DULUTH INTERNATIONAL AIRPORT

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

DULUTH AIRPORT AUTHORITY BOARD OF DIRECTORS

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

FAA AIP No. - 3-27-0024-48-10
RS&H PROJ. No. - 213.1882.091
CITY OF DULUTH BID No. - 10-4401

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

JANUARY 24, 2011

KRAUS-ANDERSON® CONSTRUCTION COMPANY

Construction Managers:
KRAUS-ANDERSON.
3716 Oneota Street
Duluth MN 55807
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RS&H IMPROVING YOUR WORLD

Architects and Civil Engineers:
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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
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M/E/P/FP Engineers:
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1 South Wacker Drive, 37th Floor,
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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

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

DRAWING LIST – VOLUME 1

G101 DRAWING LIST

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C003 CONSTRUCTION SAFETY PHASING PLAN
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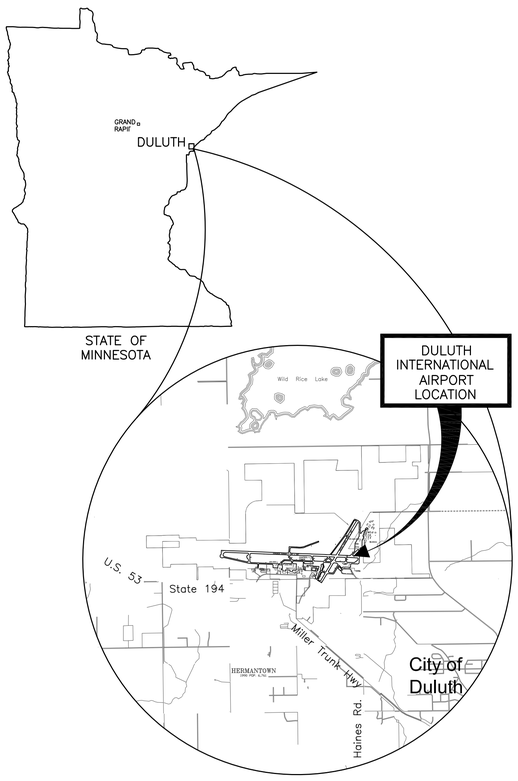

1 LOCATION MAP
N.T.S.

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DULUTH AIRPORT AUTHORITY

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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	
	CONFORMANCE SET	7.12.10
	BUILDING PERMIT	8.16.10
4	BUILDING PERMIT REVISIONS	11.12.10
	BID PACKAGE 2A	1.24.11

DATE ISSUED: 01-24-11
REVIEWED BY: SBS/TC
DRAWN BY: MKG/MI
DESIGNED BY: SBS/TC

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
DRAWING LIST

SHEET NUMBER
G101

BID PACKAGE 2A 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 CONCERTED 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 BY 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.

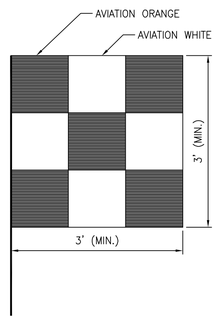
20. THE CONTRACTOR SHALL SUBMIT A SAFETY AND SECURITY PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL BY THE AIRPORT AUTHORITY PRIOR TO CONSTRUCTION COMMENCING.

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	218–722–2826
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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DULUTH AIRPORT AUTHORITY

DULUTH INTERNATIONAL AIRPORT DULUTH, MN

NEW PASSENGER TERMINAL

CONSULTANTS

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SJA ARCHITECTS
11 E Superior Street Suite 340, Duluth MN 55802
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Structural Engineers:
MBJ CONSULTING ENG.
501 Lake Avenue South, Suite 300, Duluth MN 55802
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M/E/P/FP Engineers:
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1 South Wacker Drive, 37th Floor, Chicago IL 60606
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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

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

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 01-24-11
REVIEWED BY: JEH
DRAWN BY: RDRE
DESIGNED BY: JEH

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE

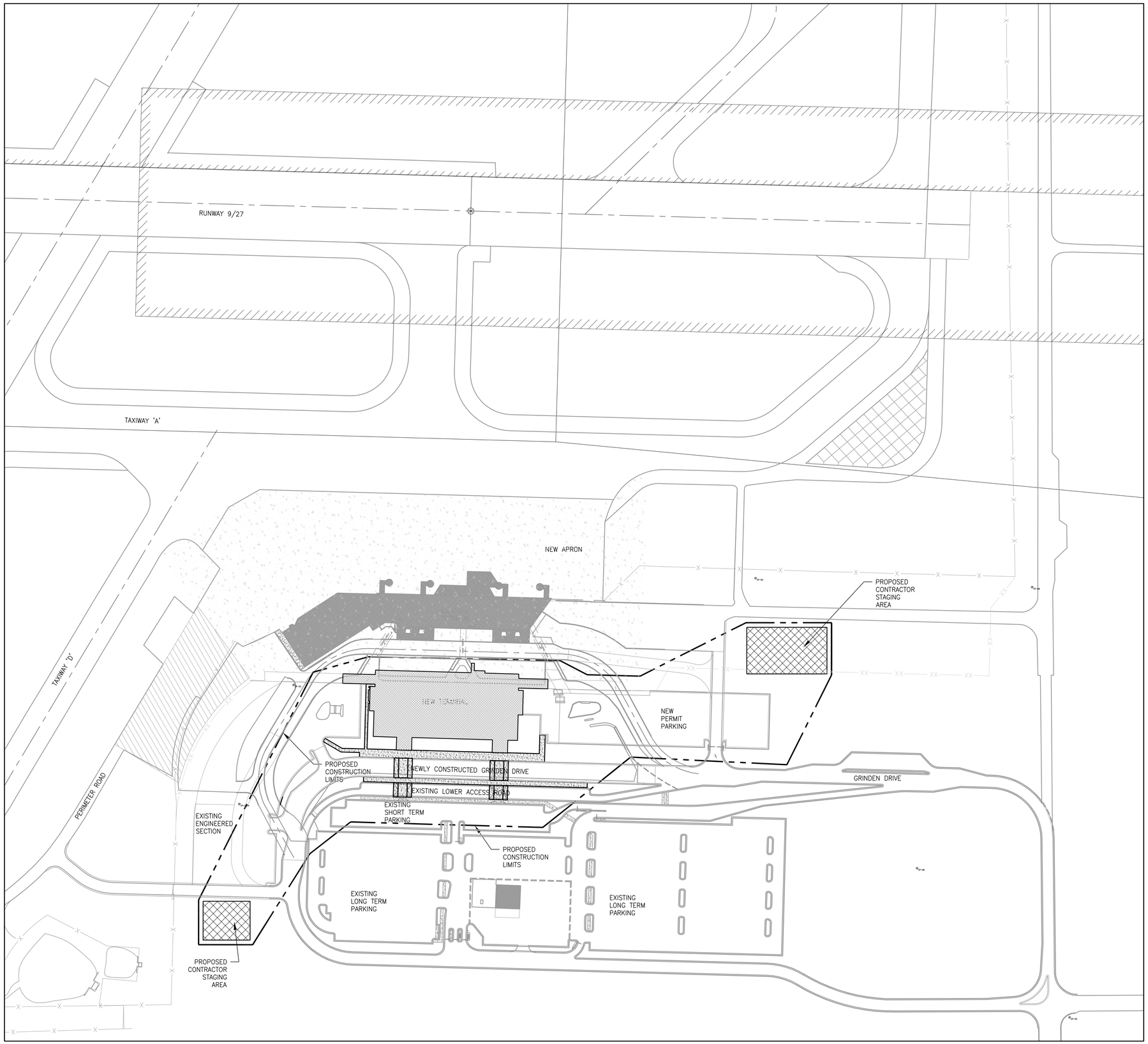
SAFETY AND SECURITY NOTES AND DETAILS

SHEET NUMBER

C002

BID PACKAGE 2A ISSUED FOR BID

Drawing: T:\P\2131882.099 DLH Terminal Design Phase 2\TERMINAL BID PKG 2A\C\DLH–C002.dwg Plotted on: 1/21/2011 8:39 AM Plotted by: Erdmann, Ryan



NORTH

0 100' 200'

NORTH

0 100' 200'

LEGEND

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

CSPP NOTES

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

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REVISIONS

NO.	DESCRIPTION	DATE

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REVIEWED BY: JEH
DRAWN BY: RDRE
DESIGNED BY: JEH

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE

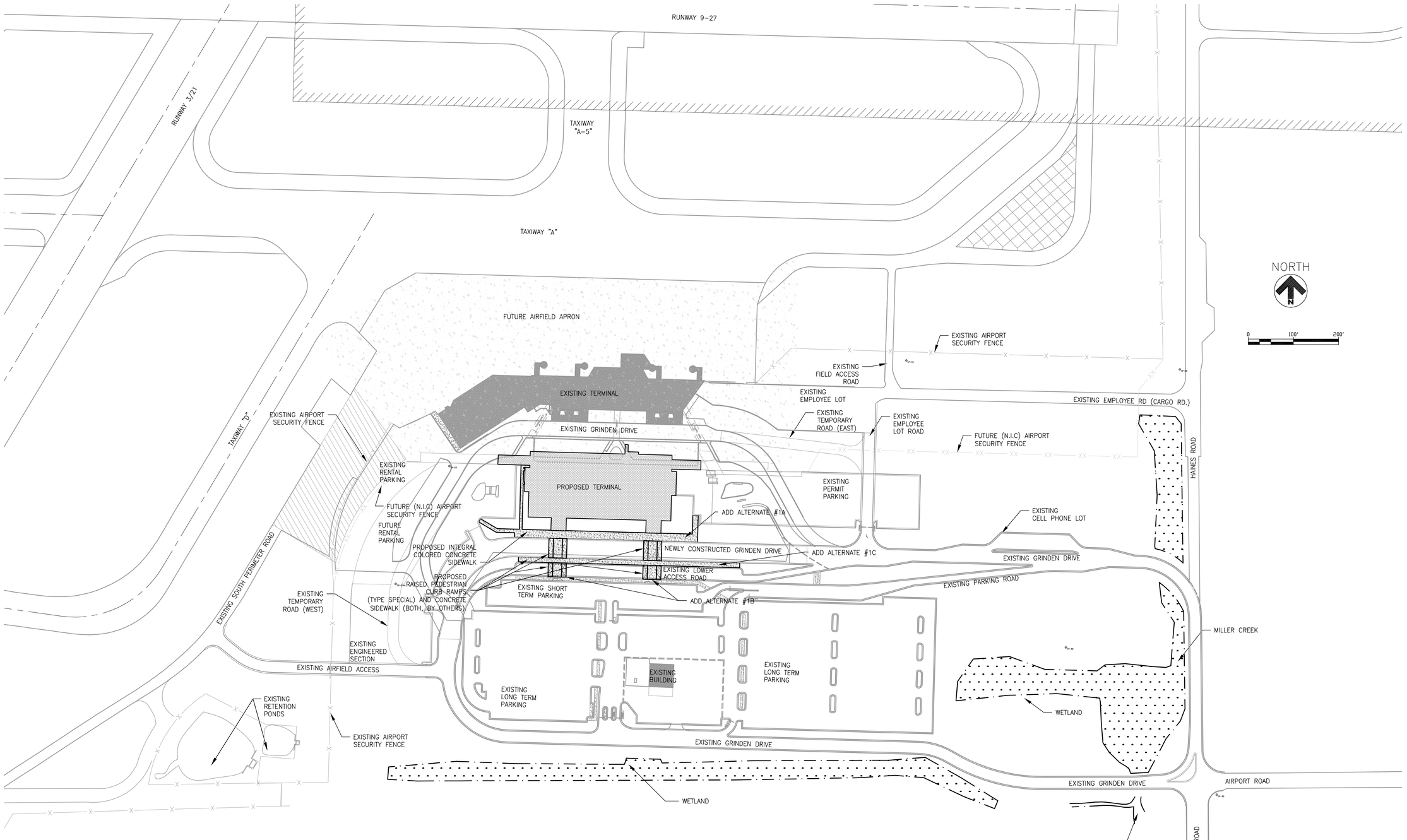
CONSTRUCTION SAFETY PHASING PLAN

SHEET NUMBER

C003

BID PACKAGE 2A ISSUED FOR BID

Drawing: T:\P\213188 2.099 DLH Terminal Design Phase 2\TERMINAL BID PKG 2A\C\DLH-C003.dwg Plotted on: 1/27/2011 9:04 AM Plotted by: Erdmann, Ryan



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.

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REVISIONS

NO.	DESCRIPTION	DATE

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REVIEWED BY: JEH
DRAWN BY: RDRE
DESIGNED BY: JEH

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE

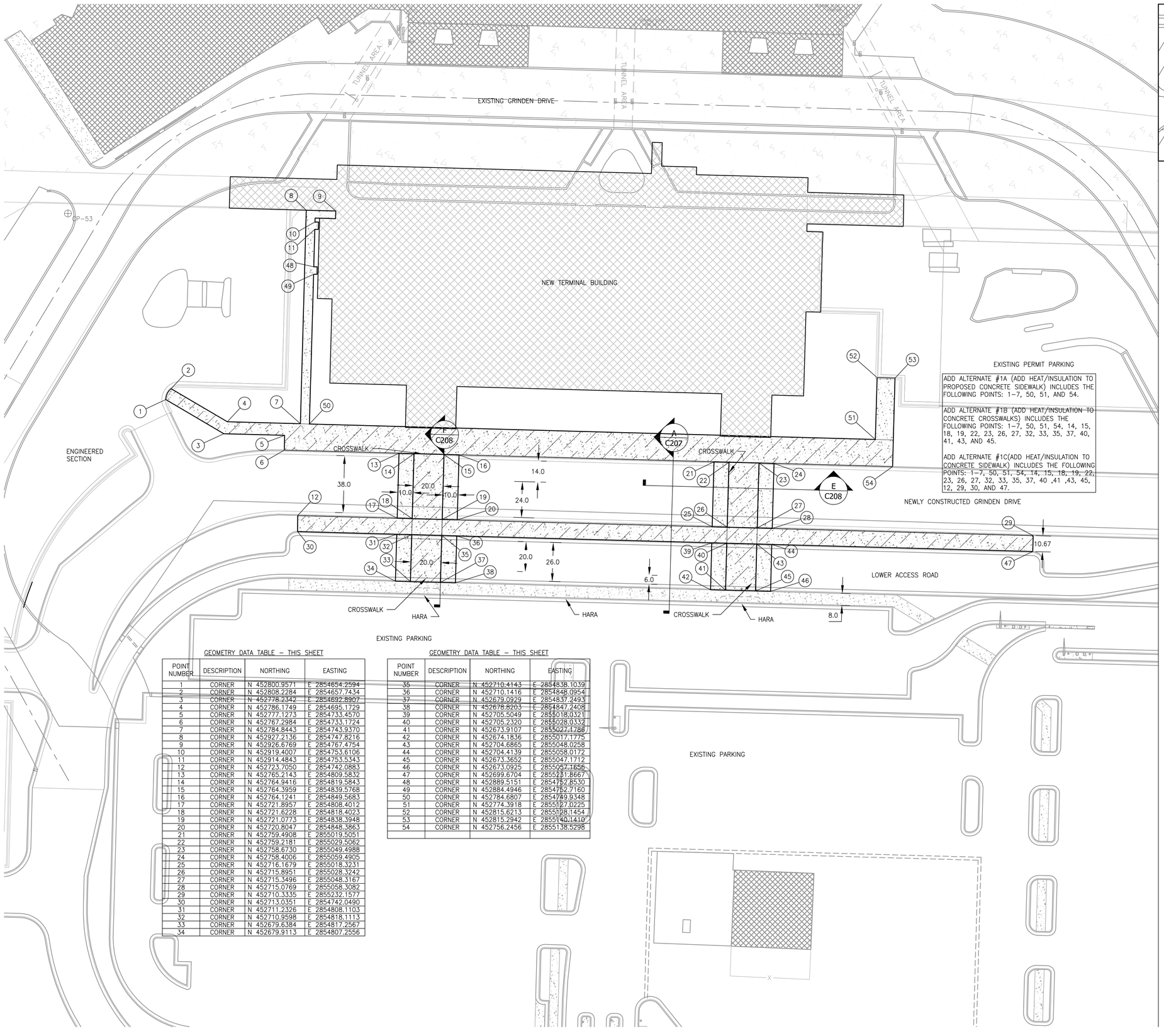
ULTIMATE DEVELOPMENT SITE PLAN

SHEET NUMBER

C004

BID PACKAGE 2A
ISSUED FOR BID

Drawing: T:\P\2131882.099 DLH Terminal Design Phase 2\TERMINAL BID PKG 2A\C\DLH-C004.dwg Plotted on: 1/28/2011 8:52 AM Plotted by: Erdmann, Ryan



GEOMETRY DATA TABLE – THIS SHEET

POINT NUMBER	DESCRIPTION	NORTHING	EASTING
1	CORNER	N 452800.9571	E 2854654.2594
2	CORNER	N 452808.2284	E 2854657.7434
3	CORNER	N 452778.2342	E 2854692.8907
4	CORNER	N 452786.1749	E 2854695.1729
5	CORNER	N 452777.1273	E 2854733.4570
6	CORNER	N 452767.2984	E 2854733.1724
7	CORNER	N 452784.8443	E 2854743.9370
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
14	CORNER	N 452764.9416	E 2854819.5843
15	CORNER	N 452764.3959	E 2854839.5768
16	CORNER	N 452764.1241	E 2854849.5683
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
22	CORNER	N 452759.2181	E 2855029.5062
23	CORNER	N 452758.6730	E 2855049.4988
24	CORNER	N 452758.4006	E 2855059.4905
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
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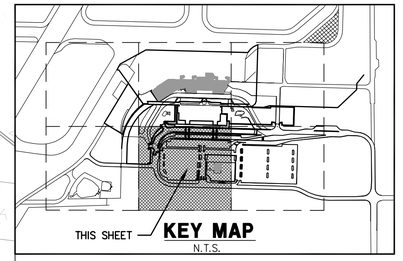
37	CORNER	N 452679.0929	E 2854837.2493
38	CORNER	N 452678.8203	E 2854847.2408
39	CORNER	N 452705.5049	E 2855018.0321
40	CORNER	N 452705.2320	E 2855028.0332
41	CORNER	N 452673.9107	E 2855027.1786
42	CORNER	N 452674.1836	E 2855017.1775
43	CORNER	N 452704.6865	E 2855048.0258
44	CORNER	N 452704.4139	E 2855058.0172
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
51	CORNER	N 452774.3918	E 2855127.0225
52	CORNER	N 452815.6213	E 2855128.1454
53	CORNER	N 452815.2942	E 2855140.1410
54	CORNER	N 452756.2456	E 2855138.5298



NORTH

0 30' 60'

LEGEND

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

GEOMETRY NOTES

1. CONSTRUCTION SURVEY AND STAKEOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. NORTHINGS AND EASTINGS GIVEN IN PROJECT ARE IN MINNESOTA STATE PLANE NORTH COORDINATES.
3. SEE TYPICAL PAVEMENT SECTION AND DETAILS SHEETS C207–C209.
4. PROVIDE HANDICAP ACCESS RAMPS IN LOCATIONS AS SHOWN.
5. 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.
6. 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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REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 01-24-11
REVIEWED BY: JEH
DRAWN BY: RDRE
DESIGNED BY: JEH

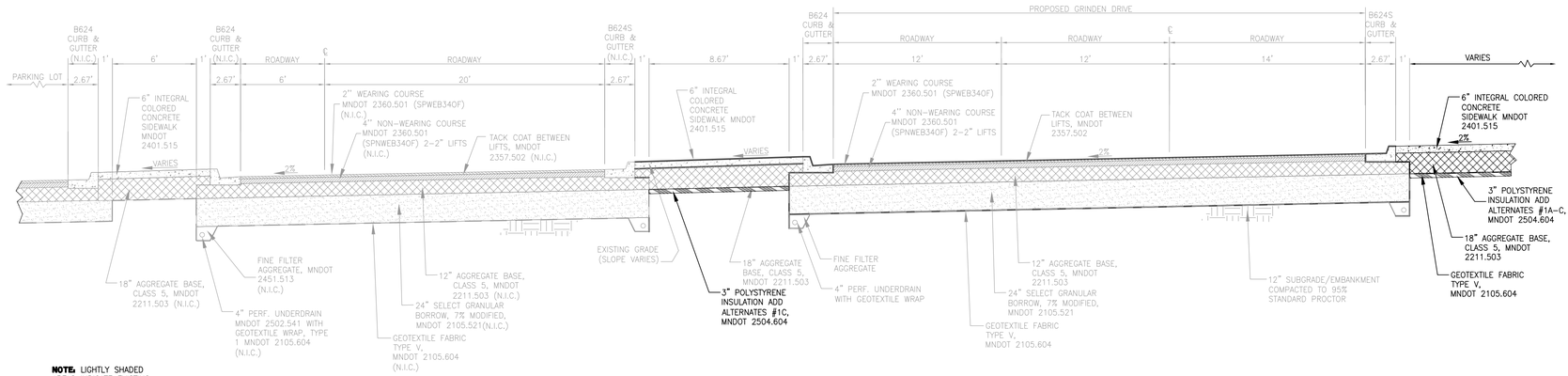
AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
CIVIL GEOMETRY PLAN

SHEET NUMBER
C205

BID PACKAGE 2A ISSUED FOR BID

Drawing: T:\P\2131882.099 DLH Terminal Design Phase 2\TERMINAL BID PKG 2A\C\DLH-C205.dwg Plotted on: 1/28/2011 9:03 AM Plotted by: Erdmann, Ryan

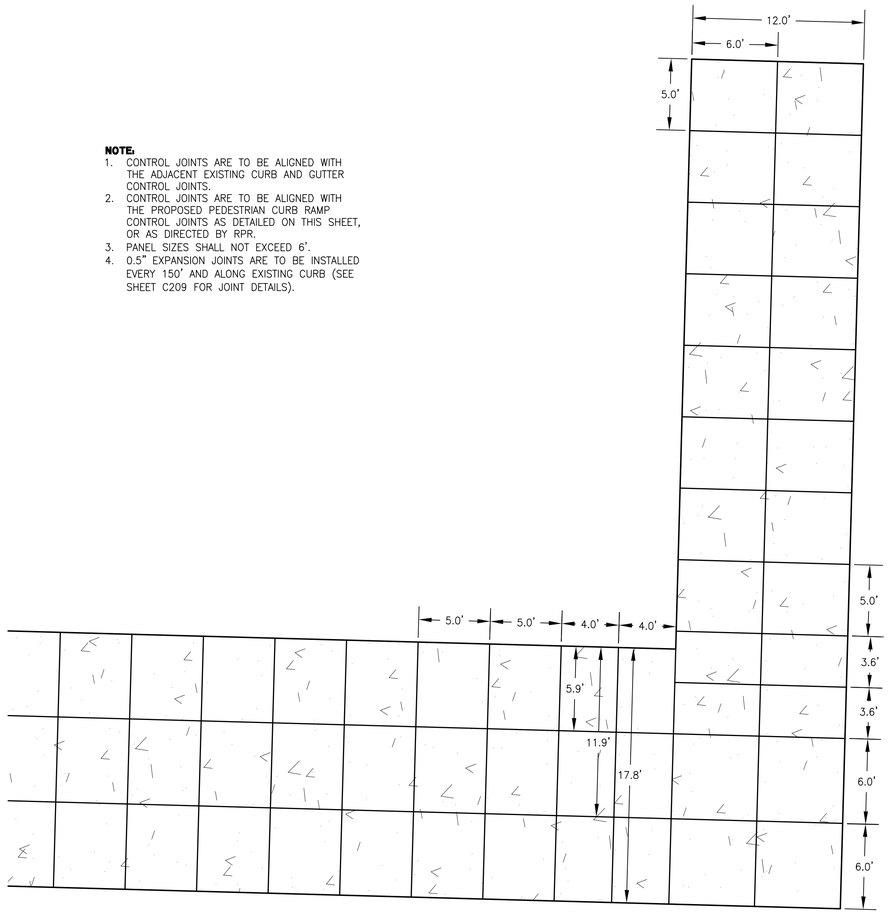


NOTE: LIGHTLY SHADED AREAS INDICATE EXISTING FEATURES, OR FEATURES TO BE COMPLETED BY OTHER CONTRACTS.

PROPOSED TYPICAL SECTION 'A' PROPOSED SIDEWALK ADJACENT TO NORTH SIDE OF GRINDEN DRIVE

N.T.S.

NOTE:
1. CONTROL JOINTS ARE TO BE ALIGNED WITH THE ADJACENT EXISTING CURB AND GUTTER CONTROL JOINTS.
2. CONTROL JOINTS ARE TO BE ALIGNED WITH THE PROPOSED PEDESTRIAN CURB RAMP CONTROL JOINTS AS DETAILED ON THIS SHEET, OR AS DIRECTED BY RPR.
3. PANEL SIZES SHALL NOT EXCEED 6'.
4. 0.5" EXPANSION JOINTS ARE TO BE INSTALLED EVERY 150' AND ALONG EXISTING CURB (SEE SHEET C209 FOR JOINT DETAILS).

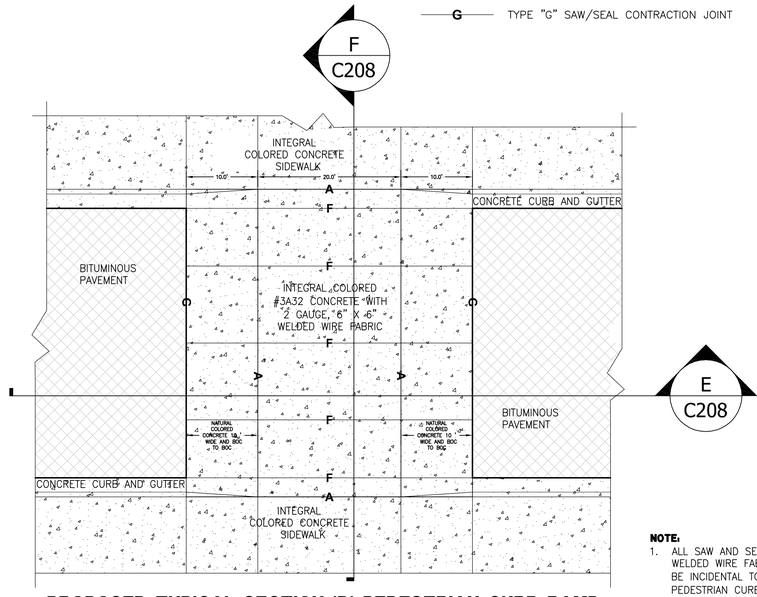


PROPOSED JOINT LAYOUT FOR SIDEWALK

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.

NOTE:
1. ALL SAW AND SEAL JOINTS, 2 GAUGE, 6" X 6" WELDED WIRE FABRIC AND DOWEL BARS SHALL BE INCIDENTAL TO MNDOT 2531.602/00030 PEDESTRIAN CURB RAMP (TYPE SPECIAL).
2. CONTRACTOR SHALL CONSTRUCT THREE TYPE 'F' CONTRACTION JOINTS PARALLEL TO CENTERLINE ON GRINDEN DRIVE AND TWO TYPE 'F' CONTRACTION JOINTS ON LOWER ACCESS ROAD.
3. TYPE 'D' DOWELED JOINTS SHOWN FOR CONSTRUCTION PURPOSES.
4. THE 10' INTEGRAL COLORED CONCRETE PEDESTRIAN CURB RAMPS TO BE CONSTRUCTED ACROSS GRINDEN DRIVE AND LOWER ACCESS ROAD SHALL BE PAID FOR UNDER MNDOT 2531.602/00030. AGGREGATES REQUIRED FOR BASE AND SUBBASE WILL BE PAID AT THEIR CORRESPONDING MNDOT NUMBER AND UNIT COST.
5. INTEGRAL COLORED CONCRETE ON PEDESTRIAN CURB RAMPS SHALL BE USED ON CENTER 20' ONLY. NATURAL COLORED CONCRETE SHALL BE USED ON THE 10' WIDE SECTIONS TO EACH SIDE OF THE CENTER 20' AND FROM BACK OF CURB (BOC) TO BACK OF CURB.

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REVISIONS

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DATE ISSUED: 01-24-11
REVIEWED BY: JEH
DRAWN BY: RDRE
DESIGNED BY: JEH

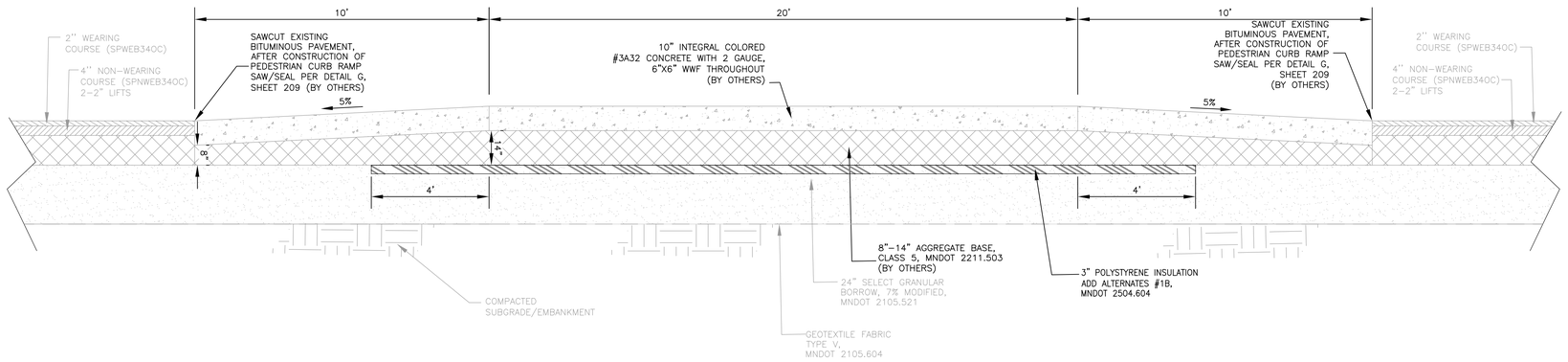
AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
SIDEWALK/CROSSWALK TYPICAL SECTION AND JOINT LAYOUT

SHEET NUMBER
C207

BID PACKAGE 2A ISSUED FOR BID

Drawing: T:\P\2131882.099 DLH Terminal Design Phase 2\TERMINAL BID PKG 2A\C\DLH-C207.dwg Plotted on: 1/28/2011 9:08 AM Plotted by: Erdmann, Ryan

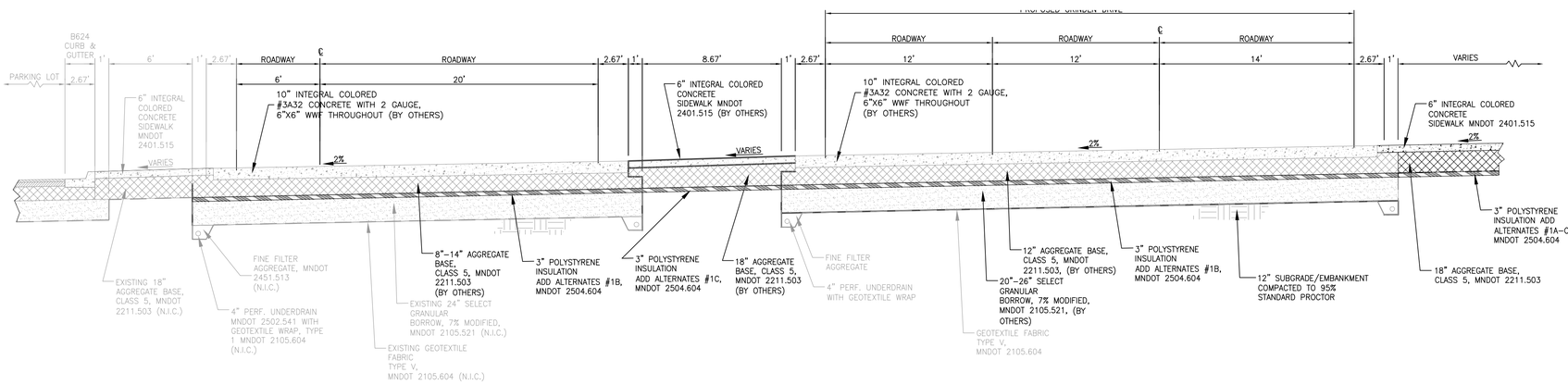


PROPOSED HEATED PAVEMENTS TYPICAL SECTION 'E' PEDESTRIAN CURB RAMP - LOWER ACCESS ROAD (TYPE SPECIAL)

N.T.S.

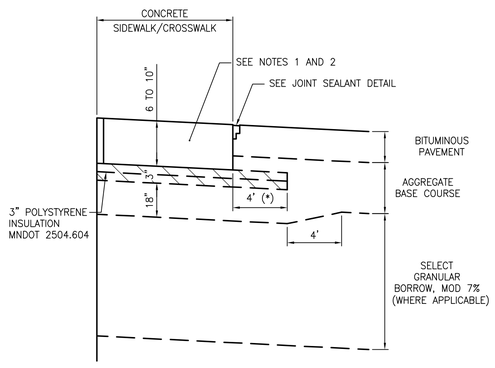
NOTE:

1. ALL SAW AND SEAL JOINTS, 2 GAUGE, 6" X 6" WELDED WIRE FABRIC AND DOWEL BARS SHALL BE INCIDENTAL TO MNDOT 2531.602/00030 PEDESTRIAN CURB RAMP (TYPE SPECIAL), BY OTHERS.
2. SEE SHEET C207 FOR JOINT TYPE, AND JOINT SPACING.
3. THE 10" INTEGRAL COLORED CONCRETE PEDESTRIAN CURB RAMPS TO BE CONSTRUCTED ACROSS GRINDEN DRIVE AND LOWER ACCESS ROAD SHALL BE PAID FOR UNDER MNDOT 2531.602/00030. AGGREGATES REQUIRED FOR BASE AND SUBBASE WILL BE PAID AT THEIR CORRESPONDING MNDOT NUMBER AND UNIT COST, (BY OTHERS).



PROPOSED HEATED PAVEMENTS TYPICAL SECTION 'F' PEDESTRIAN CURB RAMP (TYPE SPECIAL)

N.T.S.



NOTES:

1. SEE MECHANICAL DRAWINGS FOR SLAB HEATING SYSTEM REQUIREMENTS.
2. SEE STRUCTURAL DRAWINGS FOR FOUNDATION WALL PENETRATION. FOR SLAB REINFORCEMENT AND JOINTING DETAILS SEE SHEET C207, C209.
3. LAYERING OF 2 OR 3 SHEETS OF POLYSTYRENE INSULATION TO ARRIVE AT 3" IS PERMITTED WITH JOINTS OFFSET A MINIMUM OF 6".

(*) WHEREVER POSSIBLE WITHOUT DEMOLITION OF EXISTING PAVEMENTS, CURB AND GUTTER, ETC.

CONSTRUCTION DETAIL - HEATED CONCRETE (ADD ALTERNATES #1A-C)

N.T.S.

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DATE ISSUED: 01-24-11
REVIEWED BY: JEH
DRAWN BY: RDRE
DESIGNED BY: JEH

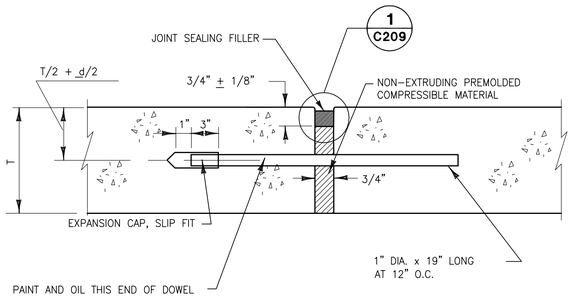
AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
TYPICAL PAVEMENT SECTIONS

SHEET NUMBER
C208

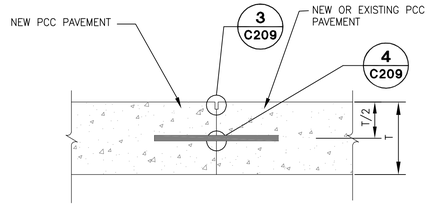
BID PACKAGE 2A ISSUED FOR BID

Drawing: T:\P\2131882.099 DLH Terminal Design Phase 2\TERMINAL BID PKG 2A\C\DLH-C208.dwg Plotted on: 1/28/2011 9:18 AM Plotted by: Erdmann, Ryan

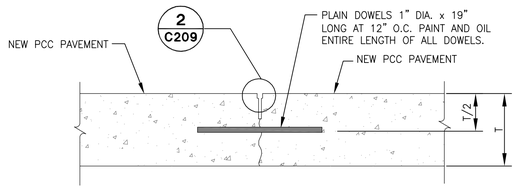


A TYPE A - DOWELED JOINT
N.T.S.

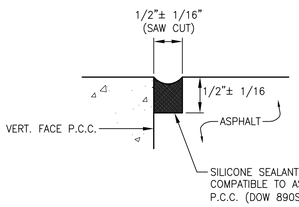
NOTE:
ALL JOINTS MUST BE ADEQUATELY CLEANED AFTER SAWCUTTING, IMMEDIATELY PRIOR TO THE INSTALLATION OF JOINT SEALANT.



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

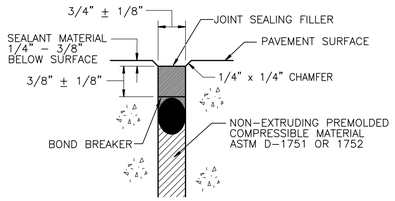


F TYPE F CONTRACTION JOINT DETAIL
N.T.S.

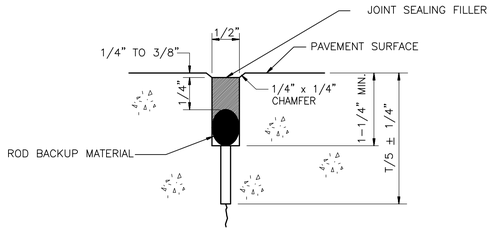


G TYPICAL SAW/SEAL CONTRACTION JOINT DETAIL
N.T.S.

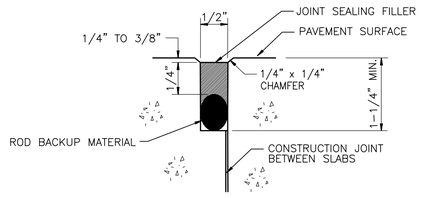
NOTE:
THE CONTRACTOR SHALL FORM THE P.C.C. TO PROVIDE A VERTICAL FACE AFTER PLACEMENT OF ASPHALT, THE CONTRACTOR SHALL SAW AND SEAL, AS SHOWN.



DETAIL 1 - EXPANSION JOINT
N.T.S.

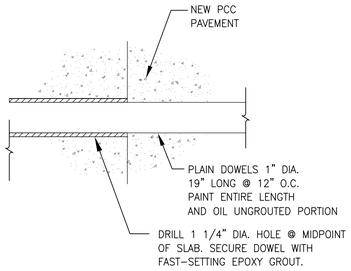


DETAIL 2 - CONTRACTION JOINT
N.T.S.

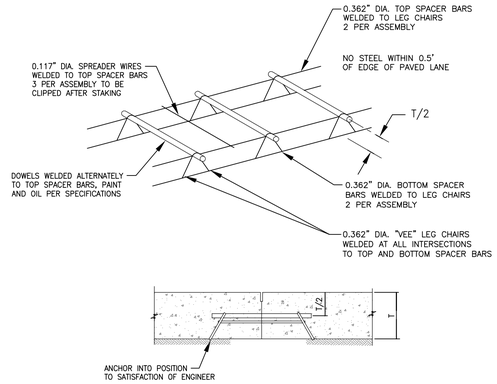


DETAIL 3 - CONSTRUCTION JOINT
N.T.S.

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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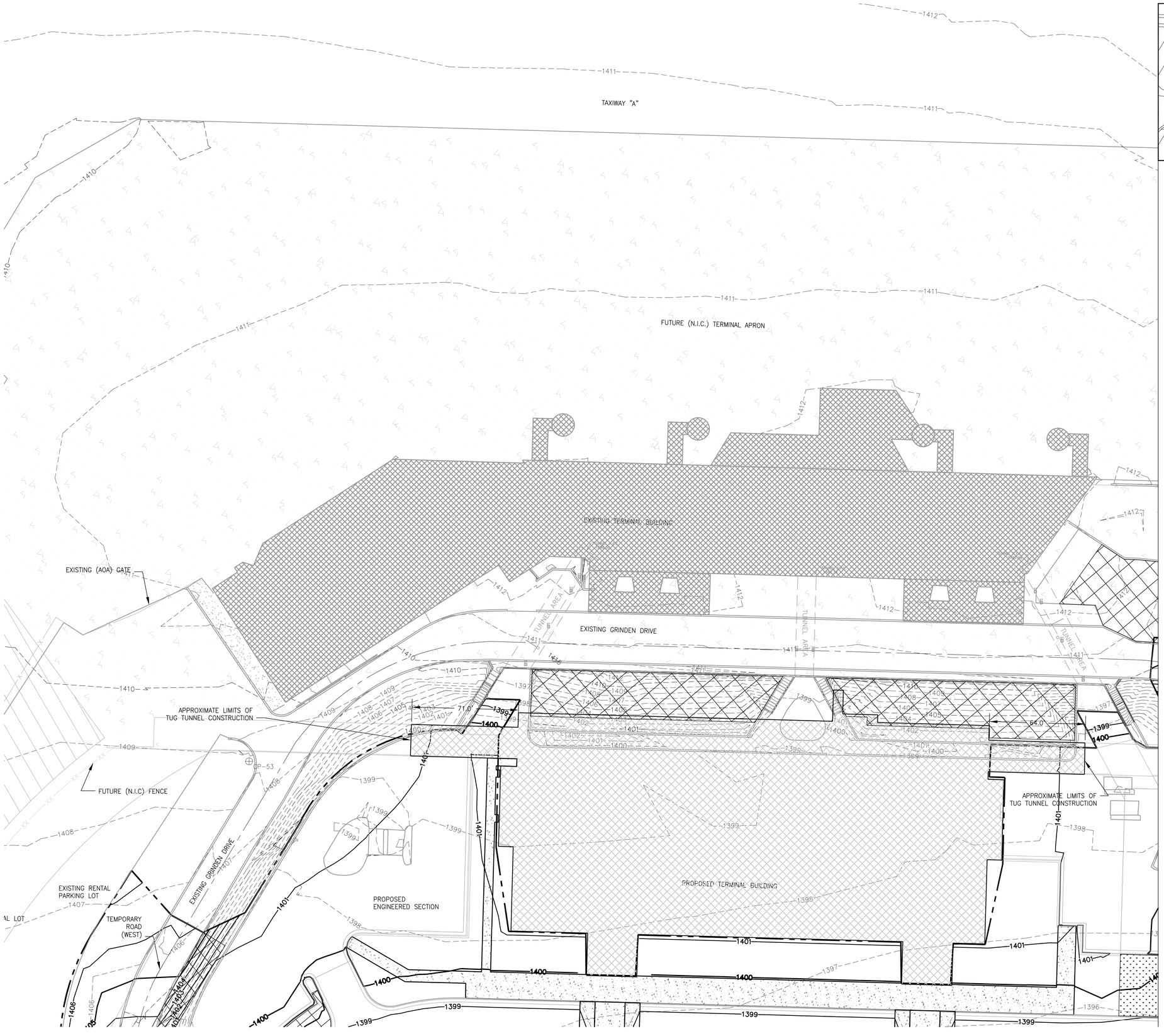
AEP PROJECT NUMBER
213-1882-091

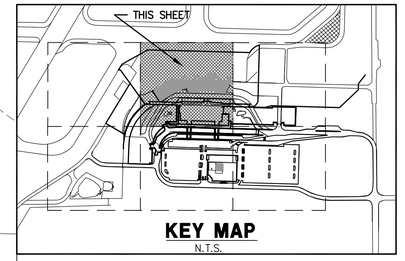
SHEET TITLE
CONCRETE PAVEMENT JOINT DETAILS

SHEET NUMBER
C209

BID PACKAGE 2A ISSUED FOR BID

Drawing: T:\P\2131882.099 DLH Terminal Design Phase 2\TERMINAL BID PKG 2A\C\DLH-C209.dwg Plotted on: 1/21/2011 10:15 AM Plotted by: Erdmann, Ryan





KEY MAP
N.T.S.

NORTH

0 30' 60'

GRADING AND EROSION CONTROL LEGEND

- 1270 — PROPOSED MAJOR CONTOUR (5')
- 1267 — PROPOSED MINOR CONTOUR (1')
- 1270 — EXISTING MAJOR CONTOUR (5')
- 1268 — EXISTING MINOR CONTOUR (1')
- PROPOSED GRADING LIMITS
- SF — SILT FENCE TYPE: MACHINE SLICED
- CLASS III RIP RAP W/ TYPE V FABRIC
- RAPID STABILIZATION METHOD #4 (SPEC 2575.3)
- TYPE 6 HYDRO MULCH(SPEC 5884)
- SOD

GRADING AND EROSION CONTROL NOTES

1. THE CONTOURS IN THESE PLANS REPRESENT THE ULTIMATE FINISH GRADE ELEVATION FOR PAVING AND TURF AREAS.

2. THIS SHEET IS PROVIDED TO SHOW THE APPROXIMATE LIMITS OF TUG TUNNEL CONSTRUCTION AND APPROXIMATE GRADES AROUND THE PROPOSED TUNNEL AREA.

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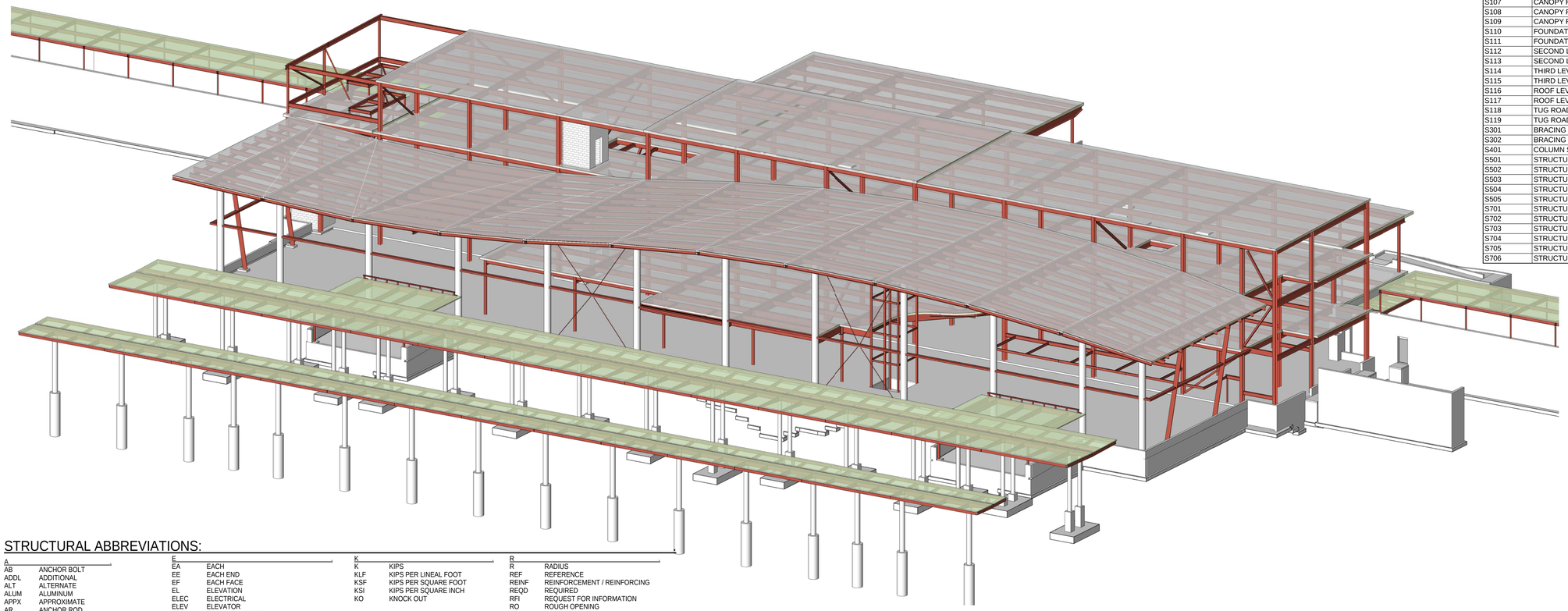
SHEET TITLE
GRADING AND EROSION PLAN (FOR REFERENCE ONLY)

SHEET NUMBER
C402

BID PACKAGE 2A ISSUED FOR BID

Drawing: T:\P\2131882.099 DLH Terminal Design Phase 2\TERMINAL BID PKG 2A\C\DLH-C402.dwg Plotted on: 1/21/2011 10:18 AM Plotted by: Erdmann, Ryan



SHEET NUMBER	SHEET NAME
S001	TITLE SHEET
S002	GENERAL STRUCTURAL NOTES
S003	GENERAL STRUCTURAL NOTES
S101	OVERALL FIRST LEVEL FLOOR PLAN
S102	OVERALL SECOND LEVEL FLOOR PLAN
S103	OVERALL THIRD LEVEL FLOOR PLAN
S104	OVERALL ROOF LEVEL PLAN
S106	CANOPY FOUNDATION PLAN - AREA A
S107	CANOPY FOUNDATION PLAN - AREA B
S108	CANOPY ROOF FRAMING PLAN - AREA A
S109	CANOPY ROOF FRAMING PLAN - AREA B
S110	FOUNDATION PLAN - AREA A
S111	FOUNDATION PLAN - AREA B
S112	SECOND LEVEL FRAMING PLAN - AREA A
S113	SECOND LEVEL FRAMING PLAN - AREA B
S114	THIRD LEVEL FRAMING PLAN - AREA A
S115	THIRD LEVEL FRAMING PLAN - AREA B
S116	ROOF LEVEL FRAMING PLAN - AREA A
S117	ROOF LEVEL FRAMING PLAN - AREA B
S118	TUG ROAD FOUNDATION PLAN
S119	TUG ROAD ROOF FRAMING PLAN
S301	BRACING ELEVATIONS AND DETAILS
S302	BRACING ELEVATIONS AND DETAILS
S401	COLUMN SCHEDULE AND DETAILS
S501	STRUCTURAL DETAILS
S502	STRUCTURAL DETAILS
S503	STRUCTURAL DETAILS
S504	STRUCTURAL DETAILS
S505	STRUCTURAL DETAILS
S701	STRUCTURAL DETAILS
S702	STRUCTURAL DETAILS
S703	STRUCTURAL DETAILS
S704	STRUCTURAL DETAILS
S705	STRUCTURAL DETAILS
S706	STRUCTURAL DETAILS

STRUCTURAL ABBREVIATIONS:

A	
AB	ANCHOR BOLT
ADDL	ADDITIONAL
ALT	ALTERNATE
ALUM	ALUMINUM
APPX	APPROXIMATE
AR	ANCHOR ROD
ARCH	ARCHITECT

B	
BDE	BOTTOM OF DECK ELEVATION
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOD	BOTTOM OF DECK
BOT	BOTTOM
BP	BEARING PLATE
BR	BOTTOM REINFORCING
BRDG	BRIDGING
BRG	BEARING
BTWN	BETWEEN

C	
CANTL	CANTILEVER
C/C	CENTER TO CENTER
CIP	CAST IN PLACE
CGS	CENTER OF GRAVITY STRAND
CJ	CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN(S)	CONNECTION(S)
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER

D	
d	NAIL DIAMETER
db	BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBE	DECK BEARING ELEVATION
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLITION
DET	DETAIL
DF	DOUGLAS FIR-LARCH
DIA	DIAMETER
DL	DEAD LOAD

E	
EA	EACH
EE	EACH END
EF	EACH FACE
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EJ	EXPANSION JOINT
EJBE	EXISTING JOIST BEARING ELEVATION
EMBED	EMBEDMENT
ENG	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
ETBE	EXISTING TOP OF BEAM ELEVATION
ETDE	EXISTING TOP OF DECK ELEVATION
ETFE	EXISTING TOP OF FOOTING ELEVATION
ETPCE	EXISTING TOP OF PILE CAP ELEVATION
ETPE	EXISTING TOP OF PIER ELEVATION
ETSE	EXISTING TOP OF SLAB ELEVATION
ETWE	EXISTING TOP OF WALL ELEVATION
EW	EACH WAY
E-W	EAST - WEST DIRECTION
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F	
FDN	FOUNDATION
FFE	FINISHED FLOOR ELEVATION
FLR	FLOOR
FP	FULL PENETRATION
FRMG	FRAMING
FS	FOOTING STEP
FT	FEET
FTG	FOOTING

G	
GA	GAGE/GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GEN	GENERAL
GL	GLUE LAMINATED TIMBER
GLB	GLUE LAMINATED BEAM
GR	GRADE
GSN	GENERAL STRUCTURAL NOTES
GYP BD	GYPSUM BOARD

H	
HDR	HEADER
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HSA	HEADED STUD ANCHOR
HS	HEADED STUD
HSS	HOLLOW STRUCTURAL SHAPE
HT	HEIGHT

I	
ID	INSIDE DIAMETER
INT	INTERIOR
ISF	INSIDE FACE

J	
JT	JOINT
JBE	JOIST BEARING ELEVATION
JST	JOIST

K	
K	KIPS
KLF	KIPS PER LINEAL FOOT
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
KO	KNOCK OUT

L	
LB(S)	POUND(S)
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LP	LOW POINT
LSL	LAMINATED STRAND LUMBER
LTL	LINTEL
LG	LIGHT GUAGE
LW	LIGHT WEIGHT
LVL	LAMINATED VENEER LUMBER

M	
MAS	MASONRY
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL AND PLUMBING
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTL	METAL

N	
NA	NOT APPLICIABLE
NF	NEAR FACE
NIC	NOT IN CONTRACT
NS	NEAR SIDE
N-S	NORTH - SOUTH DIRECTION
NTS	NOT TO SCALE
NW	NORMAL WEIGHT

O	
OC	ON CENTER
OD	OUTSIDE DIAMETER
OSF	OUTSIDE FACE
OPG	OPENING
OPP	OPPOSITE

P	
PAF	POWER ACTUATED FASTENER
PC	PRECAST CONCRETE
PEN	PENETRATION
PERP	PERPENDICULAR
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	POST TENSIONED

Q	
QTY	QUANTITY

R	
R	RADIUS
REF	REFERENCE
REINF	REINFORCEMENT / REINFORCING
REQD	REQUIRED
RFI	REQUEST FOR INFORMATION
RO	ROUGH OPENING
RTU	ROOF TOP UNIT

S	
SB	SOIL BORING
SC	SLIP CRITICAL
SCHED	SCHEDULE
SER	STRUCTURAL ENGINEER OF RECORD
SIM	SIMILAR
SK	SKETCH
SOG	SLAB ON GRADE
SPA	SPACES
SPEC	SPECIFICATION
SF	SQUARE FOOT
SPF	SPRUCE PINE FIR
SSK	STRUCTURAL SKETCH
STD	STANDARD
STIFF	STIFFENER
STEEL	STEEL
STRUCT	STRUCTURE / STRUCTURAL
SYM	SYMMETRICAL
SYP	SOUTHERN YELLOW PINE

T	
T/B	TOP AND BOTTOM
T/G	TOUNGE AND GROOVED
TBE	TOP OF BEAM ELEVATION
TDE	TOP OF DECK ELEVATION
TEMP	TEMPORARY
TFE	TOP OF FOOTING ELEVATION
TGBE	TOP OF GRADE BEAM ELEVATION
TJ	TRUSS JOIST
TPCE	TOP OF PILE CAP ELEVATION
TPE	TOP OF PIER ELEVATION
TR	TOP REINFORCING
TRANS	TRANSVERSE
TSE	TOP OF SLAB ELEVATION
TWE	TOP OF WALL ELEVATION
TYP	TYPICAL

U	
UNEX	UNEXCAVATED
UNO	UNLESS NOTED OTHERWISE

V	
VERT	VERTICAL
VIF	VERIFY IN FIELD

W	
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WL	WIND LOAD
WP	WORK POINT
WS	WATERSTOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC

LEGENDS:

GENERAL:

BF1	INDICATES BRACE FRAME MARK NUMBER
FD	INDICATES APPROXIMATE LOCATION OF FLOOR DRAIN
L1	INDICATES LINTEL MARK NUMBER
RD	INDICATES APPROXIMATE LOCATION OF ROOF DRAIN

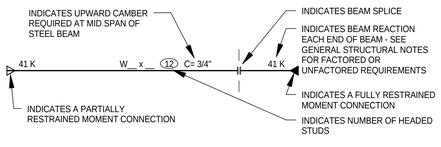
1	INDICATES KEY NOTE MARK NUMBER
	INDICATES SLAB STEP LOCATION
	INDICATES MATCH LINE
0	INDICATES NEW BUILDING GRID LINE
"LEVEL" / "ELEVATION"	ELEVATION MARKER
	SHADED AREA INDICATES EXISTING CONSTRUCTION
	INDICATES SPAN DIRECTION OF ELEMENT

FOUNDATION PLANS:

F1	INDICATES SPREAD FOOTING MARK NUMBER
P1	INDICATES PIER MARK NUMBER
WF1	INDICATES WALL FOOTING MARK NUMBER
	INDICATES APPROXIMATE LOCATION OF UNDERGROUND UTILITY
	INDICATES APPROXIMATE LOCATION OF DRAIN TILE

FS	INDICATES FOOTING STEP LOCATION
SB1	INDICATES APPROXIMATE LOCATION OF SOIL BORING

STEEL FRAMING SYSTEM:



STEEL BEAM

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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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

DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
TITLE SHEET

SHEET NUMBER
S001

BID PACKEAGE 2A ISSUED FOR BID

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	ATSM A615 Grade 60
Weldable	60,000 psi	ASTM A706 Grade 60

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

Controlled Low	1,200 psi (at 5 days)	Maximum
Strength Material (CLSM)	500 psi (at 5 days)	Minimum
Footings	4,000 psi	
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	50,000 psi	ASTM A992
Angles, Channels	36,000 psi	ASTM A36
Grade B Rectangular HSS	46,000 psi	ASTM A500
Grade B Round HSS	42,000 psi	ASTM A500
Grade B Steel Pipe	35,000 psi	ASTM A53
Plates, Bars	50,000 psi	ASTM A572 or A36 as indicated

Structural Fasteners:

Typical High-Strength Bolts	92,000 psi	ASTM A325
High-Strength Bolts as noted on plan	150,000 psi	ASTM A490
Grade 36 Anchor Rods, UNO	36,000 psi	ASTM F1554
Threaded Rods	36,000 psi	ASTM A36
Direct -Tension Indicator Washers as noted on plan		ASTM F959

Cold-formed Light Gauge Metal Framing (Fy):

Studs, Joists, Braces-16 ga. and heavier	50,000 psi	ASTM A653
Studs, Joists, Braces-18 ga. and lighter	33,000 psi	ASTM A653
Track, Channels and Accessories	33,000 psi	ASTM A653

DESIGN LOADS:
LATERAL LOADS:
Primary Frame Wind Data:

Basic Wind Speed:	90 mph
Wind Importance Factor:	1.15
Exposure:	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:	60 psf
Flat-Roof Snow Load, Pf:	46 psf
Snow Exposure Factor, Ce:	0.70
Snow Load Importance Factor, I:	1.1
Unbalanced/Drift Snow Load:	As required by ASCE 7

Floor Loads:

Live Load:	100 psf (not reducible)
Hanging loads at underside of 2nd floor:	40 psf superimposed

Stairs, Corridors and Lobbies: 100 psf (not reducible)
Stair Tread Concentrated Load: 300 lbs

Mechanical Rooms: 150 psf (not reducible)

2 Light Storage: 125 psf (not reducible)

Exterior Site Surcharge Loads:

Fire Trucks:	250 psf
Sidewalk:	250 psf
North terminal retaining wall and north tug tunnel retaining wall:	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 GTI 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.

1 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, ITWR 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.

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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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	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

DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
GENERAL STRUCTURAL NOTES

SHEET NUMBER
S002

BID PACKEAGE 2A ISSUED FOR BID

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, jambs, 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	☐	■	☐	☐	
1.2 Details	☐	■	☐	☐	
1.3 High-strength Bolts	☐	■	☐	☐	
2. Concrete					Table 1704.4
2.1 Reinforcing steel including Prestressing tendons	☐	■	☐	☐	
2.2 Bolts installed in concrete	■	☐	☐	☐	
2.3 Required design mix	☐	■	☐	☐	
2.4 Sampling	■	☐	☐	☐	
2.5 Shotcrete	☐	☐	■	☐	
2.6 Curing techniques	☐	■	☐	☐	
2.7 Prestressed concrete forces and grouting	☐	☐	■	☐	
2.8 Erection of precast concrete members	☐	☐	■	☐	
2.9 Verification of IN-SITU concrete strength	☐	☐	■	☐	
3. Masonry					
3.1 Level 1 Special Inspection *	☐	■	☐	☐	1704.5.1, 1704.5.2, Table 1704.5.1
3.2 Level 2 Special Inspection	☐	☐	■	☐	1704.5.3, Table 1704.5.3
4. Wood	☐	☐	■	☐	1704.6
5. Soils	■	☐	☐	☐	1704.7
6. Pile Foundations	☐	☐	■	☐	1704.8
7. Pier Foundations	☐	☐	■	☐	1704.9
8. Wall Panel and Veneers	☐	☐	☐	■	1704.10
9. Sprayed Fire-Resistant Materials	☐	☐	☐	■	1704.11
10. Exterior Insulation and Finish Systems (EIFS)	☐	☐	☐	■	1704.12
11. Special Cases	☐	☐	☐	■	1704.13
12. Smoke Control Systems	☐	☐	☐	■	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

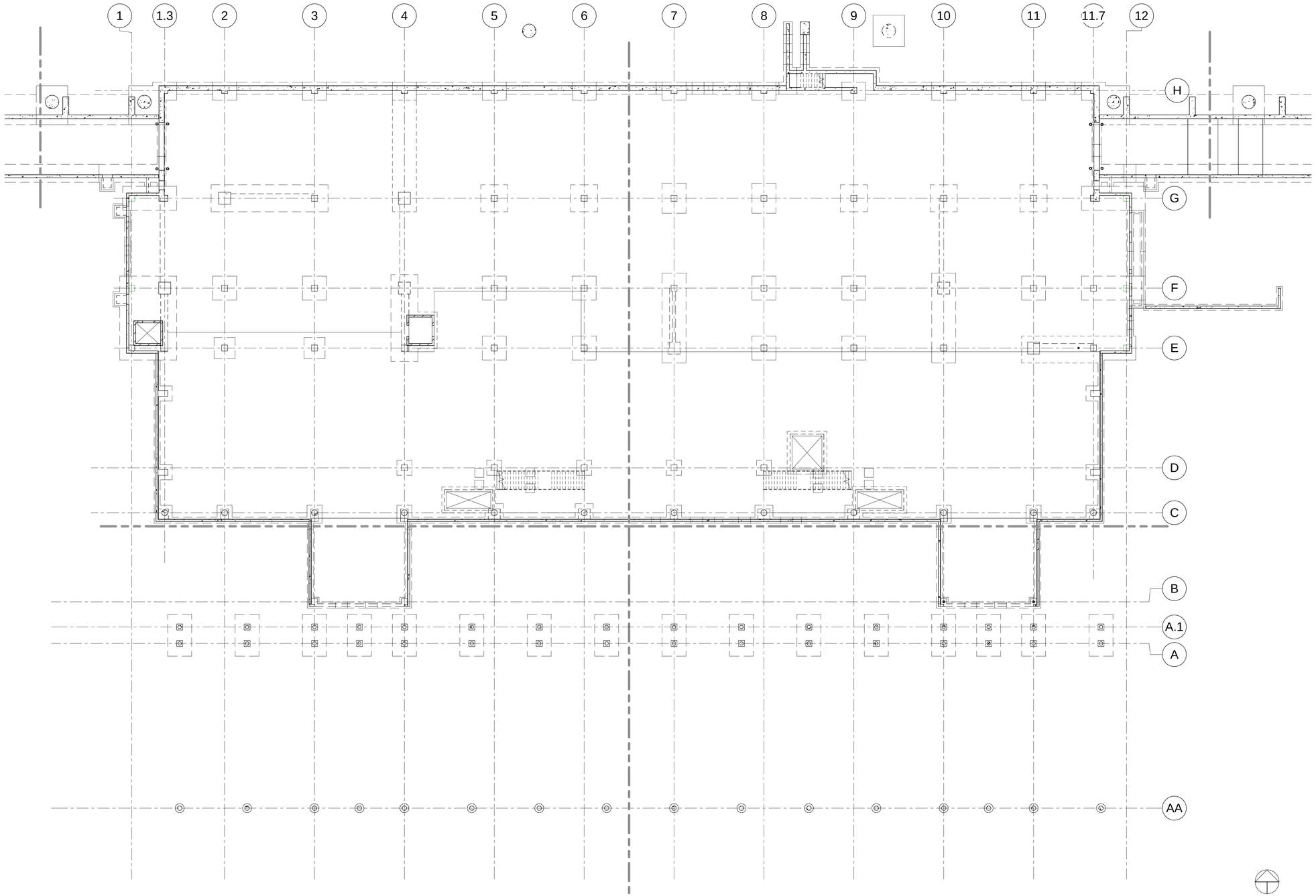
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
GENERAL STRUCTURAL NOTES

SHEET NUMBER
S003

BID PACKEAGE 2A ISSUED FOR BID



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

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DATE ISSUED: 01-24-11
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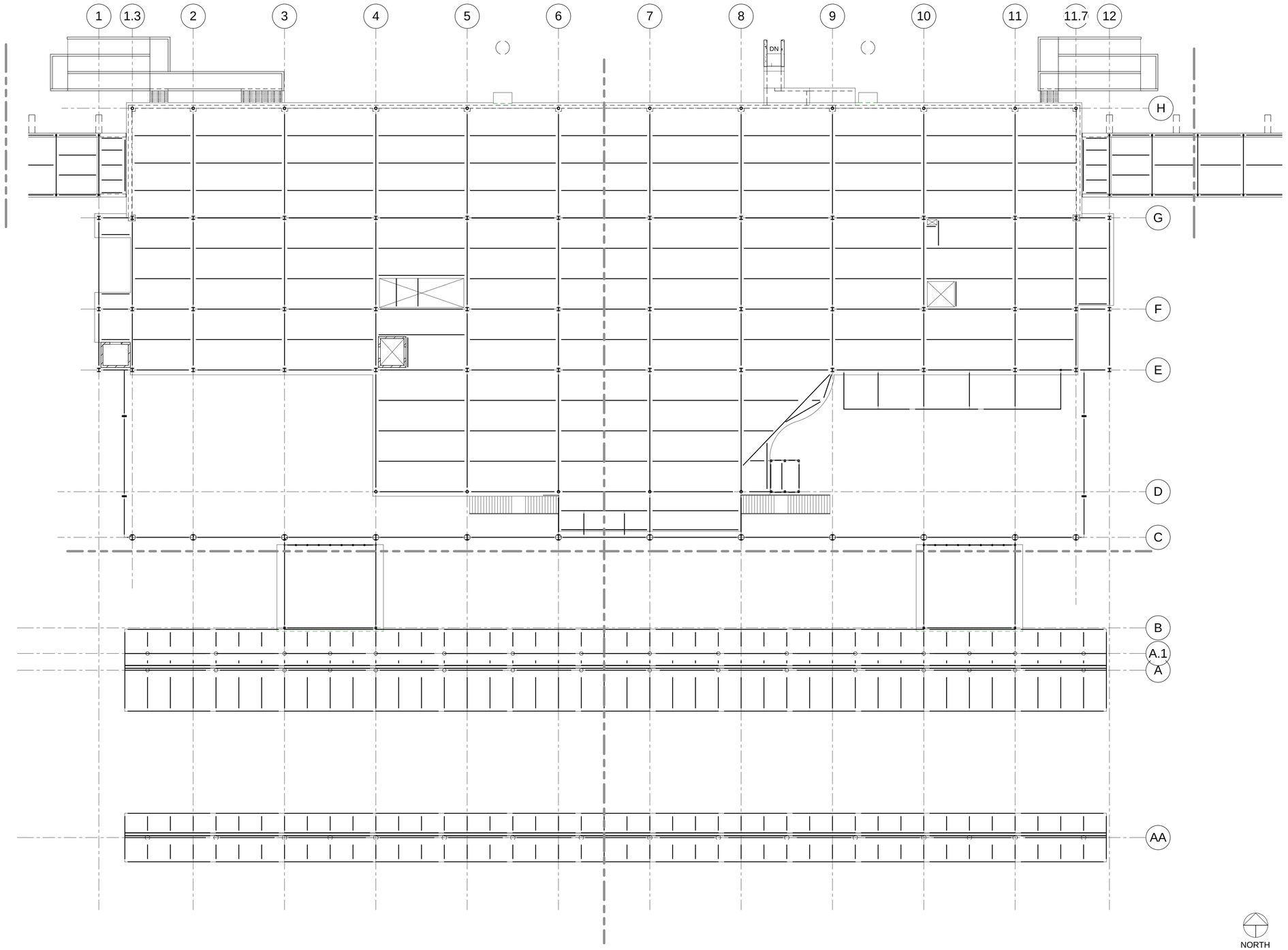
AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
OVERALL FIRST LEVEL FLOOR PLAN

SHEET NUMBER
S101

BID PACKEAGE 2A ISSUED FOR BID



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

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DATE ISSUED: 01-24-11
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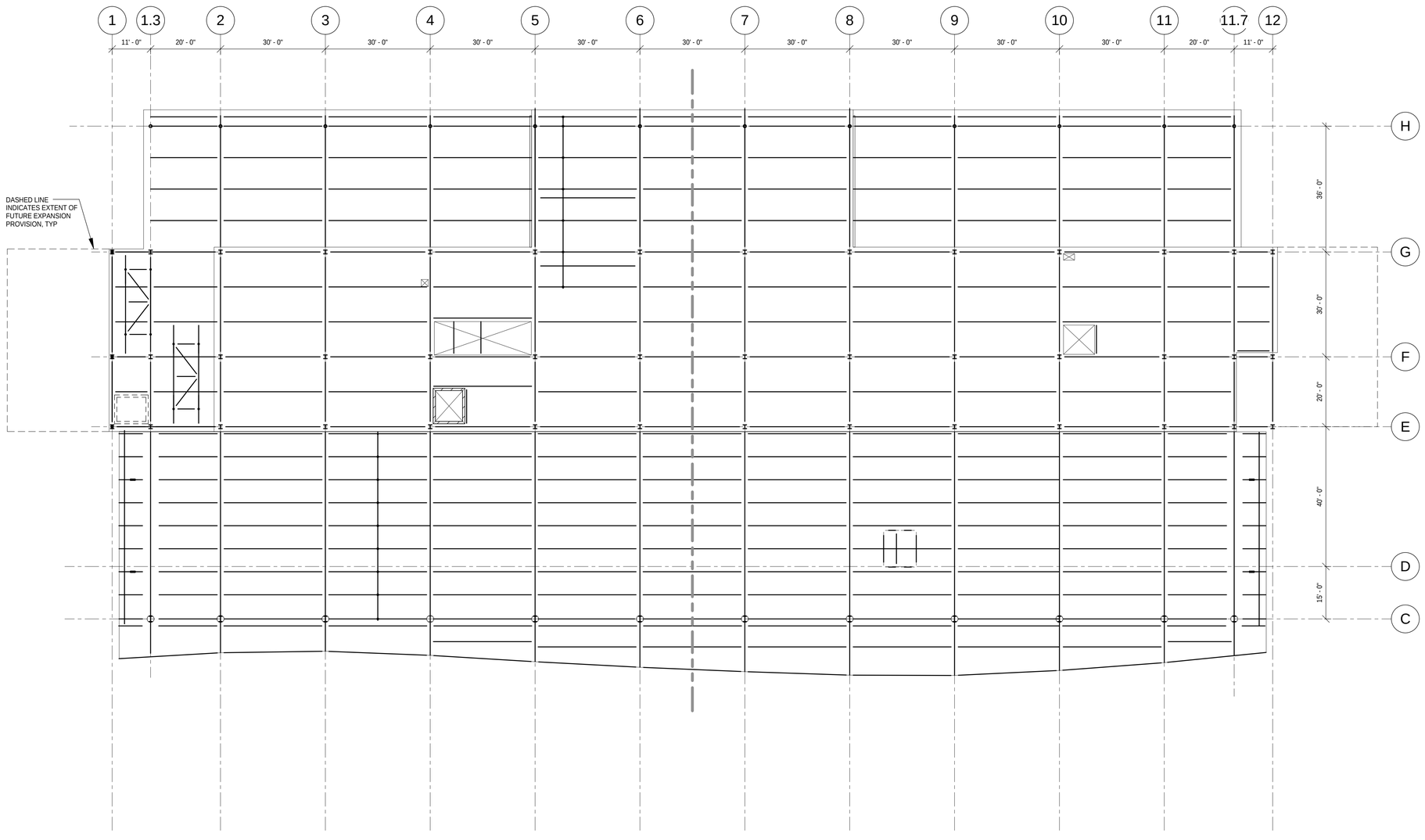
AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
OVERALL SECOND LEVEL FLOOR PLAN

SHEET NUMBER
S102

BID PACKEAGE 2A ISSUED FOR BID



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

NORTH

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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DATE ISSUED: 01-24-11
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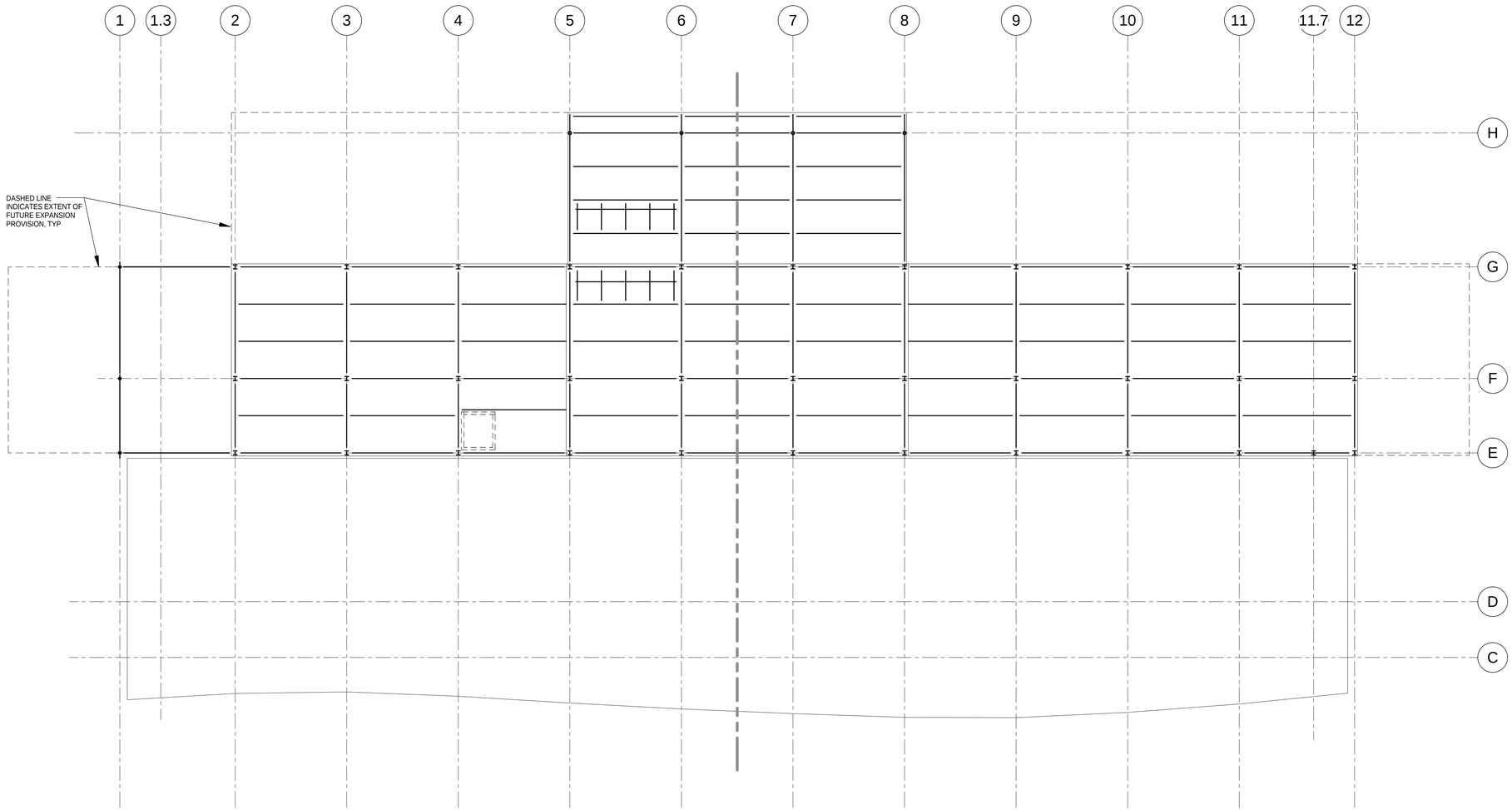
AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
OVERALL THIRD LEVEL FLOOR PLAN

SHEET NUMBER
S103

BID PACKEAGE 2A ISSUED FOR BID



NORTH

1 OVERALL ROOF PLAN
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AEP PROJECT NUMBER
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SHEET TITLE
OVERALL ROOF LEVEL PLAN

SHEET NUMBER
S104

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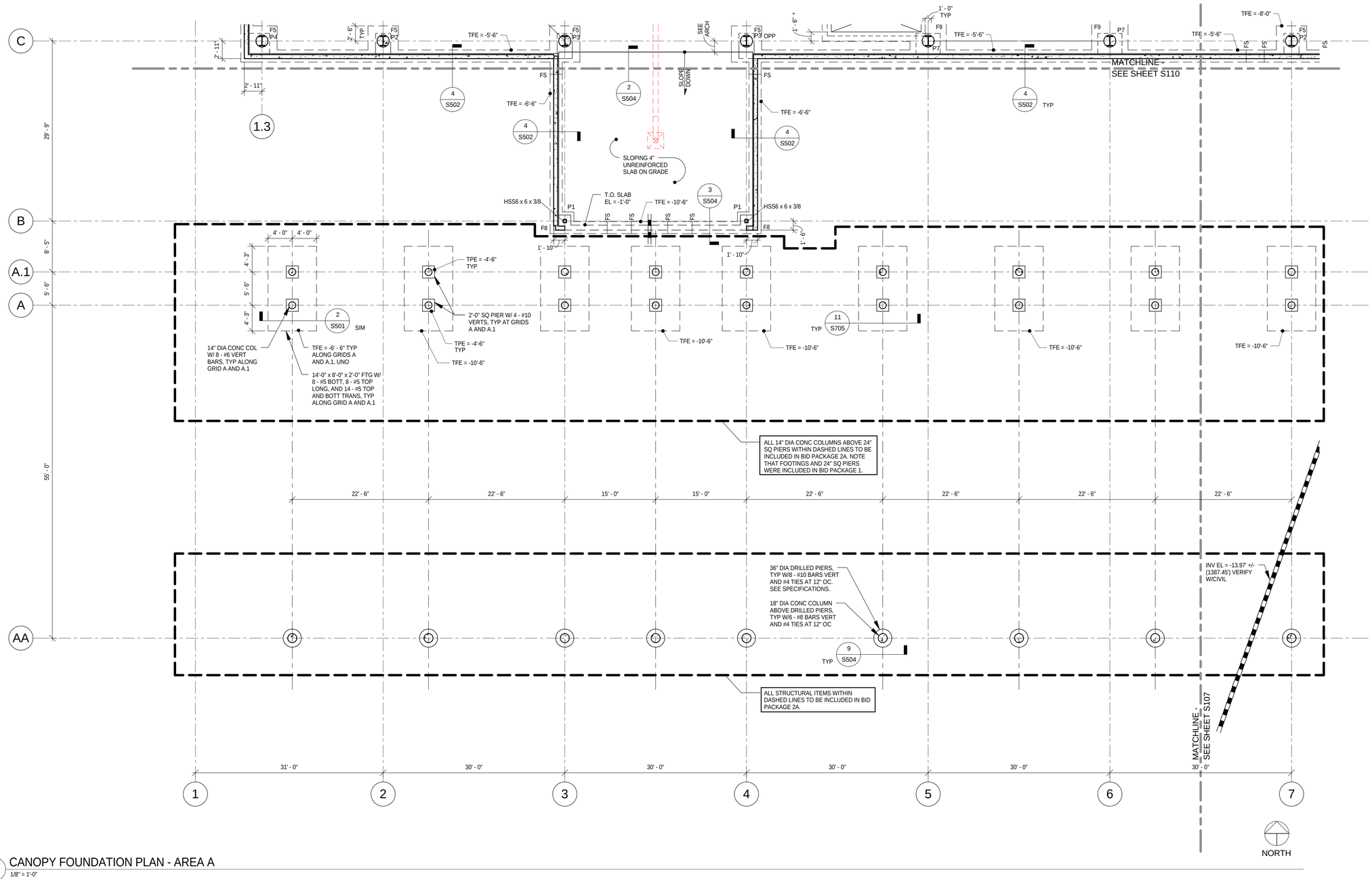

1 CANOPY FOUNDATION PLAN - AREA A

1/8" = 1'-0"

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

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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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
4	BUILDING PERMIT REVISIONS	11.12.10
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11

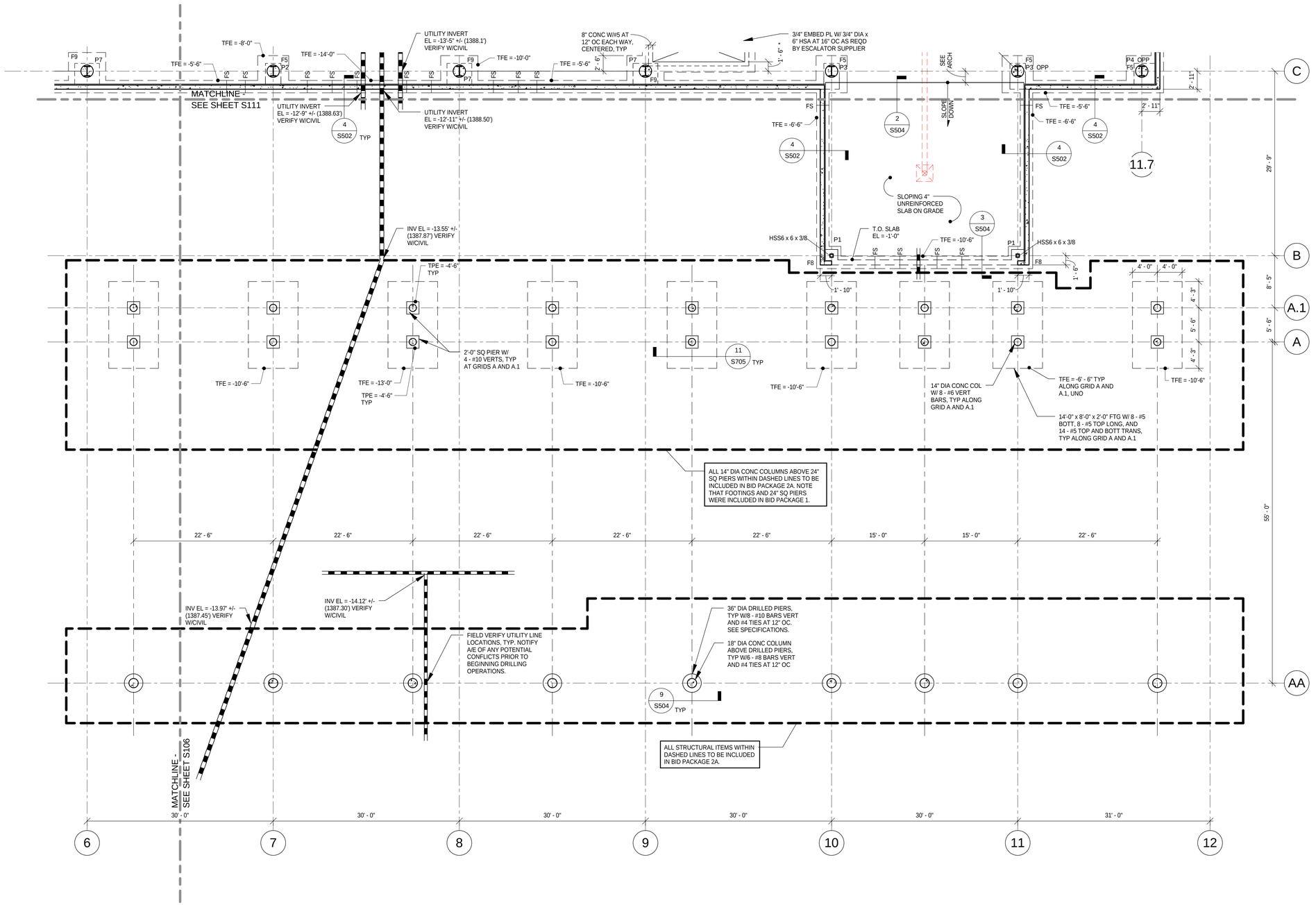
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
CANOPY FOUNDATION PLAN - AREA A

SHEET NUMBER
S106

BID PACKEAGE 2A ISSUED FOR BID



1 CANOPY FOUNDATION PLAN - AREA B

1/8" = 1'-0"

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

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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DULUTH INTERNATIONAL AIRPORT DULUTH, MN

NEW TERMINAL DESIGN

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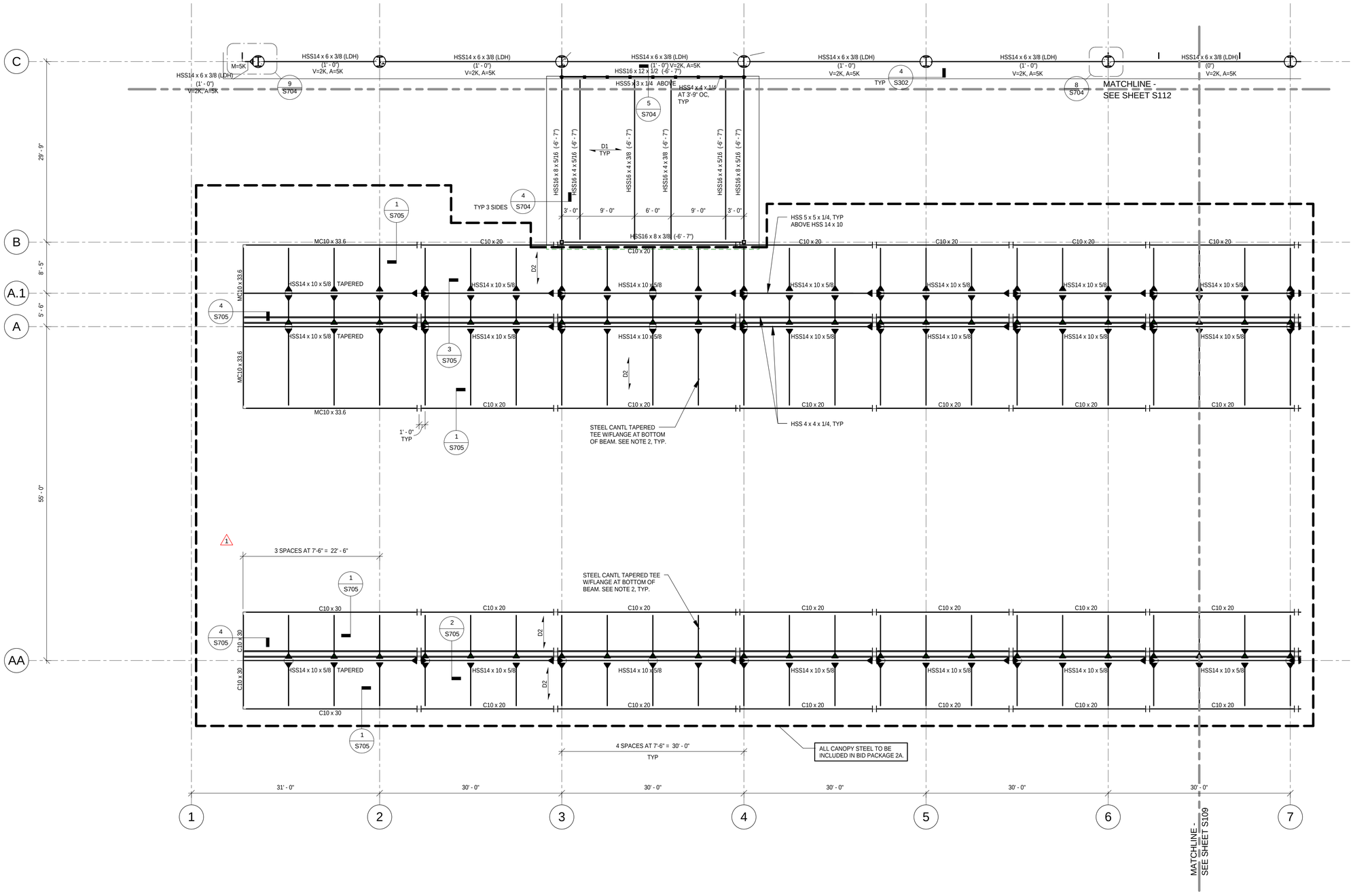
AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
CANOPY FOUNDATION PLAN - AREA B

SHEET NUMBER
S107

BID PACKEAGE 2A ISSUED FOR BID



1 CANOPY ROOF PLAN - AREA A

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

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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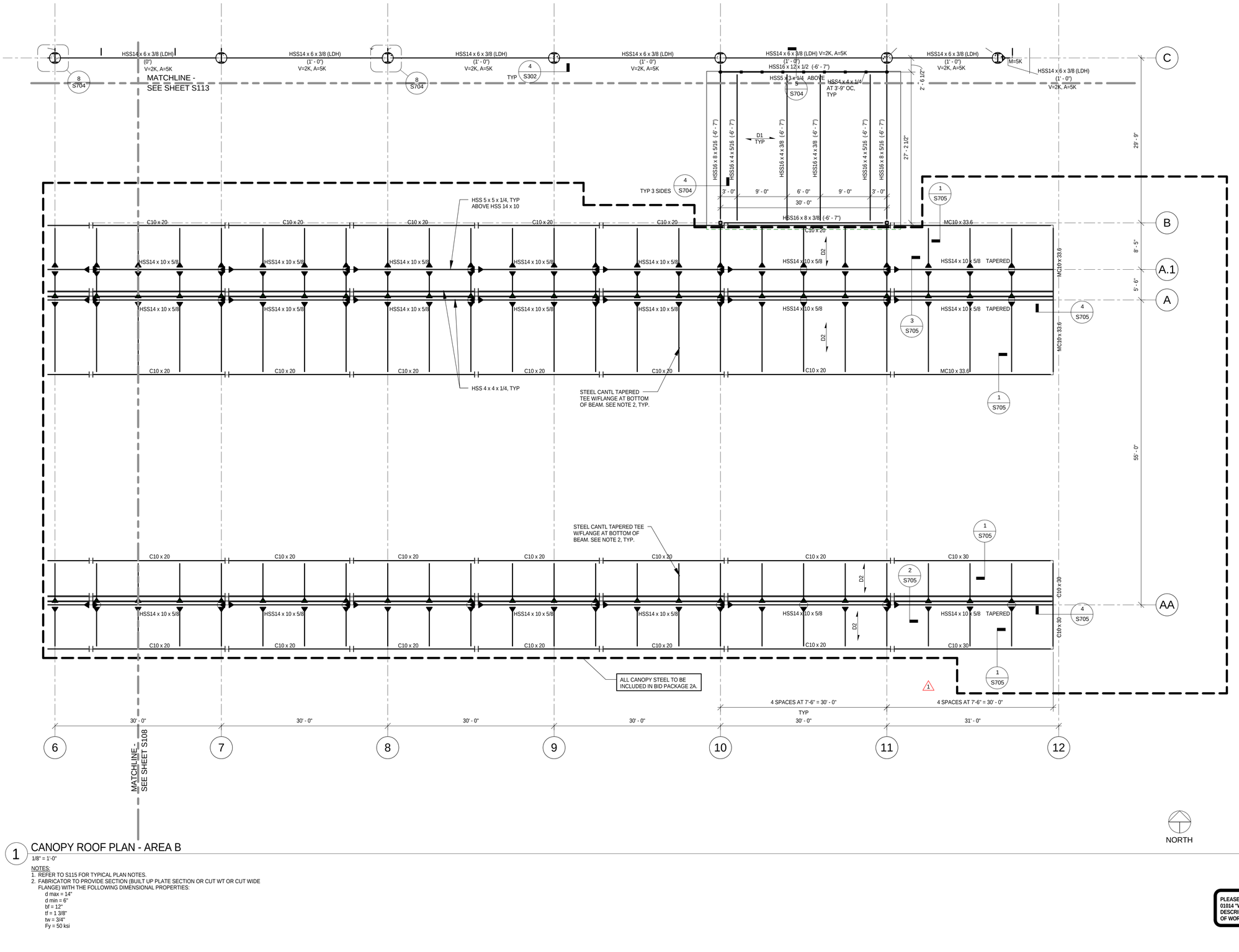
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
CANOPY ROOF FRAMING PLAN - AREA A

SHEET NUMBER
S108

BID PACKEAGE 2A ISSUED FOR BID



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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Signature:

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	BID PACKAGE 2A	01.24.11

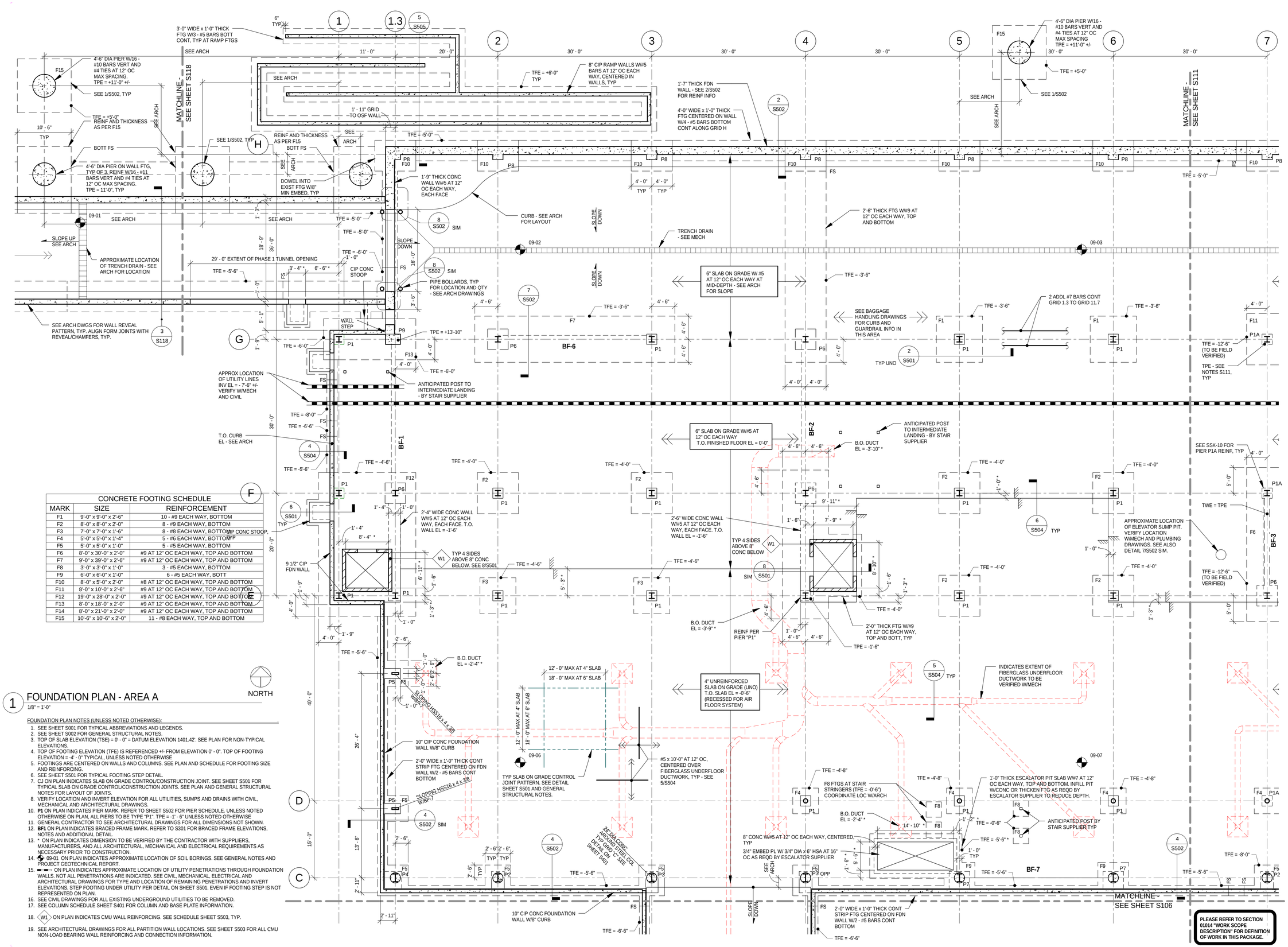
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
CANOPY ROOF FRAMING PLAN - AREA B

SHEET NUMBER
S109

BID PACKEAGE 2A ISSUED FOR BID



CONCRETE FOOTING SCHEDULE		
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, BOTT
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

NORTH

1 FOUNDATION PLAN - AREA A

1/8" = 1'-0"

FOUNDATION PLAN NOTES (UNLESS NOTED OTHERWISE):

1. SEE SHEET S001 FOR TYPICAL ABBREVIATIONS AND LEGENDS.
2. SEE SHEET S002 FOR GENERAL STRUCTURAL NOTES.
3. TOP OF SLAB ELEVATION (TSE) = 0' - 0" = DATUM ELEVATION 1401.42'. SEE PLAN FOR NON-TYPICAL ELEVATIONS.
4. TOP OF FOOTING ELEVATION (TFE) IS REFERENCED +/- FROM ELEVATION 0' - 0". TOP OF FOOTING ELEVATION = -4' - 0" TYPICAL, UNLESS NOTED OTHERWISE
5. FOOTINGS ARE CENTERED ON WALLS AND COLUMNS. SEE PLAN AND SCHEDULE FOR FOOTING SIZE AND REINFORCING.
6. SEE SHEET S501 FOR TYPICAL FOOTING STEP DETAIL.
7. 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.
8. VERIFY LOCATION AND INVERT ELEVATION FOR ALL UTILITIES, SUMPS AND DRAINS WITH CIVIL, MECHANICAL AND ARCHITECTURAL DRAWINGS.
10. **P1** ON PLAN INDICATES PIER MARK. REFER TO SHEET S502 FOR PIER SCHEDULE. UNLESS NOTED OTHERWISE ON PLAN, ALL PIERS TO BE TYPE "P1". TFE = -1' - 6" UNLESS NOTED OTHERWISE
11. GENERAL CONTRACTOR TO SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.
12. **BF1** ON PLAN INDICATES BRACED FRAME MARK. REFER TO S301 FOR BRACED FRAME ELEVATIONS, NOTES AND ADDITIONAL DETAIL.
13. * 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.
14. 09-01 ON PLAN INDICATES APPROXIMATE LOCATION OF SOIL BORINGS. SEE GENERAL NOTES AND PROJECT GEOTECHNICAL REPORT.
15. 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.
16. SEE CIVIL DRAWINGS FOR ALL EXISTING UNDERGROUND UTILITIES TO BE REMOVED.
17. SEE COLUMN SCHEDULE SHEET S401 FOR COLUMN AND BASE PLATE INFORMATION.
18. W1 ON PLAN INDICATES CMU WALL REINFORCING. SEE SCHEDULE SHEET S503, TYP.
19. SEE ARCHITECTURAL DRAWINGS FOR ALL PARTITION WALL LOCATIONS. SEE SHEET S503 FOR ALL CMU NON-LOAD BEARING WALL REINFORCING AND CONNECTION INFORMATION.

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
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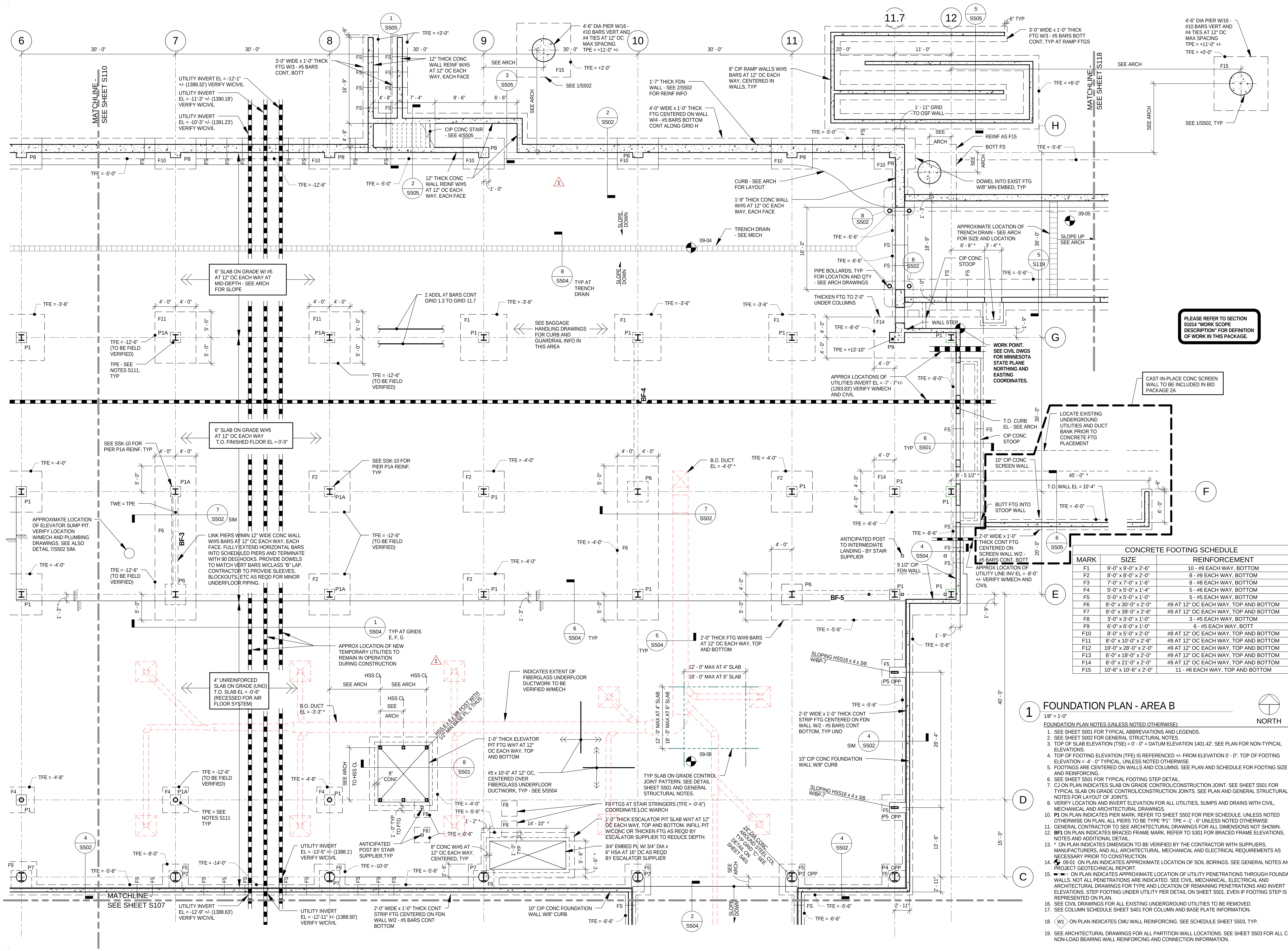
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
FOUNDATION PLAN - AREA A

SHEET NUMBER
S110

BID PACKEAGE 2A ISSUED FOR BID



CONCRETE FOOTING SCHEDULE

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, BOTT
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

1 FOUNDATION PLAN - AREA B

1/8" = 1'-0"

NORTH

FOUNDATION PLAN NOTES (UNLESS NOTED OTHERWISE):

1. SEE SHEET S001 FOR TYPICAL ABBREVIATIONS AND LEGENDS.
2. SEE SHEET S002 FOR GENERAL STRUCTURAL NOTES.
3. TOP OF SLAB ELEVATION (TSE) = 0' - 0" = DATUM ELEVATION 1401.42'. SEE PLAN FOR NON-TYPICAL ELEVATIONS.
4. TOP OF FOOTING ELEVATION (TFE) IS REFERENCED +/- FROM ELEVATION 0' - 0". TOP OF FOOTING ELEVATION = -4' - 0" TYPICAL, UNLESS NOTED OTHERWISE
5. FOOTINGS ARE CENTERED ON WALLS AND COLUMNS. SEE PLAN AND SCHEDULE FOR FOOTING SIZE AND REINFORCING.
6. SEE SHEET S501 FOR TYPICAL FOOTING STEP DETAIL.
7. 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.
8. VERIFY LOCATION AND INVERT ELEVATION FOR ALL UTILITIES, SUMPS AND DRAINS WITH CIVIL, MECHANICAL AND ARCHITECTURAL DRAWINGS.
10. **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
11. GENERAL CONTRACTOR TO SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.
12. **BF1** ON PLAN INDICATES BRACED FRAME MARK. REFER TO S301 FOR BRACED FRAME ELEVATIONS, NOTES AND ADDITIONAL DETAIL.
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16. SEE CIVIL DRAWINGS FOR ALL EXISTING UNDERGROUND UTILITIES TO BE REMOVED.
17. SEE COLUMN SCHEDULE SHEET S401 FOR COLUMN AND BASE PLATE INFORMATION.
18. W1 ON PLAN INDICATES CMU WALL REINFORCING. SEE SCHEDULE SHEET S503, TYP.
19. 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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SHEET TITLE
FOUNDATION PLAN - AREA B

SHEET NUMBER
S111

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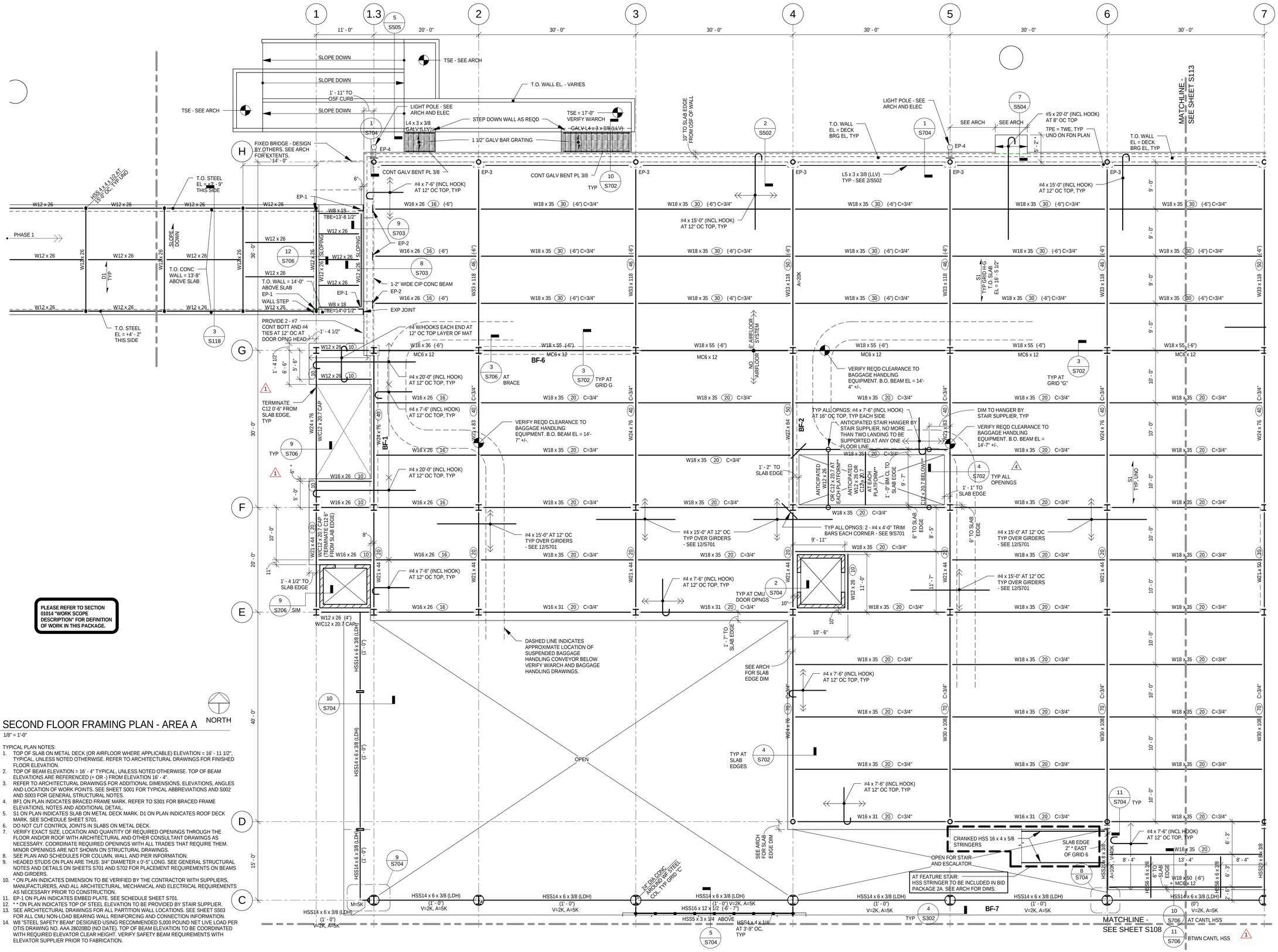

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NORTH

1 SECOND FLOOR FRAMING PLAN - AREA A

1/8" = 1'-0"

TYPICAL PLAN NOTES:

1. TOP OF SLAB ON METAL DECK (OR AIRFLOOR WHERE APPLICABLE) ELEVATION = 16' - 11 1/2", TYPICAL, UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR ELEVATION.
2. TOP OF BEAM ELEVATION = 16' - 4" TYPICAL, UNLESS NOTED OTHERWISE. TOP OF BEAM ELEVATIONS ARE REFERENCED (+ OR -) FROM ELEVATION 16' - 4".
3. 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.
4. BF1 ON PLAN INDICATES BRACED FRAME MARK. REFER TO S301 FOR BRACED FRAME ELEVATIONS, NOTES AND ADDITIONAL DETAIL.
5. S1 ON PLAN INDICATES SLAB ON METAL DECK MARK. D1 ON PLAN INDICATES ROOF DECK MARK. SEE SCHEDULE SHEET S701.
6. DO NOT CUT CONTROL JOINTS IN SLABS ON METAL DECK.
7. 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.
8. SEE PLAN AND SCHEDULES FOR COLUMN, WALL AND PIER INFORMATION.
9. 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.
10. * 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.
11. EP-1 ON PLAN INDICATES EMBED PLATE. SEE SCHEDULE SHEET S701.
12. * * ON PLAN INDICATES TOP OF STEEL ELEVATION TO BE PROVIDED BY STAIR SUPPLIER.
13. SEE ARCHITECTURAL DRAWINGS FOR ALL PARTITION WALL LOCATIONS. SEE SHEET S503 FOR ALL CMU NON-LOAD BEARING WALL REINFORCING AND CONNECTION INFORMATION.
14. WR "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. VERIFY SAFETY BEAM REQUIREMENTS WITH ELEVATOR SUPPLIER PRIOR TO FABRICATION.

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

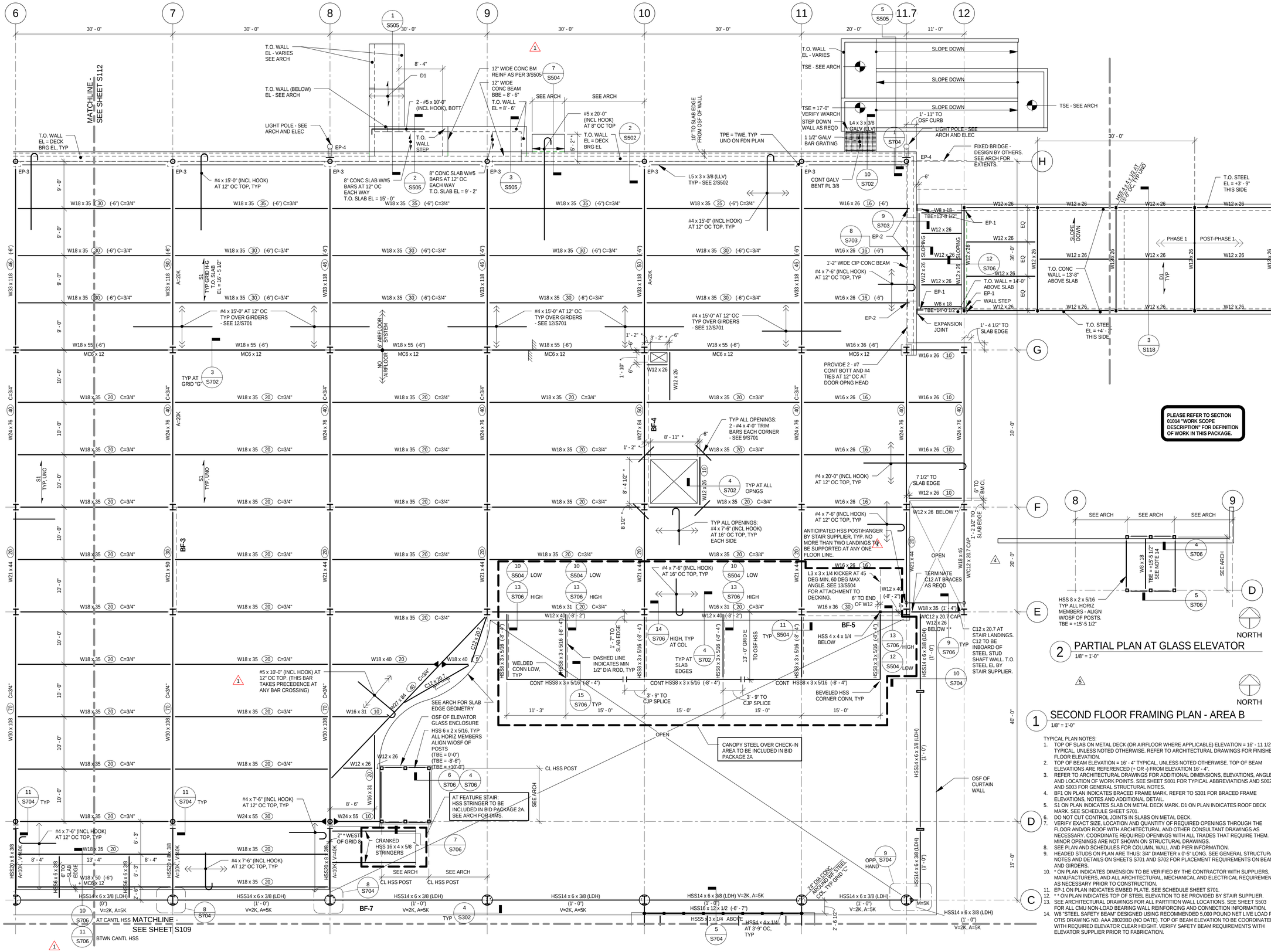
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
SECOND LEVEL FRAMING PLAN - AREA A

SHEET NUMBER
S112

BID PACKEAGE 2A ISSUED FOR BID



2 PARTIAL PLAN AT GLASS ELEVATOR

1/8" = 1'-0"

1 SECOND FLOOR FRAMING PLAN - AREA B

1/8" = 1'-0"

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

TYPICAL PLAN NOTES:

1. TOP OF SLAB ON METAL DECK (OR AIRFLOOR WHERE APPLICABLE) ELEVATION = 16' - 11 1/2", TYPICAL, UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR ELEVATION.
2. TOP OF BEAM ELEVATION = 16' - 4" TYPICAL, UNLESS NOTED OTHERWISE. TOP OF BEAM ELEVATIONS ARE REFERENCED (+ OR -) FROM ELEVATION 16' - 4".
3. 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.
4. BF1 ON PLAN INDICATES BRACED FRAME MARK. REFER TO S301 FOR BRACED FRAME ELEVATIONS, NOTES AND ADDITIONAL DETAIL.
5. S1 ON PLAN INDICATES SLAB ON METAL DECK MARK. D1 ON PLAN INDICATES ROOF DECK MARK. SEE SCHEDULE SHEET S701.
6. DO NOT CUT CONTROL JOINTS IN SLABS ON METAL DECK.
7. 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.
8. SEE PLAN AND SCHEDULES FOR COLUMN, WALL, AND PIER INFORMATION.
9. 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.
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13. SEE ARCHITECTURAL DRAWINGS FOR ALL PARTITION WALL LOCATIONS. SEE SHEET S503 FOR ALL CMU NON-LOAD BEARING WALL REINFORCING AND CONNECTION INFORMATION.
14. 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. VERIFY SAFETY BEAM REQUIREMENTS WITH ELEVATOR SUPPLIER PRIOR TO FABRICATION.

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Print Name: Paul A. Johnson

Signature:

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

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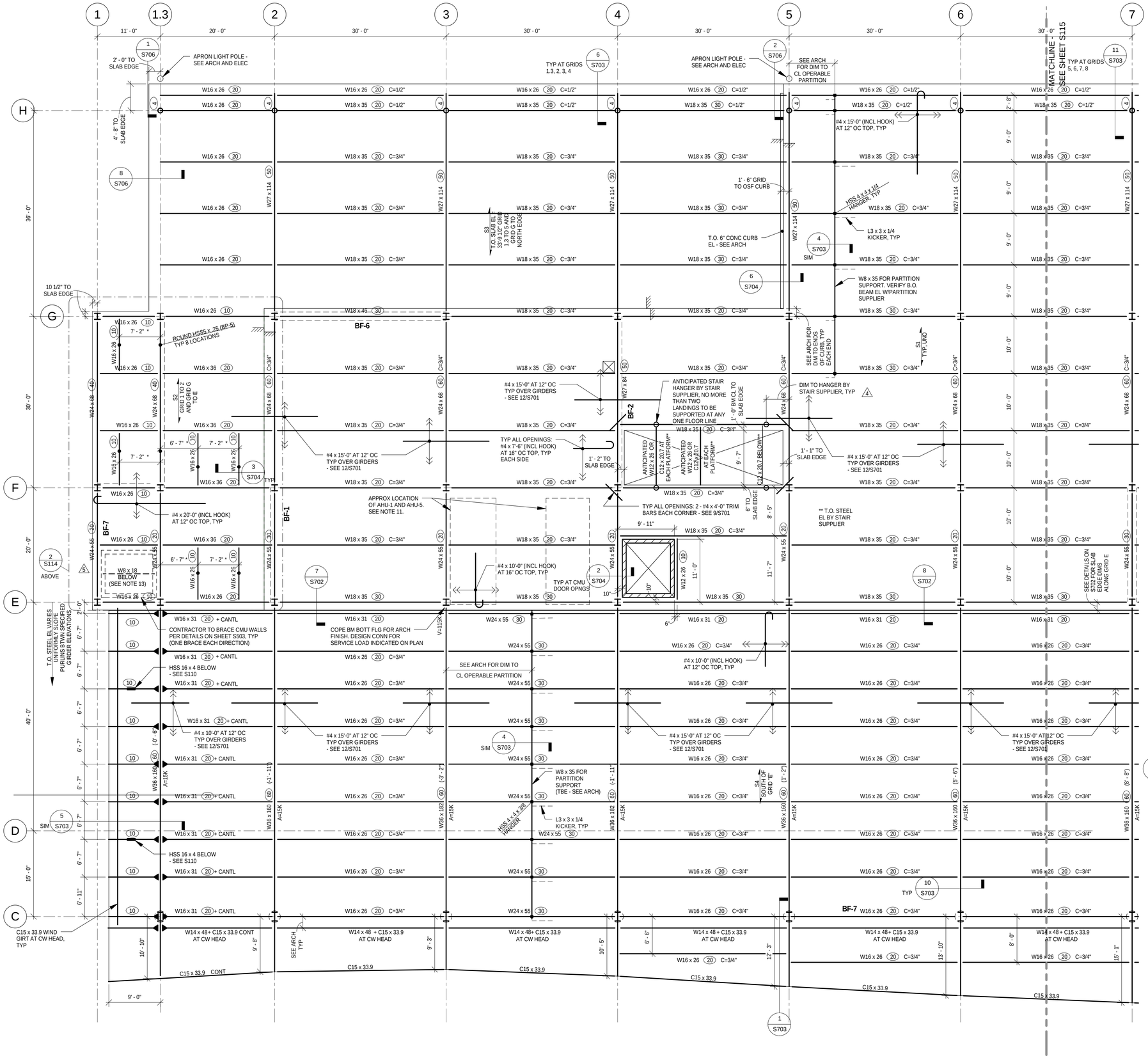
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

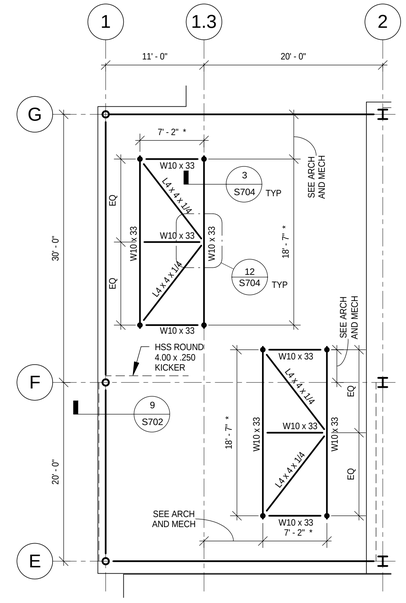
AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
SECOND LEVEL FRAMING PLAN - AREA B

SHEET NUMBER
S113

BID PACKEAGE 2A ISSUED FOR BID





2 PARTIAL THIRD FLOOR FRAMING PLAN

1/8" = 1'-0"

NOTES:
1. TOP OF CHILLER SUPPORT BEAM EL = 37'-0" *, TYP. SEE NOTE 10 ON 1/S120.
2. ASSUMED APPROXIMATE CHILLER SELF-WEIGHT = 13,000 LBS. SEE MECHANICAL EQUIPMENT SCHEDULES.

APPROXIMATE AHU WEIGHTS (VERIFY W/MECH)	
MARK	WEIGHT (POUNDS)
AHU-1	5,000
AHU-2	12,000
AHU-3	6,200
AHU-4	6,200
AHU-5	5,000

NORTH

1 THIRD LEVEL FRAMING PLAN - AREA A

1/8" = 1'-0"

TYPICAL PLAN NOTES:
1. TOP OF SLAB ELEVATION = 33' - 7 1/2", UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR ELEVATION.
2. TOP OF BEAM ELEVATION = 33' - 0" TYPICAL, UNLESS NOTED OTHERWISE. TOP OF BEAM ELEVATIONS ARE REFERENCED (+ OR -) FROM ELEVATION 33' - 0".
3. 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.
4. BF1 ON PLAN INDICATES BRACED FRAME MARK. REFER TO S301 FOR BRACED FRAME ELEVATIONS, NOTES AND ADDITIONAL DETAIL.
5. S1 ON PLAN INDICATES SLAB ON METAL DECK MARK. D1 ON PLAN INDICATES ROOF DECK MARK. SEE SCHEDULE ON SHEET S701.
6. DO NOT CUT CONTROL JOINTS IN SLABS ON METAL DECK.
7. 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.
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11. PROVIDE HOUSEKEEPING PADS FOR MECHANICAL EQUIPMENT AS INDICATED (MAXIMUM 6" THICKNESS) ON MECHANICAL DRAWINGS. REINFORCE PADS WITH #4 BARS AT 12" OC EACH WAY, CENTERED IN SLAB.
12. SEE ARCHITECTURAL DRAWINGS FOR ALL PARTITION WALL LOCATIONS. SEE SHEET S503 FOR ALL CMU NON-LOAD BEARING WALL REINFORCING AND CONNECTION INFORMATION.
13. 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.

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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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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	BID PACKAGE 2A	01.24.11

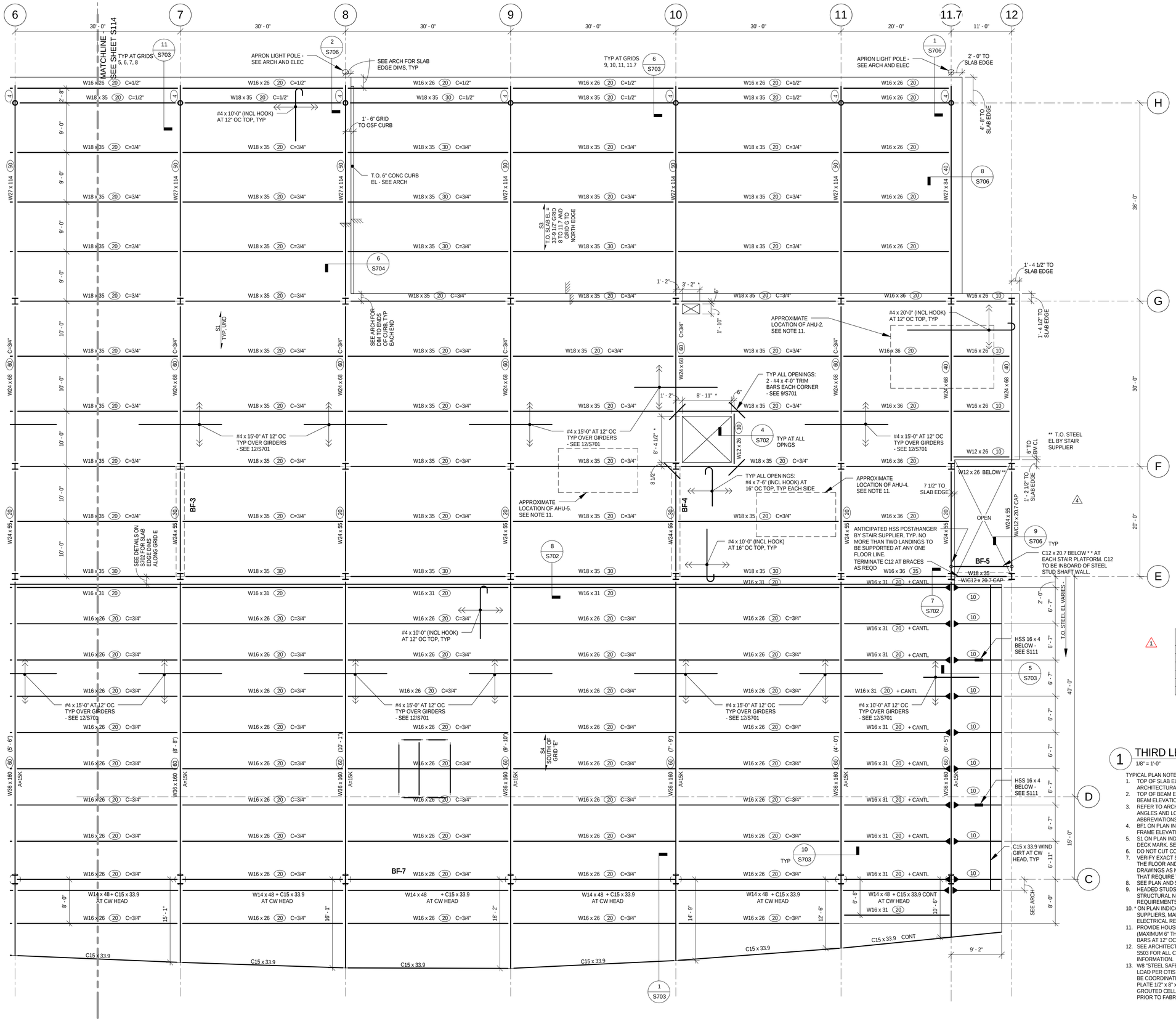
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
THIRD LEVEL FRAMING PLAN - AREA A

SHEET NUMBER
S114

BID PACKEAGE 2A ISSUED FOR BID



PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

APPROXIMATE AHU WEIGHTS (VERIFY W/MECH)

MARK	WEIGHT (POUNDS)
AHU-1	5,000
AHU-2	12,000
AHU-3	6,200
AHU-4	6,200
AHU-5	5,000

1 THIRD LEVEL FRAMING PLAN - AREA B

1/8" = 1'-0"

TYPICAL PLAN NOTES:

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2. TOP OF BEAM ELEVATION = 33' - 0" TYPICAL, UNLESS NOTED OTHERWISE. TOP OF BEAM ELEVATIONS ARE REFERENCED (+ OR -) FROM ELEVATION 33' - 0".
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7. 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.
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Print Name: Paul A. Johnson

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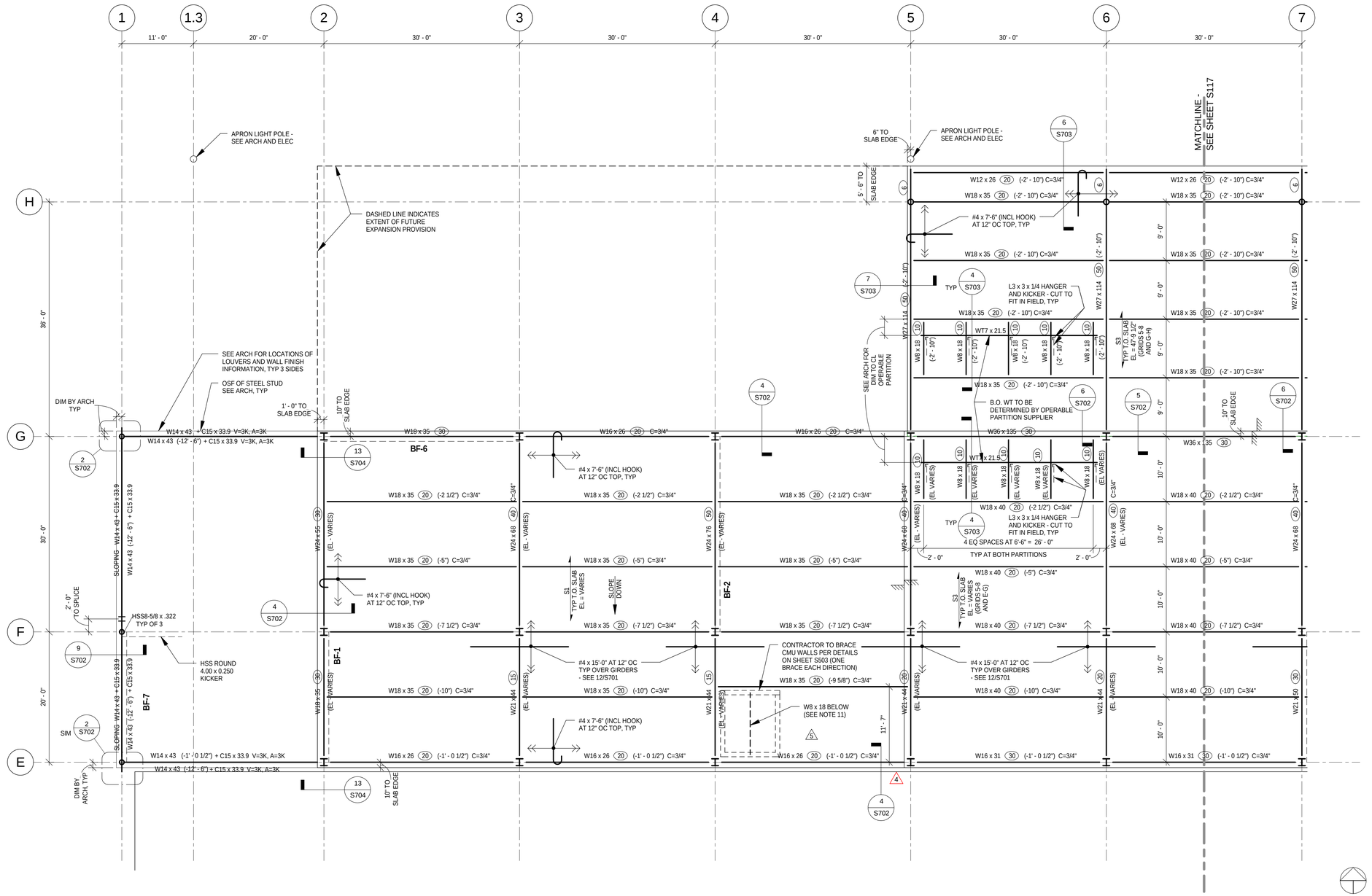
SHEET TITLE
THIRD LEVEL FRAMING PLAN - AREA B

SHEET NUMBER
S115

BID PACKEAGE 2A ISSUED FOR BID



1 ROOF LEVEL FRAMING PLAN - AREA A

1/8" = 1'-0"

TYPICAL PLAN NOTES:

1. TOP OF STEEL BEAM ELEVATION IS REFERENCED (+ OR -) FROM ELEVATION 49' - 6", TOP OF STEEL BEAM = 49' - 6", UNLESS NOTED OTHERWISE.
2. TOP OF SLAB ELEVATION VARIES. SEE PLAN
3. 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.
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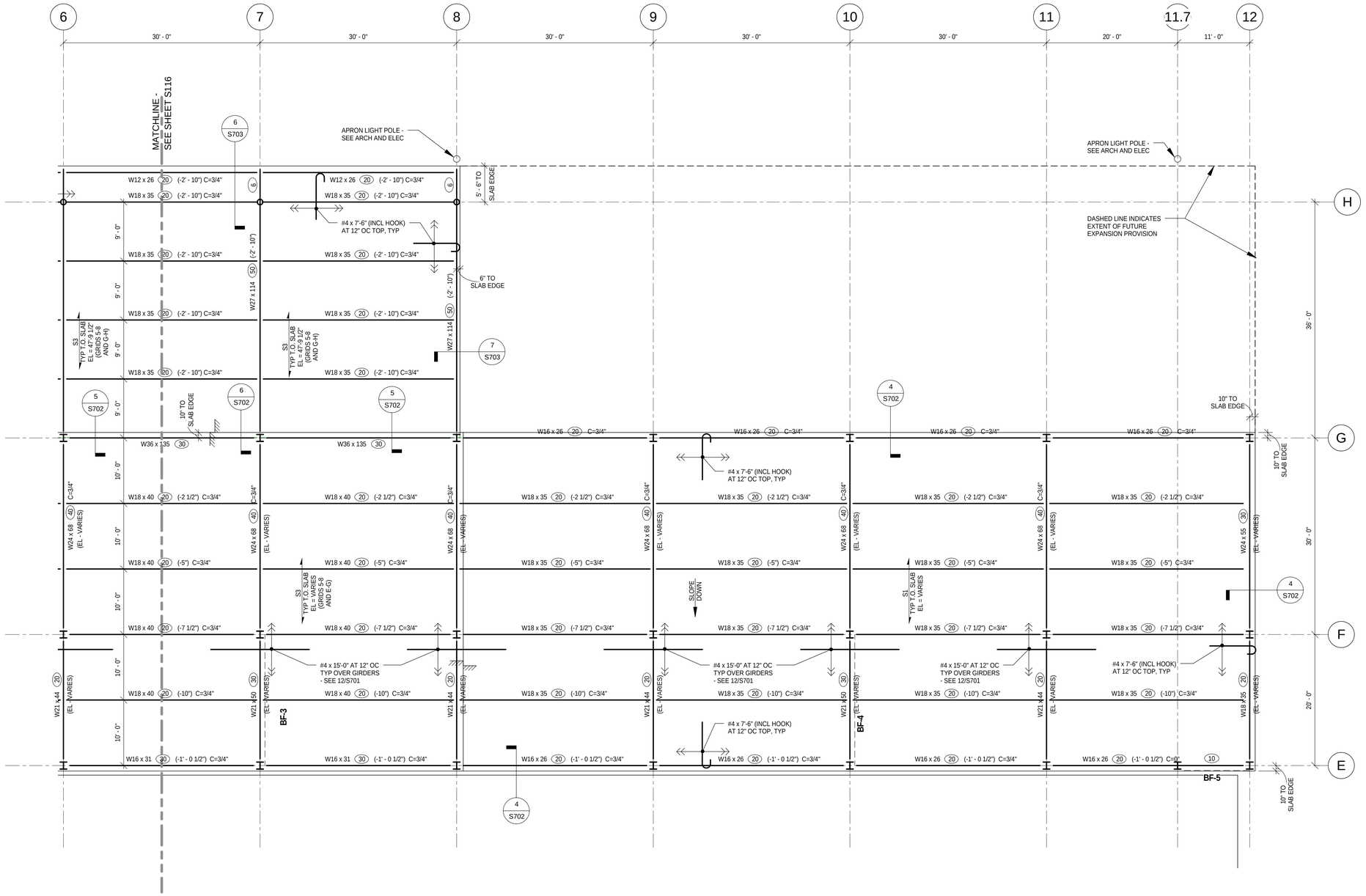
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
ROOF LEVEL FRAMING PLAN - AREA A

SHEET NUMBER
S116

BID PACKEAGE 2A ISSUED FOR BID



1 ROOF LEVEL FRAMING PLAN - AREA B

1/8" = 1'-0"

NORTH

TYPICAL PLAN NOTES:

1. TOP OF STEEL BEAM ELEVATION IS REFERENCED (+ OR -) FROM ELEVATION 49' - 6". TOP OF STEEL BEAM = 49' - 6", UNLESS NOTED OTHERWISE.
2. TOP OF SLAB ELEVATION VARIES. SEE PLAN
3. 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.
4. BF1 ON PLAN INDICATES BRACED FRAME MARK. REFER TO S301 FOR BRACED FRAME ELEVATIONS, NOTES AND ADDITIONAL DETAIL.
5. S1 ON PLAN INDICATES SLAB ON METAL DECK MARK. D1 ON PLAN INDICATES ROOF DECK MARK. SEE SCHEDULE ON SHEET S701.
6. DO NOT CUT CONTROL JOINTS IN SLABS ON METAL DECK.
7. 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.
8. SEE PLAN AND SCHEDULES FOR COLUMN, WALL AND PIER INFORMATION.
9. 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.
10. * 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.
11. 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.

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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

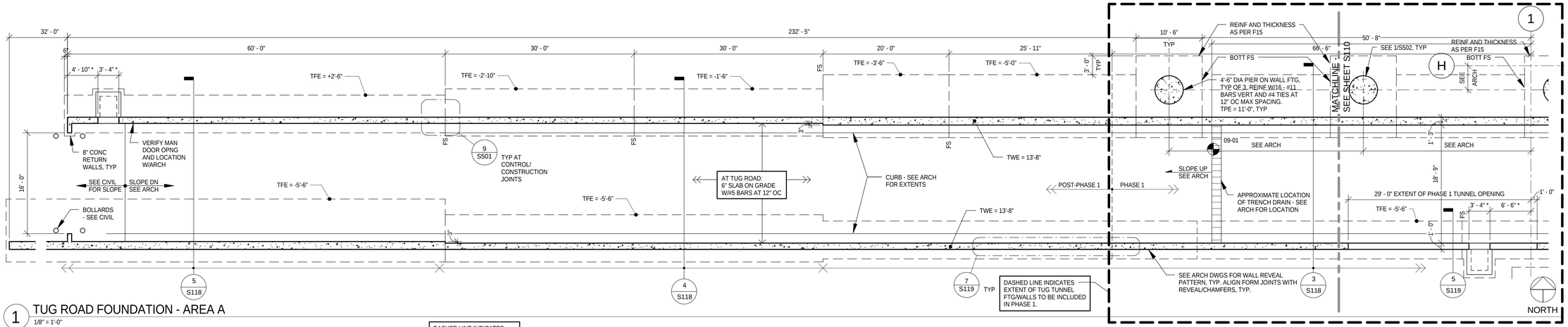
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
ROOF LEVEL FRAMING PLAN - AREA B

SHEET NUMBER
S117

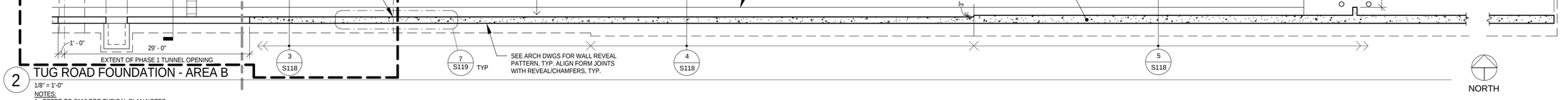
BID PACKEAGE 2A ISSUED FOR BID



1 TUG ROAD FOUNDATION - AREA A

1/8" = 1'-0"

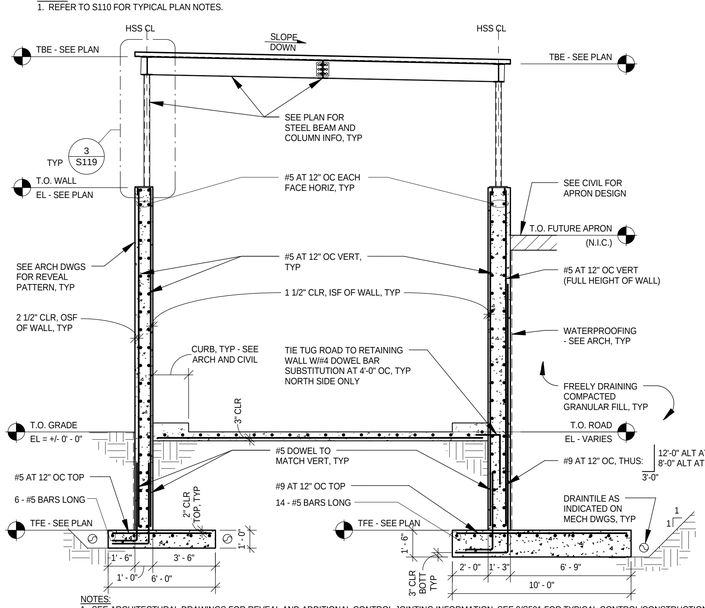
NOTES:
1. REFER TO S110 FOR TYPICAL PLAN NOTES.



2 TUG ROAD FOUNDATION - AREA B

1/8" = 1'-0"

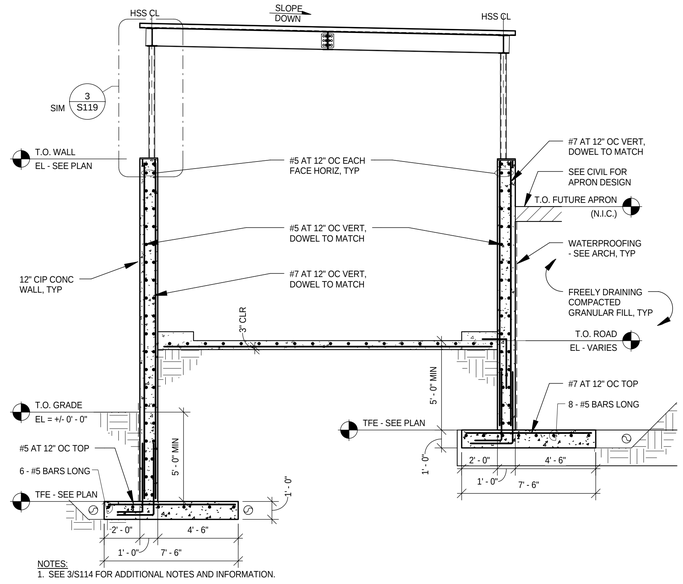
NOTES:
1. REFER TO S110 FOR TYPICAL PLAN NOTES.



NOTES:
1. SEE ARCHITECTURAL DRAWINGS FOR REVEAL AND ADDITIONAL CONTROL JOINTING INFORMATION. SEE 9/S501 FOR TYPICAL CONTROL/CONSTRUCTION JOINT INFORMATION.
2. SEE SPECIFICATION FOR CONCRETE WALL FINISH INFORMATION.
3. CONTRACTOR TO ADEQUATELY SEQUENCE BACKFILLING OPERATIONS OR BRACE WALL UNTIL CONCRETE REACHES ITS 28-DAY COMPRESSIVE STRENGTH.
4. FREE-DRAINING COMPACTED GRANULAR BACKFILL TO BE AS DEFINED IN THE PROJECT GEOTECHNICAL REPORT.
5. FOR DRAIN TILE DESIGN AND LAYOUT - SEE MECHANICAL DRAWINGS.

3 SECTION NEAR TERMINAL (LOOKING WEST)

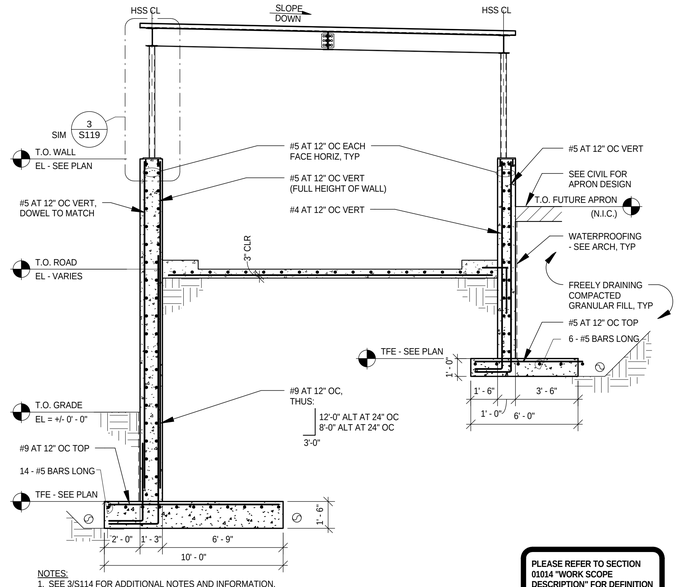
1/4" = 1'-0"



NOTES:
1. SEE 3/S114 FOR ADDITIONAL NOTES AND INFORMATION.

4 SECTION HALFWAY DOWN TUG ROAD (LOOKING WEST)

1/4" = 1'-0"



NOTES:
1. SEE 3/S114 FOR ADDITIONAL NOTES AND INFORMATION.

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

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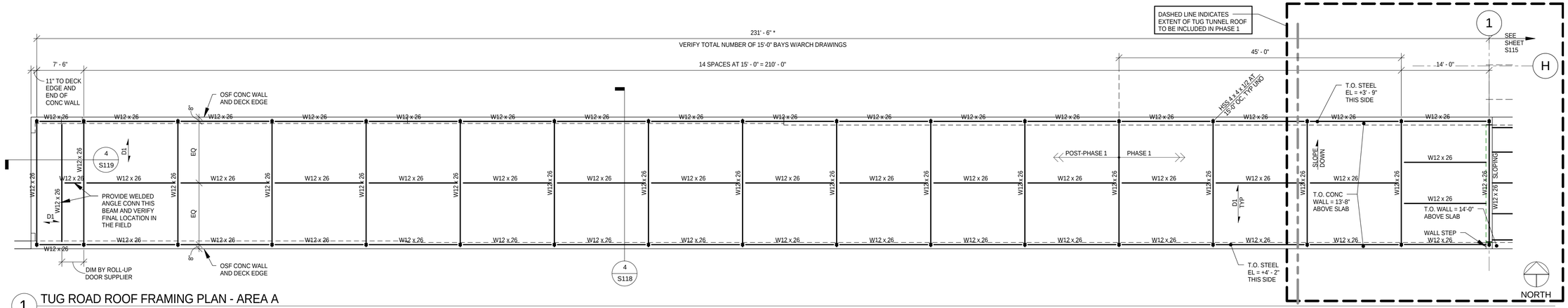
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
TUG ROAD FOUNDATION PLAN

SHEET NUMBER
S118

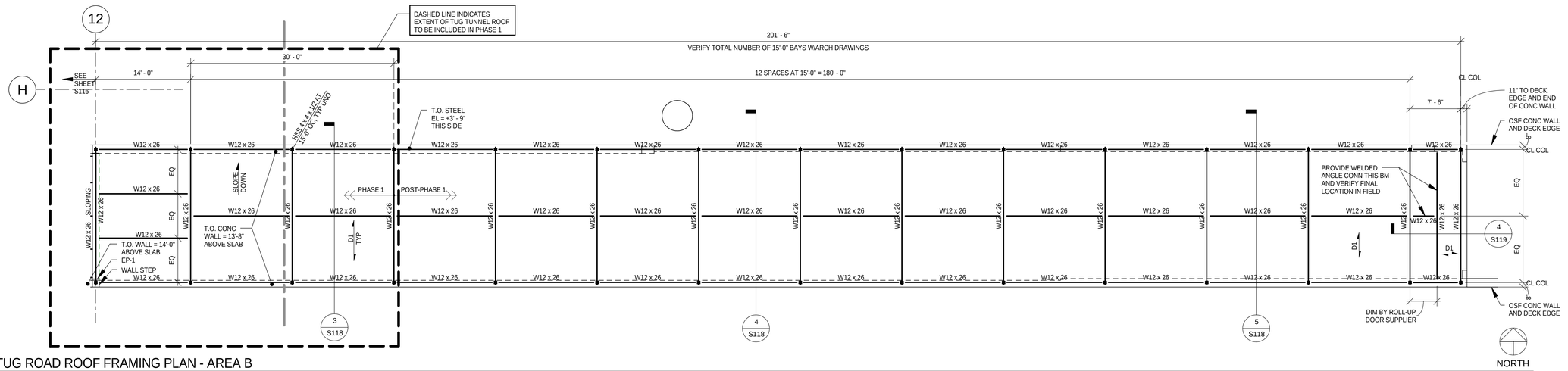
BID PACKEAGE 2A ISSUED FOR BID



1 TUG ROAD ROOF FRAMING PLAN - AREA A

1/8" = 1'-0"

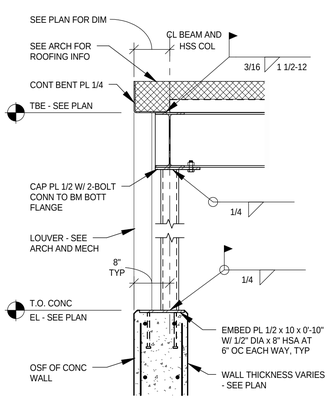
NOTES:
1. REFER TO S113 FOR TYPICAL PLAN NOTES.



2 TUG ROAD ROOF FRAMING PLAN - AREA B

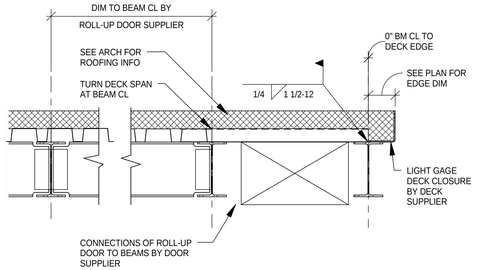
1/8" = 1'-0"

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



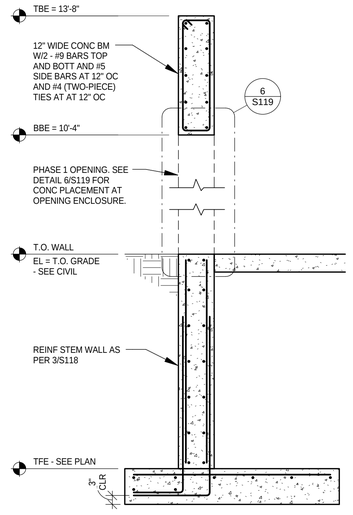
3 SECTION

3/4" = 1'-0"



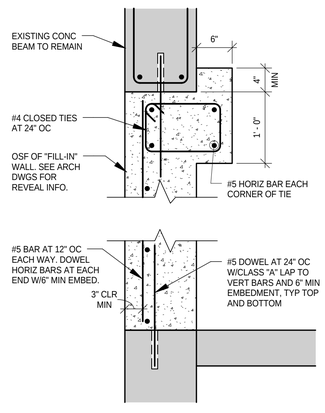
4 SECTION

3/4" = 1'-0"



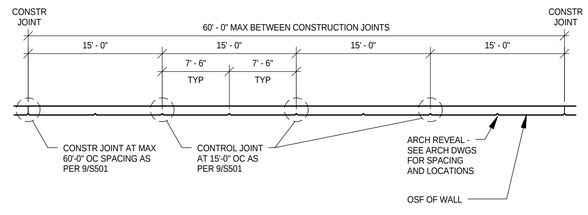
5 SECTION AT PHASE 1 TUNNEL OPENING

1/2" = 1'-0"



6 SECTION AT PHASE 1 OPENING CLOSURE

1" = 1'-0"



NOTE:
1. VERIFY ACTUAL REVEAL SPACING WITH ARCHITECTURAL DRAWINGS.

7 PLAN DETAIL

1/8" = 1'-0"

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Signature:

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

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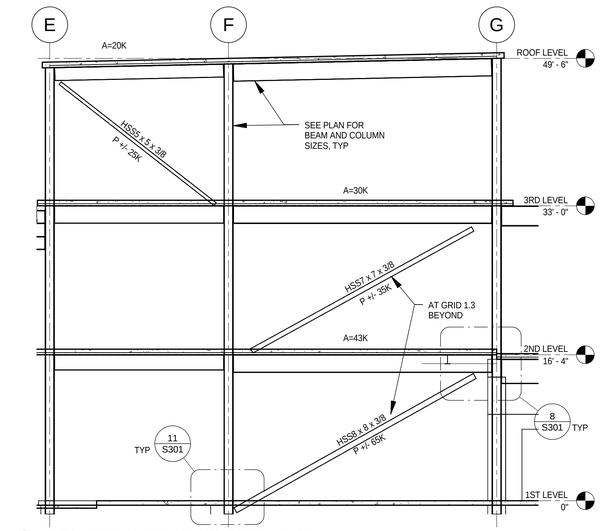
AEP PROJECT NUMBER
213-1882-091

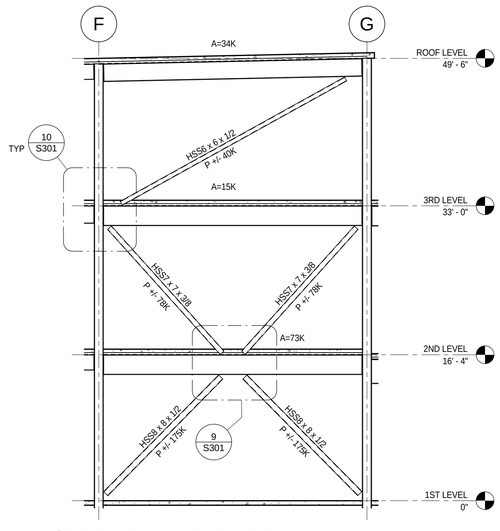
SHEET TITLE
TUG ROAD ROOF FRAMING PLAN

SHEET NUMBER
S119

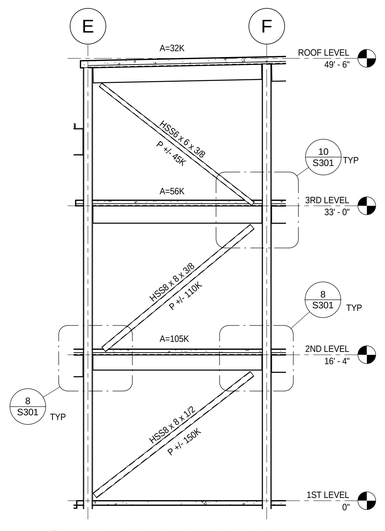
BID PACKEAGE 2A ISSUED FOR BID



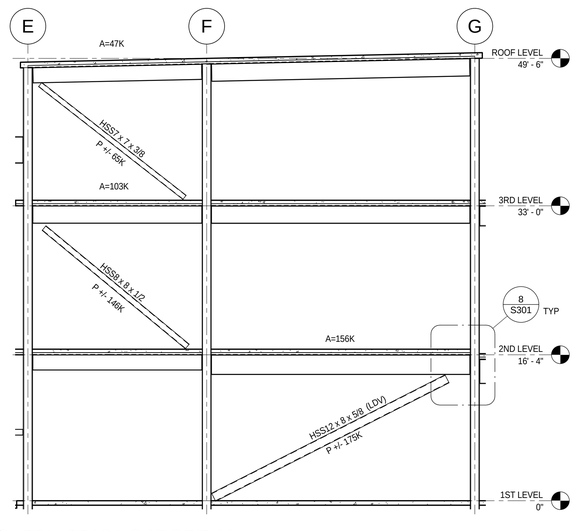
1 BF1 - BRACING AT GRID 2 AND 1.3
1/8" = 1'-0"



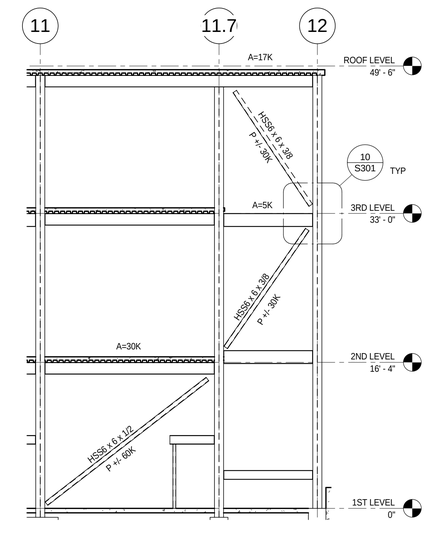
2 BF2 - BRACING AT GRID 4
1/8" = 1'-0"



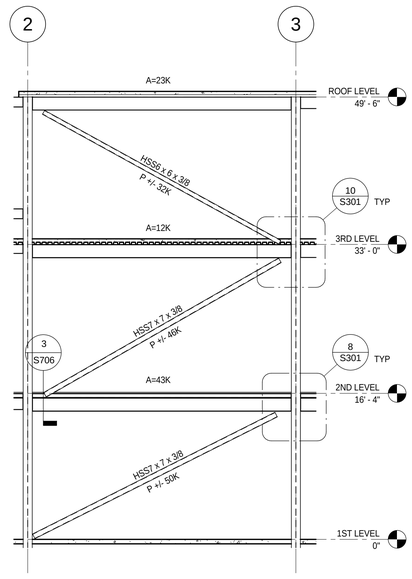
3 BF3 - BRACING AT GRID 7
1/8" = 1'-0"



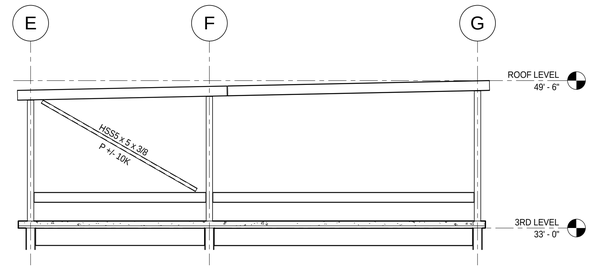
4 BF4 - BRACING AT GRID 10
1/8" = 1'-0"



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



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

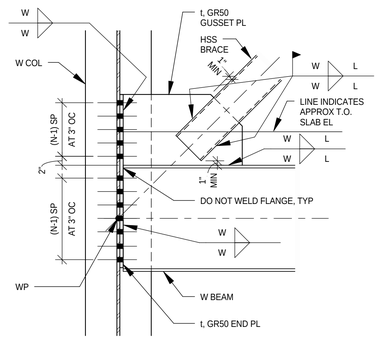


7 BF7 - BRACING AT GRID 1
1/8" = 1'-0"

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

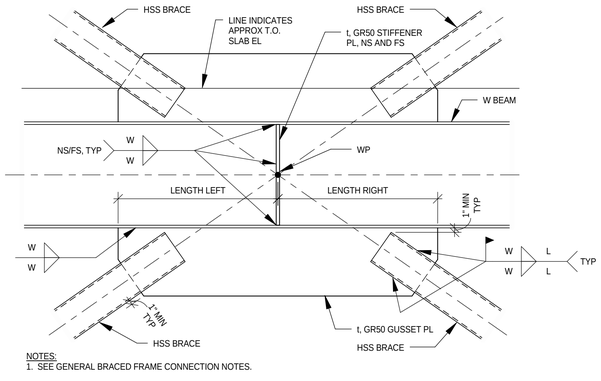
GENERAL BRACED FRAME CONNECTION NOTES:

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.



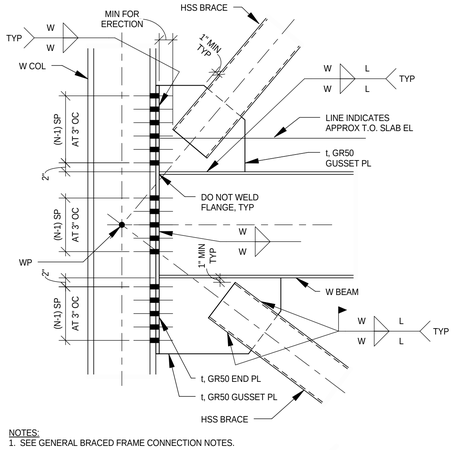
NOTES:
1. SEE GENERAL BRACED FRAME CONNECTION NOTES.

8 DETAIL
NO SCALE



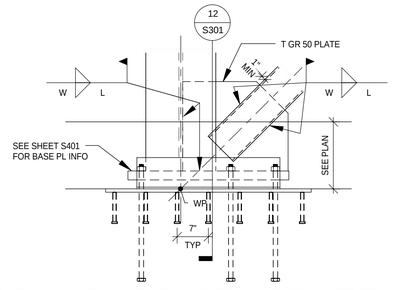
NOTES:
1. SEE GENERAL BRACED FRAME CONNECTION NOTES.

9 DETAIL
NO SCALE

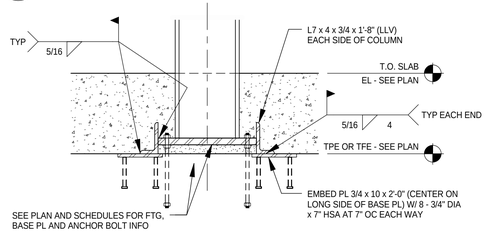


NOTES:
1. SEE GENERAL BRACED FRAME CONNECTION NOTES.

10 DETAIL
NO SCALE



11 TYPICAL FOUNDATION DETAIL AT BRACED FRAMES
NO SCALE



12 SECTION
NO SCALE

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DESIGNED BY: CWB

AEP PROJECT NUMBER
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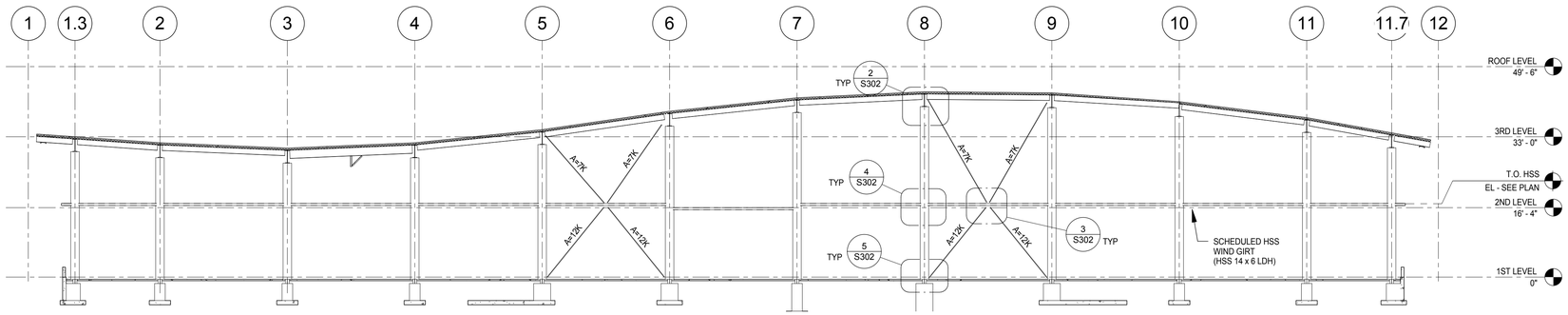
SHEET TITLE
BRACING ELEVATIONS AND DETAILS

SHEET NUMBER
S301

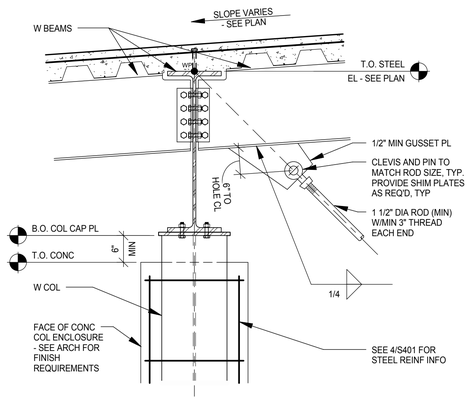
BID PACKEAGE 2A ISSUED FOR BID



1 ELEVATION AT GRID "C"

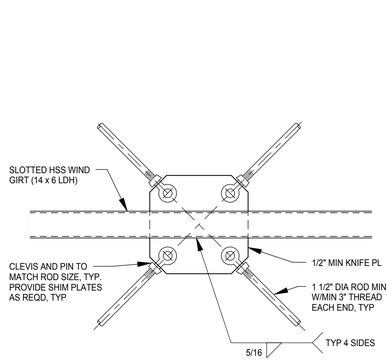
1/16" = 1'-0"

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



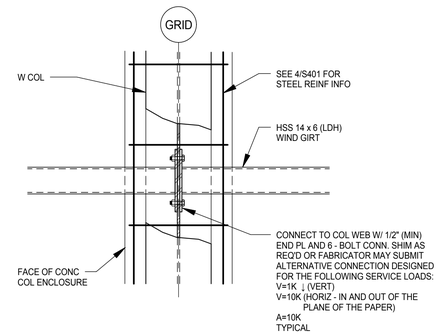
2 SECTION AT COLUMN HEAD

3/4" = 1'-0"



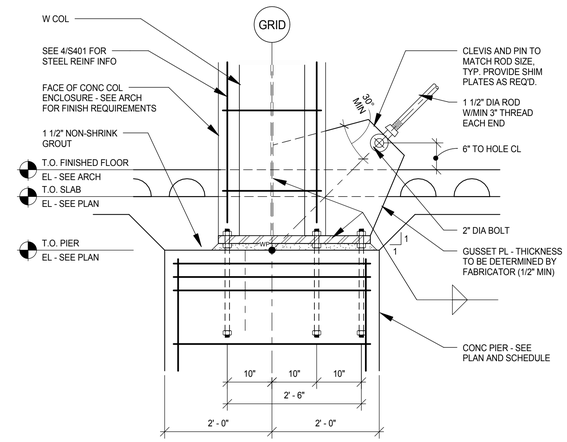
3 SECTION AT BRACING INTERSECTION

3/4" = 1'-0"



4 SECTION AT COLUMN TO GIRT CONNECTION

3/4" = 1'-0"



5 SECTION AT COLUMN BASE

3/4" = 1'-0"

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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

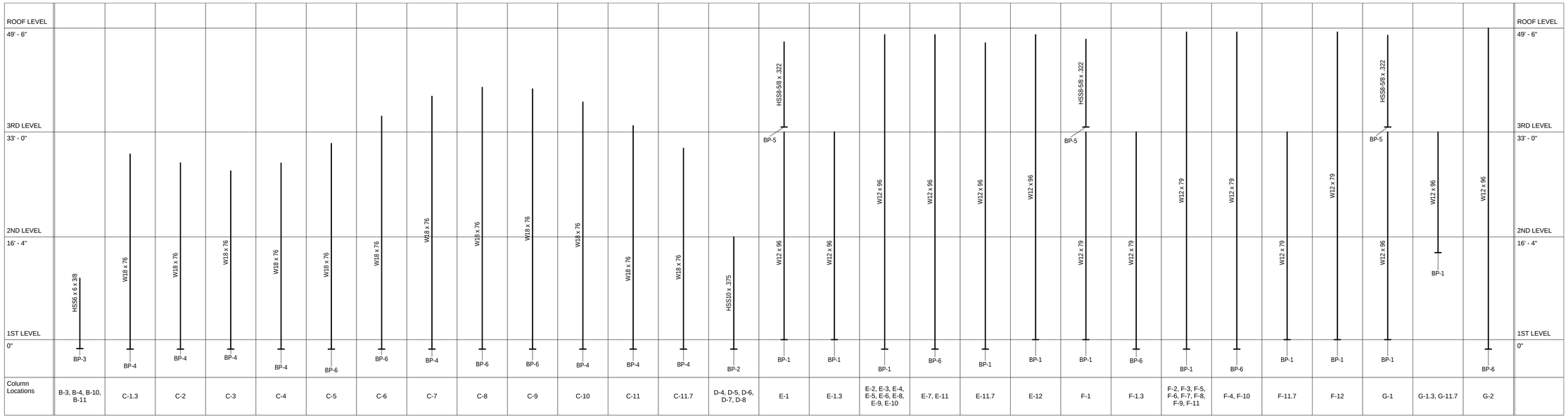
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

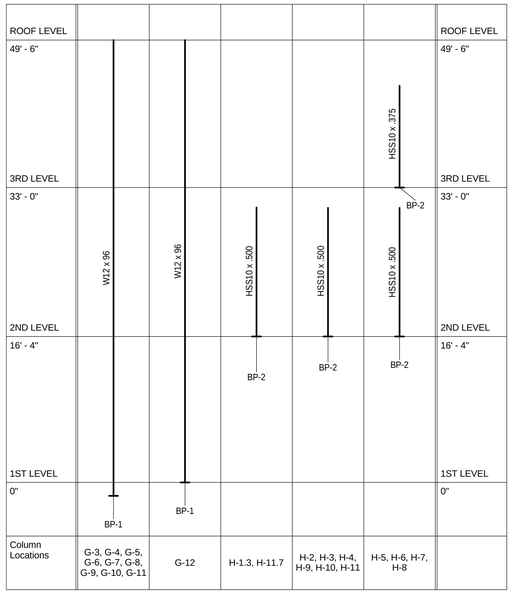
AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
BRACING ELEVATIONS AND DETAILS

SHEET NUMBER
S302

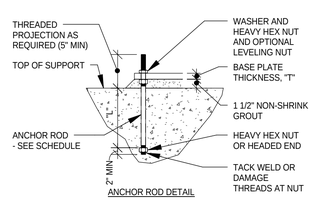
BID PACKEAGE 2A ISSUED FOR BID



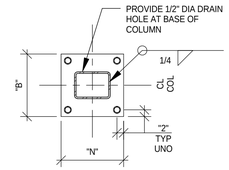


NOTES:
1. FOR BASE PLATE AND ANCHOR BOLT INFORMATION, SEE COLUMN BASE PLATE SCHEDULE THIS SHEET.
2. AT HSS ROUND COLUMNS, FABRICATOR MAY OPT TO SUBMIT EQUIVALENT PIPE SECTION TO A/E FOR REVIEW IN LIEU OF HSS ROUND COLUMN SHOWN.

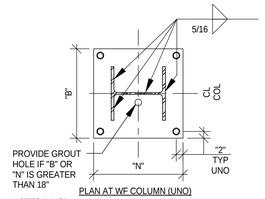
1 STEEL COLUMN SCHEDULE
NO SCALE



ANCHOR ROD DETAIL



PLAN AT HSS/PIPE COLUMN (UNO)

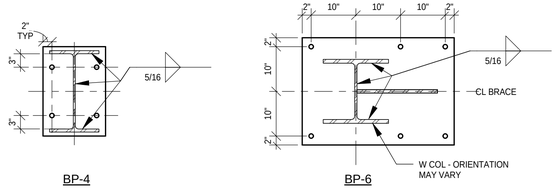


PLAN AT WF COLUMN (UNO)

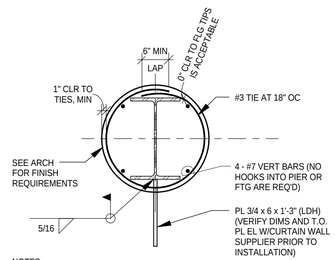
COLUMN BASE PLATE AND ANCHOR ROD SCHEDULE							
	BASE PLATE SIZE (IN)			ANCHOR RODS			
MARK	"N"	"B"	"T"	NO.	DIA (IN)	EMBED "L"	COMMENTS:
BP-1	20	20	1 3/4"	4	3/4"	0'-11"	AT GRID E-10, ANCHOR ROD EMBED LENGTH "L" = 2'-0"
BP-2	16	16	1"	4	3/4"	0'-11"	
BP-3	12	12	3/4"	4	3/4"	0'-11"	
BP-4	20	14	1 1/2"	4	3/4"	0'-11"	SEE 3/S401
BP-5	12	12	3/4"	4	1/2"	0'-3 1/2"	EXP ANCHORS
BP-6	24	34	1 3/4"	6	1"	1'-6"	SEE 3/S401
BP-7	12	18	1 1/2"	4	3/4"	0'-11"	

NOTES (UNO):
1. SEE SCHEDULE FOR BASE PLATE AND ANCHOR ROD DIMENSIONS.
2. DIMENSION "N" IS PARALLEL TO WF WEB OR LONGER HSS DIMENSION.
3. ANCHOR RODS SHALL BE ASTM F1554, GRADE 36.
4. BASE PLATES SHALL BE ASTM A36, MINIMUM.
5. MILL COLUMN BASE AND/OR BASE PLATE AS NECESSARY FOR FULL CONTACT.
6. ANCHOR RODS SHALL SET BY TEMPLATE AND NOT BE SET INTO CONCRETE AFTER CONCRETE IS CAST.
7. SEE SHEETS S301 AND S302 FOR ADDITIONAL INFORMATION AT BRACED FRAME BASE PLATES.
8. FOR ALL UNDESIGNATED BASE PLATES, MINIMUM "N" = MEMBER SIZE + 4". MINIMUM "B" = MEMBER WIDTH + 1". MINIMUM "T" = 1/2". MINIMUM 4 - 3/4" DIAMETER ANCHOR RODS.

2 COLUMN BASE PLATE AND ANCHOR ROD SCHEDULE
NO SCALE



3 BASE PLATE DETAILS
NO SCALE



NOTES:
1. SEE PLAN FOR LOCATIONS.

4 CONCRETE ENCASED WIDE FLANGE COLUMN
NO SCALE

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

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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

DATE ISSUED: 01-24-11
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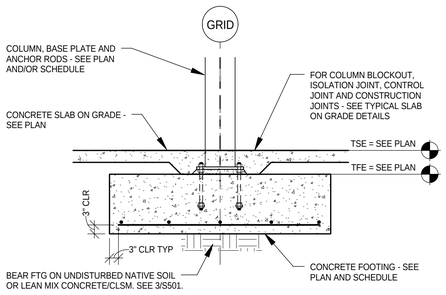
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

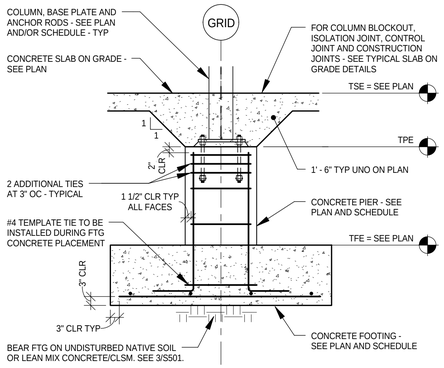
SHEET TITLE
COLUMN SCHEDULE AND DETAILS

SHEET NUMBER
S401

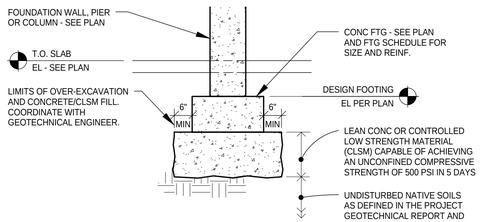
BID PACKEAGE 2A ISSUED FOR BID



1 TYPICAL INTERIOR WF COLUMN FOOTING DETAIL
NO SCALE

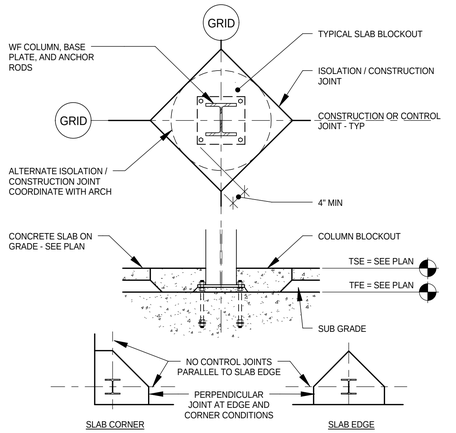


2 TYPICAL WF COLUMN, CONCRETE PIER AND FOOTING DETAIL
NO SCALE



NOTES:
1. THIS DETAIL APPLIES ONLY AT LOCATIONS WHERE THE GEOTECHNICAL ENGINEER HAS DETERMINED THAT SOILS AT THE DESIGN FOOTING ELEVATIONS ARE NOT ADEQUATE FOR FOOTING SUPPORT ACCORDING TO THE ALLOWABLE SOIL BEARING CAPACITY LISTED UNDER "DESIGN UNIT STRESS" ON SHEET S002.
2. IN LIEU OF OVER-EXCAVATING AND PLACING LEAN CONCRETE OR CLSM AS OUTLINED IN THIS DETAIL, CONTRACTOR MAY LOWER THE DESIGN FOOTING ELEVATION SUCH THAT THE FOOTING RESTS DIRECTLY ON UNDISTURBED NATIVE SOILS AS APPROVED BY THE GEOTECHNICAL ENGINEER IN THE FIELD.
3. SEE GEOTECHNICAL REPORT FOR WATER TABLE ELEVATIONS. CONTRACTOR TO MAKE ADEQUATE PROVISIONS FOR DEWATERING AS REQUIRED.

3 OVER-EXCAVATION WITH LEAN CONCRETE/CLSM FILL DETAIL
NO SCALE



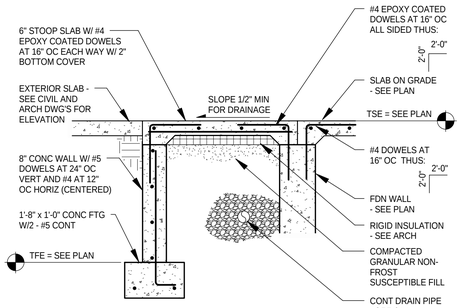
NOTE:
1. CONTRACTOR MAY PROPOSE ALTERNATE ISOLATION JOINT DETAIL TO A/E PRIOR TO CONSTRUCTION.

4 TYPICAL COLUMN ISOLATION JOINT
NO SCALE

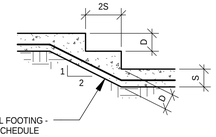
TENSION LAP SPLICE / CONCRETE / GR 60 UNCOATED REINFORCING				
STRUCTURAL ELEMENTS	FOOTINGS / SLAB-ON-GRADE / CONCRETE FILL ON METAL DECK			
CONCRETE	F'c = 4,000 PSI (NORMAL WEIGHT)			
BAR SIZE	CLASS "A" LAP		CLASS "B" LAP	
	BASIC	TOP BAR	BASIC	TOP BAR
#3	12"	14"	14"	18"
#4	15"	19"	19"	25"
#5	18"	23"	23"	30"
#6	22"	28"	28"	36"
#7	32"	42"	42"	55"
#8	42"	55"	55"	71"
#9	53"	69"	69"	90"
#10	68"	88"	88"	114"
#11	83"	108"	108"	140"

NOTES:
1. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE PLACED BELOW THEM.
2. USE CLASS "B" LAP LENGTHS - TYPICAL UNLESS NOTED OTHERWISE ON DRAWINGS.

5 BAR LAP SCHEDULE
NO SCALE

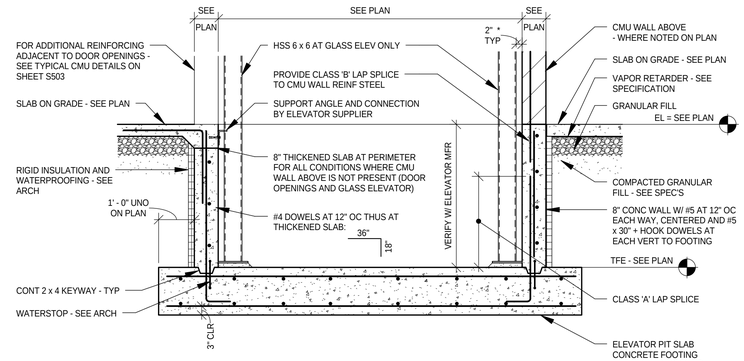


6 TYPICAL STOOP DETAIL
NO SCALE

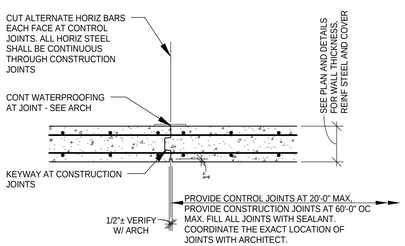


NOTE:
MAX FOOTING STEP EQUALS 24"

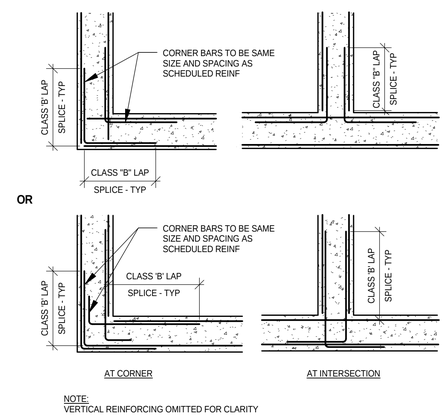
7 TYPICAL FOOTING STEP
NO SCALE



8 SECTION THRU ELEVATOR PIT
NO SCALE

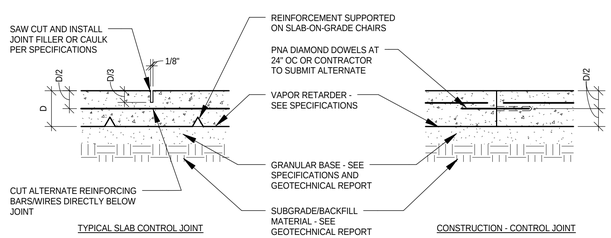


TYPICAL CONSTRUCTION/CONTROL JOINTS FOR CONCRETE WALLS
1/2" = 1'-0"



NOTE:
VERTICAL REINFORCING OMITTED FOR CLARITY

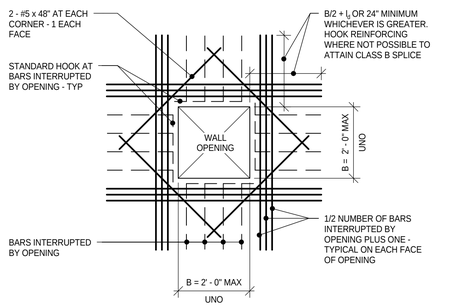
10 TYPICAL CONCRETE CORNER BAR PLACING DETAIL
NO SCALE



NOTES:
1. A CONSTRUCTION JOINT WHICH IS NOT INTENDED TO ALSO SERVE AS A CONTROL JOINT IS TO HAVE ALL REINFORCING EXTEND THROUGH IT AND TO HAVE NO GROOVE/SAW-CUT, UNLESS NOTED OTHERWISE.
2. IGNORE REINFORCING NOTES AT UNREINFORCED OR FIBER REINFORCED SLABS-ON-GRADE.
3. FOR EXTERIOR SLAB ON GRADE EXPOSED TO FREEZE-THAW CYCLES, CONSTRUCT A SLAB EXPANSION-CONTRACTION JOINT THE SAME EXCEPT ADD 3/8" COMPRESSIBLE MATERIAL THROUGH JOINT.

11 TYPICAL SLAB ON GRADE CONSTRUCTION DETAIL
1/2" = 1'-0"

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.



NOTES:
1. FOR WALL OPENINGS LARGER THAN 2'-0" (FOR WALLS NOT SUBJECT TO LATERAL EARTHPRESSURE) ADD 2 - #5 EACH FACE ALL 4 SIDES OF OPENING. EXTEND BAR 24" PAST OPENING UNLESS NOTED OTHERWISE.

TYPICAL ADDITIONAL BAR PLACING DETAIL FOR WALL OPENING
1/2" = 1'-0"

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Signature:

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

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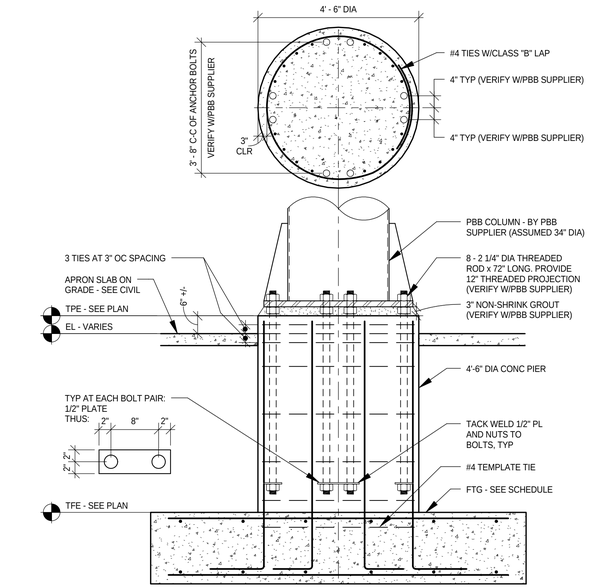
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

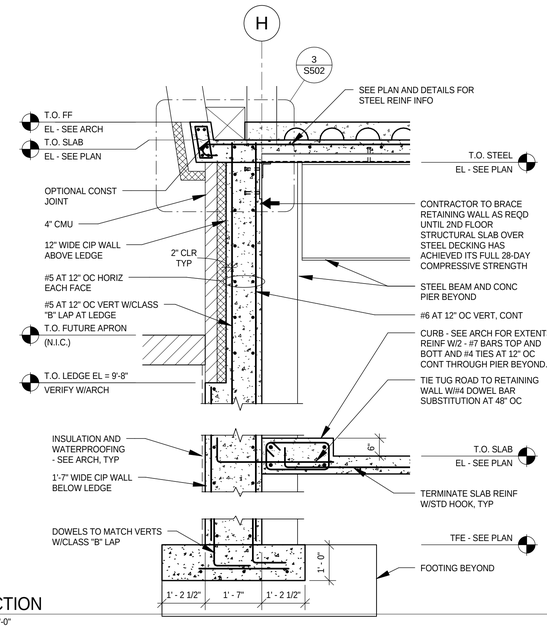
SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S501

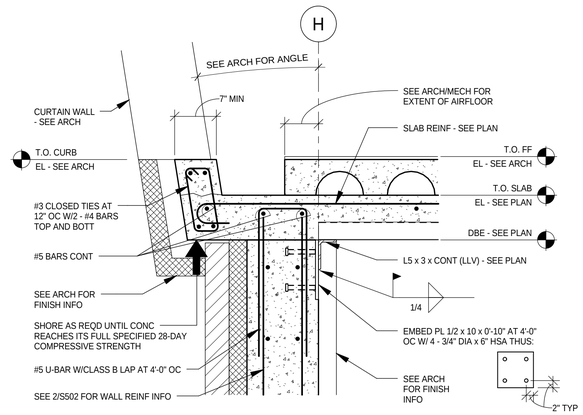
BID PACKEAGE 2A ISSUED FOR BID



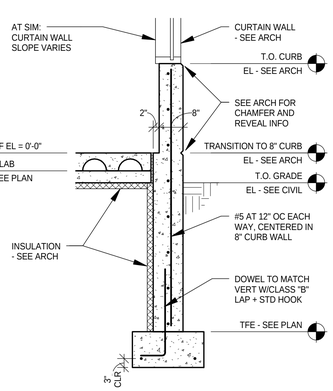
1 SECTION AT PASSENGER BOARDING BRIDGE - SPREAD FOOTING
1/2" = 1'-0"



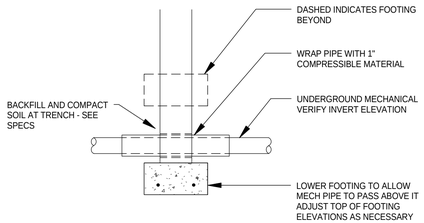
2 SECTION
1/2" = 1'-0"



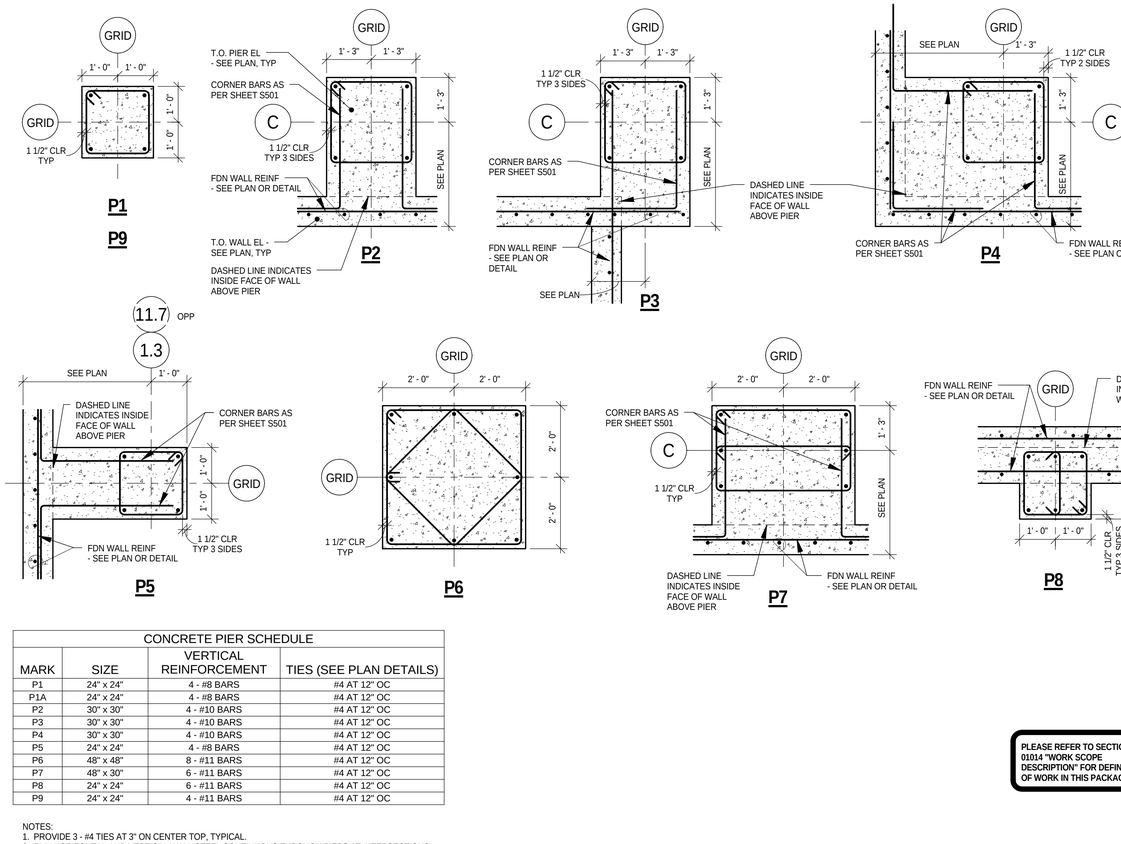
3 SECTION BETWEEN COLUMNS
1" = 1'-0"



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



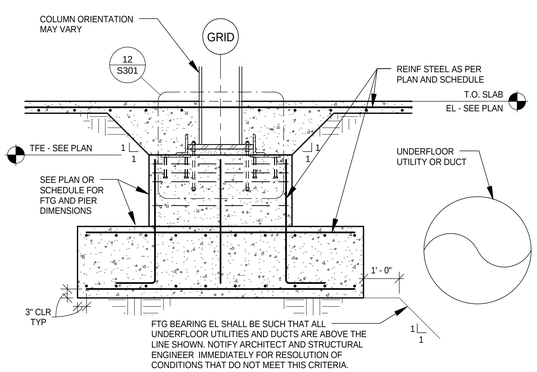
5 TYPICAL FOUNDATION WALL PIPE SLEEVE DETAIL
NO SCALE



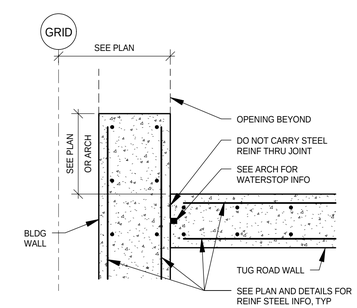
CONCRETE PIER SCHEDULE			
MARK	SIZE	VERTICAL REINFORCEMENT	TIES (SEE PLAN DETAILS)
P1	24" x 24"	4 - #8 BARS	#4 AT 12" OC
P1A	24" x 24"	4 - #8 BARS	#4 AT 12" OC
P2	30" x 30"	4 - #10 BARS	#4 AT 12" OC
P3	30" x 30"	4 - #10 BARS	#4 AT 12" OC
P4	30" x 30"	4 - #10 BARS	#4 AT 12" OC
P5	24" x 24"	4 - #8 BARS	#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"	6 - #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 DETAILS
NO SCALE



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



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

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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

DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
STRUCTURAL DETAILS

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.

SHEET NUMBER
S502

BID PACKEAGE 2A ISSUED FOR BID

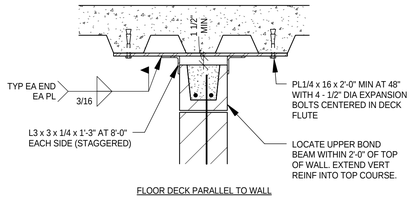
CMU WALL REINFORCING SCHEDULE					
		CENTERED IN WALL			
MARK	WALL TYPE	FOOTING DOWELS	HORIZONTAL	VERTICAL	COMMENTS
W1	8" CMU	#5 AT 24" OC	AS NOTED ON DETAILS	#5 AT 24" OC	CMU BOND BEAM LINTELS OVER ELEVATOR DOOR OPENINGS TO EXTEND AROUND ALL 4 SIDES OF ELEVATOR CORES TO PROVIDE ATTACHMENT POINT FOR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

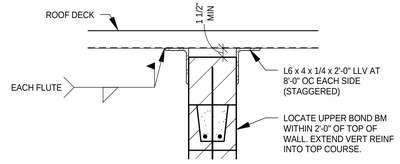
1 WALL REINFORCING SCHEDULE
NO SCALE

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

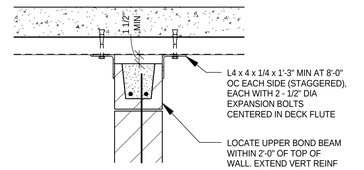
NOTES:
1. REFER TO TYPICAL DETAILS FOR DOWELS AT BOTTOM OF CMU WALLS AND BRACING AT TOP OF CMU WALLS. TOP OF WALL BRACING TO BE PLACED AT 10'-0" OC MAX SPACING WHERE DISTANCE BETWEEN WALL CORNERS EXCEEDS 12'-0". CONTRACTOR MAY USE ONE OF THE BRACING OPTIONS PROVIDED OR COORDINATE ALTERNATE BRACING WITH 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.



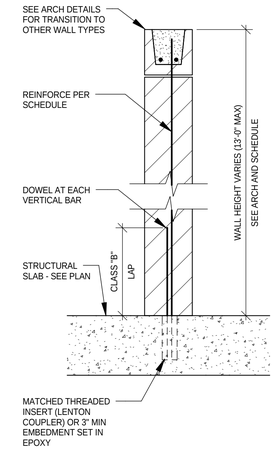
FLOOR DECK PARALLEL TO WALL



ROOF DECK PERPENDICULAR TO WALL



FLOOR DECK PERPENDICULAR TO WALL



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"

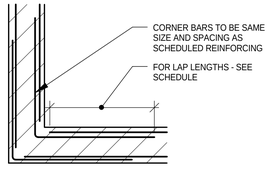
NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR ALL ROUGH OPENING SIZES AND ELEVATIONS.
2. USE LINTEL BLOCKS FOR ALL CMU LINTELS.
3. PROVIDE 8" DEEP BOND BM W/2 - #5 CONT BOTTOM AT ALL SILLS.
4. ALL LINTEL REINFORCING TO EXTEND 1'-4" MINIMUM BEYOND EDGES OF ROUGH OPENING.

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

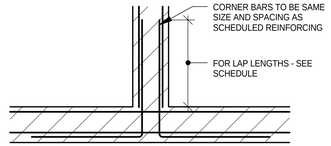
NOTES:
1. ALL BARS TO BE IN FULLY GROUTED CELLS OR BOND BEAMS
2. Fy = 60 KSI (Fs = 24 KSI MAX)
3. BAR LAP LENGTHS PER IBC 2006 SECTION 2107.5 AND ACI 530 EQ 2-9
4. SEE SHEET S501 FOR CONCRETE REINFORCING LAP SCHEDULE.

3 LINTEL SCHEDULE
NO SCALE

4 SCHEDULE
NO SCALE



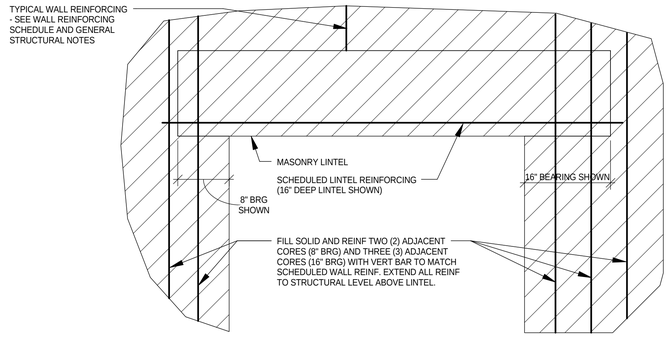
AT CORNER

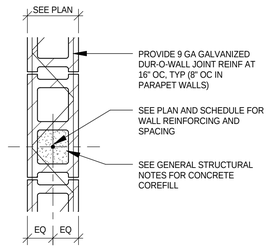


AT INTERSECTION

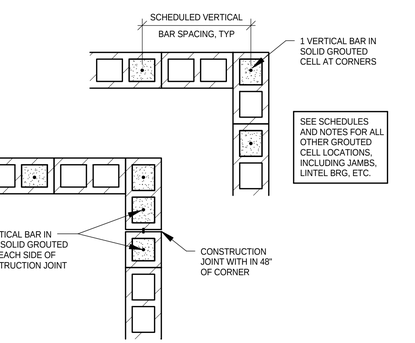
NOTE:
VERTICAL REINFORCING OMITTED FOR CLARITY

2 NON-LOAD BEARING WALL REINFORCING SCHEDULE AND TYPICAL DETAILS
NO SCALE





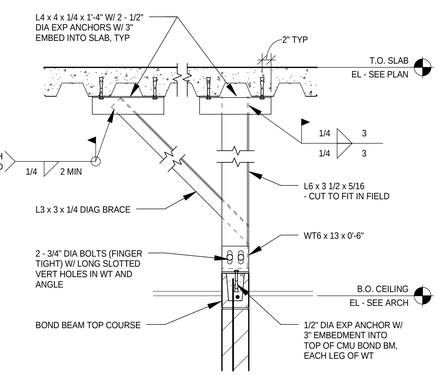
5 TYPICAL VERTICAL REINFORCING AT MASONRY CORNER DETAIL
NO SCALE



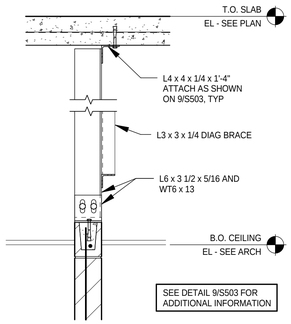
6 TYPICAL HORIZONTAL REINFORCING AT MASONRY CORNER
NO SCALE

7 TYPICAL CMU WALL DETAIL
NO SCALE

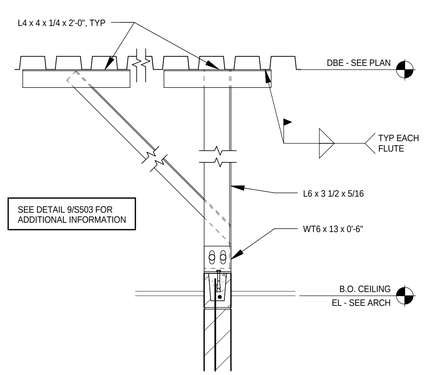
8 TYPICAL CMU LINTEL BEARING DETAIL
NO SCALE



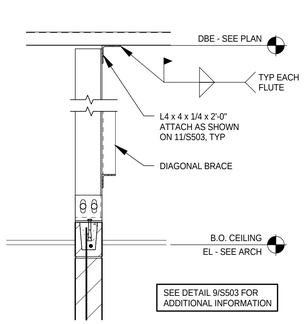
9 FLOOR DECK PARALLEL TO WALL
NO SCALE



10 FLOOR DECK PERPENDICULAR TO WALL
3/4" = 1'-0"



11 ROOF DECK PARALLEL TO WALL
3/4" = 1'-0"



12 ROOF DECK PERPENDICULAR TO WALL
3/4" = 1'-0"

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Print Name: Paul A. Johnson

Signature:

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

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1,2,3	NOT CHANGED	
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	BID PACKAGE 2A	01.24.11

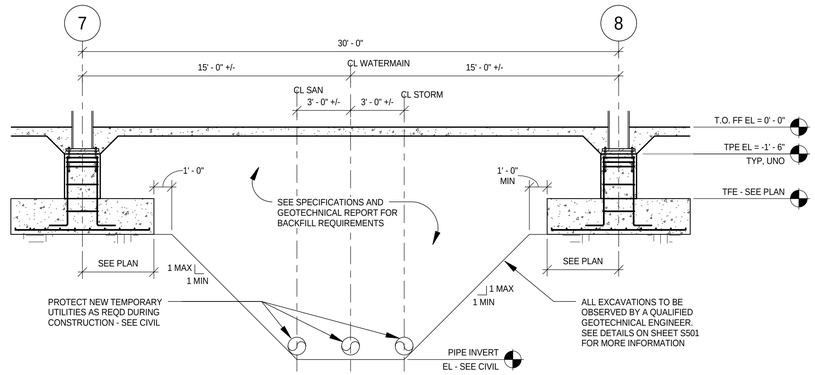
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
STRUCTURAL DETAILS

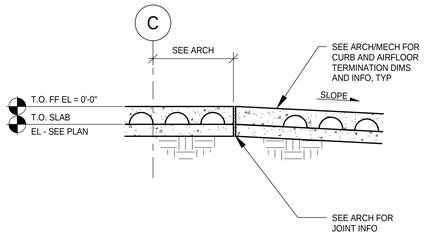
SHEET NUMBER
S503

BID PACKEAGE 2A ISSUED FOR BID

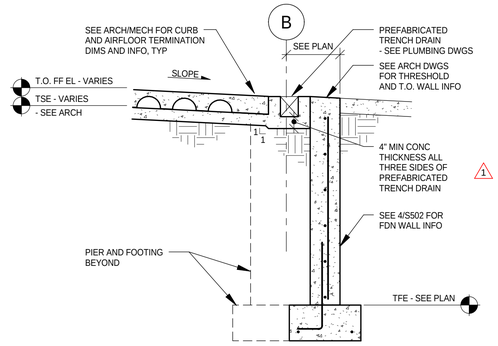


NOTES:
1. SEE GEOTECHNICAL REPORT FOR WATER TABLE ELEVATIONS. CONTRACTOR TO MAKE ADEQUATE PROVISIONS FOR DEWATERING AS REQUIRED.
2. PIPE INVERT LOCATION SHOWN SCHEMATICALLY REPRESENT LOCATIONS AT GRID E.
3. CONTRACTOR TO NOTIFY A/E IMMEDIATELY IF ACTUAL FIELD CONDITIONS VARY FROM LOCATIONS/SLOPES INDICATED.

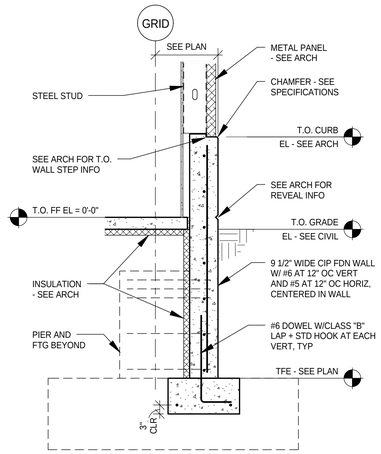
1 SECTION
1/4" = 1'-0"



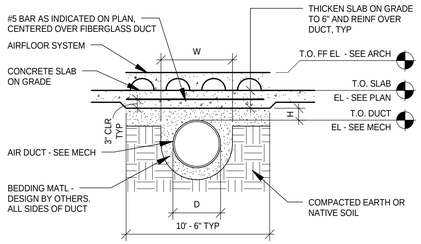
2 SECTION
1/2" = 1'-0"



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



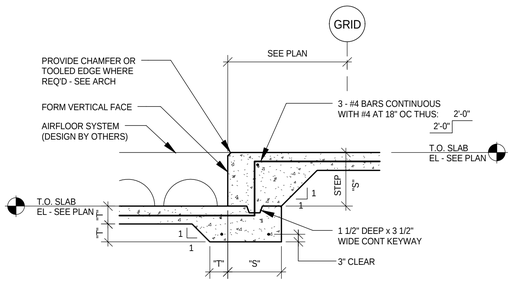
4 SECTION
1/2" = 1'-0"



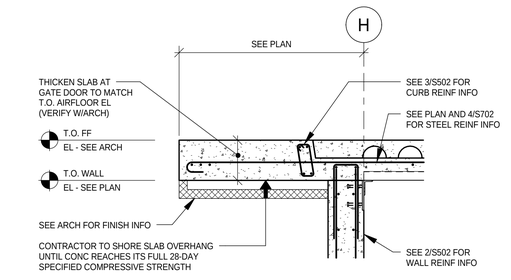
NOTE:
1. "H" AND "W" DIMENSIONS AND SPECIFICATIONS FOR BEDDING MATERIAL TO BE VERIFIED WITH UNDERGROUND DUCT SUPPLIER PRIOR TO CONSTRUCTION.

1

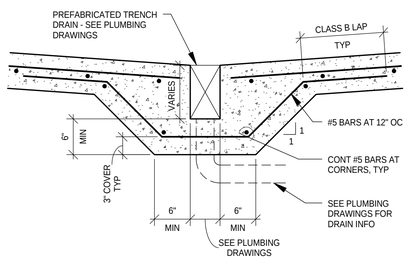
5 UNDERGROUND DUCTWORK DETAIL
1/2" = 1'-0"



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

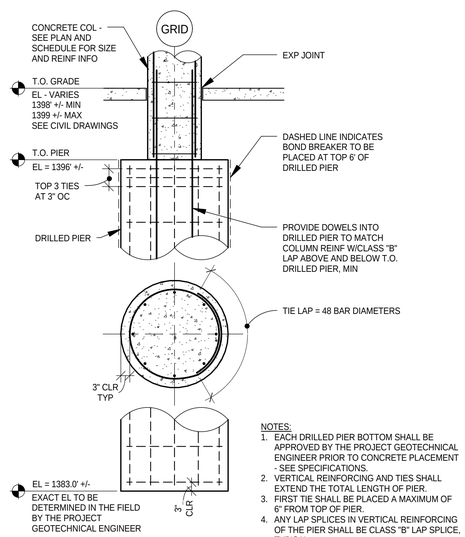


7 SECTION AT GATE DOOR SLAB
1/2" = 1'-0"



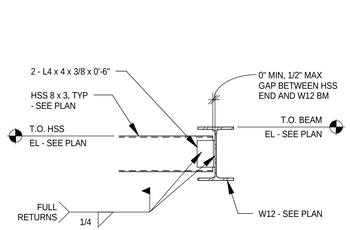
8 SECTION AT TRENCH DRAIN
1" = 1'-0"

1

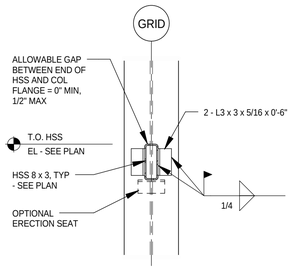


NOTES:
1. EACH DRILLED PIER BOTTOM SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER PRIOR TO CONCRETE PLACEMENT - SEE SPECIFICATIONS.
2. VERTICAL REINFORCING AND TIES SHALL EXTEND THE TOTAL LENGTH OF PIER.
3. FIRST TIE SHALL BE PLACED A MAXIMUM OF 6" FROM TOP OF PIER.
4. ANY LAP SPLICES IN VERTICAL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

9 DRILLED PIER DETAIL
NO SCALE



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



11 SECTION
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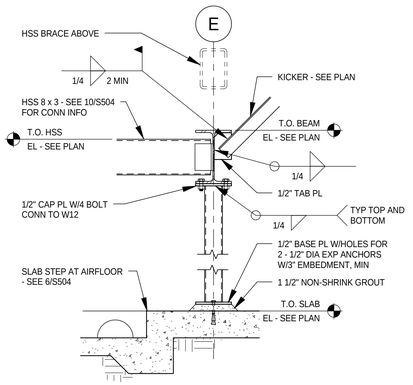
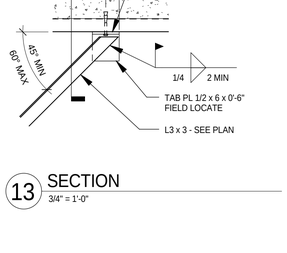
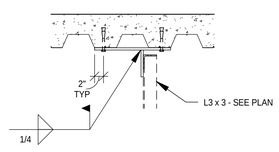


12 SECTION
3/4" = 1'-0"



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



14 SECTION
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S504

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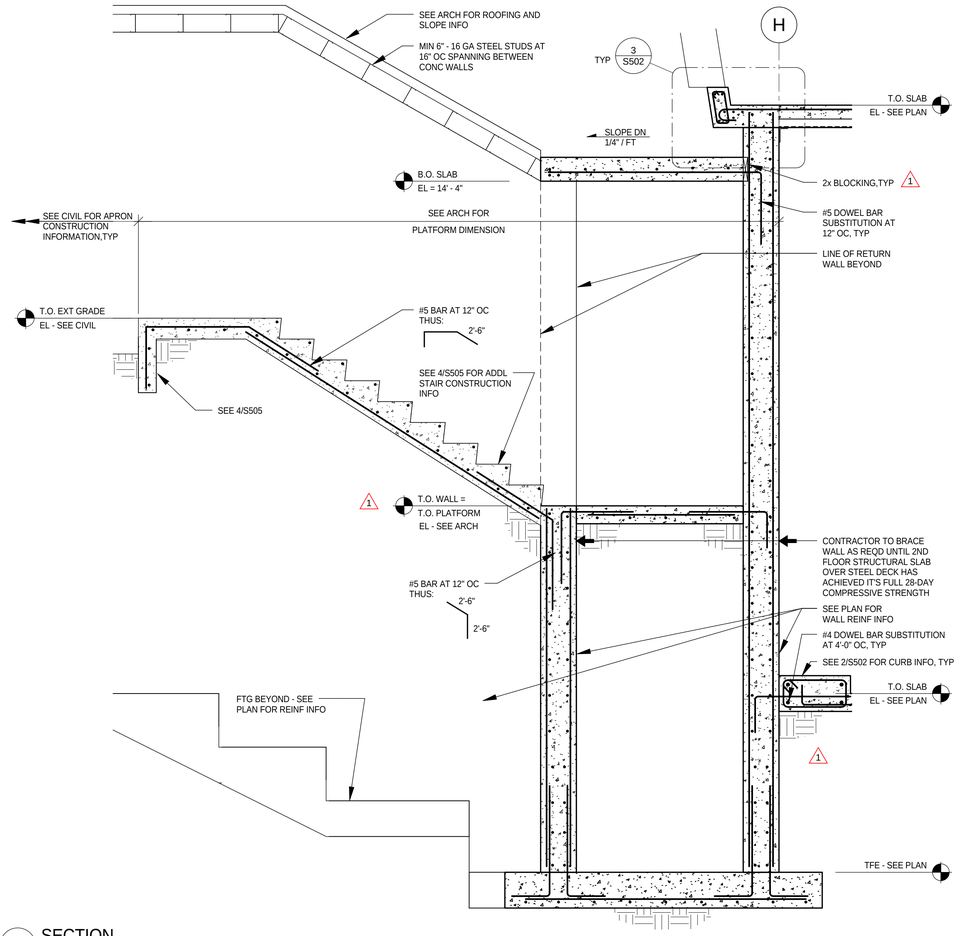
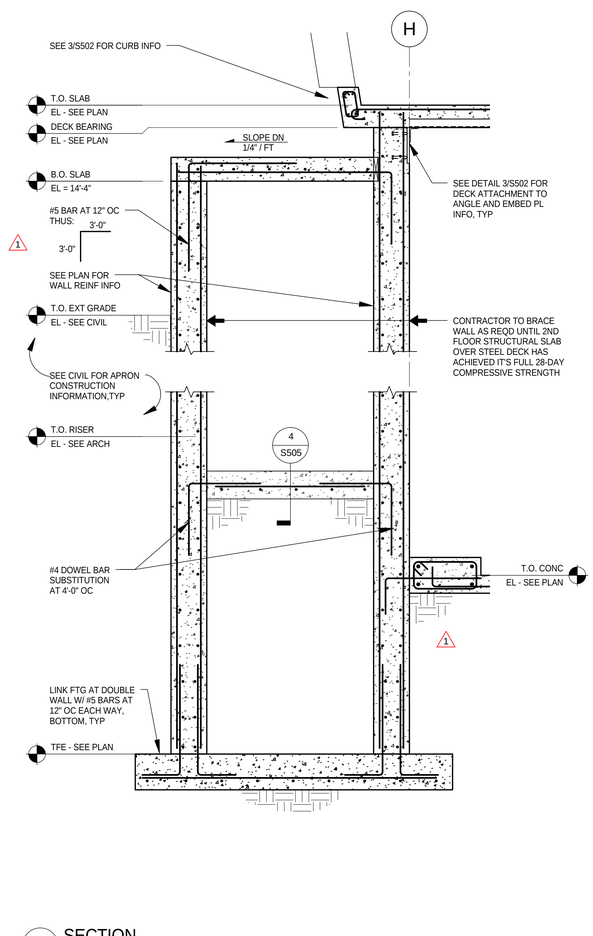
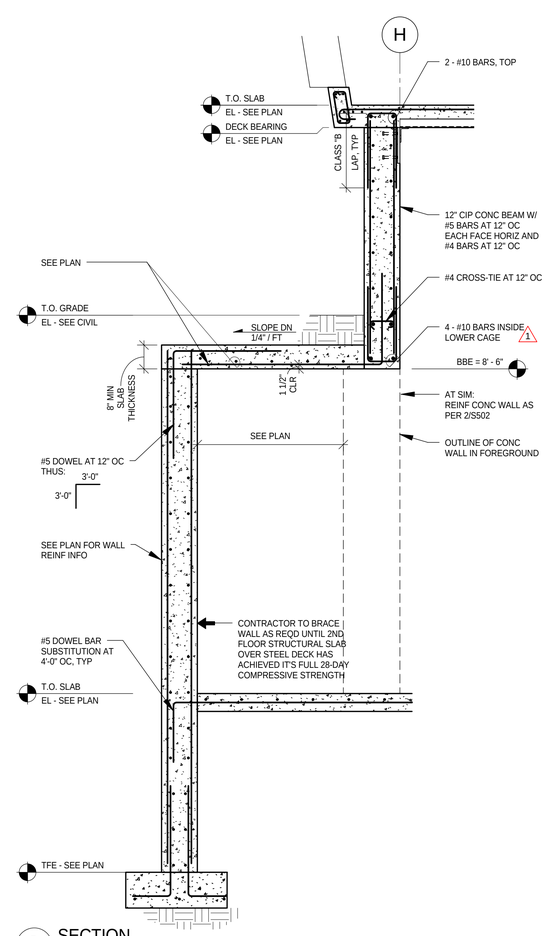


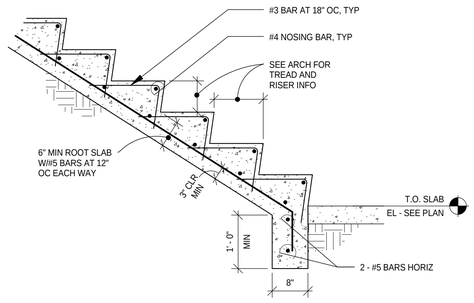
1 SECTION
1/2" = 1'-0"



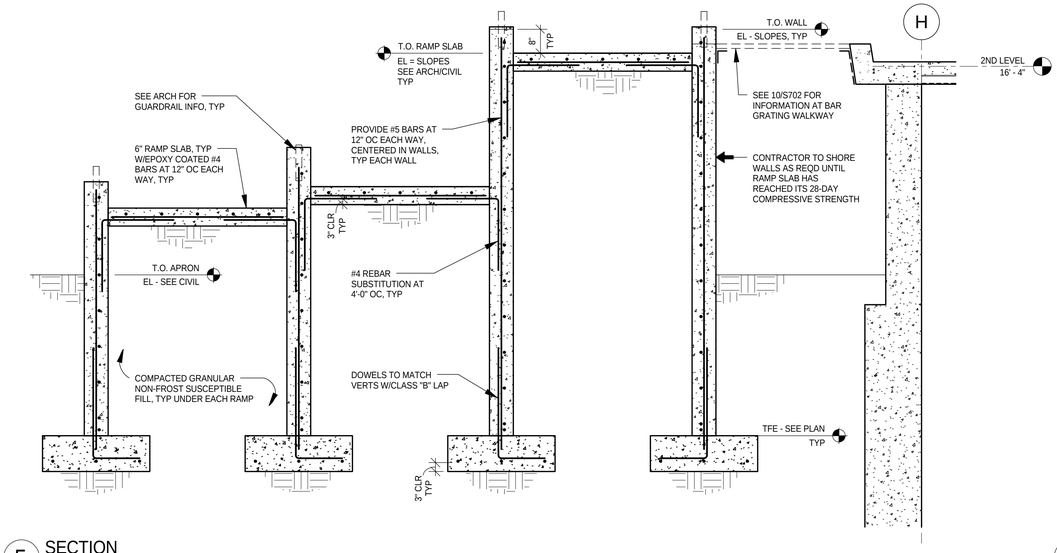
2 SECTION
1/2" = 1'-0"



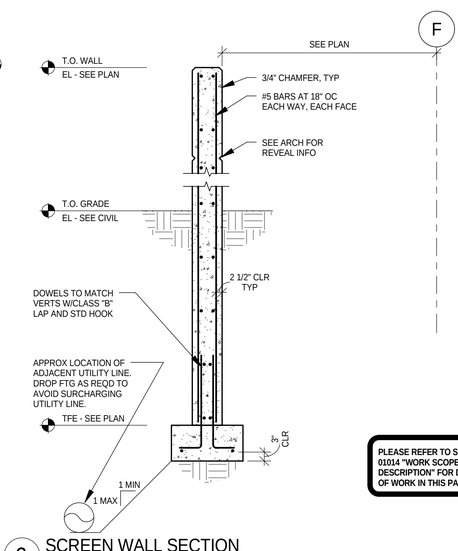
3 SECTION
1/2" = 1'-0"



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



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



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

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APPOLD DESIGN
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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
5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11

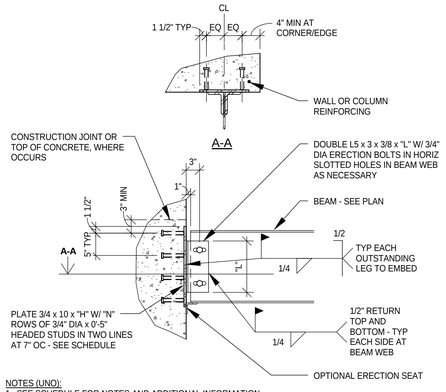
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S505

BID PACKEAGE 2A ISSUED FOR BID



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 "N"	PLATE LENGTH "H"	MIN ANGLE LENGTH "L"
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

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

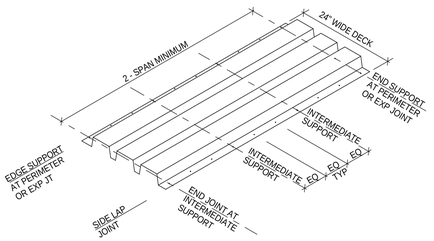
NOTES:
1. CONTRACTOR/FABRICATOR SHALL DESIGN TYPICAL SHEAR CONNECTIONS FOR THIS PROJECT. CONNECTION TYPES SHALL CONFORM TO AISC STANDARD SHEAR CONNECTIONS. SUBMIT PROPOSED CONNECTION TYPES FOR APPROVAL BEFORE STARTING SHOP DRAWINGS.
2. PROVIDE BEAM CONNECTIONS FOR END REACTIONS INDICATED ABOVE OR AS 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"

FLOOR AND ROOF DECK SCHEDULE				
MARK	DECK TYPE	CONCRETE TOPPING THICKNESS	CONCRETE TOPPING REINFORCING	COMMENTS
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

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.

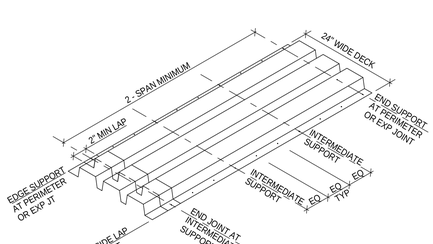
4 FLOOR AND ROOF DECK SCHEDULE
NO SCALE



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.

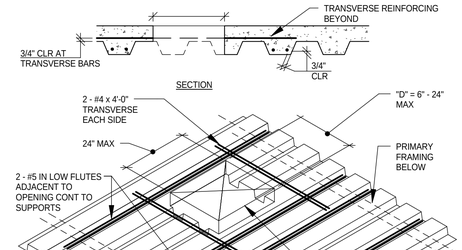
5 TYPICAL 3" COMPOSITE STEEL DECK ATTACHMENT DETAIL
NO SCALE



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

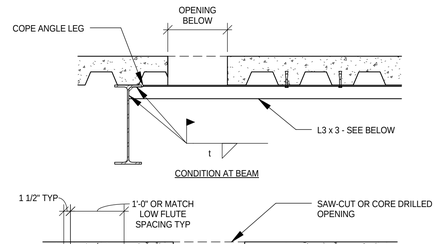
NOTES (UNO):
1. ALL PUDDLE (ARC-SPOT) WELDS SHALL BE 5/8" DIAMETER.
2. PROVIDE DECK ATTACHMENTS AT SPACING SHOWN UNLESS NOTED OTHERWISE ON DRAWINGS.
3. AT END LAP CONDITIONS, PUDDLE WELDS SHALL PROVIDE FUSION THROUGH ALL DECK LAYERS.

6 TYPICAL 3" STEEL ROOF DECK ATTACHMENT DETAIL
NO SCALE



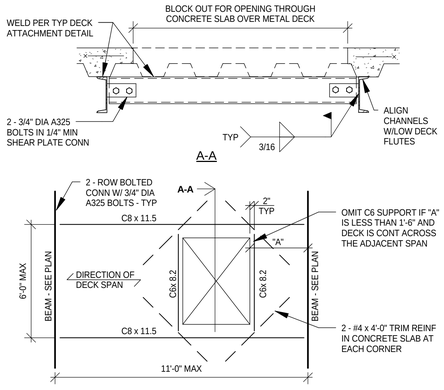
NOTES (UNO):
1. DO NOT CUT DECK AT OPENINGS UNTIL CONCRETE HAS ATTAINED ITS SPECIFIED COMPRESSIVE STRENGTH.
2. PROVIDE 2 TIMES "D" CLEAR DISTANCE BETWEEN OPENING EDGES. "D" IS LARGEST OF ADJACENT OPENING DIMENSIONS.

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



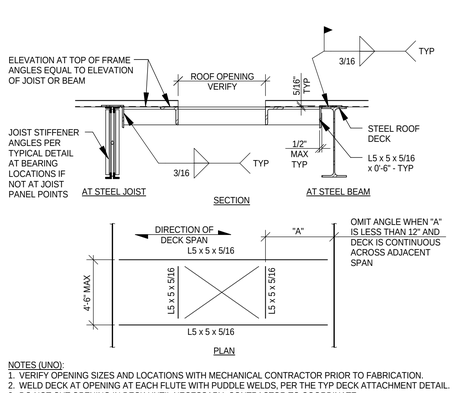
NOTES (UNO):
1. DO NOT OVER CUT CORNERS OF SQUARE OR RECTANGULAR OPENINGS.
2. CLUSTER OF OPENINGS CONSIDERED TO BE ONE OPENING. PROVIDE SUPPORT ANGLES IF OPENINGS LOCATED WITH LESS THAN TWO TIMES "D" CLEAR BETWEEN OPENING EDGES. "D" IS LARGEST OF ADJACENT OPENING DIMENSIONS.

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



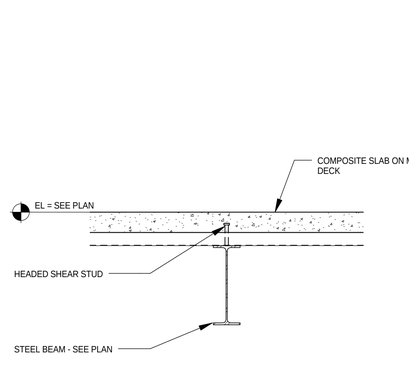
NOTES (UNO):
1. DO NOT CUT DECK AT OPENINGS UNTIL CONCRETE HAS ATTAINED ITS SPECIFIED COMPRESSIVE STRENGTH.
2. VERIFY OPENING DIMENSIONS WITH ARCHITECTURAL DRAWINGS AND MECHANICAL TRADES.

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



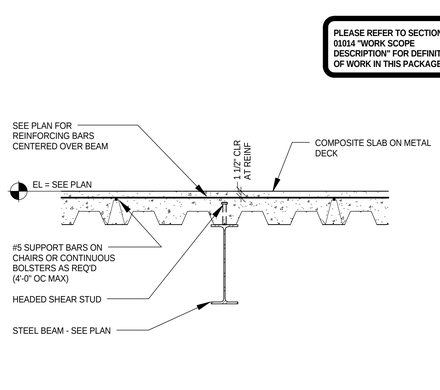
NOTES (UNO):
1. VERIFY OPENING SIZES AND LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO FABRICATION.
2. WELD DECK AT OPENING AT EACH FLUTE WITH PUDDLE WELDS, PER THE TYP DECK ATTACHMENT DETAIL.
3. DO NOT CUT OPENING IN DECK UNTIL NECESSARY, CONTRACTOR TO COORDINATE.
4. THIS ROOF OPENING FRAME IS NOT DESIGNED 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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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

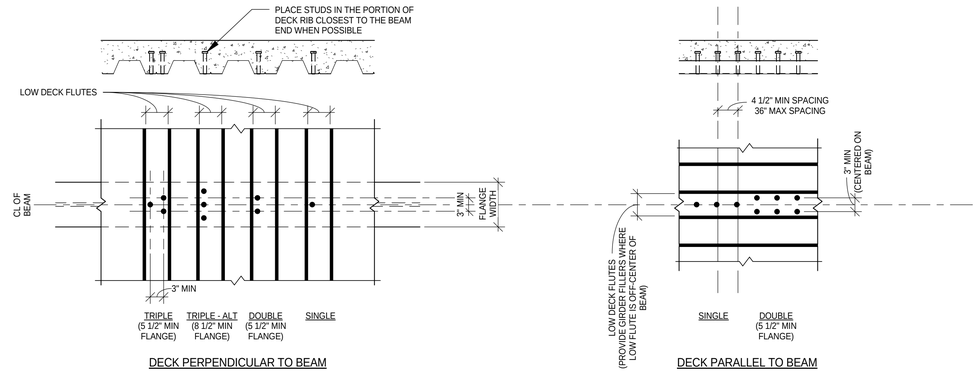
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S701

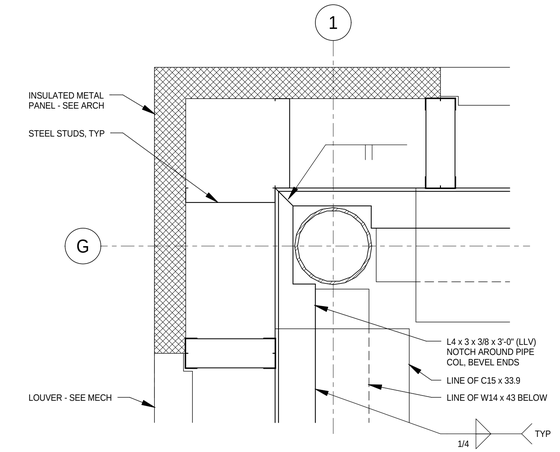
BID PACKEAGE 2A ISSUED FOR BID



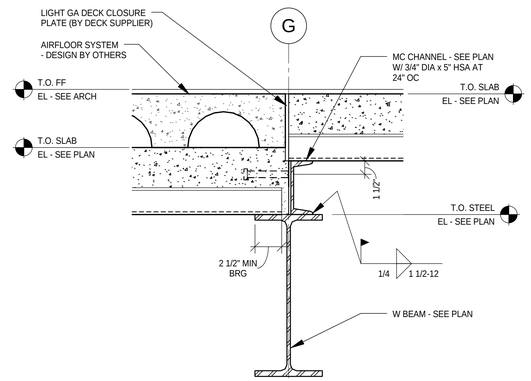
NOTES (UNO):
1. USE ONLY ONE STUD PER RIB UNTIL NUMBERS OF STUDS EXCEEDS DECK RIBS AVAILABLE. LOCATE SINGLE STUDS OVER WEB.
2. START LAYOUT OF HEADED STUDS AT EACH END OF THE BEAM AND PROCEED TOWARDS THE CENTER OF THE BEAM.
3. PROVIDE STUDS IN DOUBLE OR TRIPLE CONFIGURATION SHOWN TO MEET TOTAL NUMBER 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.

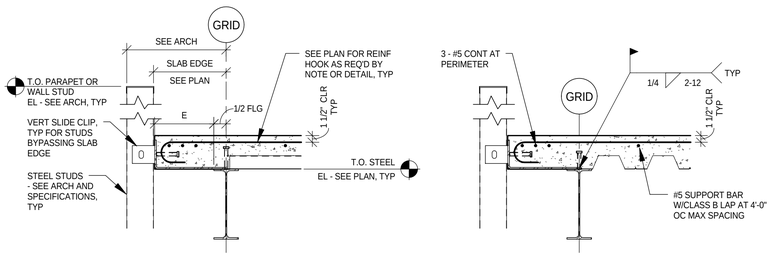
1 TYPICAL HEADED STUD PLACEMENT DETAIL
NO SCALE



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

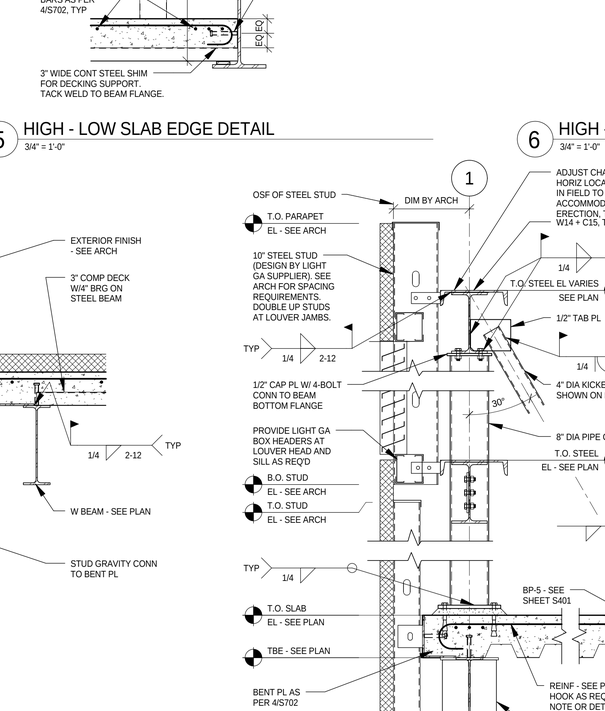


3 SECTION
1 1/2" = 1'-0"

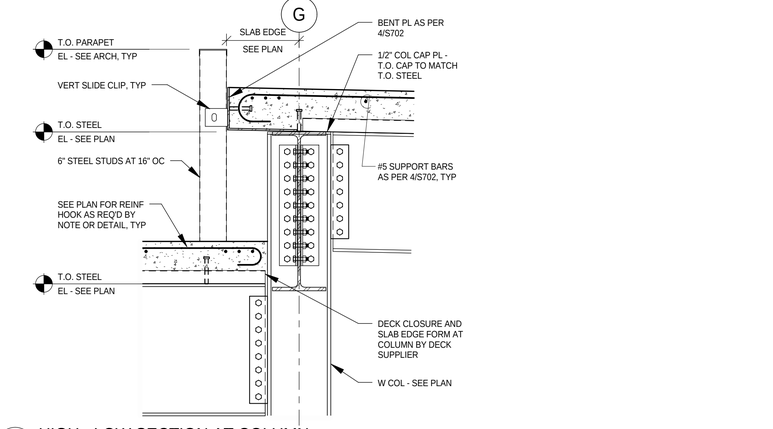


NOTES:
1. FOR "E" GREATER THAN 5" AND LESS THAN 12", PROVIDE 1/4" BENT PLATE EDGE FORM WITH 3/4" DIA x 6" LONG HEADED STUDS AT 24" OC.
2. FOR "E" GREATER THAN 12" BUT LESS THAN 24", PROVIDE 3/8" BENT PLATE EDGE FORM WITH 3/4" DIA x 6" HEADED STUDS AT 24" OC AND SHORE SLAB OVERHANG (DESIGN BY CONTRACTOR) 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.

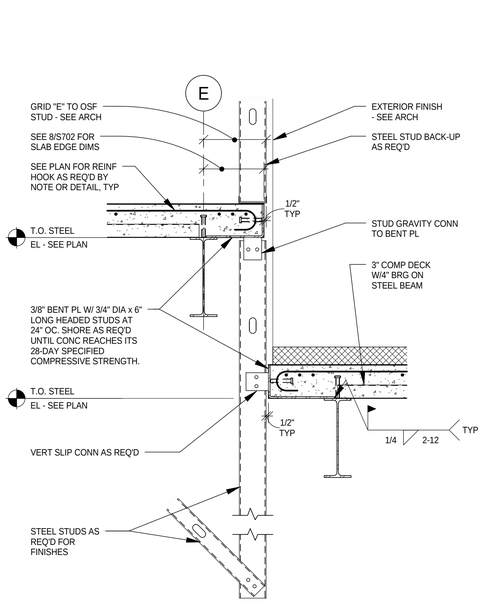
4 TYPICAL SLAB EDGE DETAIL
NO SCALE



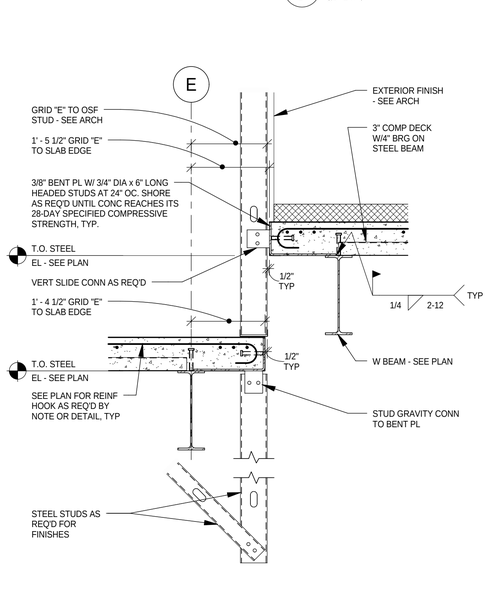
5 HIGH - LOW SLAB EDGE DETAIL
3/4" = 1'-0"



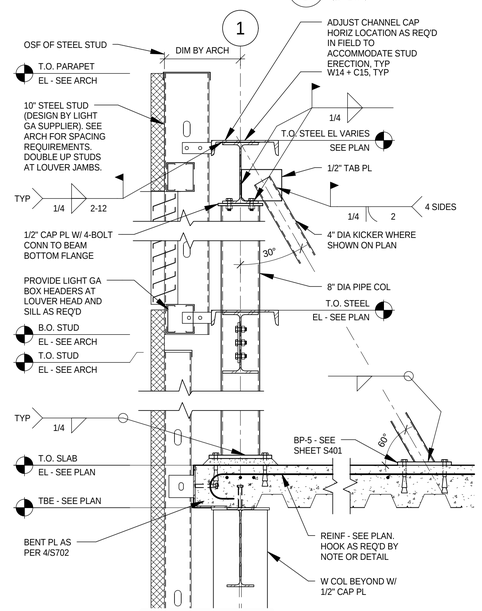
6 HIGH - LOW SECTION AT COLUMN
3/4" = 1'-0"



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"

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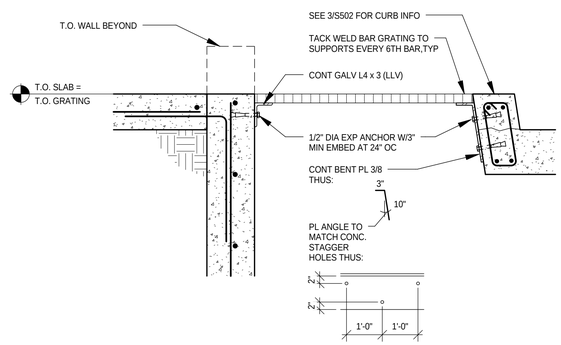

10 SECTION
1" = 1'-0"

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

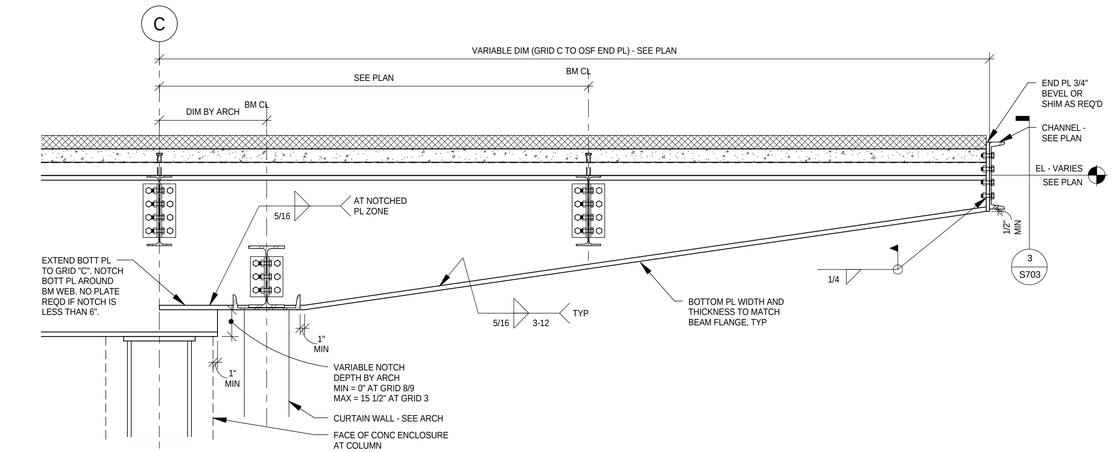
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

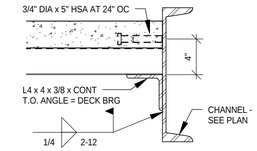
SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S702

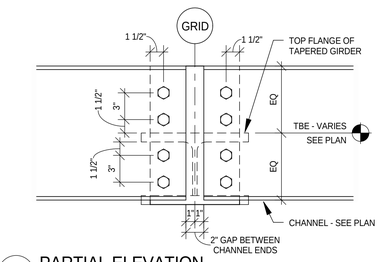
BID PACKEAGE 2A ISSUED FOR BID



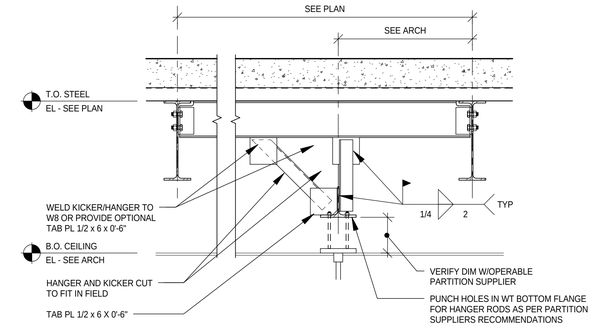
1 SECTION AT GIRDER
3/4" = 1'-0"



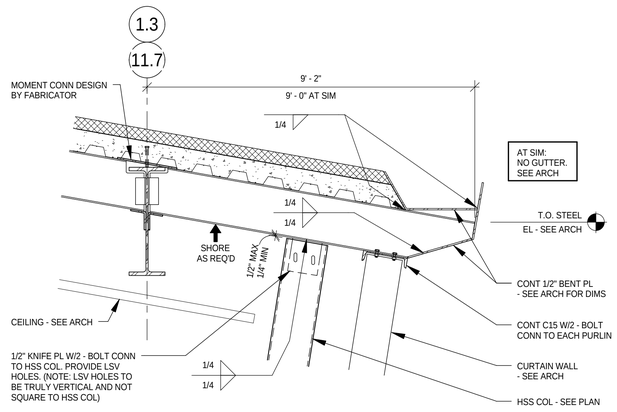
2 SECTION BETWEEN GIRDERS
1 1/2" = 1'-0"



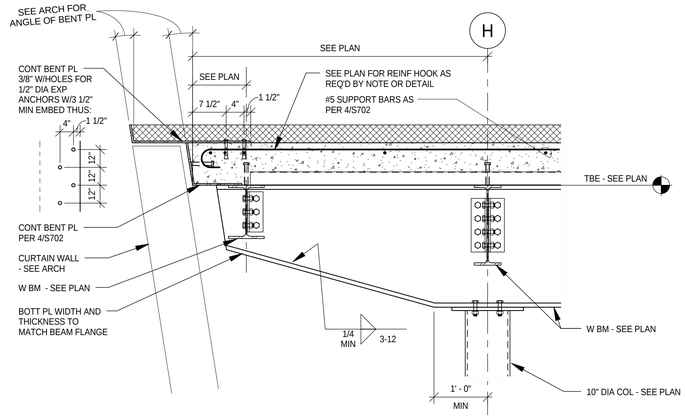
3 PARTIAL ELEVATION
1 1/2" = 1'-0"



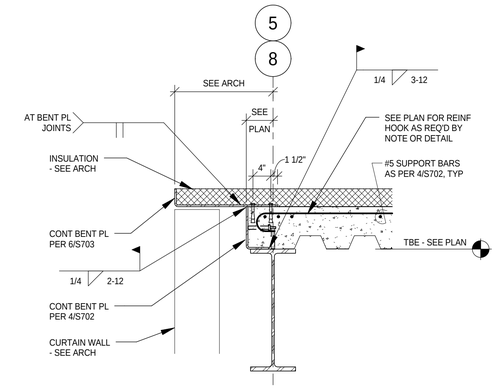
4 SECTION
3/4" = 1'-0"



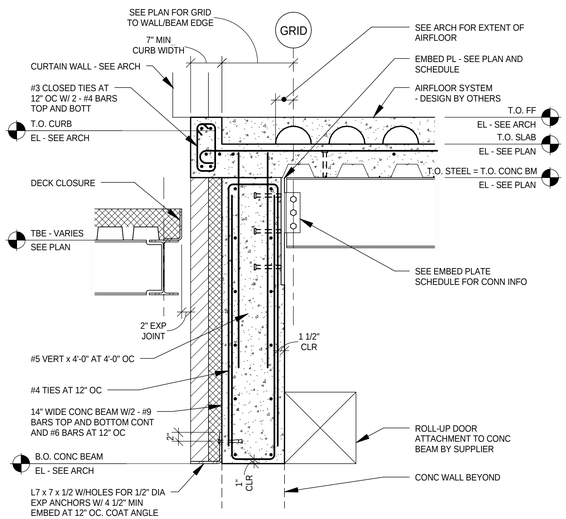
5 SECTION
1/2" = 1'-0"



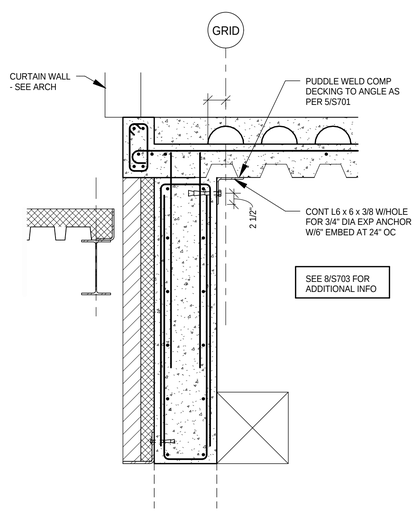
6 SECTION AT NORTH EDGE
3/4" = 1'-0"



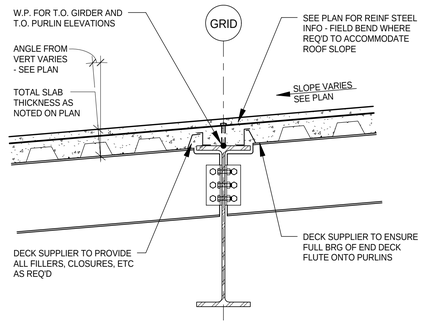
7 SECTION
3/4" = 1'-0"



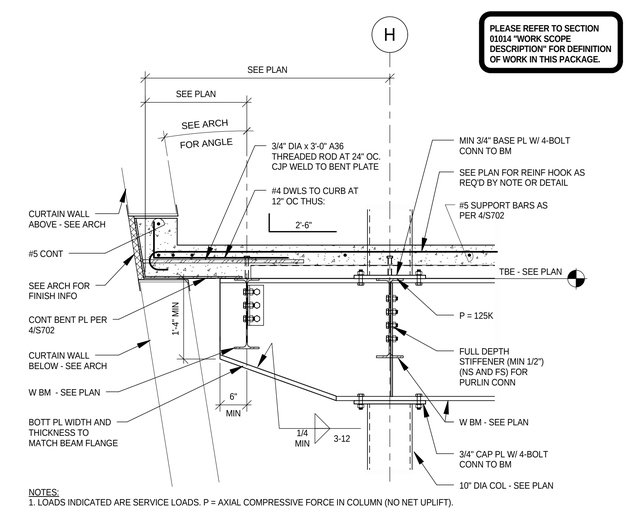
8 SECTION AT PURLIN
3/4" = 1'-0"



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



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



11 SECTION AT NORTH EDGE
3/4" = 1'-0"

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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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5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11

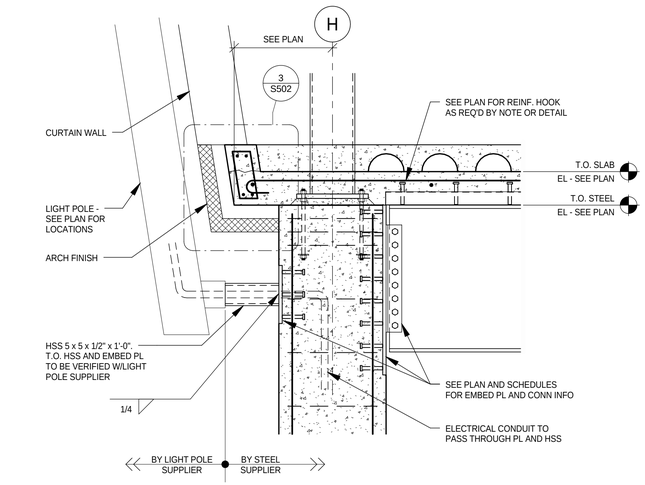
DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

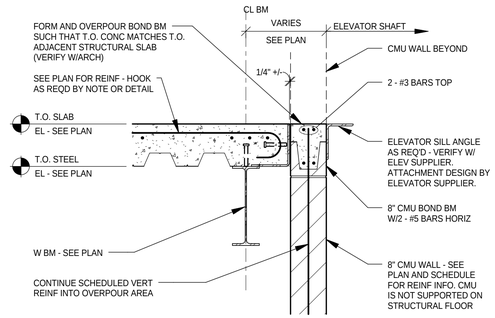
SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S703

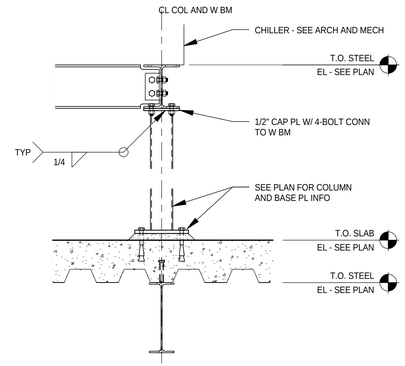
BID PACKEAGE 2A
ISSUED FOR BID



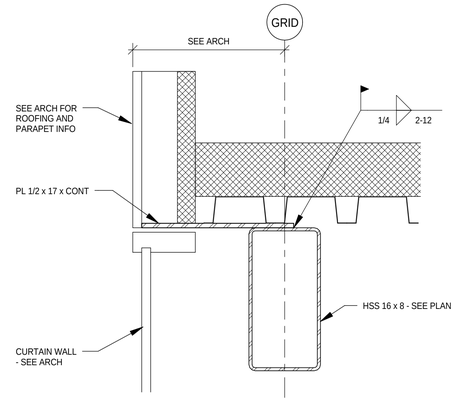
1 SECTION AT COLUMN AND LIGHT POLE
3/4" = 1'-0"



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



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

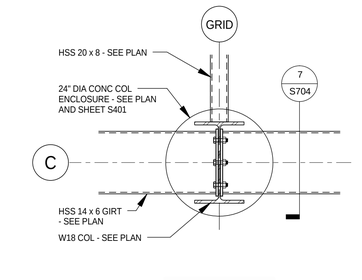


4 SECTION
1 1/2" = 1'-0"

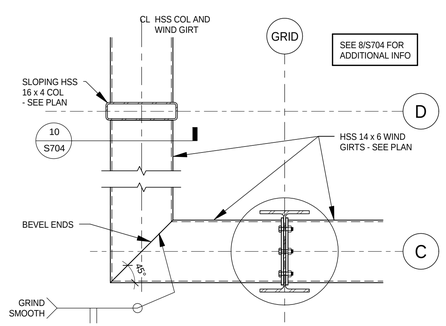
5 SECTION
1 1/2" = 1'-0"

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

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



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



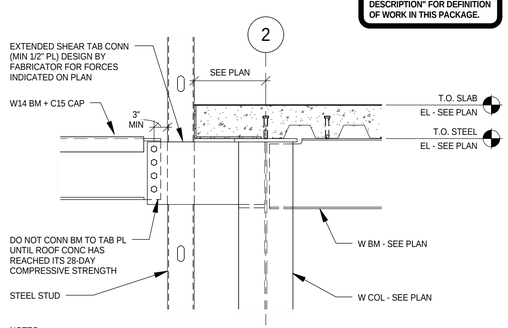
9 CORNER PLAN DETAIL
3/4" = 1'-0"

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

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

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

PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.



NOTES:
1. SEE ARCH FOR WATERPROOFING AND INSULATION INFORMATION AT CONNECTION.

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

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5	100% REVIEW	12.15.10
	BID PACKAGE 2A	01.24.11

DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
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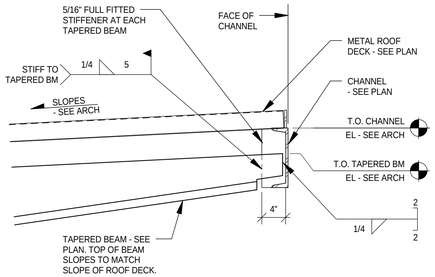
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

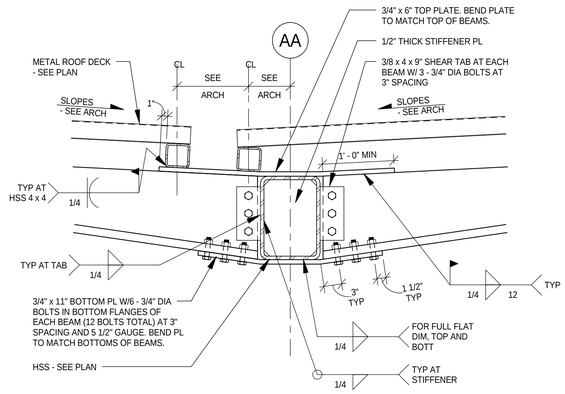
SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S704

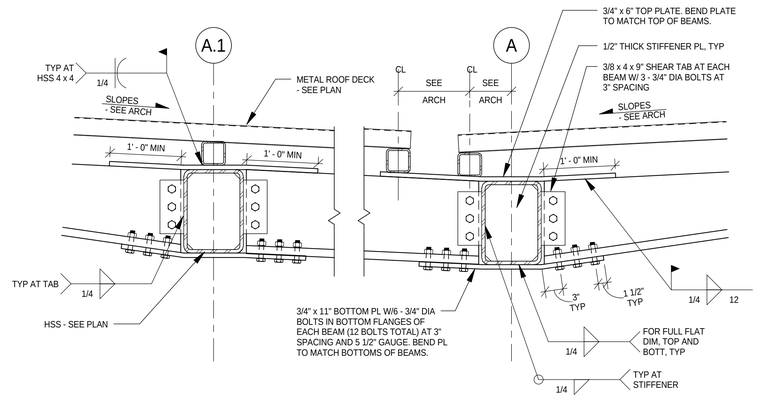
BID PACKEAGE 2A ISSUED FOR BID



1 SECTION
1" = 1'-0"

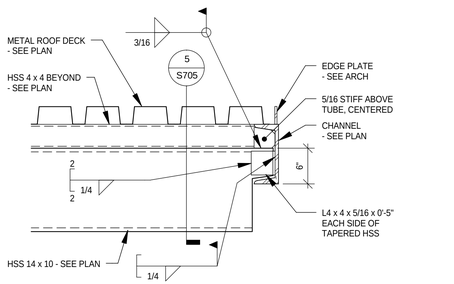


2 SECTION
1" = 1'-0"

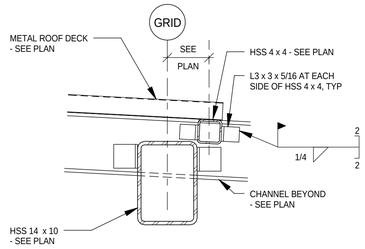


3 SECTION
1" = 1'-0"

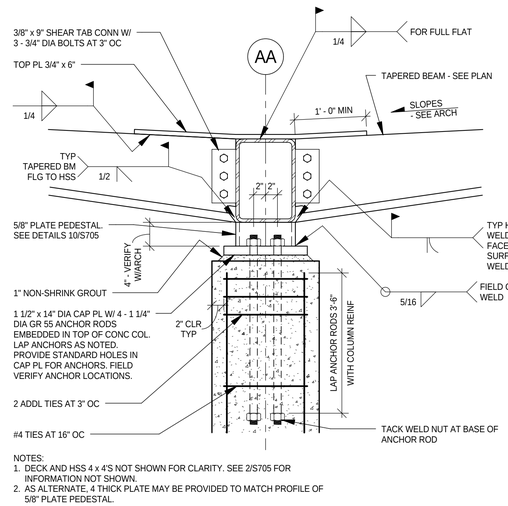
PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.



4 SECTION AT END HSS
1" = 1'-0"

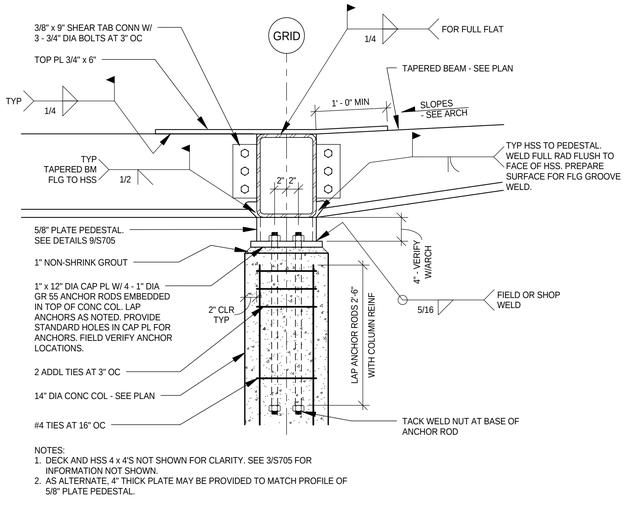


5 SECTION
1" = 1'-0"



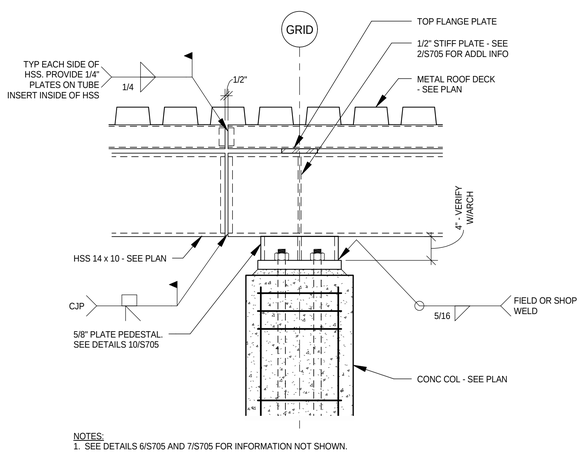
NOTES:
1. DECK AND HSS 4 x 4'S NOT SHOWN FOR CLARITY. SEE 2/S705 FOR INFORMATION NOT SHOWN.
2. AS ALTERNATE, 4 THICK PLATE MAY BE PROVIDED TO MATCH PROFILE OF 5/8" PLATE PEDESTAL.

6 SECTION
1" = 1'-0"



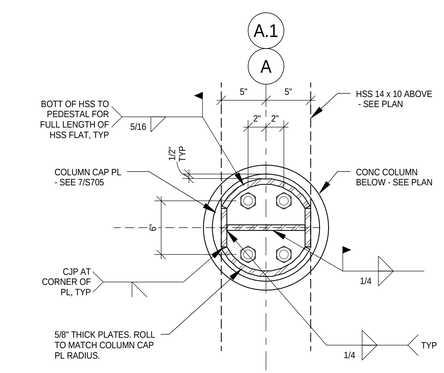
NOTES:
1. DECK AND HSS 4 x 4'S NOT SHOWN FOR CLARITY. SEE 3/S705 FOR INFORMATION NOT SHOWN.
2. AS ALTERNATE, 4" THICK PLATE MAY BE PROVIDED TO MATCH PROFILE OF 5/8" PLATE PEDESTAL.

7 SECTION
1" = 1'-0"

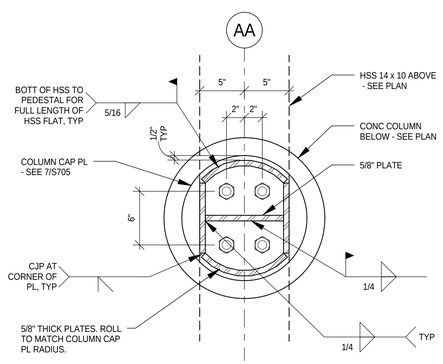


NOTES:
1. SEE DETAILS 6/S705 AND 7/S705 FOR INFORMATION NOT SHOWN.

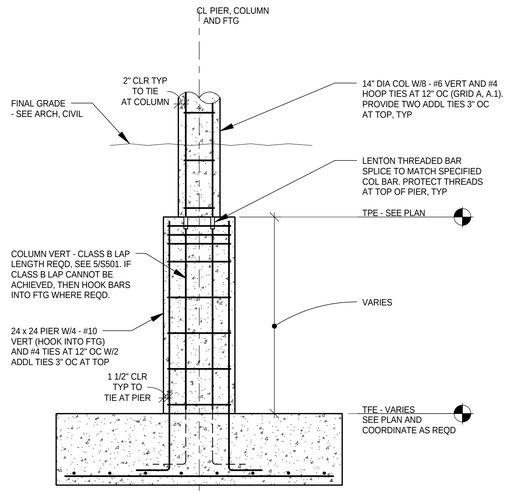
8 SECTION
1" = 1'-0"



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



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



11 SECTION AT CANOPY COLUMN
1/2" = 1'-0"

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STRUCTURAL DETAILS

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S705

BID PACKEAGE 2A
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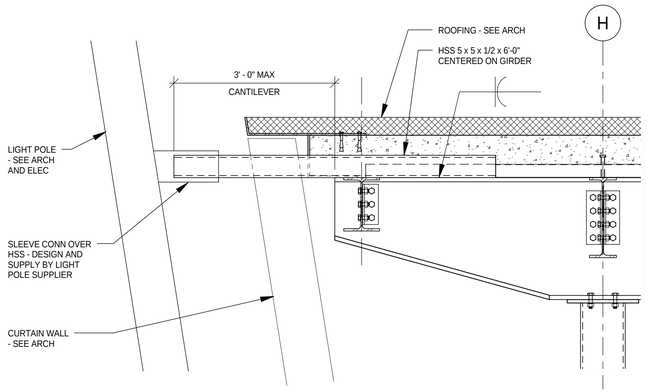
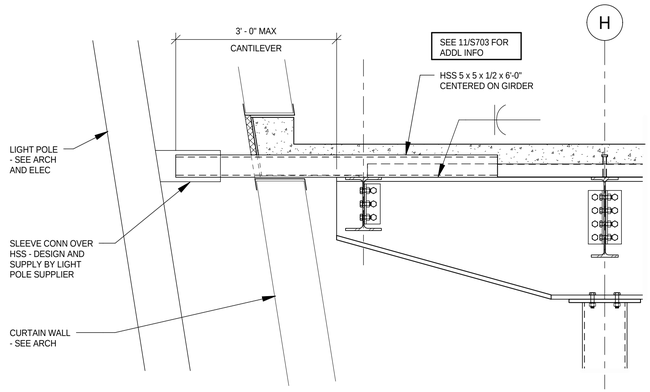
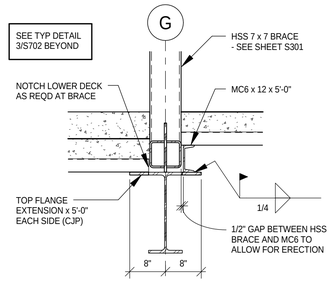


1 SECTION
3/4" = 1'-0"

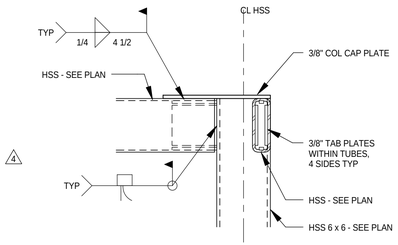


2 SECTION
3/4" = 1'-0"

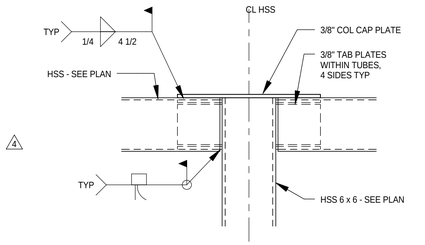
PLEASE REFER TO SECTION 01014 "WORK SCOPE DESCRIPTION" FOR DEFINITION OF WORK IN THIS PACKAGE.



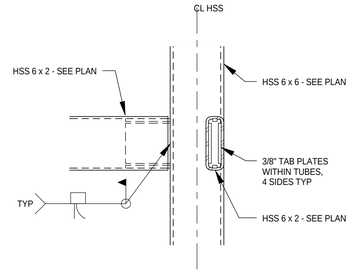
3 SECTION AT BF-6 AT LEVEL 2
3/4" = 1'-0"



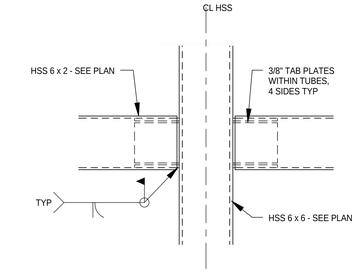
4 SECTION
1 1/2" = 1'-0"



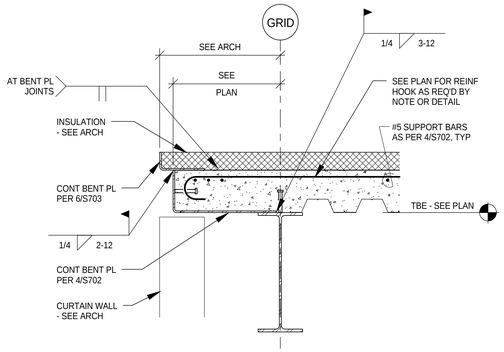
5 SECTION
1 1/2" = 1'-0"



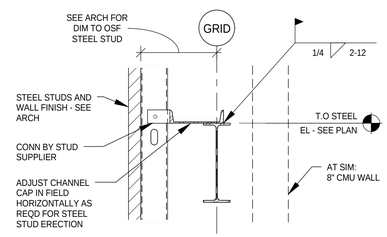
6 SECTION
1 1/2" = 1'-0"



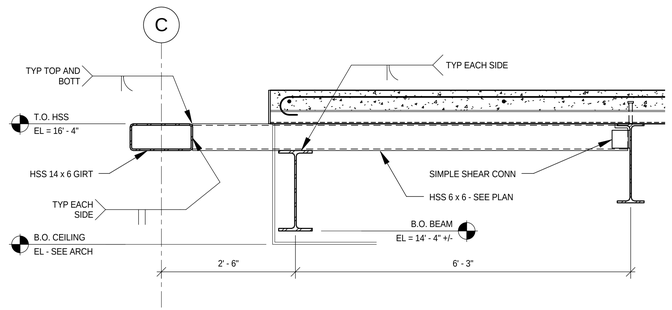
7 SECTION
1 1/2" = 1'-0"



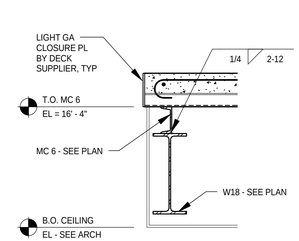
8 SECTION
3/4" = 1'-0"



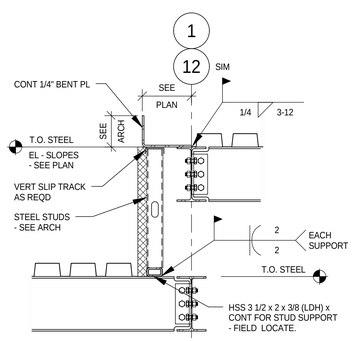
9 SECTION
3/4" = 1'-0"



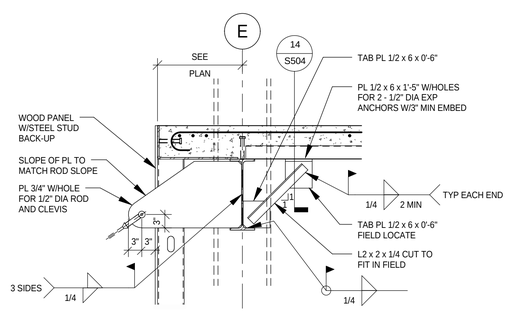
10 SECTION AT HSS CANTILEVER
3/4" = 1'-0"



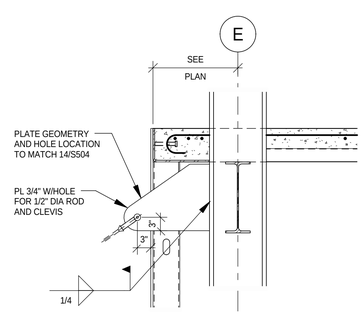
11 SECTION BETWEEN HSS CANTILEVER
3/4" = 1'-0"



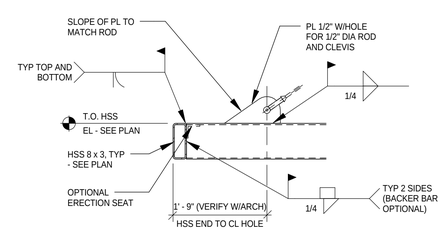
12 SECTION
3/4" = 1'-0"



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



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



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

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NEW TERMINAL DESIGN

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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

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

DATE ISSUED: 01-24-11
REVIEWED BY: PAJ / CWB
DRAWN BY: SJL
DESIGNED BY: CWB

AEP PROJECT NUMBER
213-1882-091

SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S706

BID PACKEAGE 2A
ISSUED FOR BID