" diameter expansion anchors provide 4 3/4" embed, UNO on plan.

For adhesive anchors refer to the product's ICBO Report.

Pre-approved manufacturer are as follows: HILTI, ITW/Ramset/Redhead, Powers Fasteners, and Simpson Strong-Tie. For review of alternate products, submit manufacture's product data and product's current ICBO report prior to construction.

Anchors in concrete or concrete masonry when exposed to earth, weather, or corrosive environment shall be manufactured from AISI 304/316 Stainless Steel.

STRUCTURAL STEEL:
Structural steel shall be detailed, fabricated and erected in compliance with AISC Specification for the design, fabrication, erection of structural steel for building, and Code of standard practice, and OSHA steel erection standards.

All beams and girders shall be cambered at mid-span as indicated on the structural drawings. The cambers indicated shall be present in the beam in its erected position after completion of the end connections and shall be verified prior to placing concrete. Cambering tolerances shall be (-0", +1/4"). No center point cambering allowed.

Splicing structural members where not detailed on the drawings is prohibited without prior approval of the structural engineer.

Modification of structural steel members in the field is not allowed without written approval by the structural engineer.

All composite beams using the concrete slab as a compression flange are designed for unshored construction unless noted otherwise.

Anchor rods shall be minimum 3/4" diameter or as detailed in drawings.

STRUCTURAL STEEL CONNECTIONS:
All steel connections shall be designed by the steel fabricator for the criteria indicated on the drawings unless noted or detailed otherwise. Connection design shall conform to the requirements of the AISC Specifications for the design, fabrication, erection of structural and OSHA regulations. Submit calculations certified by a Professional Engineer who is licensed in the state of Minnesota. All loads indicated on the drawings are unfactored, working loads.

Non-composite beams: Unless noted otherwise, design simple beam shear connections per the AISC Manual connection tables. The required end reaction shall be based on the reactions indicated on the plans. Design connections for the reactions indicated on plan or for the minimum connection requirements indicated in the Connection Schedule, whichever provides the greater capacity.

Composite beams: Design simple composite beam shear connections per the AISC Manual connection tables UNO. Design connections for the reactions indicated on the plans or the minimum connection requirements indicated in the Connection Schedule, whichever provides the greater capacity.

Unless detailed otherwise, beam shop connections may be welded or bolted and field connections are to be bolted. Bolts shall be a minimum 3/4" diameter for connections specified or detailed in the drawings. The fabricator may submit an alternate connection with the calculations that is certified by a professional engineer who is licensed in the state of Minnesota.

All beam web copes must be made to a 1 inch minimum radius.

Welded connections shall be made in accordance with ANSI/AWS D1.1 Structural Welding Code using E70XX electrodes unless noted otherwise. Weld sizes not shown or controlled by the required forces shall be AWS code minimum size. Welds shall be visually inspected for compliance with the AWS code visual inspection criteria. Welders shall be qualified in accordance with ANSI/AWS D1.1 and shall be experienced in weld in structural steel.

Full penetration welds shall be tested using NDT methods such as ultrasonic, magnetic particle or other methods referenced in the AWS code. Welds subject to NDT methods shall also have been found compliant with the AWS visual inspection criteria.

STRUCTURAL STEEL STAIRS:
Structural steel stair stringers, components, railings, posts, hangers, and connections to be designed by the fabricator's Qualified Professional Engineer for the loads indicated in the specifications. Configuration of stringers and railings shall be as indicated on the architectural drawings. Channel stringers to have a minimum 12" depth and a minimum 1 1/2" flange width.

STEEL ROOF DECK:
Manufacturer shall be a current member of the Steel Deck Institute (SDI).

Detail, manufacture and install steel roof deck and accessories in accordance with the SDI specifications and codes and OSHA requirements.

Steel roof deck shall be as noted on plan.

Welding shall be in accordance with AWS D1.3. Welders shall be qualified in accordance with AWS D1.3.

Where spray-on fireproofing of the deck is required, the contractor shall verify that the deck finish is compatible with the proposed fireproofing material to ensure proper bonding of the fireproofing. Coordinate fireproofing locations and requirements with the architect.

All steel deck shall span a minimum of three spans, unless otherwise approved by the engineer. Deck ends are to be lapped over supports.

Contractor shall verify the location and extent of acoustical steel deck with the architectural drawings.

Reference drawings for detail on steel roof deck fastening requirements unless noted otherwise. Powder actuated or pneumatically driven fasteners are not allowed.

Provide reinforcement or frames for deck openings as indicated on the drawings.

LIMITATIONS ON M/E SUPPORT FROM PRIMARY STRUCTURE:
All M/E systems shall be supported from the primary structural frame, unless noted otherwise. Do not connect to roof deck, floor slabs, or secondary members unless specifically allowed on the structural construction documents.

All M/E support systems, hangers, brackets and connections to the primary structural frame shall be designed, provided and installed by the M/E contractor, unless noted otherwise on the structural construction documents.

All M/E supports and connections for loads in excess of 300 lbs shall be designed by a structural engineer licensed in the state of Minnesota and engaged by the M/E contractor.

COMPOSITE STEEL FLOOR DECK:
Manufacturer shall be a current member of the Steel Deck Institute (SDI). Composite steel floor deck shall be as noted on plan.

Detail, manufacture and install composite steel floor deck and accessories in accordance with the SDI specifications, codes and OSHA steel erection standards.

Refer to drawings for composite steel floor deck fastening requirements unless noted otherwise. Powder actuated or pneumatically driven fasteners are not allowed.

Provide and install pour stops, column closures, end closures, cover plates and girder fillers and other accessories as required by the SDI unless otherwise indicated or detailed.

Where spray-on fireproofing of the deck is required, the contractor shall verify that the deck finish is compatible with the proposed fireproofing material to ensure proper bonding of the fireproofing. Coordinate fireproofing locations and requirements with the architect.

Provide reinforcement or frames for deck openings as indicated on the drawings.

Do not cut control joints in structural slabs on metal deck.

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TEL: (218) 591-5079

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS		
NO.	DESCRIPTION	DATE
	BID PACKAGE 1	5.12.10
	FOUNDATION PERMIT	6.4.10
1	ADDENDUM 1	6.11.10
2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
4	BUILDING PERMIT REVISIONS	11.12.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

NON-COMPOSITE STEEL FLOOR DECK:
Manufacturer shall be a current member of the Steel Deck Institute (SDI).

Non-composite steel floor deck shall be as noted on plan.

Detail, manufacture and install non-composite steel floor deck and accessories in accordance with the SDI specifications and codes and OSHA steel erection standards.

Refer to drawings for non-composite steel floor deck fastening requirements. Powder actuated or pneumatically driven fasteners are not allowed.

Where spray-on fireproofing of the deck is required, the contractor shall verify that the deck finish is compatible with the proposed fireproofing material to ensure proper bonding of the material. Coordinate locations and requirements with the architect.

Provide reinforcement or frames for deck openings as indicated on the drawings.

LIGHT GAUGE METAL FRAMING:
The design and connection detailing of all light gage material including, but not limited to exterior studs, bearing studs, headers, jamps, joists, rafters and anchorage shall be by the Light Gauge Supplier. The design for systems other than bearing framing shall meet the following criteria:

Stud in exterior walls shall be minimum 600S162-43 (6"-18 gauge) studs at 16" OC. See architectural for additional spacing requirements at exterior finishes.

Studs shall be cold rolled steel, galvanized, C shape, with minimum 1 5/8" flange and minimum 1/2" return. They are to be punched for utility access and galvanized to G60 coating per ASTM 525.

At all openings in exterior and bearing walls provide a minimum two studs full wall height each side of opening and a minimum one additional stud each side for lintel bearing.

Anchor bottom track to concrete or masonry with minimum 5/32" x 1 1/4" power driven fasteners at 16" OC.

Top and bottom tracks shall be cold rolled or break formed steel, galvanized U shaped and minimum 18 gauge and as noted on the drawings.

Light gauge metal framing fasteners shall be minimum #10 self-drilling sheet metal screws, 16 threads per inch, with low profile head. Provide a minimum of two screws per connection unless noted otherwise.

Fasten light gage framing to wood with minimum #10 x 1 7/8" bugle head wood screws. Pre-drill holes in metal studs. Provide a minimum of two screws per connection unless noted otherwise.

All framing components shall be squarely cut for attachment to perpendicular members. Stud ends must seat tightly into tracks for all bearing applications.

At all wall elements, provide 1 1/2"-16 gauge horizontal channel bridging to prevent stud rotation. For all axial loaded walls, space bridging at 4'-0" OC. For all non-load bearing exterior walls, space bridging at 5'-0" OC.

Wall stud deflection criteria:

For wall studs providing lateral support to masonry veneer and cementitious stucco, provide L/600.

For wall studs providing lateral support to other materials, provide L/360.

Joist and rafter deflection criteria:

Live Load Deflection is L/360.

Total Load Deflection is L/240.

An additional joist shall be provided under parallel non-load bearing partition walls.

The light gauge supplier shall submit certified shop drawings and design calculations prepared by a qualified Professional Engineer registered in the state of Minnesota. See project specification manual for additional submittal requirements.

All light gauge designations are in accordance with the Steel Stud Manufacturers Association (SSMA).

Refer to architectural drawings and specification for size, minimum gage, extent, and location of interior non-bearing light gage framing not shown on the structural drawings. Interior light gauge framing is to be designed for 5 psf lateral pressure by the light gauge supplier.

Temporary bracing shall be furnished by the light gauge supplier and framing installer and maintained until permanent systems providing lateral stability are in place.

Welding shall conform to the American Welding Society (AWS) "Structural Welding Code - Sheet Steel, D1.3 - Current Edition." Welders shall be qualified in accordance with AWS D1.3 and shall be experienced in light gage welding.

All light gage material to be welded must be nominal 16 gauge or thicker.

Touch up all light gage material at welds with zinc-rich paint.

Align load bearing wall studs with floor or roof joists.

Splices in studs, joists, and headers, are not permitted, unless approved in writing by the structural engineer.

Framing components may be pre-assembled into panels prior to erecting. Prefabricated panels shall be square, with components attached in a manner that prevents racking.

SPECIAL INSPECTION SCHEDULE:

SPECIAL INSPECTIONS REQUIRED OF STRUCTURAL ELEMENTS (PER IBC 2006, CHAPTER 17):

	Continuous	Periodic	Not Req'd	See Arch.	
1. Steel *					Table 1704.3
1.1 Welding	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.2 Details	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.3 High-strength Bolts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Concrete					Table 1704.4
2.1 Reinforcing steel including Prestressing tendons	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.2 Bolts installed in concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.3 Required design mix	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.4 Sampling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.5 Shotcrete	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.6 Curing techniques	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.7 Prestressed concrete forces and grouting	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.8 Erection of precast concrete members	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.9 Verification of IN-SITU concrete strength	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Masonry					
3.1 Level 1 Special Inspection *	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1704.5.1, 1704.5.2, Table 1704.5.1
3.2 Level 2 Special Inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1704.5.3, Table 1704.5.3
4. Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1704.6
5. Soils	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1704.7
6. Pile Foundations	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1704.8
7. Pier Foundations	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1704.9
8. Wall Panel and Veneers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1704.10
9. Sprayed Fire-Resistant Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1704.11
10. Exterior Insulation and Finish Systems (EIFS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1704.12
11. Special Cases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1704.13
12. Smoke Control Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1704.14

* Please see referenced tables for exceptions.

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Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
	BID PACKAGE 1	5.12.10
	FOUNDATION PERMIT	6.4.10
1,2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SJL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

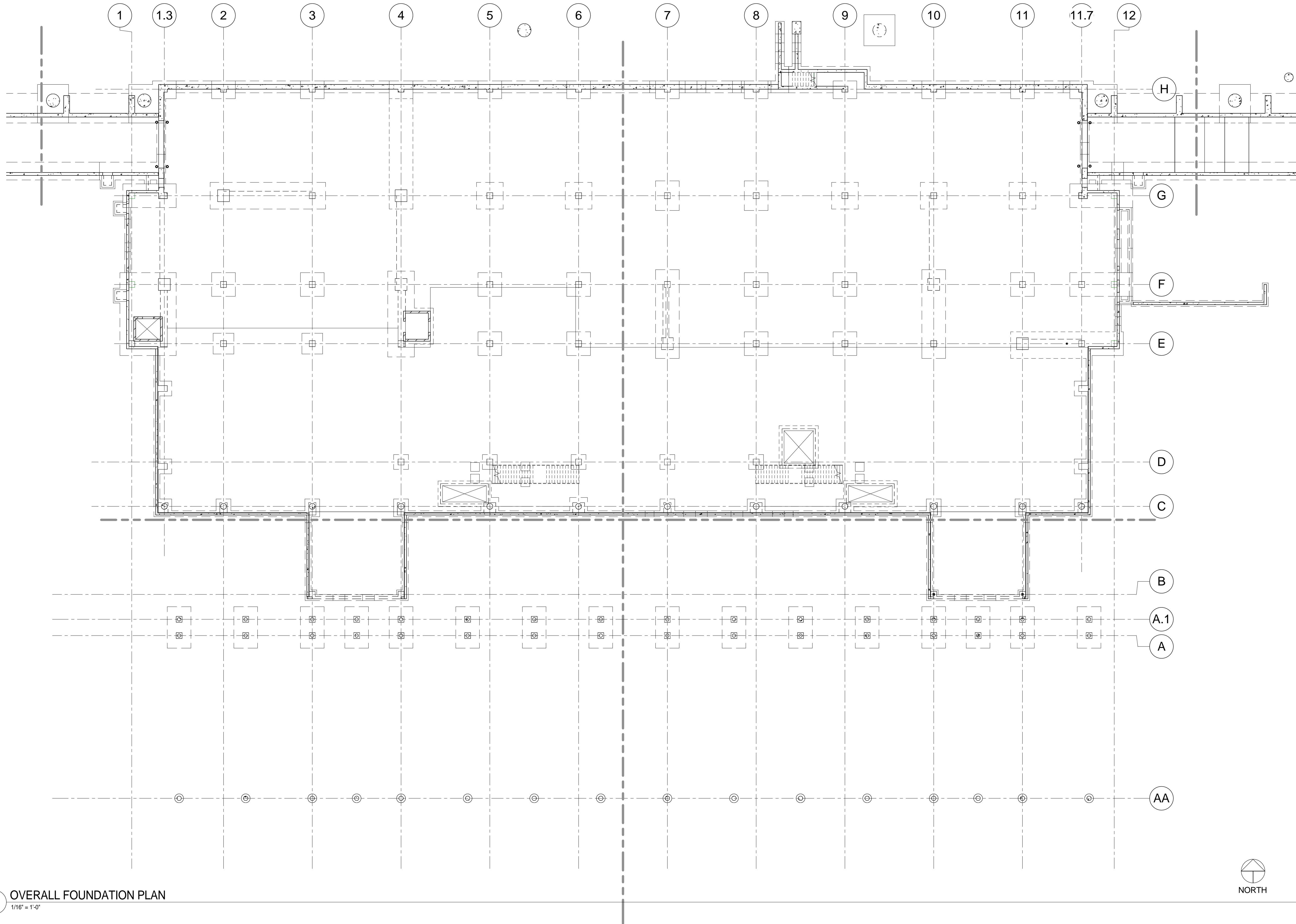
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SHEET TITLE
**GENERAL
STRUCTURAL
NOTES**

SHEET NUMBER

S003

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**



1 OVERALL FOUNDATION PLAN
1/16" = 1'-0"



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Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

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	CONFORMANCE SET	7.12.10
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	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

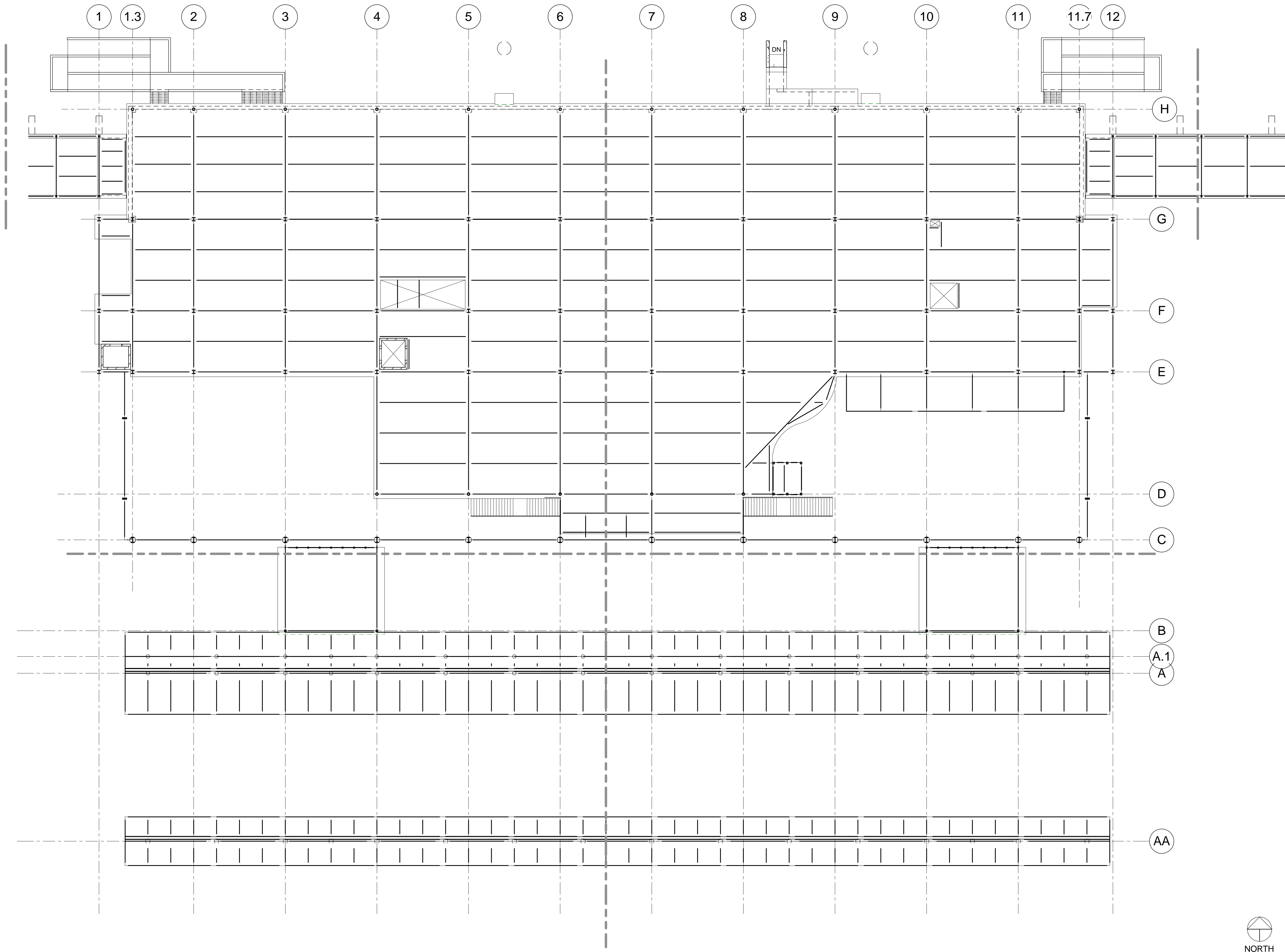
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SHEET TITLE
**OVERALL FIRST
LEVEL FLOOR
PLAN**

SHEET NUMBER

S101

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**



1 OVERALL SECOND LEVEL FLOOR PLAN
1/16" = 1'-0"



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DULUTH, MN

NEW TERMINAL
DESIGN

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Interior Architects:
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Baggage Handling Systems Consultants:
BNP ASSOCIATES INC.
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TEL: (203) 792-3000 / FAX: (203) 792-4900

Landscape Consultants:
APPOLD DESIGN
2432 East First Street, Duluth MN 55812
TEL: (218) 591-5079

I hereby certify that this plan, specification,
or report was prepared by me or under my
direct supervision and that I am a duly
licensed Professional Engineer under the
laws of the State of Minnesota.

Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
	BID PACKAGE 1	5.12.10
	FOUNDATION PERMIT	6.4.10
1,2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

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SHEET TITLE
**OVERALL
SECOND LEVEL
FLOOR PLAN**

SHEET NUMBER
S102

**BID PACKAGE 2B
ISSUED FOR BID
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Reynolds, Smith and Hills, Inc.

4525 Airport Approach Rd. Ste A
Duluth, Minnesota 55811
218-722-1227 FAX 218-722-1052
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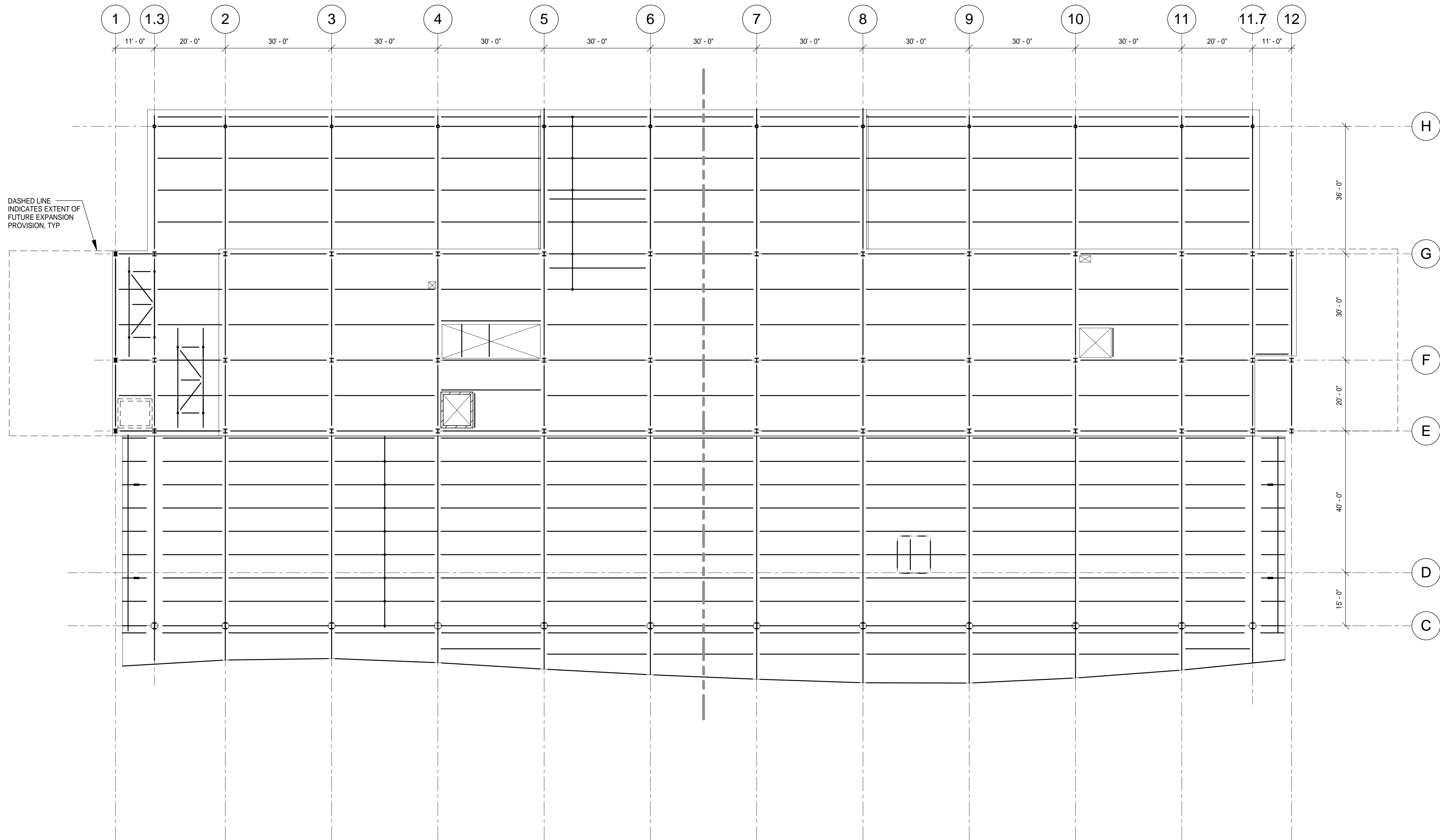
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SHEET TITLE
**OVERALL THIRD
LEVEL FLOOR
PLAN**

SHEET NUMBER

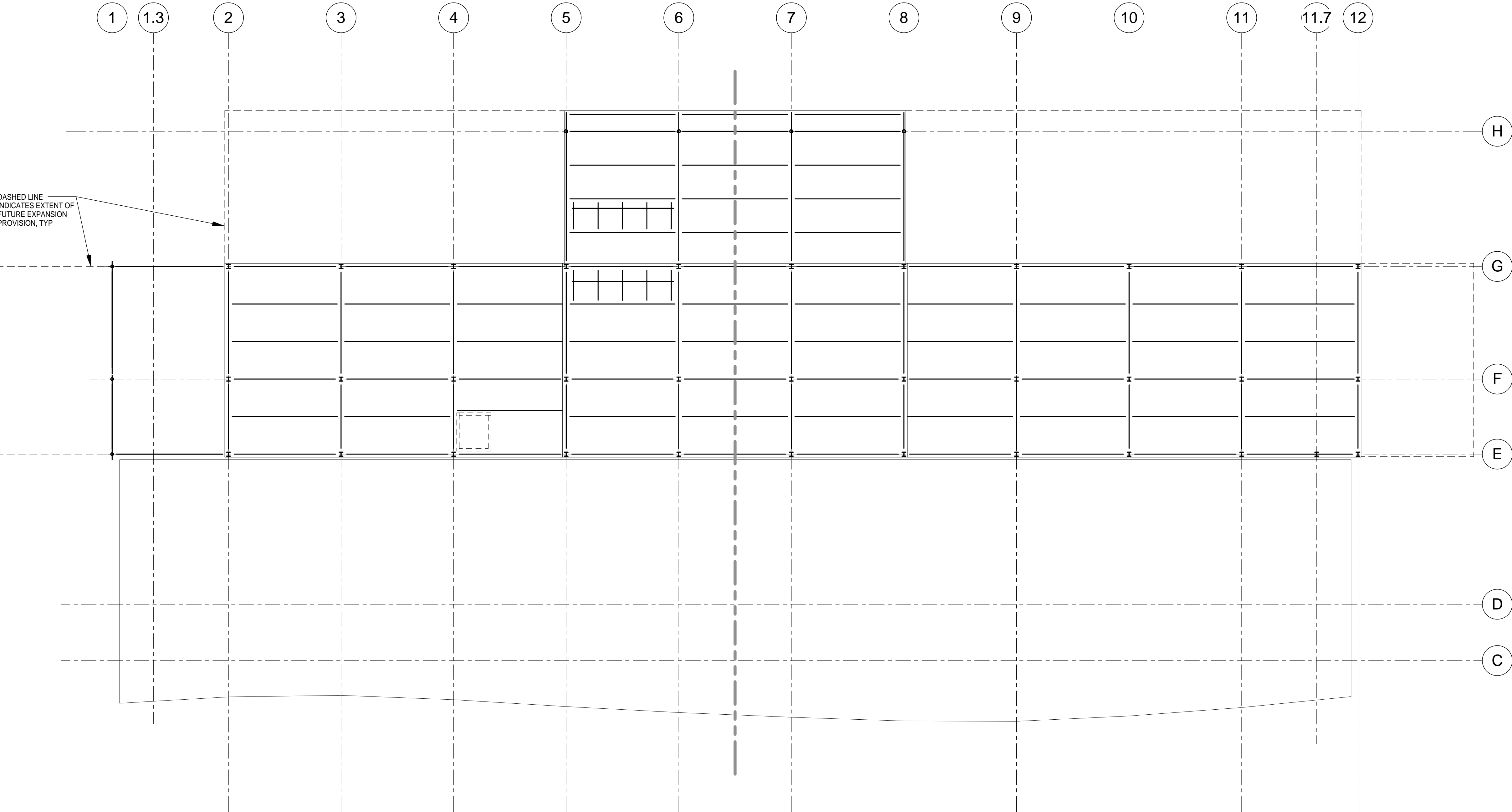
S103

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1 OVERALL THIRD LEVEL FLOOR PLAN
1/16" = 1'-0"





1 OVERALL ROOF PLAN
1/16" = 1'-0"



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SHEET TITLE
**OVERALL ROOF
LEVEL PLAN**

SHEET NUMBER

S104

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CONSULTANTS

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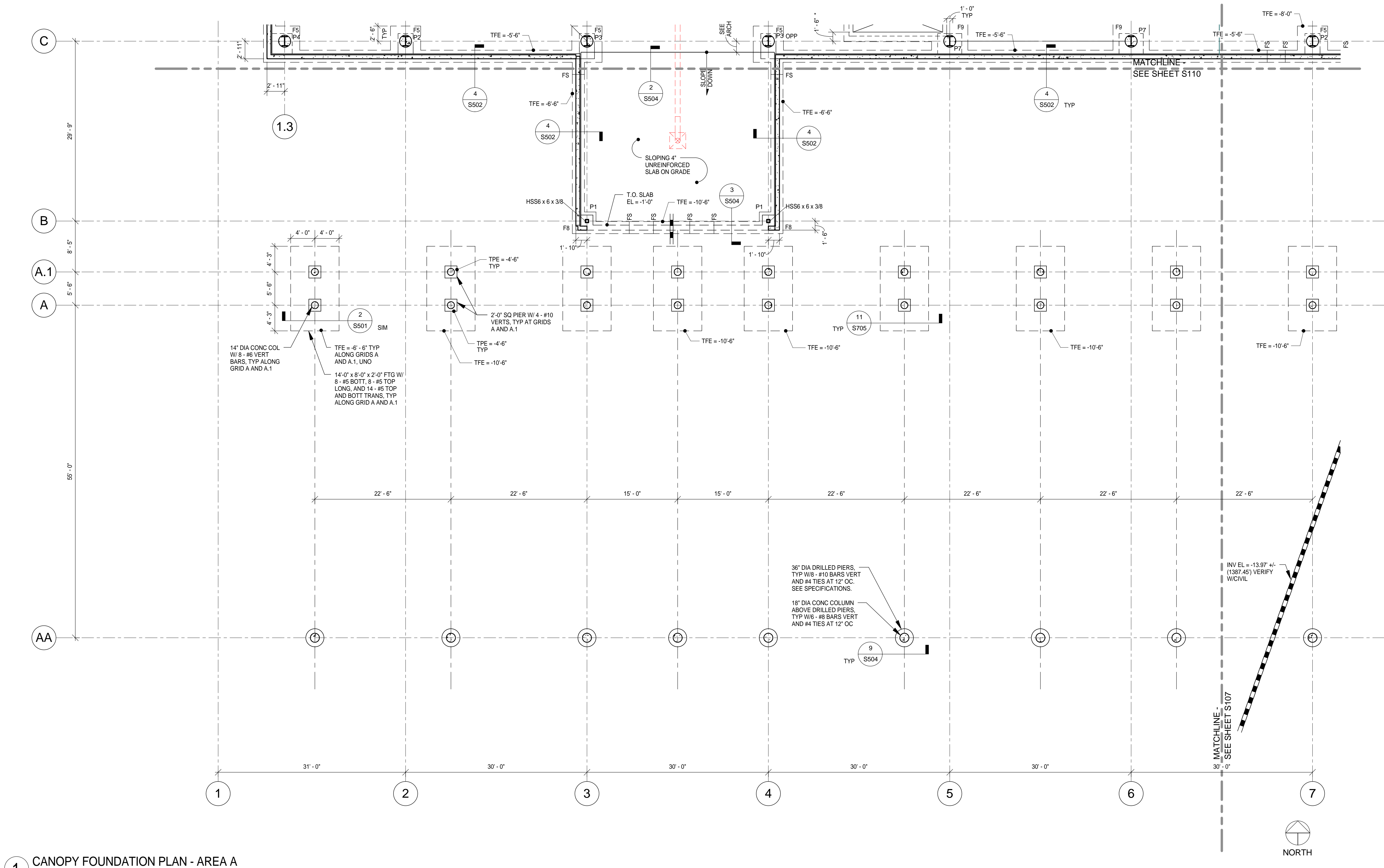
SHEET TITLE

**CANOPY
FOUNDATION
PLAN - AREA A**

SHEET NUMBER

S106

**BID PACKAGE 2B
ISSUED FOR BID
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1 CANOPY FOUNDATION PLAN - AREA A
1/8" = 1'-0"

NOTES:
1. REFER TO S110 FOR TYPICAL PLAN NOTES.

CONSULTANTS

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1,2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
4	BUILDING PERMIT REVISIONS	11.12.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11

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DRAWN BY: SJL

DESIGNED BY: CWB

AEP PROJECT NUMBER

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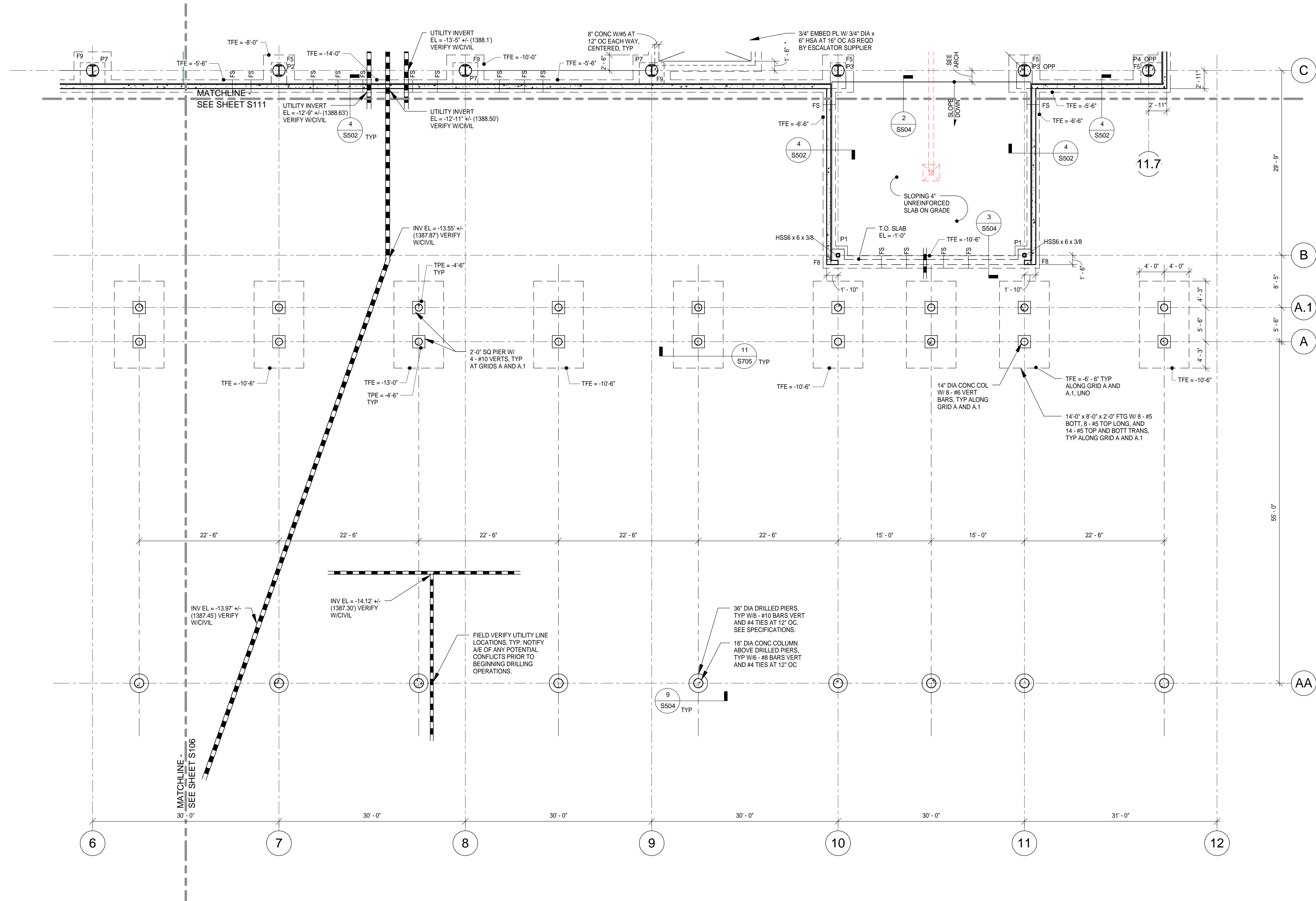
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SHEET TITLE
**CANOPY
FOUNDATION
PLAN - AREA B**

SHEET NUMBER

S107

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**



1 CANOPY FOUNDATION PLAN - AREA B
1/8" = 1'-0"

NOTES:
1. REFER TO S110 FOR TYPICAL PLAN NOTES.

CONSULTANTS

Interior Architects:

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2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
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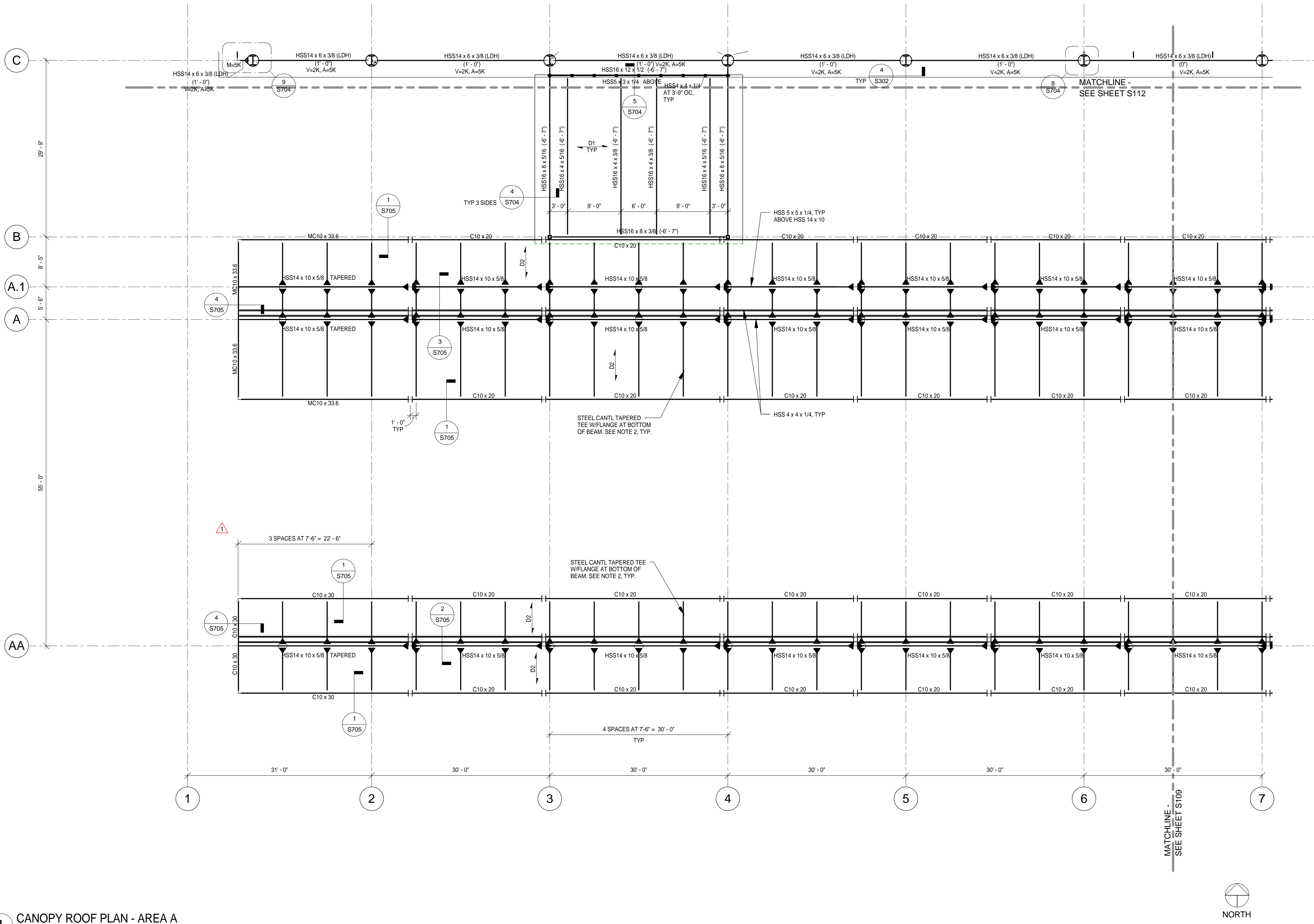
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SHEET TITLE
**CANOPY ROOF
FRAMING PLAN -
AREA A**

SHEET NUMBER

S108

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**



1 CANOPY ROOF PLAN - AREA A

1/8" = 1'-0"

NOTES:

- REFER TO S115 FOR TYPICAL PLAN NOTES.
- FABRICATOR TO PROVIDE SECTION (BUILT UP PLATE SECTION OR CUT WT OR CUT WIDE FLANGE) WITH THE FOLLOWING DIMENSIONAL PROPERTIES:

d max = 14"

d min = 6"

bf = 12"

tf = 1 3/8"

tw = 3/4"

Fy = 50 ksi



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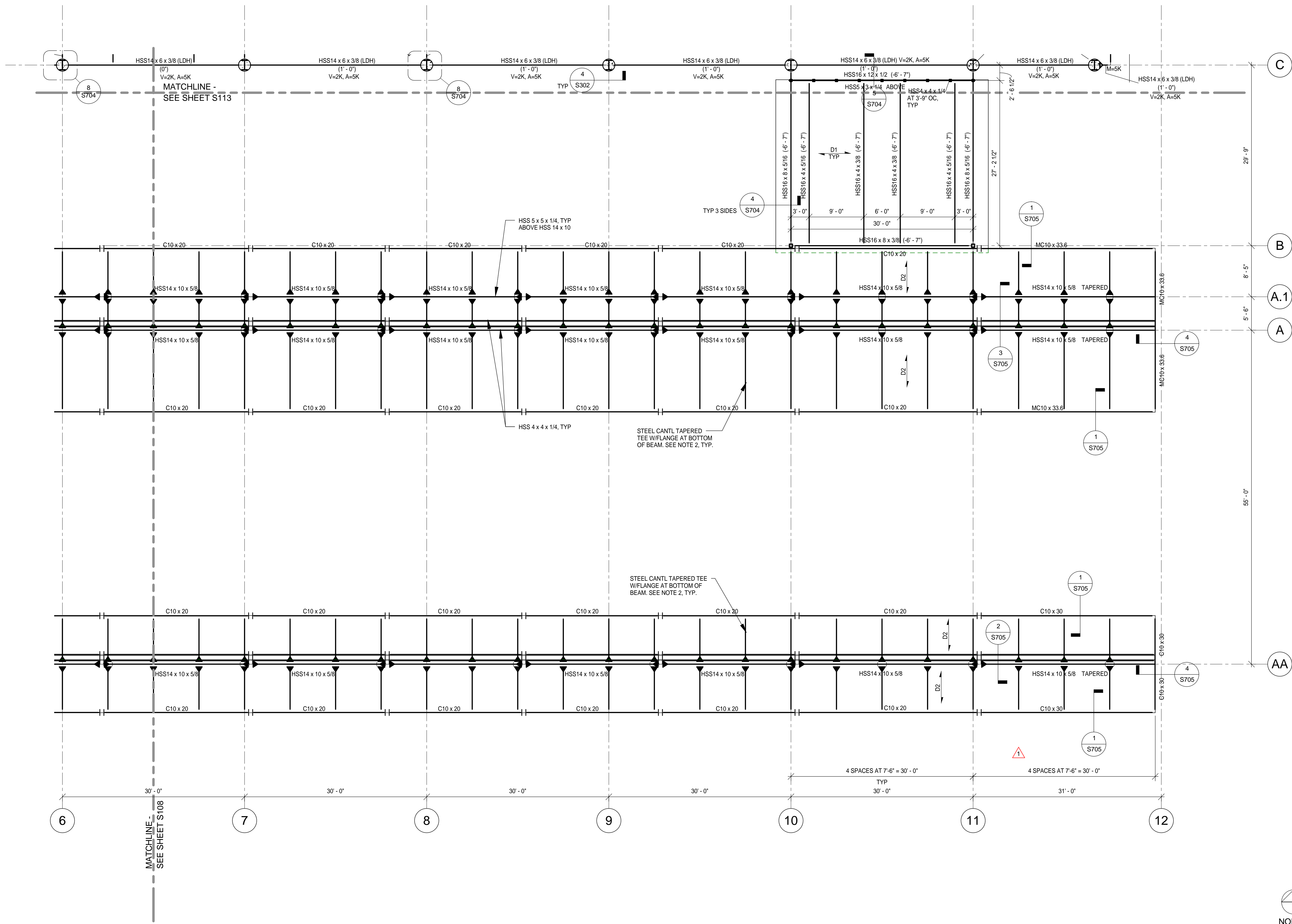
SHEET TITLE

**CANOPY ROOF
FRAMING PLAN -
AREA B**

SHEET NUMBER

S109

**BID PACKAGE 2B
ISSUED FOR BID**
FOR REFERENCE ONLY



1 CANOPY ROOF PLAN - AREA B

1/8" = 1'-0"

NOTES:
1. REFER TO S115 FOR TYPICAL PLAN NOTES.
2. FABRICATOR TO PROVIDE SECTION (BUILT UP PLATE SECTION OR CUT WT OR CUT WIDE FLANGE) WITH THE FOLLOWING DIMENSIONAL PROPERTIES:

d max = 14"

d min = 6"

bf = 12"

tf = 1 3/8"

tw = 3/4"

Fy = 50 ksi



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BUILDING PERMIT		8.6.10
100% REVIEW		12.15.10
BID PACKAGE 2A		01.24.11
BP2A ADDENDUM 2		02.25.11
RFP 90		04.06.11
BP 2A CONFORMANCE		05.02.11

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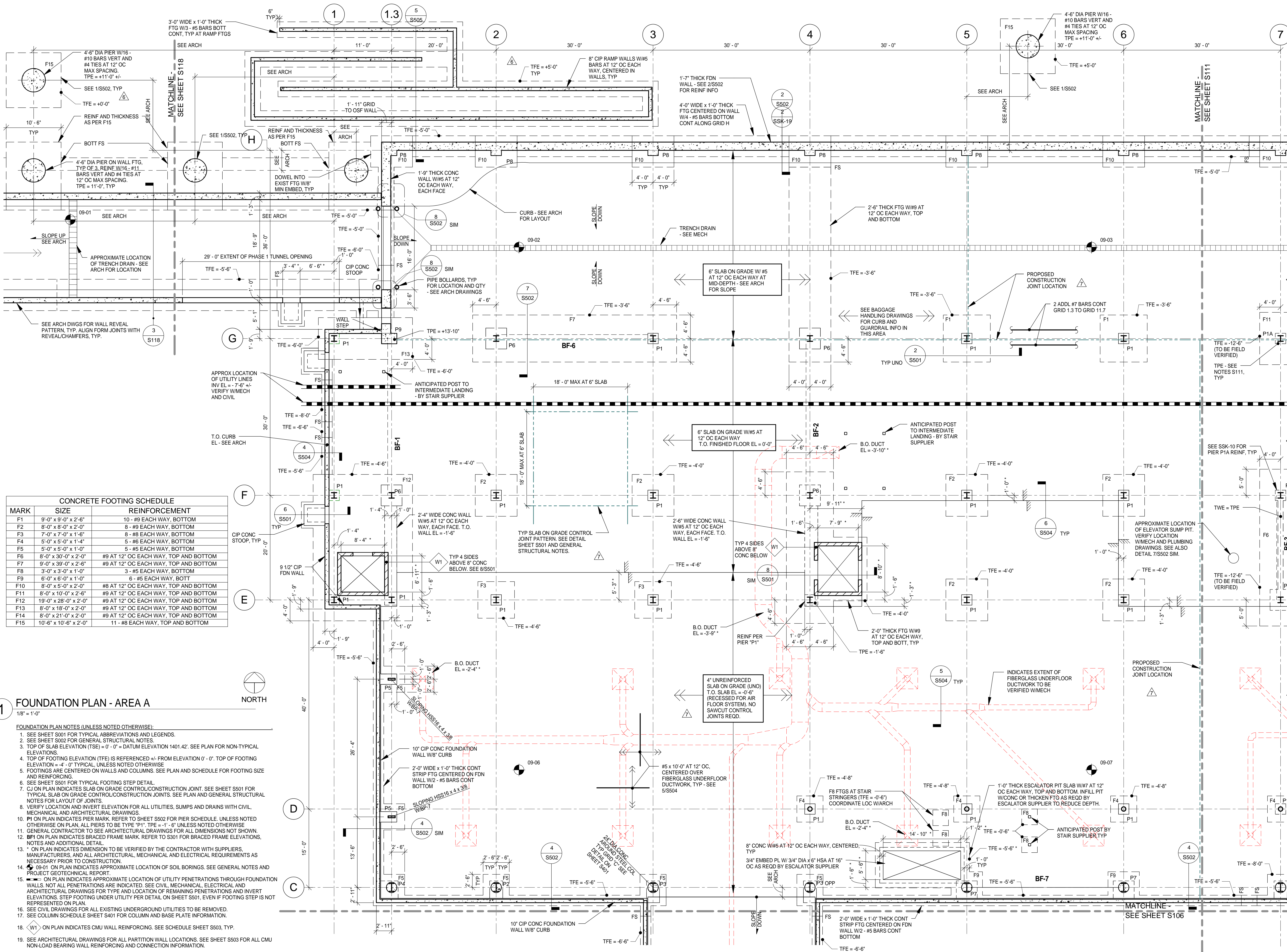
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**SHEET TITLE
FOUNDATION
PLAN - AREA A**

SHEET NUMBER

S110

**BID PACKAGE 2B
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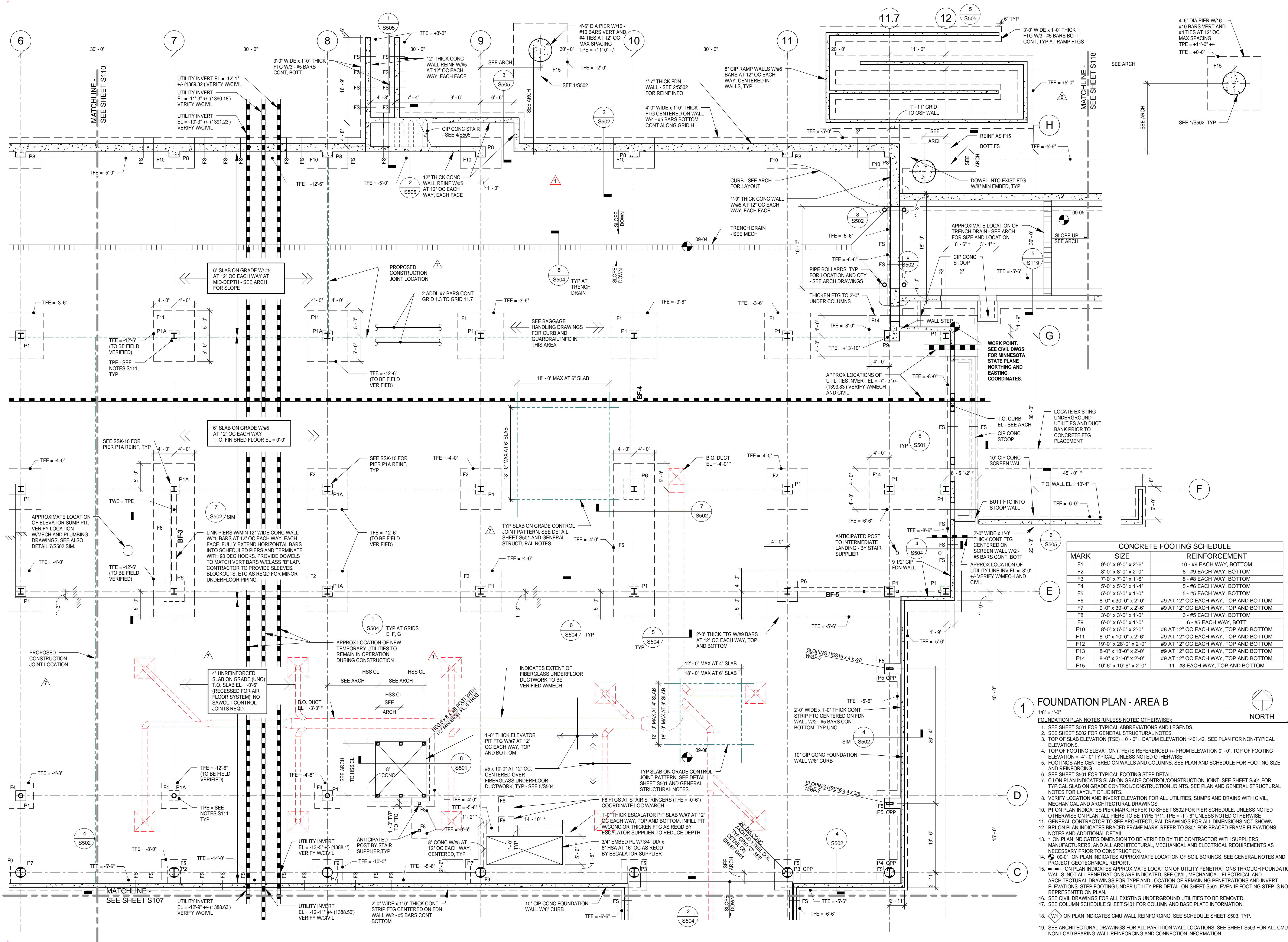
MARK	SIZE	REINFORCEMENT
F1	9'-0" x 9'-0" x 2'-6"	10 - #9 EACH WAY, BOTTOM
F2	8'-0" x 8'-0" x 2'-0"	8 - #9 EACH WAY, BOTTOM
F3	7'-0" x 7'-0" x 1'-6"	8 - #8 EACH WAY, BOTTOM
F4	5'-0" x 5'-0" x 1'-4"	5 - #6 EACH WAY, BOTTOM
F5	5'-0" x 5'-0" x 1'-0"	5 - #5 EACH WAY, BOTTOM
F6	8'-0" x 30'-0" x 2'-0"	#9 AT 12" OC EACH WAY, TOP AND BOTTOM
F7	9'-0" x 39'-0" x 2'-6"	#9 AT 12" OC EACH WAY, TOP AND BOTTOM
F8	3'-0" x 3'-0" x 1'-0"	3 - #5 EACH WAY, BOTTOM
F9	6'-0" x 6'-0" x 1'-0"	6 - #5 EACH WAY, BOT
F10	8'-0" x 5'-0" x 2'-0"	#8 AT 12" OC EACH WAY, TOP AND BOTTOM
F11	8'-0" x 10'-0" x 2'-6"	#9 AT 12" OC EACH WAY, TOP AND BOTTOM
F12	19'-0" x 28'-0" x 2'-0"	#9 AT 12" OC EACH WAY, TOP AND BOTTOM
F13	8'-0" x 18'-0" x 2'-0"	#9 AT 12" OC EACH WAY, TOP AND BOTTOM
F14	8'-0" x 21'-0" x 2'-0"	#9 AT 12" OC EACH WAY, TOP AND BOTTOM
F15	10'-6" x 10'-6" x 2'-0"	11 - #8 EACH WAY, TOP AND BOTTOM

FOUNDATION PLAN - AREA A

1/8" = 1'-0"

FOUNDATION PLAN NOTES (UNLESS NOTED OTHERWISE):

- SEE SHEET S501 FOR TYPICAL ABBREVIATIONS AND LEGENDS.
- SEE SHEET S502 FOR GENERAL STRUCTURAL NOTES.
- TOP OF SLAB ELEVATION (TSE) = 0' - 0" = DATUM ELEVATION 1401.42'. SEE PLAN FOR NON-TYPICAL ELEVATIONS.
- TOP OF FOOTING ELEVATION (TFE) IS REFERENCED +/- FROM ELEVATION 0' - 0". TOP OF FOOTING ELEVATION = 4' - 0" TYPICAL, UNLESS NOTED OTHERWISE.
- FOOTINGS ARE CENTERED ON WALLS AND COLUMNS. SEE PLAN AND SCHEDULE FOR FOOTING SIZE AND REINFORCING.
- SEE SHEET S501 FOR TYPICAL FOOTING STEP DETAIL.
- CJ ON PLAN INDICATES SLAB ON GRADE CONTROL/CONSTRUCTION JOINT. SEE SHEET S501 FOR TYPICAL SLAB ON GRADE CONTROL/CONSTRUCTION JOINTS. SEE PLAN AND GENERAL STRUCTURAL NOTES FOR LAYOUT OF JOINTS.
- VERIFY LOCATION AND INVERT ELEVATION FOR ALL UTILITIES, SUMPS AND DRAINS WITH CIVIL, MECHANICAL AND ARCHITECTURAL DRAWINGS.
- P1 ON PLAN INDICATES PIER MARK. REFER TO SHEET S502 FOR PIER SCHEDULE, UNLESS NOTED OTHERWISE ON PLAN, ALL PIERS TO BE TYPE "P1". TPE = 1' - 6" UNLESS NOTED OTHERWISE.
- GENERAL CONTRACTOR TO SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.
- BF1 ON PLAN INDICATES BRACED FRAME MARK. REFER TO S501 FOR BRACED FRAME ELEVATIONS, NOTES AND ADDITIONAL DETAIL.
- * ON PLAN INDICATES DIMENSION TO BE VERIFIED BY THE CONTRACTOR WITH SUPPLIERS, MANUFACTURERS, AND ALL ARCHITECTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS AS NECESSARY PRIOR TO CONSTRUCTION.
- 09-01 ON PLAN INDICATES APPROXIMATE LOCATION OF SOIL BORINGS. SEE GENERAL NOTES AND PROJECT GEOTECHNICAL REPORT.
- ON PLAN INDICATES APPROXIMATE LOCATION OF UTILITY PENETRATIONS THROUGH FOUNDATION WALLS. NOT ALL PENETRATIONS ARE INDICATED. SEE CIVIL, MECHANICAL, ELECTRICAL AND ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF REMAINING PENETRATIONS AND INVERT ELEVATIONS. STEP FOOTING UNDER UTILITY PER DETAIL ON SHEET S501, EVEN IF FOOTING STEP IS NOT REPRESENTED ON PLAN.
- SEE CIVIL DRAWINGS FOR ALL EXISTING UNDERGROUND UTILITIES TO BE REMOVED.
- SEE COLUMN SCHEDULE SHEET S401 FOR COLUMN AND BASE PLATE INFORMATION.
- W1 ON PLAN INDICATES CMU WALL REINFORCING. SEE SCHEDULE SHEET S503, TYP.
- SEE ARCHITECTURAL DRAWINGS FOR ALL PARTITION WALL LOCATIONS. SEE SHEET S503 FOR ALL CMU NON-LOAD BEARING WALL REINFORCING AND CONNECTION INFORMATION.



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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
	BID PACKAGE 1	5.12.10
	FOUNDATION PERMIT	6.4.10
1	ADDENDUM 1	6.11.10
2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
6	BP2A ADDENDUM 2	02.25.11
7	RFP 90	04.06.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SUL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

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**SHEET TITLE
FOUNDATION
PLAN - AREA B**

**SHEET NUMBER
S111**

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**

CONSULTANTS

Interior Architects:

SJA ARCHITECTS
 1000 1st Street Suite 340 Duluth MN 55802
 (218) 724-8578 / FAX: (218) 724-8717

Structural Engineers

CONSULTING ENG.
 Avenue South, Suite 300, Duluth MN 558
 (612) 799-1050 / FAX: (612) 799-0900

M/E/P/FP Engineers:

COSENTINI
 1000 North Dearborn Drive, Suite 103, Chicago IL 60606
 (312) 670-1800 / FAX: (312) 670-1801

Waste Handling Systems Consultants:

ASSOCIATES INC.
Office Park, Suite 103, Danbury CT 06810
(203) 792-3000 / FAX: (203) 792-4900

Landscape Consultants:

APPOLD DESIGN
 100 East First Street, Duluth MN 55812
 TEL: (218) 591-5079

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Print Name: Paul A. Johnson

Signature: _____

Date: June 3, 2010 Reg. No.: 2037

REVISIONS

NO.	DESCRIPTION	DATE
	BID PACKAGE 1	5.12.10
	FOUNDATION PERMIT	6.4.10
1	ADDENDUM 1	6.11.10
2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
4	BUILDING PERMIT REVISIONS	11.12.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: S.H.

DRAWN BY: SJL

DESIGNED BY: SUE

AEP PROJECT NUMBER

242 1882 004

213-1882-091

2009 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

SECOND LEVE

SECOND LEVEL TRAINING PLAN

FRAMING PLAN

AREA A

AREA A

100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0%

SHEET NUMBER
0410

\$112

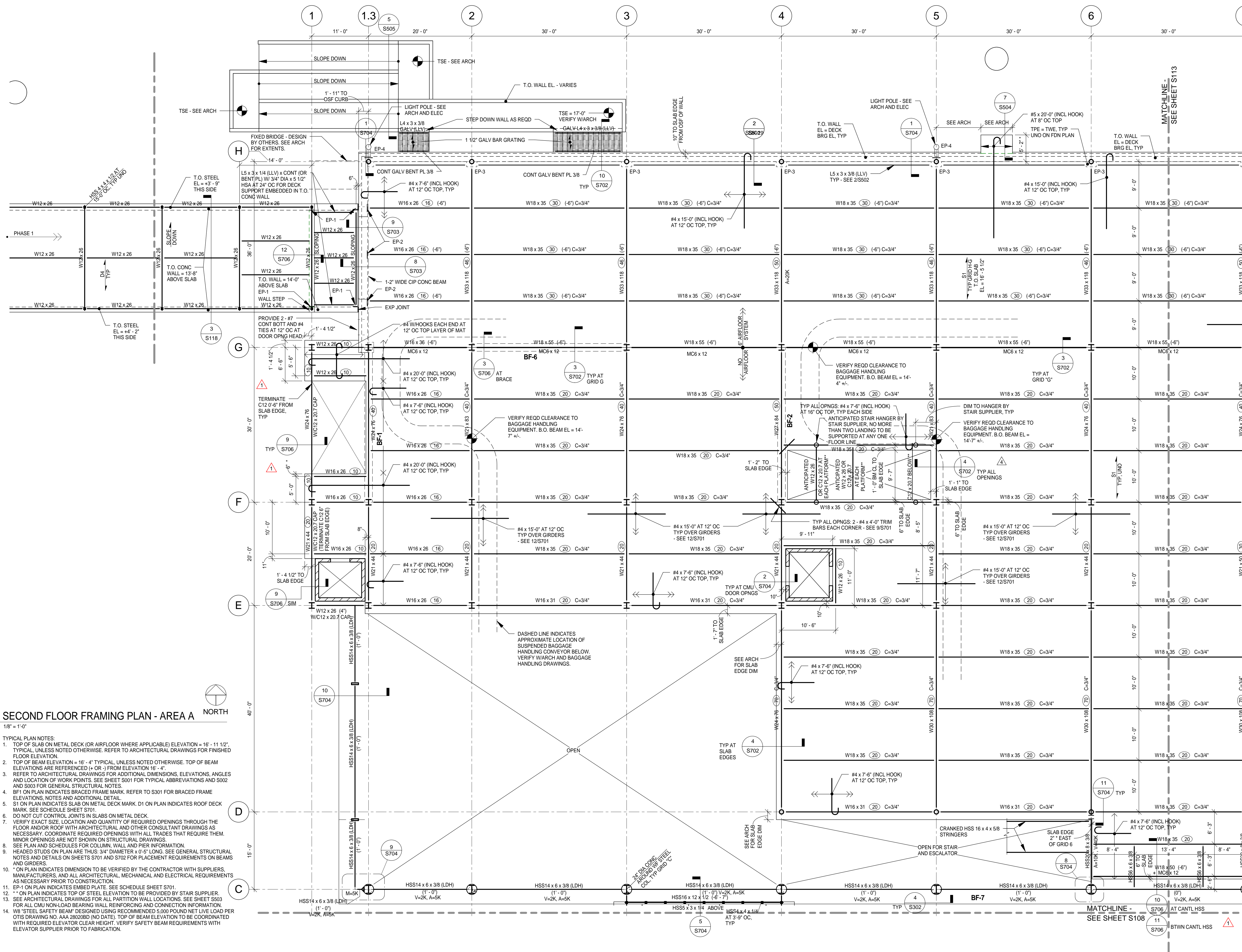
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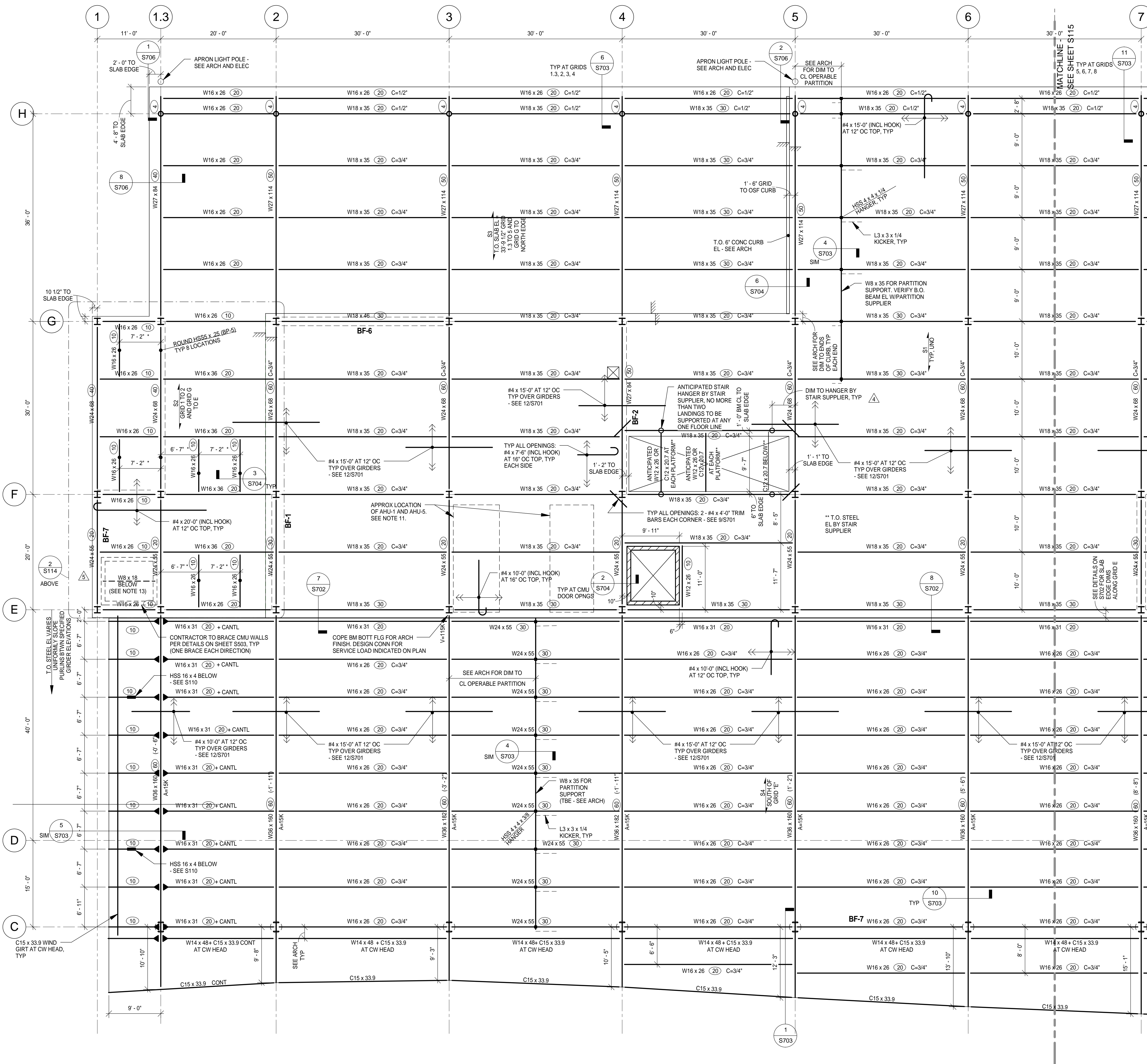
PACKAGE 2

NOT AGRICULTURAL & FORESTED FOR BIOMASS

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DULUTH, MN**

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Interior Architects:

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Structural Engineers

MBJ CONSULTING ENG.
501 Lake Avenue South, Suite 300, Duluth MN 55802
TEL: (218) 722-1056 / FAX: (218) 722-9306

M/E/P/FP Engineers:

COSENTINI

1 East Wacker Drive, Suite 103, Chicago IL 60601
TEL: (312) 670-1800 / FAX: (312) 670-1801

ASSOCIATE

101 East Ridge Office Park, Suite 103, Danbury CT 06810
TEL: (203) 792-3000 / FAX: (203) 792-4900

Landscape Consultar

APPOLD DESIGN
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TEL: (218) 591-5079

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Print Name: Paul A. Johnson

Signature: _____

Date: June 3, 2010 Reg. No.: 20379

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1	ADDENDUM 1	6.11.10
2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
4	BUILDING PERMIT REVISIONS	11.12.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY:

DESIGNED BY

AEP PROJECT NUMBER

213-1882-09

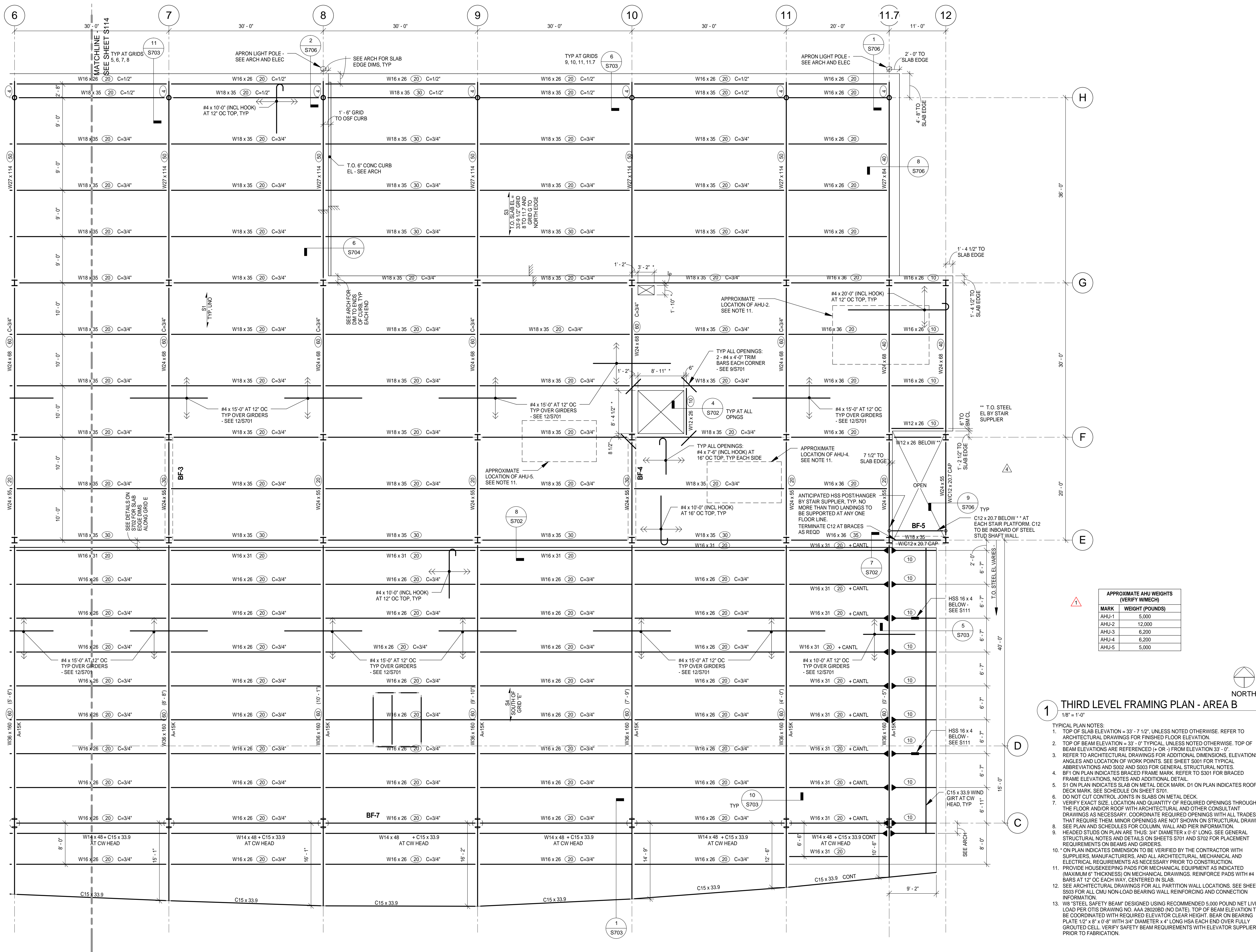
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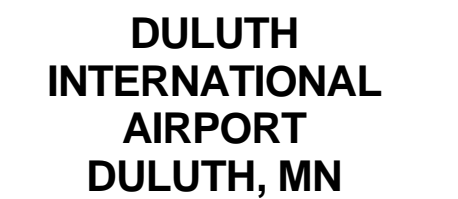
**THIRD LEVEL
FRAMING PLAN -
AREA B**

SHEET NUMBER

S115

BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY





NEW TERMINAL DESIGN

CONSULTANTS

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Structural Engineers:
SJ CONSULTING ENG.
venue South, Suite 300, Duluth MN 55802
(218) 722-1056 / FAX: (218) 722-9306

M/E/P/FP Engineers:
COSENTINI
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(312) 670-1800 / FAX: (312) 670-1801

Baggage Handling Systems Consultants:
BNP ASSOCIATES INC.
 101 East Ridge Office Park, Suite 103, Danbury CT 06810
 TEL: (203) 792-3000 / FAX: (203) 792-4900

Landscape Consultants:
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Date: June 3, 2010 Reg. No.: 20379

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NO.	DESCRIPTION	DATE
	BID PACKAGE 1	5.12.10
	FOUNDATION PERMIT	6.4.10
1,2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
4	BUILDING PERMIT REVISIONS	10.15.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11
6	RFP	05.25.11

DATE ISSUED:	08-23-11
REVIEWED BY:	PAJ / CWB
DRAWN BY:	SJL
DESIGNED BY:	CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
**ROOF LEVEL
FRAMING PLAN -
AREA A**

SHEET NUMBER
S116

BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY



- TYPICAL PLATE NOTES:**
- 1. TOP OF STEEL BEAM ELEVATION IS REFERENCED (+ OR -) FROM ELEVATION 49'-6".
 - 2. TOP OF STEEL BEAM $\approx 49'-6"$, UNLESS NOTED OTHERWISE.
 - 3. TOP OF SLAB ELEVATION VARIES. SEE PLAN.
 - 4. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS, ELEVATIONS, ANGLES AND LOCATION OF WORK POINTS. SEE SHEET S001 FOR TYPICAL ABBREVIATIONS AND S002 AND S003 FOR GENERAL STRUCTURAL NOTES.
 - 5. BFI OR PLAN INDICATES BEARING FRAME. REFER TO S301 FOR BRACED FRAME DETAILS, NOTES AND ADDITIONAL DETAILS.
 - 6. S1 ON PLAN INDICATES SLAB ON METAL DECK MARK. D1 ON PLAN INDICATES ROOF DECK MARK. SEE SCHEDULE ON SHEET S701.
 - 7. DO NOT CUT CONTROL JOINTS. SEE SCHEDULE ON SHEET S701.
 - 8. VERIFY EXACT SIZE, LOCATION AND QUANTITY REQUIRED OPENINGS THROUGH THE FLOOR AND/OR ROOF WITH ARCHITECTURAL AND OTHER CONSULTANT DRAWINGS AS NECESSARY. COORDINATE REQUIRED OPENINGS WITH ALL TRADES THAT REQUIRE OPENINGS THROUGH THE FLOOR AND/OR ROOF.
 - 9. SEE PLAN AND SCHEDULES FOR COLUMN, WALL AND PIER INFORMATION.
 - 10. HEADED STUDS ON PLAN ARE THUS: 3/4" DIAMETER X 0'-5" LONG. SEE GENERAL STRUCTURAL NOTES AND DETAILS ON SHEETS S701 AND S702 FOR PLACEMENT REQUIREMENTS ON BEARING PLATES.
 - 11. ON PLAN INDICATES DIMENSION TO BE SET BY THE CONTRACTOR WITH SUPPLIERS, MANUFACTURERS, AND ALL ARCHITECTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS AS NECESSARY PRIOR TO CONSTRUCTION.
 - 12. VERIFY SAFETY FRAME BEARING USED FOR ROOF STRUCTURAL DRAWING NET LINE LOAD PER OTIS DRAWING NO. AA4 280280 (NO DATE). TOP OF BEAM ELEVATION TO BE COORDINATED WITH REQUIRED ELEVATION CLEAR HEIGHT. BEAR ON BEARING PLATE: 1/2" X 8" X 0'-8" WITH 3/4" DIAMETER X 4" LONG HAS EACH END OVER FULLY GRIPPED BELL. VERIFY SAFETY FRAME REQUIREMENTS WITH ELEVATOR SUPPLIER PRIOR TO FABRICATION.



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DULUTH, MN**

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CONSULTANTS

Interior Architects:

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Structural Engineers:

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Landscape Consultants:

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TEL: (218) 591-5079

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Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
BID PACKAGE 1		5.12.10
FOUNDATION PERMIT		6.4.10
1,2,3 NOT CHANGED		
CONFORMANCE SET		7.12.10
BUILDING PERMIT		8.6.10
5 100% REVIEW		12.15.10
BID PACKAGE 2A		01.24.11
BP 2A CONFORMANCE		05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SJL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

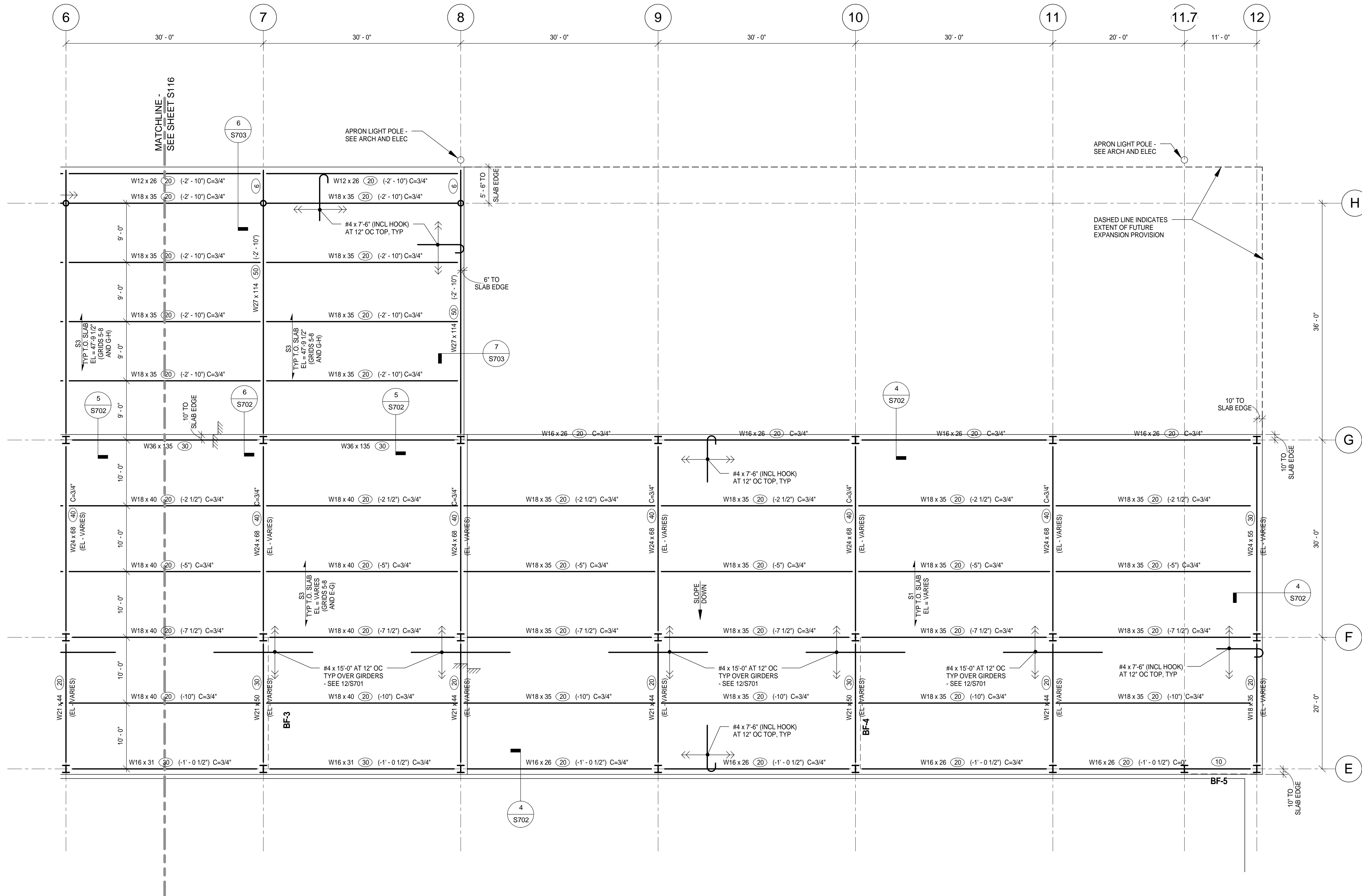
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SHEET TITLE
**ROOF LEVEL
FRAMING PLAN -
AREA B**

SHEET NUMBER

S117

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**

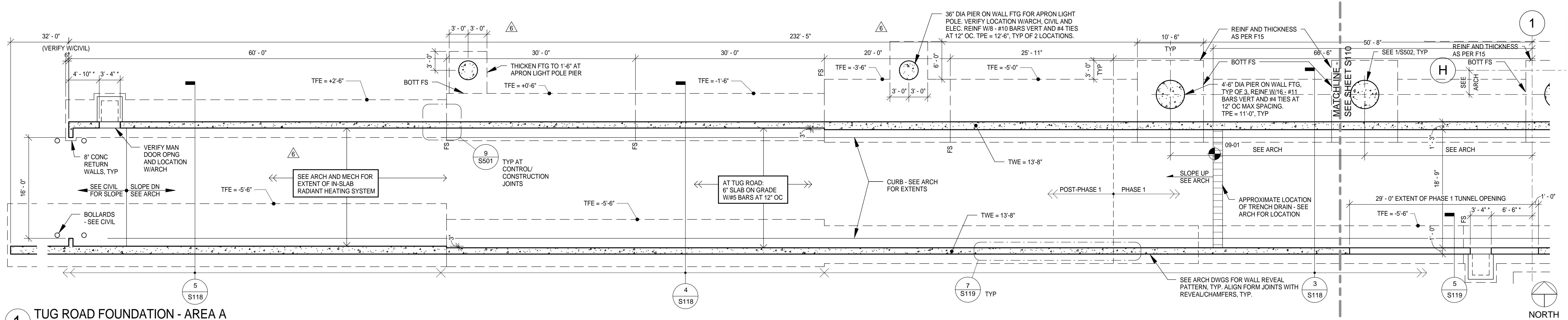


1 ROOF LEVEL FRAMING PLAN - AREA B

1/8" = 1'-0"

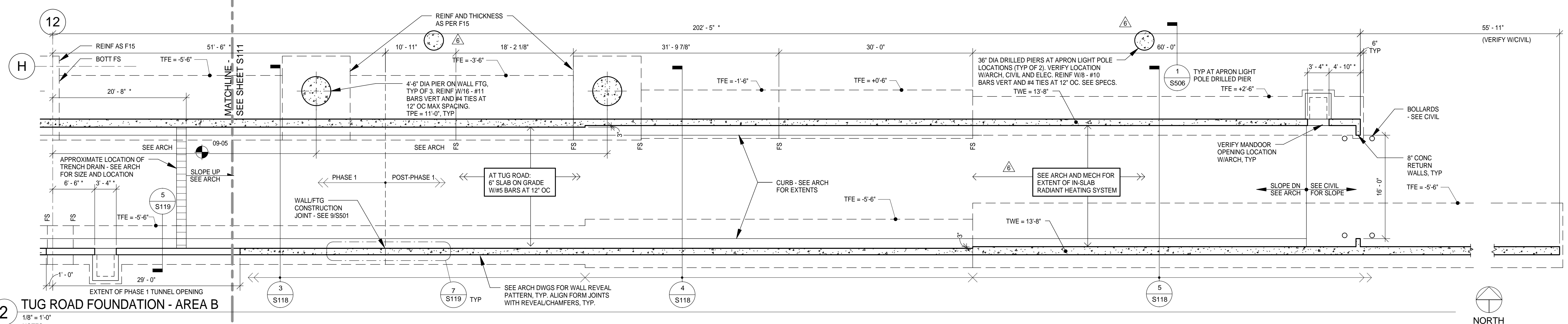
- TYPICAL PLAN NOTES:
- TOP OF STEEL BEAM ELEVATION IS REFERENCED (+ OR -) FROM ELEVATION 49' - 6".
 - TOP OF STEEL BEAM = 49' - 6", UNLESS NOTED OTHERWISE.
 - TOP OF SLAB ELEVATION VARIES. SEE PLAN.
 - REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS, ELEVATIONS, ANGLES AND LOCATION OF WORK POINTS. SEE SHEET S001 FOR TYPICAL ABBREVIATIONS AND S002 AND S003 FOR GENERAL STRUCTURAL NOTES.
 - BF1 ON PLAN INDICATES BRACED FRAME MARK. REFER TO S301 FOR BRACED FRAME ELEVATIONS, NOTES AND ADDITIONAL DETAIL.
 - S1 ON PLAN INDICATES SLAB ON METAL DECK MARK. D1 ON PLAN INDICATES ROOF DECK MARK. SEE SCHEDULE ON SHEET S701.
 - DO NOT CUT CONTROL JOINTS IN SLABS ON METAL DECK.
 - VERIFY EXACT SIZE, LOCATION AND QUANTITY OF REQUIRED OPENINGS THROUGH THE FLOOR AND/OR ROOF WITH ARCHITECTURAL AND OTHER CONSULTANT DRAWINGS AS NECESSARY. COORDINATE REQUIRED OPENINGS WITH ALL TRADES THAT REQUIRE THEM. MINOR OPENINGS ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
 - SEE PLAN AND SCHEDULES FOR COLUMN, WALL AND PIER INFORMATION.
 - HEADED STUDS ON PLAN ARE THUS: 3/4" DIAMETER x 0'-5" LONG. SEE GENERAL STRUCTURAL NOTES AND DETAILS ON SHEETS S701 AND S702 FOR PLACEMENT REQUIREMENTS ON BEAMS AND GIRDERS.
 - * ON PLAN INDICATES DIMENSION TO BE VERIFIED BY THE CONTRACTOR WITH SUPPLIERS, MANUFACTURERS, AND ALL ARCHITECTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS AS NECESSARY PRIOR TO CONSTRUCTION.
 - W8 "STEEL SAFETY BEAM" DESIGNED USING RECOMMENDED 5,000 POUND NET LIVE LOAD PER OTIS DRAWING NO. AAA 28020BD (NO DATE). TOP OF BEAM ELEVATION TO BE COORDINATED WITH REQUIRED ELEVATOR CLEAR HEIGHT. BEAR ON BEARING PLATE 1/2" x 8" x 0'-8" WITH 3/4" DIAMETER x 4" LONG HSA EACH END OVER FULLY GROUTED CELL. VERIFY SAFETY BEAM REQUIREMENTS WITH ELEVATOR SUPPLIER PRIOR TO FABRICATION.





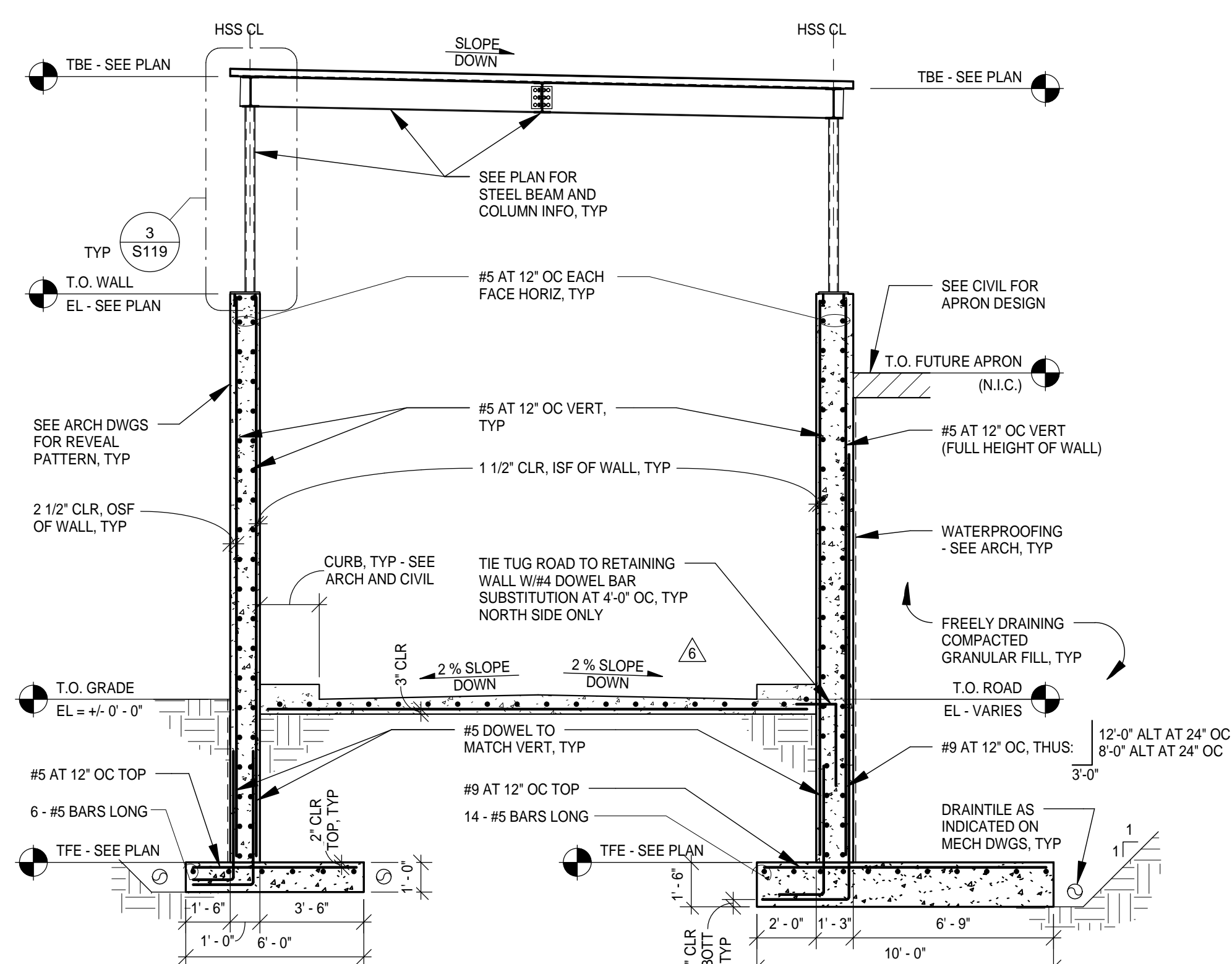
1 TUG ROAD FOUNDATION - AREA A

1/8" = 1'-0"
NOTES:
1. REFER TO S110 FOR TYPICAL PLAN NOTES.



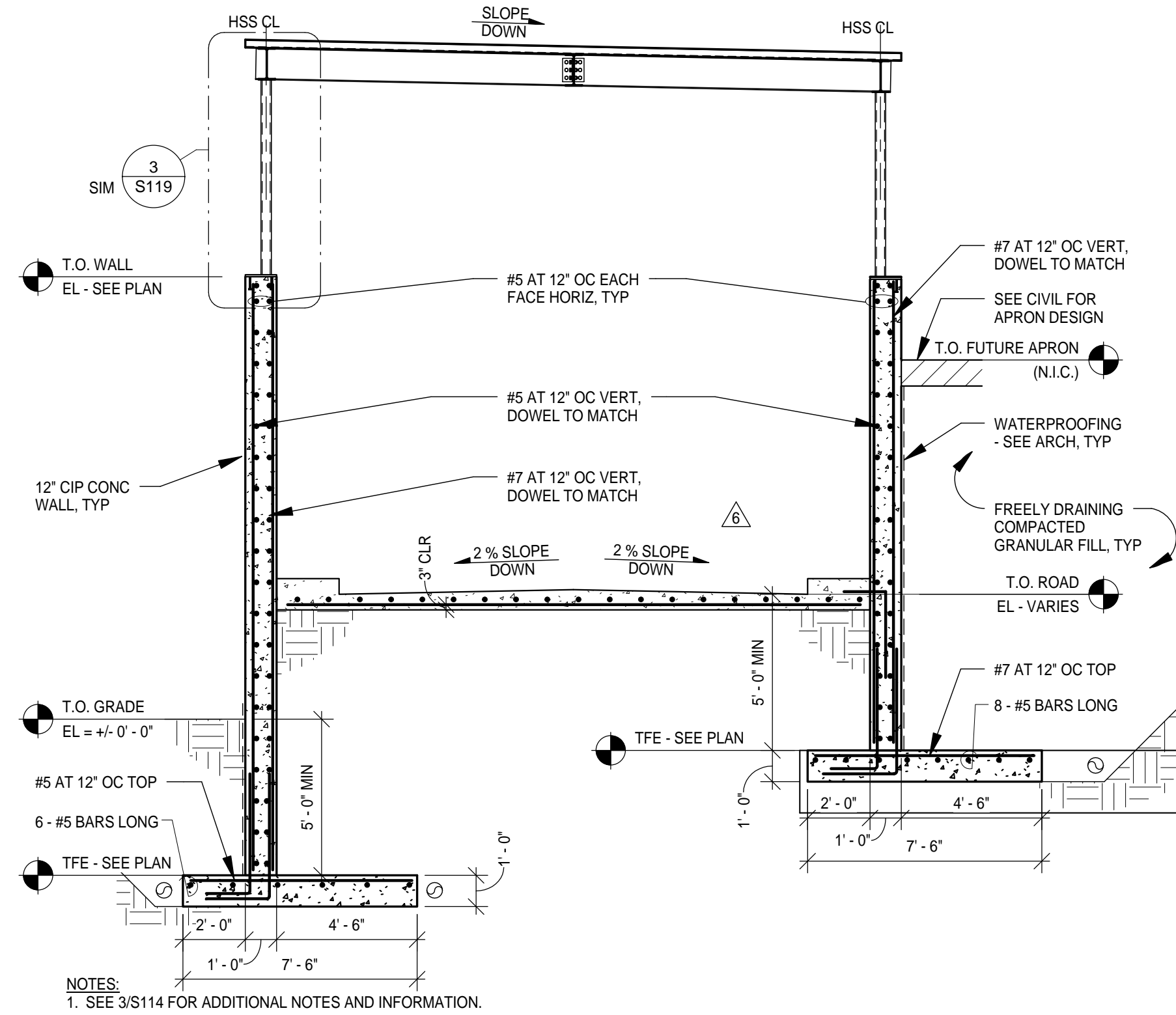
2 TUG ROAD FOUNDATION - AREA B

1/8" = 1'-0"
NOTES:
1. REFER TO S110 FOR TYPICAL PLAN NOTES.



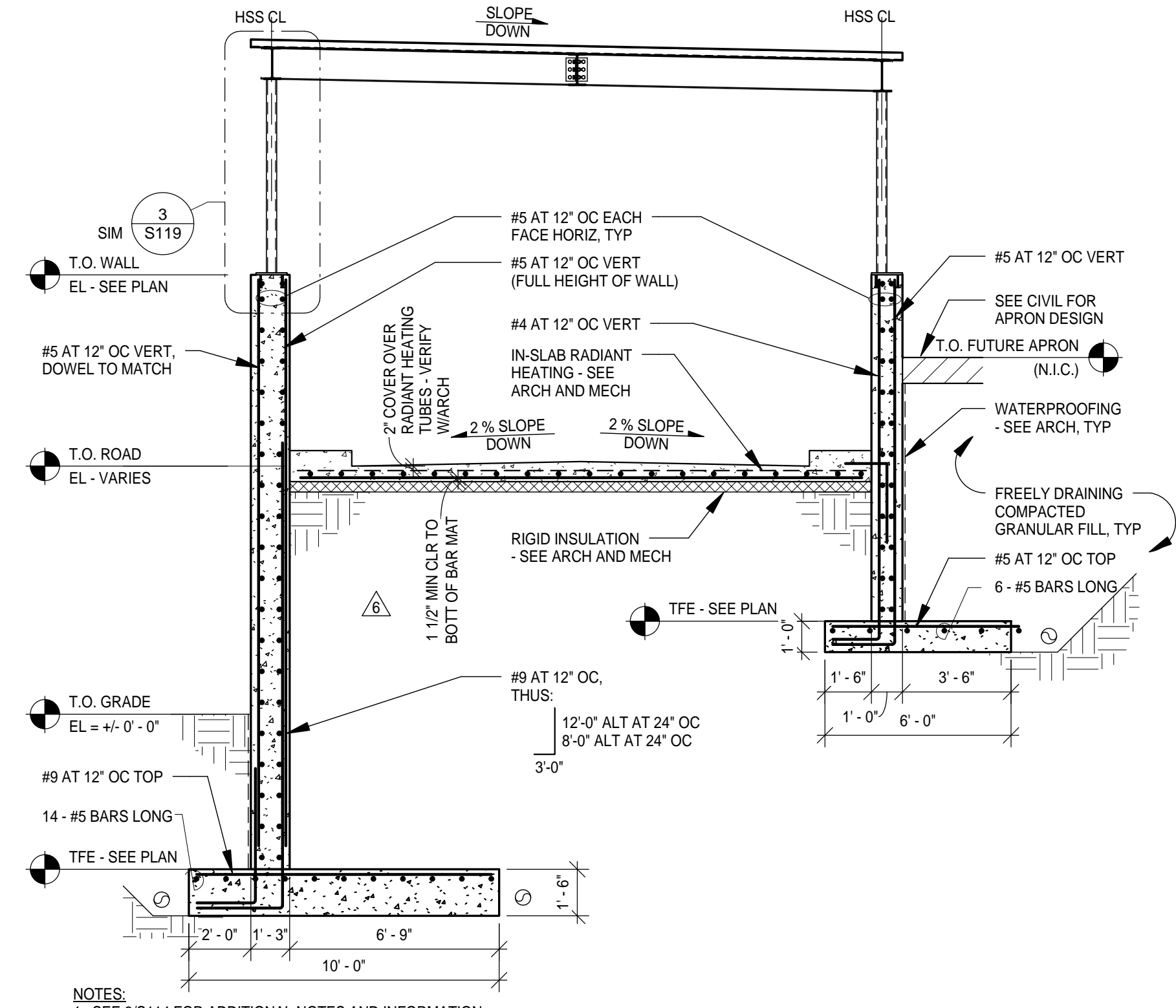
3 SECTION NEAR TERMINAL (LOOKING WEST)

1/4" = 1'-0"



4 SECTION HALFWAY DOWN TUG ROAD (LOOKING WEST)

1/4" = 1'-0"



5 SECTION (LOOKING WEST)

1/4" = 1'-0"

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Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
BID PACKAGE 1	FOUNDATION PERMIT	5.12.10
1.2.3	NOT CHANGED	6.4.10
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
5	100% REVIEW	12.15.10
6	BID PACKAGE 2A	01.24.11
	BP2A ADDENDUM 2	02.25.11
	BP 2A CONFORMANCE	05.02.11
	RFP 120	07.22.11

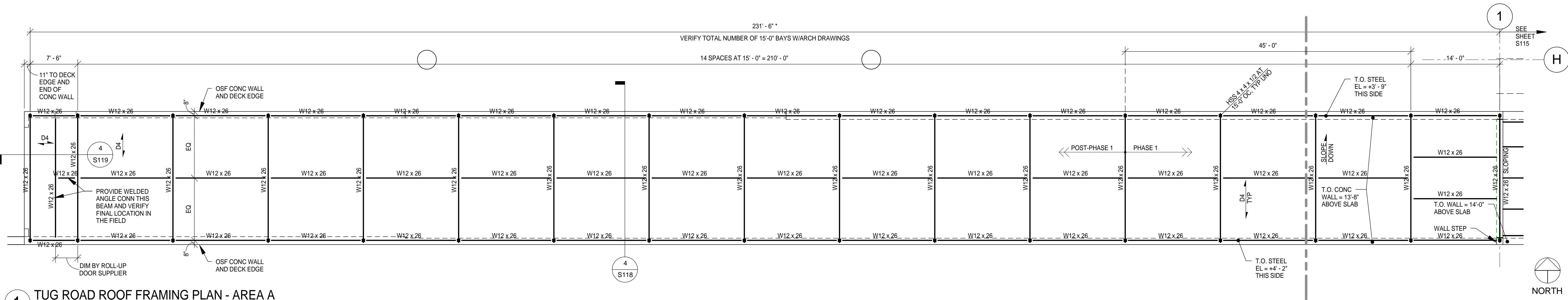
DATE ISSUED: 08-23-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

**SHEET TITLE
TUG ROAD
FOUNDATION
PLAN**

**SHEET NUMBER
S118**

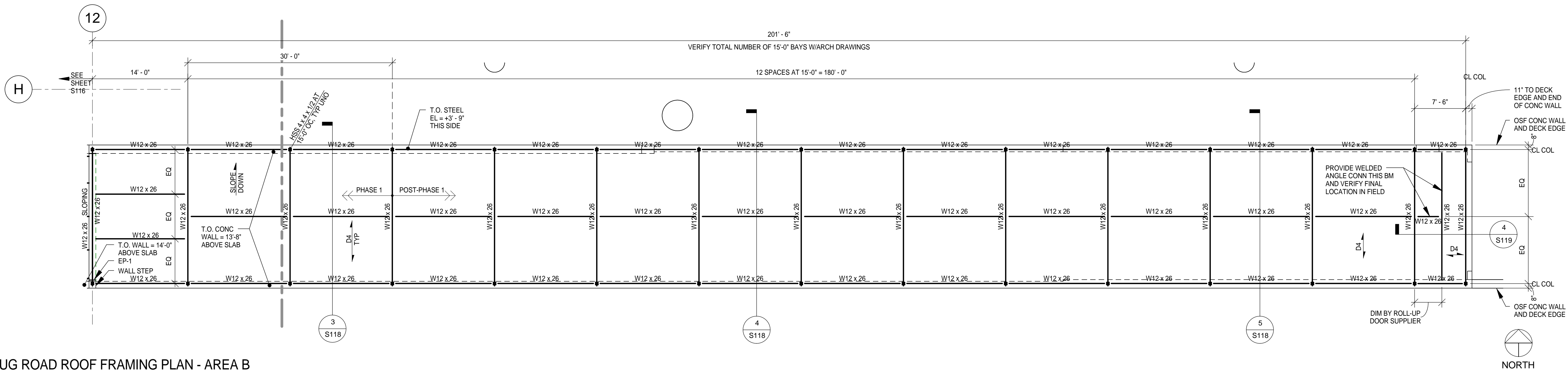
**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**



1 TUG ROAD ROOF FRAMING PLAN - AREA A

1/8" = 1'-0"

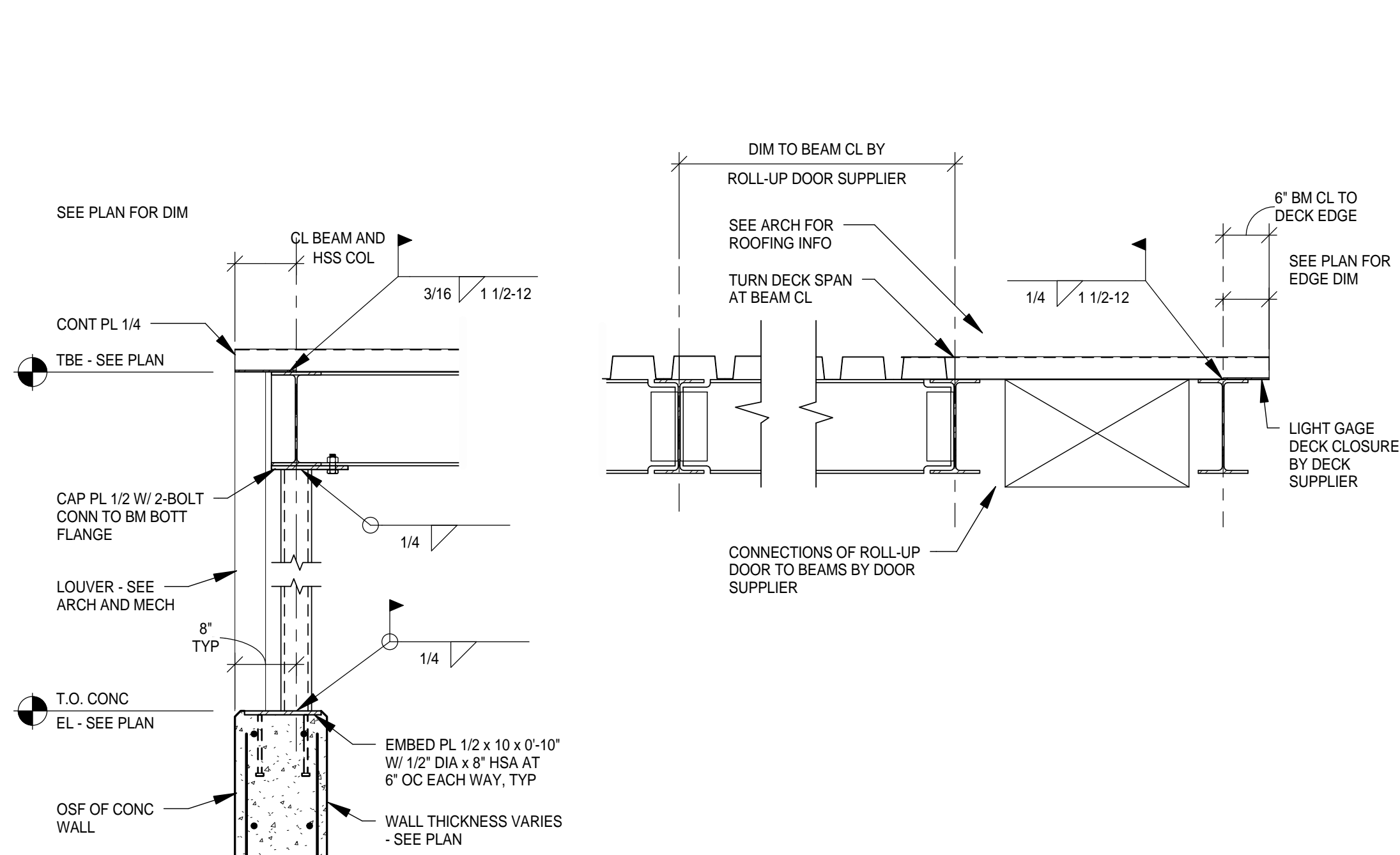
NOTES:
1. REFER TO S113 FOR TYPICAL PLAN NOTES.



2 TUG ROAD ROOF FRAMING PLAN - AREA B

1/8" = 1'-0"

NOTES:
1. REFER TO S113 FOR TYPICAL PLAN NOTES.

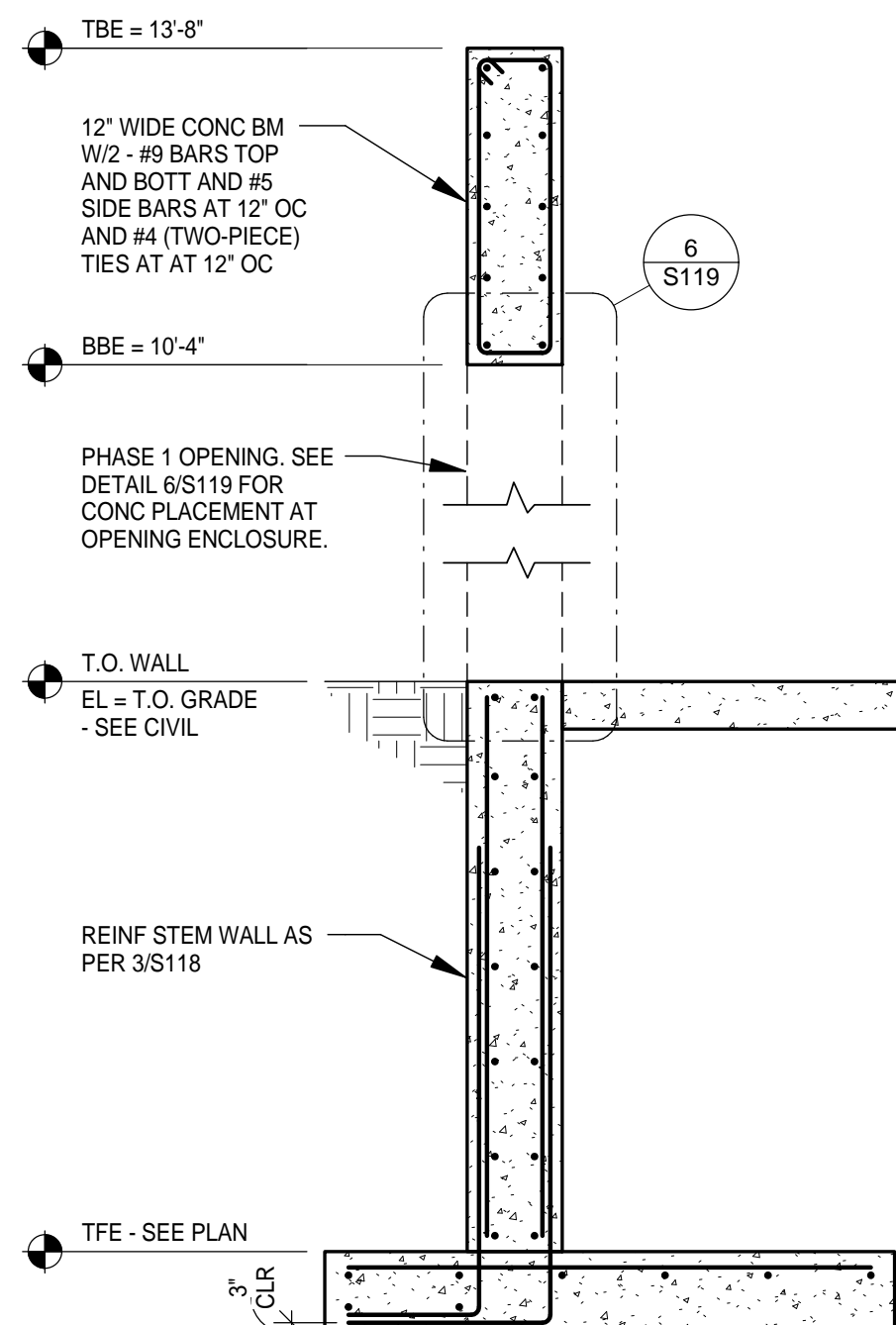


3 SECTION

3/4" = 1'-0"

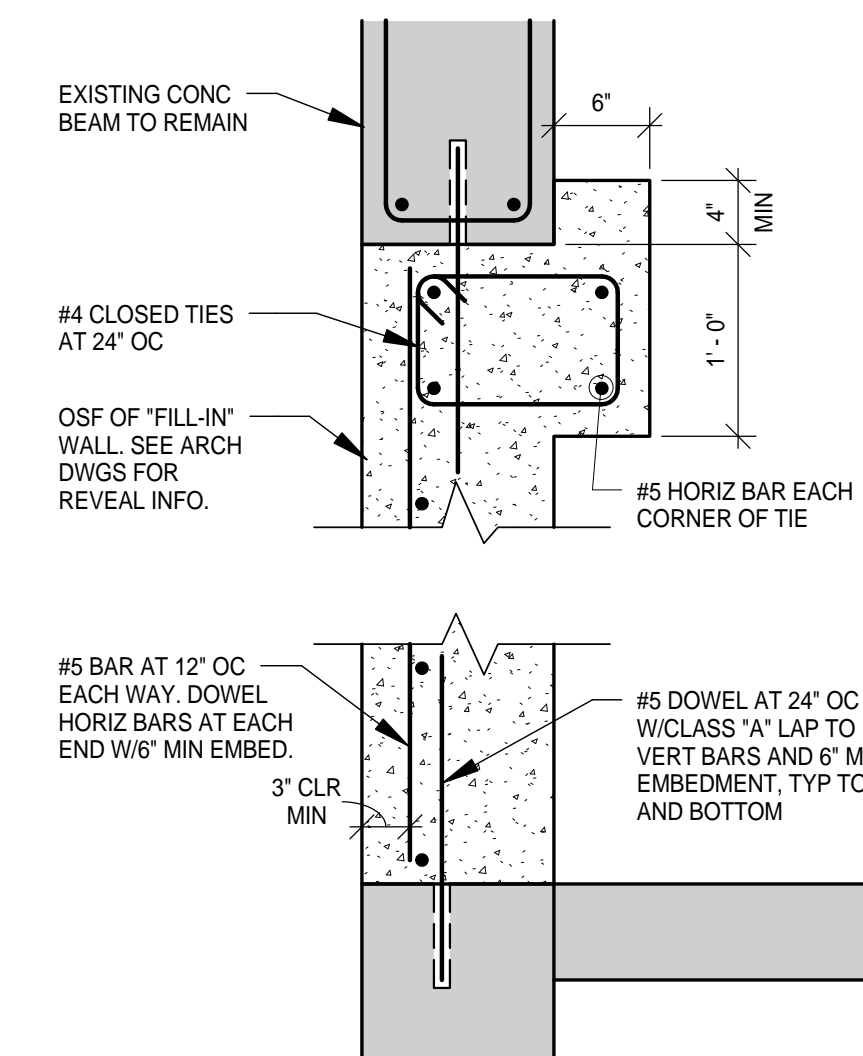
4 SECTION

3/4" = 1'-0"



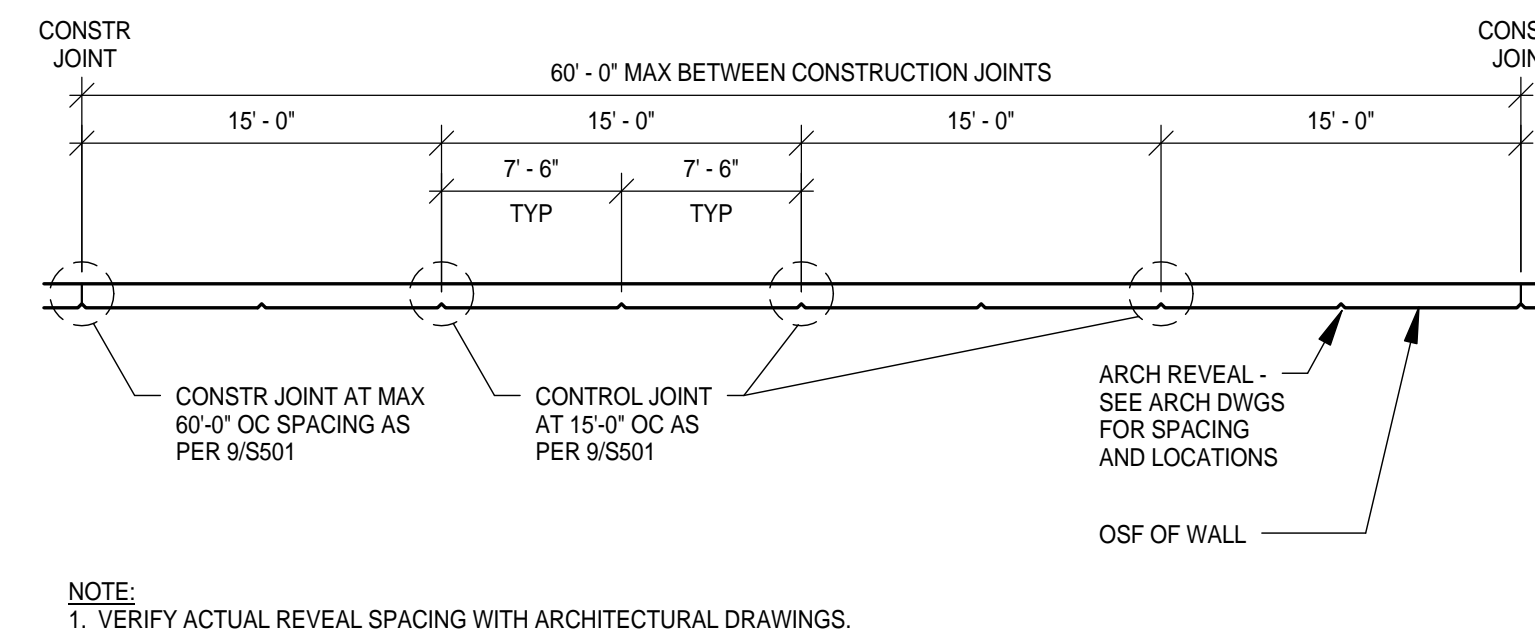
5 SECTION AT PHASE 1 TUNNEL OPENING

1/2" = 1'-0"



6 SECTION AT PHASE 1 OPENING CLOSURE

1" = 1'-0"



7 PLAN DETAIL

1/8" = 1'-0"

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Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
BID PACKAGE 1		5.12.10
FOUNDATION PERMIT		6.4.10
1,2,3 NOT CHANGED		
CONFORMANCE SET		7.12.10
BUILDING PERMIT		8.6.10
5 100% REVIEW		12.15.10
BID PACKAGE 2A		01.24.11
BP 2A CONFORMANCE		05.02.11
RP 120		07.22.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SJL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

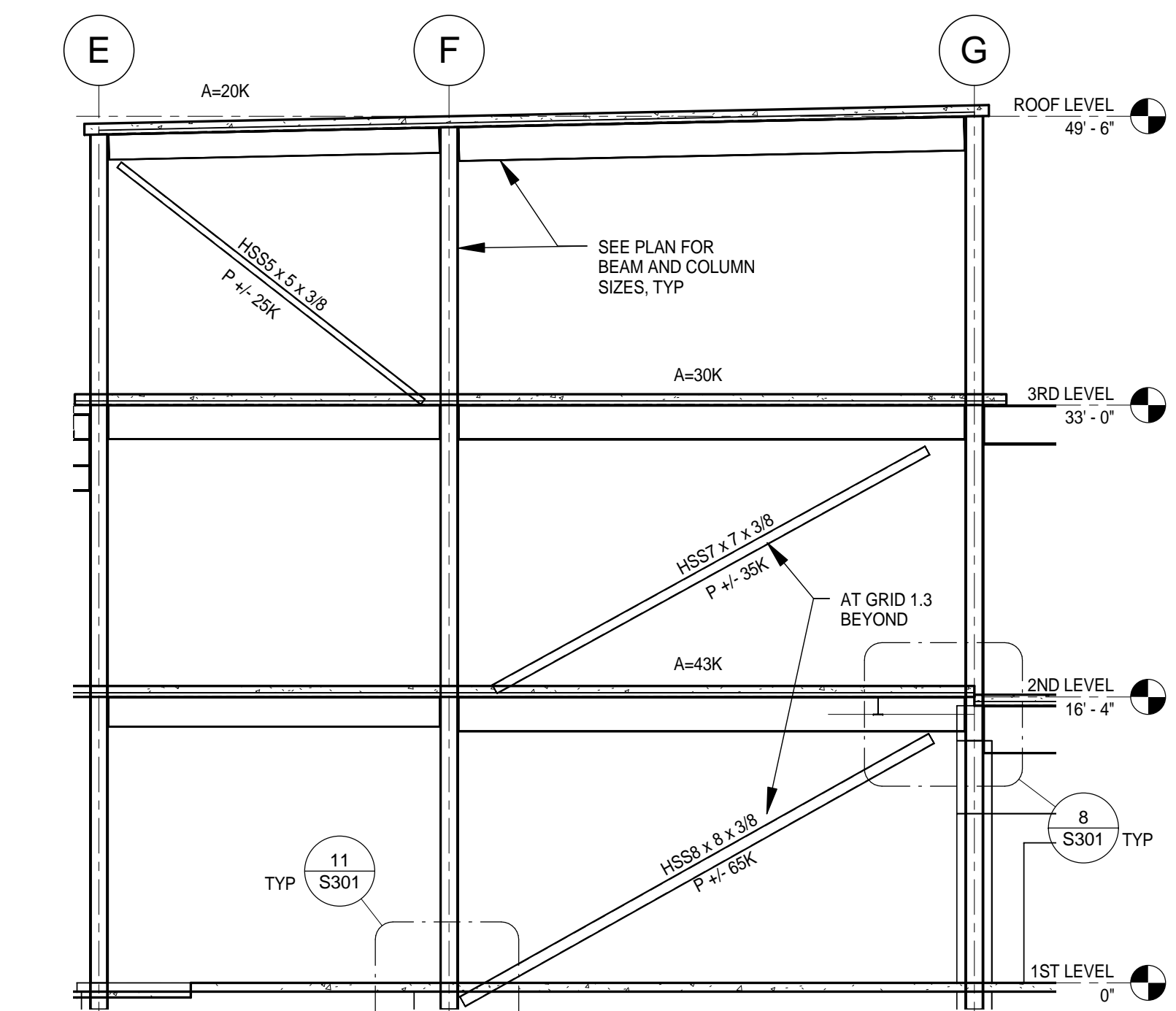
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**SHEET TITLE
TUG ROAD ROOF
FRAMING PLAN**

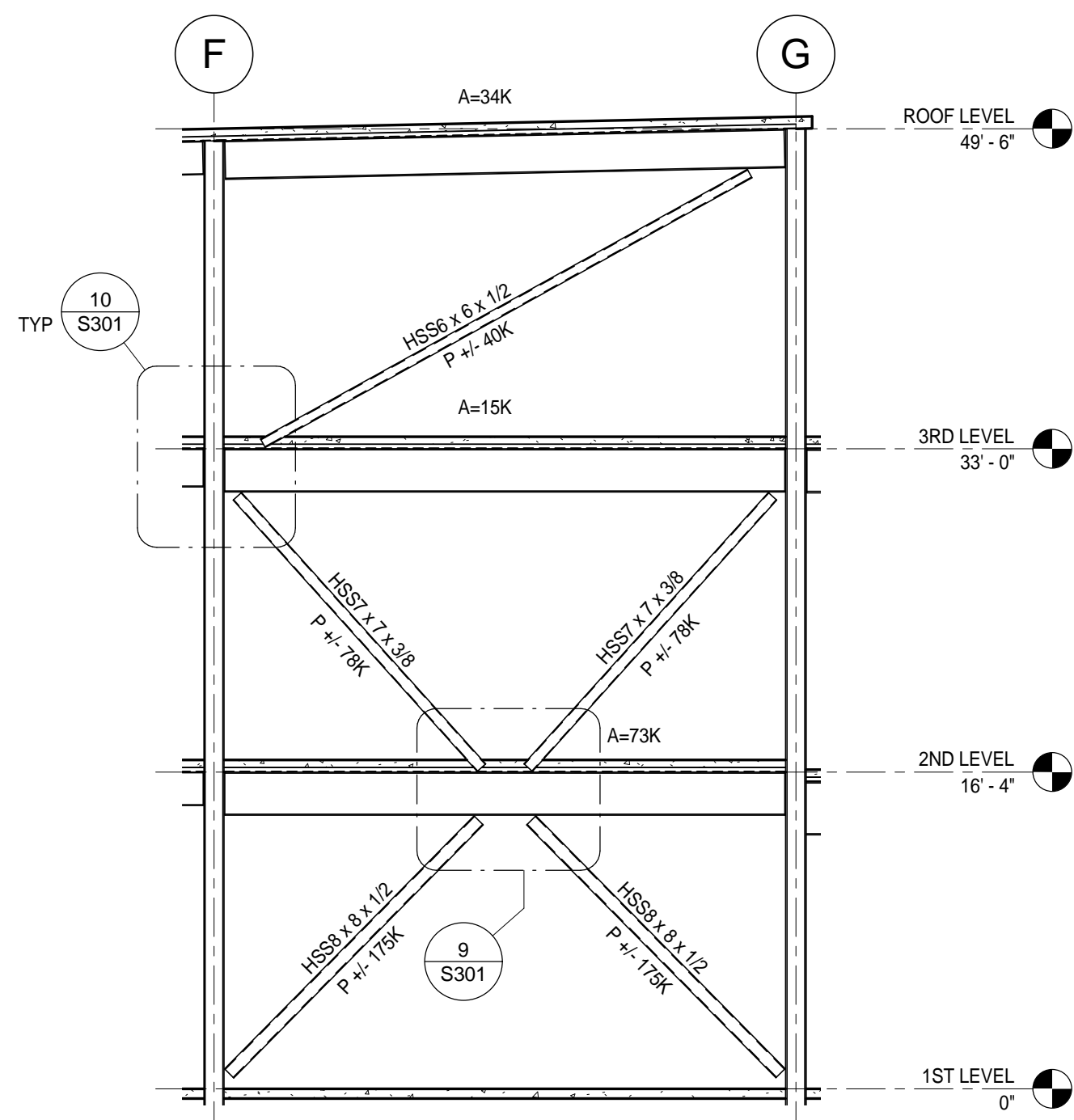
SHEET NUMBER

S119

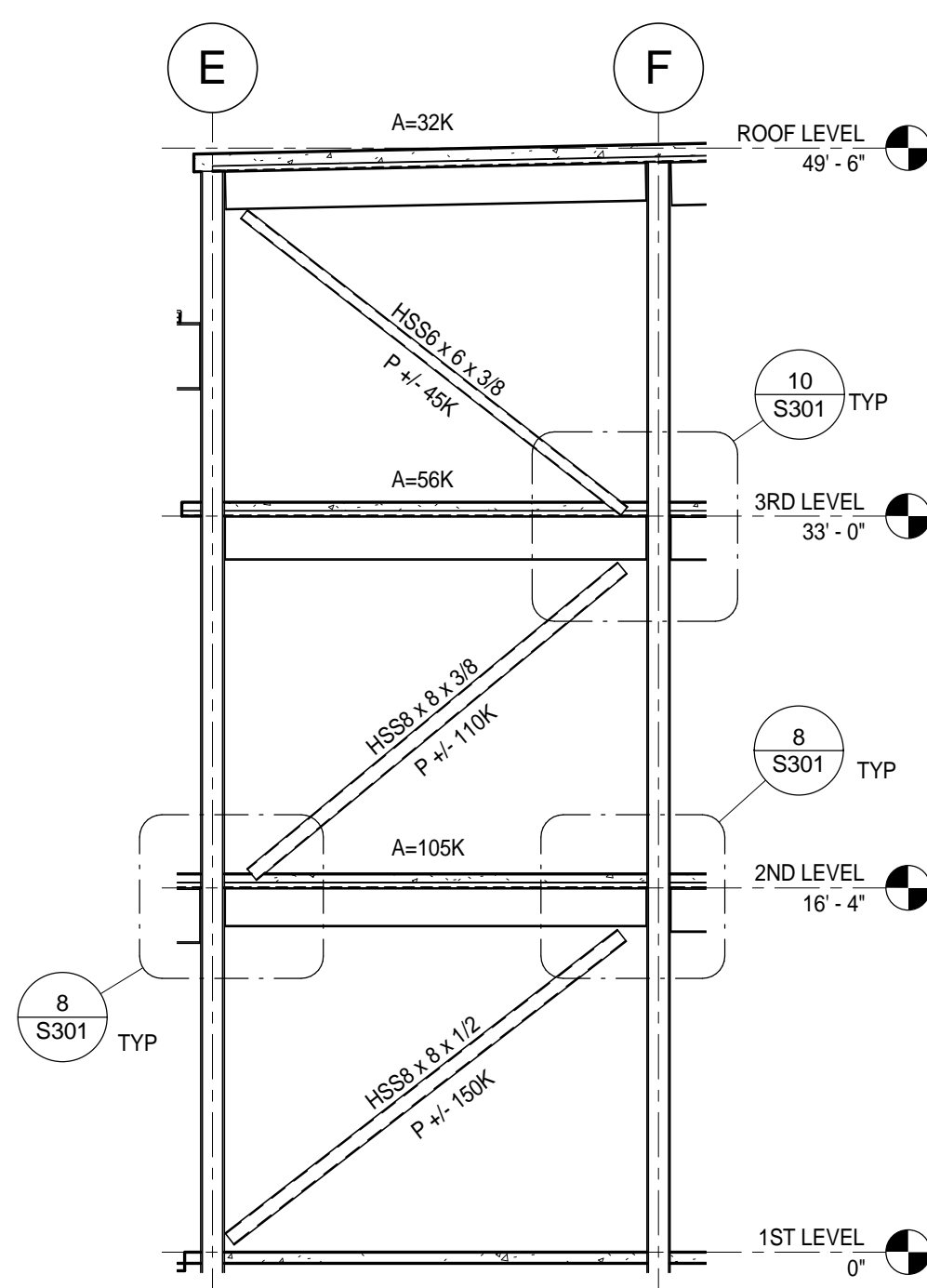
**BID PACKAGE 2B
ISSUED FOR BID
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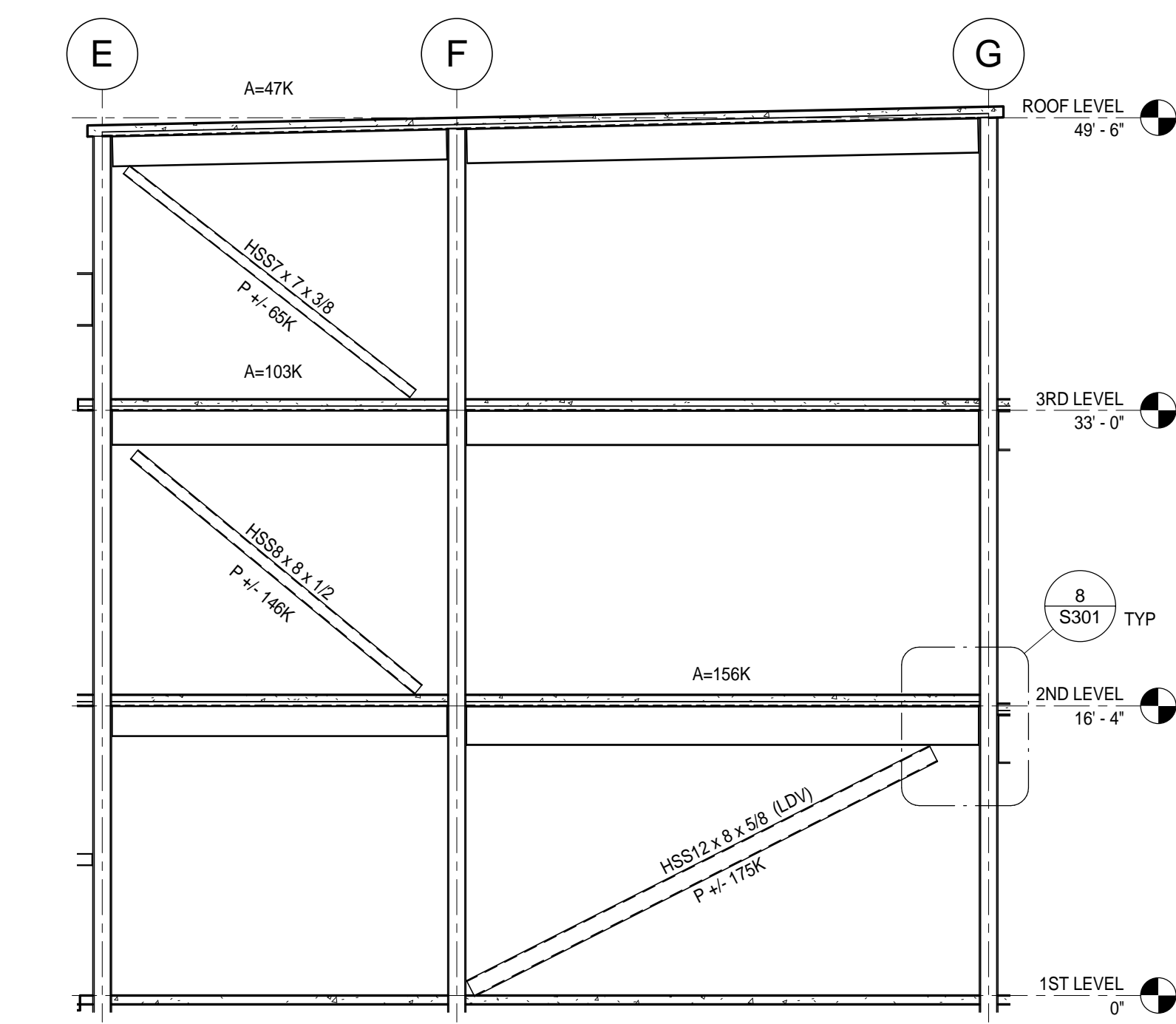
1 BF1 - BRACING AT GRID 2 AND 1.3
1/8" = 1'-0"



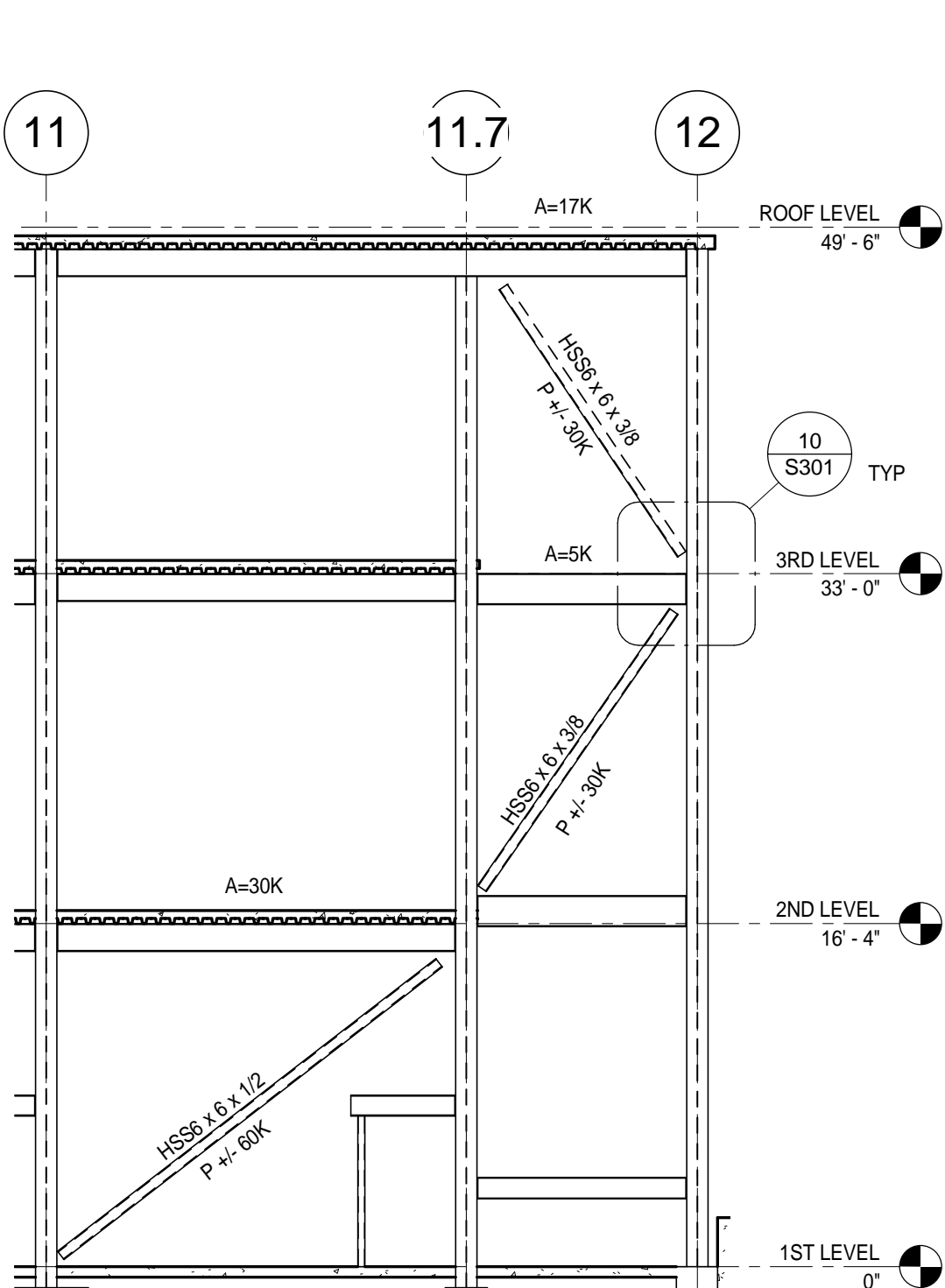
2 BF2 - BRACING AT GRID 4
1/8" = 1'-0"



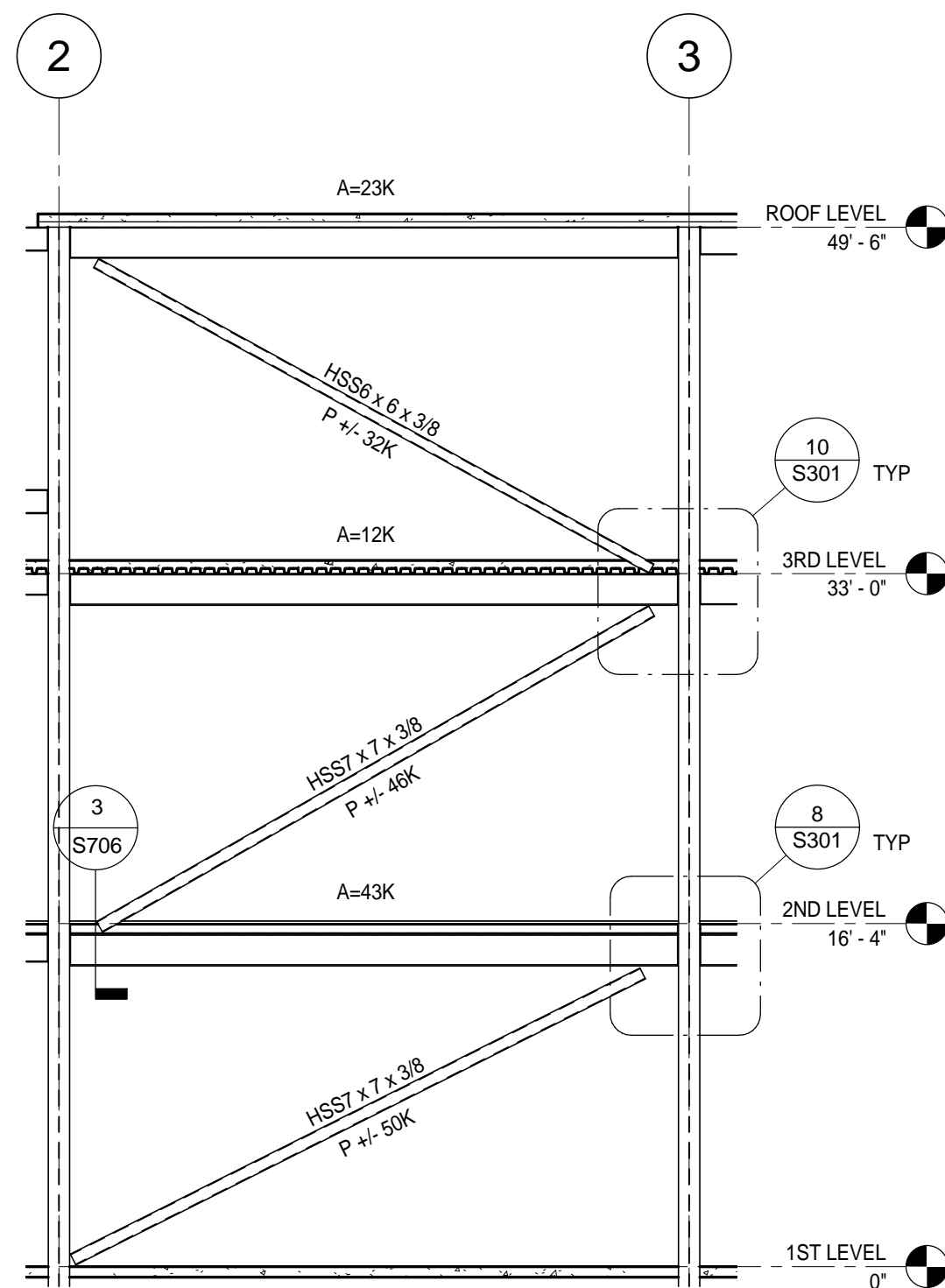
3 BF3 - BRACING AT GRID 7
1/8" = 1'-0"



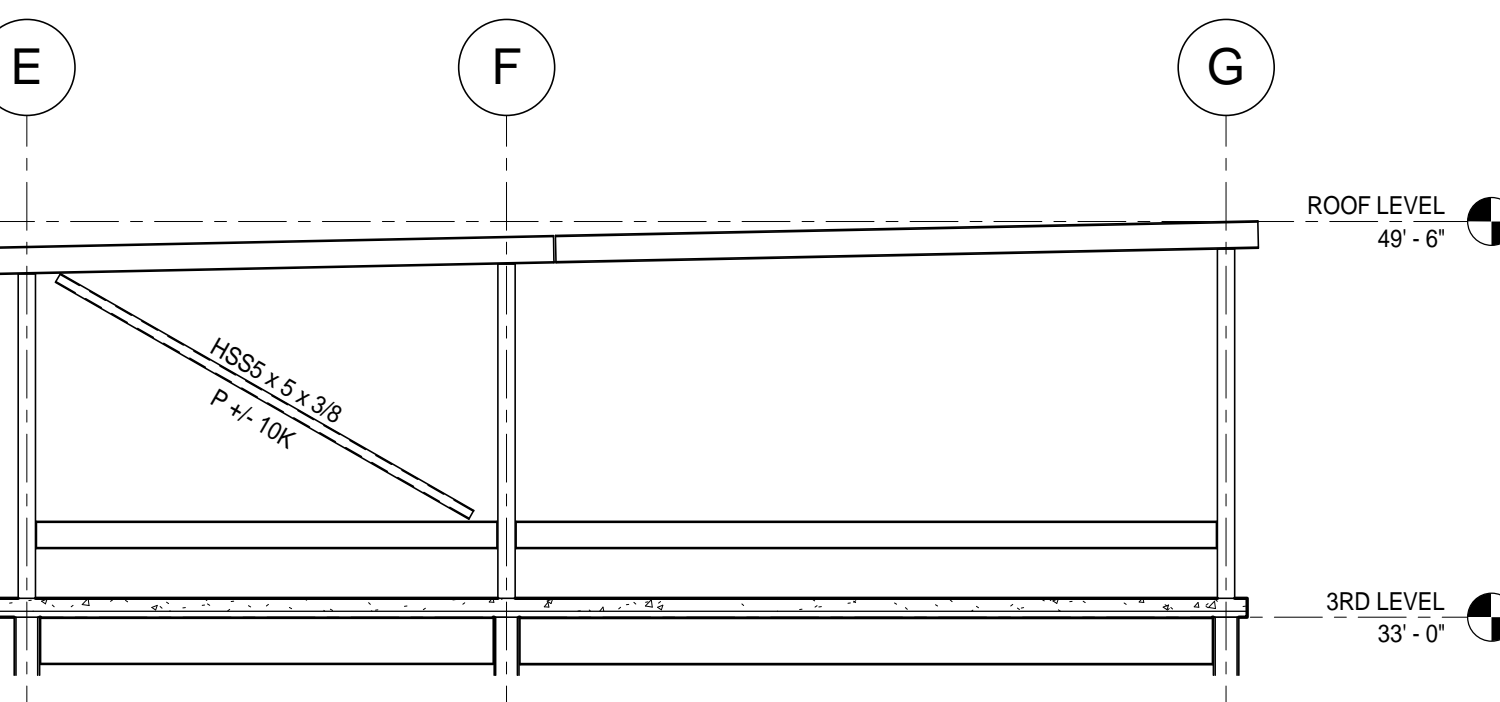
4 BF4 - BRACING AT GRID 10
1/8" = 1'-0"



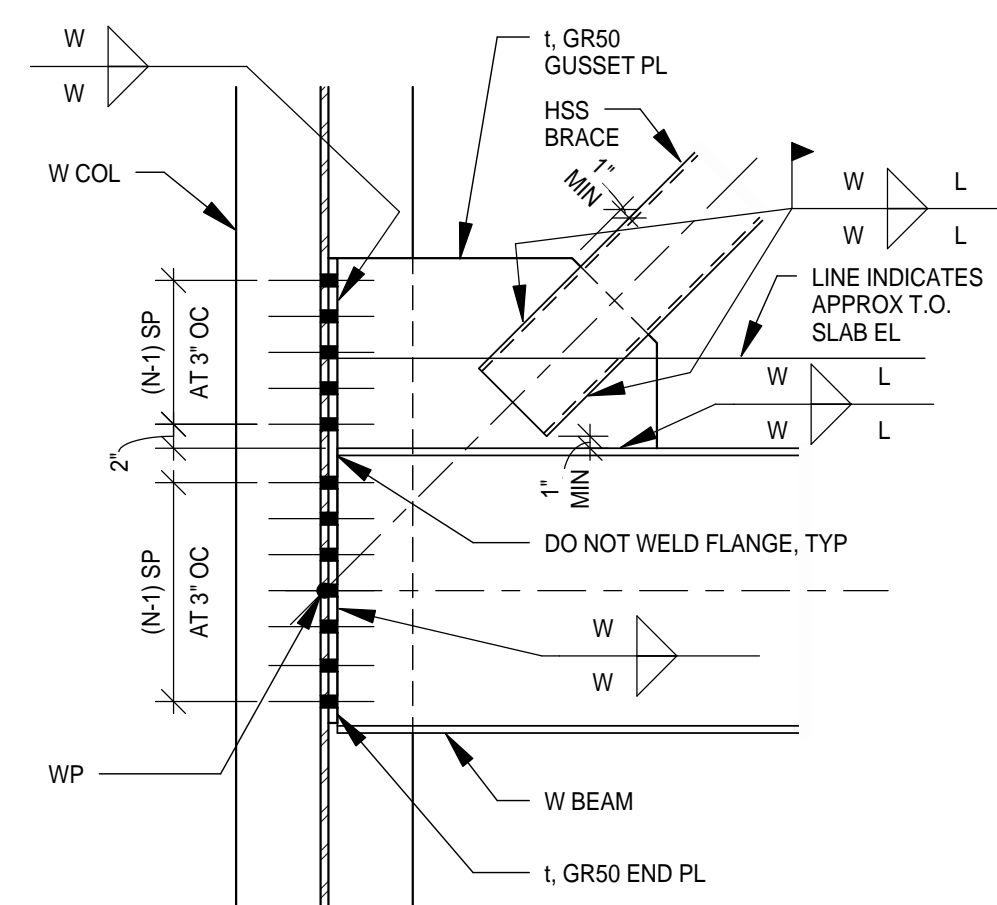
5 BF5 - BRACING AT GRID E
1/8" = 1'-0"



6 BF6 - BRACING AT GRID G
1/8" = 1'-0"

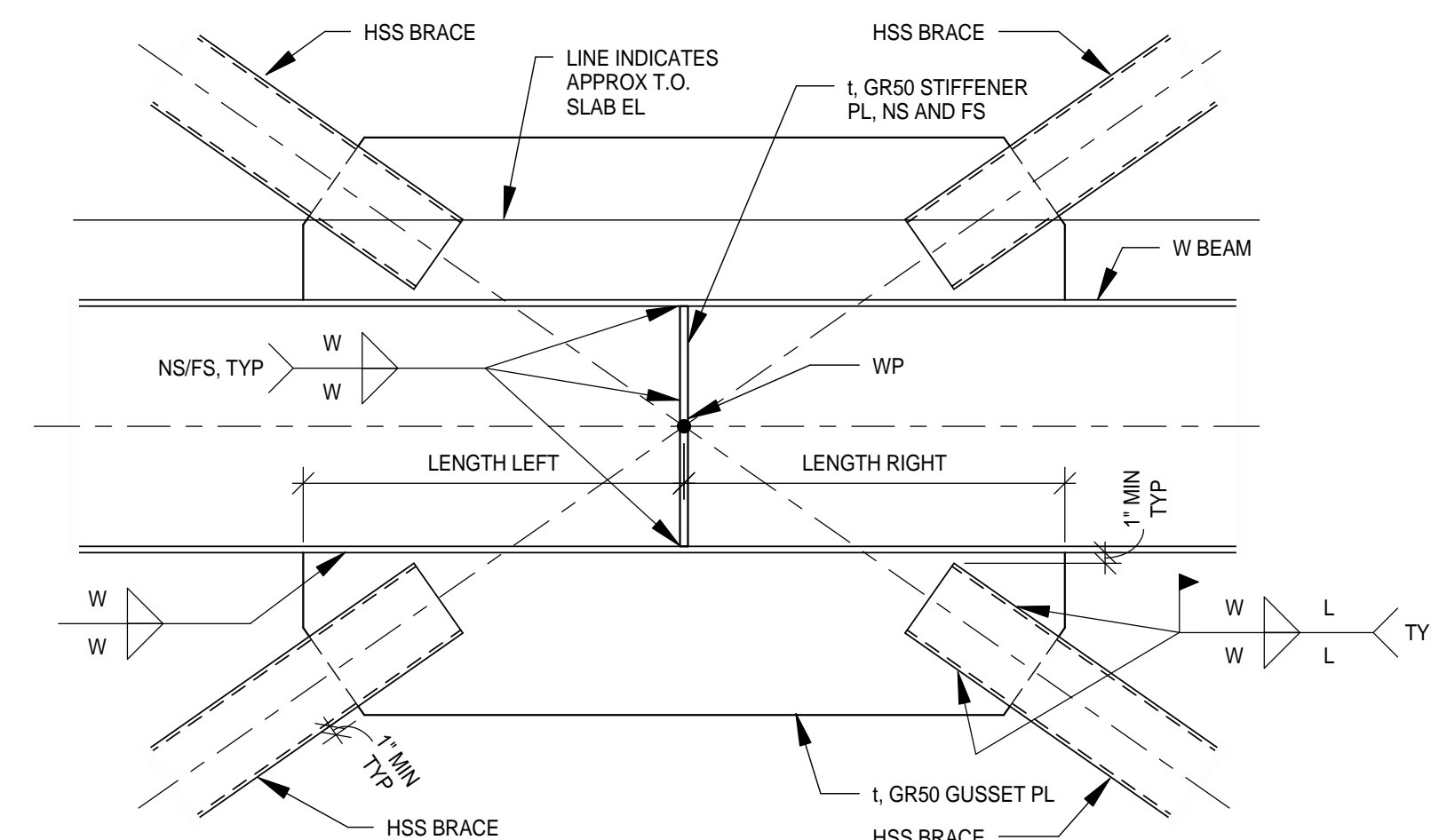


7 BF7 - BRACING AT GRID 1
1/8" = 1'-0"



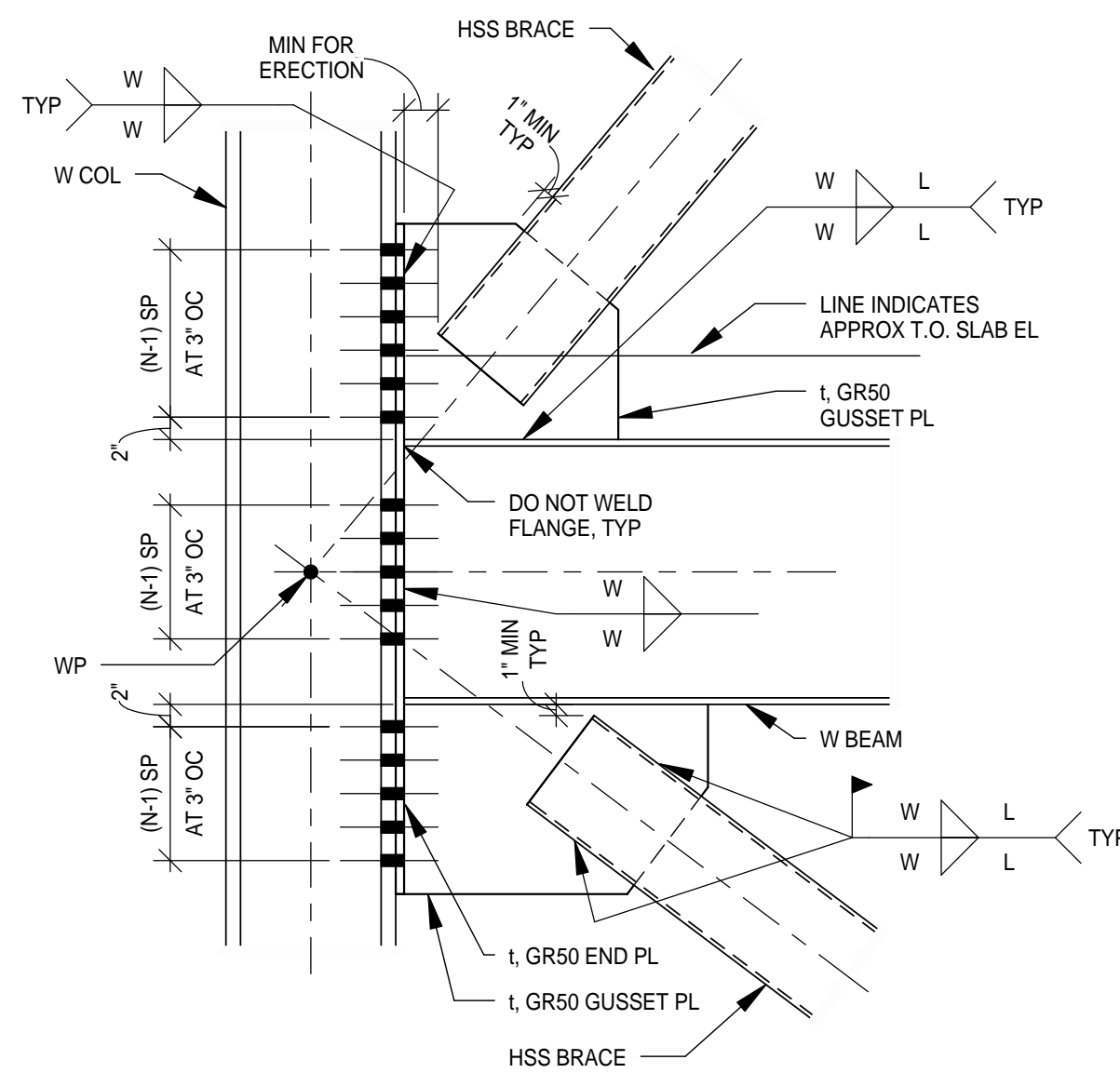
NOTES:
1. SEE GENERAL BRACED FRAME CONNECTION NOTES.

8 DETAIL
NO SCALE



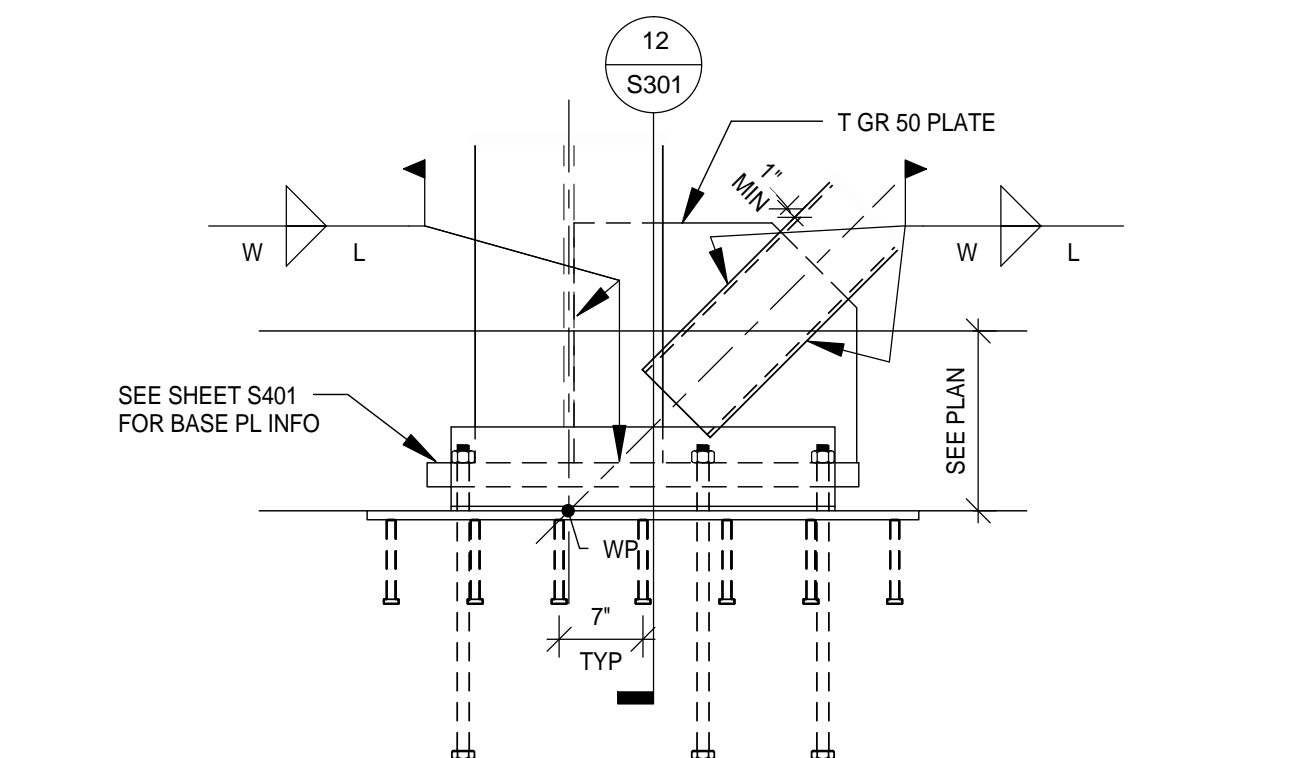
NOTES:
1. SEE GENERAL BRACED FRAME CONNECTION NOTES.

9 DETAIL
NO SCALE

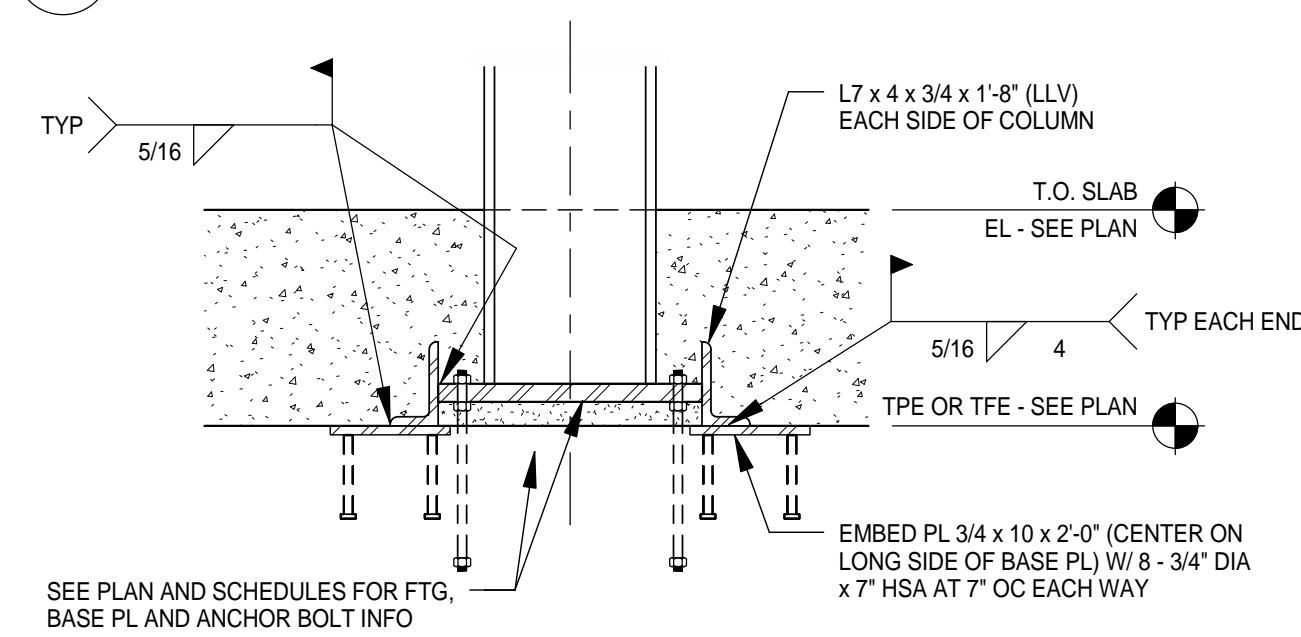


NOTES:
1. SEE GENERAL BRACED FRAME CONNECTION NOTES.

10 DETAIL
NO SCALE



11 TYPICAL FOUNDATION DETAIL AT BRACED FRAMES
NO SCALE



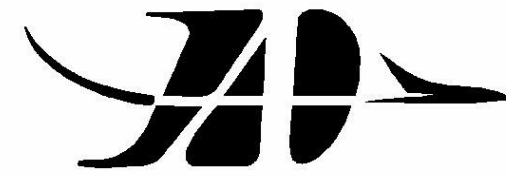
12 SECTION
NO SCALE

- GENERAL BRACED FRAME CONNECTION NOTES:**
1. ALL PLATE MATERIAL USED IN CONNECTIONS: ASTM A572-50.
 2. ALL ANGLE MATERIAL USED IN CONNECTIONS: ASTM A-36.
 3. ALL BOLTS 3/4" DIAMETER A325N OR 1" A490N BOLTS, UNLESS NOTED OTHERWISE. ALL BOLTS IN BRACED FRAMES CONNECTIONS SHALL BE FULLY TENSIONED.
 4. ALL BOLTS ARE IN STANDARD HOLES, UNLESS NOTED OTHERWISE. FABRICATOR MAY OPT TO PROVIDE SHORT SLOTTED HOLES NORMAL TO LOAD DIRECTION IN GIRDER/BRACE END PLATES.
 5. 1 1/2" MINIMUM EDGE DISTANCE.
 6. 6" MAXIMUM EDGE DISTANCE.
 7. 2" MINIMUM PITCH.
 8. E70XX WELDING ELECTRODES.
 9. CONNECTIONS SHOWN ARE CONCEPTUAL DETAILS ONLY. WELD LENGTHS, NUMBER OF BOLTS AND PLATE SIZES WILL VARY AS REQUIRED FOR DESIGN FORCES INDICATED.
 10. PROVIDE A SLOTTED ERECTION AID FOR BRACE MEMBERS.
 11. DO NOT WELD BRACE TO UPPER GUSSET UNTIL AFTER COMPOSITE CONCRETE FLOORS HAVE BEEN POURED.
 12. "P" INDICATES MEMBER AXIAL FORCE. "A" INDICATES AXIAL FORCE TO BE TRANSFERRED THROUGH THE CONNECTION.
 13. "t" INDICATES PLATE THICKNESS TO BE DETERMINED BY FABRICATOR BASED ON THE DESIGN FORCES INDICATED.

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SJA ARCHITECTS
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Structural Engineers:

MBJ CONSULTING ENG.
501 Lake Avenue South, Suite 300, Duluth MN 55802
TEL: (218) 722-1056 / FAX: (218) 722-6306

M/E/P/FP Engineers:

COSENTINI
1 East Wacker Drive, Suite 103, Chicago IL 60601
TEL: (312) 670-1800 / FAX: (312) 670-1801

Baggage Handling Systems Consultants:

BNP ASSOCIATES INC.
101 East Ridge Office Park, Suite 103, Danbury CT 06810
TEL: (203) 792-3000 / FAX: (203) 792-4900

Landscape Consultants:

APPOLD DESIGN
2432 East First Street, Duluth MN 55812
TEL: (218) 591-5079

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
BID PACKAGE 1		5.12.10
FOUNDATION PERMIT		6.4.10
1,2,3 NOT CHANGED		
CONFORMANCE SET		7.12.10
BUILDING PERMIT		8.6.10
100% REVIEW		12.15.10
BID PACKAGE 2A		01.24.11
BP 2A CONFORMANCE		05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SJL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

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SHEET TITLE
**BRACING
ELEVATIONS AND
DETAILS**

SHEET NUMBER

S301

**BID PACKAGE 2B
ISSUED FOR BID
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Reynolds, Smith and Hills, Inc.

4525 Airport Approach Rd. Ste A
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Signature:

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	BID PACKAGE 1	5.12.10
	FOUNDATION PERMIT	6.4.10
1,2,3	NOT CHANGED	
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	BUILDING PERMIT	8.6.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SJL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

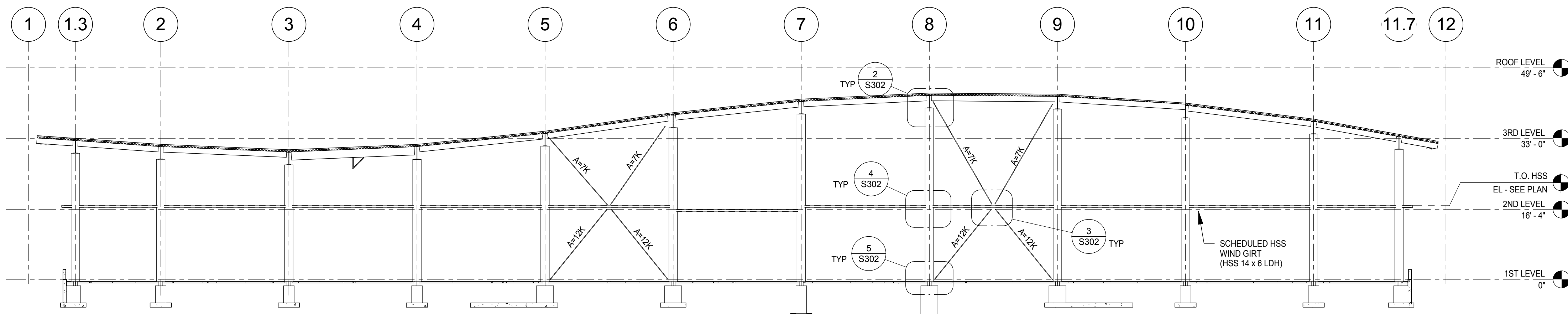
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SHEET TITLE
**BRACING
ELEVATIONS AND
DETAILS**

SHEET NUMBER

S302

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**

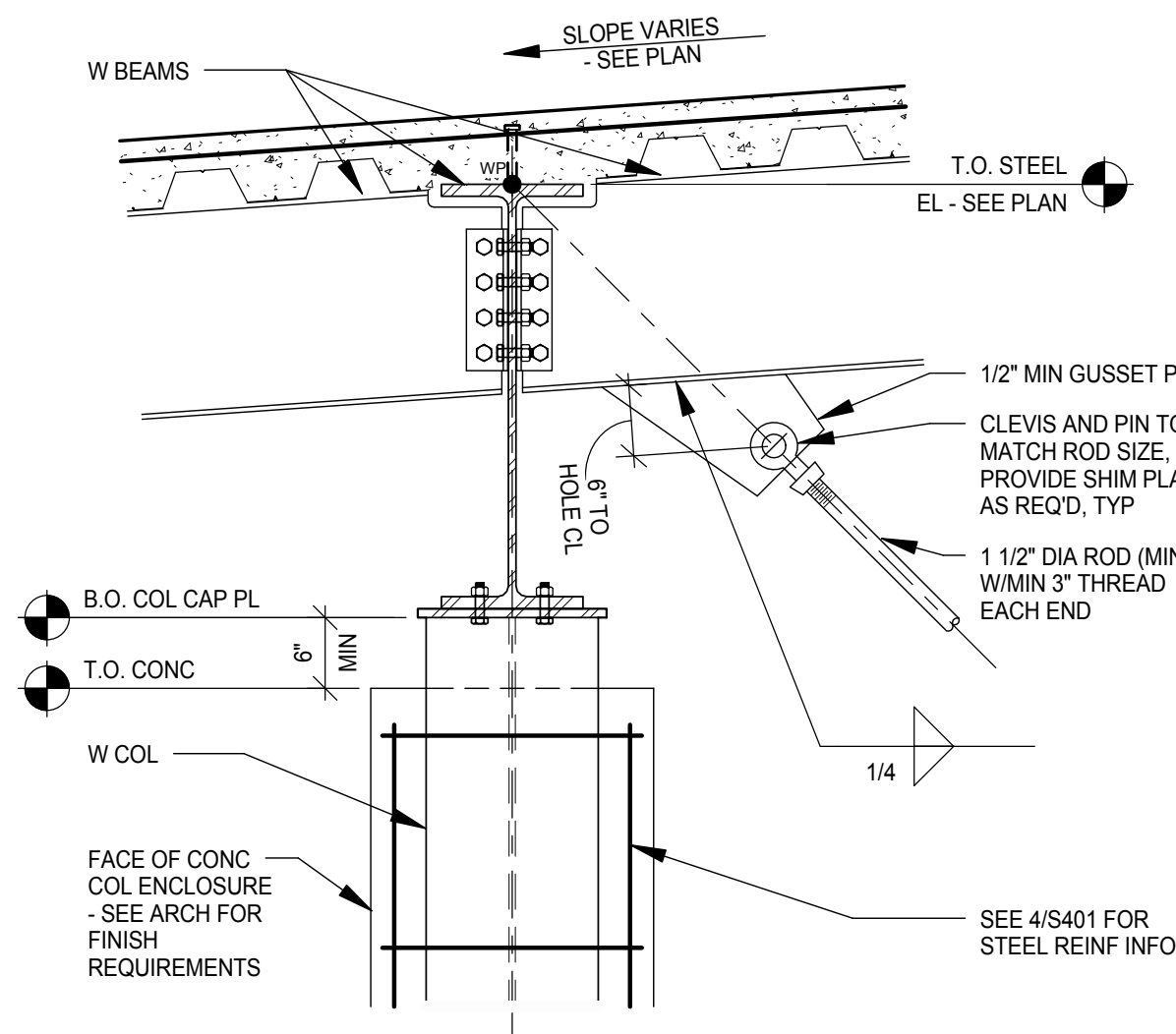


1 ELEVATION AT GRID "C"

1/16" = 1'-0"

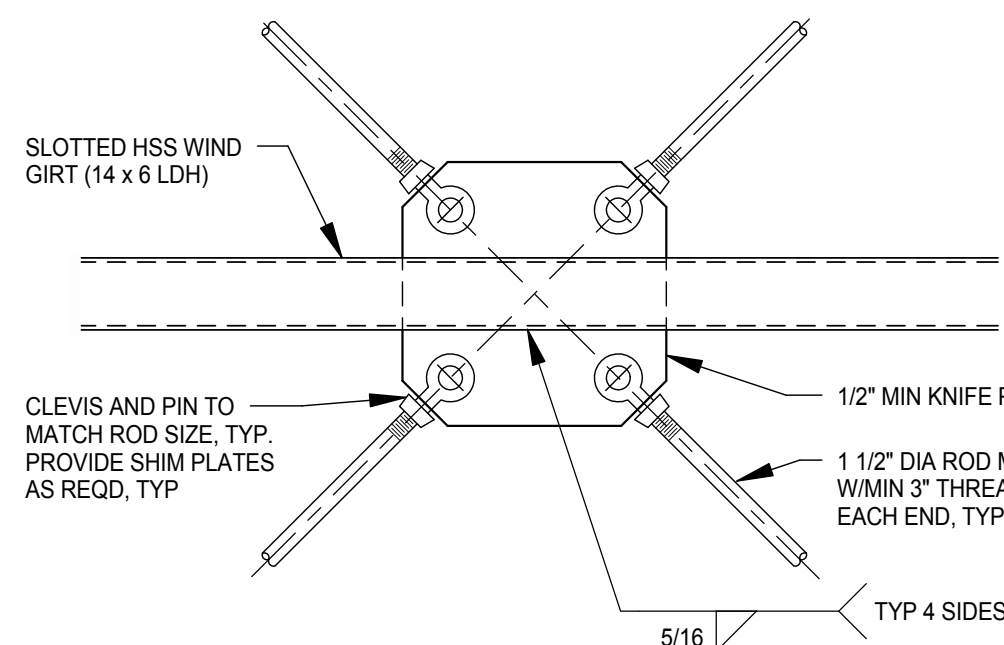
NOTES:

1. SEE GENERAL BRACED FRAME CONNECTION NOTES ON SHEET S301, TYPICAL THIS SHEET.



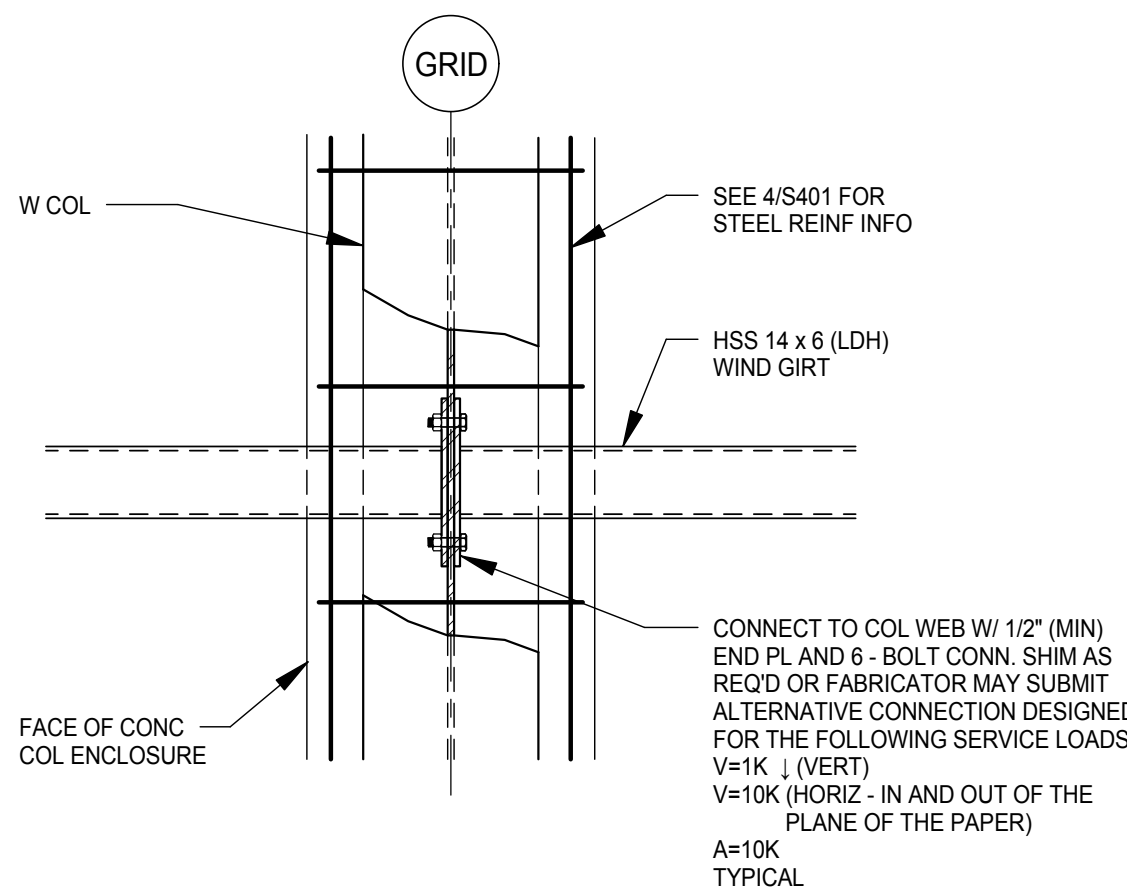
2 SECTION AT COLUMN HEAD

3/4" = 1'-0"



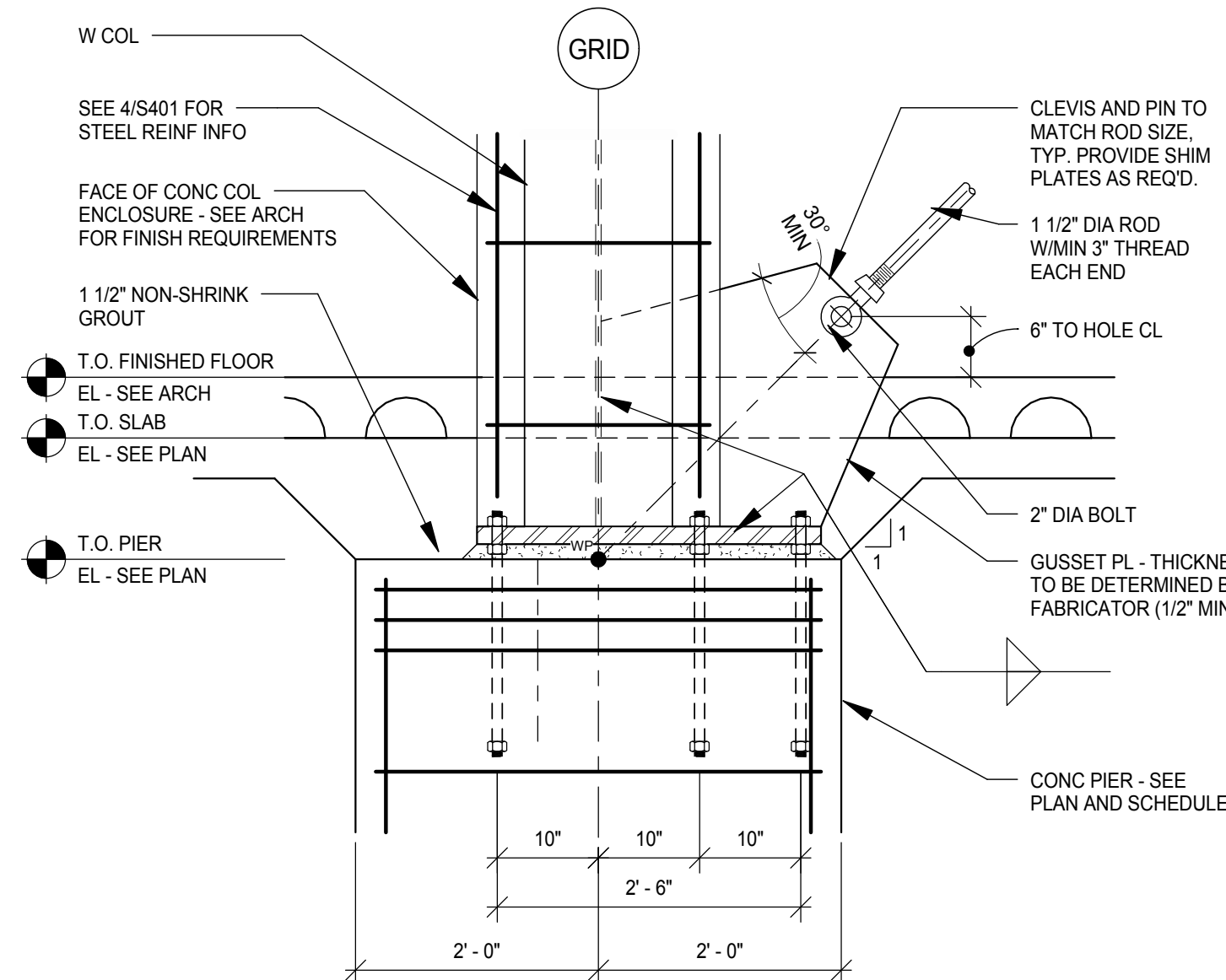
3 SECTION AT BRACING INTERSECTION

3/4" = 1'-0"



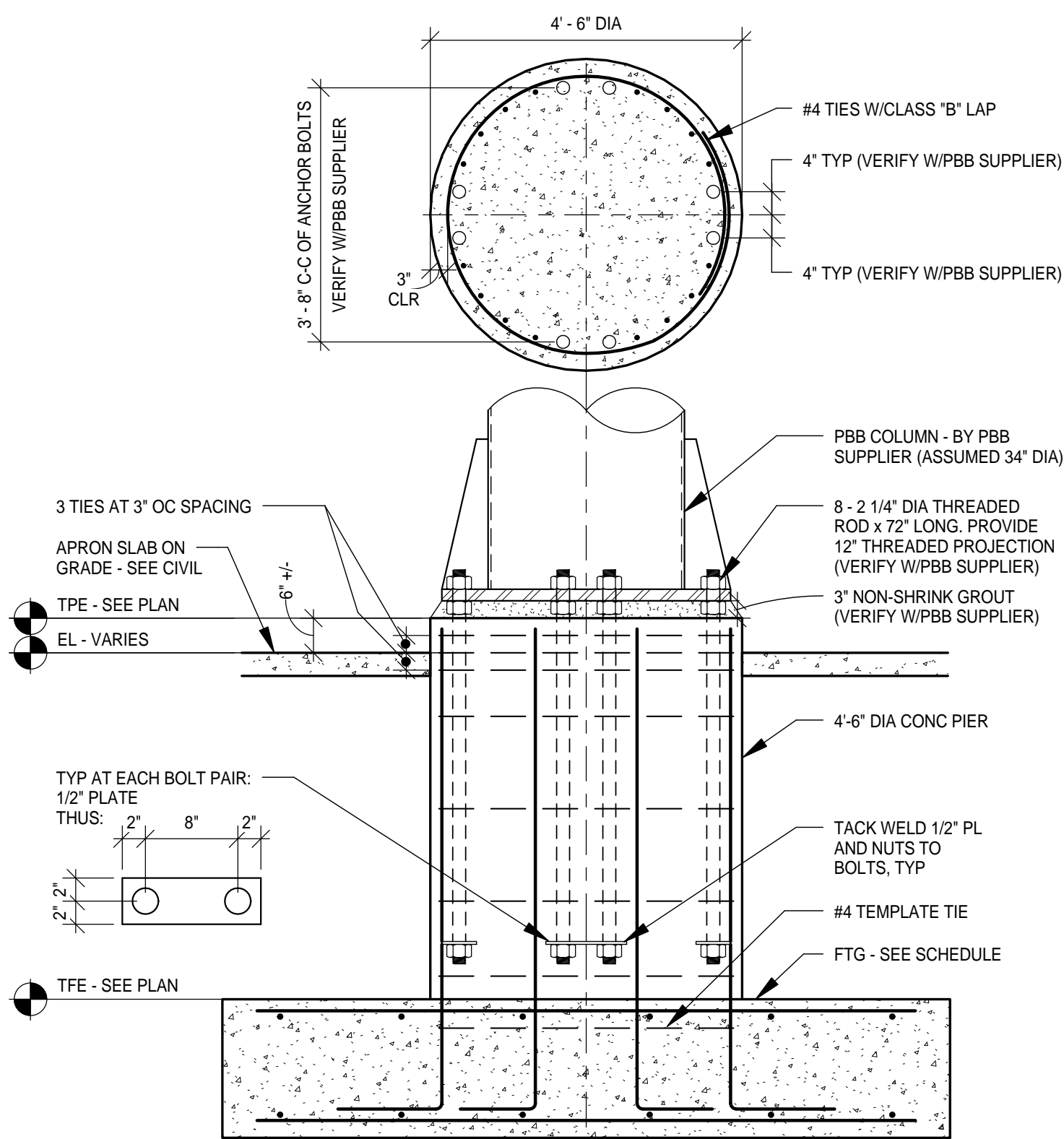
4 SECTION AT COLUMN TO GIRT CONNECTION

3/4" = 1'-0"

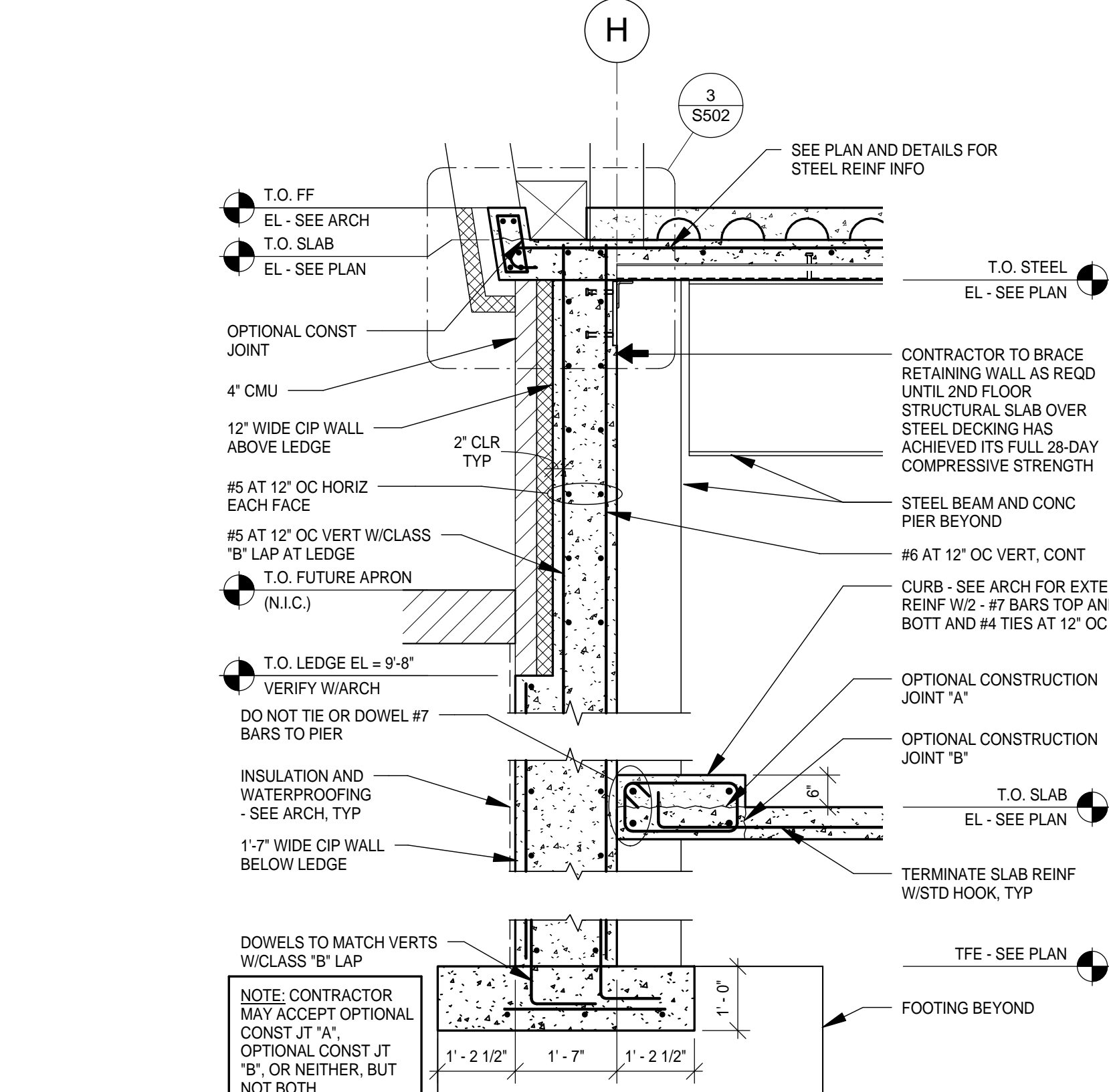


5 SECTION AT COLUMN BASE

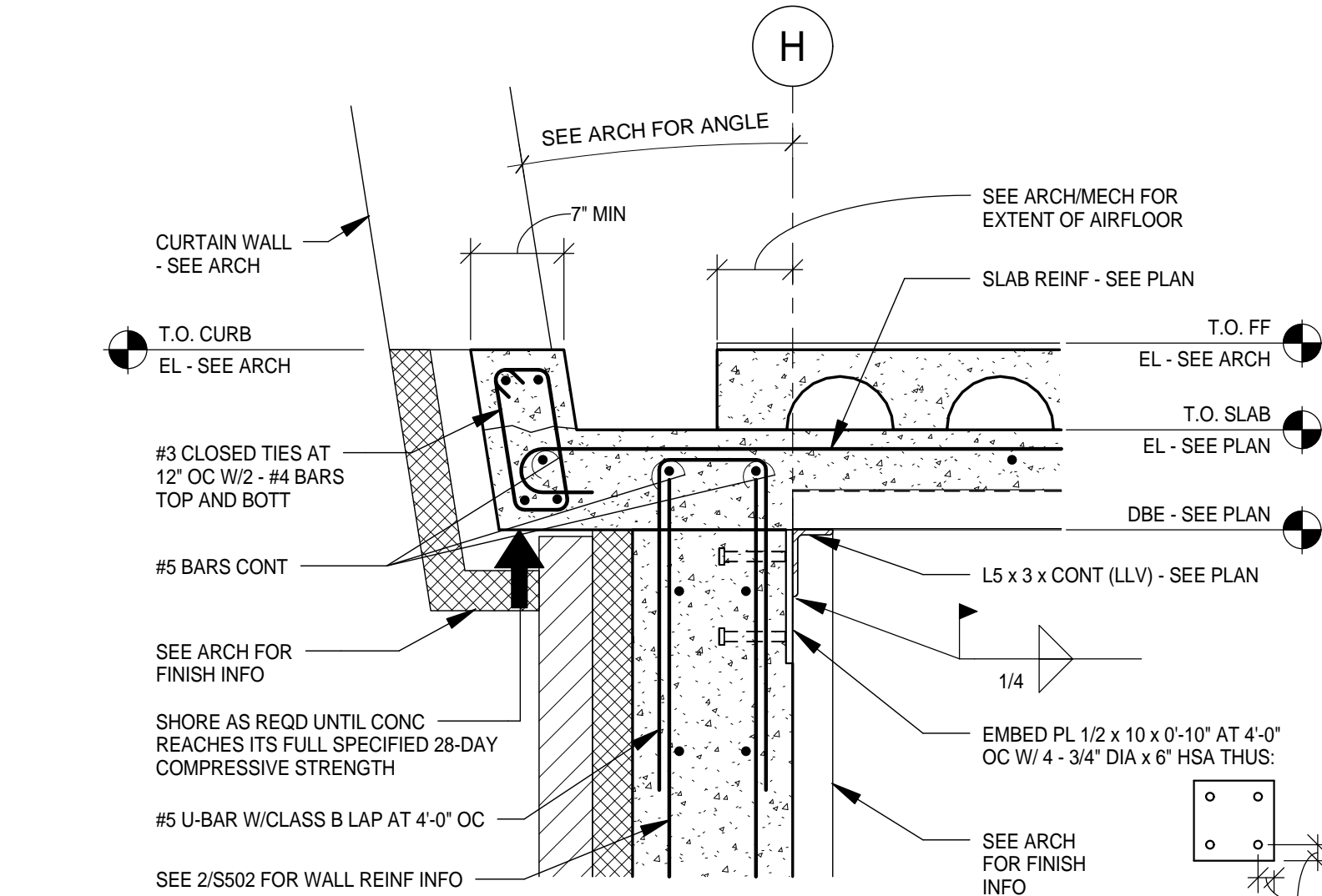
3/4" = 1'-0"



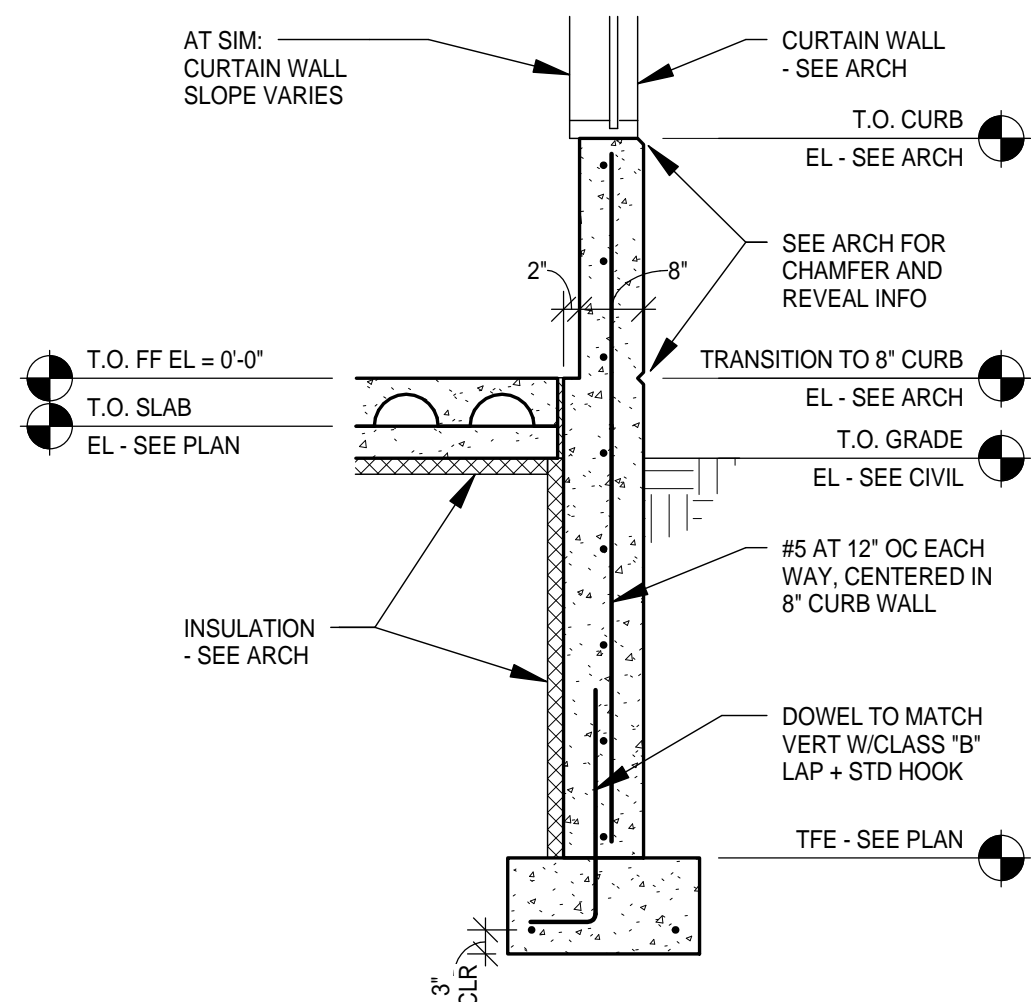
1 SECTION AT PASSENGER BOARDING BRIDGE - SPREAD FOOTING
1/2" = 1'-0"



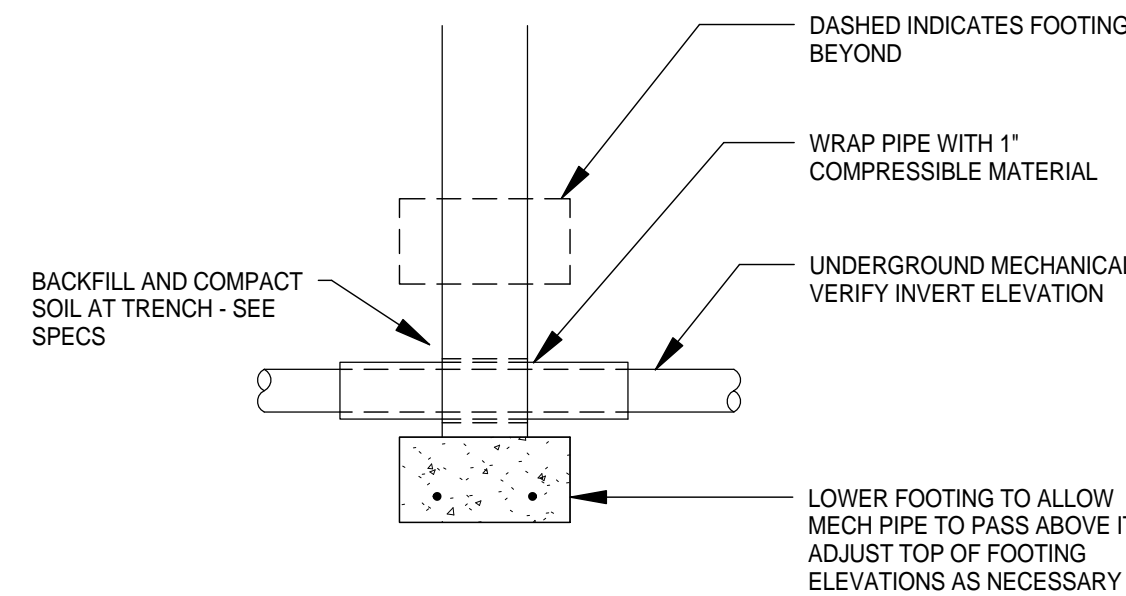
2 SECTION
1/2" = 1'-0"



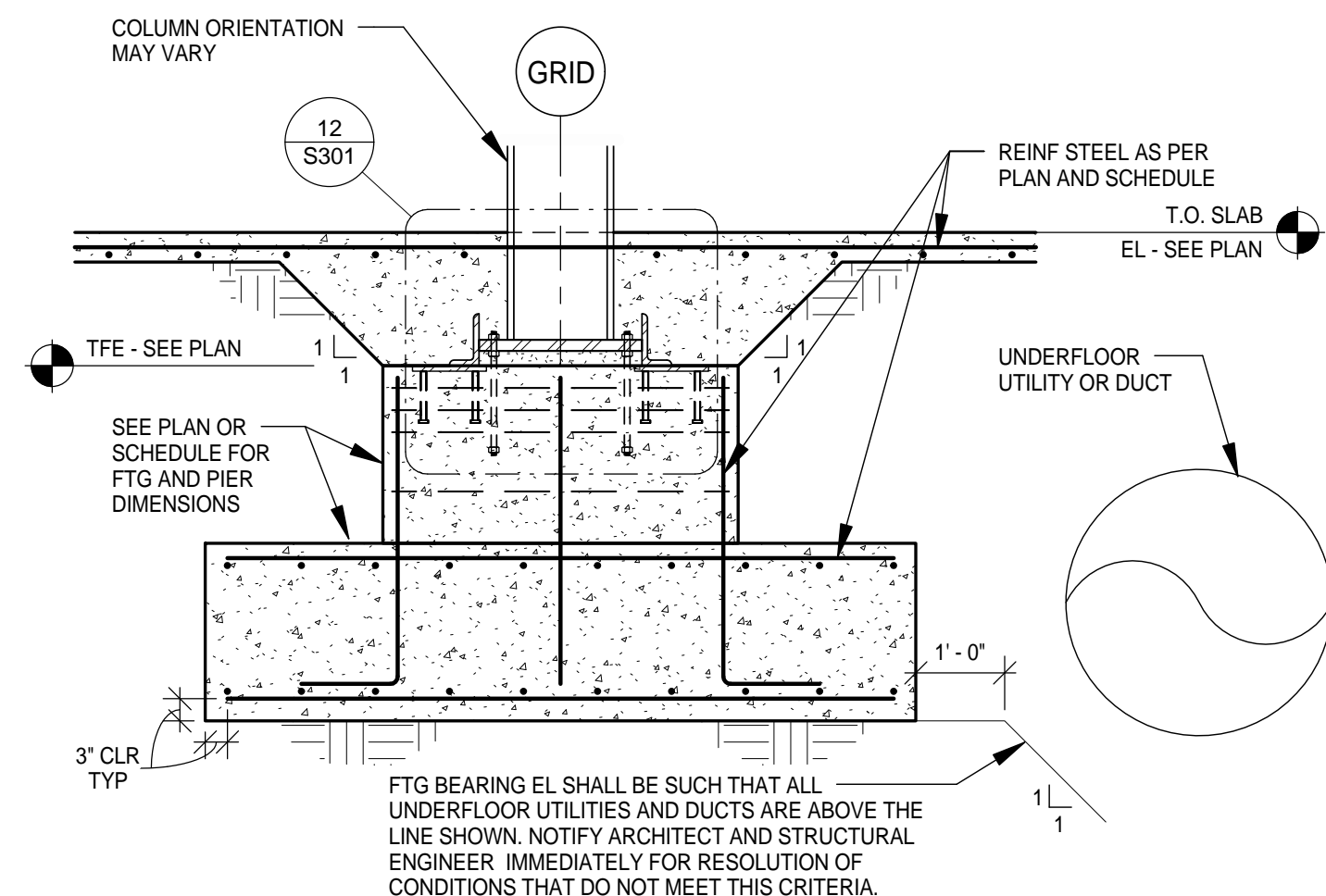
3 SECTION BETWEEN COLUMNS
1" = 1'-0"



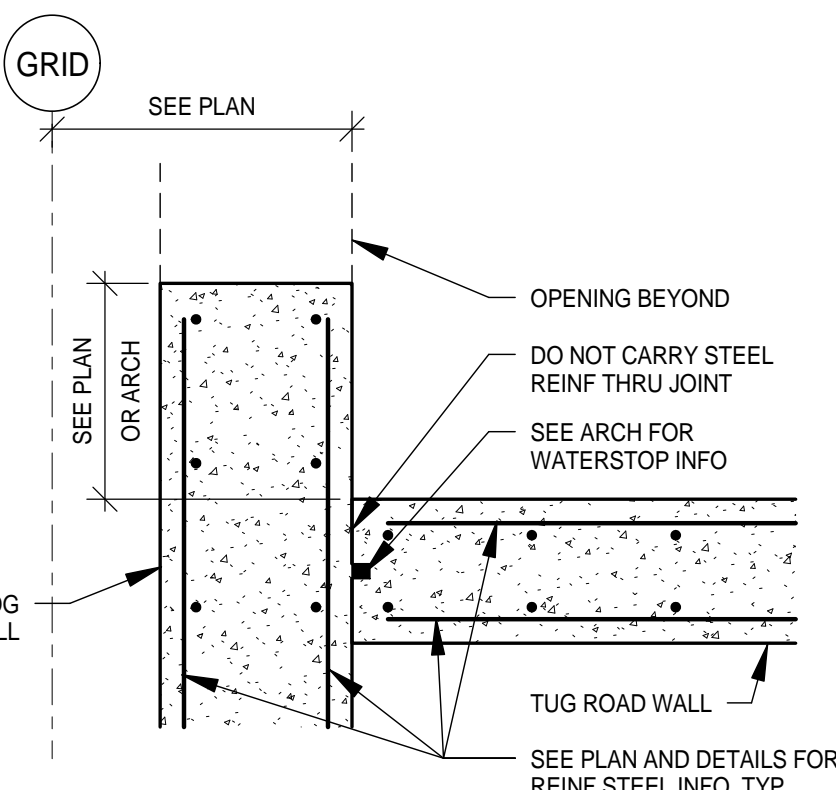
4 SECTION
1/2" = 1'-0"



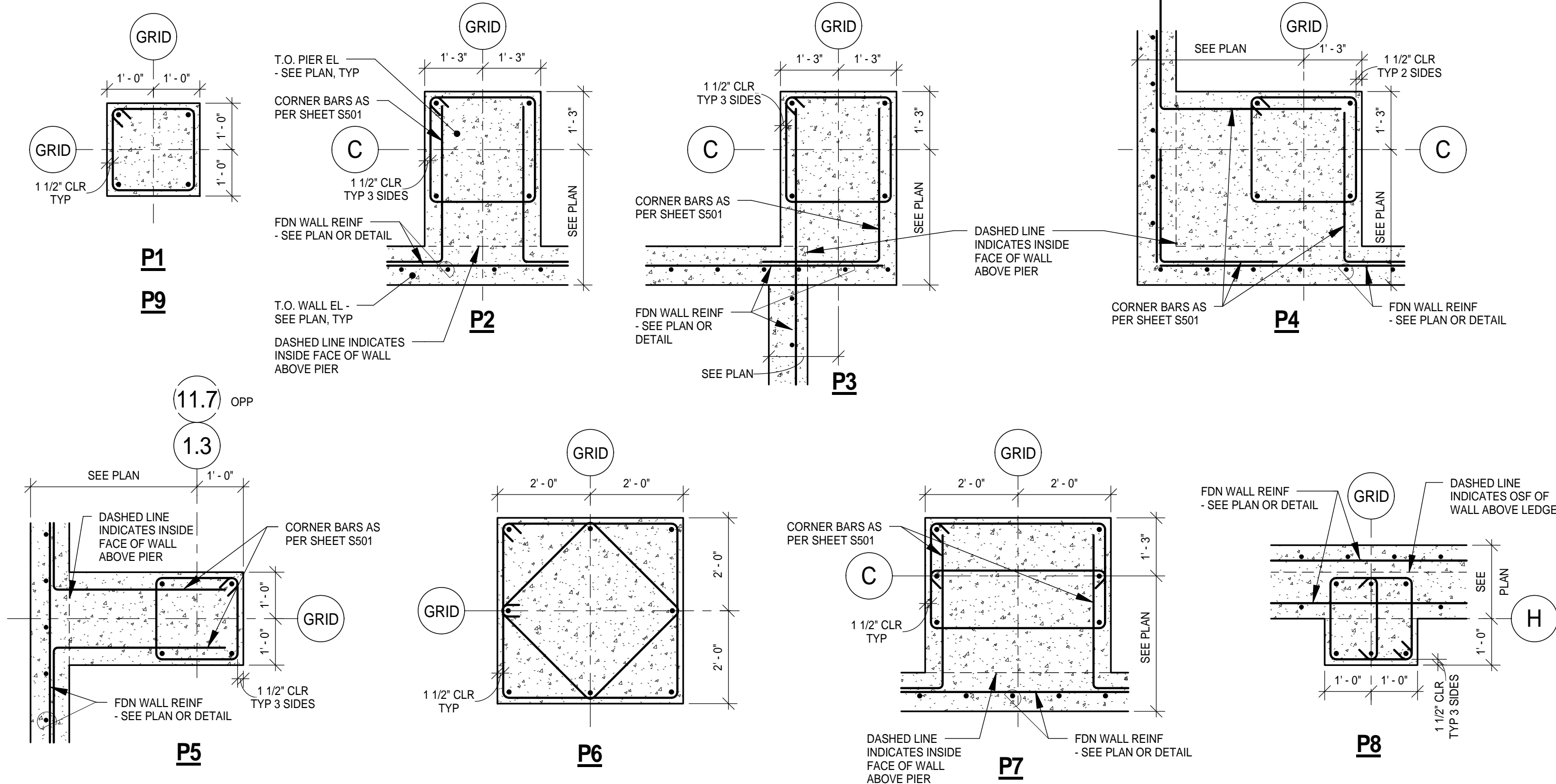
5 TYPICAL FOUNDATION WALL PIPE SLEEVE DETAIL
NO SCALE



7 SECTION AT FOOTING
1/2" = 1'-0"



8 WALL DETAIL - TUG ROAD ONLY
3/4" = 1'-0"



CONCRETE PIER SCHEDULE			
MARK	SIZE	VERTICAL REINFORCEMENT	TIES (SEE PLAN DETAILS)
P1	24" x 24"	4 - #8 BARS	#4 AT 12" OC
P1A	24" x 24"	4 - #8 BARS	#4 AT 12" OC
P2	30" x 30"	4 - #10 BARS	#4 AT 12" OC
P3	30" x 30"	4 - #10 BARS	#4 AT 12" OC
P4	30" x 30"	4 - #10 BARS	#4 AT 12" OC
P5	24" x 24"	4 - #8 BARS	#4 AT 12" OC
P6	48" x 48"	8 - #11 BARS	#4 AT 12" OC
P7	48" x 30"	6 - #11 BARS	#4 AT 12" OC
P8	24" x 24"	4 - #11 BARS	#4 AT 12" OC
P9	24" x 24"	4 - #11 BARS	#4 AT 12" OC

NOTES:
1. PROVIDE 3 - #4 TIES AT 3" ON CENTER TOP, TYPICAL.
2. RUN HORIZONTAL AND VERTICAL WALL STEEL CONTINUOUS THROUGH PIERS AT INTERSECTIONS.

6 CONCRETE PIER SCHEDULE AND PLAN PIER DETAILS
NO SCALE

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
BID PACKAGE 1		5.12.10
FOUNDATION PERMIT		6.4.10
1,2,3 NOT CHANGED		
CONFORMANCE SET		7.12.10
BUILDING PERMIT		8.6.10
5 100% REVIEW		12.15.10
BID PACKAGE 2A		01.24.11
BP 2A CONFORMANCE		05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SUL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

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SHEET TITLE

**STRUCTURAL
DETAILS**

SHEET NUMBER

S502

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**

CMU WALL REINFORCING SCHEDULE CENTERED IN WALL				
MARK	WALL TYPE	FOOTING DOWELS	HORIZONTAL	VERTICAL
W1	8" CMU	#5 AT 24" OC	AS NOTED ON DETAILS	#5 AT 24" OC
COMMENTS				
CMU BOND BEAM LINTELS OVER ELEVATOR DOOR OPENINGS TO EXTEND AROUND ALL 4 SIDES OF ELEVATOR CORES TO PROVIDE ATTACHMENT POINT FOR ELEVATOR GUIDE RAIL SUPPORTS				

- UNLESS NOTED OTHERWISE:
1. PROVIDE CLASS "A" SPLICE TO DOWELS TYPICAL.
2. FOR ALL CMU WALLS NOT INDICATED ON STRUCTURAL PLANS, SEE "NON-LOAD BEARING MASONRY PARTITION WALL REINFORCING SCHEDULE".
3. SEE LINTEL SCHEDULE THIS SHEET FOR LINTELS OVER MASONRY WALL OPENINGS.

1 WALL REINFORCING SCHEDULE

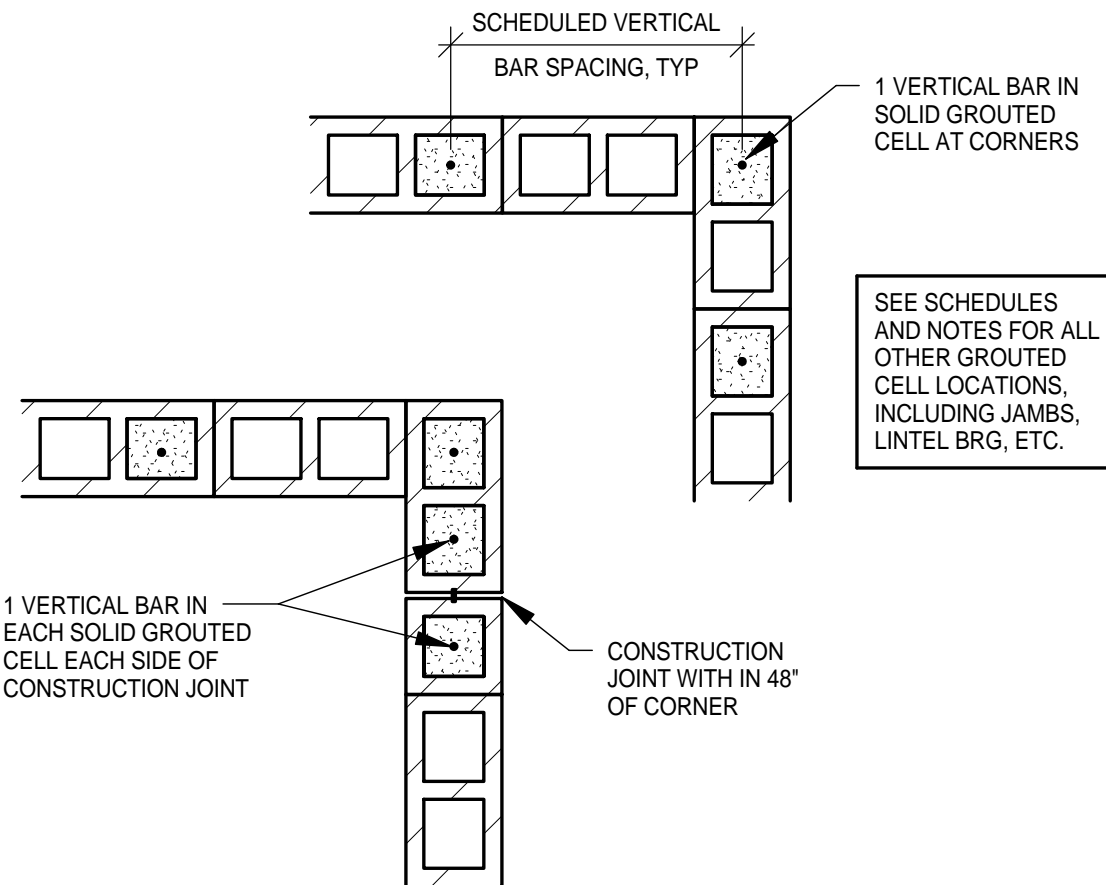
NO SCALE

CMU LINTEL SCHEDULE			
WALL TYPE	ROUGH OPENING	REQUIRED LINTEL	BEARING LENGTH EACH END
6" CMU	UP TO 3'-4"	8" DEEP BOND BM W/1 - #5 CONT BOTT	8"
6" CMU	3'-4" TO 8'-0"	16" DEEP BOND BM W/1 - #5 CONT TOP AND BOTT	16"
8" CMU	UP TO 5'-4"	8" DEEP BOND BM W/2 - #5 CONT BOTT	8"
8" CMU	5'-4" TO 10'-0"	16" DEEP BOND BM W/2 - #5 CONT TOP AND BOTT AND #4 SINGLE LEG HOOKED STIRRUP AT 8" OC	16"

- NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ROUGH OPENING SIZES AND ELEVATIONS.
2. USE LINTEL BLOCKS FOR ALL CMU LINTELS.
3. PROVIDE 8" DEEP BOND BM W/2 - #5 CONT BOTTOM AT ALL SILLS.
4. ALL LINTEL REINFORCING TO EXTEND 1'-4" MINIMUM BEYOND EDGES OF ROUGH OPENING.

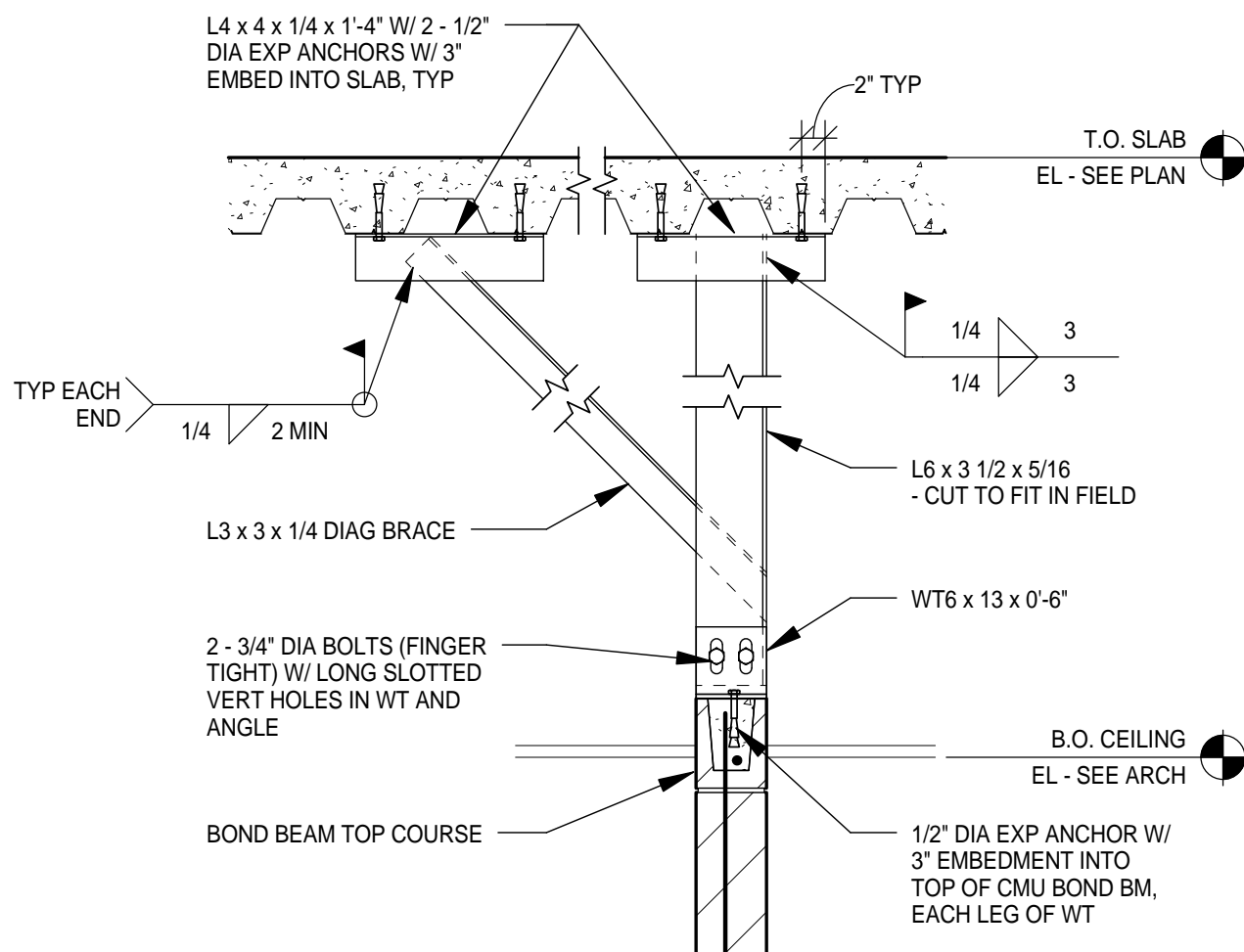
3 LINTEL SCHEDULE

NO SCALE



5 TYPICAL VERTICAL REINFORCING AT MASONRY CORNER DETAIL

NO SCALE



9 FLOOR DECK PARALLEL TO WALL

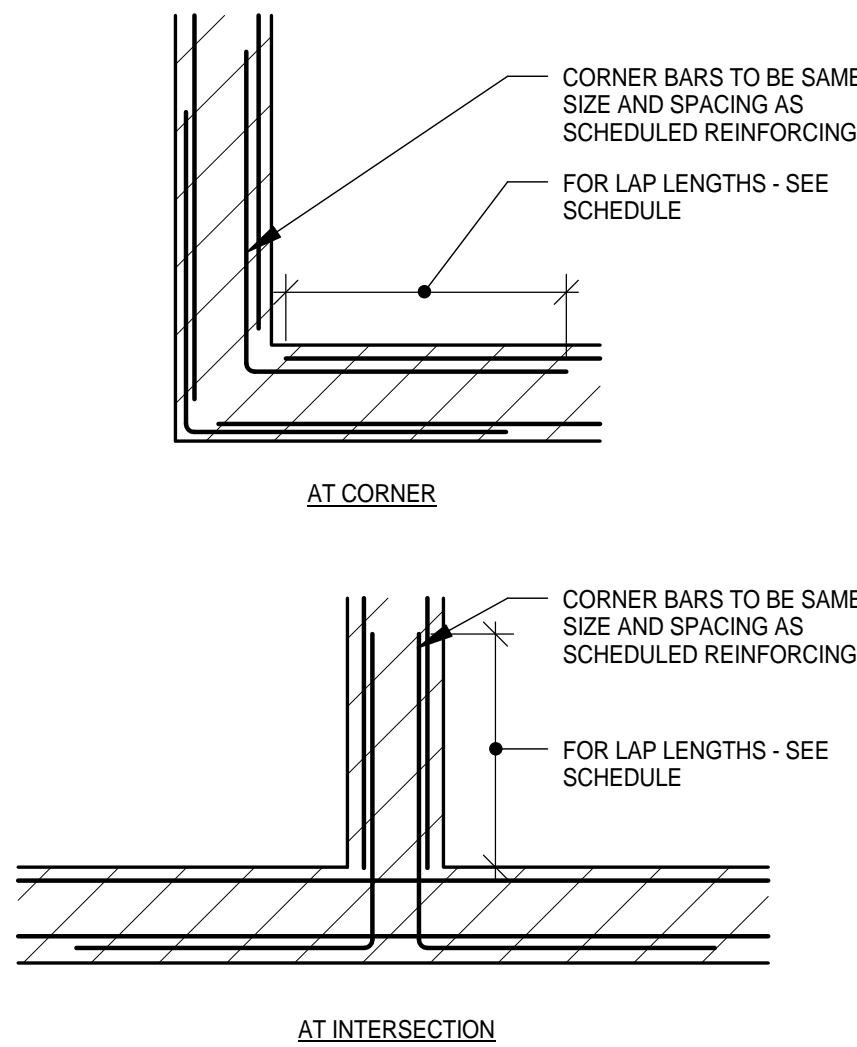
NO SCALE

MASONRY LAP SPLICE SCHEDULE	
BAR SIZE	8" CMU (1 BAR IN CENTER) f _c = 2,000 PSI
#4	24"
#5	30"
#6	36"

- NOTES:
1. ALL BARS TO BE IN FULLY GROUTED CELLS OR BOND BEAMS
2. F_y = 60 KSI (F_s = 24 KSI MAX)
3. BAR LAP LENGTHS PER IBC 2006 SECTION 2107.5 AND ACI 530 EQ 2-9
4. SEE SHEET S501 FOR CONCRETE REINFORCING LAP SCHEDULE.

4 SCHEDULE

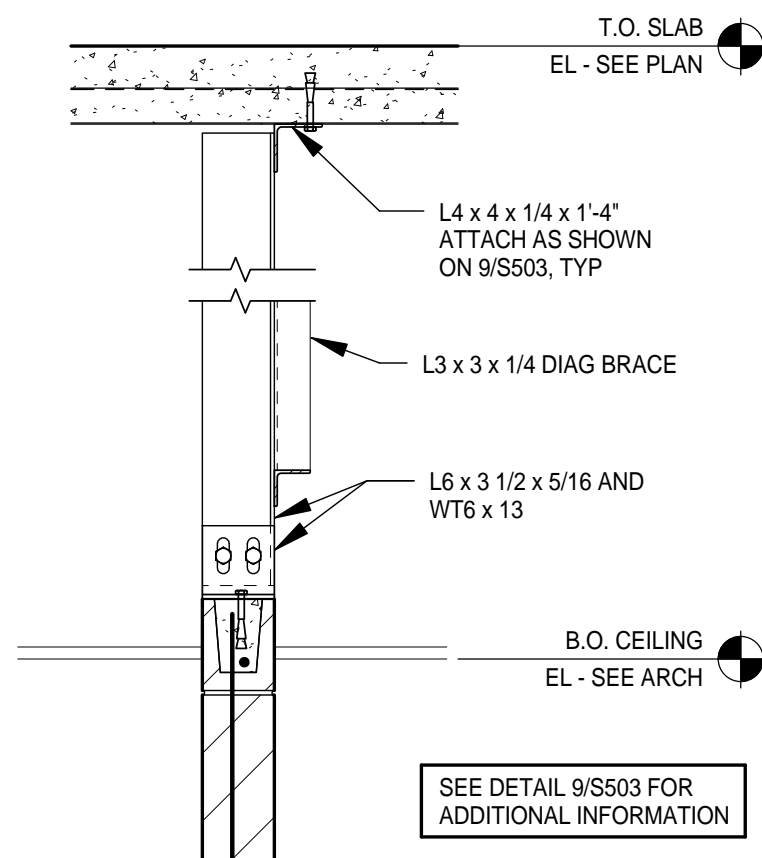
NO SCALE



NOTE:
VERTICAL REINFORCING OMITTED FOR CLARITY

6 TYPICAL HORIZONTAL REINFORCING AT MASONRY CORNER

NO SCALE

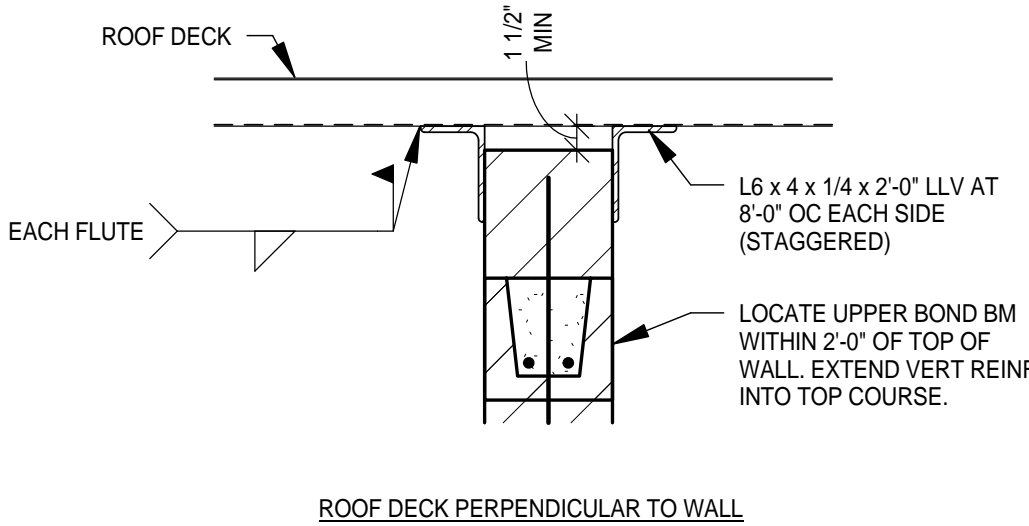


10 FLOOR DECK PERPENDICULAR TO WALL

3/4" = 1'-0"

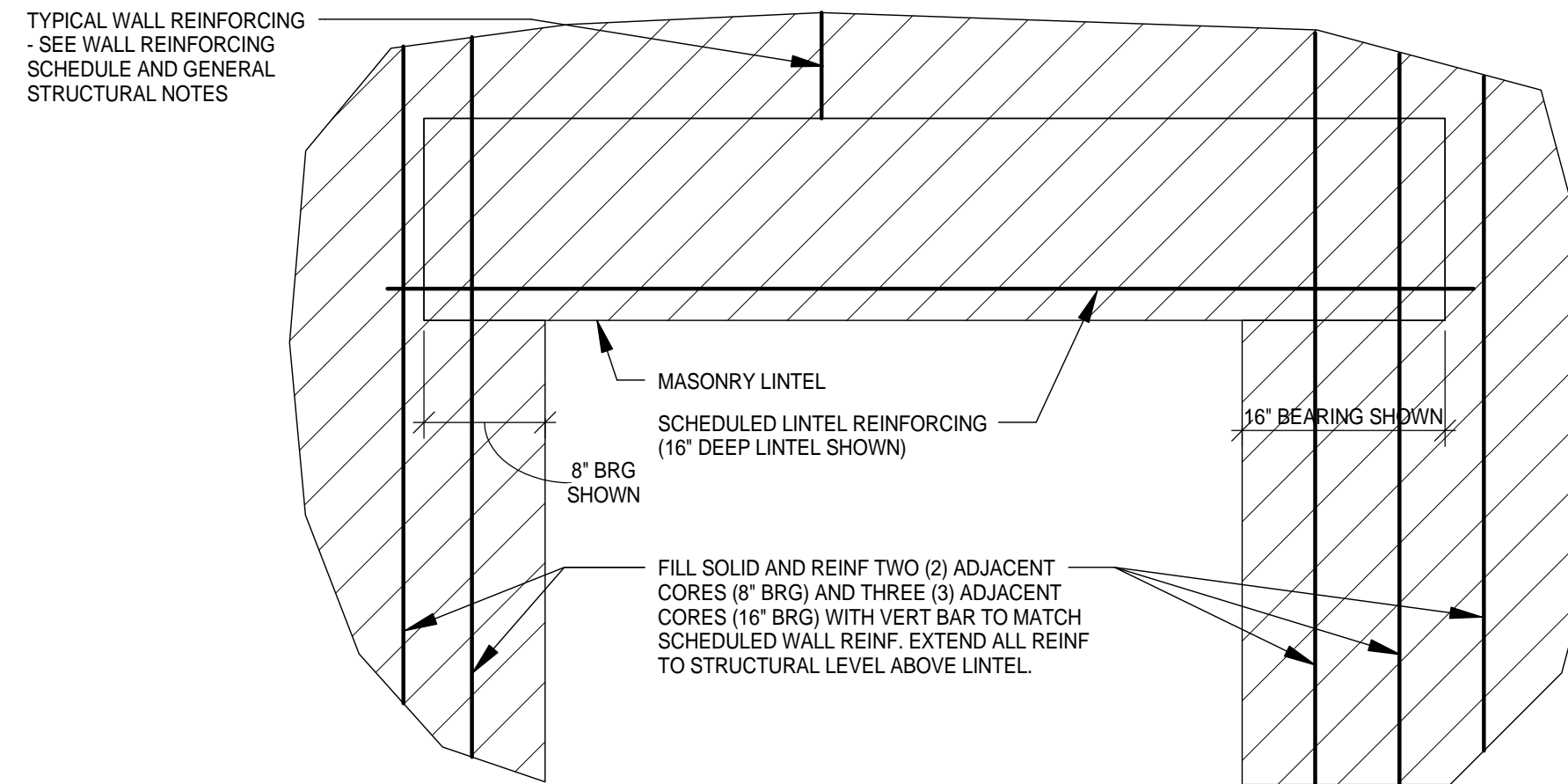
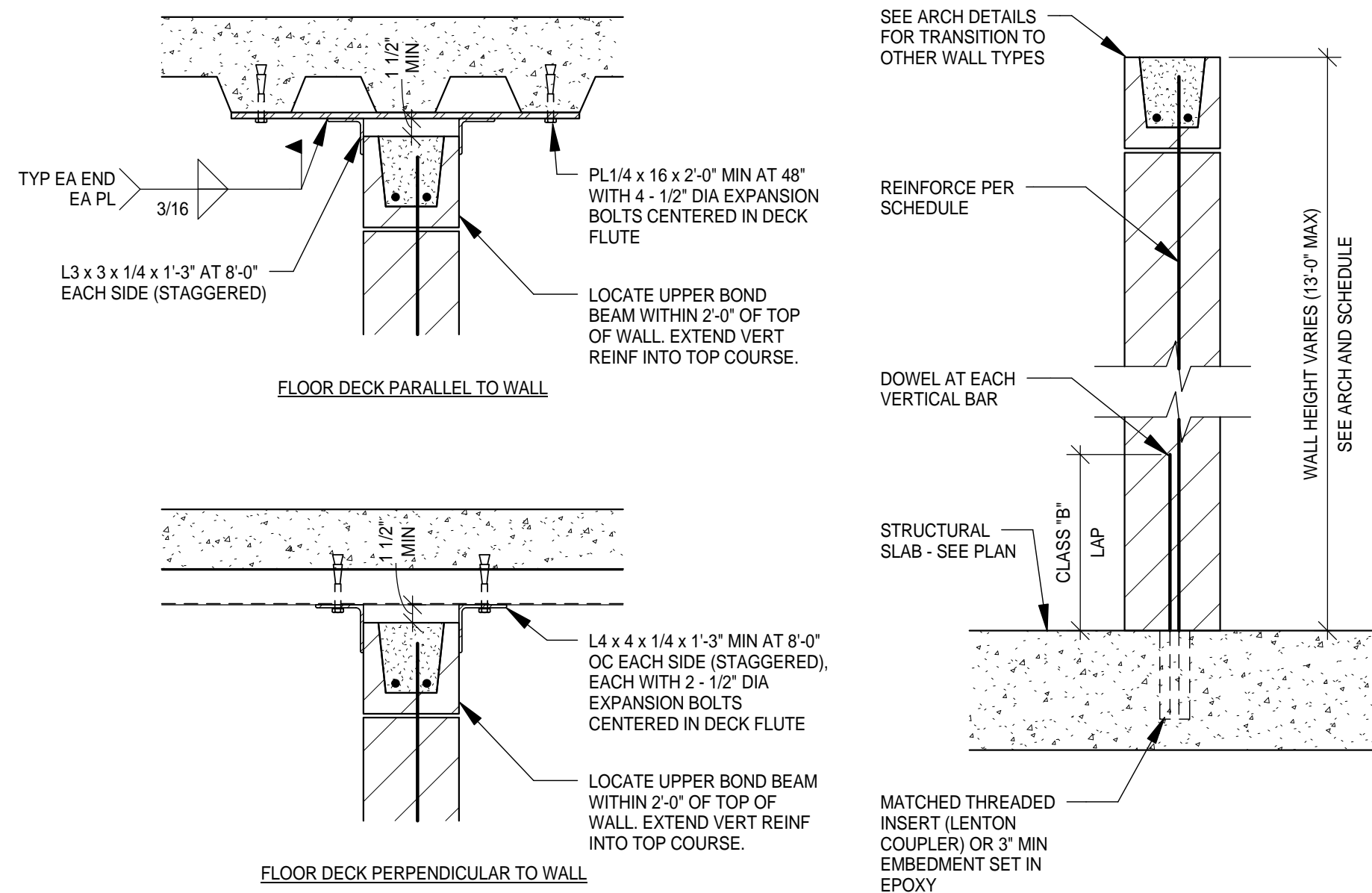
NON-LOAD BEARING MASONRY PARTITION WALL REINFORCING SCHEDULE		
WALL TYPE	VERTICAL REINFORCING	HORIZONTAL REINFORCING
6" CMU UP TO 13'-0"	#4 AT 4'-0" OC, CENTERED	BOND BM AT 5'-4" OC W/1 - #5 CONT, CENTERED
8" CMU UP TO 13'-0"	#5 AT 5'-4" OC, CENTERED	BOND BM AT TOP OF WALL AND ABOVE ALL OPNGS, EACH W/2 - #5 CONT
8" CMU CANTL TO 5'-4" MAX	#5 AT 2'-8" OC, CENTERED	BOND BM AT TOP OF WALL W/2 - #5 CONT

- NOTES:
1. REFER TO TYPICAL DETAILS FOR DOWELS AT BOTTOM OF CMU WALLS AND BRACING AT TOP OF CMU WALLS. TOP OF WALL BRACING TO BE PLACED AT 10'-0" OC MAX SPACING WHERE DISTANCE BETWEEN WALL CORNERS EXCEEDS 12'-0". CONTRACTOR MAY USE ONE OF THE BRACING OPTIONS PROVIDED OR COORDINATE ALTERNATE BRACING WITH A/E.
2. GROUT CMU SOLID AT HANDRAIL, GUARDRAIL AND OTHER SUPPORTS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION AND ADDITIONAL GROUTING REQUIREMENTS.
3. PROVIDE (1) ADDITIONAL VERTICAL BAR MATCHING SCHEDULED REINFORCING IN FULLY GROUTED CELL AT CORNERS AND WITHIN 8" OF ALL OPENINGS.
4. REFER TO 3/S503 FOR MASONRY LINTEL SCHEDULE.



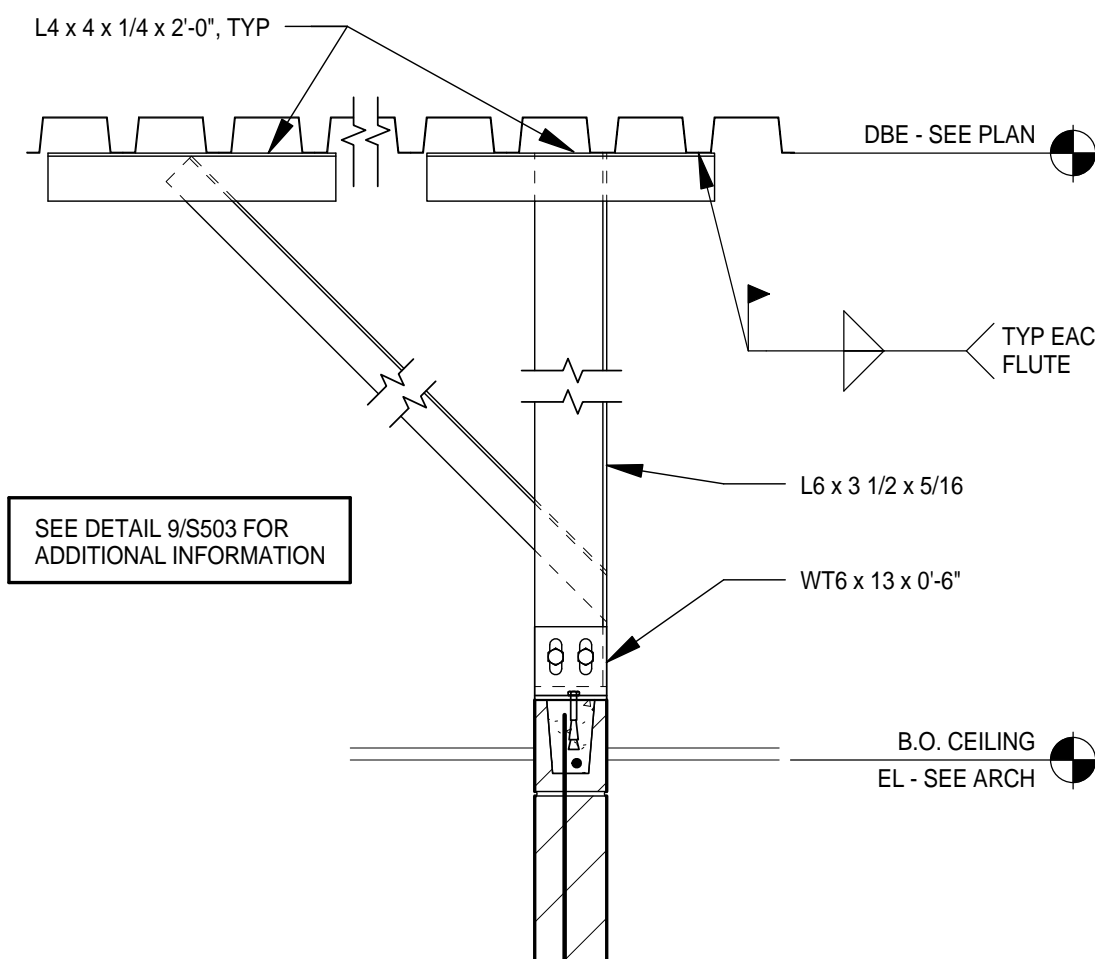
2 NON-LOAD BEARING WALL REINFORCING SCHEDULE AND TYPICAL DETAILS

NO SCALE



7 TYPICAL CMU WALL DETAIL

NO SCALE

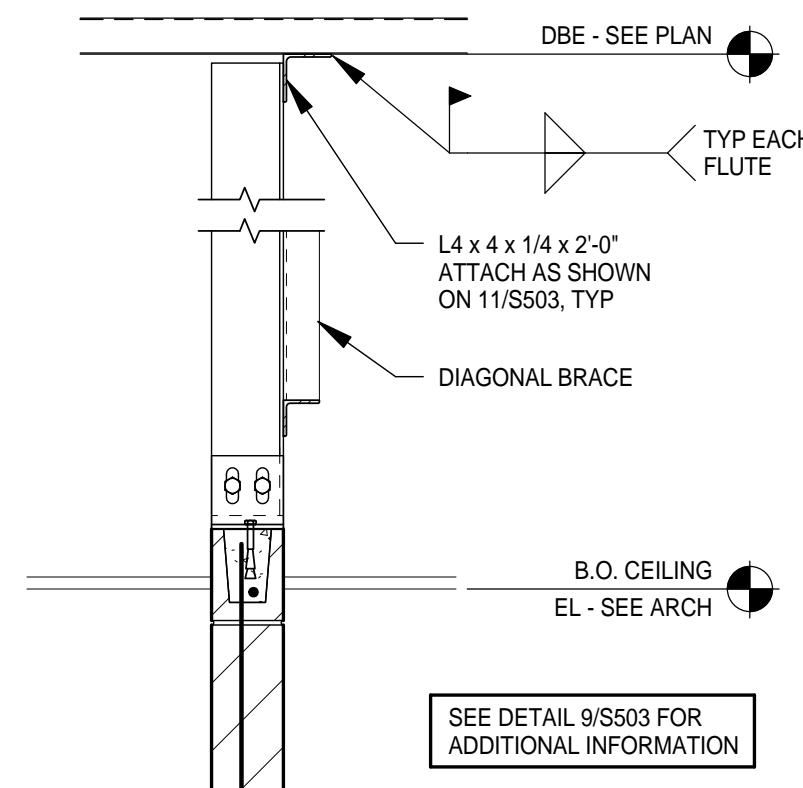


11 ROOF DECK PARALLEL TO WALL

3/4" = 1'-0"

8 TYPICAL CMU LINTEL BEARING DETAIL

NO SCALE



12 ROOF DECK PERPENDICULAR TO WALL

3/4" = 1'-0"

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Signature:

Date: June 3, 2010 Reg. No.: 20379

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1,2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

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REVIEWED BY: PAJ / CWB

DRAWN BY: SJL

DESIGNED BY: CWB

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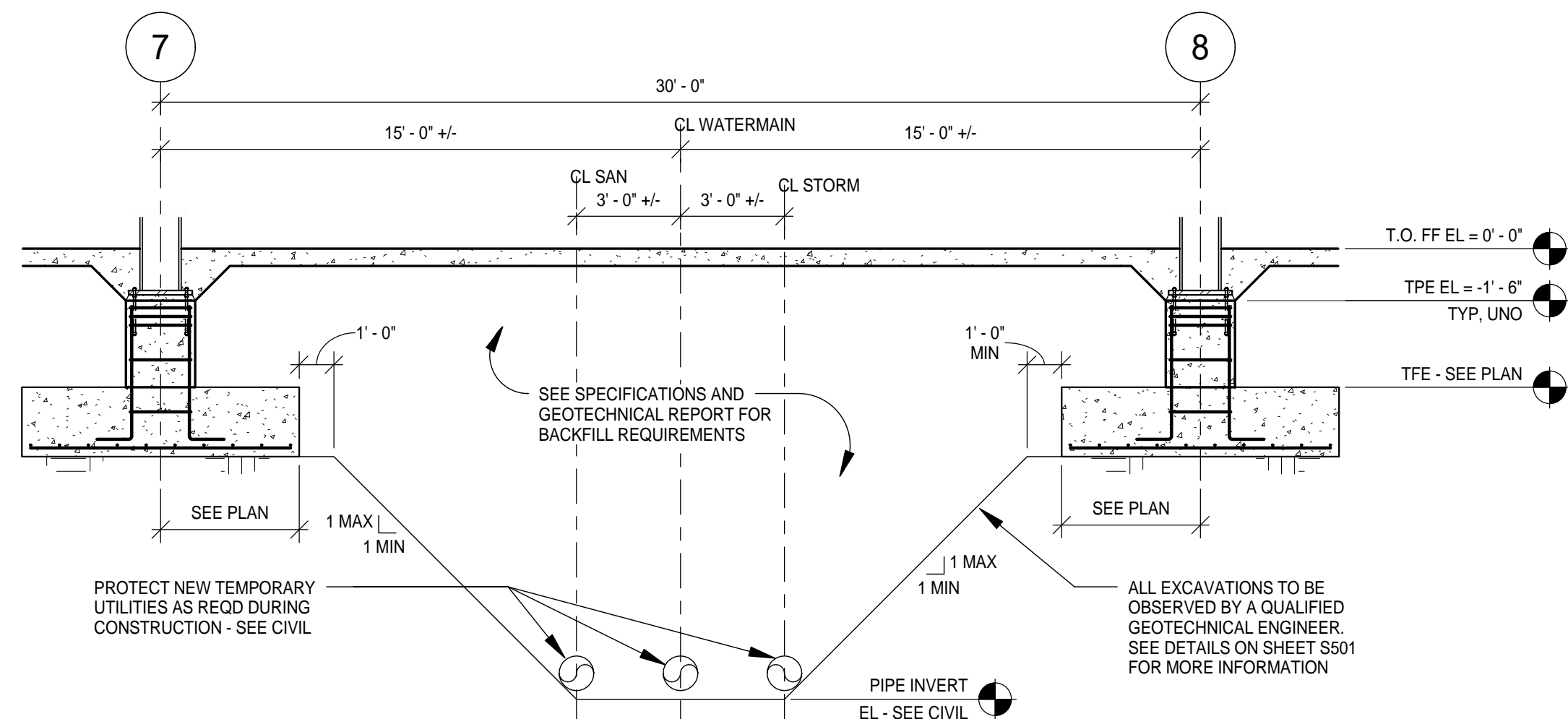
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**SHEET TITLE
STRUCTURAL
DETAILS**

SHEET NUMBER

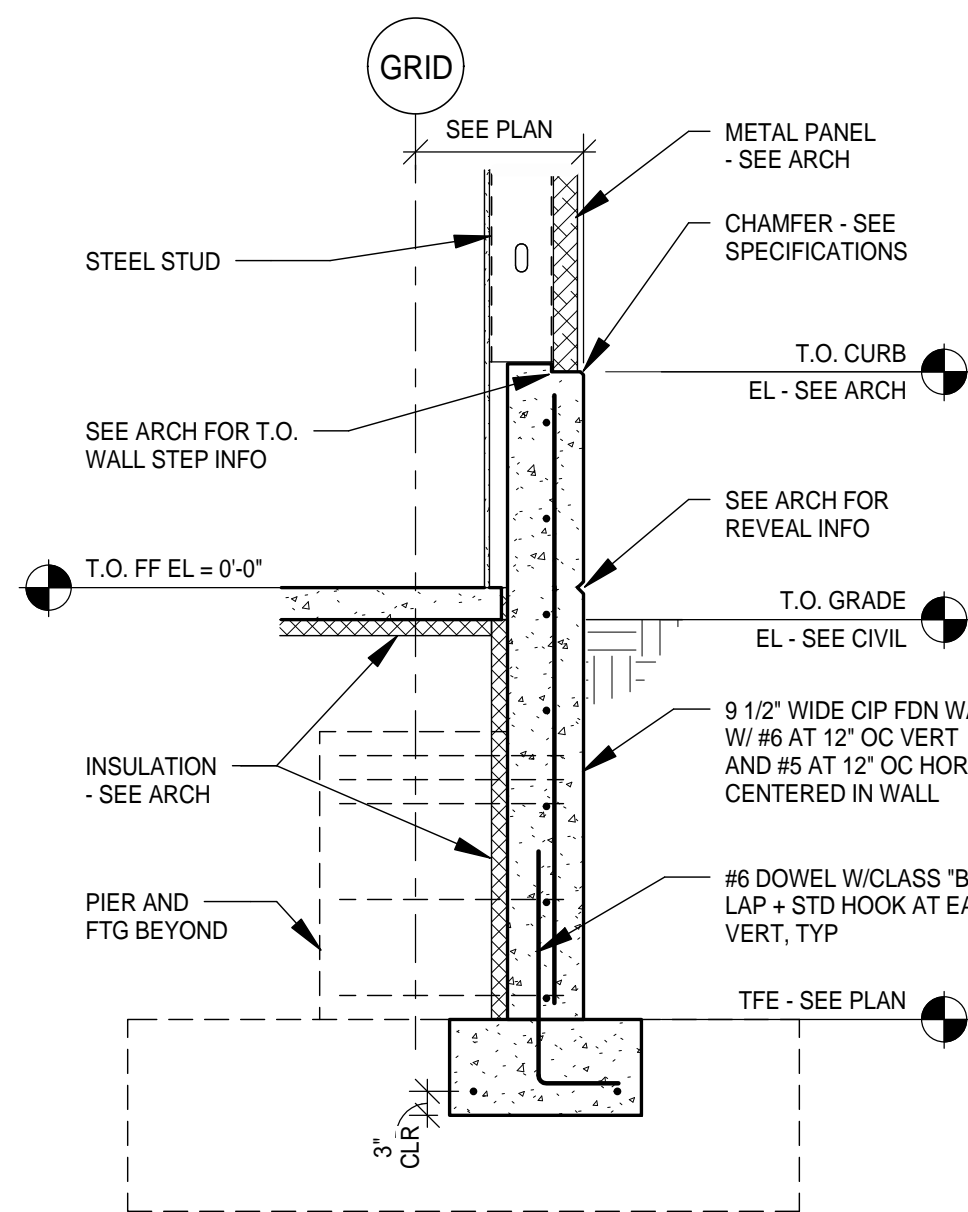
S503

**BID PACKAGE 2B
ISSUED FOR BID
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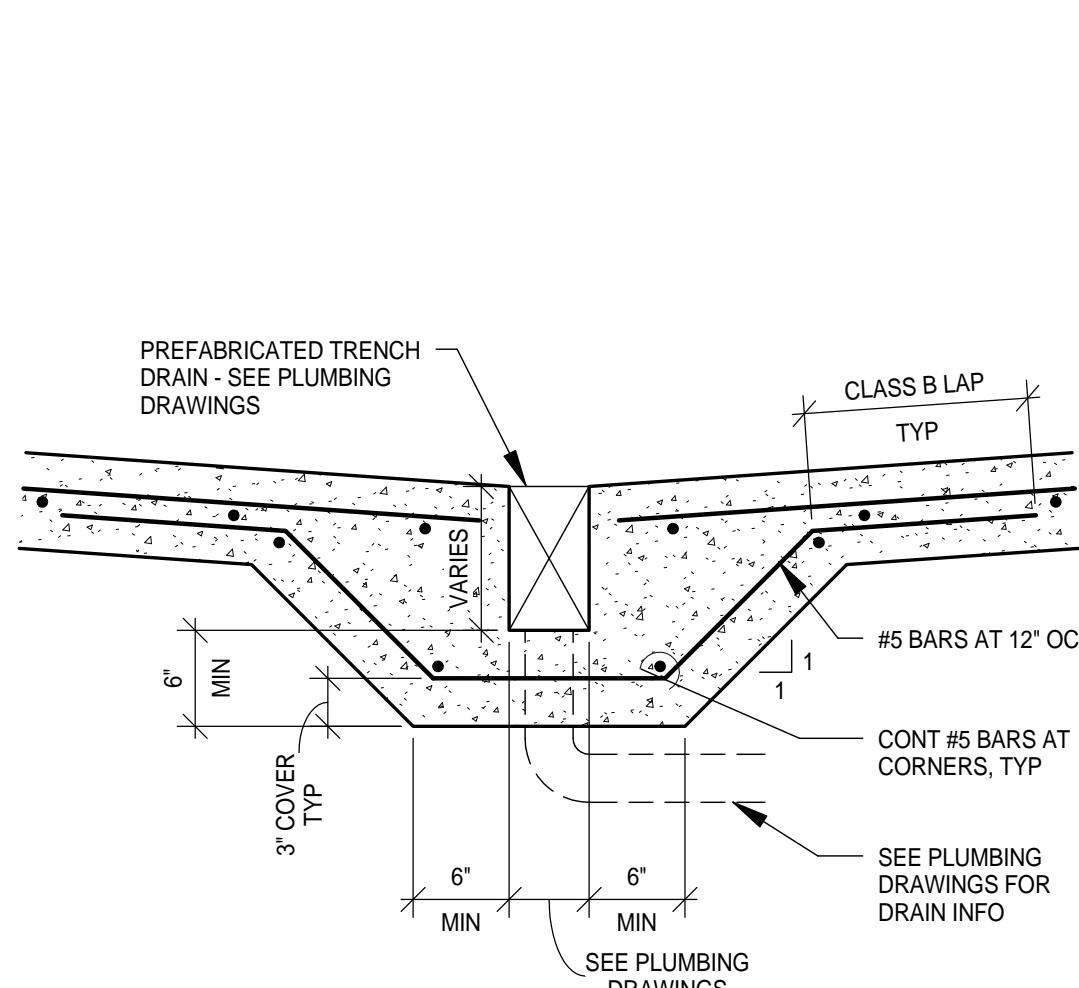


NOTES:
 1. SEE GEOTECHNICAL REPORT FOR WATER TABLE ELEVATIONS. CONTRACTOR TO MAKE ADEQUATE PROVISIONS FOR DEWATERING AS REQUIRED.
 2. PIPE INVERT LOCATION SHOWN SCHEMATICALLY REPRESENT LOCATIONS AT GRID E.
 3. CONTRACTOR TO NOTIFY A/E IMMEDIATELY IF ACTUAL FIELD CONDITIONS VARY FROM LOCATIONS/SLOPES INDICATED.

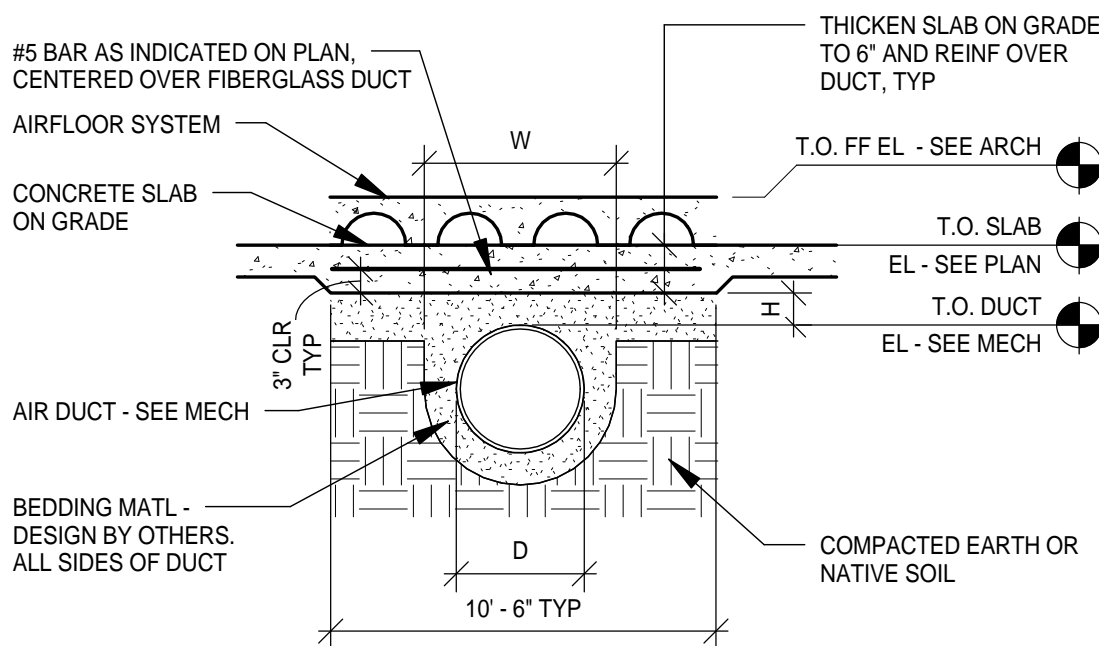
1 SECTION
1/4" = 1'-0"



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

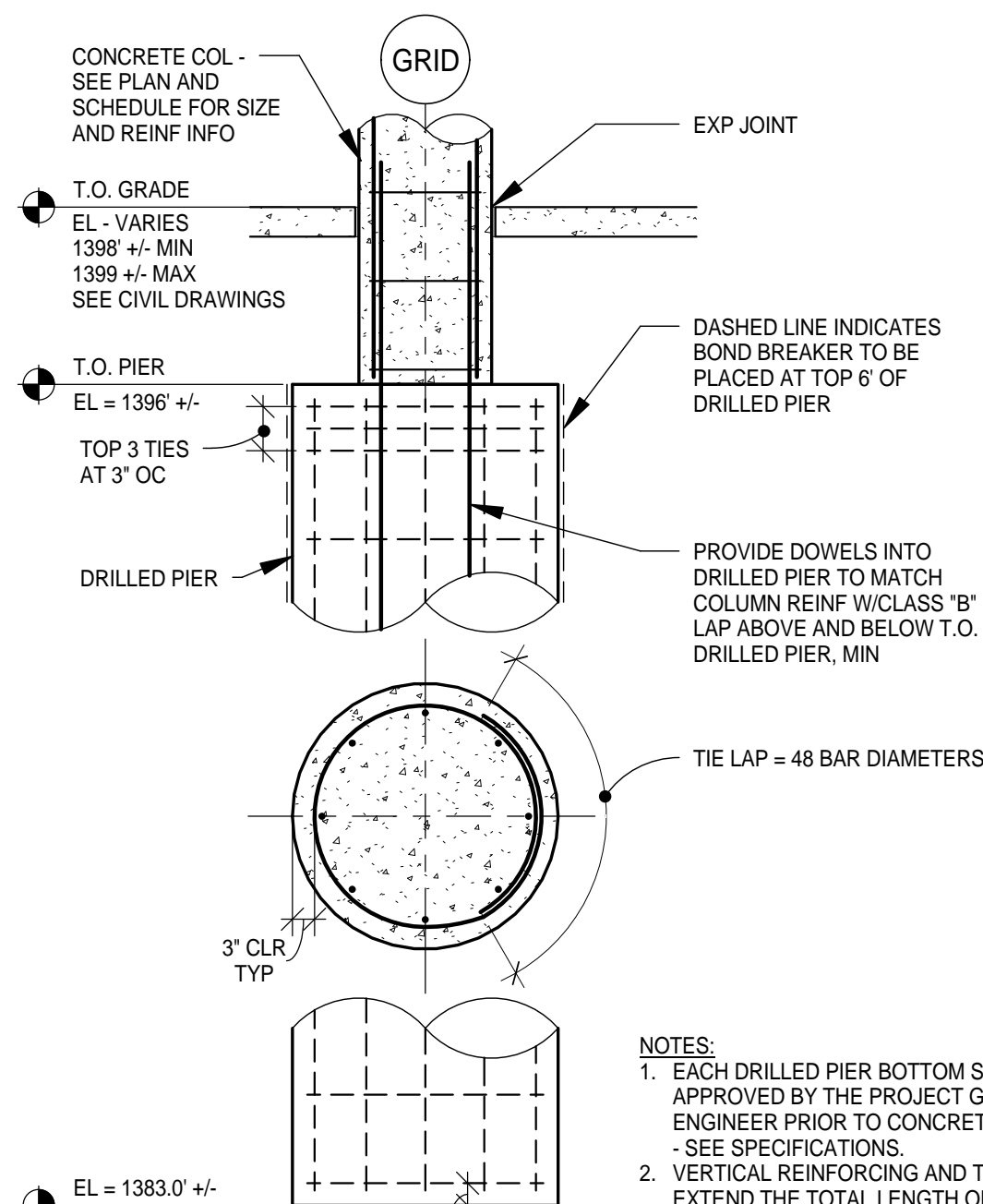


8 SECTION AT TRENCH DRAIN
1" = 1'-0"



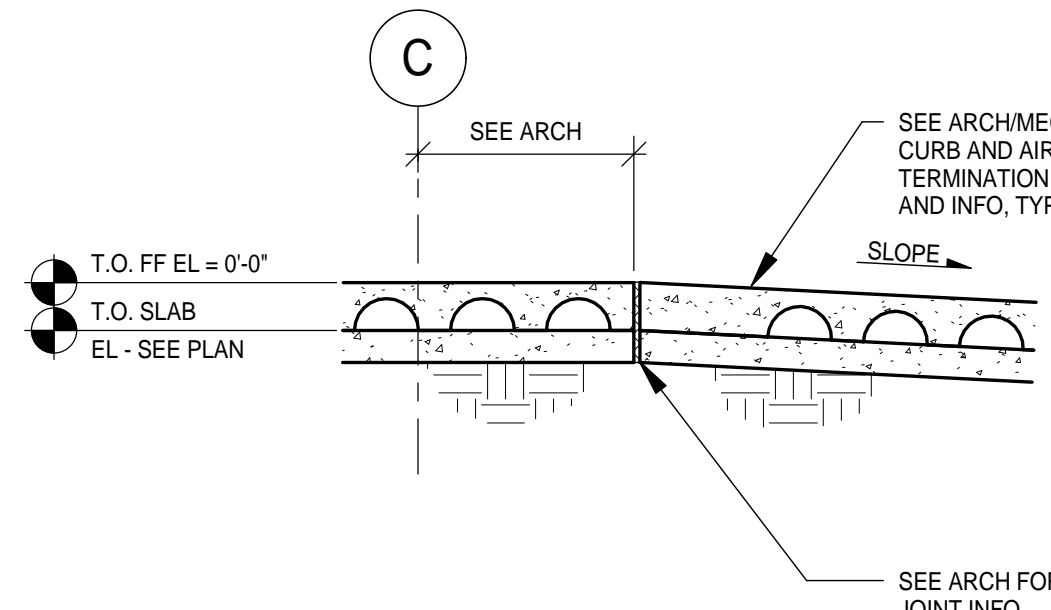
NOTE:
 1. "H" AND "W" DIMENSIONS AND SPECIFICATIONS FOR BEDDING MATERIAL TO BE VERIFIED WITH UNDERGROUND DUCT SUPPLIER PRIOR TO CONSTRUCTION.

5 UNDERGROUND DUCTWORK DETAIL
1/2" = 1'-0"

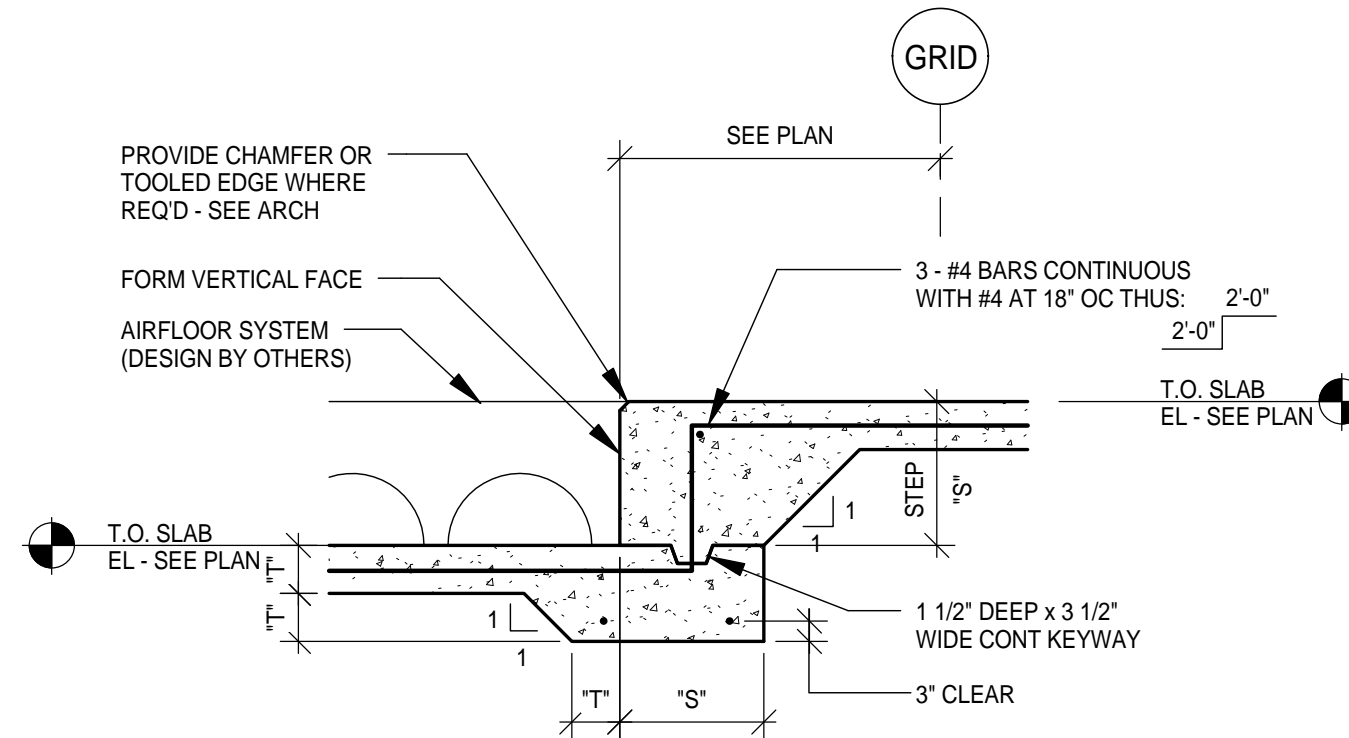


9 DRILLED PIER DETAIL
NO SCALE

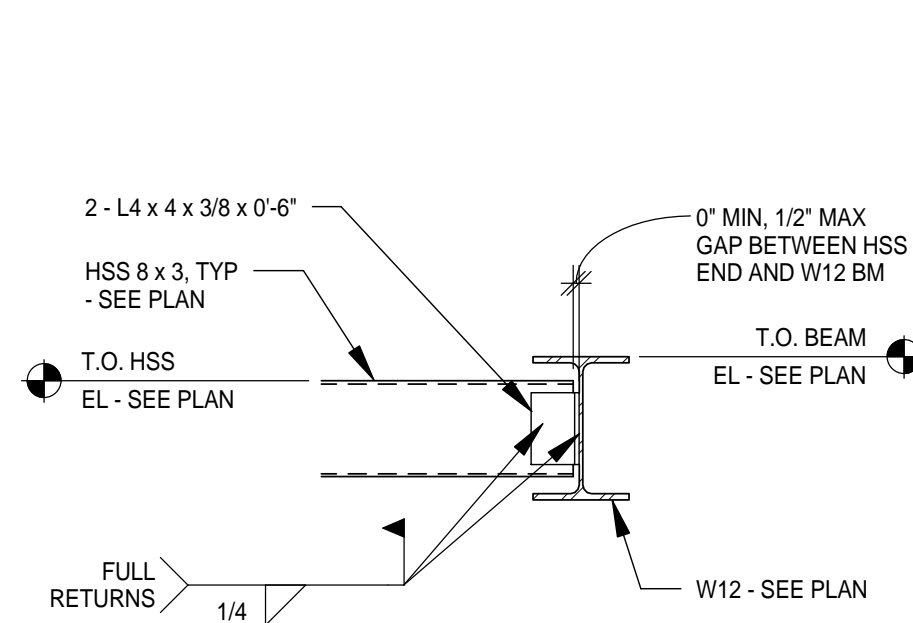
NOTES:
 1. EACH DRILLED PIER BOTTOM SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER PRIOR TO CONCRETE PLACEMENT - SEE SPECIFICATIONS.
 2. VERTICAL REINFORCING AND TIES SHALL EXTEND THE TOTAL LENGTH OF PIER.
 3. FIRST TIE SHALL BE PLACED A MAXIMUM OF 6" FROM TOP OF PIER.
 4. ANY LAP SPLICES IN VERTICAL REINFORCING OF THE PIER SHALL BE CLASS "B" LAP SPLICE, TYPICAL.



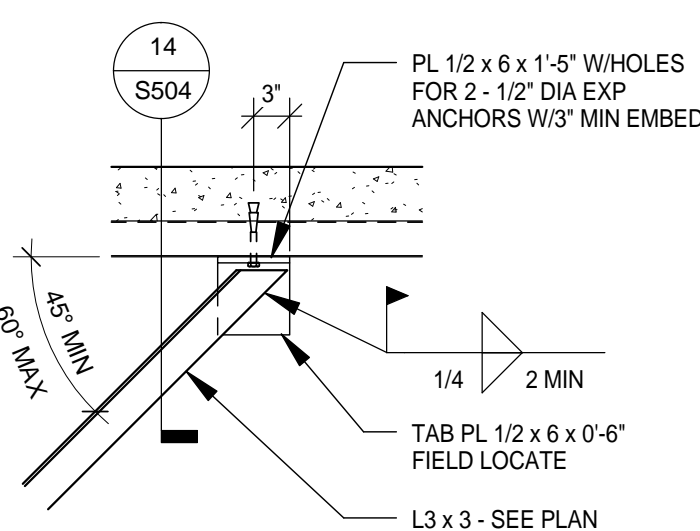
2 SECTION
1/2" = 1'-0"



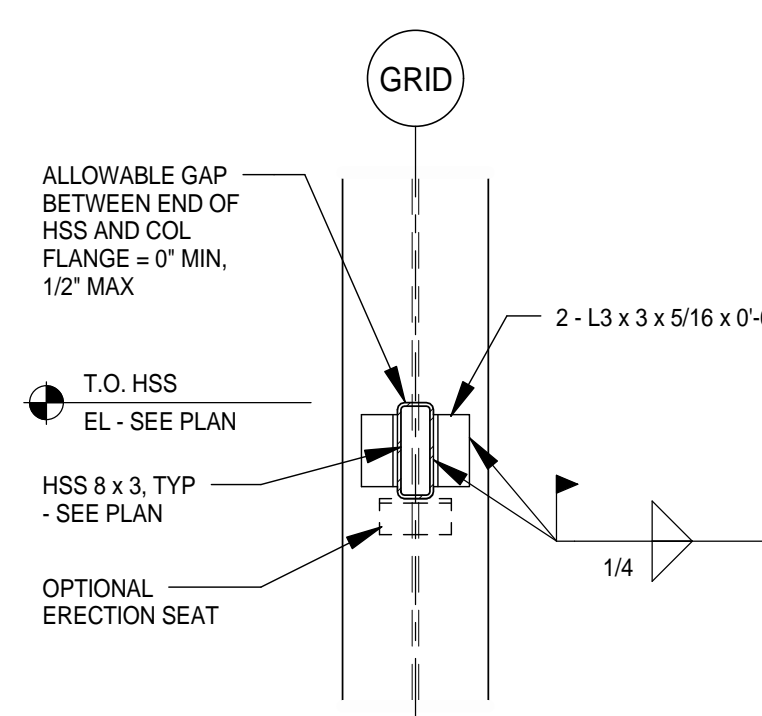
6 SLAB STEP DETAIL
3/4" = 1'-0"



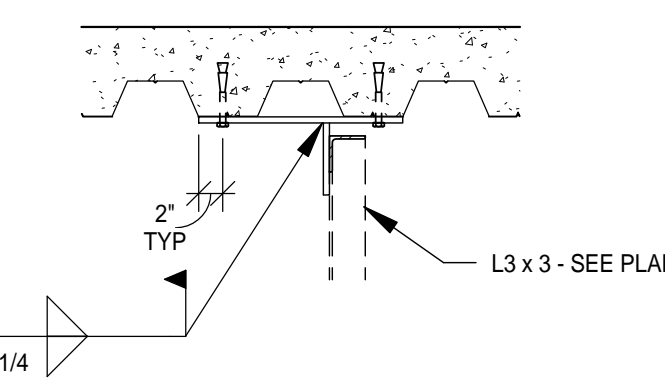
10 SECTION
3/4" = 1'-0"



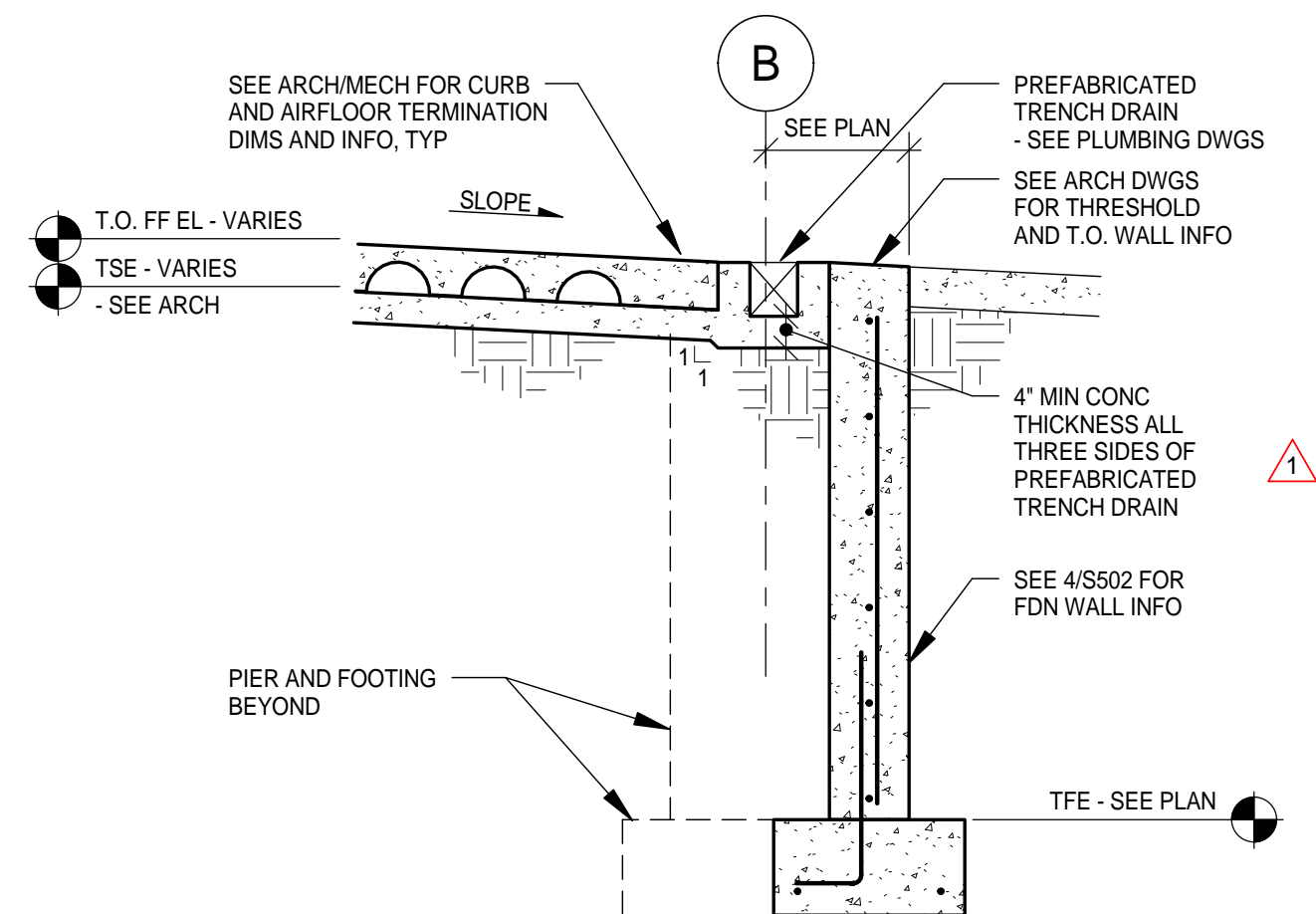
13 SECTION
3/4" = 1'-0"



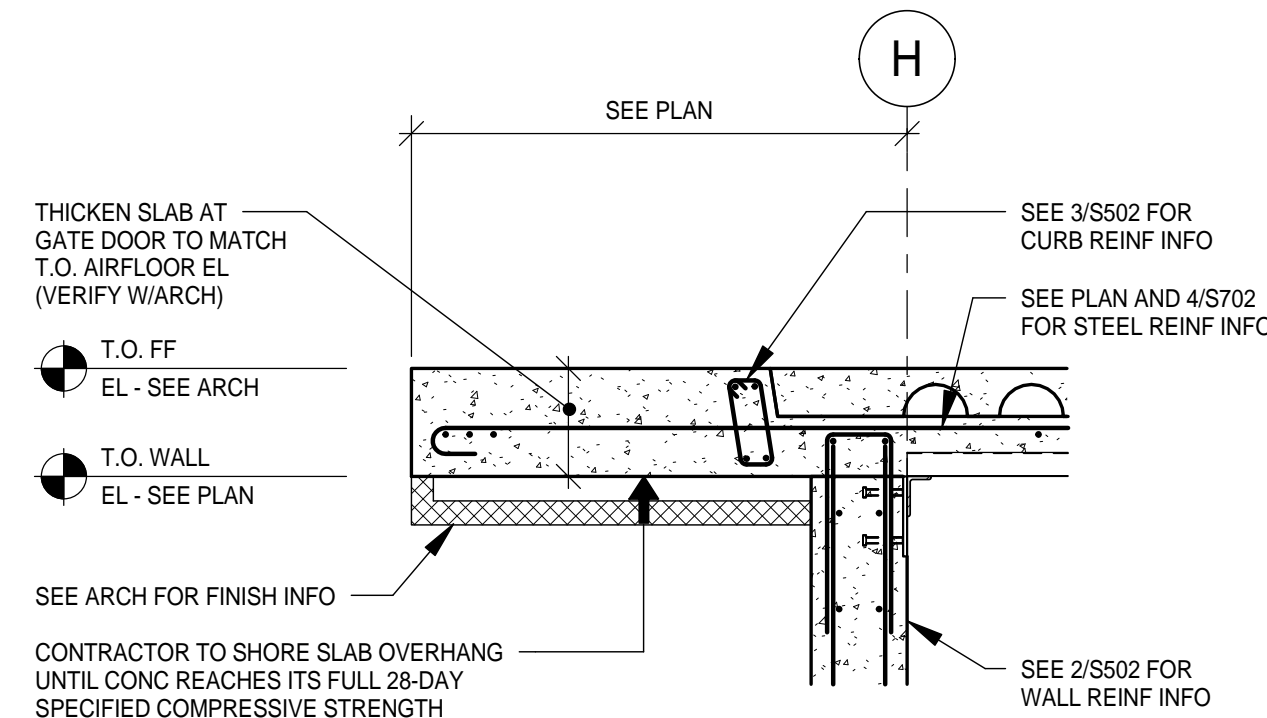
11 SECTION
3/4" = 1'-0"



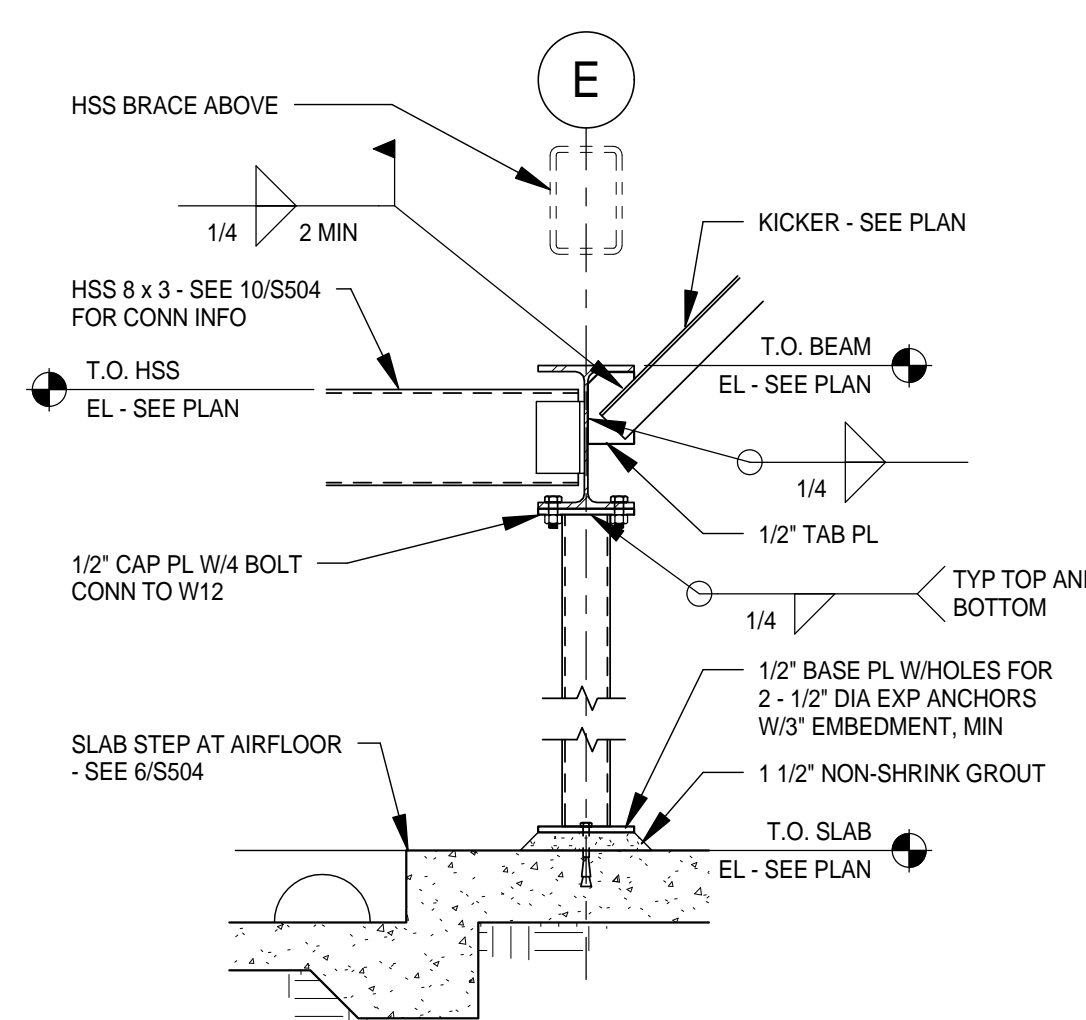
14 SECTION
3/4" = 1'-0"



3 SECTION AT VESTIBULE DOOR
1/2" = 1'-0"



7 SECTION AT GATE DOOR SLAB
1/2" = 1'-0"



12 SECTION
3/4" = 1'-0"

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Landscape Consultants:

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
	BID PACKAGE 1	5.12.10
	FOUNDATION PERMIT	6.4.10
1	ADDENDUM 1	6.11.10
2,3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.6.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SUL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

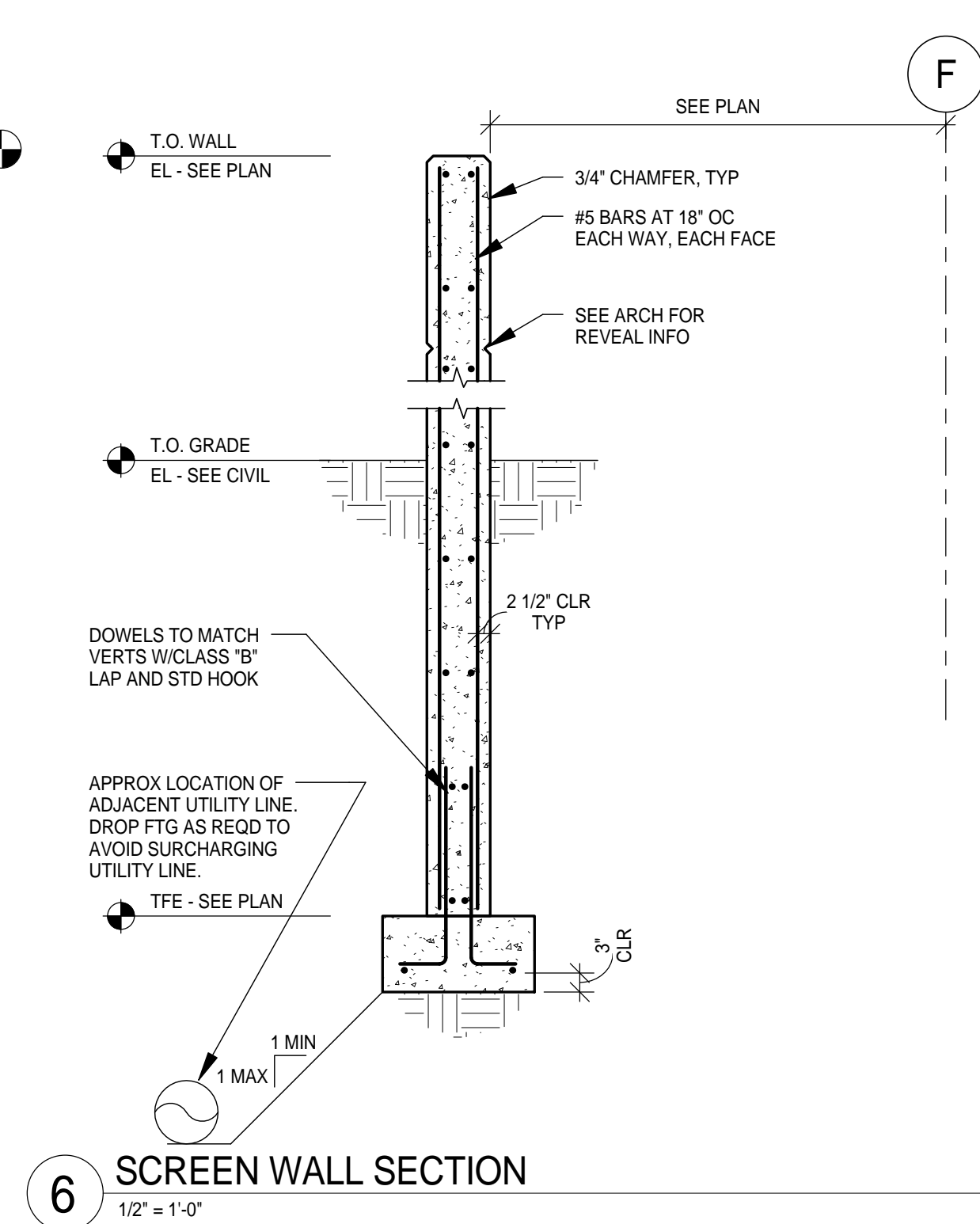
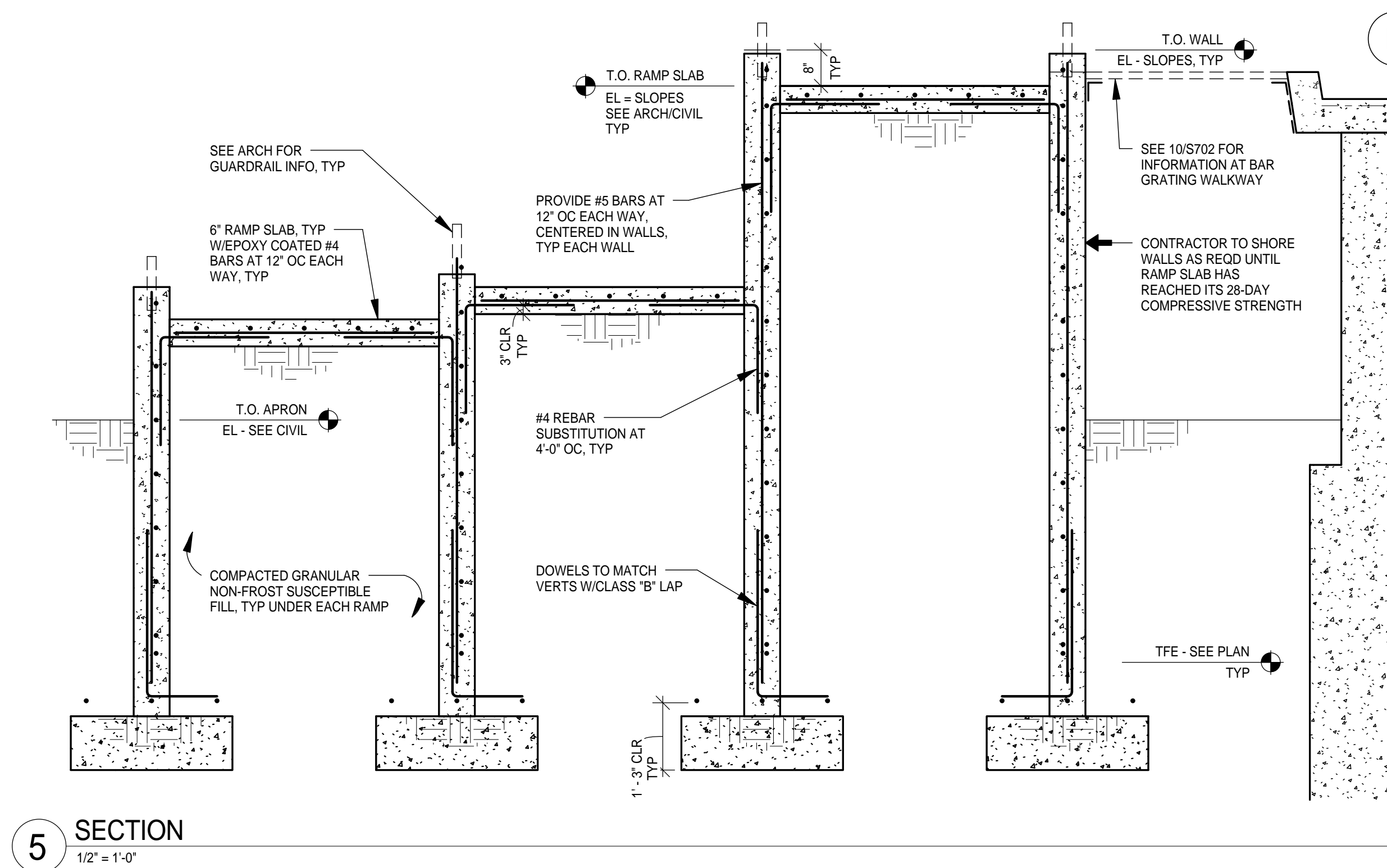
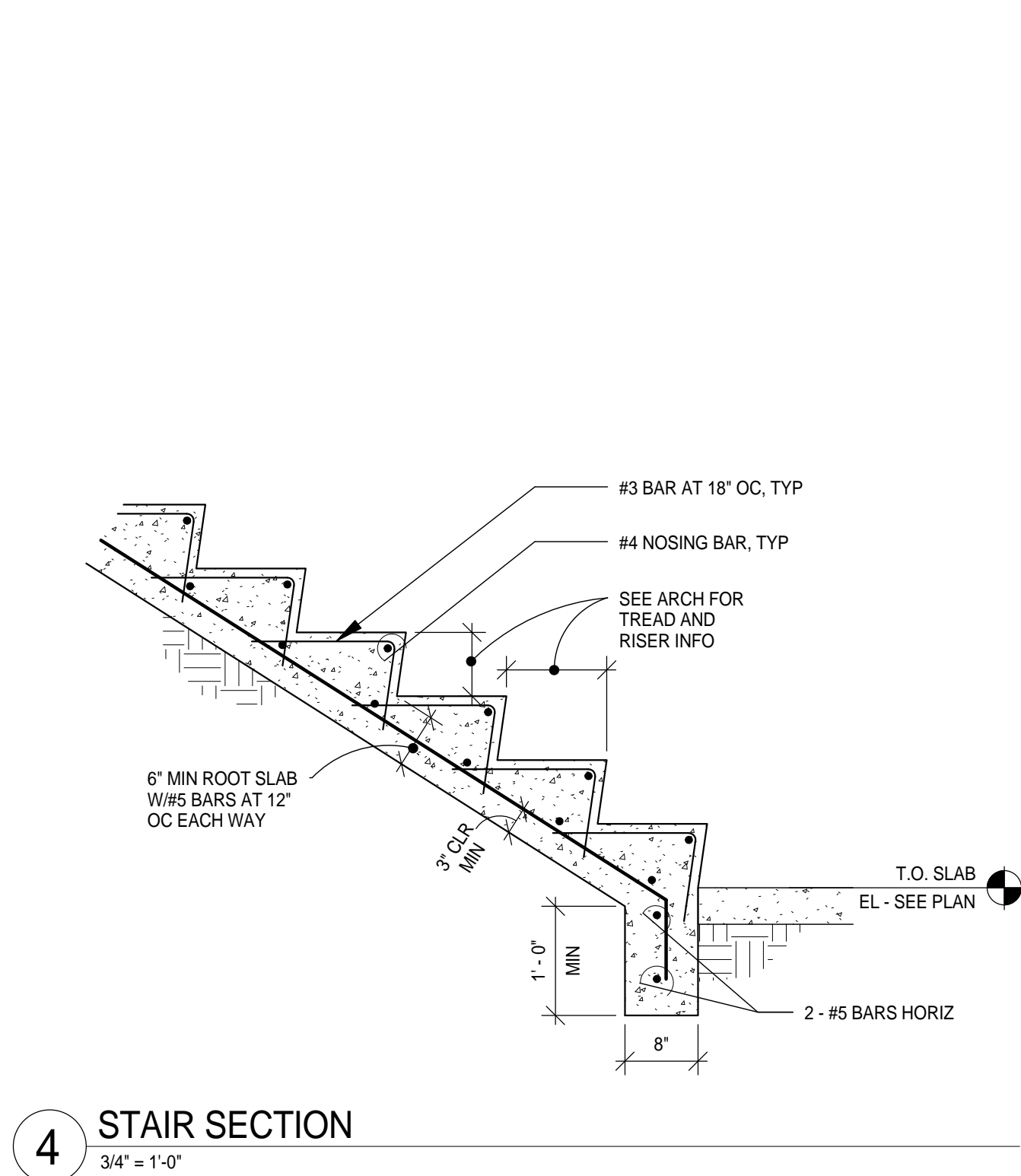
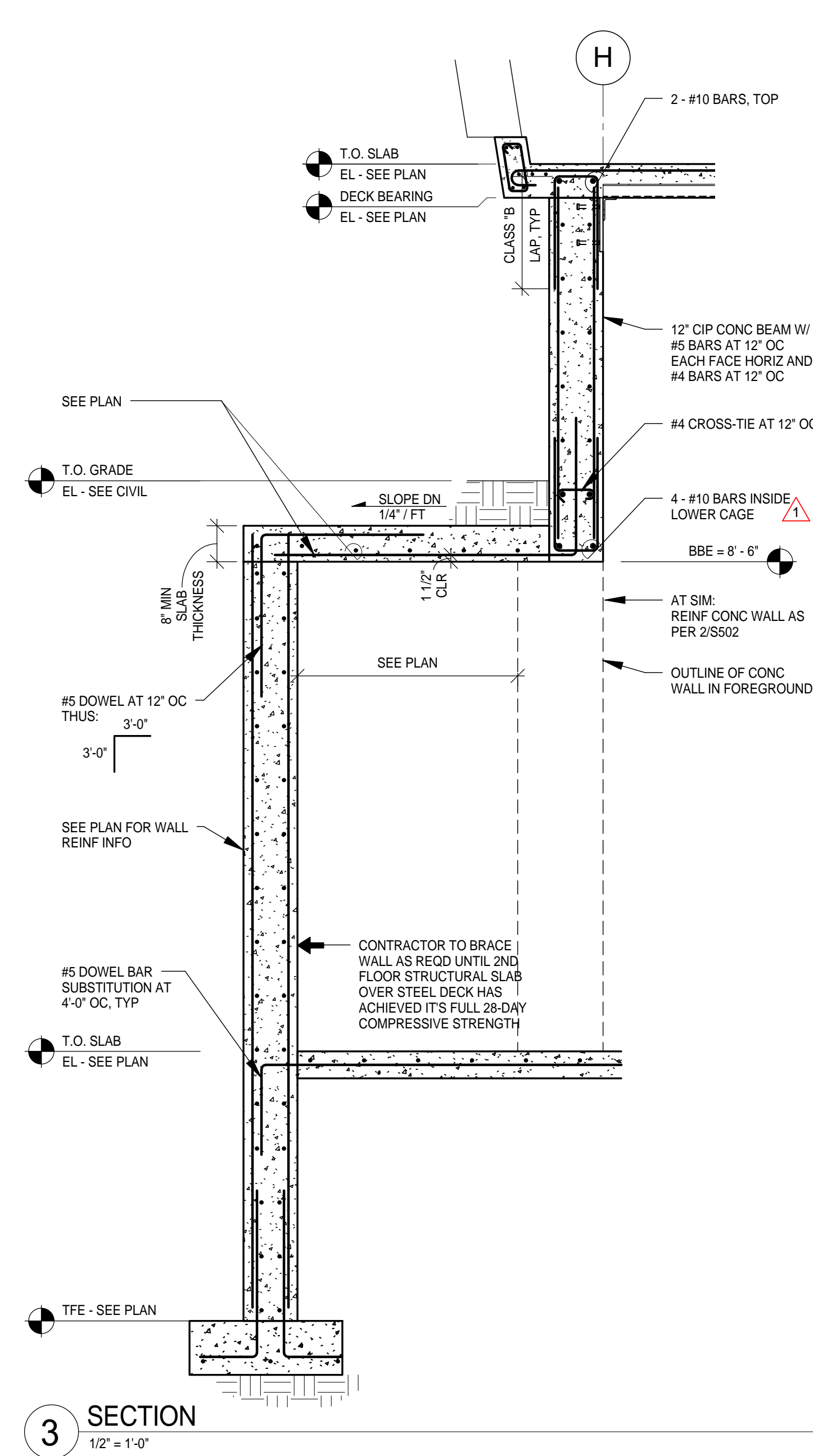
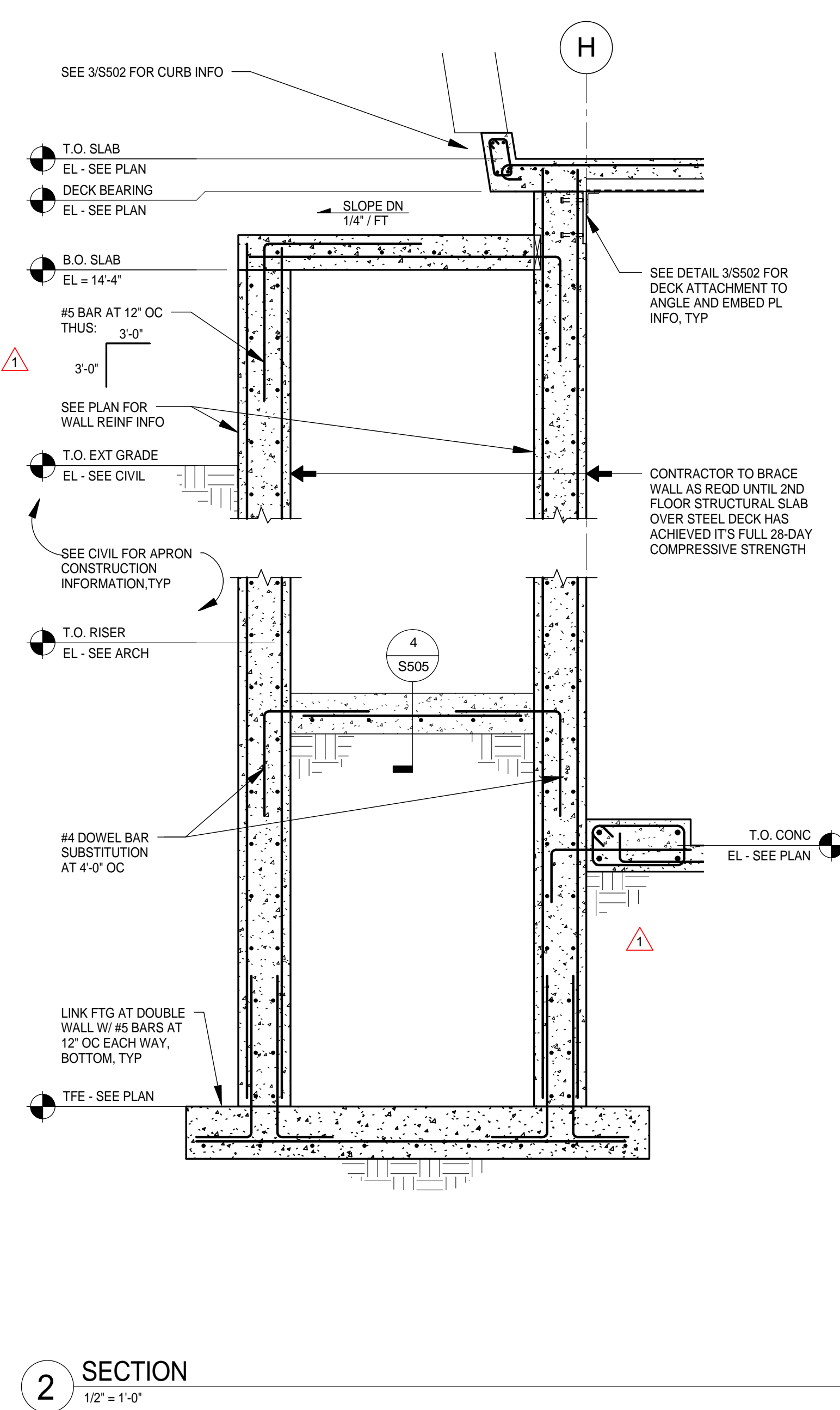
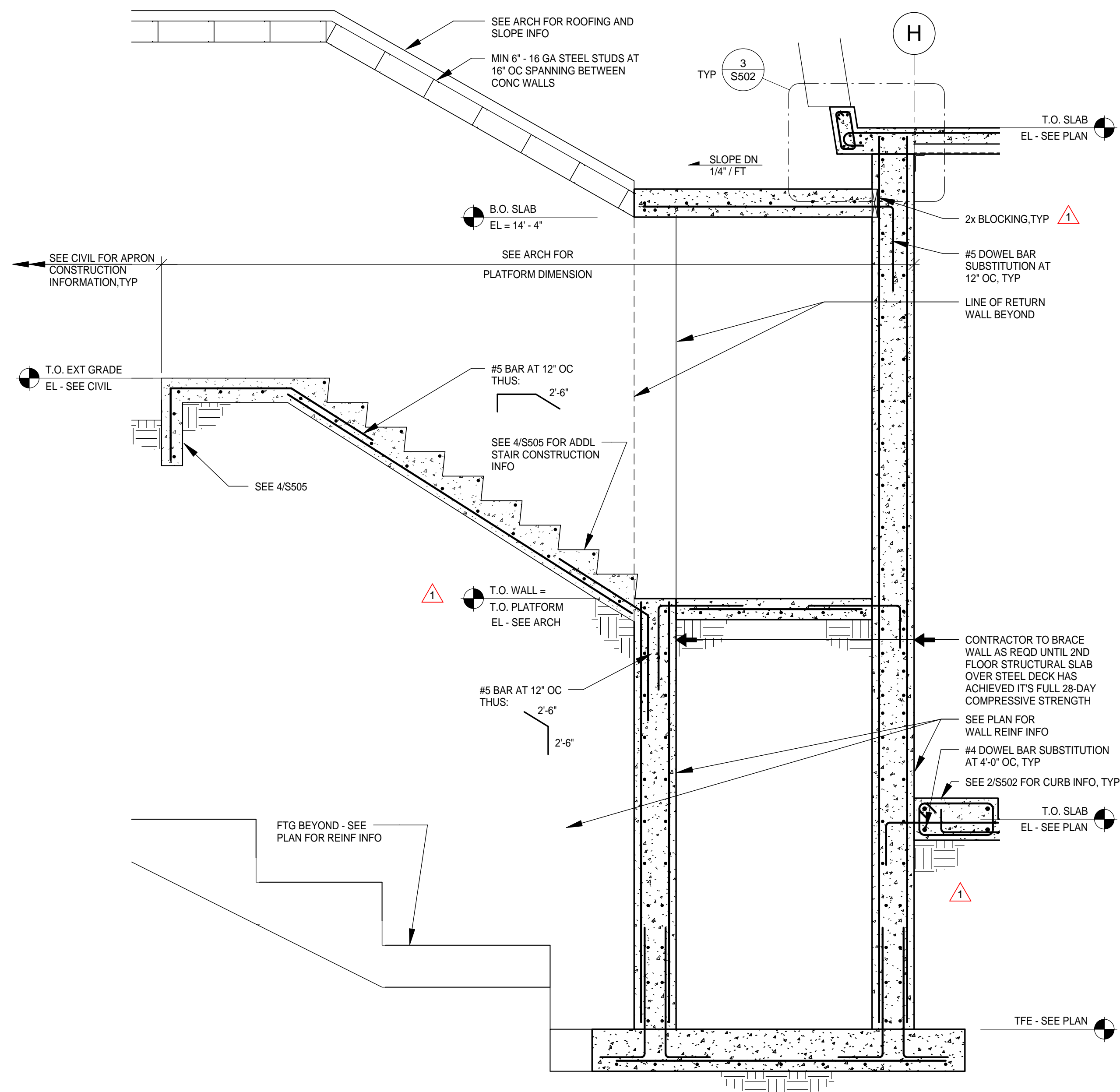
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**SHEET TITLE
 STRUCTURAL
 DETAILS**

SHEET NUMBER

S504

**BID PACKAGE 2B
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
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	FOUNDATION PERMIT	6.4.10
1	ADDENDUM 1	6.11.10
2,3	NOT CHANGED	
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	BUILDING PERMIT	8.6.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11
	BP 2A CONFORMANCE	05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SJL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

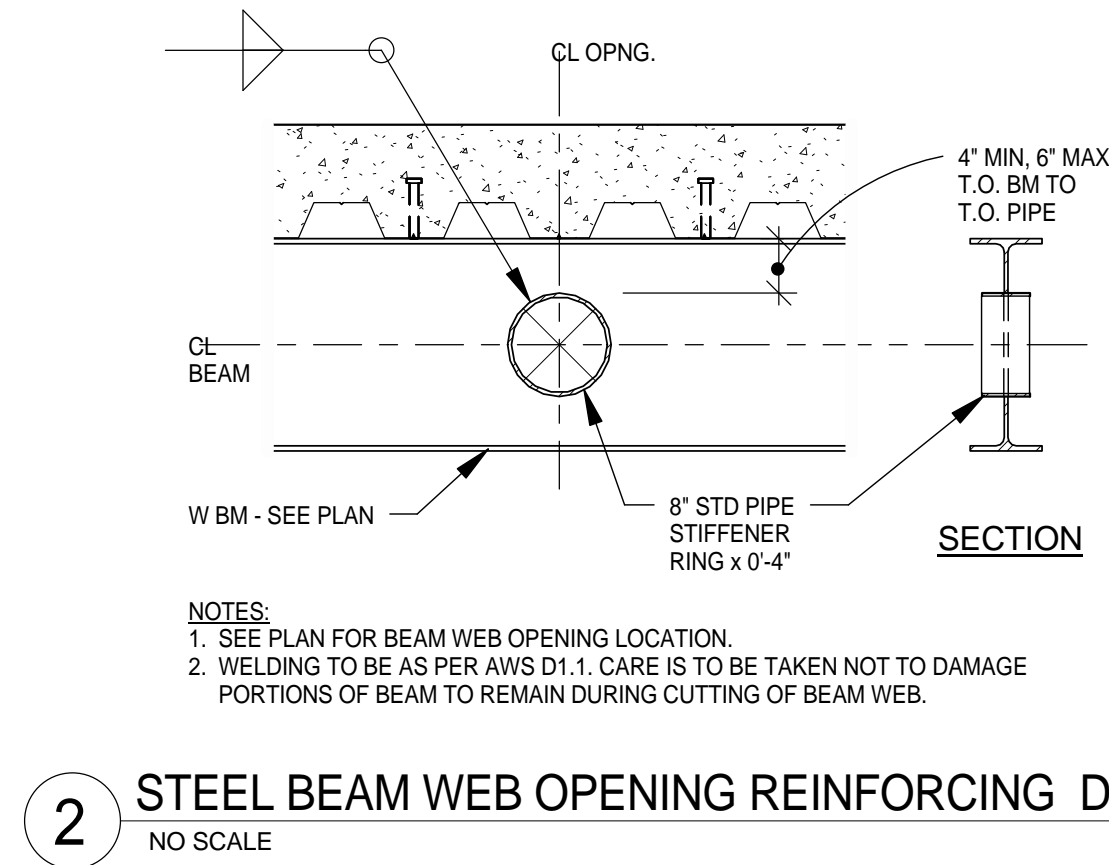
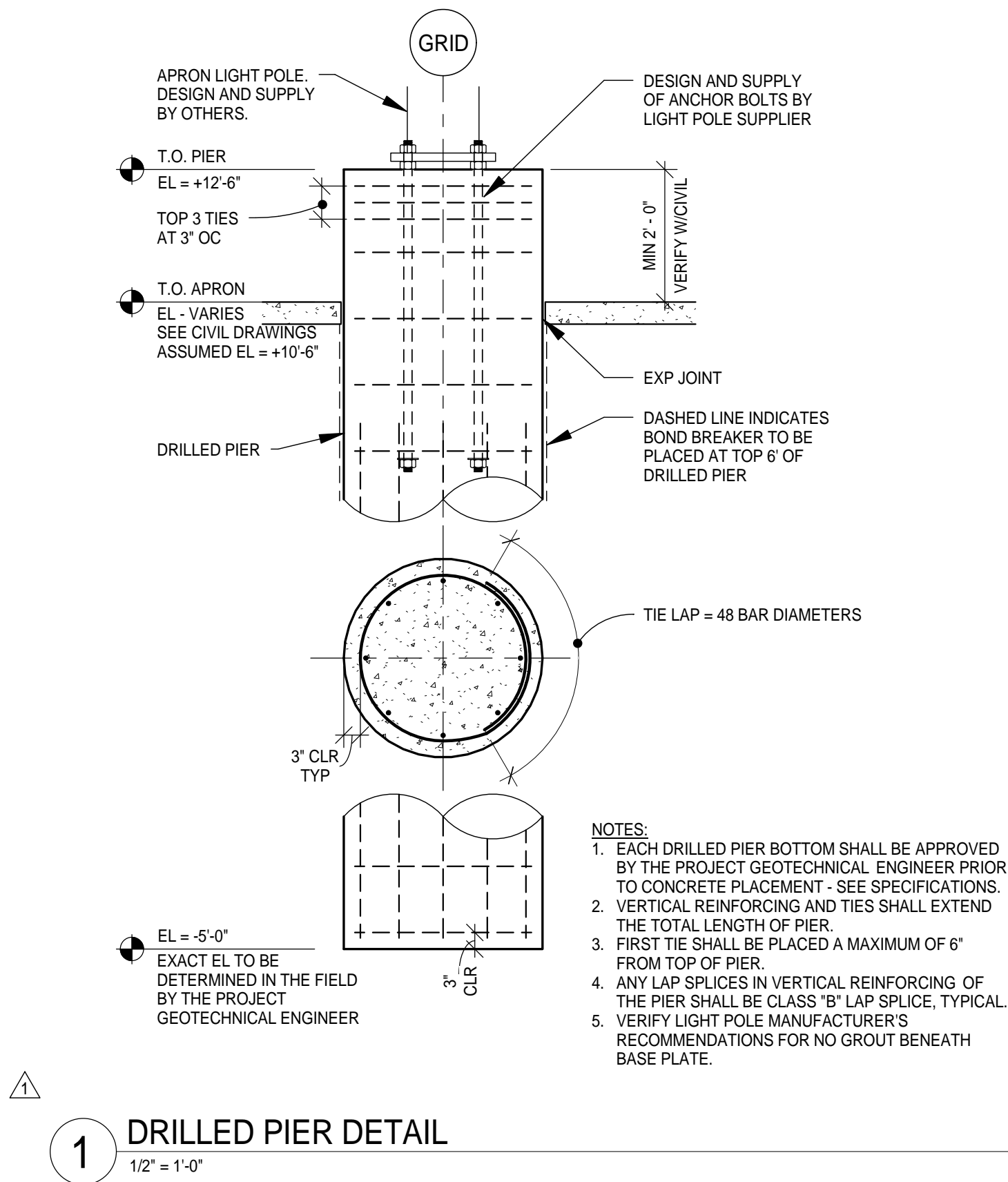
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SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER

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Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
1	BP2A ADDENDUM 2	02.25.11
	BP 2A CONFORMANCE	05.02.11
2	RFP	05.25.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SJL

DESIGNED BY: CWB

AEP PROJECT NUMBER

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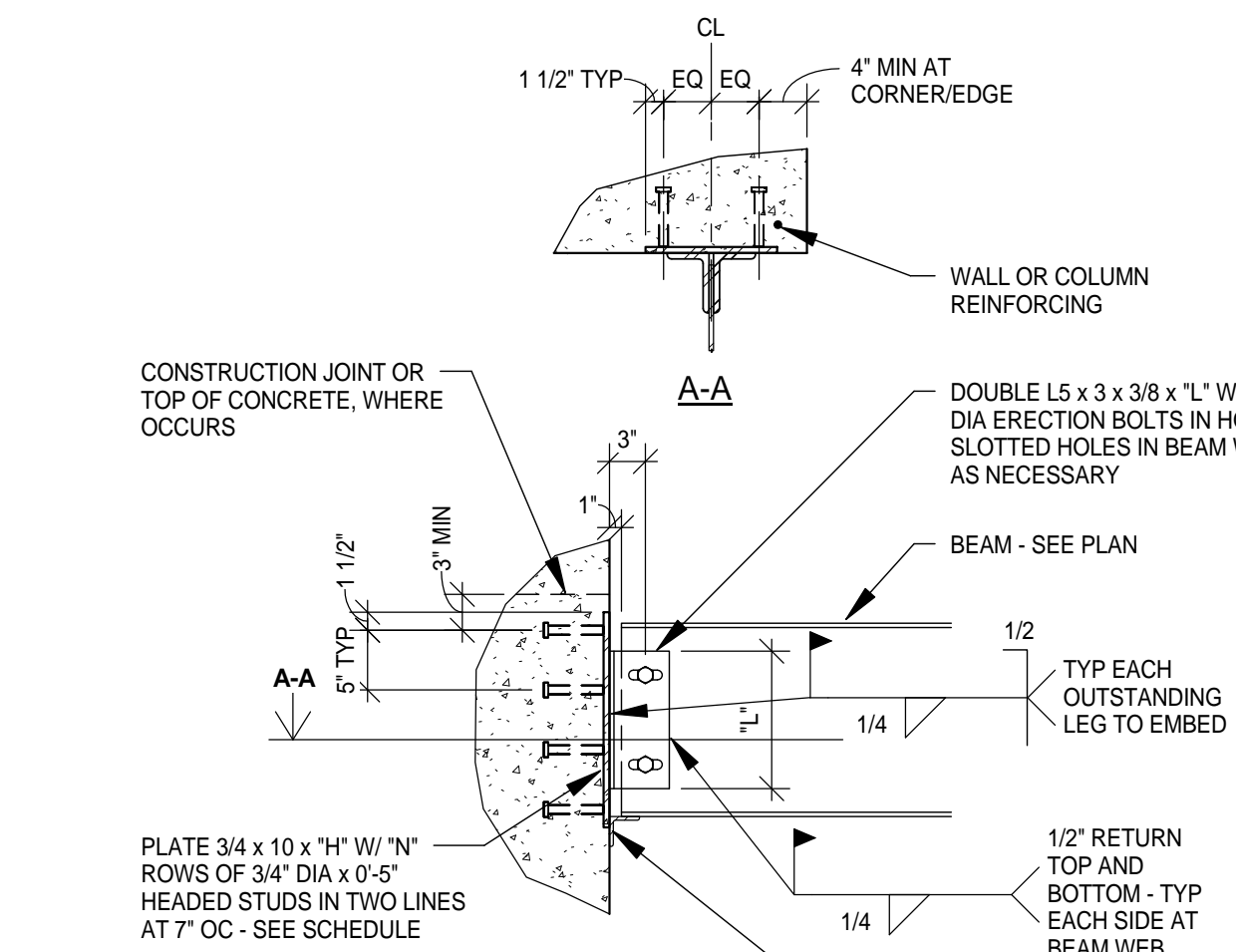
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**SHEET TITLE
STRUCTURAL
DETAILS**

SHEET NUMBER

S506

**BID PACKAGE 2B
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NOTES (UNO):
1. SEE SCHEDULE FOR NOTES AND ADDITIONAL INFORMATION.
2. PROVIDE ERECTION SEAT AS NECESSARY.

1 TYPICAL EMBED PLATE - DOUBLE ANGLE CONNECTION
3/4" = 1'-0"

TYPICAL EMBED PLATE SCHEDULE				
MARK	STEEL BEAM SIZE	STUD ROWS	PLATE LENGTH	MIN ANGLE LENGTH
EP-1	W12, W14	3	13"	8 1/2"
EP-2	W16	4	18"	11 1/2"
EP-3	W33	8	38"	24"
EP-4	HSS 5 x 5	3	13"	NA

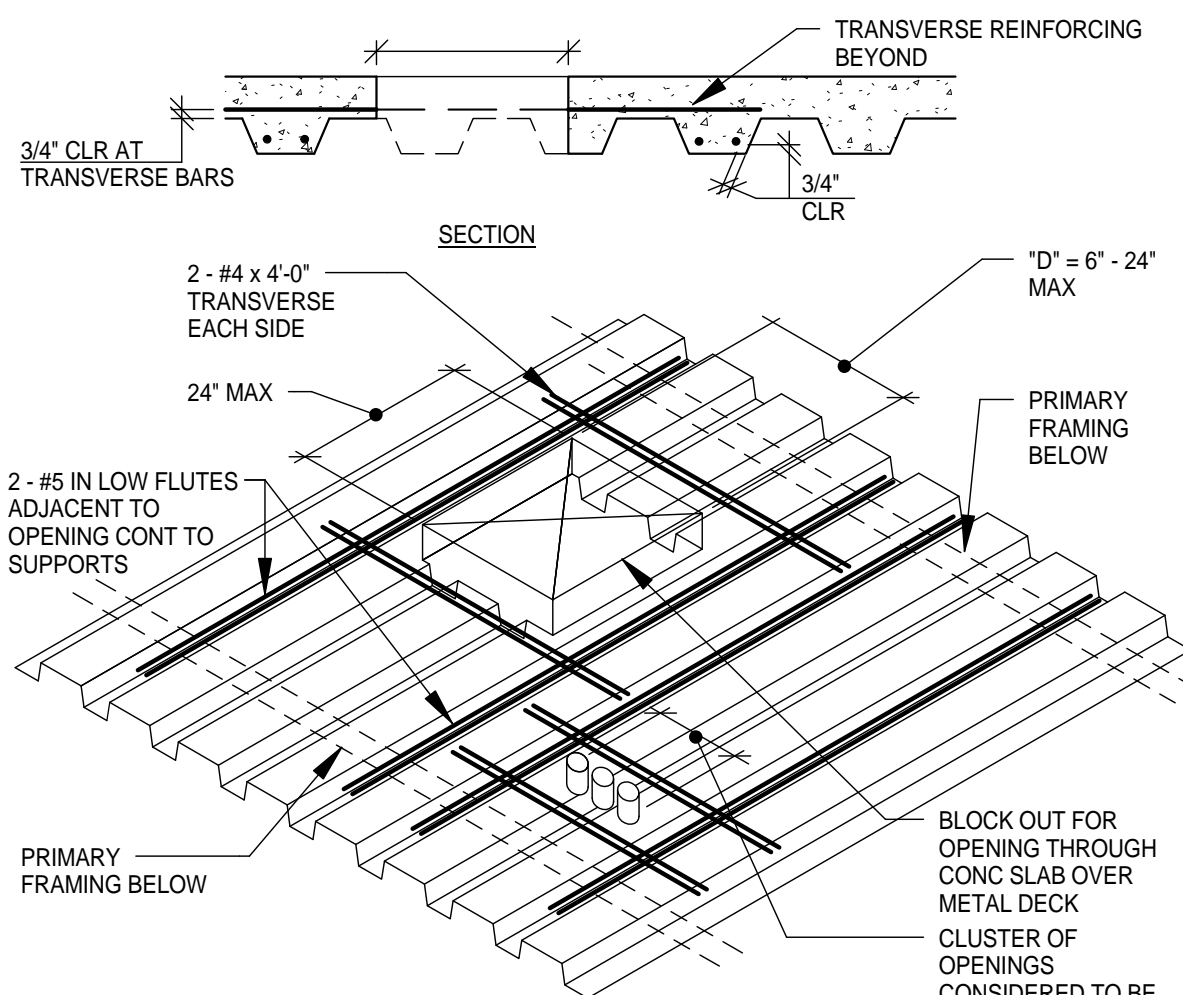
NOTES (UNO):
1. PROVIDE EMBED PLATES CORRESPONDING TO BEAM SIZES IN SCHEDULE, UNLESS NOTED OTHERWISE ON PLANS OR DETAILS.
2. PROVIDE HOLES AS NECESSARY FOR PLATE ATTACHMENT TO FORMWORK (5/16" DIA MAX).
3. COORDINATE CONCRETE REINFORCING BAR PLACEMENT WITH HEADED STUDS.
4. FIELD VERIFY EMBED PLATE PLACEMENT PRIOR TO BEAM ERECTION.
5. AT EP-4, PROVIDE 3" DIAMETER HOLE CENTERED ON HSS FOR CONDUIT ACCESS.

2 TYPICAL EMBED PLATE SCHEDULE
1" = 1'-0"

BEAM SHEAR CONNECTION SCHEDULE				
STEEL BEAM SIZE	SINGLE SHEAR CONNECTION FOR BEAMS SUPPORTING DECK ONLY		DOUBLE SHEAR CONNECTION FOR BEAMS SUPPORTING OTHER BEAMS	
	MIN ROWS OF BOLTS	MIN DESIGN SERVICE CAPACITY (KIPS)	MIN ROWS OF BOLTS	MIN DESIGN SERVICE CAPACITY (KIPS)
W8, W10	2	12	2	24
W12	3	23	3	46
W14	3	23	3	46
W16	4	35	4	70
W18	5	45	4	70
W21	6	55	5	90
W24	7	65	6	110
W27	7	65	6	110
W30	8	75	7	130
W33	8	75	7	130
W36	9	85	8	150

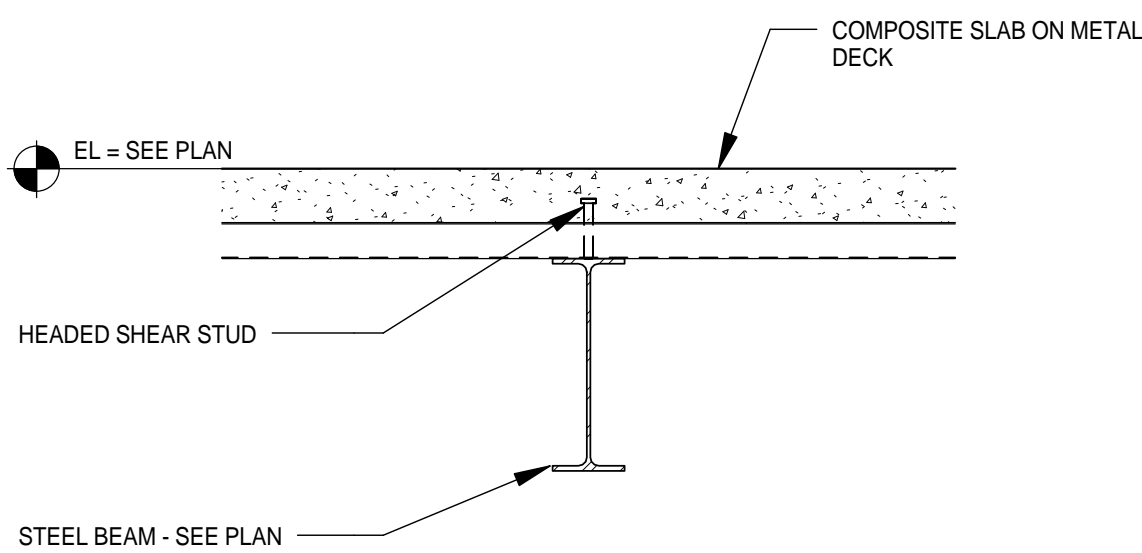
NOTES (UNO):
1. CONTRACTOR/FABRICATOR SHALL DESIGN TYPICAL SHEAR CONNECTIONS FOR THIS PROJECT. CONNECTION TYPES SHALL CONFORM TO AISC STANDARD SHEAR CONNECTIONS. SUBMIT PROPOSED CONNECTION TYPES FOR APPROVAL BEFORE STARTING SHOP DRAWINGS.
2. PROVIDE BEAM CONNECTIONS FOR END REACTIONS INDICATED ABOVE OR AS SHOWN ON PLAN OR DETAIL, WHICHEVER IS GREATER. BEAM TO BEAM CONNECTIONS MAY BE SINGLE OR DOUBLE SHEAR, AS REQUIRED TO PROVIDE THE SPECIFIED CONNECTION CAPACITY WITHIN THE AVAILABLE CONNECTION GEOMETRY. ALL BEAM TO COLUMN CONNECTIONS SHALL BE DOUBLE SHEAR.
3. ALL BOLTS SHALL BE 3/4" DIAMETER A325-N OR 1" DIAMETER A490-N, UNLESS NOTED OTHERWISE.
4. SHOP CONNECTIONS MAY BE WELDED (WITH CAPACITY AS NOTED HEREIN) OR BOLTED.
5. VALUES SHOWN ASSUME 1/4" BEAM WEB THICKNESS, MINIMUM.
6. USE TWO ANGLE CONNECTION TO ALL BEAMS FRAMING INTO CONCRETE EMBED PLATES.

3 BEAM SHEAR CONNECTION SCHEDULE
1" = 1'-0"



NOTES (UNO):
1. DO NOT CUT DECK AT OPENINGS UNTIL CONCRETE HAS ATTAINED ITS SPECIFIED COMPRESSIVE STRENGTH.
2. PROVIDE 2 TIMES "D" CLEAR DISTANCE BETWEEN OPENING EDGES. "D" IS LARGEST OF ADJACENT OPENING DIMENSIONS.

7 TYPICAL FRAMING AT FLOOR OPENINGS (6"-32" MAX)
NO SCALE



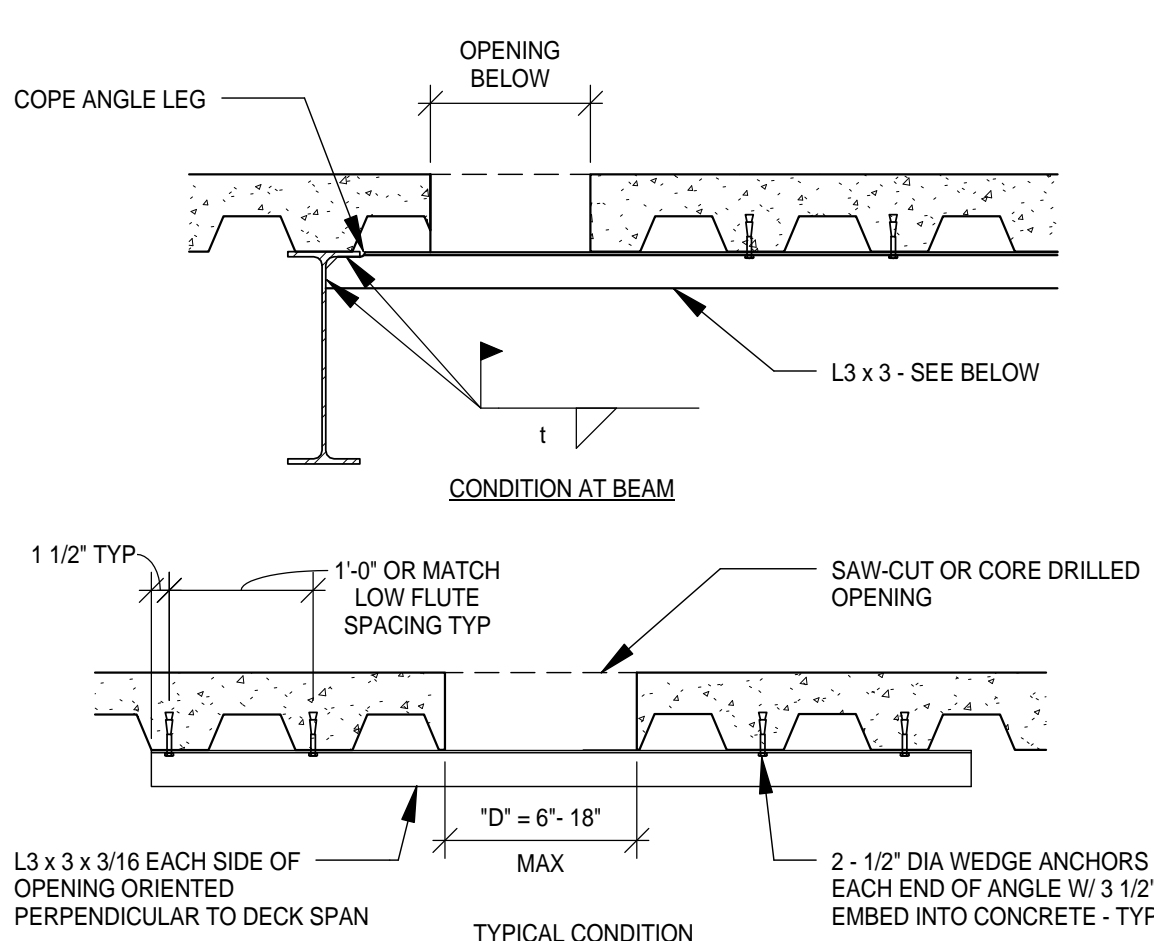
NOTES (UNO):
1. SEE TYPICAL DETAILS FOR DECK ATTACHMENT AND HEADED STUD INFORMATION.

11 TYPICAL SECTION AT COMPOSITE DECK PERPENDICULAR TO BEAM
NO SCALE

FLOOR AND ROOF DECK SCHEDULE				
MARK	DECK TYPE	CONCRETE TOPPING		COMMENTS
		THICKNESS	REINFORCING	
S1	3" - 19 GA COMPOSITE DECK	4 1/2" NORMAL WT	STRUX 90/40 SYNTHETIC FIBER	5.0 LBS/CU YD
S2	3" - 19 GA COMPOSITE DECK	6 1/2" NORMAL WT	#5 AT 12" OC EACH WAY	1 1/2" TOP COVER
S3	3" - 19 GA COMPOSITE DECK	6 1/2" NORMAL WT	STRUX 90/40 SYNTHETIC FIBER	5.0 LBS/CU YD
S4	3" - 20 GA COMPOSITE DECK	3" NORMAL WT	STRUX 90/40 SYNTHETIC FIBER	5.0 LBS/CU YD
D1	3" - 20 GA TYPE N ROOF DECK	NA	NA	NA
D2	3 1/2" - 16 GA ROOF DECK OR 4 1/2" - 18 GA ROOF DECK	NA	NA	NA
D3	1 1/2" - 20 GA TYPE N ROOF DECK	NA	NA	NA
D4	3" - 20 GA TYPE N ROOF DECK	NA	NA	"GALVALUM" FINISH REFER TO ARCH

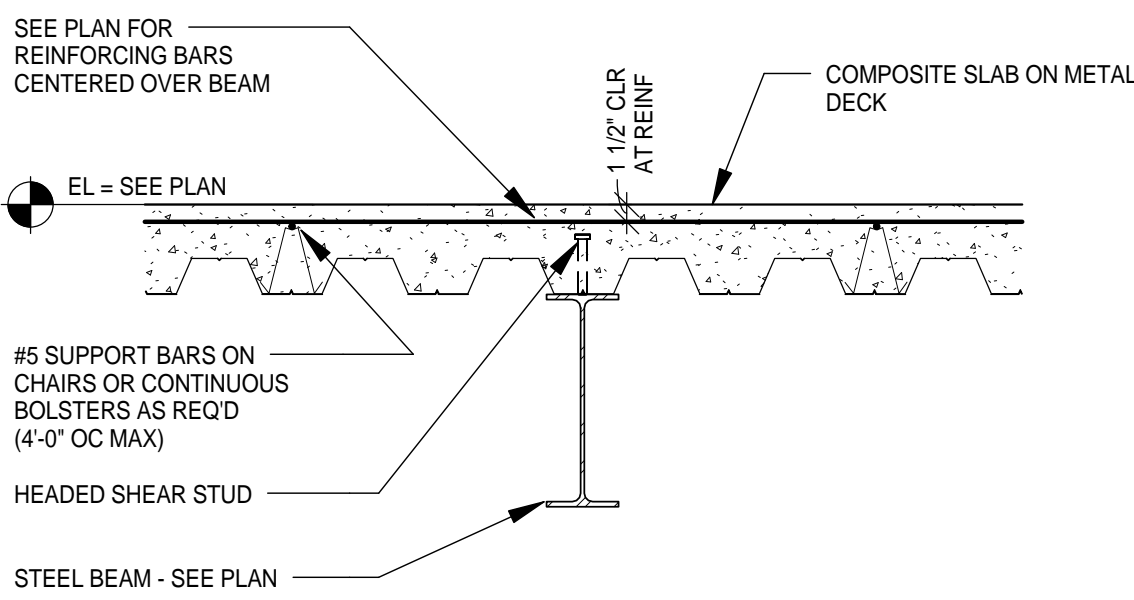
NOTES (UNO):
1. SEE TYPICAL DETAILS FOR DECK ATTACHMENT DETAILS.
2. SEE GENERAL STRUCTURAL NOTES FOR CONCRETE STRENGTH.
3. CONCRETE TOPPING THICKNESS IS FROM TOP OF DECK TO TOP OF CONCRETE.
4. SEE PLANS AND DETAILS FOR ADDITIONAL REINFORCING AND REINFORCING PLACEMENT AT CONCRETE SLABS ON METAL DECK.
5. SEE SPECIFICATIONS FOR SYNTHETIC FIBERS.
6. ALL COMPOSITE DECK IS GALVANIZED. REFER TO SPECIFICATIONS FOR ROOF DECK FINISH.

4 FLOOR AND ROOF DECK SCHEDULE
NO SCALE



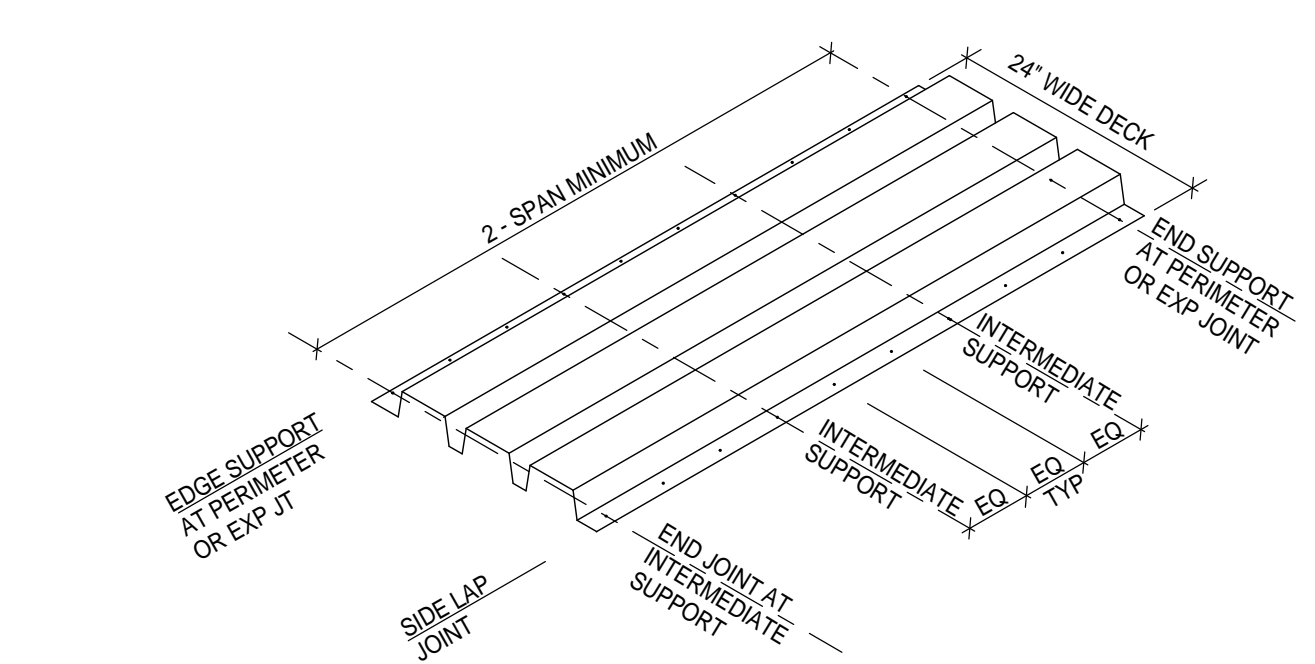
NOTES (UNO):
1. DO NOT OVER CUT CORNERS OF SQUARE OR RECTANGULAR OPENINGS.
2. CLUSTER OF OPENINGS CONSIDERED TO BE ONE OPENING. PROVIDE SUPPORT ANGLES IF OPENINGS LOCATED WITH LESS THAN TWO TIMES "D" CLEAR BETWEEN OPENING EDGES. "D" IS LARGEST OF ADJACENT OPENING DIMENSIONS.

8 TYPICAL OPENING (6"-24" MAX) THROUGH SLAB OVER METAL DECK
NO SCALE



NOTES (UNO):
1. CUT HIGH DECK FLUTE WHEN IT OCCURS AT BEAM AND PROVIDE GIRDER FILLER DECK PIECE AS NECESSARY.
2. SEE TYPICAL DETAILS FOR DECK ATTACHMENT AND HEADED STUD INFORMATION.

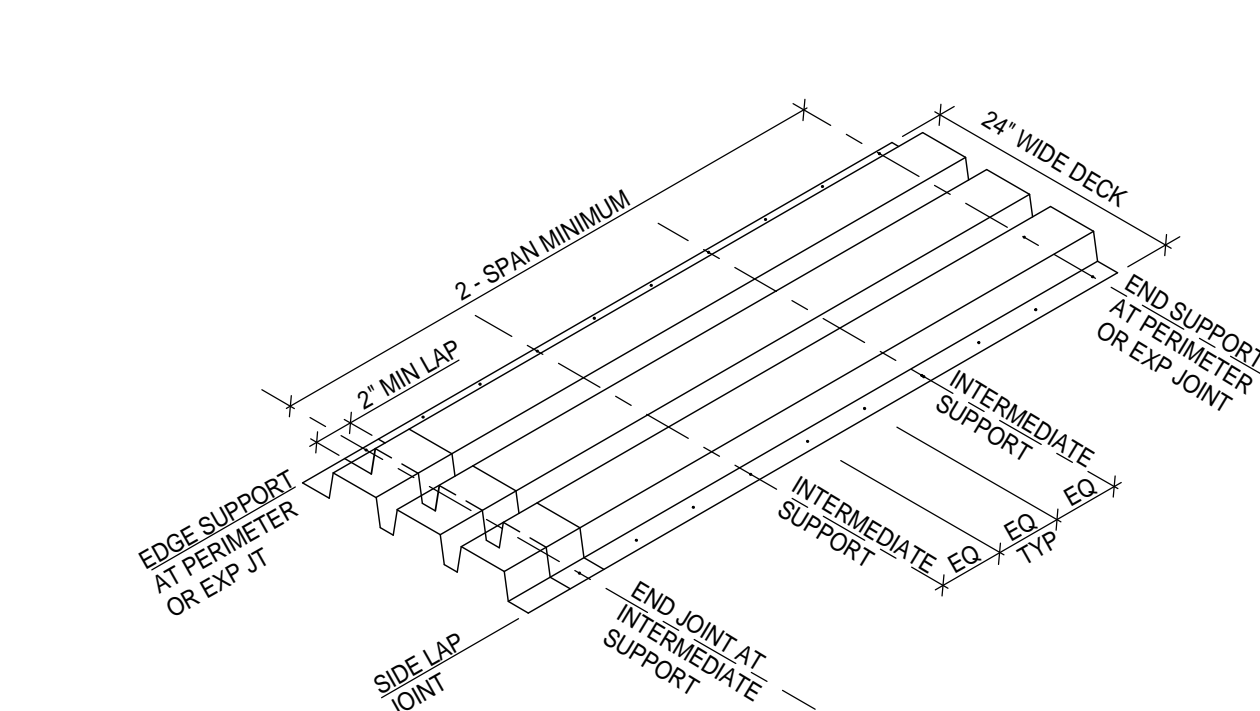
12 TYPICAL SECTION AT COMPOSITE DECK PARALLEL TO BEAM
NO SCALE



DECK SUPPORT CONDITION	DECK ATTACHMENT
END SUPPORT	PUDDLE WELDS AT EACH LOW FLUTE
EDGE SUPPORT	PUDDLE WELDS AT 12" OC
INTERMEDIATE SUPPORT	PUDDLE WELDS AT EACH LOW FLUTE
END JOINT AT INT SUPPORT	PUDDLE WELDS AT EACH LOW FLUTE, EACH SIDE
SIDE LAP JOINT	#10 TEK SCREWS OR 1 1/2" SEAM WELD AT 36" OC MAX

NOTES (UNO):
1. ALL PUDDLE (ARC-SPOT) WELDS SHALL BE 5/8" DIAMETER.
2. PROVIDE DECK ATTACHMENTS AT SPACING SHOWN UNLESS NOTED OTHERWISE ON DRAWINGS.
3. DECK SHEETS SHALL BE BUTTED AT END JOINTS. PROVIDE 2 1/2" MINIMUM BEARING. GAPS UP TO 1" ARE ACCEPTABLE AT BUTT JOINTS.
4. HEADED STUD INSTALLED THROUGH THE DECK MAY BE SUBSTITUTED FOR PUDDLE WELD.

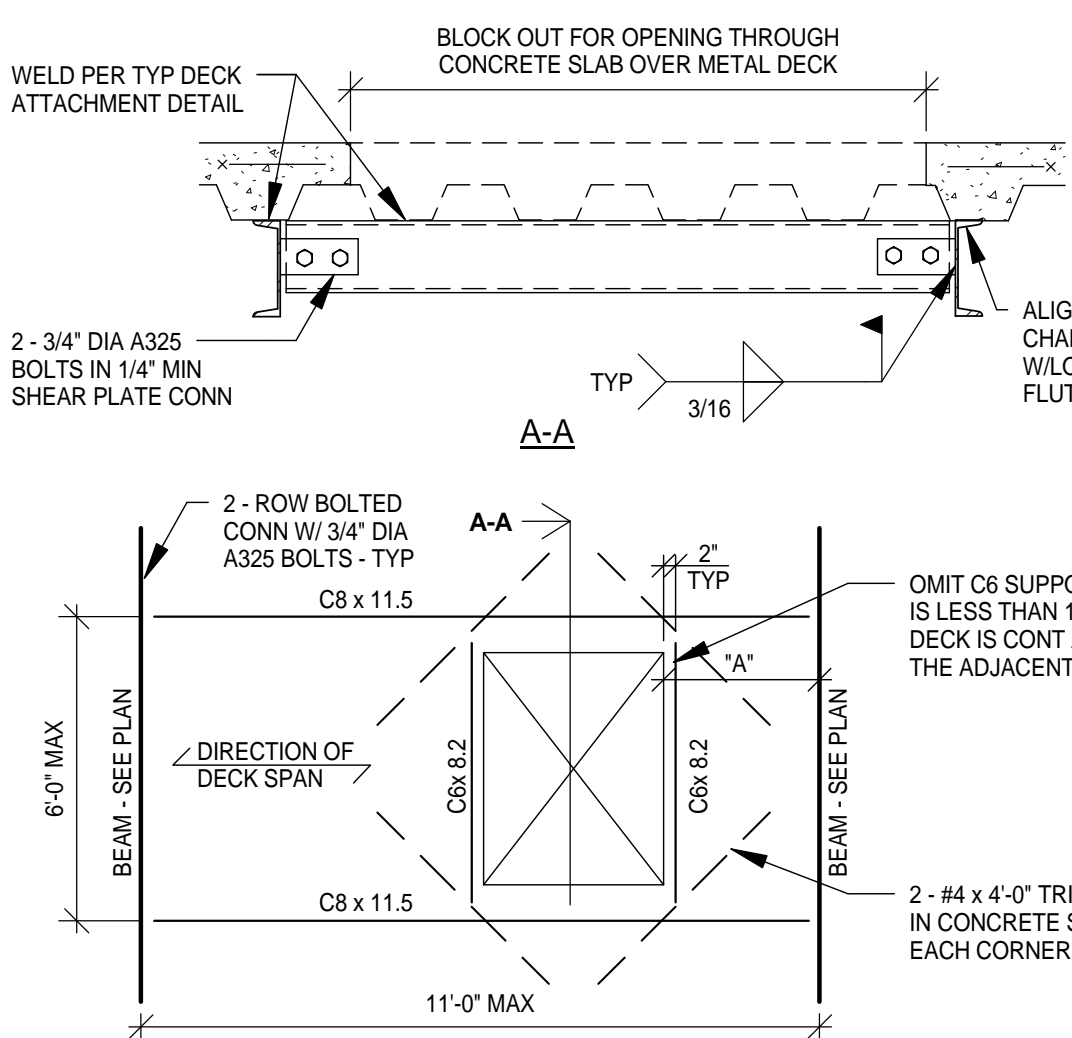
5 TYPICAL 3" COMPOSITE STEEL DECK ATTACHMENT DETAIL
NO SCALE



DECK SUPPORT CONDITION	DECK ATTACHMENT
END SUPPORT	PUDDLE WELDS AT EACH LOW FLUTE
EDGE SUPPORT	PUDDLE WELDS AT 12" OC
INTERMEDIATE SUPPORT	PUDDLE WELDS AT EACH LOW FLUTE
END LAP JOINT	PUDDLE WELDS AT EACH LOW FLUTE
SIDE LAP JOINT	#10 TEK SCREWS PER SPAN

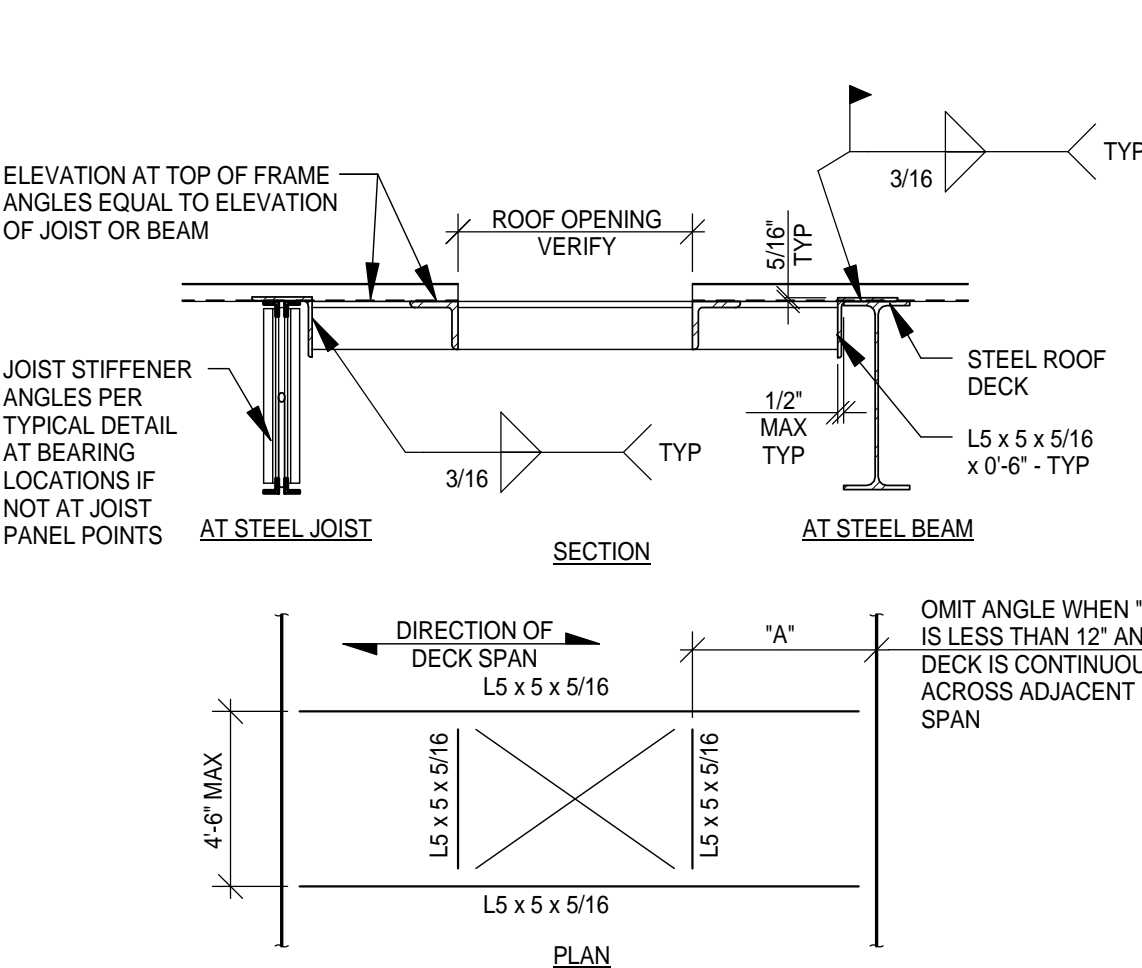
NOTES (UNO):
1. ALL PUDDLE (ARC-SPOT) WELDS SHALL BE 5/8" DIAMETER.
2. PROVIDE DECK ATTACHMENTS AT SPACING SHOWN UNLESS NOTED OTHERWISE ON DRAWINGS.
3. AT END LAP CONDITIONS, PUDDLE WELDS SHALL PROVIDE FUSION THROUGH ALL DECK LAYERS.

6 TYPICAL 3" STEEL ROOF DECK ATTACHMENT DETAIL
NO SCALE



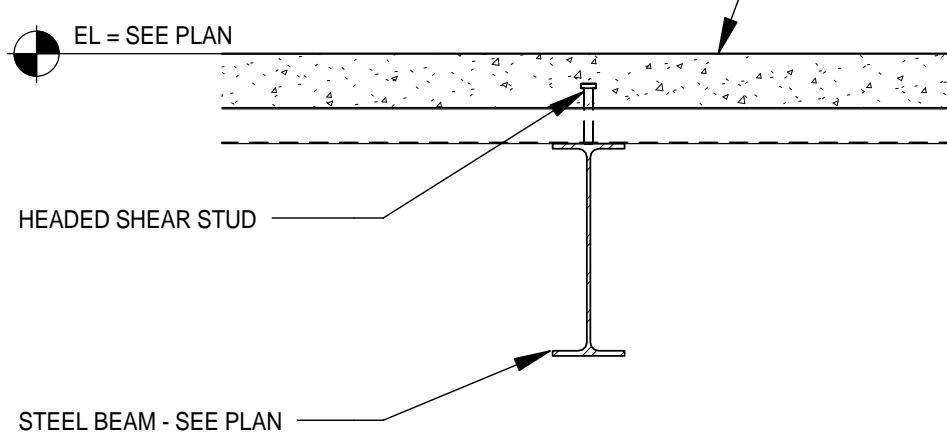
NOTES (UNO):
1. DO NOT CUT DECK AT OPENINGS UNTIL CONCRETE HAS ATTAINED ITS SPECIFIED COMPRESSIVE STRENGTH.
2. VERIFY OPENING DIMENSIONS WITH ARCHITECTURAL DRAWINGS AND MECHANICAL TRADES.

9 TYPICAL FLOOR OPENING FRAME (OVER 32")
NO SCALE



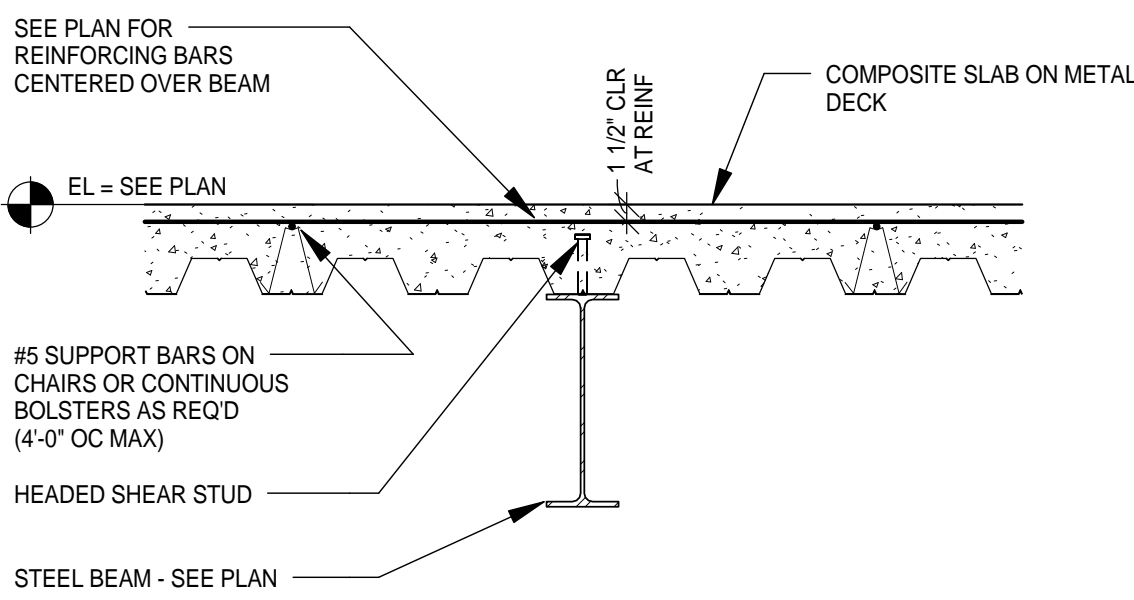
NOTES (UNO):
1. VERIFY OPENING SIZES AND LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO FABRICATION.
2. WELD DECK AT OPENING AT EACH FLUTE WITH PUDDLE WELDS, PER THE TYP DECK ATTACHMENT DETAIL.
3. DO NOT CUT OPENING IN DECK UNTIL NECESSARY. CONTRACTOR TO COORDINATE.
4. THIS ROOF OPENING FRAME IS NOT DESIGNED TO SUPPORT THE WEIGHT OF ROOF TOP MECHANICAL EQUIPMENT WEIGHING OVER 400 LBS. EQUIPMENT SHALL BE SUPPORTED ON A STRUCTURAL CURB DESIGNED BY THE SUPPLIER TO SPAN TO THE PRIMARY STRUCTURAL FRAMING.

10 TYPICAL ROOF OPENING FRAME FOR 3" DECK
NO SCALE



NOTES (UNO):
1. SEE TYPICAL DETAILS FOR DECK ATTACHMENT AND HEADED STUD INFORMATION.

11 TYPICAL SECTION AT COMPOSITE DECK PERPENDICULAR TO BEAM
NO SCALE



NOTES (UNO):
1. CUT HIGH DECK FLUTE WHEN IT OCCURS AT BEAM AND PROVIDE GIRDER FILLER DECK PIECE AS NECESSARY.
2. SEE TYPICAL DETAILS FOR DECK ATTACHMENT AND HEADED STUD INFORMATION.

12 TYPICAL SECTION AT COMPOSITE DECK PARALLEL TO BEAM
NO SCALE

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Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
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FOUNDATION PERMIT		6.4.10
1,2,3 NOT CHANGED		
CONFORMANCE SET		7.12.10
BUILDING PERMIT		8.6.10
5 100% REVIEW		12.15.10
BID PACKAGE 2A		01.24.11
BP 2A CONFORMANCE		05.02.11
RFP 120		07.22.11

DATE ISSUED: 08-23-11
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DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

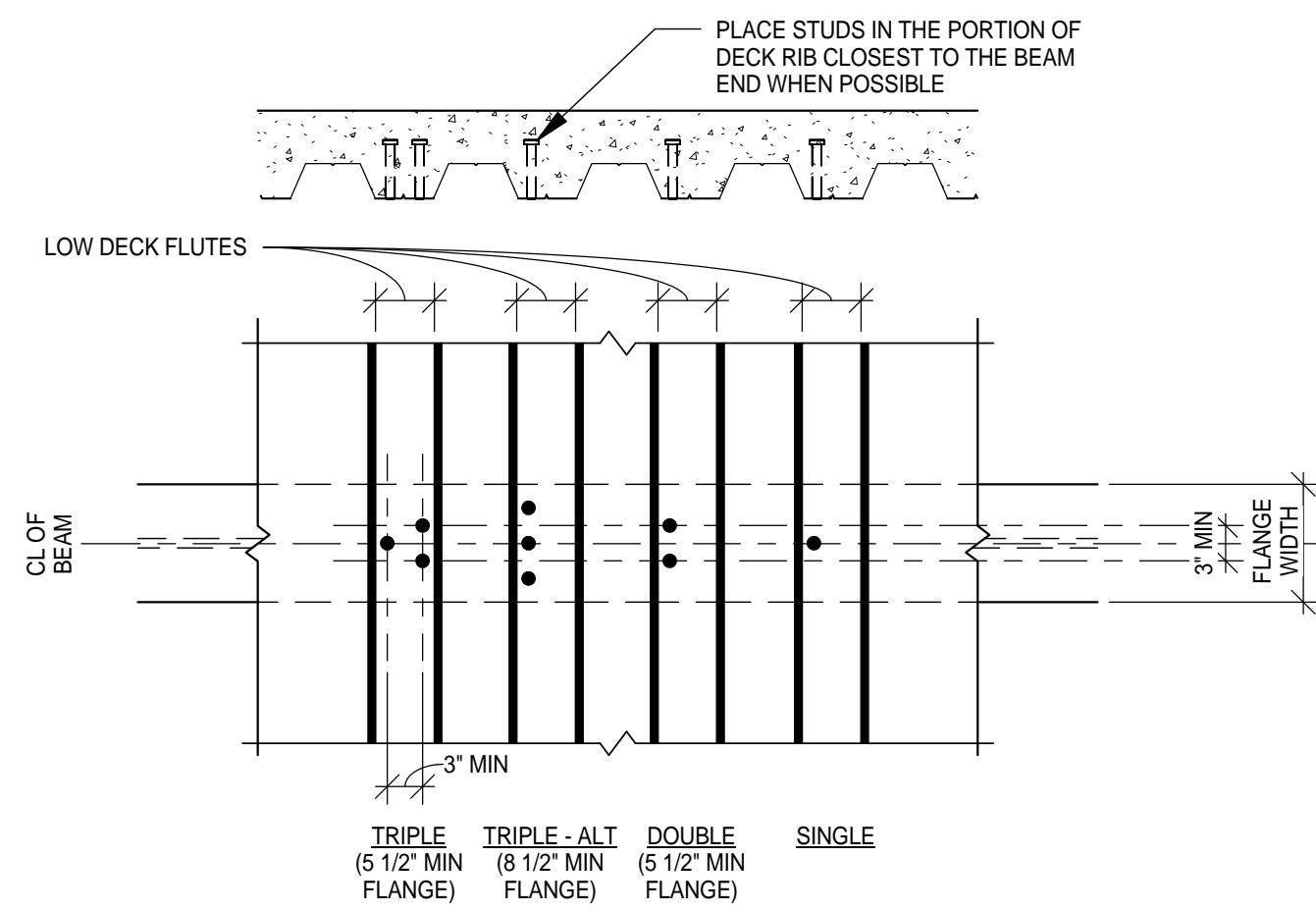
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**SHEET TITLE
STRUCTURAL
DETAILS**

SHEET NUMBER

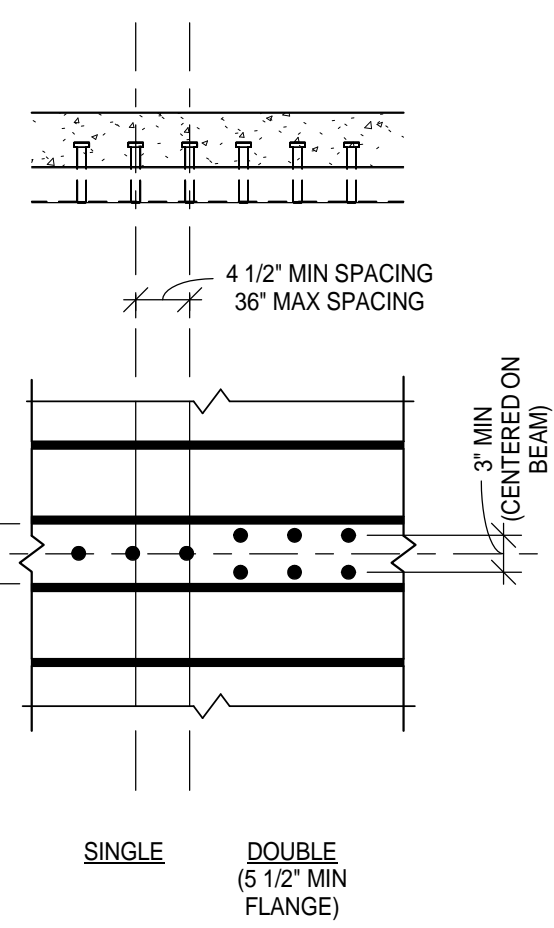
S701

**BID PACKAGE 2B
ISSUED FOR BID
FOR REFERENCE ONLY**



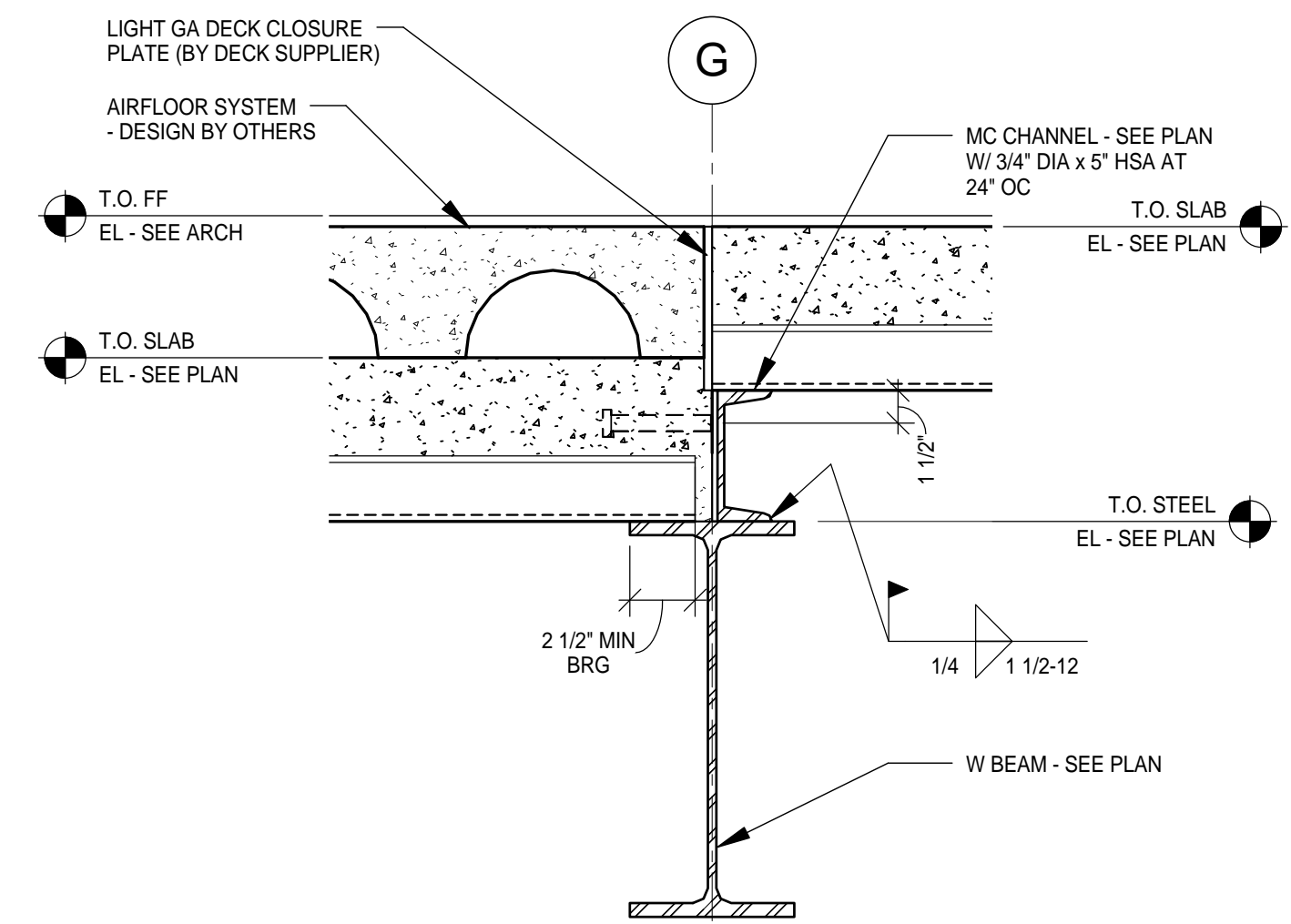
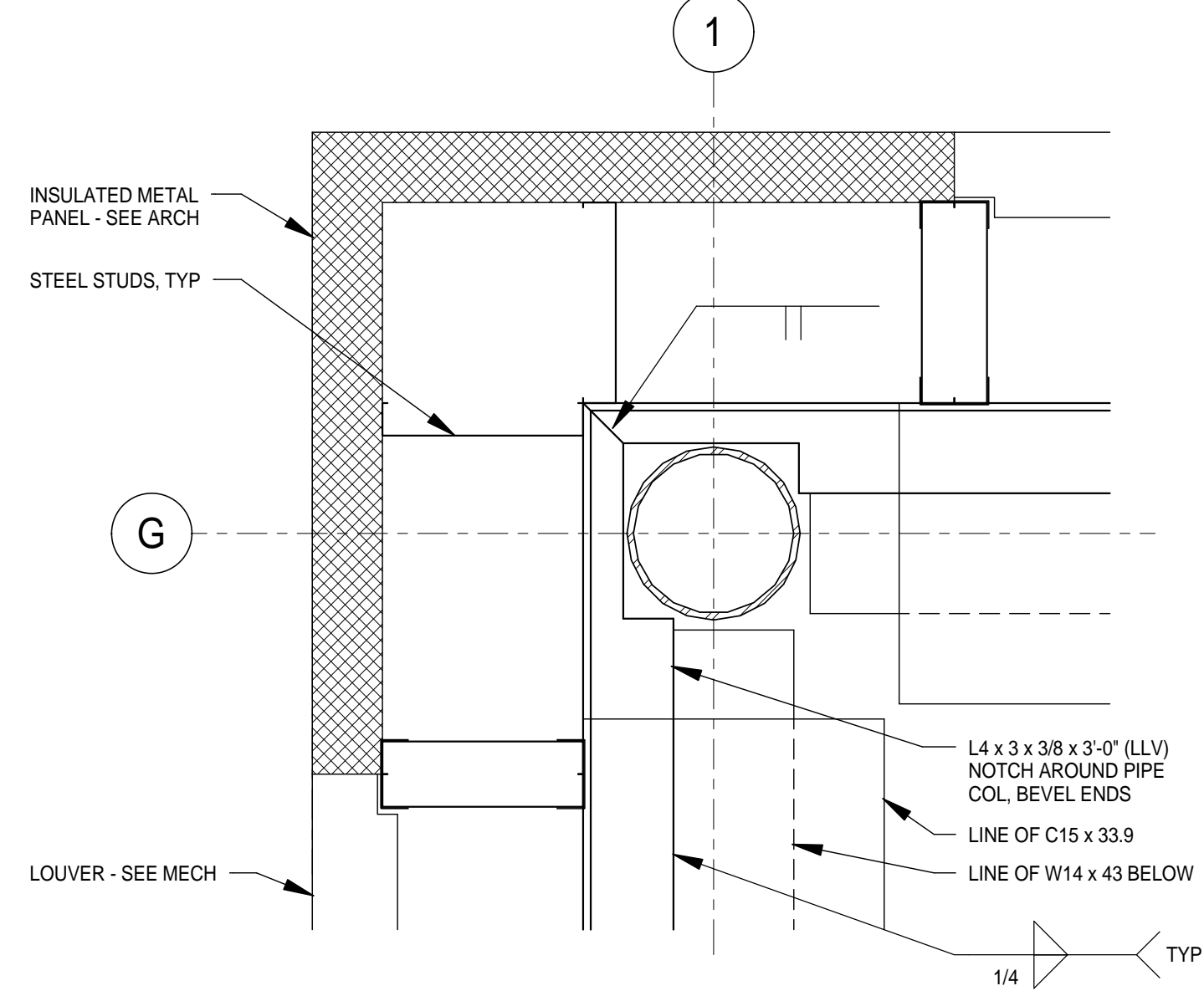
NOTES (UNO):

1. USE ONLY ONE STUD PER RIB UNTIL NUMBERS OF STUDS EXCEEDS DECK RIBS AVAILABLE. LOCATE SINGLE STUDS OVER WEB.
2. START LAYOUT OF HEADED STUDS AT EACH END OF THE BEAM AND PROCEED TOWARDS THE CENTER OF THE BEAM.
3. PROVIDE STUDS IN DOUBLE OR TRIPLE CONFIGURATION SHOWN TO MEET TOTAL NUMBER OF STUDS REQUIRED. START LAYOUT OF DOUBLE/TRIPLE STUDS AT EACH END OF BEAM. DOUBLE/TRIPLE STUD LAYOUTS SHALL ONLY BE USED FOR BEAMS WITH MINIMUM FLANGE WIDTHS SHOWN.
4. PROVIDE ADDITIONAL STUDS BEYOND NUMBER NOTED ON PLANS OR SCHEDULES TO MEET MAXIMUM STUD SPACING SHOWN.
5. HEADED STUDS SHALL BE 3/4" DIA x 5' LONG (AFTER WELDING) TYPICAL, UNLESS NOTED OTHERWISE. REMOVE ALL FERRULS PRIOR TO CONCRETE PLACEMENT.



NOTES:

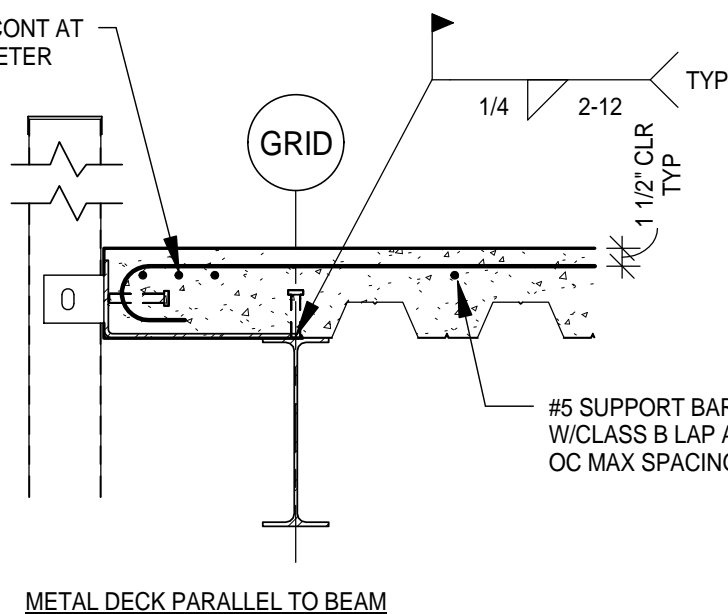
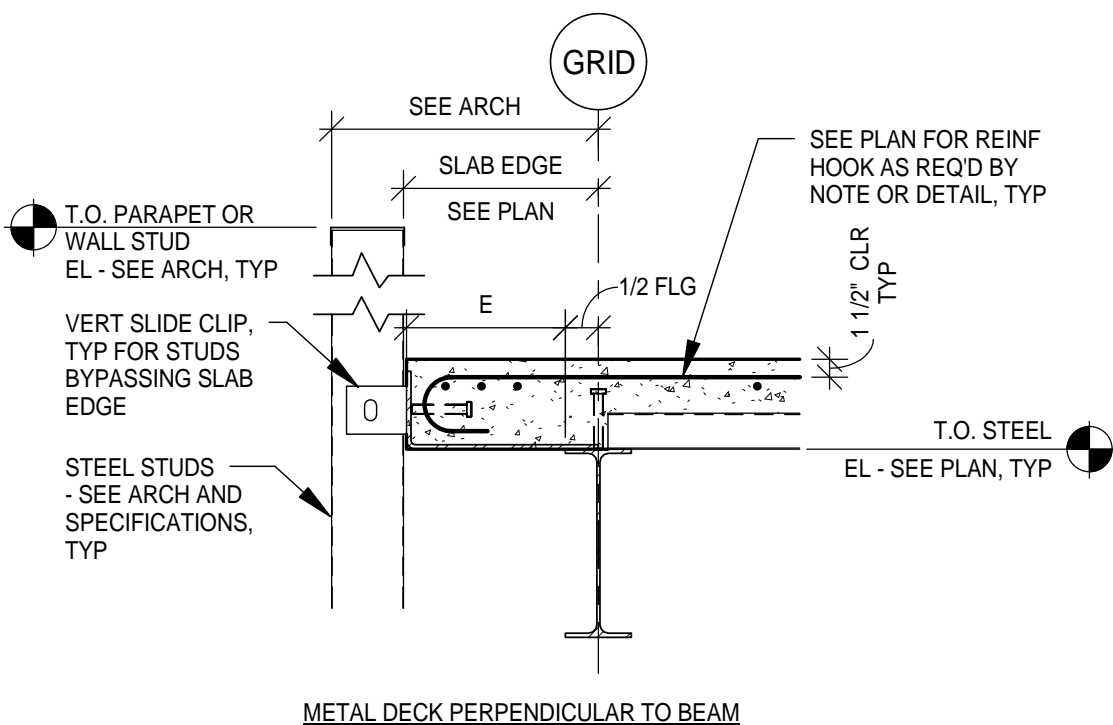
1. TRIPLE STUDS NOT PERMITTED.



1 TYPICAL HEADED STUD PLACEMENT DETAIL
NO SCALE

2 PLAN DETAIL AT CHILLER ENCLOSURE
1 1/2" = 1'-0"

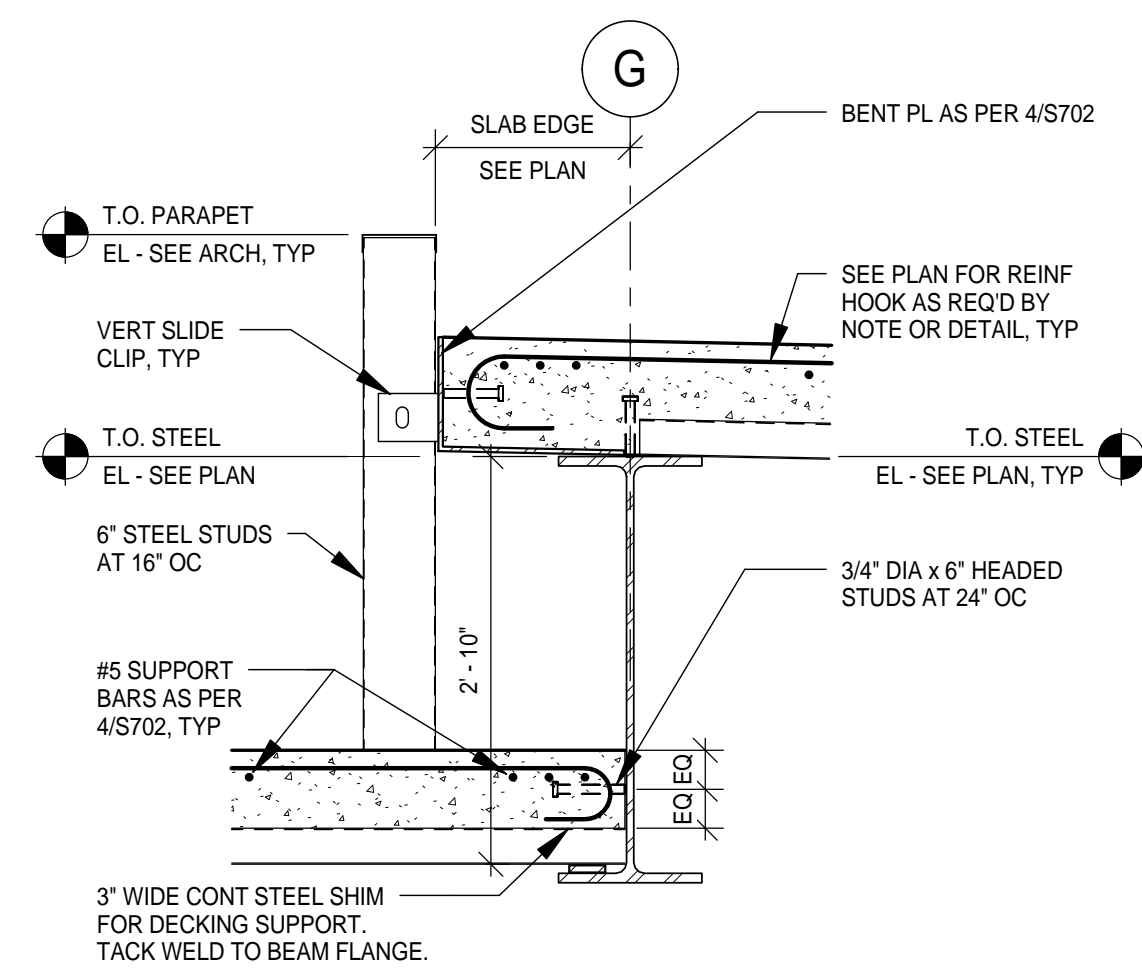
3 SECTION
1 1/2" = 1'-0"



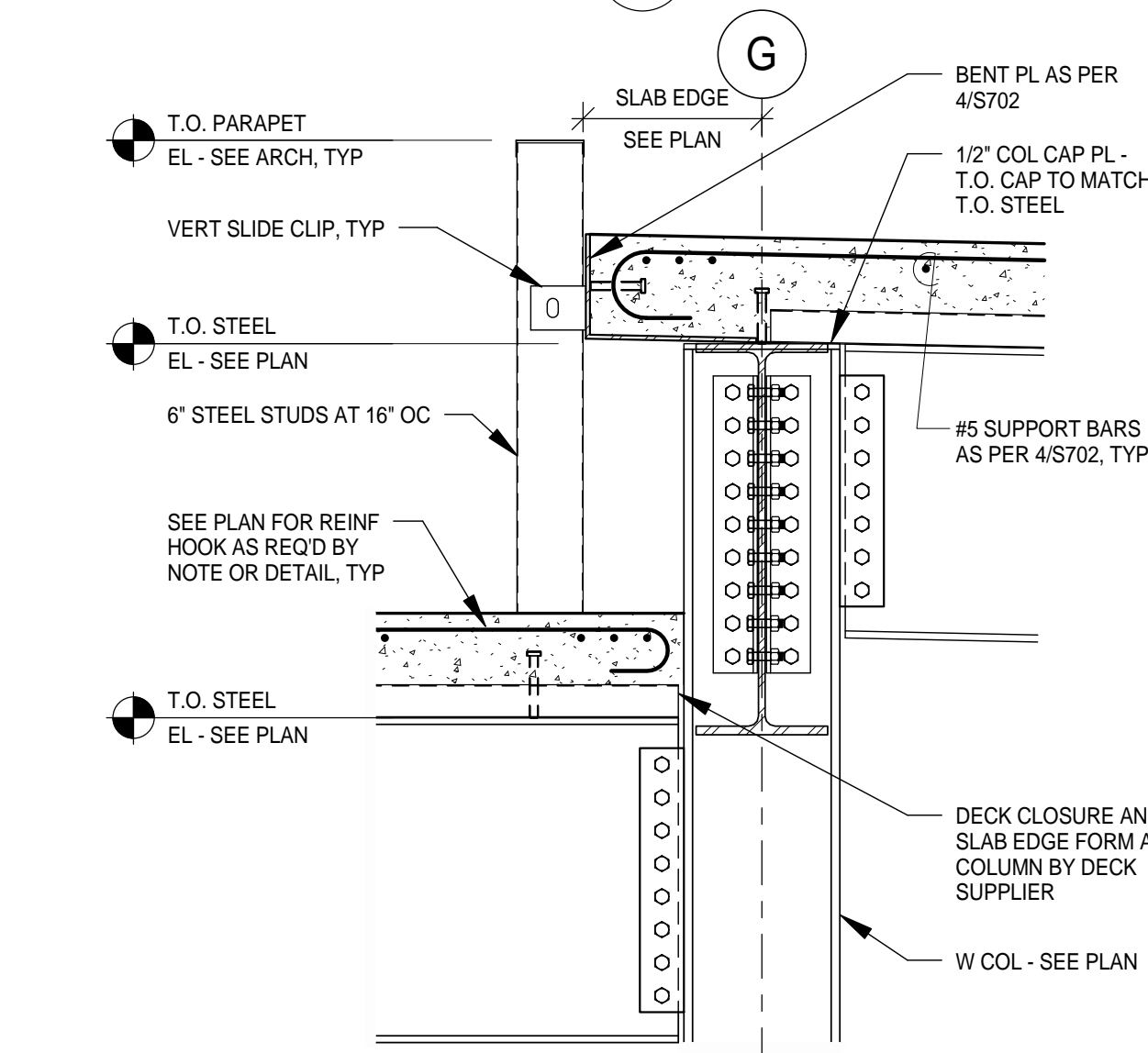
NOTES:

1. FOR "E" GREATER THAN 5" AND LESS THAN 12", PROVIDE 1/4" BENT PLATE EDGE FORM WITH 3/4" DIA x 6" LONG HEADED STUDS AT 24" OC.
2. FOR "E" GREATER THAN 12" BUT LESS THAN 24", PROVIDE 3/8" BENT PLATE EDGE FORM WITH 3/4" DIA x 6" HEADED STUDS AT 24" OC AND SHORE SLAB OVERHANG (DESIGN BY CONTRACTOR) UNTIL CONCRETE REACHES ITS 28 DAY SPECIFIED COMPRESSIVE STRENGTH.
3. FOR "E" UP TO 5", PROVIDE OPTIONAL LIGHT GAGE BENT PLATE POUR STOP AND ANY REQUIRED ACCESSORIES BY DECK FABRICATOR OR USE 1/4" BENT PLATE PER NOTE 1.

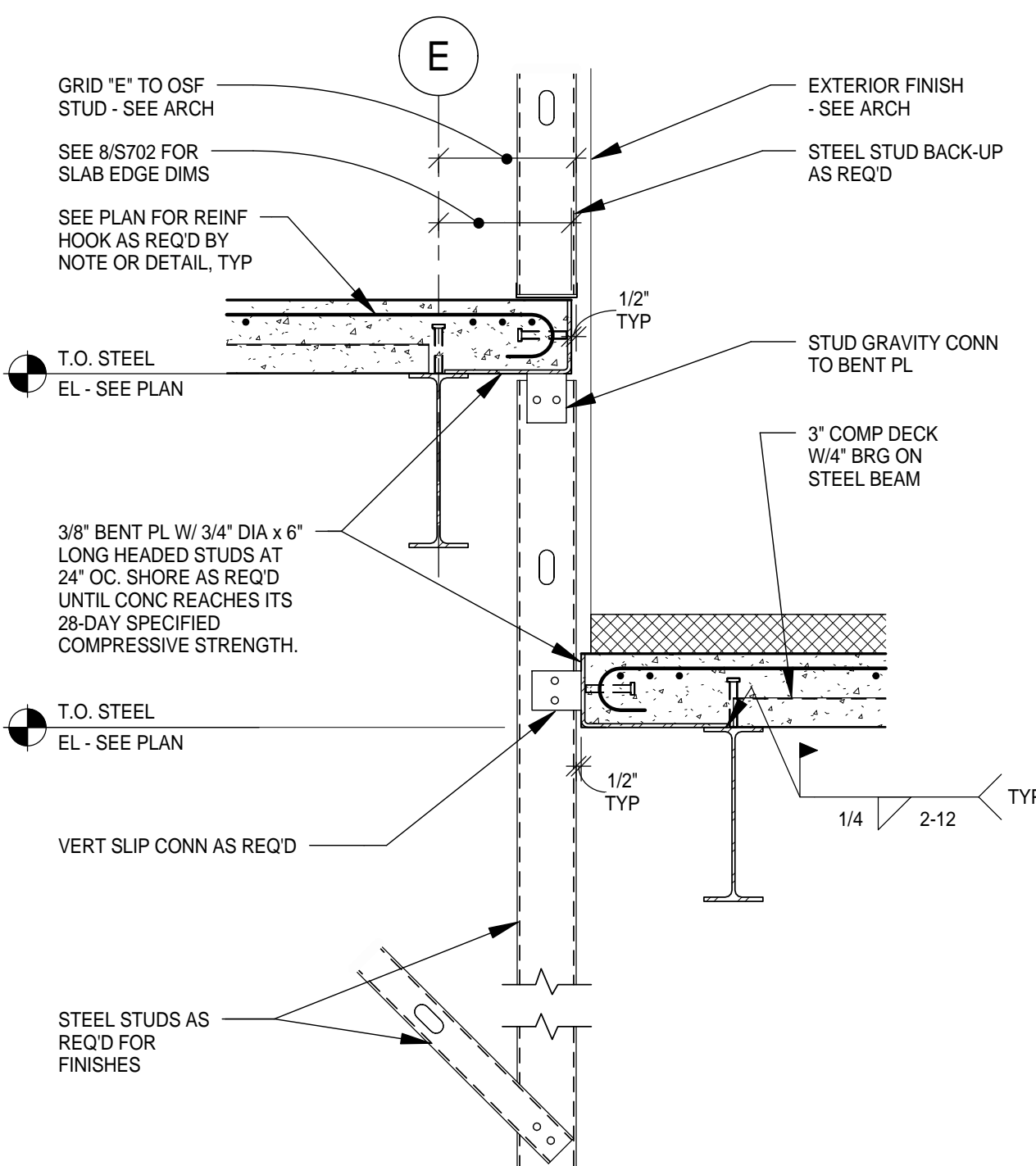
4 TYPICAL SLAB EDGE DETAIL
NO SCALE



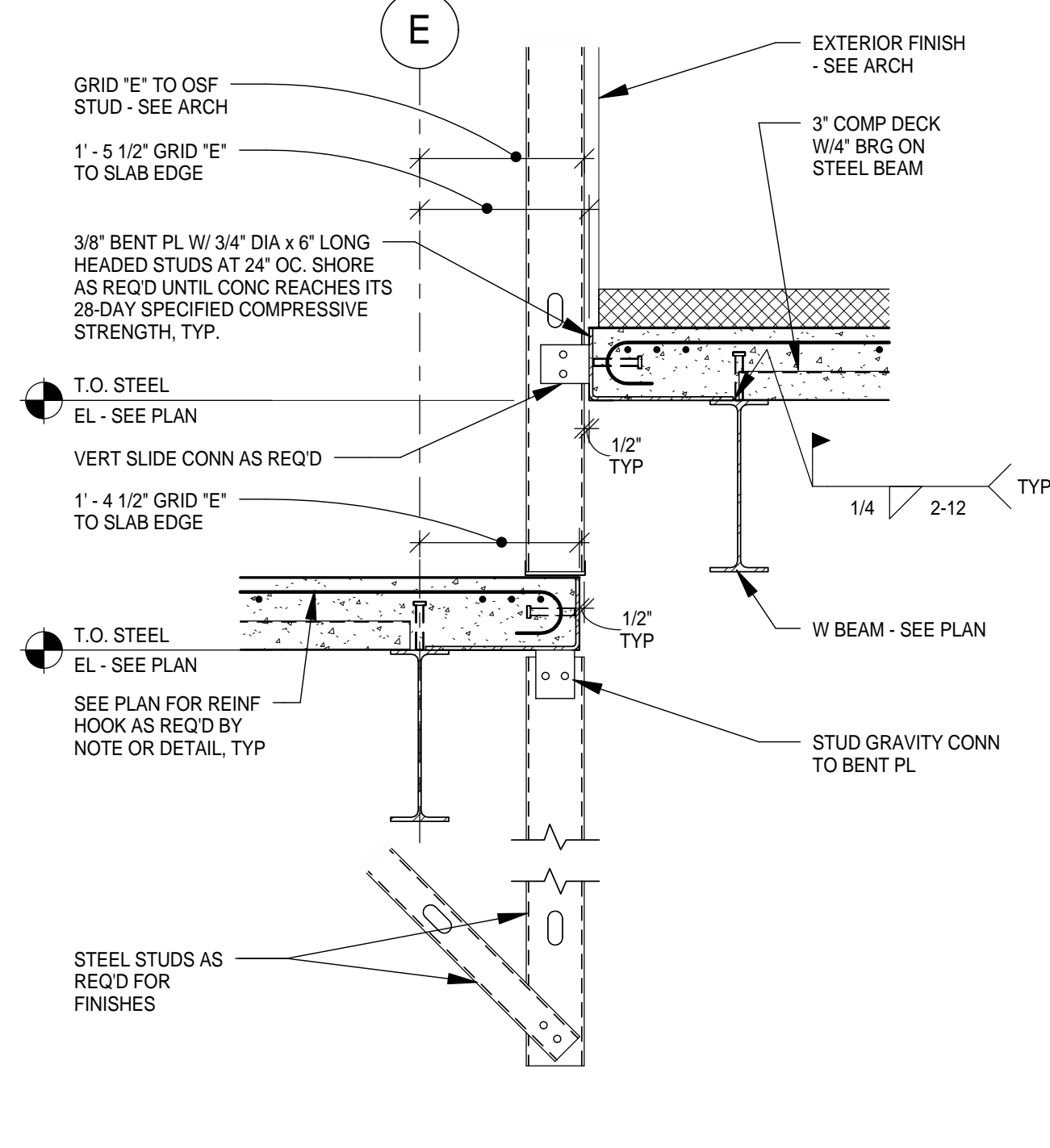
5 HIGH - LOW SLAB EDGE DETAIL
3/4" = 1'-0"



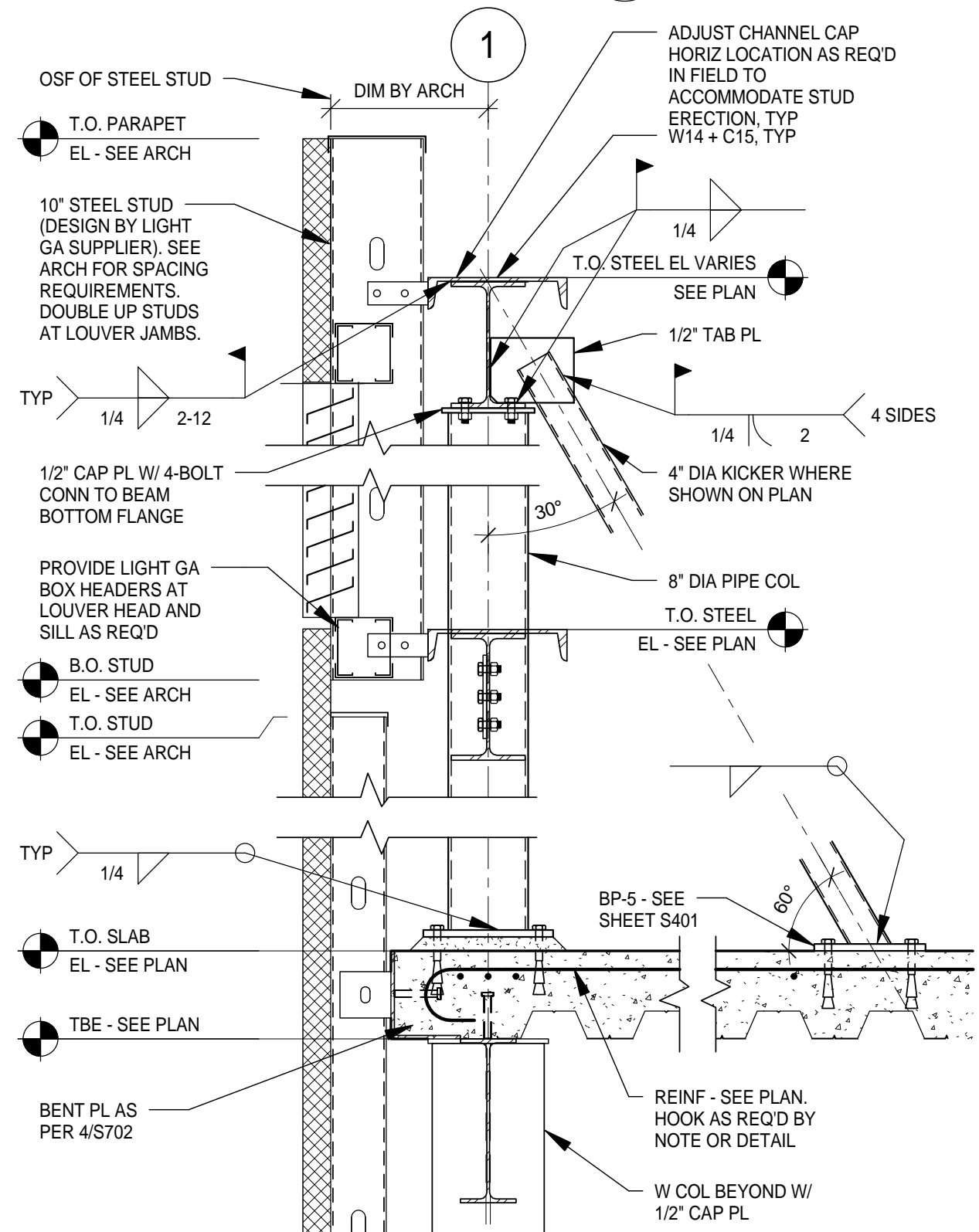
6 HIGH - LOW SECTION AT COLUMN
3/4" = 1'-0"



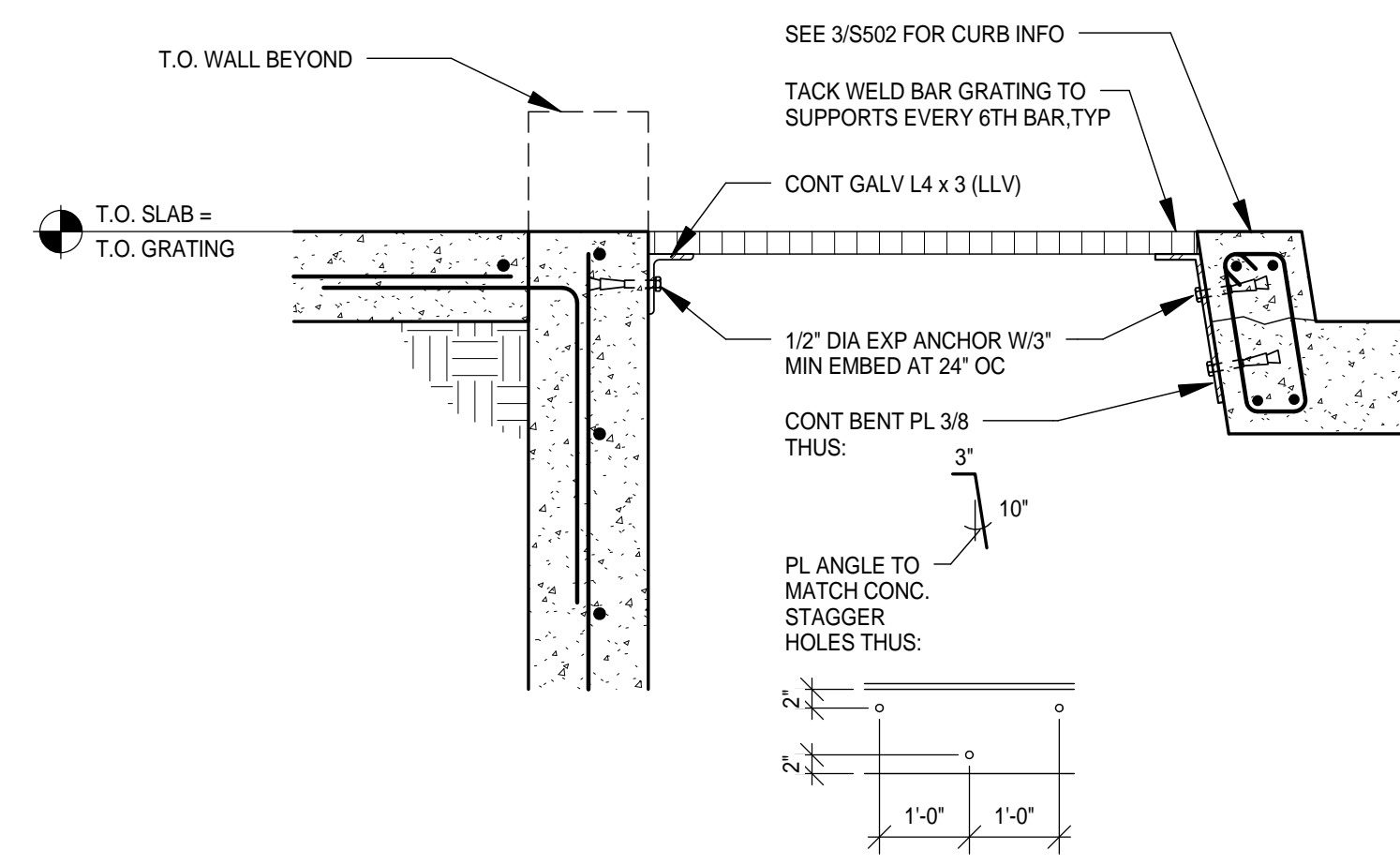
7 SECTION (CURVED ROOF BELOW 3RD FLOOR)
3/4" = 1'-0"



8 SECTION (CURVED ROOF ABOVE 3RD FLOOR)
3/4" = 1'-0"



9 SECTION
3/4" = 1'-0"



10 SECTION
1" = 1'-0"

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**DULUTH INTERNATIONAL AIRPORT
DULUTH, MN**

NEW TERMINAL DESIGN

CONSULTANTS

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Structural Engineers:

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TEL: (203) 792-3000 / FAX: (203) 792-4900

Landscape Consultants:

APPOLD DESIGN
2432 East First Street, Duluth MN 55812
TEL: (218) 591-5079

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
BID PACKAGE 1		5.12.10
FOUNDATION PERMIT		6.4.10
1,2,3 NOT CHANGED		
CONFORMANCE SET		7.12.10
BUILDING PERMIT		8.6.10
5 100% REVIEW		12.15.10
BID PACKAGE 2A		01.24.11
BP 2A CONFORMANCE		05.02.11

DATE ISSUED: 08-23-11

REVIEWED BY: PAJ / CWB

DRAWN BY: SJL

DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

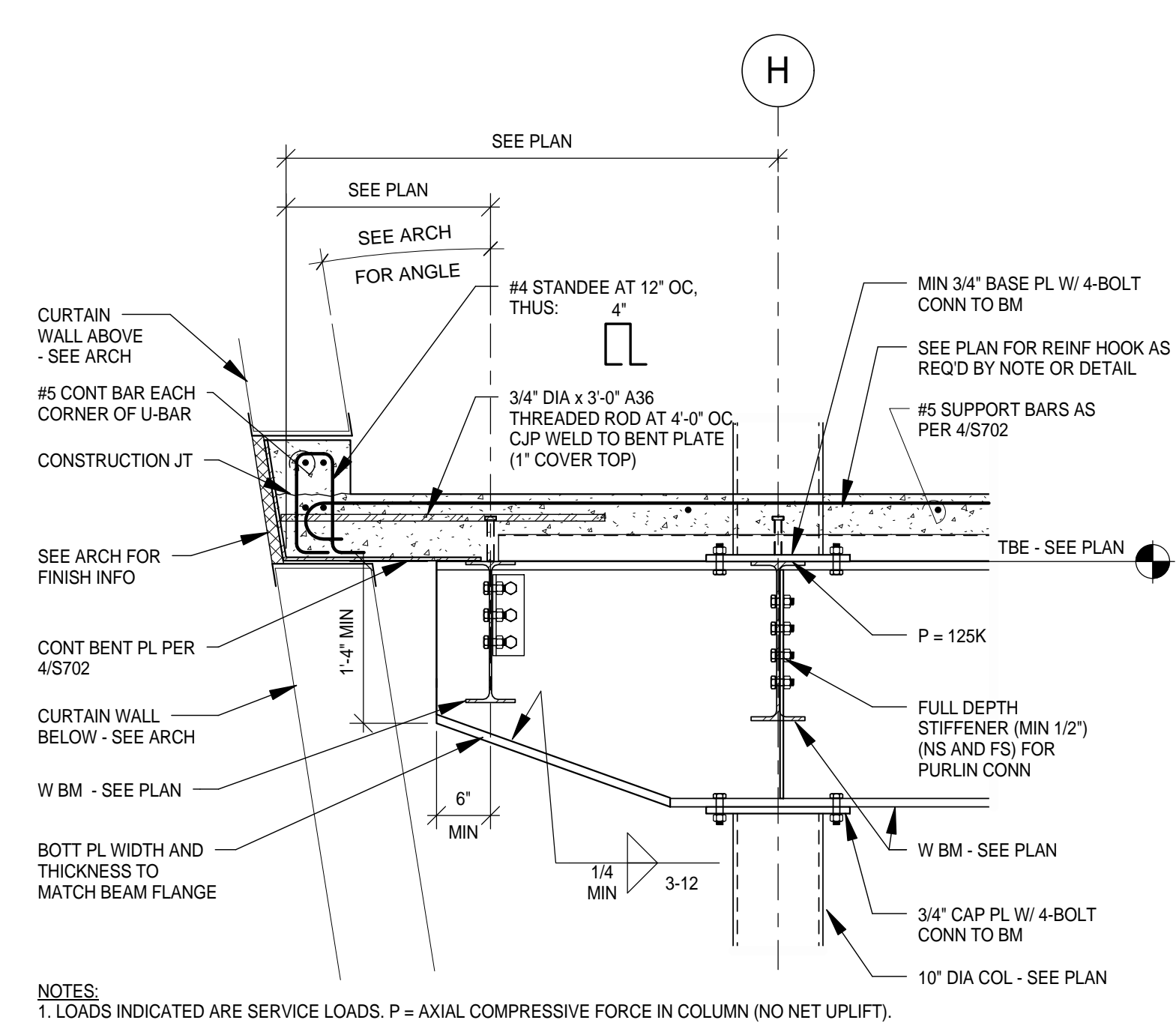
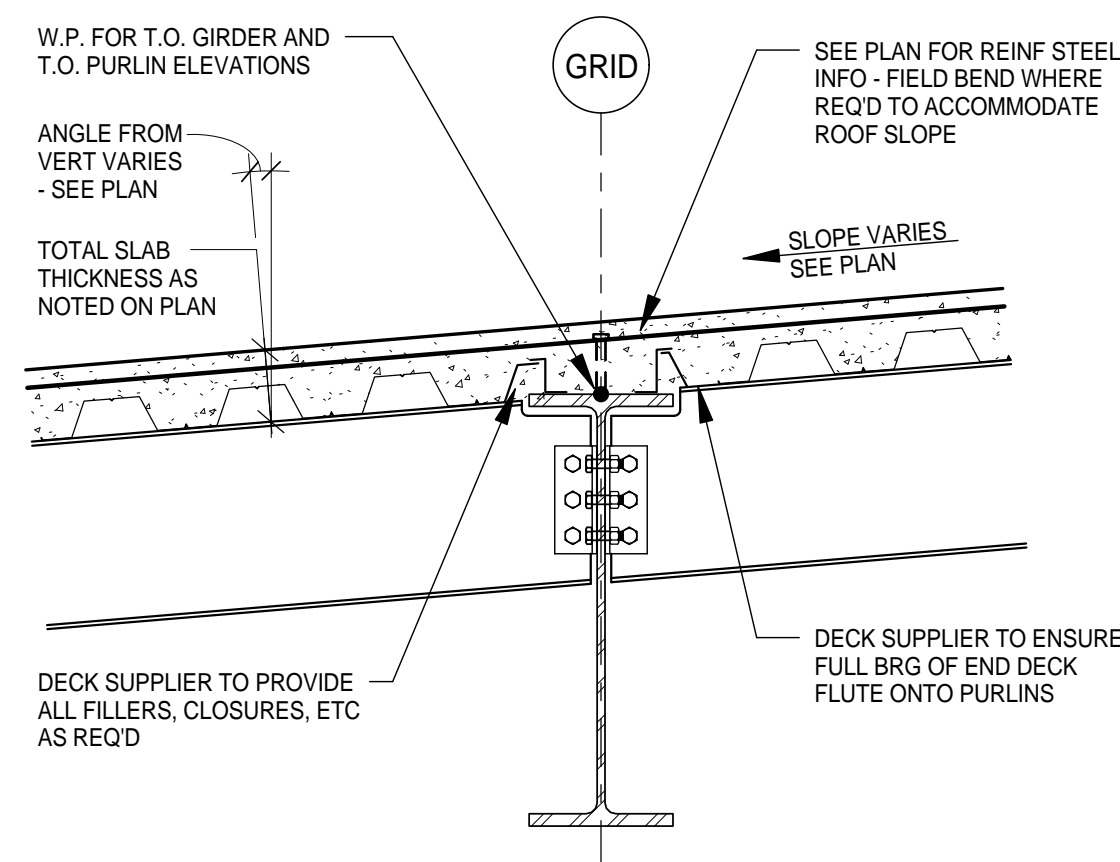
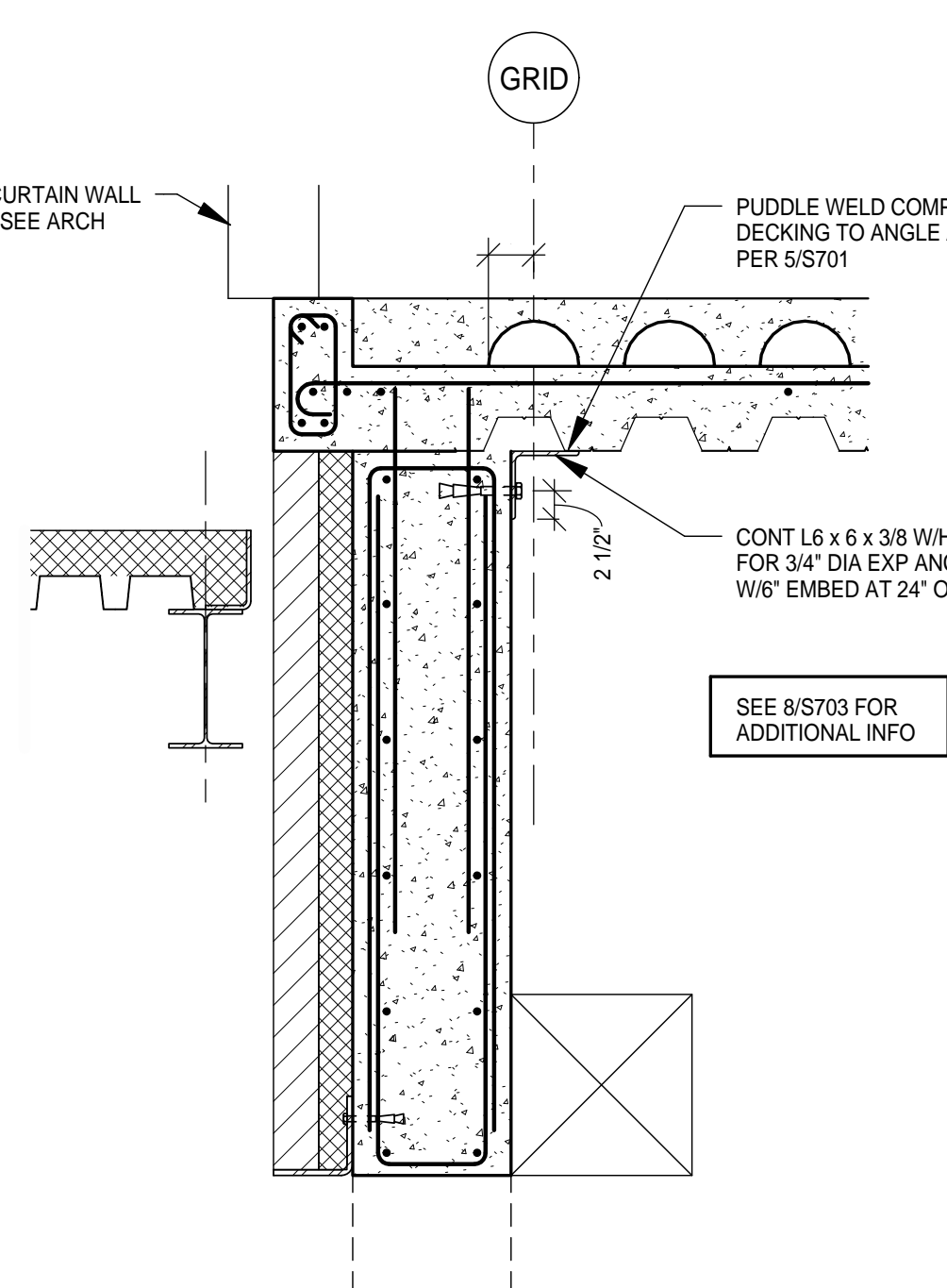
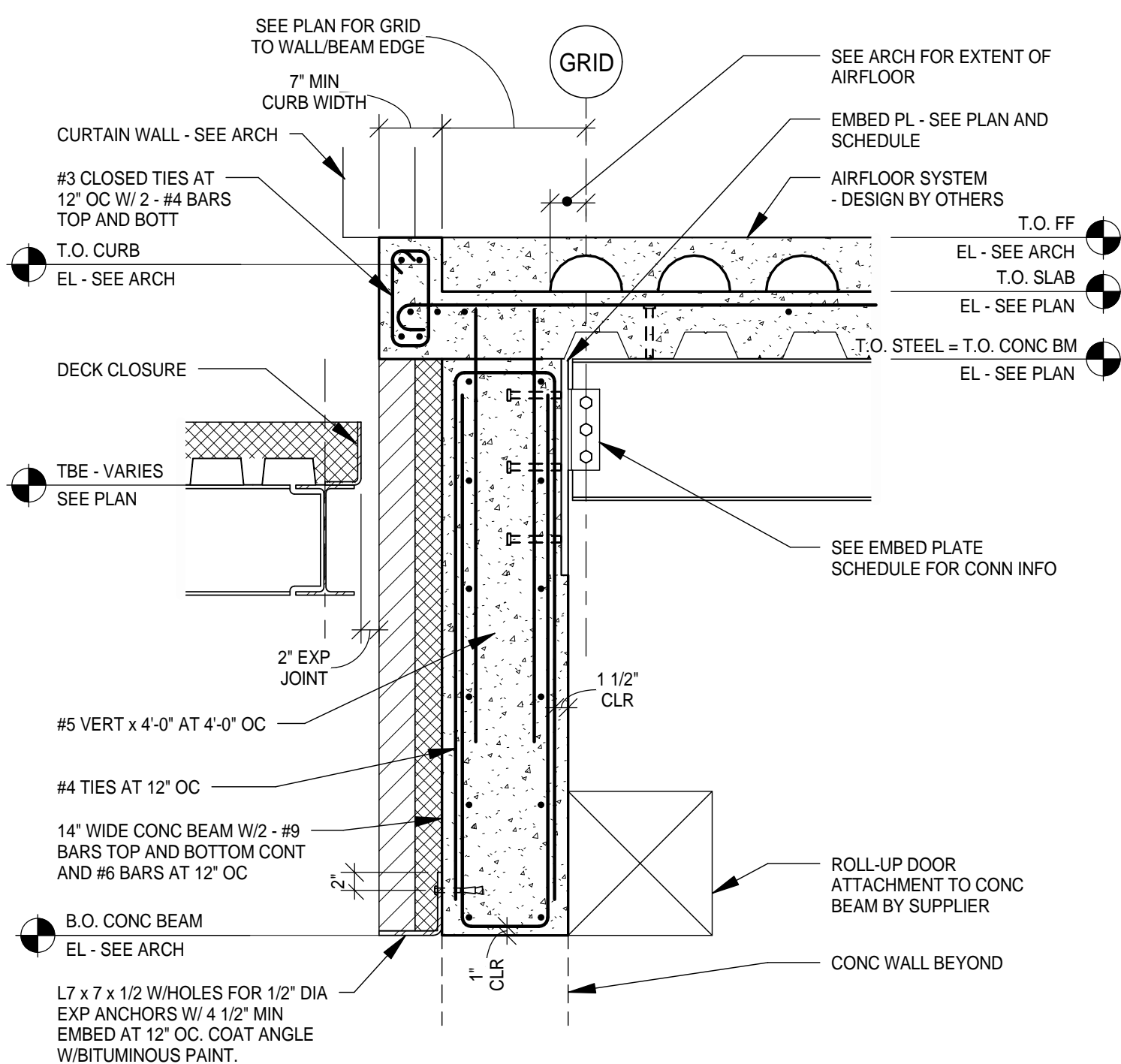
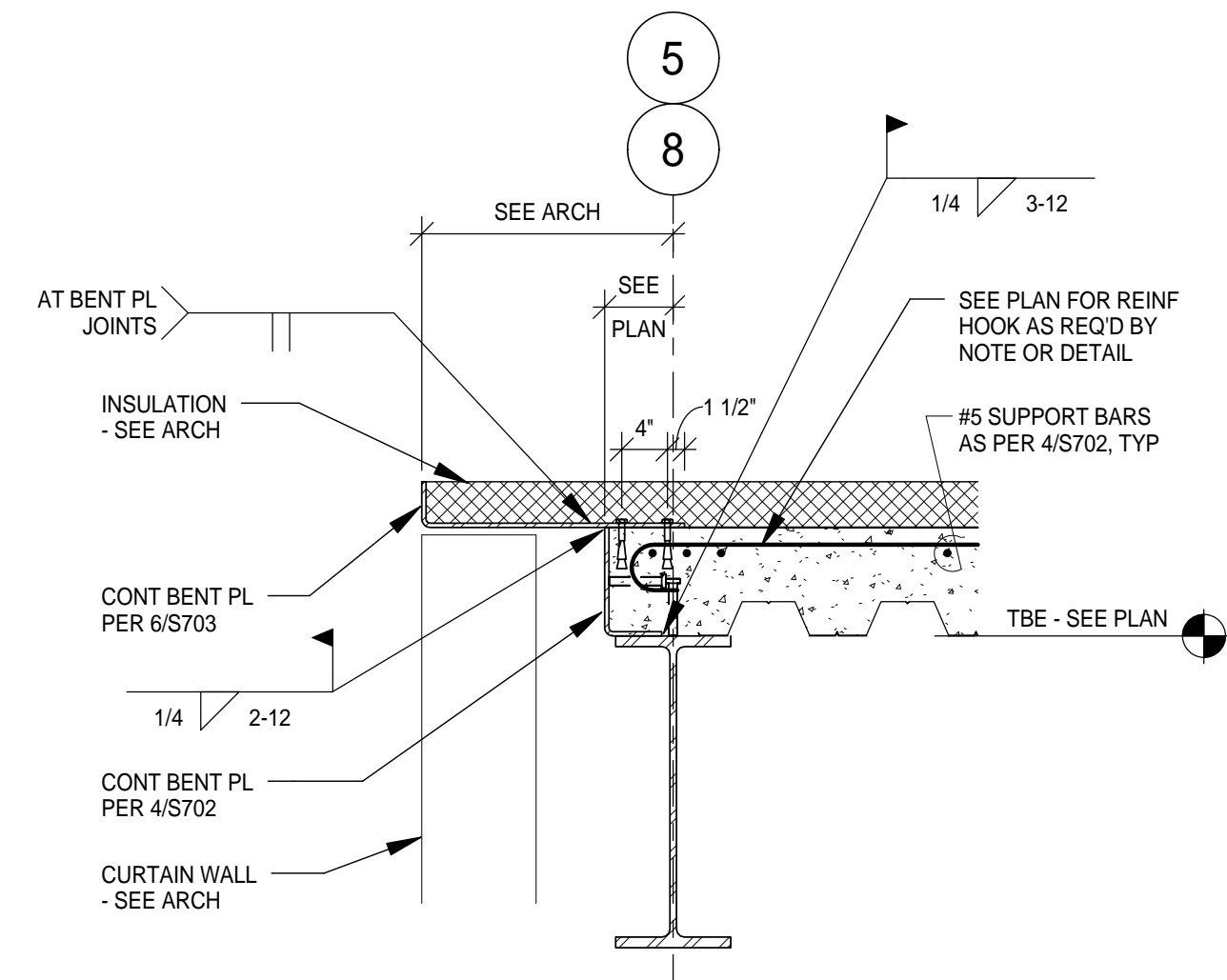
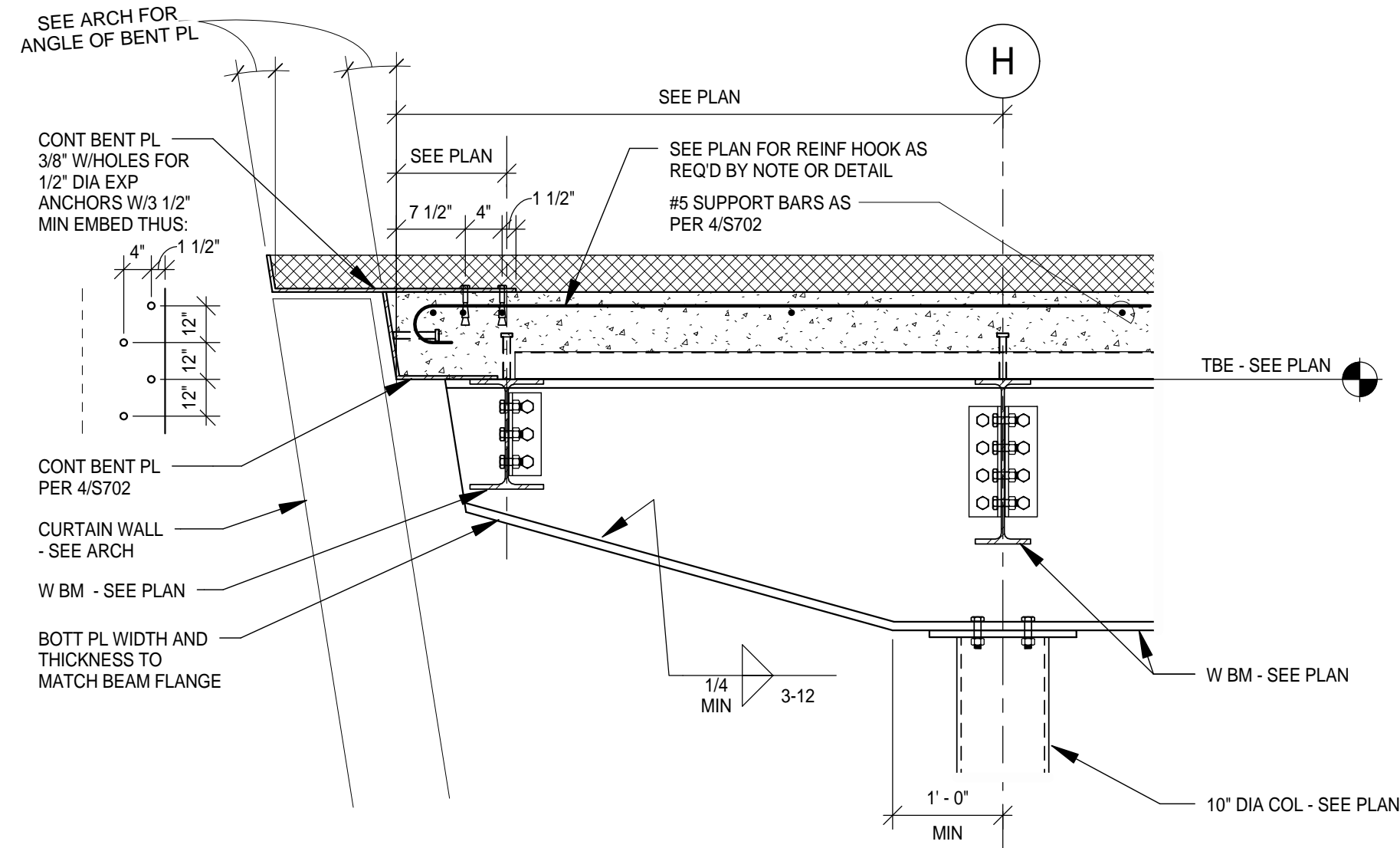
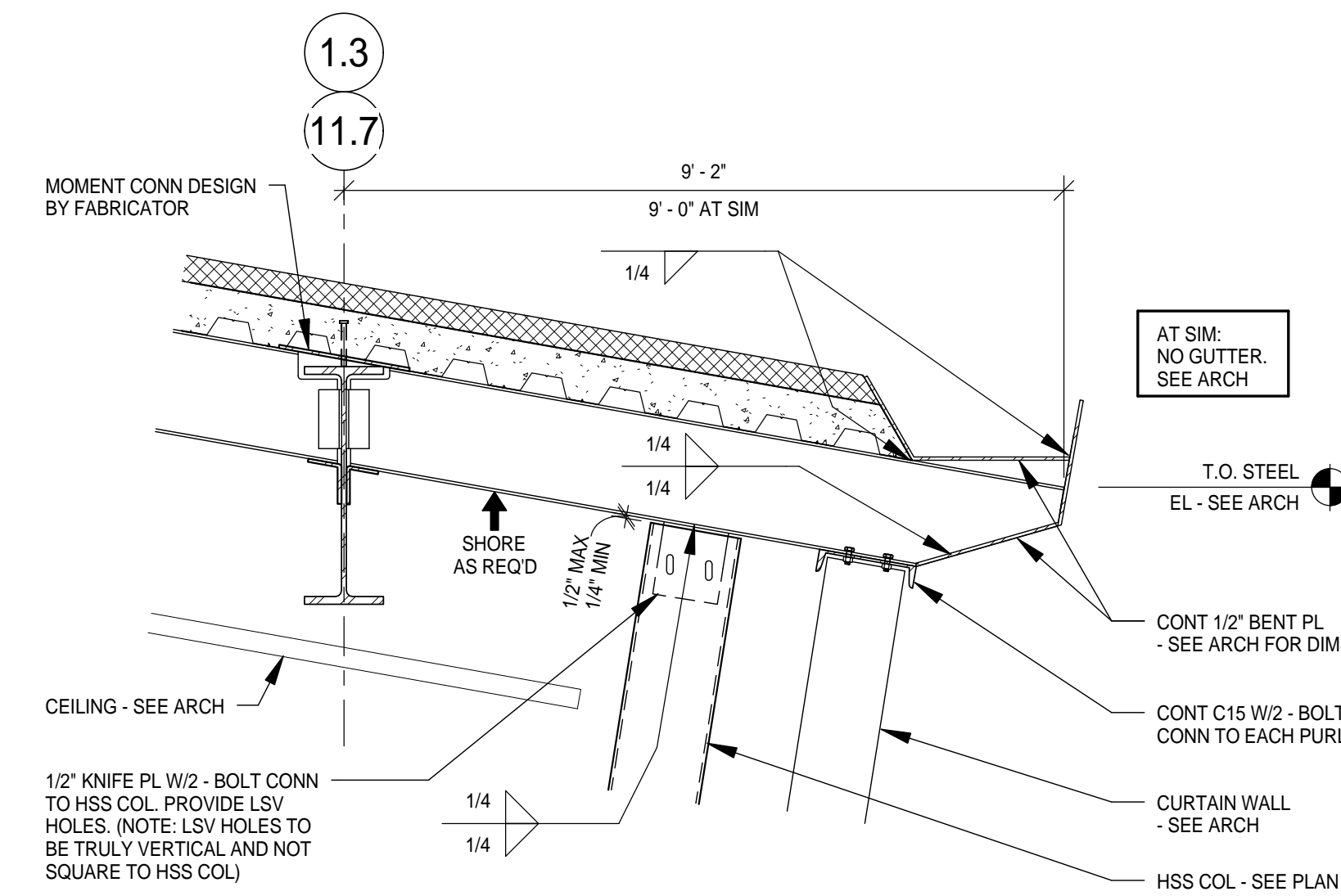
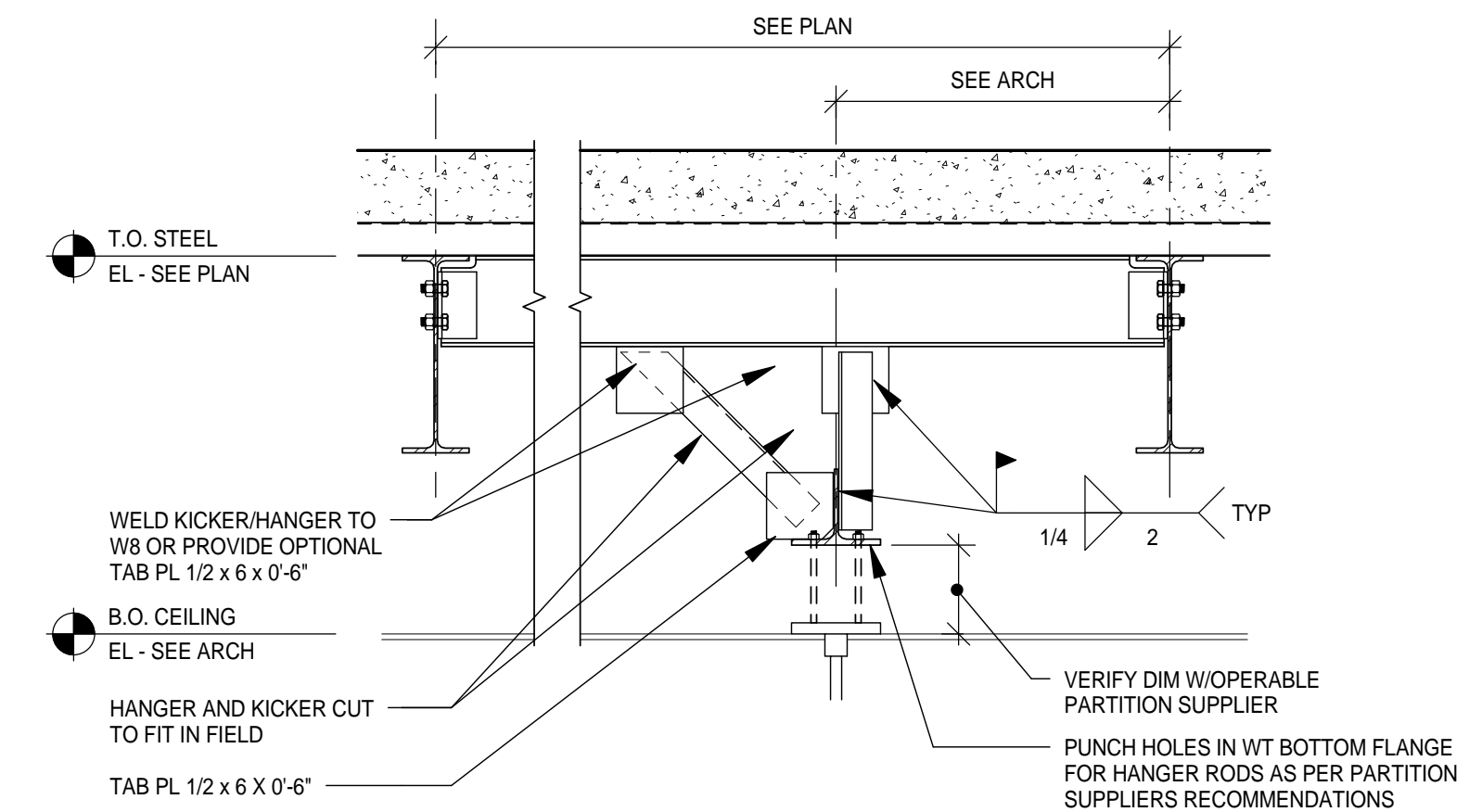
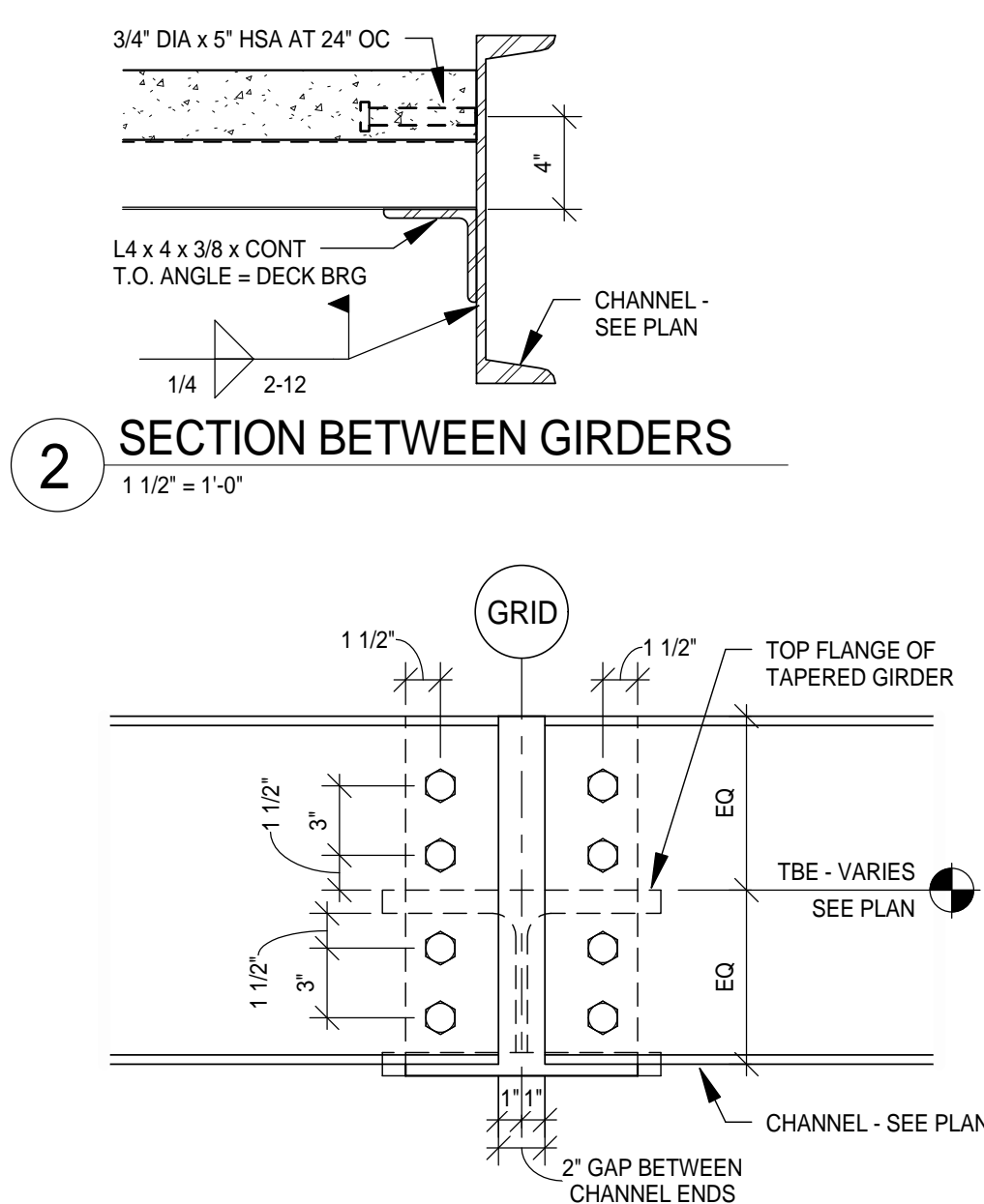
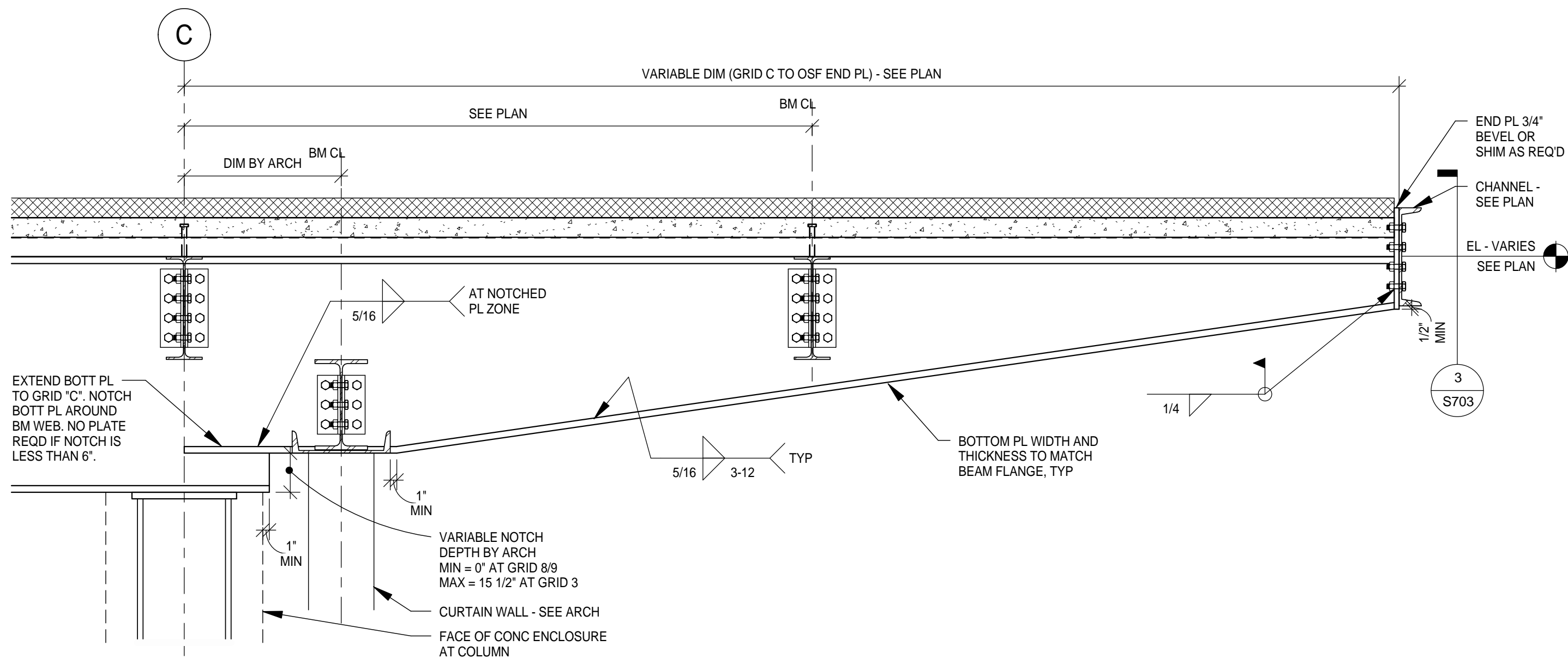
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**SHEET TITLE
STRUCTURAL
DETAILS**

SHEET NUMBER

S702

**BID PACKAGE 2B
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Paul A. Johnson

Signature:

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

NO.	DESCRIPTION	DATE
BID PACKAGE 1		5.12.10
FOUNDATION PERMIT		6.4.10
1,2,3 NOT CHANGED		
CONFORMANCE SET		7.12.10
BUILDING PERMIT		8.6.10
5 100% REVIEW		12.15.10
BID PACKAGE 2A		01.24.11
BP 2A CONFORMANCE		05.02.11

DATE ISSUED: 08-23-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER

213-1882-091

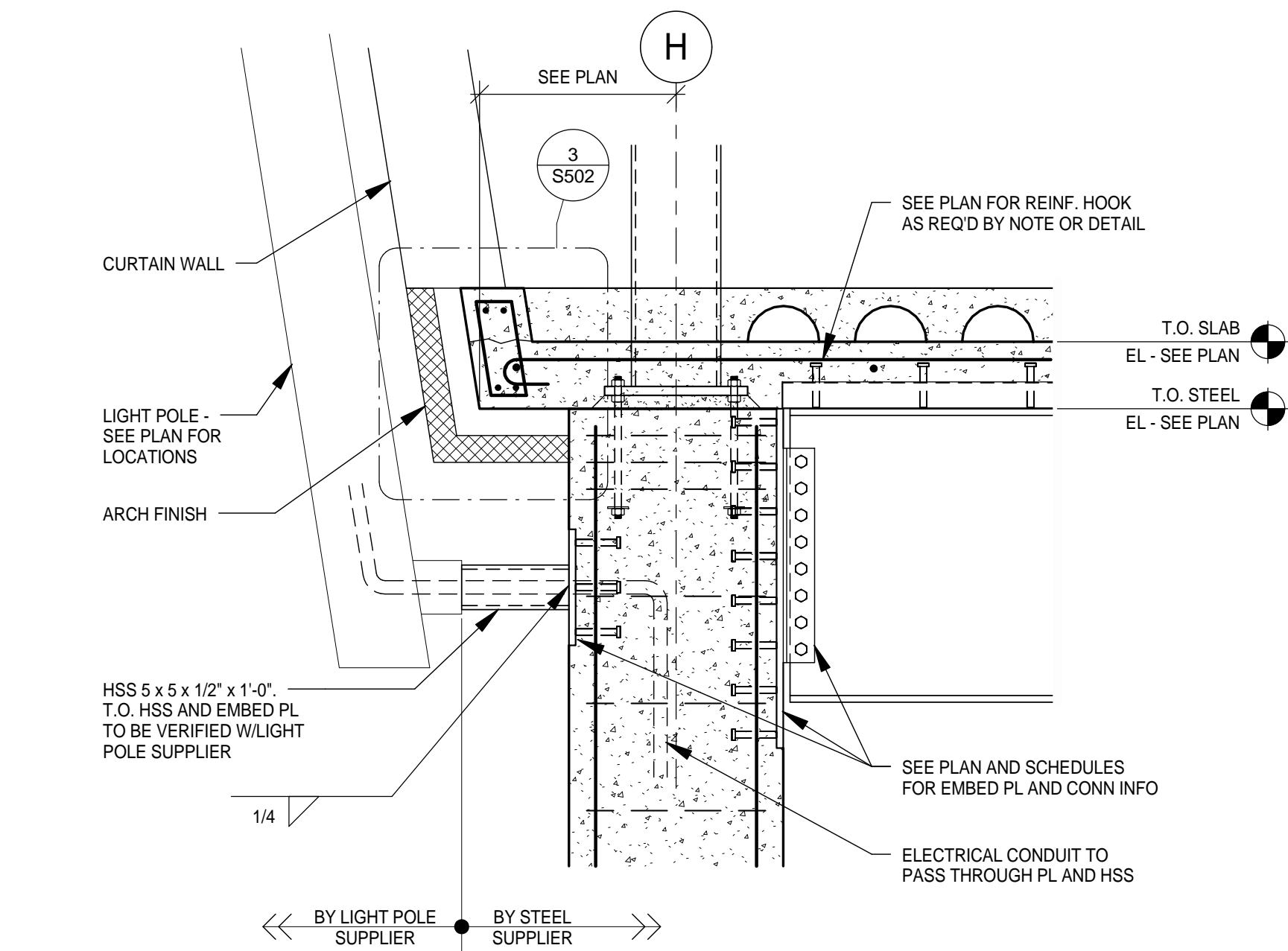
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**SHEET TITLE
STRUCTURAL
DETAILS**

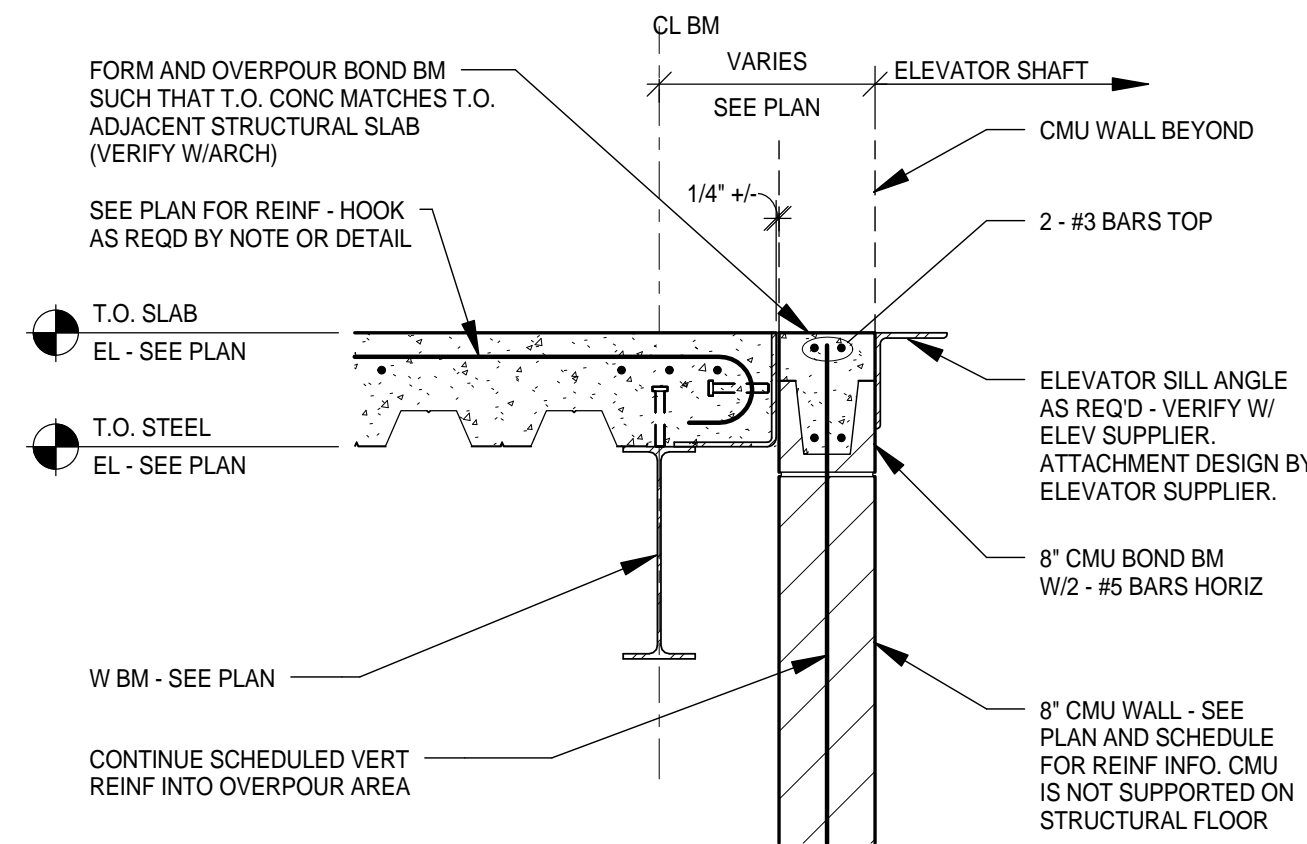
SHEET NUMBER

S703

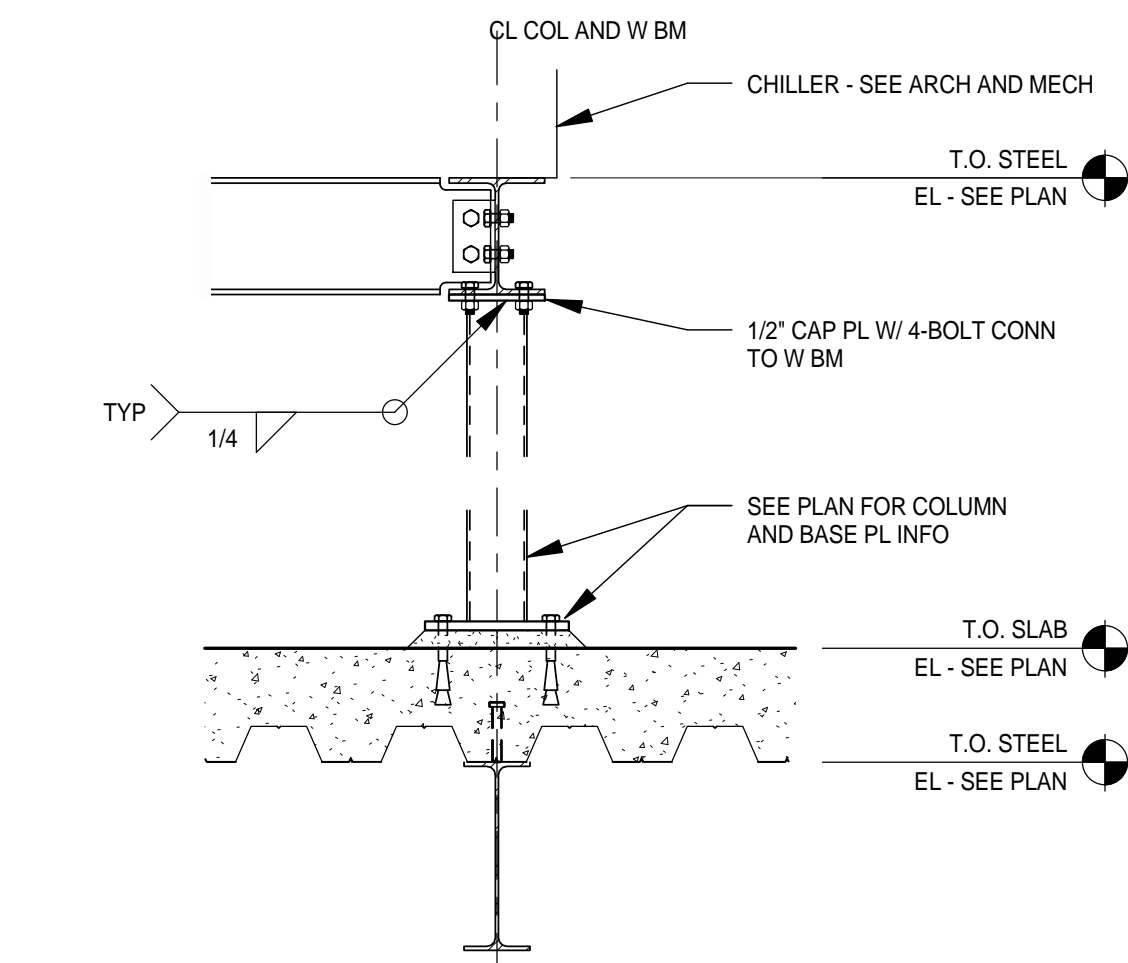
**BID PACKAGE 2B
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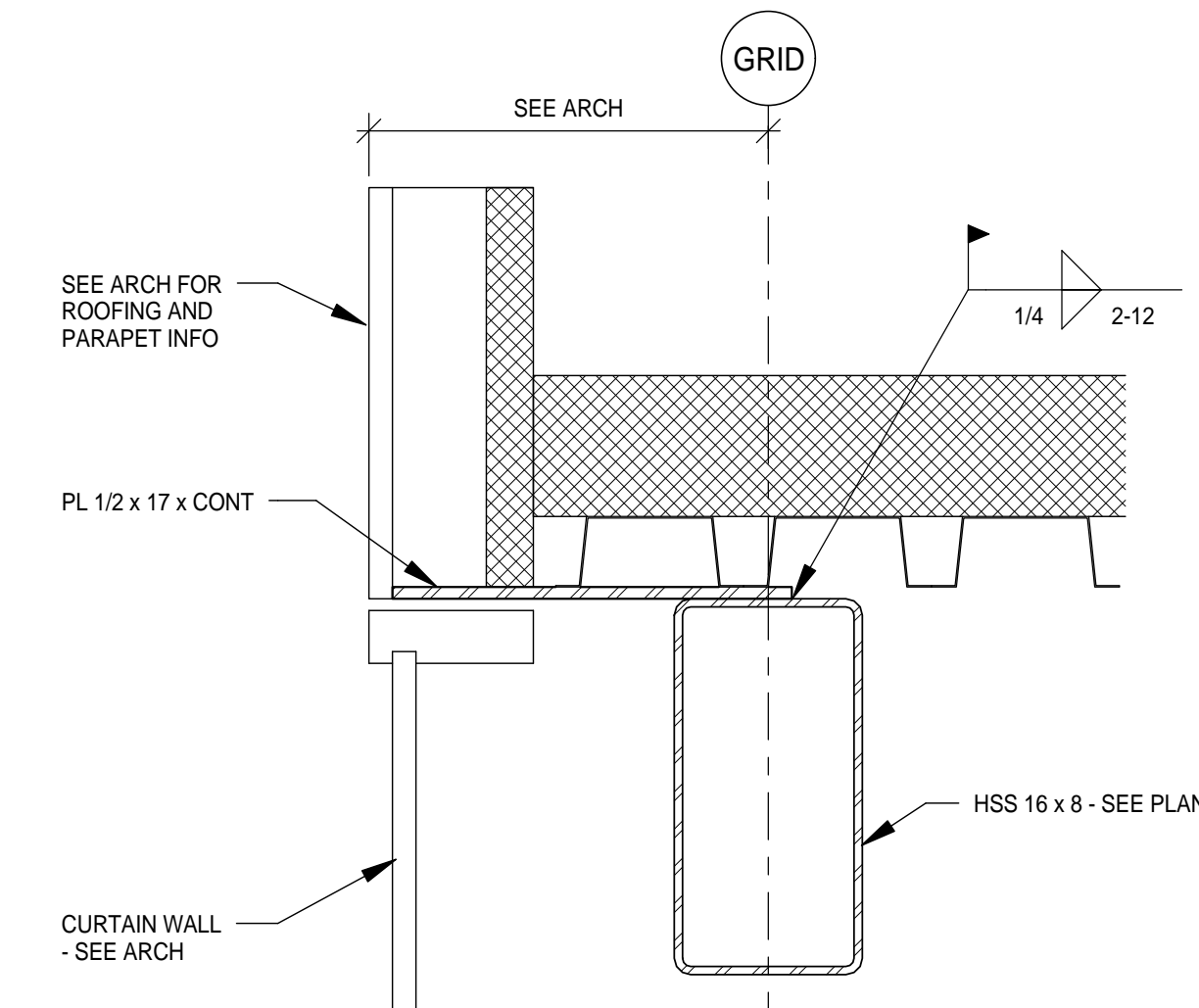
1 SECTION AT COLUMN AND LIGHT POLE
3/4" = 1'-0"



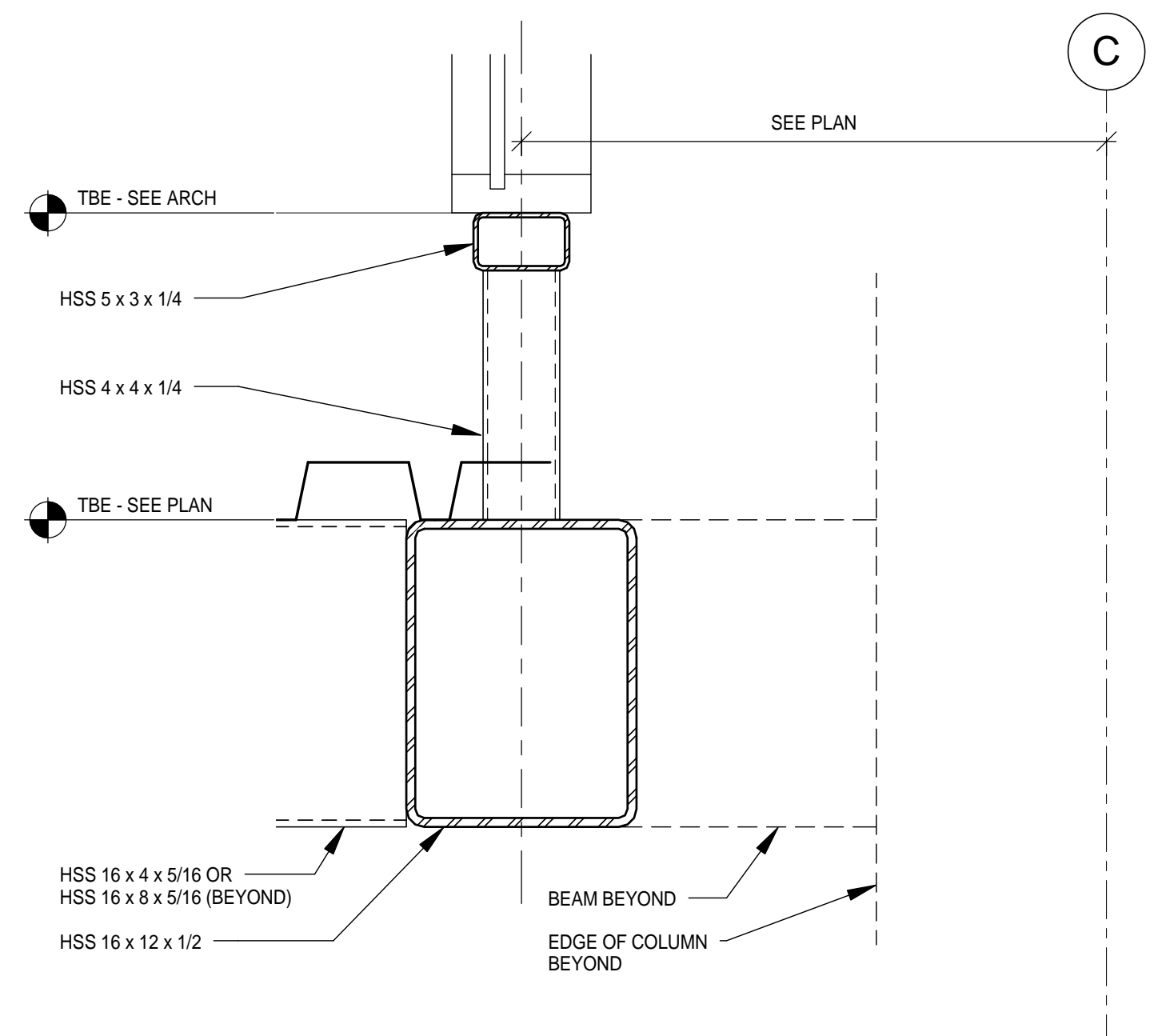
2 SECTION AT ELEVATOR DOOR OPENING
3/4" = 1'-0"



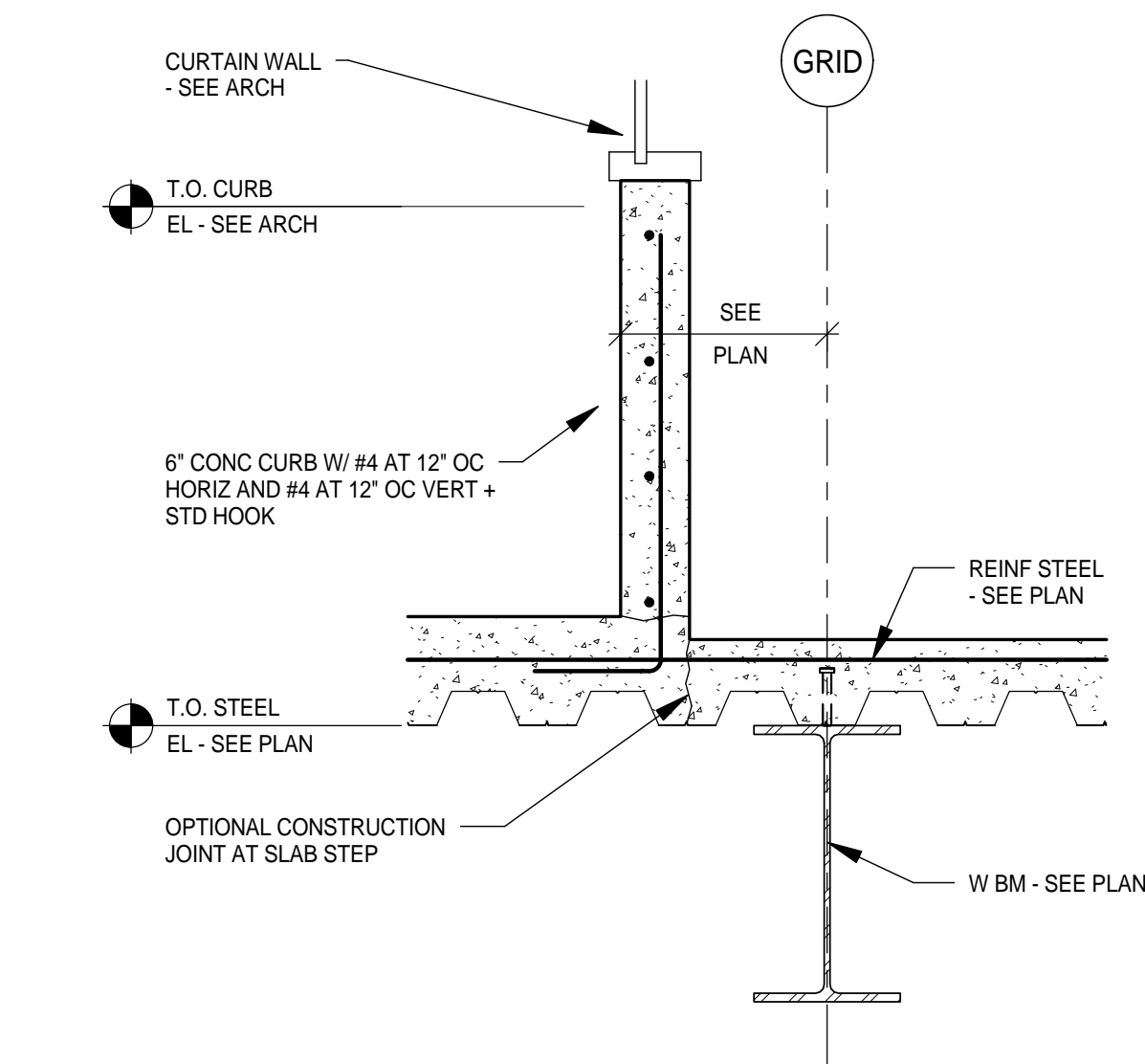
3 SECTION
3/4" = 1'-0"



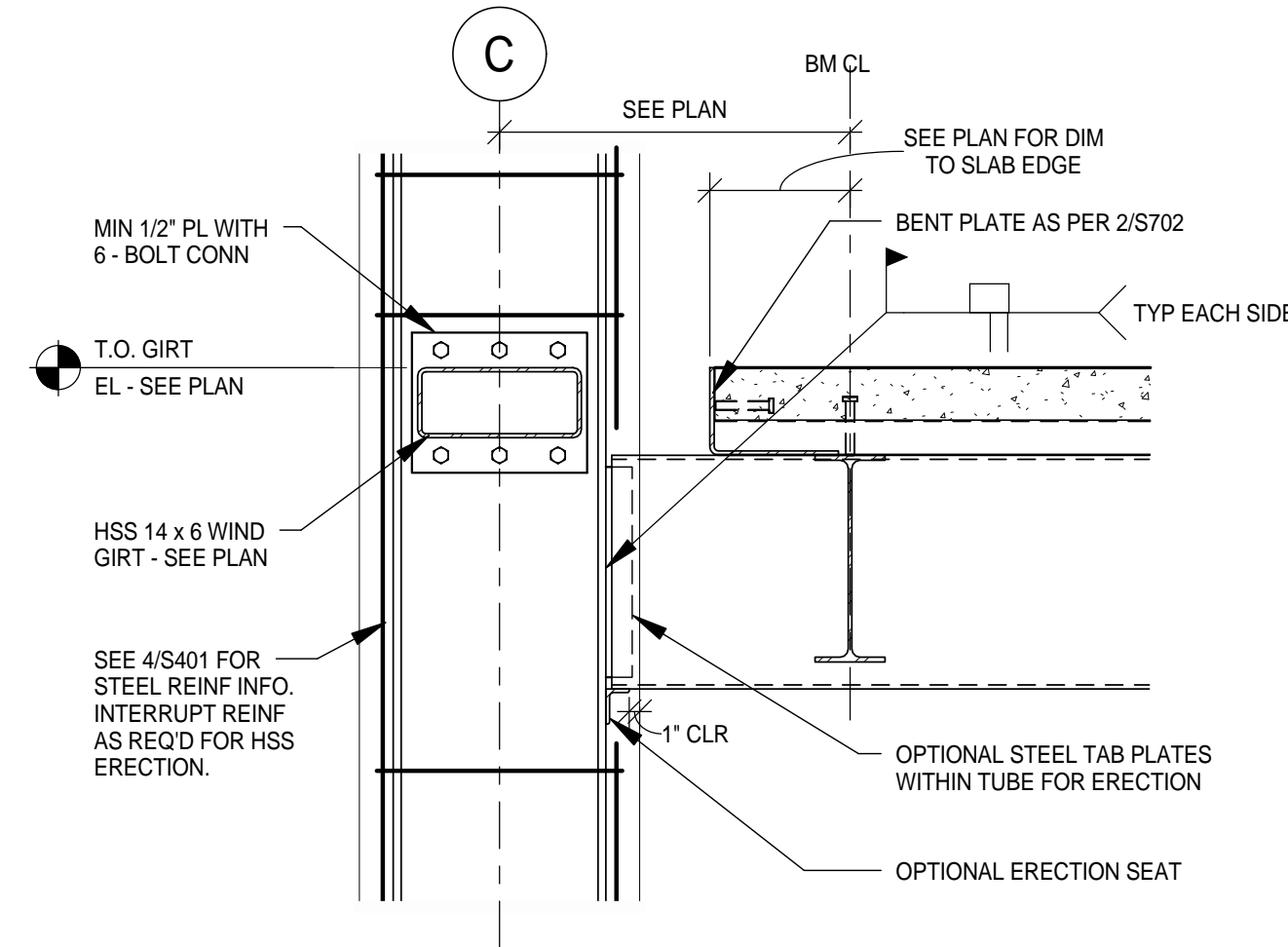
4 SECTION
1 1/2" = 1'-0"



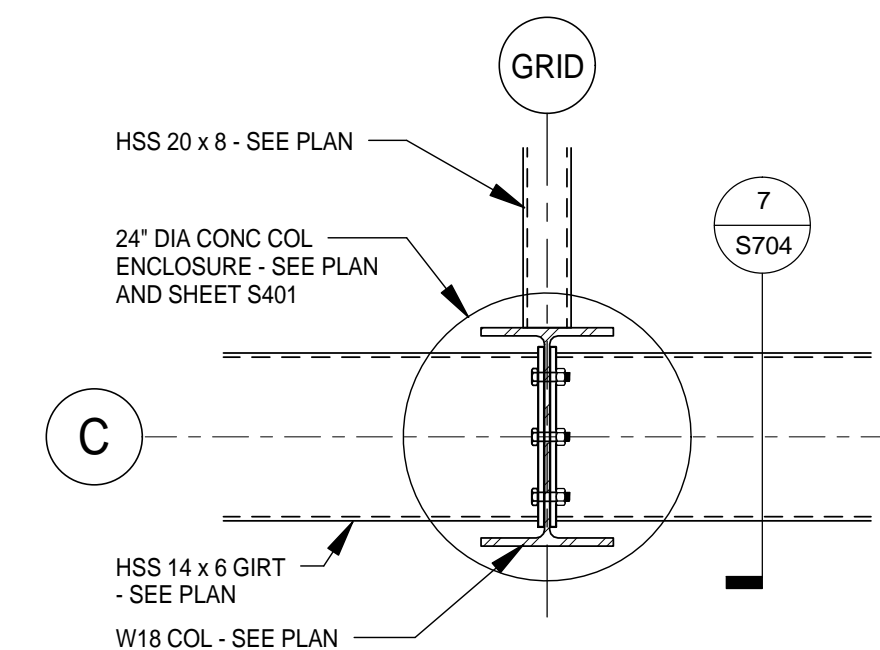
5 SECTION
1 1/2" = 1'-0"



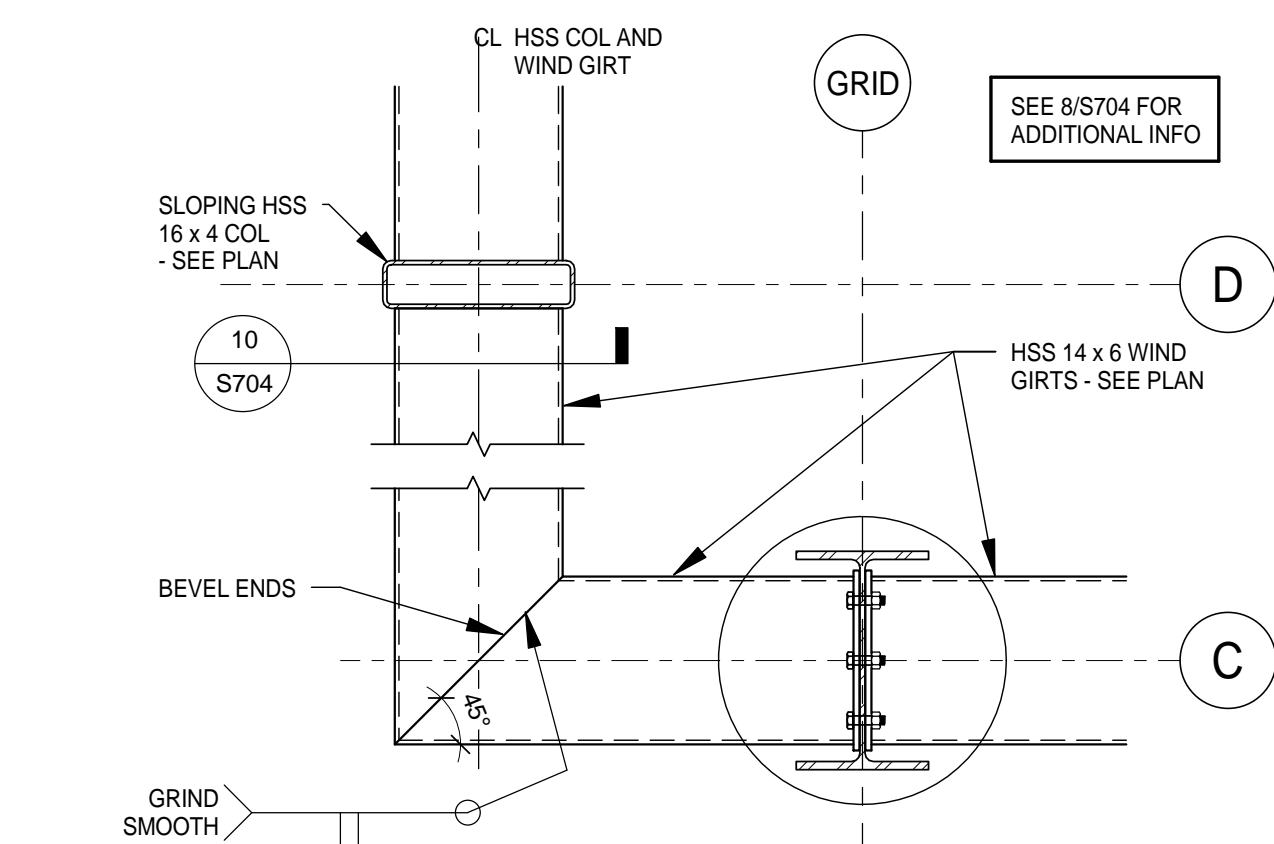
6 SECTION
3/4" = 1'-0"



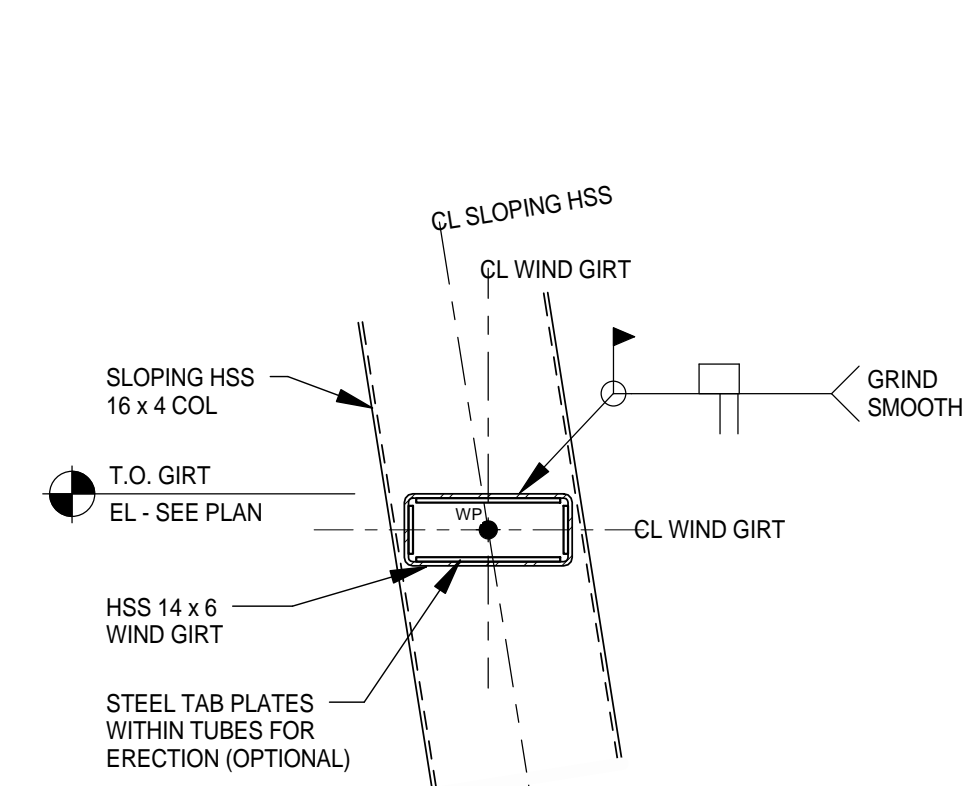
7 SECTION
3/4" = 1'-0"



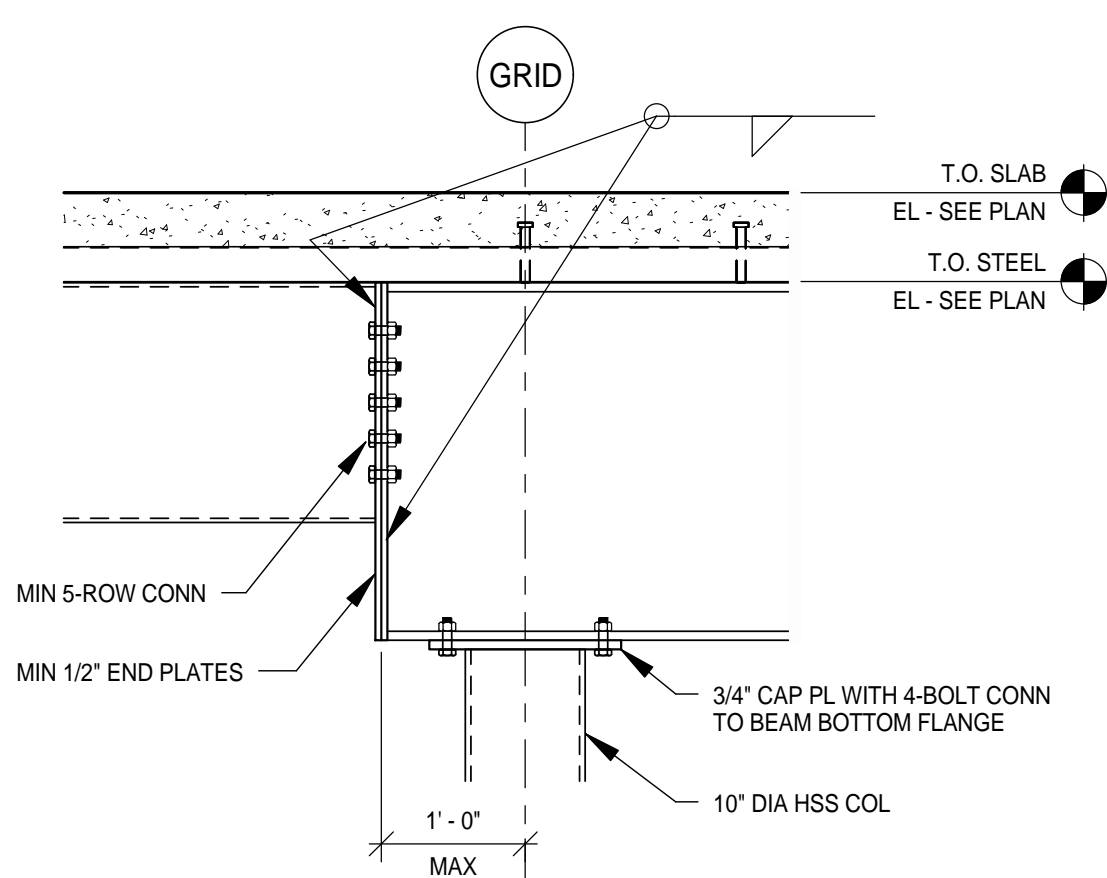
8 PARTIAL PLAN DETAIL
3/4" = 1'-0"



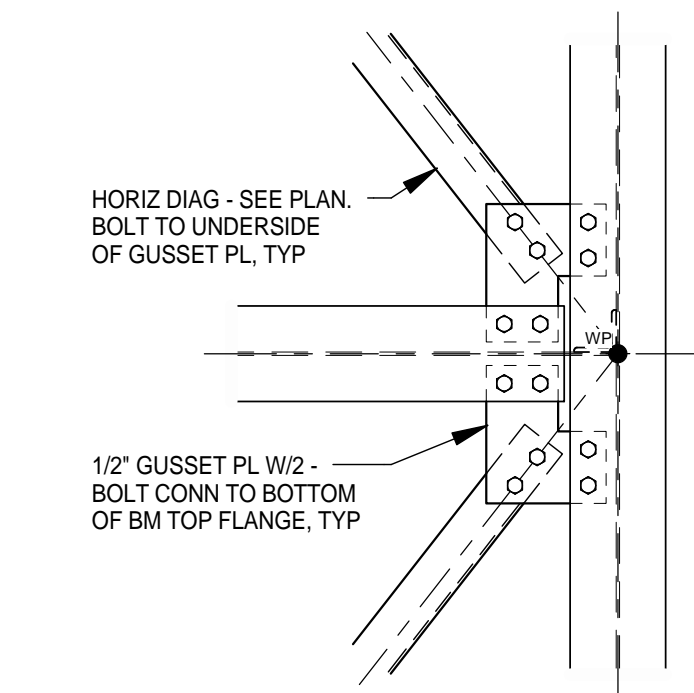
9 CORNER PLAN DETAIL
3/4" = 1'-0"



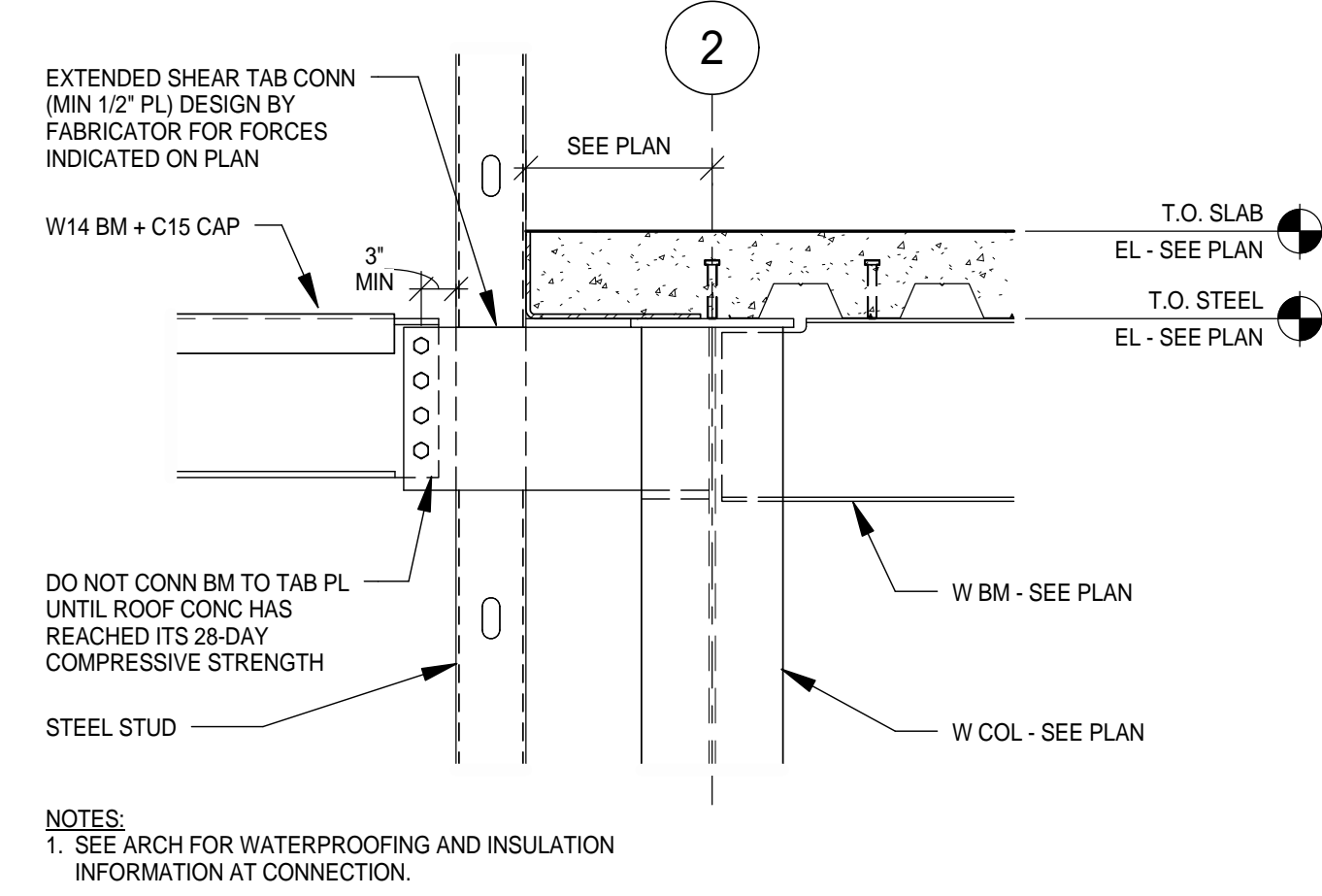
10 SECTION
3/4" = 1'-0"



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

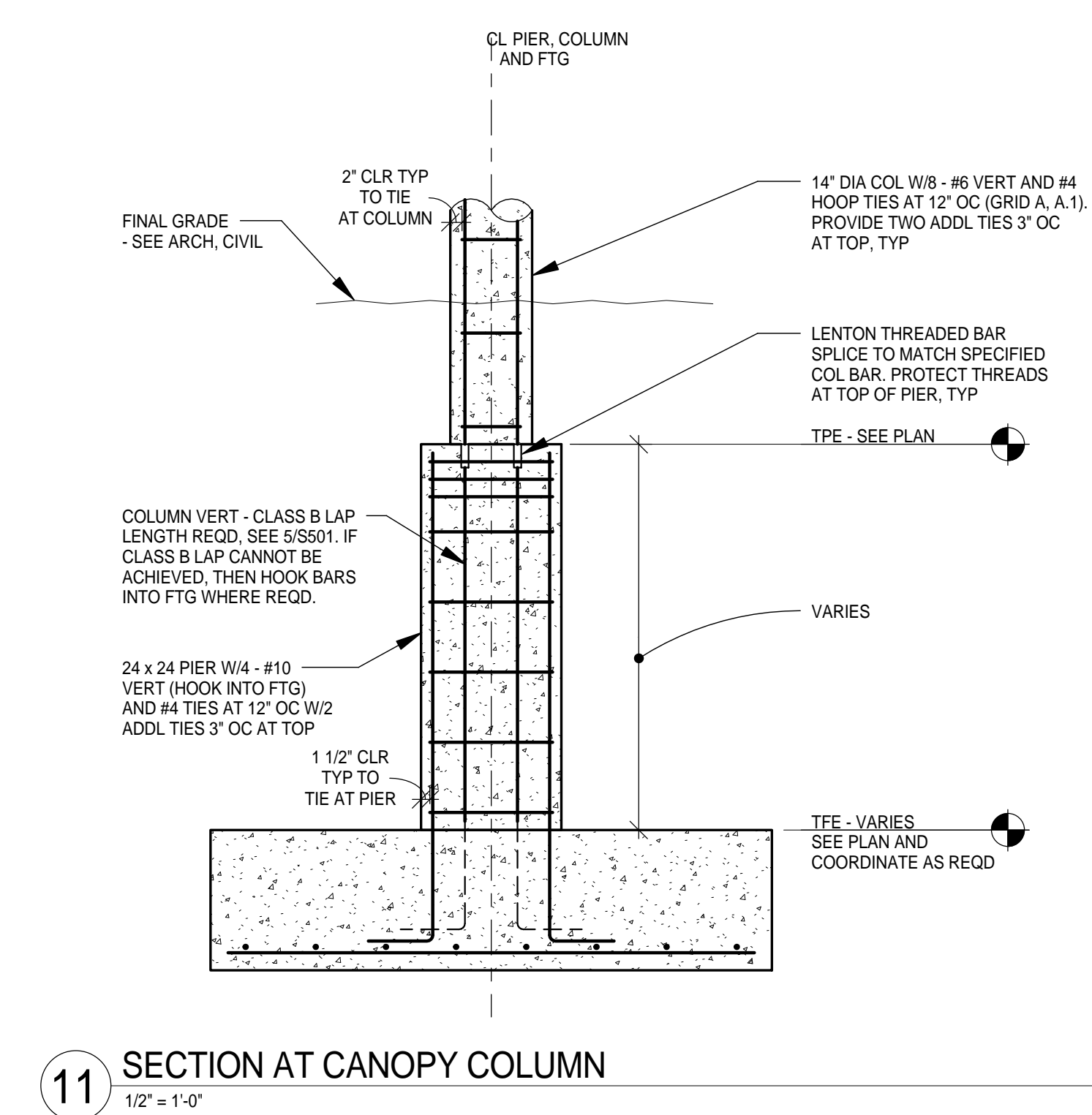
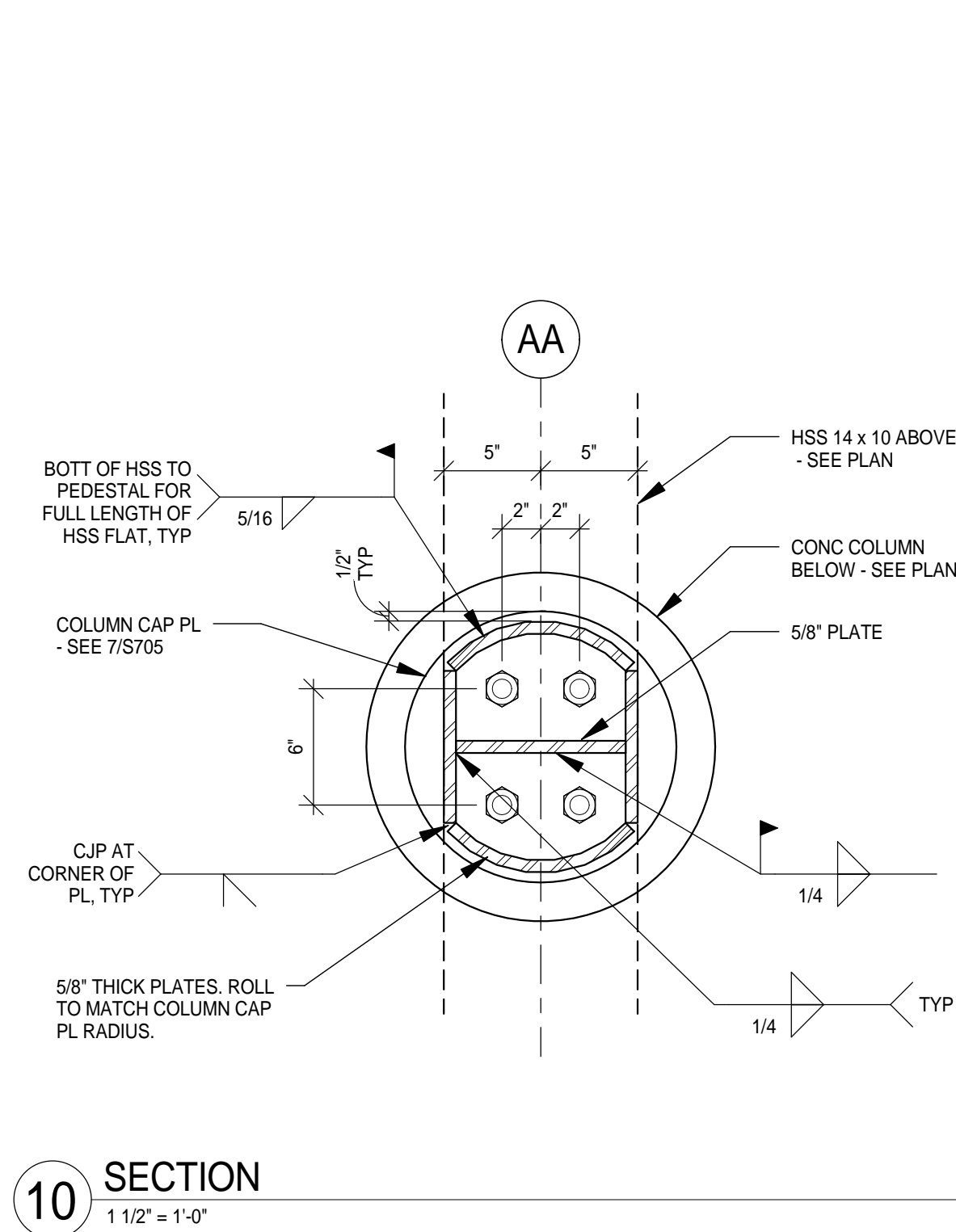
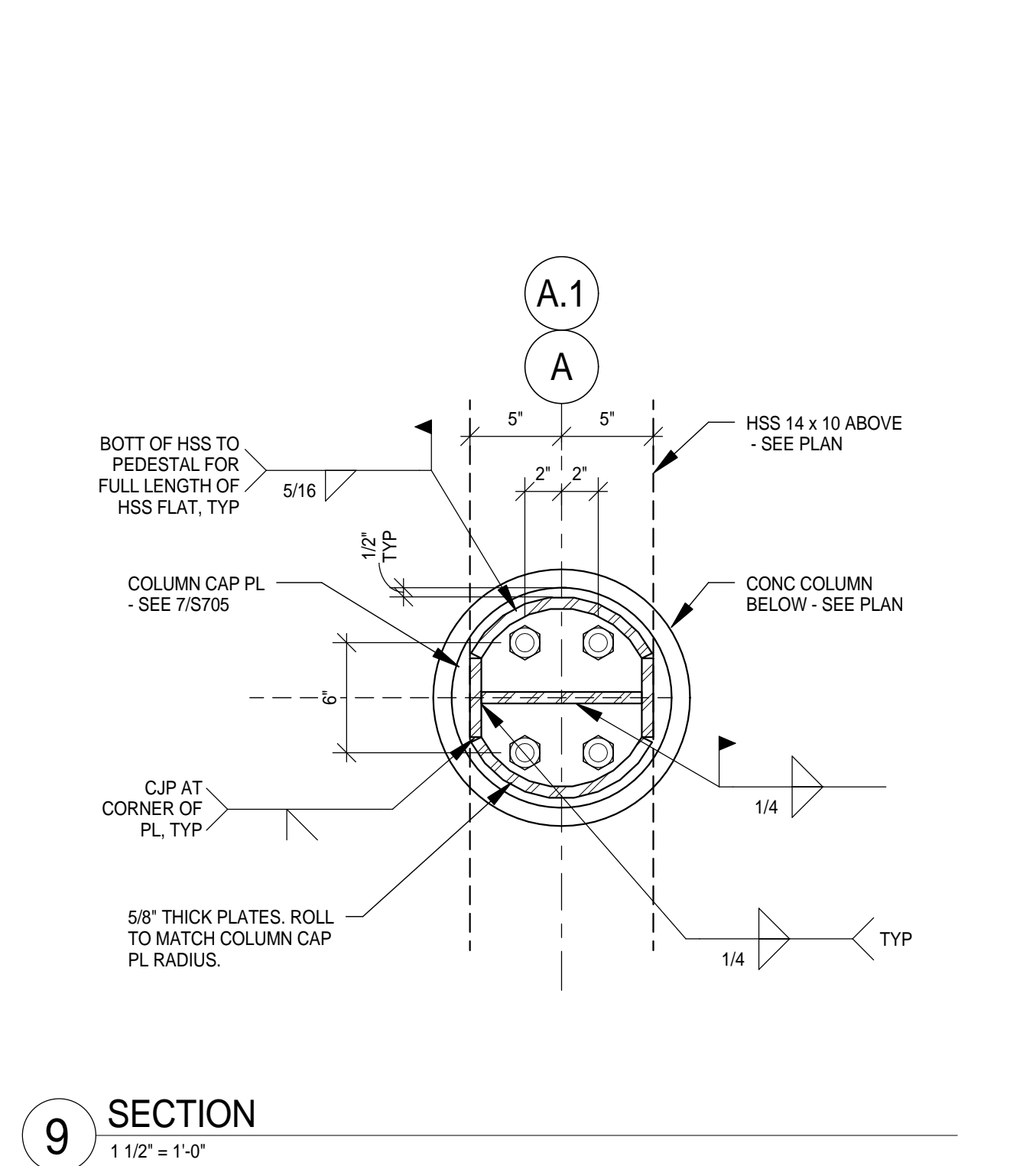
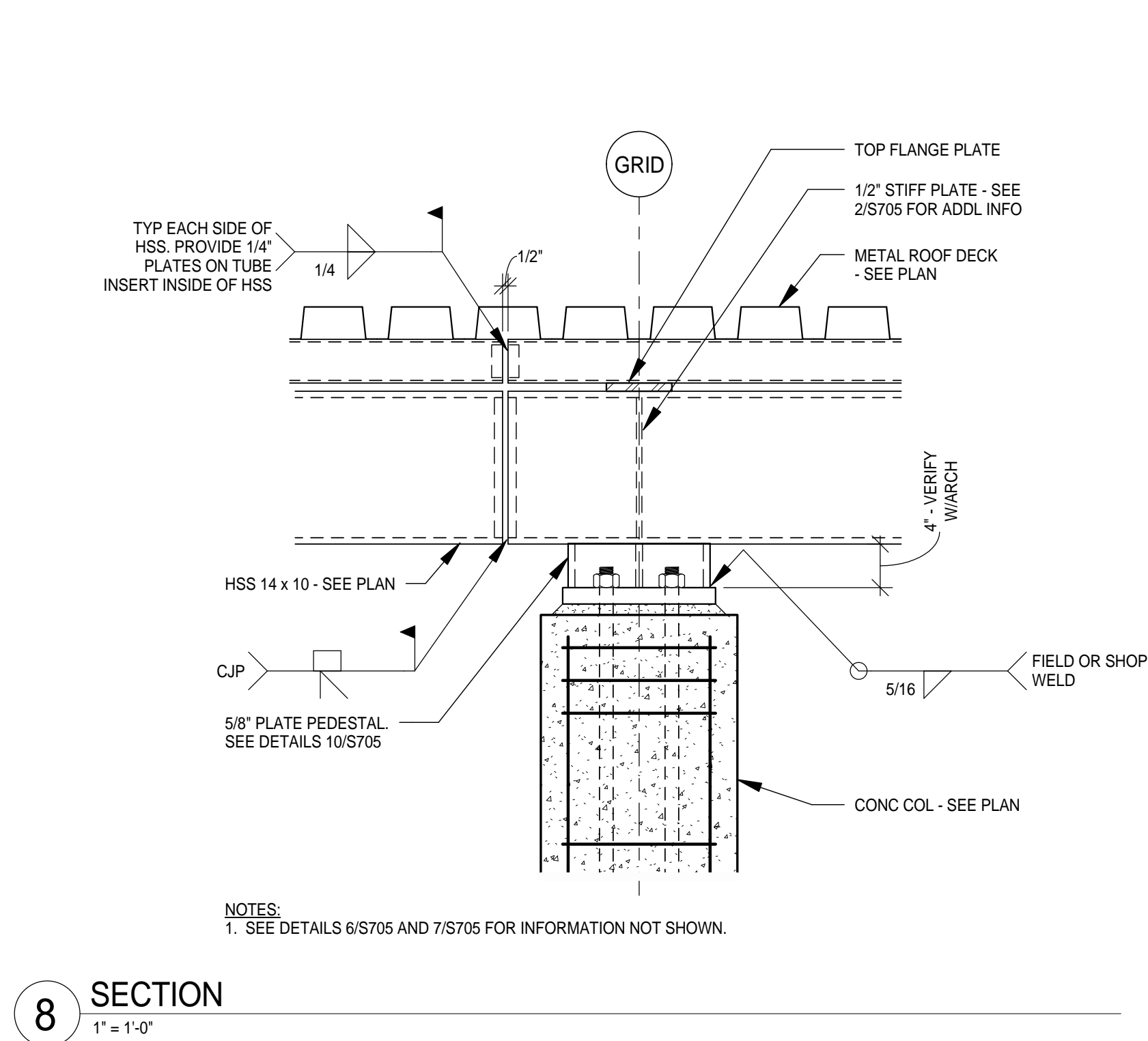
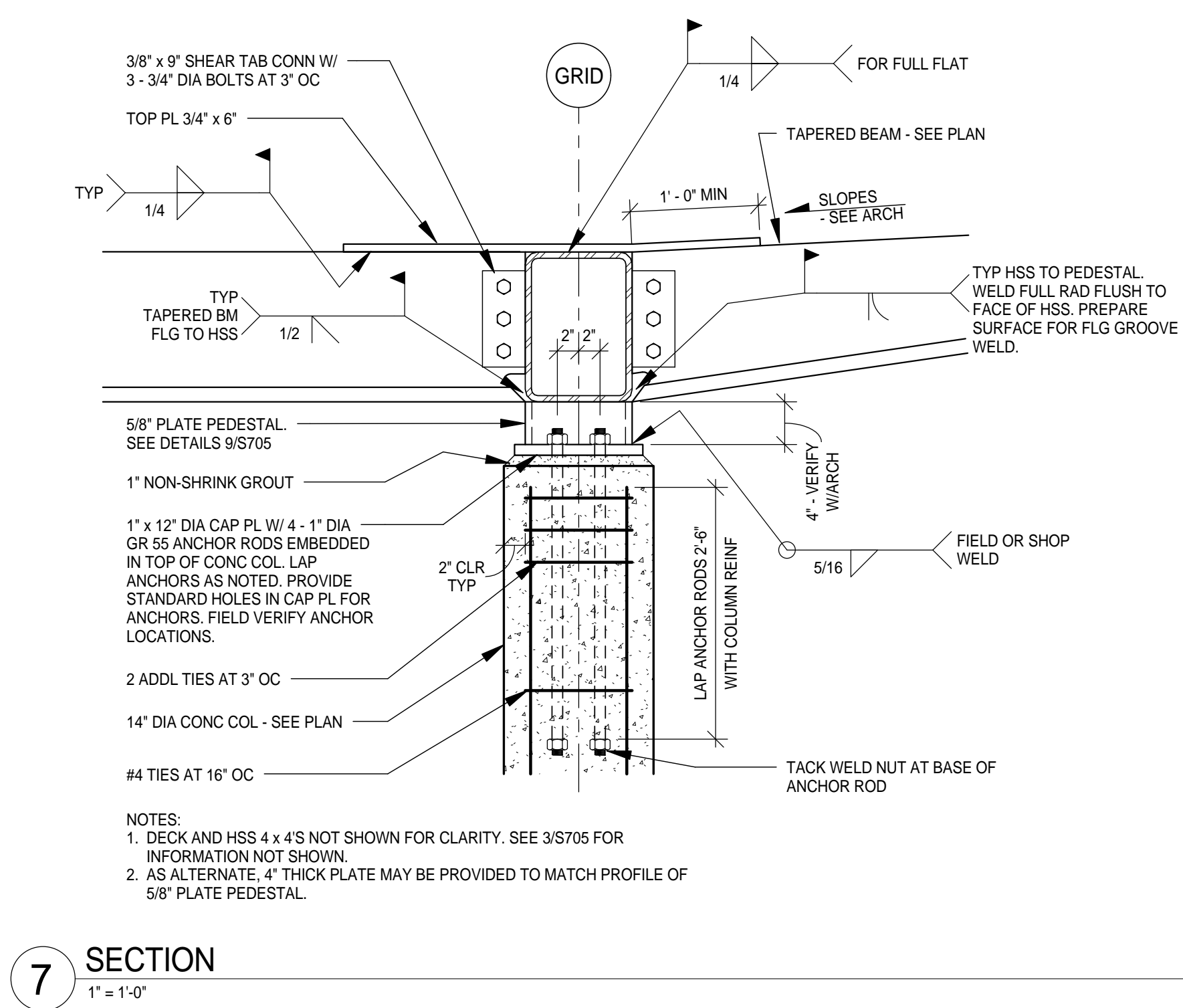
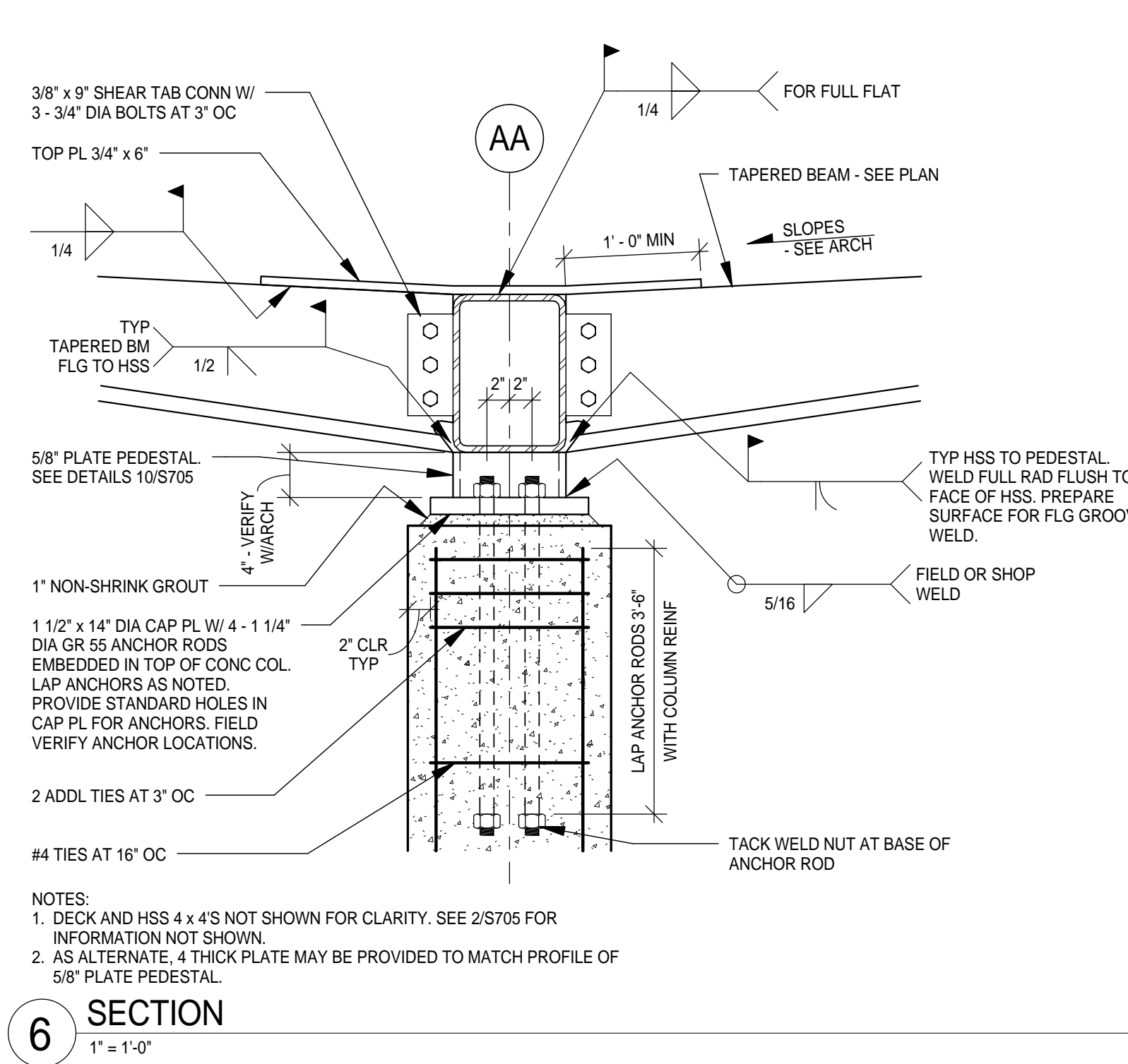
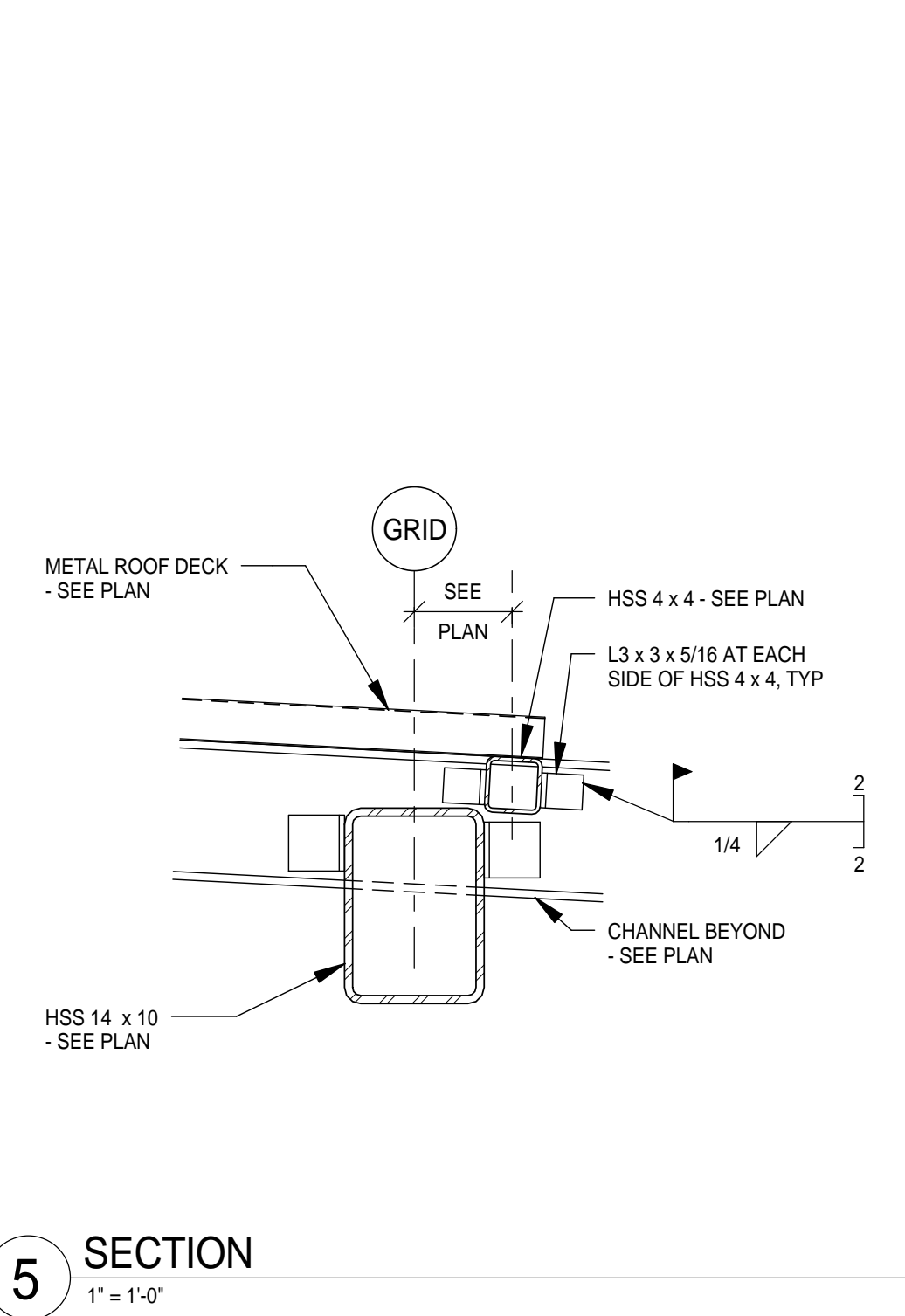
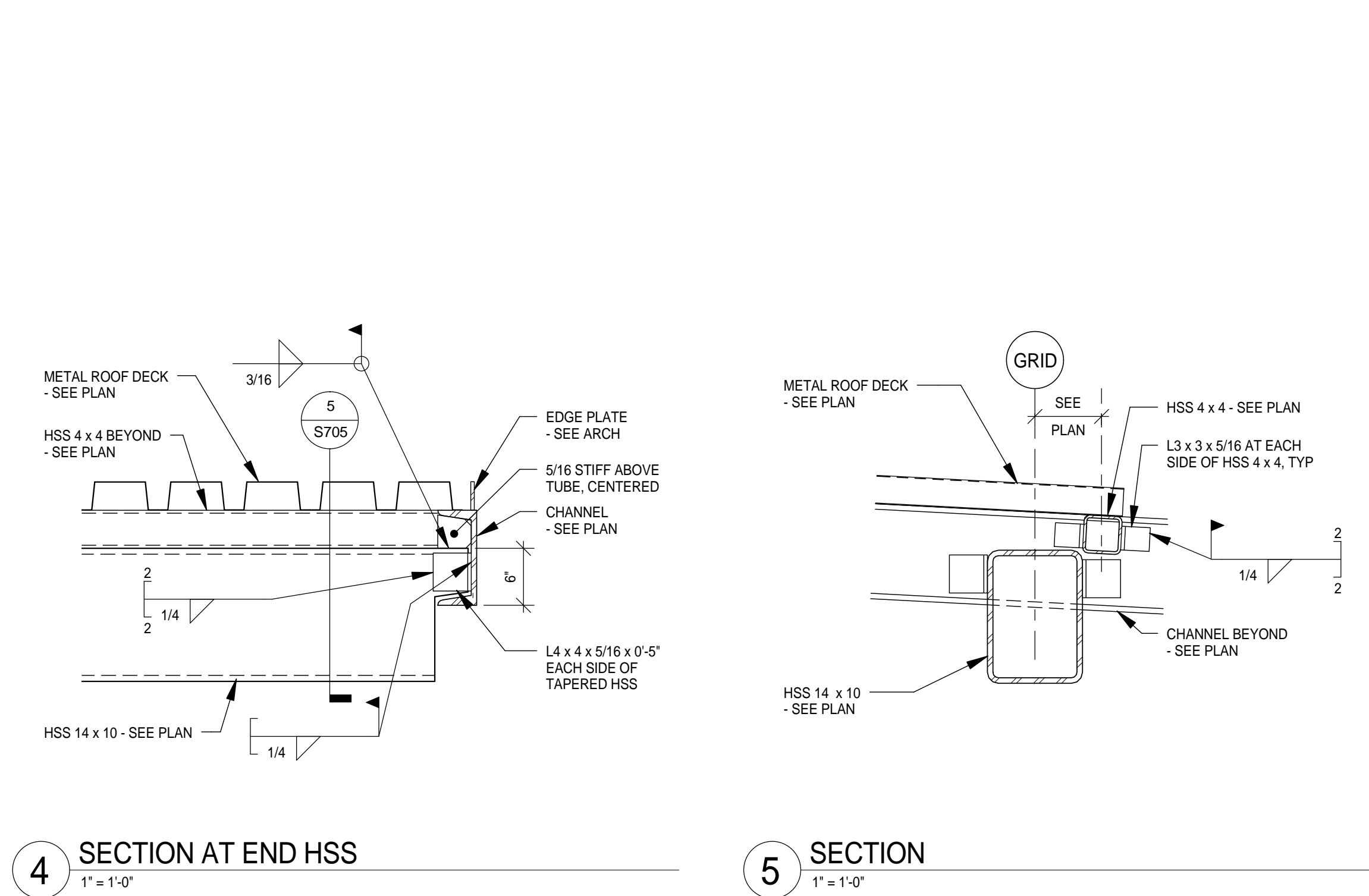
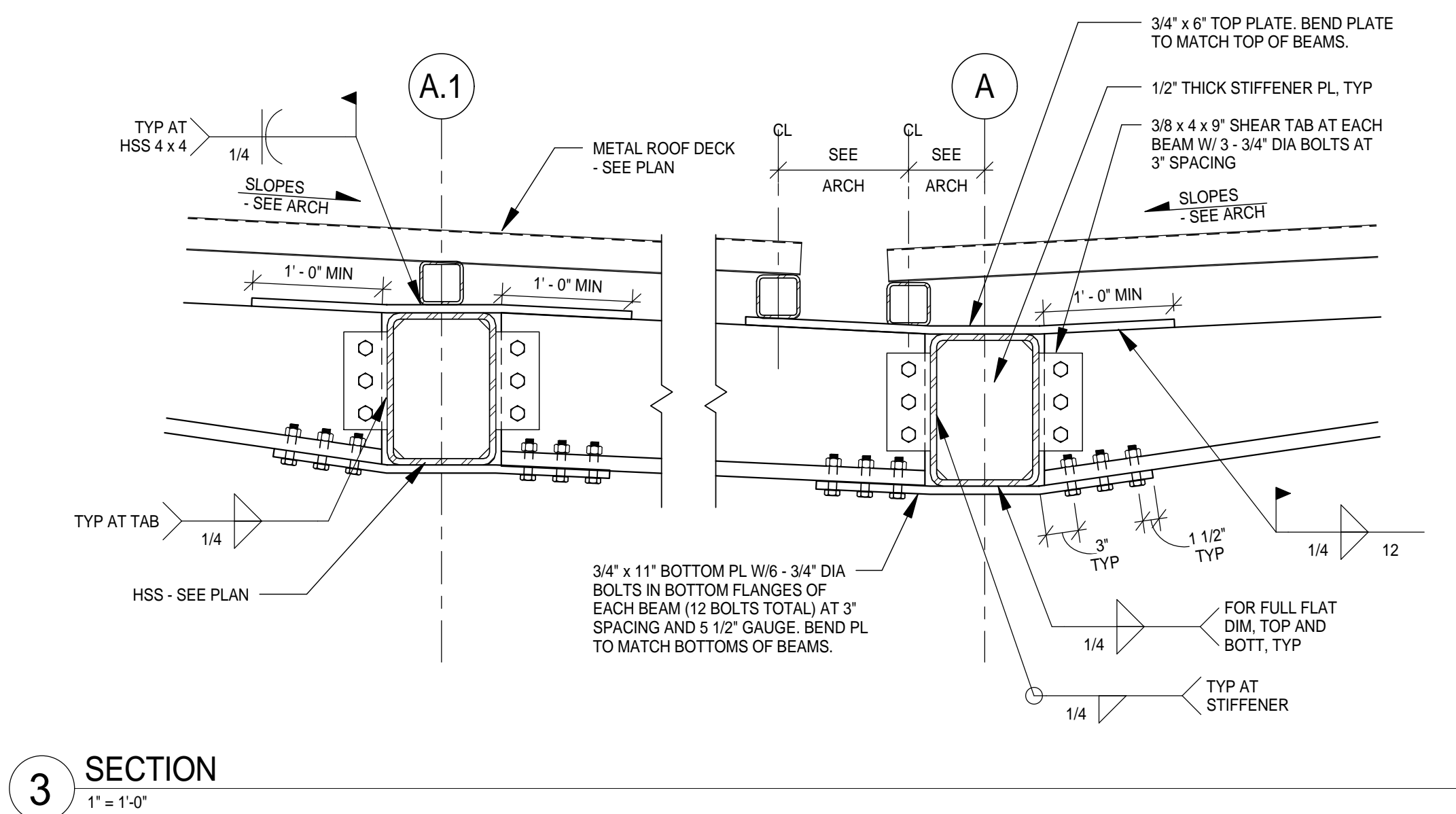
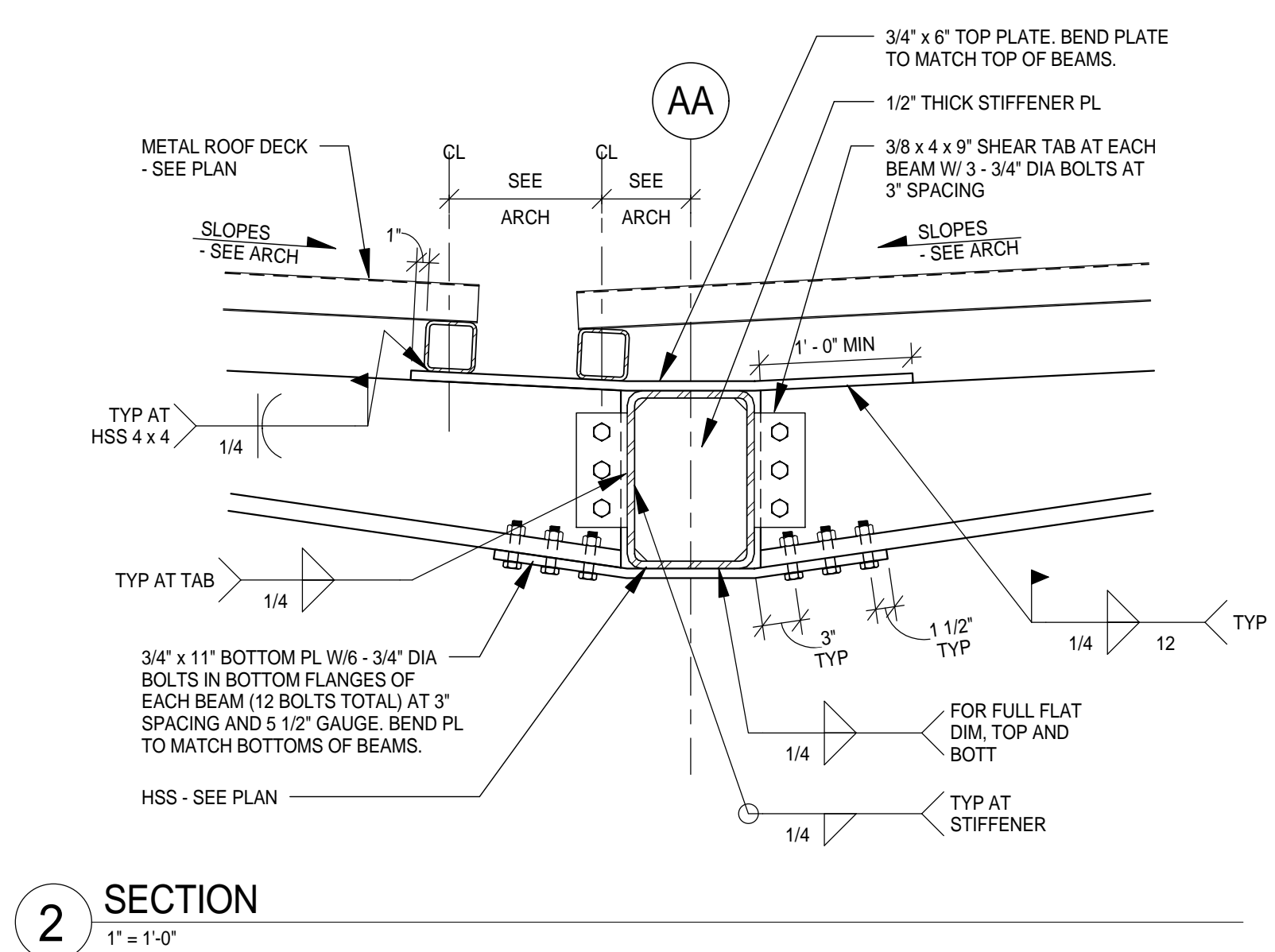
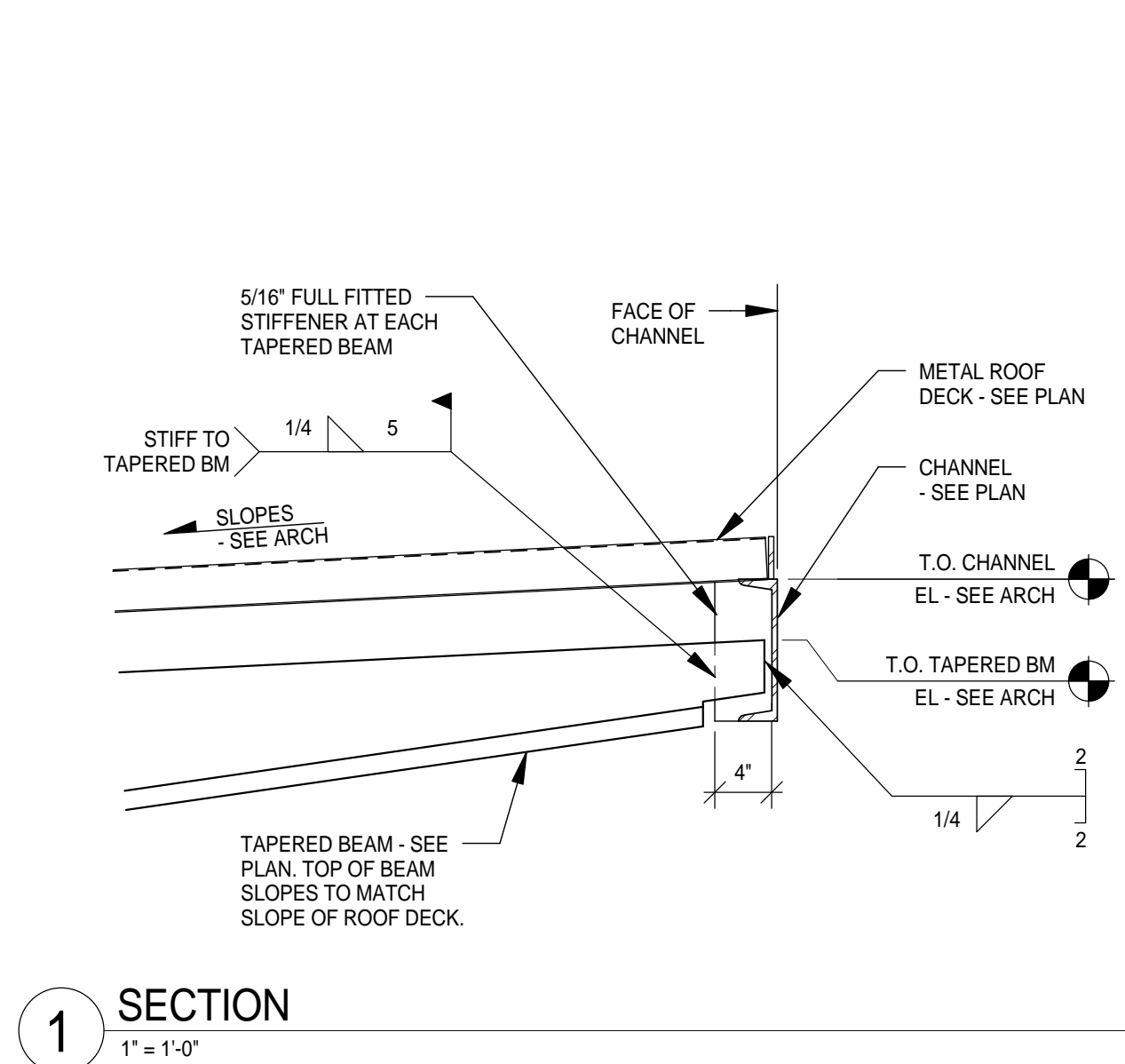


12 PLAN DETAIL
3/4" = 1'-0"



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

NO.	DESCRIPTION	DATE
BID PACKAGE 1		5.12.10
FOUNDATION PERMIT		6.4.10
1,2,3 NOT CHANGED		
CONFORMANCE SET		7.12.10
BUILDING PERMIT		8.6.10
5 100% REVIEW		12.15.10
BID PACKAGE 2A		01.24.11
BP 2A CONFORMANCE		05.02.11



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Signature: _____

Date: June 3, 2010 Reg. No.: 20379

REVISIONS

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DATE ISSUED: 08-23-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

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SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S705

**BID PACKAGE 2B
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CONSULTANTS

Interior Architects:

SJA ARCHITECTS

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	BID PACKAGE 1	5.12.10
	FOUNDATION PERMIT	6.4.10
1	ADDENDUM 1	6.11.10
2.3	NOT CHANGED	
	CONFORMANCE SET	7.12.10
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4	100% REVIEW	12.15.10
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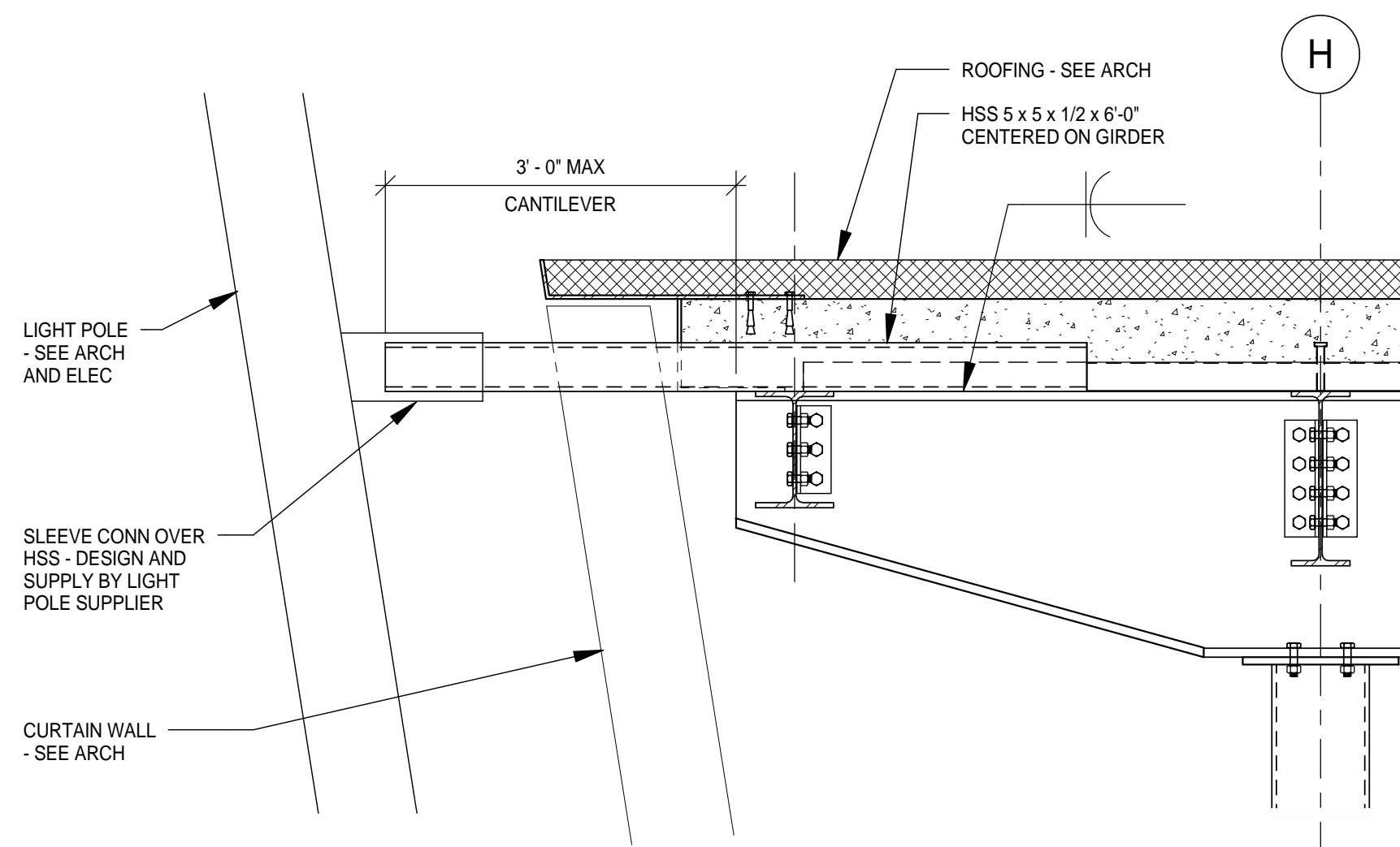
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**SHEET TITLE
STRUCTURAL
DETAILS**

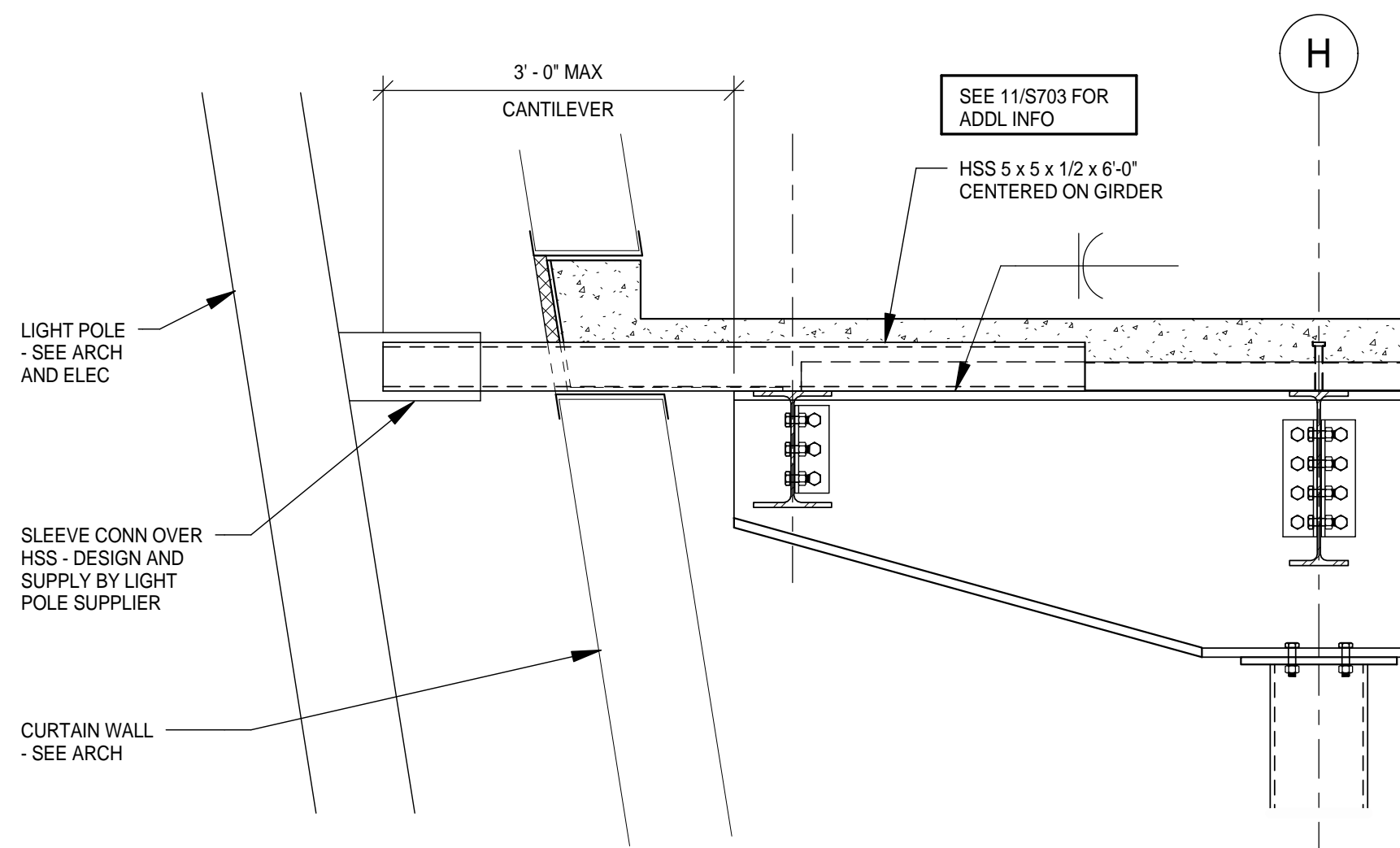
SHEET NUMBER

S706

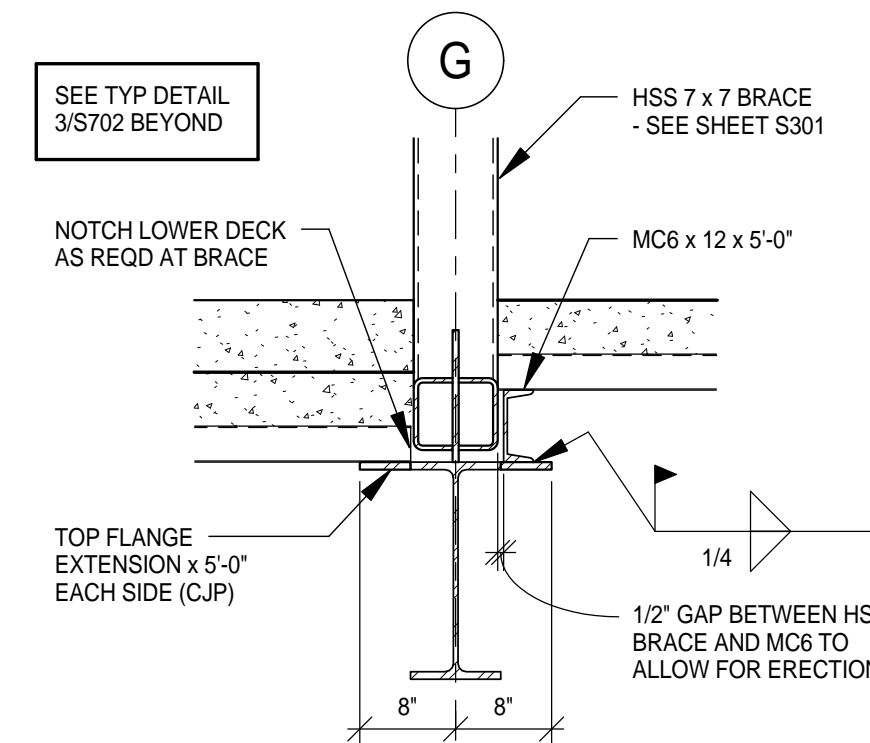
**BID PACKAGE 2B
ISSUED FOR BID
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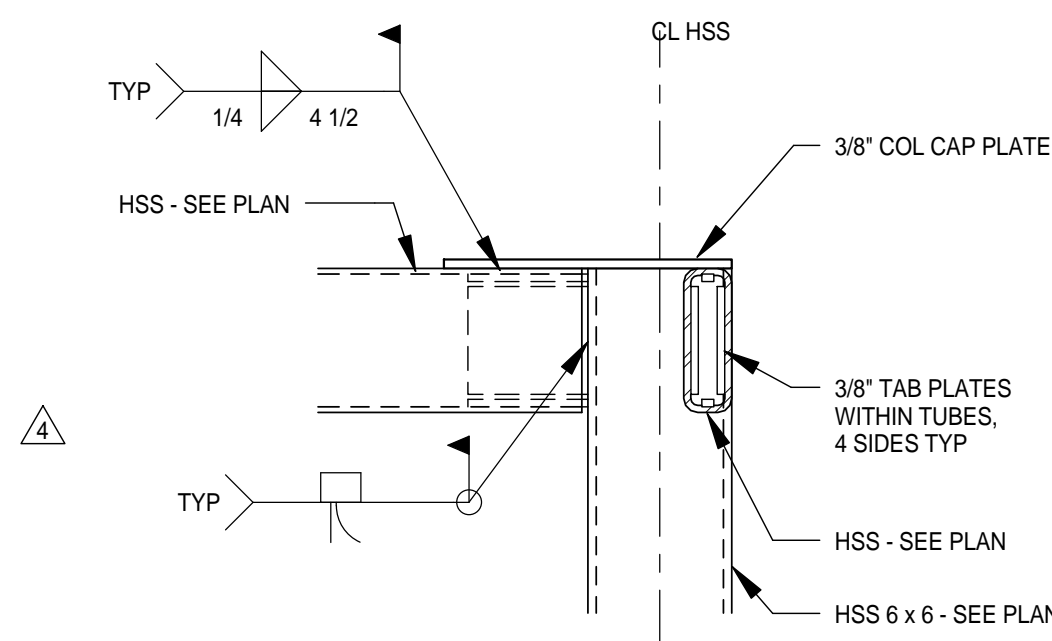
1 SECTION
3/4" = 1'-0"



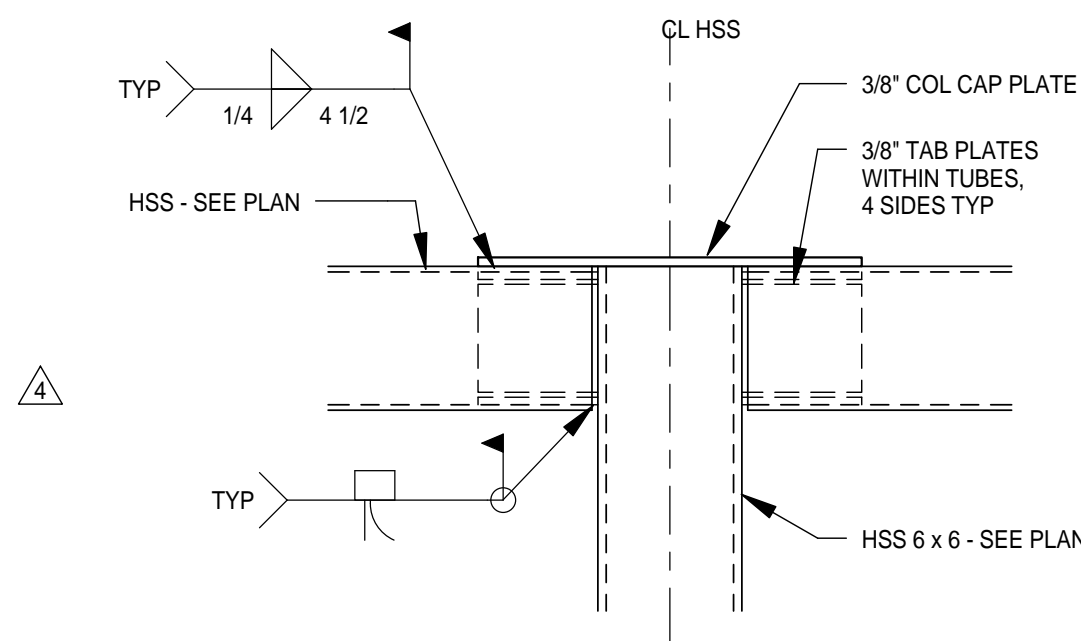
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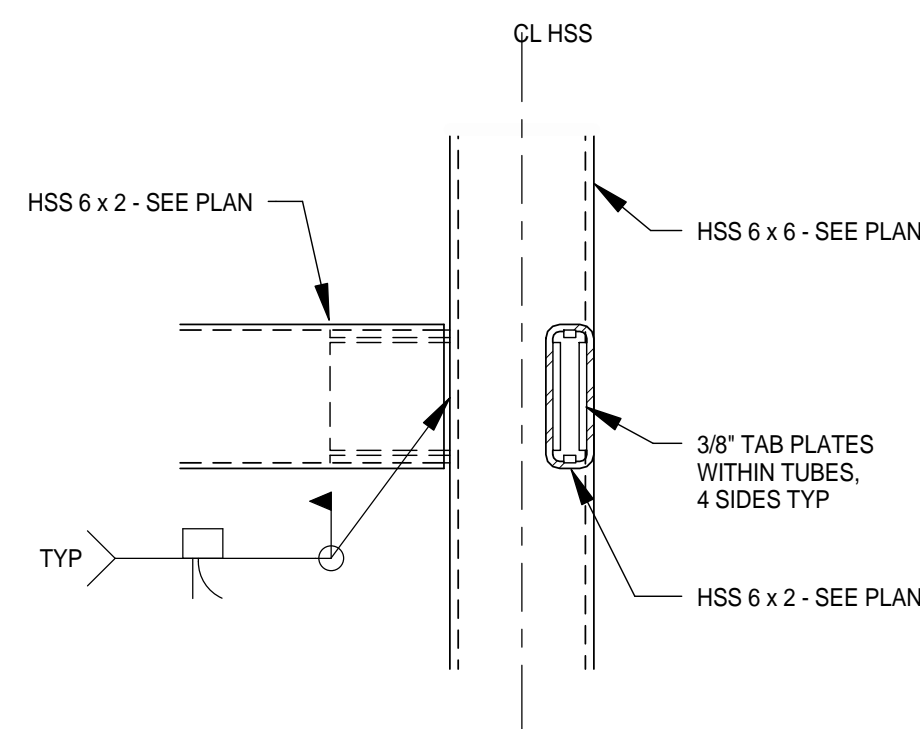
3 SECTION AT BF-6 AT LEVEL 2
3/4" = 1'-0"



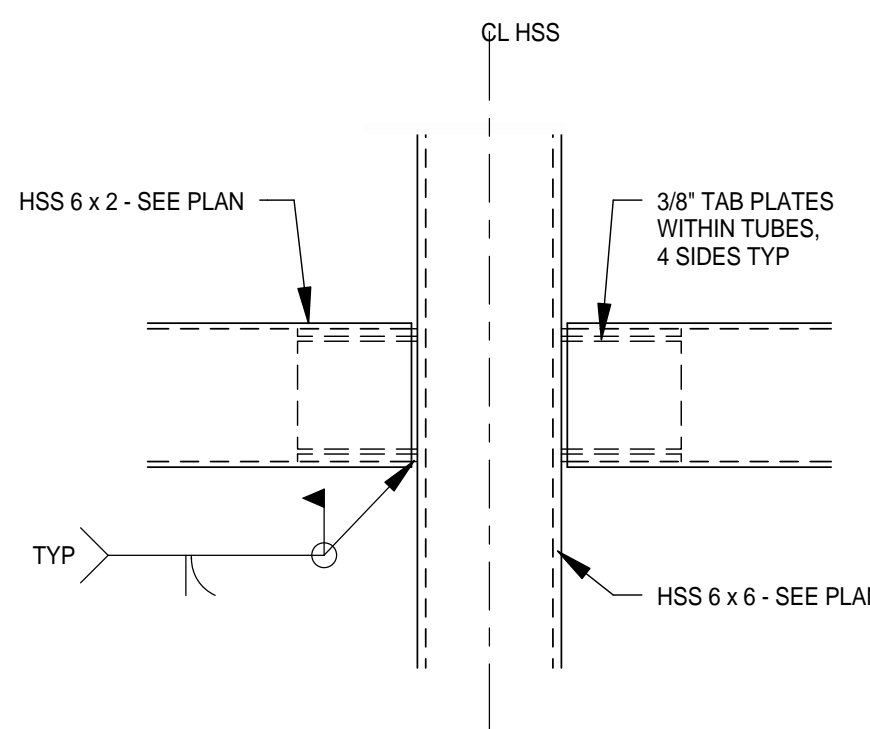
4 SECTION
1 1/2" = 1'-0"



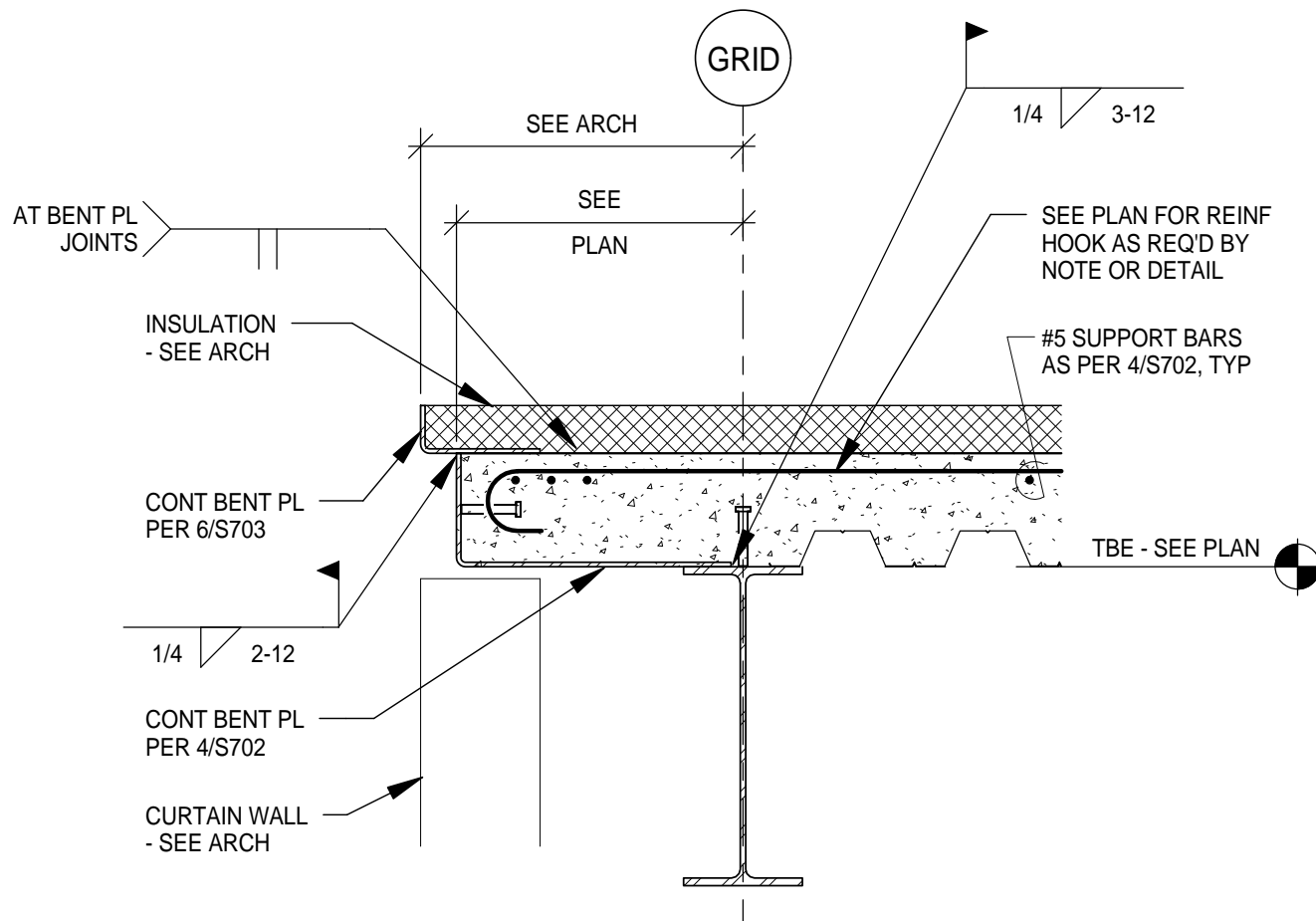
5 SECTION
1 1/2" = 1'-0"



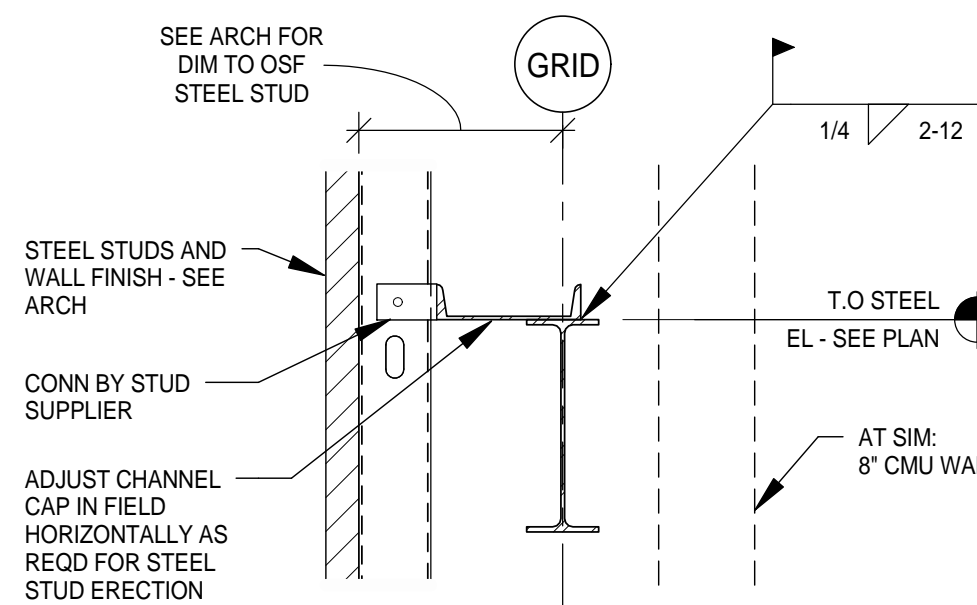
6 SECTION
1 1/2" = 1'-0"



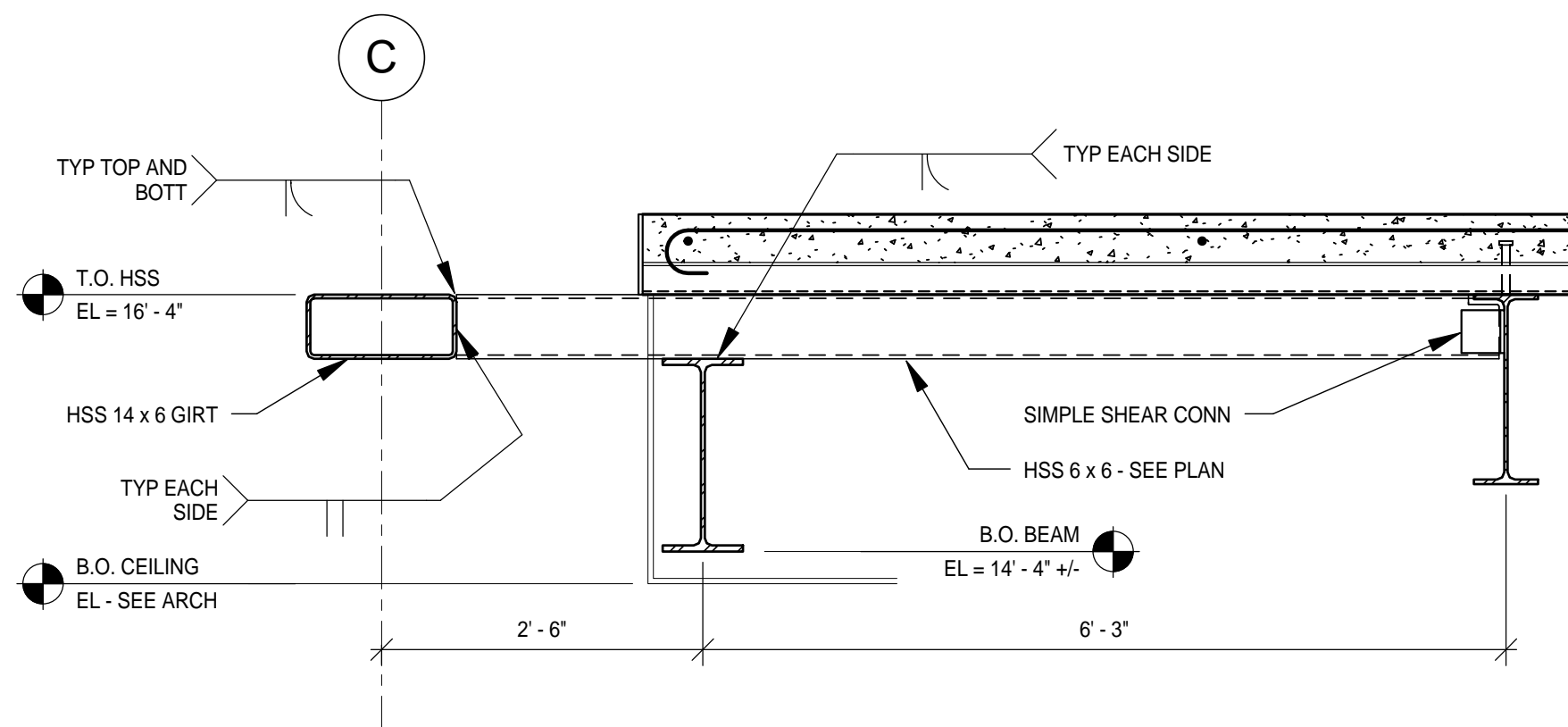
7 SECTION
1 1/2" = 1'-0"



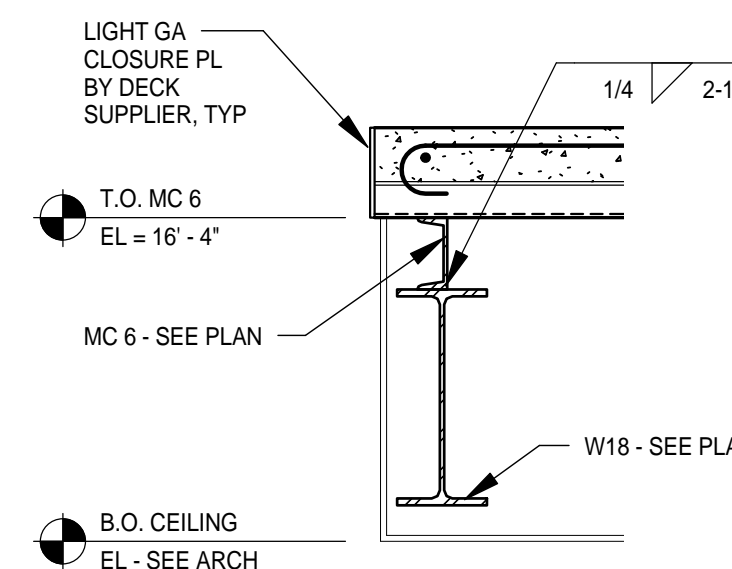
8 SECTION
3/4" = 1'-0"



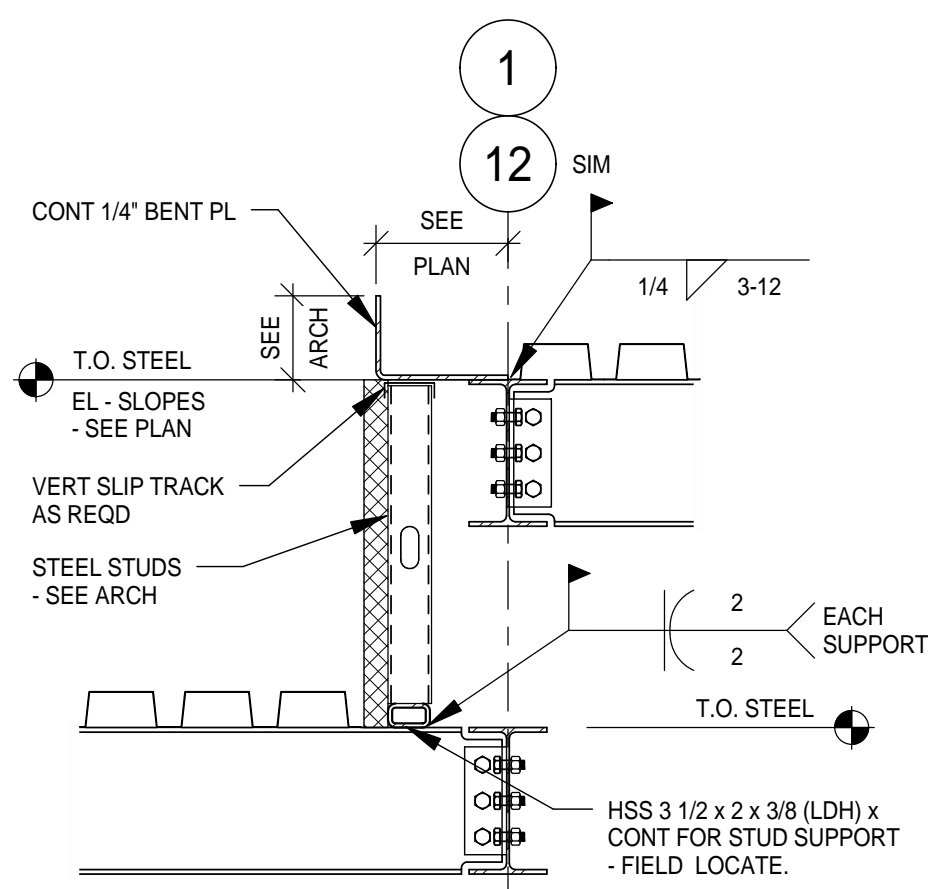
9 SECTION
3/4" = 1'-0"



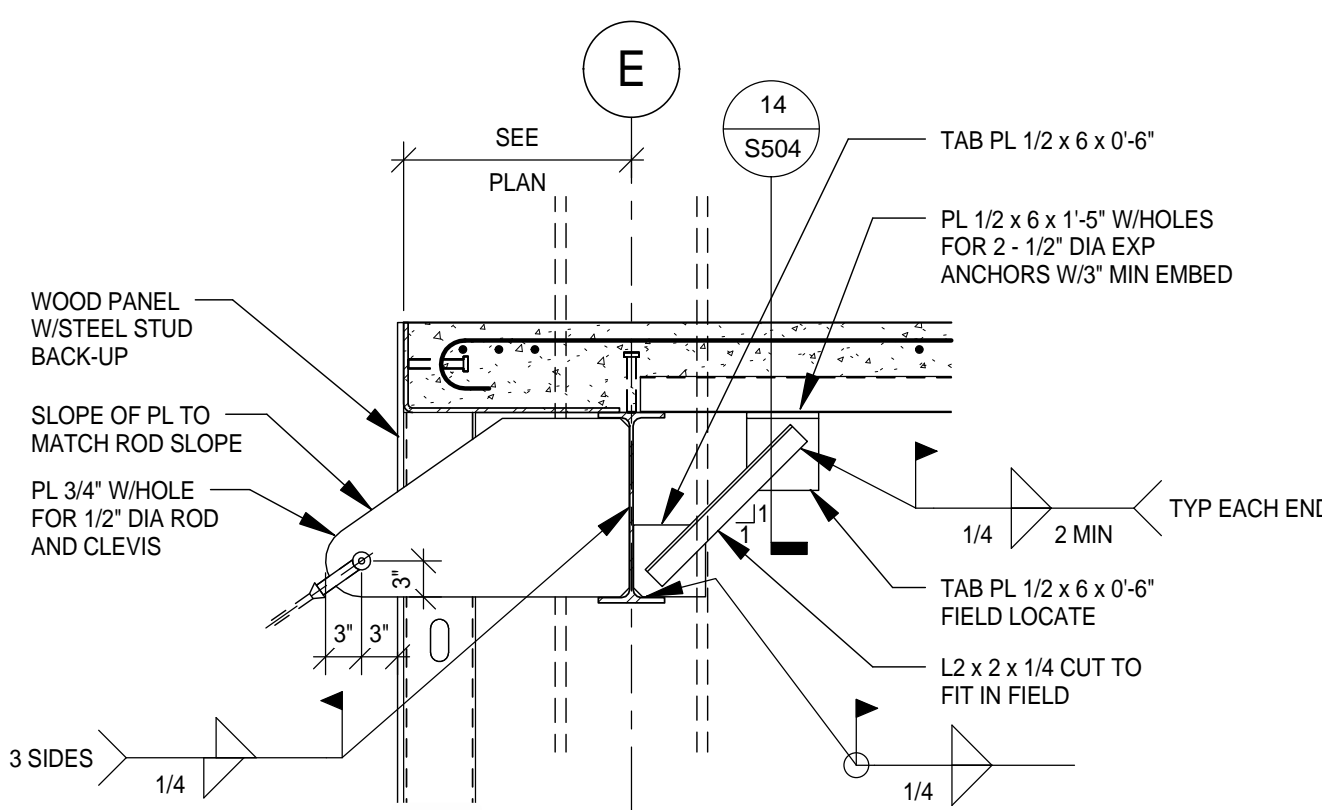
10 SECTION AT HSS CANTILEVER
3/4" = 1'-0"



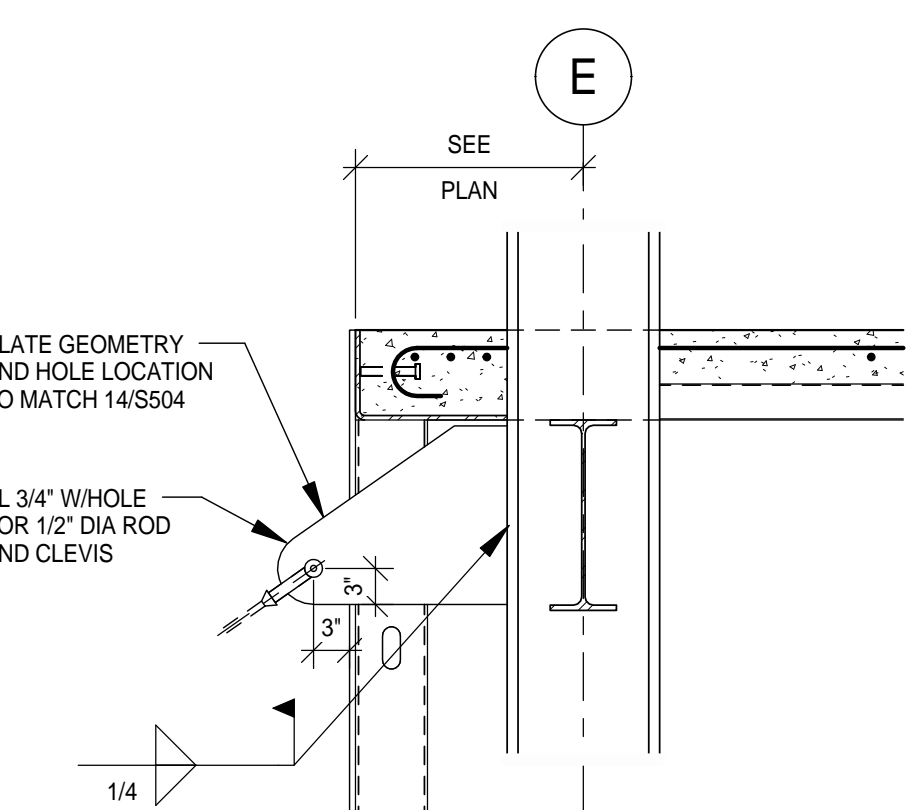
11 SECTION BETWEEN HSS CANTILEVER
3/4" = 1'-0"



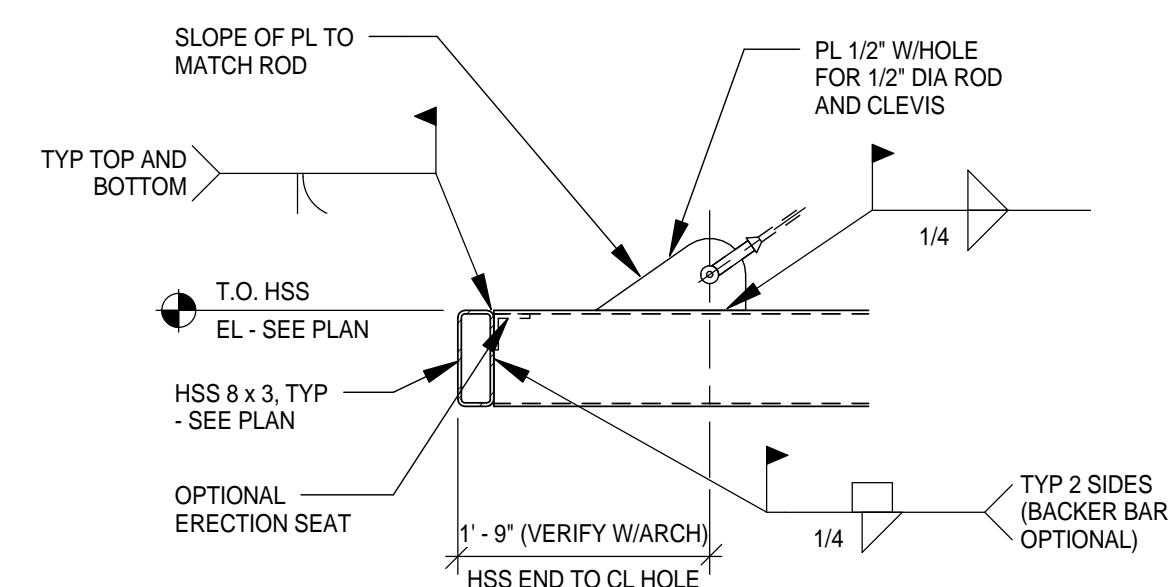
12 SECTION
3/4" = 1'-0"



13 SECTION BETWEEN COLUMNS
3/4" = 1'-0"



14 SECTION AT COLUMNS
3/4" = 1'-0"



15 SECTION
3/4" = 1'-0"