

# HUDSON YARDS - PLATFORM

## NYC DOB FILING - FOUNDATION PHASE 1, 2a & 2b

### STRUCTURAL DRAWING LIST

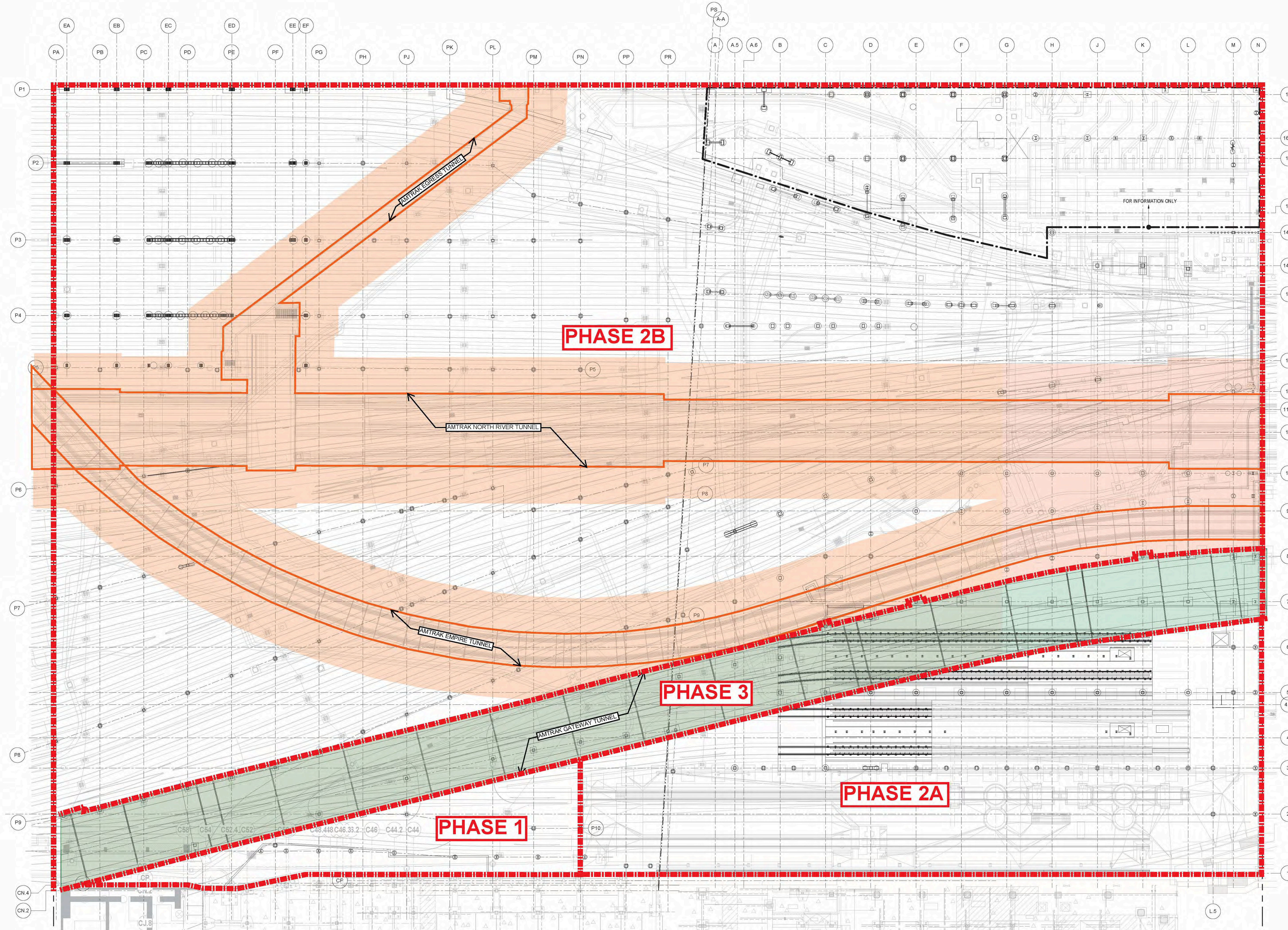
SHEET NO. SHEET NAME

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 FO-002.00 STRUCTURAL GENERAL NOTES  
 FO-003.00 STRUCTURAL GENERAL NOTES

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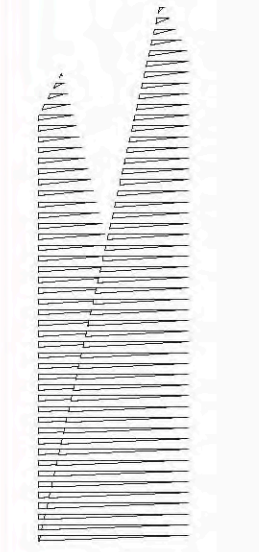
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HUDSON YARDS  
PLATFORM

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NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R. - PRE-FINAL 100%	11/22/2013
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STRUCTURAL SHEET  
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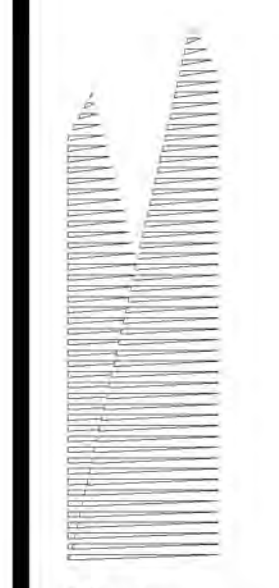
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SHEET 1 of 30

**Damian Titus**  
 Buildings  
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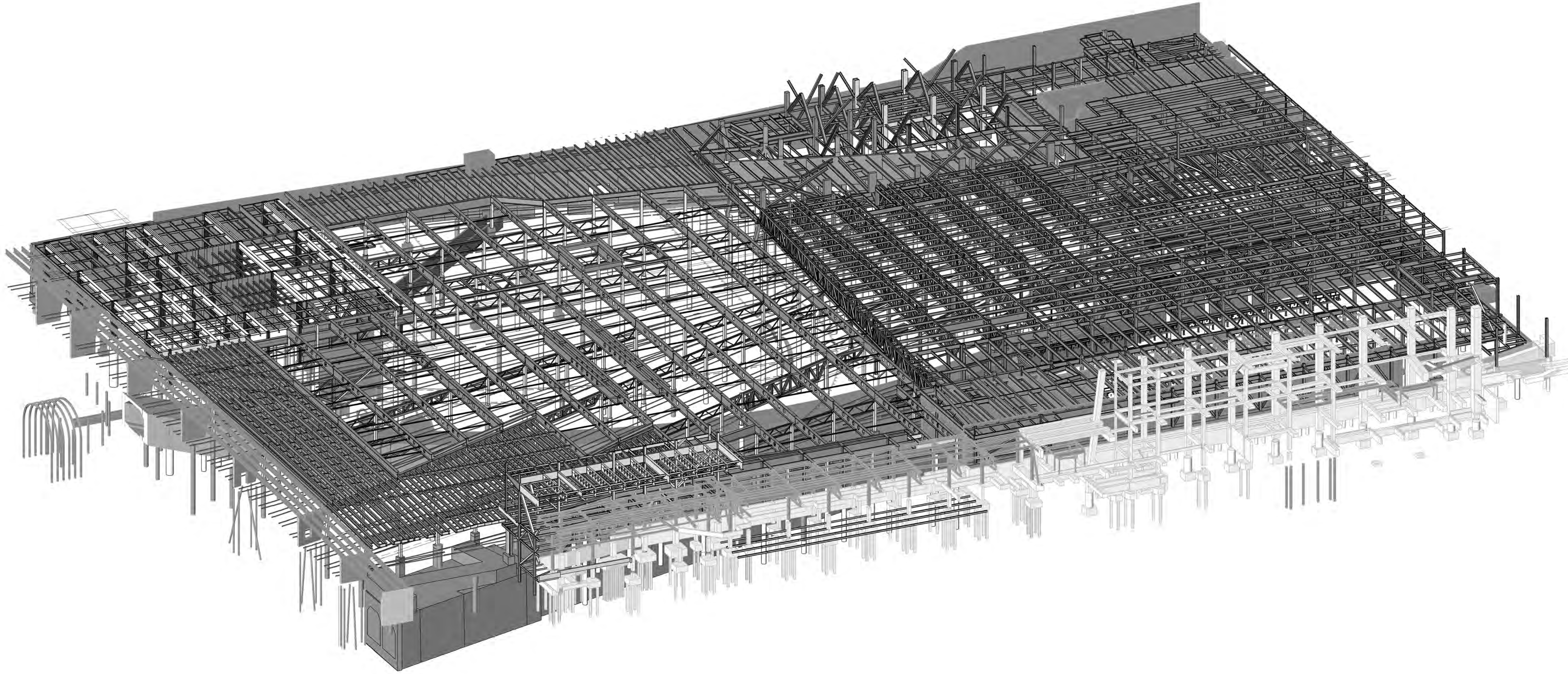
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ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ADDL	ADDITIONAL	PSF	POUNDS PER SQUARE FOOT
ADJ	ADJACENT	PSI	POUNDS PER SQUARE INCH
ALT	ALTERNATE	PT	POINT OR POST-TENSION(ED) OR (ING)
APPRX	APPROXIMATE	RAD	RADIUS
ARCH	ARCHITECT OR ARCHITECTURAL	REF	REFERENCE
BJ	BOTTOM OF	REINF	REINFORCE(D) (ING) OR (MENT)
B/B	BACK TO BACK	REQD	REQUIRED
BAL	BALANCE	S&T	SHRINKAGE AND TEMPERATURE
BLDG	BUILDING	SCHED	SCHEDULE(D)
BLK	BLOCK	SDL	SUPERIMPOSED DEAD LOAD
BLKG	BLOCKING	SECT	SECTION
BM	BEAM	SER	STRUCTURAL ENGINEER OF RECORD
BOT	BOTTOM	SF	SQUARE FOOT (FEET)
BRDG	BRIDGING	SHT	SHEET
BRG	BEARING	SIM	SIMILAR
BTWN	BETWEEN	SLRS	SEISMIC LOAD RESISTING SYSTEM
C	COMPRESSION	SOG	SLAB ON GRADE
C/C	CENTER TO CENTER	SP	SPACE
CIP	CAST-IN-PLACE	SPEC(S)	SPECIFICATION(S)
CL	CENTER LINE	STD	STANDARD
CLR	CLEAR OR CLEARANCE	STL	STEEL
CMU	CONCRETE MASONRY UNIT	STR	STRUCTURE
COL	COLUMN	STRCTL	STRUCTURAL
COMP	COMPRESSION	SYM	SYMMETRICAL
CONC	CONCRETE	T	TENSION
CONN	CONNECTION(S)	T&B	TOP AND BOTTOM
CONST	CONSTRUCTION	T/	TOP OF
CONT	CONTINUOUS	TEMP	TEMPERATURE OR TEMPORARY
db	REINFORCING BAR DIAMETER	TEN	TENSION
DBL	DOUBLE	THK	THICK OR THICKNESS
DCW/	DEMAND CRITICAL WELD	TYP	TYPICAL
DEG	DEGREE(S)	UON	UNLESS OTHERWISE NOTED
DET	DETAIL	V	SHEAR
DIA	DIAMETER	VERT	VERTICAL
DIAG	DIAGONAL	VIF	VERIFY IN FIELD
DIM(S)	DIMENSION(S)	W/	WITH
DL	DEAD LOAD	W/O	WITHOUT
DWG(S)	DRAWING(S)	WD	WOOD
DWL	DOWEL(S)	WP	WORK POINT
EA	EACH	WPPF	WATERPROOFING
ECC	ECCENTRICITY	WSTP	WATERSTOP
EF	EACH FACE	WWR	WELDED WIRE REINFORCEMENT
EL	ELEVATION		
ELEC	ELECTRICAL		
ENGR	ENGINEER		
EOS	EDGE OF SLAB		
EQ	EQUAL		
EQUIP	EQUIPMENT		
EW	EACH WAY		
EXP	EXPANSION		
EXST	EXISTING		
EXT	EXTERIOR		
F/F	FACE TO FACE		
FIN	FINISH(ED)		
FLR	FLOOR		
FND	FOUNDATION		
FP	FIREPROOF(ING)		
FS	FAR SIDE		
FTG	FOOTING		
GA	GAGE, GAUGE		
GALV	GALVANIZED		
GB	GRADE BEAM		
GEN	GENERAL		
GR	GRADE		
HK	HOOK		
HORIZ	HORIZONTAL		
HP	HIGH POINT		
HT	HEIGHT		
ID	INSIDE DIAMETER		
IF	INSIDE FACE		
INFO	INFORMATION		
INT	INTERIOR		
INTRM	INTERMEDIATE		
JST(S)	JOIST(S)		
JT	JOINT		
K	KIPS (1,000 POUNDS)		
KLF	KIP PER LINEAR FOOT		
KSF	KIP PER SQUARE FOOT		
LL	LIVE LOAD		
LLH	LONG LEG HORIZONTAL		
LLV	LONG LEG VERTICAL		
LONG	LONGITUDINAL		
LP	LOW POINT		
LW	LIGHTWEIGHT		
LWC	LIGHTWEIGHT CONCRETE		
M	MOMENT		
MATL	MATERIAL		
MAX	MAXIMUM		
MC	MOMENT CONNECTION(S)		
MECH	MECHANICAL		
MEP	MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION		
MEZZ	MEZZANINE		
MFR	MANUFACTURER		
MID	MIDDLE		
MIN	MINIMUM		
MISC	MISCELLANEOUS		
NIC	NOT IN CONTRACT		
NO	NUMBER		
NOM	NOMINAL		
NS	NEAR SIDE		
NTS	NOT TO SCALE		
NW	NORMAL WEIGHT		
NWC	NORMALWEIGHT CONCRETE		
OC	ON CENTER		
OD	OUTSIDE DIAMETER		
OF	OUTSIDE FACE		
OH	OPPOSITE HAND		
OPNG(S)	OPENING(S)		
OPP	OPPOSITE		
OSL	OUTSTANDING LEG		
PC	PIECE		
PCY	POUNDS PER CUBIC YARD		
PERP	PERPENDICULAR		
PG	PLATE GIRDER		
PL	PLATE		
PRC	PRECAST		
PRLL	PARALLEL		



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Date:

Date: 01/07/14  
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Check Number: Author

**HYE - PL - FO-01.00**

**STRUCTURAL ABBREVIATIONS AND SYMBOLS**

Drawing Number: B-00010 Drawing Number  
**FO-01.00**

**Damian Titus**  
*[Signature]*  
Buildings  
APPROVED  
Under Directive 2 of 1975  
Date/Time: Jan 8, 2014 - 12:41 PM  
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**SC STRUCTURAL STEEL CONNECTIONS**

SC-1 ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISC-LOAD AND RESISTANCE FACTOR DESIGN.

SC-2 ALL CONNECTIONS, UNLESS INDICATED AS BEING FULLY DESIGNED ON THE STRUCTURAL DRAWINGS, SHALL BE DESIGNED AND DETAILED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED. THE DESIGN AND DETAILING SHALL COMPLY WITH ALL APPLICABLE CODES AND SPECIFICATION SECTIONS.

SC-3 UNLESS OTHERWISE NOTED, DETAILS INDICATED ON DRAWINGS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS. DETAILS INDICATED ON DRAWINGS ARE NOT INTENDED TO CONVEY COMPLETE CONNECTOR SIZES, PLATE SIZES, WELD SIZES, NUMBER OF BOLTS, OR ANY OTHER SPECIFIC INFORMATION THAT IS OBTAINED THROUGH DESIGNING OF AN INDIVIDUAL CONNECTION FOR A GIVEN SET OF LOADS. THESE DETAILS DO NOT SHOW ERECTION AIDS. PROVIDE ERECTION AIDS AS REQUIRED AND REMOVE THEM AFTER WORK IS COMPLETE.

SC-4 SUBMIT CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS TO THE SER FOR REVIEW PRIOR TO REVIEW OF SHOP DRAWINGS. FOR BIDDING PURPOSES, WHERE NO MOMENT IS INDICATED ON DRAWINGS PROVIDE FULL MOMENT CAPACITY OF MEMBER (3 Fy d) AND WHERE NO VERTICAL SHEAR IS INDICATED ON DRAWINGS PROVIDE FULL SHEAR CAPACITY (54 Fy d tw).

SC-5 ALTERNATE CONNECTIONS TO THOSE SHOWN ON DRAWINGS WILL ONLY BE CONSIDERED ACCEPTABLE IF CONTRACTOR FORMALLY SUBMITS ALTERNATES AND THE SER APPROVES THE SUBMITTAL.

SC-6 FOR CONNECTION DESIGN AND DETAILING, SET CONNECTION WORK POINT AT INTERSECTION OF MEMBER CENTERLINES, UNLESS OTHERWISE NOTED.

SC-7 DESIGN ALL CONNECTIONS FOR FORCES INDICATED ON THE DRAWINGS. CONNECTION DESIGN FORCES INDICATED ON THE DRAWINGS ARE FACTORED LOADS.

SC-8 DESIGN OF MEMBERS IS BASED ON ASSUMPTION OF 7/8-INCH DIAMETER AND 1 1/8-INCH DIAMETER A325 OR A490 BOLTS. USE NO MORE THAN TWO BOLT DIAMETERS, ONE GRADE PER DIAMETER, SKIP ONE SIZE BETWEEN DIAMETERS.

**SC-9 BEAM CONNECTION DESIGN NOTES**

SEE PLANS AND ELEVATIONS FOR BEAM REACTIONS AND MOMENTS THAT ARE LARGER THAN THE VALUE SHOWN IN SCHEDULES.

DEVELOP THE LARGER OF THE BEAM SHEAR REACTION SCHEDULED, SHOWN ON PLANS OR SHOWN ON ELEVATIONS.

DEVELOP THE LARGER OF THE MOMENT SCHEDULED, SHOWN ON PLANS OR SHOWN ON ELEVATIONS.

DEVELOP THE LARGER OF THE AXIAL FORCE DENOTED AS P OR T, SHOWN ON PLANS OR SHOWN ON ELEVATIONS. SEE STEEL BEAM LEGEND.

WHERE NO AXIAL FORCE IS SHOWN ALL BEAM CONNECTIONS SHALL BE DESIGNED FOR AN AXIAL FORCE EQUAL TO THE VERTICAL SHEAR REACTION, 10 KIPS MINIMUM. FOR THE DESIGN OF THE CONNECTIONS, THE SHEAR FORCE AND THE AXIAL TENSILE FORCE NEED NOT BE CONSIDERED TO ACT SIMULTANEOUSLY.

ALL BEAM REACTIONS, AXIAL FORCES AND MOMENTS ACT CONCURRENTLY. UNLESS OTHERWISE NOTED, BEAM REACTIONS ACT IN GRAVITY DIRECTION WHILE AXIAL FORCES AND MOMENTS ARE TO BE CONSIDERED REVERSIBLE.

EXCEPT WHERE "SNUG TIGHT" INSTALLATION IS SPECIFICALLY PERMITTED ON DRAWINGS OR "SLIP CRITICAL" DETAILING IS REQUIRED, ALL HIGH STRENGTH BOLTS SHALL BE INSTALLED AS FULL PRETENSIONED BOLTS.

AT A MINIMUM ALL BOLTED MOMENT AND AXIAL CONNECTION SHALL HAVE PRETENSIONED BOLTS AND STANDARD HOLES.

BOLTED MOMENT CONNECTIONS AT CANTILEVERS AND BACKSPANS SHALL USE SLIP CRITICAL BOLTS.

DO NOT USE OVERSIZED OR SLOTTED HOLES FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON DRAWINGS OR APPROVED IN WRITING BY THE SER.

SC-10 ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE STRUCTURAL WELDING CODE, ANSIAWS D1.1, LATEST EDITION. ALL WELD SIZES SHALL BE THE LARGER OF THE SIZE REQUIRED BY CONNECTION FORCES, THE MINIMUM SIZE PER ANSIAWS D1.1, OR 3/16 INCH MINIMUM FILLET WELD UNLESS OTHERWISE NOTED. ANY WELD SIZES SHOWN ON THE DESIGN DRAWINGS ARE CONSIDERED EFFECTIVE WELD SIZES AND SHALL BE INCREASED IN ACCORDANCE WITH AISC AS REQUIRED BY GAPS OR SKEWS BETWEEN COMPONENTS.

SC-11 USE RUNOFF TABS AT ALL BEVEL AND FULL PENETRATION WELDS. REMOVE RUNOFF TABS BY NEAT CUTS AFTER WELD IS COMPLETED. GRIND SMOOTH WHERE REQUIRED BY DETAIL.

SC-12 WHERE REQUIRED BY DETAIL REMOVE WELD BACK UP BARS AND GRIND SMOOTH AFTER WELD IS COMPLETED.

SC-13 FOR TRUSS DETAILING USE A MINIMUM BOLT SPACING OF 3 TIMES THE BOLT DIAMETER AND A MINIMUM EDGE DISTANCE OF 2 INCHES. ALSO REFER TO TYPICAL DETAILS.

SC-14 DESIGN, DETAIL, FURNISH AND INSTALL STIFFENERS, CONTINUITY PLATES, DOUBLER PLATES, OR OTHER NECESSARY ADDITIONAL LOCAL STRENGTHENING MEASURES AS REQUIRED. MEMBER SIZES INDICATED ON THE DRAWINGS ARE BASED ON MEMBER BEHAVIOR AWAY FROM CONNECTIONS.

**CI CONTROLLED INSPECTIONS**

CI-1 THE FOLLOWING CONTROLLED INSPECTIONS ARE REQUIRED TO BE PERFORMED IN ACCORDANCE WITH THE BUILDING CODE OF THE CITY OF NEW YORK.

ITEM	NYC CODE REF. SECTION
STRUCTURAL STEEL - WELDING	BC 1704.3.1
STRUCTURAL STEEL - ERECTION AND BOLTING	BC 1704.3.2, BC 1704.3.4
CONCRETE - CAST IN PLACE	BC 1704.4
CONCRETE TEST CYLINDERS	BC 1905.6, TR-2
CONCRETE DESIGN MIX	BC 1905.3, TR-3
SOILS - SITE PREPARATION	BC 1704.7.1
SOILS - INVESTIGATIONS (BORINGS / TEST PITS)	BC 1704.7.4, TR-4
PILE FOUNDATIONS & DRILLED PIER INSTALLATIONS	BC 1704.8, TR-5
POST-INSTALLED ANCHORS	

CI-2 ANY HIGH STRENGTH CEMENTIOUS GROUT USED AS PART OF THE PRIMARY STRUCTURAL SYSTEM WILL BE TESTED IN ACCORDANCE WITH 1704.4

**PA POST-INSTALLED ANCHORS**

PA-1 ADHESIVE ANCHOR SYSTEMS USED FOR DESIGN:

SEISMIC DESIGN CATEGORY A - F  
HIT-HY 150 MAX-SD EPOXY ADHESIVE ANCHOR HILTI, TULSA, OK

SEISMIC DESIGN CATEGORY A - B AT LOCATIONS SPECIFICALLY NOTED IN DETAILS ONLY  
HIT-HY 150 MAX EPOXY ADHESIVE ANCHOR HILTI, TULSA, OK

OVERHEAD AND/OR CONSTANT TENSION EPOXY ANCHOR INSTALLATIONS NOT SHOWN ON THE DRAWINGS SHALL NOT BE PERMITTED UNLESS EACH CONDITION IS REVIEWED AND APPROVED IN WRITING BY THE SER.

PA-2 FIELD DRILLED EXPANSION ANCHOR SYSTEMS USED FOR DESIGN:

SEISMIC DESIGN CATEGORY A - F  
KWIK BOLT TZ HILTI, TULSA, OK

SEISMIC DESIGN CATEGORY A - B AT LOCATIONS SPECIFICALLY NOTED IN DETAILS ONLY  
KWIK BOLT 3 HILTI, TULSA, OK

PA-3 FIELD DRILLED THREADED SCREW ANCHOR SYSTEMS USED FOR DESIGN:

HUS-EZ HILTI, TULSA, OK

PA-4 ALTERNATIVE SYSTEM EQUIVALENT TO OR EXCEEDING THE PROPERTIES OF THE SYSTEMS ABOVE WILL BE CONSIDERED AS A SUBSTITUTION REQUEST. SEE PROJECT SPECIFICATIONS.

PA-5 ANCHORS ARE TO BE MINIMUM 3/4" DIAMETER WITH A MINIMUM EMBEDMENT OF 6", UNLESS OTHERWISE NOTED.

PA-6 INSTALL ANCHORS TO MEET THE REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS AND THE MANUFACTURER'S RECOMMENDATIONS.

PA-7 LOCATE BY NON-DESTRUCTIVE MEANS, AND AVOID ALL EXISTING REINFORCEMENT PRIOR TO INSTALLATION OF ANCHORS. IF EXISTING REINFORCING LAYOUT PROHIBITS THE INSTALLATION OF ANCHORS AS INDICATED IN THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS IMMEDIATELY.

PA-8 INSTALL MASONRY ANCHORS IN SOLID MASONRY OR IN HOLLOW MASONRY THAT HAS BEEN GROUTED SOLID AT LEAST ONE COURSE ABOVE AND ONE COURSE BELOW THE ANCHOR, UNLESS OTHERWISE NOTED.

**EX EXISTING CONDITIONS**

EX-1 ALL EXISTING CONDITIONS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING ARE BASED ON THE ORIGINAL DESIGN DRAWINGS BY OTHERS. ALL DIMENSIONS, LOCATIONS, SIZES AND RELATIONSHIP TO NEW STRUCTURE MUST BE FIELD VERIFIED BY THE CONTRACTOR.

- HIGHLIGHT
- LIRR STRUCTURES SUCH AS:
  - MAINTENANCE OF EQUIPMENT
  - CONTROL TOWER
  - SUBSTATION
  - RAMPS
  - PERIMETER WALLS
  - TRACKS
  - UTILITIES
- 11TH AVE
- 10TH AVE
- DEP FACILITIES
- TOWER C

EX-2 EXISTING CONDITIONS ARE BASED ON THE FOLLOWING:

- EXISTING UTILITIES ARE BASED ON LIRR MTA DRAWINGS FOR WEST SIDE STORAGE YARD COMPLEX, CONTRACT NO. 1-02-21154-0-0 DATED AUG. 12, 1982.
- EXISTING SUBSTATION, MAINTENANCE OF EQUIPMENT BUILDING AND CONTROL TOWER IS BASED ON LIRR MTA DRAWINGS FOR WEST SIDE STORAGE YARD COMPLEX, CONTRACT NO. 1-02-21202-0-0 DATED FEB. 28, 1983.
- EXISTING AMTRAK TUNNEL AND VIADUCT INFORMATION IS BASED ON REFERENCE DRAWINGS FROM LIRR MTA DRAWINGS FOR WEST SIDE STORAGE YARD COMPLEX, CONTRACT NO. 1-02-21064-0-0.
- EXISTING FOUNDATIONS IN THE MABSTOA BUS GARAGE IS BASED ON LIRR MTA DRAWINGS FOR WEST SIDE STORAGE YARD COMPLEX, CONTRACT NO. 1-02-21064-0-0 DATED FEB. 15, 1982.
- COLUMN CLEARANCES ARE BASED ON STUDY BY AECOM DATED MAR 21, 2013.
- EXISTING SITE CONDITIONS AND TRACKS ARE BASED ON SURVEY BY LANGAN DATED JAN. 15, 2013.

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**HYE - PL - FO-003.00**

**STRUCTURAL GENERAL NOTES**

Drawing Number: B-02-03 Drawing Number

**FO-003.00**

SHEET 4 of 30

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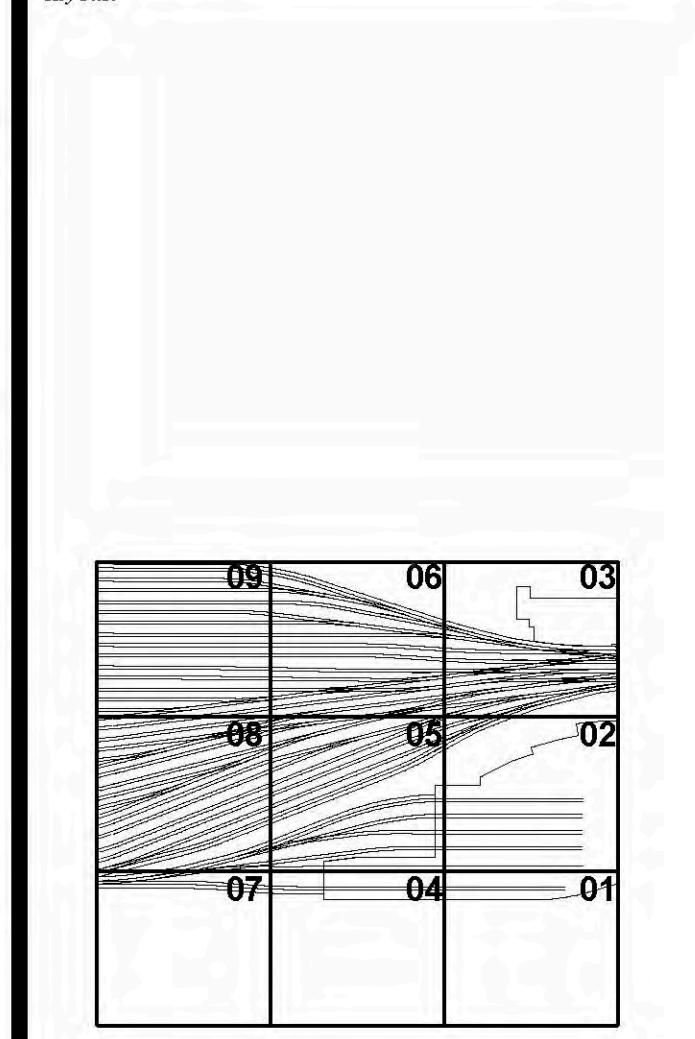
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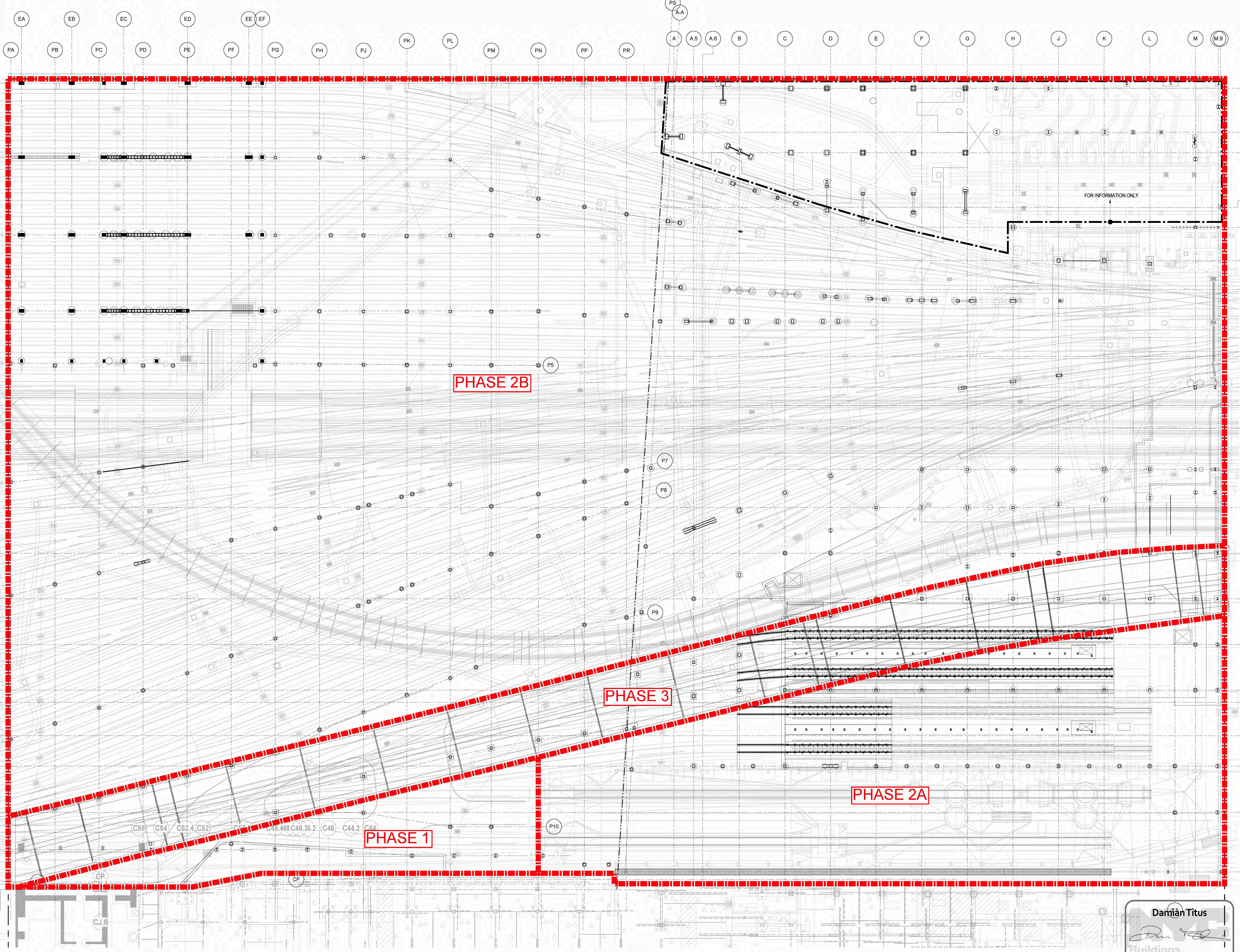
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Δ PL-2 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
Δ PL-2 PHASE 1 STRUCTURE UPDATE	9/29/2013
LIRR - 90% SUBMISSION	8/9/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE 1 FEAS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
Design	06/11/12



Date: 12/14/2012  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: 5

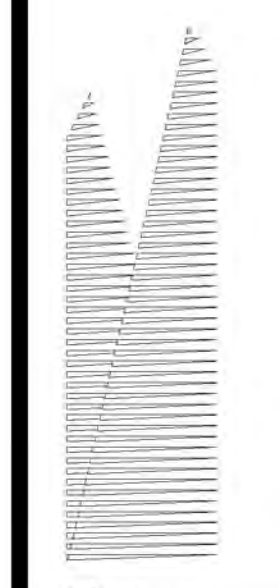
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COMPOSITE PLAN,  
FOUNDATION

Drawing Number: /B-SC/57 Drawing Number  
**FO-102.00**  
SHEET 5 of 30



Phase 1 – South of Gateway (no MOE) already approved by Amtrak  
Phase 2 – North of Gateway & MOE (South of Gateway)  
Phase 3 – Gateway

**Damian Titus**  
Buildings  
APPROVED  
Under Directive 2 of 1975  
Date/Time: Jan 8, 2014 - 12:41 PM  
**NYC Development Hub**



**Client**  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

**Oxford Properties Group**  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

**Construction Manager**  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

**Architect**  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

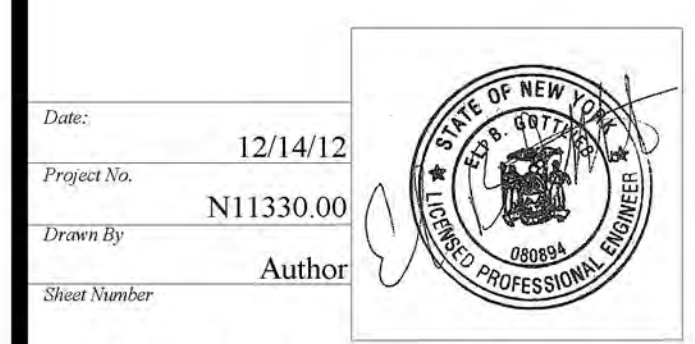
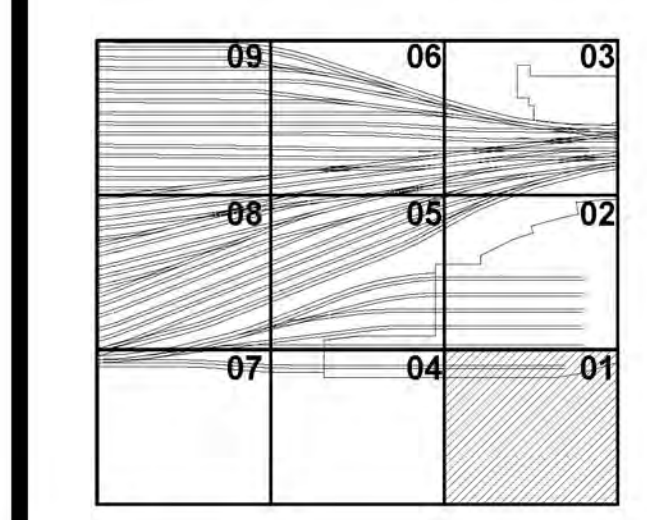
**Structural Engineer**  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

**Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

**LIRR Ventilation**  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

**LIRR Substation**  
ABCOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172

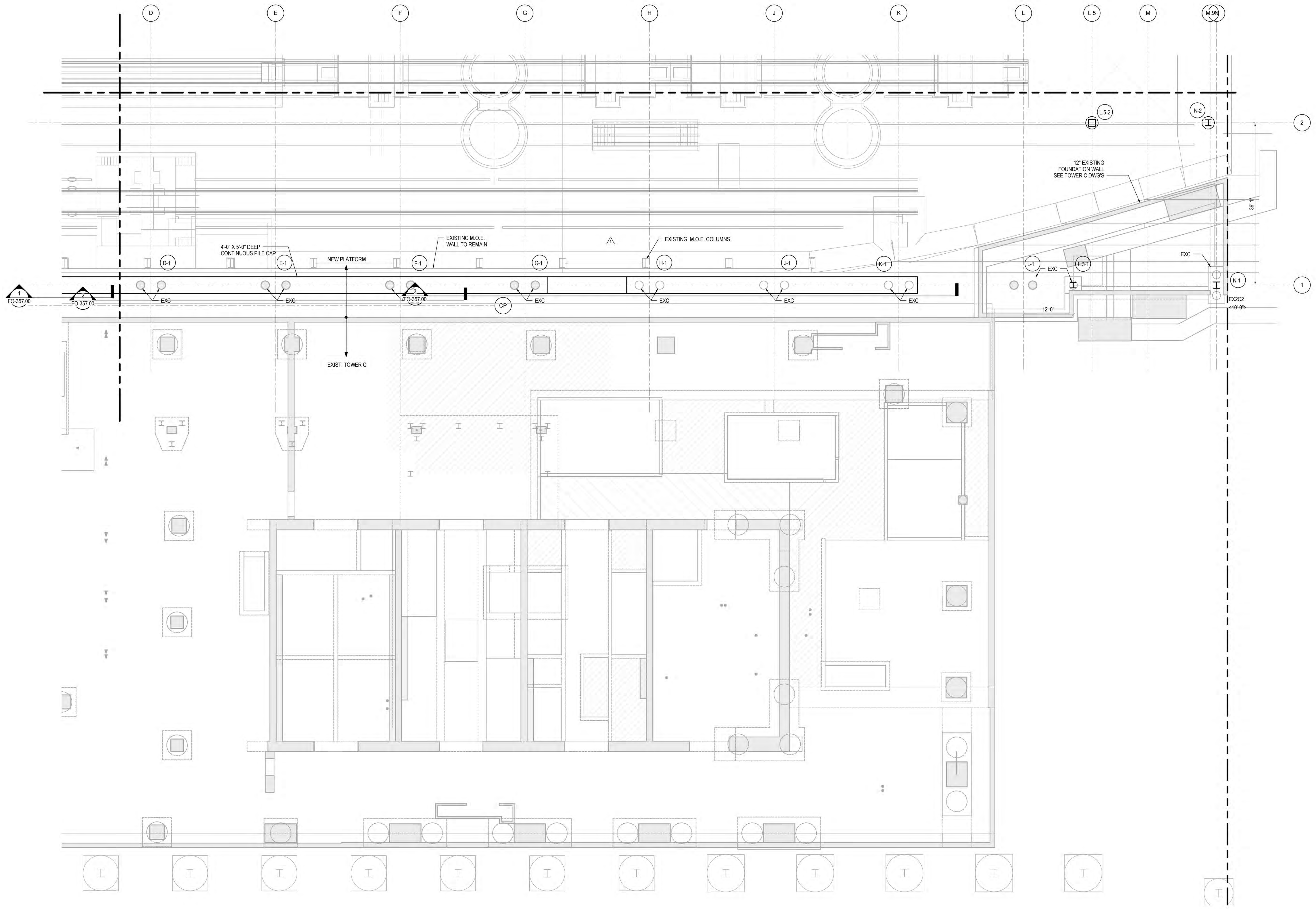
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NYC DOB FILING	10/4/2013
1. DL-01 PHASE I STRUCTURE UPDATE	9/29/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013



**Project No.** 12/14/12  
**Drawing No.** N11330.00  
**Author**

**HYE - PL - FO-121.00**  
**FOUNDATION PLAN**  
**SECTOR 01**

**FO-121.00**  
SHEET 6 of 30



- SHEET NOTES:**
- SEE GENERAL NOTES FOR CONCRETE COMPRESSIVE STRENGTH
  - TIFOOTING = EL. 'YY'-Y', AS SHOWN ON PLAN
  - FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:  
DRAWING LISTS, GENERAL NOTES, AND LOADING DIAGRAMS  
FO0 SERIES DRAWINGS  
TYPICAL FOUNDATION DETAILS  
FO3 SERIES DRAWINGS  
STEEL COLUMN SCHEDULES  
S4 SERIES DRAWINGS  
STEEL TYPICAL DETAILS  
S7 SERIES DRAWINGS
  - MAXIMUM TOP OF ROCK SOCKET SHOWN ON FO-310.00 TO FO-313.00 IS THE HIGHEST ELEVATION AT WHICH ROCK SOCKET BEGINS.
  - ROCK COUNTOURS ARE BY LANGAN GEOTECHNICAL ENGINEERS. ACTUAL TOP OF ROCK AND SOCKET TO BE FIELD VERIFIED BY THE CONTRACTOR AND GEOTECHNICAL ENGINEER.
  - EXISTING UTILITIES, BUILDINGS AND TUNNELS ARE SHOWN FOR REFERENCE ONLY. LOCATIONS AND DIMENSIONS OF ALL EXISTING CONDITIONS ARE TO BE FIELD VERIFIED. SEE GENERAL NOTES SHEET FO-310.00 FOR REFERENCES TO EXISTING DRAWINGS.

- DIMENSIONS ON SHEETS FO-310.00 TO FO-313.00 NOTED AS CLEARANCE TO TRACK IS THE DISTANCE BETWEEN CENTERLINE OF TRACK TO FACE OF COLUMN.
- DIMENSIONS SHOWN ON FO-121.00 TO FO-128.00 SHOW THE DISTANCE BETWEEN THE FACE OF EXISTING TUNNEL (V.I.F.) AND THE FACE OF PERMANENT STEEL CASING.

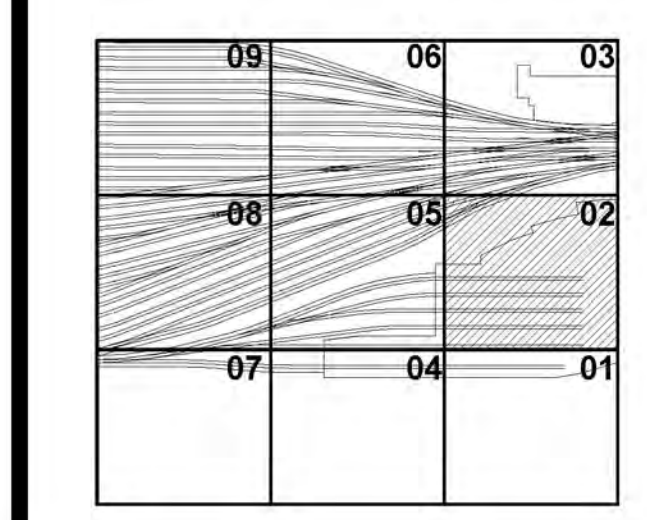
**LEGEND:**

	EXC	INDICATES EXISTING CAISSON.
	EXF	INDICATES EXISTING FOOTING
	CX-Y	INDICATES NEW CAISSON
	PCX-Y	INDICATES NEW PILECAP
		INDICATES NEW CONCRETE FILLED STEEL COLUMN
		INDICATES NEW CONCRETE FILLED STEEL COLUMN
		INDICATES NEW STEEL WIDE-FLANGE COLUMN
	TB	INDICATES NEW TIE BEAM
		INDICATES NEW ROCK ANCHOR

**Damian Titus**  
Buildings  
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NYC DOB FILING	1/7/2014	
NYC DOB FILING	12/4/2013	
3. ASH1	12/20/2013	
L.I.R.R. - PRE-FINAL 100%	11/22/2013	
M&E - PLATFORM SUBMISSION		
2. DI-02 PHASE I STRUCTURAL UPDATE	11/1/2013	
NYC DOB FILING	10/4/2013	
4. DI-01 PHASE I STRUCTURE UPDATE	9/29/2013	
LIRR - 90% SUBMISSION	8/29/2013	
NYC DOB FILING	6/17/2013	
LIRR - 60% SUBMISSION	5/29/2013	
LIRR - 60% - PHASE I FDNS	3/29/2013	
LIRR - 30% SUBMISSION	2/15/2013	
Rev	Description	Date

Rev



Date: 12/14/12  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: 2

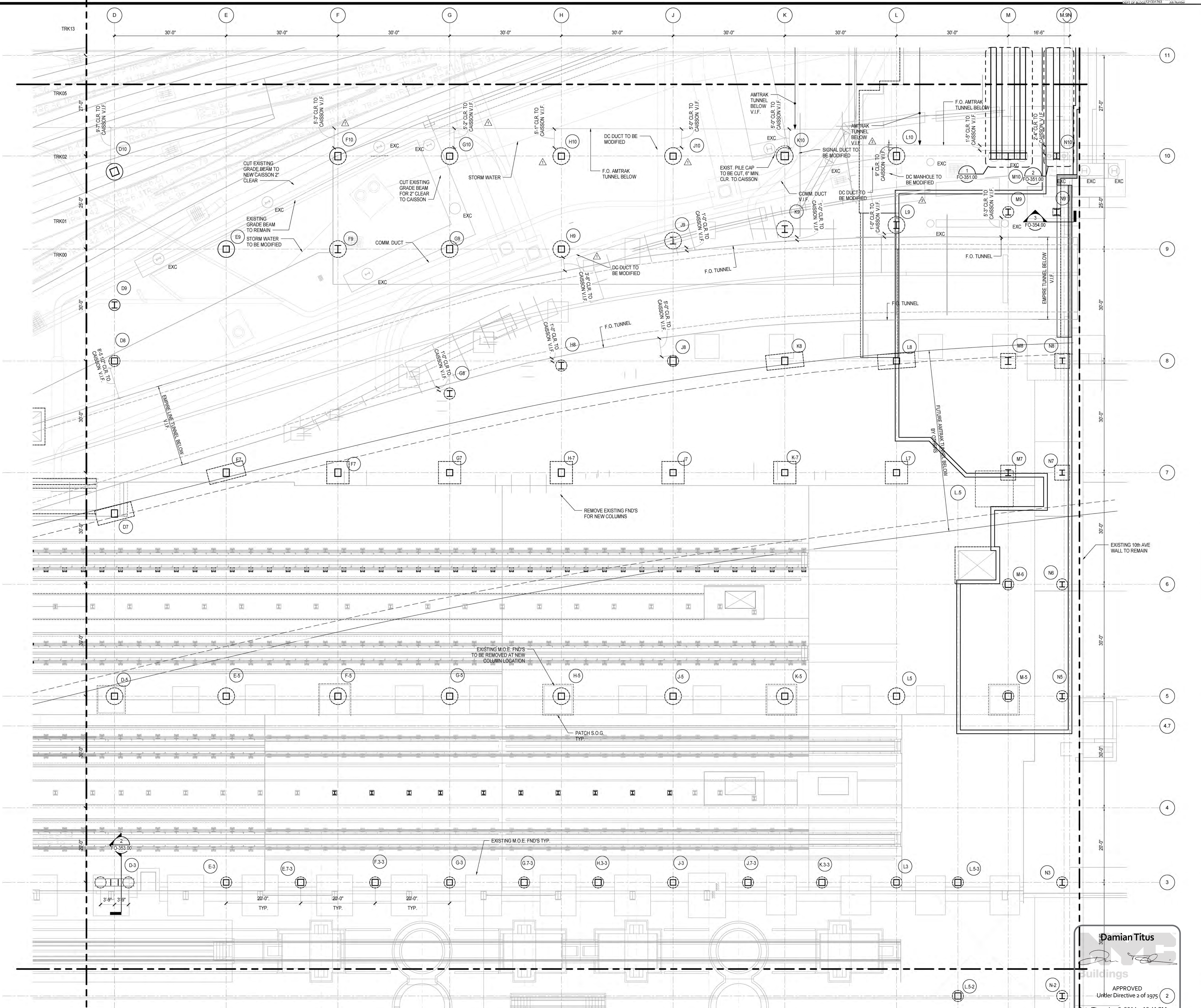
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**FOUNDATION PLAN  
SECTOR 02**

Drawing Title  
Date/Time: Jan 8, 2014 - 12:41 PM  
**NYC Development Hub**

Drawing Number: BDC-017 Drawing Number  
**FO-122.00**

SHEET 7 of 30

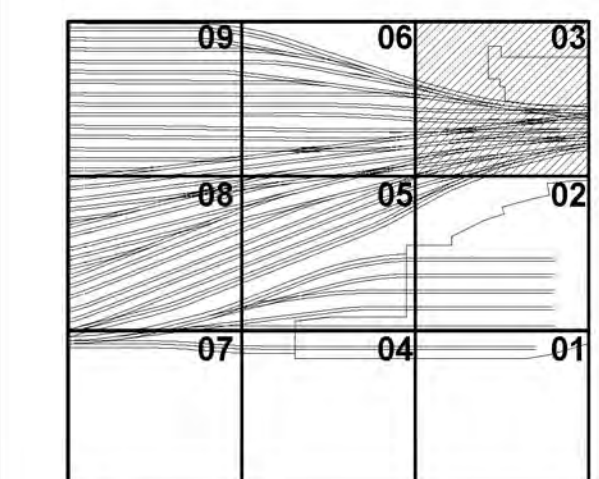


NOTES  
1. REFER TO FO-121.00 FOR FOUNDATION NOTES

**Damian Titus**  
Author  
APPROVED  
Under Directive 2 of 1975  
Date/Time: Jan 8, 2014 - 12:41 PM  
**NYC Development Hub**

NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
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NYC DOB FILING	10/4/2013
1. DIAD PHASE I STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
3/	

For File



Date: 12/14/12  
Project No: N11330.00  
Drawn By: Author  
Scale: As Shown

**HYE-PL-FO-123.00**

**FOUNDATION PLAN  
SECTION 03**

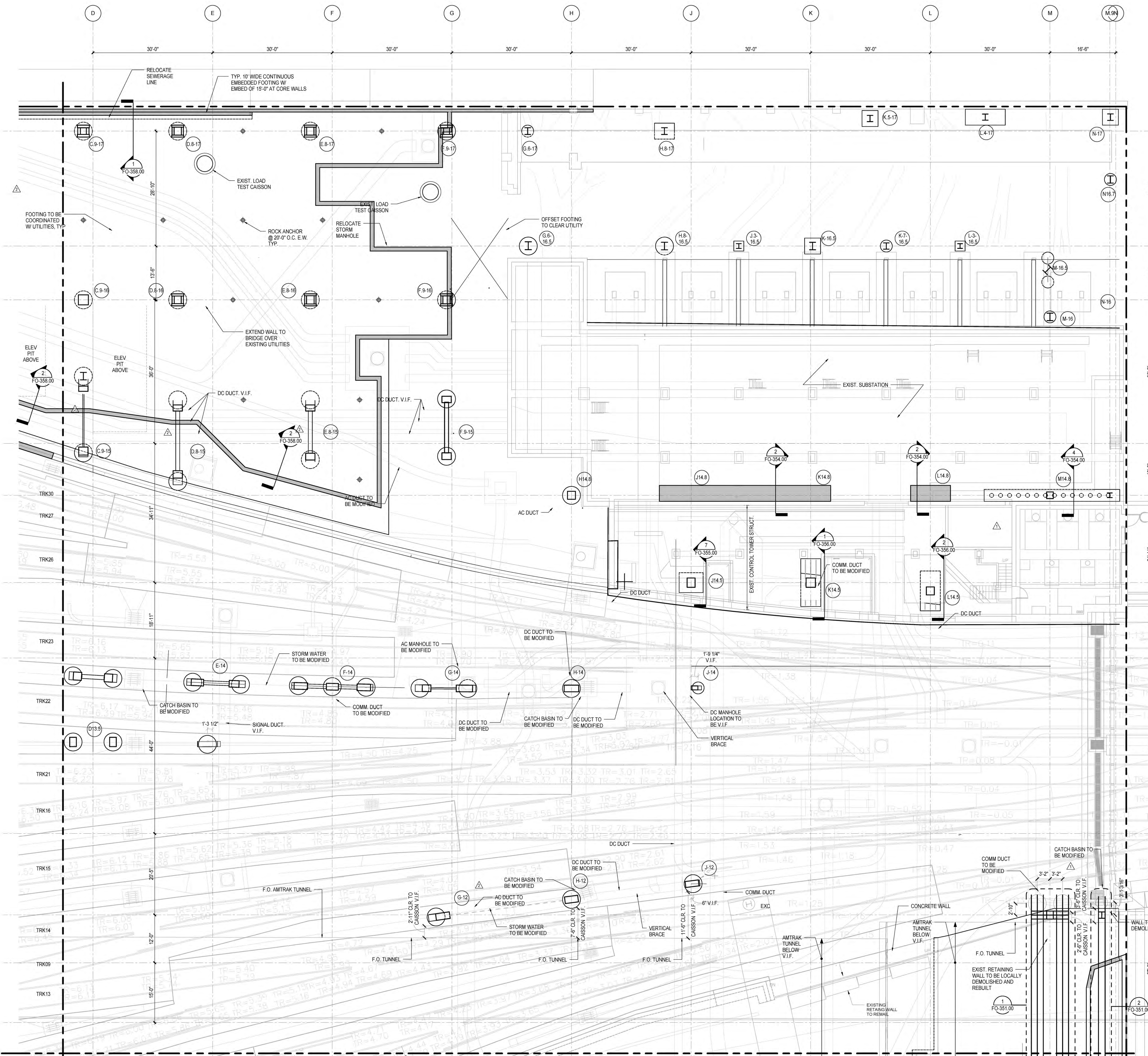
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FO-123.00 SHEET 8 of 30

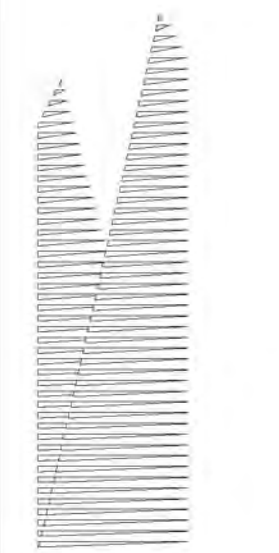


NOTES  
1. REFER TO FO-121.00 FOR FOUNDATION NOTES

**Damian Titus**  
Author  
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Under Directive 2 of 1975  
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FO-123.00  
1/17/2014 3:42:29 PM  
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**Client**  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

**Oxford Properties Group**  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

**Construction Manager**  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

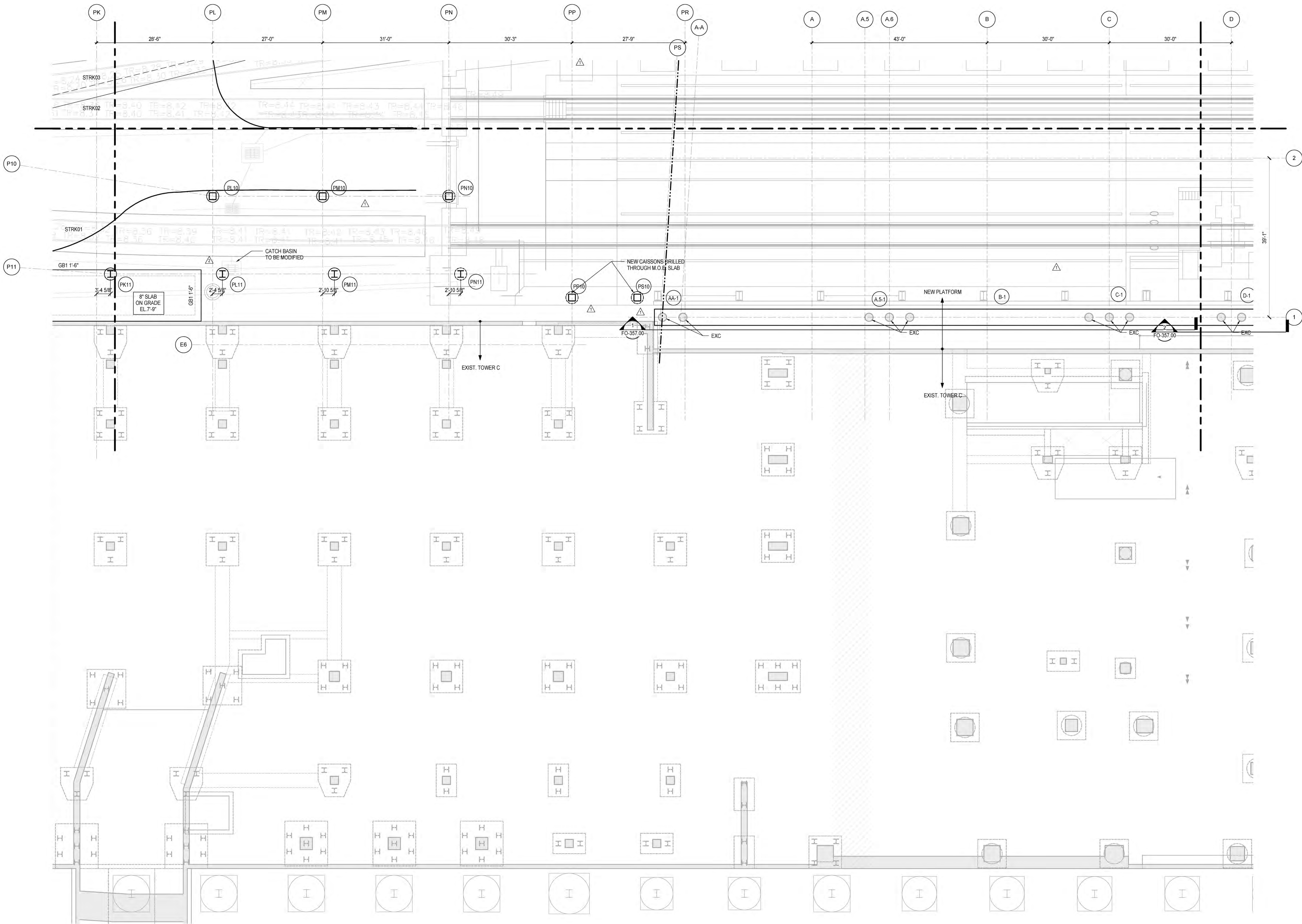
**Architect**  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

**Structural Engineer**  
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51 Madison Avenue  
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**Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

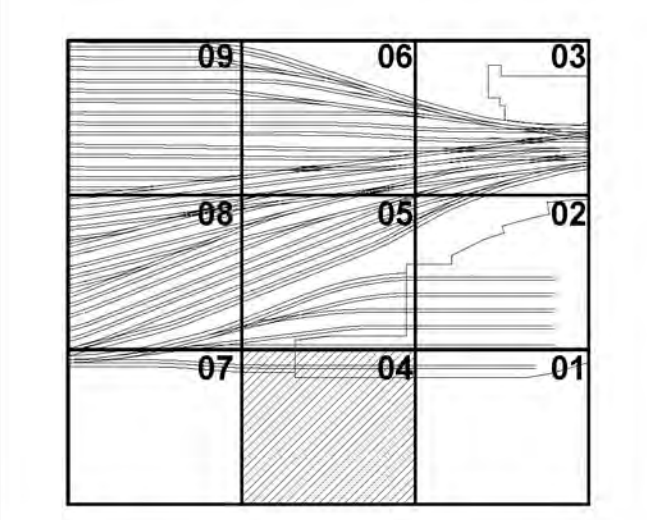
**LIRR Ventilation**  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

**LIRR Substation**  
ABCOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172



**NOTES:**  
1. REFER TO FO-121.00 FOR FOUNDATION NOTES

NYC DOB FILING	1/7/2014
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L.I.R.R. - PRE-FINAL 100%	11/20/2013
M&E - PLATFORM SUBMISSION	
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NYC DOB FILING	10/4/2013
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LIRR - 90% SUBMISSION	8/9/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
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Buildings  
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Date/Time: Jan 8, 2014 - 12:41 PM  
NYC Development Hub

Date: 12/14/12  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

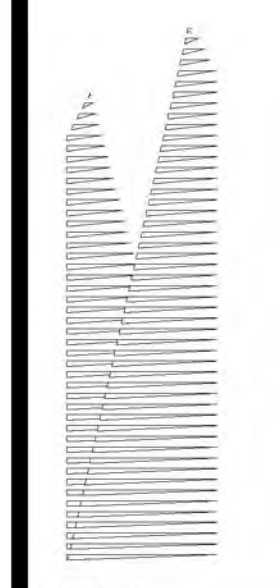
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**SECTOR 04**

Drawing Number: BDC010 Drawing Number  
**FO-124.00**

SHEET 9 of 30

**HUDSON YARDS PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
320 Park Avenue, 17th Floor  
New York, NY 10022  
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Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

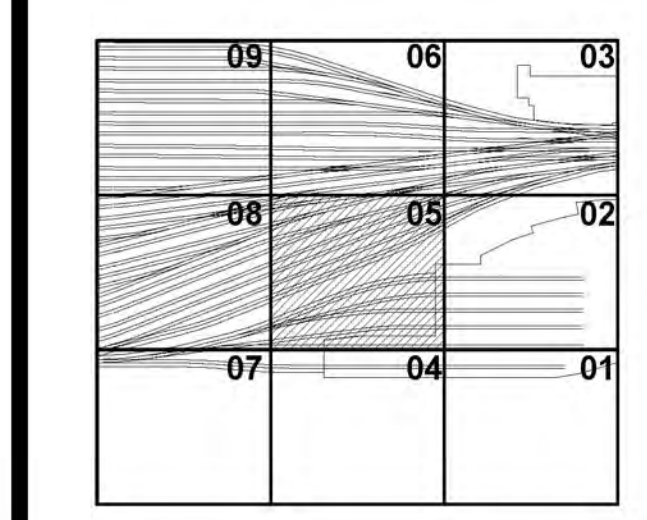
Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
ABCOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172

NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL	11/20/2013
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NYC DOB FILING	10/4/2013
3. D1-01 PHASE I STRUCTURE UPDATE	9/29/2013
LIRR - 90% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
Rev	Description



Date: 12/14/12  
Project No: N11330.00  
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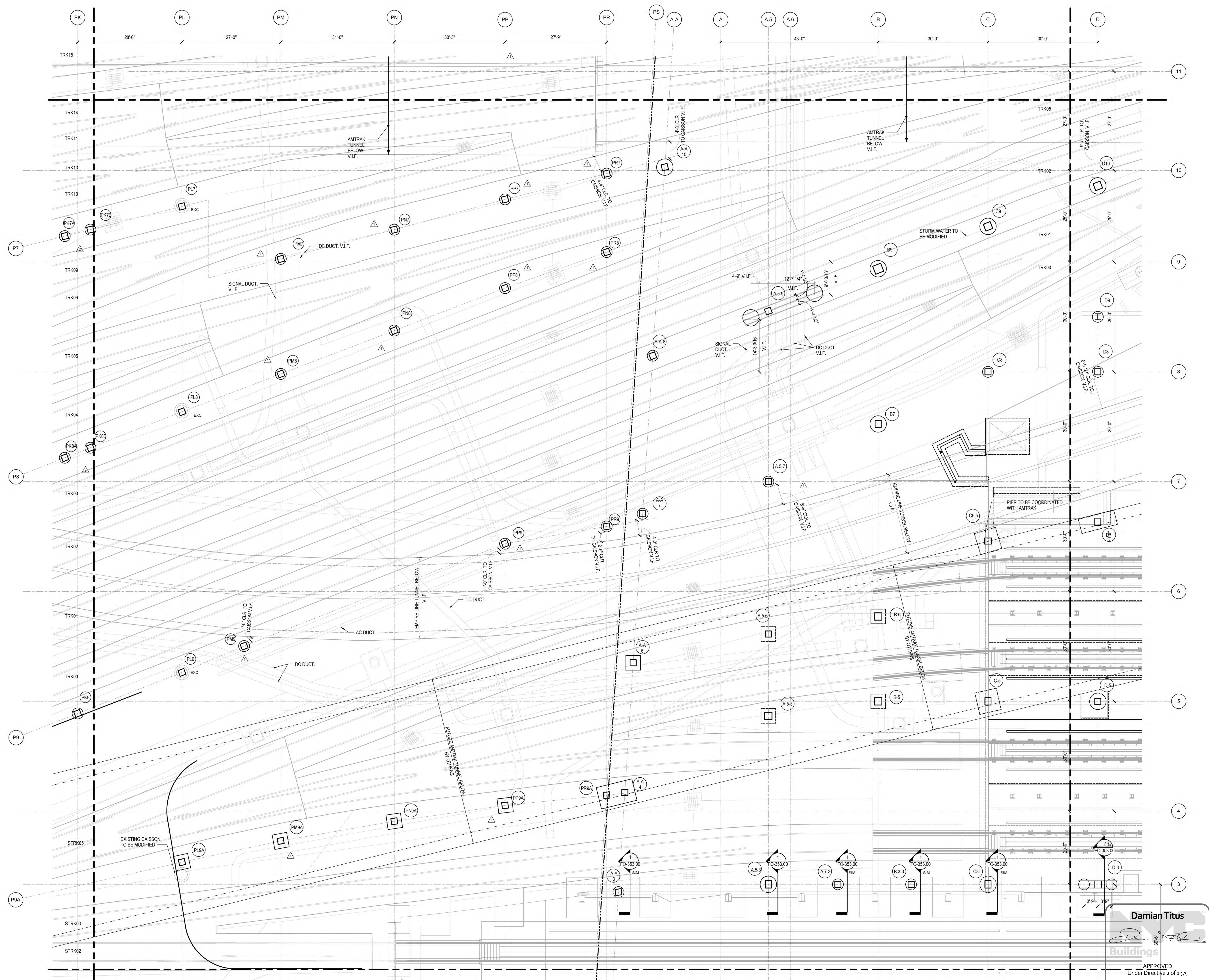
**Damian Titus**  
Principal  
Buildings

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Under Directive 2 of 1975  
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**FOUNDATION PLAN**  
**SECTOR 05**

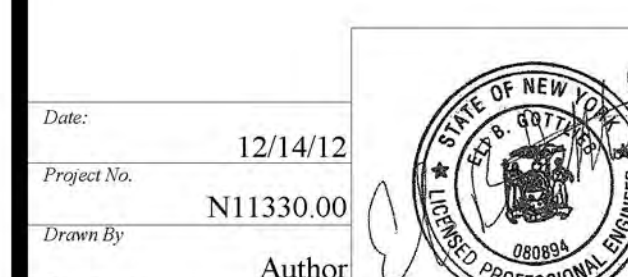
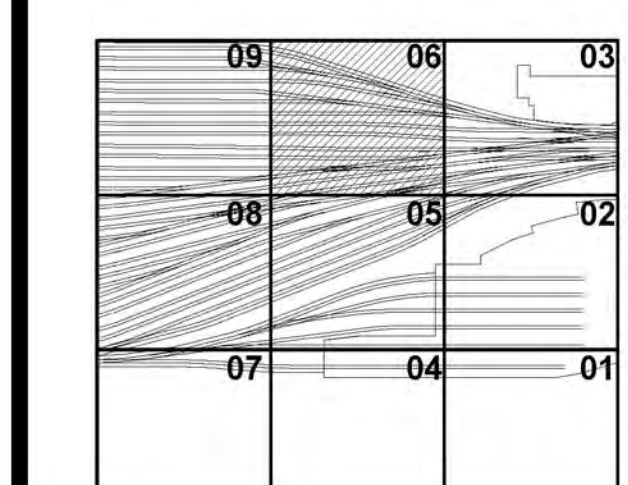
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SHEET 10 of 30



NOTES:  
1. REFER TO FO-121.00 FOR FOUNDATION NOTES

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Rev	Description



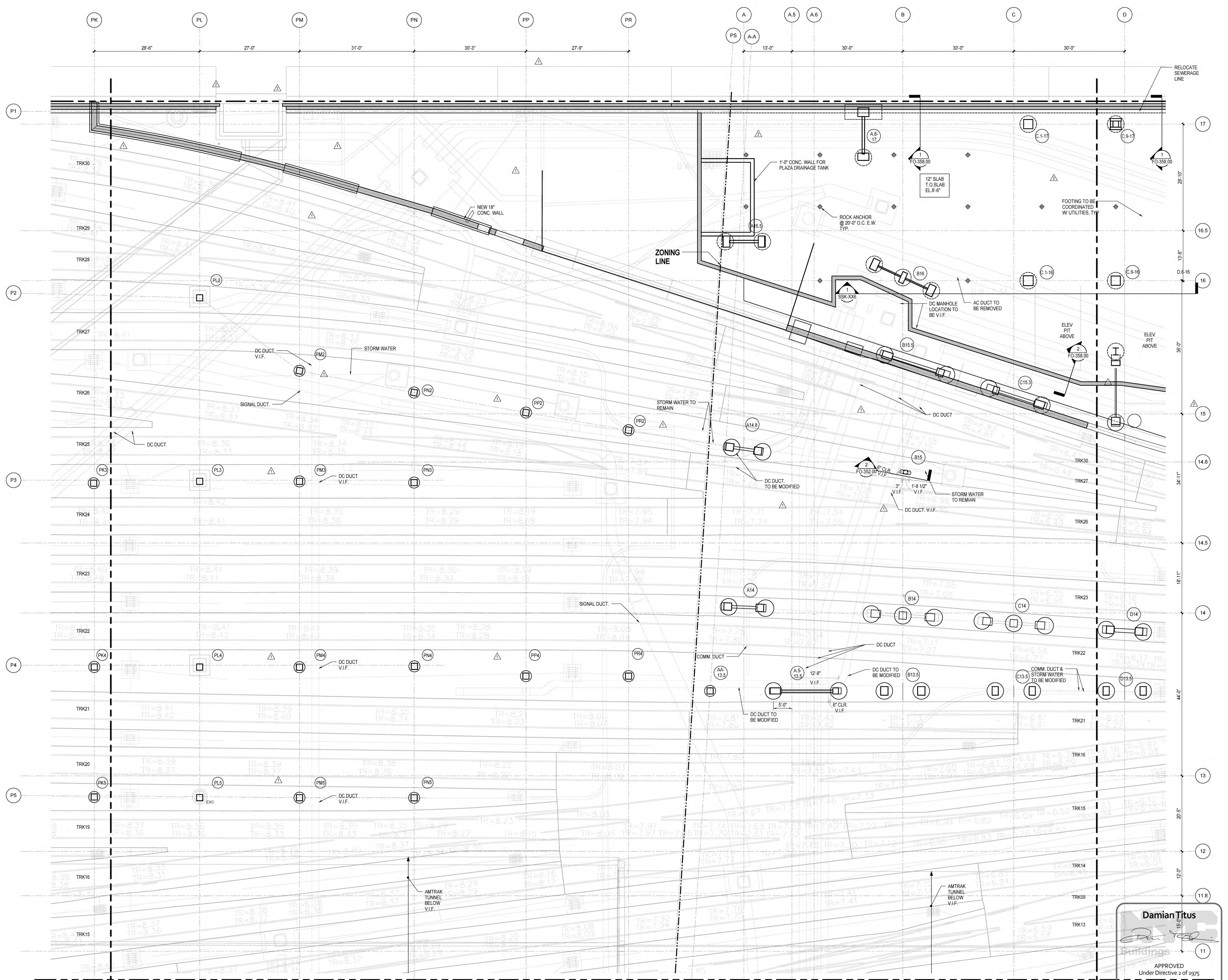
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**FOUNDATION PLAN**  
**SECTOR 06**

Approved Under Directive 2 of 1975

FO-126.00

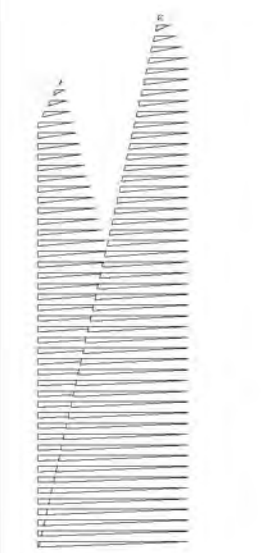
SHEET 11 of 30



**Damian Titus**  
16-0  
APPROVED  
Under Directive 2 of 1975  
Date/Time: Jan 8, 2014 - 12:41 PM  
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NOTES:  
1. REFER TO FO-121.00 FOR FOUNDATION NOTES

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*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Construction Manager*  
Oxford Properties Group  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

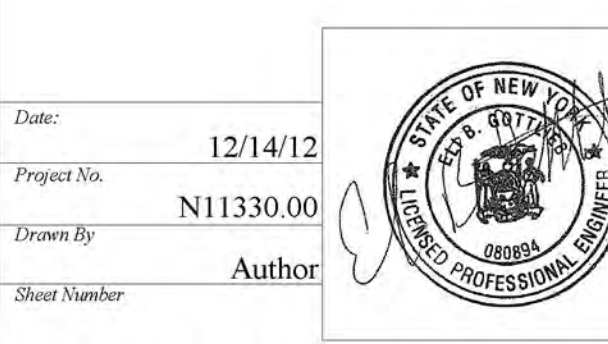
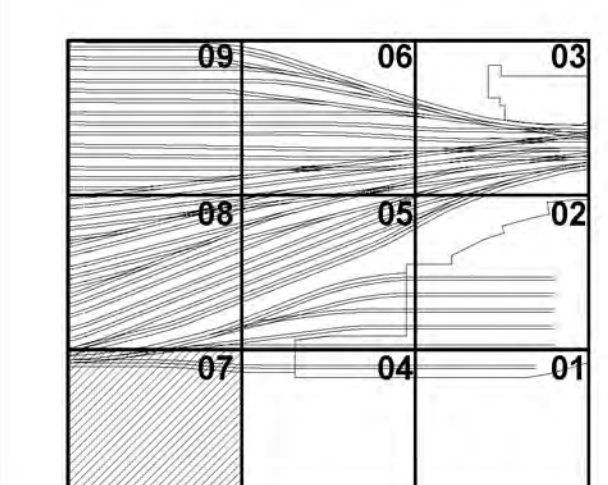
*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LIRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

*LIRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
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NYC DOB FILING	1/7/2014
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L.I.R.R. - 90% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
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Rev.	Description



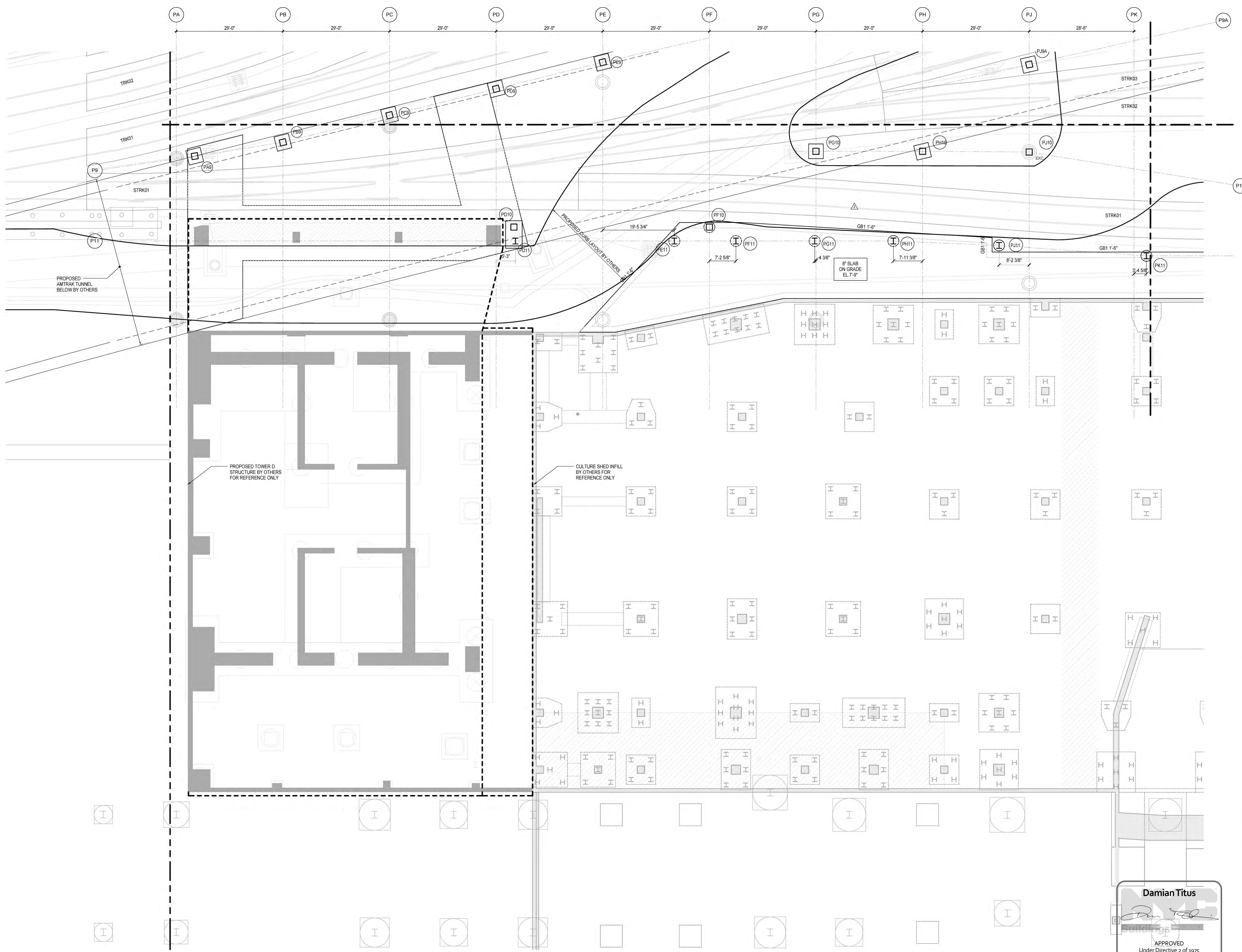
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**FOUNDATION PLAN SECTOR 07**

Drawing Number / B.C.C.A.O. Drawing Number

**FO-127.00**

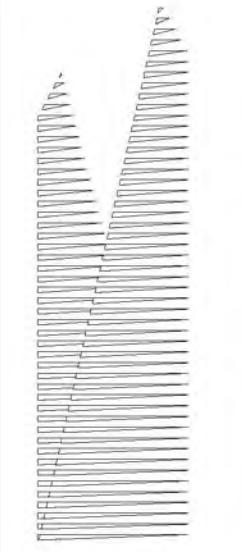
SHEET 12 of 30



NOTES:  
1. REFER TO FO-121.00 FOR FOUNDATION NOTES

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APPROVED  
Under Directive 2 of 1975  
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NYC Development Hub

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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
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New York, NY 10017  
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Architect  
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PC Architects & Planning Consultants  
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Structural Engineer  
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51 Madison Avenue  
New York, NY 10010  
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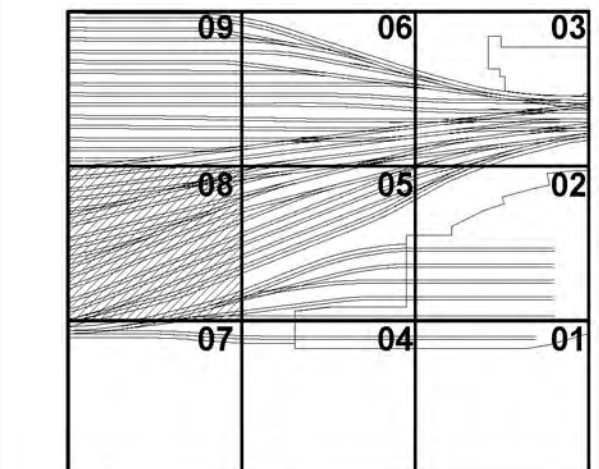
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
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LIRR Ventilation  
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New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
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NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E PLATFORM SUBMISSION	
2. DIAG PHASE I STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
3. DIAG PHASE I STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013

For Plan



Date: 12/14/12  
 Project No: N11330.00  
 Drawn By: Author  
 Sheet Number: Author

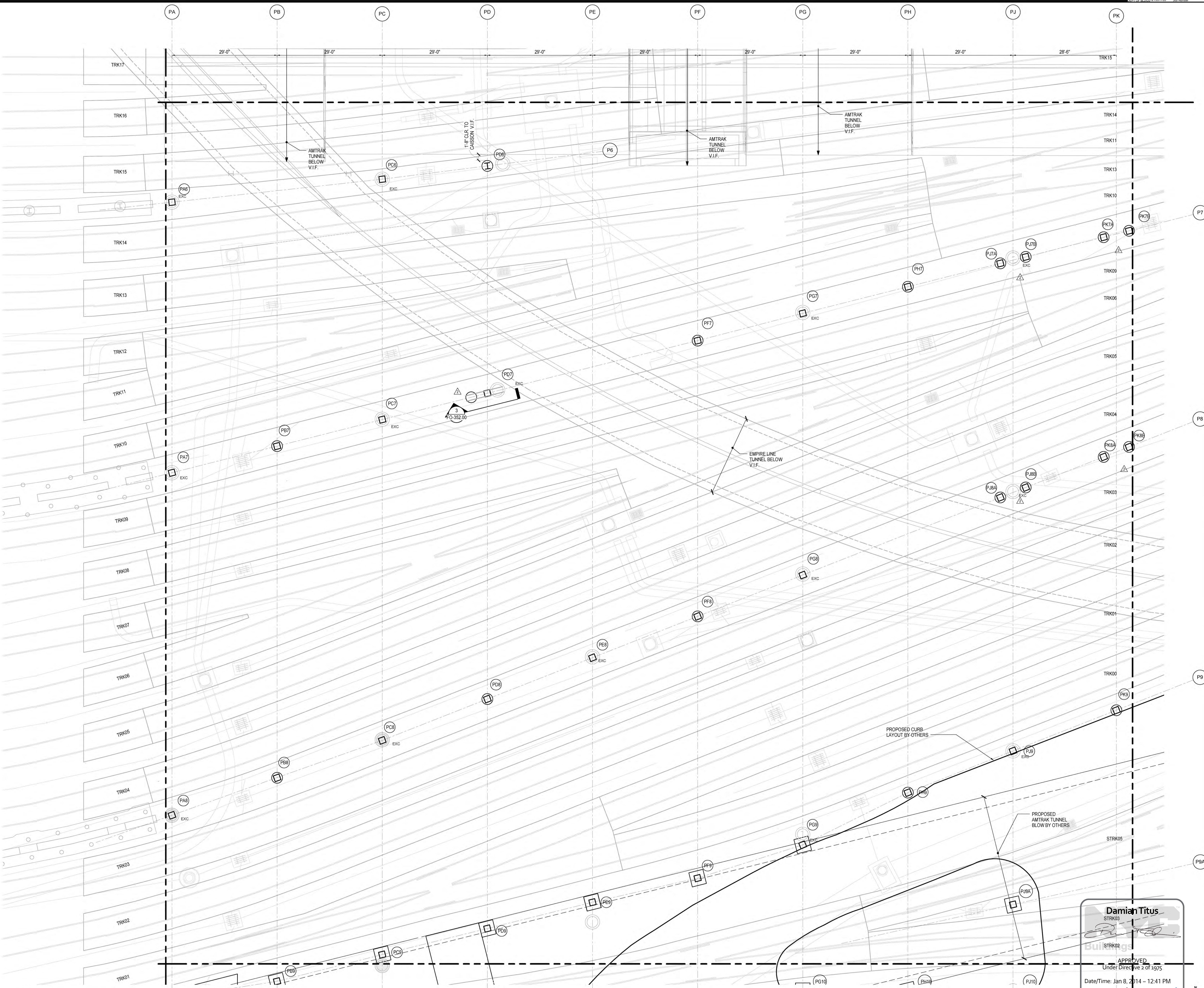
**HYE-PL-FO-128.00**

**FOUNDATION PLAN  
SECTOR 08**

Drawing Number: BSC010 Drawing Number

**FO-128.00**

SHEET 13 of 30



NOTES:  
1. REFER TO FO-121.00 FOR FOUNDATION NOTES

**Damian Titus**  
 STRK03  
 STRK02  
 APPROVED  
 Under Direction of 1975  
 Date/Time: Jan 8, 2014 - 12:41 PM  
 NYC Development Hub

FO-128.00  
1/7/2014 4:46:25 PM  
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MARK	MAX. SERVICE CAPACITY (Kips)	CONCRETE STRENGTH (Ksi)	SIZE				REINFORCEMENT					STEEL CORE CAP PLATE DIMS				
			SHAFT DIAMETER	SOCKET DIAMETER	PERMANENT CASING	SOCKET DEPTH (Baseline)	STL. CORES (Ksi)	ALT. STL. CORES (50 Ksi)	VERT. REBAR	ADDITIONAL AT SOCKET	SHEAR STUDS		WIDTH (B)	DEPTH (D)	THICKNESS (t)	
											TOTAL	T.O. STEEL CORE				
C1-1	800	12	12.75"	11"	3/4"	6'-0"	-	-	5 #18	-	-	-	-	-	-	
C3-1	3,000	8	36"	32"	3/4"	5'-0"	-	-	10 #18	-	-	-	-	-	-	
C3-2	4,000	12	36"	32"	3/4"	7'-6"	-	-	13 #18	-	-	-	-	-	-	
C3-3	6,000	12	36"	32"	3/4"	12'-0"	-	-	W14x398	W14x550	-	240	40	18	20	2 1/2
C3.1-1	3,000	8	39"	34"	3/4"	4'-6"	-	-	10 #18	-	-	-	-	-	-	-
C3.1-2	4,000	12	39"	34"	3/4"	6'-6"	-	-	13 #18	-	-	-	-	-	-	-
C3.1-3	6,000	12	39"	34"	3/4"	11'-0"	-	-	W14x398	W14x550	-	240	40	18	20	2 1/2
C4.5-1	9,000	12	54"	48"	3/4"	10'-0"	-	-	24 #18	-	-	-	-	-	-	-
C4.5-2	12,000	12	54"	48"	3/4"	16'-0"	-	-	W14x665	-	-	392	80	24	24	4
C4.5-3	15,000	12	54"	48"	3/4"	21'-0"	-	-	Solid20x20	Solid22x24	-	1000	-	-	-	-
C4.5-4	20,000	12	54"	48"	1 1/4"	30'-0"	-	-	Solid20x27	Solid24x28	-	1228	-	-	-	-
C4.5-5	25,000	12	54"	48"	1 1/4"	40'-0"	-	-	Solid24x28	Solid28x30	-	1554	-	-	-	-
C5.5-1	16,000	12	66"	60"	3/4"	18'-0"	-	-	W14x730	-	-	522	-	-	-	-
C5.5-2	20,000	12	66"	60"	3/4"	21'-0"	-	-	W14x808	-	-	522	-	-	-	-
C5.5-3	22,000	12	66"	60"	3/4"	24'-0"	-	-	Solid16x24	Solid20x22	24 #18	749	-	-	-	-
C5.5-4	26,000	12	66"	60"	7/8"	30'-0"	-	-	Solid20x24	Solid24x24	30 #18	980	-	-	-	-
C5.5-5	32,000	12	66"	60"	1 3/8"	39'-0"	-	-	Solid24x28	Solid28x30	32 #18	1429	-	-	-	-

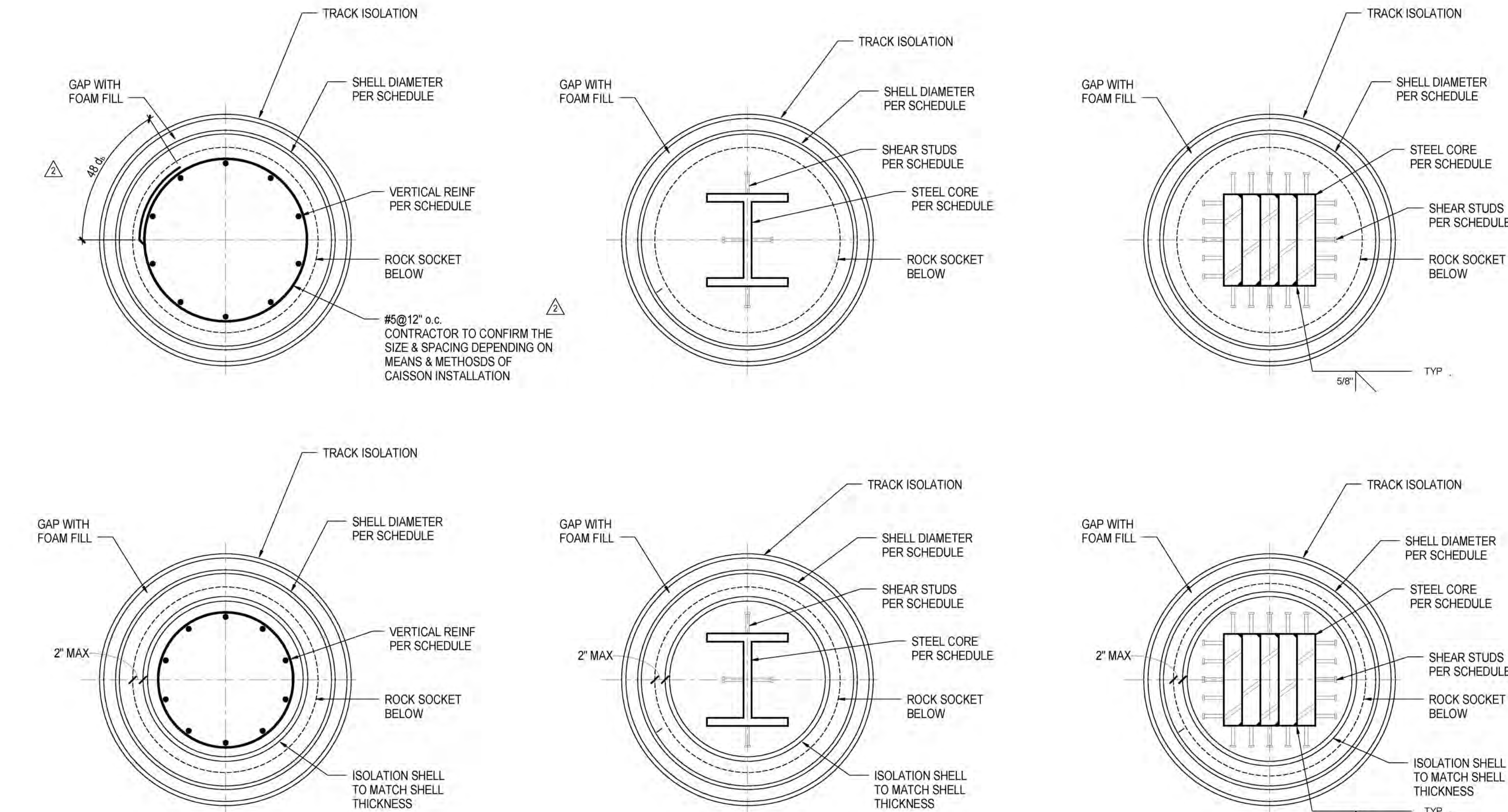
- CAISSON NOTES:**
- FY SHELL = 60 KSI
  - FY CORE PLATE = 65KSI, UON, ROLLED SHAPE = 65KSI
  - FY REBAR = 75 KSI
  - FY STUD = 65 KSI
  - FY CAP PLATE = 50 KSI, UON
  - THE ROCK SOCKET DEPTH INDICATED HEREIN IS BASED ON AN ALLOWABLE SIDE FRICTION OF 300 PSI FOR COMPRESSION AND 150 PSI FOR TENSION, AND A BASIC ALLOWABLE BEARING CAPACITY OF 75 TSF INCREASING TO 150 TSF OVER A 10FT DEPTH.
  - ROCK CONDITIONS SHALL BE VERIFIED BY DOWN-HOLE VIDEO INSPECTION. ROCK SHALL MEET THE MINIMUM REQUIREMENTS OF NYCBC CLASS 1C FOR THE SIDEWALLS OF CAISSON ROCK SOCKETS AND NYCBC CLASS 1A FOR END BEARING.

- CONTRACTOR SHALL EMBED THE STEEL CASING THROUGH WEATHERED ROCK, SUCH THAT CASING IS SECURELY SEATED AND SEALED AGAINST A SOUND ROCK SURFACE THAT MEETS THE MINIMUM REQUIREMENTS OF NYCBC CLASS 1C.
- THE SOCKET DEPTH IS DEFINED AS THE DEPTH OF THE CAISSON BELOW THE BOTTOM OF THE PERMANENT STEEL CASING, OR THE ISOLATION CASING (IF PROVIDED).
- THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE MILL ORDER LENGTH OF THE CASING + STEEL CORE, BASED ON THE GEOTECHNICAL INFORMATION AVAILABLE REGARDING ROCK ELEVATIONS AND THICKNESS OF WEATHERED ROCK.
- ANY SPLICES REQUIRED IN STEEL CORES SHALL DEVELOP THE FULL STRENGTH OF THE MEMBER.
- TOLERANCES:  
CAISSON LOCATION = 3" FROM THEORETICAL  
CORE = 1" FROM THEORETICAL  
VERTICALITY = 1% MAX.

- ADDITIONAL SHEAR STUDS SHALL BE PLACED FROM THE TOP OF THE STEEL CORE AND EXTENDING TO A MINIMUM DEPTH OF TWO TIMES THE CAISSON'S OUTER DIAMETER.
- INSTALLATION AND TESTING OF ALL CAISSONS SHALL BE SUBJECT TO FULL-TIME SPECIAL INSPECTION.
- REFER TO SECTION 318326 OF THE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION PERTAINING TO CAISSON MATERIALS, INSTALLATION, AND TESTING.
- REFER TO DRAWING S.002 FOR GENERAL NOTES.
- ALL STEEL HEADED STUDS SHALL BE 3/4" DIAMETER AND 4' LENGTH.

**1 CAISSON SCHEDULE**

1:50



**4 TYPICAL PLAN DETAIL OF CAISSON**

3/4" = 1'-0"

MARK	MAX. SERVICE CAPACITY (KIPS)	SIZE			SOCKET DEPTH	REINFORCEMENT	
		SHAFT DIAMETER	SOCKET DIAMETER	PERMANENT CASING		CONT.	ADDITIONAL AT SOCKET
EXC-X	1,800	32"	32"	3/8"	7'-0"	-	-
EXC-Y1	2,800	32"	32"	3/8"	7'-0"	W14X233	20 #11
EXC-Y2	2,400	32"	32"	3/8"	7'-0"	W14x109	W14X38 20 #11
EXC-Z	1,800	32"	32"	3/8"	7'-0"	-	20 #11
EXC-W1	2,800	32"	32"	3/8"	7'-0"	W14X233	20 #11
EXC-W2	2,400	32"	32"	3/8"	7'-0"	W14x109	20 #11

- CAISSON NOTES:**
- f<sub>c</sub> = 6 ksi TYP.
  - Fy SHELL = 35 ksi
  - Fy CORE = 36 ksi
  - Fy REBAR = 60 ksi
  - ROCK CAPACITY BASED ON AN ALLOWABLE SIDE FRICTION OF 200 PSI FOR COMPRESSION, AND A BASIC ALLOWABLE BEARING CAPACITY OF 60 TSF INCREASING TO 120 TSF OVER A 10 FT DEPTH.
  - INFORMATION OF EXISTING CAISSONS AS PER L.I.R.R. CONTRACT NO. 1-02-21094-0-0 DRAWING NO. BG-1 TO BG-7 (SHEET 198 TO 204.)

**2 EXISTING CAISSON SCHEDULE**

1/4" = 1'-0"

ISOLATED FOOTING SCHEDULE						
MARK	L	W	H	BOTTOM BARS	TOP BARS	REMARKS
F4-1	4'-0"	4'-0"	2'-0"	-	-	
F6-1	6'-0"	6'-0"	3'-0"	-	-	

- NOTE:**
- FOOTING DESIGN BASED ON MINIMUM BEARING CAPACITY OF 75 TSF.
  - FOOTING SUBGRADES SHALL CONSIST OF HARD SOUND ROCK MEETING THE REQUIREMENTS OF NYCBC CLASS 1A. ROCK CONDITIONS SHALL BE DETERMINED IN THE FIELD BY THE SPECIAL INSPECTOR.
  - FOOTING SUBGRADES SHALL BE EXCAVATED TO A LEVEL CONDITION AND SHALL BE CLEANED WITH COMPRESSED AIR OR WATER PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE.
  - REFER TO SECTION 310000 OF THE PROJECT SPECIFICATIONS FOR ADDITIONAL SUBGRADE PREPARATION REQUIREMENTS.

**3 ISOLATED FOOTING SCHEDULE**

1/4" = 1'-0"

- CAISSONS INSTALLATION NOTES:**
- ALL NEW COLUMNS OR WALLS WILL BEAR ON HIGH CAPACITY DRILLED-IN-CAISSON. THIS CAN BE ACHIEVED WITH MINIMAL VIBRATIONS.
  - IN ACCORDANCE WITH THE NEW YORK CITY BUILDING CODE, THE CAISSONS MUST BE STEEL-ENCASED ALL THE WAY TO THE TOP OF SOUND ROCK. TO MINIMIZE VIBRATIONS, THE HOLE CAN BE DRILLED USING BENTONITE SLURRY TO MAINTAIN STABILITY (THE USE OF SYNTHETIC POLYMERIC BIODEGRADABLE SLURRIES CAN ALSO BE INVESTIGATED IF NECESSARY) AND THE STEEL CASING ELEMENT CAN BE "SCREWED-IN" IN SECTIONS THAT ARE WELDED AS THE DRILLING PROGRESSES. ALTERNATIVELY, AN UPPER STEEL CASING OF SLIGHTLY LARGER DIAMETER COULD BE "SCREWED-IN". THEN THE HOLE COULD BE DRILLED TO THE TOP OF ROCK AND THE FINAL CASING WOULD BE LOWERED IN. THE RESULTANT SMALL SPACE AROUND THE FINAL CAISSON WOULD BE GROUTED AT THE END OF THE PROCESS. IN ANY CASE, THE MEANS AND METHODS USED WILL ELIMINATE OR MINIMIZE VIBRATIONS AND WILL MAINTAIN THE STABILITY OF THE TRACKS. PER SPECIFICATION THE CASING SHALL BE ADVANCED AHEAD OF THE DRILLING TOOLS AND THAT A MINIMUM PLUG OF AT LEAST 3 FT BE PROVIDED UNTIL THE CASING IS SEALED INTO ROCK.
  - CONTRACTOR TO SUBMIT FOR APPROVAL BY THE ENGINEER, THE PLATE AND WELD ARRANGEMENT FOR SOLID SECTIONS.

NYC DOB FILING	1/7/2014
NYC DOB FILING	1/3/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
AME - PLATFORM SUBMISSION	9/20/2013
2. DRG PHASE 1 STRUCTURAL UPDATE	11/17/2013
NYC DOB FILING	10/4/2013
J. DRG PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/20/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
FILING FOR FOUNDATIONS	5/8/2013
LIRR - 60% - PHASE 1 FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
3/1	2/15/2013

Exp./Rev.

Date: 12/14/2012  
Project No.: N11330.00  
Drawn By: Author  
Issue Number:

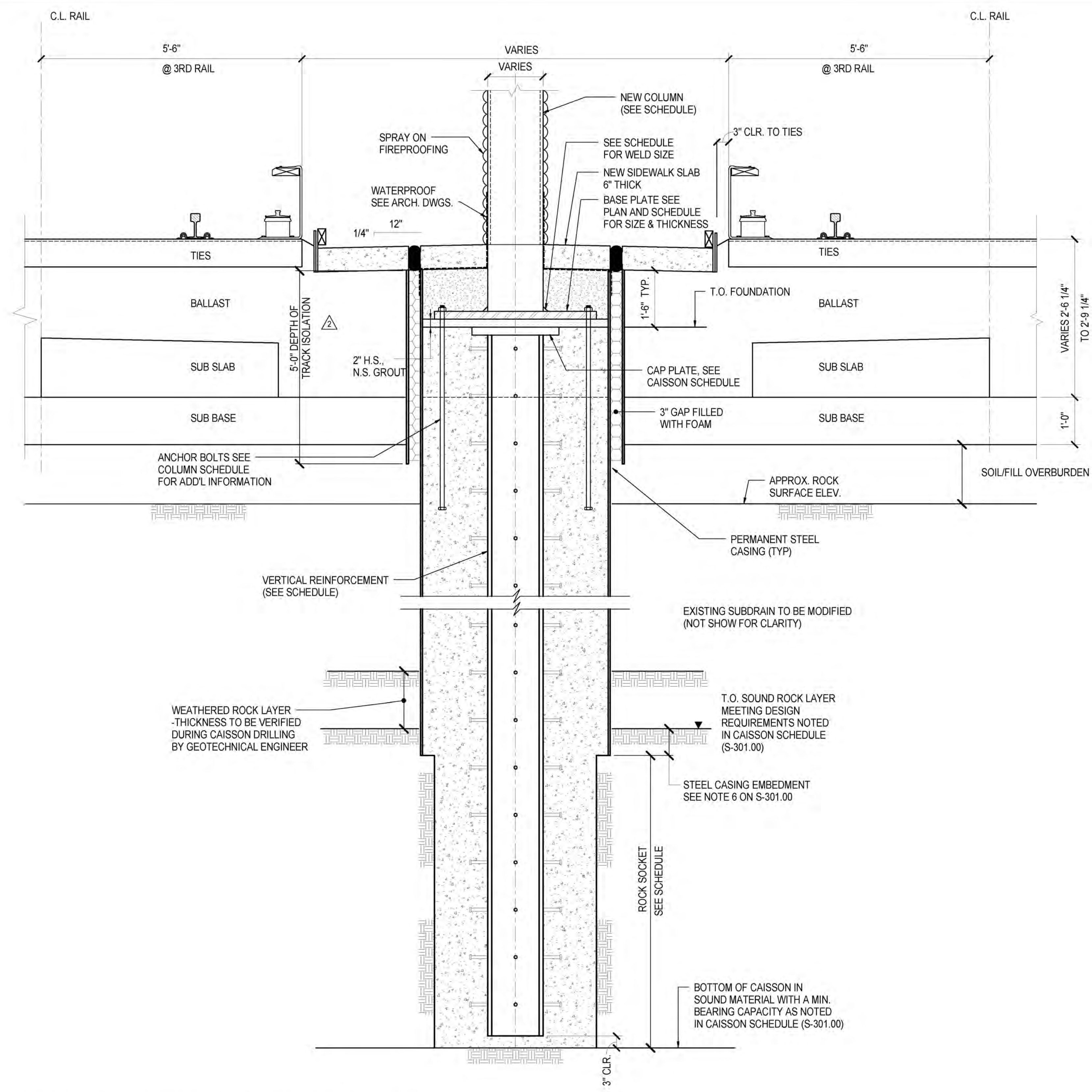
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**TYPICAL CAISSON DETAILS & SCHEDULES I**

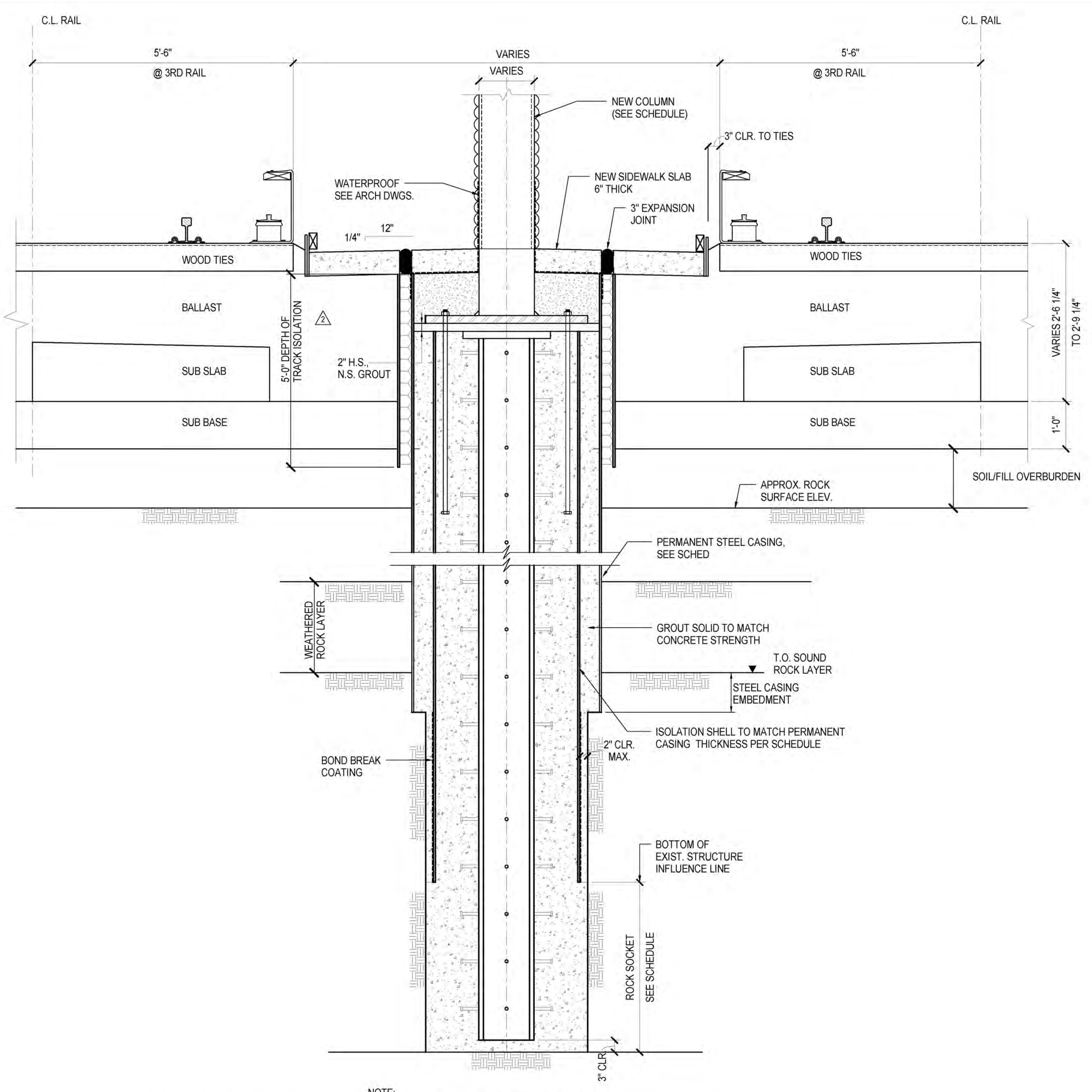
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**FO-301.00**

**Damian Titus**  
Buildings  
APPROVED  
Under Directive 2 of 1975  
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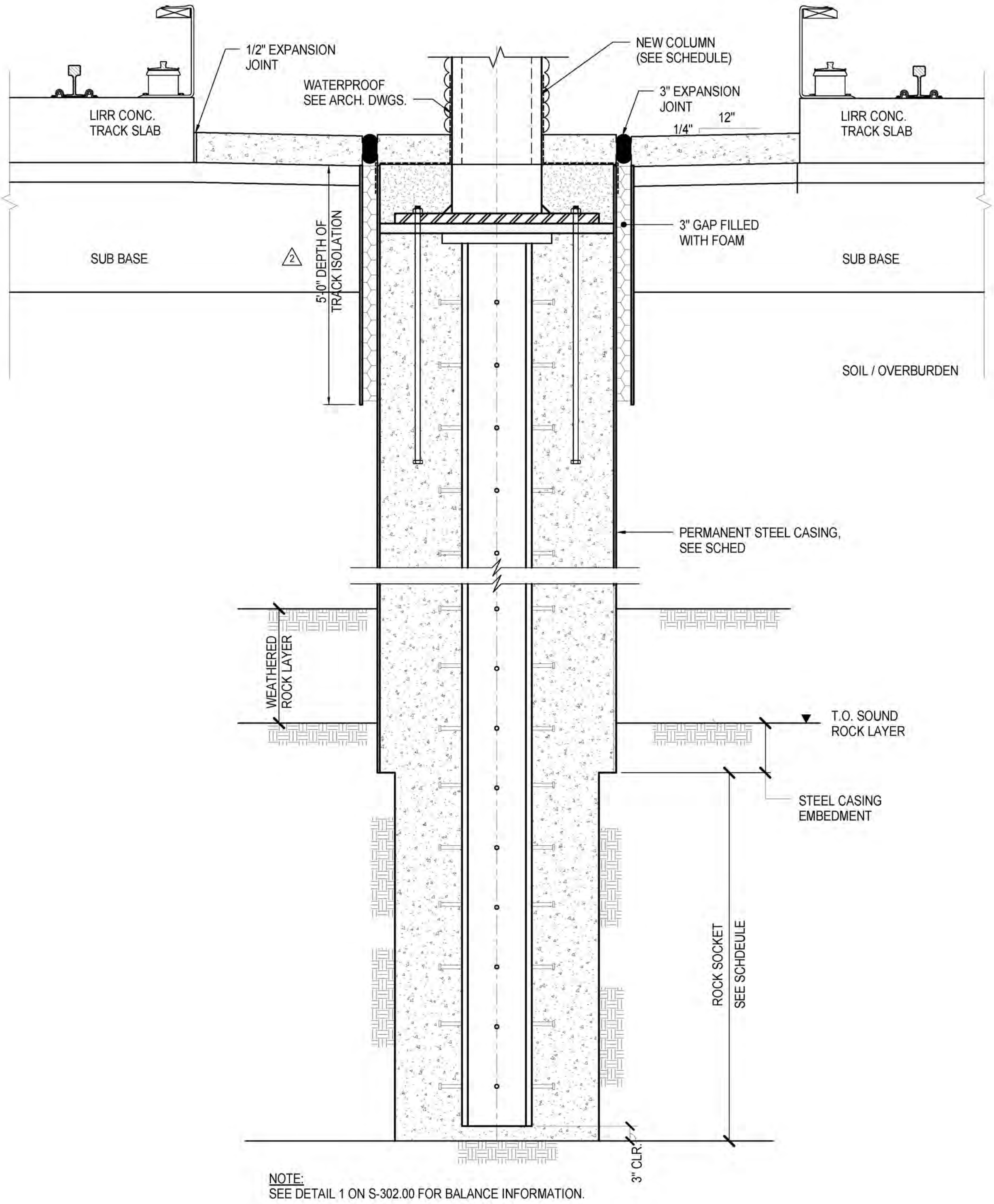




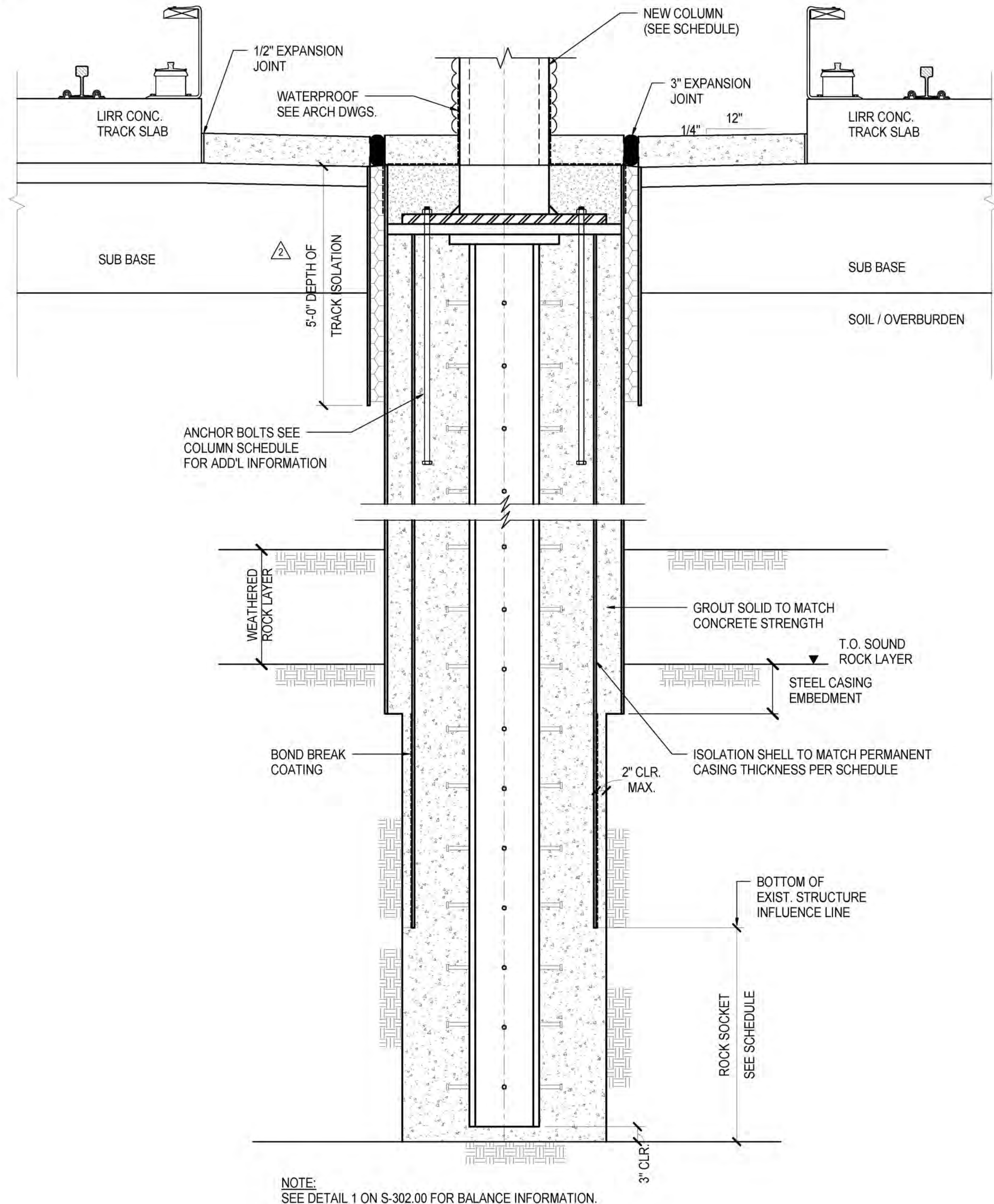
1 TYPICAL CAISSON DETAIL BETWEEN TRACKS  
3/4" = 1'-0"



2 TYPICAL CAISSON DETAIL BETWEEN TRACKS AT CLOSE CLEARANCE IN PHASE I  
3/4" = 1'-0"



3 TYPICAL CAISSON DETAIL AT DIRECT FIXATION ZONE  
3/4" = 1'-0"



4 TYPICAL DETAIL ADJACENT TO DEEP AMTRAK STRUCTURES AT DIRECT FIXATION ZONE  
3/4" = 1'-0"

NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
2. D&D PHASE I STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
3. D&D PHASE I STRUCTURE UPDATE	9/20/2013
LIRR - 30% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
FILING FOR FOUNDATIONS	5/8/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
Rev	Description

Date: 12/14/2012  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

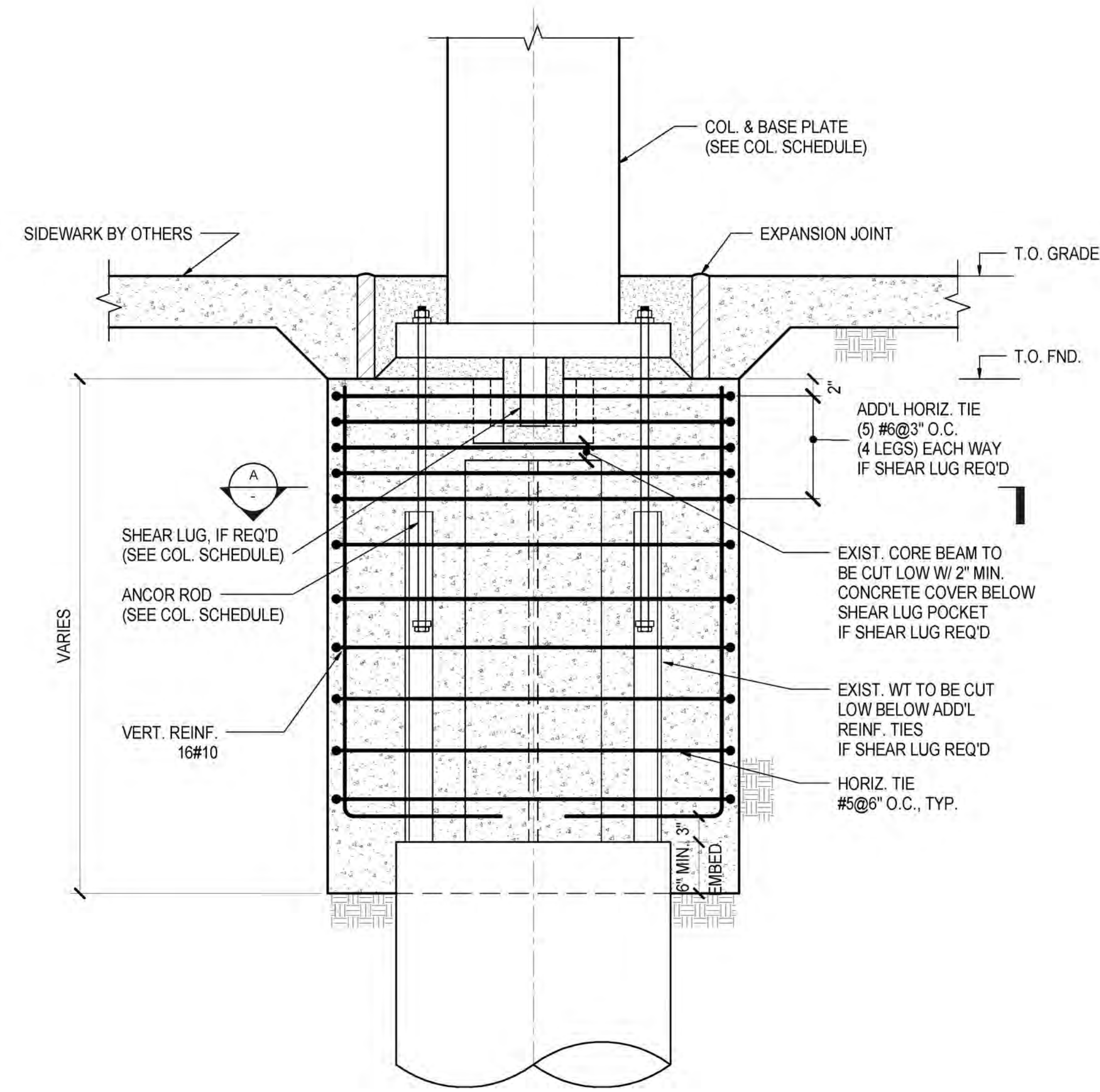
HYE - PL - FO-302.00

TYPICAL CAISSON  
DETAILS &  
SCHEDULES II

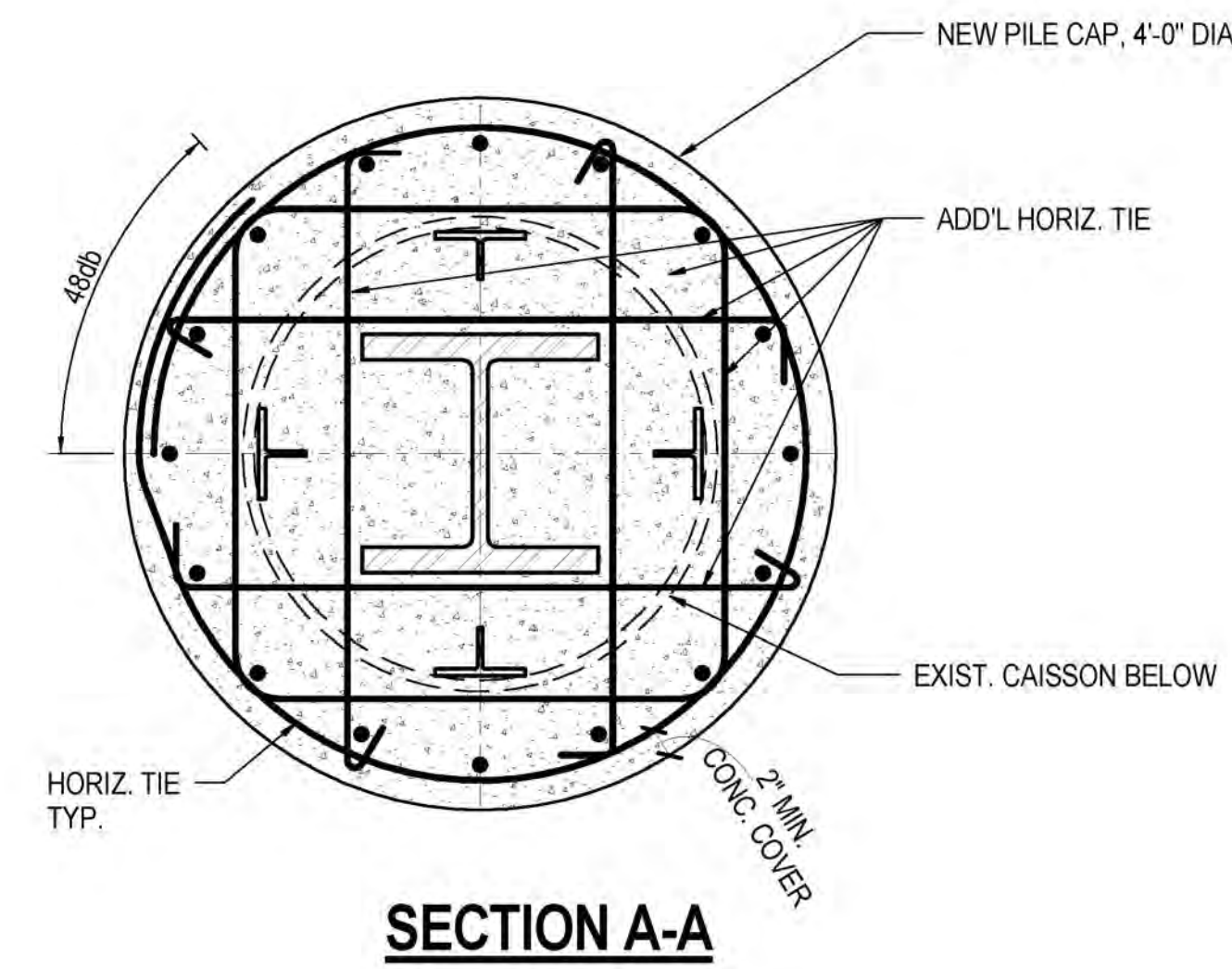
FO-302.00

**Damian Titus**  
Buildings  
APPROVED  
Under Directive 2 of 1975  
Date/Time: Jan 8, 2014 - 12:41 PM  
NYC Development Hub

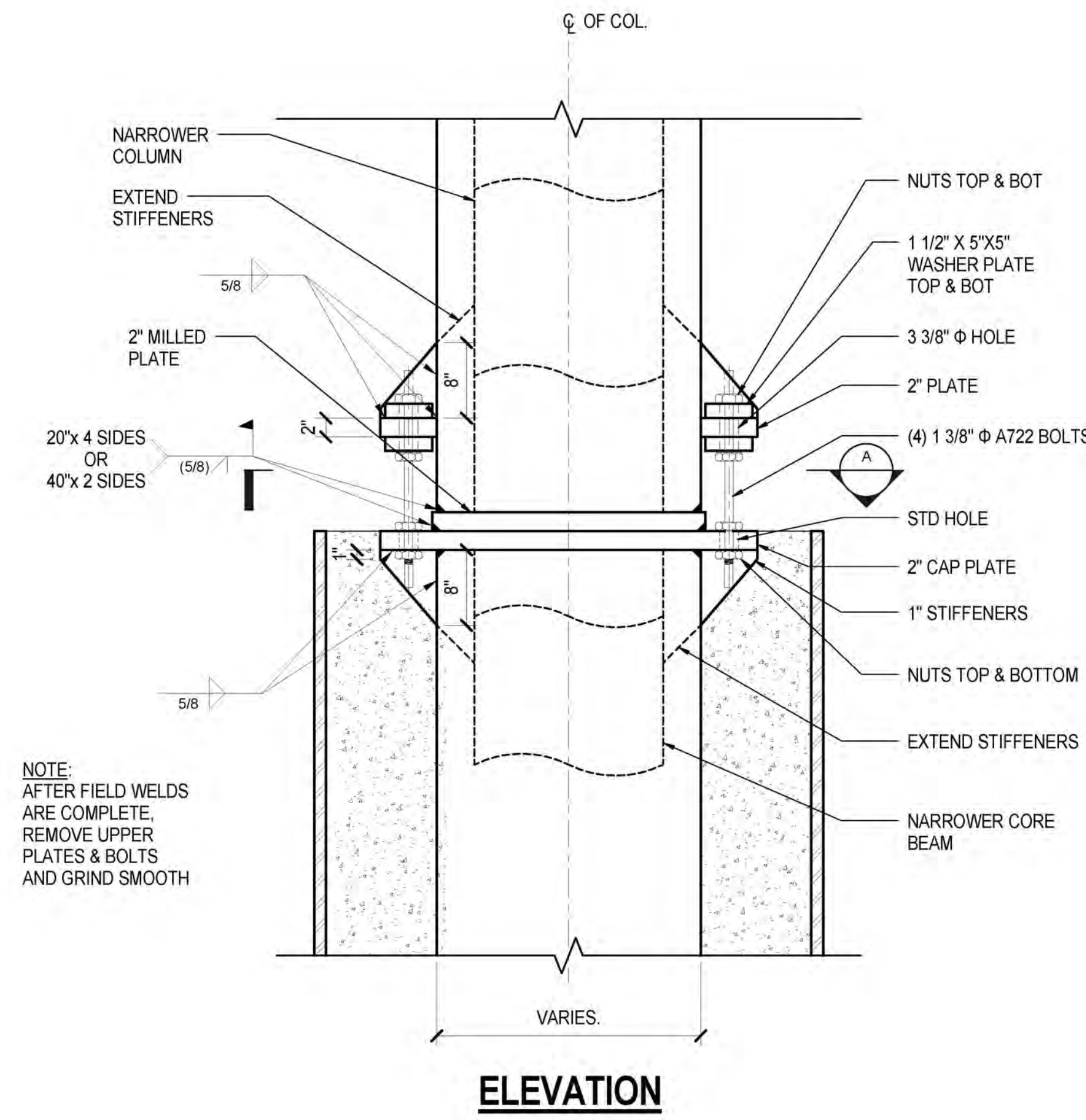




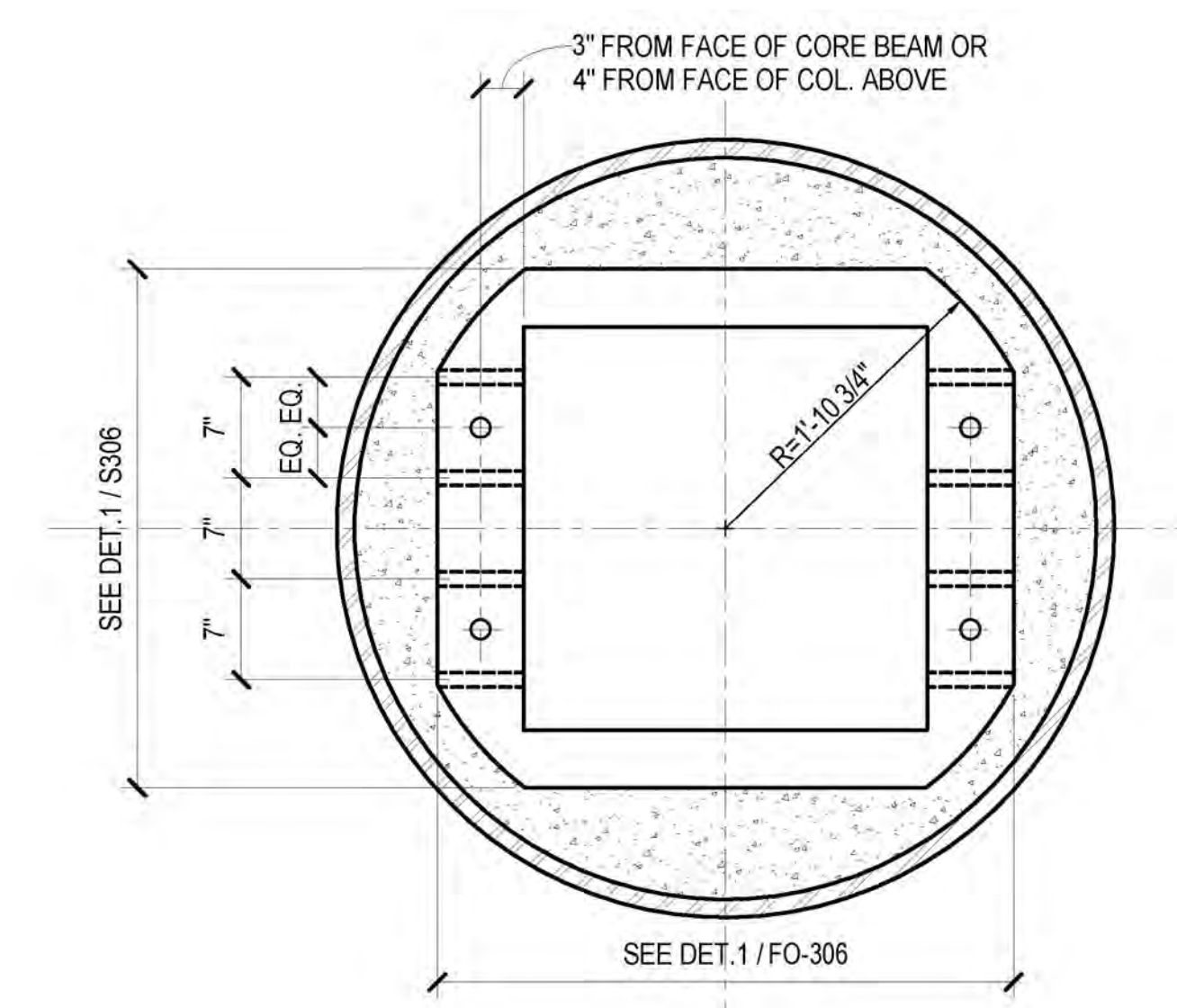
**1 NEW PILE CAP ON EXIST. CAISSON**  
1" = 1'-0"



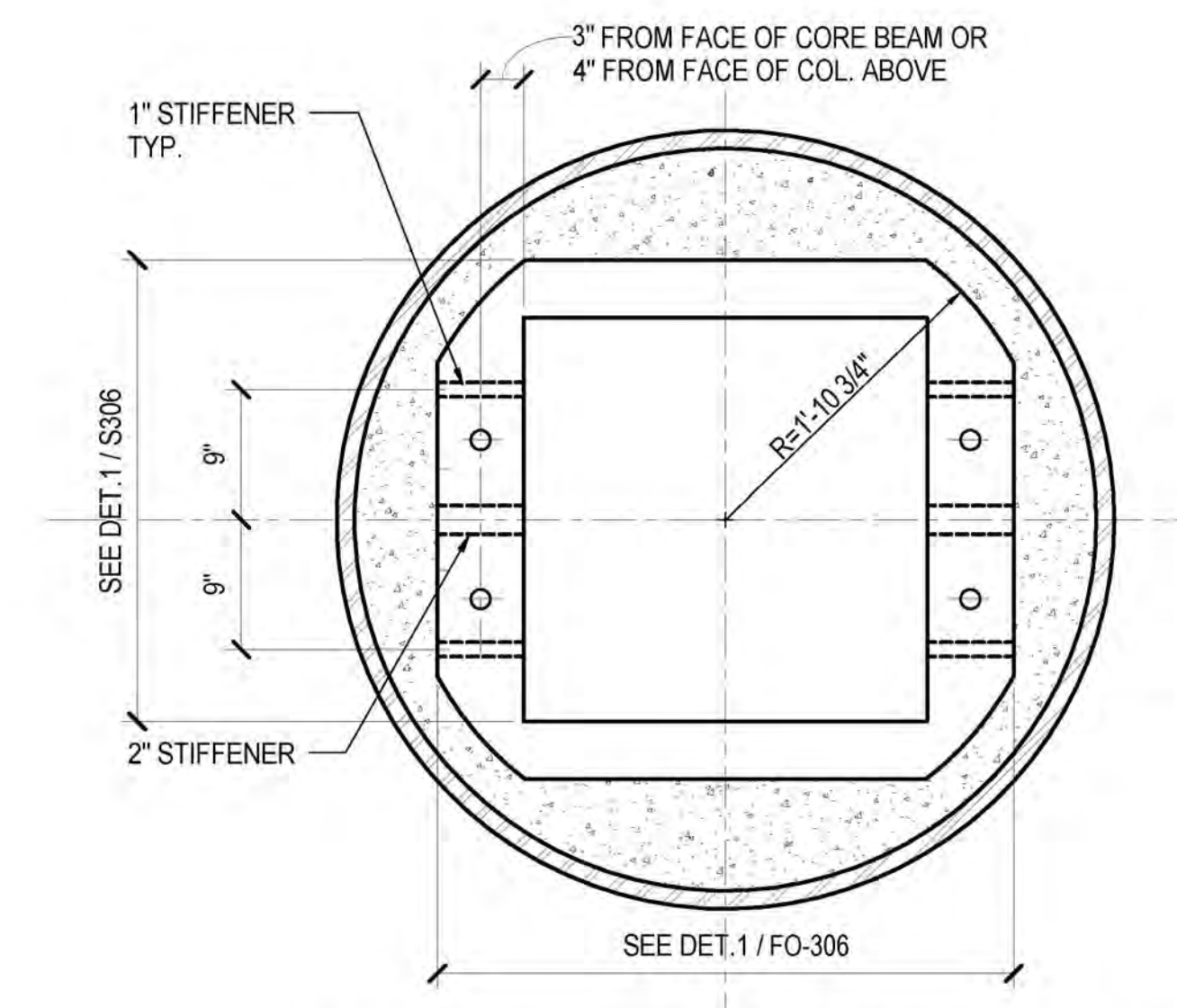
**SECTION A-A**



**ELEVATION**



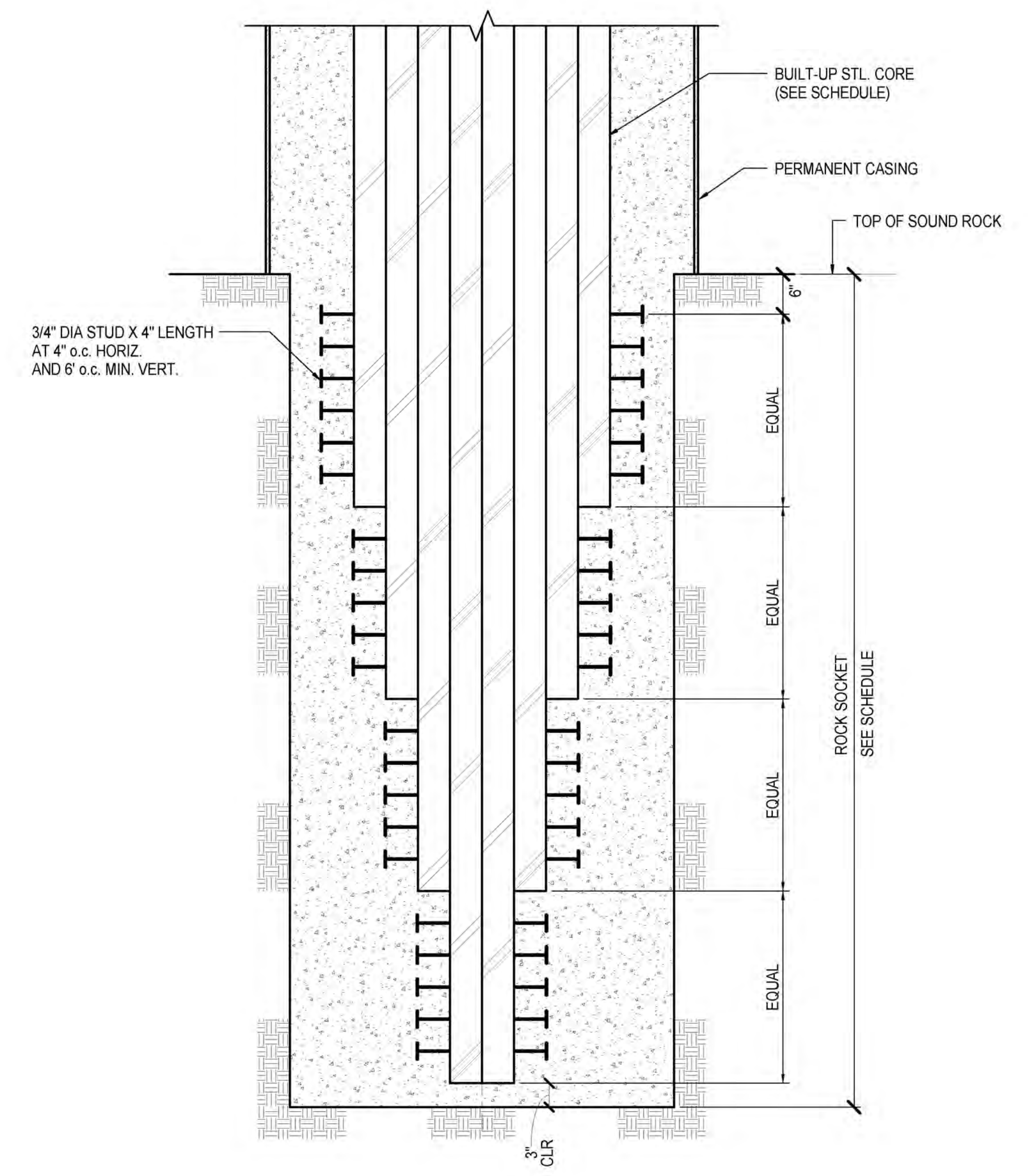
**TYPICAL**



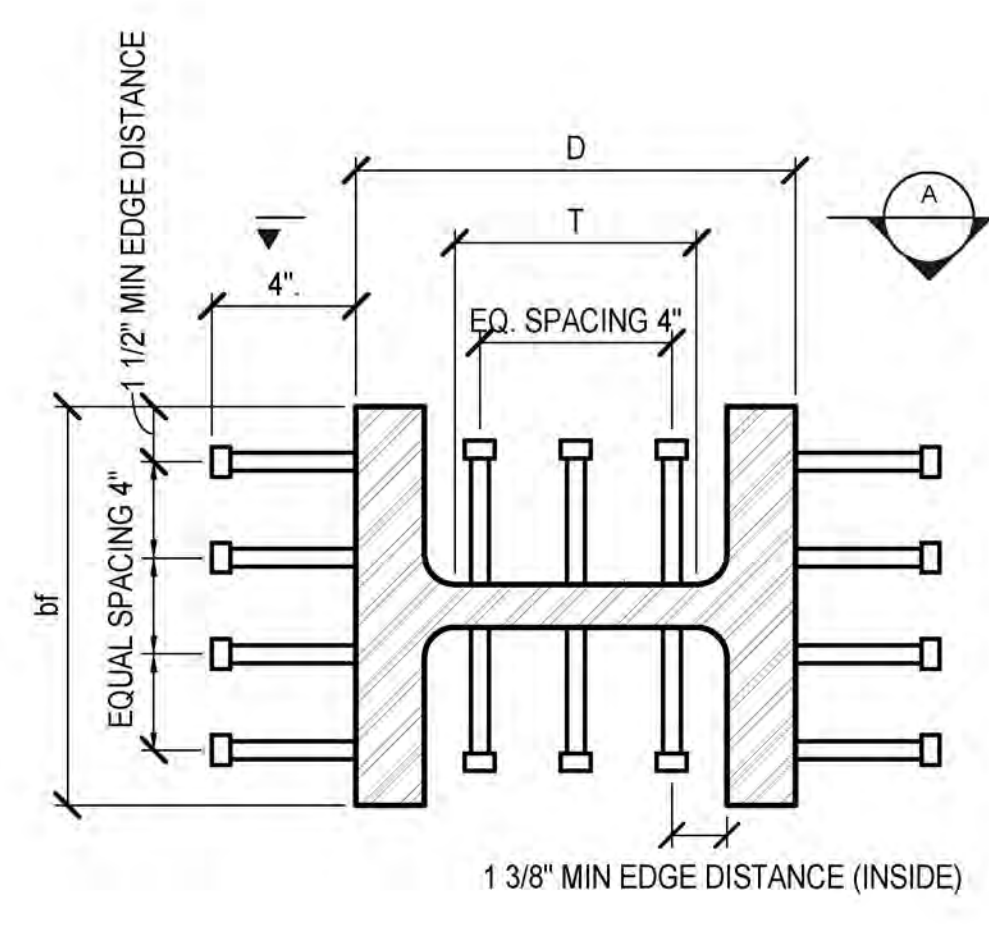
**CONN. TO 20" SIDE OF CORE BEAM**

**A**

**2 CAISSON TO COLUMN DIRECT BEARING DETAIL**  
1" = 1'-0"



**3 BUILT-UP STEEL CORE BEAM TAPPER IN ROCK SOCKET**  
1" = 1'-0"



**VIEW A**

**4 CAISSON CORE SHEAR STUD SPACING DETAIL ON W-SHAPE**  
1 1/2" = 1'-0"

NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Model - PLATFORM SUBMISSION	
2. DIAG PHASE I STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
3. DIAG PHASE I STRUCTURE UPDATE	9/20/2013
LIRR - 60% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
FILING FOR FOUNDATIONS	5/8/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
Rev	Description

See Plan

Date	02/15/2013
Project No.	N11330.00
Drawn By	Author
Sheet Number	

**HYE - PL - FO-303.00**

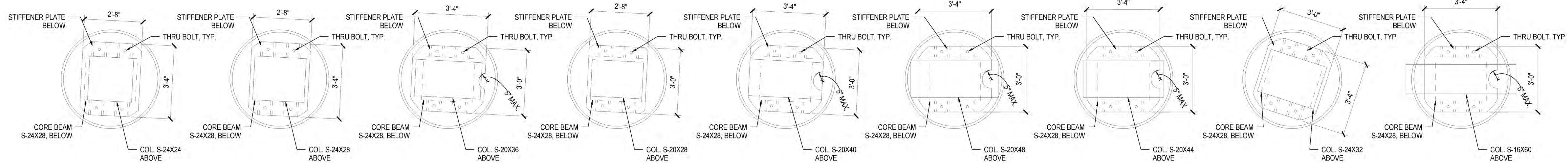
**TYPICAL CAISSON DETAILS & SCHEDULES III**

Drawing Number / BSCAD Drawing Number  
**FO-303.00**

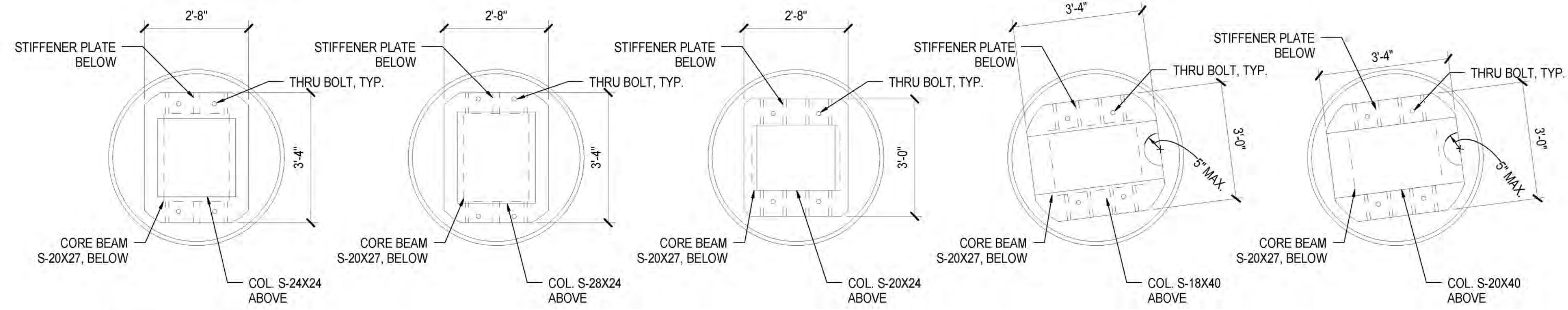
SHEET 17 of 30

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Buildings  
APPROVED  
Under Directive 2 of 1975  
Date/Time: Jan 8, 2014 - 12:41 PM  
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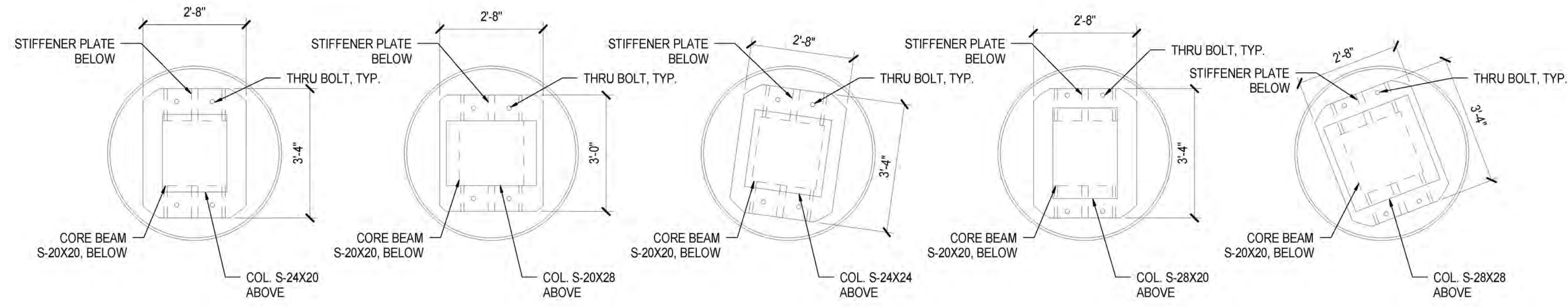




**C4.5-5 CAISSONS**



**C4.5-4 CAISSONS**



**C4.5-3 CAISSONS**

**1 DIRECT BEARING CAPPLATE**

1/2" = 1'-0"



**Client**  
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60 Columbus Circle  
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Tel: 212.801.1000 Fax: 212.801.1048

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**Construction Manager**  
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100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

**Architect**  
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PC Architects & Planning Consultants  
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New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

**Structural Engineer**  
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Tel: 917.661.7800 Fax: 718.661.7801

**Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

**LJBR Ventilation**  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

**LJBR Substation**  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172

NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
2. DI-03 PHASE I STRUCTURAL UPDATE	11/10/2013

Rev. Item

Date: 11/01/13  
Project No: N11330.00  
Drawing No: Author  
Sheet Number: Author

**HYE - PL - FO-306.00**

**TYPICAL CAISSON DETAILS & SCHEDULE IV**

Drawing Number / Revision Drawing Number  
**FO-306.00**

SHEET 18 of 30

**Damian Titus**  
Buildings  
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LOCATION REFERENCE	COLUMN COORDINATES <sup>1</sup>		COLUMN ROTATION <sup>11</sup>	ELEVATION AT THE TOP OF FOUNDATION	ELEVATION AT THE TOP FLOOR LEVEL	FOUNDATION TYPE <sup>2</sup>	ALT. FOUNDATION TYPE <sup>2</sup>	BASE PLATE DIMENSIONS	SHEAR LUG MARK <sup>12</sup>	ANCHOR ROD MARK AND SIZE <sup>3</sup>	TOP OF ROCK SOCKET ELEVATION <sup>4</sup>	ROCK SOCKET LENGTH <sup>5</sup>	ADDITIONAL ROCK SOCKET LENGTH <sup>6</sup>	COLUMN SECTION SIZE <sup>7</sup>	COLUMN AXIAL LOADS		CLEARANCE TO TRACK NORTH OF COLUMN <sup>8</sup>	CLEARANCE TO TRACK SOUTH OF COLUMN <sup>8</sup>
	X (FT)	Y (FT)													(DEG)	(FT)		
PA5	1.70	525.56	0.00	6.50		EXC-Z		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X1.50	450	600	8-6 1/4"	8-9 1/2"
PA6	1.70	447.48	6.23	6.50		EXC-Z		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X1.50	2050	2600	8-1 1/2"	8-10 1/2"
PA7	1.70	372.90	14.20	6.50		EXC-X		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X1.25	1150	1800	9-2 3/4"	9-2"
PA8	1.70	278.48	19.60	4.50		EXC-X		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X1.25	950	1500	9-2 1/2"	9-0 3/4"
PA9	6.70	228.93	8.89	3.00		PIER-A1	EXC-X	32 X 32 X 11.75	TYPE 1	TYPE F - 1 3/8" DIA. (T)				B-20X20X2.00	550	700	8-1"	8-7"
PB5	30.70	524.07	0.00	5.50		C3-1		30 DIA. X 2.75		TYPE A - 1 3/8" DIA.				B-20X20X1.25	1050	1400	9-11 3/4"	7-4"
PB7	30.70	380.23	14.20	3.50		C3-1		30 DIA. X 2.75		TYPE A - 1 3/8" DIA.				B-20X20X2.00	2450	3850	9-2 1/4"	9-2"
PB8	30.70	288.81	19.60	3.50		C3-1		30 DIA. X 2.75		TYPE B - 1 3/8" DIA. (T)				B-20X20X2.00	2100	3400	8-4 3/4"	9-10 1/2"
PB9	30.70	232.70	14.06	3.50		PIER-A1	C3-1	32 X 32 X 6.75	TYPE 1	TYPE E - 1 3/8" DIA. (T)				B-20X20X2.00	1150	1400	10-5"	11-0"
PC6	59.70	453.81	6.76	6.50		EXC-Y1		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X3.00	1150	1400	7-1 1/4"	7-7"
PC7	59.70	387.57	14.20	6.50		EXC-W1		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X2.50	1800	2450	9-2 3/4"	9-1 1/2"
PC8	59.70	299.14	19.60	4.50		EXC-W2		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X2.50	1500	2150	9-3"	9-0 1/4"
PC9	59.70	240.06	14.06	3.50		PIER-A1	EXC-W1	32 X 32 X 6.75	TYPE 1	TYPE E - 1 3/8" DIA. (T)				B-20X20X2.00	1450	1900	10-5 1/4"	N/A
PD5	88.70	524.07	0.00	5.50		C3-1		30 DIA. X 2.75		TYPE A - 1 3/8" DIA.				B-20X20X1.25	1000	1350	9-11 1/4"	7-4 1/2"
PD6	88.70	457.51	7.27	5.50		C3-3**	C3-1-3**	30 DIA. X 4.00		TYPE A - 1 3/8" DIA. (T)	-42.00			W14x500	4600	6050	6-10 3/4"	7-2 3/4"
PD7	88.70	394.82	14.04	6.50		GRILLAGE BEAM		SEE DET. 3/S-352		SEE DET. 3/S-352				B-20X20X3.00	3100	4100	9-4 1/4"	9-0"
PD8	88.70	310.53	21.44	3.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)				B-20X20X1.50	1500	1950	9-3"	9-0 1/4"
PD9	88.70	247.26	14.06	3.50		PIER-A1	C3-1	32 X 32 X 6.75	TYPE 1	TYPE D - 1 3/8" DIA. (T)				B-20X20X2.50	1650	2200	N/A	N/A
PD10	93.52	209.63	0.00	3.50		PIER-A5	C3-1	32 X 32 X 8.25	TYPE 1	TYPE D - 1 3/8" DIA. (T)				B-20X20X1.25	450	550	8-11 1/4"	N/A
PD11 <sup>10</sup>	93.94	205.83	0.00	3.50		PIER-A5	C3-1	32 X 32 X 3.75	TYPE 1	TYPE D - 1 3/8" DIA. (T)				W14x455	1650	2350	N/A	N/A
PE5	108.27	524.07	0.00	5.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA.				B-20X20X1.25	950	1250	9-10 3/4"	7-4 1/2"
PE8	117.70	321.91	21.44	4.50		EXC-W2		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X1.75	1650	2200	9-3 1/4"	9-0 1/2"
PE9	117.70	254.48	14.06	4.00		PIER-A1	EXC-W1	32 X 32 X 6.75	TYPE 1	TYPE D - 1 3/8" DIA. (T)				B-20X20X2.50	1400	1850	N/A	N/A
PE11 <sup>10</sup>	137.18	205.83	0.00	4.50		C3-1	C3-1-1	30 DIA. X 3.75		TYPE A - 1 3/8" DIA. (T)				W14x455	1450	2100	N/A	N/A
PF5	162.24	524.07	0.00	5.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA.				B-20X20X1.25	1000	1300	9-5 3/4"	7-5"
PF7	146.70	409.33	14.04	5.50		C3-2	C3-1-2	30 DIA. X 3.75		TYPE A - 1 3/8" DIA.				B-20X20X4.00	4150	5450	9-6 3/4"	8-9 1/2"
PF8	146.70	333.30	21.44	4.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)				B-20X20X2.00	1500	1950	9-3 1/4"	9-1"
PF9	146.70	261.15	14.06	4.00		PIER-A1	C3-1	32 X 32 X 6.75	TYPE 1	TYPE D - 1 3/8" DIA. (T)				B-20X20X1.50	1400	1850	N/A	N/A
PF10	146.70	209.63	0.00	4.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)				B-20X20X2.50	1300	1750	8-7 1/4"	N/A
PF11 <sup>10</sup>	153.92	205.83	0.00	4.50		C3-1	C3-1-1	30 DIA. X 3.75		TYPE A - 1 3/8" DIA. (T)				W14x455	850	1000	N/A	N/A
PG2	175.70	660.82	0.00	8.49****		EXF-B		32 X 32 X 3.75		TYPE D - 1" DIA. (P)				B-20X20X1.50	650	850	7-9"	9-7 1/2"
PG3	175.70	609.76	0.00	6.51****		EXF-A		32 X 32 X 3.75		TYPE D - 1" DIA. (P)				B-20X20X1.25	950	1300	8-9"	8-6 3/4"
PG4	175.70	559.88	0.00	6.5****		EXF-B		32 X 32 X 3.75		TYPE D - 1" DIA. (P)				B-20X20X1.25	50	100	8-7"	9-5 1/2"
PG5****	175.70	524.85	0.00	6.5****		EXC-Y1		32 X 32 X 4.5	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X3.00	2000	2600	8-6 1/2"	8-2 1/2"
PG7	175.70	416.82	14.20	6.50		EXC-W1		32 X 32 X 4.5	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X2.50	2450	3200	9-5 1/2"	8-10 3/4"
PG8	175.70	344.69	21.44	5.50		EXC-W2		32 X 32 X 4.5	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X2.50	2450	3250	9-3"	9-1 1/2"
PG9	175.70	270.31	22.62	4.50		PIER-A1	EXC-W1	32 X 32 X 6.75	TYPE 1	TYPE D - 1 3/8" DIA. (T)				B-20X20X1.75	1400	1850	N/A	N/A
PG10	175.70	230.25	0.00	4.50		PIER-A1	C3-2	32 X 32 X 6.75	TYPE 1	TYPE D - 1 3/8" DIA. (T)				B-20X20X1.25	550	750	7-5 1/4"	N/A
PG11 <sup>10</sup>	175.33	205.83	0.00	4.50		C3-1	C3-1-1	30 DIA. X 3.75		TYPE A - 1 3/8" DIA. (T)				W14x455	900	1150	N/A	N/A
PH2	204.70	660.82	0.00	5.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE B - 1 3/8" DIA. (T)				B-20X20X2.00	1000	1350	7-8 3/4"	9-7 3/4"
PH3	212.17	609.76	0.00	5.50		C3-1**	C3-1-1**	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)	-10.50			B-20X20X1.25	1200	1550	8-8 1/2"	8-7 1/4"
PH4	204.70	559.76	0.00	5.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE B - 1 3/8" DIA. (T)				B-20X20X1.25	750	950	8-8 1/4"	8-10 1/4"
PH5	204.70	524.74	0.00	5.50		C3-1**	C3-1-1**	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)	-25.00			B-20X20X2.00	1900	2500	8-3"	8-1 1/2"
PH7	204.70	424.16	14.20	5.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE B - 1 3/8" DIA.				B-20X20X2.50	2350	3100	9-5 3/4"	8-10 1/4"
PH9	204.70	284.73	21.63	4.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)				B-20X20X1.75	1400	1850	8-8 1/2"	N/A
PH10	204.70	230.25	0.00	4.50		PIER-A1	C3-1	32 X 32 X 6.75	TYPE 1	TYPE D - 1 3/8" DIA. (T)				B-20X20X2.50	1500	1950	N/A	N/A
PH11 <sup>10</sup>	196.75	205.83	0.00	5.50		C3-1	C3-1-1	30 DIA. X 3.75		TYPE A - 1 3/8" DIA. (T)				W14x455	1150	1400	9-6"	N/A
PJ2	233.70	660.82	0.00	8.51****		EXF-B		32 X 32 X 3.75		TYPE D - 1" DIA. (P)				B-20X20X3.00	1900	2500	7-8 1/2"	9-8"
PJ3	233.70	609.76	0.00	5.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)				B-20X20X1.25	1300	1750	8-8 1/2"	8-7 1/4"
PJ4	233.70	559.64	0.00	6.49****		EXF-B		32 X 32 X 3.75		TYPE D - 1" DIA. (P)				B-20X20X1.25	750	1000	8-9 1/2"	N/A
PJ5	233.70	524.64	0.00	6.50		EXC-Y1		32 X 32 X 4.5	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X1.75	1800	2350	8-0"	8-0 1/4"
PJ7A	230.20	430.61	14.20	5.50		C3-3	C3-1-3	30 DIA. X 4.00		TYPE A - 1 3/8" DIA.				B-20X20X4.00	6000	7800	9-6 1/4"	8-9 3/4"
PJ7B	237.20	432.38	14.20	5.50		C3-3	C3-1-3	30 DIA. X 4.00		TYPE A - 1 3/8" DIA.				B-20X20X4.00	6000	7800	9-6 1/2"	8-9 1/2"
PJ8A	230.20	366.08	21.44	5.50		C3-3	C3-1-3	30 DIA. X 4.00		TYPE A - 1 3/8" DIA.	-17.75			B-20X20X4.00	6000	7800	9-3 1/4"	9-2"
PJ8B	237.20	368.83	21.44	5.50		C3-3	C3-1-3	30 DIA. X 4.00		TYPE A - 1 3/8" DIA.	-17.75			B-20X20X4.00	6000	7800	9-3 1/4"	9-2"
PJ9	233.70	296.23	21.47	6.50		EXC-W1		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3"				B-20X20X1.25	1600	2100	8-7"	N/A
PJ9A	233.70	253.86	12.80	5.00		PIER-A1	C3-1	32 X 32 X 6.75	TYPE 1	TYPE D - 1 3/8" DIA. (T)				B-20X20X1.25	500	700	7-0"	6-11 1/4"
PJ10	233.70	230.06	0.00	6.50		EXC-W1		32 X 32 X 3.75	TYPE 2	TYPE D - 1 3/8" DIA. X 3" (GR 55)				B-20X20X1.25	1550	2050	N/A	N/A
PJ11 <sup>10</sup>	225.50	204.64	0.00	5.50		C3-1	C3-1-1	30 DIA. X 3.75		TYPE A - 1 3/8" DIA. (T)				W14x455	1850	2650	8-6"	N/A
PK3	262.20	609.12	0.00	5.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)				B-20X20X1.25	1400	1850	9-2"	8-1 1/2"
PK4	262.20	559.60	0.00	5.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)	-24.25			B-20X20X1.25	750	950	8-9 3/4"	N/A
PK5	262.20	524.46	0.00	5.50		C3-1**	C3-1-1**	30 DIA. X 2.75		TYPE A - 1 3/8" DIA. (T)	-20.00			B-20X20X1.50	1650	2150	7-9 1/2"	7-10 1/4"
PK7A	258.70	437.82	14.20	5.50		C3-3	C3-1-3	30 DIA. X 4.00		TYPE A - 1 3/8" DIA.				B-20X20X4.00	6000	7800	9-6 1/2"	8-9 1/4"
PK7B	265.70	439.59	14.20	5.50		C3-3	C3-1-3	30 DIA. X 4.00		TYPE A - 1 3/8" DIA.				B-20X20X4.00	6000	7800	9-6 1/2"	8-9 1/4"
PK8A	258.70	377.28	21.44	5.50		C3-3	C3-1-3	30 DIA. X 4.00		TYPE A - 1 3/8" DIA.				B-20X20X4.00	6000	7800	9-3 1/4"	9-2 1/4"
PK8B	265.70	380.03	21.44	5.50		C3-3	C3-1-3	30 DIA. X 4.00		TYPE A - 1 3/8" DIA.				B-20X20X4.00	6000	7800	9-3 1/4"	9-2 1/2"
PK9	262.20	307.44	21.47	5.50		C3-1	C3-1-1	30 DIA. X 2.75		TYPE A - 1 3/8" DIA.				B-20X20X1				

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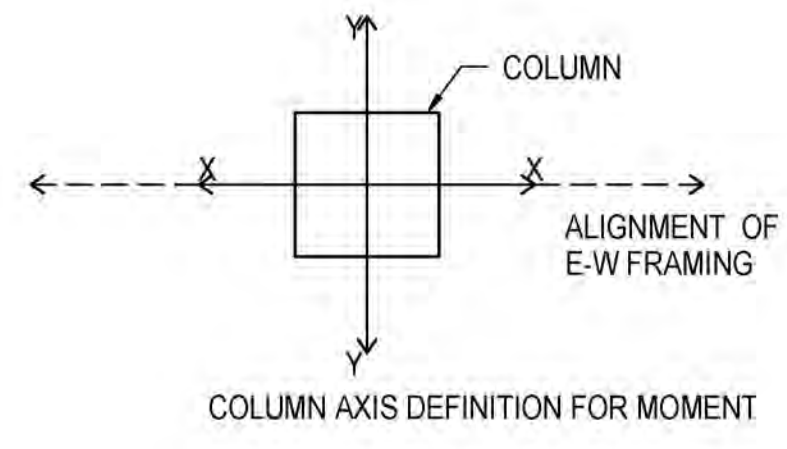
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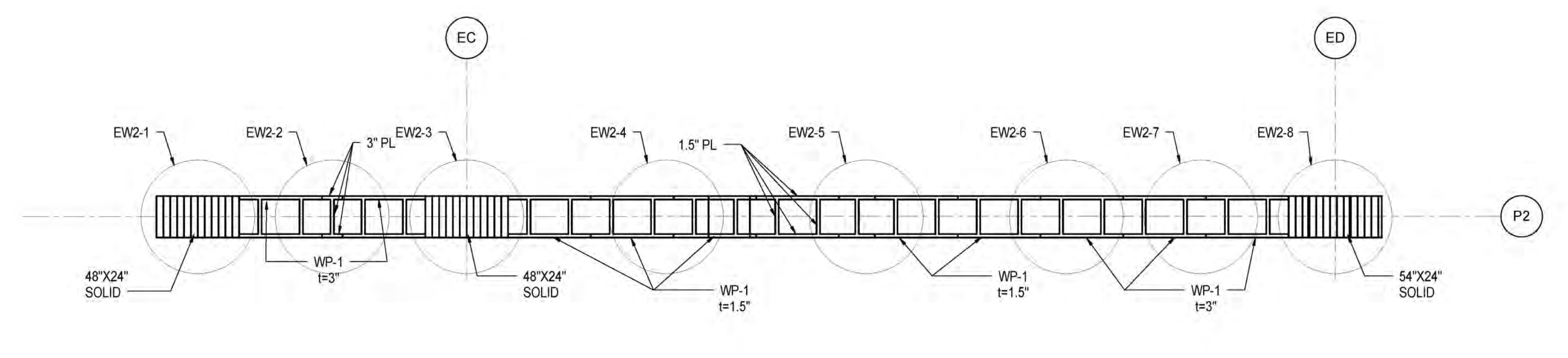
LOCATION REFERENCE	COLUMN COORDINATES 1		ELEVATION AT THE TOP OF FOUNDATION (FT)	ELEVATION AT THE TOP FLOOR LEVEL (FT)	FOUNDATION TYPE 2	ALT. FOUNDATION TYPE 2	BASE PLATE DIMENSIONS (IN)	ANCHOR ROD MARK 3	TOP OF ROCK SOCKET ELEVATION 4 (FT)	ROCK SOCKET LENGTH 5 (FT)	ADDITIONAL ROCK SOCKET LENGTH 6 (FT)	COLUMN SECTION SIZE 7	COLUMN AXIAL LOADS		COLUMN MOMENT		CLEARANCE TO TRACK NORTH OF COLUMN 8	CLEARANCE TO TRACK SOUTH OF COLUMN 8	CAISSON TIP ELEVATION 9 (FT)
	X (FT)	Y (FT)											SERVICE (KIPS)	ULTIMATE (KIPS)	SERVICE (KIPS-FT)	ULTIMATE (KIPS-FT)			
EAE1	8.75	709.77	6	30.67	10' CONT. PIER		60 x 40 x 8	(6) 2 1/2" DIA.				8-42x24	8300	10300	4926	7882	-	8'-2 1/4"	
EAE2	8.75	661.06	6	31.25	5' CONT. PIER		60 x 40 x 10	(6) 2 1/2" DIA.				8-48x24	16350	21650	6091	9746	7'-6"	9'-5 1/4"	
EAE3	8.75	610.06	6	31.50	C5-5.1		60 DIA. x 13	(6) 2 1/2" DIA.				8-50x24	17350	23050	2860	4256	8'-5 1/2"	8'-8 3/4"	-28
EAE4	8.75	560.06	6	31.50	C5-5.1		60 DIA. x 12	(6) 2 1/2" DIA.				8-40x24	14350	19350	1704	2726	8'-5 1/4"	8'-8 3/4"	
EAE5	8.75	525.56	6	31.50	C4-5.2		30 DIA. x 6	(6) 2 1/2" DIA.				8-18x24	6300	7800	-	-	8'-5 1/2"	8'-6 1/2"	
EBE1	37.75	709.77	6	30.67	10' CONT. PIER		60 x 40 x 8	(6) 2 1/2" DIA.				8-42x24	9350	11550	4741	7585	-	8'-2 3/4"	
EBE2	37.75	661.06	6	31.50	5' CONT. PIER		60 x 40 x 15	(6) 2 1/2" DIA.				8-48x24	14500	18950	6039	9663	7'-5 1/4"	9'-6"	
EBE3	37.75	610.06	6	31.50	C5-5.1		60 DIA. x 13	(6) 2 1/2" DIA.				8-48x24	15500	20050	2966	4746	8'-5 1/2"	8'-8 1/2"	-28
EBE4	37.75	560.06	6	31.50	C5-5.1		60 DIA. x 14	(6) 2 1/2" DIA.				8-44x24	16500	21100	2188	3501	8'-5 1/2"	8'-8 3/4"	
EBE5	37.75	525.56	6	31.50	C4-5.2		40 DIA. x 7	(6) 2 1/2" DIA.				8-20x24	8350	10150	-	-	8'-5 1/4"	8'-7 1/4"	
EBE6E1	59.00	709.77	6	30.67	10' CONT. PIER		40 x 40 x 1.25	(6) 2 1/2" DIA.				8-34x24	350	450	-	-	-	8'-3 1/4"	
EBE6E5	59.00	525.56	6	31.50	PILE CAP 5x12x9		30 DIA. x 2	(6) 2 1/2" DIA.				8-18x24	350	450	-	-	8'-4 3/4"	8'-7"	
ECIE1	72.00	709.77	6	30.67	10' CONT. PIER		60 x 40 x 12	(6) 2 1/2" DIA.				8-42x24	9500	11850	4513	7220	-	8'-3"	
ECIE5	72.00	525.56	6	31.50	C4-5.2		54 DIA. x 9	(6) 2 1/2" DIA.				8-20x24	9500	10650	-	-	8'-4 3/4"	8'-7 1/4"	
ECIE5E5	93.58	525.56	6	31.50	C4-5.2		48 DIA. x 13	(6) 2 1/2" DIA.				8-24x24	350	450	-	-	8'-4 1/2"	8'-7 1/4"	
EDIE1	114.00	709.77	6	30.67	5'X12' PIER		60 x 40 x 12	(6) 2 1/2" DIA.				8-44x24	9350	11650	4454	7127	-	8'-3 1/4"	
EEIE1	154.25	709.77	6	31.50	5'X10' PIER		60 x 40 x 11	(6) 2 1/2" DIA.				8-42x24	7350	9150	4223	6756	-	8'-3 3/4"	
EEIE2	154.25	661.06	6	31.50	C5-5.1		60 DIA. x 14	(6) 2 1/2" DIA.				8-54x24	17500	24150	6154	9846	7'-5"	9'-7"	
EEIE3	154.25	610.06	6	31.50	C5-5.1		60 DIA. x 14	(6) 2 1/2" DIA.				8-48x24	17500	24150	4424	7079	8'-5"	8'-7 1/4"	
EFIE1	166.98	709.77	6	31.50	5'X9' PIER		40 x 40 x 1.25	(6) 2 1/2" DIA.				8-24x24	300	400	-	-	-	8'-3 1/2"	
EFIE2	166.98	661.06	6	31.50	C5-5.1		40 DIA. x 1.25	(6) 2 1/2" DIA.				8-24x24	350	450	-	-	7'-5 1/4"	9'-7"	
EFIE3	166.98	610.06	6	31.50	C5-5.1		40 DIA. x 1.25	(6) 2 1/2" DIA.				8-24x24	350	450	-	-	8'-4 3/4"	8'-7 1/2"	
EFIE4	166.98	560.06	6	31.50	C5-5.1		54 DIA. x 12	(6) 2 1/2" DIA.	-40.25			8-30x24	12200	18000	-	-	8'-3"	9'-4 1/2"	
EFIE5	166.98	525.56	6	31.50	C4-5.2		40 DIA. x 5	(6) 2 1/2" DIA.	-40.25			8-24x24	4500	5200	-	-	7'-9 3/4"	8'-7 3/4"	
EW2-1	59.00	661.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 2	19800	25800	-	-	7'-5"	9'-6"	-43
EW2-2	65.50	661.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 2	19800	25800	-	-	7'-5"	9'-6"	-43
EW2-3	72.00	661.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 2	17500	22500	-	-	7'-5"	9'-6"	-43
EW2-4	81.67	661.06	6	31.50	C5-2		60 DIA. x 13	(6) 2 1/2" DIA.			9	SEE DET. 2	15200	19200	-	-	7'-5"	9'-6 1/2"	-43
EW2-5	91.33	661.06	6	31.50	C5-2		60 DIA. x 13	(6) 2 1/2" DIA.			9	SEE DET. 2	15200	19200	-	-	7'-5"	9'-6 1/2"	-43
EW2-6	101.00	661.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 2	17500	22800	-	-	7'-5"	9'-7"	-43
EW2-7	107.50	661.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 2	19800	26400	-	-	7'-5"	9'-7"	-43
EW2-8	114.00	661.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 2	19800	26400	-	-	7'-5"	9'-7"	-43
EW3-1	59.00	610.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 3	22800	29400	-	-	8'-5 1/2"	8'-6 1/2"	-43
EW3-2	65.50	610.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 3	22800	29400	-	-	8'-5 1/2"	8'-6 1/2"	-43
EW3-3	72.00	610.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 3	20200	25500	-	-	8'-5 1/2"	8'-6 1/2"	-43
EW3-4	81.67	610.06	6	31.50	C5-3		60 DIA. x 13	(6) 2 1/2" DIA.			9	SEE DET. 3	17600	21600	-	-	8'-5 3/4"	8'-6 3/4"	-43
EW3-5	91.33	610.06	6	31.50	C5-3		60 DIA. x 13	(6) 2 1/2" DIA.			9	SEE DET. 3	17600	21600	-	-	8'-5 3/4"	8'-6 3/4"	-43
EW3-6	101.00	610.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 3	20200	26100	-	-	8'-5 1/2"	8'-7 1/2"	-43
EW3-7	107.50	610.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 3	22800	30600	-	-	8'-5 1/2"	8'-7 1/2"	-43
EW3-8	114.00	610.06	6	31.50	C5-4		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 3	22800	30600	-	-	8'-5 1/2"	8'-7 1/2"	-43
EW4-1	59.00	560.06	6	31.50	C5-4		60 DIA. x 13	(6) 2 1/2" DIA.			9	SEE DET. 4	19800	25800	-	-	8'-5"	8'-6 3/4"	
EW4-2	65.50	560.06	6	31.50	C5-4		60 DIA. x 13	(6) 2 1/2" DIA.			9	SEE DET. 4	19800	25800	-	-	8'-5"	8'-6 3/4"	
EW4-3	72.00	560.06	6	31.50	C5-4		60 DIA. x 13	(6) 2 1/2" DIA.			9	SEE DET. 4	17900	22900	-	-	8'-5"	8'-6 3/4"	
EW4-4	80.17	560.06	6	31.50	C5-3		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 4	16000	20000	-	-	8'-5 1/2"	8'-7"	
EW4-5	88.33	560.06	6	31.50	C5-3		60 DIA. x 16	(6) 2 1/2" DIA.			9	SEE DET. 4	16000	20000	-	-	8'-5 1/2"	8'-7"	
EW4-6	96.50	560.06	6	31.50	C5-5		60 DIA. x 16	(6) 2 1/2" DIA.			11.6	SEE DET. 4	16250	23250	-	-	8'-5 1/2"	8'-6 3/4"	
EW4-7	102.50	560.06	6	31.50	C5-5		60 DIA. x 16	(6) 2 1/2" DIA.			11.6	SEE DET. 4	20500	26500	-	-	8'-5 1/2"	8'-6 3/4"	
EW4-8	108.50	560.06	6	31.50	C5-5		60 DIA. x 17	(6) 2 1/2" DIA.	-13.33		11.6	SEE DET. 4	32300	42000	-	-	8'-5 1/2"	8'-6 3/4"	

**5 TOWER E - COLUMN SCHEDULE**  
1/4" = 1'-0"

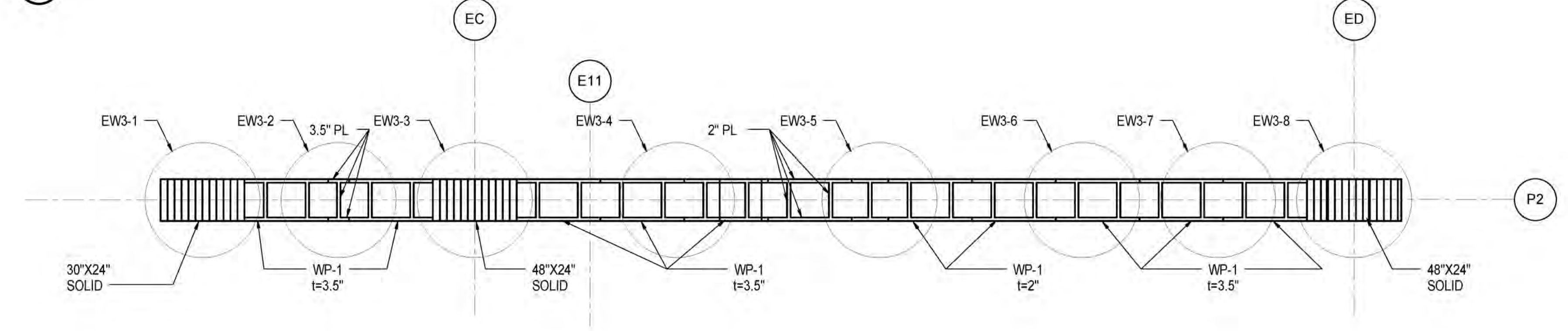
**NOTES:**  
1. COLUMN COORDINATES ARE BASED OFF OF A LOCAL COORDINATE SYSTEM WHERE (0,0) IS LOCATED AT THE INTERSECTION OF THE 11TH AVE AND WEST 30TH STREET PROPERTY LINE. THE MANHATTAN BOROUGH GRID THAT RELATES TO THE LOCAL (0,0) IS (N 19196.576, E -16007.848).  
2. REFER TO FO-301.00 TO FO-304.00 FOR FOUNDATION DETAILS AND SCHEDULES.  
3. REFER TO S-321.00 FOR ANCHOR ROD DETAILS AND SCHEDULE.  
4. TOP OF ROCK SOCKET ELEVATIONS IS THE HIGHEST ELEVATION AT WHICH ROCK SOCKET BEGINS BASED ON INFLUENCE LINE. ACTUAL TOP OF SOCKET TO BE FIELD VERIFIED BY GEOTECHNICAL ENGINEER.  
5. REFER TO TYPICAL DETAILS IN F0300.00 SERIES FOR ROCK SOCKET INFORMATION UNLESS NOTED OTHERWISE.  
6. ADDITIONAL ROCK SOCKET LENGTH DUE TO GROUPING EFFECT SHALL BE PROVIDED BY GEOTECHNICAL ENGINEER.  
7. REFER TO S-320.00 TO S-323.00 FOR COLUMN DETAILS.  
8. CLEARANCE TO TRACK IS MEASURED FROM CENTERLINE OF TRACK TO FACE OF COLUMN. COLUMNS ARE TO BE LOCATED IN ACCORDANCE WITH THE COORDINATES SHOWN. THE CLEARANCES TO ADJACENT TRACK ARE FOR LIRR INFORMATION ONLY.  
9. CAISSON TIP ELEVATIONS SHOWN ARE THE HIGHEST ELEVATION AT WHICH THE TIP OF THE ROCK SOCKET MAY BE LOCATED. DEEPER SOCKETS MAY BE REQUIRED BASED ON THE CONDITION OF THE ROCK AS DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER.  
\* COLUMN BETWEEN LOADING LEVEL AND PLATFORM LEVEL.



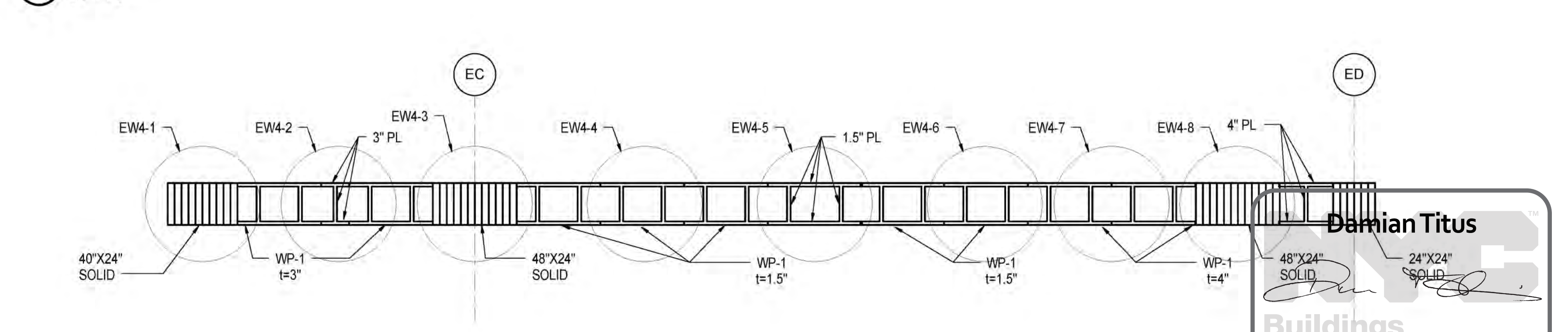
NOTE: PROVIDE (6) 2 1/2" DIA. A722 (Fy=150KSI) ANCHOR BOLTS, TYP. AT ALL BASE PLATES.



**2 WALL AT GRID E2**  
1/4" = 1'-0"

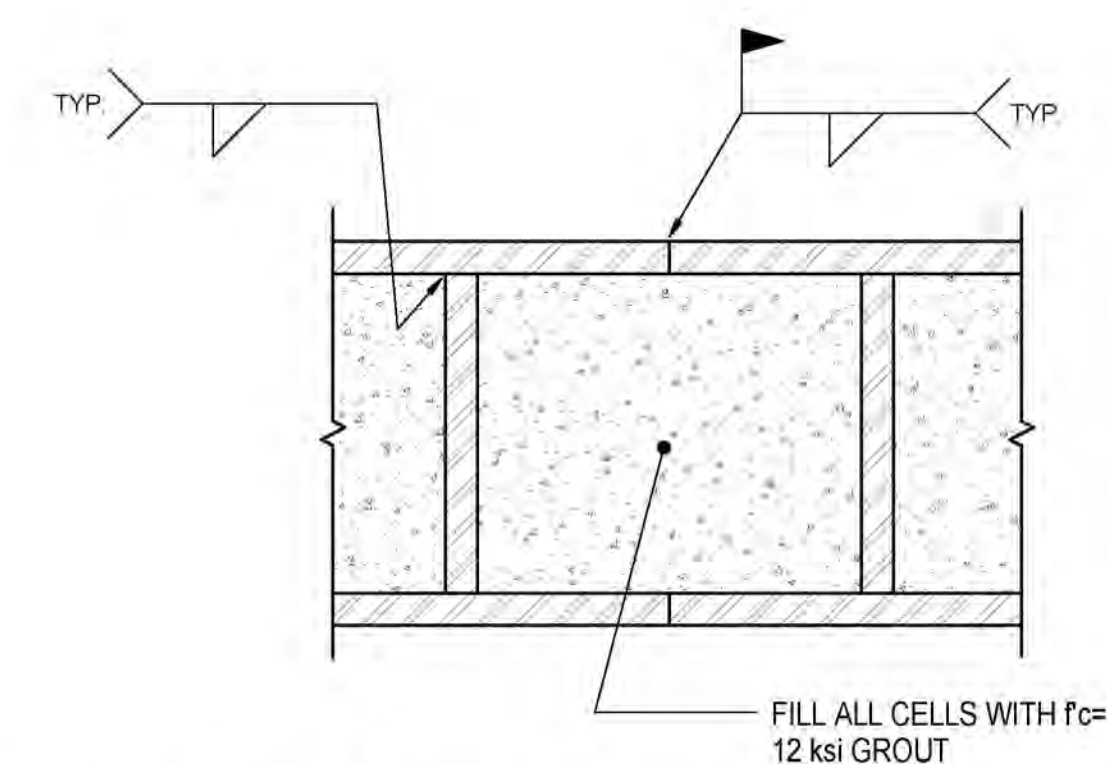


**3 WALL AT GRID E3**  
1/4" = 1'-0"

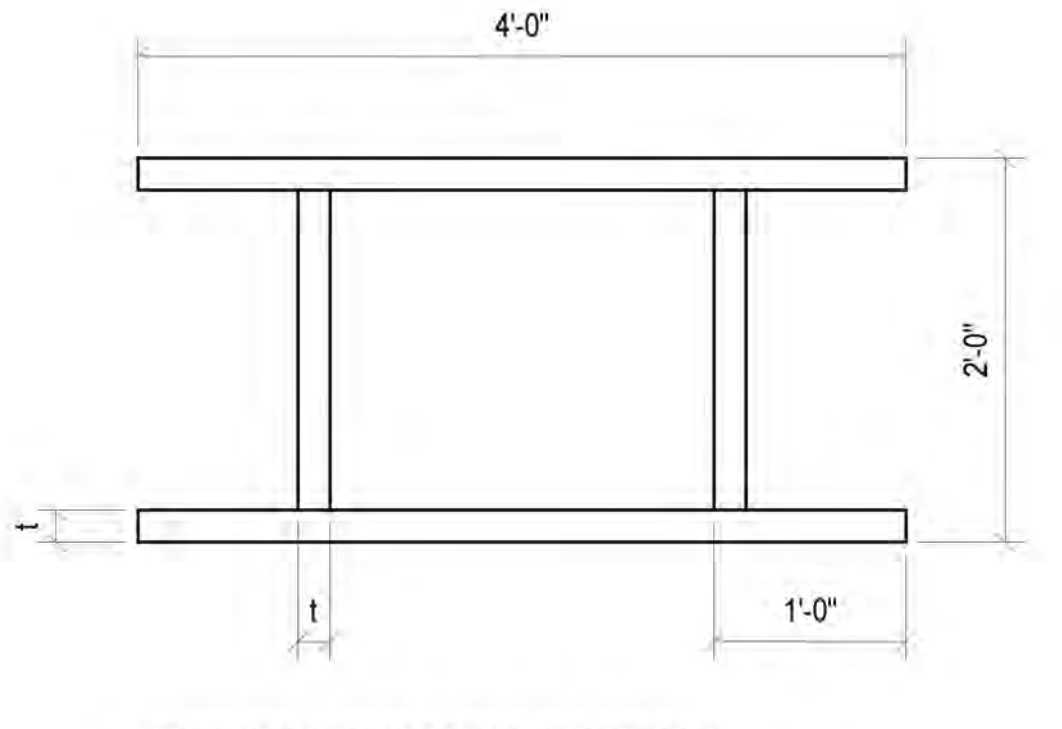


**4 WALL AT GRID E4**  
1/4" = 1'-0"

**1 TYPICAL CONNECTION DETAILS AT WALL PANEL**  
1" = 1'-0"

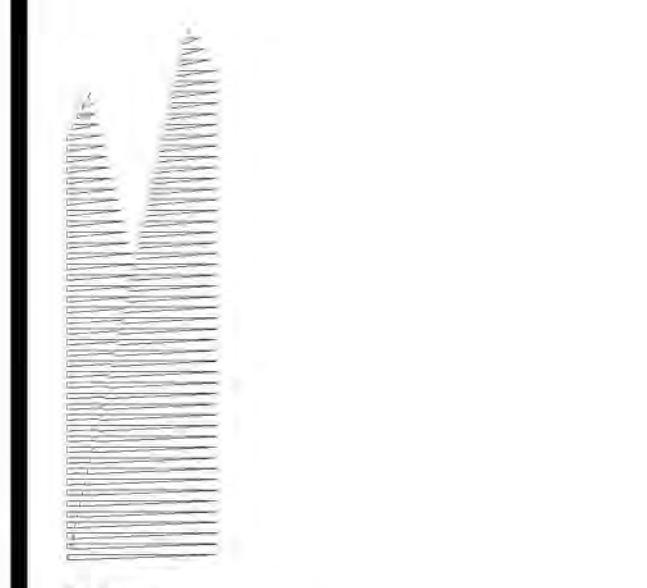


**6 TYPICAL DETAIL OF WALL PANEL INFILL (WP-1)**  
1" = 1'-0"



**Damian Titus**  
Buildings  
APPROVED Under Directive 2 of 1975  
Date/Time: Jan 8, 2014 - 12:41 PM  
NYC Development Hub

NYC DOB FILING	1/7/2014
NYC DOB FILING	1/13/2014
NYC DOB FILING	1/24/2013
L.I.R.R. - PRELIMINAL 100%	11/22/2013
NYC DOB FILING	11/11/2013
NYC DOB FILING	10/4/2013
NYC DOB FILING	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
FILING FOR FOUNDATIONS	5/8/2013
L.I.R.R. - 60% - PHASE I FDNS	3/29/2013
L.I.R.R. - 90% SUBMISSION	2/15/2013
NYC DOB FILING	1/16/2013



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LIRR Ventilation Ove Arup & Partners P.C. 77 Water Street New York, NY 10005 Tel: 212.896.3000

LIRR Substation ABCOM 605 Third Avenue New York, NY 10158 Tel: 212.973-9200 Fax: 212.682.6172

Table with 2 columns: Filing Type and Date. Includes NYC DOB FILING, LIRR - PRE-FINAL 100%, and LIRR - 90% SUBMISSION.

Formal project information including Date (02/15/2013), Title (N11330.00), and Author (Damian Titus).

Professional seal and signature of Damian Titus, Architect, dated 02/15/2013.

Main table with columns: LOCATION REFERENCE, COLUMN COORDINATES, COLUMN ROTATION, ELEVATION AT THE TOP OF FOUNDATION, ELEVATION AT THE TOP FLOOR LEVEL, FOUNDATION TYPE, ALT. FOUNDATION TYPE, BASE PLATE DIMENSIONS, ANCHOR ROD MARK & SIZE, SHEAR LUG MARK, TOP OF ROCK SOCKET ELEVATION, ROCK SOCKET LENGTH, ADDITIONAL ROCK SOCKET LENGTH, COLUMN SECTION SIZE, COLUMN STEEL GRADE, COLUMN CAP PLATE SIZE, COLUMN AXIAL LOADS (SERVICE, ULTIMATE), CLEARANCE TO TRACK NORTH OF COLUMN, CLEARANCE TO TRACK SOUTH OF COLUMN.

NOTES: 1. COLUMN COORDINATES ARE BASED OFF OF A LOCAL COORDINATE SYSTEM WHERE (0,0) IS LOCATED AT THE INTERSECTION OF THE 11TH AVE AND WEST 30TH STREET PROPERTY LINE. THE MANHATTAN BOROUGH GRID THAT RELATES TO THE LOCAL (0,0) IS IN 19196 576 E - 15007 646).

1 COLUMN AND FOUNDATION SCHEDULE - EAST PLATFORM I NOT TO SCALE

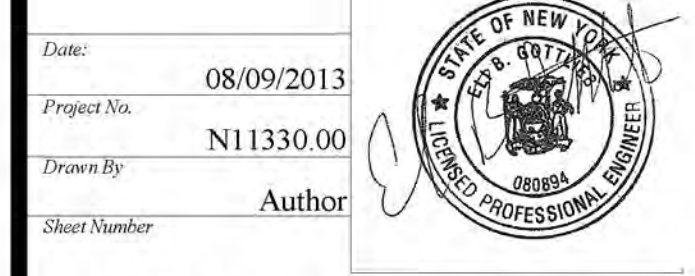
Damian Titus Buildings logo and NYC Development Hub approval stamp.

HYE-PL-FO-312.00 COLUMN & FOUNDATION SCHEDULE - EAST PLATFORM I FO-312.00

LOCATION REFERENCE <sup>1</sup>	COLUMN COORDINATES <sup>1</sup>		COLUMN ROTATION <sup>11</sup>	ELEVATION AT THE TOP OF FOUNDATION <sup>1</sup>	ELEVATION AT THE TOP FLOOR LEVEL	FOUNDATION TYPE <sup>2</sup>	ALT. FOUNDATION TYPE <sup>2</sup>	BASE PLATE DIMENSIONS <sup>3</sup>	ANCHOR ROD MARK & SIZE <sup>3</sup>	SHEAR LUG MARK <sup>12</sup>	TOP OF ROCK SOCKET ELEVATION <sup>4</sup>	ROCK SOCKET LENGTH <sup>4</sup>	ADDITIONAL ROCK SOCKET LENGTH <sup>4</sup>	COLUMN SECTION SIZE <sup>7</sup>	COLUMN STEEL GRADE	COLUMN CAP PLATE SIZE <sup>8</sup>	COLUMN AXIAL LOADS		CLEARANCE TO TRACK NORTH OF COLUMN <sup>9</sup>	CLEARANCE TO TRACK SOUTH OF COLUMN <sup>9</sup>
	X (FT)	Y (FT)		(FT)	(FT)			(IN)			(FT)	(FT)	(FT)			(IN)	SERVICE (KIPS)	ULTIMATE (KIPS)		
G12 <sup>2</sup>	626.90	509.23	7.39	1.00	40.50	C4.5-2**		48 DIA. x 10	TYPE C - 1" DIA.		-31.75			S-20X40	65	38x46x3.5	12400	16000	7'-0 1/2"	6'-9 1/4"
H12	660.86	513.94	7.39	1.00	40.50	C4.5-4**		SEE DET. 2 / S-303			-23.75			S-20X40	65	38x46x3.5	14900	19100	6'-9 1/2"	6'-11 3/4"
J12 <sup>2</sup>	691.36	517.59	7.39	1.00	40.50	C4.5-4**		SEE DET. 2 / S-303			-19.00			S-18X40	65	38x46x3.5	16300	21500	6'-9 1/4"	7'-2 1/2"
M12	780.86	509.75	0.00	1.83	40.50	GRILLAGE BEAM		SEE DET. 1 / S-351	SEE DET. 1 / S-351				S-24X20	65	34x34x3.5	14200	18800	9'-10 3/4"		
N12	793.86	509.70	0.00	-1.00	40.50	GRILLAGE BEAM		SEE DET. 2 / S-351	SEE DET. 2 / S-351				W14x455	65		3200	4200	11'-8"		
	(A)	445.86	553.13	0.00	6.50											26x26x3.5		13'-8 3/4"	7'-2"	
A/5/13.5	(B)	445.86	553.13	0.00	5.00											26x26x3.5	17700	22600	13'-8 3/4"	7'-2"
	(C)	463.53	553.13	0.00	5.00	C4.5-1		36 DIA. x 3.75	TYPE A - 1" DIA.							26x26x3.5		12'-8 3/4"	7'-2 1/4"	
A-A/13.5		428.74	553.13	0.00	5.00	C3-1	C3-1.1	30 DIA. x 2.5	TYPE A - 1" DIA.				B-20x20x4	65	24x24x2	2600	3400	14'-4"	7'-1 3/4"	
B13.5	(A)	475.86	553.13	0.00	6.00	C4.5-4		SEE DET. 2 / S-303					S-28X24	65	34x30x3.5			11'-7 1/4"	6'-10 1/2"	
	(B)	485.86	553.13	0.00	6.00	C4.5-4		SEE DET. 2 / S-303					S-28X24	65	34x30x3.5	30500	39500	10'-11 1/4"	6'-10 1/2"	
C13.5	(A)	505.86	553.13	0.00	5.50	C4.5-3		SEE DET. 2 / S-303					S-28X20	65	34x26x3.5			9'-7 1/2"	6'-11"	
	(B)	515.86	553.13	0.00	5.50	C4.5-3		SEE DET. 2 / S-303					S-28X20	65	34x26x3.5	26600	33800	8'-11 1/2"	6'-11"	
D13.5	(A)	535.86	553.13	0.00	5.00	C4.5-3		SEE DET. 2 / S-303					S-28X20	65	34x26x3.5			7'-7 1/4"	6'-11 1/4"	
	(B)	545.86	553.13	0.00	5.00	C4.5-3		SEE DET. 2 / S-303					S-28X20	65	34x26x3.5	25100	32200	7'-0"	6'-11 1/2"	
E13.5 <sup>2</sup>		569.57	552.55	0.00	3.00	C4.5-5		SEE DET. 2 / S-303					SEE DET. 2/S-324, 4/S-403, 6/S-403	65	42x42x3.5	25700	32900	6'-8 1/2"	7'-0 1/4"	
A14 <sup>2</sup>	(A)	432.87	575.94	177.46	6.00	C4.5-5		SEE DET. 2 / S-303						65	42x46x3.5			6'-8 3/4"	6'-9"	
	(B)	442.86	575.50	177.46	6.00	C4.5-5		SEE DET. 2 / S-303						65	42x46x3.5	29800	40200	6'-9"	6'-9"	
B14 <sup>2</sup>	(A)	472.38	574.04	176.33	5.50	C4.5-5		SEE DET. 2 / S-303						65	42x46x3.5			6'-9 1/4"	6'-9 3/4"	
	(B)	480.86	573.50	176.33	5.50	C4.5-5		SEE DET. 2 / S-303						65	45x66x3.5	51000	66200	6'-9 1/2"	6'-9 3/4"	
	(C)	489.35	572.95	176.33	5.50	C4.5-5		SEE DET. 2 / S-303						65				6'-9 1/4"	6'-10"	
C14 <sup>2</sup>	(A)	502.39	572.03	175.68	5.00	C4.5-5		SEE DET. 2 / S-303						65	45x66x3.5	33800	43300	6'-9 3/4"	6'-8 1/2"	
	(B)	510.86	571.39	175.68	5.00	C4.5-5		SEE DET. 2 / S-303						65				6'-9 3/4"	6'-8 1/2"	
	(C)	519.34	570.75	175.68	5.00	C4.5-5		SEE DET. 2 / S-303						65				6'-9 1/4"	6'-7 1/2"	
D14 <sup>2</sup>	(A)	535.87	569.68	176.65	4.00	C4.5-5		SEE DET. 2 / S-303						65	45x46x3.5	33200	41100	6'-9"	6'-8"	
	(B)	545.85	569.10	176.65	4.00	C4.5-5		SEE DET. 2 / S-303						65	45x46x3.5			6'-8 1/2"	6'-9"	
E14 <sup>2</sup>	(A)	555.87	568.10	177.74	3.50	C4.5-5		SEE DET. 2 / S-303						65	45x56x3.5	28800	37100	6'-9 3/4"	6'-11"	
	(B)	577.86	567.62	177.74	3.50	C4.5-5		SEE DET. 2 / S-303						65	45x56x3.5			6'-9 1/2"	6'-11"	
	(C)	592.37	567.16	178.73	3.00	C4.5-5		SEE DET. 2 / S-303						65	26x46x3.5			6'-9 1/16"	6'-10"	
F14 <sup>2</sup>	(A)	600.86	566.97	178.73	3.00	C4.5-5		SEE DET. 2 / S-303						30.00	26x42x3.5	45600	57600	6'-8 3/4"	6'-9 1/2"	
	(B)	609.36	566.78	178.73	3.00	C4.5-5		SEE DET. 2 / S-303						65	26x46x3.5			6'-9"	6'-8 1/4"	
	(C)	622.86	566.60	179.65	2.50	C4.5-4		SEE DET. 2 / S-303						65	42x69x3.5	29400	41200	6'-9"	6'-9 3/4"	
G14 <sup>2</sup>	(A)	634.86	566.52	179.65	2.50	C4.5-5		SEE DET. 2 / S-303						30.00	42x69x3.5			6'-9 1/4"	6'-8 1/4"	
	(B)	648.86	566.52	179.65	2.50	C4.5-5		SEE DET. 2 / S-303						65	42x69x3.5			6'-9"	6'-7 1/4"	
H14		660.86	566.53	0.00	1.50	C4.5-5		SEE DET. 2 / S-303								36x50x3.5	20300	26400	6'-9"	6'-7 1/4"
J14 <sup>2</sup>		692.63	566.67	0.00	-1.00	C3-3	C3-1.3	30 DIA. x 5.5	TYPE A - 1" DIA.							34x34x3.5	4000	5400	6'-11 1/4"	7'-2"
M14.3		780.86	584.14	0.00	21.75	EXIST. WALL		SEE DET. 5 / S-606	SEE DET. 5 / S-606							W14x655	65	24x24x3.5	2800	3800
H14.5		660.86	593.08	0.00	23.50	Wall-19"		16 x 20 x 1.5	DET. 3 / S-700 - 1" DIA.							W14x90	50	24x24x3.5	400	500
J14.5		690.86	593.08	0.00	-9.25	5x6" W/ 1" EMBEDDED PIER		48 x 60 x 14	TYPE D - 1 3/8" DIA.							S-28X24	65	42x42x3.5	17500	22600
K14.5		720.87	593.08	0.00	1.00	GRILLAGE BEAM		SEE DET. 2 / S-356	SEE DET. 2 / S-356							S-28X24	65	34x34x3.5	22000	29000
L14.5		750.86	591.01	0.00	1.00	GRILLAGE BEAM		SEE DET. 3 / S-356	SEE DET. 3 / S-356							S-24X24	65	34x34x3.5	16100	21500
A14.8 <sup>2</sup>	(A)	433.66	619.09	172.07	6.00	C4.5-3		SEE DET. 2 / S-303								48x48x3.5	30900	38300	10'-1 3/4"	6'-9 3/4"
	(B)	442.07	617.92	172.07	6.00	C4.5-3		SEE DET. 2 / S-303								48x48x3.5			9'-9 1/2"	6'-9 1/4"
H14.8		660.87	615.00	0.00	10.00	C4.5-4		SEE DET. 2 / S-303								S-24X24	65	42x42x3.5	16900	21900
J14.8		690.86	615.00	0.00	12.00	Wall-60"		SEE DET. 2 / S-354	SEE DET. 2 / S-354							S-20X24	65	42x42x3.5	15400	19100
K14.8		720.86	615.00	0.00	12.00	Wall-60"		SEE DET. 2 / S-354	SEE DET. 2 / S-354							S-20X16	65	34x34x3.5	10600	13700
L14.8		750.86	615.00	0.00	12.00	Wall-60"		36 x 36 x 6.5	DET. 3 / S-700 - 1" DIA.							W14x665	65	34x34x3.5	6600	8700
M14.8		780.86	615.00	0.00	12.00	Wall-36"		SEE DET. 4 / S-354	SEE DET. 4 / S-354							S-20X20	65	34x34x3.5	10100	13400
N14.8		797.36	615.00	0.00	12.00	Wall-36"		18 x 18 x 3	DET. 3 / S-700 - 1" DIA.							W14x90	50	24x24x3.5	300	400
B15 <sup>2</sup>		481.59	612.23	170.42	5.50	GRILLAGE BEAM		SEE DET. 2 / S-352	SEE DET. 2 / S-352							S-12x12	65	24x24x3.5	1100	1500
C/5/15	(A)	538.45	644.89	0.00	7.00	C4.5-3										42x42x3.5	26500	32500		
	(B)	538.45	625.65	0.00	7.00	C4.5-5										42x42x3.5				
D/5/15	(A)	562.11	638.92	0.00	7.00	C4.5-3										42x42x3.5	26900	33100		
	(B)	562.11	618.47	0.00	7.00	C4.5-3										42x42x3.5				
E/5/15	(A)	595.36	638.94	0.00	5.50	C4.5-2										42x42x3.5	22400	27300		
	(B)	595.36	623.95	0.00	7.00	C4.5-4										42x42x3.5				
F/5/15	(A)	629.53	639.17	0.00	9.50	C4.5-2										42x42x3.5	21300	26700		
	(B)	629.53	624.78	0.00	11.00	C4.5-4										42x42x3.5				
C/15.3	(A)	504.16	634.93	162.26	3.50	C4.5-1		36 DIA. x 7	TYPE A - 1 3/8" DIA.											10'-1 1/4"
	(B)	518.45	630.37	162.26	5.00	C4.5-5		SEE DET. 2 / S-303								52x52x3.5	31400	38600		10'-2"
B15.5	(A)	475.98	643.98	162.26	5.50	C4.5-5		SEE DET. 2 / S-303								52x52x3.5	33700	41300		10'-0 1/2"
	(B)	492.67	638.64	162.26	4.00	C4.5-2		48 DIA. x 9	TYPE A - 1" DIA.							52x52x3.5				10'-0 1/2"
B16	(A)	473.15	668.4																	

NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	10/4/2013
2. DI-02 PHASE I STRUCTURAL UPDATE	11/12/2013
NYC DOB FILING	10/4/2013
1. DI-01 PHASE I STRUCTURAL UPDATE	9/20/2013
LJRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LJRR - 60% SUBMISSION	5/29/2013
LJRR - 60% - PHASE I FDS	3/29/2013
NYC DOB FILING	04/01/2013

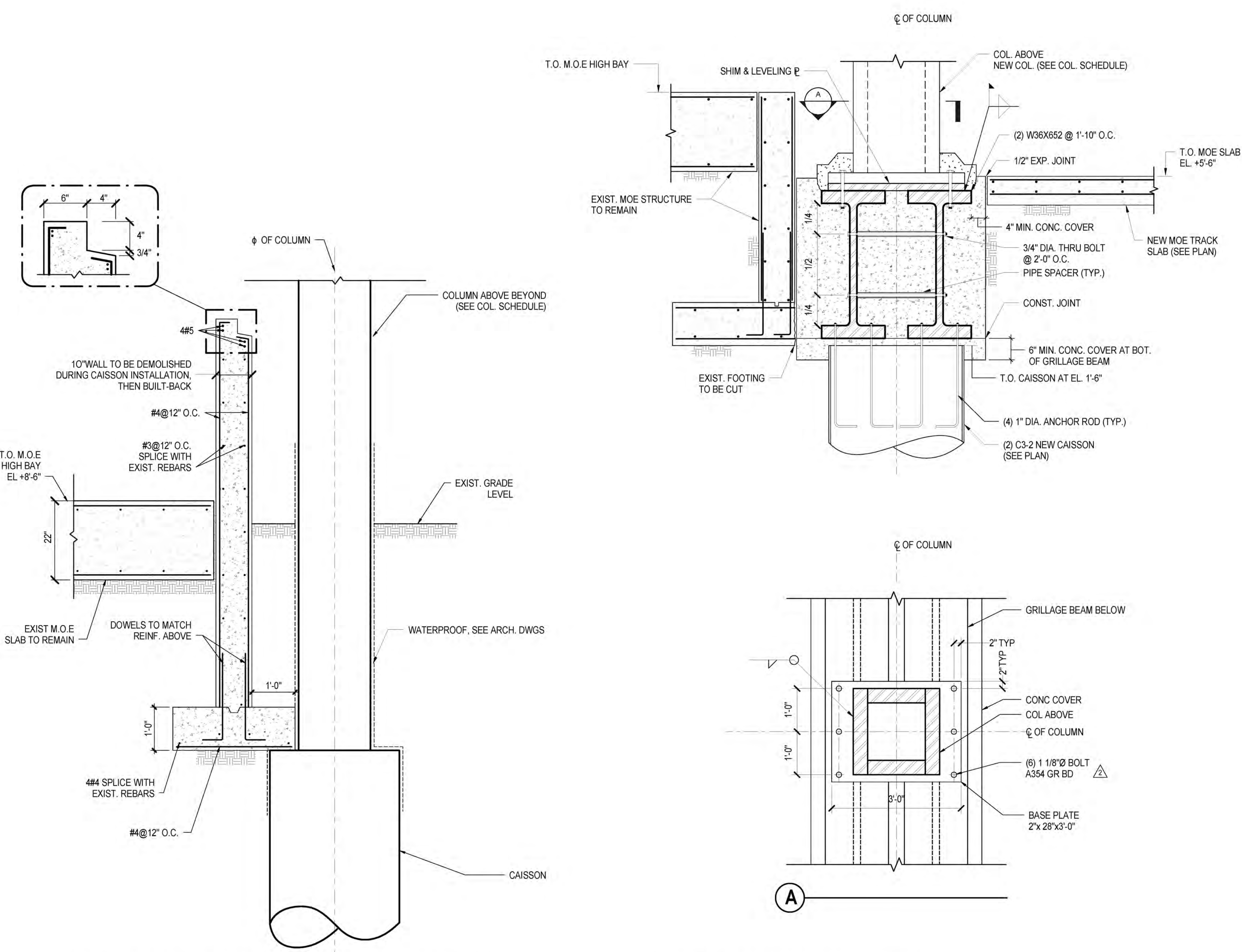
Rev. No.



**HYE-PL-FO-353.00**

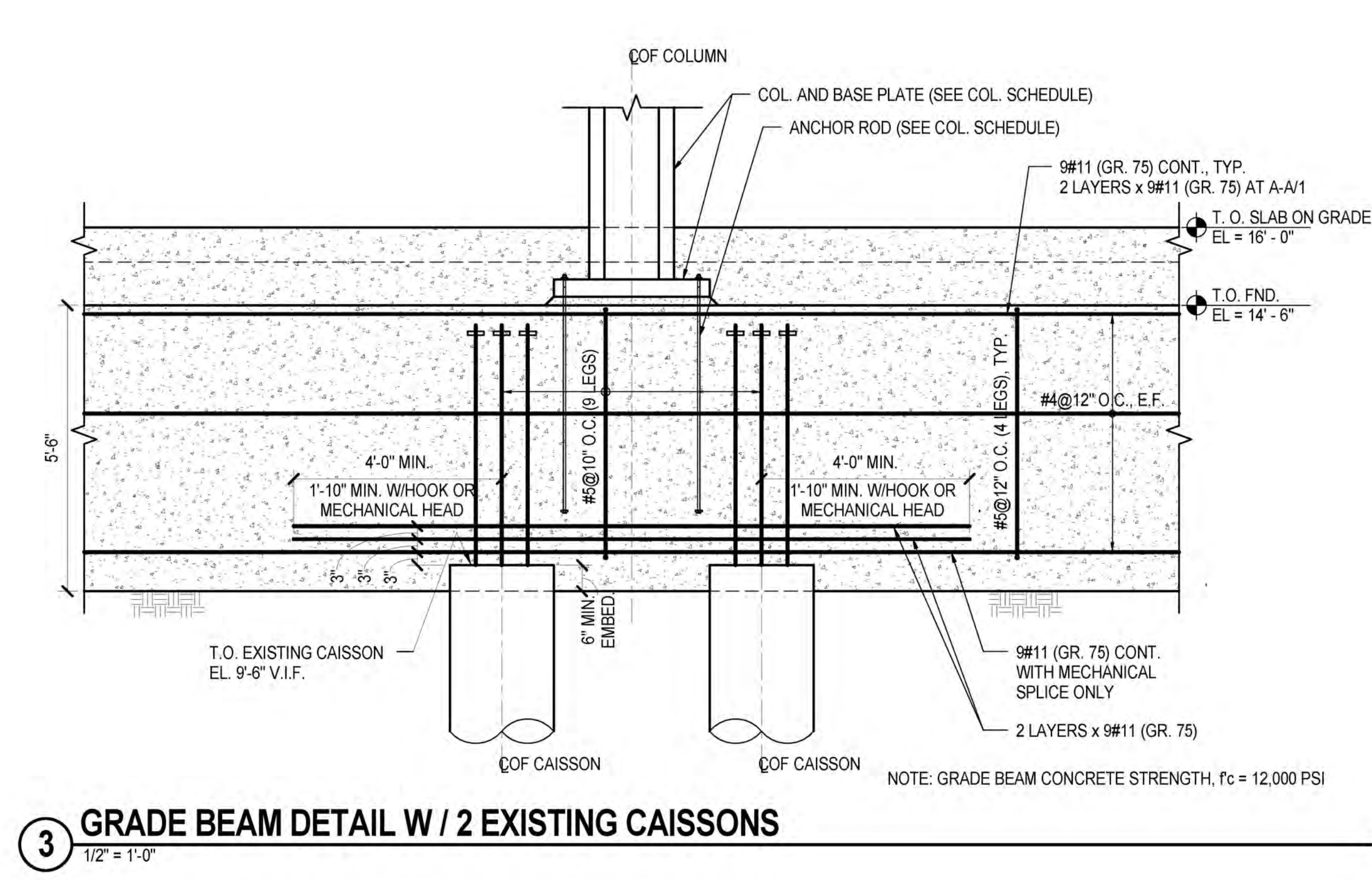
**EAST PLATFORM FOUNDATION SECTIONS AND DETAILS**

FO-353.00

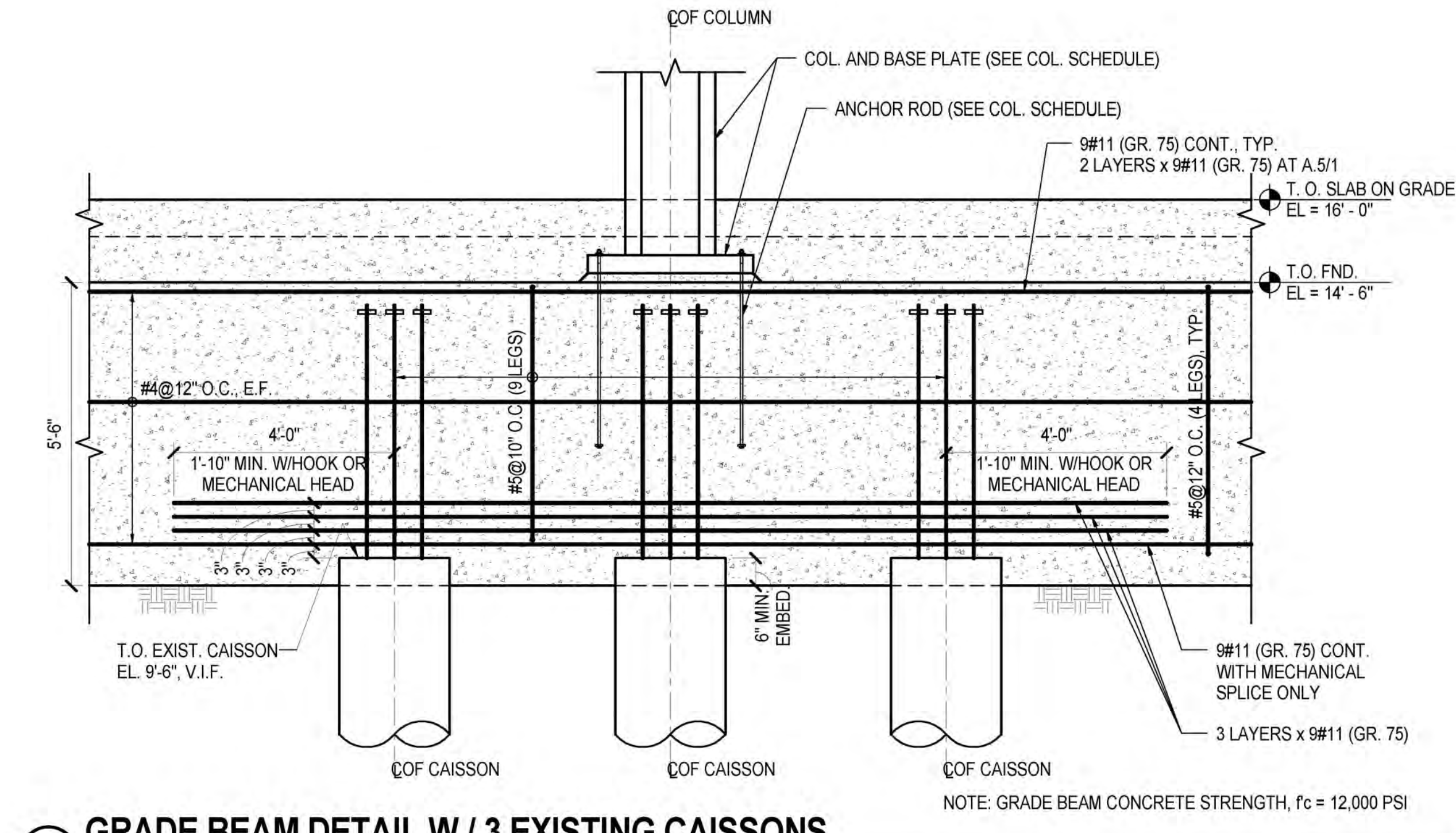


**1 CAISSON ADJACENT M.O.E HIGH BAY AT GRIDLINE 3**  
3/4" = 1'-0"

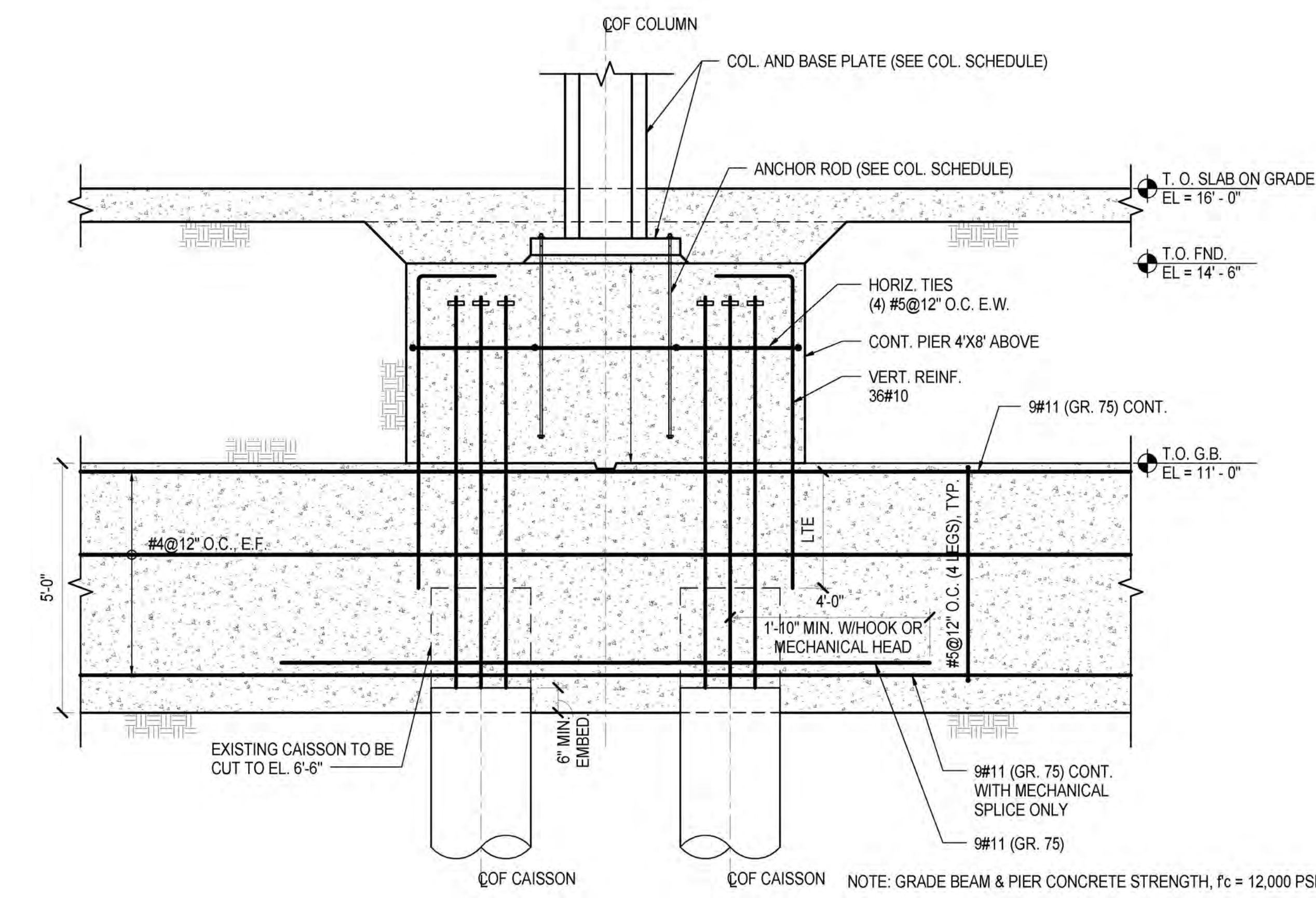
**2 GRILLAGE STEEL BEAM AT D-3**  
3/4" = 1'-0"



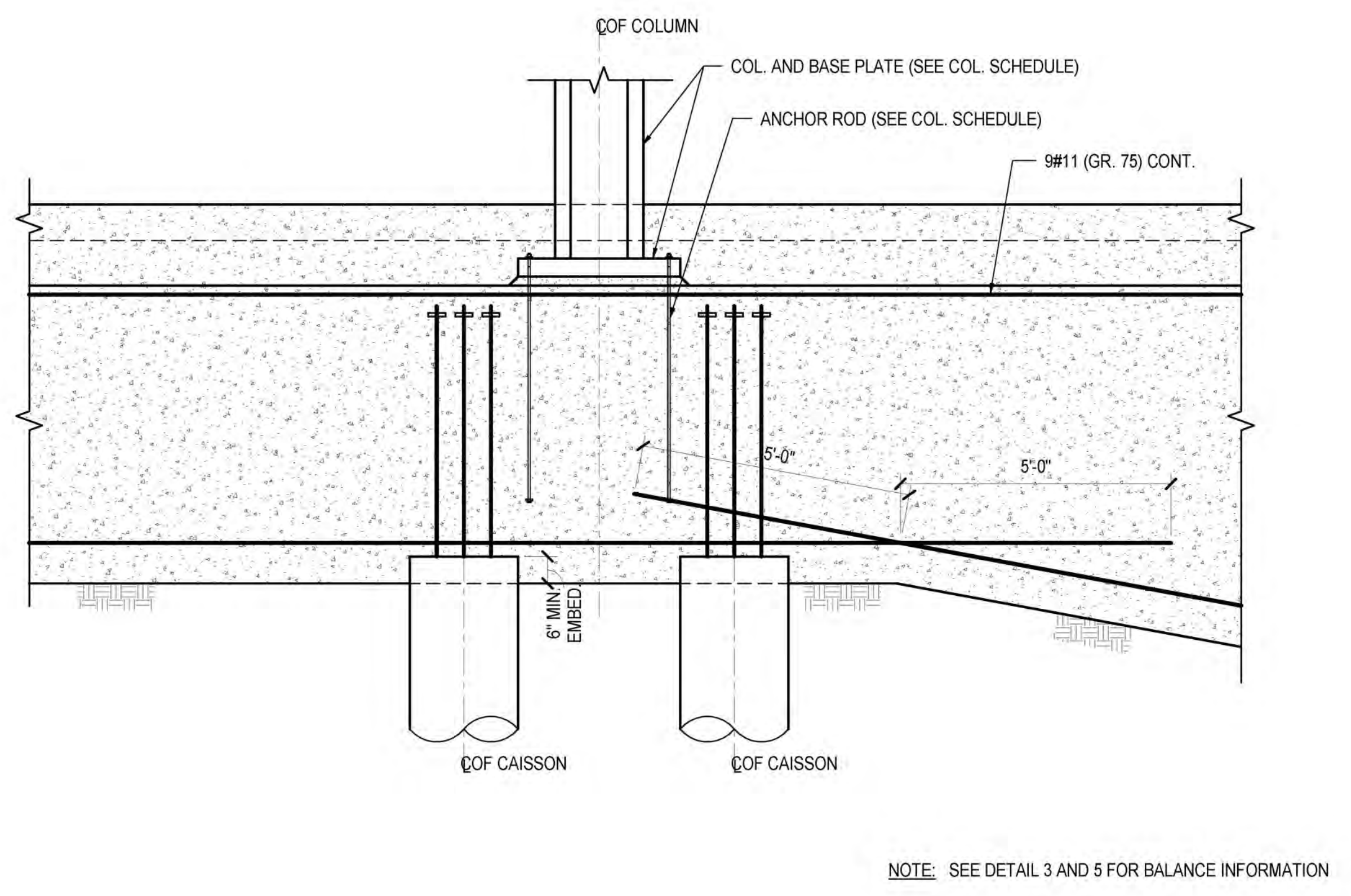
**3 GRADE BEAM DETAIL W / 2 EXISTING CAISSONS**  
1/2" = 1'-0"



**4 GRADE BEAM DETAIL W / 3 EXISTING CAISSONS**  
1/2" = 1'-0"



**5 GRADE BEAM W/ CONCRETE PIER ABOVE**  
1/2" = 1'-0"



**6 STEP GRADE BEAM BETWEEN GLID LINES G & H**  
1/2" = 1'-0"

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*Construction Manager*  
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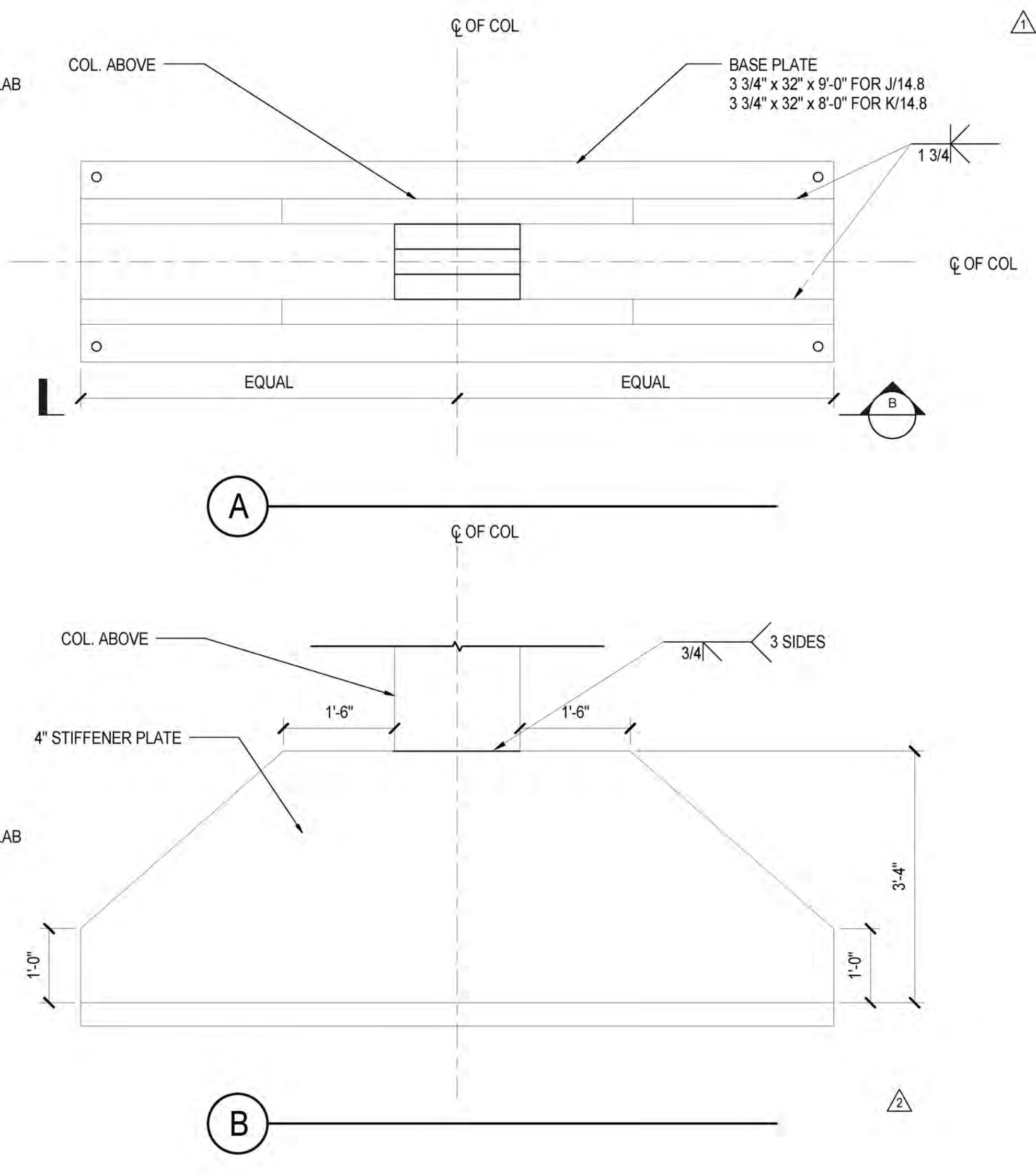
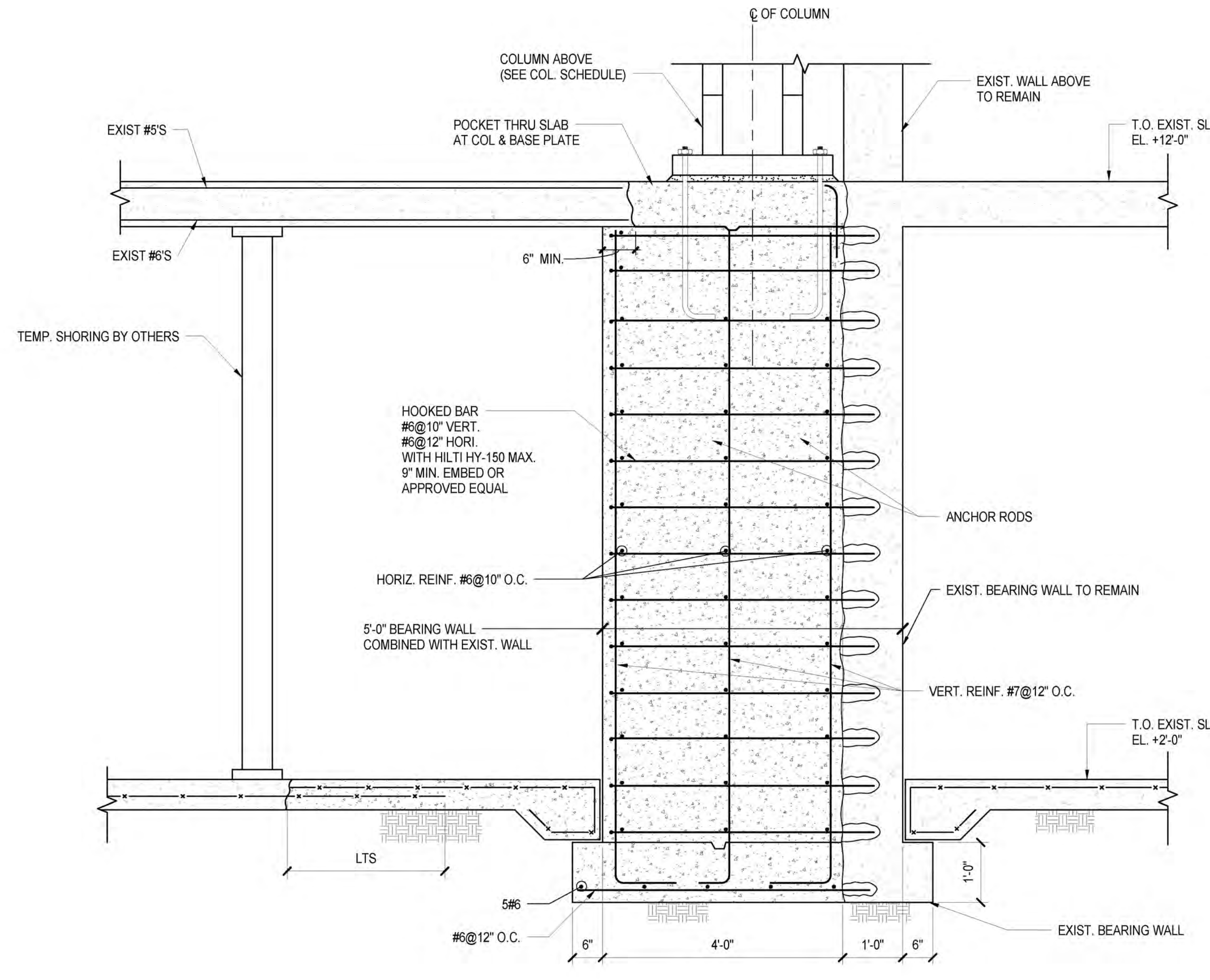
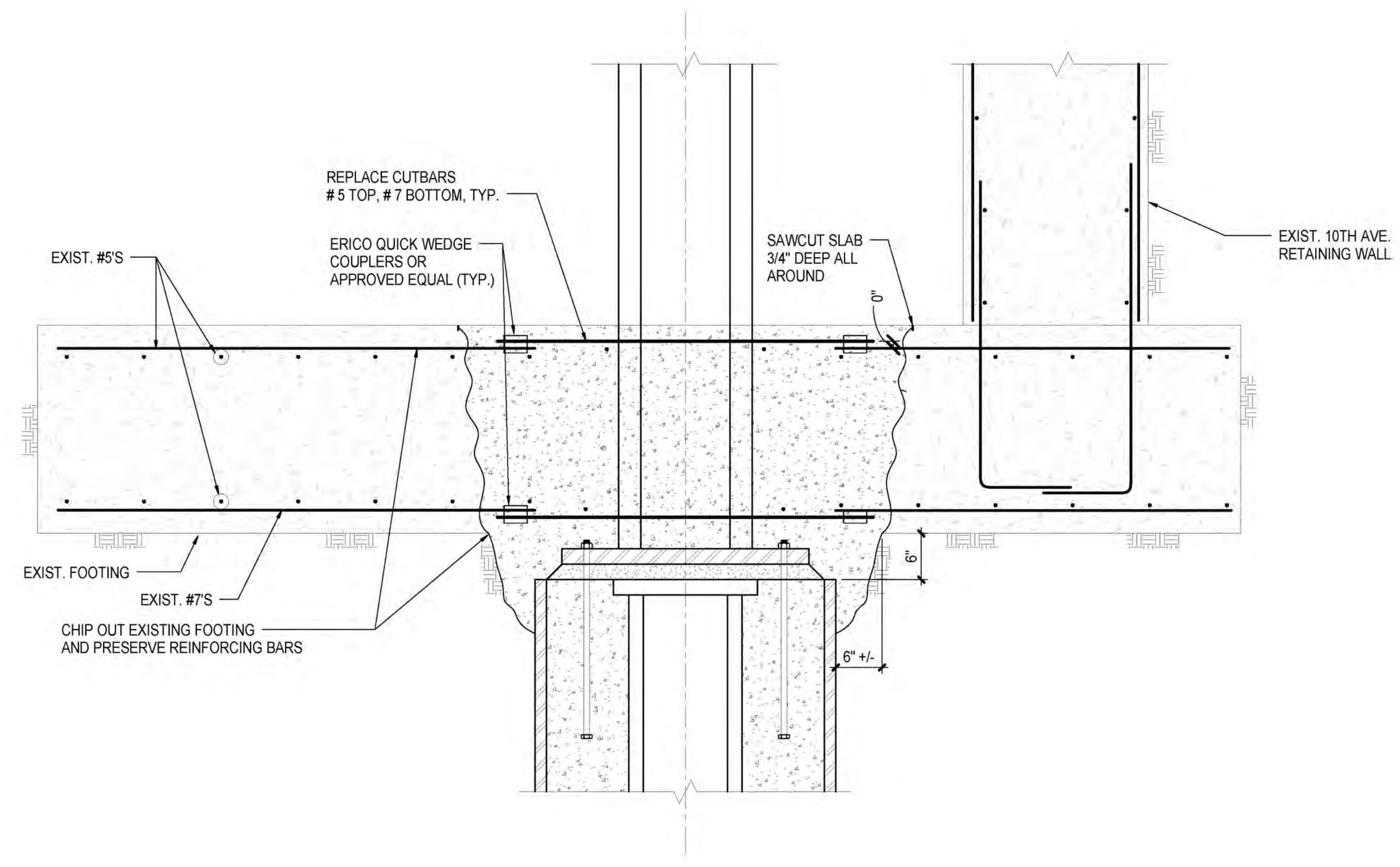
*Architect*  
Kohn Pedersen Fox Associates PC  
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Parsons Transportation Group  
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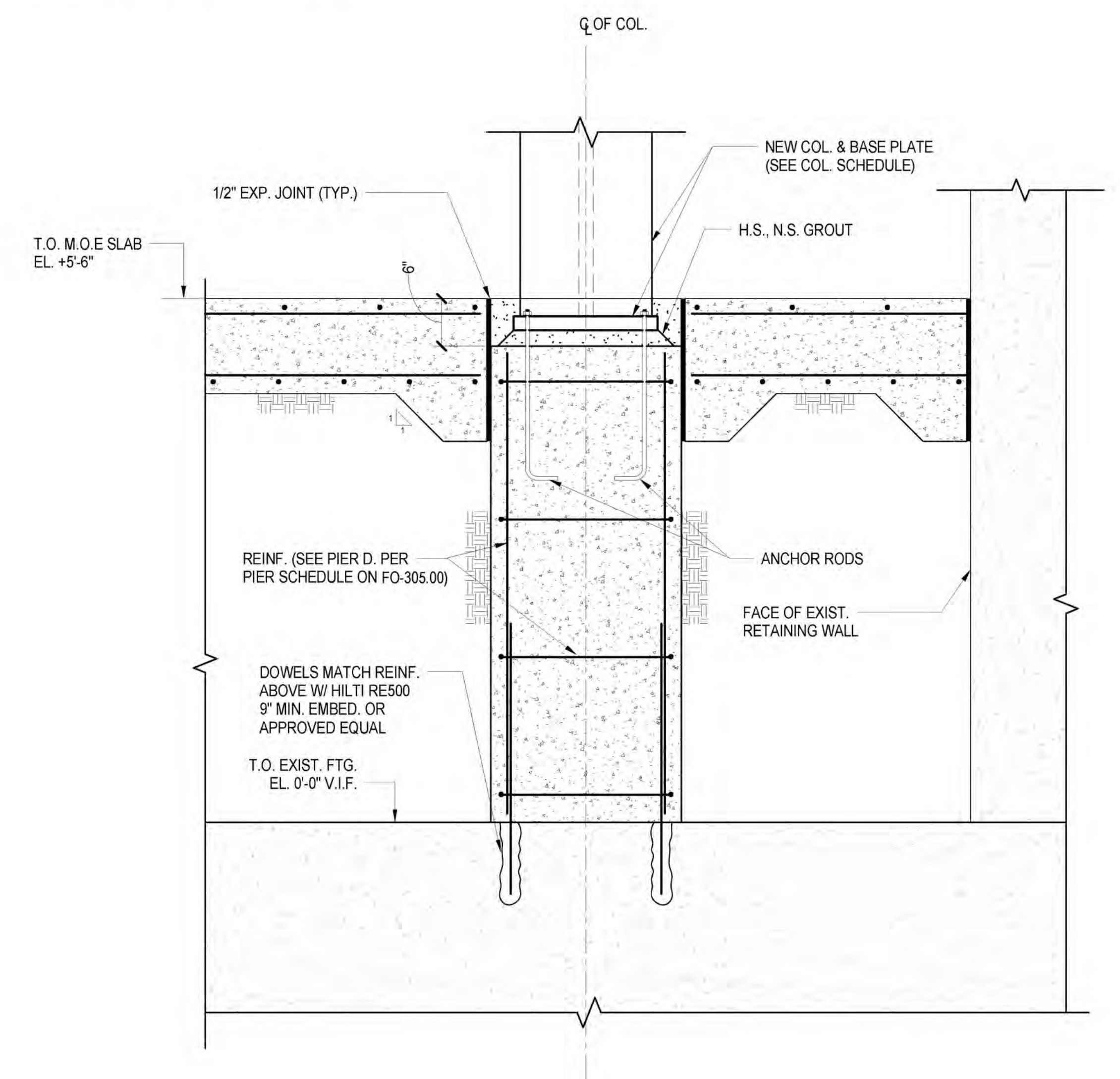
*LIRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

*LIRR Substation*  
ABCOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172

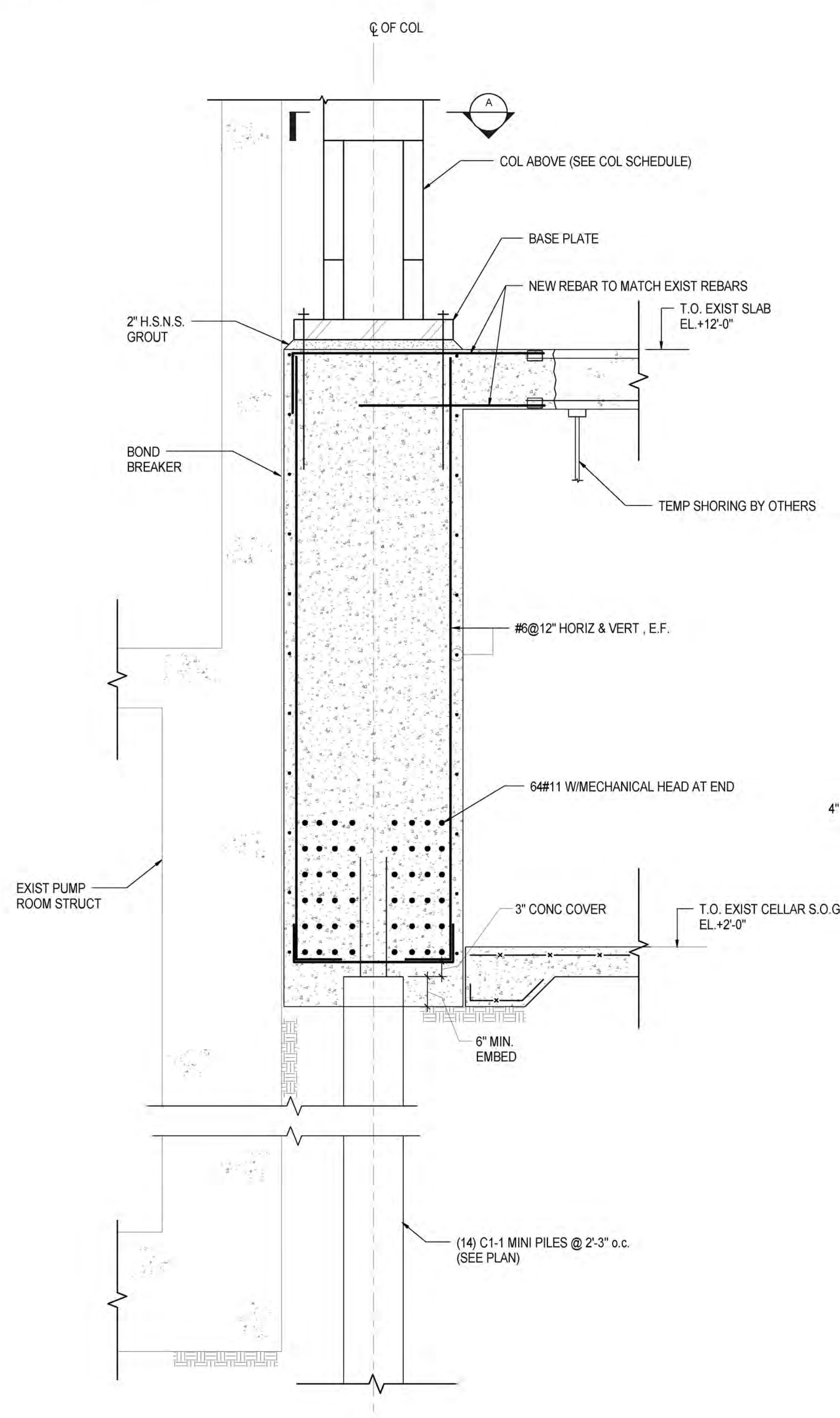


**1 FOUNDATION SECTION AT GRIDLINE N**  
1" = 1'-0"

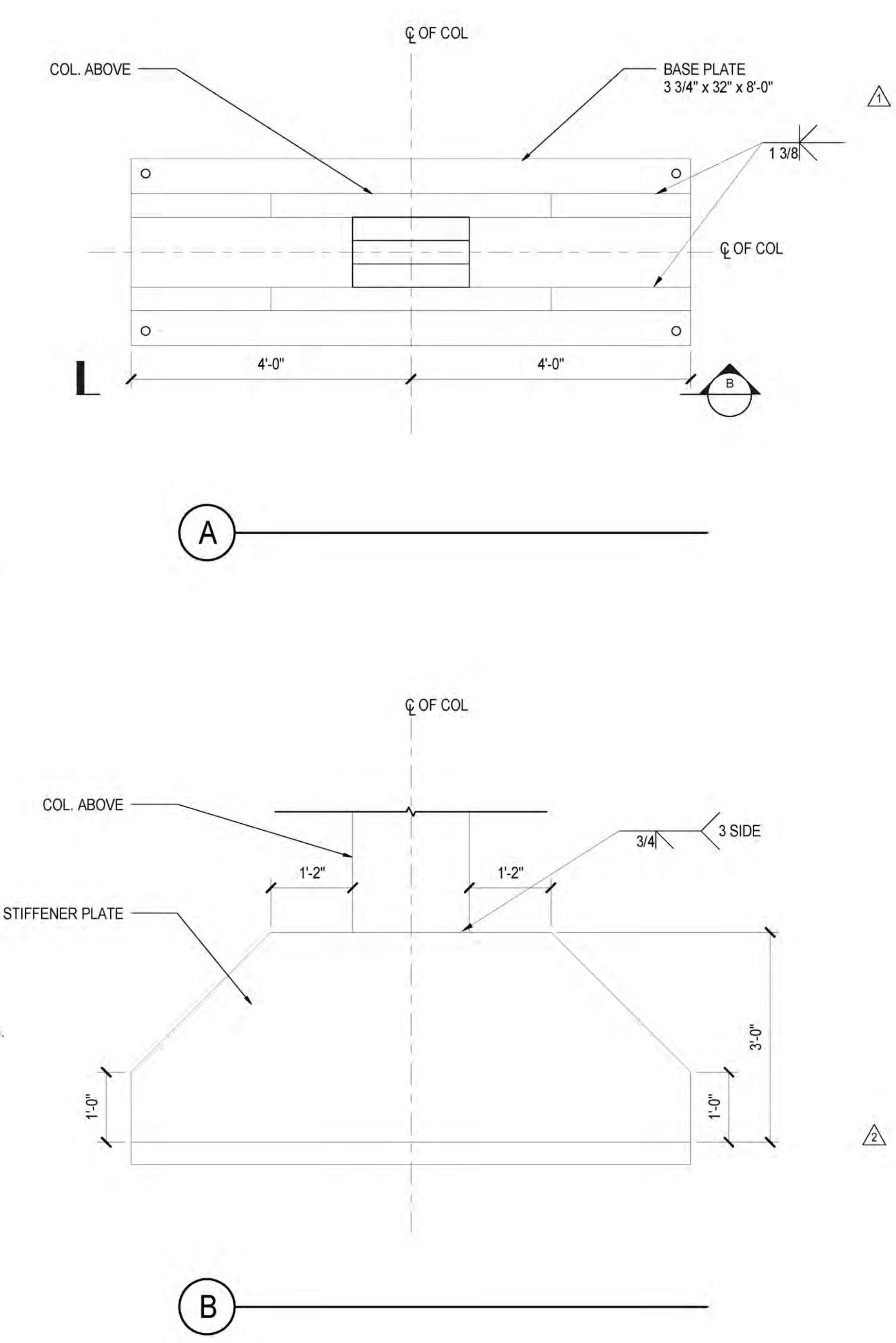
**2 SECTION @ SUB-STATION LINER WALL**  
3/4" = 1'-0"



**3 PIER ON EXIST. FTG**  
1" = 1'-0"



**4 BEARING WALL ON MINI PILES AT M/14.8 & N/14.8**  
3/4" = 1'-0"



NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
2. DI-02 PHASE I STRUCTURAL UPDATE	1/11/2013
NYC DOB FILING	10/4/2013
1. DI-01 PHASE I STRUCTURE UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/9/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE I FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
NY	08/09/2013

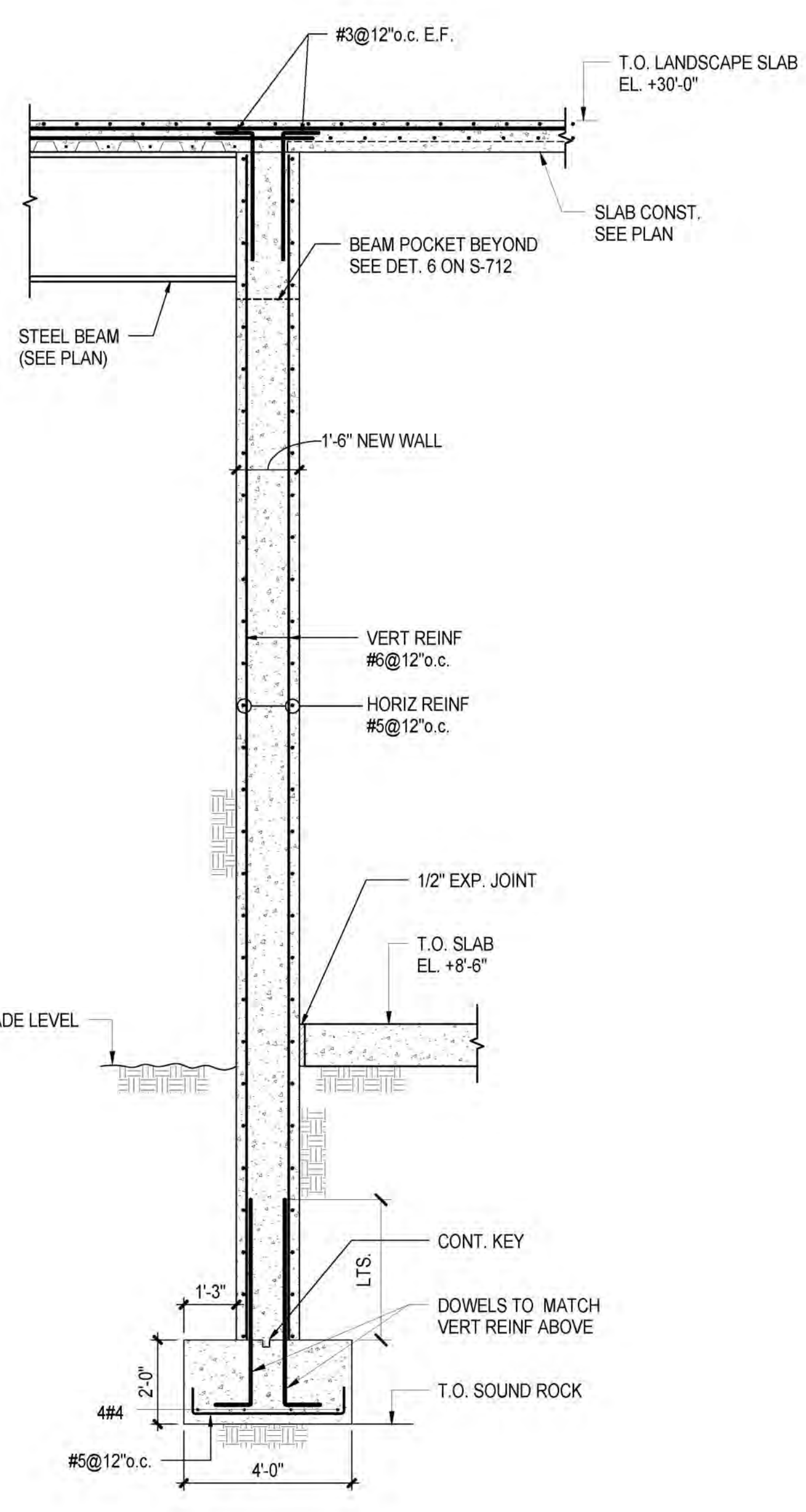
Exp. Plan

Date: 08/09/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

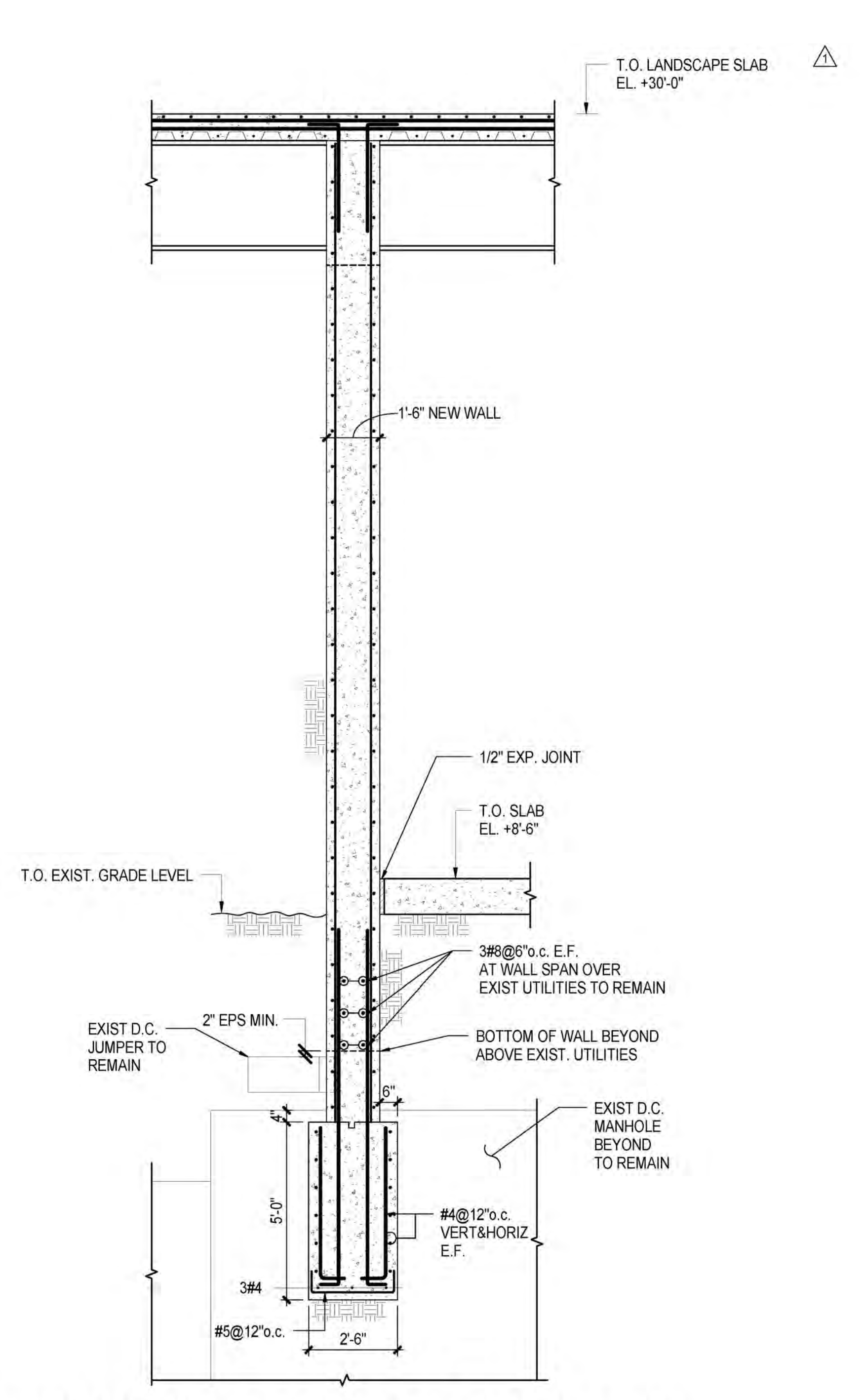
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**EAST PLATFORM FOUNDATION SECTIONS AND DETAILS**  
Drawing Number: /B/C/S/D Drawing Number  
**FO-354.00**

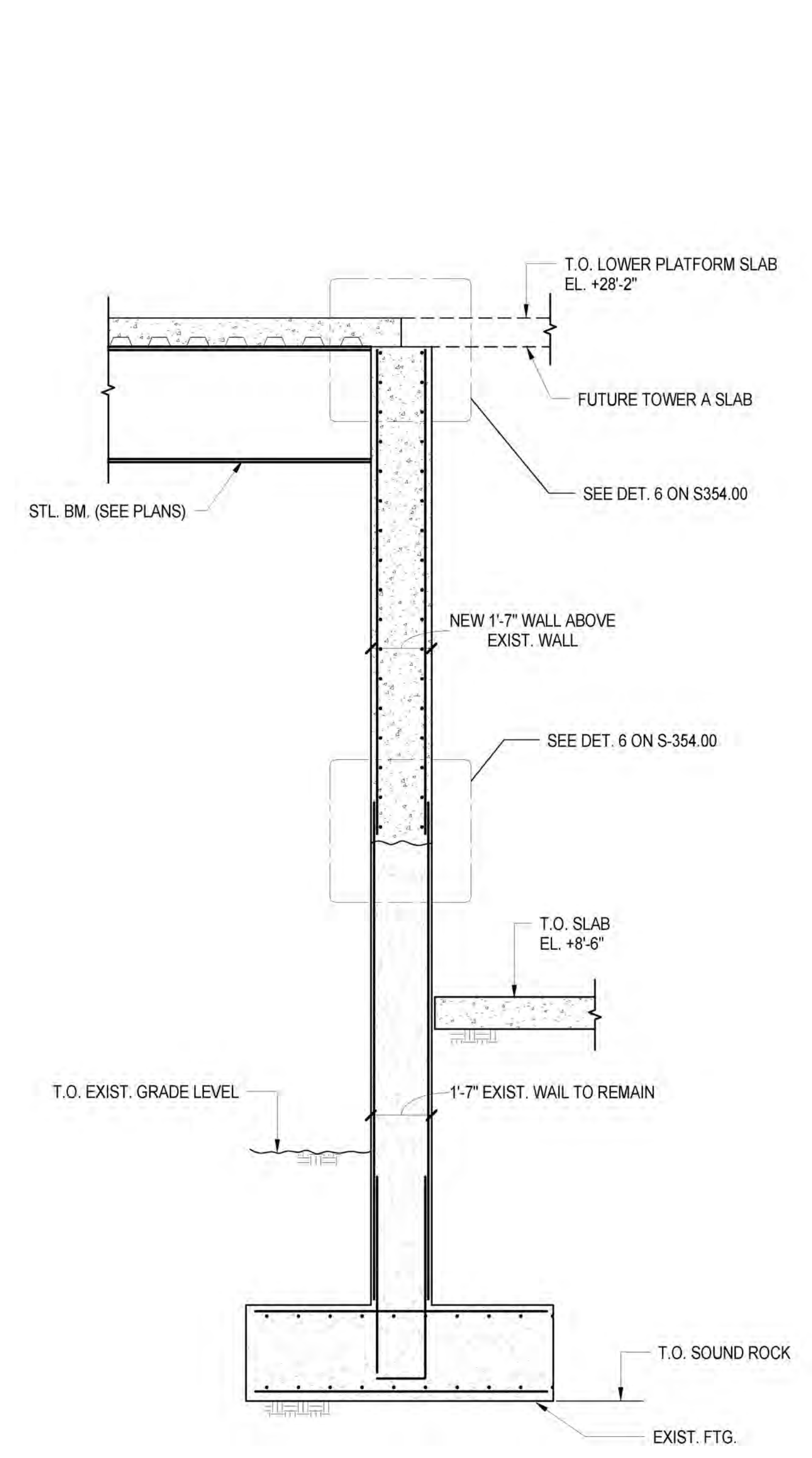




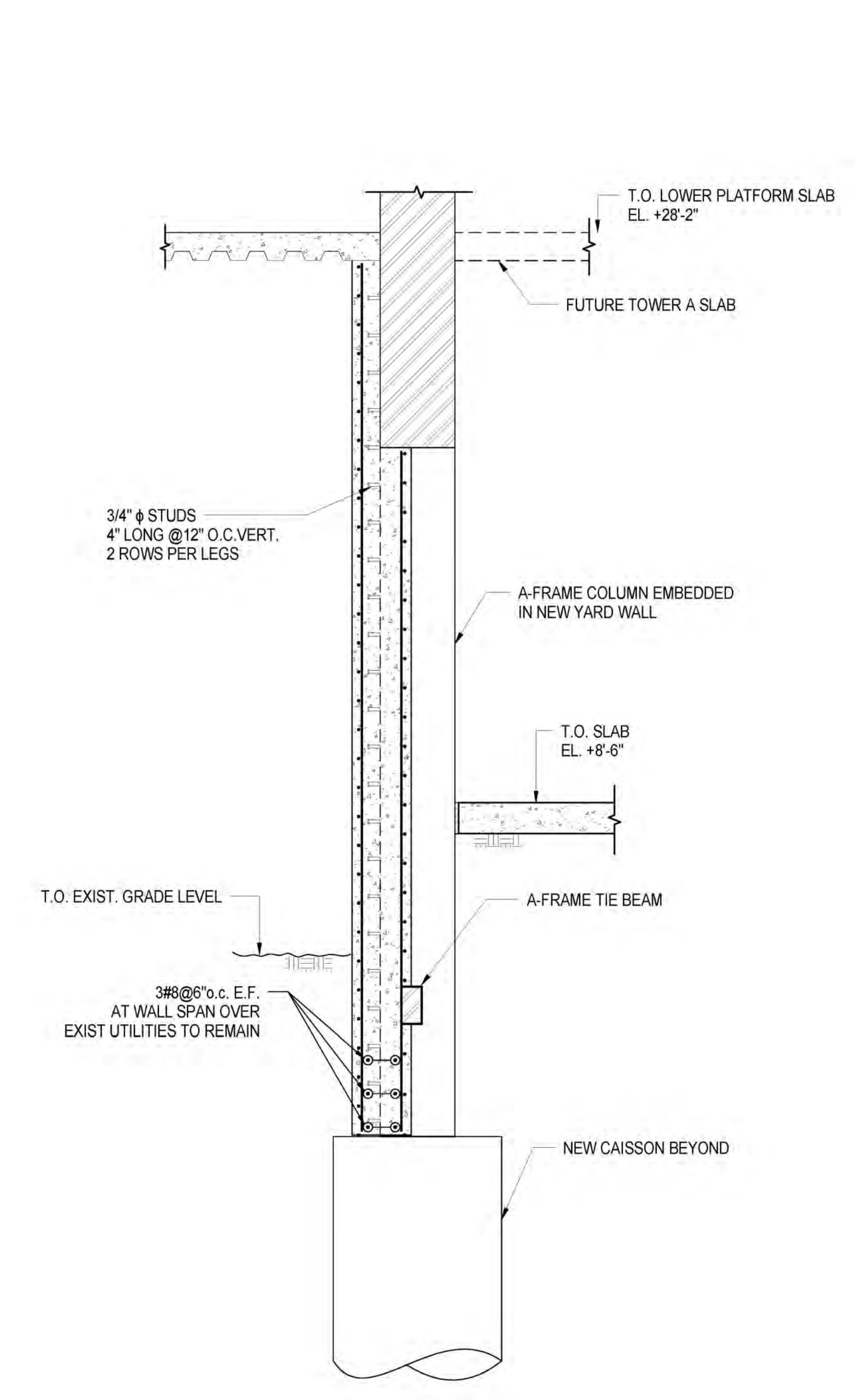
**1 NEW YARD WALL AT WEST SIDE**  
3/8" = 1'-0"



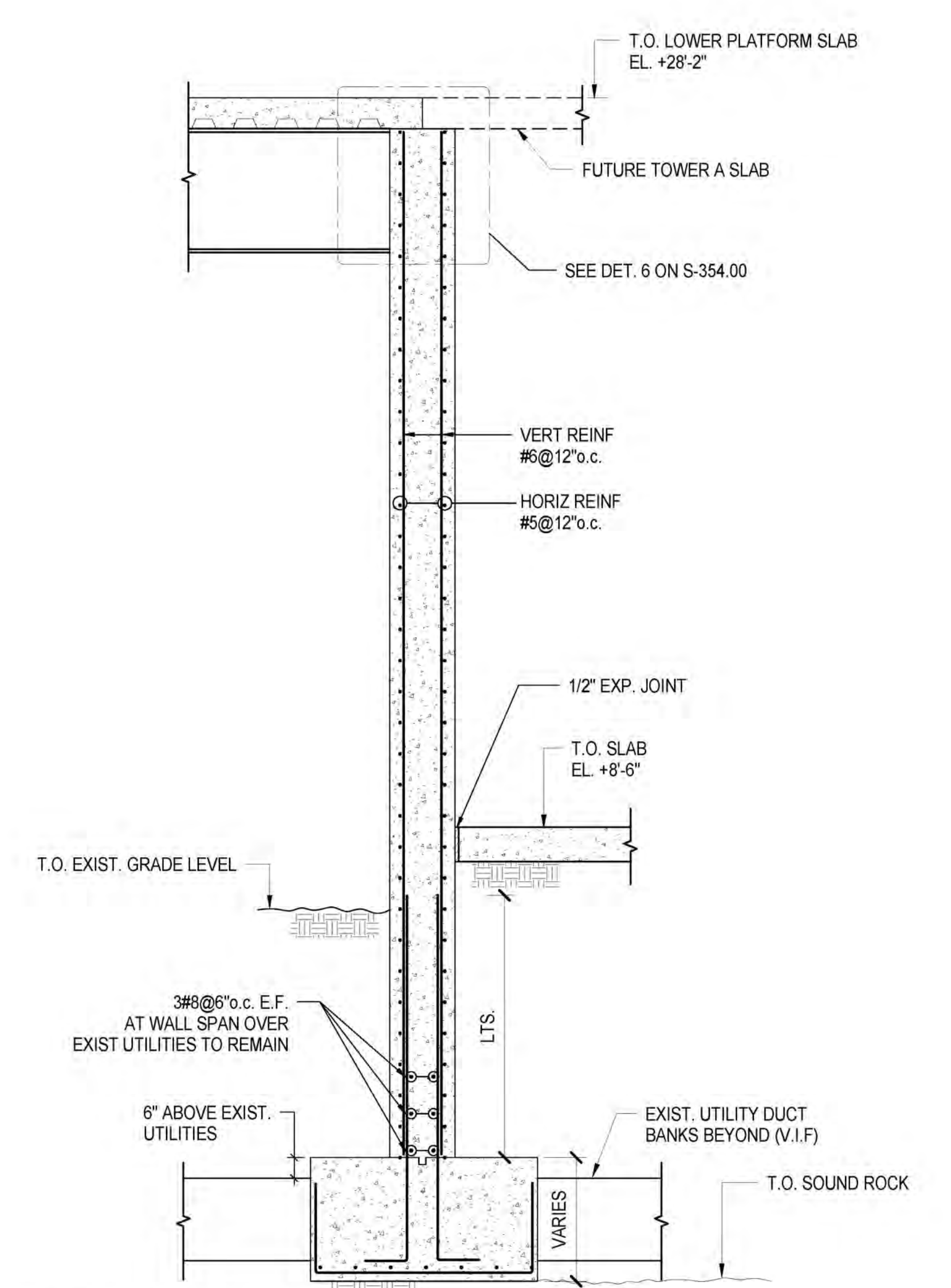
**2 NEW YARD WALL ADJACENT TO EXIST. UTILITIES**  
3/8" = 1'-0"  
NOTE: SEE DET 1 FOR BALANCE OF INFORMATION.



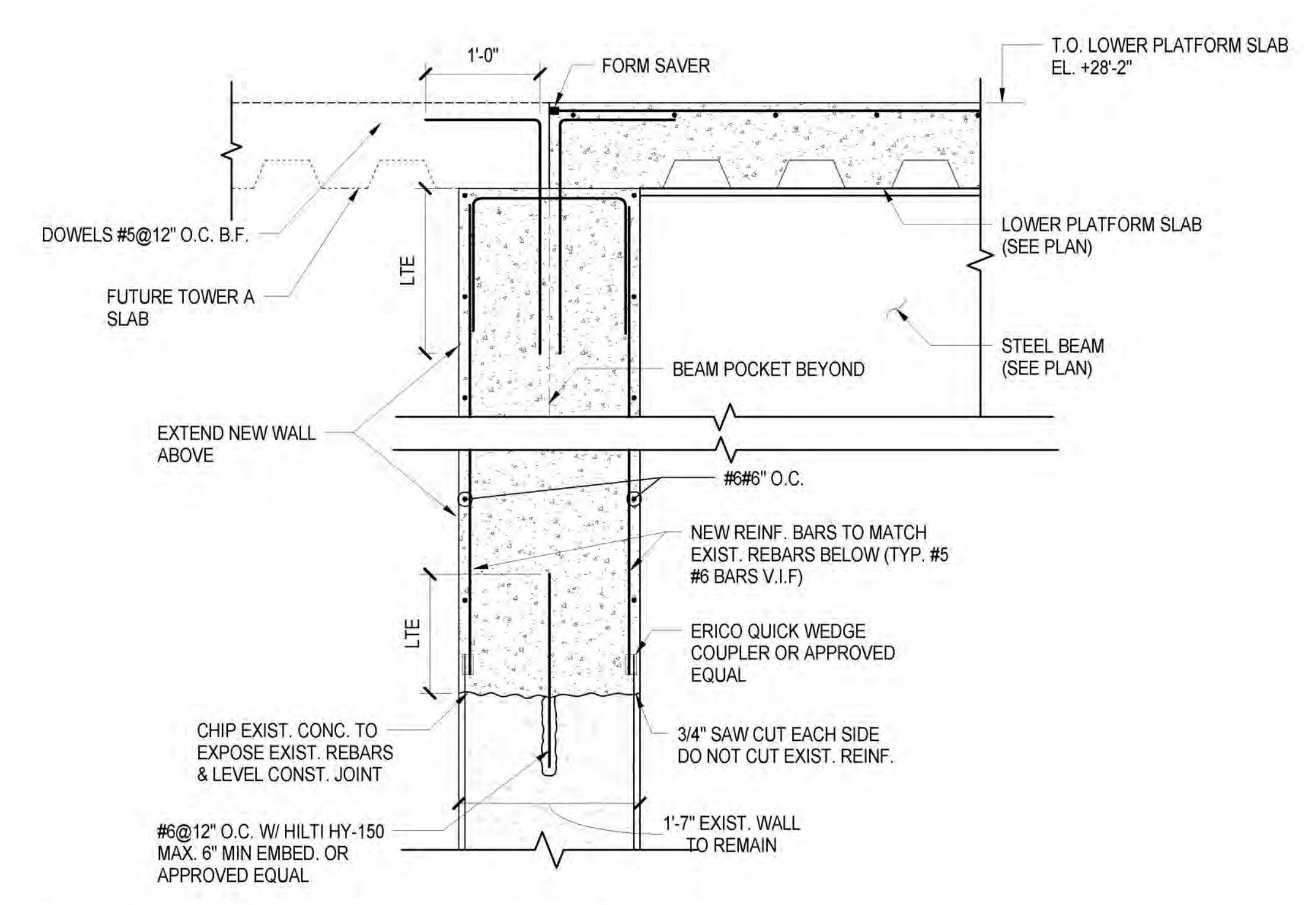
**3 TYP. YARD WALL EXTENDED ABOVE EXIST. WALL**  
3/8" = 1'-0"



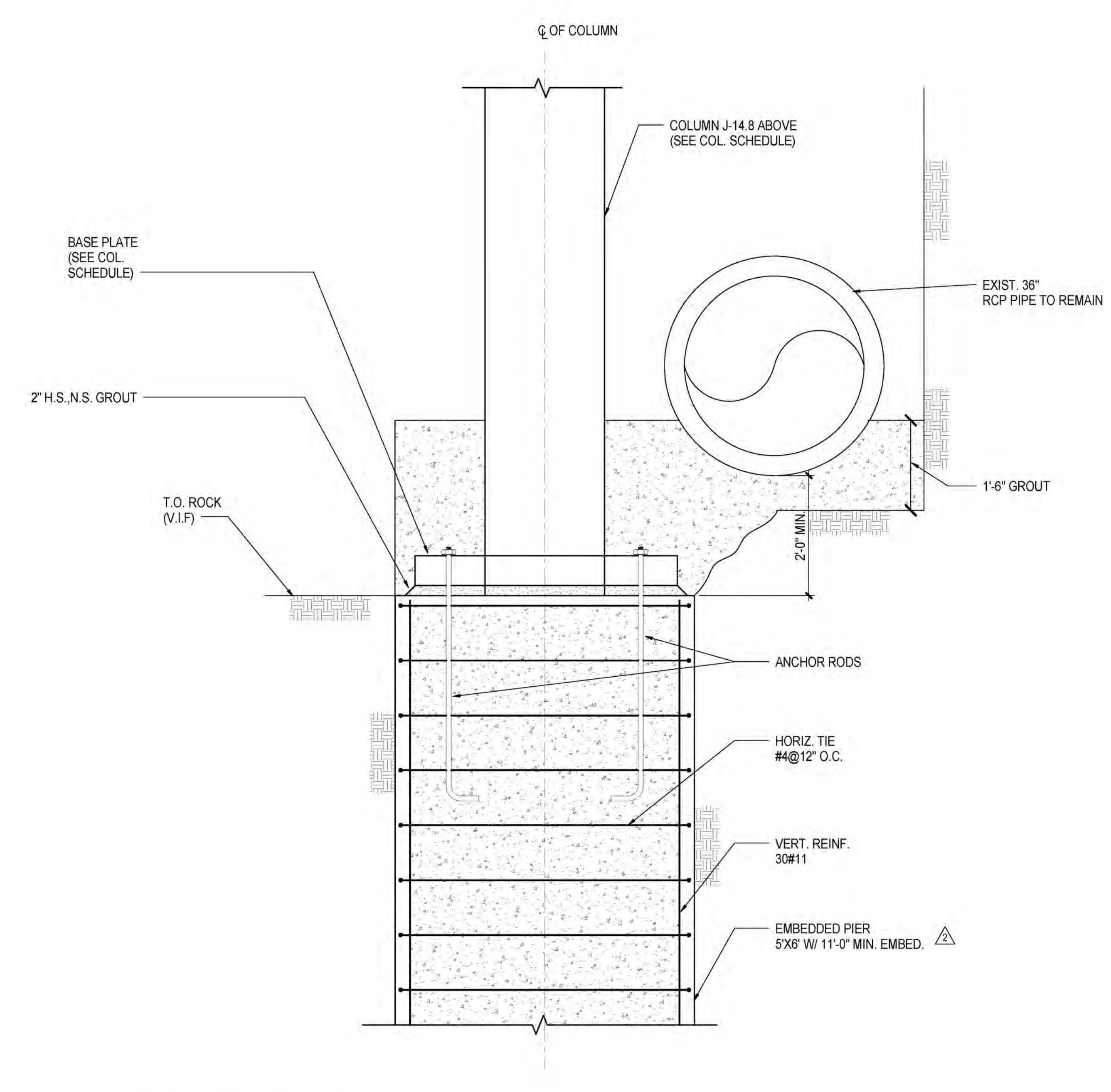
**4 NEW YARD WALL. COMBINED W. A-FRAME COL.**  
3/8" = 1'-0"



**5 NEW YARD WALL AT EAST SIDE**  
3/8" = 1'-0"

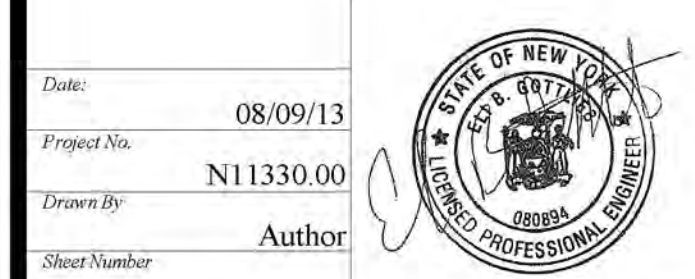


**6 YARD WALL AT NORTH OF TRACKS**  
1" = 1'-0"



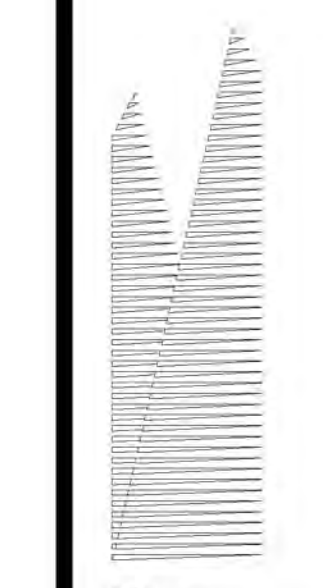
**7 EMBEDDED PIER AT J-14.5**  
3/4" = 1'-0"

NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRELIMINARY 100%	11/20/2013
MoE - PLATFORM SUBMISSION	
2. DI-02 PHASE I STRUCTURAL UPDATE	11/17/2013
NYC DOB FILING	10/4/2013
1. DI-01 PHASE I STRUCTURE UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
MoE	1/6/2014



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**HYE - PL - FO-355.00**  
**EAST PLATFORM FOUNDATION SECTIONS AND DETAILS**  
Drawing Number / BIDDING Drawing Number  
**FO-355.00**



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320 Park Avenue, 17th Floor  
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PC Architects & Planning Consultants  
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LJRR Ventilation  
Ove Arup & Partners P.C.  
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LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
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NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRELIMINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
2. DI-02 PHASE 1 STRUCTURAL UPDATE	11/12/2013
NYC DOB FILING	10/4/2013
1. DI-01 PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
3d	8/09/2013

Rev. No. Description

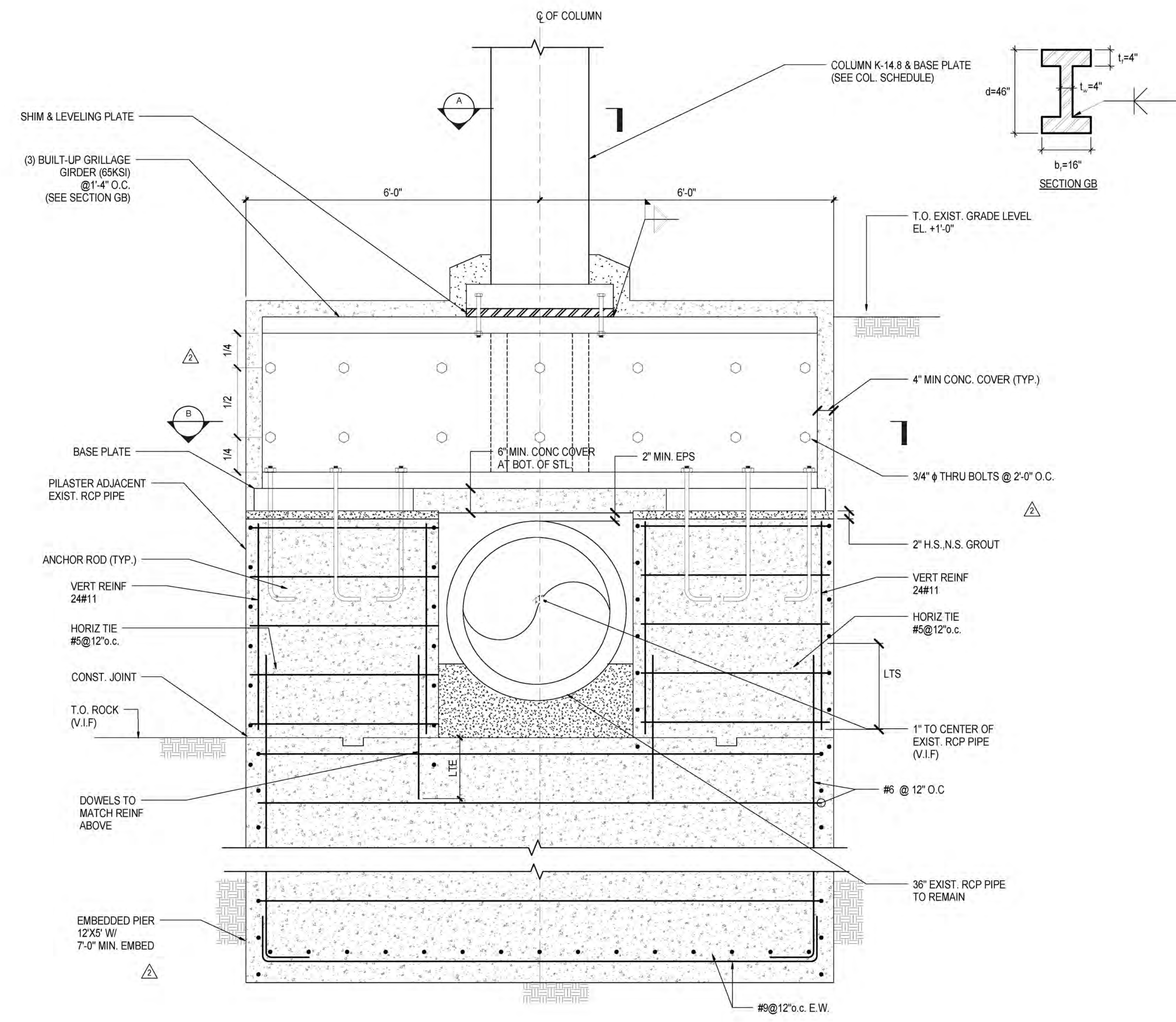
Date: 08/09/13  
Project No: N11330.00  
Drawing No: 0000  
Sheet Number: 0000

**HYE-PL-FO-356.00**

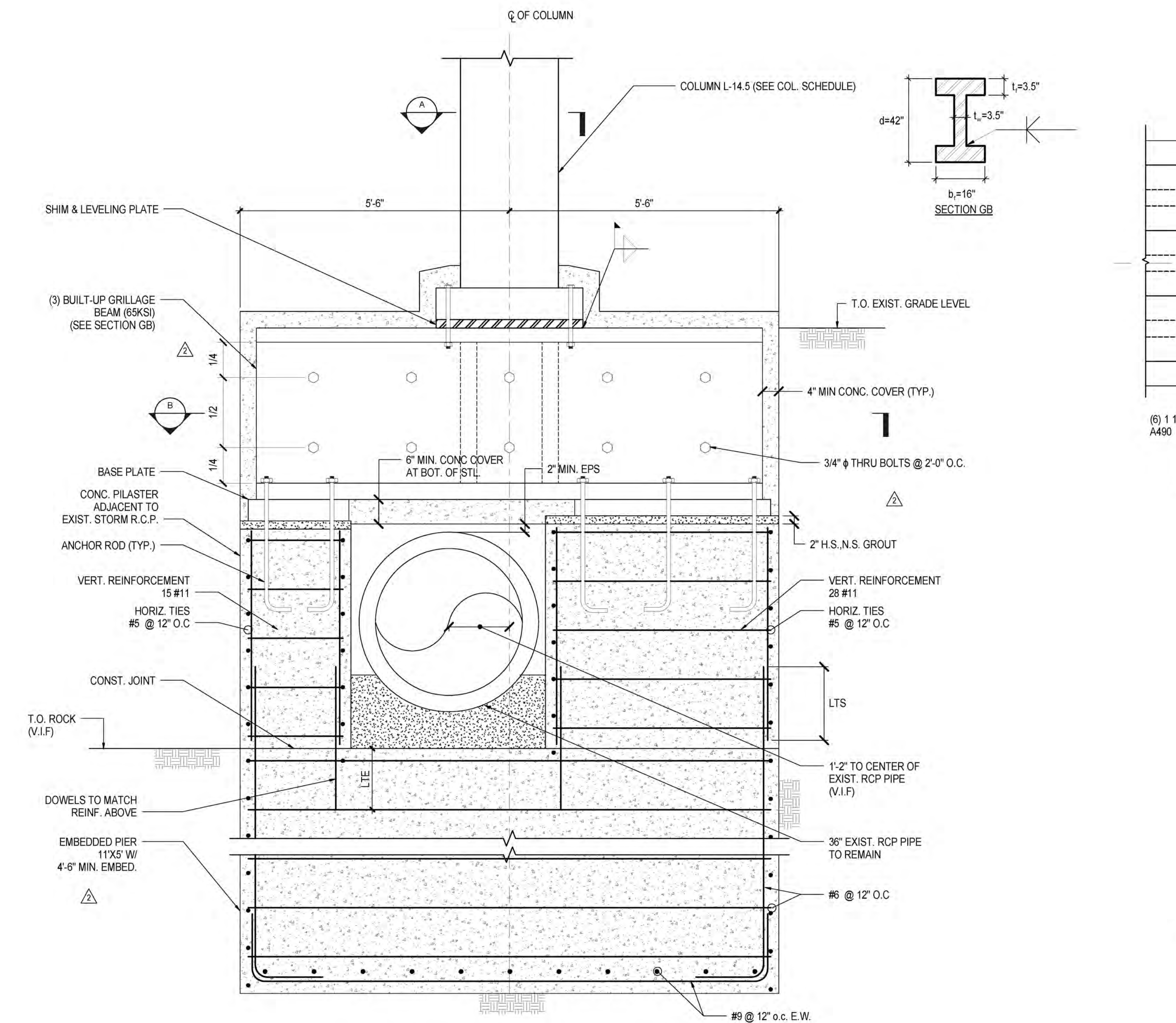
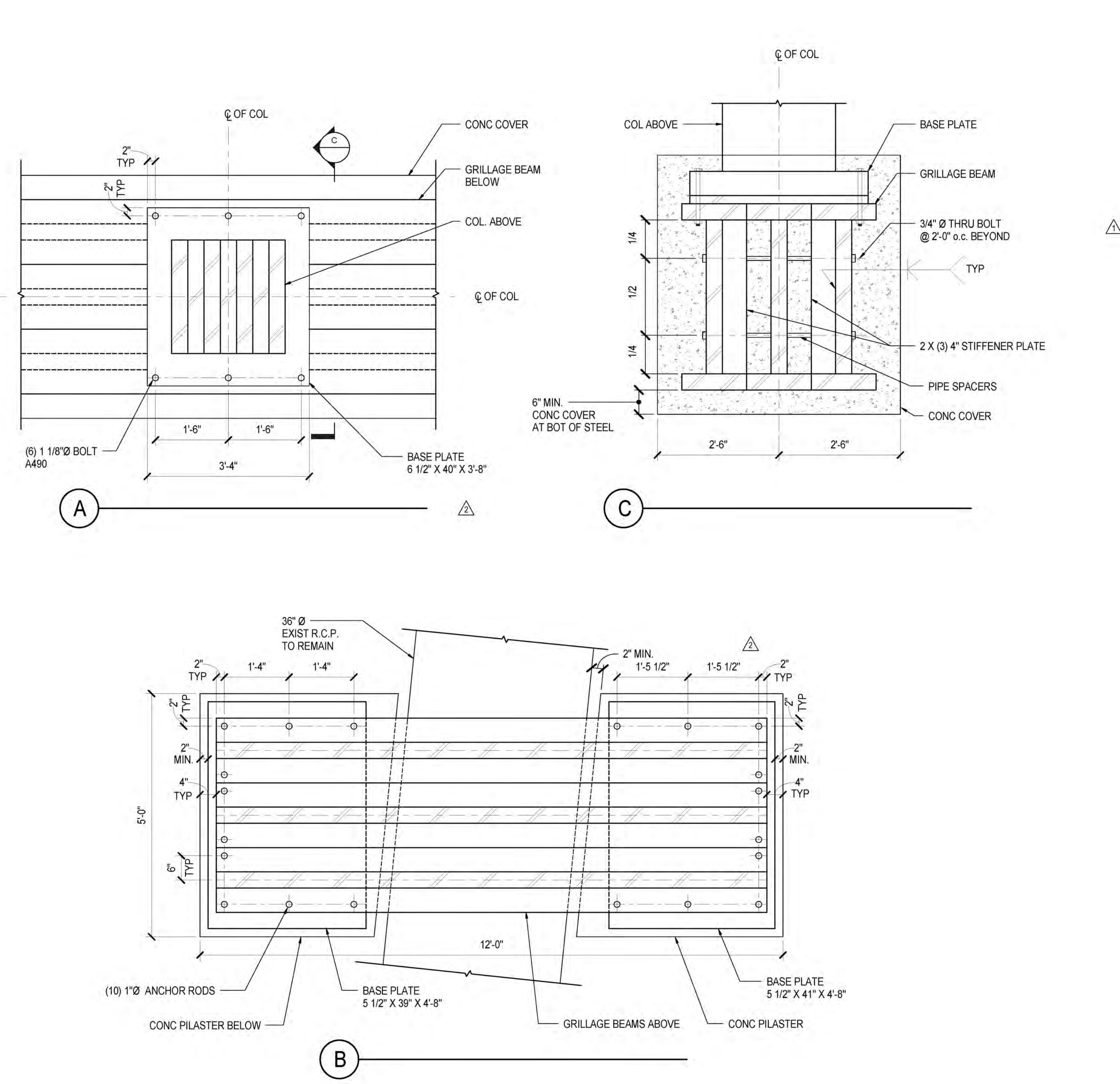
**EAST PLATFORM FOUNDATION SECTIONS AND DETAILS**

Drawing Number: B-356.00 Drawing Number: FO-356.00

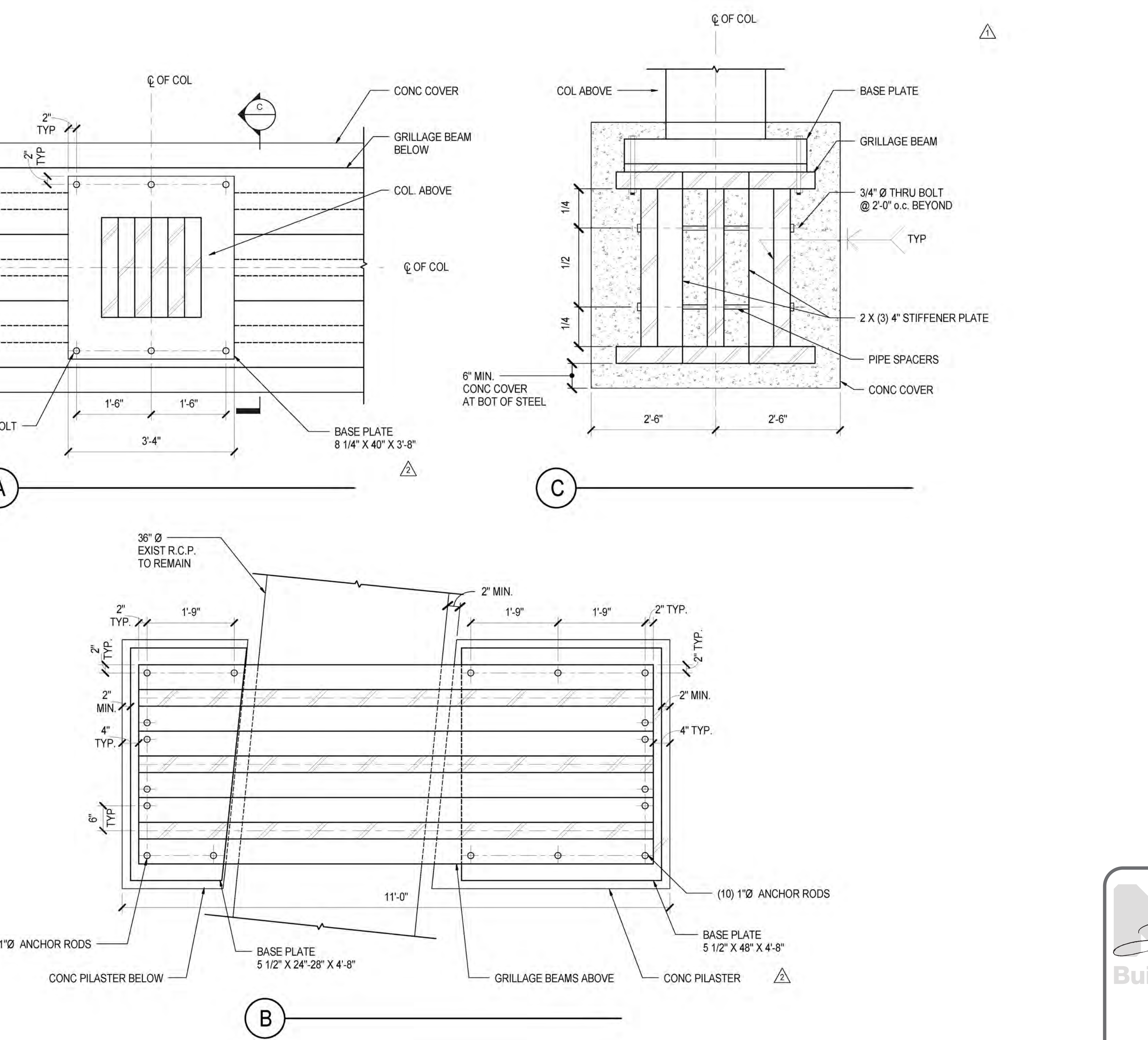
SHEET 26 of 30



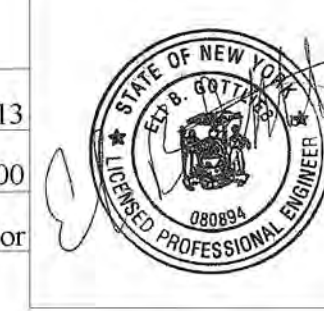
**1 EMBEDDED PIER & TRANSFER BM. AT K-14.5**  
3/4" = 1'-0"



**2 EMBEDDED PIER & TRANSFER BM. AT L-14.5**  
3/4" = 1'-0"



**Damian Titus**  
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EAST PLATFORM FOUNDATION SECTIONS AND DETAILS  
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Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Oxford Properties Group*  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

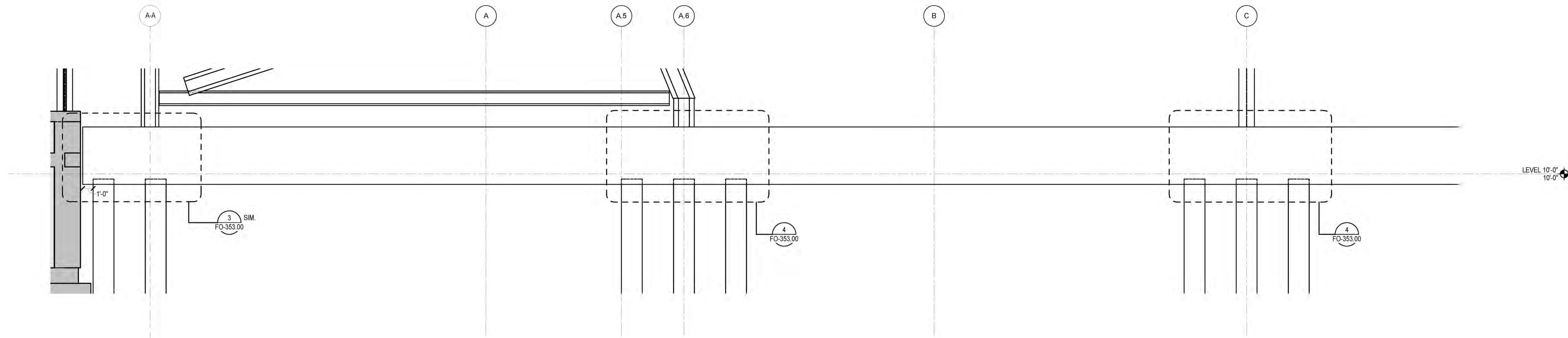
*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6550 Fax: 212.956.2526

*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

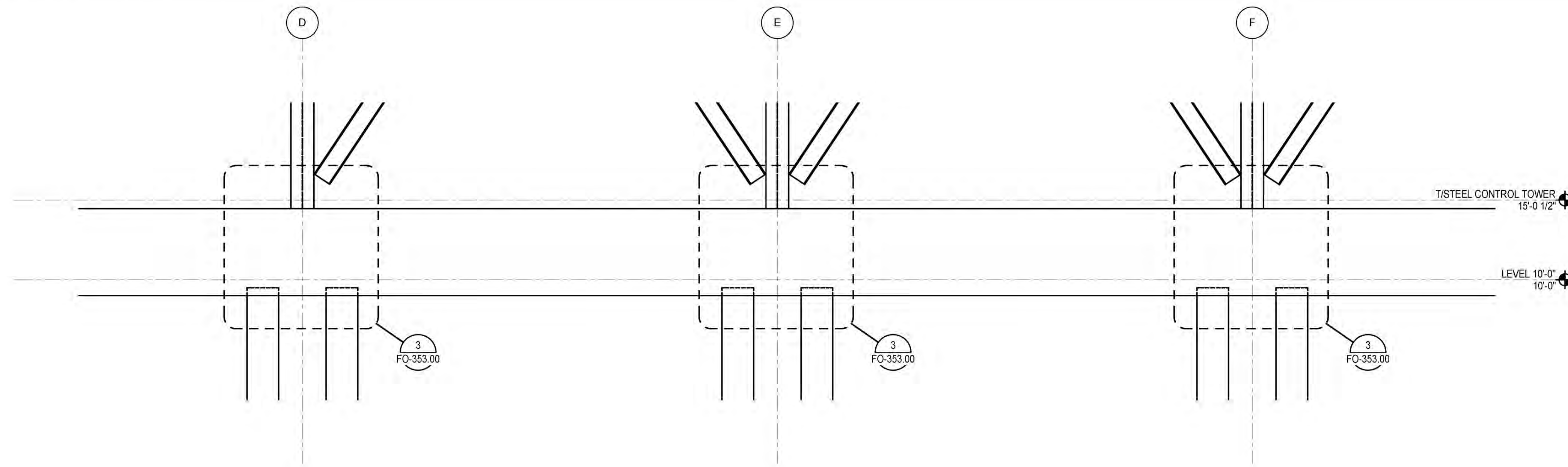
*Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group*  
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New York, NY 10005  
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*LJBR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

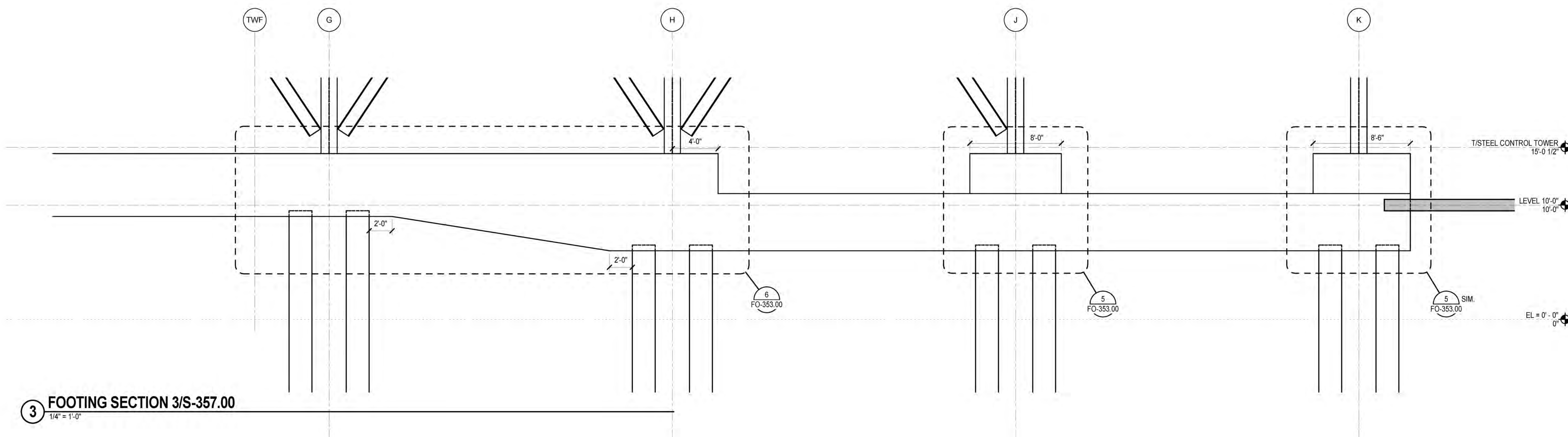
*LJBR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172



**1 FOOTING SECTION 1/S357.00**  
1/4" = 1'-0"



**2 FOOTING SECTION 2/S-357.00**  
1/4" = 1'-0"



**3 FOOTING SECTION 3/S-357.00**  
1/4" = 1'-0"

NYC DOB FILING	1/7/2014
NYC DOB FILING	12/4/2013
L.I.R.A. - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
2. D4-D PHASE I STRUCTURAL UPDATE	1/1/2013

Rev. No. Description Date

Date: 11/01/13  
Project No: N11330.00  
Drawing No: Author

**HYE - PL - FO-357.00**

**EAST PLATFORM  
FOUNDATION  
SECTIONS AND  
DETAILS**

FO-357.00

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CAISSON REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES)					
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)			COMPRESSION (LCS)
		Fc = 4 KSI	Fc = 5 KSI	Fc = 6 KSI	
#5	2.125	31	28	26	19
#6	2.250	37	34	31	23
#7	2.375	44	40	37	27
#8	2.500	51	47	44	30
#9	2.625	58	54	51	34
#10	3.250	79	71	64	39
#11	3.625	87	78	71	43

SLAB/SLAB-ON-GRADE REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES)							
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)					
		Fc = 3 KSI	Fc = 4 KSI	Fc = 5 KSI	Fc = 6 KSI	Fc = 7 KSI	Fc = 8 KSI
#4	1.500	29	25	23	21	19	18
#5	1.875	36	31	28	26	24	22
#6	2.250	43	37	34	31	28	27
#7	2.625	54	46	43	39	36	34
#8	3.000	67	57	53	48	45	42

COLUMN REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES)											
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)									COMPRESSION (LCS)
		Fc = 4 KSI	Fc = 5 KSI	Fc = 6 KSI	Fc = 7 KSI	Fc = 8 KSI	Fc = 9 KSI	Fc = 10 KSI	Fc = 11 KSI	Fc = 12 KSI	
#5	2.125	31	28	26	24	22	21	20	20	19	
#6	2.250	37	34	31	28	27	25	24	24	23	
#7	2.375	44	40	37	34	33	31	30	30	27	
#8	2.500	51	47	44	41	40	38	37	37	30	
#9	2.625	58	54	51	48	47	44	44	44	34	
#10	3.250	79	71	64	60	57	50	50	50	39	
#11	3.625	87	78	71	66	62	58	55	55	43	

GRADE BEAM/BAM REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES)															
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)													
		Fc = 4 KSI		Fc = 5 KSI		Fc = 6 KSI		Fc = 7 KSI		Fc = 8 KSI		Fc = 9 KSI		Fc = 10 KSI	
		TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER
#4	1.500	33	25	29	23	27	21	25	19	23	18	22	17	21	16
#5	1.875	41	31	36	28	33	26	31	24	29	22	27	21	26	20
#6	1.750	49	37	44	34	40	31	37	28	35	27	33	25	31	24
#7	1.875	71	54	63	49	58	45	54	41	50	39	47	36	45	35
#8	2.000	81	62	72	56	66	51	61	47	57	44	54	42	51	39
#9	2.375	91	70	81	63	74	57	69	53	64	50	61	47	58	44
#10	2.625	102	79	92	71	84	64	77	60	72	56	68	53	65	50
#11	2.875	114	87	102	78	93	71	86	66	80	62	76	58	72	55

FOOTING/MAT REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES)															
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION LAP (LTS)													
		Fc = 4 KSI		Fc = 5 KSI		Fc = 6 KSI		Fc = 7 KSI		Fc = 8 KSI		Fc = 9 KSI		Fc = 10 KSI	
		TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER	TOP BARS	OTHER
#4	1.500	33	25	29	23	27	21	25	19	23	18	22	17	21	16
#5	1.875	41	31	36	28	33	26	31	24	29	22	27	21	26	20
#6	2.250	49	37	44	34	40	31	37	28	35	27	33	25	31	24
#7	2.625	71	54	63	49	58	45	54	41	50	39	47	36	45	35
#8	3.000	81	62	72	56	66	51	61	47	57	44	54	42	51	39
#9	3.500	91	70	81	63	74	57	69	53	64	50	61	47	58	44
#10	3.875	102	79	92	71	84	64	77	60	72	56	68	53	65	50
#11	4.250	114	87	102	78	93	71	86	66	80	62	76	58	72	55

FOUNDATION WALL REINFORCEMENT - VERTICAL BARS LAP SPLICE LENGTH SCHEDULE (INCHES)											
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)									COMPRESSION (LCS)
		Fc = 4 KSI	Fc = 5 KSI	Fc = 6 KSI	Fc = 7 KSI	Fc = 8 KSI	Fc = 9 KSI	Fc = 10 KSI	Fc = 11 KSI	Fc = 12 KSI	
#4	2.000	25	23	21	19	18	17	16	16	15	
#5	2.125	31	28	26	24	22	21	20	20	19	
#6	2.250	37	34	31	28	27	25	24	24	23	
#7	2.625	44	40	37	34	33	31	30	30	27	
#8	3.000	51	47	44	41	40	38	37	37	30	
#9	3.500	58	54	51	48	47	44	44	44	34	
#10	3.875	79	71	64	60	57	50	50	50	39	
#11	4.250	87	78	71	66	62	58	55	55	43	

FOUNDATION WALL REINFORCEMENT - HORIZONTAL BARS LAP SPLICE LENGTH SCHEDULE (INCHES)											
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)									COMPRESSION (LCS)
		Fc = 4 KSI	Fc = 5 KSI	Fc = 6 KSI	Fc = 7 KSI	Fc = 8 KSI	Fc = 9 KSI	Fc = 10 KSI	Fc = 11 KSI	Fc = 12 KSI	
#4	1.500	33	30	27	25	23	22	21	21	15	
#5	1.875	40	36	34	31	29	27	26	26	19	
#6	2.250	48	44	40	36	35	33	31	31	23	
#7	2.625	70	64	59	53	51	47	46	46	27	
#8	3.000	81	73	66	61	57	55	51	51	30	
#9	3.500	91	82	74	69	65	61	57	57	34	
#10	3.875	103	92	83	78	73	69	65	65	39	
#11	4.250	113	101	92	86	81	75	72	72	43	

DEVELOPMENT LENGTH SCHEDULE (INCHES)																													
BAR SIZE	MIN BAR SPACING (INCHES) (MAX OF db+1" OR 2db)	TENSION												COMPRESSION															
		NOTED AS Ld ON DRAWINGS						NOTED AS Ldh ON DRAWINGS						NOTED AS Ldc ON DRAWINGS															
		Fc (PSI)						Fc (PSI)						Fc (PSI)															
#3	1.375	17	15	13	12	12	12	12	12	12	9	8	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
#4	1.500	22	19	17	16	15	14	13	12	12	12	11	10	9	8	7	7	6	6	6	6	6	6	6	6	6	6	6	6
#5	1.625	28	24	22	20	18	17	16	15	15	15	14	12	11	10	9	9	8	8	8	8	8	8	8	8	8	8	8	8
#6	1.750	33	29	26	24	22	21	19	18	18	18	17	15	13	12	11	11	10	9	9	9	9	9	9	9	9	9	9	9
#7	1.875	48	42	38	34	32	30	28	27	27	27	20	17	15	14	13	12	11	11	11	11	11	11	11	11	11	11	11	11
#8	2.000	55	48	43	39	36	34	32	30	30	30	22	19	17	16	15	14	13	12	12	12	12	12	12	12	12	12	12	12
#9	2.375	62	54	48	44	41	38	36	34	34	34	25	22	20	18	17	16	15	14	14	14	14	14	14	14	14	14	14	14
#10	2.625	70	61	54	50	46	43	41	39	39	39	28	25	22	20	19	18	17	16	16	16	16	16	16	16	16	16	16	16
#11	2.875	78	67	60	55	51	48	45	43	43	43	31	27	24	22	21	19	18	17	17	17	17	17	17	17	17	17	17	17

- LAP SPLICE NOTES:
- TABULATED VALUES ARE PER ACI 318-08 REQUIREMENTS FOR NORMALWEIGHT CONCRETE. THE VALUES ON THIS SHEET DO NOT APPLY TO LIGHTWEIGHT CONCRETE.
  - SEE TYPICAL DETAILS FOR CLEAR COVER.
  - MINIMUM BAR SPACING DIAGRAM - "S"
    - FIRST BAR
    - SECOND BAR PLACED OR SPLICE BAR
  - WHERE ACTUAL CONDITIONS DIFFER FROM THE CLEAR COVER SHOWN ON THE TYPICAL DETAILS OR DIFFER FROM PROVIDED SCHEDULED BAR SIZE, MINIMUM SPACING AND/OR FC LENGTHS SHALL BE ADJUSTED ONLY WITH THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
  - TABULATED VALUES ARE FOR NON-EPOXY COATED REINFORCEMENT. FOR EPOXY COATED REINFORCEMENT MULTIPLY VALUES BY 1.3 FOR "TOP BARS" AND 1.5 FOR ALL OTHER REINFORCEMENT.
  - WHERE BARS OF DIFFERENT SIZES ARE LAP SPICED IN TENSION, THE LAP LENGTH SHALL BE THE TENSION LAP SPLICE LENGTH (LTS) OF THE SMALLER BAR.
  - WHERE BARS OF DIFFERENT SIZES ARE LAP SPICED IN COMPRESSION, THE COMPRESSION LAP LENGTH (LCS) SHALL BE THE LARGER OF THE COMPRESSION DEVELOPMENT LENGTH (Ldc) OF THE LARGER BAR OR THE COMPRESSION LAP SPLICE LENGTH OF THE SMALLER BAR.
  - "TOP BARS" ARE DEFINED PER ACI HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE. "OTHER BARS" ARE ALL BARS FOR WHICH THIS DOES NOT APPLY.
  - FOUNDATION WALL LAP SPLICES ARE BASED ON A MINIMUM 2 INCH CLEAR COVER. IF CLEAR COVER IS REDUCED ON INTERIOR FACE, LAP SPLICES MUST BE REVISED.

**HUDSON YARDS PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY

Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
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Owned Properties Group  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

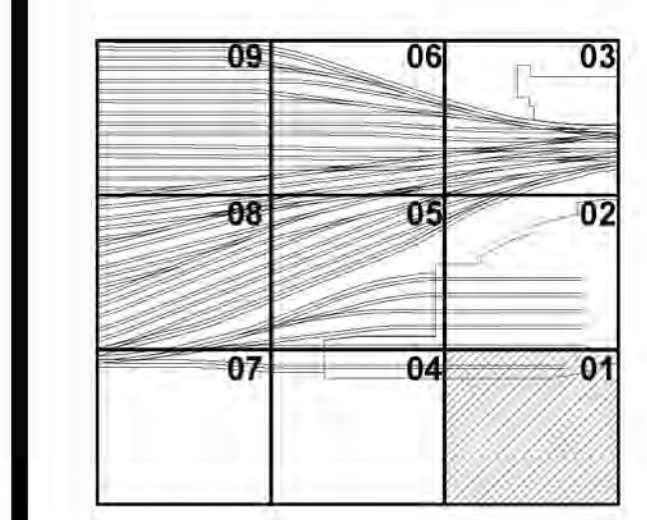
Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
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Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
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LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
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LJRR Substation  
ABCOM  
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NYC DOB FILING	12/4/2013
LJRR - PRELIMINAL 100%	11/22/2013
AM6 - PLATFORM SUBMISSION	
2. DI-02 PHASE I STRUCTURAL UPDATE	11/7/2013
NYC DOB FILING	10/2/2013
1. DI-01 PHASE I STRUCTURE UPDATE	9/20/2013
LJRR - 90% SUBMISSION	8/29/2013
	100%

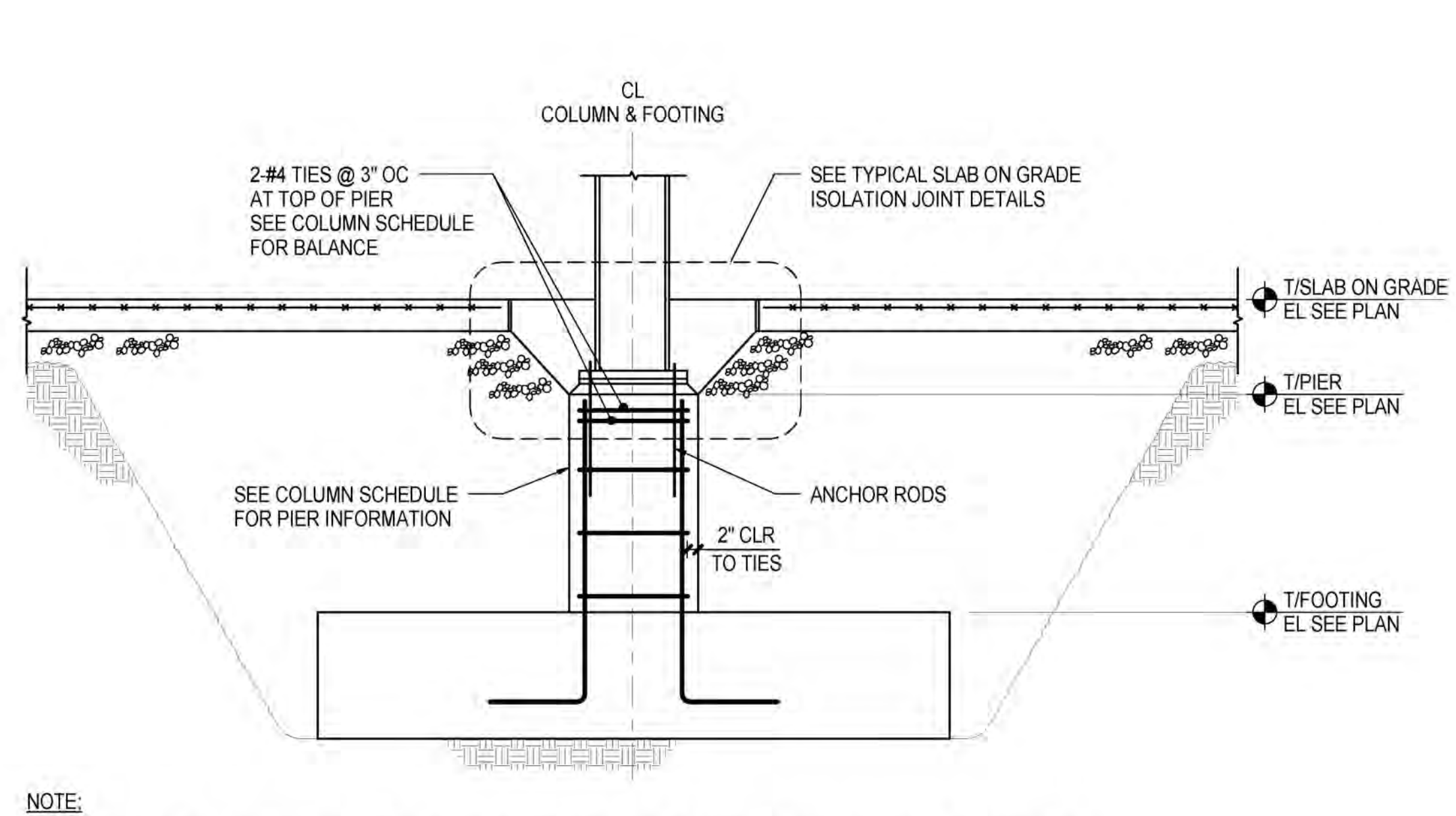
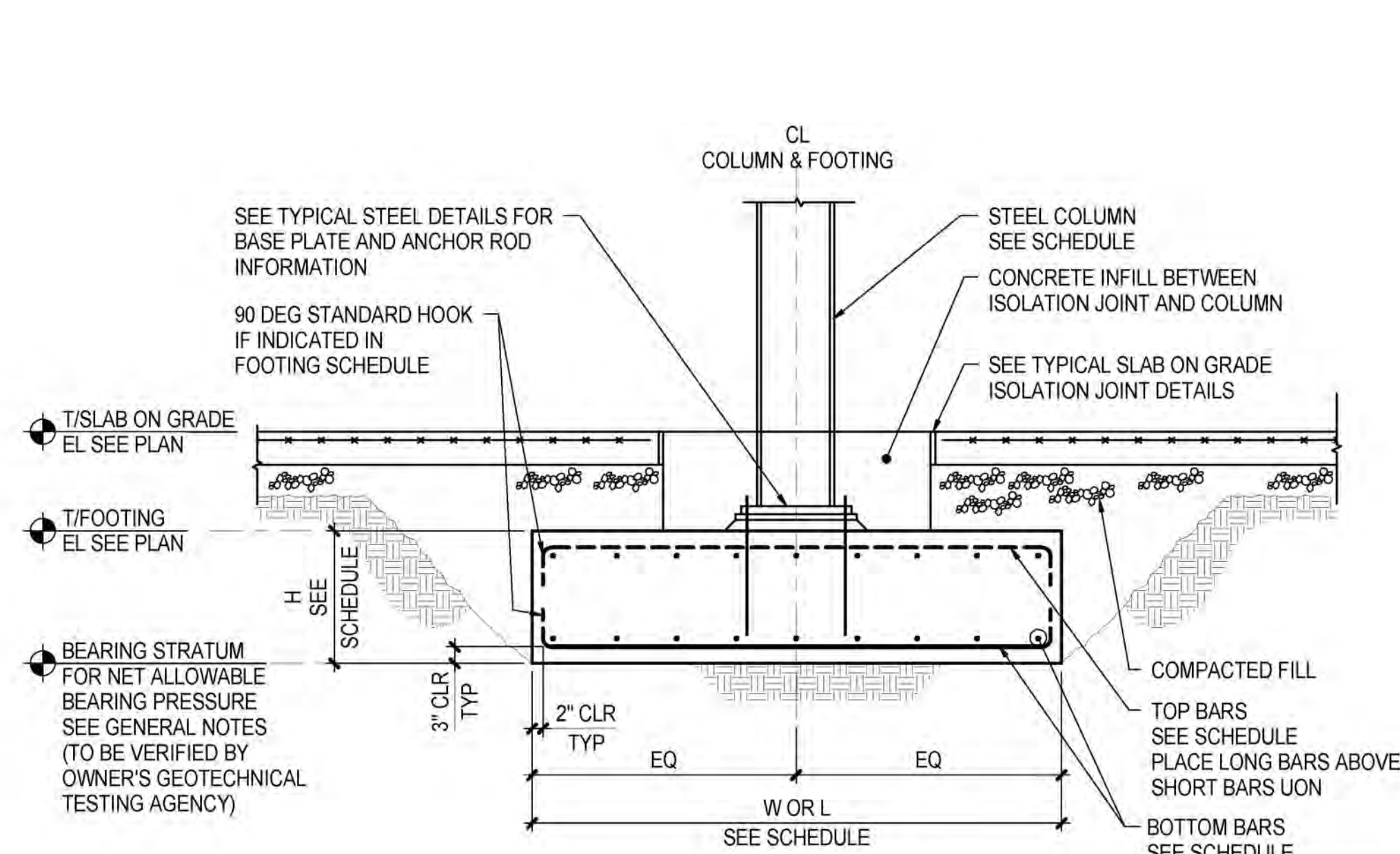
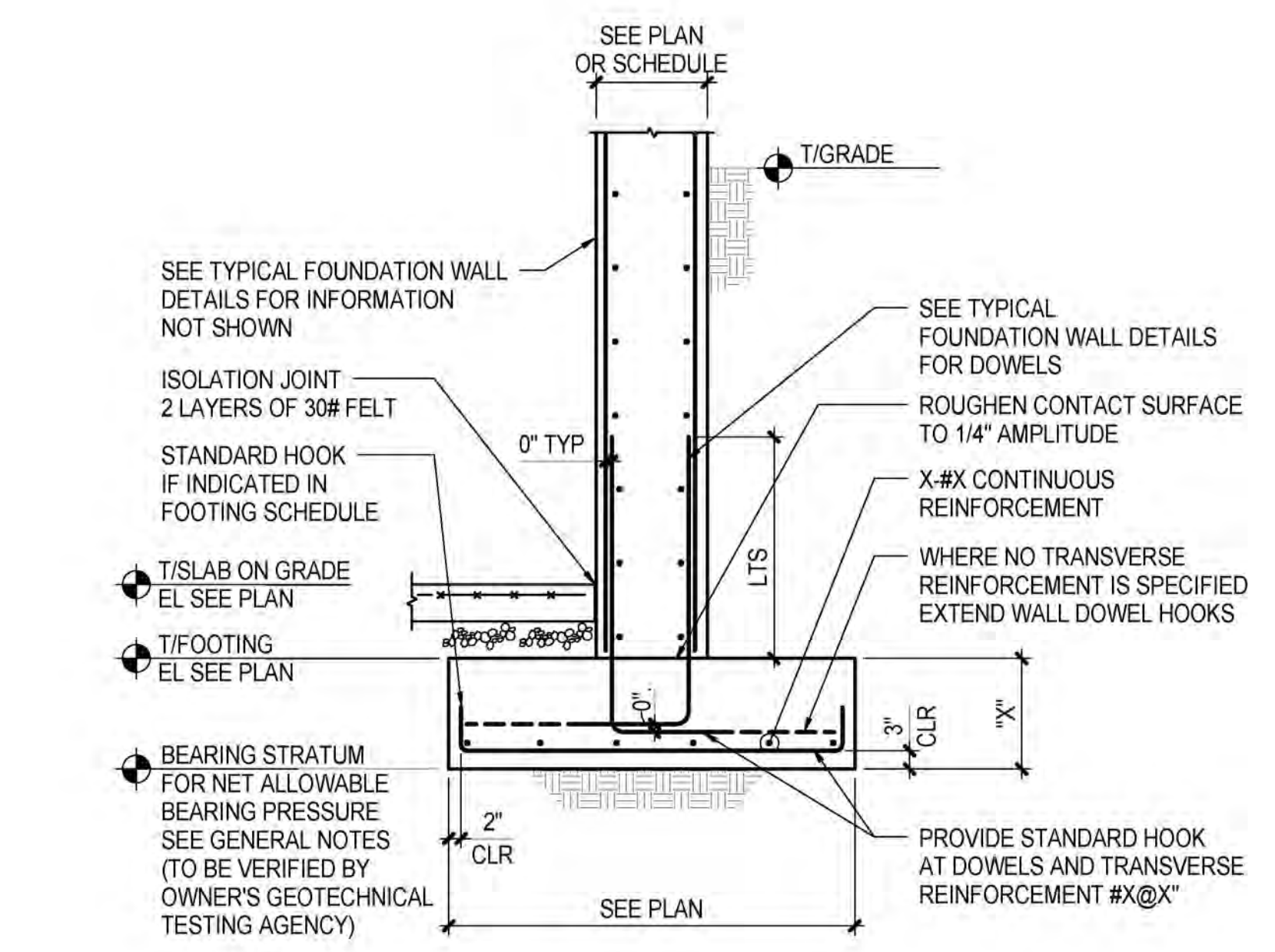
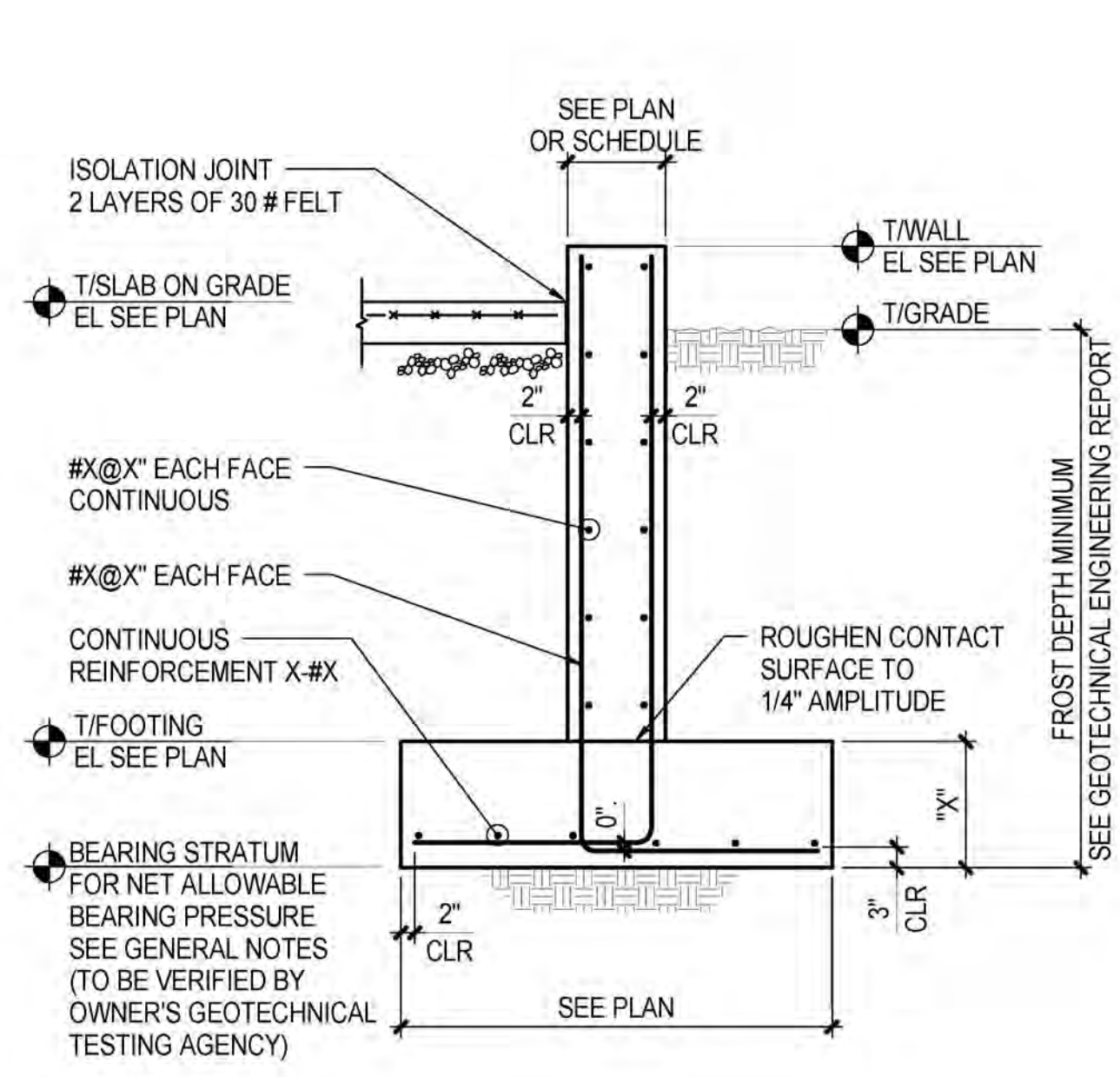


Date: 08/09/2013  
Project No.: N11330.00  
Revision: Author  
Drawing Title: HYE-PL-FO-730.00  
SHEET 29 of 30

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Buildings  
APPROVED  
Under Directive 2 of 1975  
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NYC Development Hub

**HYE-PL-FO-730.00**  
LAP SPLICE SCHEDULES

FO-730.00  
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NOTE:  
1. SEE TYPICAL ISOLATED FOOTING - BASE PLATE WITHIN CONCRETE INFILL DETAIL FOR ADDITIONAL INFORMATION.

1 TYPICAL CONTINUOUS FOOTING AT FROST WALL  
NOT TO SCALE

2 TYPICAL CONTINUOUS FOOTING AT FOUNDATION WALL  
NOT TO SCALE

3 TYPICAL ISOLATED FOOTING - BASE PLATE WITHIN CONCRETE INFILL  
NOT TO SCALE

4 TYPICAL PIER ON ISOLATED FOOTING  
NOT TO SCALE

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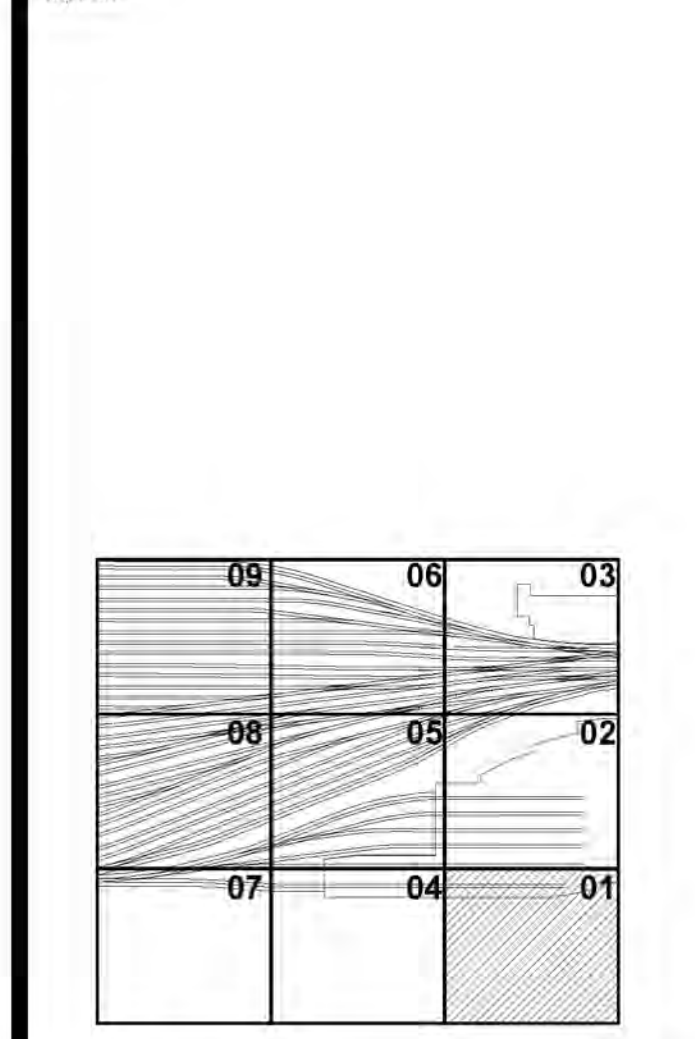
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LIRR - 90% SUBMISSION	8/09/2013
10	

NYC DOB FILING	1/7/2014
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Project No: N11330.00  
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Sheet Number: Author

**NYC Development Hub**  
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Under Directive 2 of 1975  
Date/Time: Jan 8, 2014 - 12:41 PM

**Damian Titus**  
Buildings

**HYE - PL - FO-731.00**  
TYPICAL FOOTING DETAILS

Drawing Number / BSC/OT Drawing Number  
**FO-731.00**

SHEET 30 of 30

FO-731.00  
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GR GENERAL REQUIREMENTS

GR-1 AS USED IN THESE GENERAL NOTES: "DRAWINGS" MEANS THE LATEST STRUCTURAL DESIGN DRAWINGS, UON. "SPECIFICATIONS" MEANS THE LATEST PROJECT SPECIFICATIONS, UON. "CONTRACT DOCUMENTS" IS DEFINED AS THE DESIGN DRAWINGS AND THE SPECIFICATIONS. "SER" IS DEFINED AS THE STRUCTURAL ENGINEER OF RECORD FOR THE STRUCTURE IN ITS FINAL CONDITION. "DESIGN PROFESSIONALS" IS DEFINED AS THE OWNER'S ARCHITECT AND SER. "MEP" INCLUDES, BUT IS NOT LIMITED TO MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION. "CONTRACTOR" IS DEFINED TO INCLUDE ANY OF THE FOLLOWING: GENERAL CONTRACTOR AND THEIR SUBCONTRACTORS, CONSTRUCTION MANAGER AND THEIR SUBCONTRACTORS, STRUCTURAL STEEL FABRICATOR OR STRUCTURAL STEEL ERECTOR. "BASE BUILDING STRUCTURE" IS DEFINED AS THE STRUCTURAL FRAME DESIGNED BY THORNTON TOMASETTI. "STRUCTURE IN ITS FINAL CONDITION" MEANS ALL STRUCTURAL ELEMENTS SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS ARE INSTALLED AND COMPLETELY CONNECTED AND INSPECTED WITH NO OUTSTANDING NON-COMPLIANCE ISSUES.

GR-2 THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL WORK WITH THE ARCHITECTURAL, CIVIL, MEP CONTRACT DOCUMENTS, AS WELL AS ANY OTHER APPLICABLE TRADES.

GR-3 THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHES ITS FINAL CONDITION.

GR-4 THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF TEMPORARY BRACING AND CONSTRUCTION SUPPORTS, FOR NEW AND EXISTING STRUCTURES, AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT WHILE UNDER CONSTRUCTION IS INTENDED TO BE STABLE IN THE ABSENCE OF THE CONTRACTOR'S TEMPORARY SUPPORTS AND BRACES. CONTRACTOR SHALL RETAIN A STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED TO DESIGN TEMPORARY BRACING AND CONSTRUCTION SUPPORTS.

GR-5 LATERAL LOAD RESISTANCE AND STABILITY OF THE STRUCTURE IN ITS FINAL CONDITION IS PROVIDED BY A COMBINATION OF MOMENT FRAMES, BRACED FRAMES AND SHEAR WALLS. LATERAL STABILITY OF OTHER ELEMENTS IS PROVIDED THROUGH FLOOR SLABS AND FLOOR BRACING.

GR-6 THE SPECIFICATIONS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS.

GR-7 THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AND COORDINATE WITH THE STRUCTURAL DRAWINGS, ARCHITECTURAL DRAWINGS, DRAWINGS FROM OTHER CONSULTANTS, PROJECT SHOP DRAWINGS AND FIELD CONDITIONS.

GR-8 IN CASES OF CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND OTHER DISCIPLINES OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH WORK.

GR-9 APPLY DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.

GR-10 ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS.

GR-11 ASSUME EQUAL SPACING BETWEEN ESTABLISHED DIMENSIONS, IF NOT INDICATED ON DRAWINGS.

GR-12 CENTERLINES OF COLUMNS AND FOUNDATIONS COINCIDE WITH GRID LINE INTERSECTIONS, UON.

GR-13 CENTERLINES OF GRADE BEAMS AND WALLS COINCIDE WITH CENTERLINES OF FOUNDATIONS, UON.

GR-14 CENTERLINES OF FRAMING MEMBERS COINCIDE WITH COLUMN CENTERLINES, UON.

GR-15 THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE.

GR-16 THE CONTRACTOR SHALL VERIFY THAT CONSTRUCTION LOADS DO NOT EXCEED THE CAPACITY OF THE STRUCTURE AT THE TIME THE LOAD IS APPLIED.

GR-17 THE CONTRACTOR SHALL COORDINATE THE BOTTOM OF BASE PLATE ELEVATIONS WITH THE AS-BUILT TOP OF SUPPORT ELEVATIONS.

GR-18 THE CONTRACTOR SHALL VERIFY ALL OPENING SIZES AND LOCATIONS WITH OTHER DISCIPLINES. THE DRAWINGS DO NOT SHOW ALL OPENINGS REQUIRED. ADDITIONAL OPENINGS, BLOCKOUTS AND SLEEVES MAY BE REQUIRED BY OTHER DISCIPLINES AND SHALL BE CONSTRUCTED USING THE TYPICAL DETAILS AND/OR THE CRITERIA INDICATED ON THE DRAWINGS. OPENINGS REQUIRED BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS MUST BE APPROVED BY THE STRUCTURAL ENGINEER.

GR-19 ELEVATIONS INDICATED ON STRUCTURAL DRAWINGS ARE BASED ON A PROJECT DATUM INDICATED ON THE ARCHITECTURAL DRAWINGS.

GR-20 SEE ARCHITECTURAL, CIVIL, MEP, AND VERTICAL TRANSPORTATION, CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION RELATING TO THE COORDINATION OF STRUCTURAL COMPONENTS INCLUDING, BUT NOT LIMITED TO:

- CIVIL: SITING OF BUILDING GRID LINES WITH RESPECT TO CITY BENCHMARKS
SITE PREPARATION
BACKFILLING MATERIALS AND REQUIREMENTS
PAVING AND SITE ELEVATIONS OUTSIDE OF BUILDING ENVELOPE
NEW AND EXISTING SITE UTILITIES

- ARCHITECTURAL: PLAN DIMENSIONS AND PROJECT DATUM
SLAB EDGE DIMENSIONS
FINISH ELEVATIONS
WATERPROOFING AND DAMP-PROOFING DETAILS
RAMP GEOMETRY, PITS, SLAB SLOPES AND DEPRESSIONS
EMBEDMENTS, INSERTS, BLOCKOUTS, ETC.
EXACT OPENING SIZES FOR PIPES, DUCTS, ETC.
CONCRETE FINISHES AND TOPPING SLABS
CONCRETE CURBS AND HOUSEKEEPING PADS
INTERIOR NON-STRUCTURAL MASONRY PARTITIONS
FIRE RATINGS
METAL PAN STAIRS AND SUPPORTS
OPERABLE PARTITIONS

- MEP: PIPE AND DUCT SIZES FOR OPENING AND SLEEVE COORDINATION
FLOOR DRAINS
UNDER FLOOR AND PERIMETER DRAINAGE SYSTEMS
EQUIPMENT CURBS
CONDUITS AND EMBEDMENTS IN WALLS AND SLABS

- VERTICAL TRANSPORTATION: INSERTS, HANGERS, TRENCHES, PITS, CONDUITS IN WALLS AND SLABS
EQUIPMENT SUPPORT, ELEVATOR DIVIDER BEAMS, EMBEDMENTS, AND ANCHOR BOLTS

CD CODES AND DESIGN CRITERIA

CD-1 PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE PROJECT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, UON:

NEW YORK CITY CONSTRUCTION CODE 2008.
STRUCTURAL CONCRETE: "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" THE AMERICAN CONCRETE INSTITUTE (ACI 318-2008)

STRUCTURAL STEEL: "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", MARCH 2011 14TH EDITION CONFORMING TO THE PROVISIONS OF LOAD RESISTANCE FACTOR DESIGN. BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC-15RF)

FOR AREA BELOW PLATFORM LEVEL:
NEW YORK STATE CONSTRUCTION CODE 2010.

APPROVAL BY THE NEW YORK CITY BUILDING DEPARTMENT SHALL NOT RELIEVE OR EXEMPT THE DESIGN FROM ANY REQUIREMENTS OF THE RELEVANT TRANSIT AUTHORITIES.

CD-2 LIVE LOADS: SEE DESIGN LOAD DIAGRAMS ON SHEET S004.00 FOR LOCATIONS AND EXTENT OF LIVE LOAD.

TRAIN LIVE LOAD IN M.O.E. SHOP BUILDING: TRACK SLAB: MY CAR WITH UNLIMITED PREPATIONS. SW 1001 LOCOMOTIVE TO AND FROM THE SHOP ONCE A YEAR.
BETWEEN TACKS: 1/20 TRUCK (ASHTO) LOADING FOR REPAIR SHOP 5 KIPS SINGLE WHEEL LIFT TRUCK FOR INSPECTION SHOP
SHOP SUPPORT: 250 PSF

CD-3 SUPERIMPOSED DEAD LOADS: SEE DESIGN LOAD DIAGRAMS ON SHEET S004.00 FOR LOCATIONS AND EXTENT OF SUPERIMPOSED DEAD LOADS.

CD-4 SNOW LOADS: FLAT ROOF SNOW LOAD (Ps) 20 PSF
GROUND SNOW LOAD (Pg) 25 PSF
SNOW EXPOSURE FACTOR (Ce) 0.9
SNOW LOAD IMPORTANCE FACTOR (Is) 1.0
WIND SPEED FACTOR (Kz) 1.0
SNOW DRIFTING PER CODE

CD-5 WIND LOAD DESIGN DATA: HEIGHT: 30 FT OR LESS
PRIMARY WIND RESISTING FRAME PRESSURES 20 PSF
WIND LOADS FOR FUTURE OVERBUILD ARE AS INDICATED ON LOADING DIAGRAM SHEETS

CD-6 SEISMIC LOAD DESIGN DATA: SEISMIC IMPORTANCE FACTOR (Ih) 1.25
S1 0.055 g
S1 0.071 g
SDS 0.292 g
S01 0.080 g
SITE CLASS C
SEISMIC DESIGN CATEGORY B
LATERAL SYSTEM DESCRIPTION MOMENT FRAMES, BRACED FRAMES AND SHEAR WALLS
SEISMIC RESPONSE COEFFICIENT (Cs) 0.0579
RESPONSE MODIFICATION FACTOR (R) 3
ANALYSIS PROCEDURE DESCRIPTION EQUIVALENT LATERAL FORCE
DESIGN BASE SHEAR 1700 KIPS EW & NS - PLAZA AREA
8500 KIPS EW, 8000 KIPS NS - TOWER E AREA
14400 EW & 14800 KIPS NS TOWER A & RETAIL AREA

CD-7 IN CASES WHERE THE CONTRACTOR DETERMINES THAT SUSPENDED OR FLOOR MOUNTED MEP EQUIPMENT LOADS EXIST WHICH EXCEED DESIGN LOADS INDICATED ON CONTRACT DOCUMENTS, CONTRACTOR SHALL SUBMIT LOAD DATA TO DESIGN PROFESSIONALS FOR REVIEW PRIOR TO PROCEEDING WITH WORK.

CD-8 DISTRIBUTE THE MAXIMUM LOAD HUNG FROM ANY STRUCTURAL MEMBER FOR MEP DUCTWORK, PIPING ETC OVER THE MEMBER'S TRIBUTARY AREA IN A WAY THAT THE DESIGN SUPERIMPOSED DEAD LOADS LISTED IN CONTRACT DOCUMENTS ARE NOT EXCEEDED. THE CONTRACTOR SHALL COORDINATE THE LOADS OF ALL TRADES AND PROVIDE ADDITIONAL SUPPORT OR DISTRIBUTION FRAMING AS REQUIRED TO ACHIEVE THE ALLOWABLE LOAD DISTRIBUTION.

CD-9 ESCALATOR SUPPORTS AND PITS ARE BASED ON ESCALATOR TYPES INDICATED ON ARCHITECTURAL CONTRACT DOCUMENTS. CONTRACTOR SHALL SUBMIT FOR REVIEW ANY PLANNED CHANGE TO ESCALATORS TO DESIGN PROFESSIONALS PRIOR TO SUBMITTING CORRESPONDING STRUCTURAL SHOP DRAWINGS FOR ACTION.

CD-10 ELEVATOR GUIDELINE SUPPORTS, MACHINE ROOMS, PITS, AND PENTHOUSES ARE BASED ON ELEVATOR TYPES INDICATED ON ARCHITECTURAL CONTRACT DOCUMENTS. CONTRACTOR SHALL SUBMIT FOR REVIEW ANY PLANNED CHANGE TO ELEVATORS TO DESIGN PROFESSIONALS PRIOR TO SUBMITTING CORRESPONDING STRUCTURAL SHOP DRAWINGS FOR ACTION.

CD-11 STRUCTURAL COMPONENTS ARE NOT DESIGNED FOR VIBRATING EQUIPMENT. MOUNT VIBRATING EQUIPMENT ON VIBRATION ISOLATORS.

CD-12 SERVICEABILITY: LIVE LOAD DEFLECTION IS LESS THAN L/360
LONG-TERM TOTAL DEFLECTION IS LESS THAN L/240
LATERAL DRIFT DUE TO WIND LOADS IS LESS THAN OR EQUAL TO [H/400]

CD-13 CONNECTIONS OF SYSTEMS DESIGNED BY CONTRACTOR'S ENGINEER SUCH AS, BUT NOT LIMITED TO, CLADDING, STAIRS, ELEVATORS, ESCALATORS, PRECAST STADIA, AND MEP LOADS, ARE ASSUMED TO IMPOSE VERTICAL AND/OR HORIZONTAL LOADS ON THE BASE BUILDING STRUCTURE MEMBERS WITHOUT GENERATING TORSION IN THE SUPPORTING STRUCTURAL MEMBERS. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL NECESSARY BRACING MEMBERS AS REQUIRED TO PREVENT TORSION ON THE BASE BUILDING STRUCTURE.

CD-14 FOR FIRE RATINGS AND FIREPROOFING ASSEMBLY EVALUATIONS, CONSIDER THE FOLLOWING ASSEMBLIES RESTRAINED: COMPOSITE WIDE-FLANGE STEEL FRAMING, INTERIOR BAYS OF CONTINUOUS CAST-IN-PLACE CONCRETE CONSTRUCTION. CONSIDER ALL OTHER ASSEMBLIES UNRESTRAINED.

CD-15 CONTRACTOR SHALL VERIFY COMPATIBILITY OF FIREPROOFING ASSEMBLIES WITH ANY TEMPORARY COATINGS REQUIRED TO PROTECT THE STEEL ASSEMBLIES DURING SHIPPING AND ERECTION.

DE DEMOLITION

DE-1 THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE MEANS AND METHODS OF DEMOLITION AND THE INTEGRITY AND STABILITY OF THE EXISTING STRUCTURE DURING DEMOLITION UNTIL THE WORK IS COMPLETED. THE CONTRACTOR SHALL PROVIDE SHORING IN REQUIRED LOCATIONS WHERE EXISTING CONSTRUCTION TO REMAIN WILL BE AFFECTED BY DEMOLITION.

DE-2 THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS TO ANY STRUCTURAL ELEMENTS WHICH ARE TO REMAIN AND THAT HAVE BEEN DAMAGED DURING THE DEMOLITION PROCESS TO THE COMPLETE SATISFACTION OF THE OWNER. THE REPAIRS SHALL BE AT NO EXPENSE TO THE OWNER. ALL REPAIR WORK SHALL BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE OF NEW YORK AND SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO COMMENCING REPAIR WORK.

DE-3 ALL EXISTING FRAMING IS INDICATED FOR REFERENCE ONLY AND IS TO BE FIELD VERIFIED BY THE CONTRACTOR. VERIFY THE EXACT EXTENT OF DEMOLITION AT THE SITE. DETERMINE THE NATURE AND EXTENT OF DEMOLITION THAT WILL BE NECESSARY BY COMPARING THE CONTRACT DOCUMENTS WITH THE EXISTING CONSTRUCTION.

DE-4 THE CONTRACTOR SHALL USE THE STRUCTURAL CONTRACT DOCUMENTS IN CONJUNCTION WITH THE ARCHITECTURAL AND MEP DEMOLITION CONTRACT DOCUMENTS. IN THE EVENT OF CONFLICTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER.

DE-5 THE CONTRACTOR SHALL USE QUALIFIED, EXPERIENCED PERSONNEL FOR DEMOLITION AND REMOVAL OPERATIONS. PERFORM DEMOLITION AND REMOVAL OPERATIONS IN A CAREFUL AND ORDERLY MANNER TO PREVENT HAZARDS TO PERSONS, DAMAGE TO PROPERTY, AND THE SPREADING OF DUST AND DEBRIS.

DE-6 DO NOT PERMIT PORTIONS OF THE STRUCTURE TO FALL NOR DEBRIS TO DROP EXCEPT BY METHODS WHICH WILL INSURE INTEGRITY OF THE STRUCTURE.

DE-7 PRIOR TO THE START OF WORK, VERIFY THAT THE SCOPE OF DEMOLITION INDICATED ON THE CONTRACT DOCUMENTS SHALL NOT DAMAGE, CUT OR DISRUPT SERVICE OF ANY MECHANICAL SYSTEM, ELECTRICAL SYSTEM OR UTILITY EMBEDDED IN THE EXISTING STRUCTURE.

DE-8 DO NOT REMOVE MORE OF THE EXISTING STRUCTURE THAN INDICATED ON CONTRACT DOCUMENTS. DO NOT DAMAGE, MAR, CUT OR DEFACE THE REMAINING STRUCTURE OR MATERIALS TO BE REUSED.

DE-9 THE CONTRACTOR SHALL INCLUDE IN HIS BID THE COST OF REMOVING DEMOLISHED MATERIALS FROM THE SITE IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS.

DE-10 WHERE NEW OPENINGS IN EXISTING CONCRETE SLABS OR WALLS ARE TO BE CREATED, THE DEMOLITION CONTRACTOR SHALL CUT OUT HOLES PRIOR TO DEMOLITION. SAW-CUT AND DEMOLISH SLAB OR WALL ONLY AFTER THE INSTALLATION OF ALL REQUIRED NEW STRUCTURAL FRAMING AND/OR REINFORCEMENT IN PLAN OR SECTION, UON. SAW CUTTING SHALL BE STRAIGHT AND SHALL NOT EXTEND INTO EXISTING SLAB OR WALL TO REMAIN NOR BEYOND THE HOLES CORED AT THE CORNERS OF THE NEW OPENING.

DE-11 THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES IN THE AREAS OF NEW CONSTRUCTION WORK AND SHALL COORDINATE ANY MODIFICATIONS OR PROTECTION OF THESE UTILITIES WITH THE OTHER TRADES AND UTILITY DRAWINGS.

PI PERFORMANCE ITEMS

PI-1 THE CONTRACTOR SHALL EMPLOY OR RETAIN A LICENSED STRUCTURAL ENGINEER IN THE STATE IN WHICH THIS PROJECT IS LOCATED TO DESIGN AND DETAIL PERFORMANCE ITEMS AS PART OF THE BASE BUILDING STRUCTURE INDICATED IN THE CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO:

STRUCTURAL PRECAST CONCRETE AND CONNECTIONS: STRUCTURAL STEEL CONNECTIONS
STEEL COMPOSITE DECK
STEEL FORM DECK

SU SUBMITTALS

SU-1 TWENTY WORKING DAYS PRIOR TO SUBMITTING SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT FOR STRUCTURAL ENGINEER'S REVIEW A SCHEDULE WHICH DETAILS THE ESTIMATED QUANTITY OF SHOP DRAWINGS AND THE DATE THE SHOP DRAWINGS WILL BE RECEIVED BY THE STRUCTURAL ENGINEER. THE STRUCTURAL ENGINEER SHALL HAVE THE OPPORTUNITY TO REVIEW THE PROPOSED SCHEDULE AND SUBMIT COMMENTS TO THE CONTRACTOR. THE FINAL SHOP DRAWING SCHEDULE SHALL BE DEVELOPED AND SUBMITTED TO THE STRUCTURAL ENGINEER, IN ACCORDANCE WITH THE SHOP DRAWING SCHEDULE. THE STRUCTURAL ENGINEER WILL RETURN THE SHOP DRAWING ITEMS WITHIN TEN WORKING DAYS AFTER HAVING RECEIVED THE REPRODUCIBLE SHOP DRAWING.

SU-2 THE CONTRACTOR IS TO REVIEW EACH SUBMITTAL PRIOR TO FORWARDING TO ARCHITECT AND STRUCTURAL ENGINEER. THE CONTRACTOR IS TO STAMP EACH SUBMITTAL VERIFYING THAT THE FOLLOWING IS ADDRESSED:

- 1. THE SHOP DRAWING IS REQUESTED.
2. THE SHOP DRAWING IS BASED ON THE LATEST DESIGN.
3. THE ARCHITECT'S AND STRUCTURAL ENGINEER'S COMMENTS FROM ANY PREVIOUS SUBMITTALS ARE ADDRESSED.
4. THE WORK IS COORDINATED AMONG ALL CONSTRUCTION TRADES.
5. REVISIONS FROM PREVIOUS SUBMITTALS ARE CLEARLY MARKED BY CIRCLING OR CLOUDS.
6. SUBMITTAL IS COMPLETE.
7. SUBMITTAL DOES NOT INCLUDE SUBSTITUTION REQUEST.
8. SUBMITTAL SHALL INCLUDE A STAMP INDICATING PROJECT NAME AND LOCATION, SUBMITTAL NUMBER, SPECIFICATION SECTION NUMBER.

THE STRUCTURAL ENGINEER SHALL RETURN, WITHOUT COMMENT, SUBMITTALS WHICH THE CONTRACTOR HAS NOT STAMPED OR WHICH DO NOT MEET THE ABOVE REQUIREMENTS. THE STRUCTURAL ENGINEER'S REVIEW OF SUBMITTALS SHALL BE FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. NO WORK SHALL BE STARTED WITHOUT SUCH REVIEW.

SU-3 FOR COMPONENTS THAT REQUIRE ENGINEERING BY THE CONTRACTOR, PROVIDE A NOTE ON EACH SHOP DRAWING, WRITTEN AND SIGNED BY THE SUPPLIER'S ENGINEERING, INDICATING THAT THE SHOP DRAWING IS IN CONFORMANCE WITH THE CALCULATIONS OF THE CONTRACTOR'S ENGINEER.

SU-4 THE FOLLOWING ITEMS REQUIRE SUBMITTALS FOR STRUCTURAL REVIEW AS OUTLINED IN THE SPECIFICATIONS:

Table with columns: Item No., Description, and Action. Includes items like 024119 SELECTIVE DEMOLITION, 031000 CONCRETE FORMWORK, 033000 CONCRETE REINFORCING LAYOUT, 033000 CONCRETE MIX DESIGNS, 033000 CONCRETE CONSTRUCTION JOINT LAYOUT, 034120 STRUCTURAL PRECAST CONCRETE, 034100 STRUCTURAL PRECAST CONCRETE CONNECTIONS, 041000 MASONRY REINFORCEMENT LAYOUT, 051000 STRUCTURAL STEEL, 051000 STRUCTURAL STEEL CONNECTIONS, 051000 SHEAR STUD LAYOUT, 053000 STEEL COMPOSITE DECK, 053000 STEEL FORM DECK, 316329 CAISSON LAYOUT AND SIZE.

S SHOP DRAWINGS REQUIRED

CALC = SUPPORTING CALCULATIONS REQUIRED, SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED.

SU-5 THE ITEMS IN THIS SECTION REQUIRE SHOP DRAWINGS, SUBMITTED FOR REVIEW OF INTERACTION WITH THE BASE BUILDING STRUCTURE.

THE FOLLOWING SHOP DRAWINGS SHALL SHOW THE MAGNITUDES, DIRECTIONS, LOCATIONS AND CONNECTION CONDITIONS OF ALL LOADS IMPOSED ON THE SUPPORTING STRUCTURE. SUBMIT ALL INFORMATION ON STRUCTURAL DRAWINGS:

ARCHITECTURAL ORNAMENTATION (FLAGPOLES, BANNERS, MASTS, ETC.)
ELEVATOR REACTIONS
ESCALATOR REACTIONS

IN ADDITION TO THE SHOP DRAWING REQUIREMENTS ABOVE, THE FOLLOWING SUBMITTALS SHALL ALSO LIST THE DESIGN LOADS USED AND BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED:

ARCHITECTURAL PRECAST CONCRETE AND CONNECTIONS
COLD-FORMED METAL FRAMING
EXTERIOR CLADDING SYSTEMS
METAL STAIRS

FN FOUNDATIONS

FN-1 THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT PREPARED BY LANGAN ENGINEERING, ENVIRONMENTAL, SURVEYING, AND LANDSCAPE ARCHITECTURE, D.P.C., DATED OCTOBER 30, 2013.

FN-2 FOOTINGS HAVE BEEN DESIGNED ASSUMING A NET ALLOWABLE BEARING CAPACITY OF 75 TSF. SUBGRADES FOR FOOTINGS SHALL CONSIST OF HARD SOUND ROCK MEETING THE REQUIREMENTS OF NYCBC CLASS 1A.

FN-3 CAISSONS HAVE BEEN DESIGN ASSUMING AN ALLOWABLE SIDE FRICTION OF 300 PSF IN COMPRESSION AND 150 PSF IN TENSION, AND A BASIC ALLOWABLE BEARING CAPACITY OF 75 TSF INCREASING TO 150 TSF OVER A DEPTH OF 10 FT. ROCK SHALL MEETING THE MINIMUM REQUIREMENTS OF NYCBC CLASS 1C FOR ROCK SOCKET SIDE WALLS AND NYCBC CLASS 1A FOR END BEARING.

FN-4 ROCK CONDITIONS FOR FOOTINGS AND CAISSONS SHALL BE FIELD VERIFIED BY A QUALIFIED SPECIAL INSPECTOR MEETING THE MINIMUM REQUIREMENTS OUTLINED IN RONY 101-06. ROCK CONDITIONS WITHIN CAISSONS SHALL BE DETERMINED BY DOWN-HOLE VIDEO INSPECTION.

FN-5 THE CONTRACTOR SHALL VERIFY FOUNDATION INSTALLATION AND CONSTRUCTION IS IN CONFORMANCE WITH THE RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT AND THE PROJECT SPECIFICATIONS.

FN-6 THE CONTRACTOR SHALL BE RESPONSIBLE TO ADEQUATELY PROTECT ALL EXCAVATION, WHERE NECESSARY, SHEET AND SHORE THE EXCAVATION WITH ALL REQUIRED TIEBACKS AND BRACING AS DETERMINED BY CONTRACTOR'S STRUCTURAL ENGINEER. FOUNDATION INSTALLATION AND PROTECTION OF EXCAVATION IN RAILROAD AREAS AND TEMPORARY LOADING CONDITIONS FROM CONSTRUCTION ACTIVITIES MUST BE ANALYZED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK AND THE MEANS AND METHODS FOR ADDRESSING THESE LOADS BE SUBMITTED TO LIRR FOR APPROVAL PRIOR TO BEGINNING THE CONSTRUCTION ACTIVITY.

FN-7 DO NOT BACKFILL AGAINST CANTILEVER RETAINING WALLS UNTIL THE CONCRETE HAS ATTAINED 100% OF ITS DESIGN STRENGTH.

FN-8 CONTRACTOR TO PROVIDE NOTIFICATION TO DOB 24-48 HOURS PRIOR TO COMMENCEMENT OF EARTHWORK PER BC3304.3.1

FN-9 REFER TO SECTION 310000 OF THE PROJECT SPECIFICATIONS FOR GENERAL REQUIREMENTS PERTAINING TO EXCAVATION AND FOOTING SUBGRADE PREPARATION.

FN-10 REFER TO SECTION 316326 OF THE PROJECT SPECIFICATIONS FOR GENERAL REQUIREMENTS PERTAINING TO CAISSON INSTALLATION AND TESTING.

FN-11 REFER TO SECTIONS 310900 AND 310901 OF THE PROJECT SPECIFICATIONS FOR REQUIREMENTS PERTAINING TO MONITORING OF TUNNELS, STRUCTURES, AND UTILITIES.

FN-12 REFER TO DRAWING S-301 FOR ADDITIONAL INFORMATION PERTAINING TO FOOTING AND CAISSON INSTALLATION.

FN-13 ALL EXCAVATIONS TO EXPOSE THE TOP OF ANY AMTRAK TUNNEL SHALL BE PERFORMED WITH HAND EXCAVATION EQUIPMENT OR VACUUM EXCAVATION EQUIPMENT.

FN-14 IN AN AREA WHERE AN EXISTING AMTRAK TUNNEL IS NOT BEARING ON ROCK, AND DEWATERING MUST BE PERFORMED THAT WILL LOWER THE STATIC WATER LEVEL AROUND THE TUNNEL, THE CONTRACTOR MUST SUBMIT THE DEWATERING PLAN TO AMTRAK FOR REVIEW AND APPROVAL PRIOR TO ANY DEWATERING.

FN-15 ALL EXCAVATIONS THAT EXPOSE THE EXISTING AMTRAK TUNNELS SHALL BE PERFORMED IN THE DRY, AND WATER SHALL NOT BE ALLOWED TO ACCUMULATE MORE THAN 6 INCHES IN THE BOTTOM OF ANY EXCAVATION. BERMS OR OTHER MEASURES SHALL BE PROVIDED TO PREVENT SURFACE WATERS FROM FLOWING INTO THE EXCAVATION. AT NO TIME SHALL WATER BE ALLOWED TO POND IN THE EXCAVATION, REGARDLESS OF IF WORK IS BEING ACTIVELY PERFORMED OR NOT.

CM CONCRETE MATERIALS

CM-1 CONCRETE STRENGTH SHALL MEET THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS (f'c), UON:

Table with columns: Material, Strength, and Reference. Includes items like SITE RETAINING WALLS (4000 PSI), CAISSONS (SEE CAISSON SCHEDULE), FOOTINGS, CAISSON CAPS AND PIERS (8000 PSI), FOUNDATION WALLS, PILASTERS, BUTTRESSES (4000 PSI), NON-SHRINK GROUT (12000 PSI), SLAB ON GRADE (4000 PSI), CONCRETE ON STEEL DECK (5000 PSI), FORMED CONCRETE SLABS AND BEAMS (5000 PSI), CONCRETE HOUSEKEEPING PADS, AND FILL SLABS (4000 PSI), COLUMNS (SEE COLUMN SCHEDULE), CONCRETE SHEARWALLS (SEE WALL SCHEDULE).

CM-2 PROVIDE NORMAL WEIGHT CONCRETE WITH CURED DENSITY OF 145 +/- 5 PCF, AND AGGREGATE CONFORMING TO ASTM C33 UON. WHERE INDICATED, PROVIDE LIGHTWEIGHT CONCRETE WITH CURED DENSITY OF 112+/-3 PCF AND AGGREGATE CONFORMING TO ASTM C330.

CM-3 THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED. THE USE OF RECYCLED CONCRETE IS PROHIBITED. PLACEMENT WITHIN CONTACT BETWEEN ALUMINUM ITEMS, INCLUDING ALUMINUM CONDUIT, AND CONCRETE IS PROHIBITED.

CM-4 ALL CAST-IN-PLACE CONCRETE WILL EXPERIENCE DIFFERING VARIATIONS OF CRACKING. ANY ELEMENT EXPOSED TO DIRECT WEATHER AND/OR TEMPERATURE VARIATIONS DURING CONSTRUCTION OR IN THE FINAL CONDITION IS TO BE TREATED AND REGULARLY MAINTAINED TO PREVENT PROPAGATION OF CRACKS AND WATER PENETRATION. THE CONTRACTOR SHALL DEVELOP A REGULAR MAINTENANCE PROGRAM AND SUBMIT IT TO THE OWNER.

RE CONCRETE REINFORCEMENT

RE-1 ALL CONCRETE SHALL INCLUDE REINFORCEMENT. IF REINFORCEMENT IS NOT SPECIFICALLY INDICATED ON THE DRAWINGS VERIFY WITH THE STRUCTURAL ENGINEER.

RE-2 REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES UON:

Table with columns: Material, Standard, and Reference. Includes items like DEFORMED BARS (ASTM A615 Grade 60 & Grade 75), WELDABLE DEFORMED BARS (ASTM A706), EPOXY COATED DEFORMED BARS (ASTM A615 / A775), WELDED WIRE REINFORCEMENT (ASTM A185), EPOXY COATED WELDED WIRE REINFORCEMENT (ASTM A185 / A884).

RE-3 DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI-318 AND ACI-315, UON.

RE-4 WHERE A 90-DEG, 135-DEG OR 180-DEG HOOK IS GRAPHICALLY INDICATED, PROVIDE CORRESPONDING ACI STANDARD HOOKS UON.

RE-5 DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCEMENT UON.

RE-6 REINFORCEMENT SHALL HAVE CONCRETE PROTECTION (CLEAR COVER) PER ACI 318 UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

RE-7 LAP REINFORCEMENT AS SPECIFICALLY DETAILED ON THE DRAWINGS. SEE LAP SPLICE AND EMBEDMENT SCHEDULE.

RE-8 UNLESS OTHERWISE NOTED ALL LAP SPLICES ARE TO BE TENSION LAP SPLICES PER LAP SPLICE AND EMBEDMENT SCHEDULE.

RE-9 PROVIDE MECHANICAL SPLICES FOR BARS LARGER THAN #11 OR WHERE INDICATED. PROVIDE TENSILE, PRE-QUALIFIED, WELDED OR THREADED MECHANICAL SPLICES UON.

RE-10 LAP WELDED WIRE REINFORCEMENT TWO PANEL SPACINGS, UON.

RE-11 PROVIDE LAP LOCATIONS AS FOLLOWS, UON:
A. GRADE BEAM / WALL (TOP HORIZONTAL REINFORCEMENT): AT CENTER OF SPAN
B. GRADE BEAM / WALL (BOTTOM HORIZONTAL REINFORCEMENT): AT SUPPORTS
C. WALL INSIDE FACE (VERTICAL REINFORCEMENT): AT SUPPORT
D. WALL OUTSIDE FACE (VERTICAL REINFORCEMENT): AT MIDDLEPOINT OF WALL
E. UNLESS OTHERWISE NOTED TERMINATE BARS AT DISCONTINUOUS ENDS WITH STANDARD HOOKS.

RE-12 PROVIDE EPOXY COATED REINFORCEMENT AND ACCESSORIES IN AREAS OF DIRECT EXPOSURE TO THE ENVIRONMENT, CHEMICALS, OR DE-ICING FOR THE AREAS INDICATED ON THE DRAWINGS.

CJ CONCRETE CONSTRUCTION JOINTS

CJ-1 PROVIDE CONSTRUCTION JOINTS IN ACCORDANCE WITH ACI-318. SUBMIT SHOP DRAWINGS SHOWING PROPOSED CONSTRUCTION JOINT LOCATIONS, DETAILS AND THE PLACEMENT SEQUENCE FOR THE STRUCTURAL ENGINEER'S APPROVAL PRIOR TO PROCEEDING WITH WORK.

CJ-2 NO HORIZONTAL CONSTRUCTION JOINTS WILL BE PERMITTED IN BEAMS, UPTURNED BEAMS, WALLS AND SLABS UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS OR APPROVED IN WRITING BY THE DESIGN PROFESSIONALS PRIOR TO CONSTRUCTION.

CJ-3 PLACE VERTICAL CONSTRUCTION JOINTS TO PROVIDE A 60 FT MAXIMUM LENGTH OF CONCRETE PLACEMENT AND LOCATE AS FOLLOWS:
A. FOUNDATION WALLS: MINIMUM OF 8 FT FROM ANY WALL INTERSECTION, PILASTER, PIER, OR WALL OPENING.
B. BEAMS AND GRADE BEAMS: WITHIN THE MIDDLE THIRD OF THE CLEAR SPAN AVOIDING LAP SPLICES, SUBJECT TO SER APPROVAL.

CJ-4 PROVIDE CONTINUOUS WATERSTOPS AT ALL CONSTRUCTION JOINTS EXPOSED TO SOIL OR WATER, AS DESCRIBED IN THE SPECIFICATIONS.

SP STRUCTURAL PRECAST CONCRETE

SP-1 TYPICAL DETAILS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF PRECAST CONCRETE. PROVIDE DESIGNS THAT MEET INDICATED CRITERIA AND LISTED CODES AND STANDARDS.

SP-2 PROVIDE CONNECTIONS BETWEEN ADJACENT PRECAST UNITS TO TRANSMIT 200 POUNDS PER LINEAR FOOT OF DIAPHRAGM LOADS.

SP-3 PROVIDE CAMBER TO LIMIT DEFLECTION SUCH THAT NO POINT OF THE DEFLECTED STRUCTURE EXCEEDS [XXX] BELOW THE STATED ELEVATION. CAMBER DESIGN SHALL INCLUDE EFFECTS OF LONG-TERM DEFLECTION, SHRINKAGE, CREEP, AND MAXIMUM ALLOWABLE CONSTRUCTION TOLERANCES.

SP-4 DO NOT USE POWER-DRIVEN ANCHORS OR ANCHORS WHICH REQUIRE DRILLING AT PRESTRESSED UNITS. SUBMIT PROPOSED ANCHOR PROCEDURES FOR PRECAST UNITS TO THE DESIGN PROFESSIONALS AND PRECAST SUPPLIER FOR REVIEW.

MA MASONRY

MA-1 LOAD BEARING, NON-LOAD BEARING, AND BACKUP WALL CONCRETE MASONRY CONSTRUCTION SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

CONCRETE BLOCK: ASTM C90, NORMAL WEIGHT (135 PCF)
(MINIMUM 28 DAY COMPRESSIVE STRENGTH 1900 PSI FOR S OR M OR 2150 PSI FOR N)
MORTAR: ASTM C270, TYPE S OR M PORTLAND CEMENT / LIME ONLY
(USE TYPE M MORTAR WHEN MASONRY IS IN DIRECT CONTACT WITH SOIL; TYPE S IN ALL OTHER CONDITIONS; TYPE N MAY BE USED FOR INTERIOR NON-LOAD BEARING WALLS AT CONTRACTOR'S OPTION)
GROUT: ASTM C476 (MINIMUM 28 DAY COMPRESSIVE STRENGTH 2000 PSI)
REINFORCEMENT: ASTM A615, GRADE 60
JOINT REINFORCEMENT: ASTM A82, TRUSS OR LADDER TYPE
EXTERIOR JT REINF: GALVANIZE PER ASTM A153
INTERIOR JT REINF: GALVANIZE PER ASTM A153
TYPICAL GALVANIZE PER ASTM A153
RELATIVE HUMIDITY >75% GALVANIZE PER ASTM A153

MA-2 THE MINIMUM COMPRESSIVE STRENGTH OF THE MASONRY (F'm) SHALL BE 1,500 PSI, UON, AS DETERMINED IN ACCORDANCE WITH THE ABOVE REFERENCED SPECIFICATIONS FOR MASONRY STRUCTURES.

MA-3 CALCIUM CHLORIDE SHALL NOT BE USED IN MORTAR OR GROUT.

MA-4 PROVIDE FULL FACE SHELL MORTAR COVERAGE ON MASONRY UNIT HORIZONTAL AND VERTICAL (BED AND HEAD) FACE SHELL JOINTS.

MA-5 PROVIDE FULL MORTAR COVERAGE ON WEBS AROUND ALL GROUDED CELLS.

MA-6 LAY MASONRY UNITS IN RUNNING BOND UON WITH UNITS DESIGNED TO ALIGN WITH WEBS IN EACH COURSE.

MA-7 REFER TO PLANS AND DETAILS FOR BONDED JOINT REQUIREMENTS AT WALL CORNERS AND INTERSECTIONS, WHERE INDICATED ON DRAWINGS. INTERLOCK WALLS WITH METAL TIES, ANCHORS OR PREFABRICATED JOINT REINFORCEMENT UON ON DRAWINGS OR SEE SPECIFICATIONS.

MA-8 GROUT SOLID CELLS WITH REINFORCEMENT. GROUT SOLID CELLS IN BELOW GRADE CONSTRUCTION WHERE MASONRY IS IN CONTACT WITH SOIL.

MA-9 GROUT MINIMUM OF ONE (1) CELL WITH REINFORCEMENT AT EACH SIDE OF ALL OPENINGS. SEE DRAWINGS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.

MA-10 WHERE STRAP ANCHORS ARE REQUIRED BY DRAWINGS OR SPECIFICATIONS, LOCATE THEM AT DIFFERENT BED JOINTS

SC STRUCTURAL STEEL CONNECTIONS

SC-1 ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISC-LOAD AND RESISTANCE FACTOR DESIGN.

SC-2 ALL CONNECTIONS, UNLESS INDICATED AS BEING FULLY DESIGNED ON THE STRUCTURAL DRAWINGS, SHALL BE DESIGNED AND DETAILED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED. THE DESIGN AND DETAILING SHALL COMPLY WITH ALL APPLICABLE CODES AND SPECIFICATION CRITERIA.

SC-3 UNLESS OTHERWISE NOTED, DETAILS INDICATED ON DRAWINGS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS. DETAILS INDICATED ON DRAWINGS ARE NOT INTENDED TO CONVEY COMPLETE CONNECTOR SIZES, PLATE SIZES, WELD SIZES, NUMBER OF BOLTS, OR ANY OTHER SPECIFIC INFORMATION THAT IS OBTAINED THROUGH DESIGNING OF AN INDIVIDUAL CONNECTION FOR A GIVEN SET OF LOADS. THESE DETAILS DO NOT SHOW ERECTION AIDS. PROVIDE ERECTION AIDS AS REQUIRED AND REMOVE THEM AFTER WORK IS COMPLETE.

SC-4 SUBMIT CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS TO THE SER FOR REVIEW PRIOR TO REVIEW OF SHOP DRAWINGS. FOR BIDDING PURPOSES, WHERE NO MOMENT IS INDICATED ON DRAWINGS PROVIDE FULL MOMENT CAPACITY OF MEMBER (1.8 Fy z) AND WHERE NO VERTICAL SHEAR IS INDICATED ON DRAWINGS PROVIDE FULL SHEAR CAPACITY (.54 Fy d tw).

SC-5 ALTERNATE CONNECTIONS TO THOSE SHOWN ON DRAWINGS WILL ONLY BE CONSIDERED ACCEPTABLE IF CONTRACTOR FORMALLY SUBMITS ALTERNATES AND THE SER APPROVES THE SUBMITTAL.

SC-6 FOR CONNECTION DESIGN AND DETAILING, SET CONNECTION WORK POINT AT INTERSECTION OF MEMBER CENTERLINES, UNON.

SC-7 DESIGN ALL CONNECTIONS FOR FORCES INDICATED ON THE DRAWINGS. CONNECTION DESIGN FORCES INDICATED ON THE DRAWINGS ARE FACTORED UNON.

SC-8 DESIGN OF MEMBERS IS BASED ON ASSUMPTION OF 7/8-INCH DIAMETER AND 1 1/8-INCH DIAMETER A325 OR A490 BOLTS. USE NO MORE THAN TWO BOLT DIAMETERS, ONE GRADE PER DIAMETER, SKIP ONE SIZE BETWEEN DIAMETERS.

SC-9 BEAM CONNECTION DESIGN NOTES

SEE PLANS AND ELEVATIONS FOR BEAM REACTIONS AND MOMENTS THAT ARE LARGER THAN THE VALUE SHOWN IN SCHEDULES.

DEVELOP THE LARGER OF THE BEAM SHEAR REACTION SCHEDULED, SHOWN ON PLANS OR SHOWN ON ELEVATIONS.

DEVELOP THE LARGER OF THE MOMENT SCHEDULED, SHOWN ON PLANS OR SHOWN ON ELEVATIONS.

DEVELOP THE LARGER OF THE AXIAL FORCE DENOTED AS P OR TF SHOWN ON PLANS OR SHOWN ON ELEVATIONS. SEE STEEL BEAM LEGEND.

WHERE NO AXIAL FORCE IS SHOWN ALL BEAM CONNECTIONS SHALL BE DESIGNED FOR AN AXIAL FORCE EQUAL TO THE VERTICAL SHEAR REACTION, 10 KIPS MINIMUM. FOR THE DESIGN OF THE CONNECTIONS, THE SHEAR FORCE AND THE AXIAL TENSILE FORCE NEED NOT BE CONSIDERED TO ACT SIMULTANEOUSLY.

ALL BEAM REACTIONS, AXIAL FORCES AND MOMENTS ACT CONCURRENTLY. UNON, BEAM REACTIONS ACT IN GRAVITY DIRECTION WHILE AXIAL FORCES AND MOMENTS ARE TO BE CONSIDERED REVERSIBLE.

EXCEPT WHERE "SNUG TIGHT" INSTALLATION IS SPECIFICALLY PERMITTED ON DRAWINGS OR "SLIP CRITICAL" DETAILING IS REQUIRED, ALL HIGH STRENGTH BOLTS SHALL BE INSTALLED AS FULL PRETENSIONED BOLTS.

AT A MINIMUM ALL BOLTED MOMENT AND AXIAL CONNECTION SHALL HAVE PRETENSIONED BOLTS IN STANDARD HOLES.

BOLTED MOMENT CONNECTIONS AT CANTILEVERS AND BACKSPANS SHALL USE SLIP CRITICAL BOLTS.

DO NOT USE OVERSIZED OR SLOTTED HOLES FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE SER.

SC-10 ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE STRUCTURAL WELDING CODE, ANSIAWIS D1.1, LATEST EDITION. ALL WELD SIZES SHALL BE THE LARGER OF THE SIZE REQUIRED BY CONNECTION FORCES, THE MINIMUM SIZE PER ANSIAWIS D1.1, OR 3/16 INCH MINIMUM FILLET WELD UNON. ANY WELD SIZES SHOWN ON THE DESIGN DRAWINGS ARE CONSIDERED EFFECTIVE WELD SIZES AND SHALL BE INCREASED IN ACCORDANCE WITH AWS AS REQUIRED BY GAPS OR SKEWS BETWEEN COMPONENTS.

SC-11 USE RUNOFF TABS AT ALL BEVEL AND FULL PENETRATION WELDS. REMOVE RUNOFF TABS BY NEAT CUTS AFTER WELD IS COMPLETED. GRIND SMOOTH WHERE REQUIRED BY DETAIL.

SC-12 WHERE REQUIRED BY DETAIL REMOVE WELD BACK UP BARS AND GRIND SMOOTH AFTER WELD IS COMPLETED.

SC-13 FOR TRUSS DETAILING USE A MINIMUM BOLT SPACING OF 3 TIMES THE BOLT DIAMETER AND A MINIMUM EDGE DISTANCE OF 2 INCHES. ALSO REFER TO TYPICAL DETAILS.

SC-14 DESIGN, DETAIL, FURNISH AND INSTALL STIFFENERS, CONTINUITY PLATES, DOUBLER PLATES, OR OTHER NECESSARY ADDITIONAL LOCAL STRENGTHENING MEASURES AS REQUIRED. MEMBER SIZES INDICATED ON THE DRAWINGS ARE BASED ON MEMBER BEHAVIOR AWAY FROM CONNECTIONS.

SD STEEL DECK GENERAL REQUIREMENTS

SD-1 THE DESIGN, MANUFACTURE AND ERECTION OF STEEL DECK AND ITS ANCHORAGE SHALL, AT A MINIMUM, BE IN ACCORDANCE WITH "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS" OF THE STEEL DECK INSTITUTE (SDI), CURRENT EDITION AND "SPECIFICATIONS FOR DESIGN OF LIGHT GAGE COLD FORMED STEEL STRUCTURAL MEMBERS" AS PUBLISHED BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI), CURRENT EDITION.

SD-2 FABRICATE STEEL DECK UNITS AND ACCESSORIES FROM STEEL SHEET CONFORMING TO ASTM A653 SQ GRADE 40, WITH A MINIMUM YIELD STRENGTH OF 40 KSI.

SD-3 CONFIGURE ALL STEEL DECK USING THREE SPAN CONTINUOUS LAYOUTS WHEREVER POSSIBLE.

SD-4 DESIGN STEEL DECK FOR UNSHORED CONDITIONS.

DK STEEL COMPOSITE DECK AND FORM DECK

DK-1 COMPOSITE DECK AND FORM DECK SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:

ASTM A653-HOT-DIPPED GALVANIZED CONFORMING TO ASTM A924 G60, OR ASTM A1008, GRADE C WITH PHOSPHATE TREATED AND BAKED ON RUST-INHIBITIVE PAINT

DK-2 DESIGN AND DETAIL COMPOSITE DECK TO SUPPORT SCHEDULED DESIGN LOADS, WORKING AS A PART OF COMPOSITE SLAB.

DK-3 FASTEN COMPOSITE FLOOR DECK UNITS AS FOLLOWS: A. TO THE STEEL FRAMEWORK AT ENDS OF UNITS AND AT ALL INTERMEDIATE SUPPORTS; BY PUDDLE WELDS NOT LESS THAN 3/4 INCH DIAMETER SPACED AT 12 INCHES ON CENTER MAXIMUM, UNON. WHERE PRESENT, A HEADED STUD CAN REPLACE A PUDDLE WELD.

B. AT SIDE LAPS OF ADJACENT UNITS BETWEEN SUPPORTS AT INTERVALS NOT EXCEEDING 24 INCHES ON CENTER UNON.

DK-4 COMPOSITE FLOOR DECK HANGER TABS LOADS SHALL NOT EXCEED 60 LBS PER HANGER TAB. IN ADDITION LOADS ON HANGERS SHALL BE DISTRIBUTED IN SUCH A MANNER THAT THE TRIBUTARY LOADS FOR EACH HANGER SHALL NOT EXCEED 5 POUNDS PER SQUARE FOOT. DO NOT HANG MEP EQUIPMENT AND PIPING DIRECTLY FROM STEEL DECK.

DK-5 DISTRIBUTE STEEL STUDS UNIFORMLY OVER BEAM SPAN UNLESS OTHERWISE NOTED ON DRAWINGS. MAXIMUM SPACING OF 3/4 INCH HEADED STUDS SHALL NOT EXCEED 12" ON CENTER (ONE STUD PER FOOT) UNLESS OTHERWISE NOTED ON PLAN.

DK-6 HEADED SHEAR STUDS SHALL EXTEND A MINIMUM OF 1 1/2 INCHES ABOVE THE TOP OF STEEL DECK WITH A MINIMUM CLEAR COVER OF 1/2 INCH FROM THE TOP OF SLAB.

DK-7 STEEL COMPOSITE DECKS ARE TO BE POURED-TO-THICKNESS OR AS INDICATED ON THE DRAWINGS.

DK-8 DESIGN AND DETAIL STEEL COMPOSITE DECK, FORM DECK, DECK ENCLOSURES, AND DECK ACCESSORIES FOR CONSTRUCTION LOADS. IN DETERMINING CONSTRUCTION LOADING OF FRESH CONCRETE, ACCOUNT FOR RELEVANT FACTORS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

A. THE PLANNED CONCRETE PLACEMENT METHODS
B. ADDITIONAL CONCRETE WEIGHT DUE TO DECK DEFLECTION
C. WHERE DECKS ARE POURED TO LEVEL ADDITIONAL CONCRETE WEIGHT DUE TO CUMULATIVE DEFLECTION OF INDIVIDUAL BEAMS AND GIRDERS LESS ANY INDICATED CAMBER.

CI CONTROLLED INSPECTIONS

CI-1 THE FOLLOWING CONTROLLED INSPECTIONS ARE REQUIRED TO BE PERFORMED IN ACCORDANCE WITH THE BUILDING CODE OF THE CITY OF NEW YORK

Table with 3 columns: ITEM, NYC CODE REF SECTION. Lists items like STRUCTURAL STEEL - WELDING, CONCRETE - CAST IN PLACE, etc.

CI-2 ANY HIGH STRENGTH CEMENTIOUS GROUT USED AS PART OF THE PRIMARY STRUCTURAL SYSTEM WILL BE TESTED IN ACCORDANCE WITH 1704.4

PA POST-INSTALLED ANCHORS

PA-1 ADHESIVE ANCHOR SYSTEMS USED FOR DESIGN: SEISMIC DESIGN CATEGORY A - F HIT-HY 150 MAX-SD EPOXY ADHESIVE ANCHOR HILTI, TULSA, OK

SEISMIC DESIGN CATEGORY A - B AT LOCATIONS SPECIFICALLY NOTED IN DETAILS ONLY HIT-HY 150 MAX EPOXY ADHESIVE ANCHOR HILTI, TULSA, OK

OVERHEAD AND/OR CONSTANT TENSION EPOXY ANCHOR INSTALLATIONS NOT SHOWN ON THE DRAWINGS SHALL NOT BE PERMITTED UNLESS EACH CONDITION IS REVIEWED AND APPROVED IN WRITING BY THE SER.

PA-2 FIELD DRILLED EXPANSION ANCHOR SYSTEMS USED FOR DESIGN: SEISMIC DESIGN CATEGORY A - F KWIK BOLT T2 HILTI, TULSA, OK

SEISMIC DESIGN CATEGORY A - B AT LOCATIONS SPECIFICALLY NOTED IN DETAILS ONLY KWIK BOLT 3 HILTI, TULSA, OK

PA-3 FIELD DRILLED THREADED SCREW ANCHOR SYSTEMS USED FOR DESIGN: HUS-EZ HILTI, TULSA, OK

PA-4 ALTERNATIVE SYSTEM EQUIVALENT TO OR EXCEEDING THE PROPERTIES OF THE SYSTEMS ABOVE WILL BE CONSIDERED AS A SUBSTITUTION REQUEST. SEE PROJECT SPECIFICATIONS.

PA-5 ANCHORS ARE TO BE MINIMUM 3/4" DIAMETER WITH A MINIMUM EMBEDMENT OF 6", UNON.

PA-6 INSTALL ANCHORS TO MEET THE REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS AND THE MANUFACTURER'S RECOMMENDATIONS.

PA-7 LOCATE, BY NON-DESTRUCTIVE MEANS, AND AVOID ALL EXISTING REINFORCEMENT PRIOR TO INSTALLATION OF ANCHORS. IF EXISTING REINFORCING LAYOUT PROHIBITS THE INSTALLATION OF ANCHORS AS INDICATED IN THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS IMMEDIATELY.

PA-8 INSTALL MASONRY ANCHORS IN SOLID MASONRY OR IN HOLLOW MASONRY THAT HAS BEEN GROUTED SOLID AT LEAST ONE COURSE ABOVE AND ONE COURSE BELOW THE ANCHOR, UNON.

EX EXISTING CONDITIONS

EX-1 ALL EXISTING CONDITIONS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING ARE BASED ON THE ORIGINAL DESIGN DRAWINGS BY OTHERS. ALL DIMENSIONS, LOCATIONS, SIZES AND RELATIONSHIP TO NEW STRUCTURE MUST BE FIELD VERIFIED BY THE CONTRACTOR.

- 1. HIGHLINE
2. LIRR STRUCTURES SUCH AS MAINTENANCE OF EQUIPMENT CONTROL TOWER SUBSTATION RAMPS PERIMETER WALLS TRACKS UTILITIES
3. 11TH AVE
4. 10TH AVE
5. DEP FACILITIES
6. TOWER C

EX-2 EXISTING CONDITIONS ARE BASED ON THE FOLLOWING:

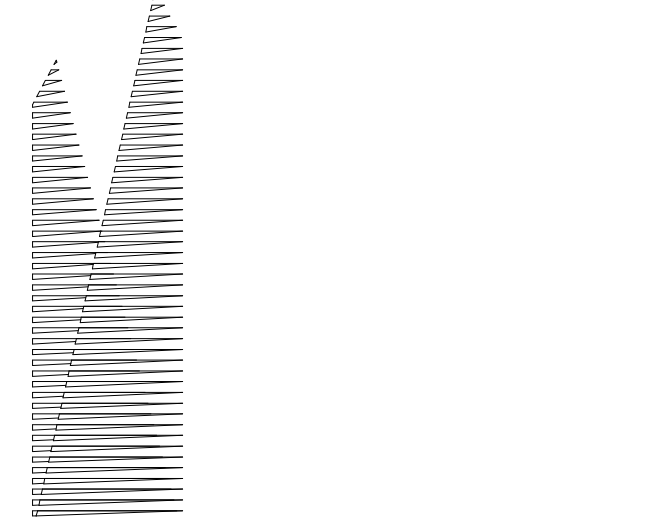
- A. EXISTING UTILITIES ARE BASED ON LIRR MTA DRAWINGS FOR WEST SIDE STORAGE YARD COMPLEX, CONTRACT NO. 1-02-21154-0-0 DATED AUG 12, 1982.
B. EXISTING SUBSTATION, MAINTENANCE OF EQUIPMENT BUILDING AND CONTROL TOWER IS BASED ON LIRR MTA DRAWINGS FOR WEST SIDE STORAGE YARD COMPLEX, CONTRACT NO. 1-02-21020-0-0 DATED FEB. 28, 1983.
C. EXISTING AMTRAK TUNNEL AND VIADUCT INFORMATION IS BASED ON REFERENCE DRAWINGS FROM LIRR MTA DRAWINGS FOR WEST SIDE STORAGE YARD COMPLEX, CONTRACT NO. 1-02-21064-0-0.
D. EXISTING FOUNDATIONS IN THE MABSTOA BUS GARAGE IS BASED ON LIRR MTA DRAWINGS FOR WEST SIDE STORAGE YARD COMPLEX, CONTRACT NO. 1-02-21064-0-0 DATED FEB. 15, 1982.
E. COLUMN CLEARANCES ARE BASED ON STUDY BY AECOM DATED MAR 21, 2013.
F. EXISTING SITE CONDITIONS AND TRACKS ARE BASED ON SURVEY BY LANGAN DATED JAN. 15, 2013.

SLAB SCHEDULE table with columns: SLAB MARK, TOTAL SLAB THICKNESS AND CONCRETE TYPE, STEEL DECK (MIN), CONCRETE TOPPING SLAB, fc, SLAB REINFORCEMENT, STUD LENGTH, NOTES.

1 SLAB SCHEDULE NOT TO SCALE

HUDSON YARDS PLATFORM

Address 530 WEST 33RD STREET NEW YORK, NY



Client Related Companies 60 Columbus Circle New York, NY 10023 Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group 330 Park Avenue, 17th Floor New York, NY 10022 Tel: 212.986.7514 Fax: 212.986.7510

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Structural Engineer Thornton Tomasetti, Inc. 51 Madison Avenue New York, NY 10017 Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security Hanson Transportation Group 100 Broadway New York, NY 10005 Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation Ove Arup & Partners P.C. 77 Water Street New York, NY 10005 Tel: 212.896.3000

LIRR Substation AECOM 605 Third Avenue New York, NY 10158 Tel: 212.973.9200 Fax: 212.682.6172

Table of project milestones and dates, including DOB POST-APPROVAL AMENDMENT, LIRR - M.O.E FINAL 100% DESIGN, etc.

Rev Plot

Date: 12/14/2012
Project No: N11330.00
Author: HYE

HYE -PL -FO-003.01

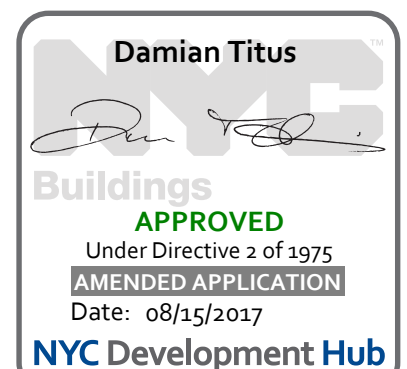
Structural GENERAL NOTES

Drawing Number / B-SCAN Drawing Number

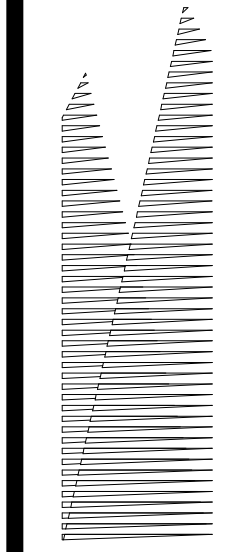
FO-003.01

SHEET 2 of 163

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*Construction Manager*  
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New York, NY 10017  
Tel: 212.708.3600

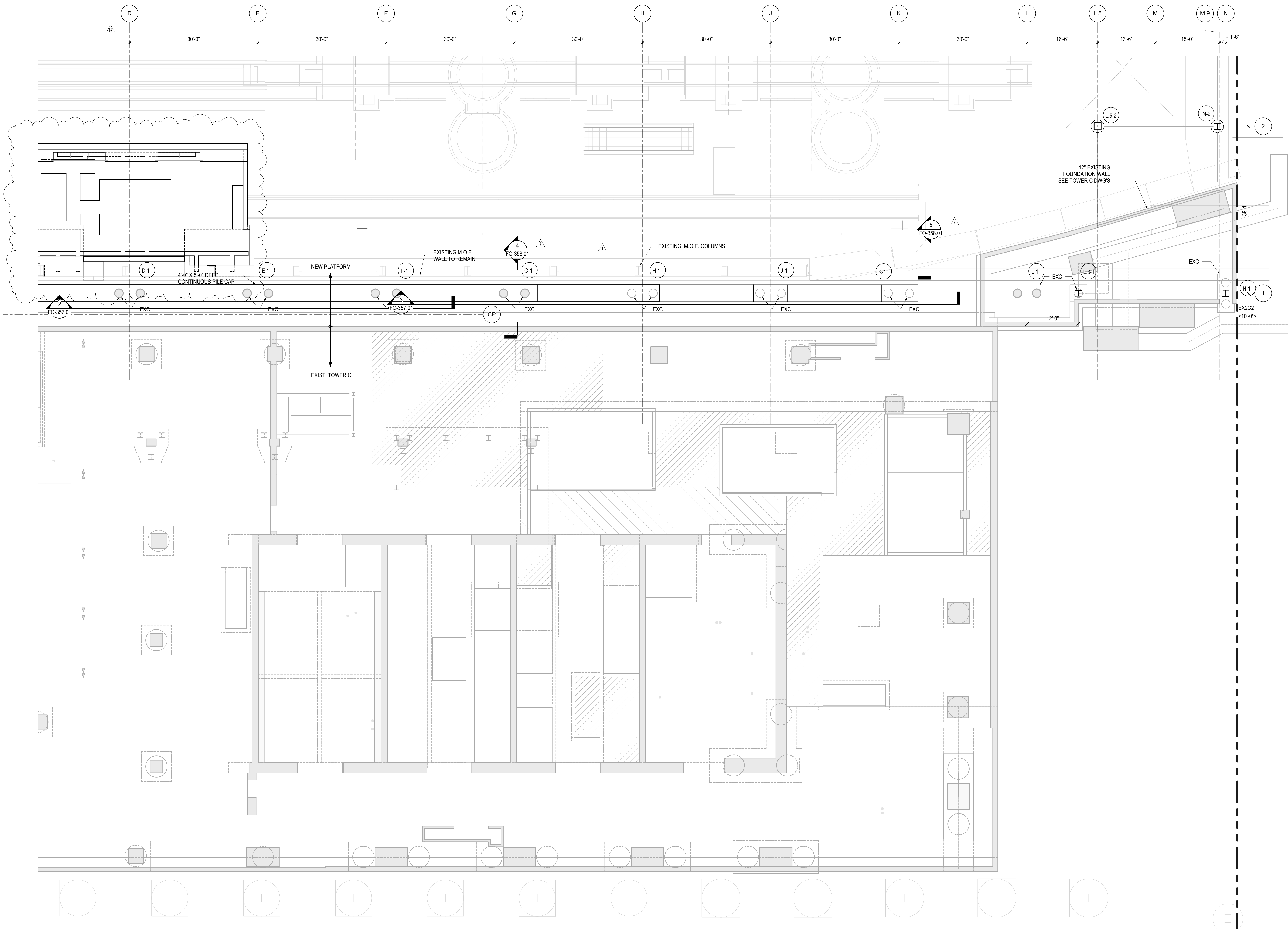
*Architect*  
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AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

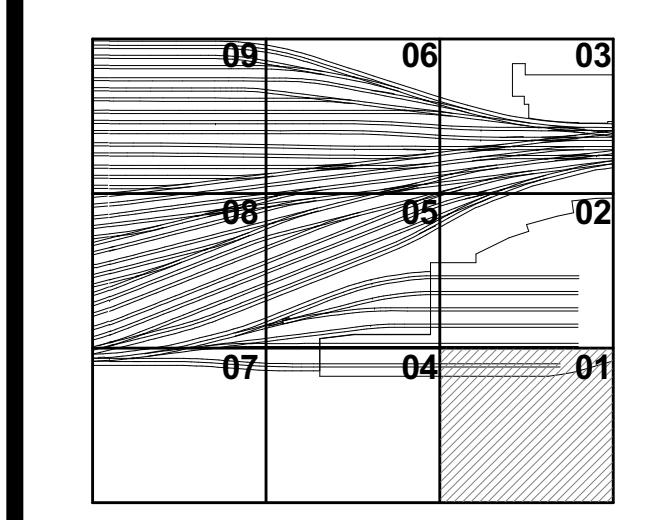


- SHEET NOTES:**
- SEE GENERAL NOTES FOR CONCRETE COMPRESSIVE STRENGTH
  - TI FOOTING = EL. 'YY'-Y', AS SHOWN ON PLAN
  - FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:  
DRAWING LISTS, GENERAL NOTES, AND LOADING DIAGRAMS S0 SERIES DRAWINGS  
TYPICAL FOUNDATION DETAILS S3 SERIES DRAWINGS  
STEEL COLUMN SCHEDULES S4 SERIES DRAWINGS  
STEEL AND CONCRETE TYPICAL DETAILS S7 SERIES DRAWINGS
  - MAXIMUM TOP OF ROCK SOCKET SHOWN ON S-310.00 TO S-313.00 IS THE HIGHEST ELEVATION AT WHICH ROCK SOCKET BEGINS.
  - ROCK COUNTOURS ARE BY LANGAN GEOTECHNICAL ENGINEERS. ACTUAL TOP OF ROCK AND SOCKET TO BE FIELD VERIFIED BY THE CONTRACTOR AND GEOTECHNICAL ENGINEER.
  - EXISTING UTILITIES, BUILDINGS AND TUNNELS ARE SHOWN FOR REFERENCE ONLY. LOCATIONS AND DIMENSIONS OF ALL EXISTING CONDITIONS ARE TO BE FIELD VERIFIED. SEE GENERAL NOTES SHEET S-003.00 FOR REFERENCES TO EXISTING DRAWINGS.

- DIMENSIONS ON SHEETS S-310.00 TO S-313.00 NOTED AS CLEARANCE TO TRACK IS THE DISTANCE BETWEEN CENTERLINE OF TRACK TO FACE OF COLUMN.
- DIMENSIONS SHOWN ON S-121.00 TO S-129.00 SHOW THE DISTANCE BETWEEN THE FACE OF EXISTING TUNNEL (V.I.F.) AND THE FACE OF PERMANENT STEEL CASING.
- IF THE PLANS ARE MODIFIED OR ADDITIONAL FOUNDATIONS ARE ADDED, THE ANALYSIS MUST BE RESUBMITTED OR THE FOUNDATIONS MUST COMPLY WITH THE MTA NYC TRANSIT GENERAL NOTE #1, #12, AND #13 ON S-005.00.

- LEGEND:**
- EXC INDICATES EXISTING CAISSON.
  - EXF INDICATES EXISTING FOOTING
  - CX-Y INDICATES NEW CAISSON
  - PCX-Y INDICATES NEW PILECAP
  - INDICATES NEW CONCRETE FILLED STEEL COLUMN
  - INDICATES NEW CONCRETE FILLED STEEL COLUMN
  - INDICATES NEW STEEL WIDE-FLANGE COLUMN
  - ▬ INDICATES NEW TIE BEAM
  - ⊕ INDICATES NEW ROCK ANCHOR
  - INDICATES ADD'L TOP REBAR IN NEW SLAB
  - - - INDICATES ADD'L BOTTOM REBAR IN NEW SLAB
  - SR-X INDICATES STUDRAIL IN NEW SLAB

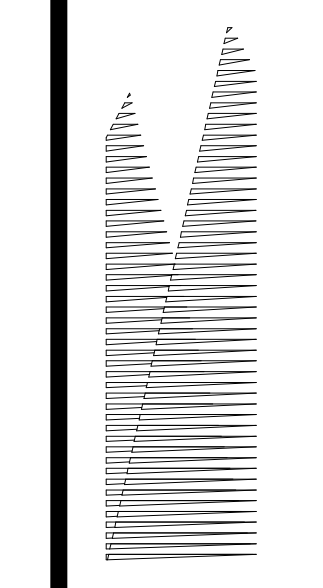
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L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0004	10/14/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	
DI-02 PHASE I STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DI-01 PHASE I STRUCTURE UPDATE	9/29/2013
LIRR - 90% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE 1 FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
NY - Description	000



Drawn: 12/14/12  
Project No: N11330.00  
Author: [Signature]  
Date: 08/15/2017

**HYE -PL -FO-121.01**  
**FOUNDATION PLAN SECTOR 01**

FO-121.01 SHEET 3 of 163



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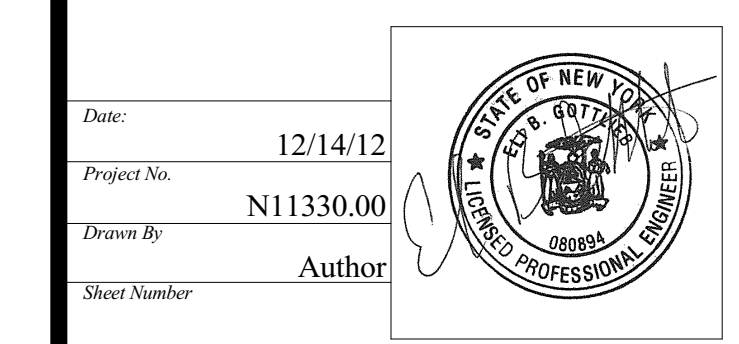
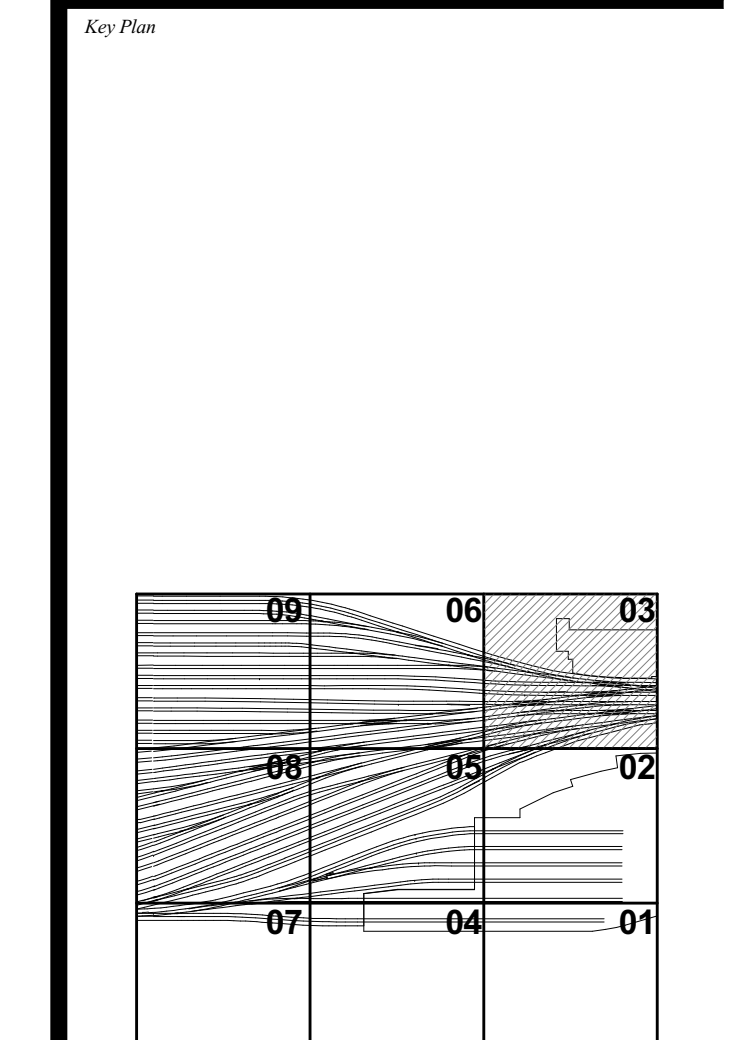
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LIRR Substation  
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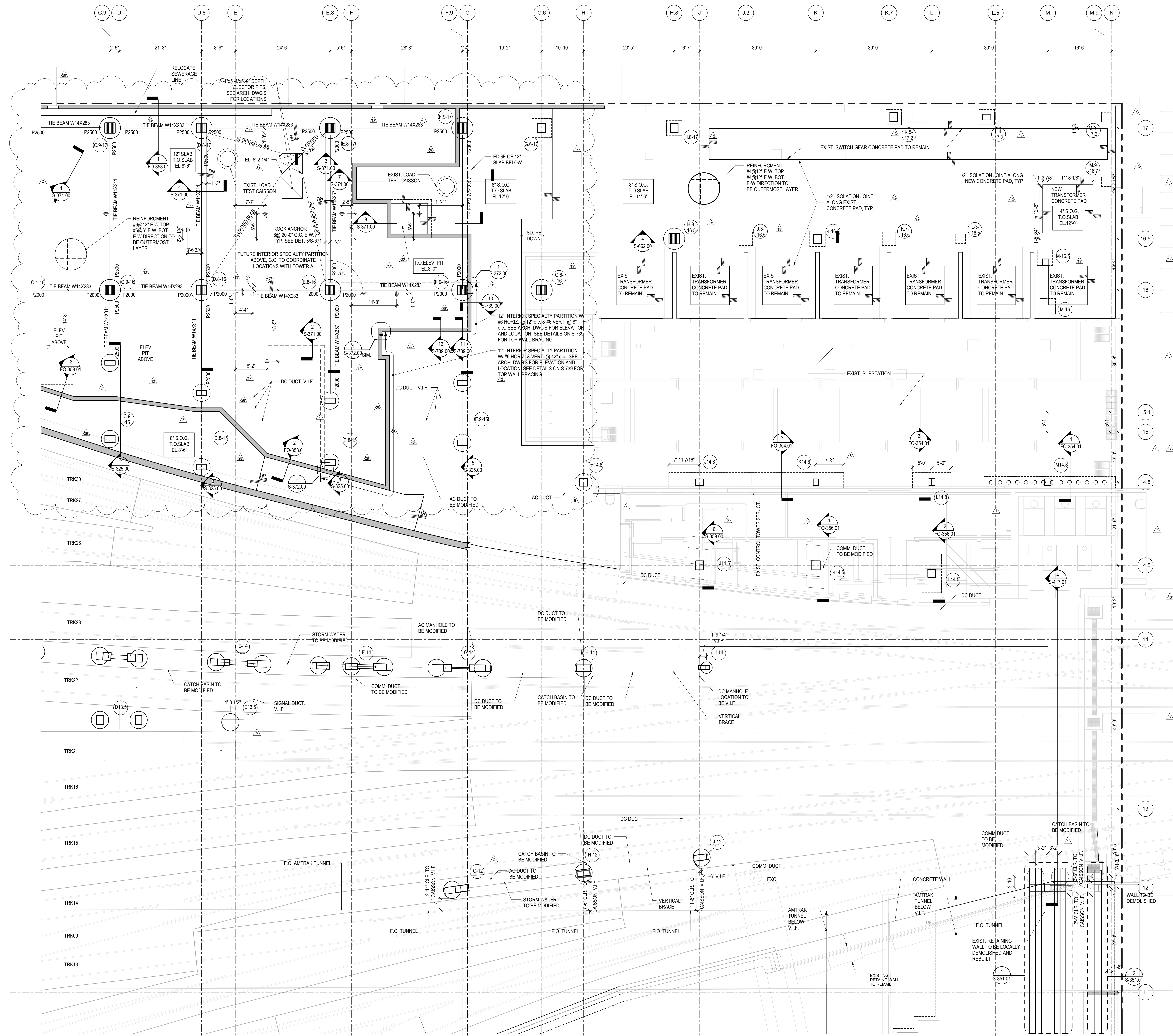
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3	ASH0001	4/20/2015
4	ASH0002	2/24/2015
5	DESIGN SUBMISSION FOR RECORDS	10/14/2014
6	ASH0003	10/14/2014
7	ASH0004 - TOWER A PRESSURE WALL	9/9/2014
8	ASH0005 - SEQUENCE 11 FRAMING	6/9/2014
9	ASH0006 - TOWER A SEQUENCE 11	3/7/2014
10	CAISSON STEEL	
11	ASH0007	2/20/2014
12	ASH0008	2/18/2014
13	PDC #4	2/5/2014
14	NYC DOB FILING	12/4/2013
15	L.I.R.R. - PRE-FINAL 100%	11/22/2013
16	Mod. PLATFORM SUBMISSION	
17	DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
18	NYC DOB FILING	10/4/2013
19	DL01 PHASE 1 STRUCTURE UPDATE	9/20/2013
20	L.I.R.R. - 90% SUBMISSION	8/9/2013
21	NYC DOB FILING	6/17/2013
22	L.I.R.R. - 60% SUBMISSION	5/29/2013
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24	L.I.R.R. - 30% SUBMISSION	2/15/2013
25	Rev. Description	000



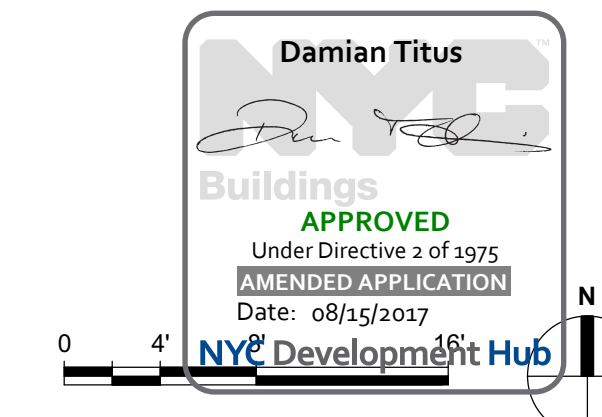
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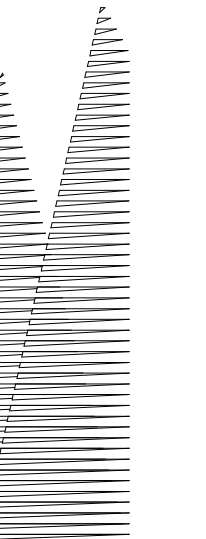
**FOUNDATION PLAN**  
**SECTOR 03**

Drawing Number / Revision Drawing Number  
**FO-123.01**



NOTES:  
1. REFER TO S-121.00 FOR FOUNDATION NOTES





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Construction Manager  
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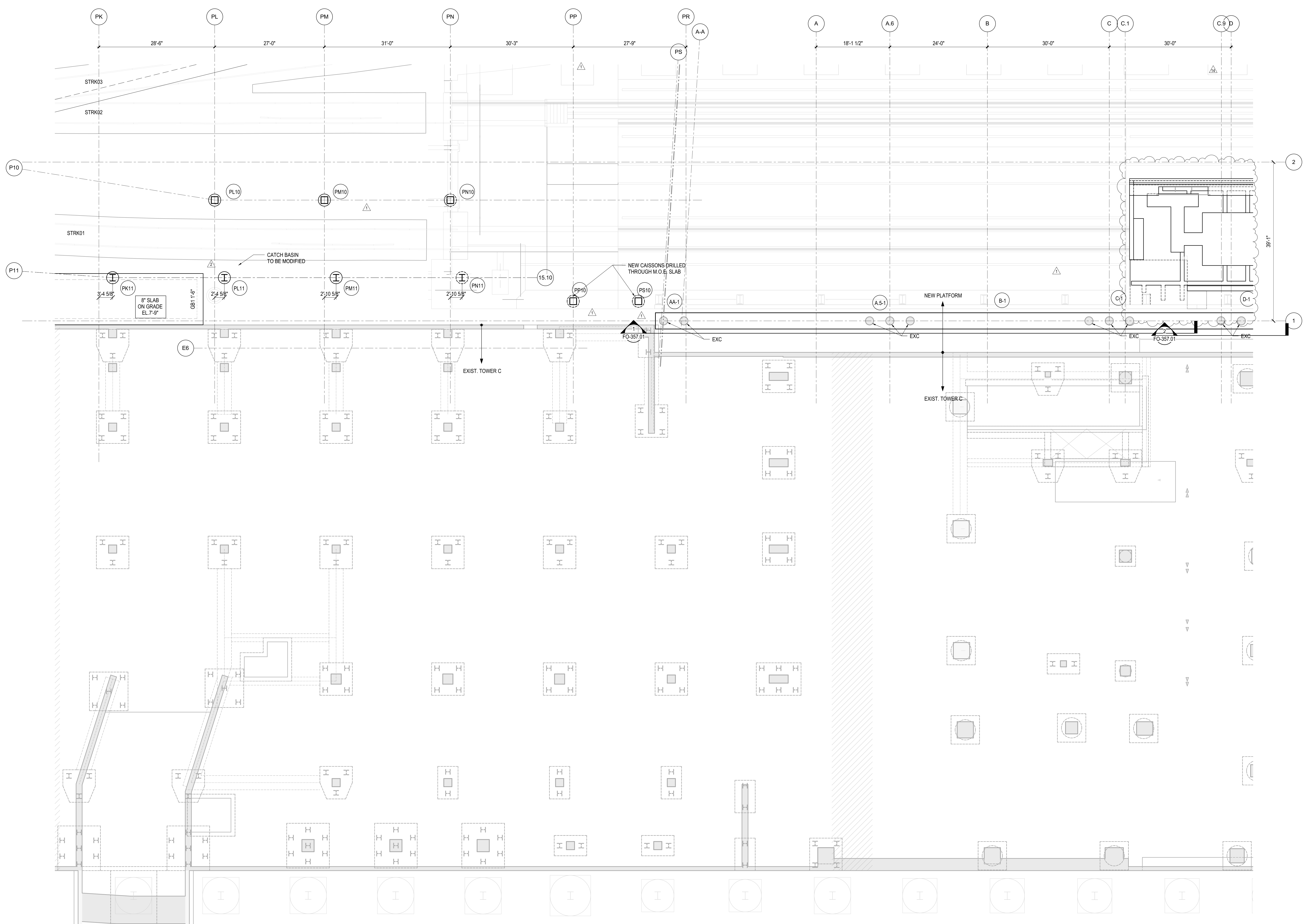
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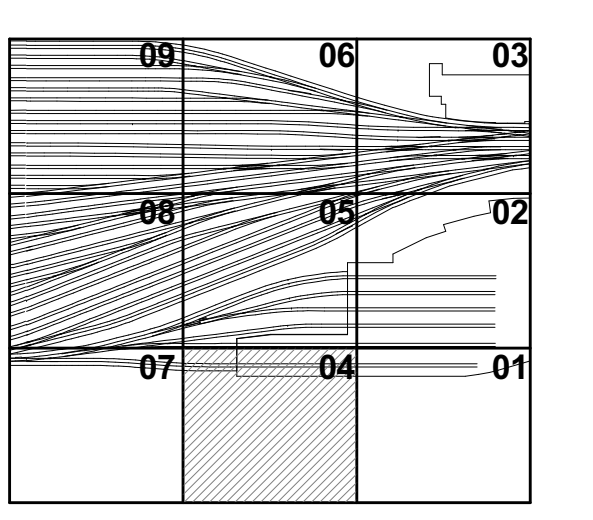
LJRR Ventilation  
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NOTES  
1. REFER TO S-121.00 FOR FOUNDATION NOTES

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/29/2013
LJRR - 90% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
LJRR - 60% SUBMISSION	5/29/2013
LJRR - 60% - PHASE 1 FDNS	3/29/2013
LJRR - 30% SUBMISSION	2/15/2013
NYC DOB FILING	08/



Date: 12/14/12  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

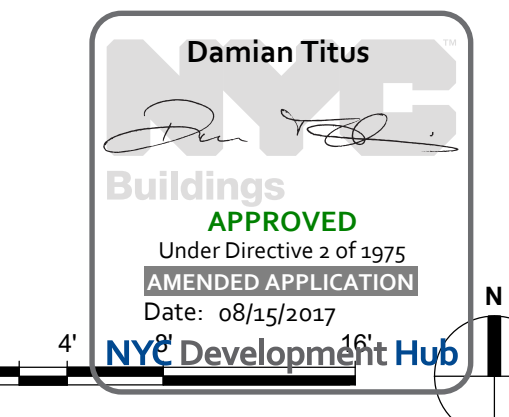
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**FOUNDATION PLAN SECTOR 04**

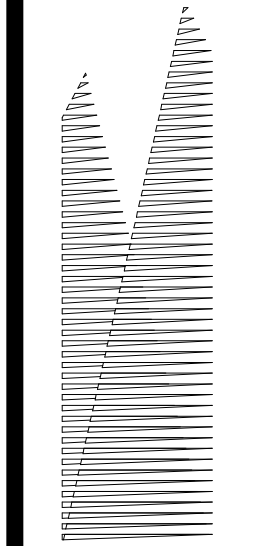
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**FO-124.01**

SHEET 5 of 163



APPROVED  
Under Directive 3 of 1975  
Professional Application  
Date: 08/15/2017  
NYC Development Hub



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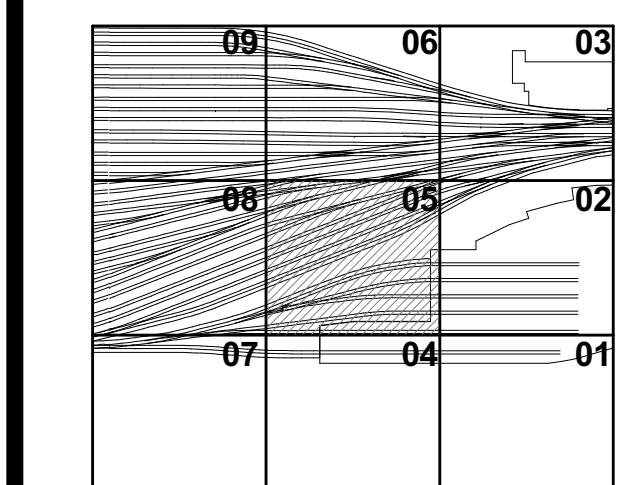
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Fishman Transportation Group  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH00049	3/13/2014
ASH00099 - PLATFORM REDESIGN	3/13/2014
FOR VESSEL	
ASH00003	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	
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NYC DOB FILING	10/4/2013
DEL01 PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE 1 FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
NYC DOB FILING	08/01/2012

Key Plan



Date: 12/14/12  
Project No: N11330.00  
Revision By: Author  
Sheet Number

**HYE -PL -FO-125.01**

FOUNDATION PLAN  
SECTOR 05

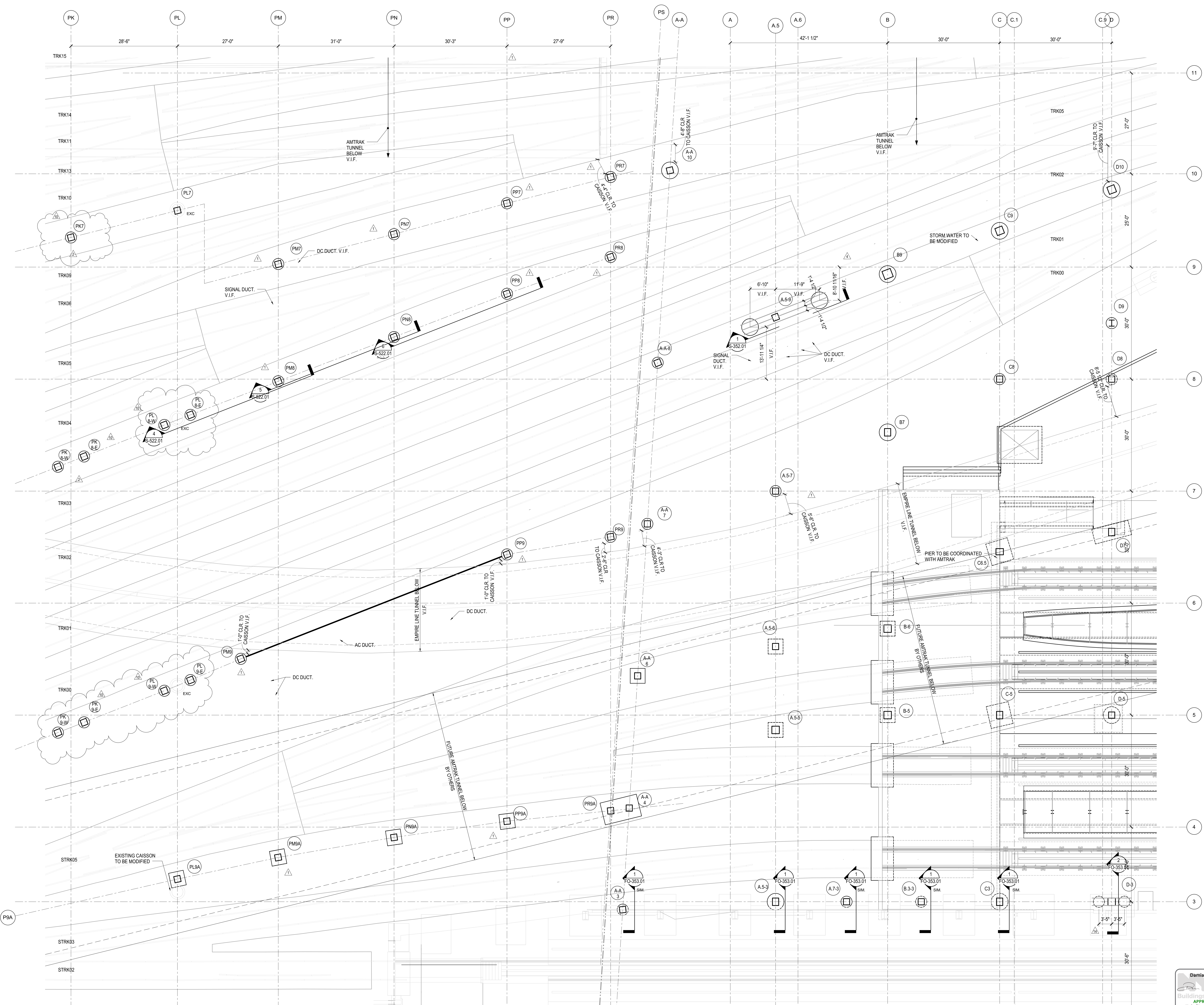
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**FO-125.01**

SHEET 6 of 163

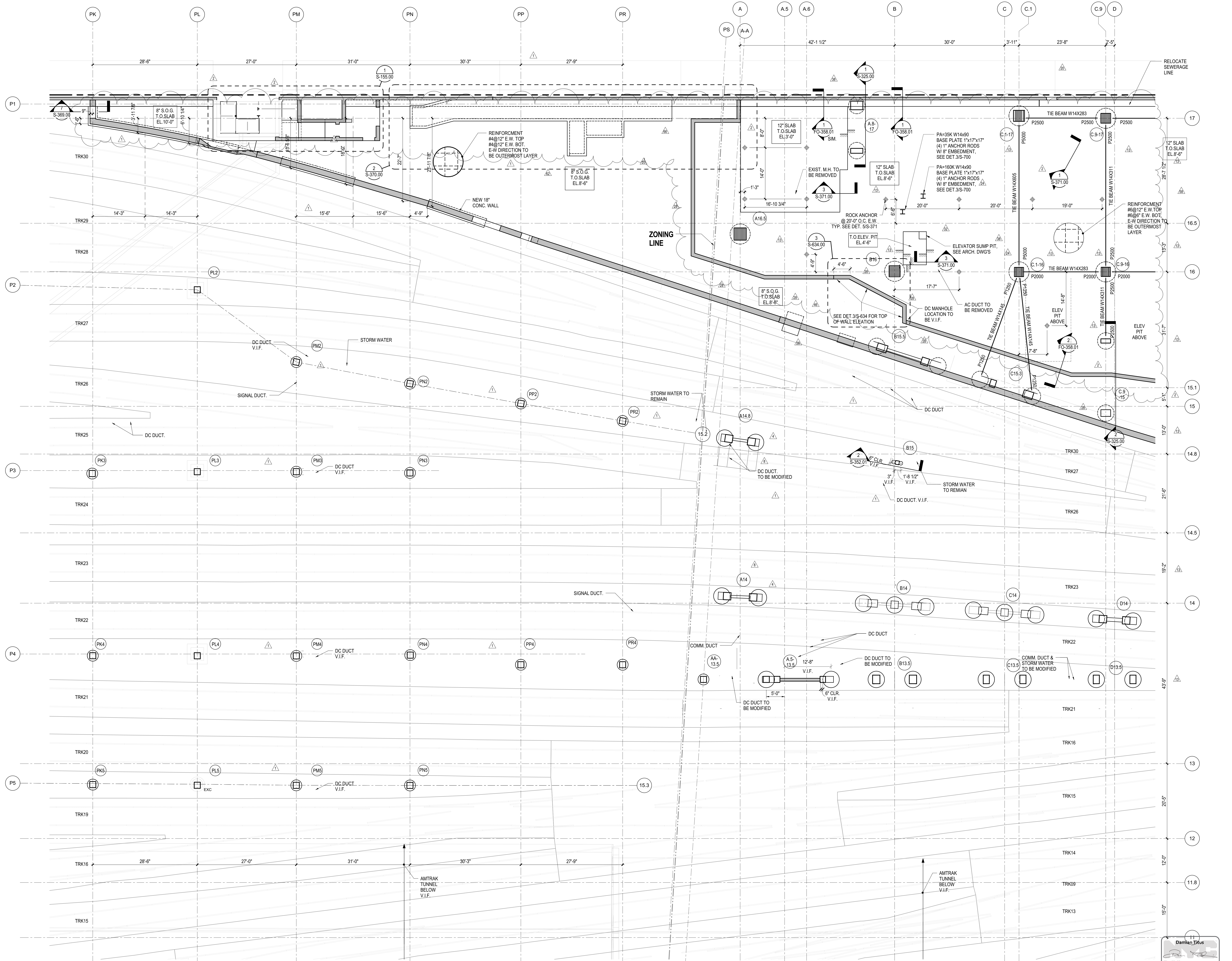
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NOTES  
1. REFER TO S-121.00 FOR FOUNDATION NOTES

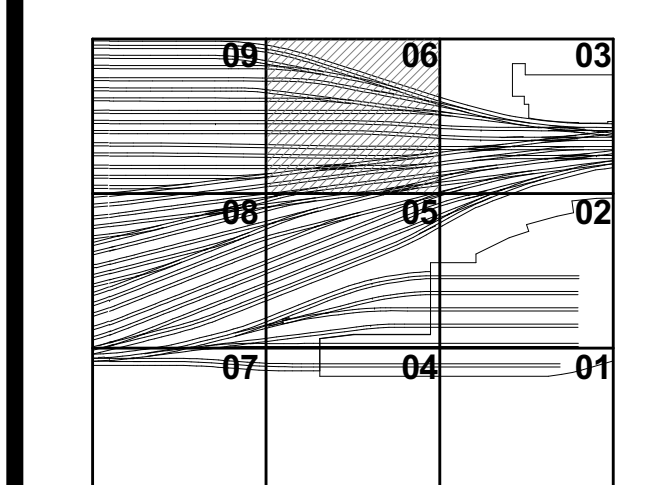
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Under Directive 3 of 1975  
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Date: 2/8/12/2012

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NOTES:  
1. REFER TO S-121.00 FOR FOUNDATION NOTES

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3	ASH00111	03/02/2016
4	ASH00073	4/20/2015
5	ASH00061	2/24/2015
6	LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS		
7	ASH00049	10/14/2014
8	ASH00042 - TOWER A PRESSURE WALL	9/30/2014
9	ASH00034	7/28/2014
10	ASH00025 - SEQUENCE 11 FRAMING	6/09/2014
11	ASH00015 - TOWER A - SEQUENCE 11	3/7/2014
CAISSON STEEL		
12	ASH00007	2/20/2014
13	PK #4	2/5/2014
14	ASH00003	1/14/2014
15	NYC DOB FILING	12/4/2013
16	LJRR - PRE-FINAL 100%	11/22/2013
Mod. PLATFORM SUBMISSION		
17	DL02 PHASE 1 STRUCTURAL UPDATE	11/11/2013
18	NYC DOB FILING	10/4/2013
19	DL01 PHASE 1 STRUCTURAL UPDATE	9/20/2013
20	LJRR - 90% SUBMISSION	8/09/2013
21	NYC DOB FILING	6/17/2013
22	LJRR - 60% SUBMISSION	5/29/2013
23	LJRR - 60% - PHASE 1 FDNS	3/29/2013
24	LJRR - 30% SUBMISSION	2/15/2013
25	Rev. 0	08/



Date: 12/14/12  
Project No: N11330.00  
Author: [Signature]  
Scale: As Shown

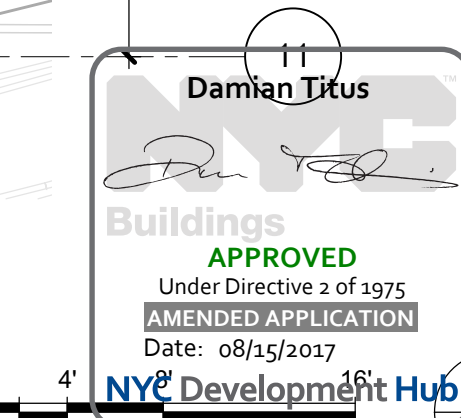
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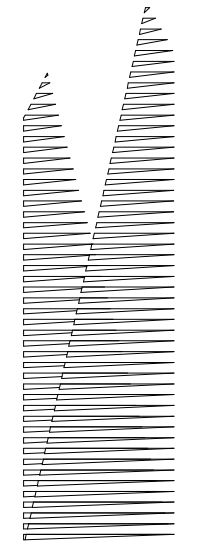
**FOUNDATION PLAN**  
**SECTOR 06**

Drawing Title  
Drawing Number / B.C.A.N. Drawing Number

**FO-126.01**

SHEET 7 of 163





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

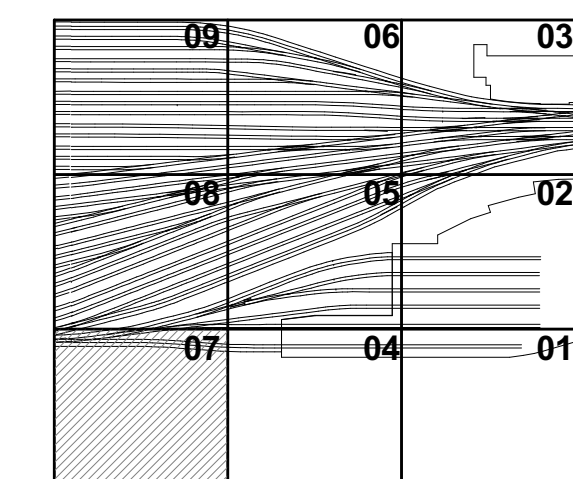
Civil, Mechanical, Electrical, Plumbing  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0080	05/26/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
MOE - PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/29/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE 1 FDN'S	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
Rev.	Date

Key Plan



Date: 12/14/12  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

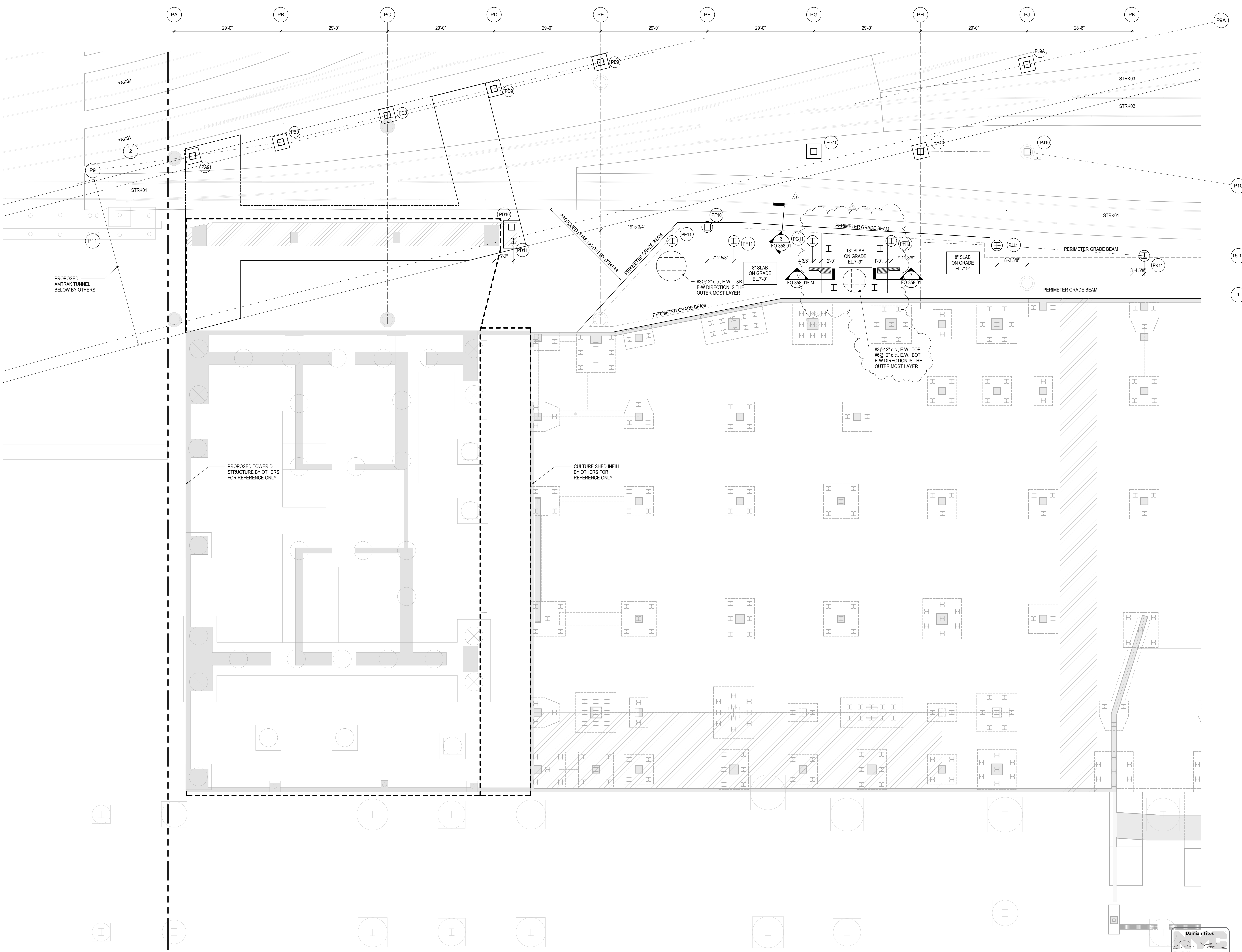
**HYE-PL-FO-127.01**

**FOUNDATION PLAN SECTOR 07**

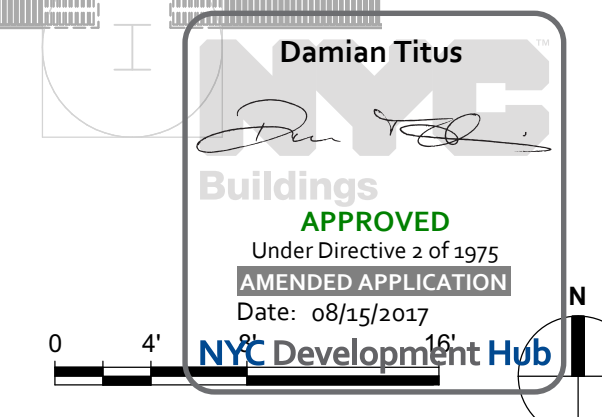
Drawing Title

**FO-127.01**

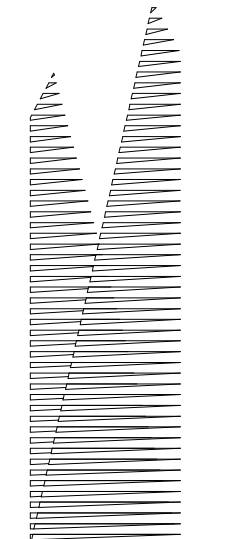
SHEET 8 of 163



NOTES  
1. REFER TO S-121.00 FOR FOUNDATION NOTES



FO-127.01  
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10/27/2016 11:23:39 AM



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

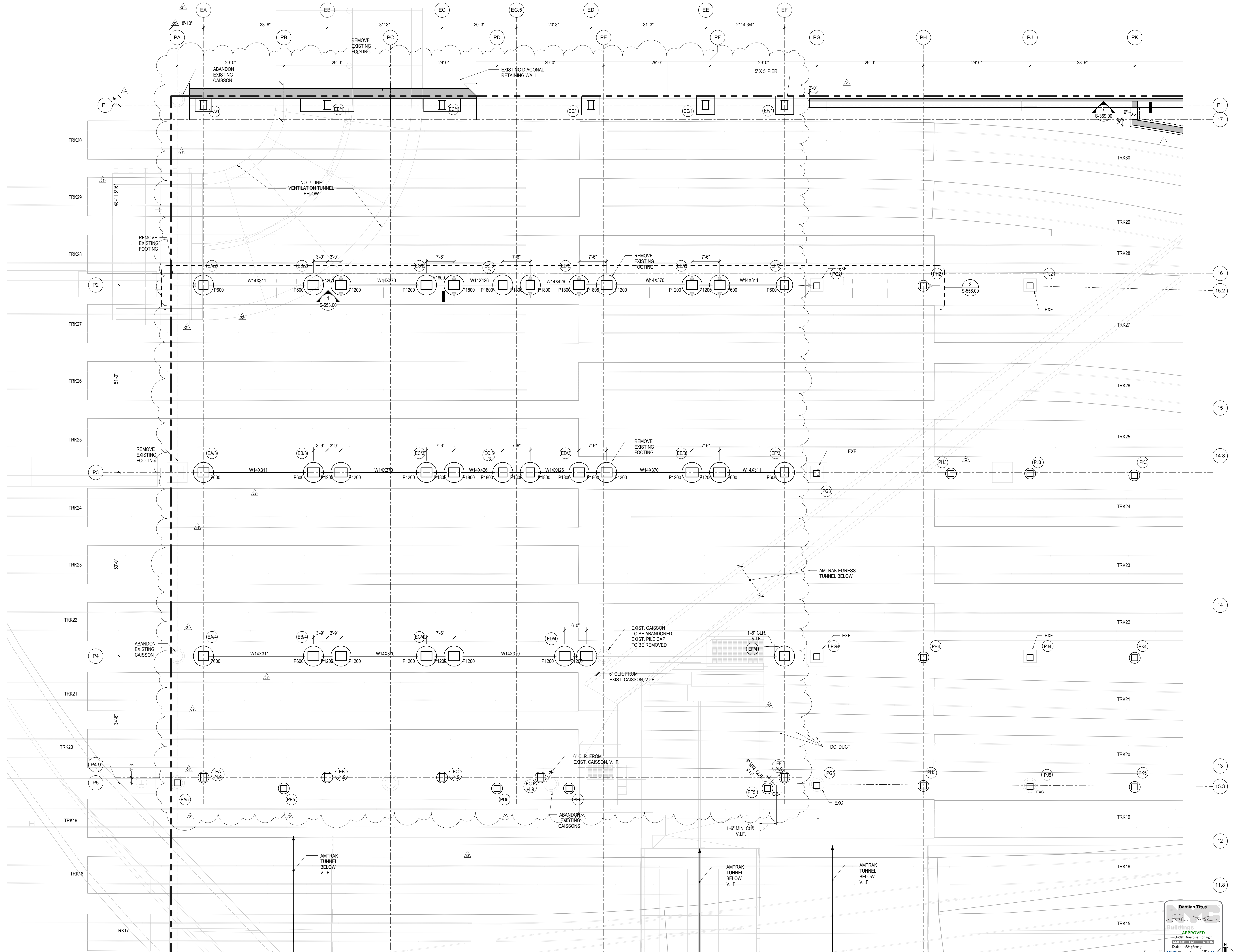
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

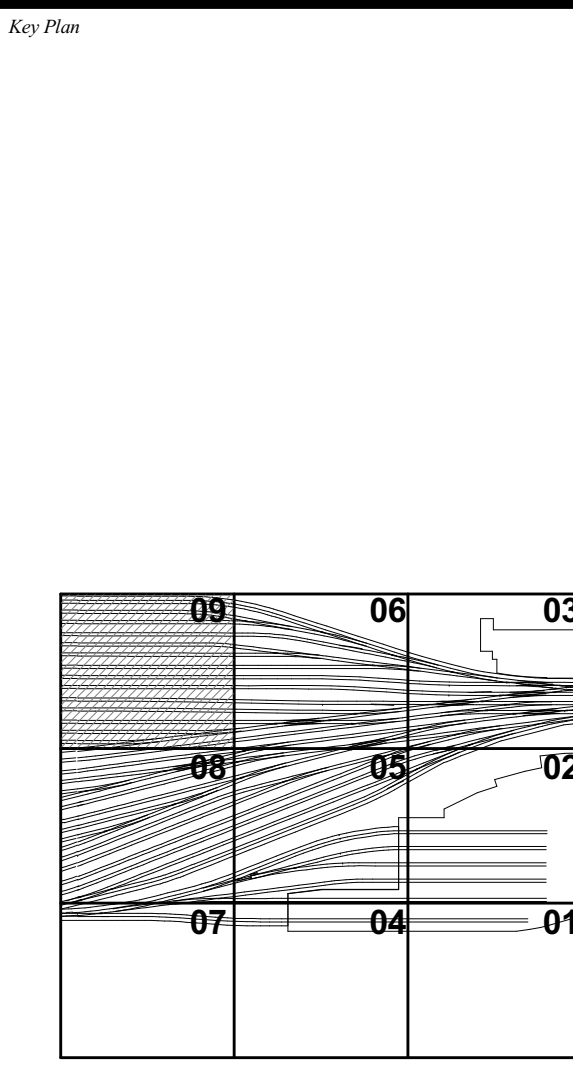
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Systems, Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172



DOB POST-APPROVAL AMENDMENT	10/26/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0038 - TOWER E FOUNDATION	6/24/2014
ASH0029 - TOWER E FOUNDATION	6/09/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod. PLATFORM SUBMISSION	
DI.G2 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DI.G1 PHASE 1 STRUCTURAL UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - PHASE 1 FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
No. Description	Date



Date: 12/14/12  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE-PL-FO-129.01**

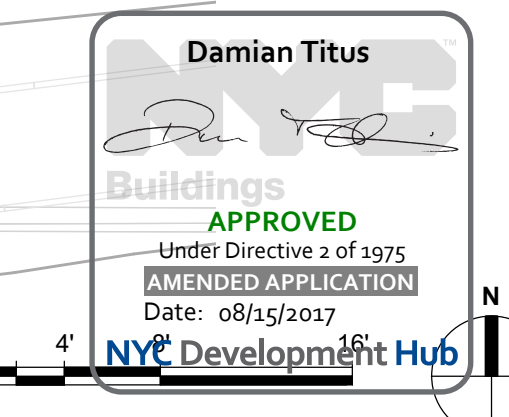
**FOUNDATION PLAN SECTOR 09**

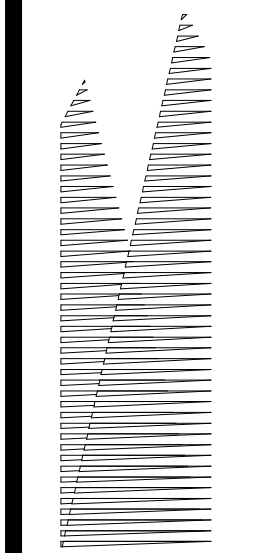
Drawing Title  
**FO-129.01**

Drawing Number / B/CAN Drawing Number  
**FO-129.01**

**SHEET 9 OF 163**

NOTES:  
1. REFER TO S-121.00 FOR FOUNDATION NOTES





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Contractor  
Kohn Pedersen Fox Associates PC  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

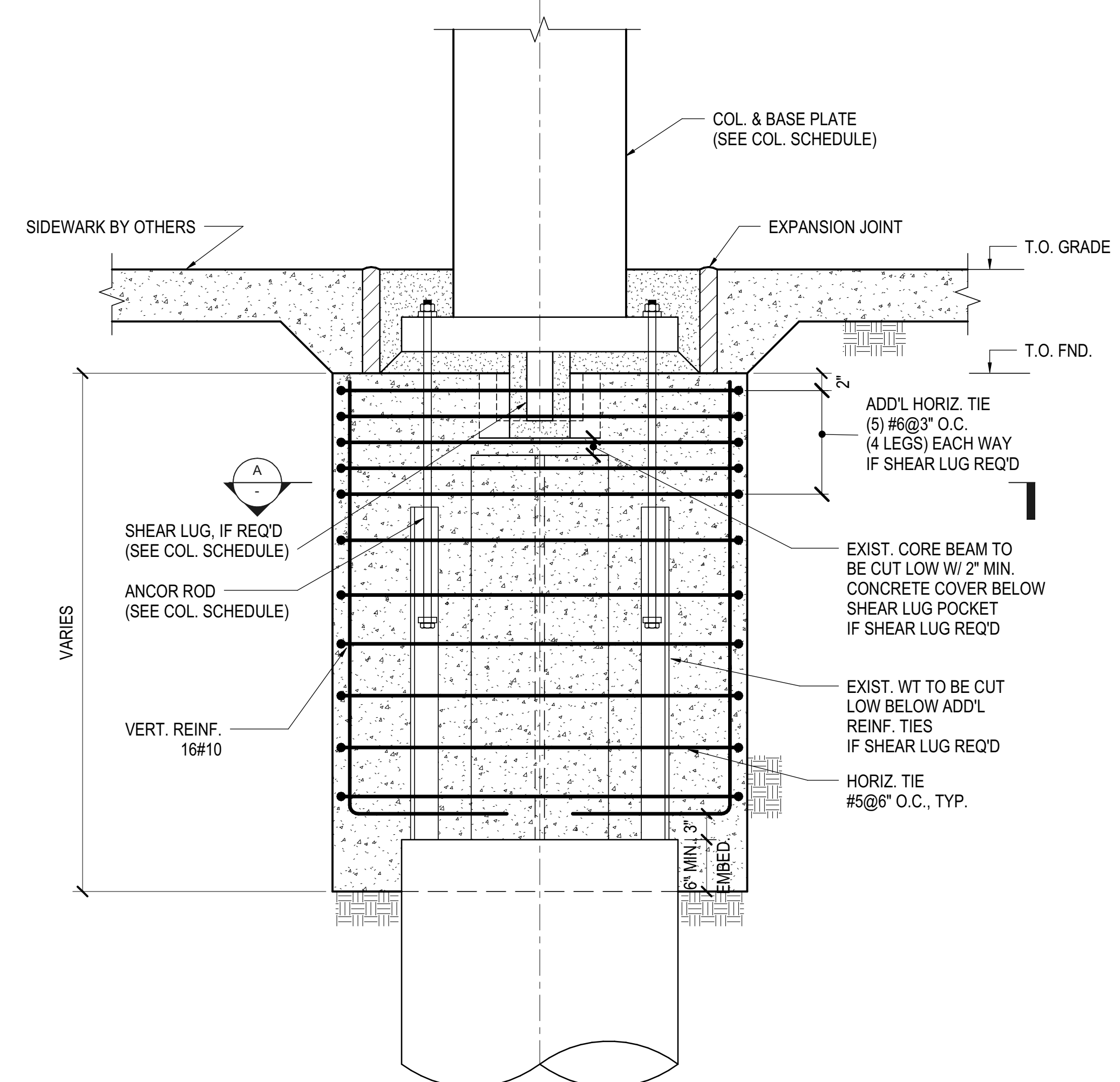
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, NY 10018  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10017  
Tel: 917.661.7800 Fax: 212.661.7801

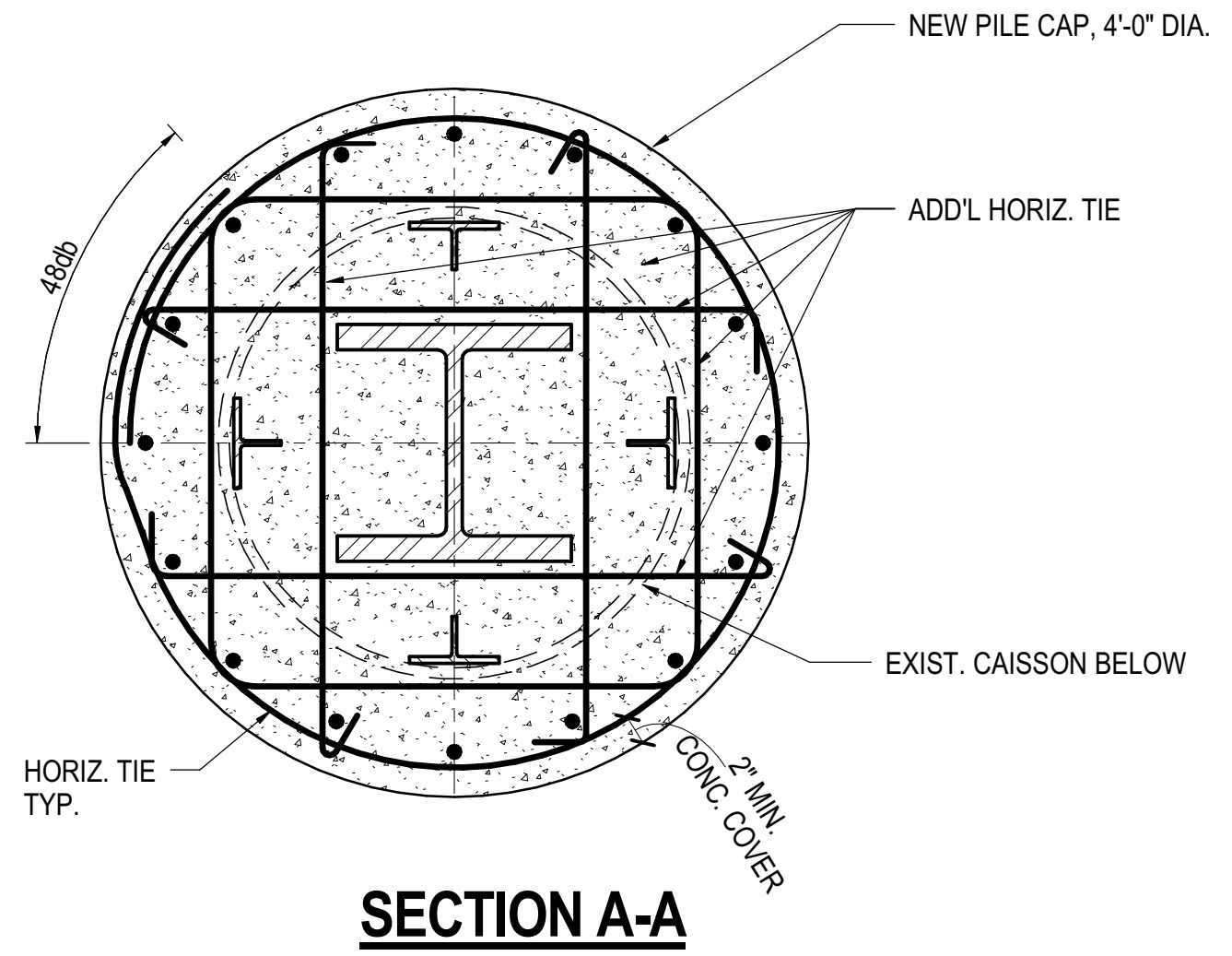
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Ransom, Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

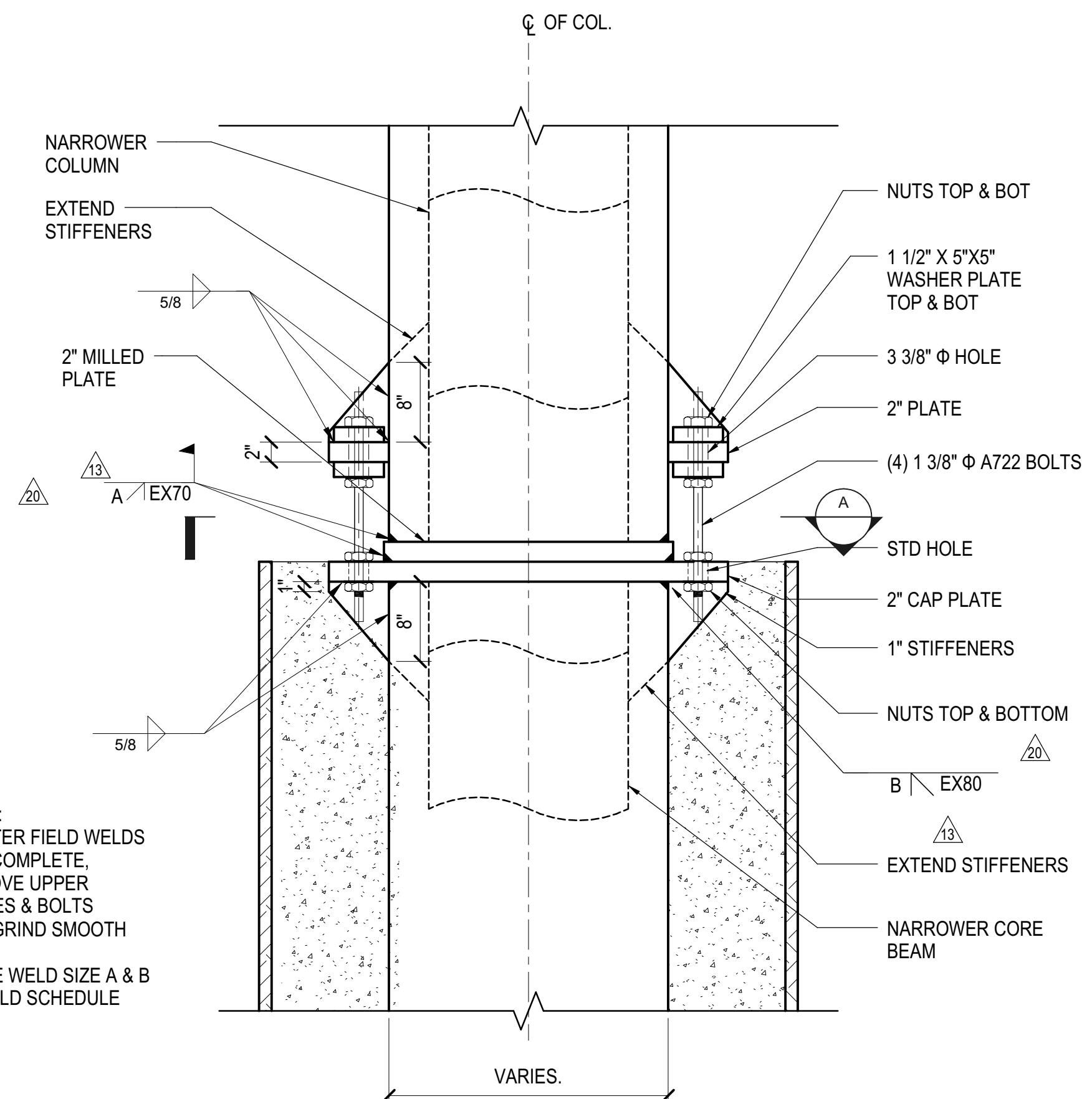
LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



**1 NEW PILE CAP ON EXIST. CAISSON**  
1" = 1'-0"



**SECTION A-A**



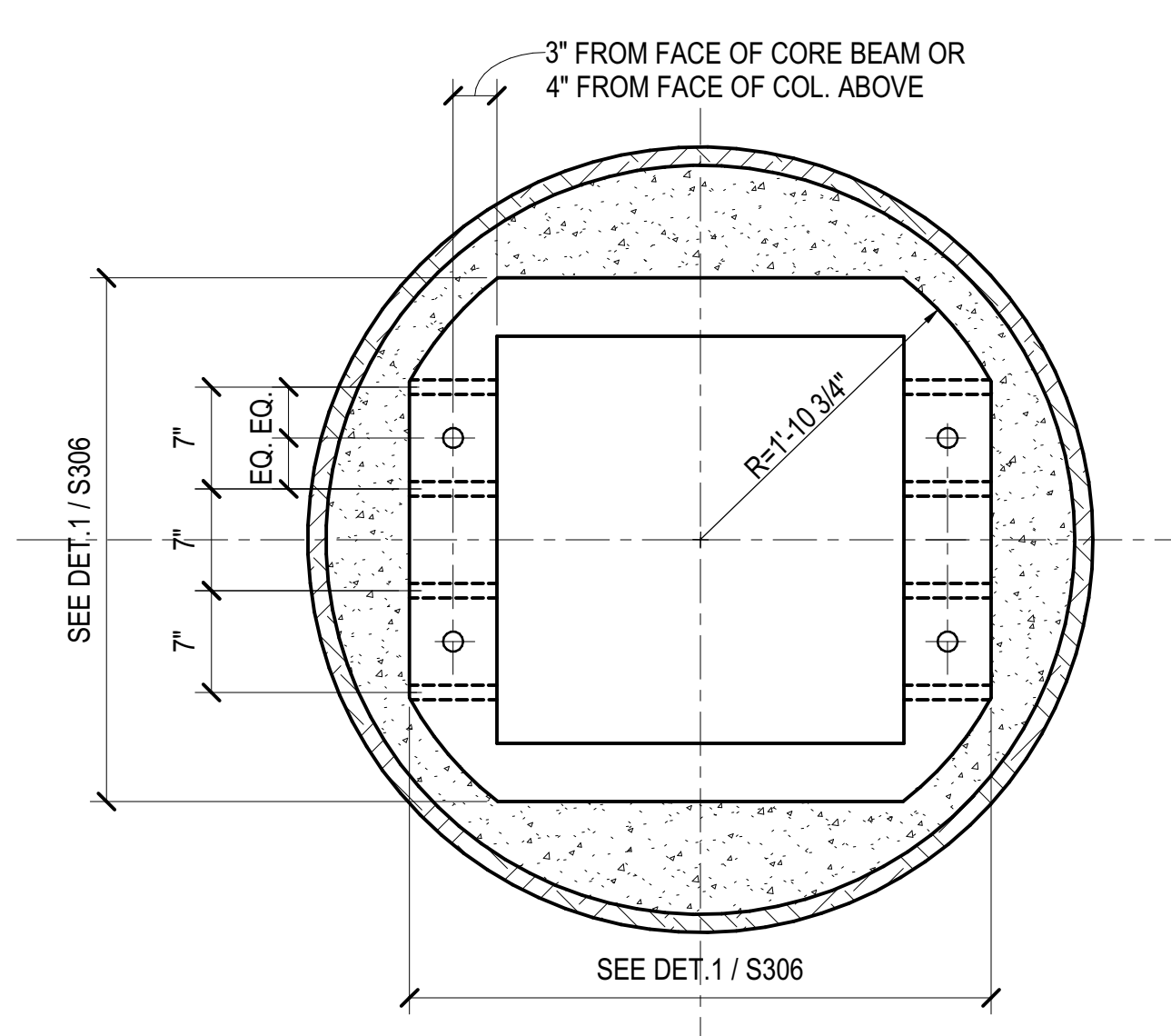
NOTE:  
1. AFTER FIELD WELDS ARE COMPLETE, REMOVE UPPER PLATES & BOLTS AND GRIND SMOOTH  
2. SEE WELD SIZE A & B IN WELD SCHEDULE

**ELEVATION**

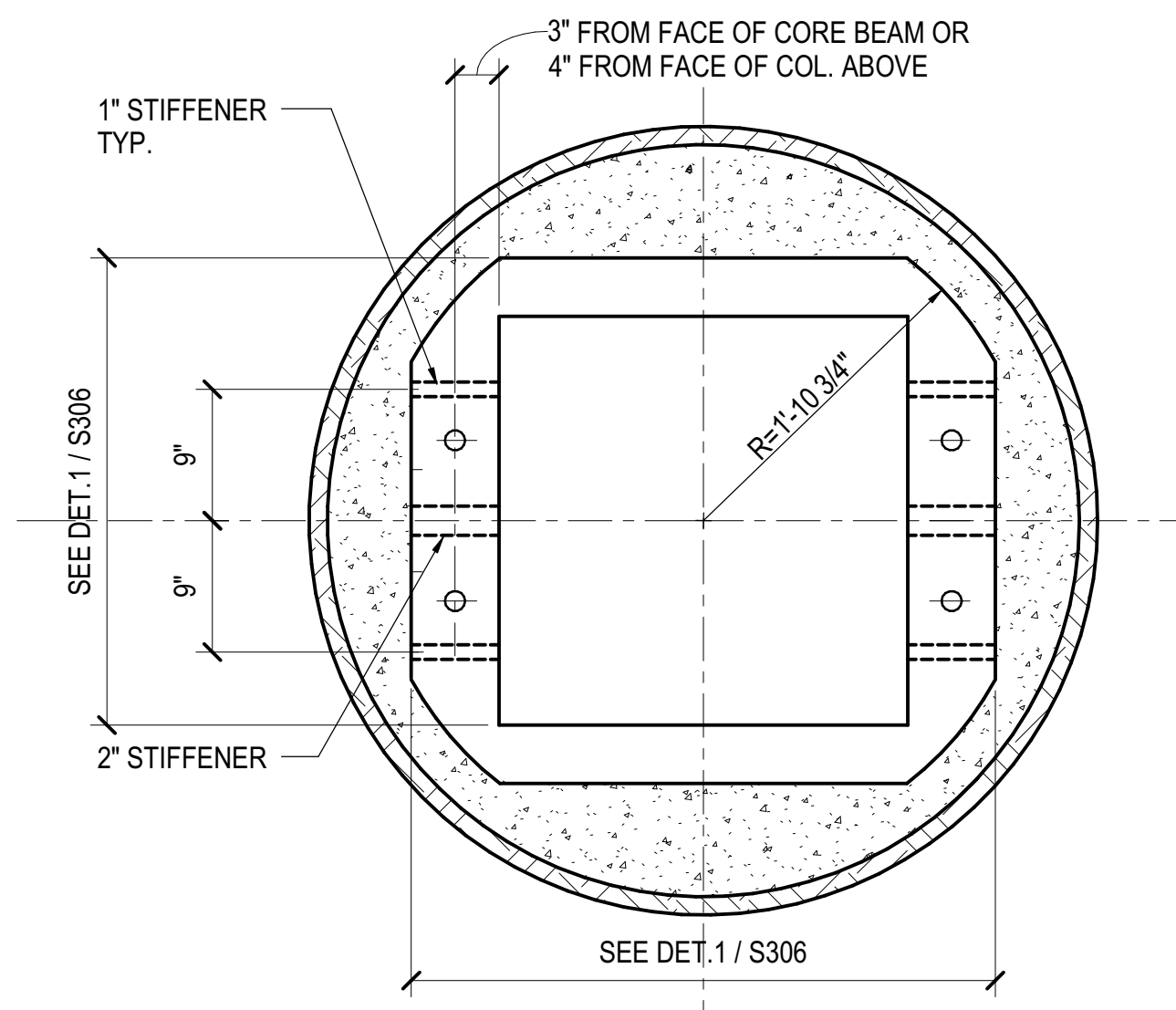
COLUMN MARK	WELD SIZE		WELD LENGTH	CAP PLATE THICKNESS GR65 TYP. UON.
	A	B		
TYP.	5/8"	5/8"	20" x 4 SIDES 40" x 2 SIDES	2"
A/14	1 3/4"	1 3/4"	ALL AROUND	2"
A/16.5, C 1/16, D 8/16	1"	1"	ALL AROUND	2"
C/15.3(B), C/9/15(B), F/9/16	1 5/8"	1 7/8"	ALL AROUND	2"
A/8/17(A)	2 3/4"	3 3/8"	ALL AROUND	5", GR 50
C 1/17, C 3/17, D 8/17, E 8/17	5 3/4"	5 3/4"	ALL AROUND	7 1/2", GR 50
F 9/17	4 5/8"	7 1/2"	ALL AROUND	7 1/2", GR 50
TOWER E COLUMNS, UON.	1 1/2"	1 1/2"	ALL AROUND	3 1/2"

NOTE:  
1. CAP PLATE SHALL BE FINISHED TO BEAR TOP & BOTTOM

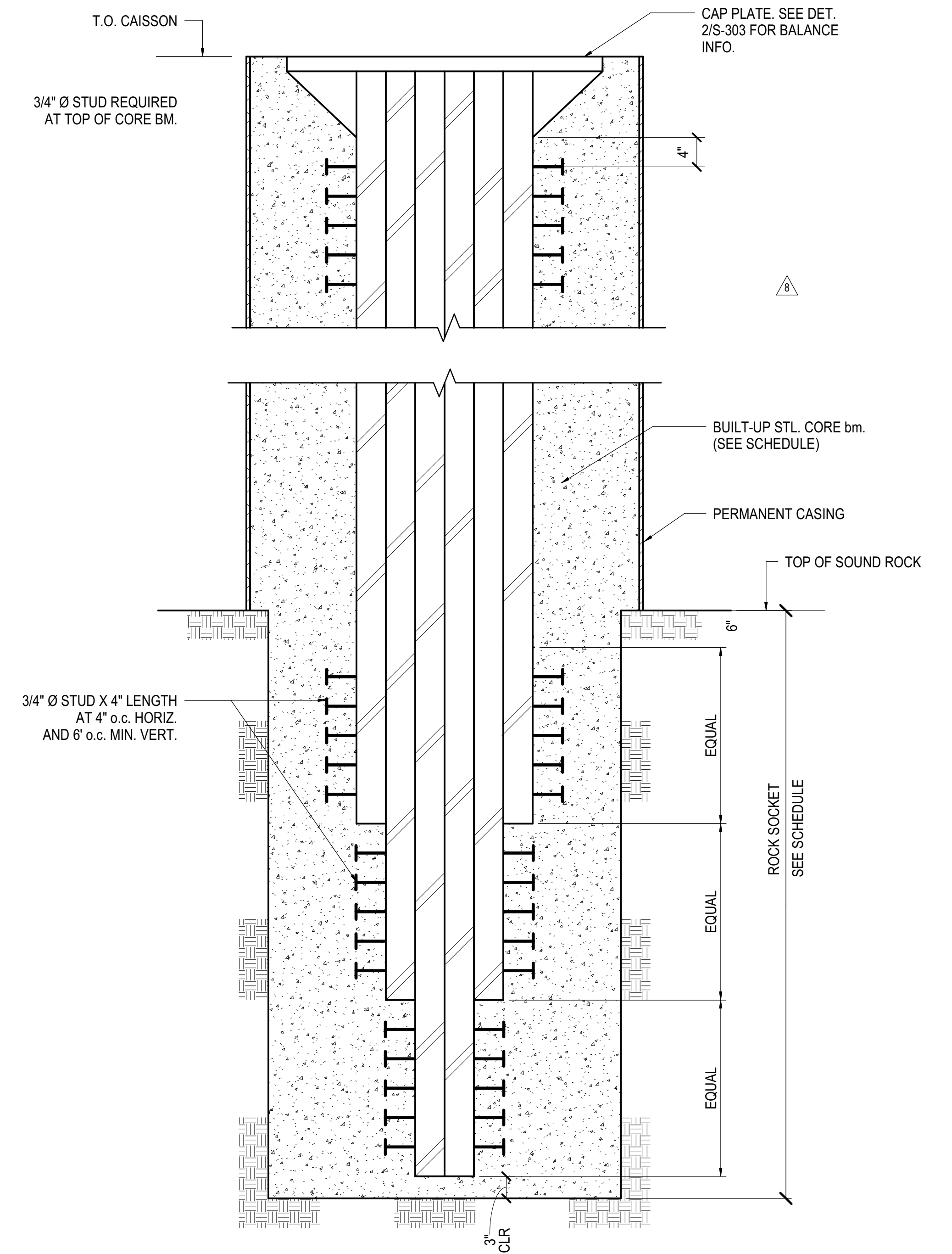
**2 CAISSON TO COLUMN DIRECT BEARING DETAIL**  
1" = 1'-0"



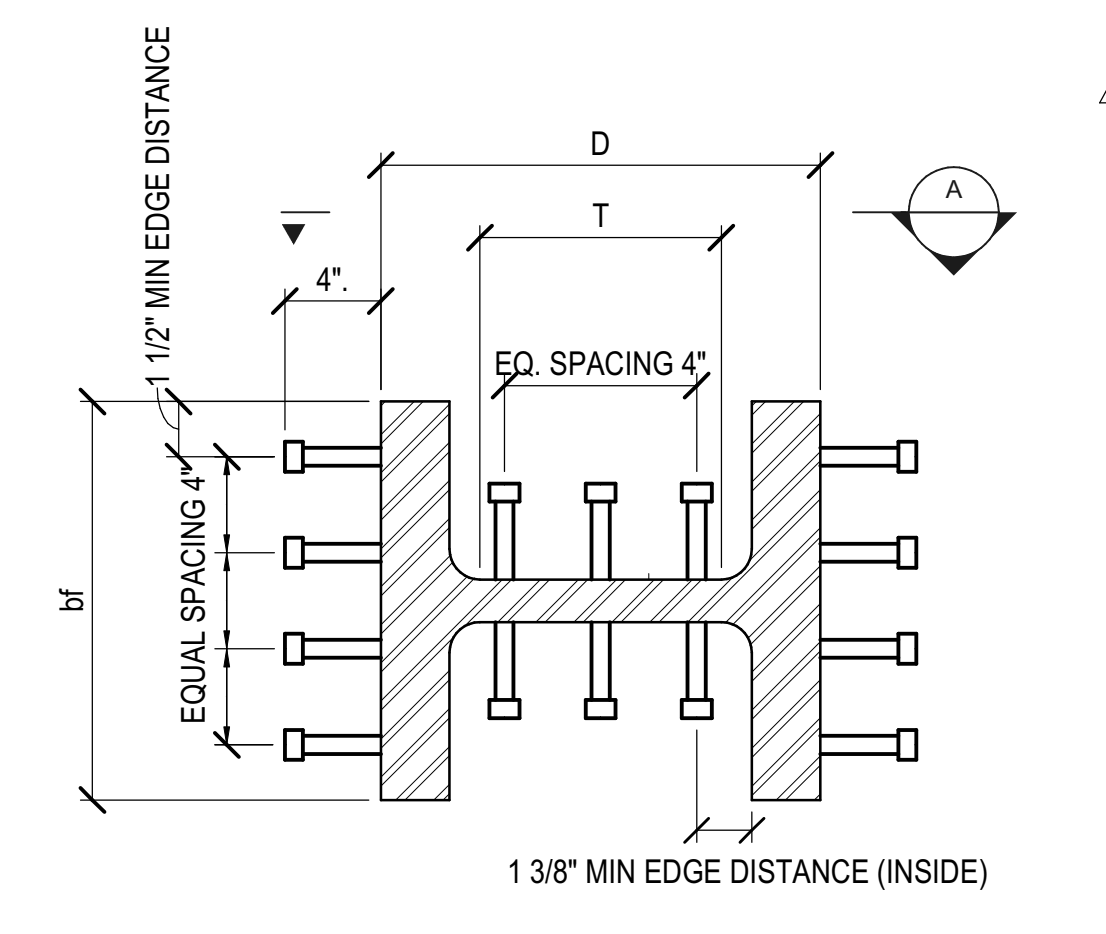
**TYPICAL**



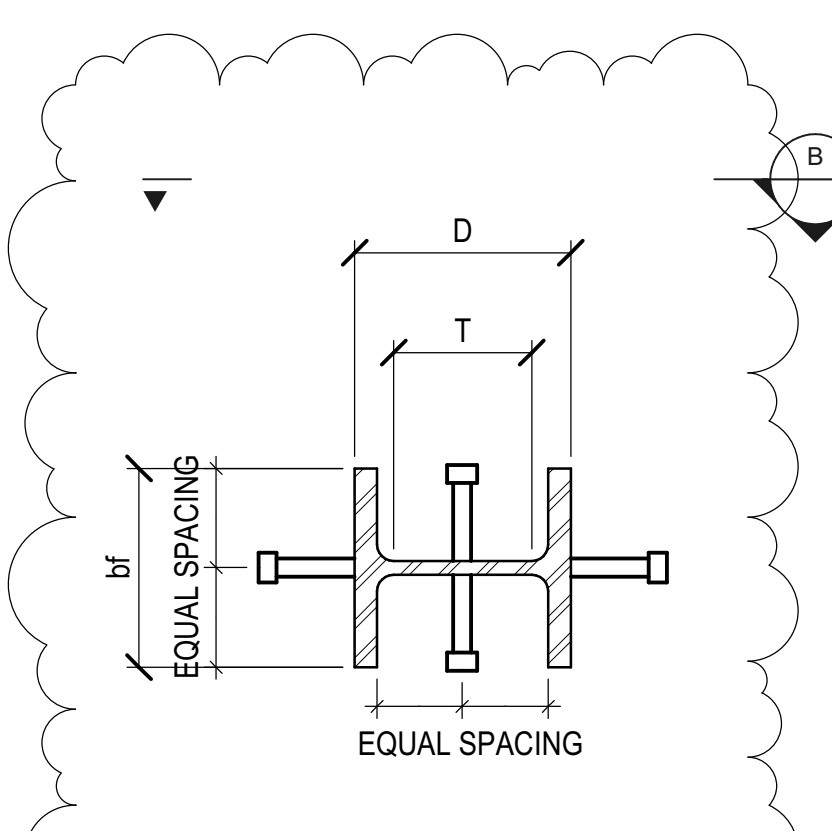
**CONN. TO 20" SIDE OF CORE BEAM**



**3 BUILT-UP STEEL CORE BEAM TAPPER IN ROCK SOCKET**  
1" = 1'-0"

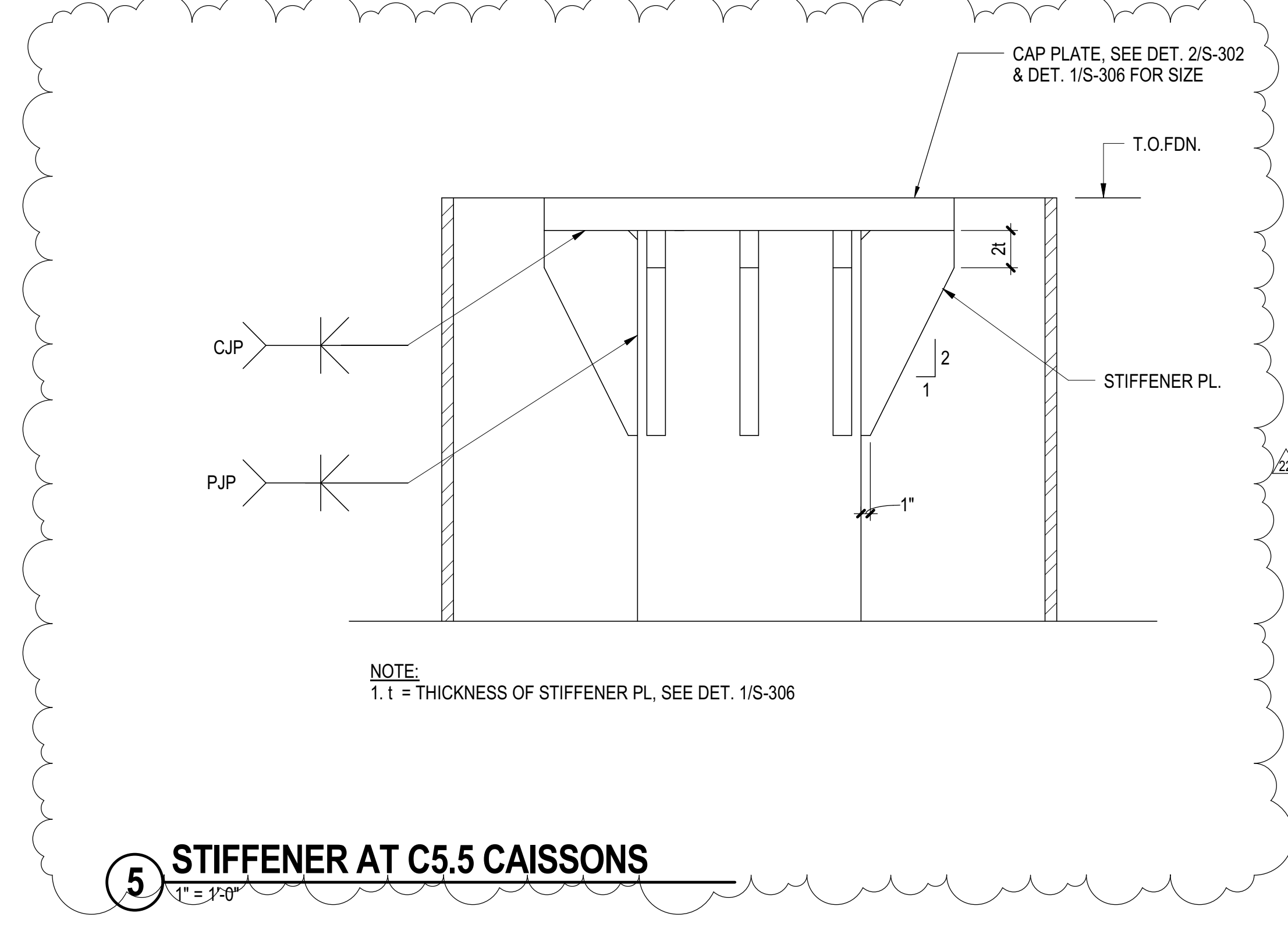


**W14**



**W8**

**4 CAISSON CORE SHEAR STUD SPACING DETAIL ON W-SHAPE**  
1 1/2" = 1'-0"



**5 STIFFENER AT C5.5 CAISSONS**  
1" = 1'-0"

NO.	DESCRIPTION	DATE
1	DOB POST-APPROVAL AMENDMENT	10/28/2016
2	L.I.R.R. - FINAL 100%	10/14/2014
3	DESIGN SUBMISSION FOR RECORDS	
4	ASH0049	10/14/2014
5	ASH0014	7/28/2014
6	ASH0013 - TOWER E STEEL FRAMING	7/22/2014
7	ASH0016 - TOWER E FOUNDATION	6/24/2014
8	ASH0029 - TOWER E FOUNDATION	6/09/2014
9	ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
10	ASH0015 - TOWER A - SEQUENCE 11	3/7/2014
11	CAISSON STEEL	
12	ASH0007	2/20/2014
13	PK #4	2/5/2014
14	NYC DOB FILING	12/4/2013
15	L.I.R.R. - PRE-FINAL 100%	11/22/2013
16	M&E - PLATFORM SUBMISSION	
17	B/O PHASE 1 STRUCTURAL UPDATE	11/1/2013
18	NYC DOB FILING	10/4/2013
19	B/O PHASE 1 STRUCTURE UPDATE	9/29/2013
20	L.I.R.R. - 60% SUBMISSION	8/09/2013
21	NYC DOB FILING	6/17/2013
22	L.I.R.R. - 60% SUBMISSION	5/29/2013
23	FILING FOR FOUNDATIONS	5/08/2013
24	L.I.R.R. - 60% PHASE 1 FDNS	3/29/2013
25	L.I.R.R. - 30% SUBMISSION	2/15/2013
26	Rev	0/0

NO.	DESCRIPTION	DATE
1	DOB POST-APPROVAL AMENDMENT	10/28/2016
2	L.I.R.R. - FINAL 100%	10/14/2014
3	DESIGN SUBMISSION FOR RECORDS	
4	ASH0049	10/14/2014
5	ASH0014	7/28/2014
6	ASH0013 - TOWER E STEEL FRAMING	7/22/2014
7	ASH0016 - TOWER E FOUNDATION	6/24/2014
8	ASH0029 - TOWER E FOUNDATION	6/09/2014
9	ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
10	ASH0015 - TOWER A - SEQUENCE 11	3/7/2014
11	CAISSON STEEL	
12	ASH0007	2/20/2014
13	PK #4	2/5/2014
14	NYC DOB FILING	12/4/2013
15	L.I.R.R. - PRE-FINAL 100%	11/22/2013
16	M&E - PLATFORM SUBMISSION	
17	B/O PHASE 1 STRUCTURAL UPDATE	11/1/2013
18	NYC DOB FILING	10/4/2013
19	B/O PHASE 1 STRUCTURE UPDATE	9/29/2013
20	L.I.R.R. - 60% SUBMISSION	8/09/2013
21	NYC DOB FILING	6/17/2013
22	L.I.R.R. - 60% SUBMISSION	5/29/2013
23	FILING FOR FOUNDATIONS	5/08/2013
24	L.I.R.R. - 60% PHASE 1 FDNS	3/29/2013
25	L.I.R.R. - 30% SUBMISSION	2/15/2013
26	Rev	0/0

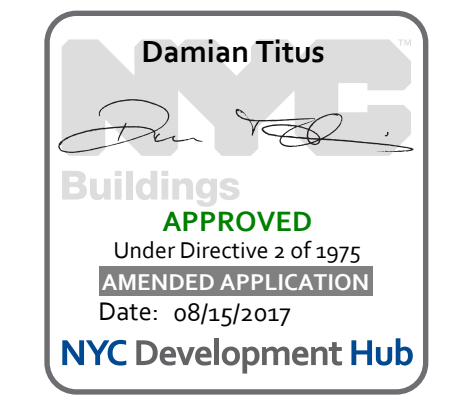
Drawn By: 02/15/2013  
Project No: N11330.00  
Checked By: Author  
Sheet Number

**HYE -PL -FO-303.01**

**TYPICAL CAISSON DETAILS & SCHEDULES III**

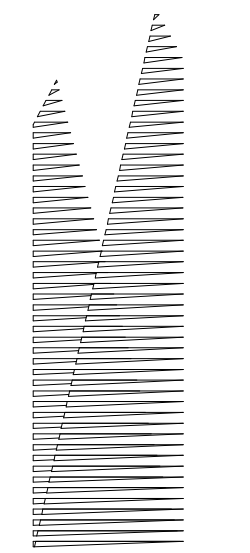
Drawing Number / B.SCAN Drawing Number  
**FO-303.01**

**SHEET 10 of 163**



APPROVED  
Under Directive 3 of 1975  
Professional Registration  
Date: 08/15/2017  
NYC Development Hub





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

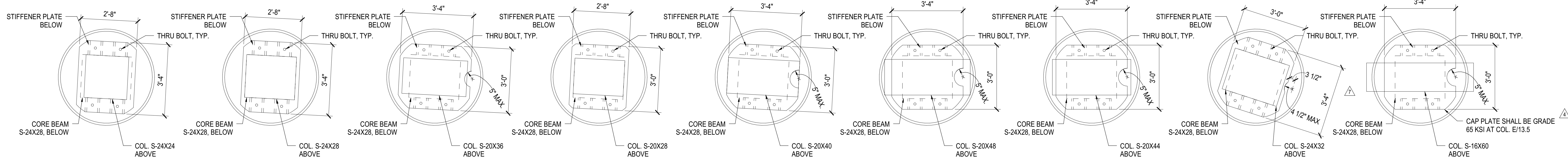
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

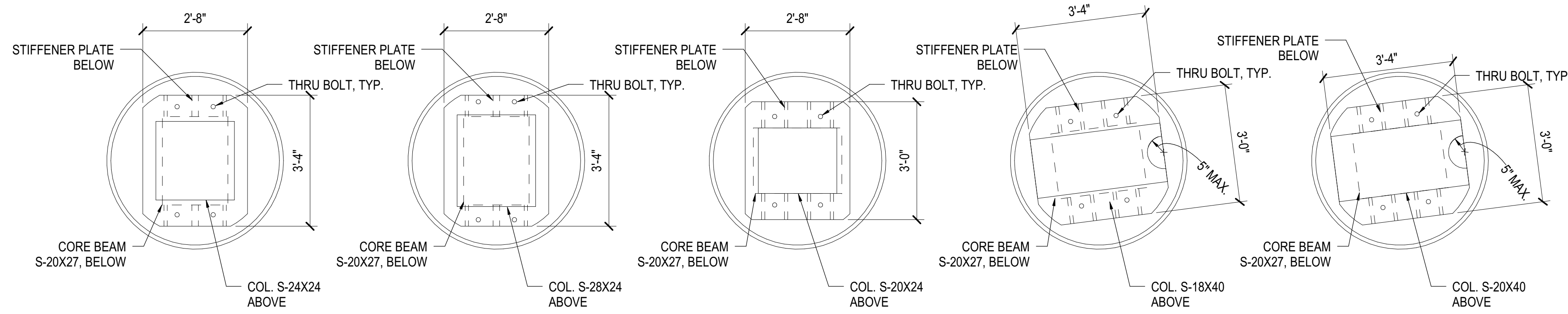
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Reasons: Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

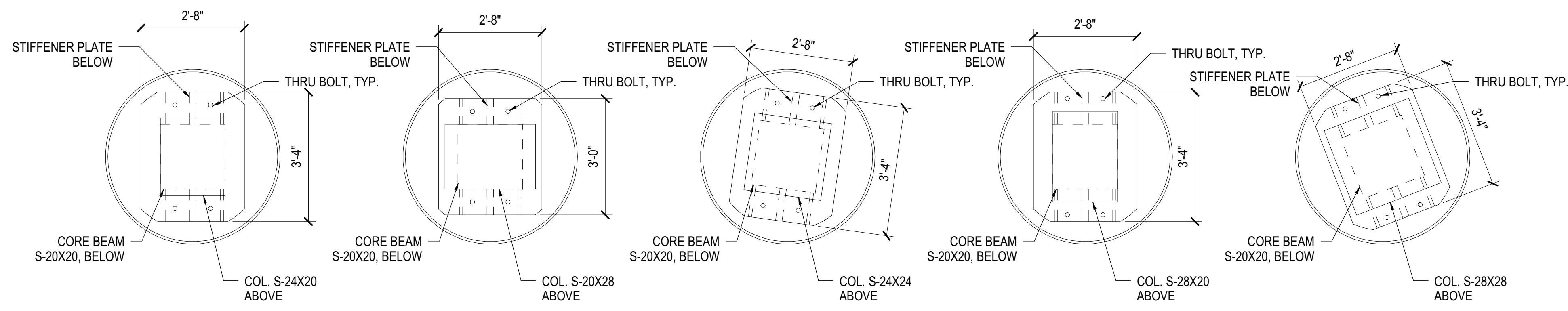
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



**C4.5-5 CAISSONS**

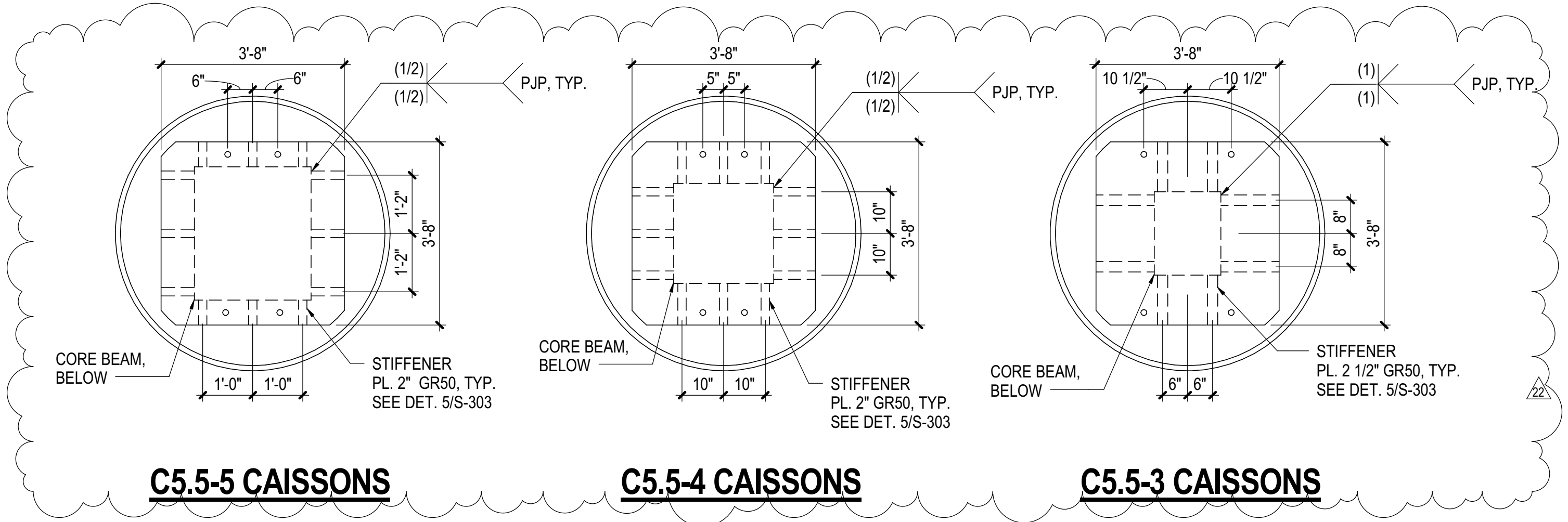


**C4.5-4 CAISSONS**



**C4.5-3 CAISSONS**

NOTE:  
1. Fy OF CAP PLATE=50 KSI ONLY FOR C4.5 CAISSONS, U.O.N.

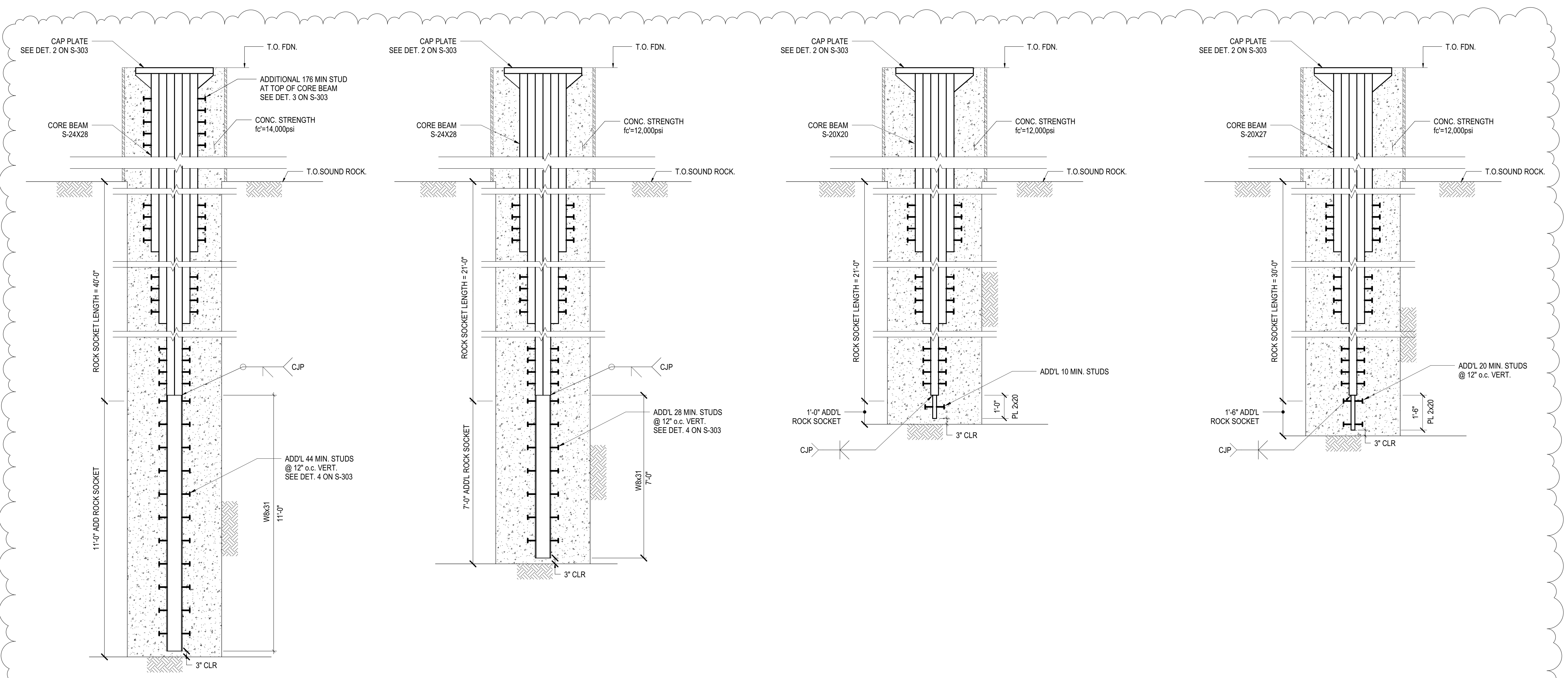


**C5.5-5 CAISSONS**

**C5.5-4 CAISSONS**

**C5.5-3 CAISSONS**

**1 DIRECT BEARING CAPPLATE**  
1/2" = 1'-0"



**E/13.5**

**A/14 (A) & (B)**

**A/14.8 (A) & (B)**

**H/14.8**

**2 ADDITIONAL CAISSON DETAIL**  
1/2" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00049	10/14/2014
ASH00030 - TOWER E FOUNDATION	6/24/2014
ASH00007	2/20/2014
PKC #4	2/5/2014
ASH00003	1/14/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	11/22/2013
MeE - PLATFORM SUBMISSION	
D442 PHASE I STRUCTURAL UPDATE	11/1/2013
Revision	000

Key Plan

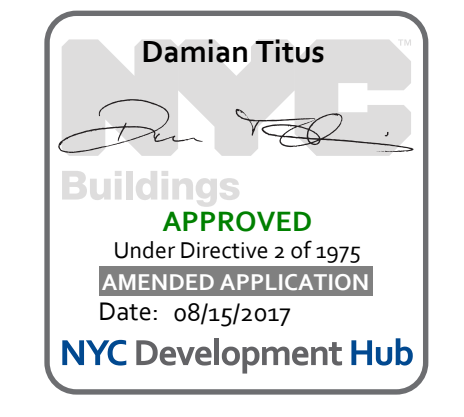
Date: 11/01/13  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

**HYE -PL -FO-306.01**

**TYPICAL CAISSON DETAILS & SCHEDULE IV**

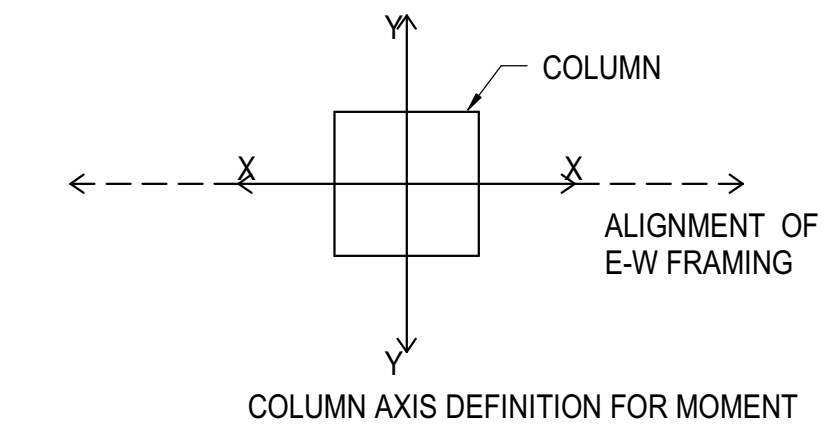
Drawing Number / Revision Drawing Number  
**FO-306.01**

SHEET 11 of 163



LOCATION REFERENCE	COLUMN COORDINATES 1		ELEVATION AT THE TOP OF FOUNDATION (FT)	ELEVATION AT THE TOP FLOOR LEVEL (FT)	FOUNDATION TYPE 2	ALT. FOUNDATION TYPE 2	BASE PLATE DIMENSIONS (IN)	ANCHOR ROD MARK 3	TOP OF ROCK SOCKET ELEVATION 4	ROCK SOCKET LENGTH 5	ADDITIONAL ROCK SOCKET LENGTH 6	COLUMN SECTION SIZE 7	COLUMN AXIAL LOADS		COLUMN MOMENT (KIPS-FT)	CLEARANCE TO TRACK NORTH OF COLUMN 8	CLEARANCE TO TRACK SOUTH OF COLUMN 8
	X (FT)	Y (FT)											SERVICE (KIPS)	ULTIMATE (KIPS)			
EA/1	8.83	710.00	5.5	31.50	CONT. FOOTING		36x48x5.75"	TYPE D 1" DIA.				B-30x24x4	4500	5700	-	-	8'-3"
EA/2	8.83	661.06	2.5	31.50	C5-5-1		56 DIA. x 4.75"	TYPE A 1 3/8" DIA. (T)				S-30x28	6900	9000	13700	7'-2 3/4"	9'-4 3/4"
EA/3	8.83	610.06	2.5	31.50	C5-5-1		56 DIA. x 4.75"	TYPE A 1 3/8" DIA. (T)				S-30x36	7700	9800	26300	8'-2"	8'-4 1/4"
EA/4	38.75	560.06	2.5	31.50	C5-5-1		56 DIA. x 4.75"	TYPE A 1 3/8" DIA. (T)				S-30x32	5100	6500	15300	8'-1 1/2"	8'-5 1/4"
EA/4.9	8.83	527.06	5.5	31.50	C3-1-3		31.5 DIA. x 2.75"	TYPE C 1" DIA.	-15			B-24x24x4	2300	3000	-	6'-10 1/4"	10'-1 1/2"
EB/1	42.50	710.00	5.5	31.50	CONT. FOOTING		SEE DET 4/S-553					B-30x24x4	8900	11600	-	-	8'-3 1/4"
EB/2	(A) 38.75	661.06	2.5	31.50	C5-5-2		56 DIA. x 5.75"	TYPE B 3" DIA. (T)		22 <sup>10</sup>		S-30x36	20300	29500/3400	15300	7'-1 1/2"	9'-4"
	(B) 46.25	661.06	2.5	31.50	C5-5-2		56 DIA. x 5.75"	TYPE B 3" DIA. (T)		22 <sup>10</sup>		S-30x36	20300	29500/3400	15300	7'-1 1/2"	8'-8 1/2"
EB/3	(A) 38.75	610.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x40	22800	30500/3200	20100	8'-1 3/4"	8'-4 1/2"
	(B) 46.25	610.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x40	22800	30500/3200	20100	8'-1 1/2"	8'-4 1/2"
EB/4	(A) 38.75	560.06	3.5	31.50	C5-5-3		SEE DET 2/S-303					S-30x36	12800	18200/2600	9900	8'-1 1/4"	8'-4 1/2"
	(B) 46.25	560.06	3.5	31.50	C5-5-3		SEE DET 2/S-303					S-30x36	12800	18200/2600	9900	8'-1 1/4"	8'-4 1/2"
EB/4.9	42.50	527.06	5.5	31.50	C3-1-3		31.5 DIA. x 2.75"	TYPE C 1" DIA.	-14.5			B-24x24x4	2800	3700	-	6'-9 3/4"	10'-1 3/4"
EC/1	73.75	710.00	5.5	31.50	CONT. FOOTING		SEE DET 4/S-553					B-30x24x4	7300	9400	-	-	8'-3 1/2"
EC/2	(A) 69.50	661.06	3.5	31.50	C5-5-5		SEE DET 2/S-303					S-30x36	25300	32800	12700	7'-1 1/4"	9'-4 1/4"
	(B) 77.00	661.06	3.5	31.50	C5-5-5		SEE DET 2/S-303					S-30x36	25300	32800	12700	7'-1 1/2"	9'-4 1/4"
EC/3	(A) 69.50	610.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x36	23100	29600	16500	8'-1 1/4"	8'-4 3/4"
	(B) 77.00	610.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x36	23100	29600	16500	8'-1 1/4"	8'-4 3/4"
EC/4	(A) 69.50	560.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x36	24000	33600/1200	9700	8'-1"	8'-4"
	(B) 77.00	560.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x36	24000	33600/1200	9700	8'-1"	8'-4"
EC/4.9	73.75	527.06	5.5	31.50	C3-1-3		31.5 DIA. x 2.75"	TYPE C 1" DIA.	-9			B-24x24x4	1200	1600	-	6'-9 1/2"	10'-2 1/4"
EC.5/2	(A) 90.50	661.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x28	19600	25500	-	7'-1 1/4"	9'-4 1/2"
	(B) 97.50	661.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x28	19600	25500	-	7'-1 1/4"	9'-4 3/4"
EC.5/3	(A) 90.50	610.06	3.5	31.50	C5-5-3		SEE DET 2/S-303					S-30x28	14400	17800	-	8'-1 1/4"	8'-4 3/4"
	(B) 97.50	610.06	3.5	31.50	C5-5-3		SEE DET 2/S-303					S-30x28	14400	17800	-	8'-1"	8'-5"
EC.6/4.9	100.50	527.06	5.5	31.50	C3-1-3		31.5 DIA. x 2.75"	TYPE C 1" DIA.	-8.5			B-24x24x4	3300	4400	-	6'-9 1/4"	10'-2 1/4"
ED/1	114.25	710.00	5.5	31.50	EMBED. PIER 5x5x5		48x48x7	TYPE D 1" DIA.				B-30x24x4	7600	9700	-	-	8'-3 3/4"
ED/2	(A) 111.00	661.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x36	20000	26700	15100	7'-1 1/4"	9'-4 3/4"
	(B) 118.50	661.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x36	20000	26700	15100	7'-1"	9'-5"
ED/3	(A) 111.00	610.06	3.5	31.50	C5-5-5		SEE DET 2/S-303					S-30x36	23700	30700	15500	8'-1"	8'-5"
	(B) 118.50	610.06	3.5	31.50	C5-5-5		SEE DET 2/S-303					S-30x36	23700	30700	15500	8'-1"	8'-5"
ED/4	(A) 107.08	560.06	3.5	31.50	C5-5-5		SEE DET 2/S-303		-15	2		S-30x36	28800	37600	-	8'-0 1/2"	8'-4"
	(B) 113.08	560.06	3.5	31.50	C5-5-5		SEE DET 2/S-303		-15	2		S-30x40	28800	37600	16200	8'-0 1/2"	8'-4 1/4"
EE/1	145.50	710.00	5.5	31.50	EMBED. PIER 5x5x2		48x48x5.25"	TYPE D 1" DIA.				B-30x24x4	4900	6200	-	-	8'-4"
EE/2	(A) 141.75	661.06	3.5	31.50	C5-5-3		SEE DET 2/S-303			2		S-30x36	12600	18300/2200	12900	7'-1"	9'-5 1/4"
	(B) 149.25	661.06	3.5	31.50	C5-5-3		SEE DET 2/S-303			2		S-30x36	12600	18300/2200	12900	7'-1"	9'-5 1/4"
EE/3	(A) 141.75	610.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x40	22600	32400/2500	20200	8'-0 3/4"	8'-5 1/4"
	(B) 149.25	610.06	3.5	31.50	C5-5-4		SEE DET 2/S-303					S-30x40	22600	32400/2500	20200	8'-0 1/2"	8'-5 1/4"
EF/1	166.90	710.00	5.5	31.50	FT 5X5X2		48x48x3.75"	TYPE D 1" DIA.				B-30x24x4	1700	2200	-	-	8'-4 1/4"
EF/2	166.90	661.06	2.5	31.50	C5-5-1		56 DIA. x 5.25"	TYPE A 2 1/2" DIA. (T)				S-30x28	3000	4000	12000	7'-0 3/4"	9'-5 1/2"
EF/3	166.90	610.06	2.5	31.50	C5-5-1		56 DIA. x 5.25"	TYPE A 2 1/2" DIA. (T)				S-30x28	2600	3200	17100	8'-0 1/2"	8'-5 1/2"
EF/4	166.90	560.06	5.5	31.50	C5-5-2		56 DIA. x 4.75"	TYPE A 1 3/8" DIA. (T)	-40.5			S-30x32	14000	18700/1600	13700	8'-0"	9'-0 1/2"
EF/4.9	166.90	527.06	5.5	31.50	C3-1-3		31.5 DIA. x 2.75"	TYPE C 1" DIA.	-44			B-24x24x4	2400	3300	-	6'-3 1/4"	10'-3"

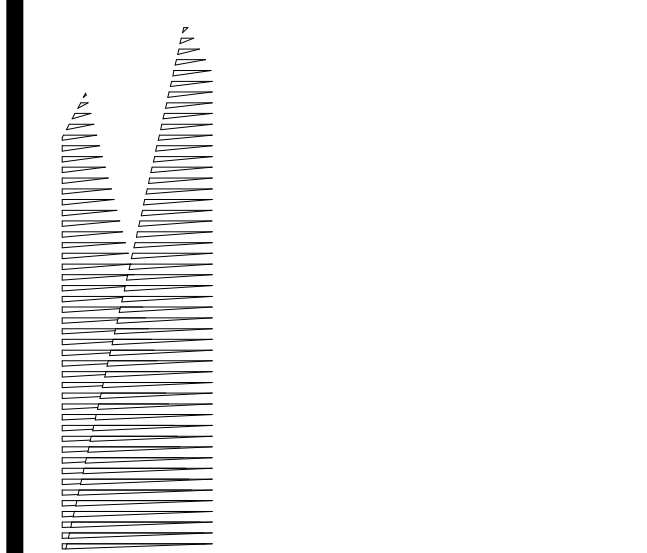
- NOTES:
- COLUMN COORDINATES ARE BASED OFF OF A LOCAL COORDINATE SYSTEM WHERE (0,0) IS LOCATED AT THE INTERSECTION OF THE 11TH AVE AND WEST 30TH STREET PROPERTY LINE. THE MANHATTAN BOROUGH GRID THAT RELATES TO THE LOCAL (0,0) IS (N 19196 576, E -15007 646).
  - REFER TO S-301.00 TO S-304.00 FOR FOUNDATION DETAILS AND SCHEDULES.
  - REFER TO S-321.00 FOR ANCHOR ROD DETAILS AND SCHEDULE.
  - (T) INDICATES POST-TENSIONING REQUIRED. SEE DET. 3/S-321. (P) INDICATES POST-INSTALLED ANCHOR BOLT. SEE DET. 4/S-321.
  - TOP OF ROCK SOCKET ELEVATIONS IS THE HIGHEST ELEVATION AT WHICH ROCK SOCKET BEGINS BASED ON INFLUENCE LINE. ACTUAL TOP OF SOCKET TO BE FIELD VERIFIED BY GEOTECHNICAL ENGINEER.
  - REFER TO TYPICAL DETAILS IN S-300.00 SERIES FOR ROCK SOCKET INFORMATION UNLESS NOTED OTHERWISE.
  - ADDITIONAL ROCK SOCKET LENGTH DUE TO GROUPING EFFECT SHALL BE PROVIDED BY GEOTECHNICAL ENGINEER.
  - REFER TO S-320.00 TO S-323.00 FOR COLUMN DETAILS.
  - CLEARANCE TO TRACK IS MEASURED FROM CENTERLINE OF TRACK TO FACE OF COLUMN. COLUMNS ARE TO BE LOCATED IN ACCORDANCE WITH THE COORDINATES SHOWN. THE CLEARANCES TO ADJACENT TRACK ARE FOR LRR INFORMATION ONLY.
  - CAISSON TIP ELEVATIONS SHOWN ARE THE HIGHEST ELEVATION AT WHICH THE TIP OF THE ROCK SOCKET MAY BE LOCATED. DEEPER SOCKETS MAY BE REQUIRED BASED ON THE CONDITION OF THE ROCK AS DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER.
  - CAISSON ROCK SOCKET LENGTH IS MODIFIED TO PROVIDE HIGHER CAPACITY FOR DESIGN SERVICE LOAD SHOWN IN COLUMN SCHEDULE.
  - COLUMN BETWEEN LOADING LEVEL AND PLATFORM LEVEL.



COLUMN LABEL	CAISSON TYPE	CAISSON REINFORCEMENT SCHEDULE			
		CONCRETE STRENGTH (psi)	STL. CORES (65psi)	ALT. STL. CORES (65psi)	VERT. REBAR
EA/3	C5-5-1	14	W14X500		24#18
EB/2	(A) C5-5-2	14	W14X665		36#18
EB/2	(B) C5-5-2	14	W14X665		36#18
EB/3	(A) C5-5-4	14	SOLID 24X24	SOLID 28X28	24#18
EB/3	(B) C5-5-4	14	SOLID 24X24	SOLID 28X28	24#18
EC/3	(A) C5-5-4	14	SOLID 24X24	SOLID 28X28	24#18
EC/3	(B) C5-5-4	14	SOLID 24X24	SOLID 28X28	24#18
EC/4	(A) C5-5-4	14	SOLID 24X24	SOLID 28X28	24#18
EC/4	(B) C5-5-4	14	SOLID 24X24	SOLID 28X28	24#18
EE/3	(A) C5-5-4	14	SOLID 24X24	SOLID 28X28	24#18
EE/3	(B) C5-5-4	14	SOLID 24X24	SOLID 28X28	24#18
EF/4	(A) C5-5-2	14	W14X500	W14X665	24#18

# HUDSON YARDS PLATFORM

Address  
530 WEST 33RD STREET  
NEW YORK, NY



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**LRR Substation**  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0009	10/14/2014
ASH0040 - TOWER E STEEL FRAMING	8/28/2014
ASH005 - TOWER E STEEL FRAMING	7/27/2014
ASH0013	3/20/2014
ASH0005	1/14/2014
NYC DOB FILING	1/3/2014
NYC DOB FILING	12/4/2013
L.R.R. - PRE-FINAL 100%	11/22/2013
Sub. PLATFORM SUBMISSION	
DOB PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DOB PHASE 1 STRUCTURE UPDATE	9/29/2013
LRR - 60% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
LRR - 60% SUBMISSION	5/29/2013
FILING FOR FOUNDATIONS	5/28/2013
LRR - 60% - PHASE 1 FDNS	3/29/2013
LRR - 30% SUBMISSION	2/15/2013
NYC DOB FILING	08/

Exp. Plan

Date: 02/15/2013  
Project No: N11330.00  
Author: [Signature]  
Drawn By: [Signature]

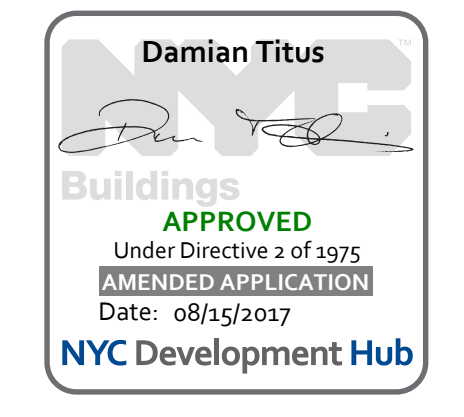
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## COLUMN & FOUNDATION SCHEDULE - TOWER E

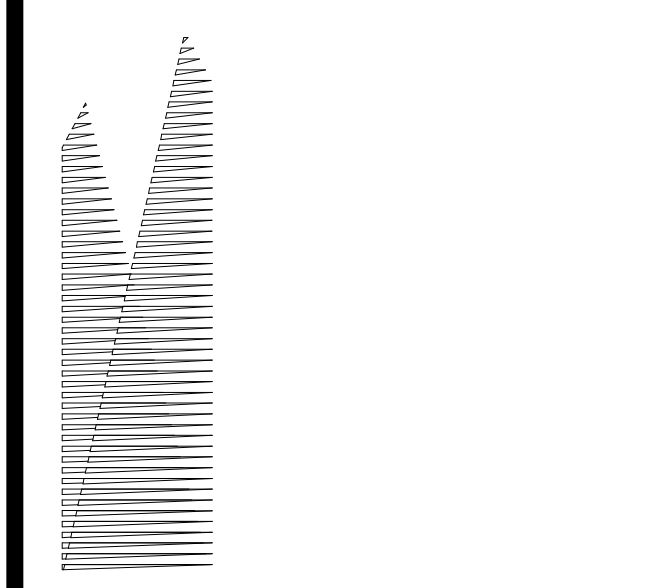
Drawing Number / B.C.A.N Drawing Number

FO-311.01

SHEET 12 of 163



Damian Titus  
NYC Development Hub



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LJRR Substation  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00049	10/14/2014
ASH00007	2/20/2014
ASH00005	2/18/2014
PDC 04	2/5/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	
DI-02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DI-01 PHASE 1 STRUCTURE UPDATE	9/20/2013
LJRR - 90% SUBMISSION	8/09/2013
100% Submission	Now

Key Plan

Date: 08/09/13  
Project No: N11330.00  
Revision: Author  
Sheet Number

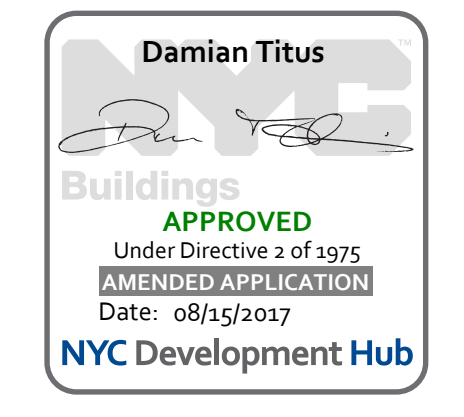
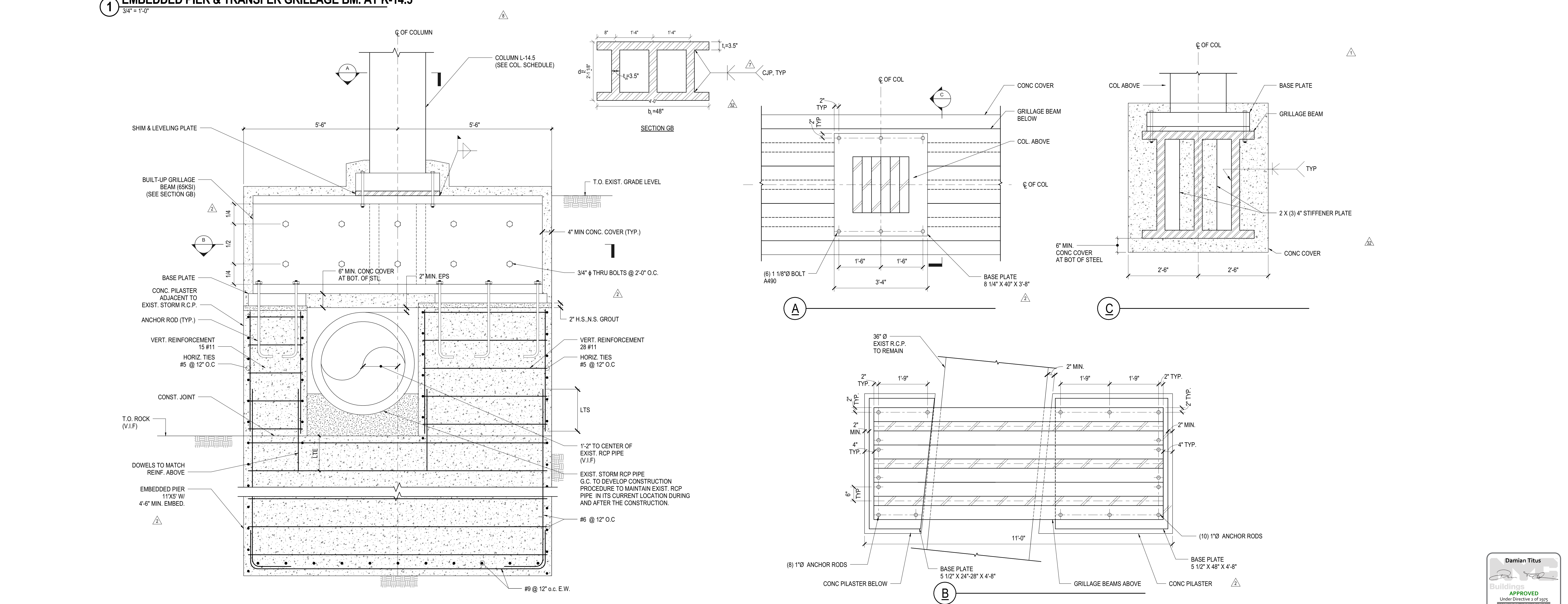
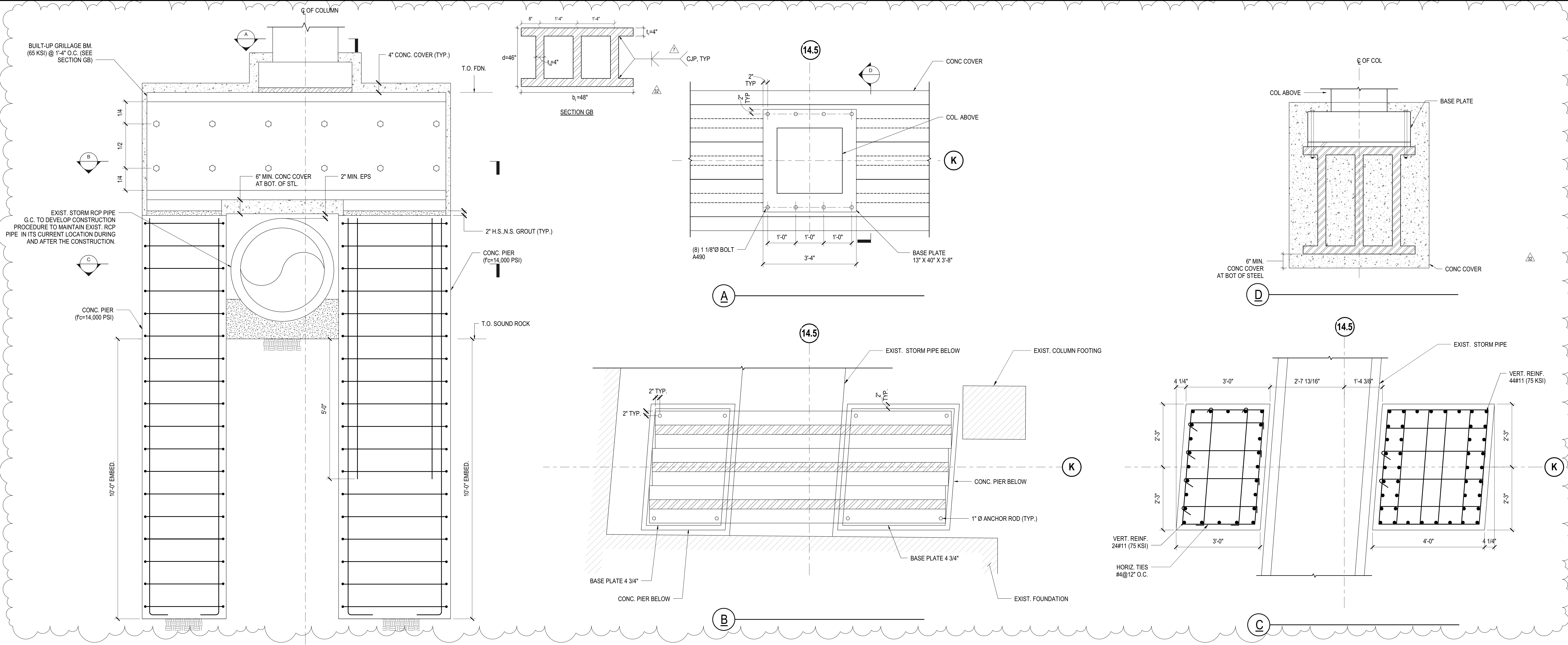
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**EAST PLATFORM FOUNDATION SECTIONS AND DETAILS**

Drawing Number / Revision Drawing Number

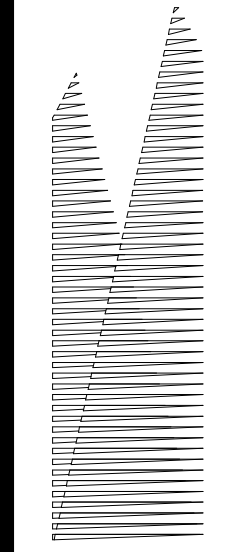
**FO-356.01**

SHEET 13 of 163



Damian Titus  
APPROVED  
Under Directive 1 of 1975  
Professional Engineer  
Date: 08/15/2017  
NYC Development Hub

EAST PLATFORM FOUNDATION SECTIONS AND DETAILS  
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 FO-356.01  
 10/20/2016 8:25:36 PM



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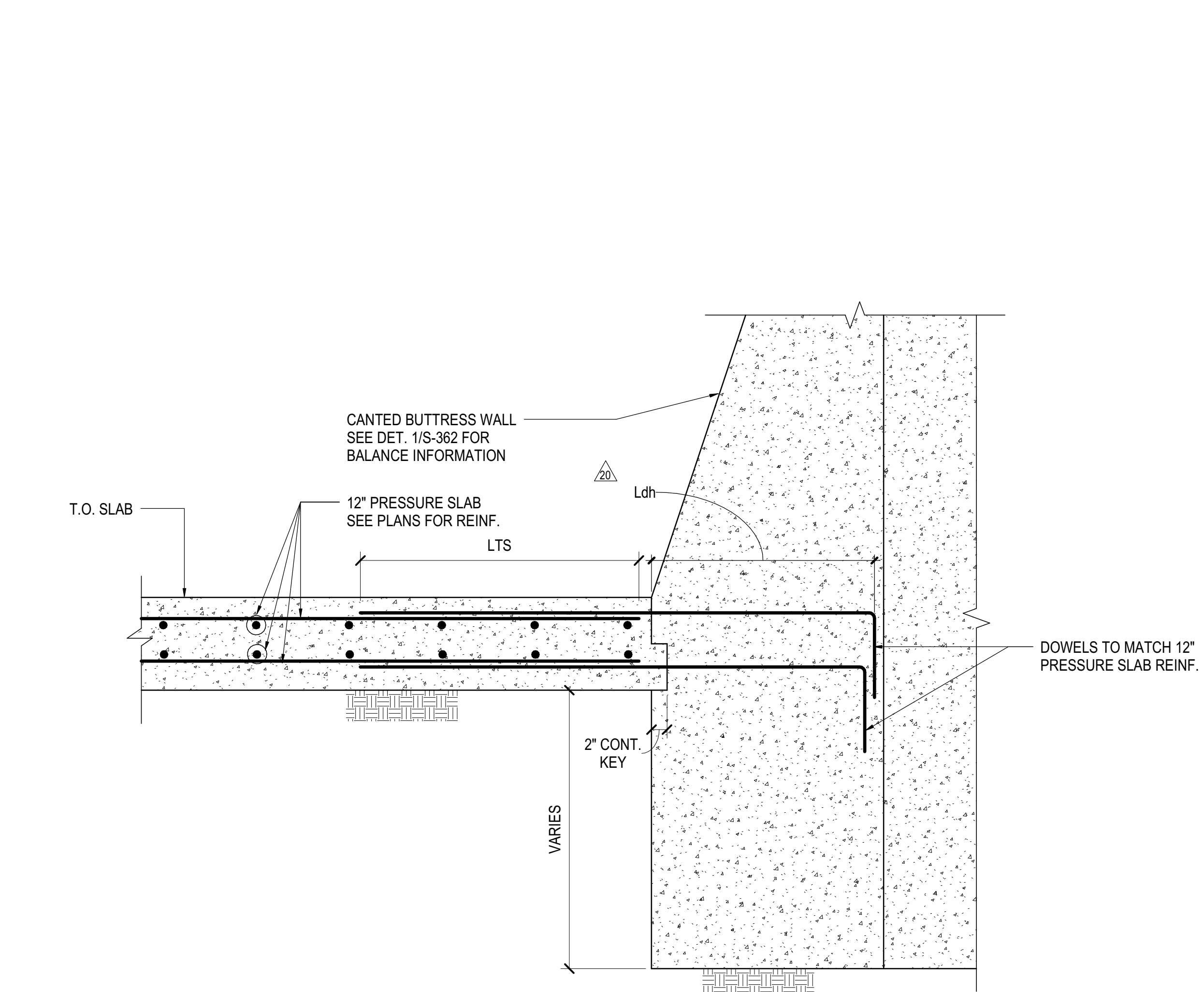
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PC Architects & Planning Consultants  
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Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
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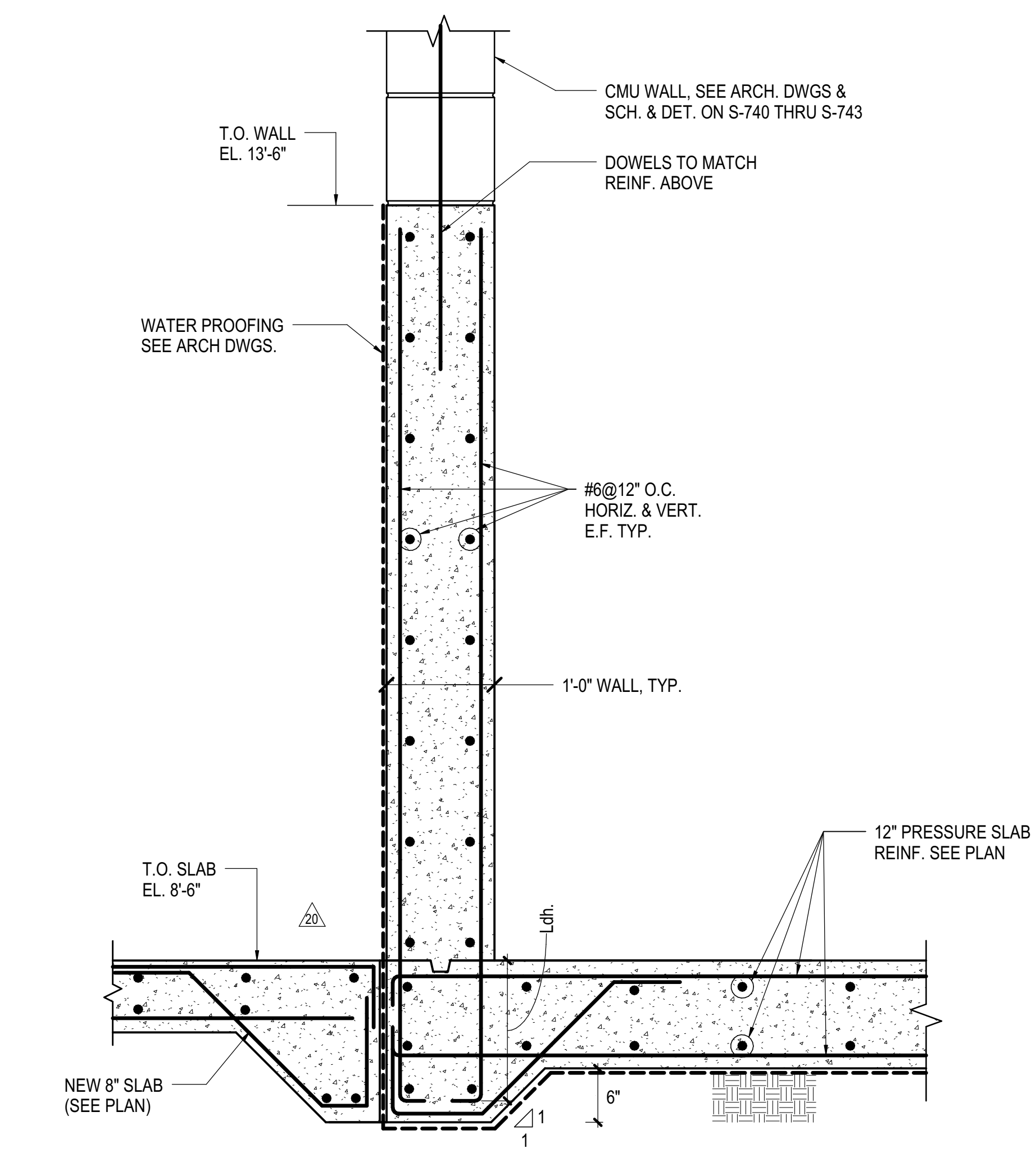
Civil, Mechanical, Electrical, Plumbing  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

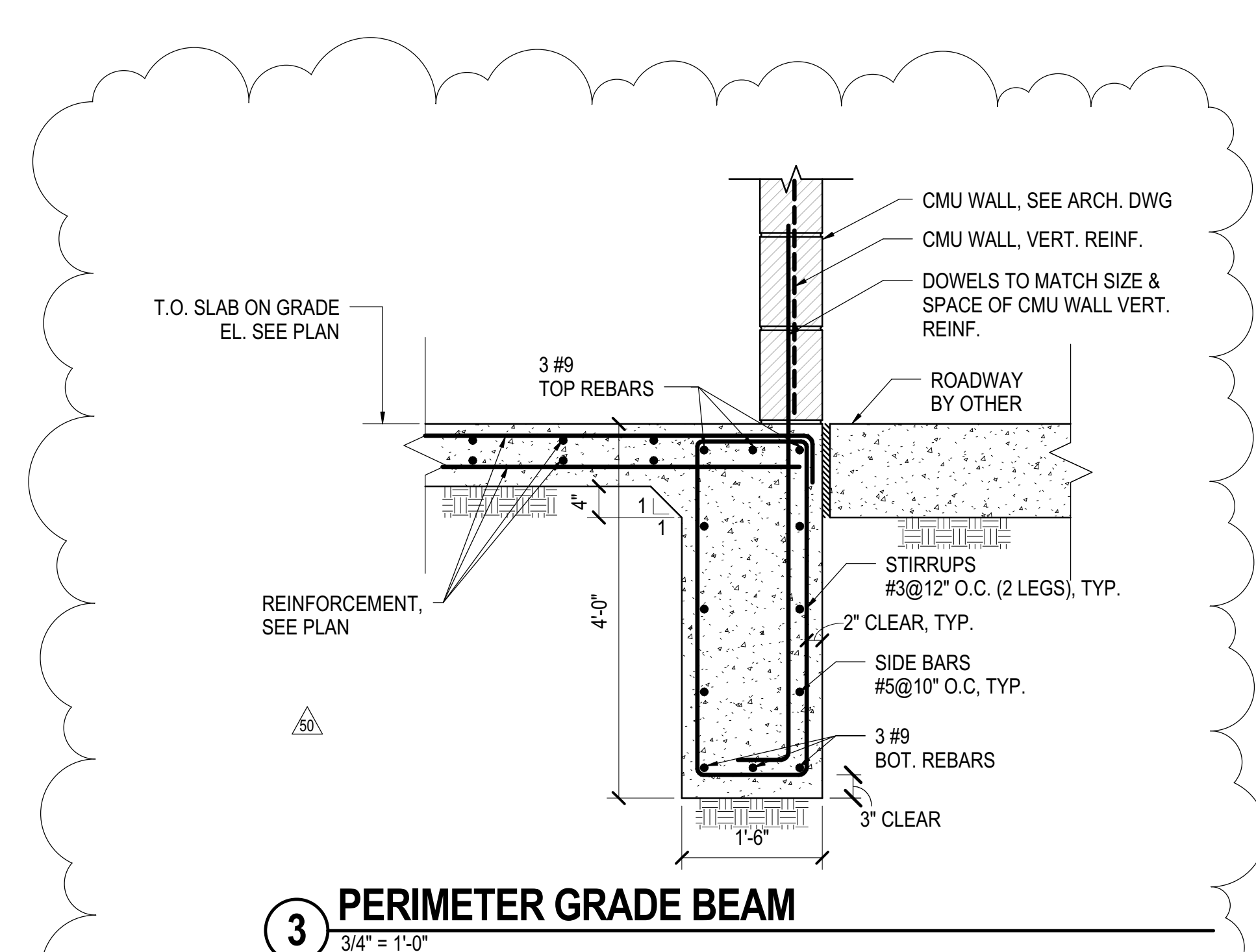
LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



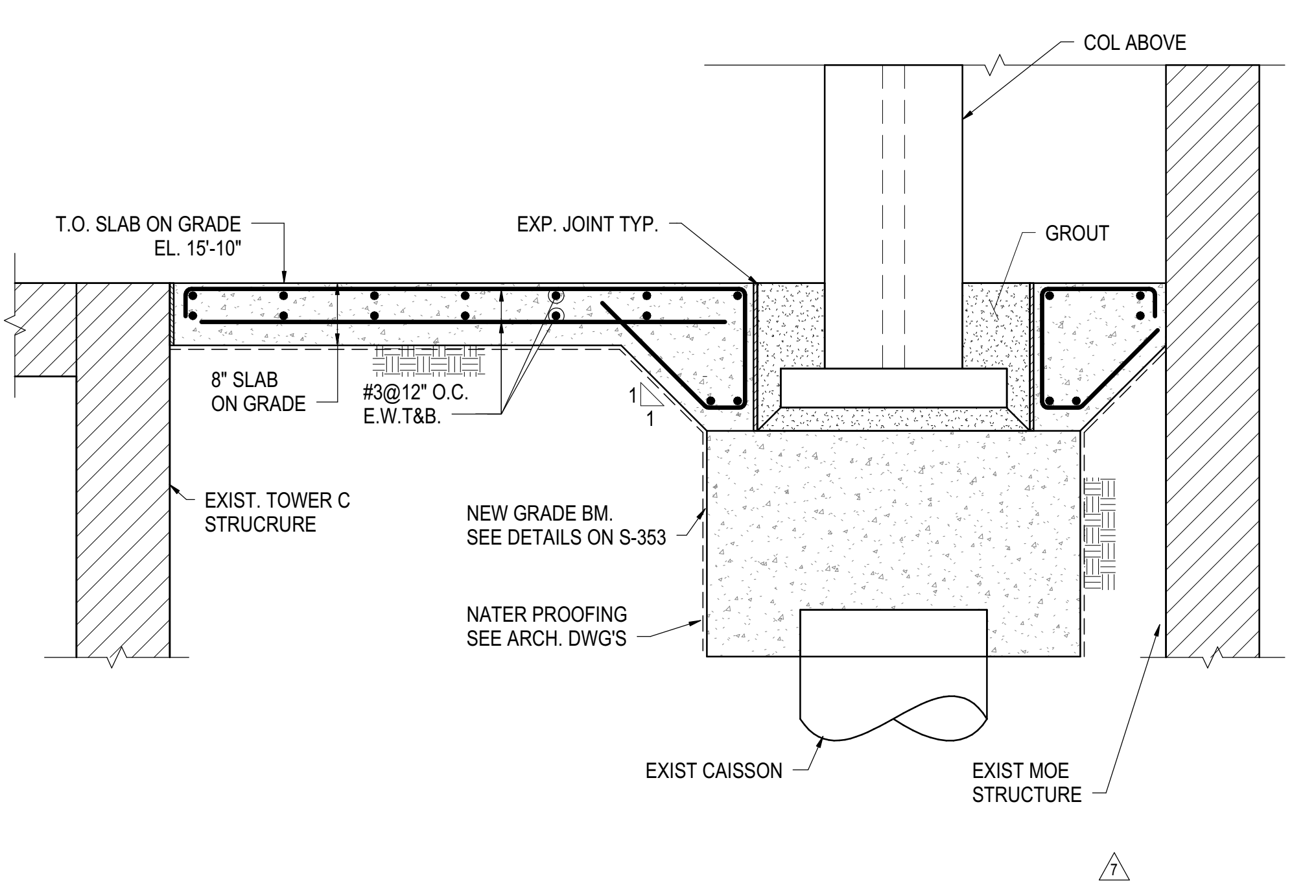
**1 12" PRESSURE SLAB CONN. TO 33RD RETAINING WALL**  
1" = 1'-0"



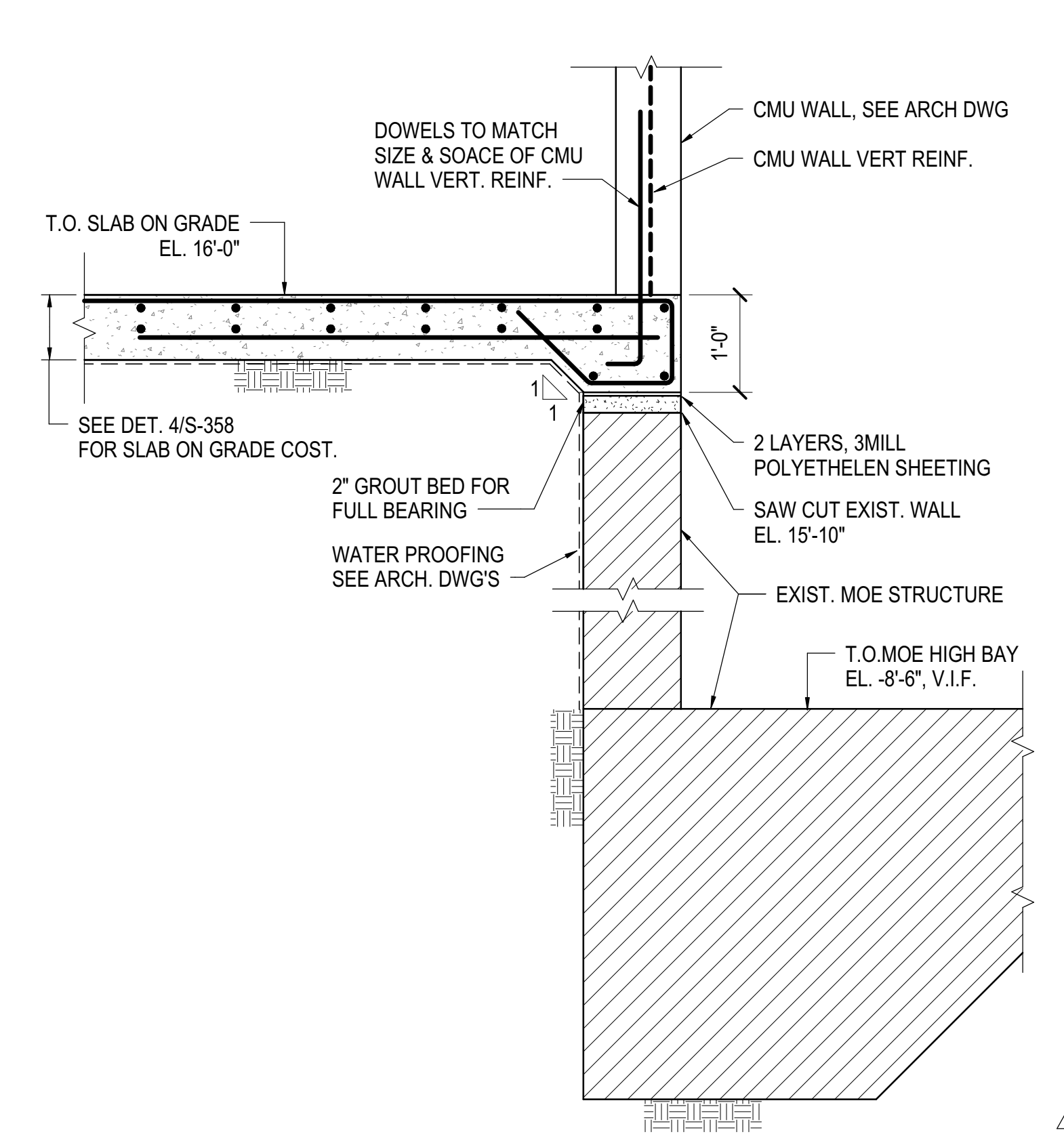
**2 PRESSURE SLAB DETAIL**  
1" = 1'-0"



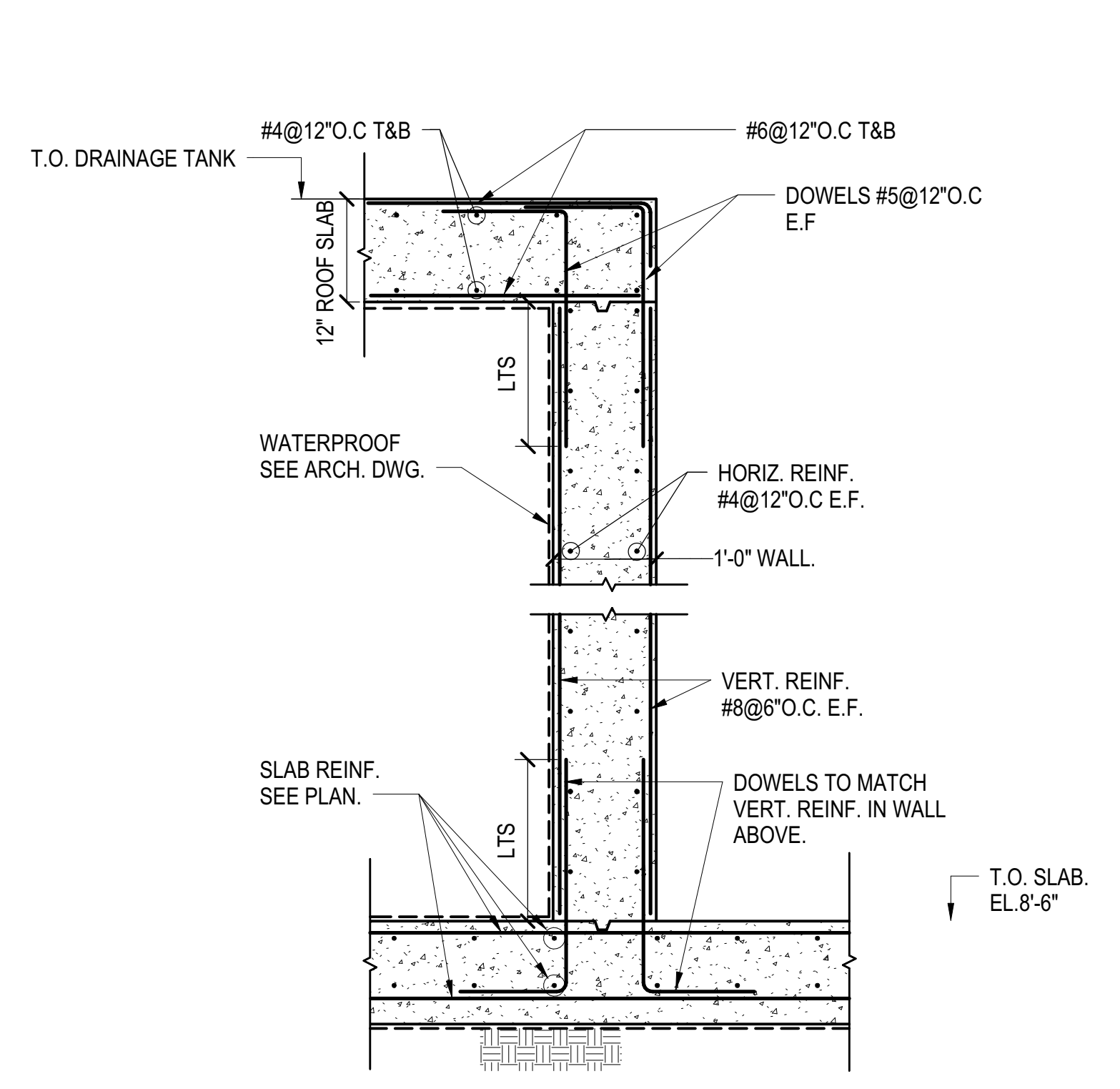
**3 PERIMETER GRADE BEAM**  
3/4" = 1'-0"



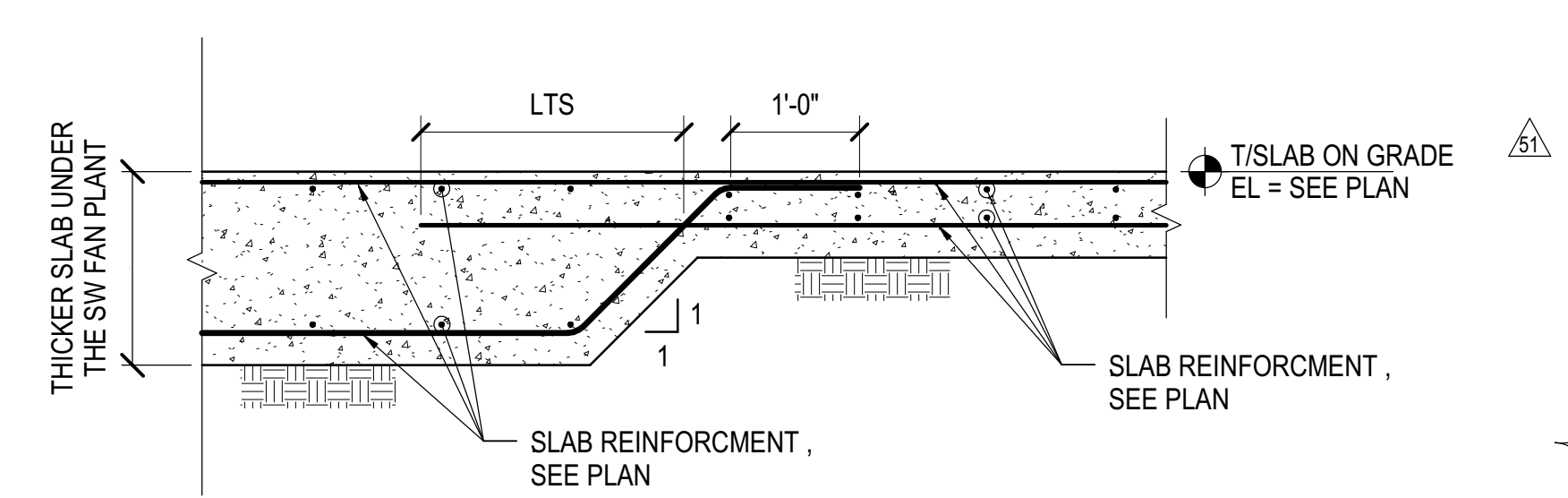
**4 SLAB ON GRADE AT GRIDLINE 1**  
3/4" = 1'-0"



**5 SLAB ON EXIST. EDN AT SE CORNER**  
3/4" = 1'-0"



**6 PLAZA DRAINAGE TANK DETAIL**  
3/4" = 1'-0"



**7 TRANSITION AT DIFFERENT SLAB THICKNESS**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0000	05/26/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0028 - SEQUENCE 11 FRAMING	6/09/2014
ASH0005	2/18/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M-E - PLATFORM SUBMISSION	
DL-02 PHASE 1 STRUCTURAL UPDATE	11/1/2013

Key Plan

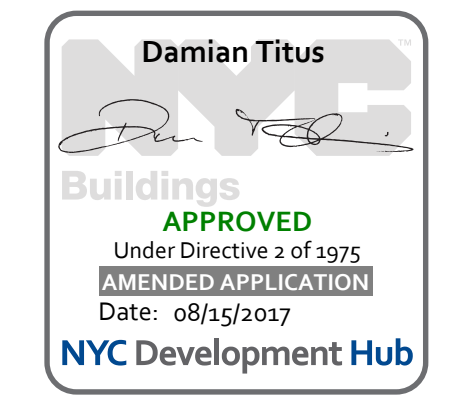
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Project No: N11330.00  
Drawn By: Author  
Sheet Number

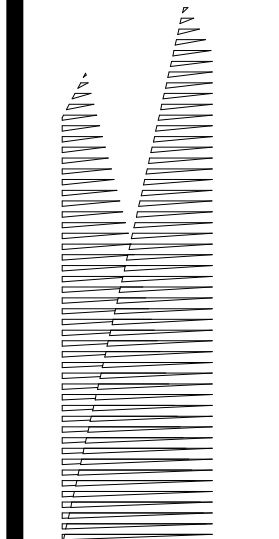
**HYE-PL-FO-358.01**

**EAST PLATFORM FOUNDATION SECTIONS AND DETAILS**

Drawing Number: B-RCV Drawing Number  
**FO-358.01**

SHEET 14 of 163





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Construction Manager  
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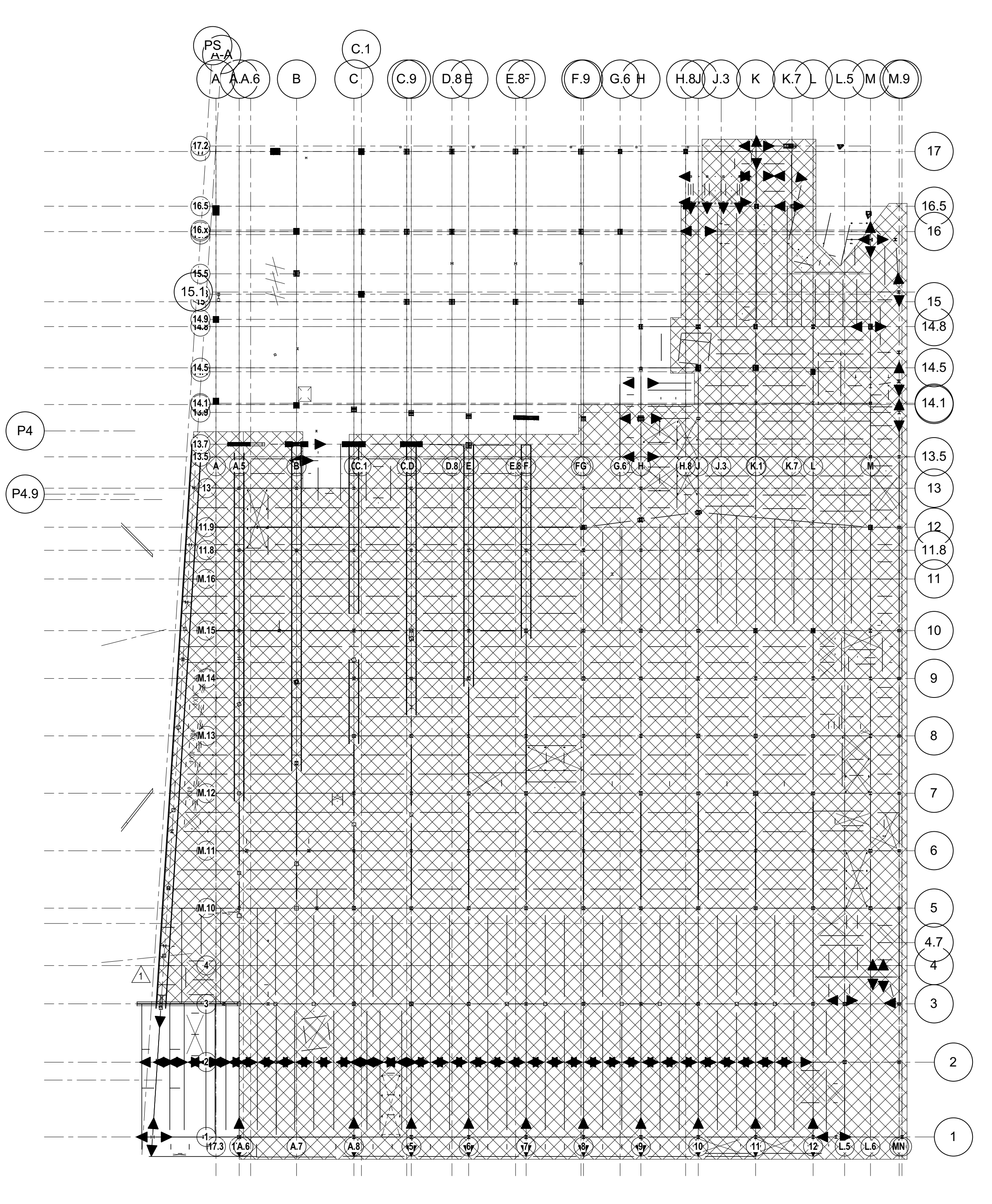
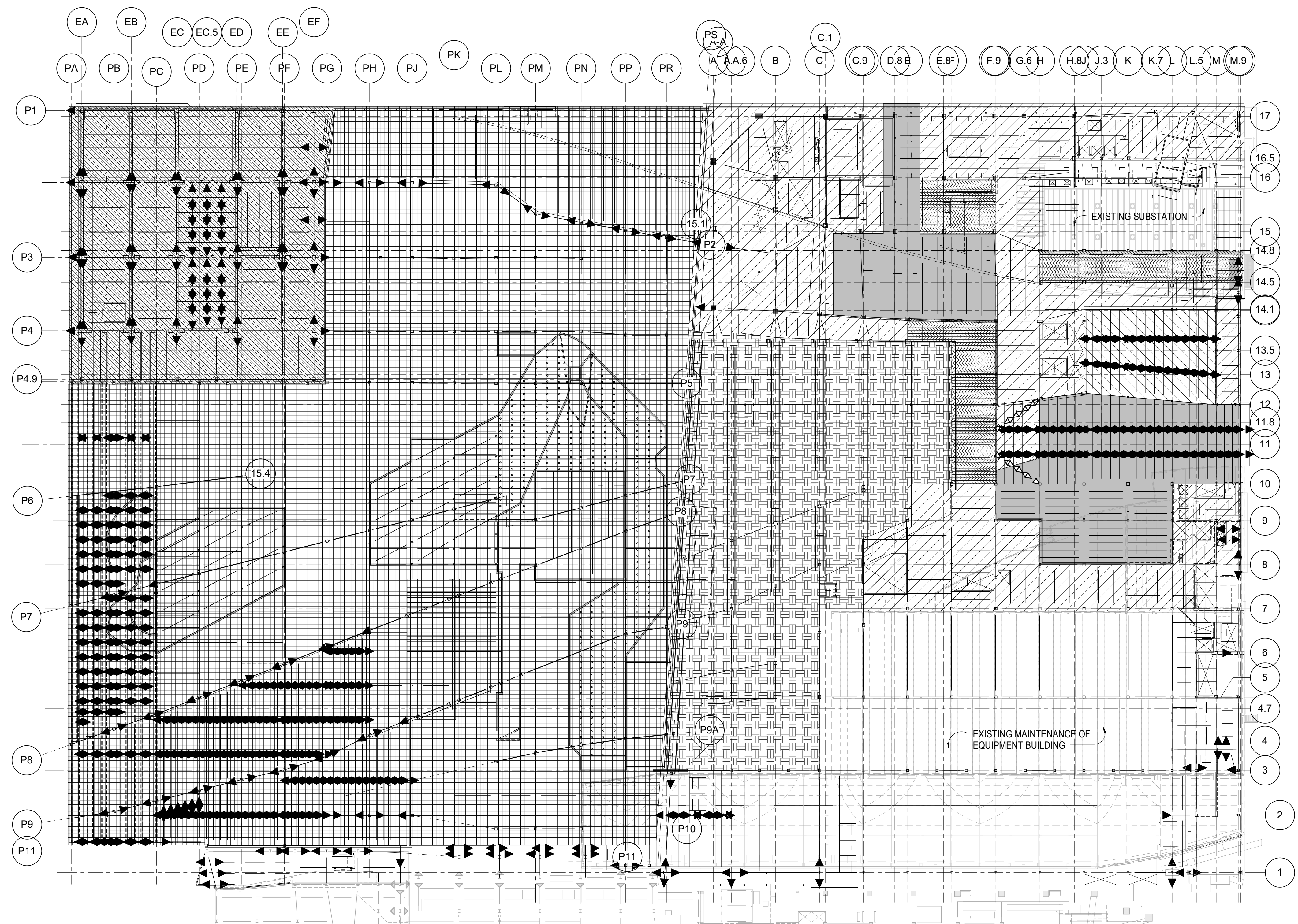
Architect  
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Fire Alarm, Fire Protection, Security  
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New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

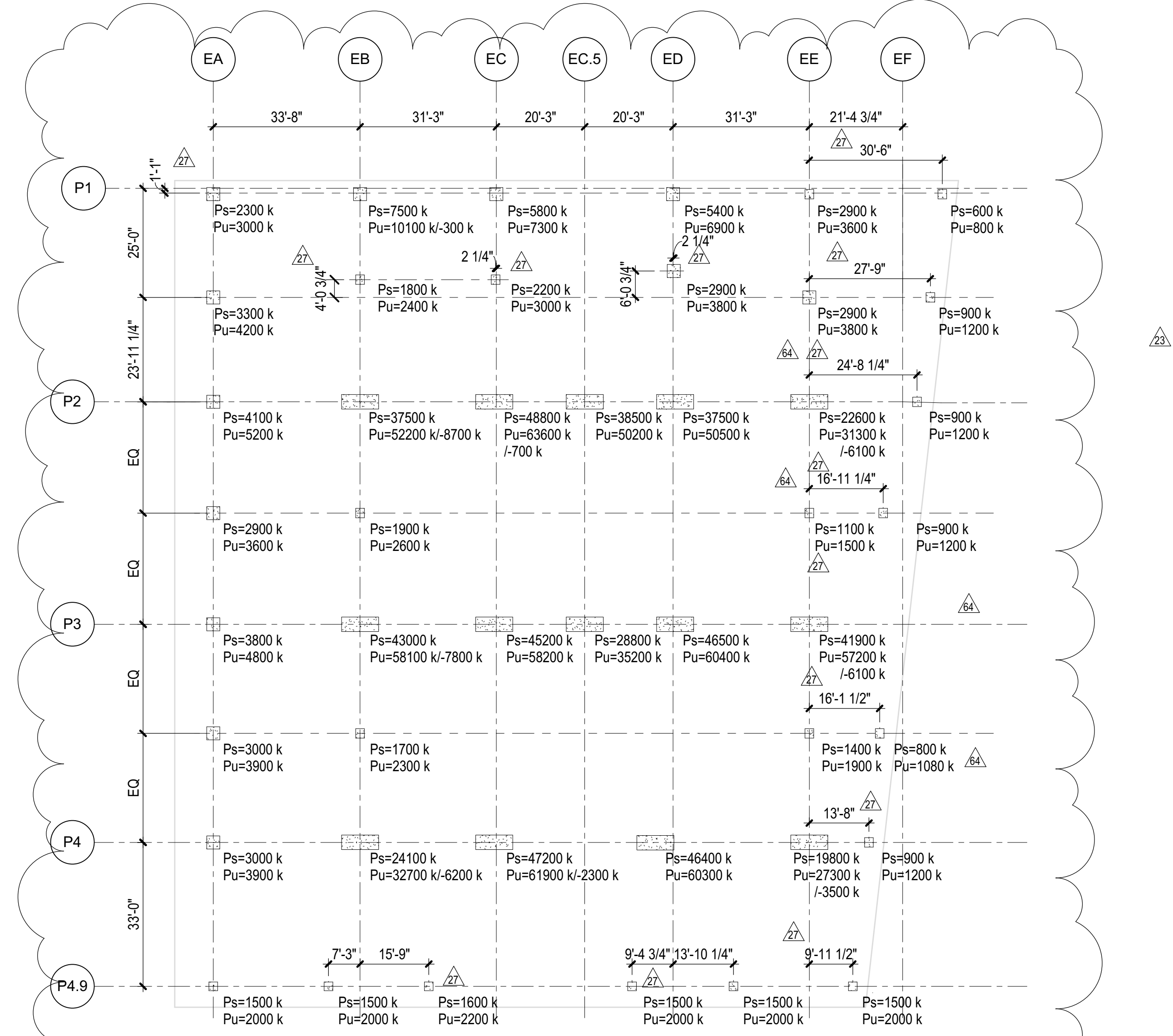
LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



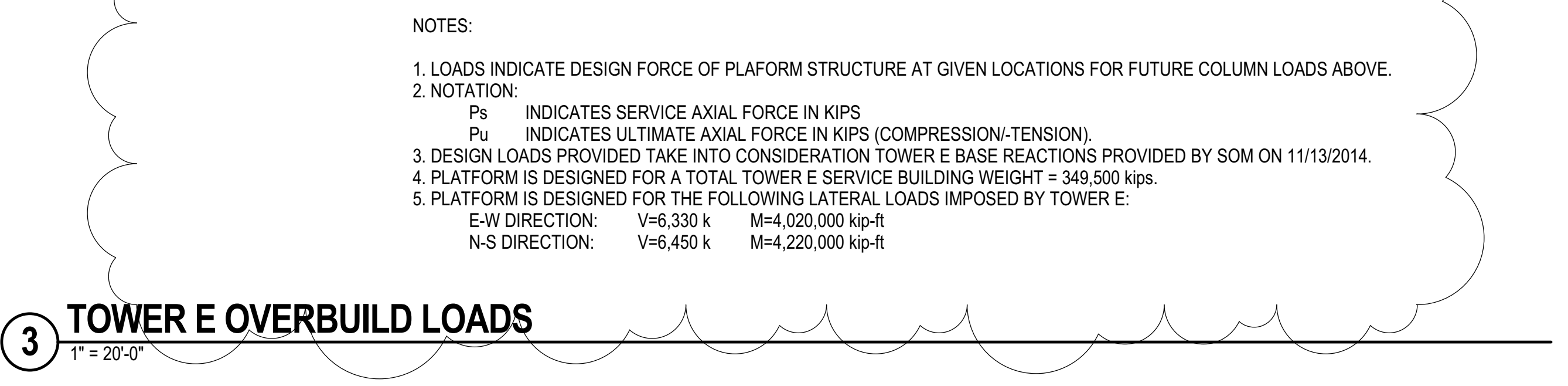
1 LOWER LEVEL PLATFORM - LOADING DIAGRAM  
1" = 40'-0"

2 UPPER LEVEL PLATFORM - LOADING DIAGRAM  
1" = 40'-0"



TOWER A AND RETAIL LATERAL LOAD SUMMARY		
	SERVICE	FACTORED
NORTH/SOUTH		
BASE SHEAR (k)	14,800	23,700
OVERTURNING MOMENT (k-ft)	8,161,000	13,057,700
EAST/WEST		
BASE SHEAR (k)	10,800	17,400
TOWER A	3,500	5,000
RETAIL	7,303,400	11,685,400
TOWER A	660,800	944,000
RETAIL		

4 TOWER A AND RETAIL LATERAL LOAD SUMMARY  
NOT TO SCALE



- NOTES:
- LOADS INDICATE DESIGN FORCE OF PLATFORM STRUCTURE AT GIVEN LOCATIONS FOR FUTURE COLUMN LOADS ABOVE.
  - NOTATION:  
 Ps INDICATES SERVICE AXIAL FORCE IN KIPS  
 Pu INDICATES ULTIMATE AXIAL FORCE IN KIPS (COMPRESSION-TENSION)
  - DESIGN LOADS PROVIDED TAKE INTO CONSIDERATION TOWER E BASE REACTIONS PROVIDED BY SOM ON 11/13/2014.
  - PLATFORM IS DESIGNED FOR A TOTAL TOWER E SERVICE BUILDING WEIGHT = 349,500 kips.
  - PLATFORM IS DESIGNED FOR THE FOLLOWING LATERAL LOADS IMPOSED BY TOWER E:  
 E-W DIRECTION: V=6,330 k M=4,020,000 kip-ft  
 N-S DIRECTION: V=6,450 k M=4,220,000 kip-ft

3 TOWER E OVERBUILD LOADS  
1" = 20'-0"

**LOADING DIAGRAM LEGEND**  
1" = 40'-0"

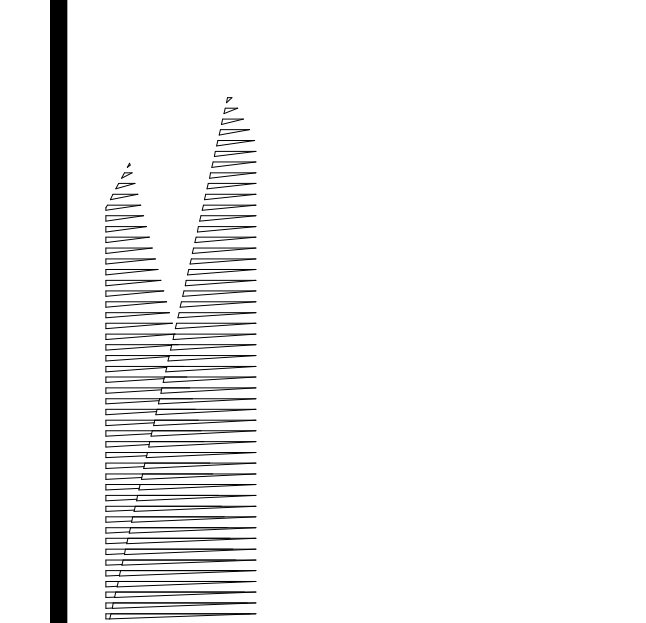
- MECHANICAL  
4" TOPPING SLAB: 50 PSF  
HUNG MECHANICAL: 30 PSF  
LL: 150 PSF OR ACTUAL WEIGHT  
LL: 250 PSF (DURING CONSTRUCTION)
- PLATFORM - SERVICE SPACES  
4" TOPPING SLAB: 50 PSF  
HUNG MECHANICAL: 30 PSF  
LL: 100 PSF (REDUCIBLE)  
LL: 250 PSF (DURING CONSTRUCTION)
- LOADING DOCK (10TH AVE & 33RD ST)  
4" TOPPING SLAB: 50 PSF  
HUNG MECHANICAL: 30 PSF  
LL: 250 PSF (NON-REDUCIBLE)
- LOADING DOCK (10TH AVE & 33RD ST)  
4" TOPPING SLAB: 50 PSF  
HUNG MECHANICAL: 30 PSF  
LL: 250 PSF (NON-REDUCIBLE)  
LL: 20 PSF (DURING CONSTRUCTION)
- CRAWL SPACE STORAGE  
4" TOPPING SLAB: 50 PSF  
HUNG MECHANICAL: 30 PSF  
LL: 150 PSF (NON-REDUCIBLE)
- PLATFORM - PLAZA (LANDSCAPED REGION)  
FILL ALLOWANCE: 350 PSF  
HUNG MECHANICAL: 30 PSF  
LL: 250 PSF (NON-REDUCIBLE)
- PLATFORM - RETAIL (ABOVE LIRR SPACE)  
4" TOPPING SLAB: 50 PSF  
HUNG MECHANICAL: 30 PSF  
LL: 100 PSF (PERMANENT)  
LL: 250 PSF (DURING CONSTRUCTION)
- PLATFORM - TOWER E FOOTPRINT  
FULL ALLOWANCE: 320 PSF  
HUNG MECHANICAL: 30 PSF  
LL: 250 PSF (NON-REDUCIBLE)
- PLATFORM - LOBBY  
FILL ALLOWANCE: 75PSF  
HUNG MECHANICAL: 30 PSF  
LL: 250 PSF (NON-REDUCIBLE)

DESCRIPTION	DATE
DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH00116	4/13/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00047	10/14/2014
ASH00048 - TOWER E STEEL FRAMING	8/25/2014
ASH00032 - TOWER E STEEL FRAMING	7/22/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod. PLATFORM SUBMISSION	
DI-02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DI-01 PHASE 1 STRUCTURE UPDATE	9/29/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE 1 FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
NYC DOB FILING	08/2012

Key Plan

Date: 12/14/2012  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

HYE -PL -S-004.01  
LOADING DIAGRAMS



*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Owner*  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

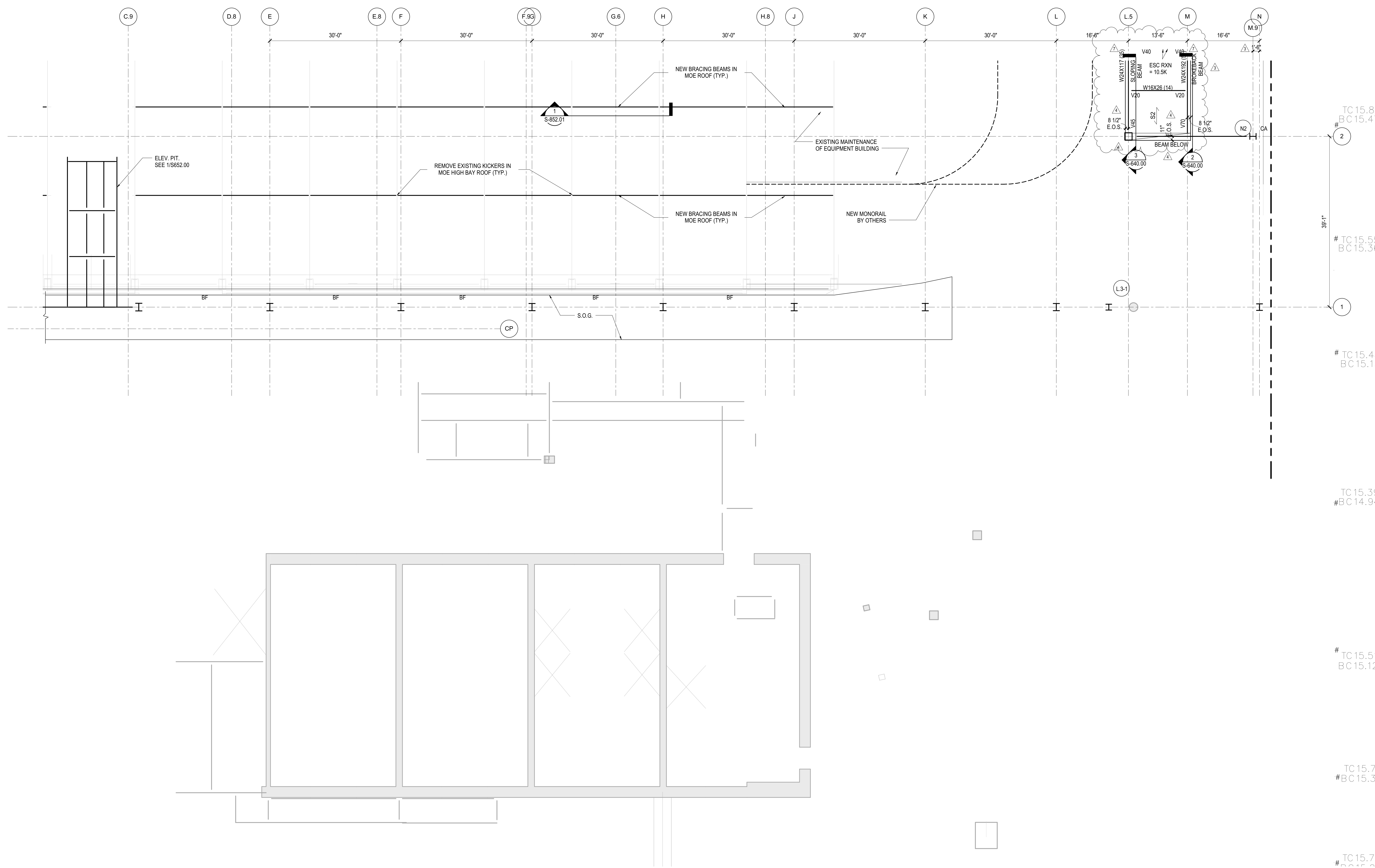
*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
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*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LIRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

*LIRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



TC 15.85  
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TC 15.55  
#BC 15.36

TC 15.48  
#BC 15.15

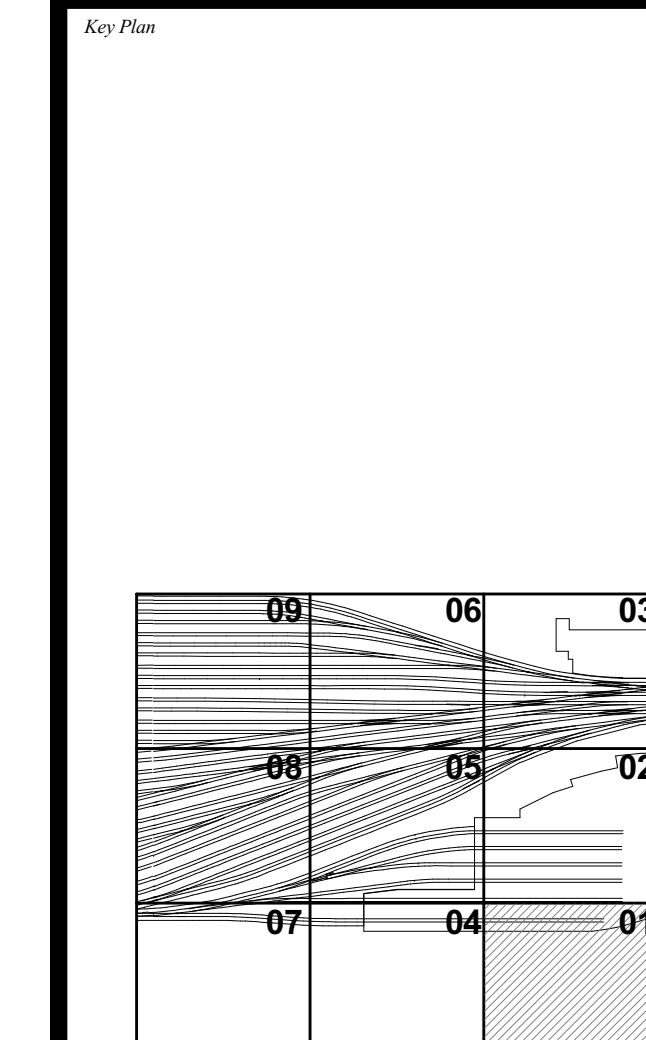
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TC 15.70  
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TC 15.78  
#BC 15.36

DESCRIPTION	DATE
DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0037 - RETAIL FIELD MODIF.	8/19/2014
ASH0005	1/14/2014
NYC DOB FILING	12/4/2013
ASH0001	12/20/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE 1 FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
Rev	000



Date: 12/14/12  
Project No: N11330.00  
Drawing No: Author

**HYE -PL -S-131.01**

**PLATFORM LOWER LEVEL PLAN SECTOR 01**

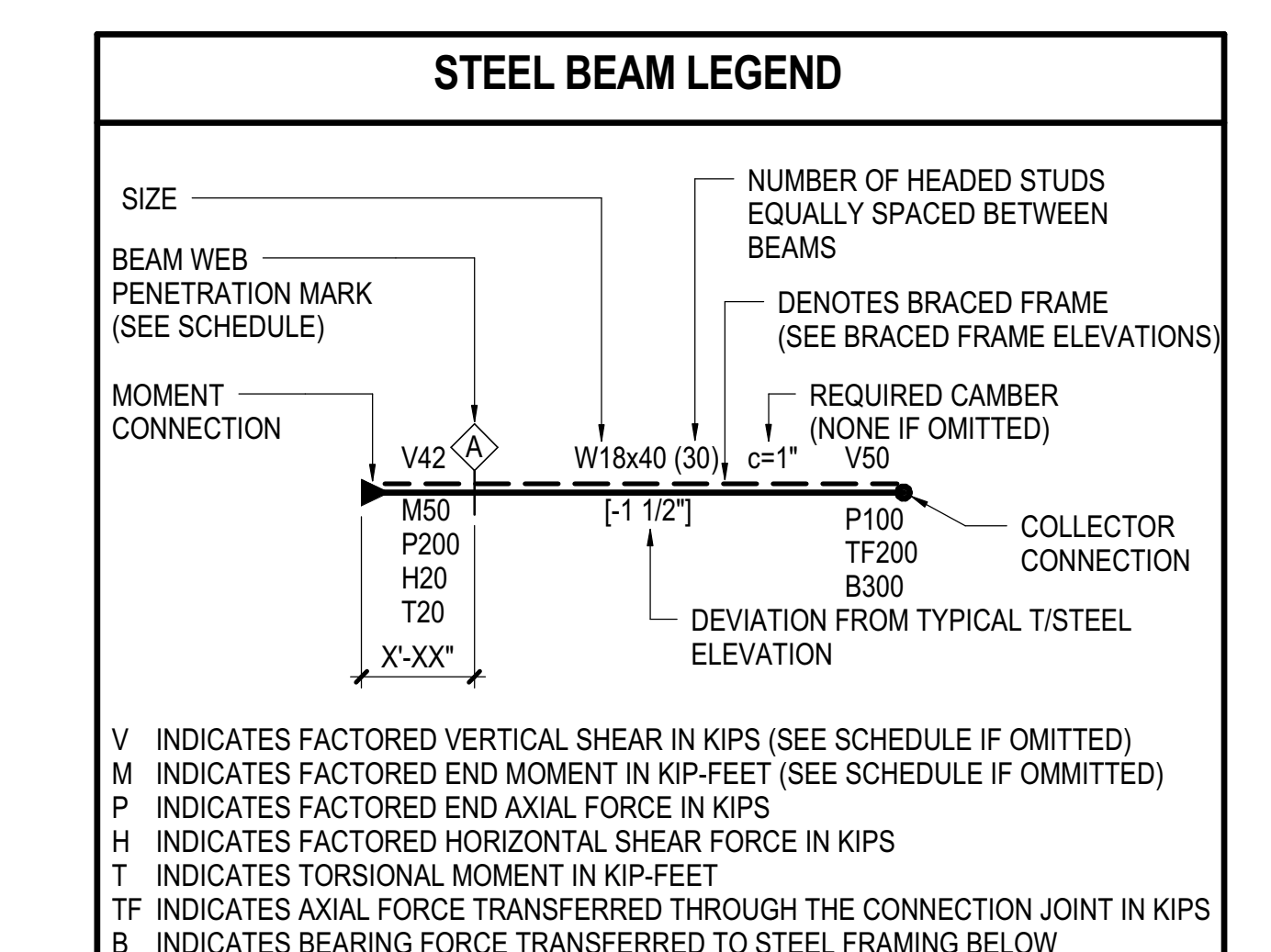
Drawing Number / B.C.A.N. Drawing Number  
**S-131.01**

SHEET 16 of 163

- SHEET NOTES:**
- T/STRUCTURAL SLAB EL+ UON THIS: X - INDICATES CHANGE IN T/STRUCTURAL SLAB ELEVATION.
  - T/STEEL EL UON
  - INDICATES DECK SPAN DIRECTION. SEE SCHEDULE ON S-003.00
  - FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:  
DRAWING LISTS, GENERAL NOTES, AND LOADING DIAGRAMS S0 SERIES DRAWINGS  
TYPICAL FOUNDATION DETAILS S3 SERIES DRAWINGS  
STEEL COLUMN SCHEDULES S4 SERIES DRAWINGS  
STEEL TYPICAL DETAILS S7 SERIES DRAWINGS

- 5. SYMBOLS:**
- INDICATES MOMENT CONNECTION
  - INDICATES LATERAL BRACING.
  - INDICATES FULL HEIGHT FITTED STIFFENER CONNECTION.
  - INDICATES SLOPE IN TOP OF SLAB
  - INDICATES SPLICE LOCATIONS. SEE S-512.00 FOR DETAILS
  - INDICATES LOCATION OF SLAB TRENCHES. SEE S-341.00 FOR DETAILS
  - INDICATES SLAB OPENING FOR DRAINAGE. TYPICALLY 2'-0". FINAL POSITION BETWEEN BEAMS TO BE COORDINATED WITH ARCHITECT.
  - INDICATES BEAM PENETRATION. SEE S-714.00 & S-715 FOR BEAM PENETRATION SCHEDULE & DETAILS
  - INDICATES BEAM REINFORCEMENT

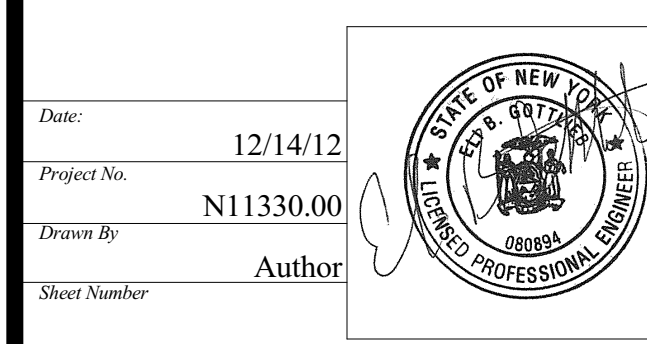
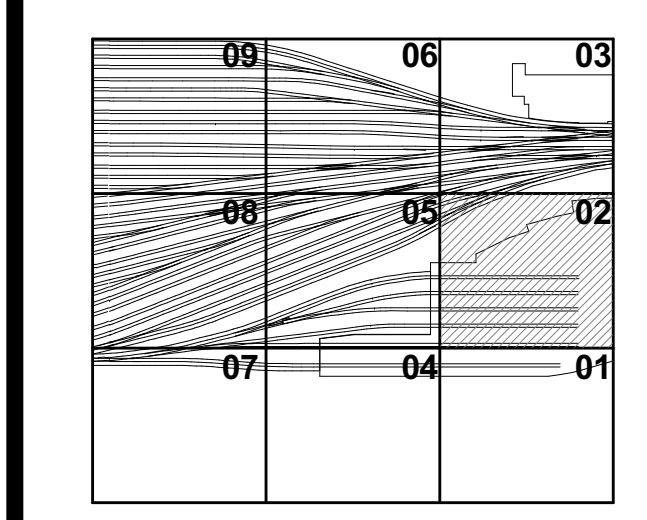
- 6. NOTATIONS:**
- C/ACB INDICATES COLUMN ABOVE/BELOW. COMPRESSION AXIAL FORCE IN COLUMN INDICATED WHERE APPLICABLE.
  - PA/PB INDICATES POST ABOVE / BELOW
  - DB INDICATES HSS8X4X3/8 ELEVATOR DIVIDER BEAM (NOT FIREPROOFED)
  - HA/HB INDICATES HANGER ABOVE/BELOW. TENSION AXIAL FORCE IN HANGER BELOW INDICATED WHERE APPLICABLE
  - MF INDICATES LATERAL MOMENT FRAME. SEE MOMENT FRAME ELEVATIONS FOR BEAM INFORMATION AND CONNECTION FORCES
  - PG INDICATES PLATE GIRDER TYPE. SEE S-511.00 FOR SCHEDULE AND DETAILS
  - TC INDICATES TORSIONAL CONNECTION FOR STAIR
  - TR INDICATES COLUMN FROM ABOVE TRANSFERS. COMPRESSION AXIAL FORCE IN COLUMN INDICATED WHERE APPLICABLE
  - BF INDICATES BRACED FRAME. SEE ELEVATIONS
  - FCA INDICATES FUTURE COLUMN ABOVE
  - FHA INDICATES FUTURE HANGER ABOVE
- NOTES:**
- IN PLENUM ZONE'S BRIDGING TO BE INSTALLED BETWEEN PRECAST PLANKS AT 90 DEGREES TO THE PLATE GIRDERS. FINAL POSITION TO BE COORDINATED BY THE CONTRACTOR TO SUIT PLANK DISTRIBUTION.
  - SEE S-513.00 FOR BRIDGING DETAILS



Damian Titus  
APPROVED  
Under Directive 3 of 1975  
Date: 08/15/2017  
NYC Development Hub

DOB POST-APPROVAL AMENDMENT	DATE
ASH0001	10/28/2016
L.I.R.R. - FINAL 100%	10/21/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0007 - RETAIL FIELD MODIF.	10/14/2014
ASH0004	7/28/2014
ASH0005	2/18/2014
ASH0006	2/12/2014
ASH0003	1/14/2014
ASH0001	12/20/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	11/22/2013
DL02 PHASE I STRUCTURAL UPDATE	11/11/2013
NYC DOB FILING	10/4/2013
DL01 PHASE I STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
NYC DOB FILING	08/01/2012

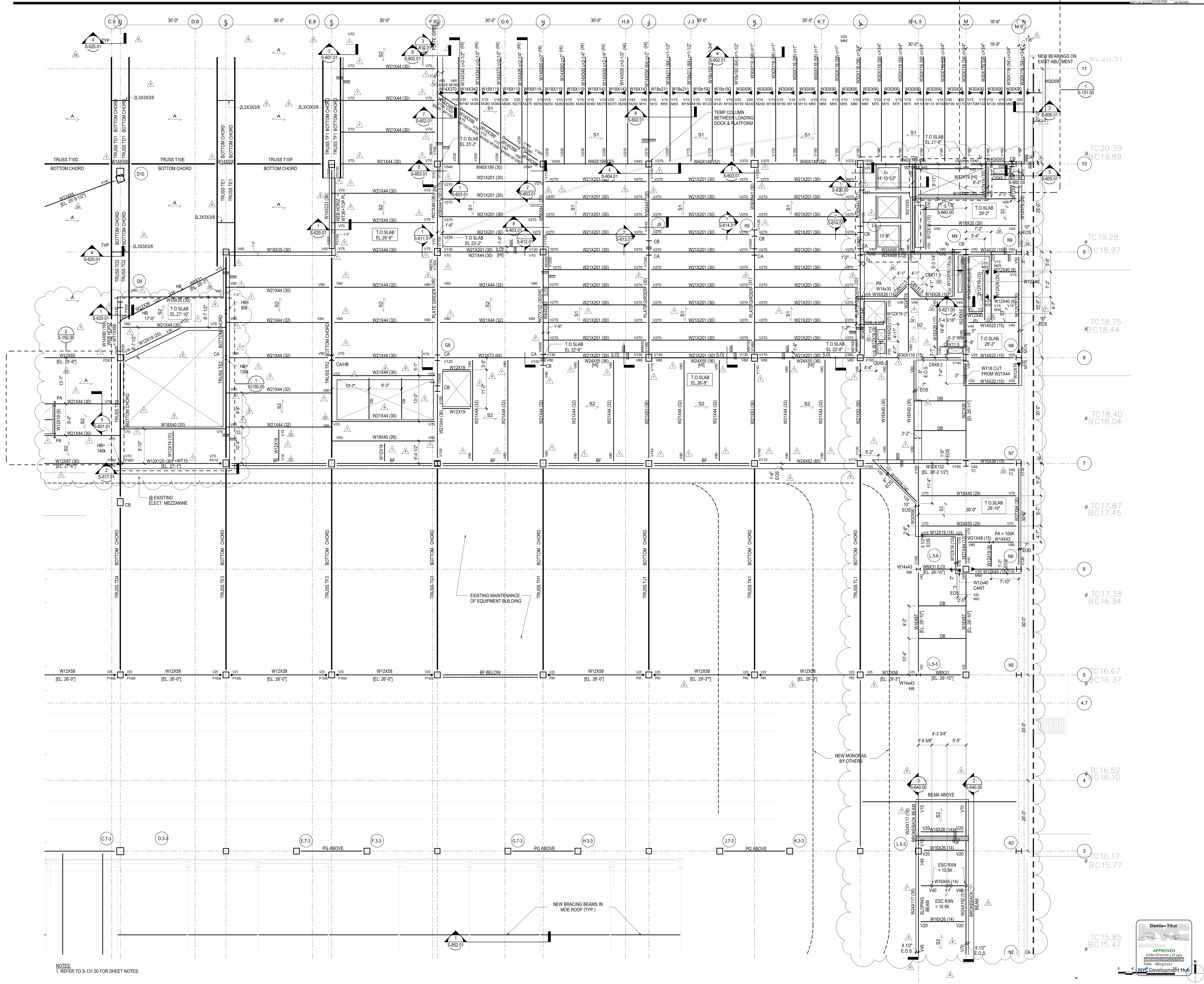
See Plan



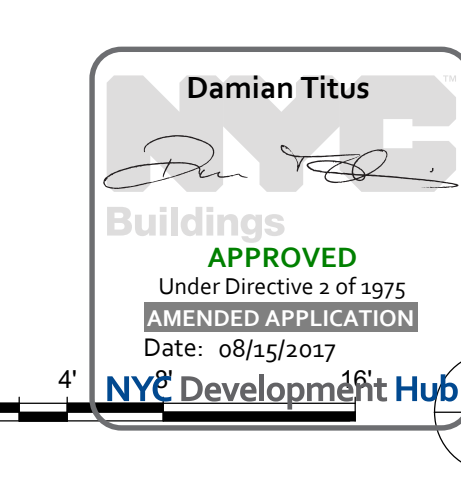
**HYE-PL-S-132.01**  
Drawing Title

**PLATFORM LOWER LEVEL PLAN SECTOR 02**

Project No: 12/14/12  
Project No: N11330.00  
Drawing No: Author  
Date: 08/15/2017



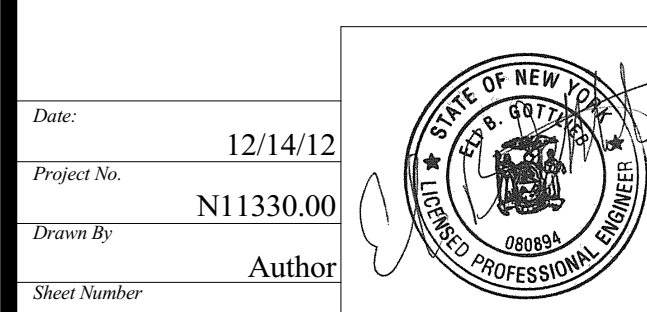
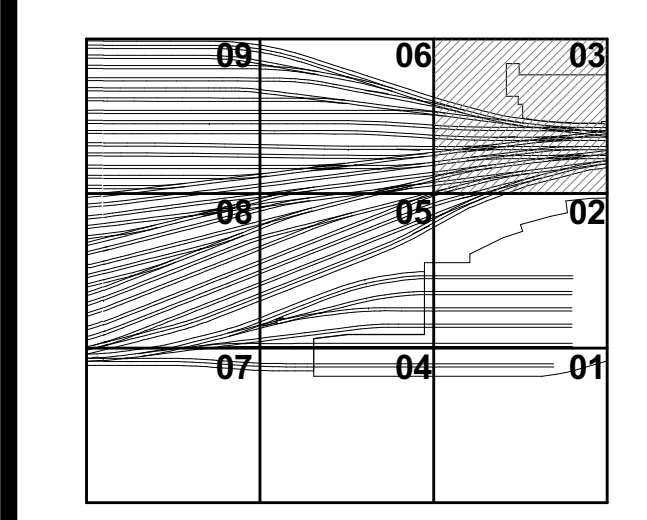
NOTES  
1. REFER TO S-131.00 FOR SHEET NOTES



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NO.	DESCRIPTION	DATE
1	DOE POST-APPROVAL AMENDMENT	10/28/2016
2	ASH0066	06/09/2015
3	ASH0068	06/09/2015
4	ASH0079	5/21/2015
5	ASH0077	5/13/2015
6	ASH0073	4/20/2015
7	ASH0056	12/19/2014
8	ASH0054	11/26/2014
9	ASH0050	10/21/2014
10	L.I.R. - FINAL 100%	10/14/2014
11	DESIGN SUBMISSION FOR RECORDS	
12	ASH0049	10/14/2014
13	ASH0046	9/28/2014
14	ASH0044	7/28/2014
15	ASH0029 - SEQUENCE 11 FRAMING	6/06/2014
16	ASH0021	5/7/2014
17	ASH0013	3/20/2014
18	ASH0007	2/20/2014
19	ASH0005	2/19/2014
20	NYC DOB FILING	12/4/2013
21	L.I.R. - PRE-FINAL 100%	11/22/2013
22	MOE - PLATFORM SUBMISSION	
23	DOE2 PHASE 1 STRUCTURE UPDATE	11/1/2013
24	NYC DOB FILING	10/4/2013
25	DESI PHASE 1 STRUCTURE UPDATE	9/29/2013
26	L.I.R. - 90% SUBMISSION	8/09/2013
27	NYC DOB FILING	6/17/2013
28	L.I.R. - 60% SUBMISSION	5/29/2013
29	L.I.R. - 60% PHASE 1FDS	3/29/2013
30	L.I.R. - 30% SUBMISSION	2/15/2013
31	ASH0003	1/14/2013
32	NYC DOB FILING	12/4/2012
33	L.I.R. - PRE-FINAL 100%	11/22/2012
34	MOE - PLATFORM SUBMISSION	
35	DOE2 PHASE 1 STRUCTURE UPDATE	11/1/2012
36	NYC DOB FILING	10/4/2012
37	DESI PHASE 1 STRUCTURE UPDATE	9/29/2012
38	L.I.R. - 90% SUBMISSION	8/09/2012
39	NYC DOB FILING	6/17/2012
40	L.I.R. - 60% SUBMISSION	5/29/2012
41	L.I.R. - 60% PHASE 1FDS	3/29/2012
42	L.I.R. - 30% SUBMISSION	2/15/2012
43	ASH0002	1/14/2012
44	NYC DOB FILING	12/4/2011
45	L.I.R. - PRE-FINAL 100%	11/22/2011
46	MOE - PLATFORM SUBMISSION	
47	DOE2 PHASE 1 STRUCTURE UPDATE	11/1/2011
48	NYC DOB FILING	10/4/2011
49	DESI PHASE 1 STRUCTURE UPDATE	9/29/2011
50	L.I.R. - 90% SUBMISSION	8/09/2011
51	NYC DOB FILING	6/17/2011
52	L.I.R. - 60% SUBMISSION	5/29/2011
53	L.I.R. - 60% PHASE 1FDS	3/29/2011
54	L.I.R. - 30% SUBMISSION	2/15/2011
55	ASH0001	1/14/2011

Key Note

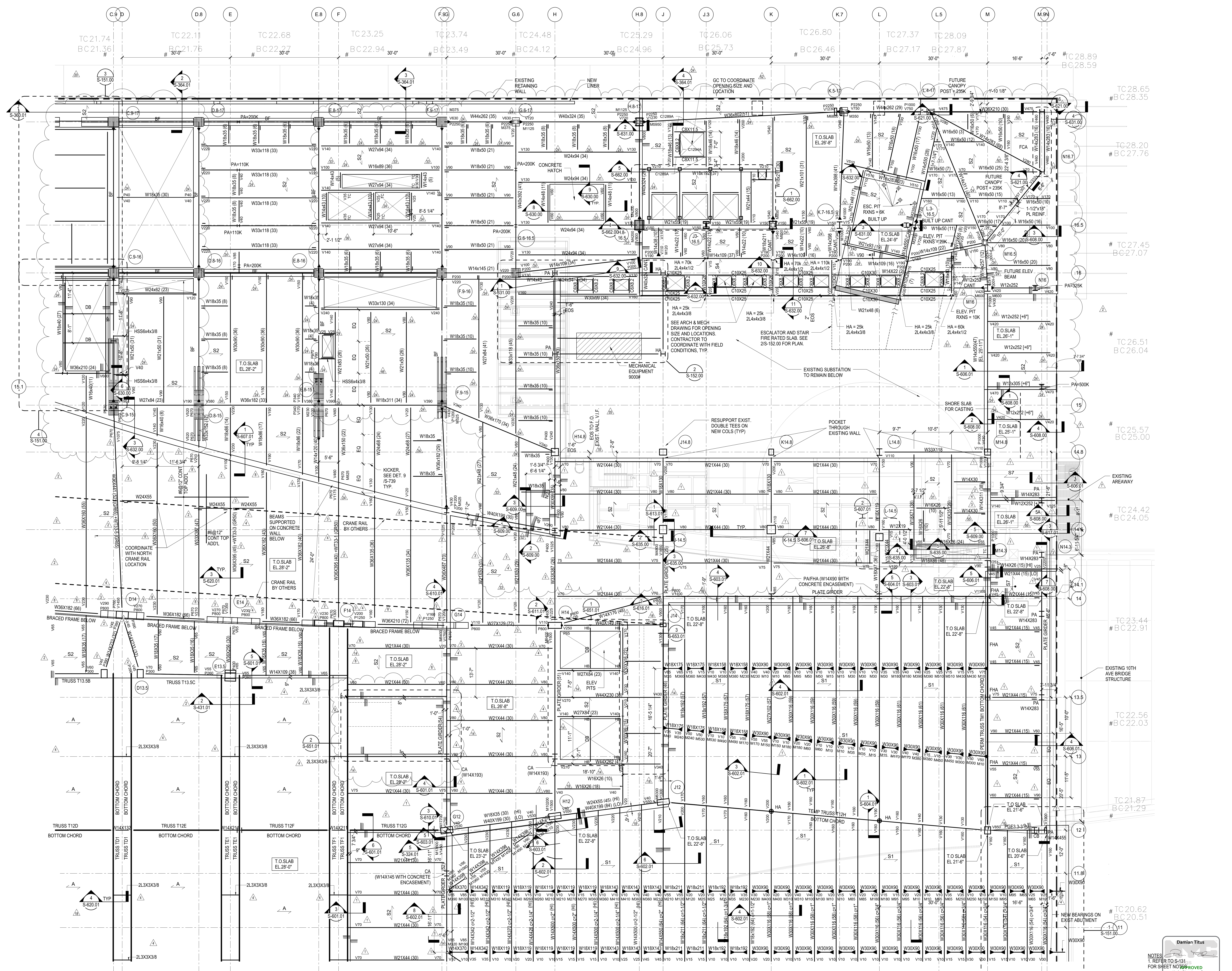


HYE-PL-S-133.01

PLATFORM LOWER LEVEL PLAN SECTOR 03

Notes:  
1. REFER TO S-131 FOR SHEET NOTATIONS

DATE: 12/14/12  
PROJECT NO: N11330.00  
DRAWING TITLE: PLATFORM LOWER LEVEL PLAN SECTOR 03  
DRAWING NUMBER: HYE-PL-S-133.01



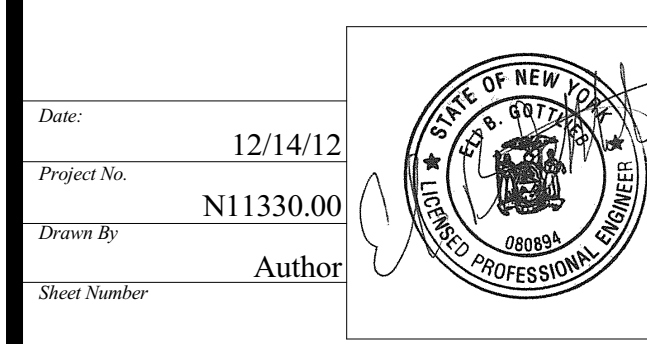
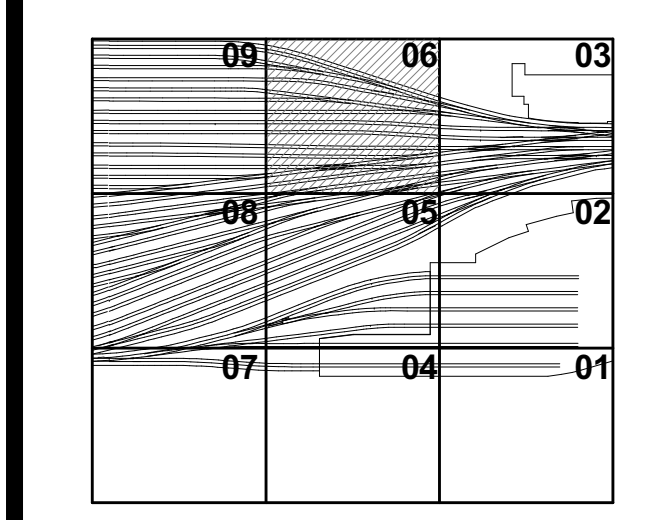
NOTES:  
1. REFER TO S-131.00 FOR SHEET NOTES



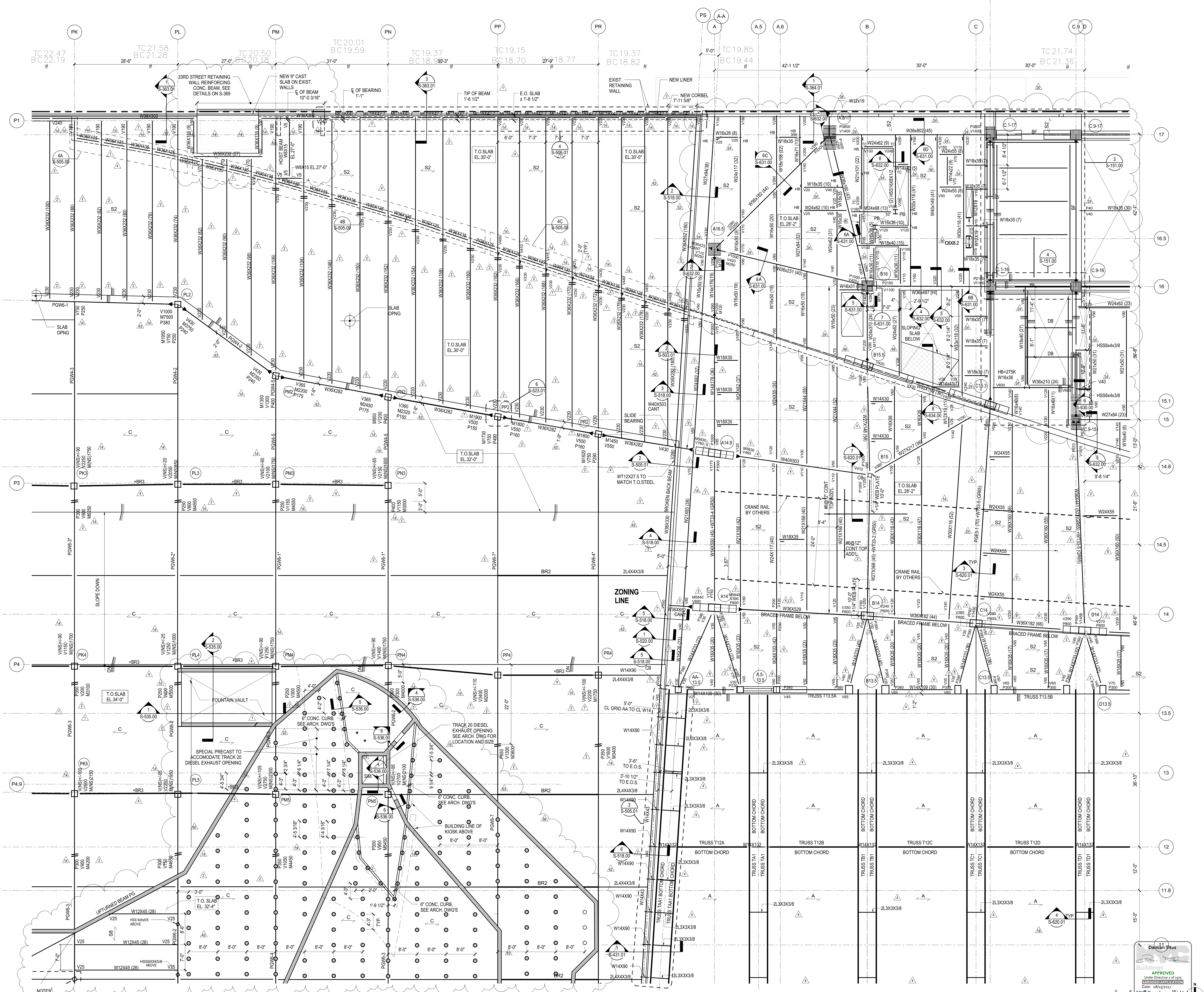




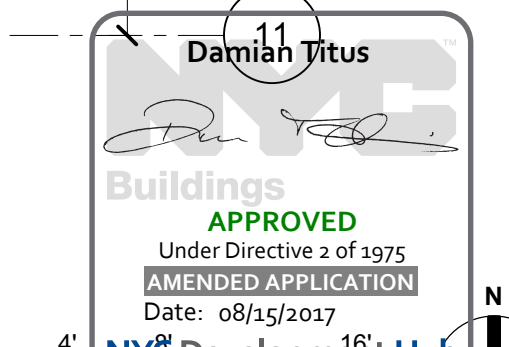
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1	DOB POST APPROVAL AMENDMENT	10/26/2016
2	ASH10115	03/22/2015
3	ASH10111	03/02/2016
4	ASH10100 - Track 20 Exhaust Updates	09/24/2015
5	ASH10008	6/28/2014
6	ASH10073	4/20/2015
7	ASH10067	3/20/2015
8	ASH10066	3/18/2015
9	ASH10056	12/19/2014
10	DESIGN SUBMISSION FOR RECORDS	10/14/2014
11	ASH10049	10/14/2014
12	ASH10034	7/28/2014
13	ASH10025 - SEQUENCE 11 FRAMING	6/06/2014
14	ASH10024	5/28/2014
15	ASH10013	3/20/2014
16	ASH10007	2/28/2014
17	ASH10006	2/18/2014
18	ASH10003	1/14/2014
19	NYC DOB FILING	12/4/2013
20	LJRR - PRE-FINAL 100%	11/22/2013
21	PRE-PLATFORM SUBMISSION	11/22/2013
22	DOB FILING	11/11/2013
23	NYC DOB FILING	10/4/2013
24	DOB FILING - STRUCTURAL UPDATE	9/29/2013
25	LJRR - 90% SUBMISSION	8/29/2013
26	NYC DOB FILING	6/17/2013
27	LJRR - 60% SUBMISSION	5/29/2013
28	LJRR - 60% - PHASE 1 FDNS	3/29/2013
29	LJRR - 30% SUBMISSION	2/15/2013
30	Rev. 06	06/15/2017

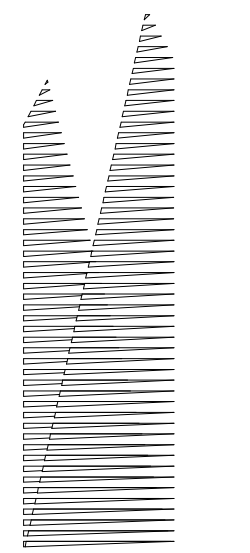


**HYE-PL-S-136.01**  
**PLATFORM LOWER LEVEL PLAN SECTOR 06**



NOTES:  
1. REFER TO S-131.00 FOR SHEET NOTES  
2. THE LOCATIONS OF ALL 12" DIA. CONCRETE POST SHALL BE VERIFIED IN THE FIELD PER AS-BUILT PRECAST PLANKS





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
130 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
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Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

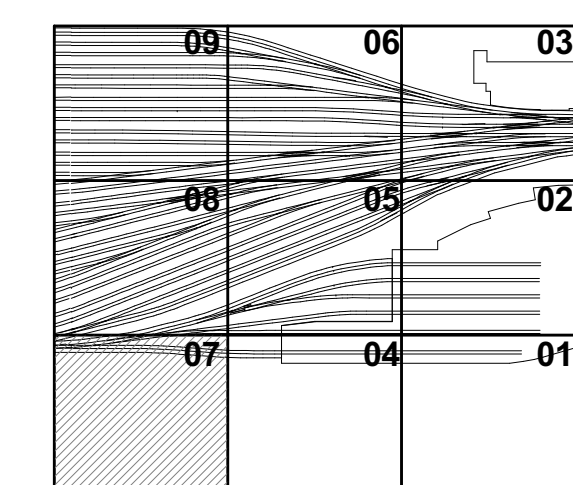
Civil, Mechanical, Electrical, Plumbing  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0080	05/26/2015
ASH0067	3/20/2015
ASH0066	3/18/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0069	10/14/2014
ASH0011	3/20/2014
ASH0011 - PLATFORM CONNECTIONS	3/7/2014
TO TOWER C - SEQUENCE 7	
ASH0005	1/14/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
MOE - PLATFORM SUBMISSION	
DI02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DI01 PHASE 1 STRUCTURAL UPDATE	9/29/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE 1 FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
Rev	Description

Key Plan

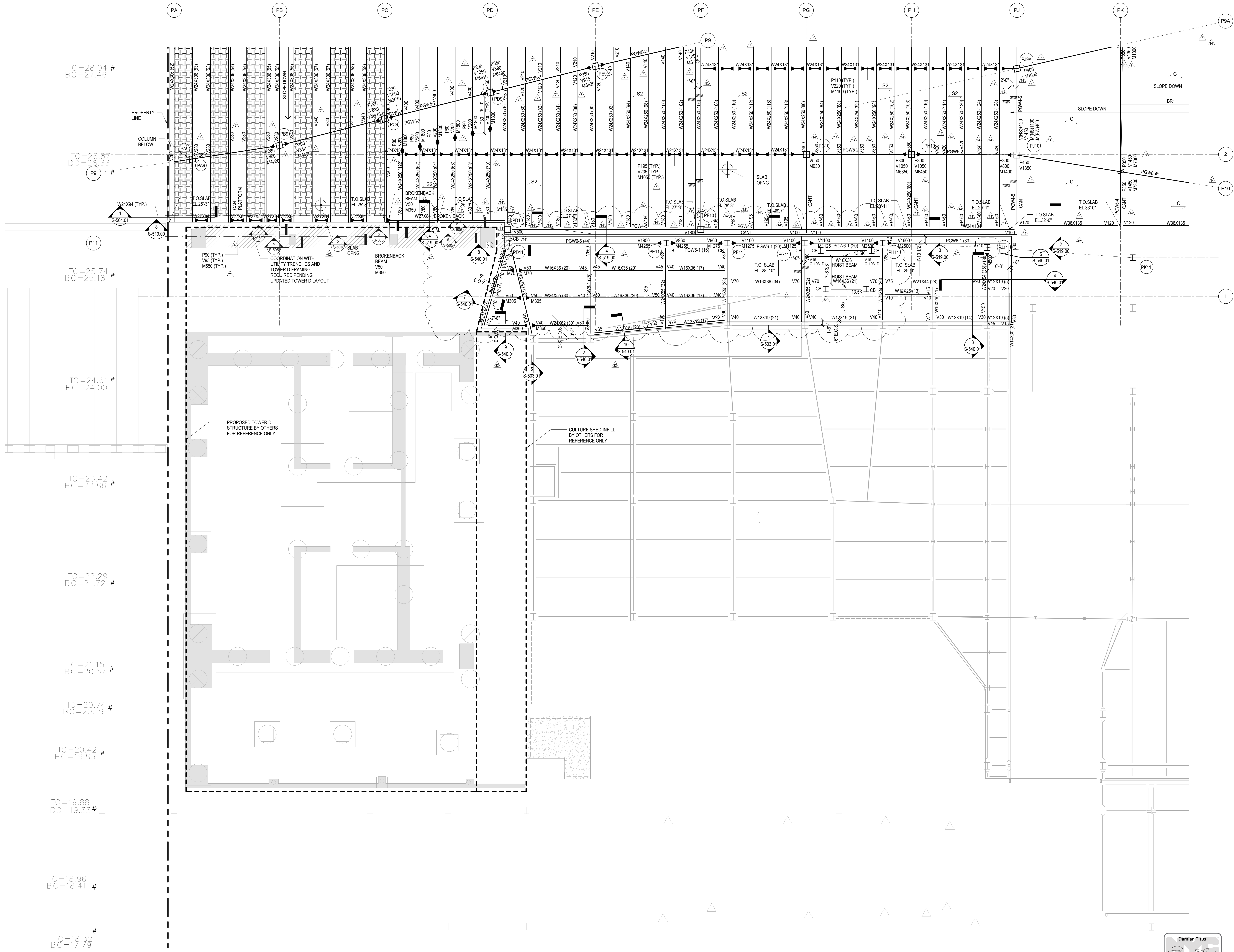


Date: 12/14/12  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE -PL -S-137.01**

**PLATFORM LOWER LEVEL PLAN SECTOR 07**

Drawing Number: B-DCM Drawing Number  
**S-137.01**



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TC = 26.87 #  
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TC = 25.74 #  
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BC = 24.00

TC = 23.42 #  
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BC = 21.72

TC = 21.15 #  
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BC = 20.19

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BC = 19.83

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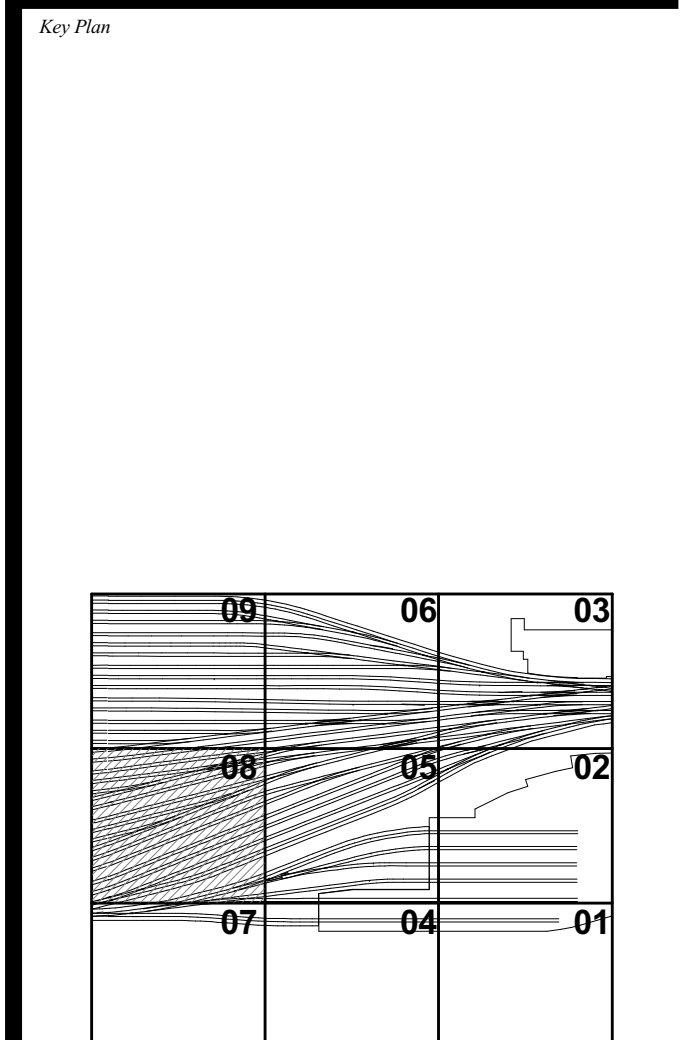
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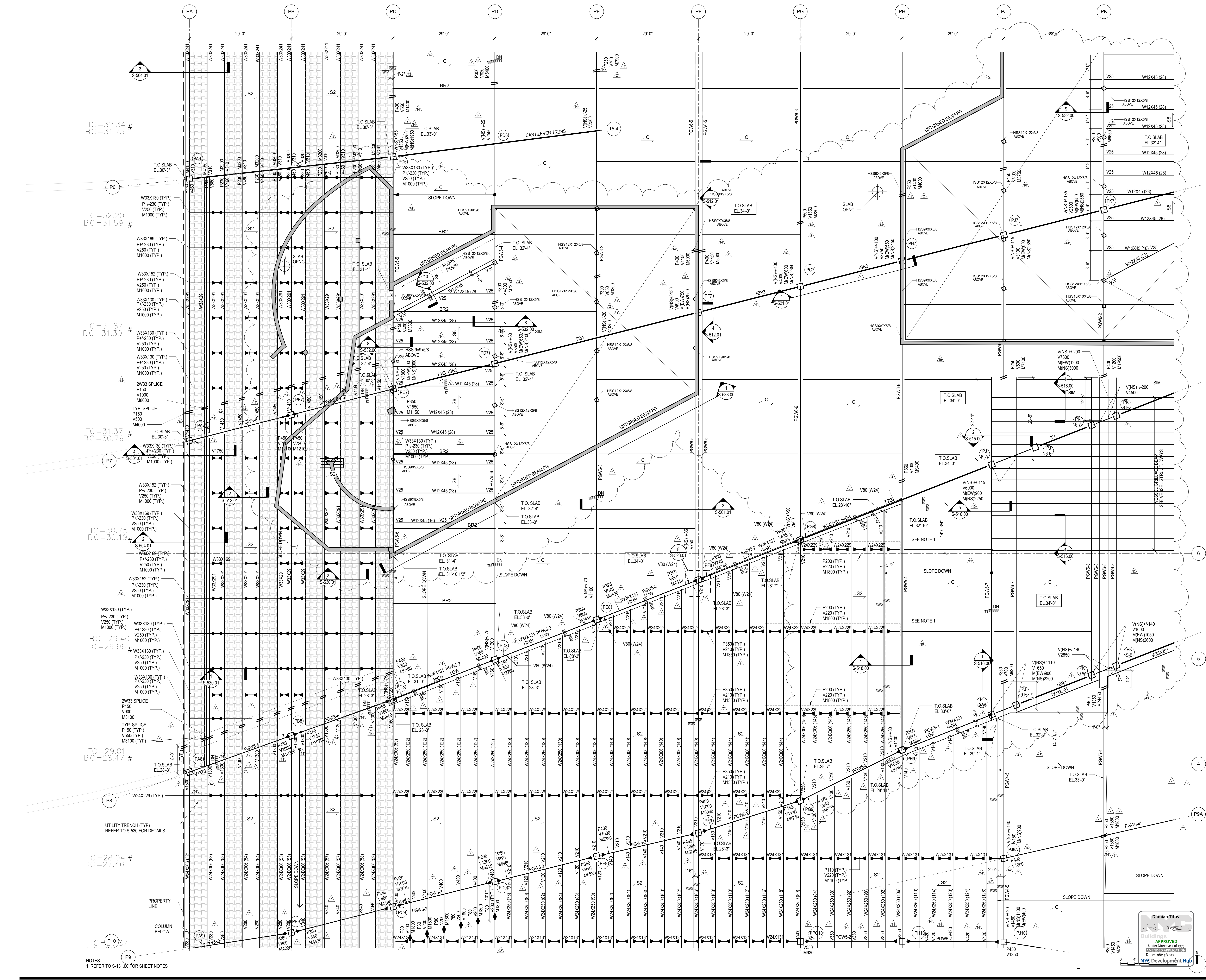
NOTES:  
1. REFER TO S-131.00 FOR SHEET NOTES

Damian Titus  
Build APPROVED  
Under Directive 3 of 1975  
NYC DOB FILING  
Date: 08/15/2017  
NYC Development Hub

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH00121	6/7/2016
ASH00067	3/20/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH00049	10/14/2014
ASH00024	5/28/2014
ASH00016 - FAN ROOM ACCESS PLATE	4/7/2014
CIPER MODIFICATION	3/20/2014
ASH00015 - PLATFORM REDESIGN	3/13/2014
FOR VESSEL	2/18/2014
ASH00005	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M.E. - PLATFORM SUBMISSION	9/20/2013
DEL.02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DEL.01 PHASE 1 STRUCTURE UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/20/2013
L.I.R.R. - 60% PHASE 1 FENS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
DOB	0/0/0



Date: 12/14/12  
Project No: N11330.00  
Drawing Title: HYE-PL-S-138.01  
Author: [Signature]  
Drawing Title: PLATFORM LOWER LEVEL PLAN SECTOR 08  
Drawing Number / B.C.A.N. Drawing Number: S-138.01  
NYC Development Hub



PLATFORM LOWER LEVEL PLAN SECTOR 08  
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NOTES:  
1. REFER TO S-131.00 FOR SHEET NOTES

Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
130 Park Avenue, 13th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
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PC Architects & Planning Consultants  
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Tel: 212.977.6500 Fax: 212.956.2526

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51 Madison Avenue  
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Tel: 917.661.7800 Fax: 718.661.7801

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Fire Alarm, Fire Protection, Security  
Fishman Construction Corporation  
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New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

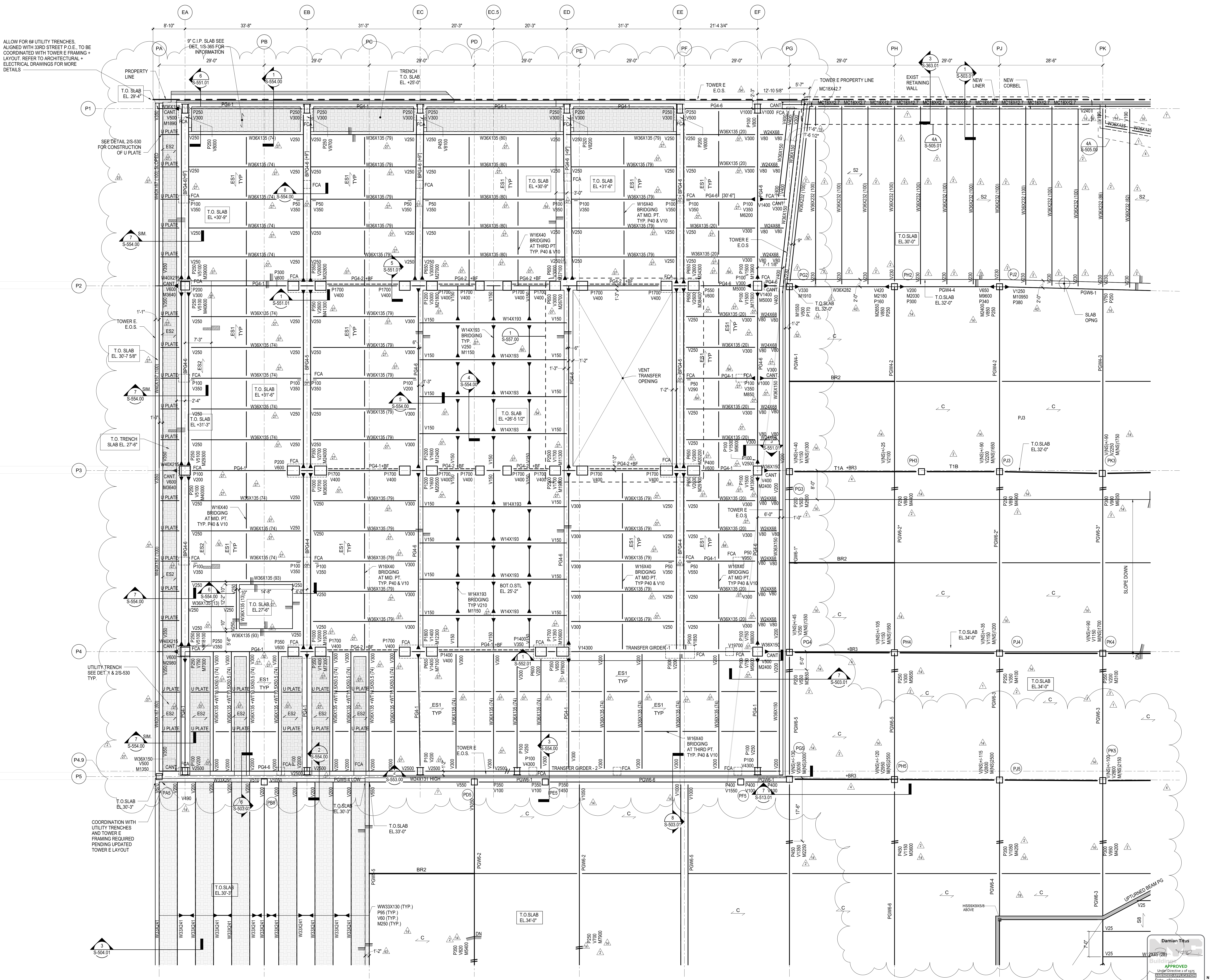
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH00116	4/13/2016
ASH00103	10/26/2015
ASH00084	6/17/2015
ASH00067	3/20/2015
ASH00065	10/14/2014
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH00049	10/14/2014
ASH00046 - TOWER E STEEL FRAMING	8/28/2014
ASH00025 - TOWER E STEEL FRAMING	7/22/2014
ASH00024	5/28/2014
ASH00013	3/28/2014
ASH00005	2/18/2014
ASH00003	1/14/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	11/22/2013
DL02 PHASE I STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE I STRUCTURAL UPDATE	9/29/2013
LJRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LJRR - 60% SUBMISSION	5/29/2013
LJRR - 60% - PHASE I FDNS	3/29/2013
LJRR - 30% SUBMISSION	2/15/2013
DL01 - Approval	08/01/12

01	02	03
04	05	06
07	08	09

Date: 12/14/12  
Project No: N11330.00  
Author: Author  
HYE - PL - S-139.01  
Drawing Title: PLATFORM LOWER LEVEL PLAN SECTOR 09

APPROVED  
Under Direction of 1975  
Professional Engineer  
Date: 08/15/2017  
Damian Titus  
NYC Development Hub



ALLOW FOR 6" UTILITY TRENCHES ALIGNED WITH 33RD STREET P.O.E. TO BE COORDINATED WITH TOWER E FRAMING LAYOUT. REFER TO ARCHITECTURAL ELECTRICAL DRAWINGS FOR MORE DETAILS.

PROPERTY LINE  
T.O. SLAB EL. 29'-4"

SEE DETAIL 2/S-530 FOR CONSTRUCTION OF U PLATE

TOWER E E.O.S.  
T.O. SLAB EL. 30'-7 5/8"

T.O. TRENCH SLAB EL. 27'-6"

UTILITY TRENCH SEE DET. 7 & 2/S-530 TYP.

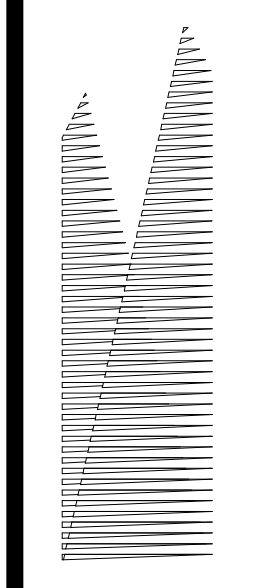
COORDINATION WITH UTILITY TRENCHES AND TOWER E FRAMING REQUIRED PENDING UPDATED TOWER E LAYOUT

T.O. SLAB EL. 30'-3"

T.O. SLAB EL. 30'-3"

T.O. SLAB EL. 34'-0"

NOTES:  
1. REFER TO S-131.00 FOR SHEET NOTES



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
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Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

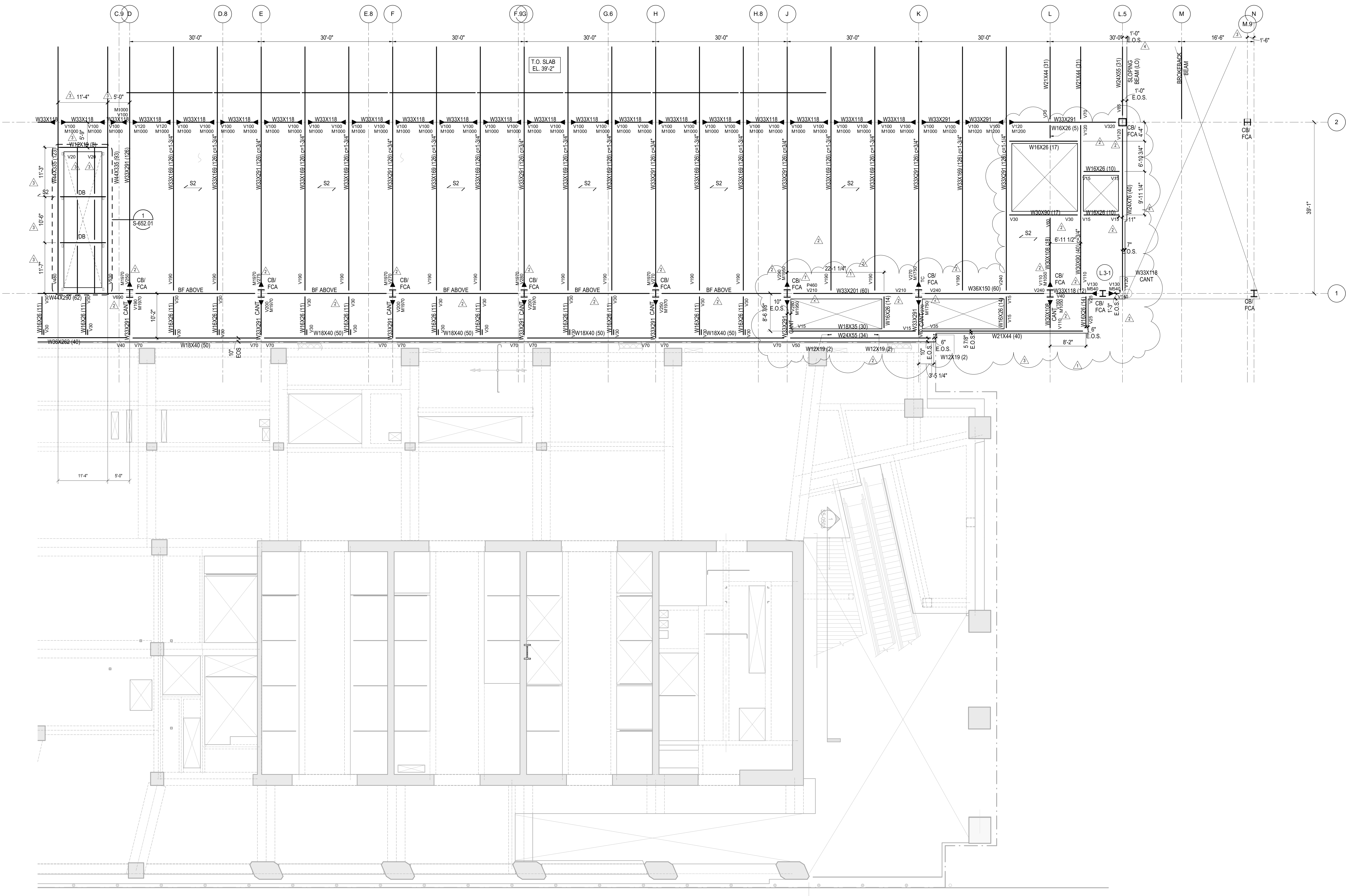
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, NY 10036  
Tel: 212.977.6500 Fax: 212.956.2526

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Parsons Transportation Group  
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New York, NY 10005  
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LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



**SHEET NOTES:**

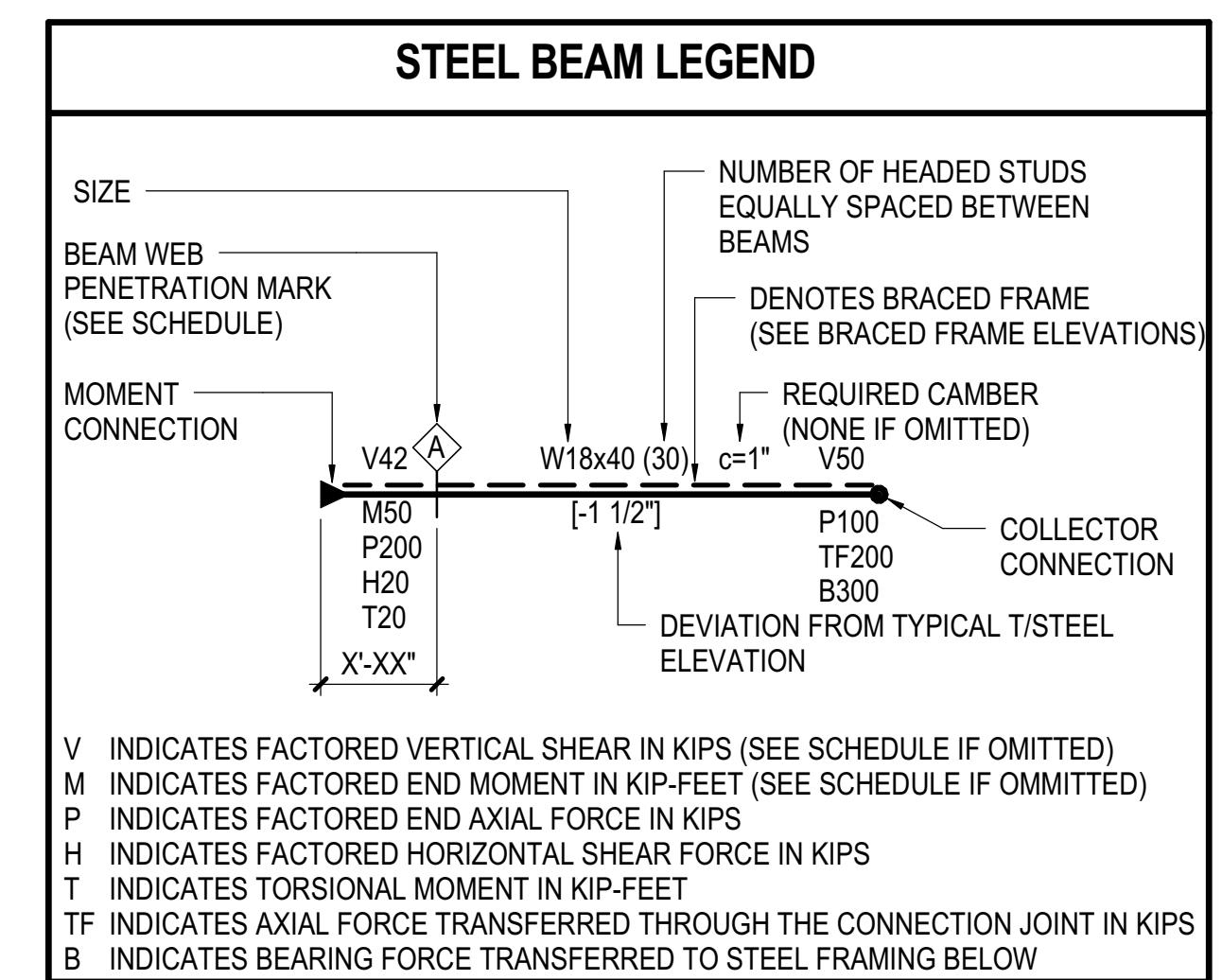
- T/STRUCTURAL SLAB EL+ UON THIS:  
X - INDICATES CHANGE IN T/STRUCTURAL SLAB ELEVATION.
- T/STEEL EL UON
- INDICATES DECK SPAN DIRECTION. SEE SCHEDULE ON S-003.00
- FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:  
DRAWING LISTS, GENERAL NOTES, AND LOADING DIAGRAMS S0 SERIES DRAWINGS  
TYPICAL FOUNDATION DETAILS S3 SERIES DRAWINGS  
STEEL COLUMN SCHEDULES S4 SERIES DRAWINGS  
STEEL TYPICAL DETAILS S7 SERIES DRAWINGS

**5. SYMBOLS:**

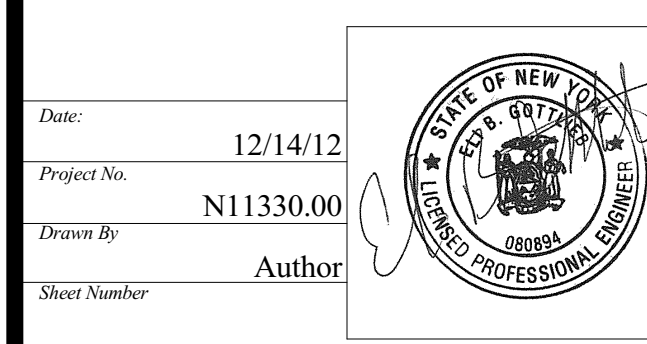
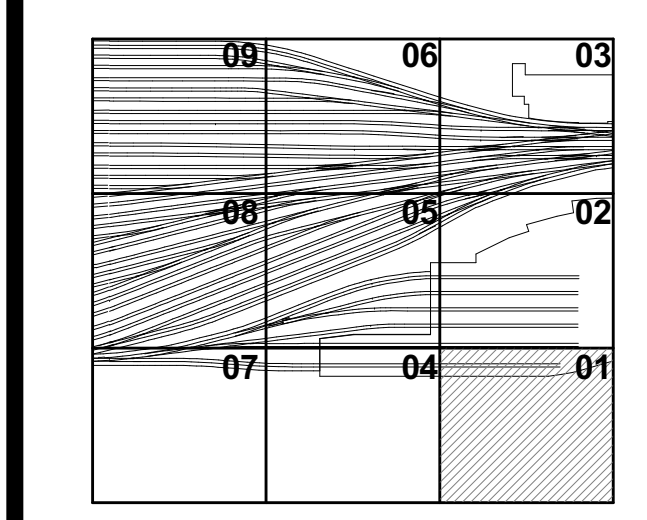
- INDICATES MOMENT CONNECTION
- INDICATES LATERAL BRACING
- INDICATES FULL HEIGHT FITTED STIFFENER CONNECTION.
- INDICATES SLOPE IN TOP OF SLAB
- INDICATES SPLICE LOCATIONS. SEE S-512.00 FOR DETAILS
- INDICATES LOCATION OF SLAB TRENCHES. SEE S-341.00 FOR DETAILS
- INDICATES SLAB OPENING FOR DRAINAGE. TYPICALLY 2'-0". FINAL POSITION BETWEEN BEAMS TO BE COORDINATED WITH ARCHITECT.
- INDICATES BEAM PENETRATION. SEE S-714.00 & S-715 FOR BEAM PENETRATION SCHEDULE & DETAILS
- INDICATES BEAM REINFORCEMENT

**6. NOTATIONS:**

- CA/CB INDICATES COLUMN ABOVE/BELOW. COMPRESSION AXIAL FORCE IN COLUMN INDICATED WHERE APPLICABLE.
- PA/PB INDICATES POST ABOVE / BELOW
- DB INDICATES HSS8X4X3/8 ELEVATOR DIVIDER BEAM (NOT FIREPROOFED)
- HA/HB INDICATES HANGER ABOVE/BELOW. TENSION AXIAL FORCE IN HANGER BELOW INDICATED WHERE APPLICABLE
- MF INDICATES LATERAL MOMENT FRAME. SEE MOMENT FRAME ELEVATIONS FOR BEAM INFORMATION AND CONNECTION FORCES
- PG INDICATES PLATE GIRDER TYPE. SEE S-511.00 FOR SCHEDULE AND DETAILS
- TC INDICATES TORSIONAL CONNECTION FOR STAIR
- TR INDICATES COLUMN FROM ABOVE TRANSFERS. COMPRESSION AXIAL FORCE IN COLUMN INDICATED WHERE APPLICABLE
- BF INDICATES BRACED FRAME. SEE ELEVATIONS
- FCA INDICATES FUTURE COLUMN ABOVE
- FHA INDICATES FUTURE HANGER ABOVE



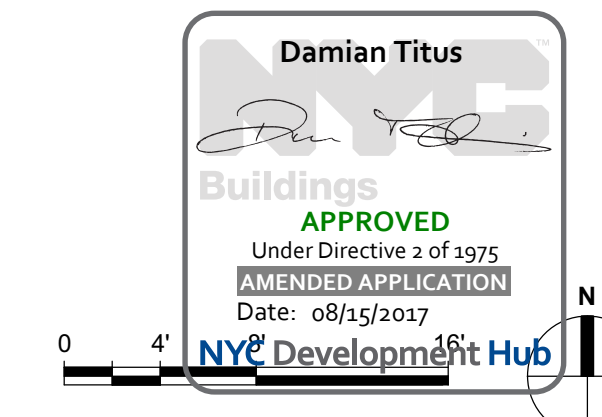
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L.I.R. - FINAL 100%	10/14/2014
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ASH0009	10/14/2014
ASH0005	2/18/2014
NYC DOB FILING	12/4/2013
ASH0001	12/20/2013
Mod - PLATFORM SUBMISSION	11/22/2013
L.I.R. - PRE-FINAL 100%	
Mod - PLATFORM SUBMISSION	
DL02 PHASE I STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE I STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
Rev	000

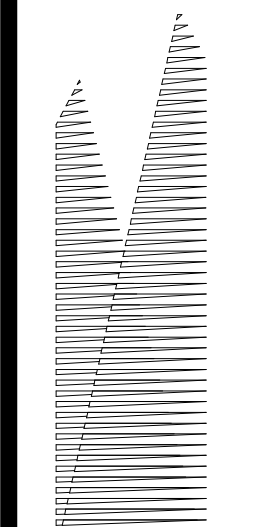


**HYE - PL - S-141.01**

**PLATFORM UPPER LEVEL PLAN SECTOR 01**

Project No: N11330.00  
Drawing Title: HYE - PL - S-141.01  
SHEET 25 OF 163





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

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PC Architects & Planning Consultants  
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Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10017  
Tel: 917.661.7800 Fax: 718.661.7801

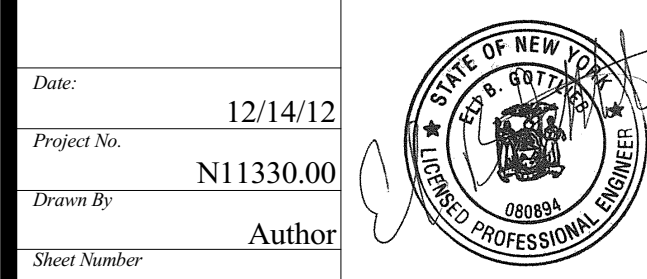
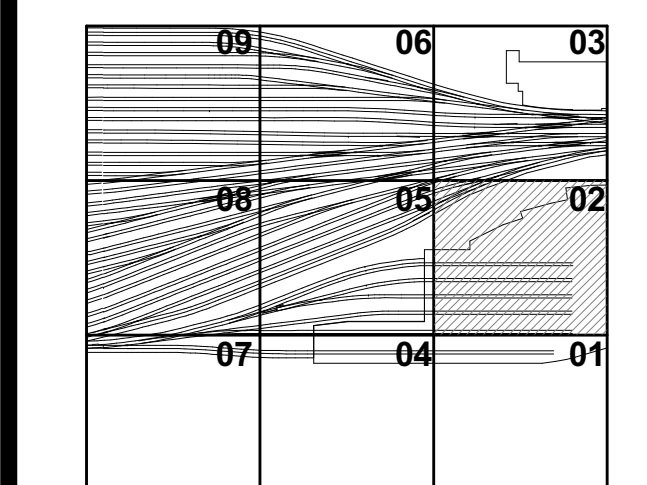
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212-973-9200 Fax: 212.682.6172

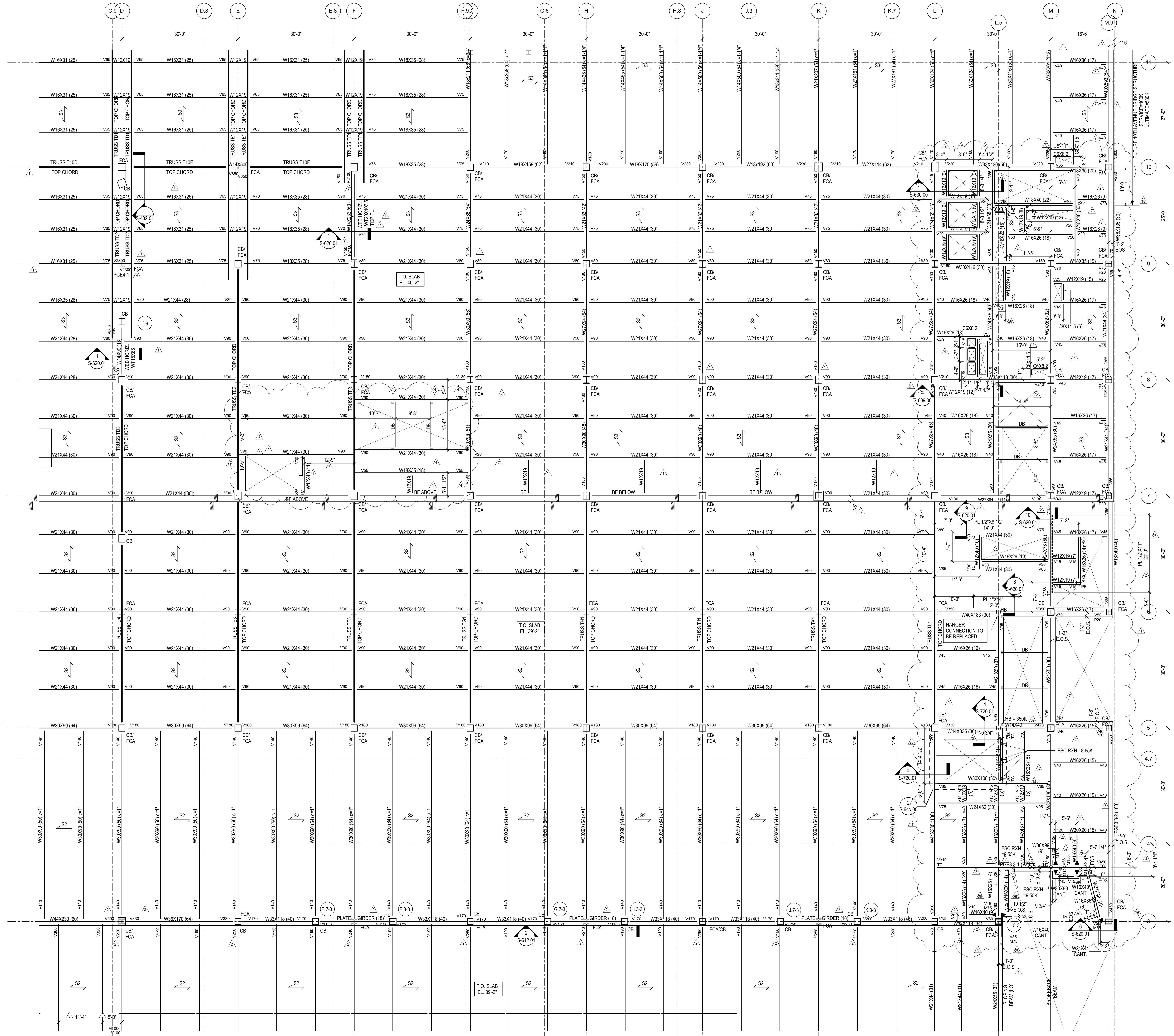
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ASH0090	10/21/2014
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DESIGN SUBMISSION FOR RECORDS	
ASH0005	10/14/2014
ASH0007 - RETAIL FIELD MODIF.	8/19/2014
ASH0021	5/7/2014
ASH0005	2/18/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
ASH0000	12/20/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
ASH - PLATFORM SUBMISSION	
DOB FILING	11/1/2013
NYC DOB FILING	10/4/2013
DOB FILING	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE 1 FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
NYC DOB FILING	1/22/2013

Key Plan

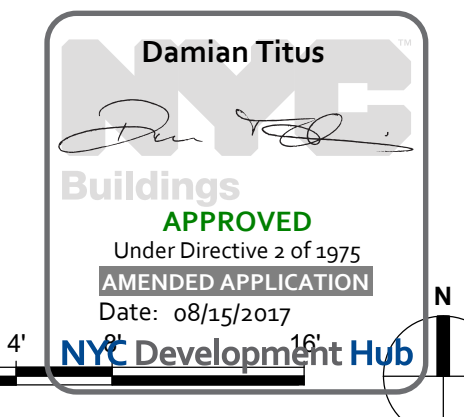


HYE-PL-S-142.01  
PLATFORM UPPER LEVEL PLAN SECTOR 02

S-142.01 SHEET 26 OF 163

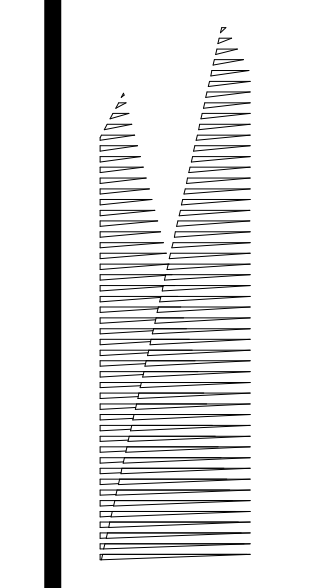


NOTES  
1. REFER TO S-141.00 FOR SHEET NOTES



S-142.01  
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*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

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Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 212.956.7801

*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

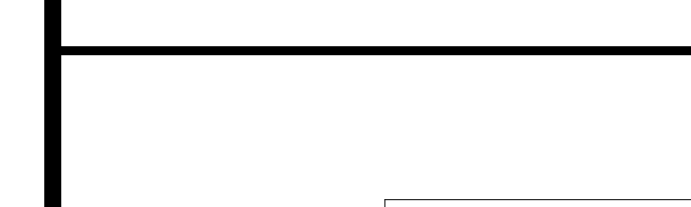
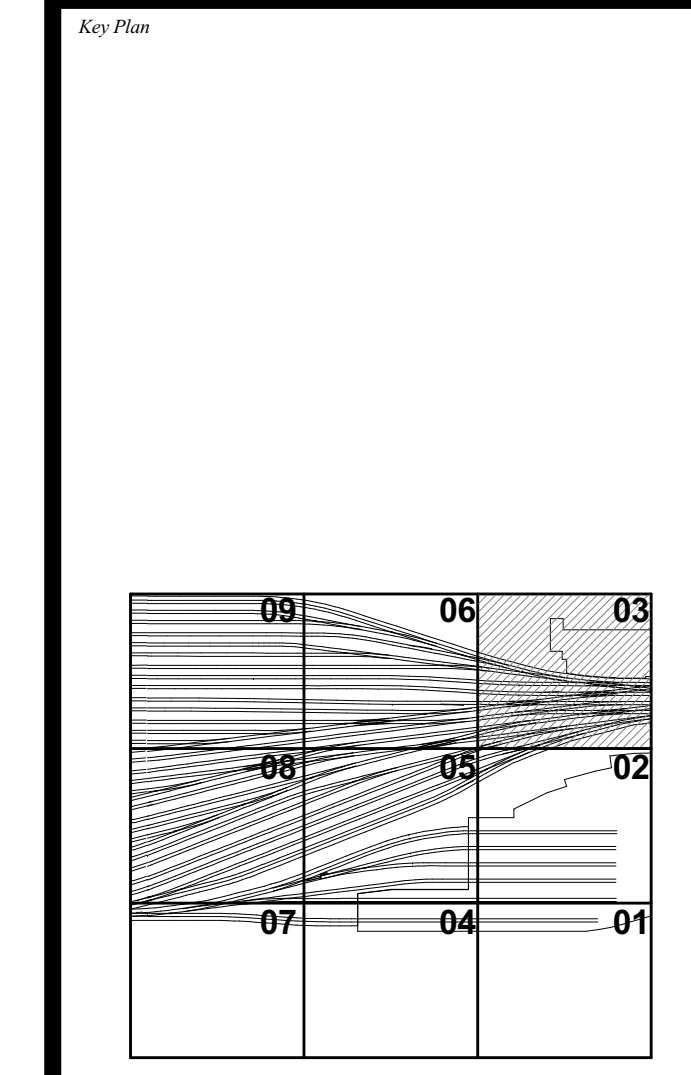
*LIRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

*LIRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

*DOB POST-APPROVAL AMENDMENT* 10/28/2016  
ASH0081 06/05/2015  
ASH0079 4/3/2015  
ASH0066 12/19/2014  
L.I.R.R. - FINAL 100% 10/14/2014  
DESIGN SUBMISSION FOR RECORDS  
ASH0049 10/14/2014  
ASH0046 9/24/2014  
ASH0037 - RETAIL FIELD MODIF. 8/19/2014  
ASH0021 5/7/2014  
ASH0013 3/20/2014  
NYC DOB FILING 12/4/2013  
L.I.R.R. - PRE-FINAL 100% 11/22/2013  
M&E PLATFORM SUBMISSION  
D1.02 PHASE 1 STRUCTURE UPDATE 11/1/2013  
NYC DOB FILING 10/4/2013  
D1.01 PHASE 1 STRUCTURE UPDATE 9/29/2013  
L.I.R.R. - 90% SUBMISSION 8/09/2013  
NYC DOB FILING 6/17/2013  
L.I.R.R. - 60% SUBMISSION 5/29/2013  
L.I.R.R. - 60% PHASE 1 FDNS 3/29/2013  
L.I.R.R. - 30% SUBMISSION 2/15/2013  
NYC DOB FILING 01/22/2013

*Key Plan*

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0081	06/05/2015
ASH0079	4/3/2015
ASH0066	12/19/2014
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0046	9/24/2014
ASH0037 - RETAIL FIELD MODIF.	8/19/2014
ASH0021	5/7/2014
ASH0013	3/20/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E PLATFORM SUBMISSION	
D1.02 PHASE 1 STRUCTURE UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
D1.01 PHASE 1 STRUCTURE UPDATE	9/29/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% PHASE 1 FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
NYC DOB FILING	01/22/2013



Date: 12/14/12  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

**HYE-PL-S-143.01**

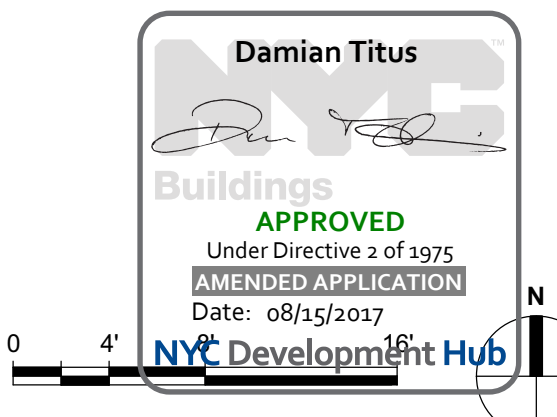
**PLATFORM UPPER LEVEL PLAN SECTOR 03**

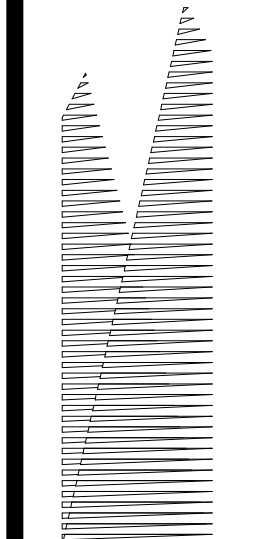
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**S-143.01**



NOTES:  
1. REFER TO S-141.00 FOR SHEET NOTES





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Related Companies  
330 Park Avenue, 17th Floor  
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PC Architects & Planning Consultants  
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Structural Engineer  
Thornton Tomasetti, Inc.  
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Tel: 917.661.7800 Fax: 718.661.7801

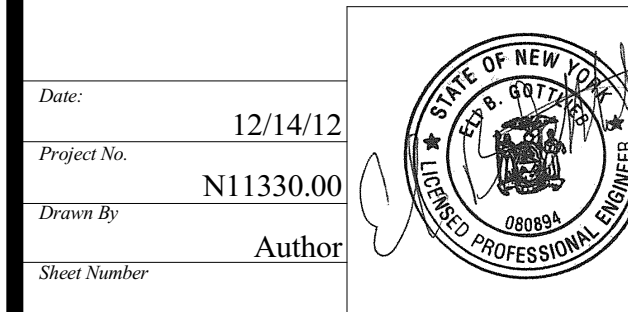
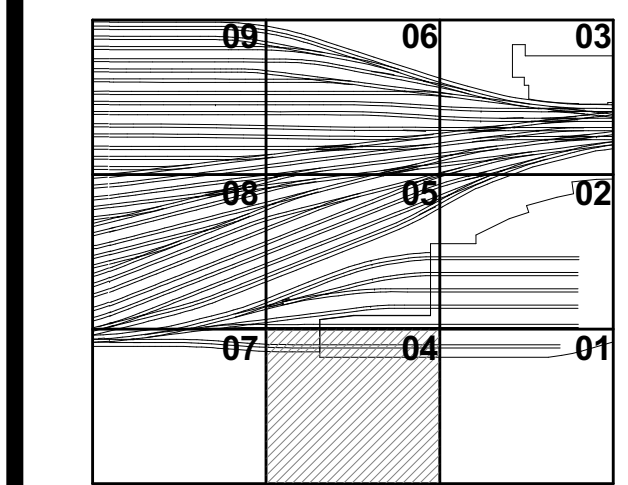
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Fishman Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

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77 Water Street  
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Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0011 - PLATFORM CONNECTIONS	3/7/2014
TO TOWER C - SEQUENCE 7	
ASH0005	2/18/2014
ASH03 REVISION 1	1/17/2014
ASH0005	1/14/2014
NYC DOB FILING	12/4/2013
ASH0001	12/20/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
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LIRR - 30% SUBMISSION	2/15/2013
Rev	Description

Rev Plot

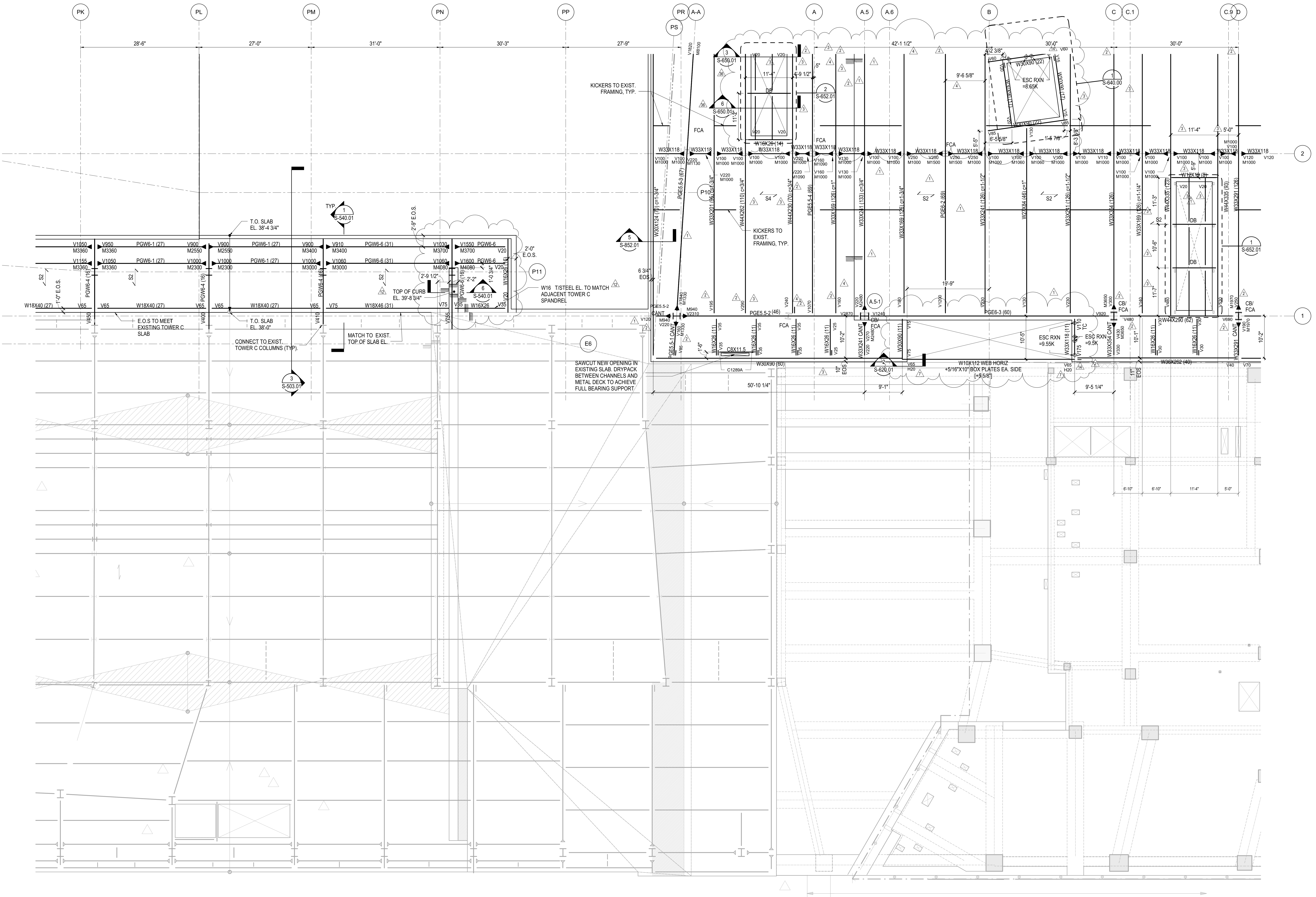


**HYE -PL -S-144.01**

**PLATFORM UPPER LEVEL PLAN SECTOR 04**

Project No: 12/14/12  
N11330.00  
Author: Damian Titus

Approved Under Directive 3 of 1975  
NYC Development Hub  
Date: 08/15/2017



NOTES:  
1. REFER TO S-141.00 FOR SHEET NOTES

Client  
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60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Onward Properties Group  
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New York, NY 10022  
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Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.6000

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Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
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New York, NY 10036  
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Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
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Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

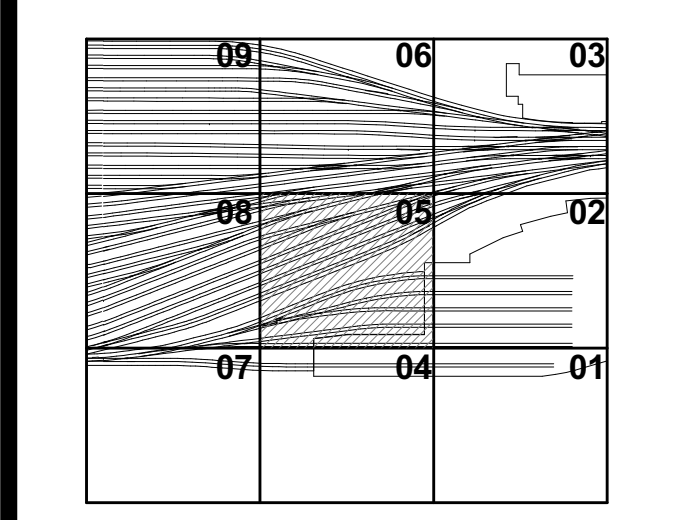
LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

Table with 2 columns: Description and Date. Lists project milestones and design submissions.

DOB POST-APPROVAL AMENDMENT	10/30/2016
ASH0115	03/23/2015
ASH0100 - Track 20 Exhaust Updates	09/24/2015
ASH0096	09/23/2015
ASH0092	08/10/2015
ASH0082	6/29/2015
ASH0081	06/05/2015
ASH0075	5/1/2015
ASH0067	3/20/2015
ASH0056	12/30/2014
ASH0052 - WEST ATRIUM	10/31/2014
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0024	5/28/2014
ASH0021	5/7/2014
ASH0010 - PODIUM A-A-LINE TRUSS	3/7/2014
MODIFICATIONS	
ASH 45 REVISION 1	1/17/2014
ASH0005	1/14/2014
NYC DOB FILING	12/4/2013
ASH0000	12/20/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
DOB PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DOB PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE 1 FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
DOB	DOB

Key Plan

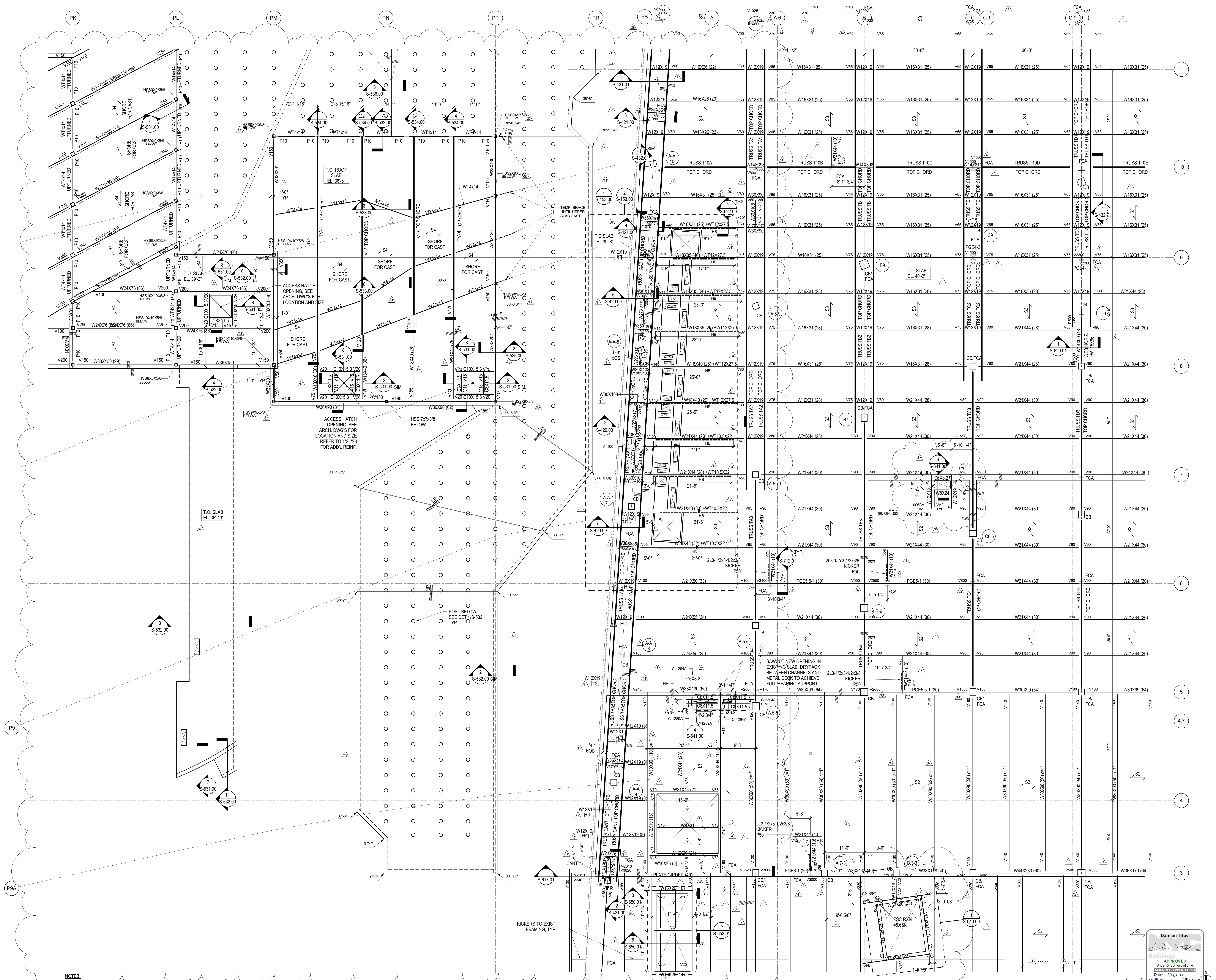


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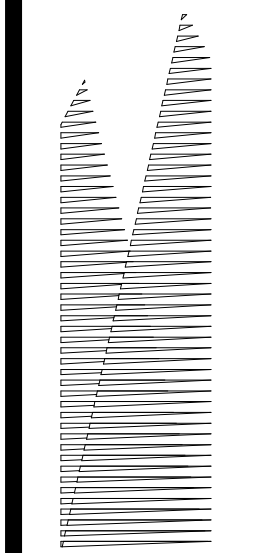
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Sheet No.	N11330.00
Author	Damian Titus

HYE-PL-S-145.01  
PLATFORM UPPER LEVEL PLAN SECTOR 05

Approved by: Damian Titus  
Under Direction of: [Signature]  
Date: 08/15/2017  
NYC Development Hub



NOTES  
1. REFER TO S-141.00 FOR SHEET NOTES



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Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

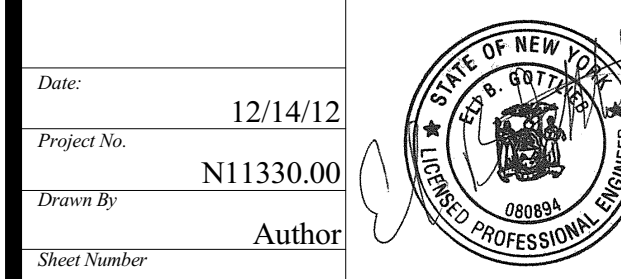
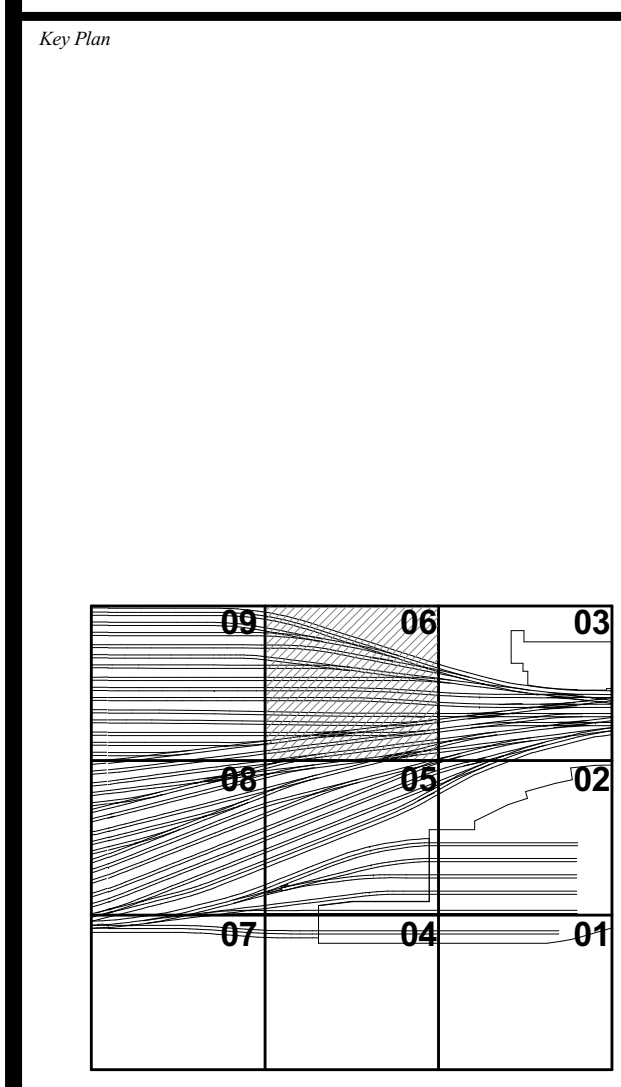
*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
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New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LIRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

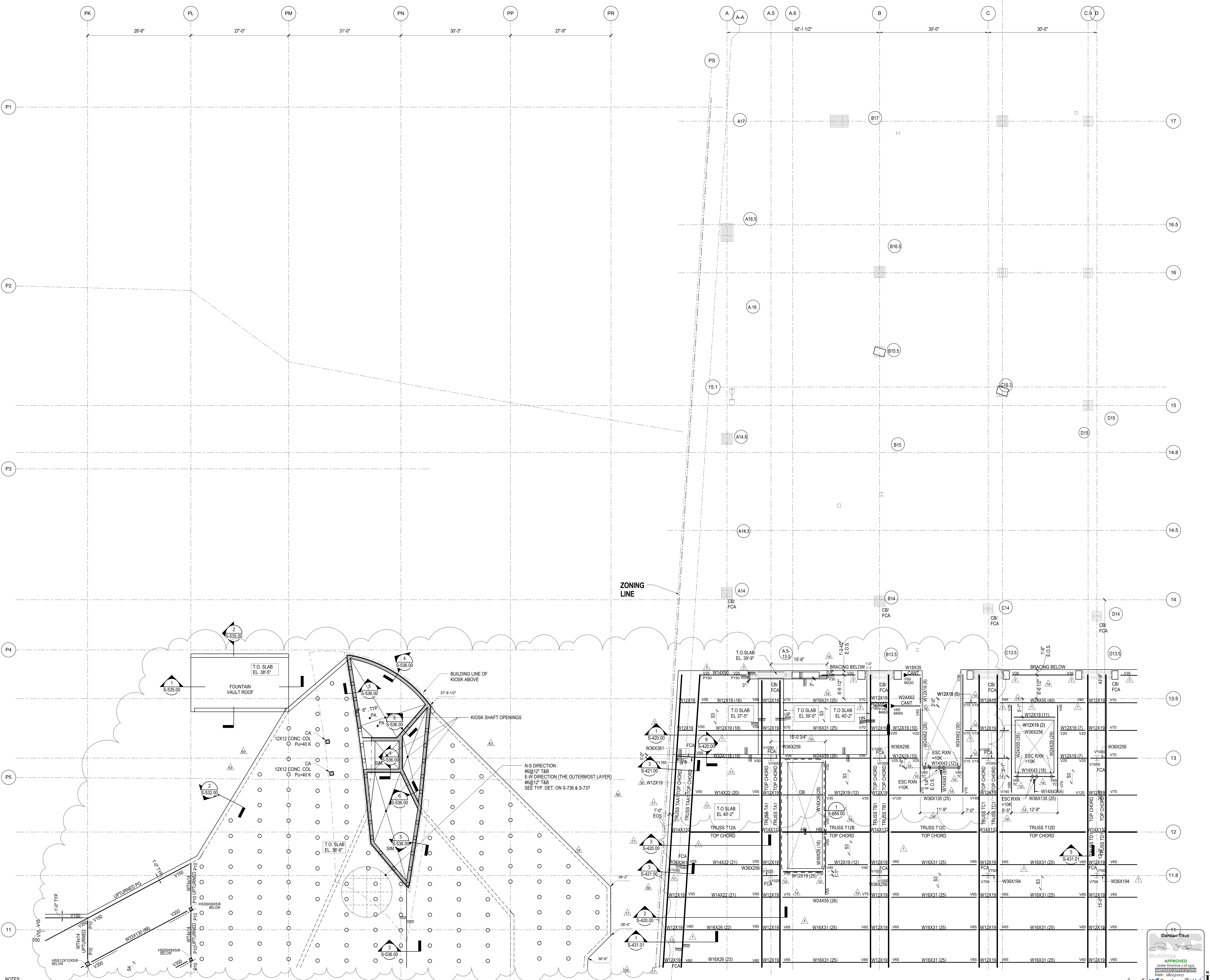
*LIRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

NO.	DESCRIPTION	DATE
1	DOB POST-APPROVAL AMENDMENT	10/28/2016
2	ASH00113 - RETAIL FIELD MODIF.	03/22/2015
3	ASH01000 - Track 20 Exhaust Updates	09/24/2015
4	ASH00082	6/29/2015
5	ASH00066	12/16/2014
6	L.I.R.R. - FINAL 100%	10/14/2014
<b>DESIGN SUBMISSION FOR RECORDS</b>		
7	ASH00049	10/14/2014
8	ASH00037 - RETAIL FIELD MODIF.	8/19/2014
9	ASH00024	5/28/2014
10	ASH00013	3/20/2014
11	ASH00010 - PODIUM AA-LINE TRUSS	3/7/2014
<b>MODIFICATIONS</b>		
12	NYC DOB FILING	12/4/2013
13	L.I.R.R. - PRE-FINAL 100%	11/22/2013
14	PRE-PLATFORM SUBMISSION	
15	DI-02 PHASE I STRUCTURAL UPDATE	11/1/2013
16	NYC DOB FILING	10/4/2013
17	DI-01 PHASE I STRUCTURE UPDATE	9/20/2013
18	L.I.R.R. - 90% SUBMISSION	8/09/2013
19	NYC DOB FILING	6/17/2013
20	L.I.R.R. - 60% SUBMISSION	5/29/2013
21	L.I.R.R. - 60% PHASE I FEEDS	3/29/2013
22	L.I.R.R. - 30% SUBMISSION	2/15/2013
23	NYC DOB FILING	0/0/0



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Drawing No: N11330.00  
Author: [Signature]  
Date: 08/15/2017

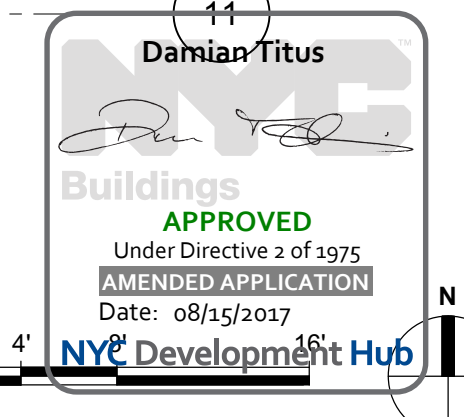
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**PLATFORM UPPER LEVEL PLAN SECTOR 06**



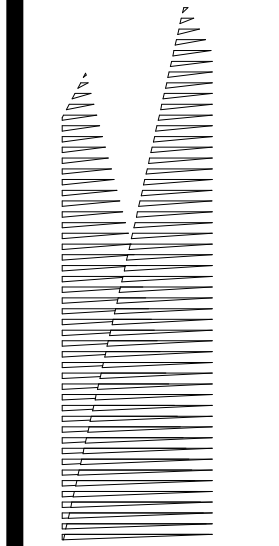
ZONING LINE

N-S DIRECTION : #6@12" T&B  
E-W DIRECTION (THE OUTERMOST LAYER) #6@12" T&B  
SEE TYP. DET. ON S-736 & S-737

NOTES:  
1. REFER TO S-141.00 FOR SHEET NOTES



PLATFORM UPPER LEVEL PLAN SECTOR 06  
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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

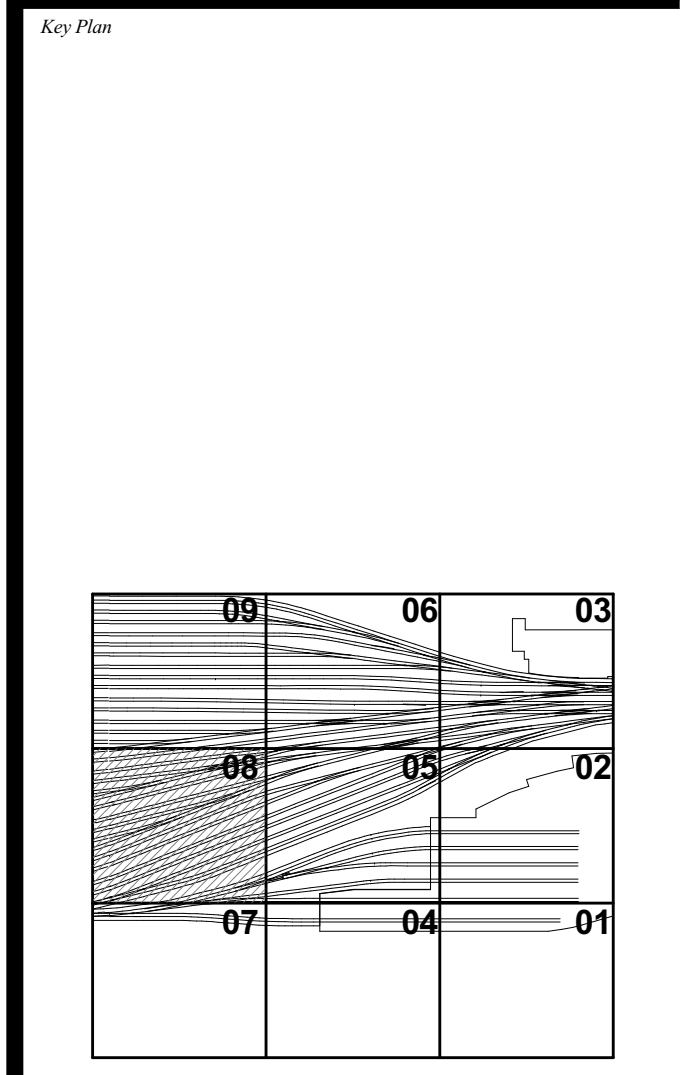
Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 212.571.6825

Civil, Mechanical, Electrical, Plumbing,  
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Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
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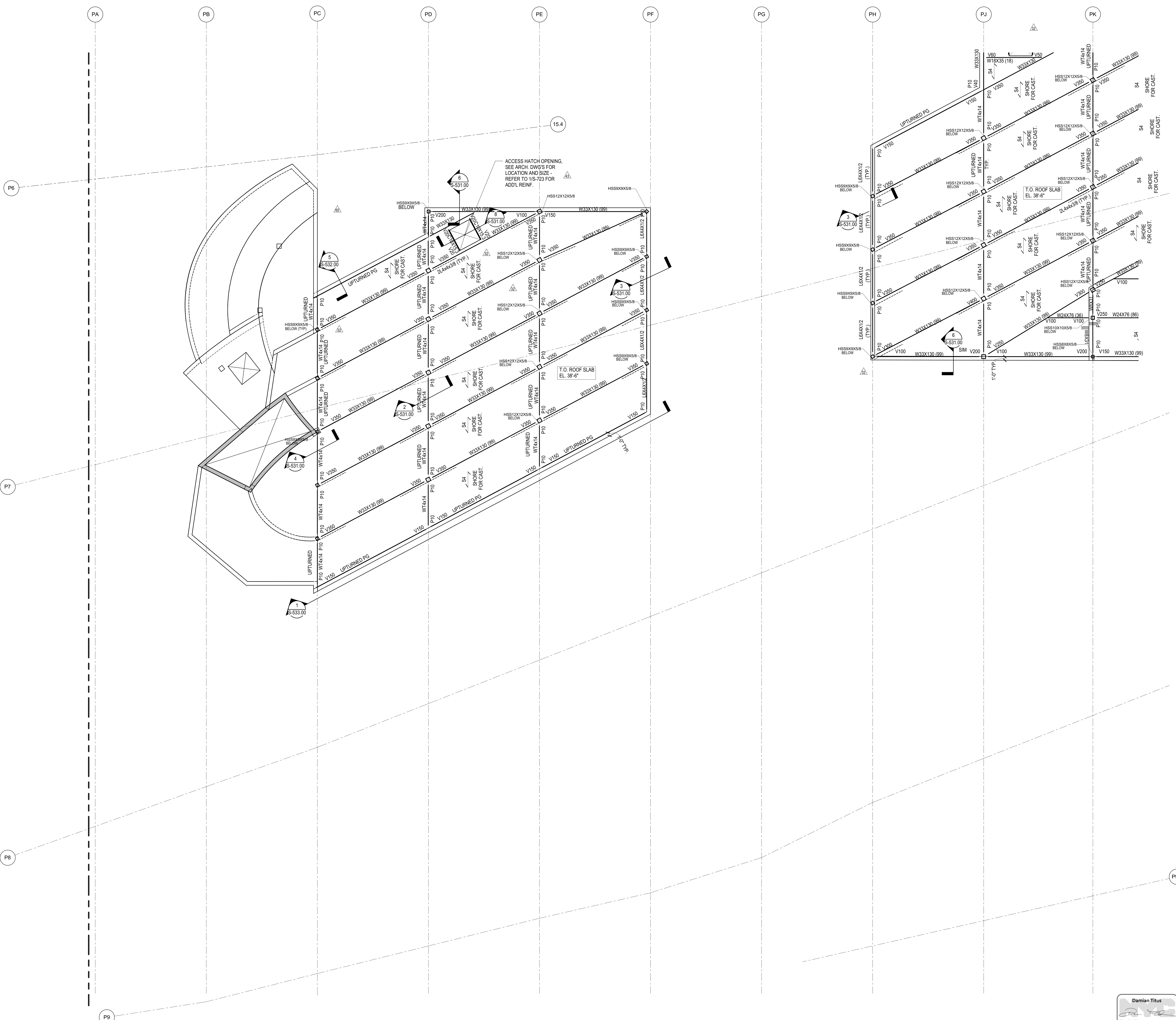
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ASH0121	6/7/2016
ASH0067	3/20/2015
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0495	10/14/2014
ASH0024	5/28/2014
	Doc.



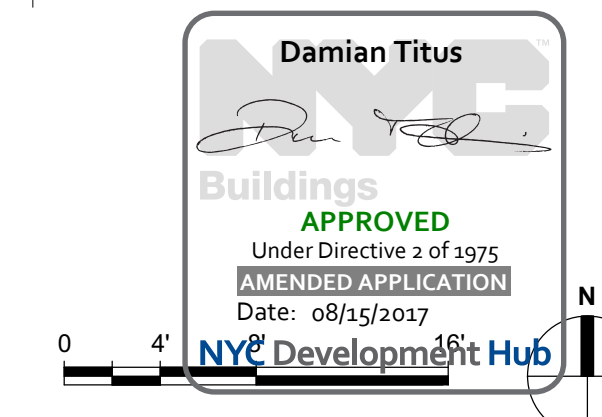
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Project No: N11330.00  
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Drawing Title  
**PLATFORM UPPER LEVEL PLAN SECTOR 08**

Drawing Number / Revision Drawing Number  
**S-148.00**  
SHEET 31 of 163

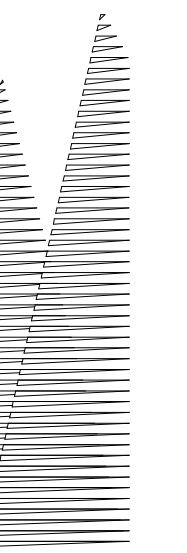


NOTES:  
1. REFER TO S-141.00 FOR SHEET NOTES



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Address  
530 WEST 33RD STREET  
NEW YORK, NY



*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
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*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

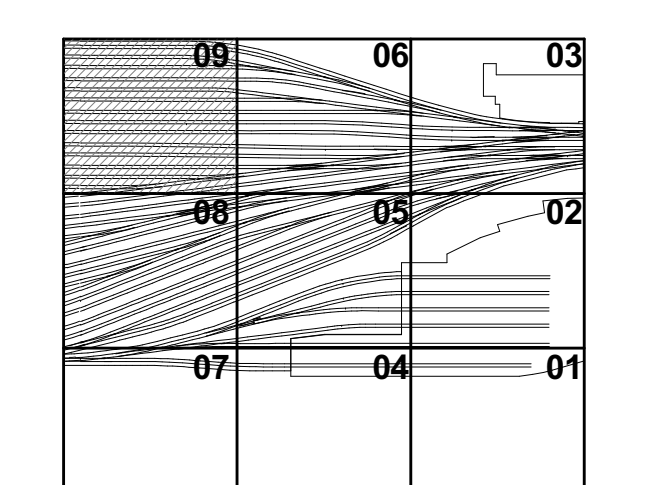
*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LIRR Ventilation*  
Ove Arup & Partners P.C.  
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New York, NY 10005  
Tel: 212.896.3000

*LIRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
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DOR POST-APPROVAL AMENDMENT	10/28/2016
ASH0067	3/20/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0024	5/28/2014
Rev	Description

Rev. Description



Date: 05/28/2014  
Project No: N11330.00  
Drawing By: Author  
Sheet Number

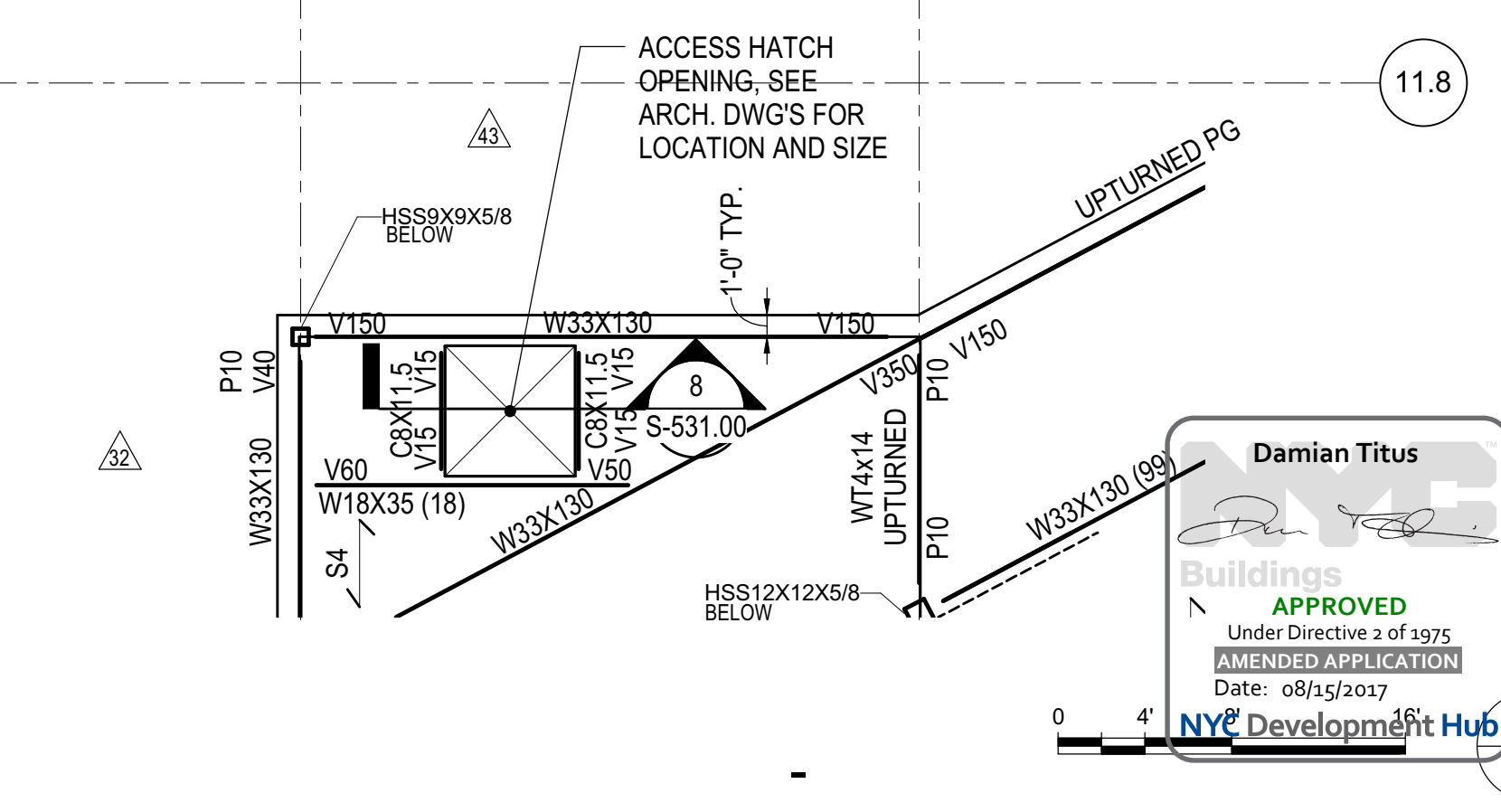
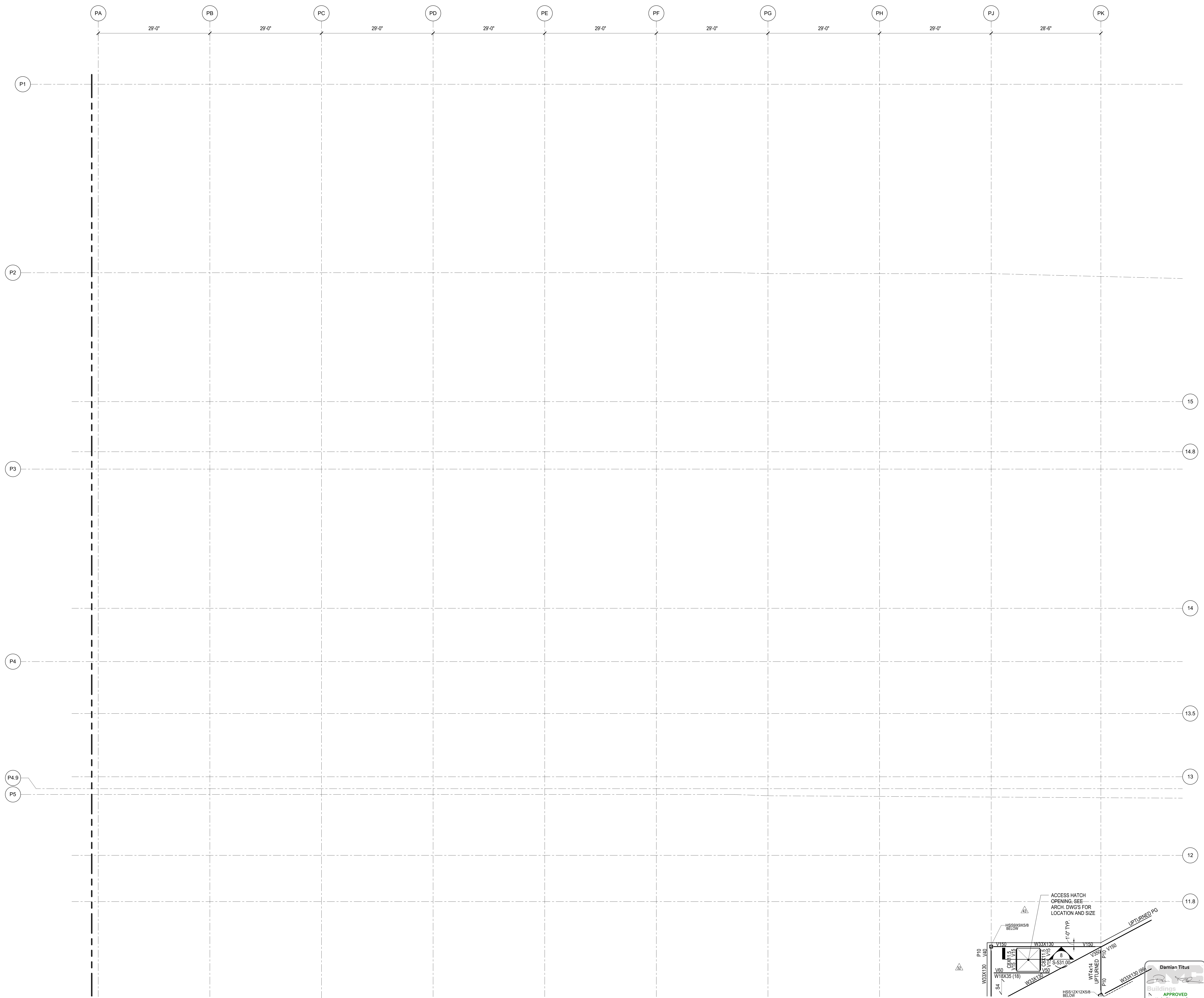
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**PLATFORM UPPER LEVEL PLAN SECTOR 09**

Drawing Number / B/CAN Drawing Number

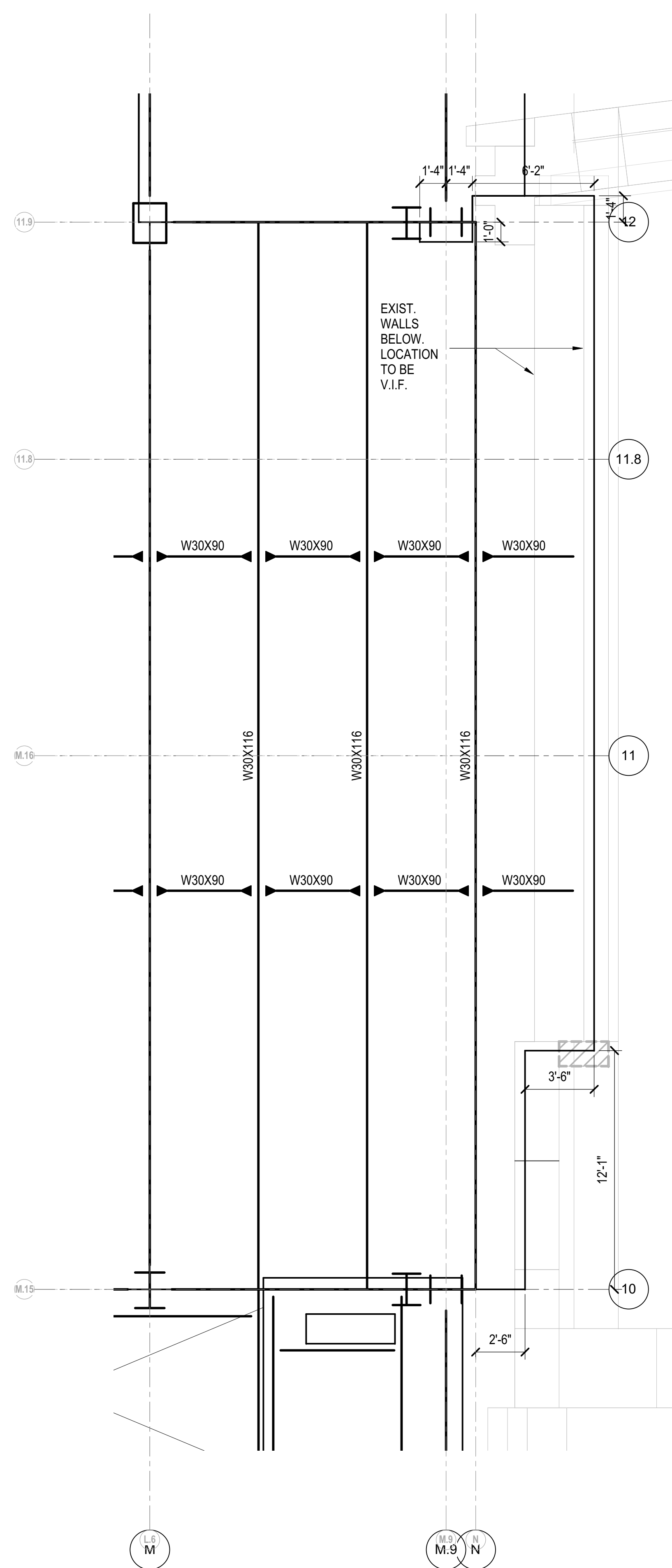
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SHEET 32 of 163

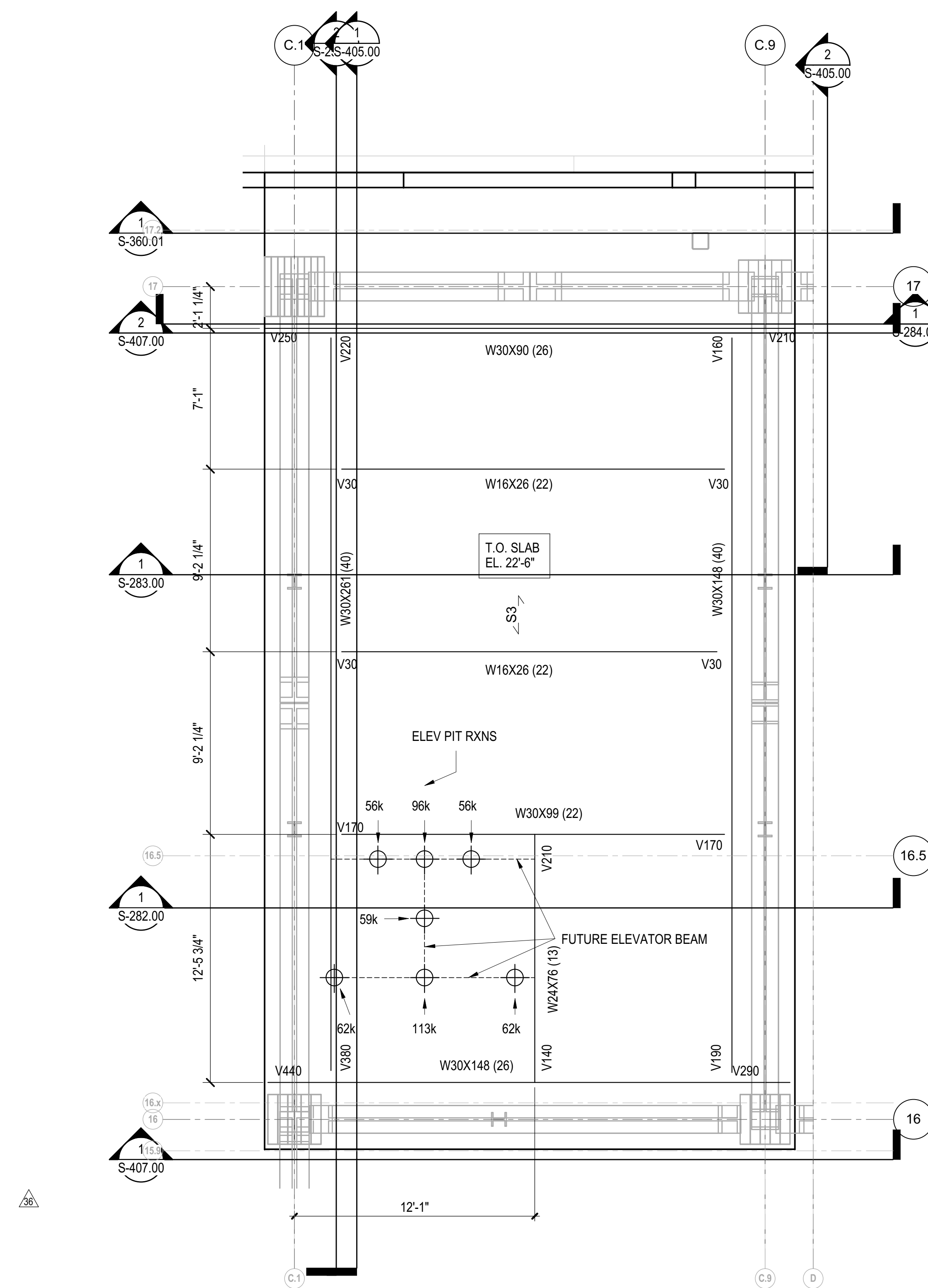
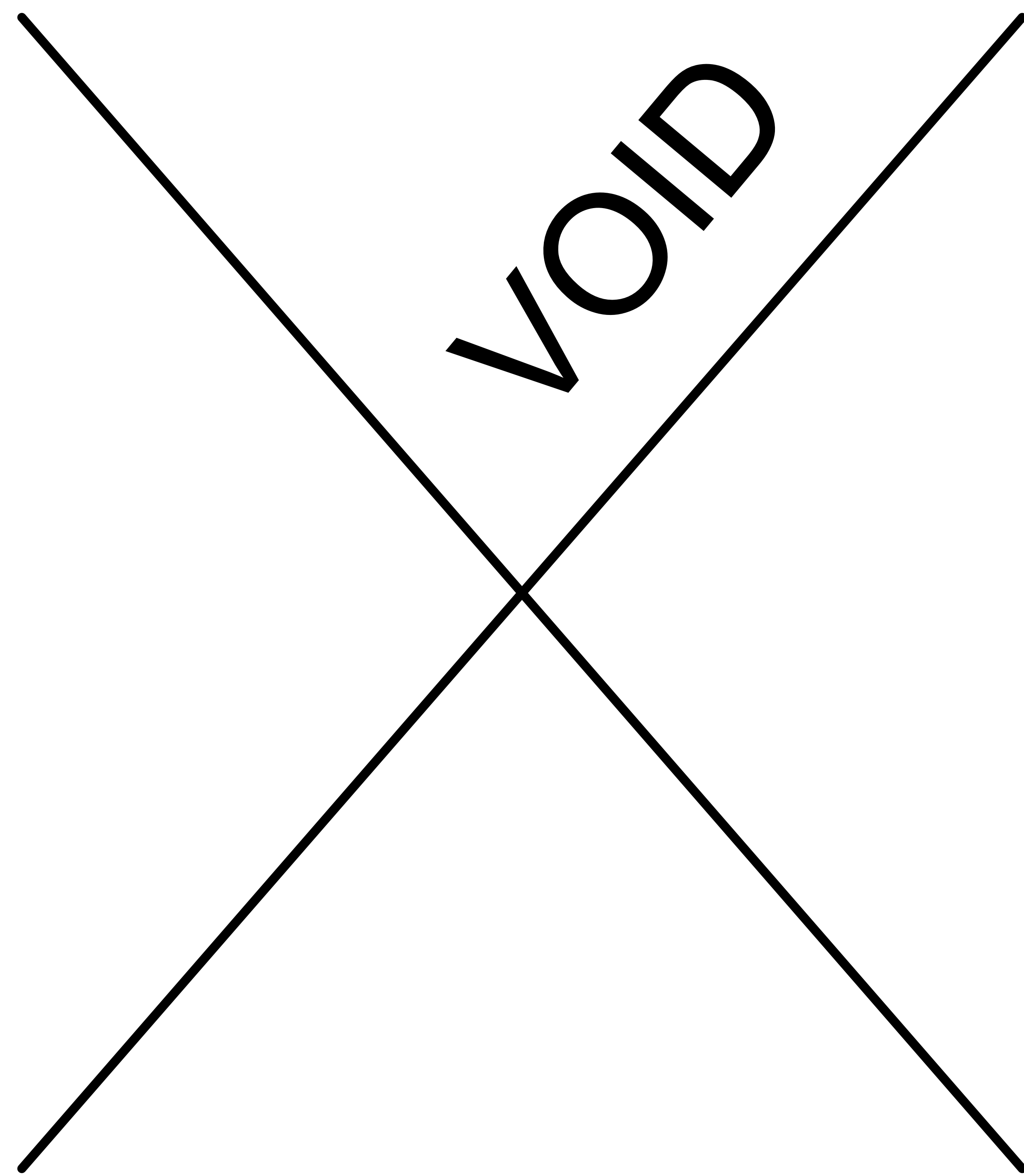


NOTES:  
1. REFER TO S-141.00 FOR SHEET NOTES

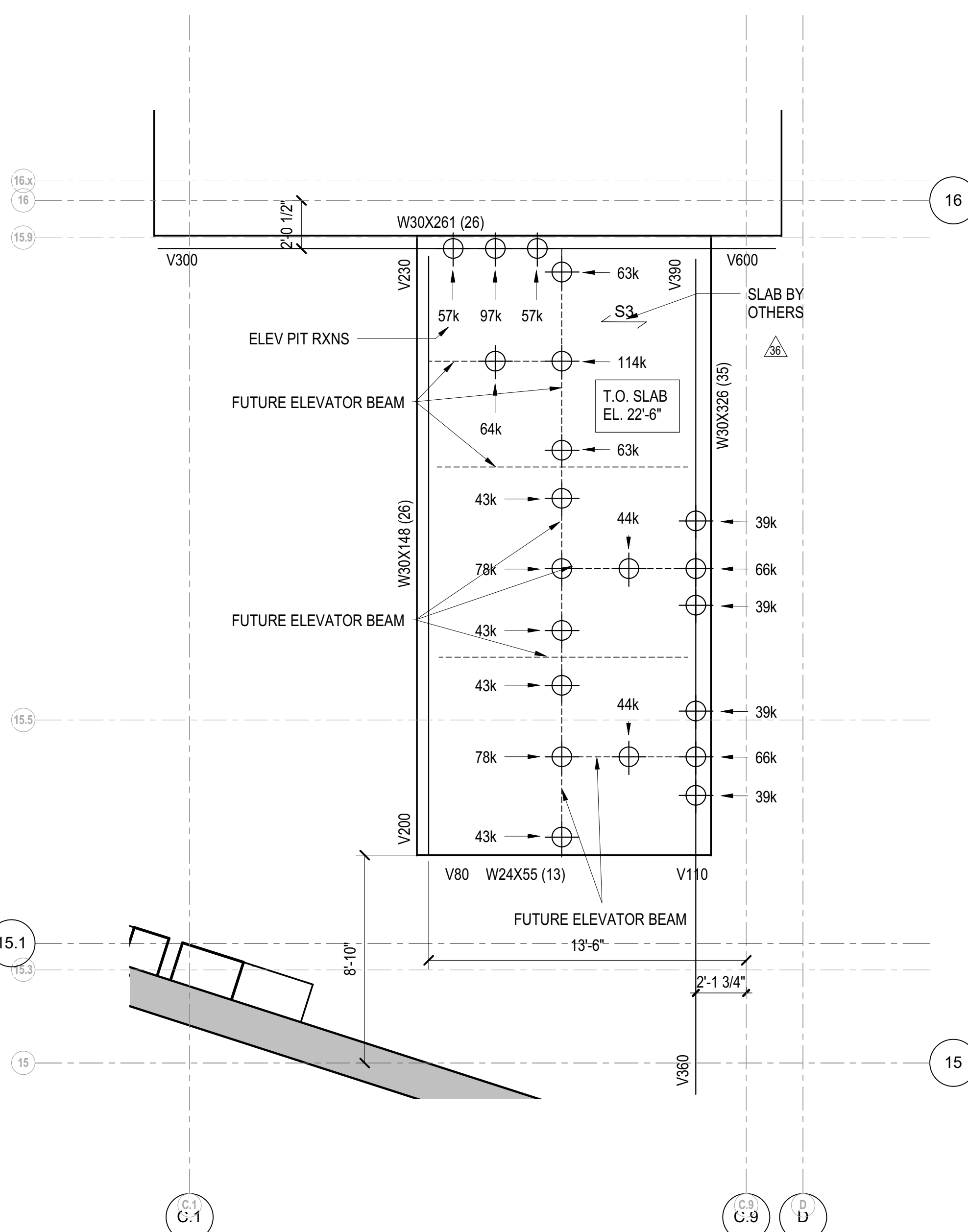
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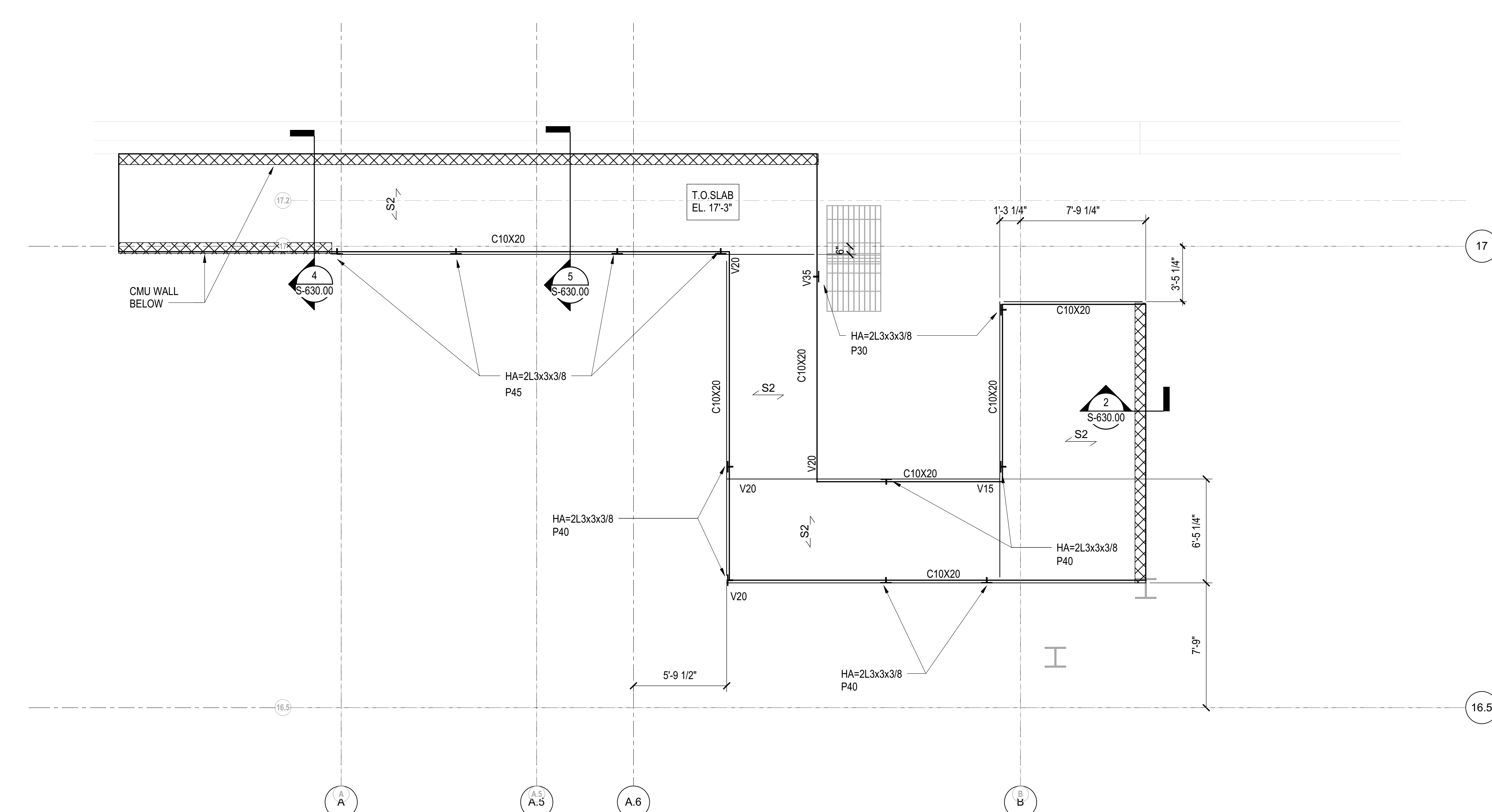
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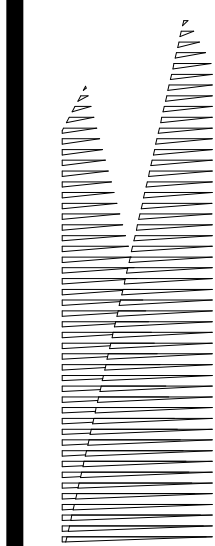
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1/4" = 1'-0"



4 PART PLAN AT AMTRACK EGRESS SLAB  
1/4" = 1'-0"



5 AMTRAK STAIR EOS  
1/4" = 1'-0"



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
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New York, NY 10022  
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New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
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Personnel Transportation Group  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASID0056	12/19/2014
L.I.R.R. - FINAL 100%	10/14/2014
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ASID0049	10/14/2014
ASID0028 - SEQUENCE 11 FRAMING	6/06/2014
Description	Rev.

For Plot

Date: 06/06/14  
Project No: N11330.00  
Revision By: Author  
Sheet Number

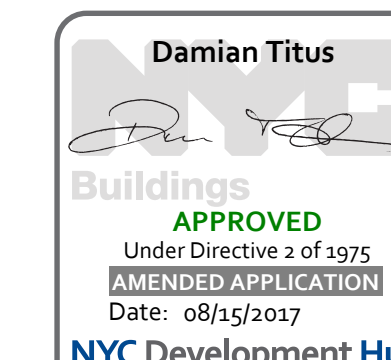
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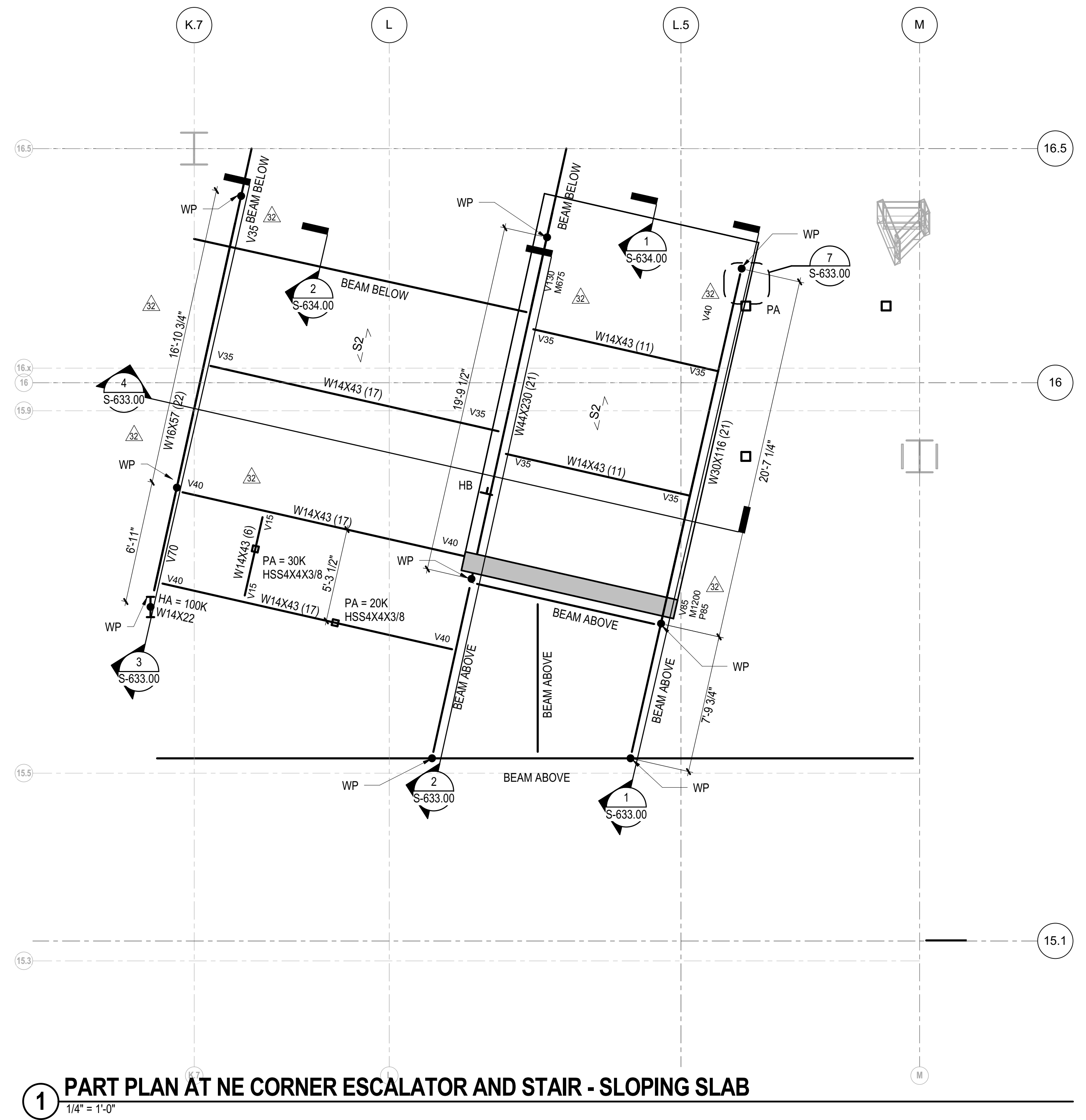
PLATFORM PART PLANS

Drawing Title

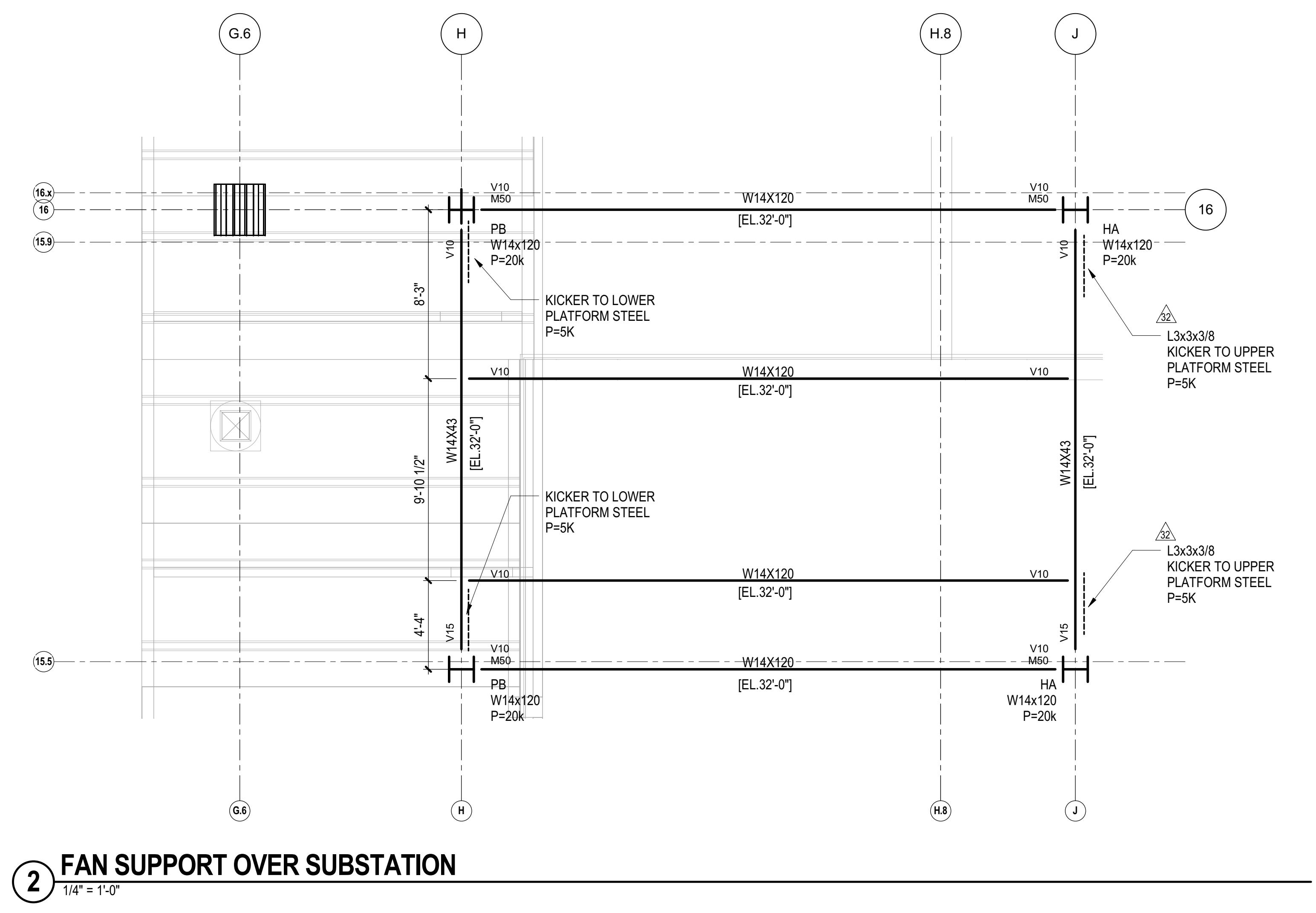
S-151.00

SHEET 33 of 163

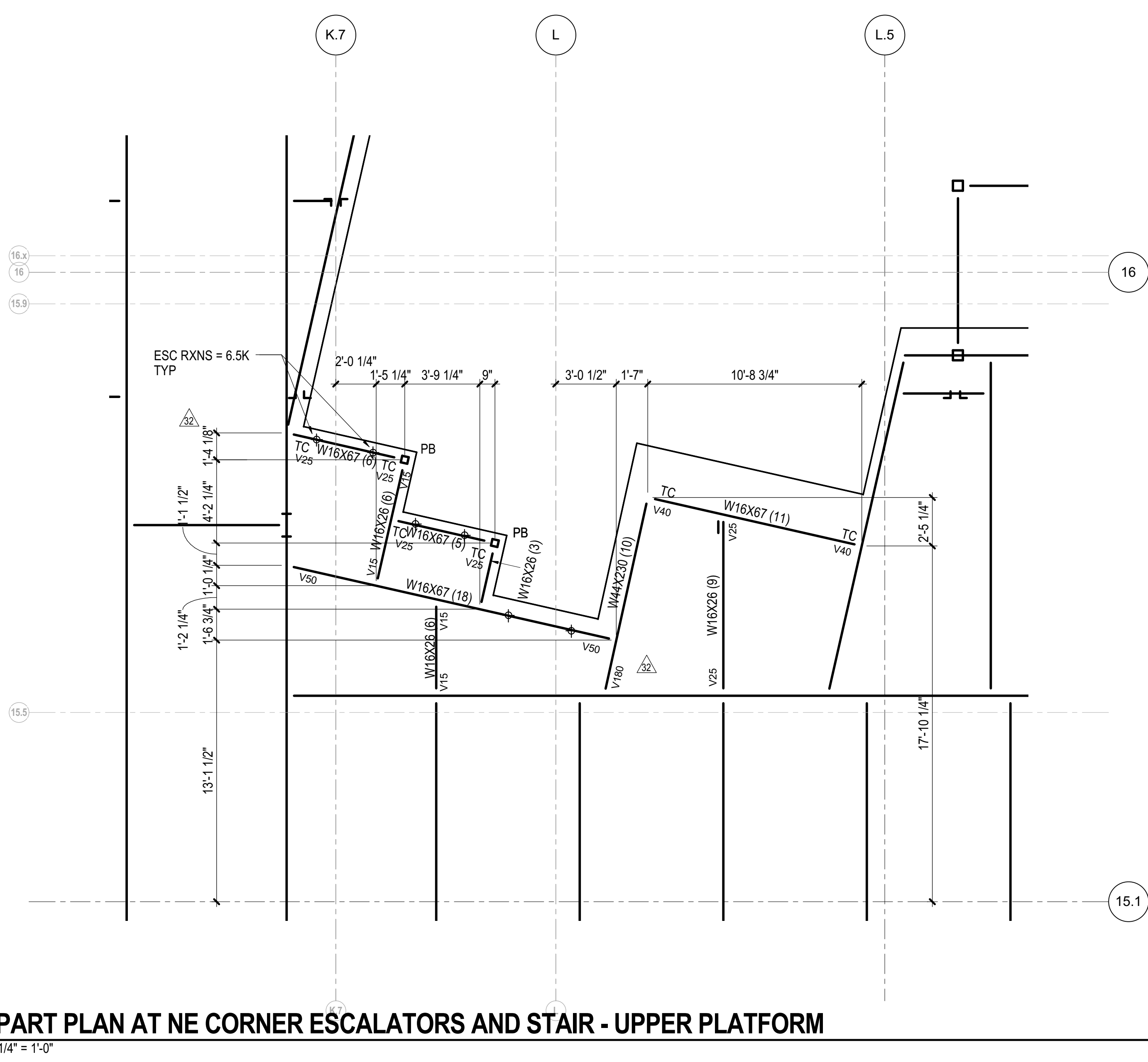




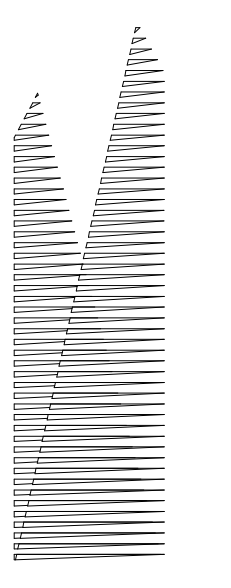
**1 PART PLAN AT NE CORNER ESCALATOR AND STAIR - SLOPING SLAB**  
1/4" = 1'-0"



**2 FAN SUPPORT OVER SUBSTATION**  
1/4" = 1'-0"



**3 PART PLAN AT NE CORNER ESCALATORS AND STAIR - UPPER PLATFORM**  
1/4" = 1'-0"



*Client*  
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60 Columbus Circle  
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*Owner*  
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New York, NY 10017  
Tel: 212.708.3600

*Architect*  
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*LJRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

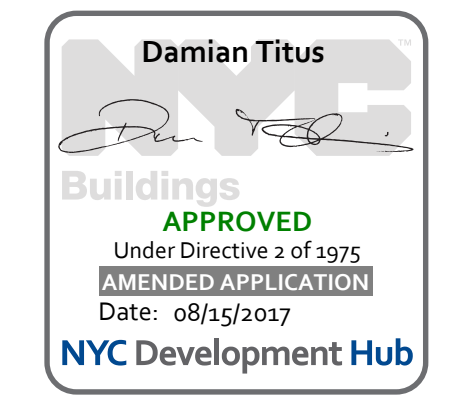
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AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
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Design	06/01

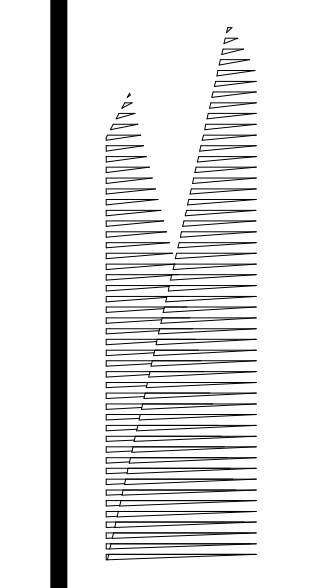
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Drawn By	Author
Sheet Number	

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**PLATFORM PART  
PLANS**

Drawing Number / B/CAN Drawing Number  
**S-152.00**  
SHEET 34 of 163







**Client**  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

**Oxford Properties Group**  
330 Park Avenue, 17th Floor  
New York, NY 10022  
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**Construction Manager**  
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New York, NY 10017  
Tel: 212.708.3600

**Architect**  
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PC Architects & Planning Consultants  
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**Structural Engineer**  
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Tel: 212.896.3000

**LJRR Substation**  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

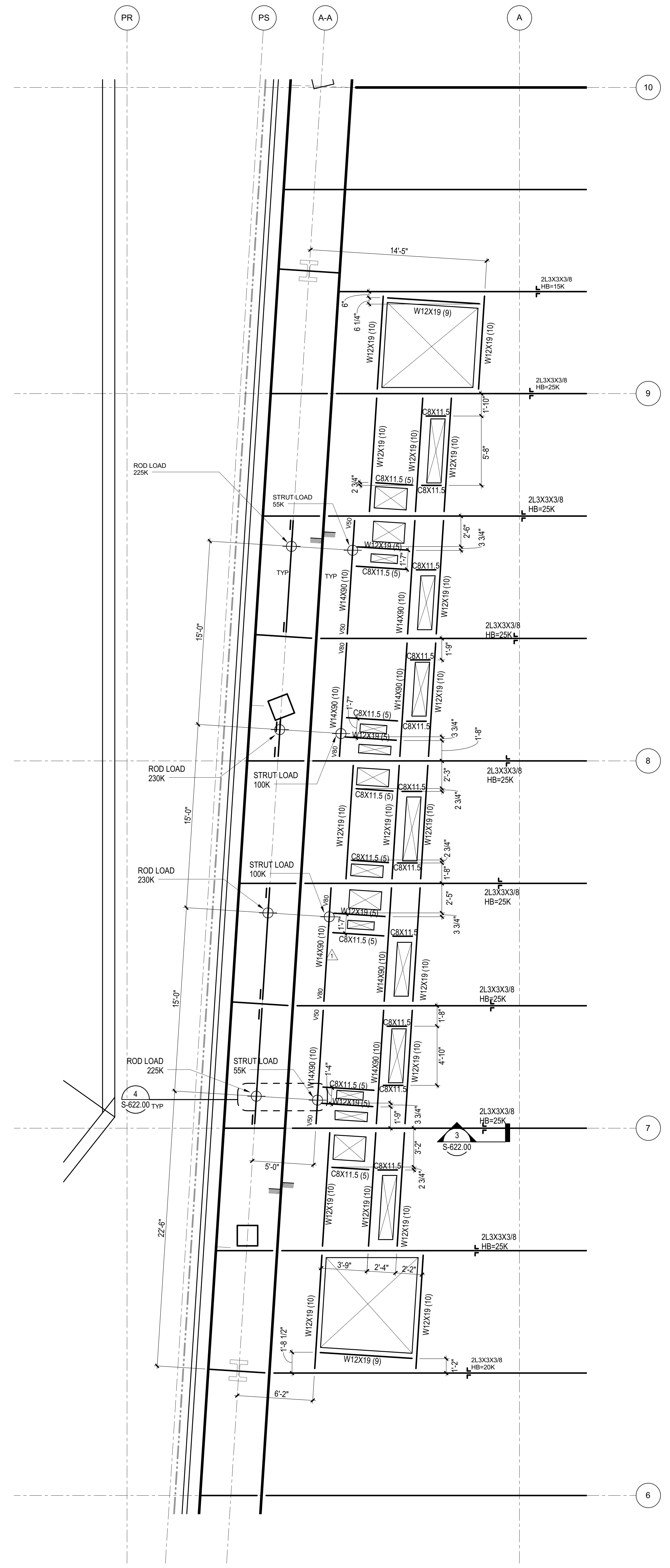
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ASH0052 - WEST ATRIUM	10/31/2014
Revision	000

Key Plan

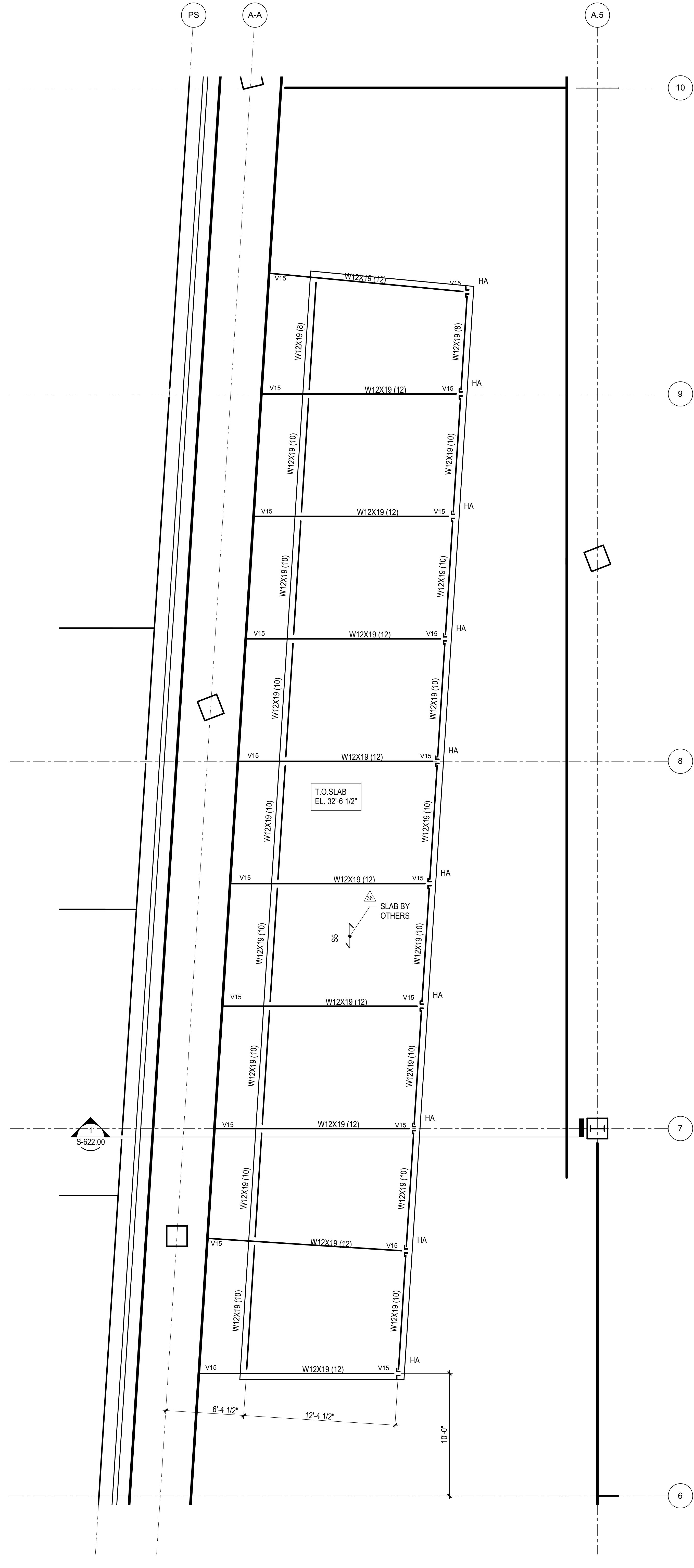
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Sheet Number

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PLATFORM PART PLANS

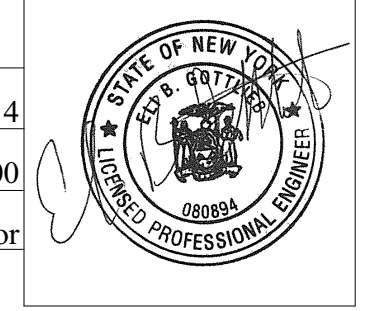
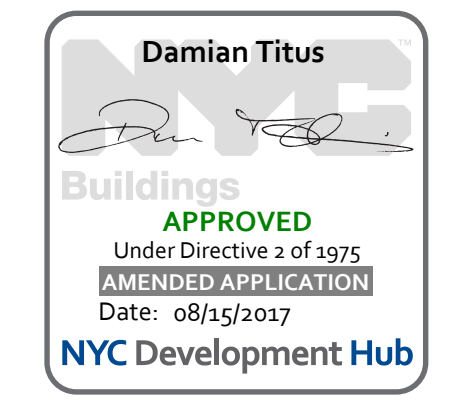
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**S-153.00**  
Under Directive 1 of 1975  
Date: 08/15/2017  
NYC Development Hub

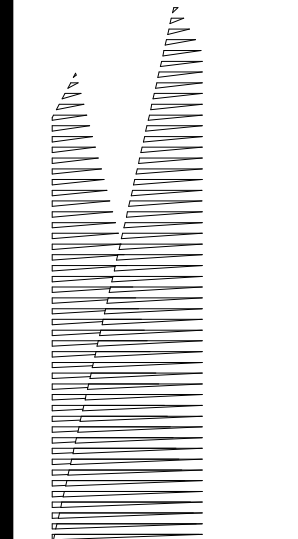


**1 WEST ATRIUM SLAB OPENING PART PLAN**  
1/4" = 1'-0"



**2 WEST ATRIUM TRENCH**  
1/4" = 1'-0"





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LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172

DESCRIPTION	DATE
DO NOT POST-APPROVAL AMENDMENT	10/28/2016
Dr. ASS-M-06	07/15/2015
Mod. 100% Wheel Truer Design	5/31/2016
Submission Rev. 1	5/31/2016
Mod. 100% Wheel Truer Design	3/23/2016
Submission	3/23/2016
LJRR MOE 90% WTM	1/28/2016
Rev.	Rev.

Rev. Plan

Date:	10/12/15
Project No.:	N11330.00
Drawn By:	Author
Sheet Number:	

**HYE -PL -S-154.00**

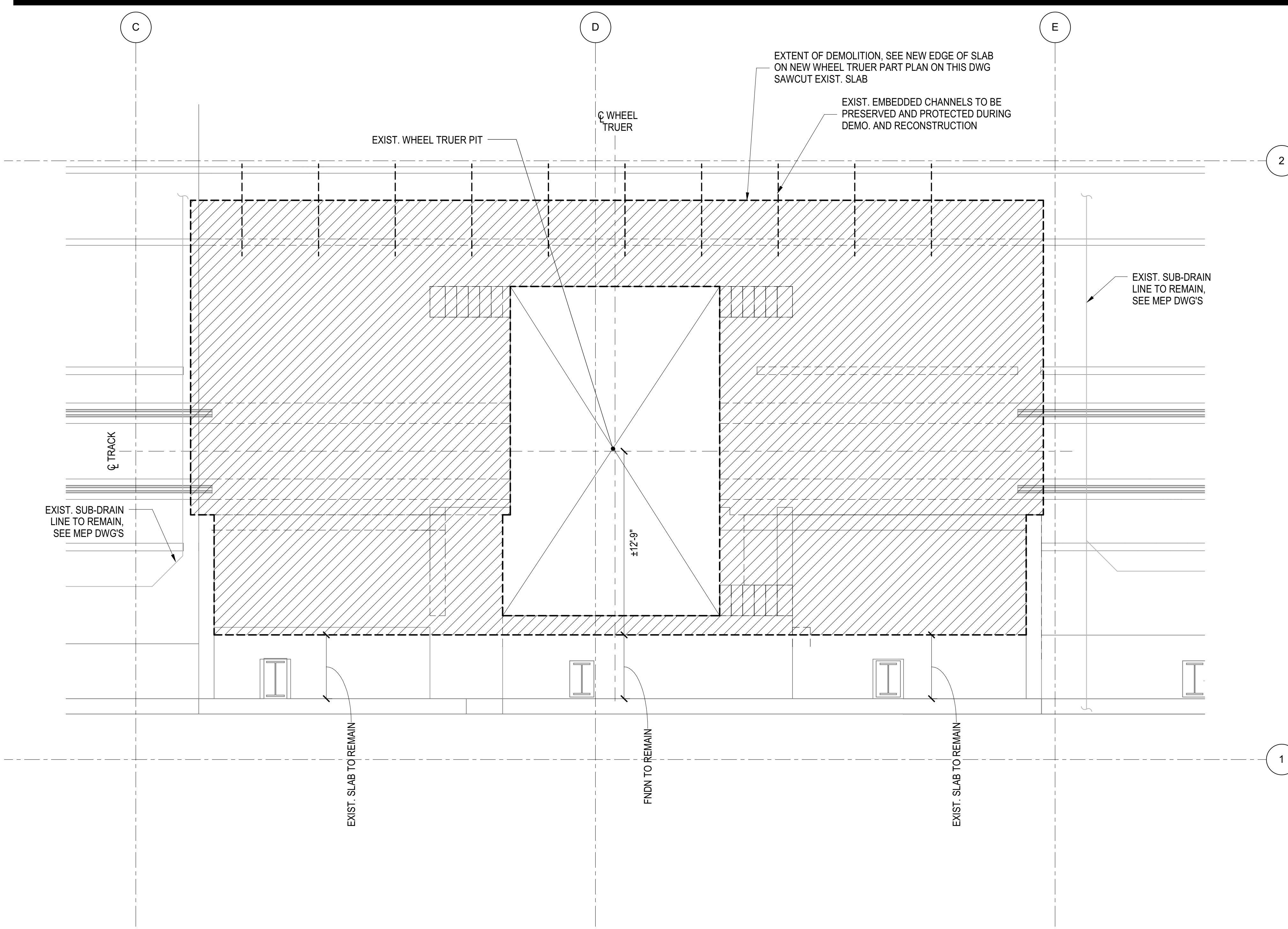
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Drawing Title  
**S-154.00**

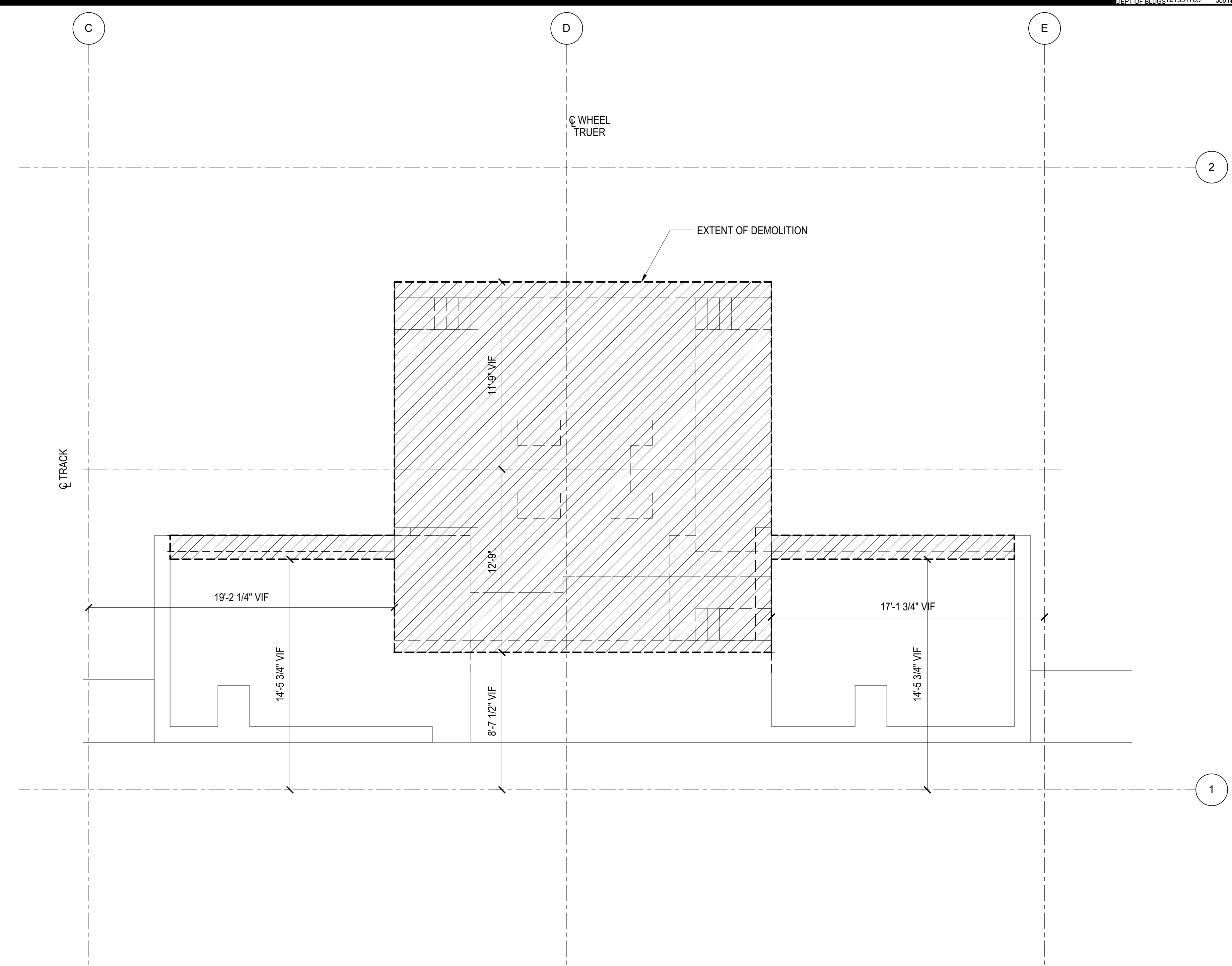
Drawing Number / Revision Drawing Number

**SHEET 36 OF 163**

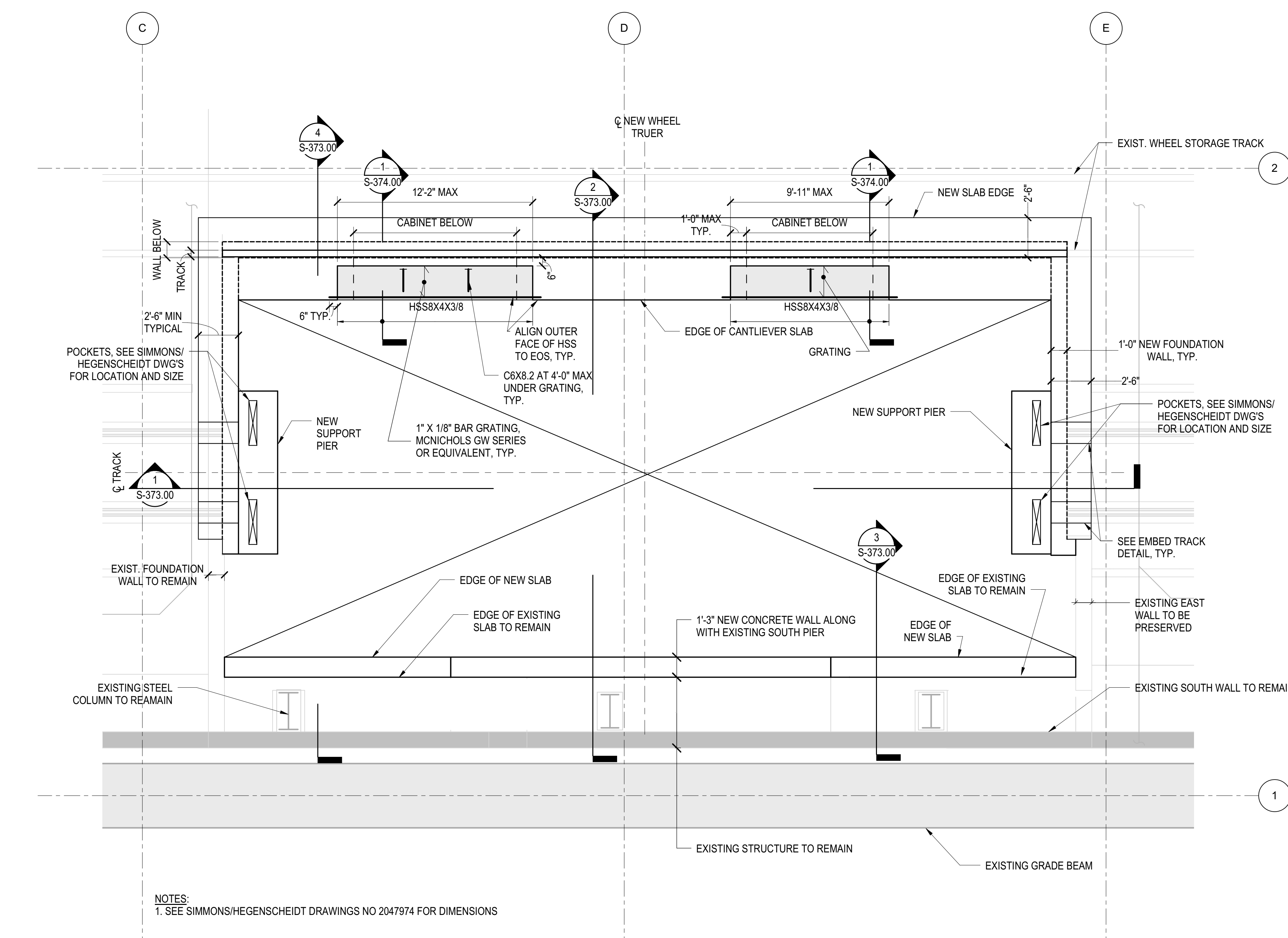
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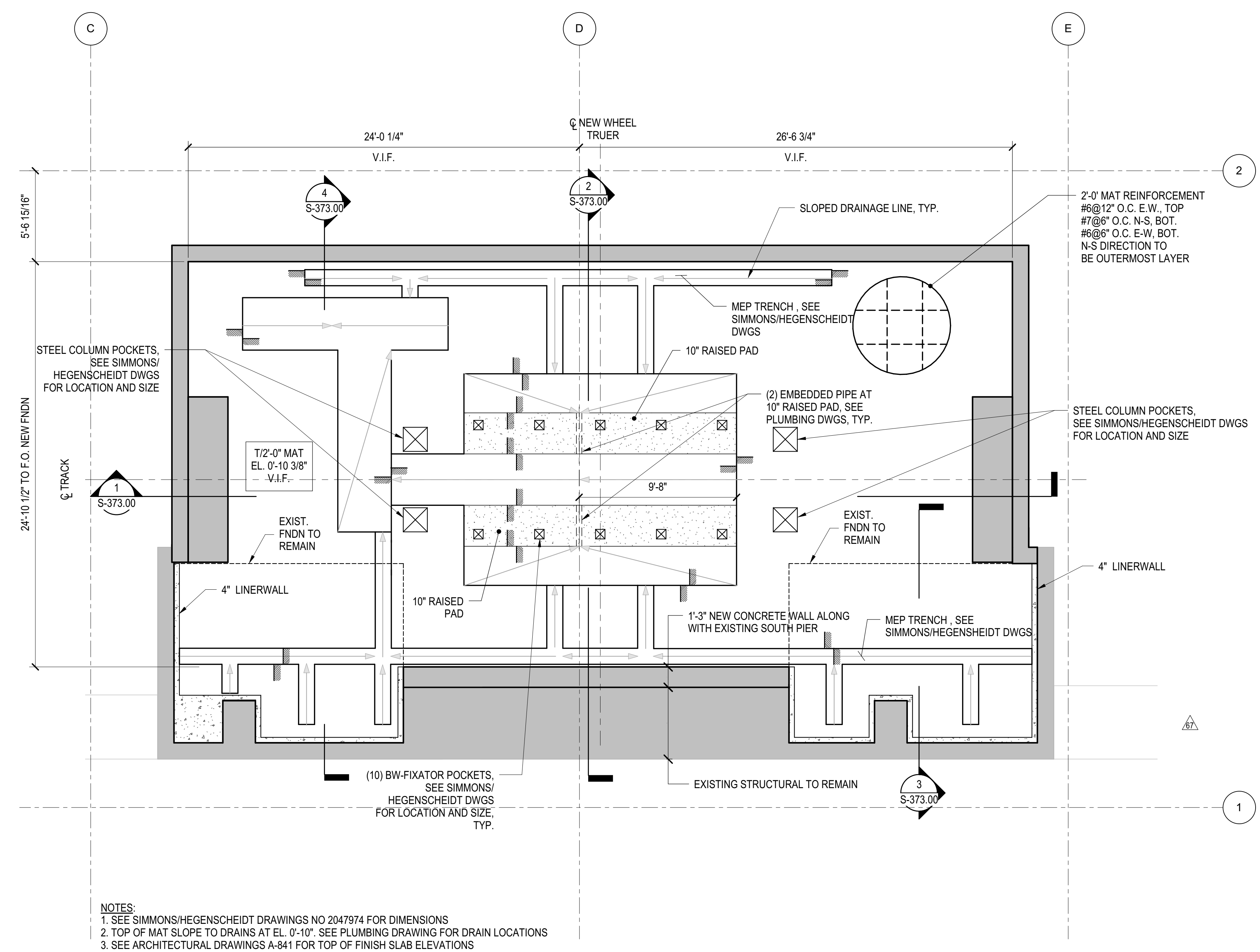
**2 NEW WHEEL TRUER DEMOLITION PART PLAN AT HIGHBAY LEVEL**  
1/4" = 1'-0"



**1 NEW WHEEL TRUER DEMOLITION PART PLAN AT PIT LEVEL**  
1/4" = 1'-0"



**3 NEW WHEEL TRUER PART PLAN AT HIGHBAY LEVEL**  
1/4" = 1'-0"



**4 NEW WHEEL TRUER PART PLAN AT PIT LEVEL**  
1/4" = 1'-0"

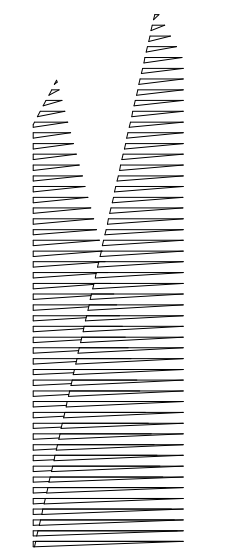
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NOTES:  
1. SEE SIMMONS/HEGENSCHEIDT DRAWINGS NO 2047974 FOR DIMENSIONS

NOTES:  
1. SEE SIMMONS/HEGENSCHEIDT DRAWINGS NO 2047974 FOR DIMENSIONS  
2. TOP OF MAT SLOPE TO DRAINS AT EL. 0'-10". SEE PLUMBING DRAWING FOR DRAIN LOCATIONS  
3. SEE ARCHITECTURAL DRAWINGS A-841 FOR TOP OF FINISH SLAB ELEVATIONS

Damian Titus  
  
APPROVED  
Under Directive 3 of 1975  
NY State Professional Engineer  
Date: 08/15/2017





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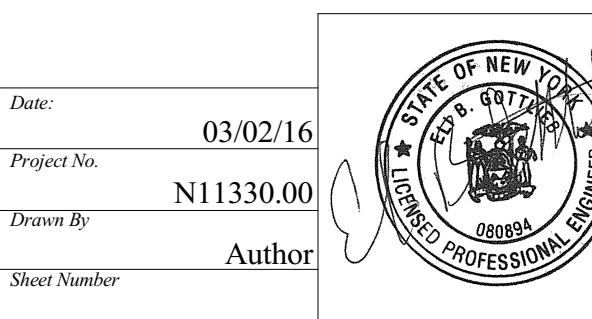
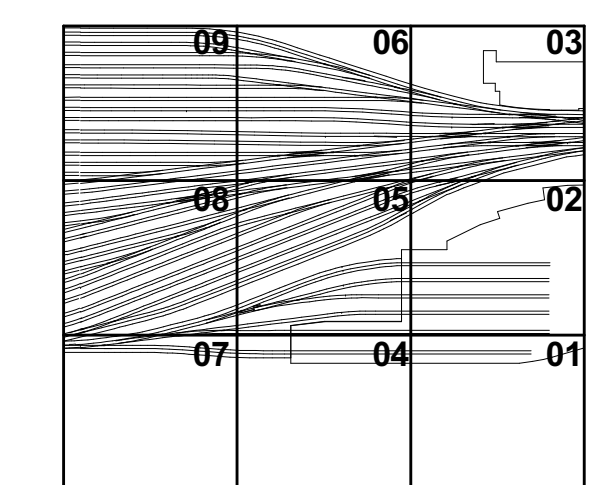
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New York, NY 10158  
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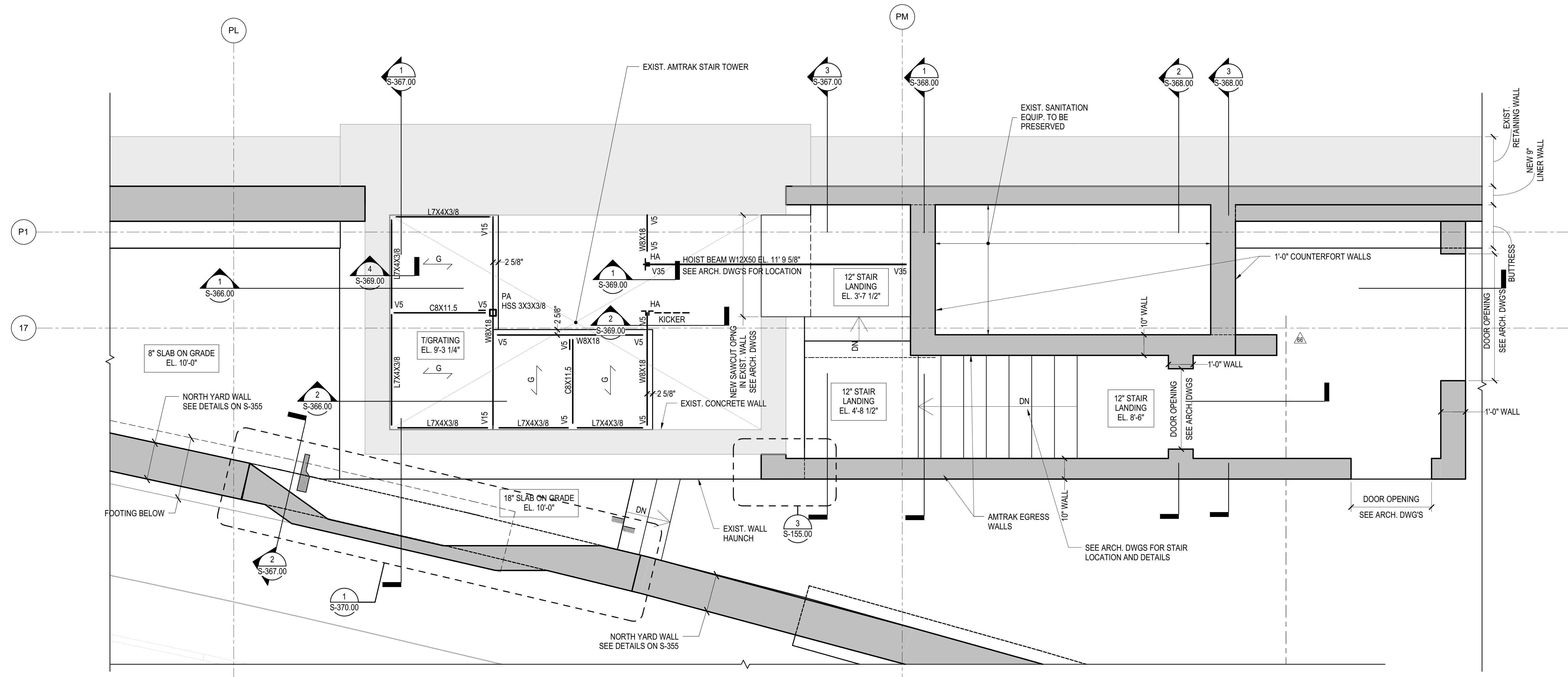
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ASB0123	06/29/2016
ASB0111	03/02/2016
Revisions	Rev.

Rev. No.

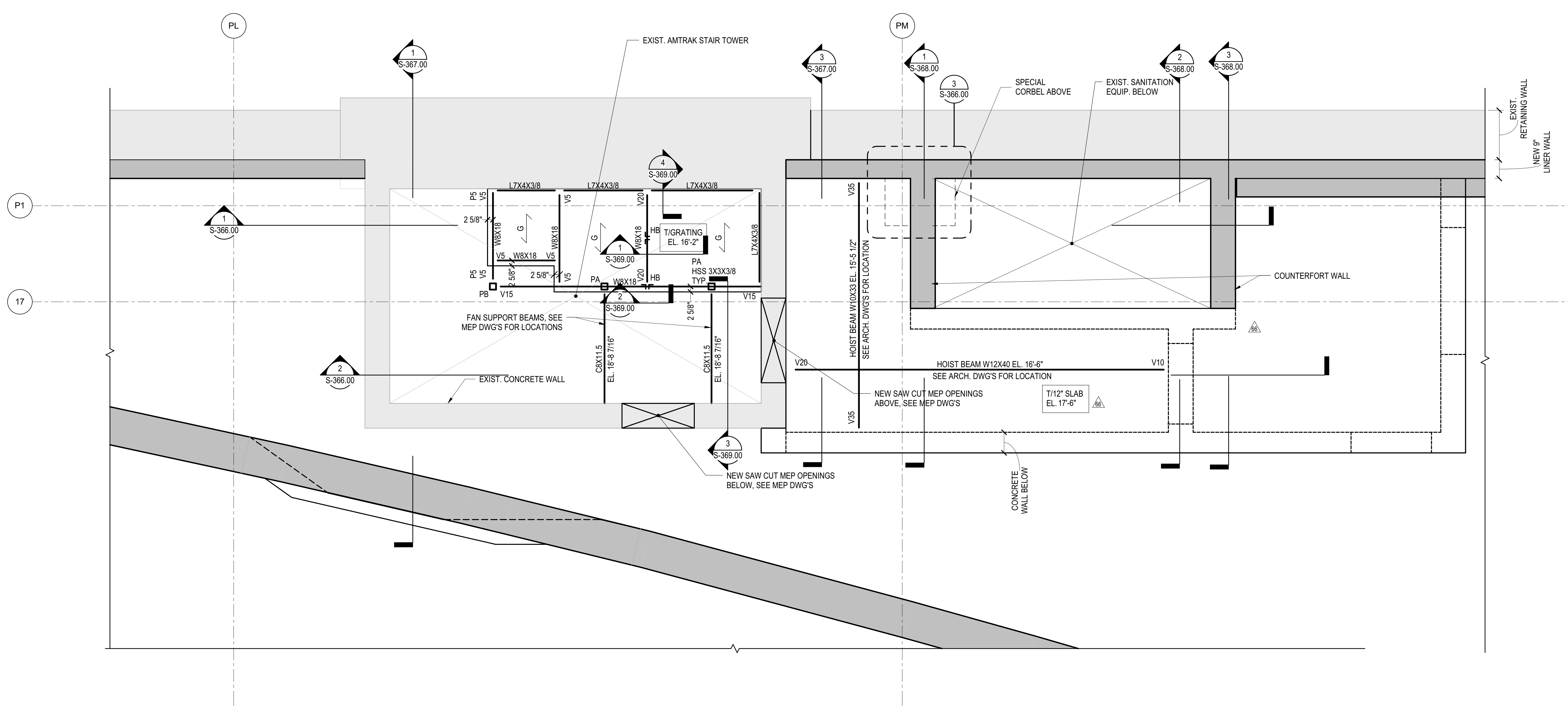


Drawn By: 03/02/16  
Project No: N11330.00  
Revision By: Author  
Sheet Number: HYE-PL-S-155.00

Part Plans at Amtrak Stair  
Drawing Title: HYE-PL-S-155.00  
Drawing Number / B/CAN Drawing Number: S-155.00

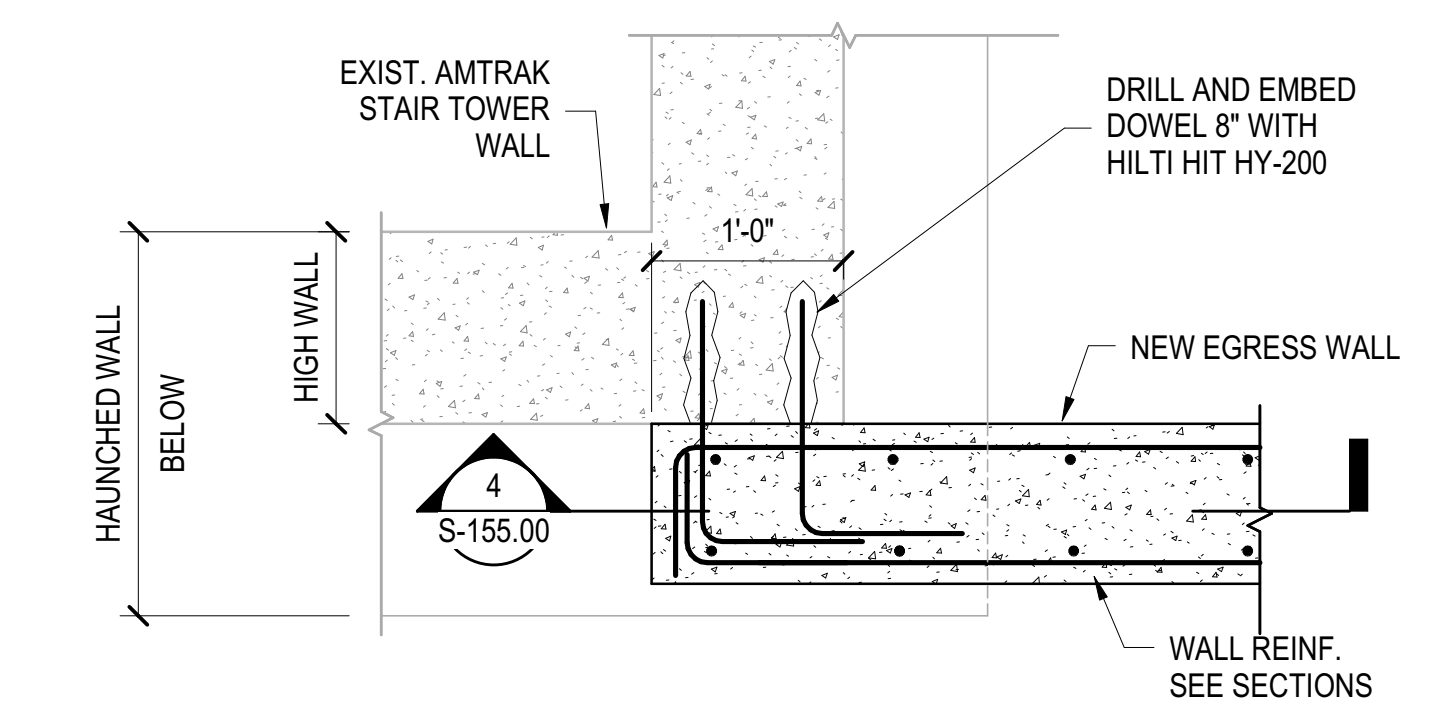


1 NEW AMTRAK STAIR TOWER SLAB PART PLAN AT TRACK LEVEL  
1/2" = 1'-0"

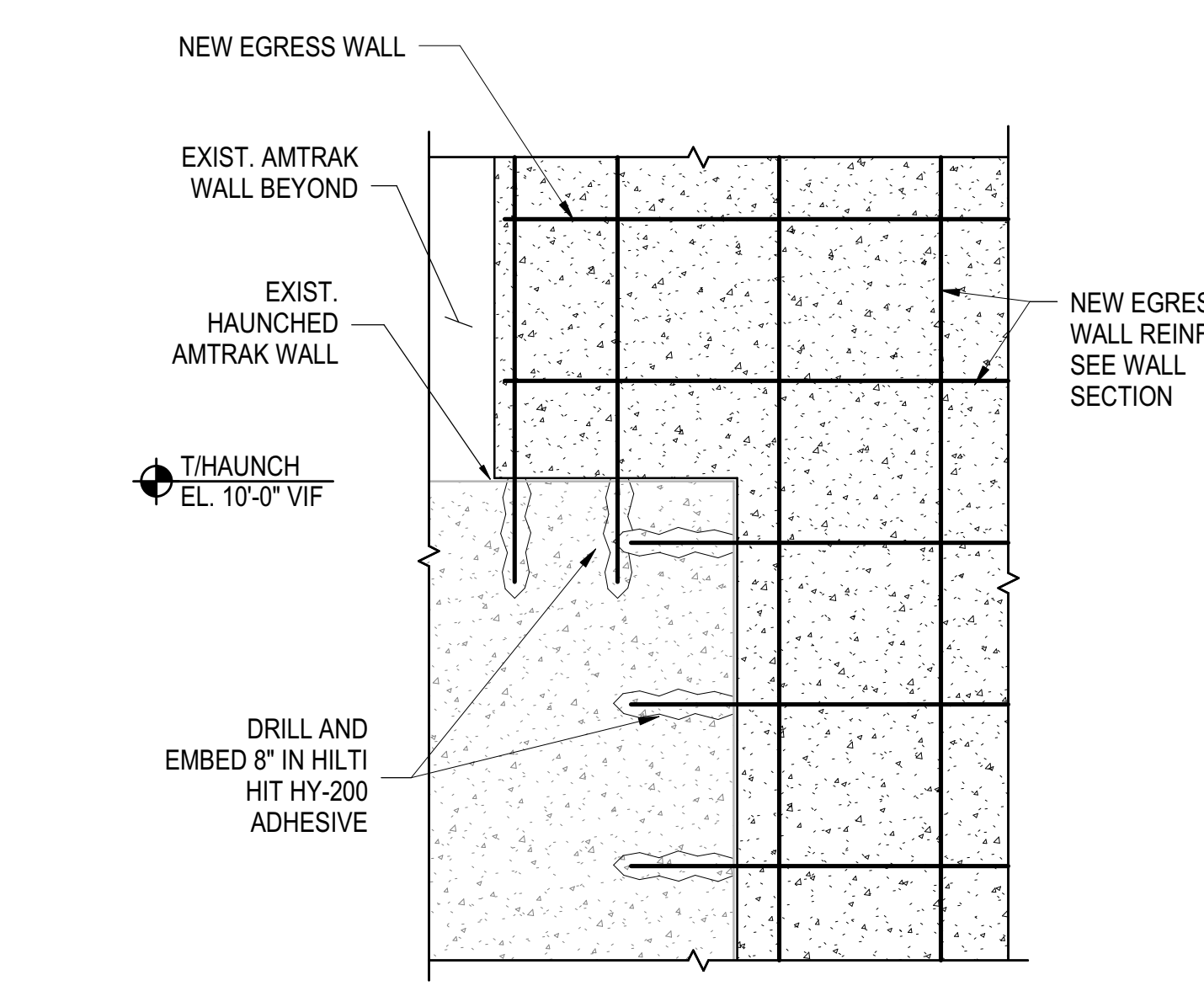


2 NEW AMTRAK STAIR TOWER ROOF SLAB PART PLAN  
1/2" = 1'-0"

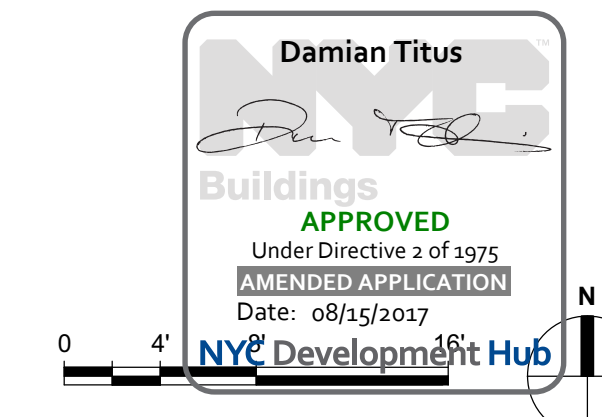
NOTES:  
1. REFER TO S-121 & S-131 FOR NOTES.  
2. G INDICATES STEEL GRATING 1'X3'16" WITH BAR SPACING 15'16", TYPE 154



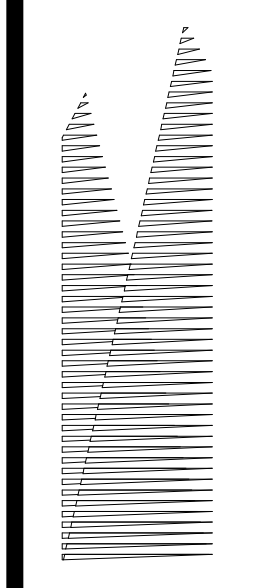
3 AMTRAK STAIR - WALL ON HAUNCH  
1" = 1'-0"



4 AMTRAK STAIR - WALL ON HAUNCH SECTION  
1" = 1'-0"



PART PLANS AT AMTRAK STAIR  
10/27/2016 2:38:28 PM  
C:\Users\sking\OneDrive\Documents\Rev\N11330.00 - East Platform - sking.rvt



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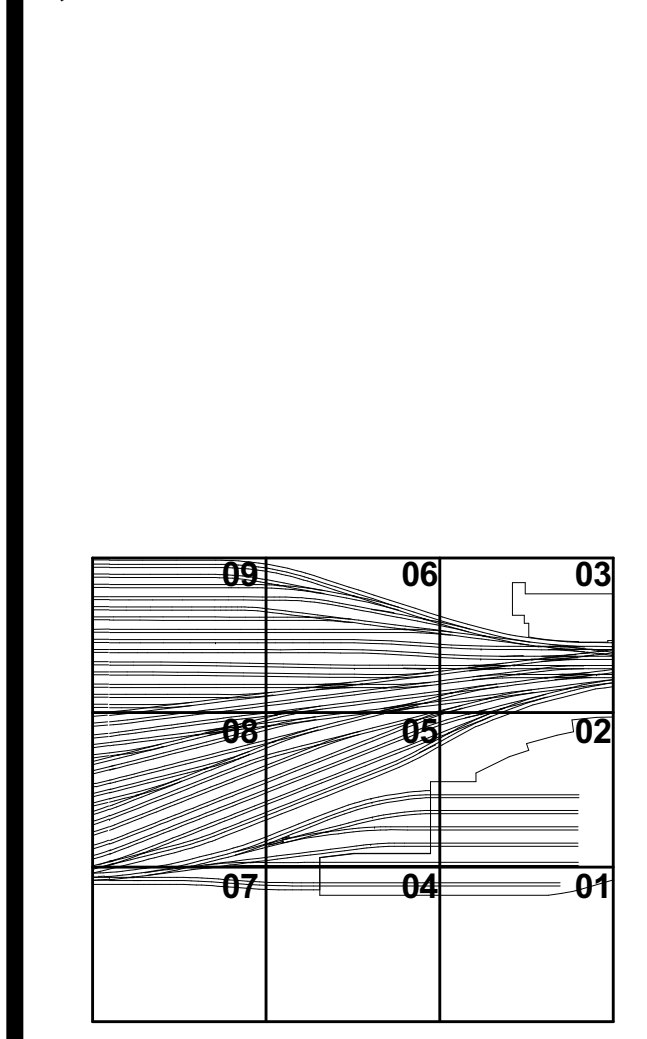
Structural Engineer  
Thornton Tomasetti, Inc.  
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LJRR Substation  
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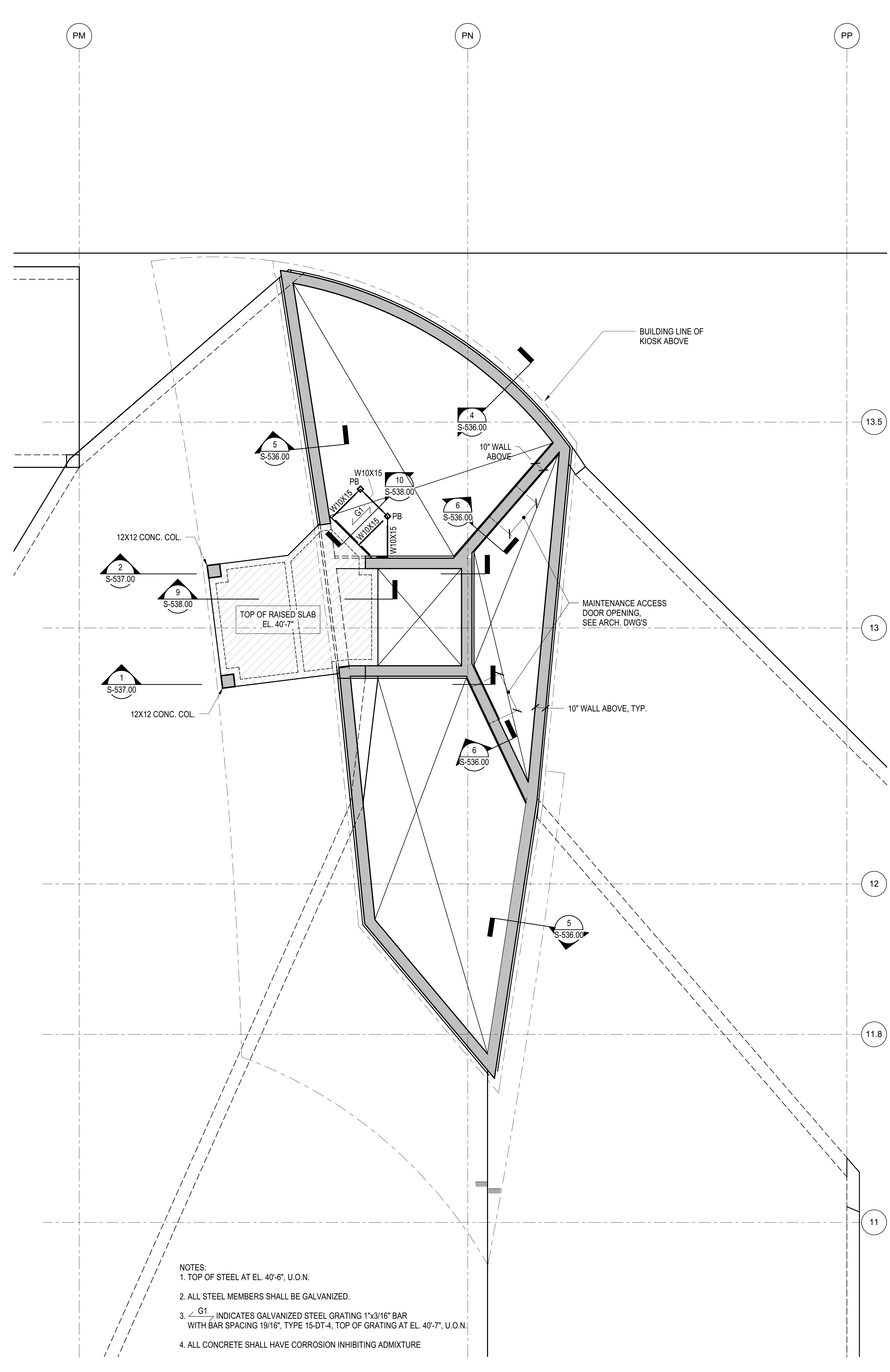
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ASHP#115	03/22/2015



Date: 03/02/16  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: HYE-PL-S-156.00

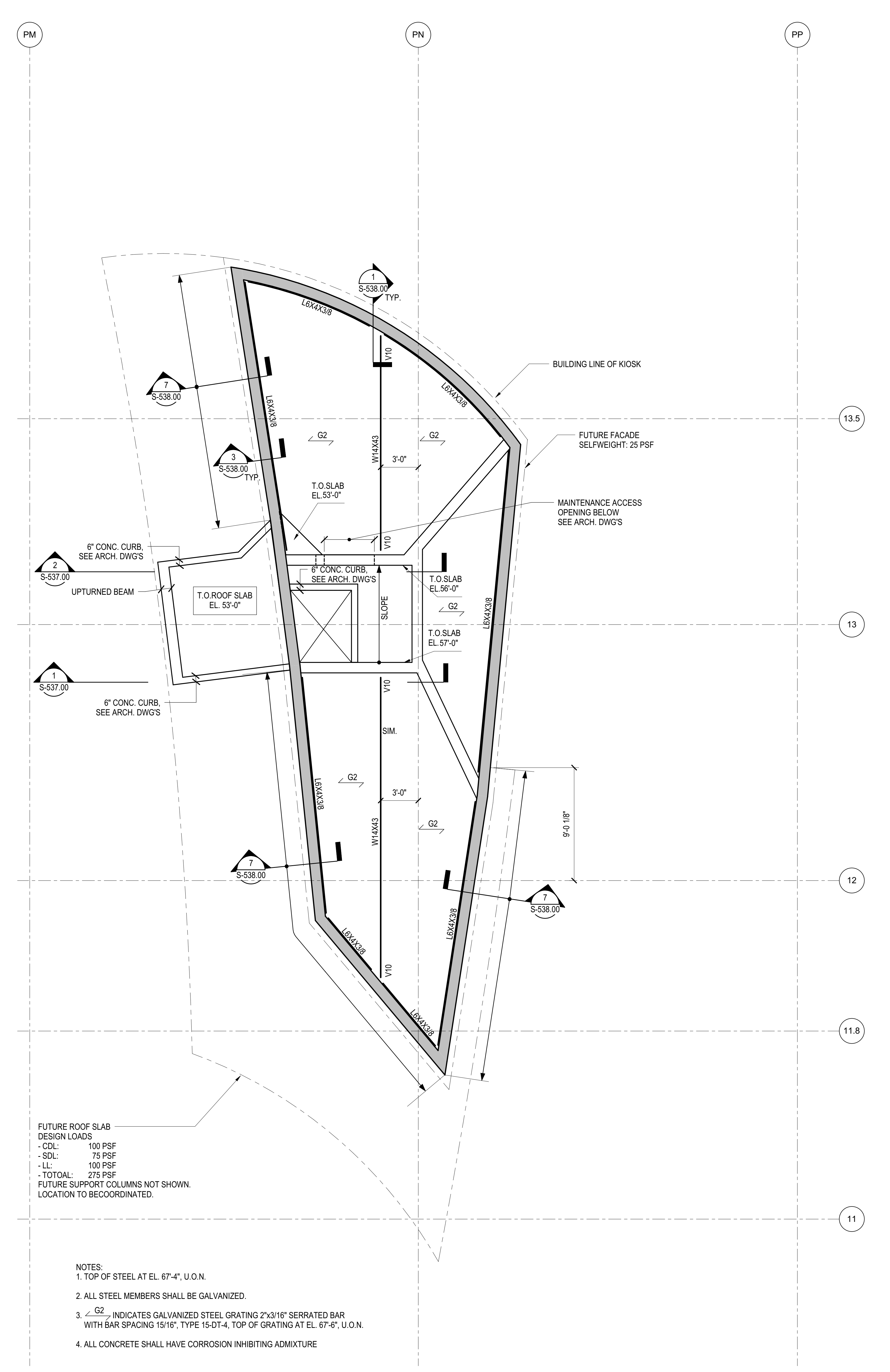
**HYE-PL-S-156.00**  
**PART PLANS AT KIOSK**

Drawing Number / B.C.A.N. Drawing Number  
**S-156.00**



- NOTES:
- TOP OF STEEL AT EL. 40'-6", U.O.N.
  - ALL STEEL MEMBERS SHALL BE GALVANIZED.
  - G1 INDICATES GALVANIZED STEEL GRATING 1"x3/16" BAR WITH BAR SPACING 19/16", TYPE 15-DT-4, TOP OF GRATING AT EL. 40'-7", U.O.N.
  - ALL CONCRETE SHALL HAVE CORROSION INHIBITING ADMIXTURE

**1 PAVILION PLAN**  
1/4" = 1'-0"

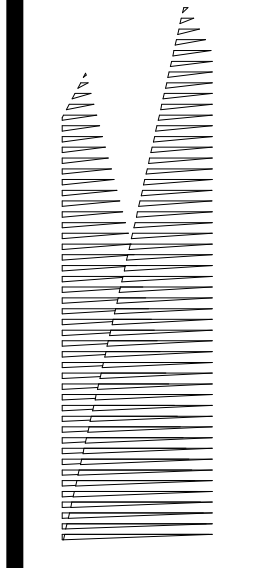


- FUTURE ROOF SLAB DESIGN LOADS
- CDL: 100 PSF
  - SDL: 75 PSF
  - LL: 100 PSF
  - TOTAL: 275 PSF
- FUTURE SUPPORT COLUMNS NOT SHOWN. LOCATION TO BE COORDINATED.

- NOTES:
- TOP OF STEEL AT EL. 67'-4", U.O.N.
  - ALL STEEL MEMBERS SHALL BE GALVANIZED.
  - G2 INDICATES GALVANIZED STEEL GRATING 2"x3/16" SERRATED BAR WITH BAR SPACING 15/16", TYPE 15-DT-4, TOP OF GRATING AT EL. 67'-6", U.O.N.
  - ALL CONCRETE SHALL HAVE CORROSION INHIBITING ADMIXTURE

**2 KIOSK ROOF PLAN**  
1/4" = 1'-0"

Damian Titus  
APPROVED  
Under Directive 3 of 1975  
Professional Engineer  
Date: 08/15/2017  
NYC Development Hub



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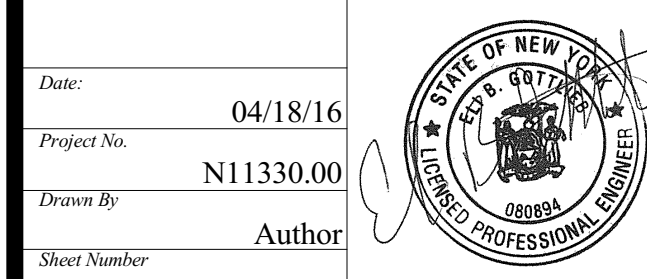
*Structural Engineer*  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
AS#	AS#0121
Description	6/7/2016
Rev	

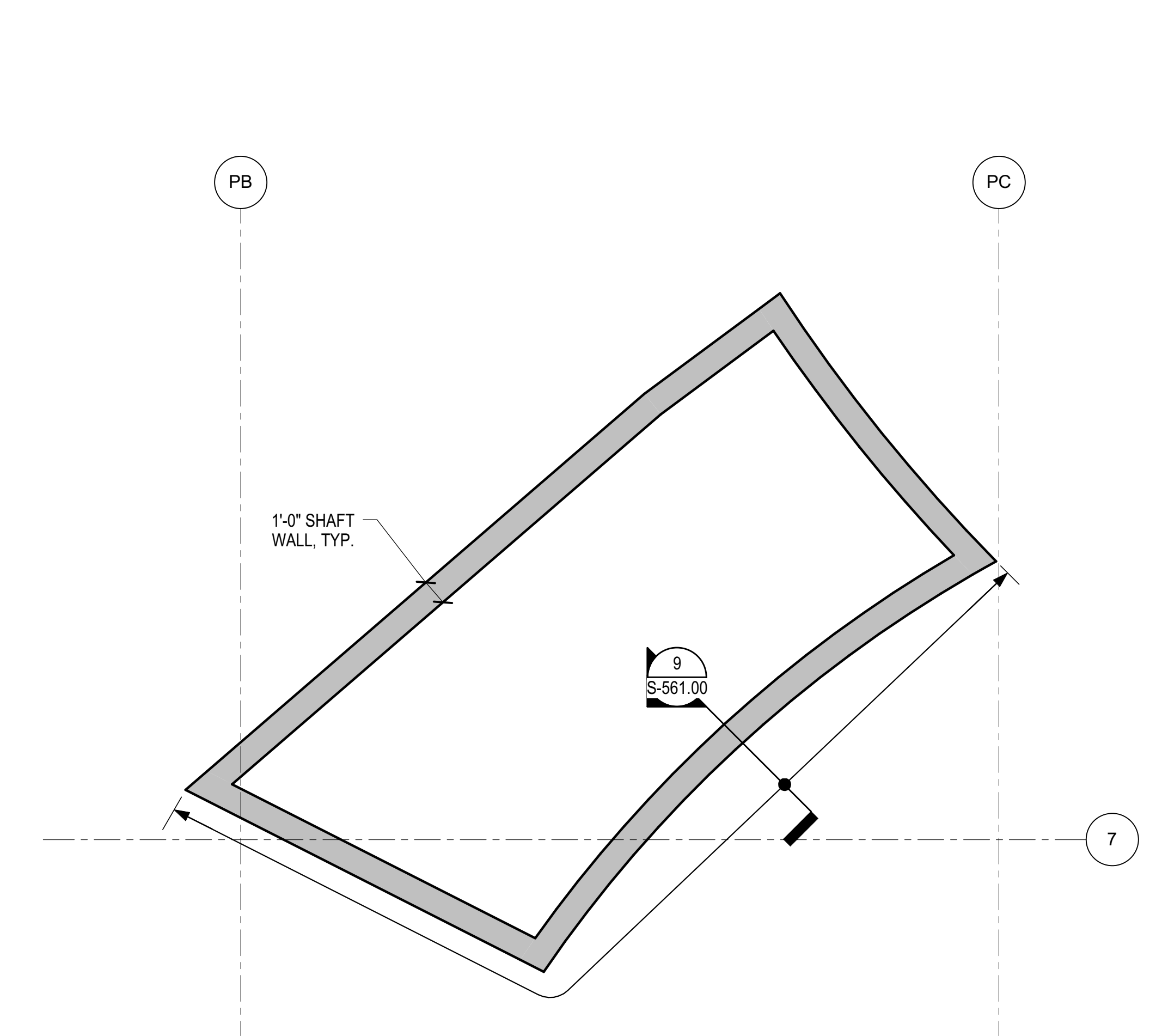


**HYE -PL -S-157.00**

**PART PLAN AT PAVILION SHAFT**

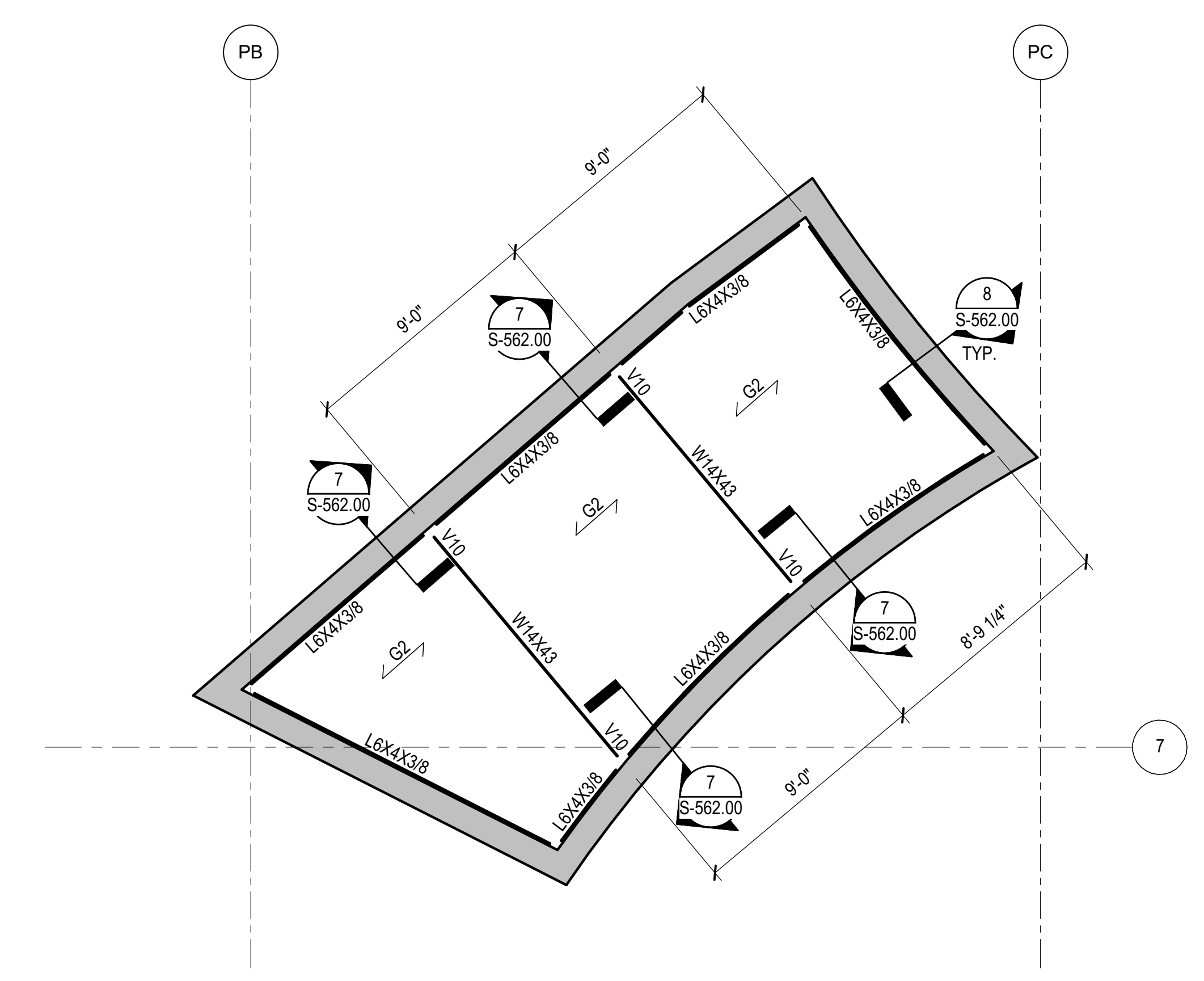
Drawing Number / B.C.M.N. Drawing Number

**S-157.00**



NOTES:  
1. ALL CONCRETE SHALL HAVE CORROSION INHIBITING ADMIXTURE AT SHAFT WALL

**3 PAVILION SHAFT - MIDDLE OF SHAFT**  
1/4" = 1'-0"

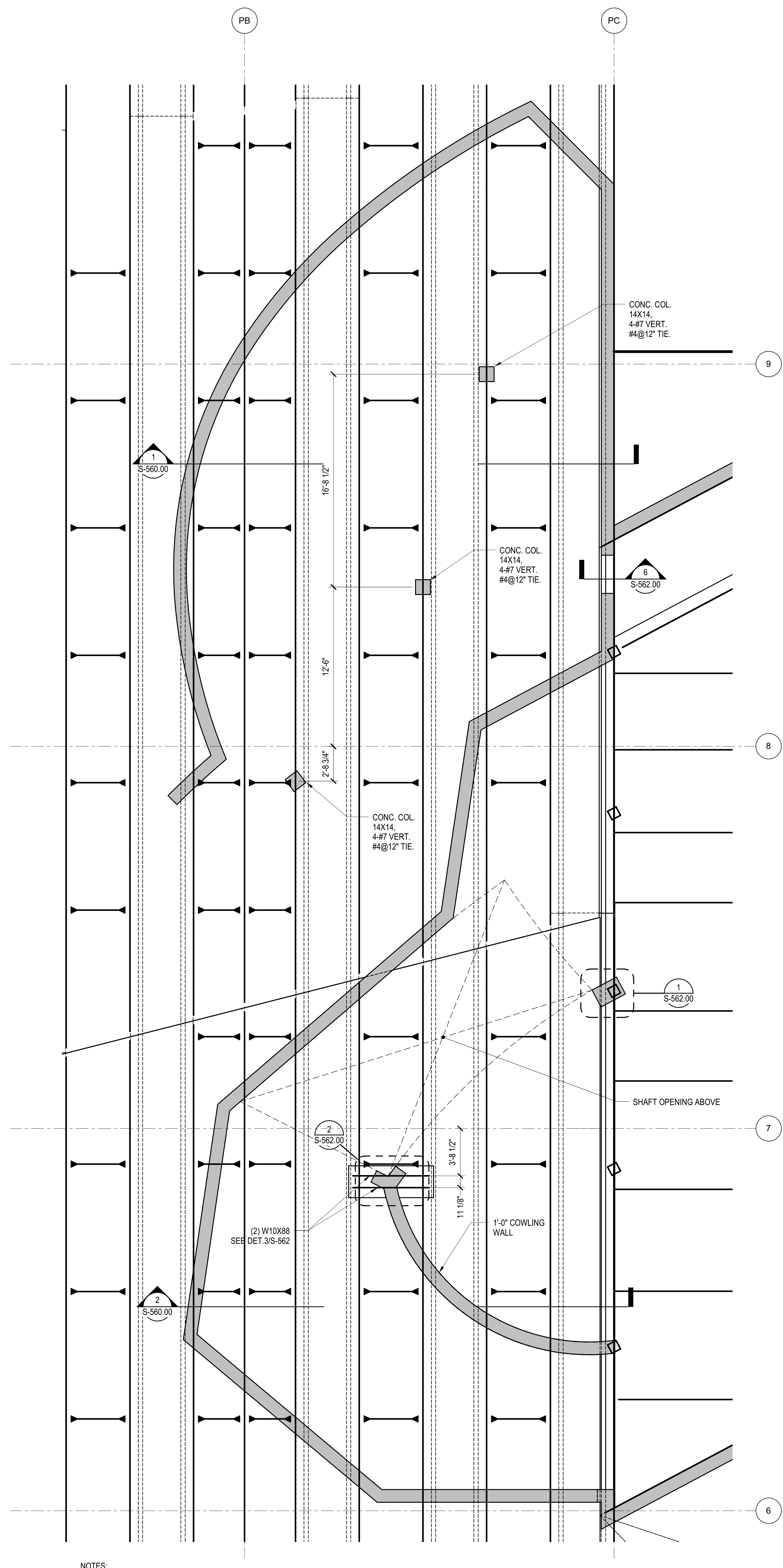


NOTES:  
1. TOP OF STEEL AT EL. 71'-6", U.O.N.  
2. ALL STEEL MEMBERS SHALL BE GALVANIZED.  
3. G2 INDICATES GALVANIZED STEEL GRATING 2"x3/16" SERRATED BAR WITH BAR SPACING 15/16", TYPE 15-DT-4, TOP OF GRATING AT EL. 71'-8", U.O.N.  
4. ALL CONCRETE SHALL HAVE CORROSION INHIBITING ADMIXTURE AT SHAFT WALL

**DESIGN LOADS:**

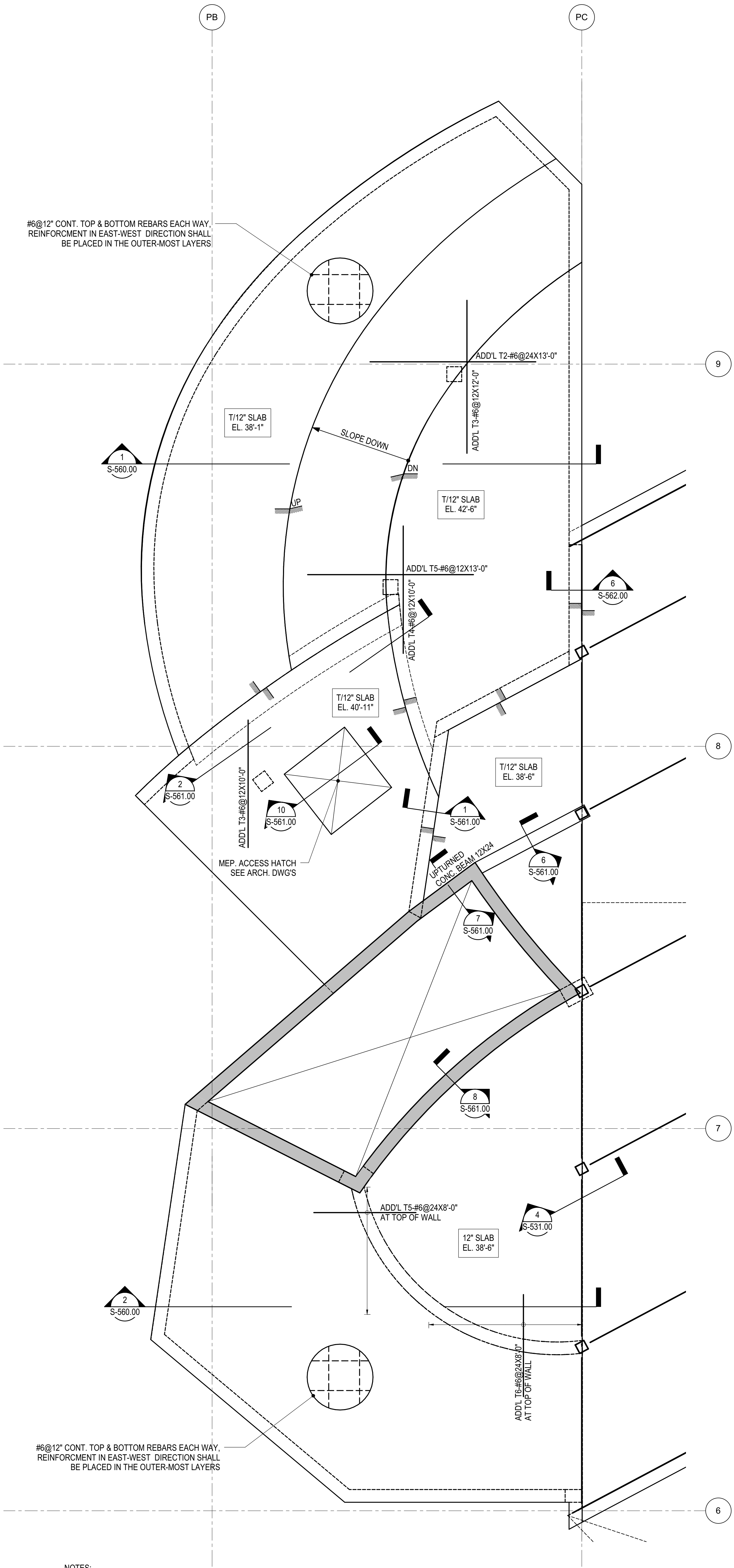
- DEAD LOADS:  
10" FLOOR/ROOF CONCRETE SLAB, NORMAL WEIGHT
- SUPERIMPOSED DEAD LOAD:  
TYPICAL FLOOR: 30 PSF  
ROOF: 45 PSF
- LIVE LOADS:  
TYPICAL FLOOR: 100 PSF  
ROOF: 75 PSF
- FACADE LOADS: 25 PSF

**4 PAVILION SHAFT - TOP OF SHAFT**  
1/4" = 1'-0"



NOTES:  
1. ALL CONCRETE SHALL HAVE CORROSION INHIBITING ADMIXTURE AT VENT PLENUM SPACE WALL, COLUMNS AND SLAB

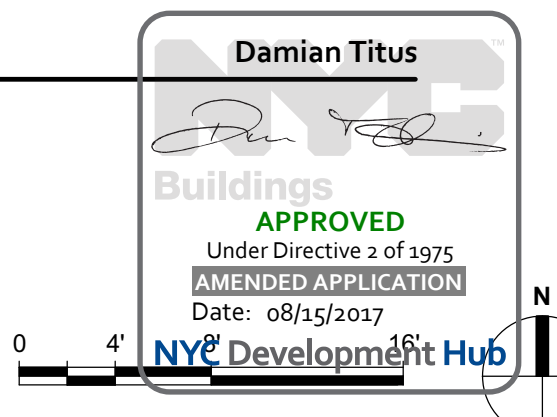
**1 PAVILION SHAFT - LOWER LEVEL**  
1/4" = 1'-0"



NOTES:  
1. ALL CONCRETE SHALL HAVE CORROSION INHIBITING ADMIXTURE AT VENT PLENUM SPACE WALL, COLUMNS AND SLAB

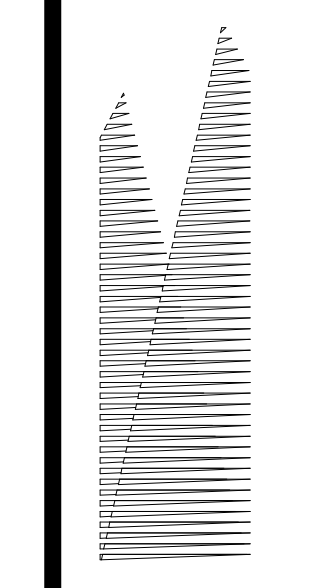
**2 PAVILION SHAFT - UPPER LEVEL**  
1/4" = 1'-0"

S-157.00  
10/27/2016 2:38:52 PM  
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**Damian Titus**  
APPROVED  
Under Directive 3 of 1975  
Professional Engineer  
Date: 08/15/2017  
NYC Development Hub

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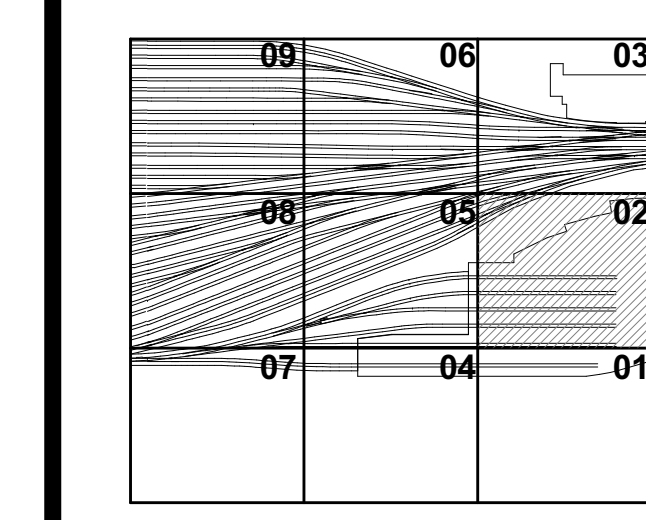
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 1095	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
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Key Plan	
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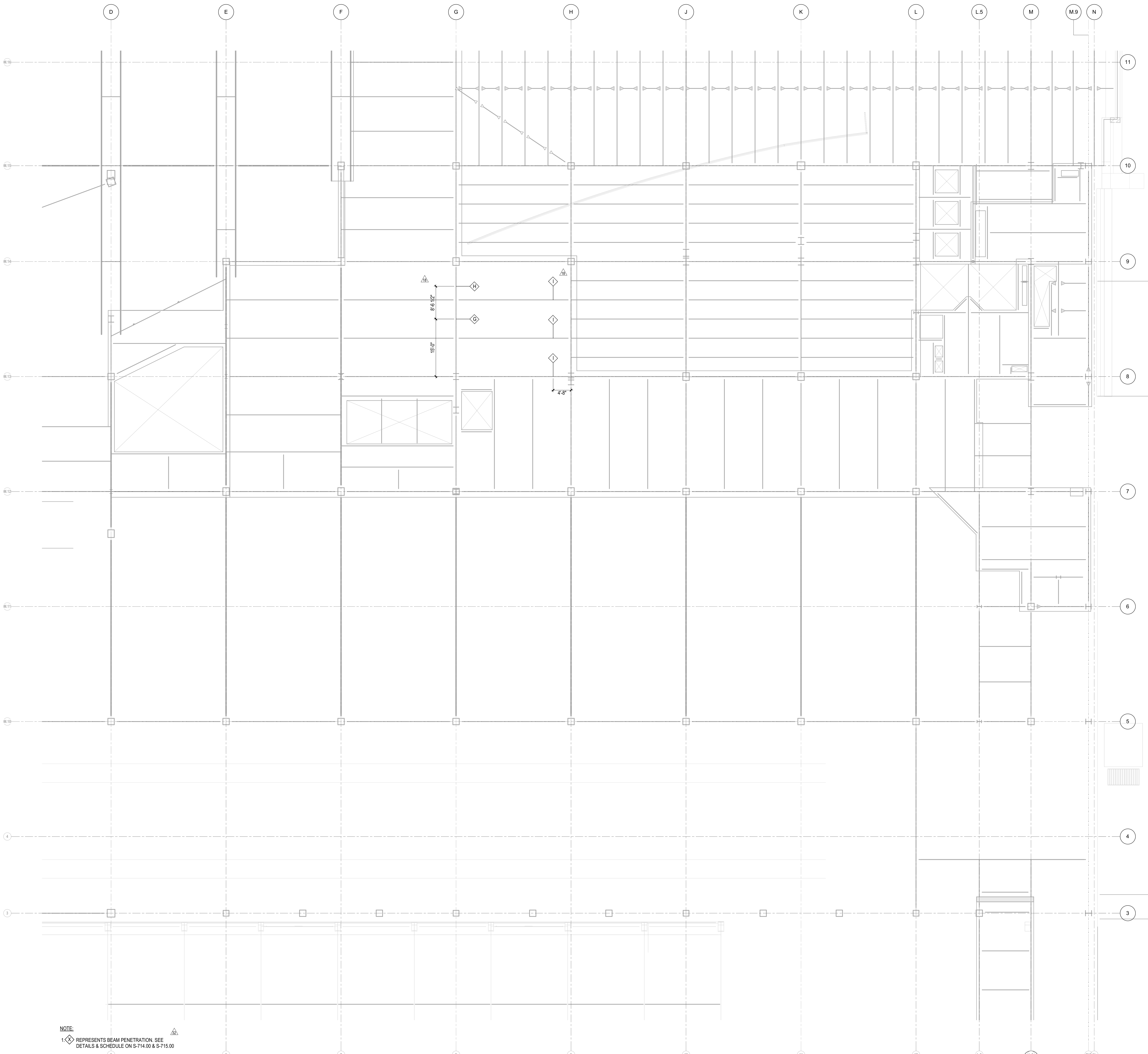
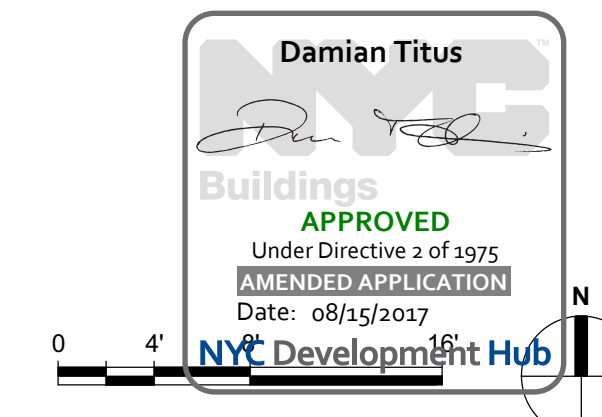
Date: 04/17/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: 40

**HYE-PL-S-162.00**

**PLATFORM LOWER  
LEVEL PLAN BEAM  
PENETRATIONS  
SECTOR 02**

Drawing Number: 03/03/Drawing Number  
**S-162.00**

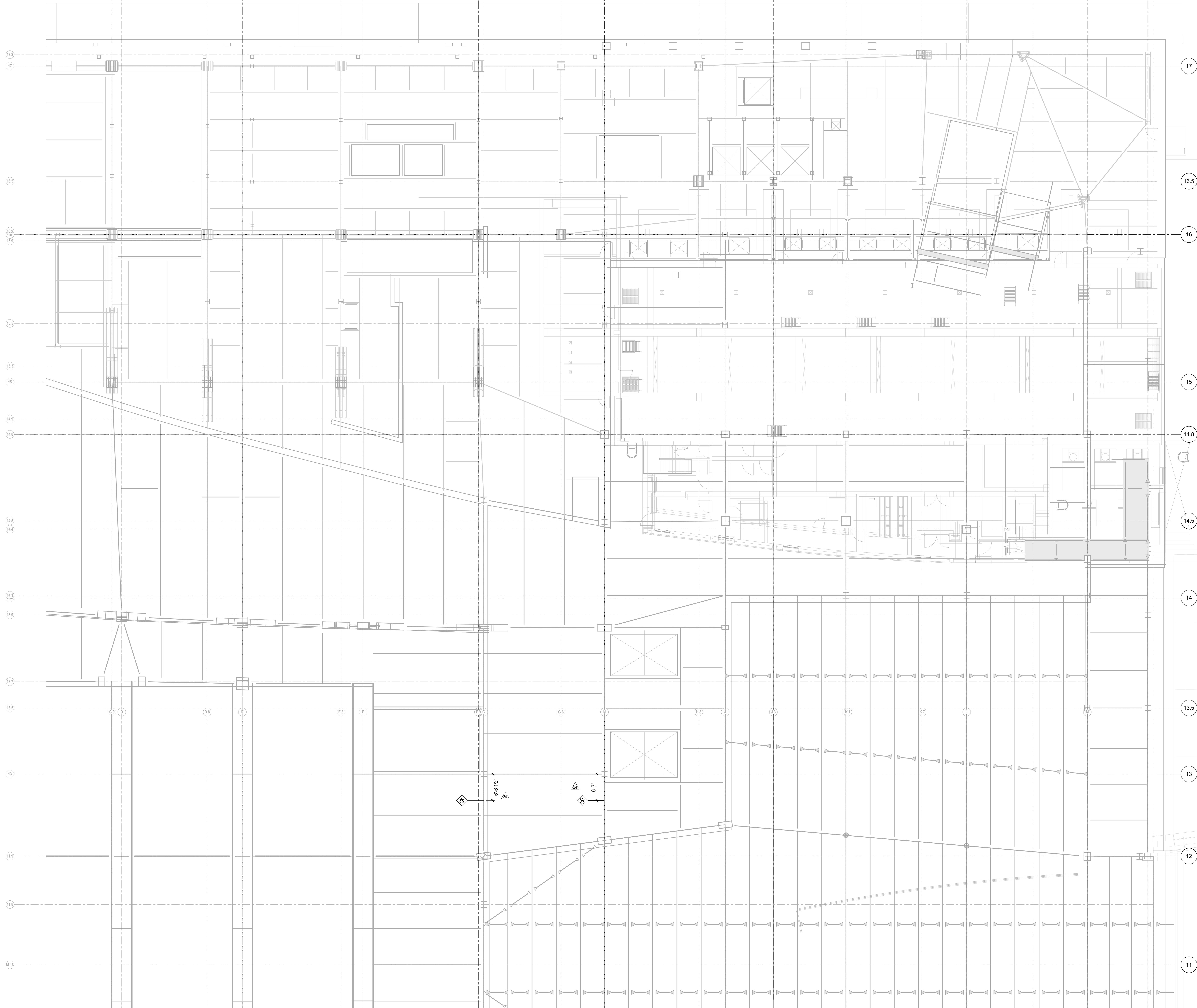
SHEET 40 of 163



**NOTE:**  
1 REPRESENTS BEAM PENETRATION. SEE  
DETAILS & SCHEDULE ON S-714.00 & S-715.00

S-162.00  
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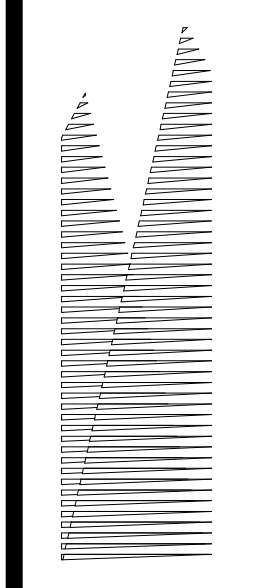
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NOTE  
1. REPRESENTS BEAM PENETRATION. SEE DETAILS & SCHEDULE ON S-714.00 & S-715.00

**HUDSON YARDS PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY



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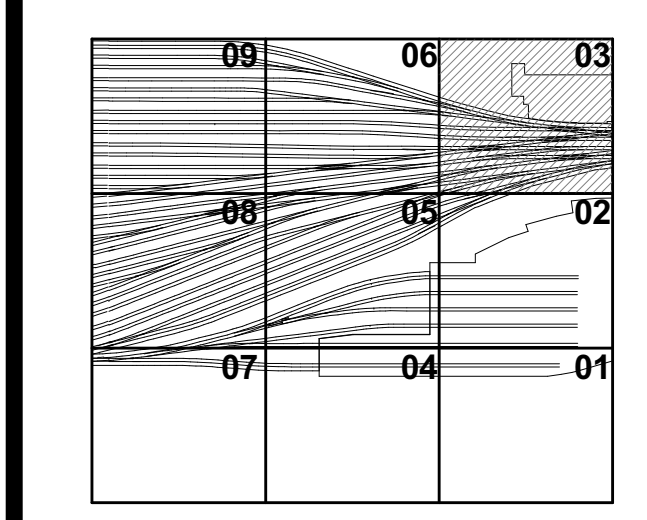
*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
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L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASB00049	10/14/2014
NO Description	000

Exp. Plan



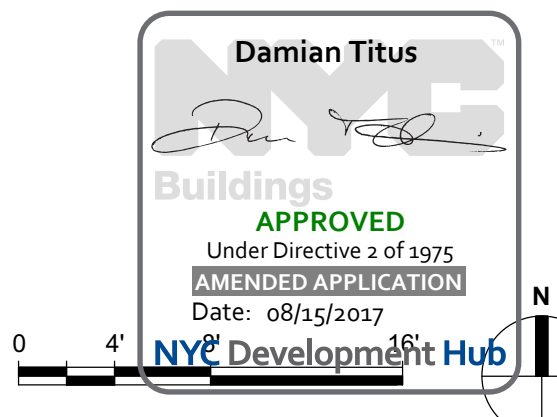
Drawn By: 04/17/14  
Project No: N11330.00  
Discipline: Author  
Sheet Number

**HYE -PL -S-163.00**

**PLATFORM LOWER LEVEL PLAN BEAM PENETRATIONS SECTOR 03**

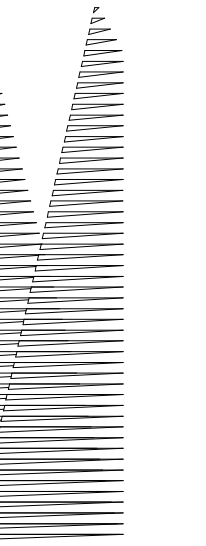
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SHEET 41 of 163



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60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510  
Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

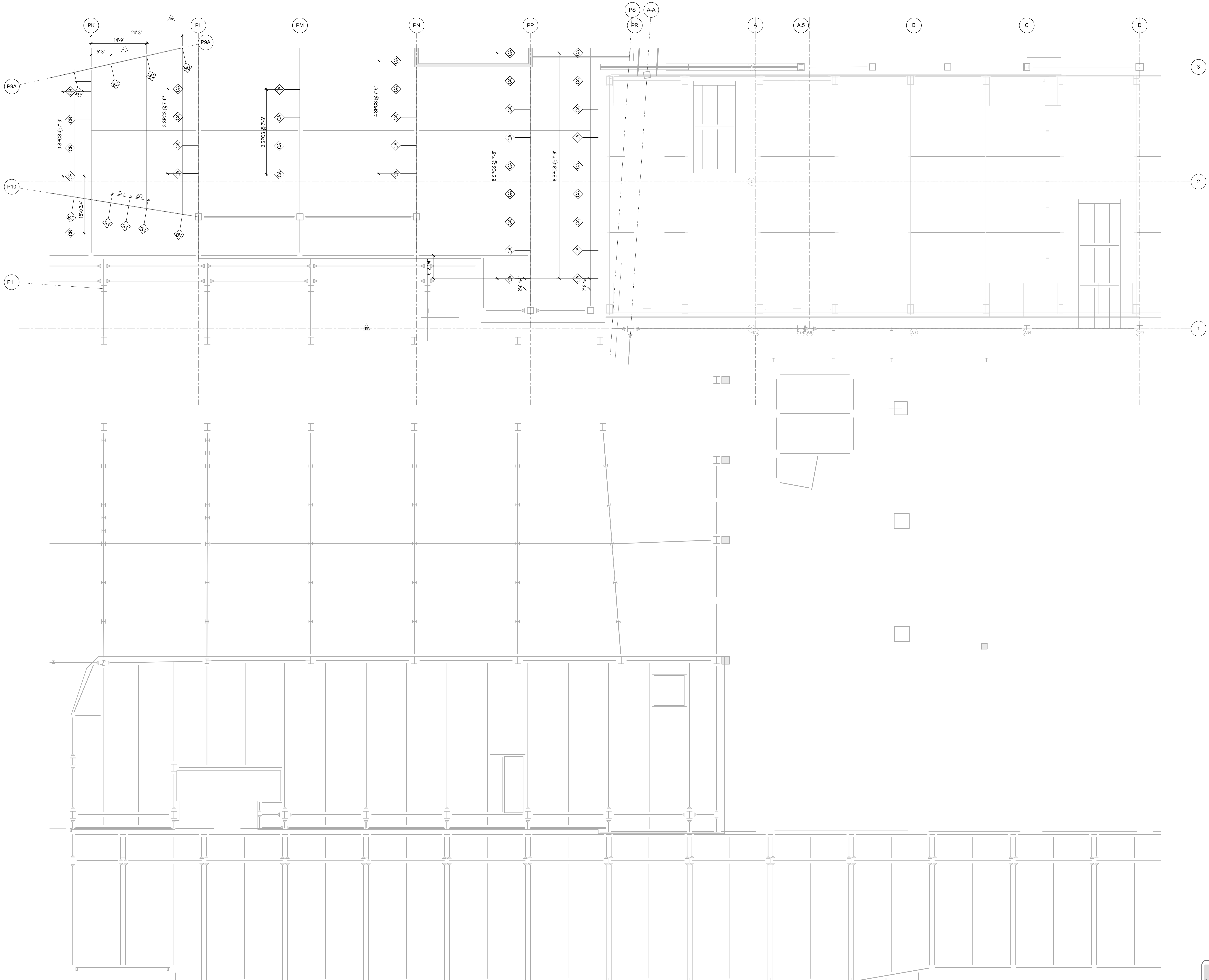
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

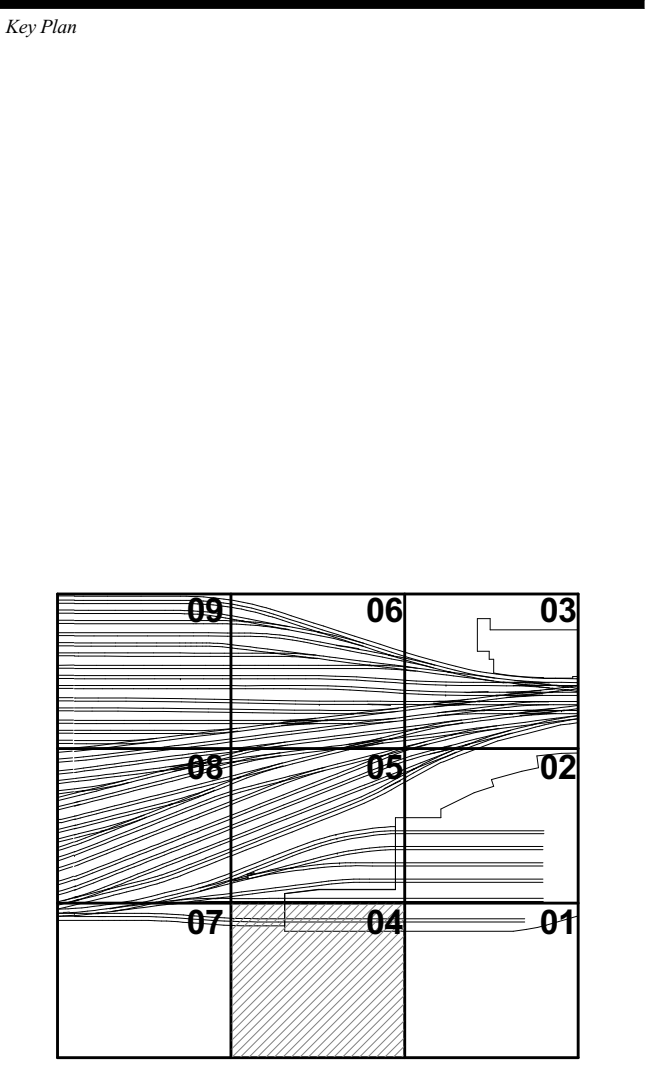
LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



NOTE  
1. REPRESENTS BEAM PENETRATION. SEE  
DETAILS & SCHEDULE ON S-714.00 & S-715.00

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASHP009	10/14/2014
ASHP0024	5/28/2014
ASHP0021	5/7/2014
Revison	Rev



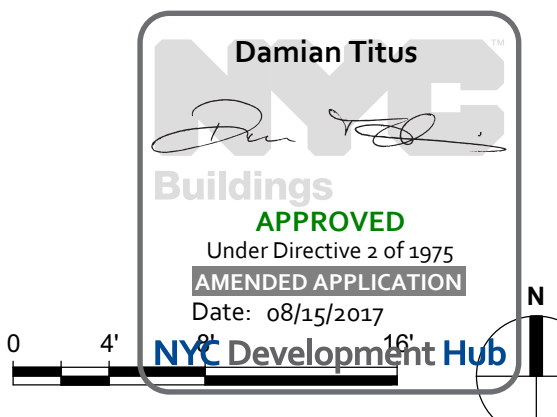
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Project No: N11330.00  
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Sheet Number: Author

HYE-PL-S-164.00

PLATFORM LOWER  
LEVEL PLAN BEAM  
PENETRATIONS  
SECTOR 04

S-164.00

SHEET 42 of 163

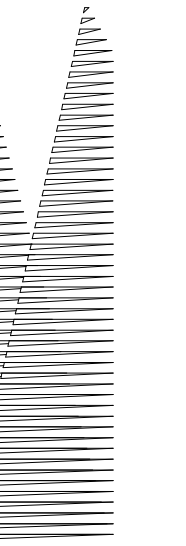


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# HUDSON YARDS PLATFORM

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230 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

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Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

Architect  
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PC Architects & Planning Consultants  
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Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

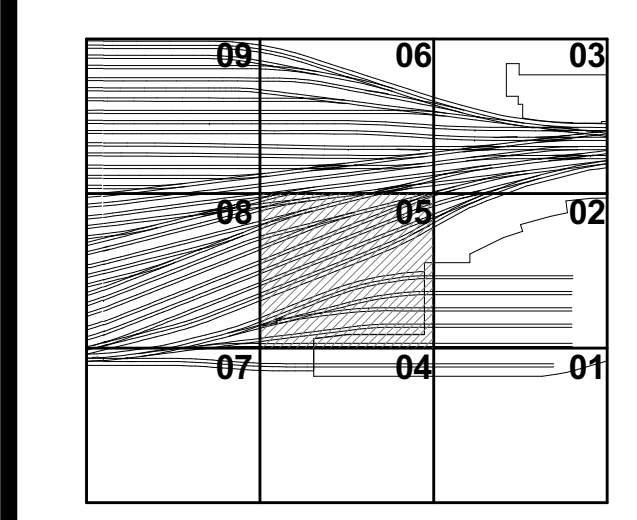
Civil, Mechanical, Electrical, Plumbing  
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Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 1095	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00492	10/14/2014
ASH0021	5/7/2014
Rev	Description
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Key Plan



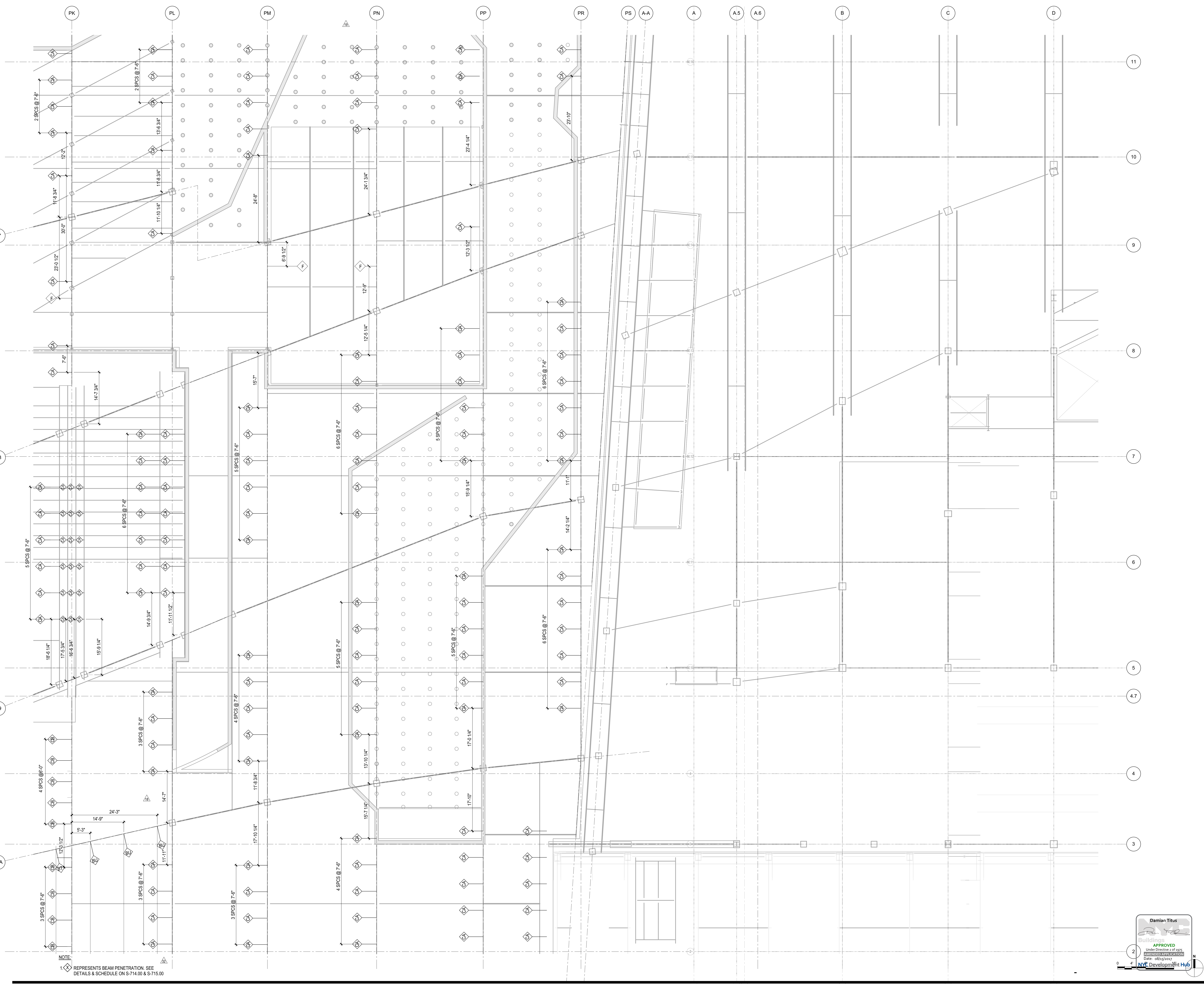
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Sheet Number:	

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## PLATFORM LOWER LEVEL PLAN BEAM PENETRATIONS SECTOR 05

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S-165.00

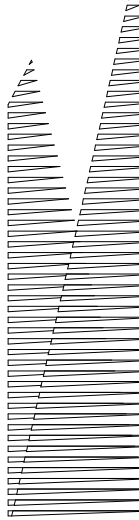
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NOTE:  
1. REPRESENTS BEAM PENETRATION. SEE DETAILS & SCHEDULE ON S-714.00 & S-715.00

Damian Titus  
APPROVED  
Under Directive 2 of 1975  
NYC DEVELOPMENT CORP.  
Date: 08/15/2017  
NYC Development Hub

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Related Companies  
60 Columbus Circle  
New York, NY 10023  
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330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
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100 Park Avenue, 5th Floor  
New York, NY 10017  
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PC Architects & Planning Consultants  
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Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

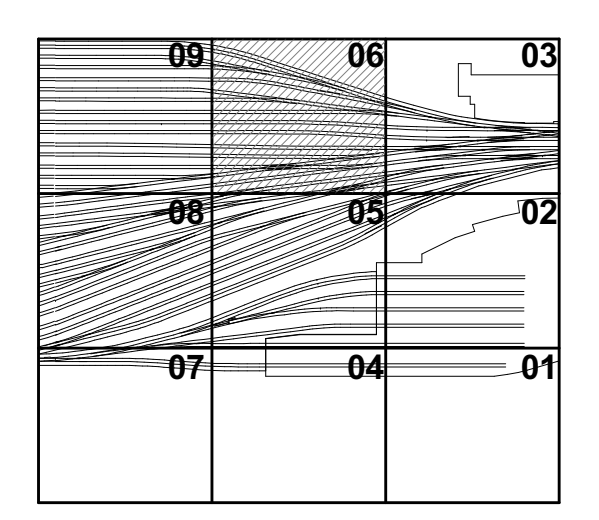
LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT 10/28/2016

L.I.R.R. - FINAL 100%	10/14/2014	
DESIGN SUBMISSION FOR RECORDS	10/14/2014	
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Rev.	Description	Date

Key Plan

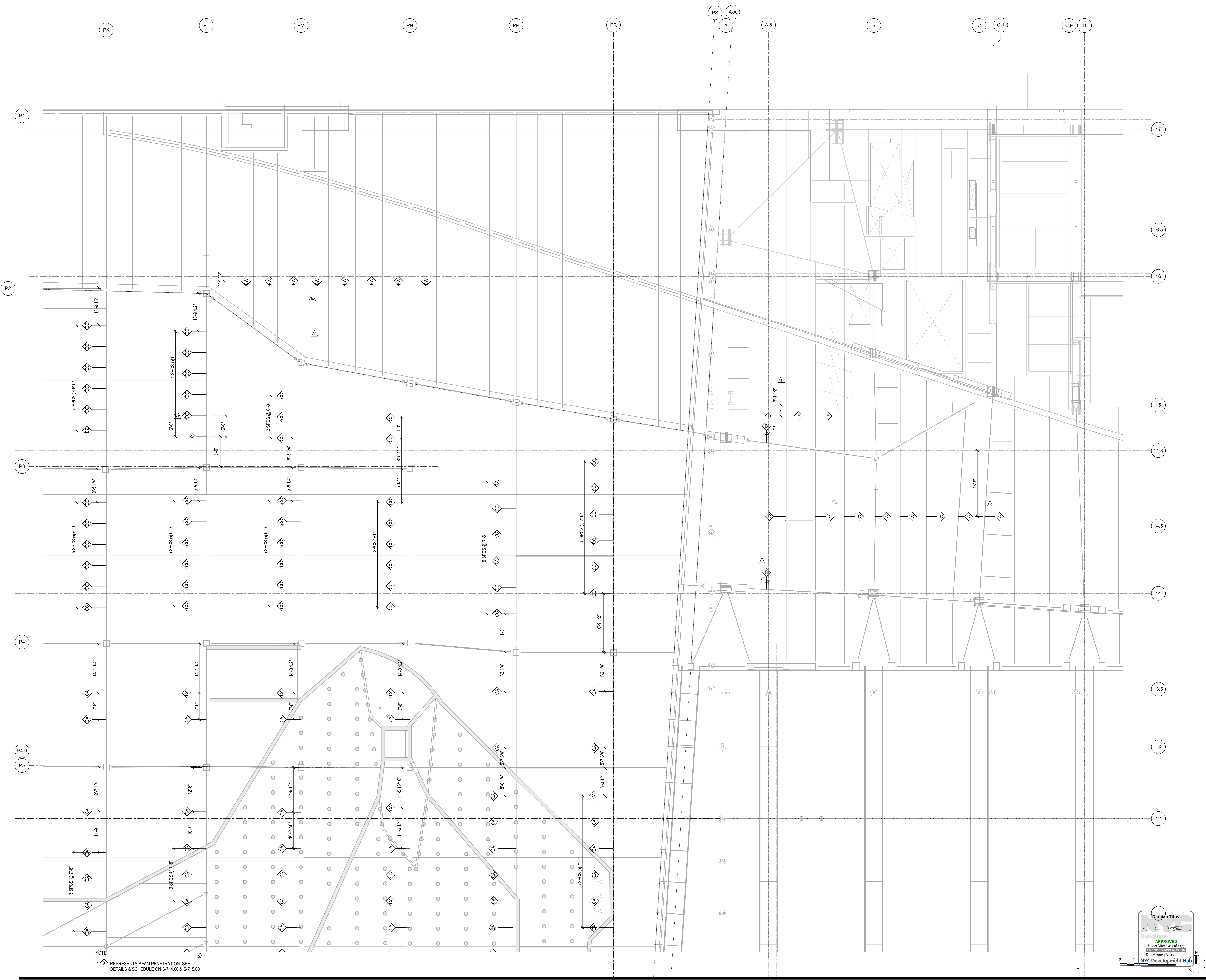


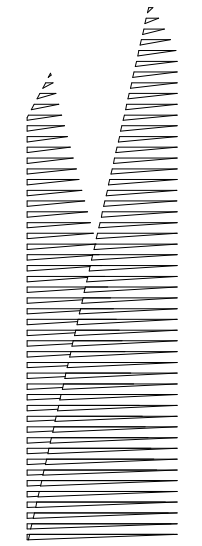
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Drawing Number: 06-11330-00-10  
S-166.00  
SHEET 44 OF 163

APPROVED  
Under Directive 3 of 1995  
Date: 08/15/2017  
NYC Development Hub





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New York, NY 10022  
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Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

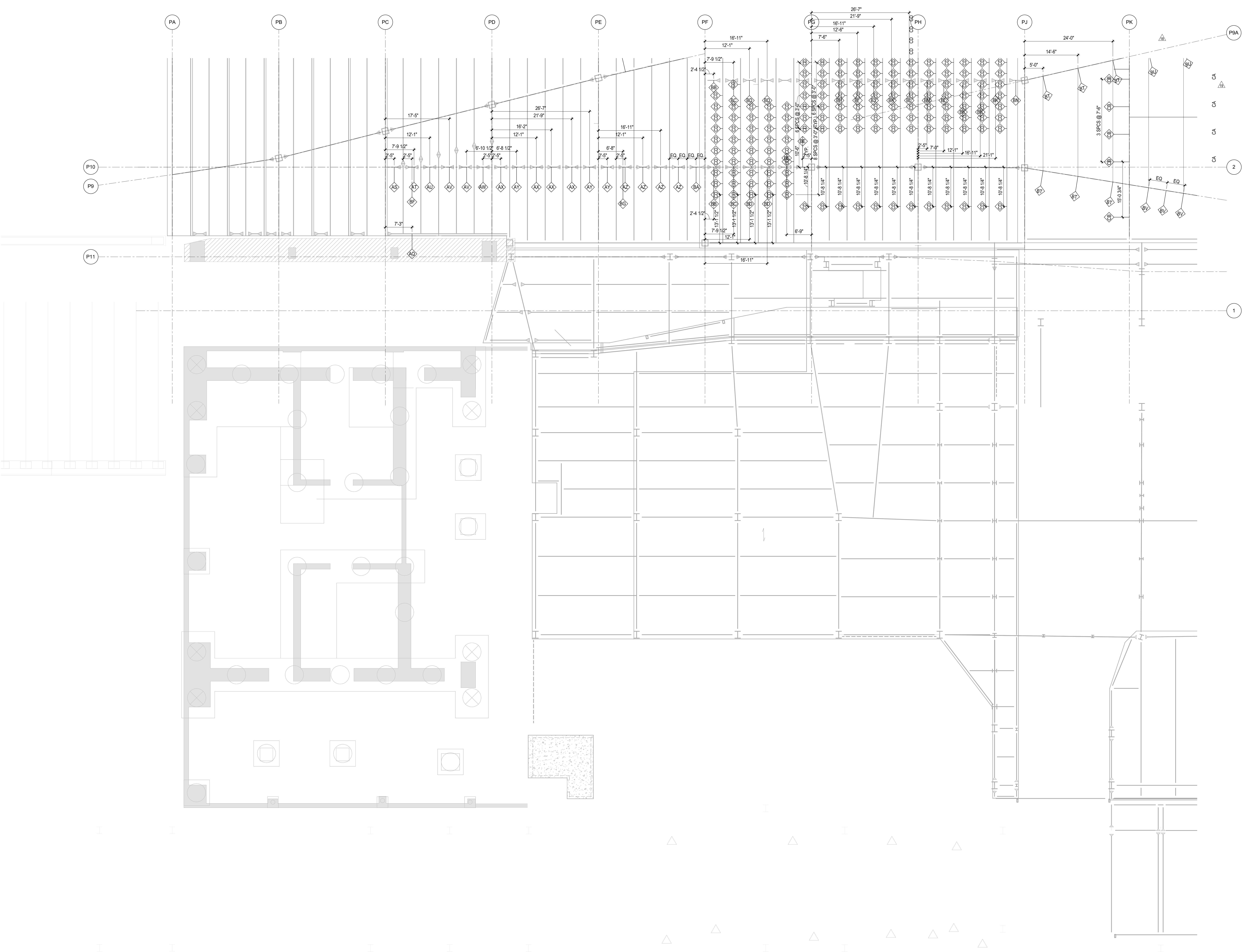
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

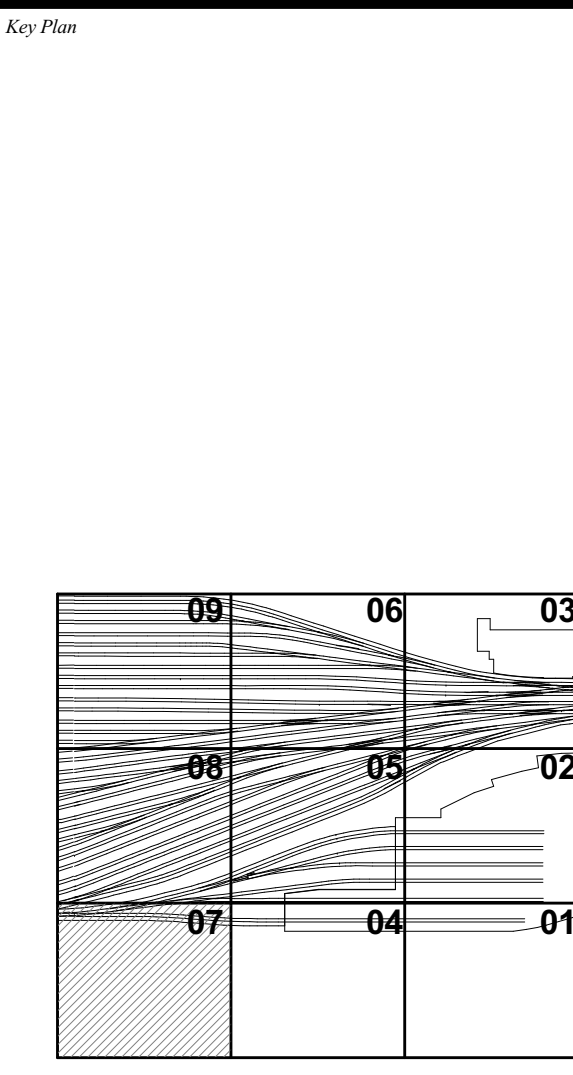
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Parsons Transportation Group  
100 Broadway  
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Tel: 212.896.3000

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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
AS/SH/04/09	10/14/2014
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AS/SH/00/21	5/7/2014
Rev	Description
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Project No: N11330.00  
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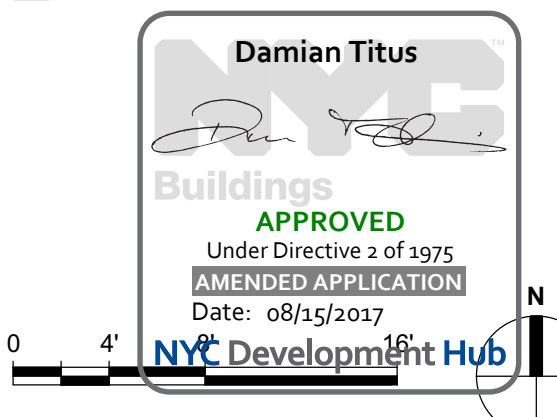
**PLATFORM LOWER LEVEL PLAN BEAM PENETRATIONS SECTOR 07**

Under Directive 3 of 1975  
Date: 08/15/2017

**S-167.00**

SHEET 45 of 163

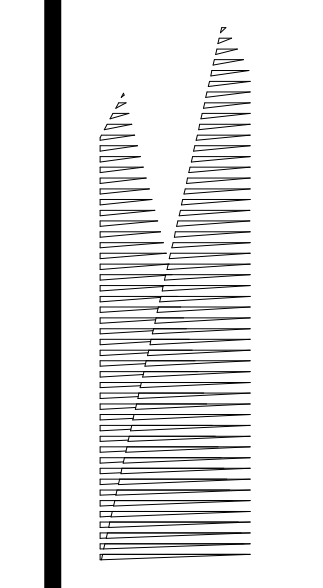
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60 Columbus Circle  
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130 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

**Construction Manager**  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

**Architect**  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

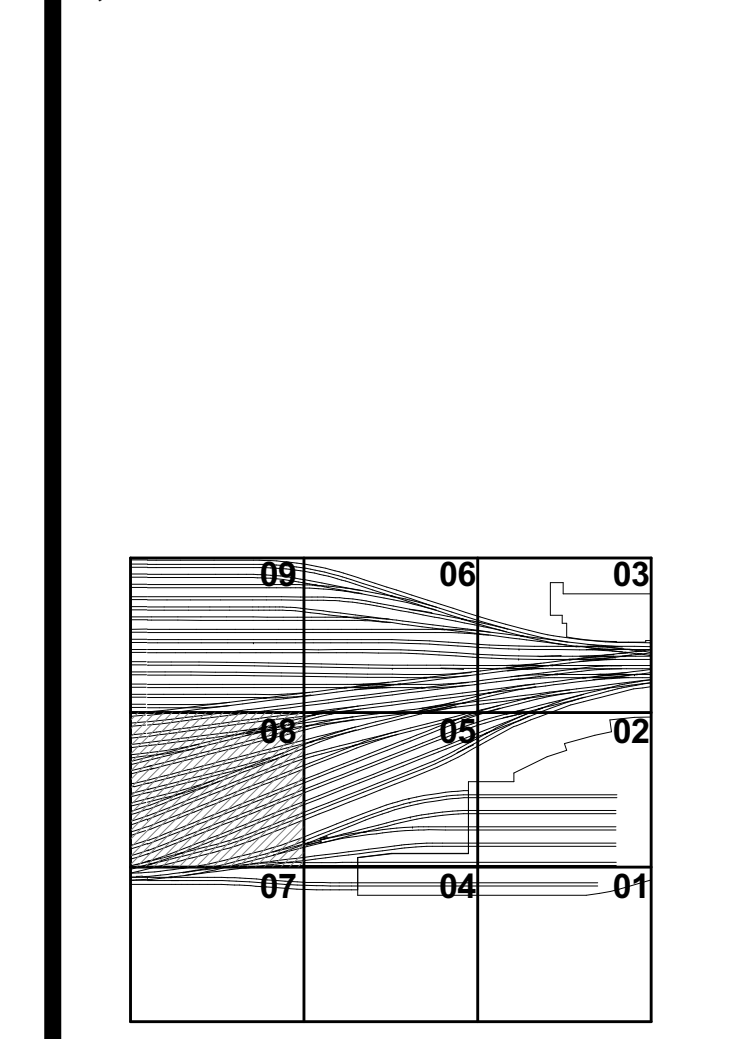
**Structural Engineer**  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

**Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security**  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

**LIRR Ventilation**  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

**LIRR Substation**  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
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Revision	Rev.



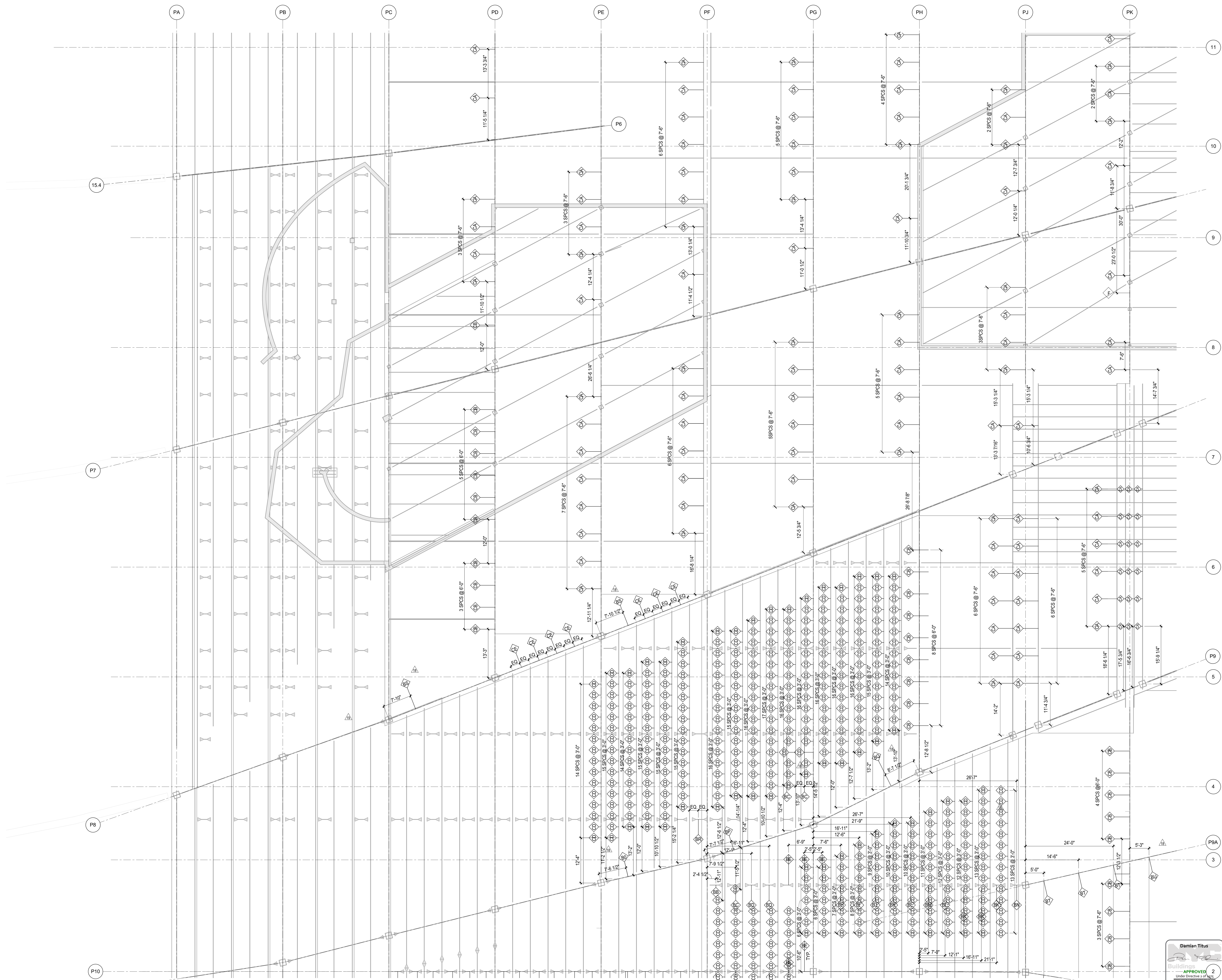
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Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

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**PLATFORM LOWER  
LEVEL PLAN BEAM  
PENETRATIONS  
SECTOR 08**

Drawing Number: 08/03/Driving/Author  
**S-168.00**

SHEET 46 of 163



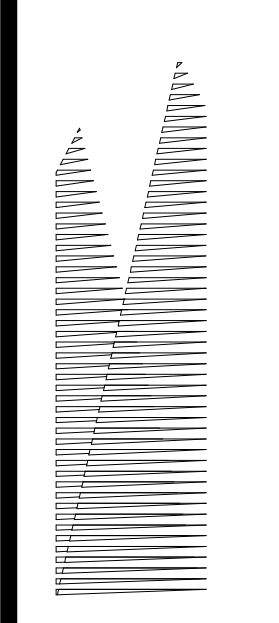
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1. REPRESENTS BEAM PENETRATION. SEE DETAILS & SCHEDULE ON S-714.00 & S-715.00

Damian Titus  
APPROVED 2  
Under Direction of  
NYC Development Hub  
Date: 08/15/2017

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10/27/2016 5:44:06 PM  
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PLATFORM**

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60 Columbus Circle  
New York, NY 10023  
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230 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
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New York, NY 10017  
Tel: 212.708.5600

Architect  
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PC Architects & Planning Consultants  
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Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10017  
Tel: 917.661.7800 Fax: 718.661.7801

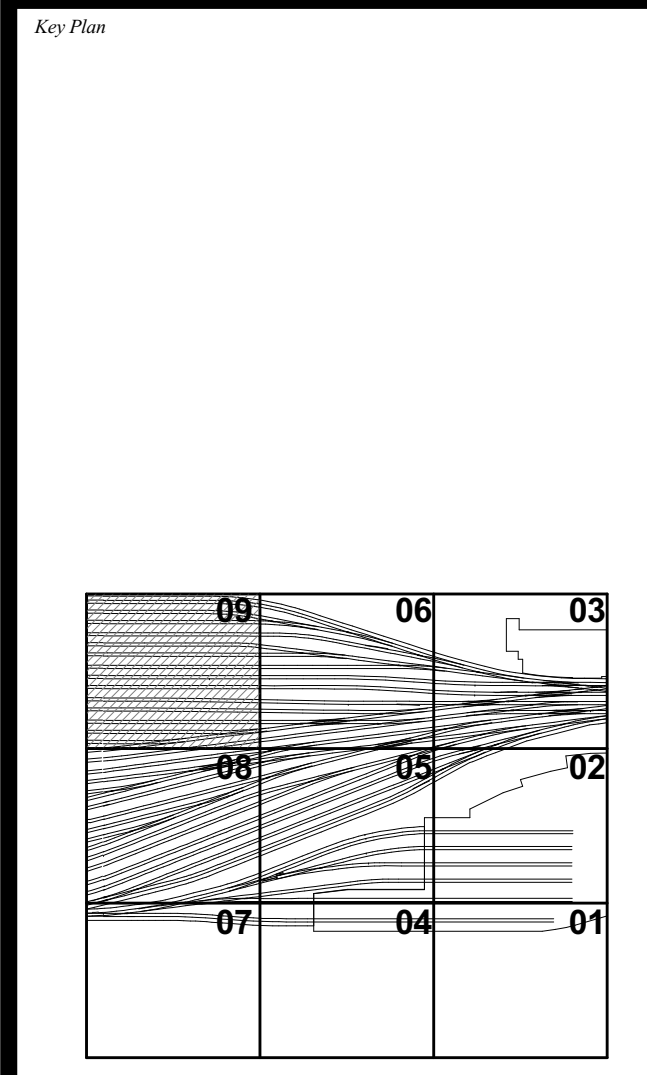
Civil, Mechanical, Electrical, Plumbing  
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Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
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77 Water Street  
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Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

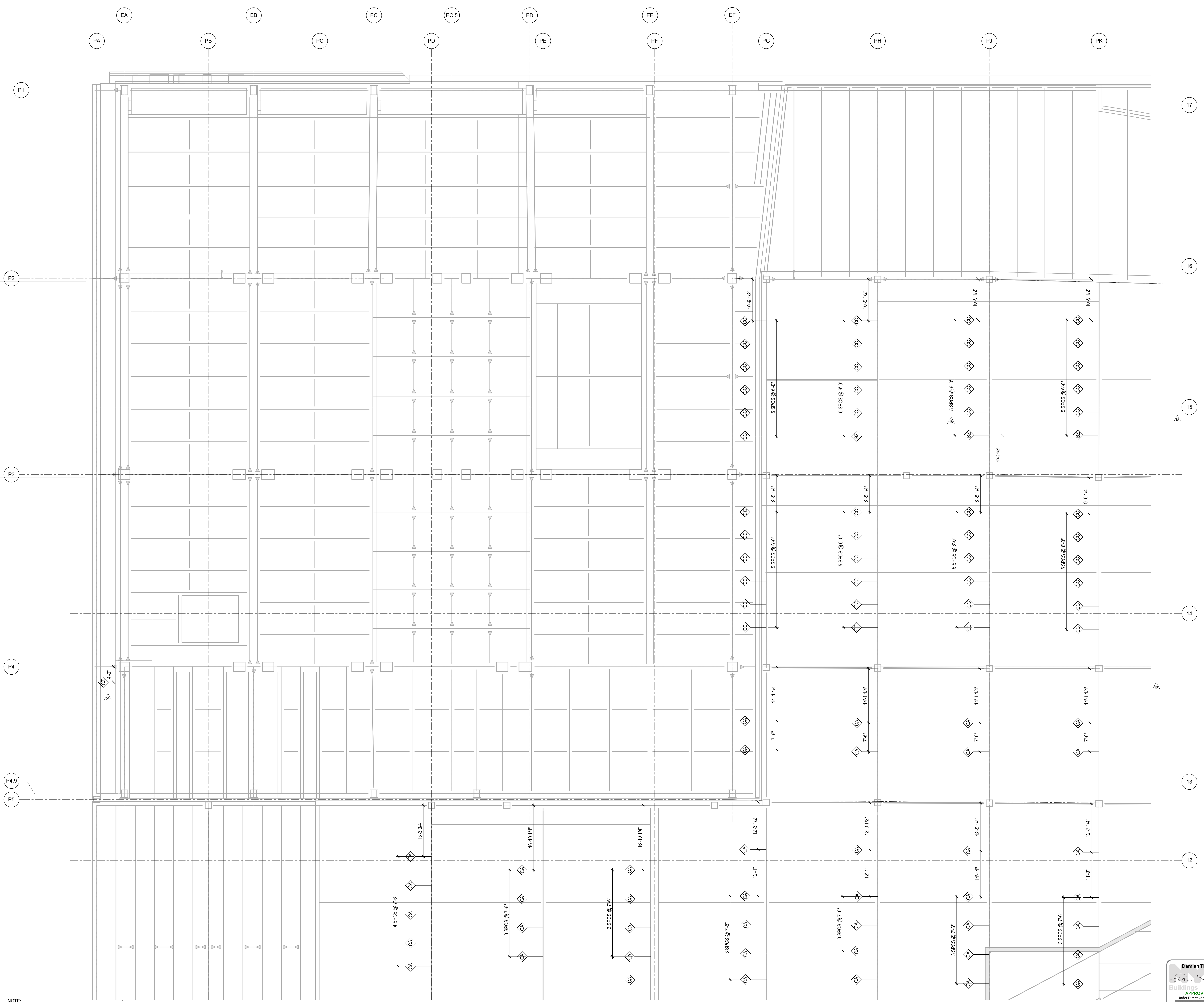
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NO.	DESCRIPTION	DATE
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2	AS10084	01/17/2015
3	L.I.R.R. - FINAL 100%	10/14/2014
4	DESIGN SUBMISSION FOR RECORDS	10/14/2014
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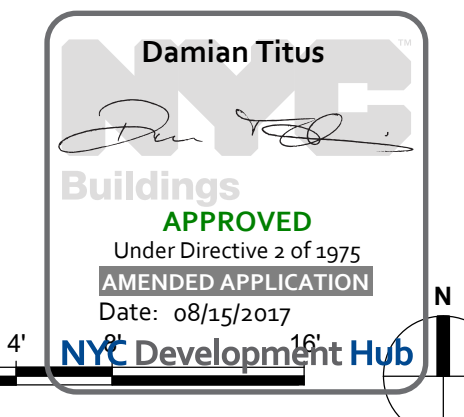


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 Project No: N11330.00  
 Drawn By: Author  
 Sheet Number:

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 LEVEL PLAN BEAM  
 PENETRATIONS  
 SECTOR 09**  
 Drawing Number: 8/034/01 Drawing Number  
**S-169.00**  
 SHEET 47 of 163



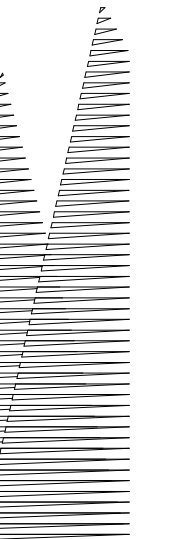
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NEW YORK, NY



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New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Owner*  
Oxford Properties Group  
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Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Tishman Construction Corporation  
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New York, NY 10017  
Tel: 212.708.3600

*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 212.956.2526

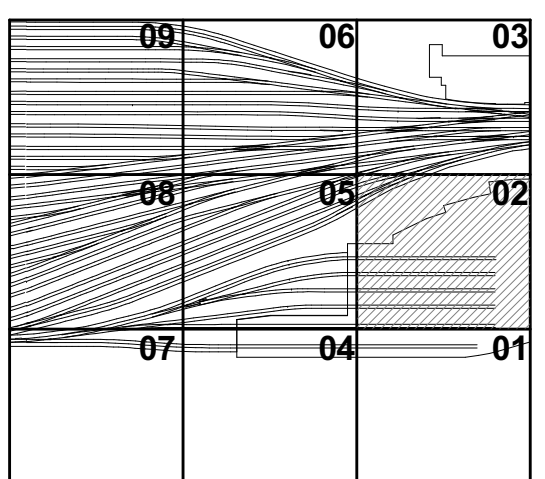
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Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LIRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
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Tel: 212.896.3000

*LIRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
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Key Plan



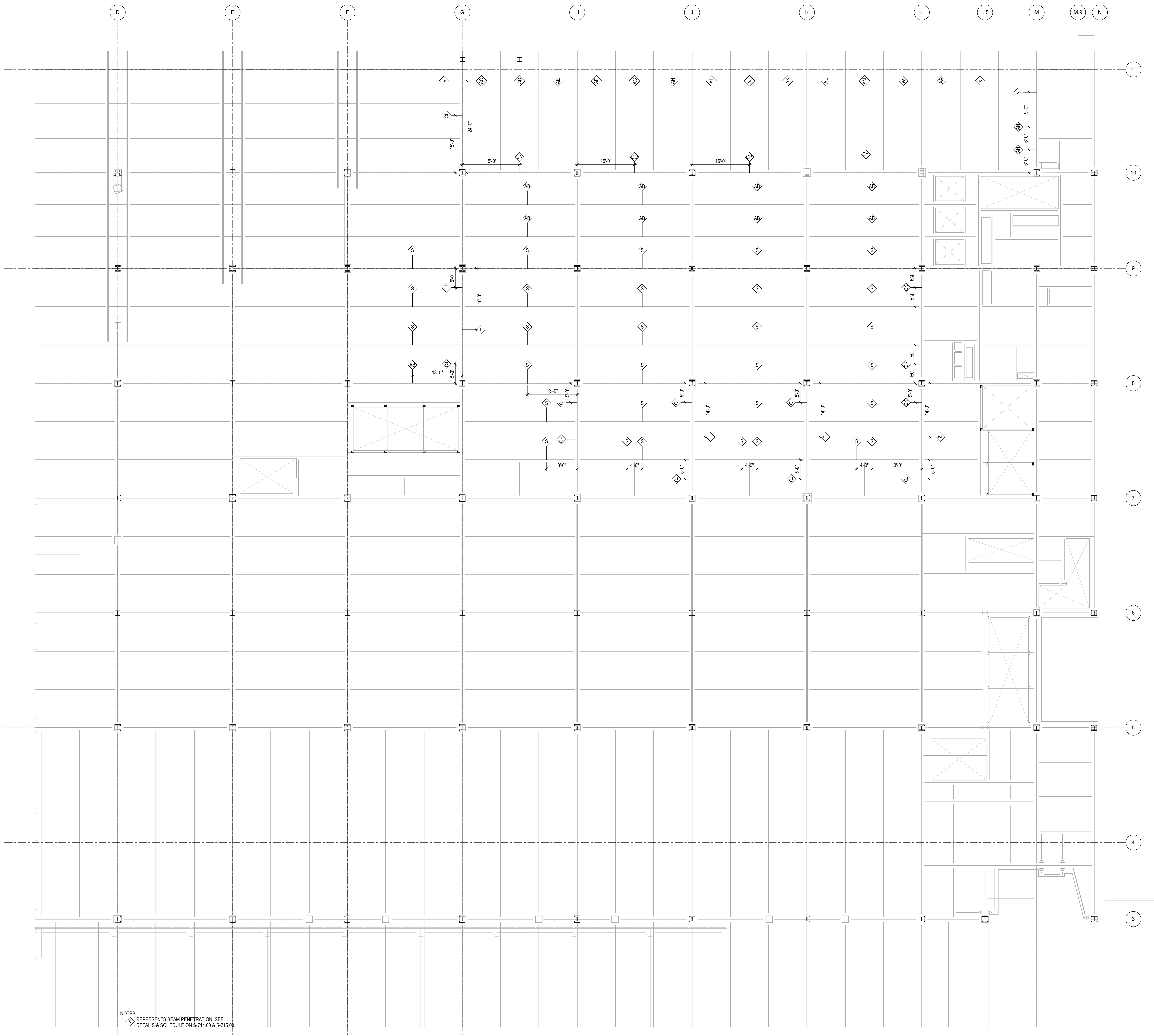
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 Project No: N11330.00  
 Drawn By: Author  
 Sheet Number: \_\_\_\_\_

HYE -PL-S-172.00

PLATFORM UPPER  
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PENETRATIONS  
SECTOR 02

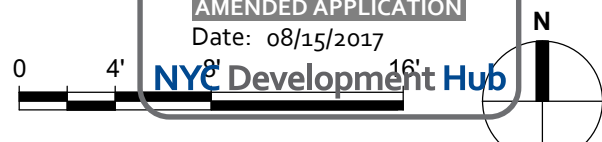
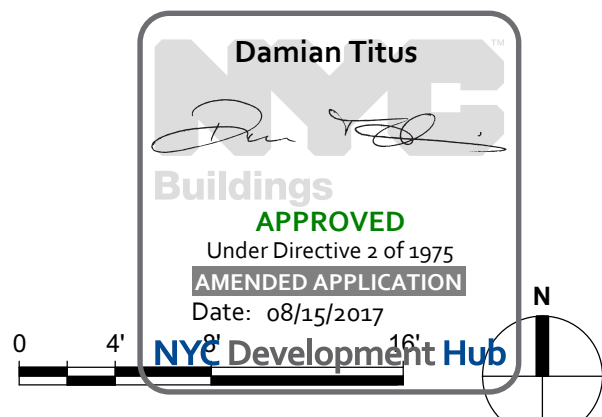
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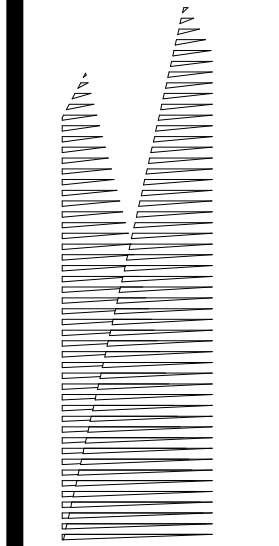


NOTES  
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*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
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New York, New York 10036  
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*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

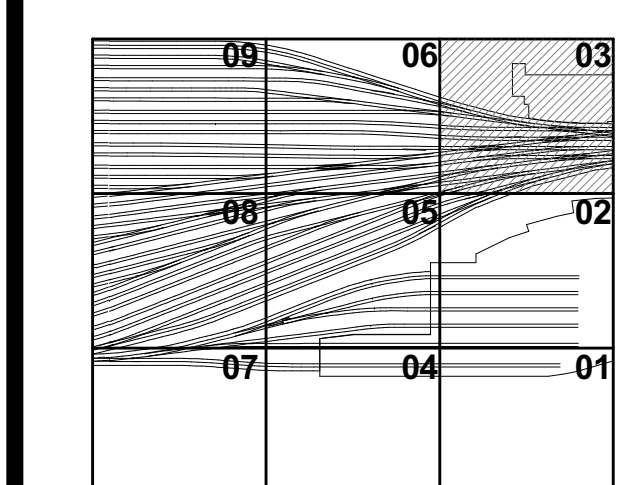
*Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Elevators, Transportation Group*  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LJRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

*LJRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0037 - RETAIL FIELD MOD.	8/19/2014
Rev	Rev

Rev Plot



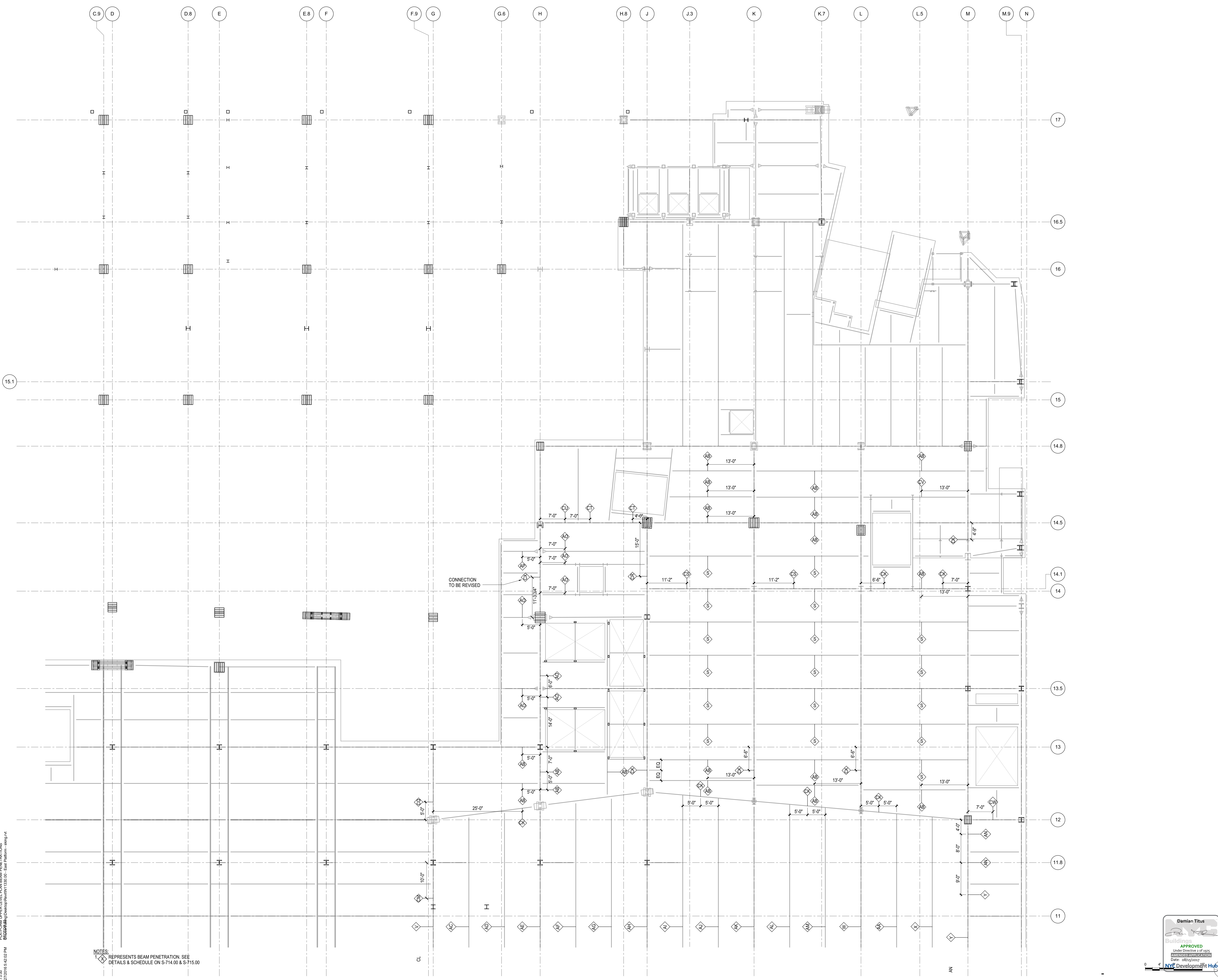
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Project No: N11330.00  
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**HYE -PL -S-173.00**

**PLATFORM UPPER  
LEVEL PLAN BEAM  
PENETRATIONS  
SECTOR 03**

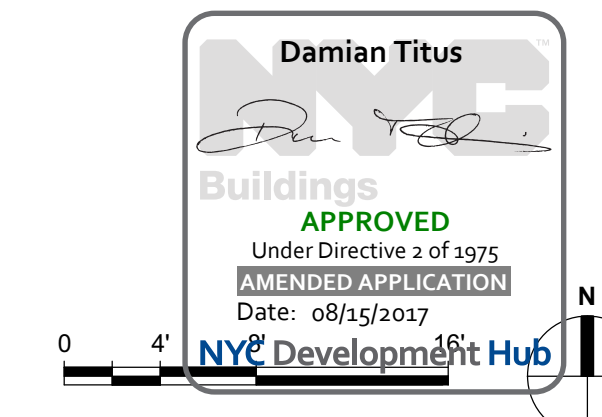
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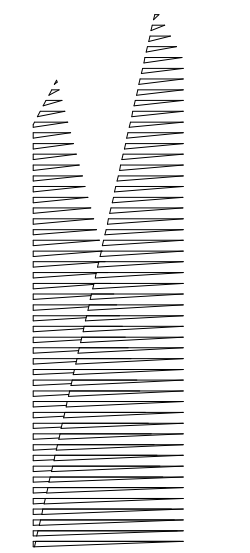
SHEET 49 of 163



S-173.00  
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B2502P/PL/UPPER/LEVEL/PLAN/BEAM/PENETRATIONS - s-173.plt

NOTES:  
1. REPRESENTS BEAM PENETRATION. SEE DETAILS & SCHEDULE ON S-714.00 & S-715.00





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
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Architect  
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PC Architects & Planning Consultants  
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Structural Engineer  
Thornton Tomasetti, Inc.  
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Tel: 917.661.7800 Fax: 718.661.7801

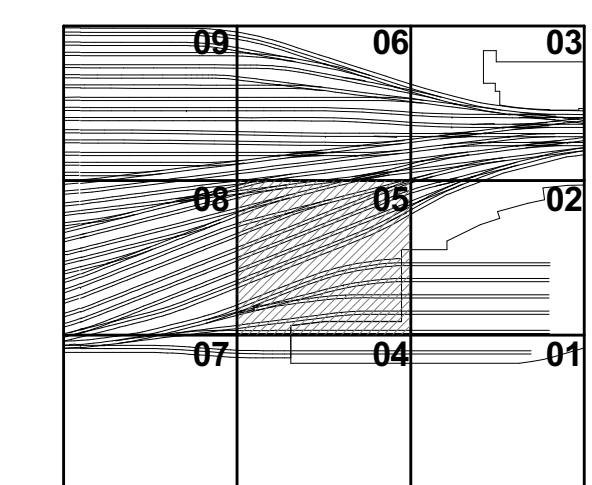
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
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LJRR Substation  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0024	5/28/2014
Rev. Description	Date

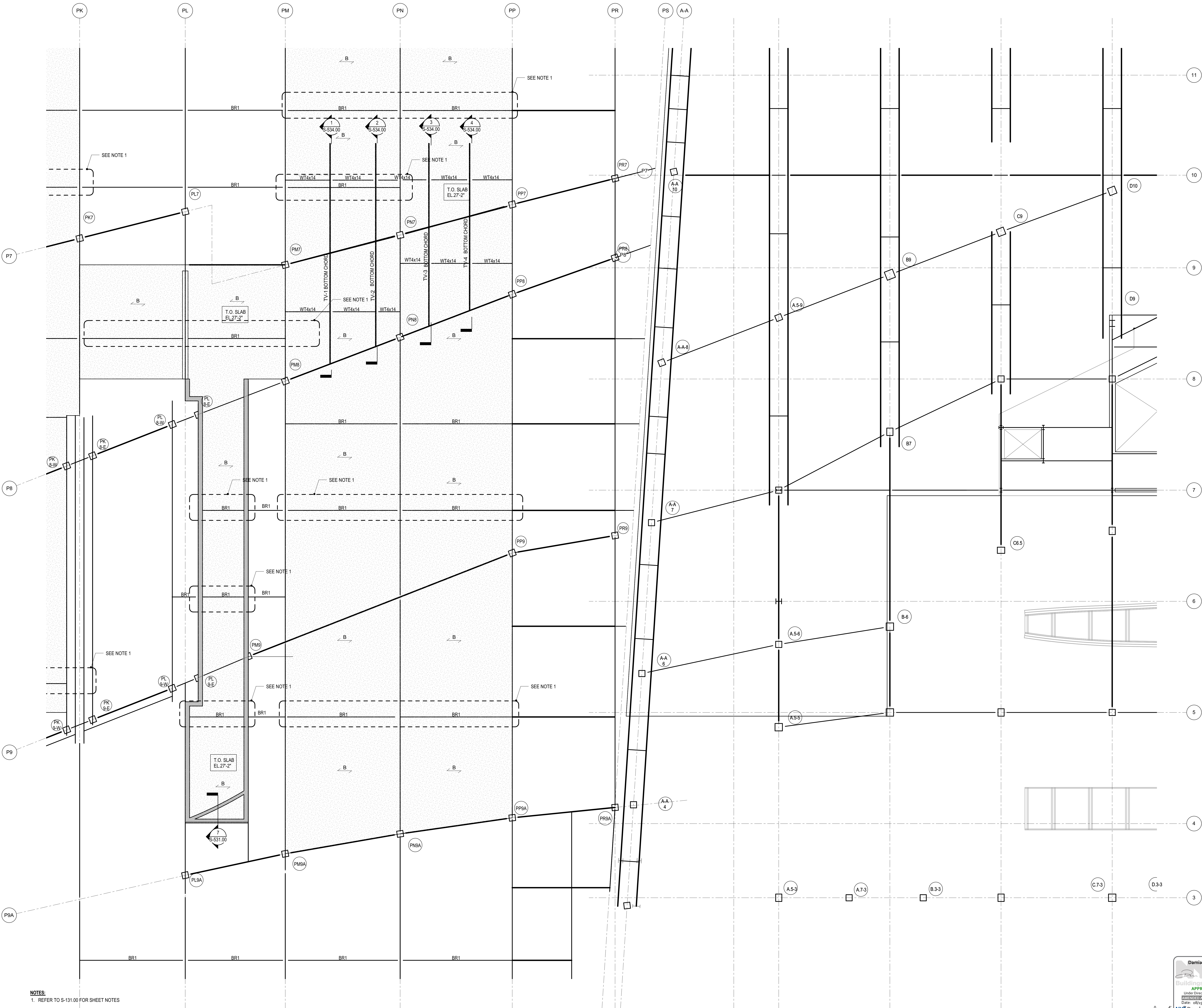
Key Plan



Date: 05/28/14  
Project No: N11330.00  
Author: [Signature]  
Drawing Title: HYE -PL -S-185.00

**PLATFORM PLENUM  
LEVEL PLAN SECTOR  
05**

Drawing Number / B/CAN Drawing Number  
**S-185.00**



**NOTES:**  
1. REFER TO S-131.00 FOR SHEET NOTES

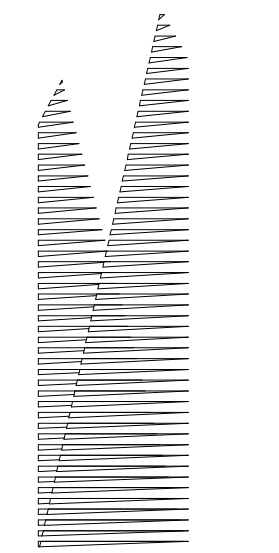
Damian Titus  
Buildings  
APPROVED  
Under Directive 3 of 1975  
Professional Registration  
Date: 08/15/2017  
NYC Development Hub

S-185.00  
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**HUDSON YARDS PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY



**Client**  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

**Overland Properties Group**  
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**Construction Manager**  
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**Architect**  
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PC Architects & Planning Consultants  
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**Structural Engineer**  
Thornton Tomasetti, Inc.  
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Tel: 917.661.7800 Fax: 718.661.7801

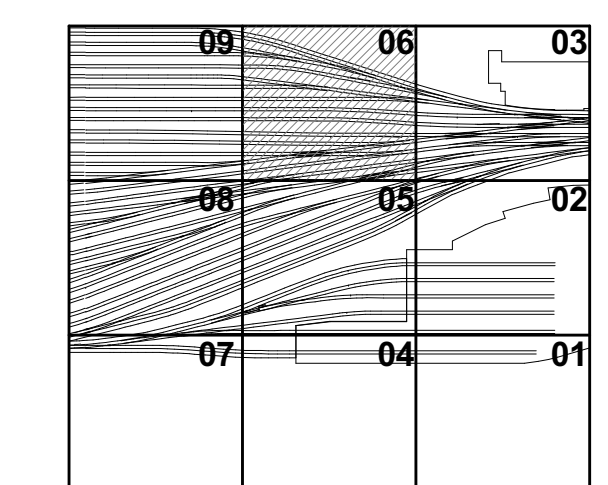
**Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

**LIRR Ventilation**  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
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**LIRR Substation**  
AECOM  
605 Third Avenue  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
A. ASH0040	10/14/2014
Rev. Description	Date

Rev. Description Date



Date: 05/28/2014  
Project No: N11330.00  
Title: Author  
Sheet Number: 51

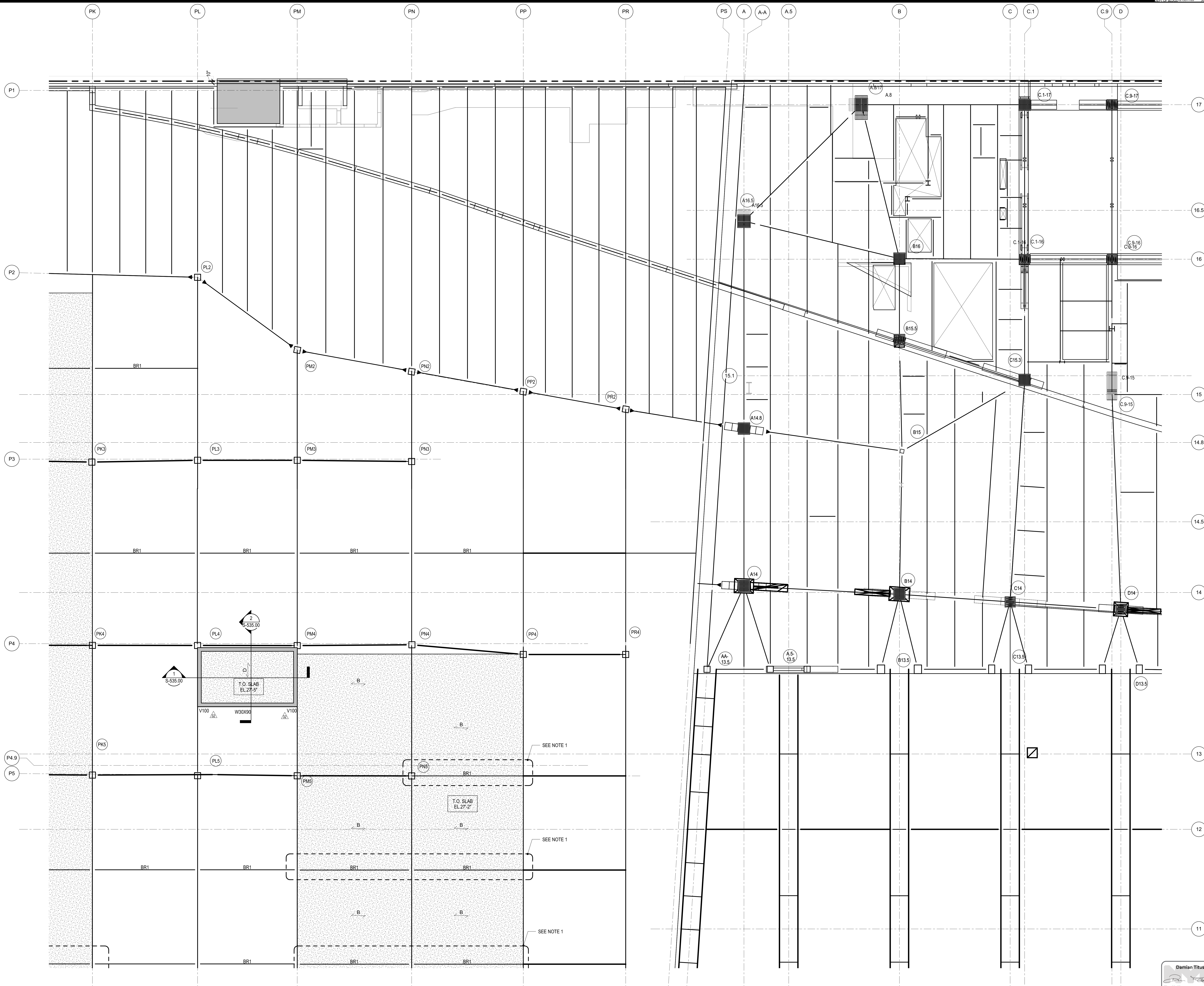
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**PLATFORM PLENUM LEVEL PLAN SECTOR 06**

Drawing Title: S-186.00

Sheet Number: 51 of 163

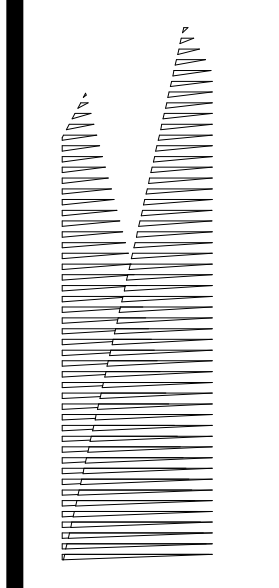
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**NOTES:**  
1. REFER TO S-131.00 FOR SHEET NOTES

Damian Titus  
Buildings  
APPROVED  
Under Directive 3 of 1975  
Date: 08/15/2017  
NYC Development Hub

S-186.00  
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*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Owner*  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
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*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
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New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

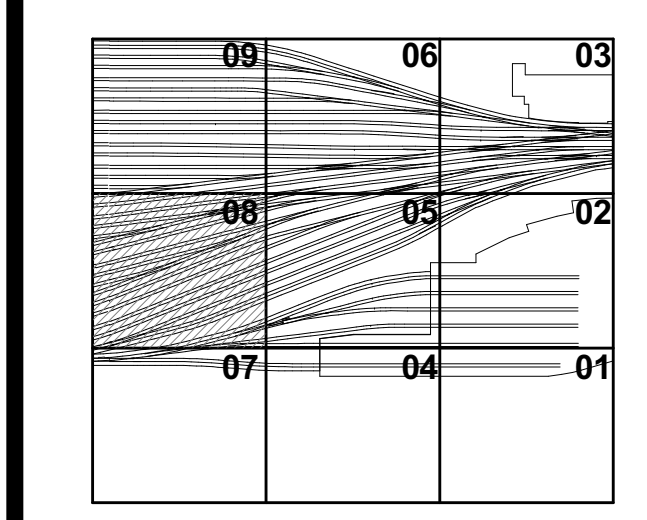
*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LJRR Ventilation*  
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*LJRR Substation*  
AECOM  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASHP0049	10/14/2014
ASHP0024	5/28/2014
ASHP0024	5/28/2014
ASHP0024	5/28/2014

Rev	Description	Date
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02		
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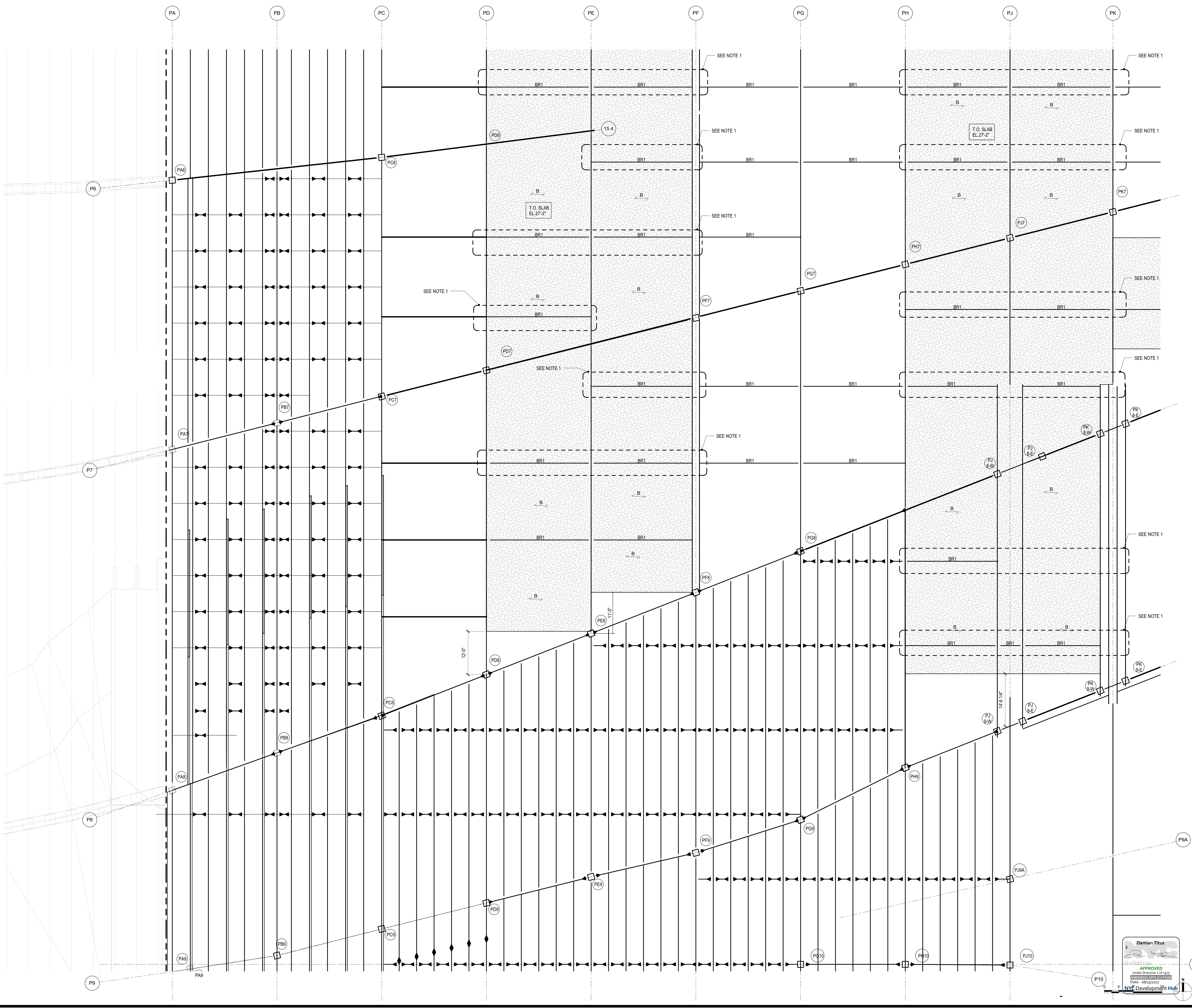


Date: 05/28/2014  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

**HYE -PL -S-188.00**

**PLATFORM PLENUM LEVEL PLAN SECTOR 08**

Drawing Number / Revision Drawing Number  
**S-188.00**  
SHEET 52 of 163

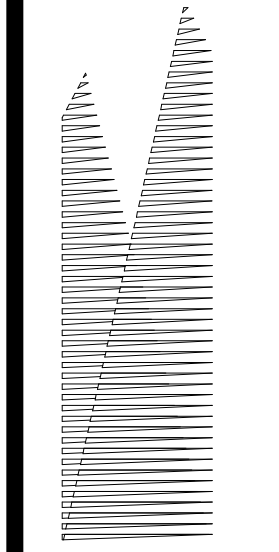


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Under Directive 3 of 1975  
Professional Regulation  
Date: 08/15/2017  
NYC Development Hub

**HUDSON YARDS  
PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY



*Client*  
Related Companies  
60 Columbus Circle  
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*Oxford Properties Group*  
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Tel: 212.986.7514 Fax: 212.986.7510

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*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

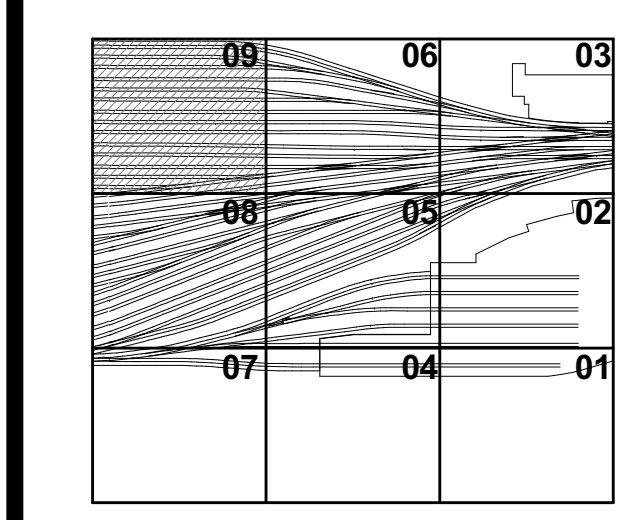
*Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group*  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LJRR Ventilation*  
Ove Arup & Partners P.C.  
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*LJRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 109%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	5/28/2014
ASH0024	5/28/2014
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By: [Signature]



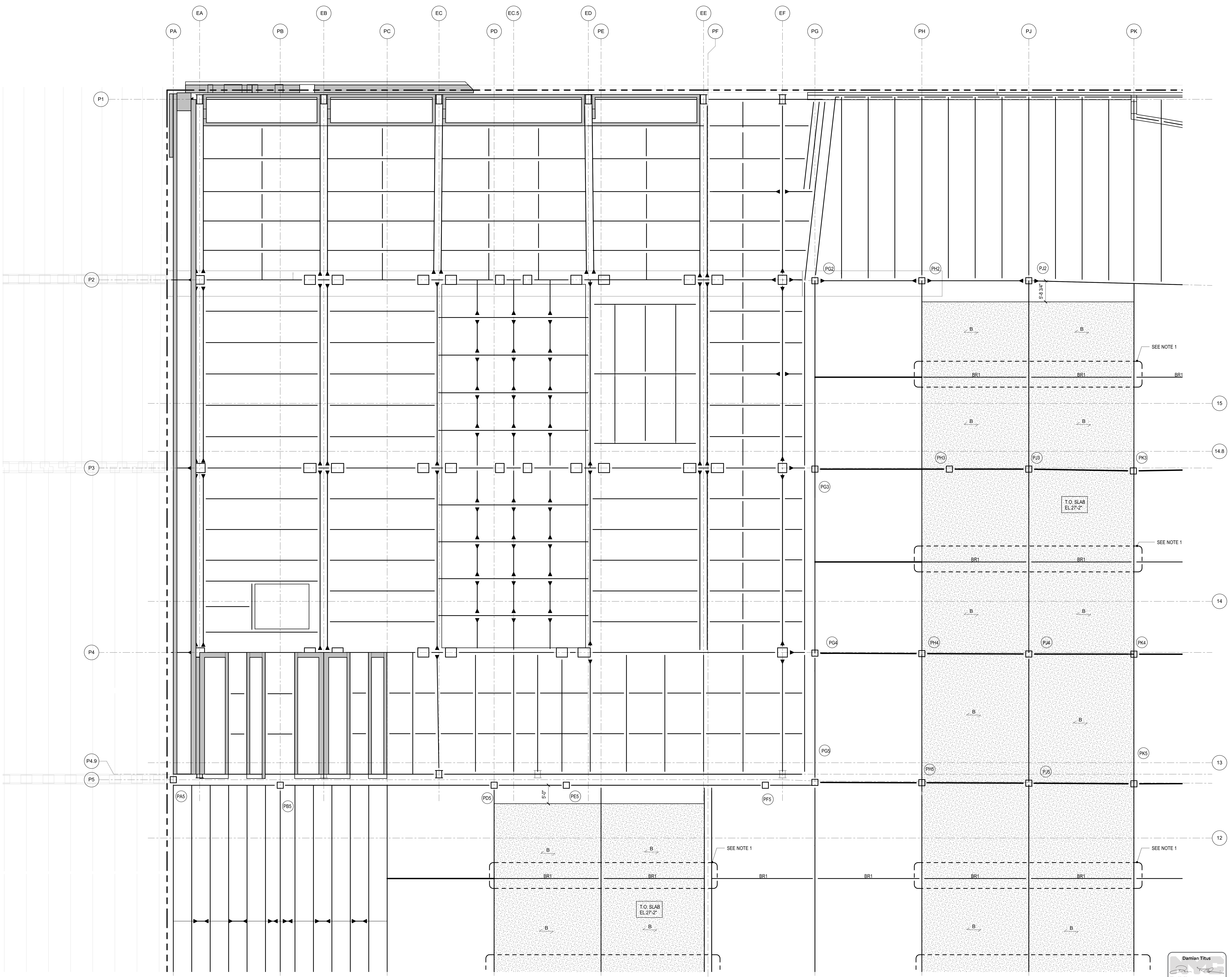
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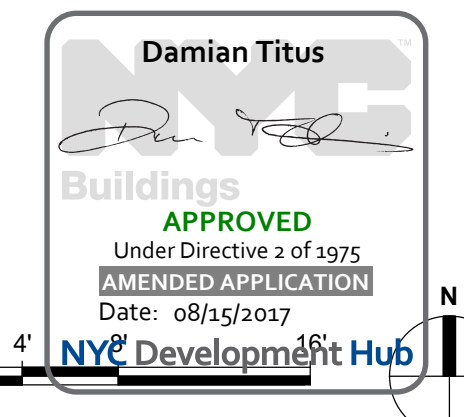
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LEVEL PLAN SECTOR  
09**

Drawing Number / B/CAN Drawing Number  
**S-189.00**

SHEET 53 of 163

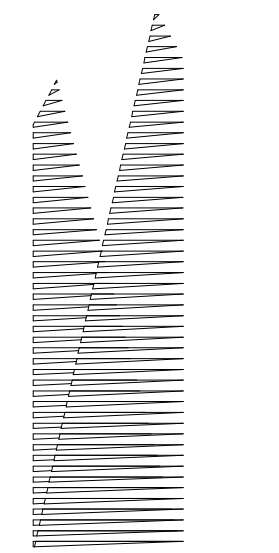


**NOTES:**  
1. REFER TO S-131.00 FOR SHEET NOTES



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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

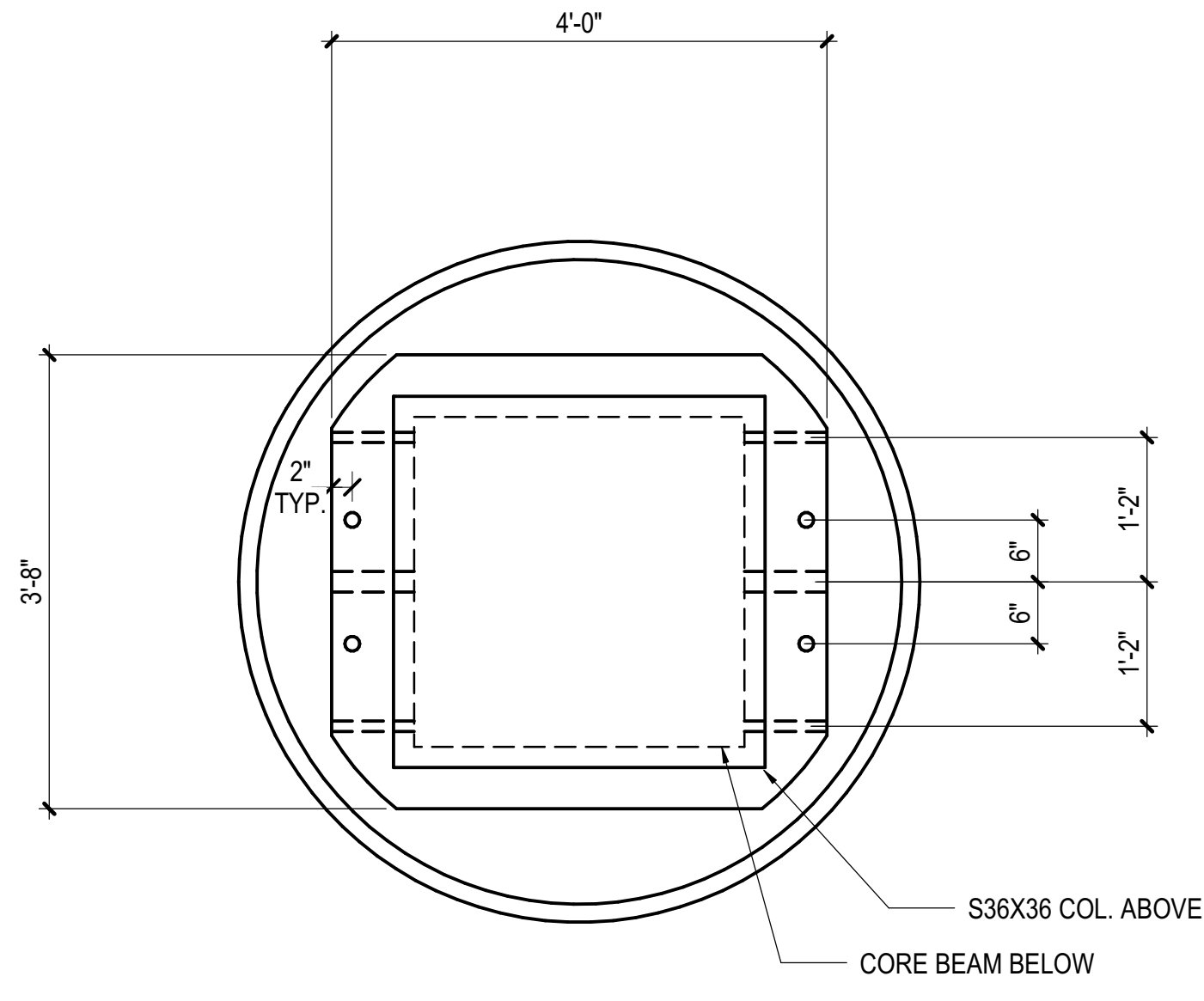
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 212.661.7801

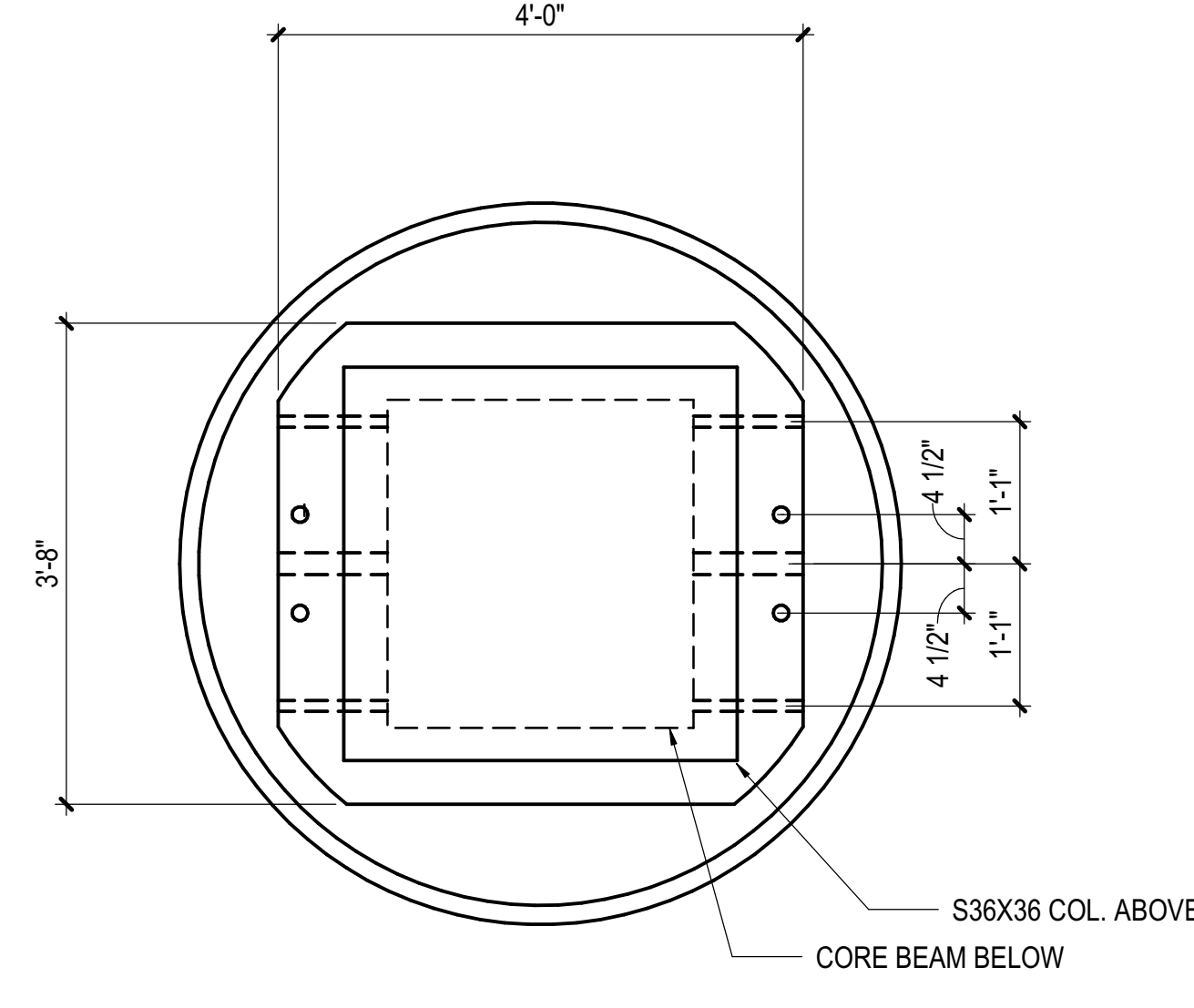
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

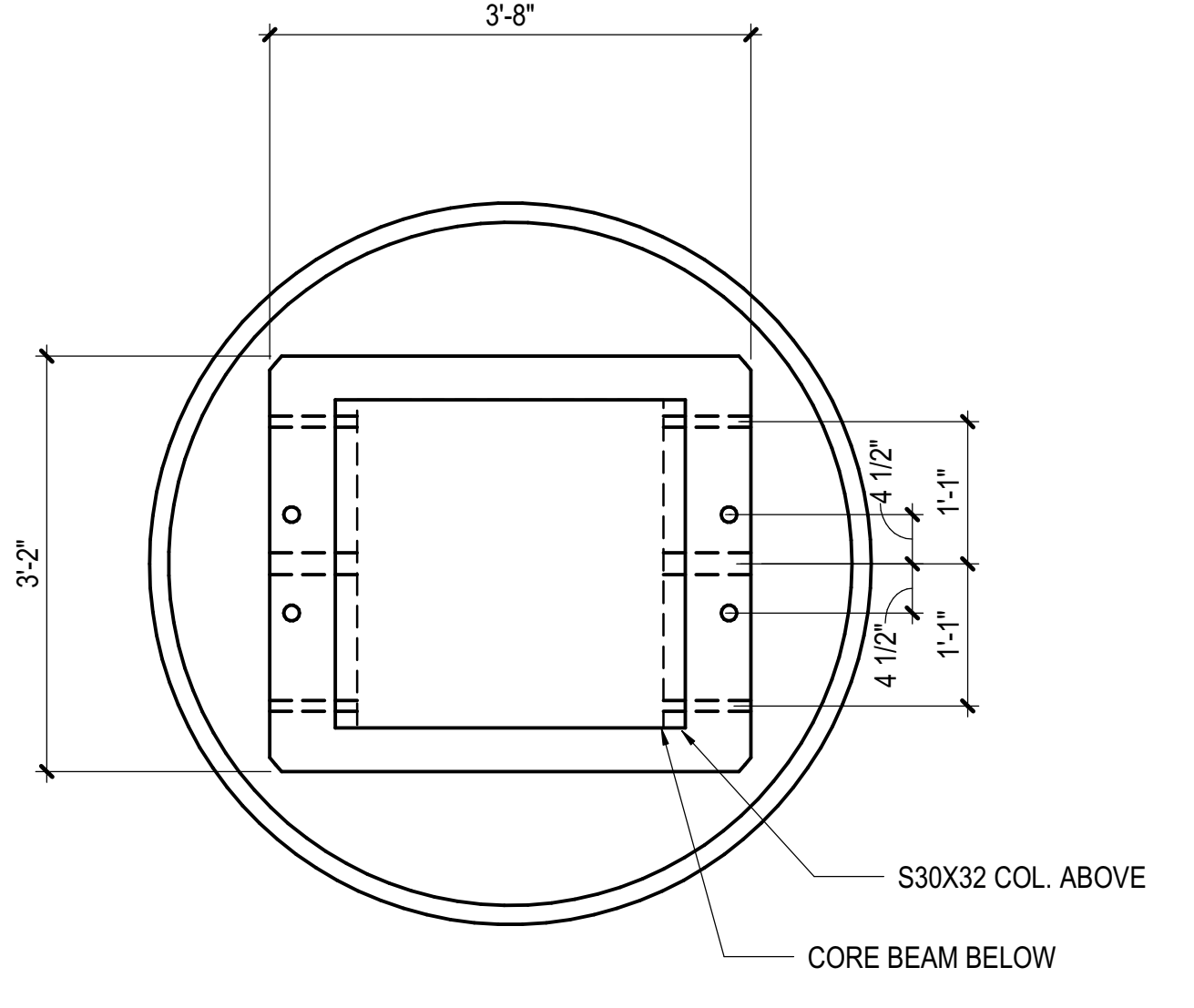
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



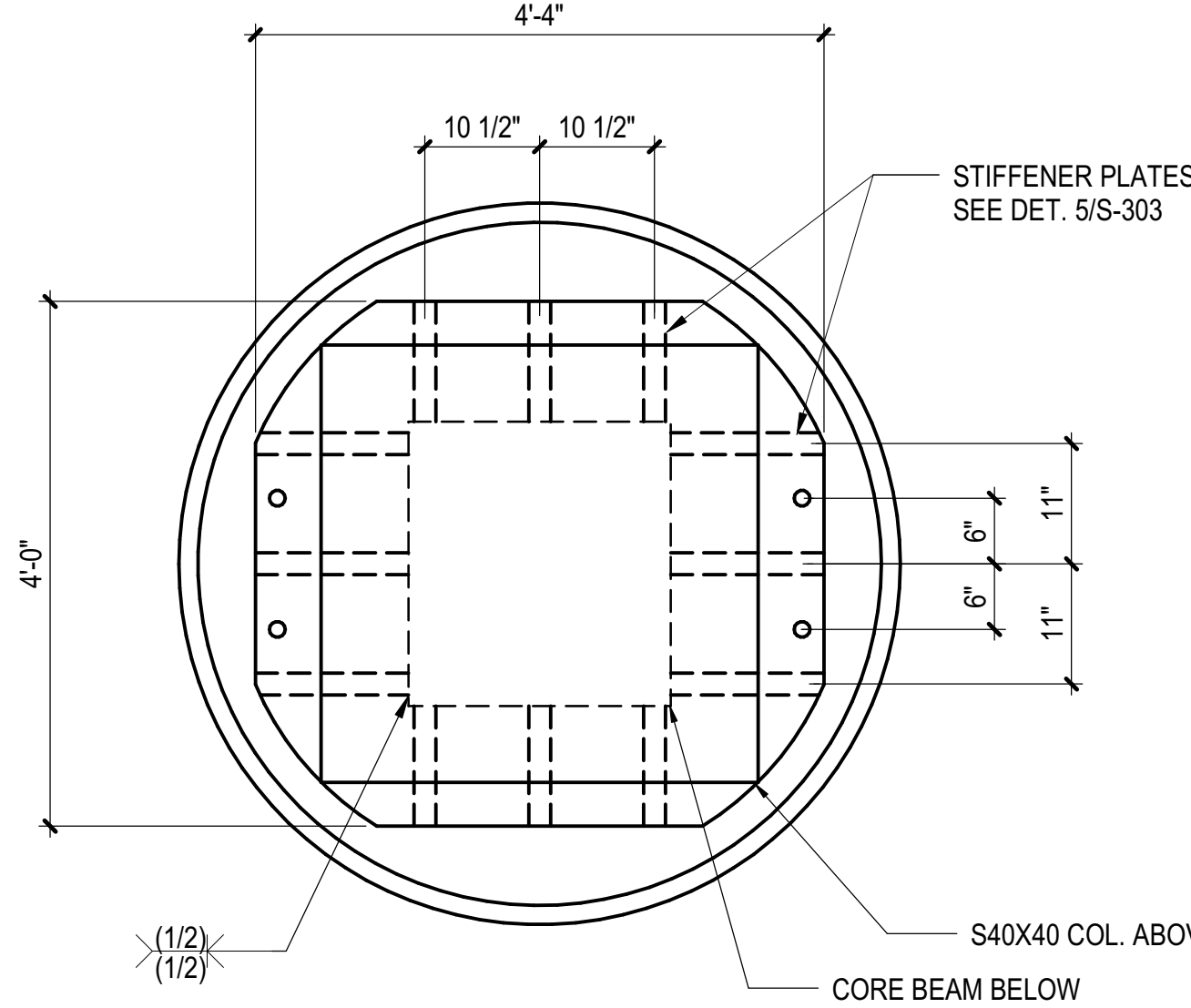
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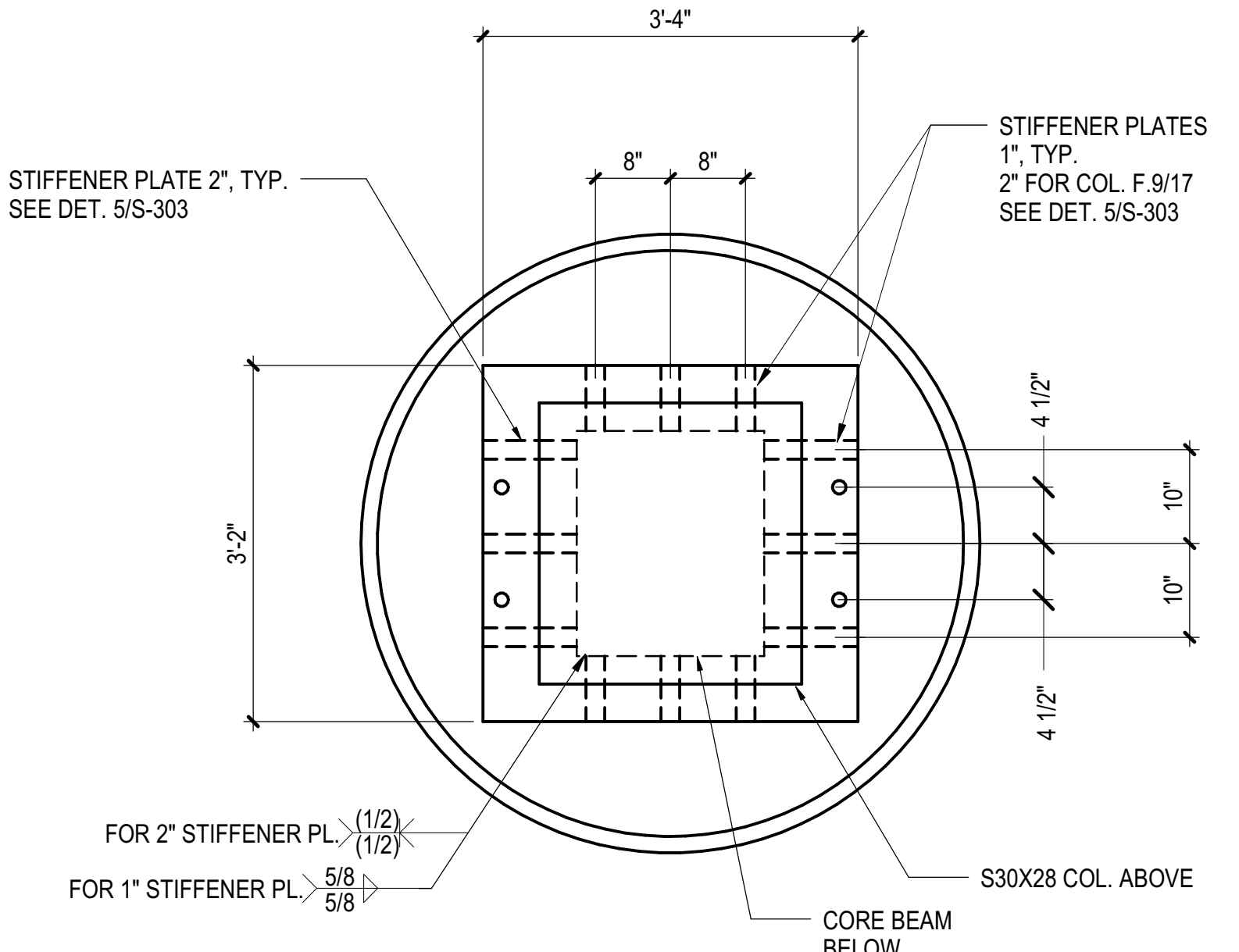
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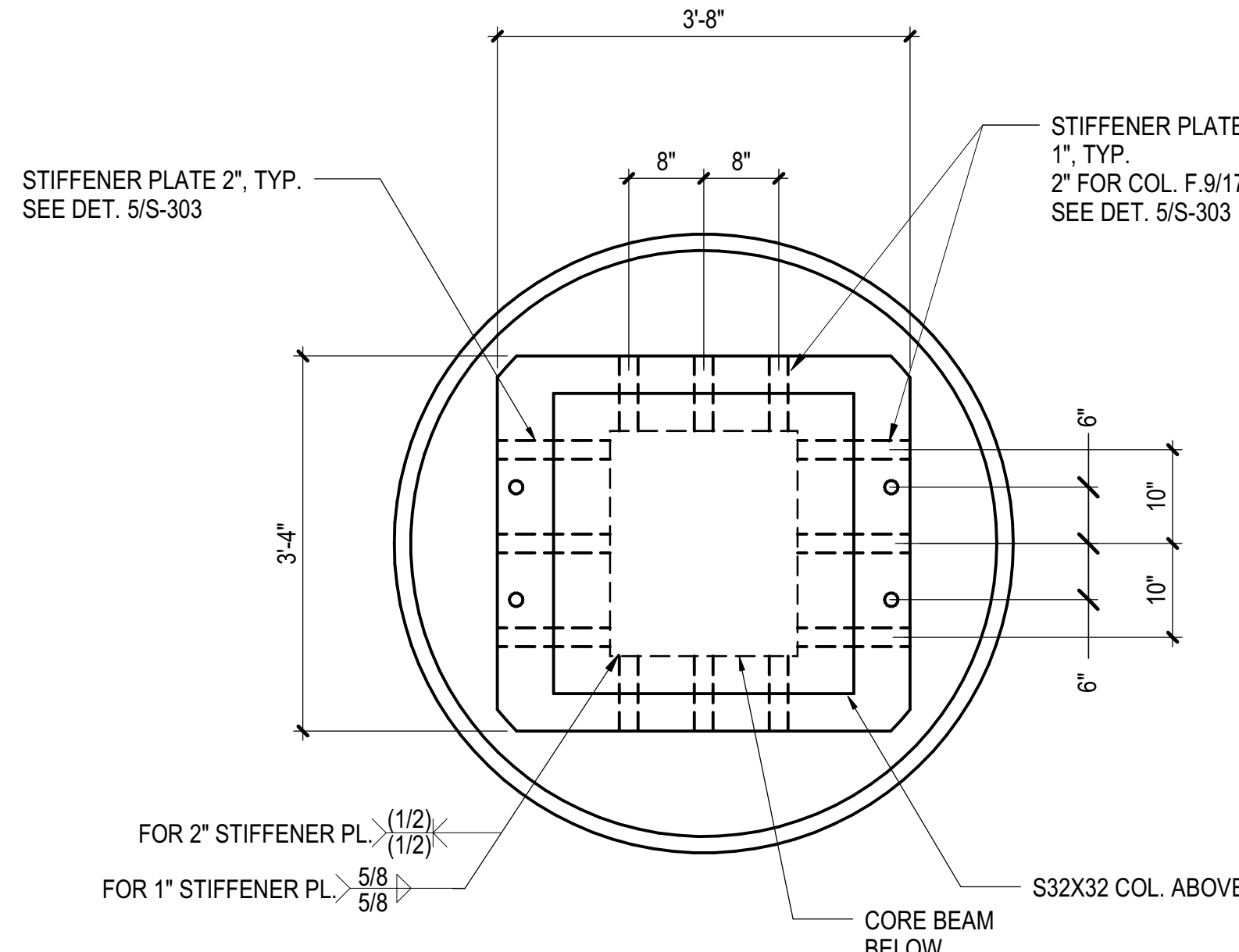
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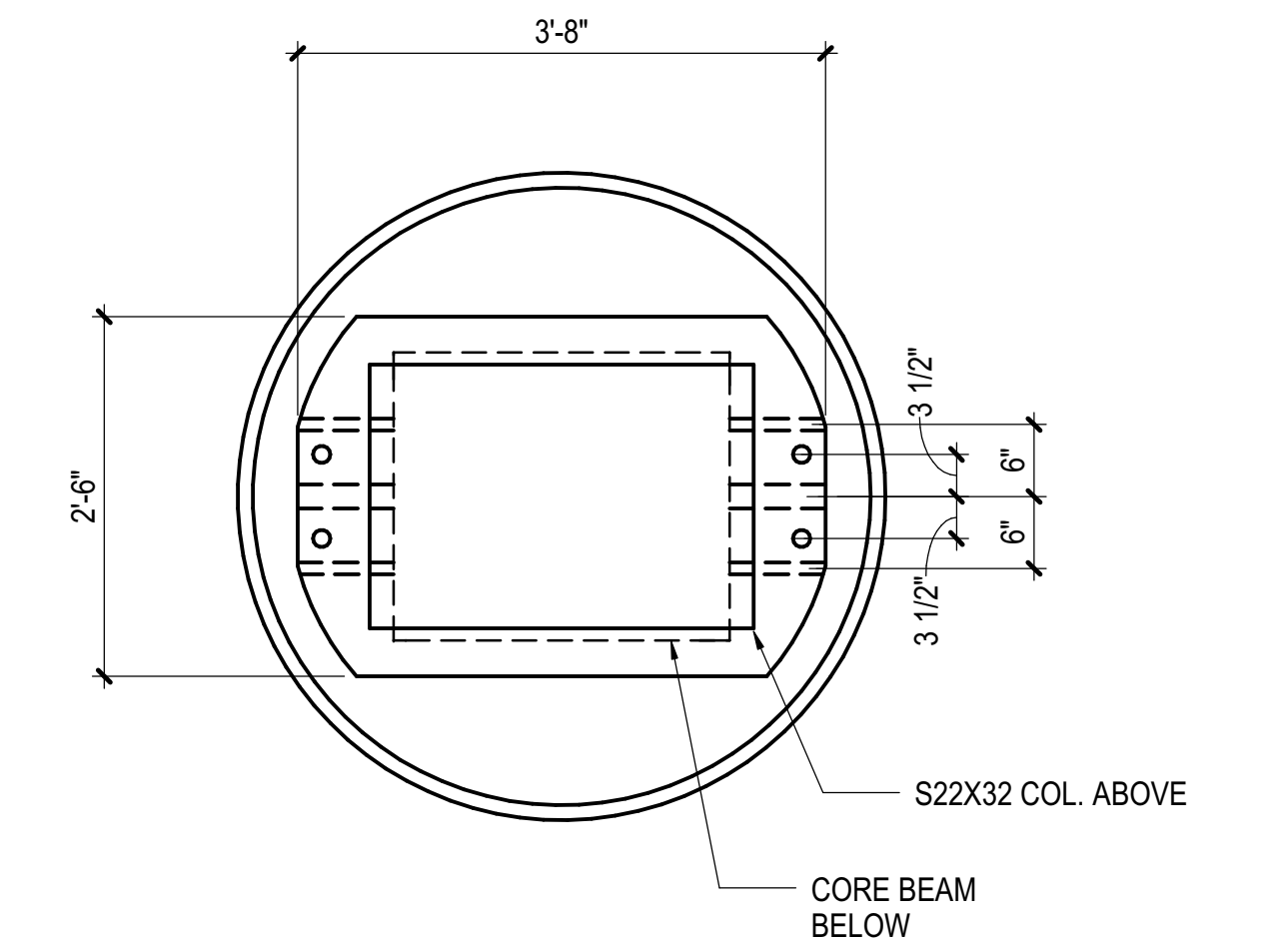
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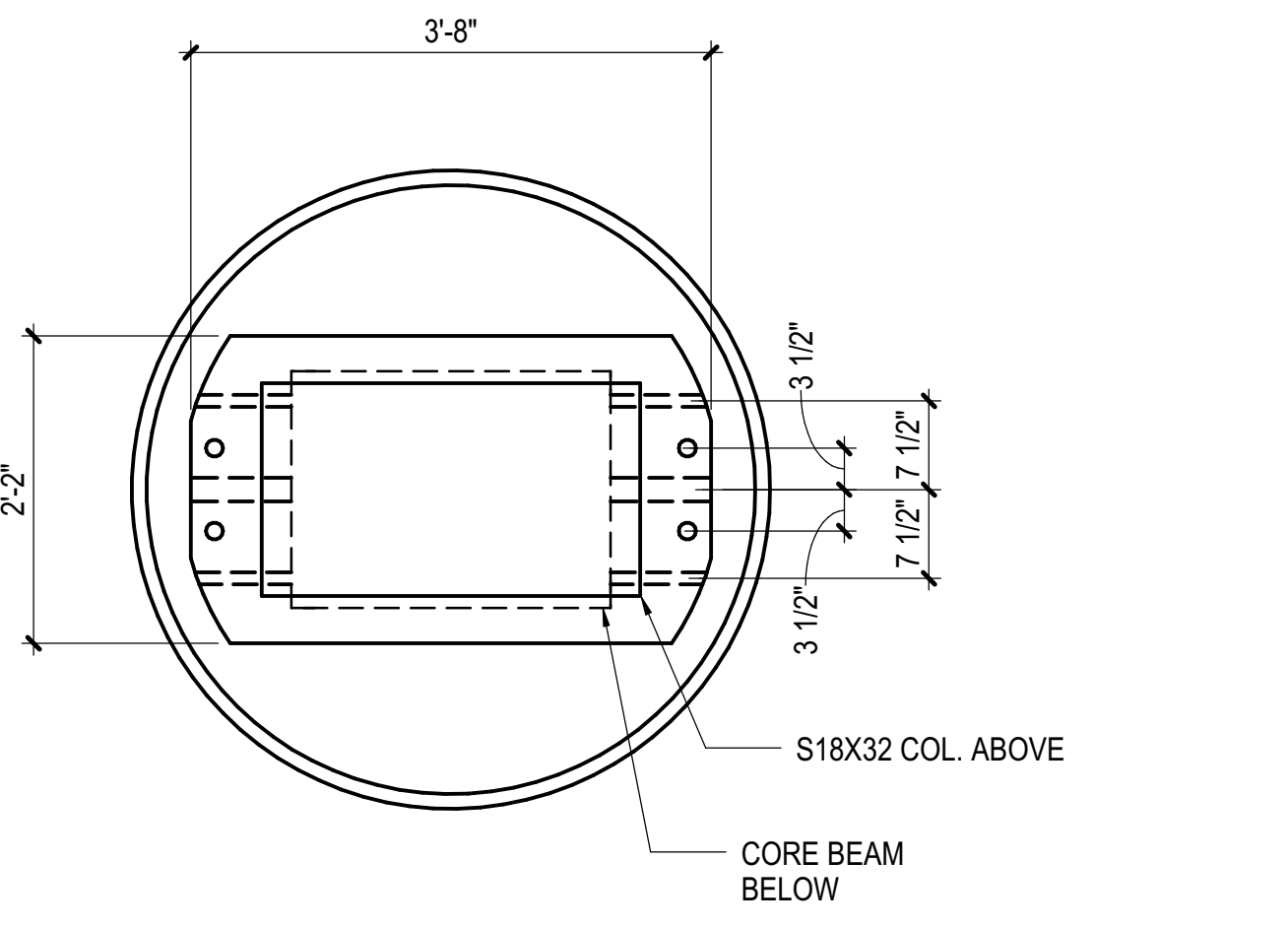
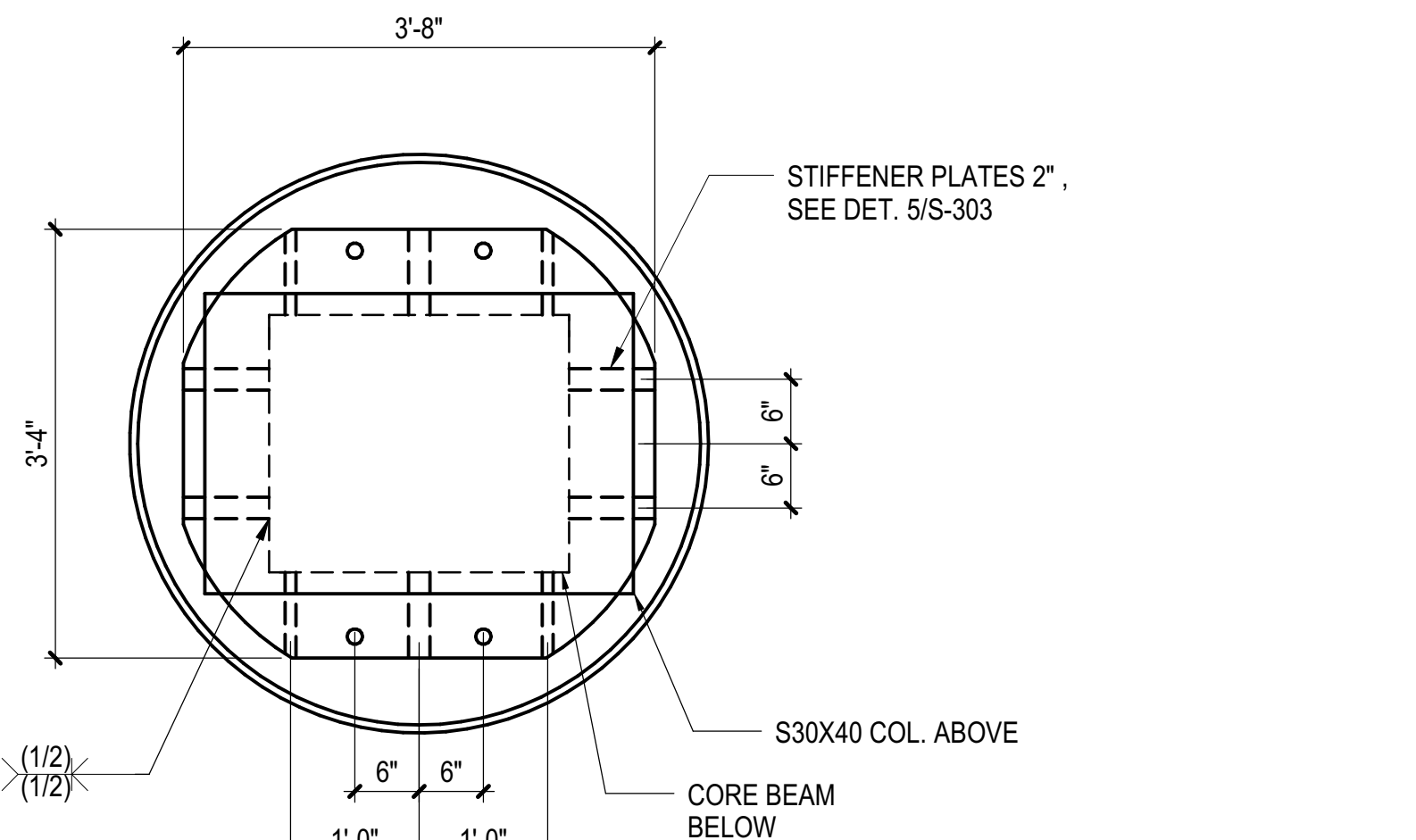
C4.5-5



C4.5-4



C4.5-3



NOTE:  
SEE DET. 2/S-303 FOR BALANCE INFORMATION

1 CAISSON CAP PLATE UNDER TOWER A AREA AT NORTH OF YARD WALL  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0034	7/28/2014
Rev	Description

Rev

Date	07/28/14
Project No	N11330.00
Drawn By	Author
Sheet Number	

HYE-PL-S-308.00

TYPICAL CAISSON  
DETAILS & SCHEDULE  
V

Under Directive 3 of 1975  
APPROVED  
Date: 08/15/2017  
NYC Development Hub

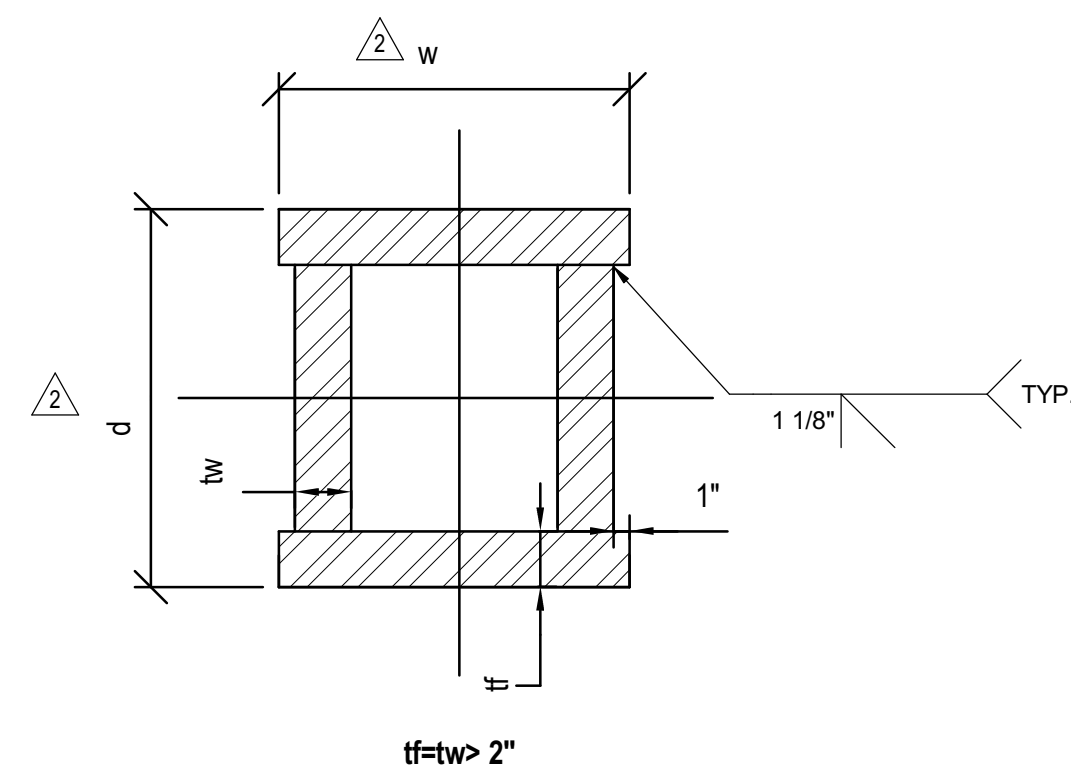
SHEET 55 of 163

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S-12X28	12	28
S-14X32	14	32
S-16X28	16	28
S-16X30	16	30
S-16X32	16	32
S-16X40	16	40
S-18X32	18	32
S-18X30	18	30
S-18X32	18	32
S-18X40	18	40
S-20X16	18	16
S-20X20	20	20
S-20X24	20	24
S-20X28	20	28
S-20X32	20	32
S-20X36	20	36
S-20X40	20	40
S-20X44	20	44
S-20X48	20	48
S-20X60	20	60
S-20X72	20	72
S-22X32	22	32
S-24X16	24	16
S-24X20	24	20
S-24X24	24	24
S-24X28	24	28
S-24X32	24	32
S-24X36	24	36
S-24X40	24	40
S-24X60	24	60
S-28X20	28	20
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S-28X28	28	28
S-28X32	28	32
S-28X40	28	40
S-30X28	30	28
S-30X30	30	30
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S-32X32	32	32
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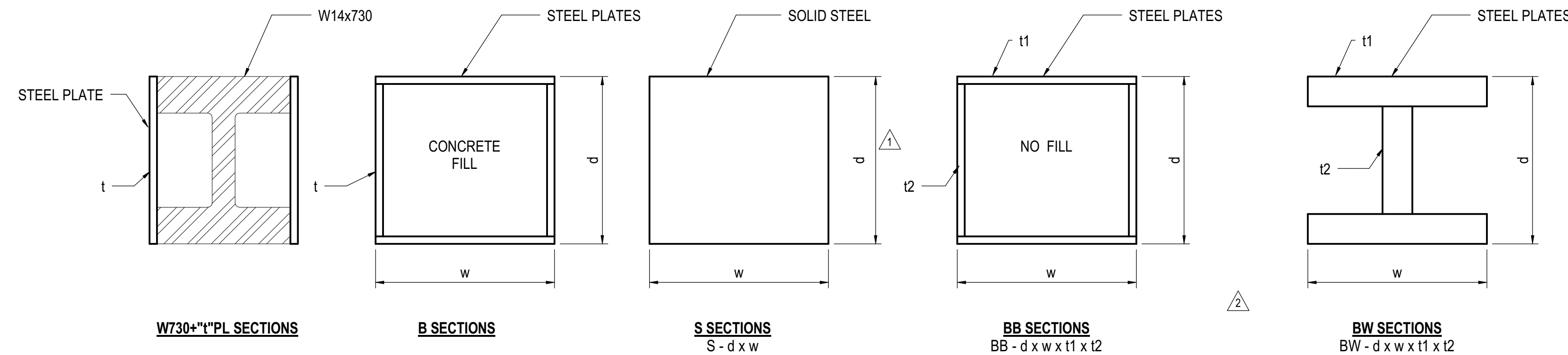
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B-20x20x1.5	20	20	1.5
B-20x20x1.75	20	20	1.75
B-20x20x2	20	20	2.0
B-20x20x2.5	20	20	2.5
B-20x20x3	20	20	3.0
B-20x20x3.5	20	20	3.5
B-20x20x4	20	20	4.0
B-24x24x1.25	24	24	1.25
B-24x24x1.5	24	24	1.5
B-24x24x1.75	24	24	1.75
B-24x24x2	24	24	2.0
B-24x24x2.5	24	24	2.5
B-24x24x3	24	24	3.0
B-24x24x3.5	24	24	3.5
B-24x24x4	24	24	4.0

<sup>1</sup>SEE COLUMN SECTION DETAIL FOR BUILT-UP BOX SECTION (B-SECTIONS)

2 BUILT-UP BOX SECTION TABLE (B-SECTIONS)  
NOT TO SCALE



5 TYPICAL STEEL COLUMN SECTION FOR  $tw=tw < 2"$  (UNTIL 8' ABOVE T.O.R.)  
 $1" = 1'-0"$



3 COLUMN SECTION TYPES  
 $1" = 1'-0"$

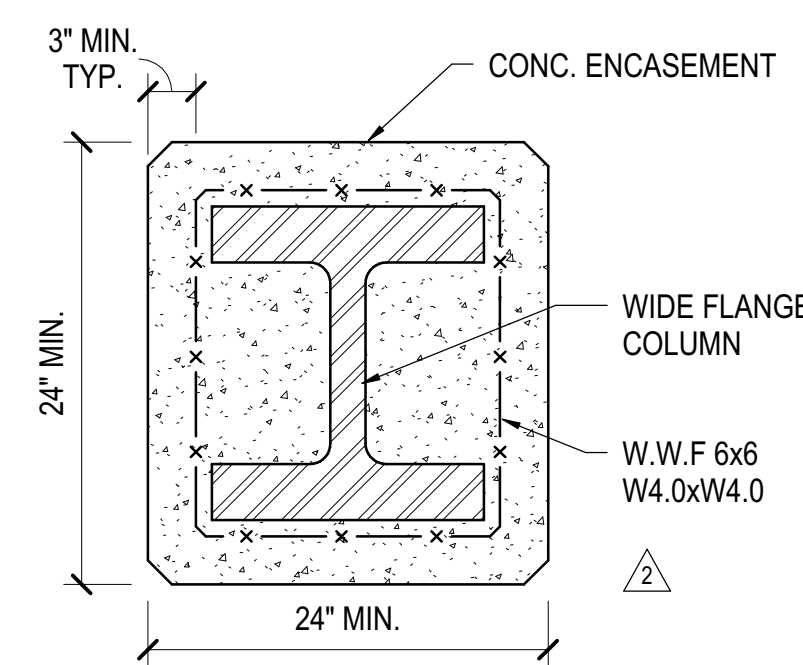
4 TYPICAL STEEL COLUMN SECTION FOR  $tw=tw < 2"$  (UNTIL 8' ABOVE T.O.R.)  
 $1" = 1'-0"$

1 SOLID BOX SECTIONS TABLE (S-SECTIONS)  
NOT TO SCALE

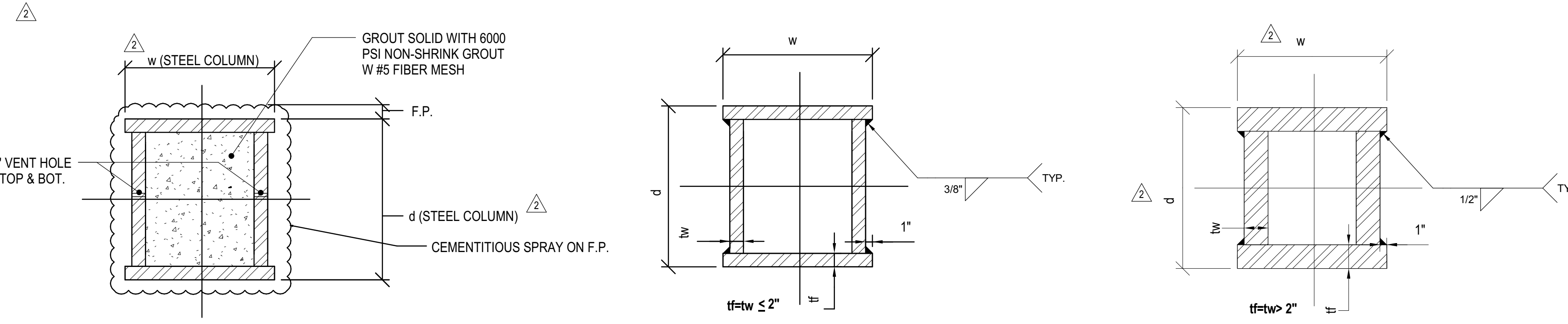
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W14x730 + 2.5" PL	2.5
W14x730 + 3.0" PL	3.0
W14x730 + 3.5" PL	3.5
W14x730 + 4.0" PL	4.0

<sup>1</sup>SEE COLUMN SECTION DETAIL FOR BUILT-UP W SECTIONS

6 BUILT-UP W SECTIONS TABLE  
NOT TO SCALE



11 TYPICAL W SHAPE COLUMN ENCASED IN CONCRETE  
 $1" = 1'-0"$



7 TYPICAL SECTION OF BOX COLUMN  
 $1" = 1'-0"$

8 TYPICAL STEEL COLUMN SECTION FOR  $tw=tw < 2"$  (ABOVE 8' FROM T.O.R.)  
 $1" = 1'-0"$

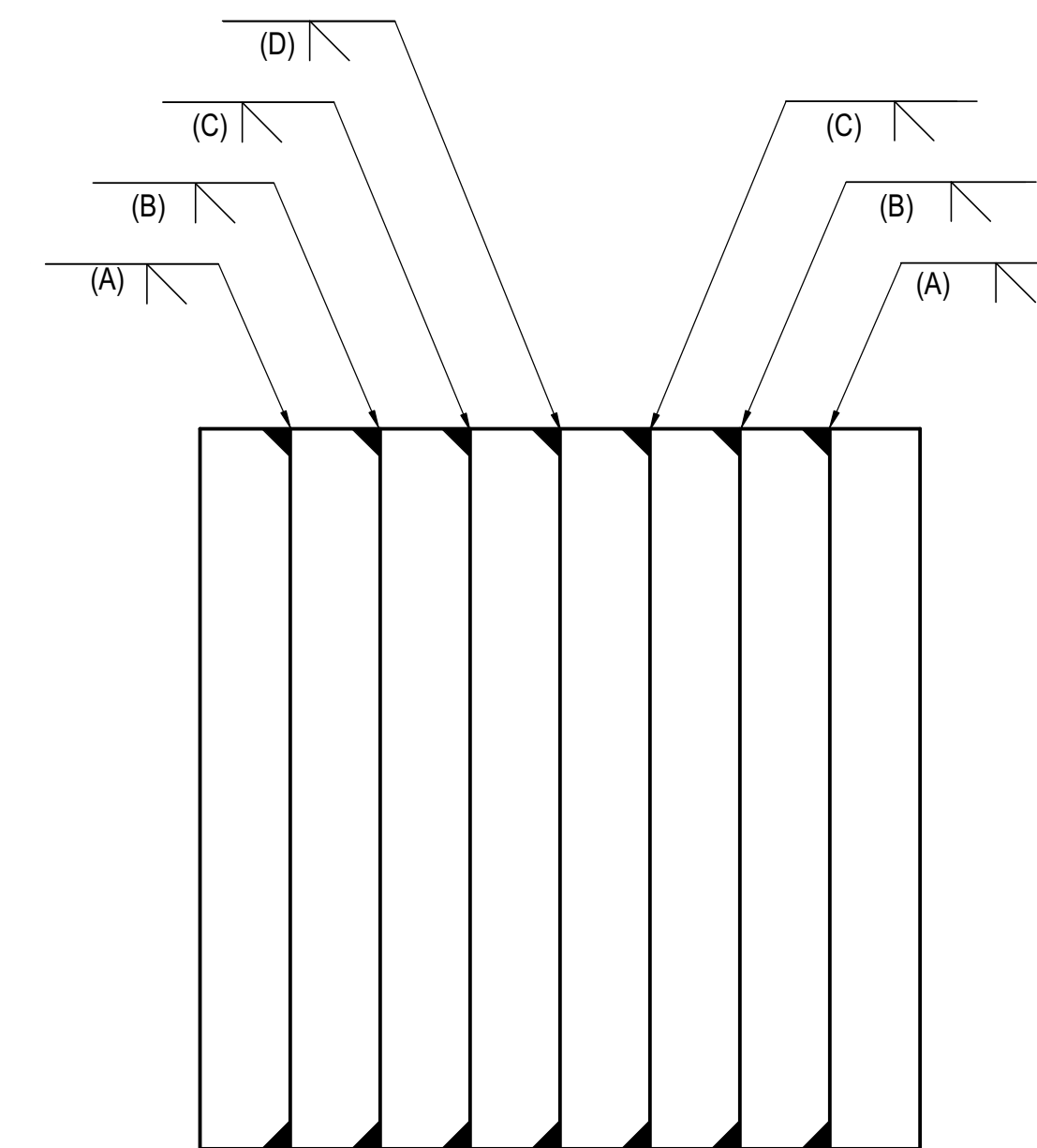
9 TYPICAL STEEL COLUMN SECTION FOR  $tw=tw > 2"$  (ABOVE 8' FROM T.O.R.)  
 $1" = 1'-0"$

10 TYPICAL SECTION OF BOX COLUMN: SOLID SHAPE  
 $3/4" = 1'-0"$

TYPE	WIDTH "w" <sup>1</sup>	DEPTH "d" <sup>1</sup>	PLATE THICKNESS "t" <sup>1</sup>	PLATE THICKNESS "t" <sup>2</sup>
BB-20x20x4x4	20	20	4	4
BB-24x28x6x5	24	28	6	4.5
BB-24x28x8x5	24	28	8	5
BB-24x28x8x6	24	28	8	6
BB-24x18x4x4	24	18	4	4
BB-36x36x5.5	36	36	5.5	5.5
BB-36x36x6	36	36	6.0	6.0
BB-36x36x6.5	36	36	6.5	6.5
BB-36x36x8	36	36	8.0	8.0

<sup>1</sup>SEE COLUMN SECTION DETAIL FOR BUILT-UP BOX SECTION (BB-SECTIONS)

12 BUILT-UP BOX SECTION TABLE (NO FILL)(BB-SECTIONS)  
NOT TO SCALE

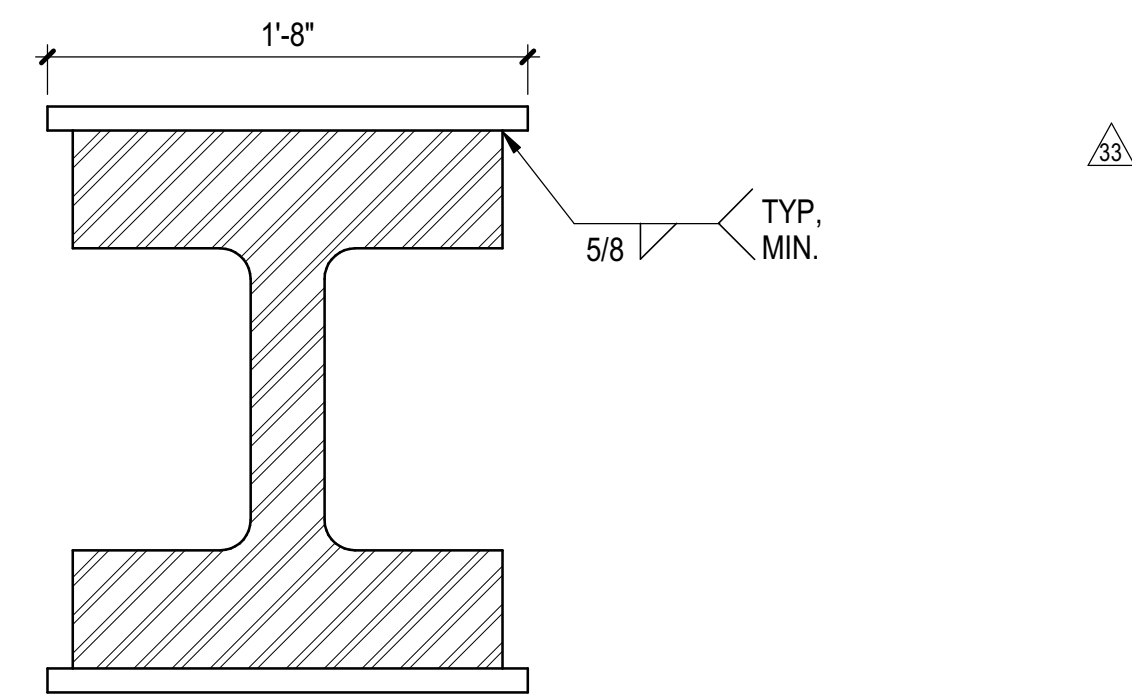


13 COLUMN C.9/17 LAMINATION WELDS  
 $1 1/2" = 1'-0"$

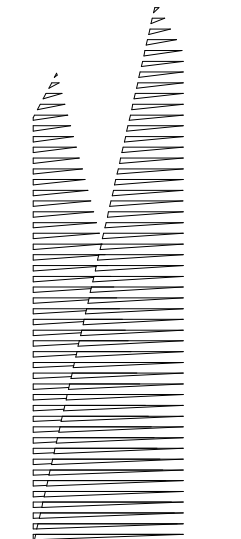
LOCATION REFERENCE	COLUMN ROTATION	COLUMN SECTION SIZE	COLUMN STEEL GRADE	CAP PLATE
M.9/15.1	0.00	W14X283	50	24X24X2
M/16	90.00	W14X730 + 1" PL	50	
M.9/15.16	0.00	W14X283	50	24X24X2
H.8/16.5	0.00	S-32X30	50	36X36X3.5
J.3/16.5	0.00	BW24X20X6X4	50	
K/16.5	0.00	BB28X24X8X4.5	50	
K.7/16.5	0.00	W14X685	50	
H.8/17	0.00	BB28X24X8X4.5	50	
K.7/17.2	90.00	BW28X24X8X4.5	50	29X28X7.5 GR36

NOTES:  
1. SEE 3/S-302.00 FOR ORIENTATION OF DIMENSIONS  
2. CAP PL. TO BE GRADE 50 UON.

14 TA COLUMNS BETWEEN LOWER & UPPER PLATFORMS  
 $1 1/2" = 1'-0"$



15 TA COLUMN M16 BETWEEN LOWER & UPPER PLATFORM  
 $1 1/2" = 1'-0"$



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DOE POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0006	10/14/2014
ASH0046	9/24/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mat. PLATFORM SUBMISSION	
DI-02 PHASE I STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DI-01 PHASE I STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE I FDNS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
NYC DOB FILING	08/

Exp. Plan

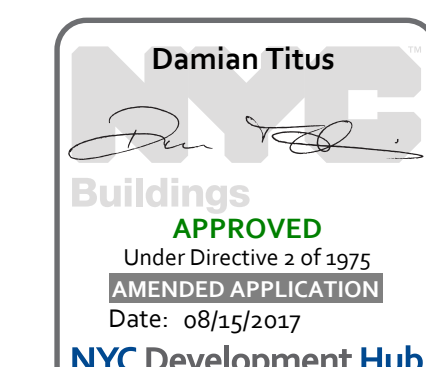
Date: 12/14/2012  
Project No: N11330.00  
Drawing No: Author

HYE - PL - S-320.01

COLUMN DETAILS I

S-320.01

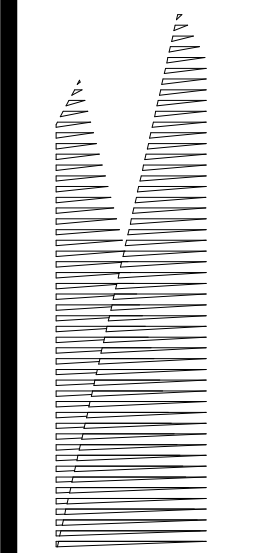
SHEET 56 of 163



Drawing Number / B.SCAN Drawing Number

Under Directive 3 of 1975  
Effective 01/01/2010  
Date: 08/15/2017

NYC Development Hub



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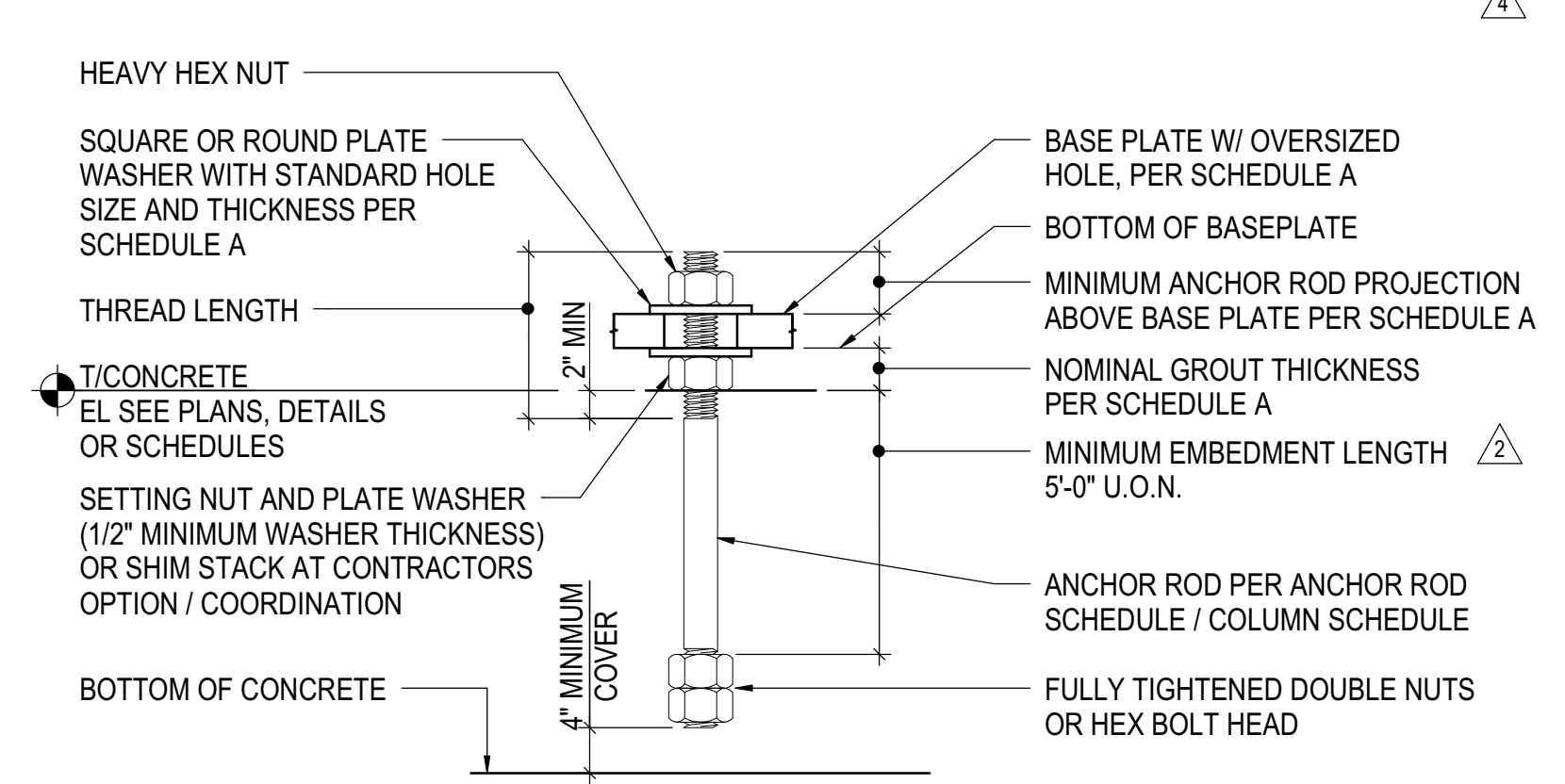
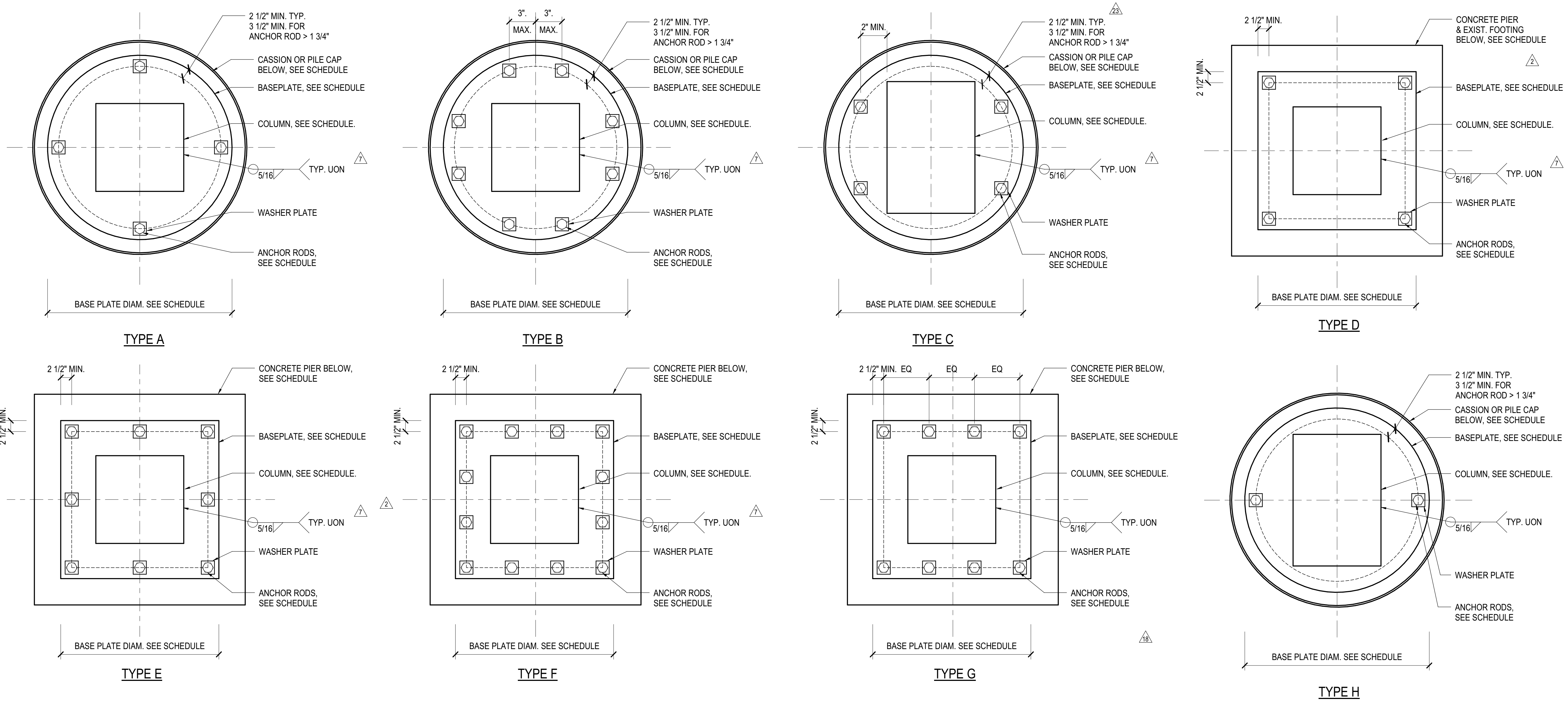
Architect  
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Tel: 212.896.3000

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AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



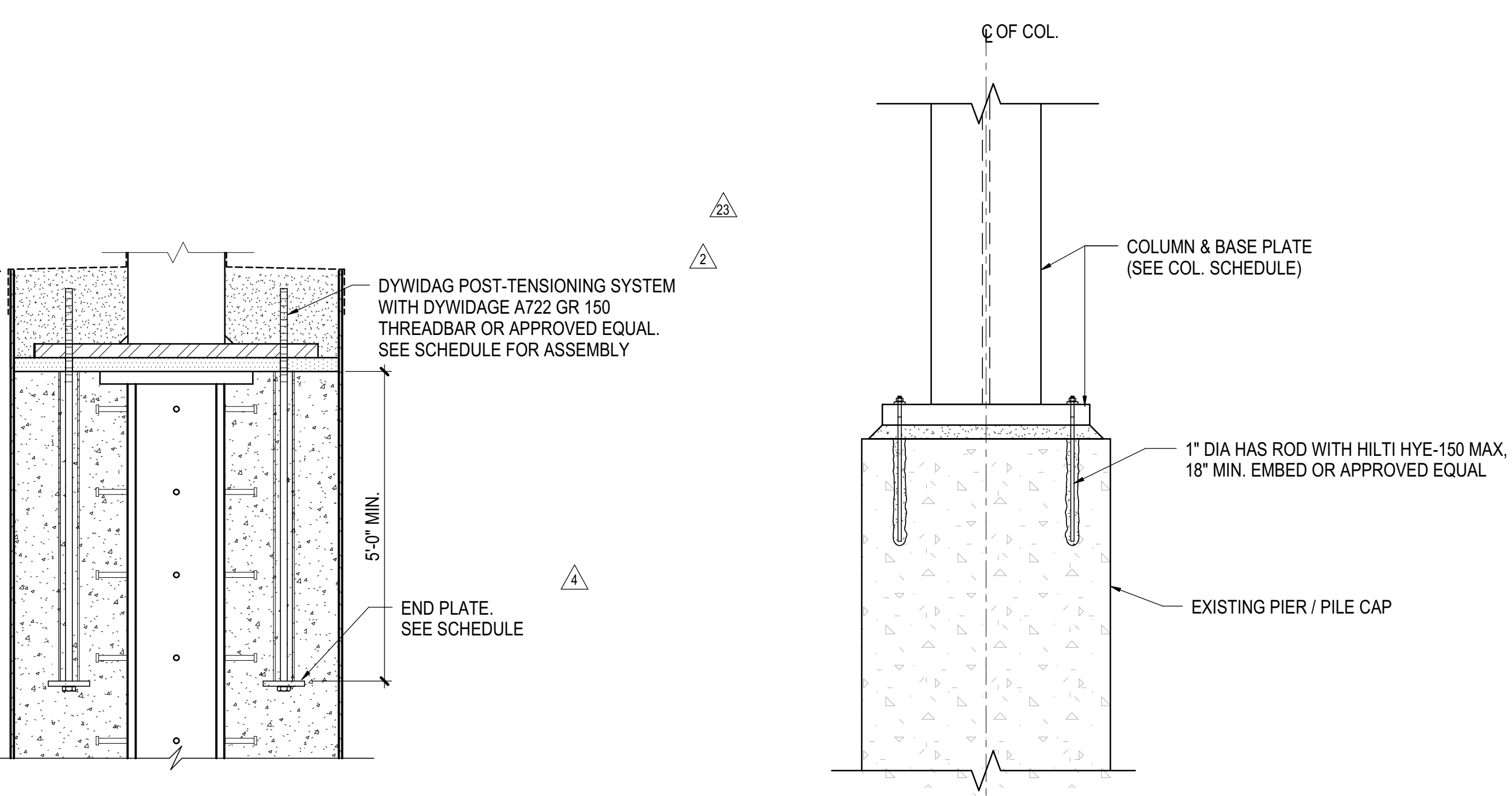
SCHEDULE A					
ANCHOR ROD DIAMETER	BASE PL HOLE DIA	MIN WASHER SIZE	MIN WASHER t	MIN PROJ ABOVE BASE PL	NOMINAL GROUT THICKNESS
3/4"	1-5/16"	2"	1/4"	3"	2"
1"	1-13/16"	3"	3/8"	3-1/2"	2"
1-1/4"	2-1/16"	3"	1/2"	4"	3"
1-3/8"	2-3/16"	3-1/2"	1/2"	4"	3"
1-1/2"	2-5/16"	3-1/2"	1/2"	4"	3"
1-3/4"	2-3/4"	4"	3/4"	5"	3"
2"	3-1/4"	5"	3/4"	5"	4"
2-1/2"	3-3/4"	5-1/2"	1"	5-1/2"	4"

NOTE:  
1. TEMPORARY BRACING IS REQUIRED DURING ERECTION

2 TYPICAL ANCHOR ROD DETAIL  
3/4" = 1'-0"

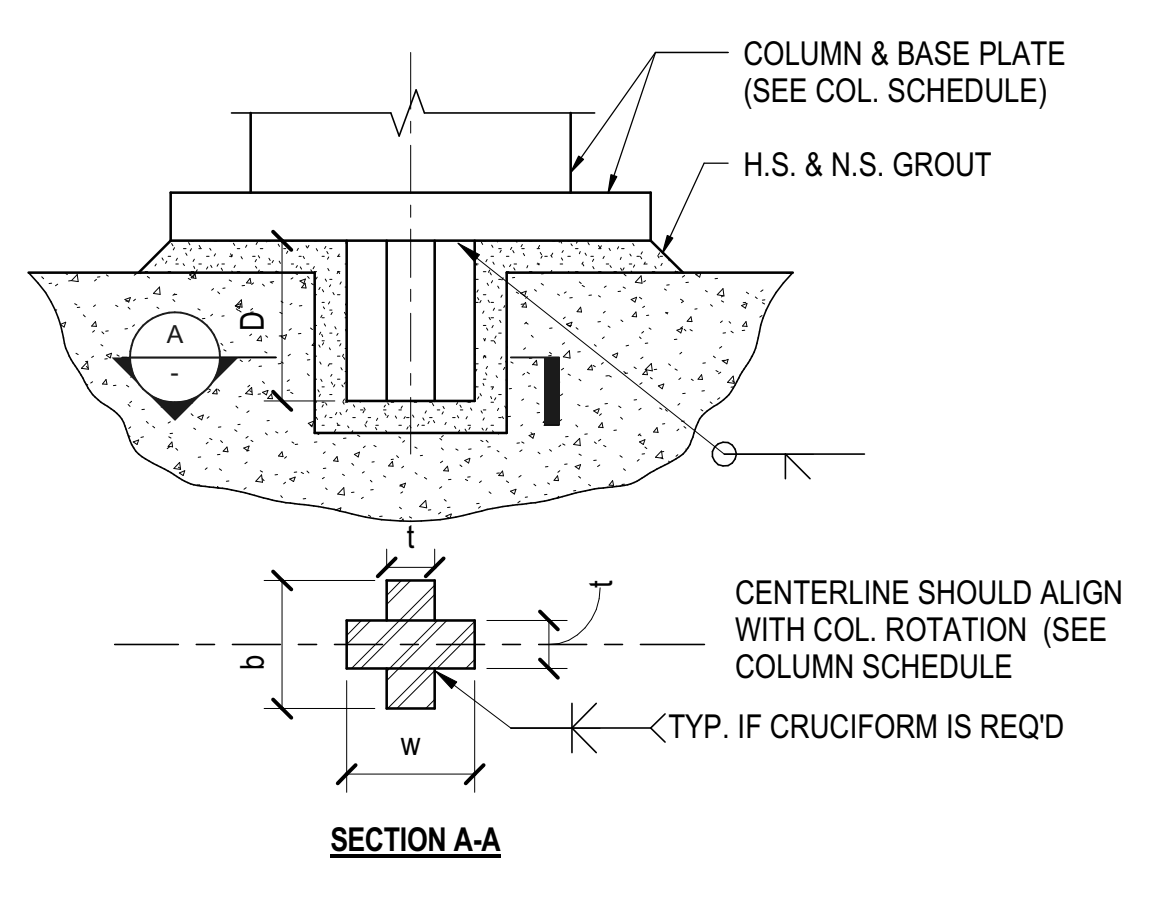
- NOTES:
- SEE COLUMN SCHEDULE FOR BASE PLATE SIZE, ORIENTATION AND THICKNESS
  - BASE PLATE THICKNESS SHOWN ON SCHEDULE IS A MIN. DIMENSION AFTER ALL MILLING IS COMPLETED
  - COLUMN STABILITY DURING ERECTION IS RESPONSIBILITY OF CONTRACTOR
  - SEE COLUMN SCHEDULE FOR ANCHOR ROD SIZE AND SEE ANCHOR ROD DETAIL FOR ADDITIONAL INFORMATION
  - CONTRACTOR'S OPTION TO FIELD WELD COLUMNS TO BASEPLATES FOR HEAVY BASEPLATES
  - EXIST. ANCHOR ROD OF EXIST. FOOT SHALL BE CUT FLASH WITH TOP OF FOOT.

1 ANCHOR RODS LOCATION PLAN  
1" = 1'-0"



PT ANCHOR ROD SCHEDULE						
ANCHOR ROD DIAMETER	BASE PL HOLE DIA	MIN WASHER SIZE	MIN WASHER t	MIN END PLATE SIZE	MIN END PLATE t	NOMINAL GROUT THICKNESS
1-3/8"	2-1/2"	4"	1-3/4"	6" DIA.	1-3/4"	3"
2-1/2"	3-3/4"	6"	2-3/8"	8" DIA.	2-3/8"	3"
3"	4-1/2"	7"	2-3/4"	9" DIA.	2-3/4"	3"

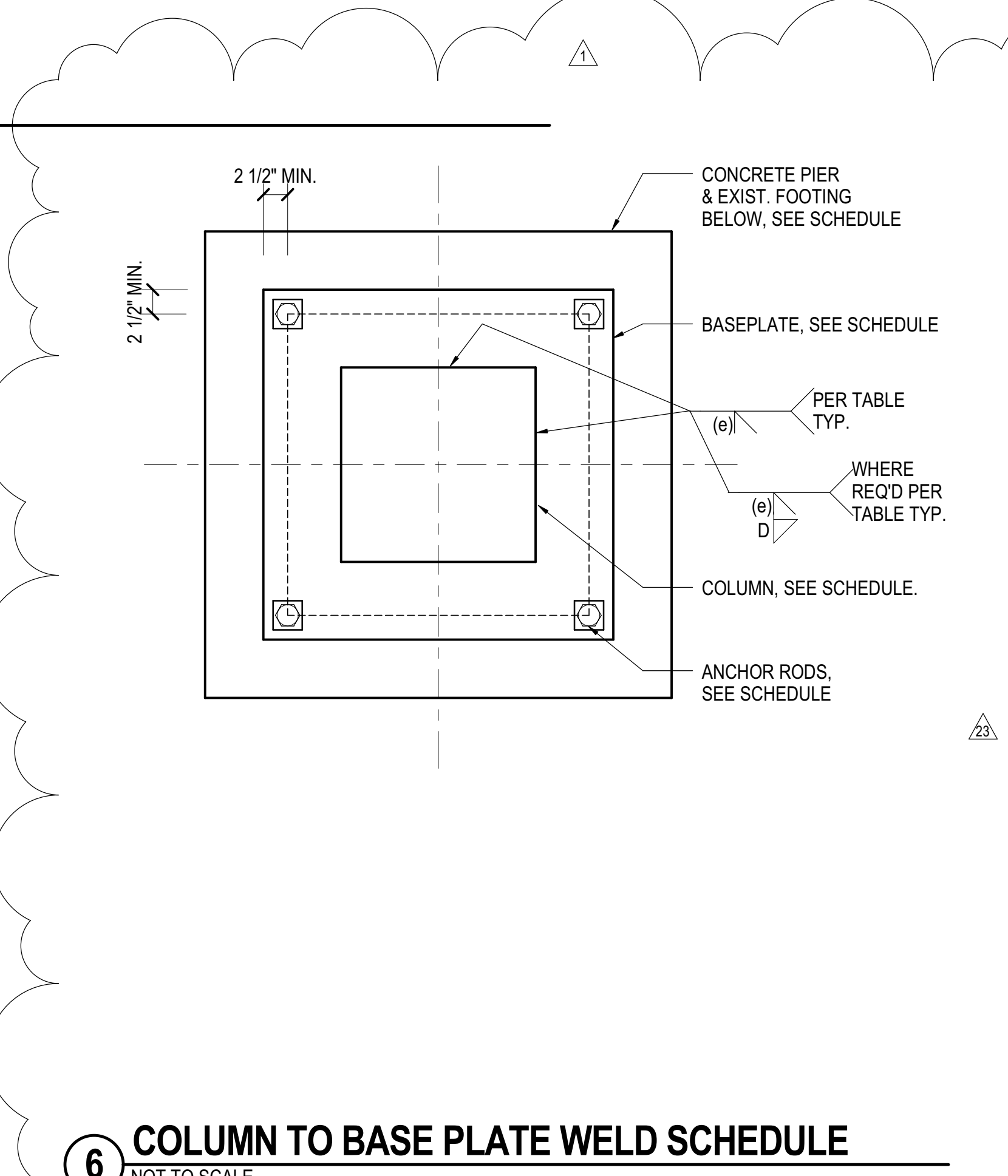
3 POST-TENSION ANCHOR ROD IN CAISSON  
3/4" = 1'-0"



SHEAR LUG SCHEDULE			
TYPE	b (m)	w (m)	t (m)
TYPE 1	8	8	3
TYPE 2	10	10	3
TYPE 3	6	-	3
TYPE 4	10	-	3.75
TYPE 5	12	12	5.25
TYPE 6	10	10	4.5
TYPE 7	-	10	5.25

4 TYPICAL POST-INSTALLED ANCHOR BOLT  
3/4" = 1'-0"

5 SHEAR LUG DETAIL  
NOT TO SCALE



COLUMN TO BASE PLATE WELD SCHEDULE		
LOC REFERENCE	e (m)	D (m)
ALL BOX COLUMNS ON GRIDLINES FROM PA THROUGH PR, UON.	1	-
PA9, PB9, PC9, PD9, PD10, PE9, PG9, PH10, PJ9A, PL9A, PM9A, PN9A, PP9A	1	5/8
E.8/15(A), E.8/15(B), F.9/15(A), C.9/15(A)	5/8	-
A.8/17(B), C15.3(A)	1 3/4	-
A.8/17(A)	2 1/2	-
EA/1, EA/2, EA/3, EA/4, EB/2 (A) & (B), ED/1, EE/1, EF/1, EF/2, EF/3, EF/4	1 1/2	-

6 COLUMN TO BASE PLATE WELD SCHEDULE  
NOT TO SCALE

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0001	10/14/2014
ASH0002 - TOWER E STEEL FRAMING	7/23/2014
ASH0003 - SEQUENCE 11 FRAMING	6/06/2014
ASH0001	5/7/2014
ASH0005	2/18/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
MAE - PLATFORM SUBMISSION	
DI-62 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DI-61 PHASE 1 STRUCTURE UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE 1 FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
Rev.	Rev.

Key Plan

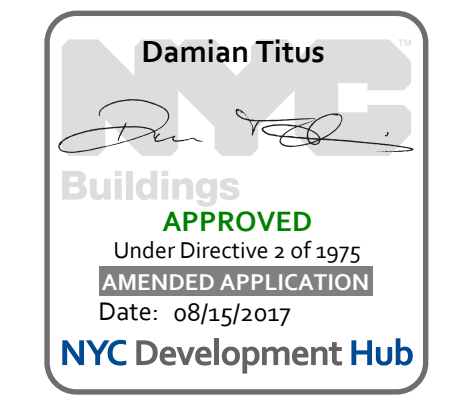
Date: 12/14/2012  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

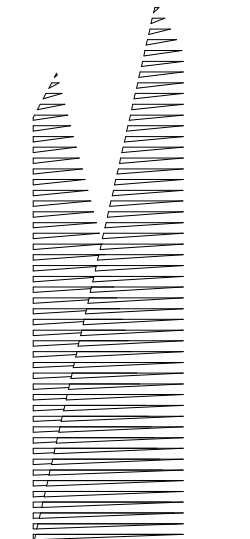
**HYE-PL-S-321.01**  
Drawing Title

**COLUMN DETAILS II**

Drawing Number: 8/024/2/000/000  
**S-321.01**

SHEET 57 OF 163





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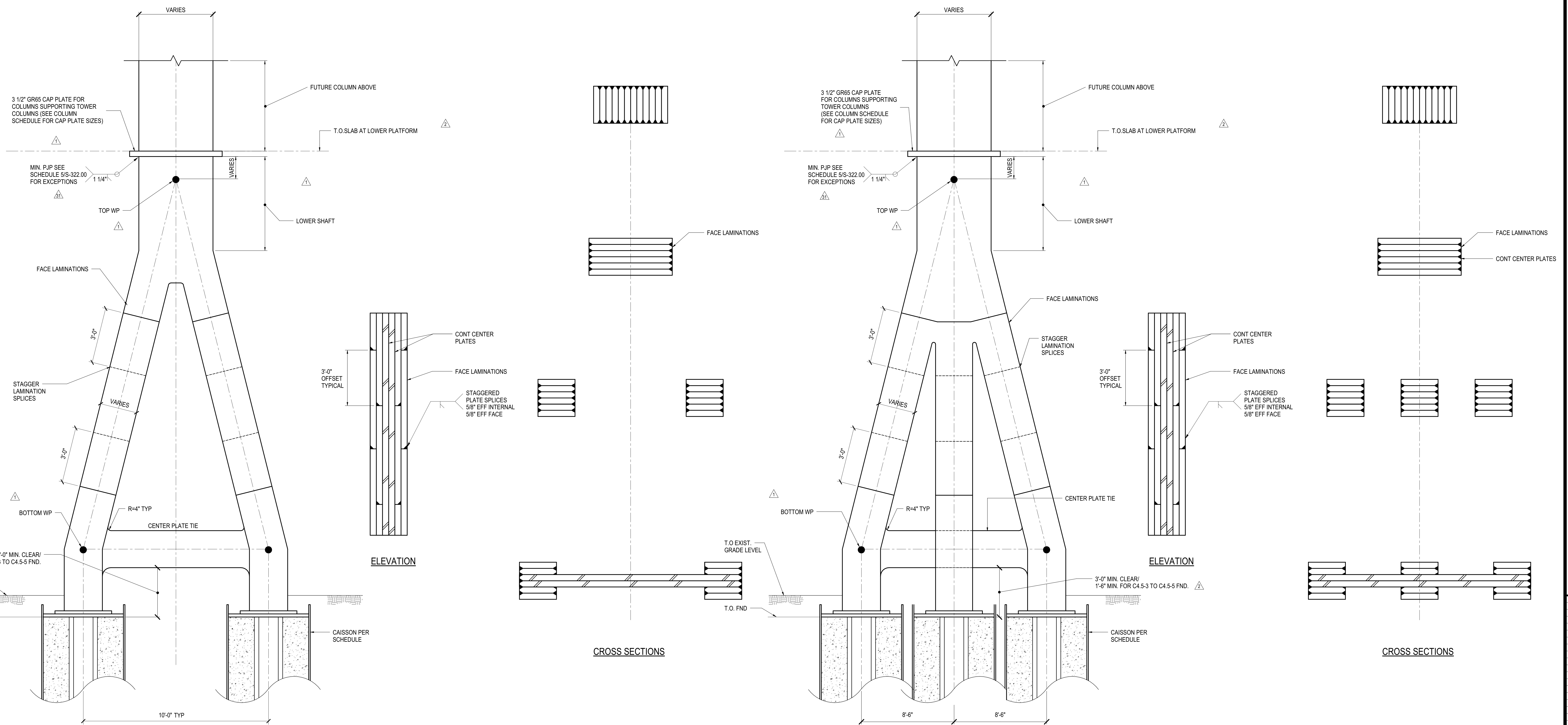
Architect  
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LIRR Substation  
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605 Third Avenue  
New York, NY 10158  
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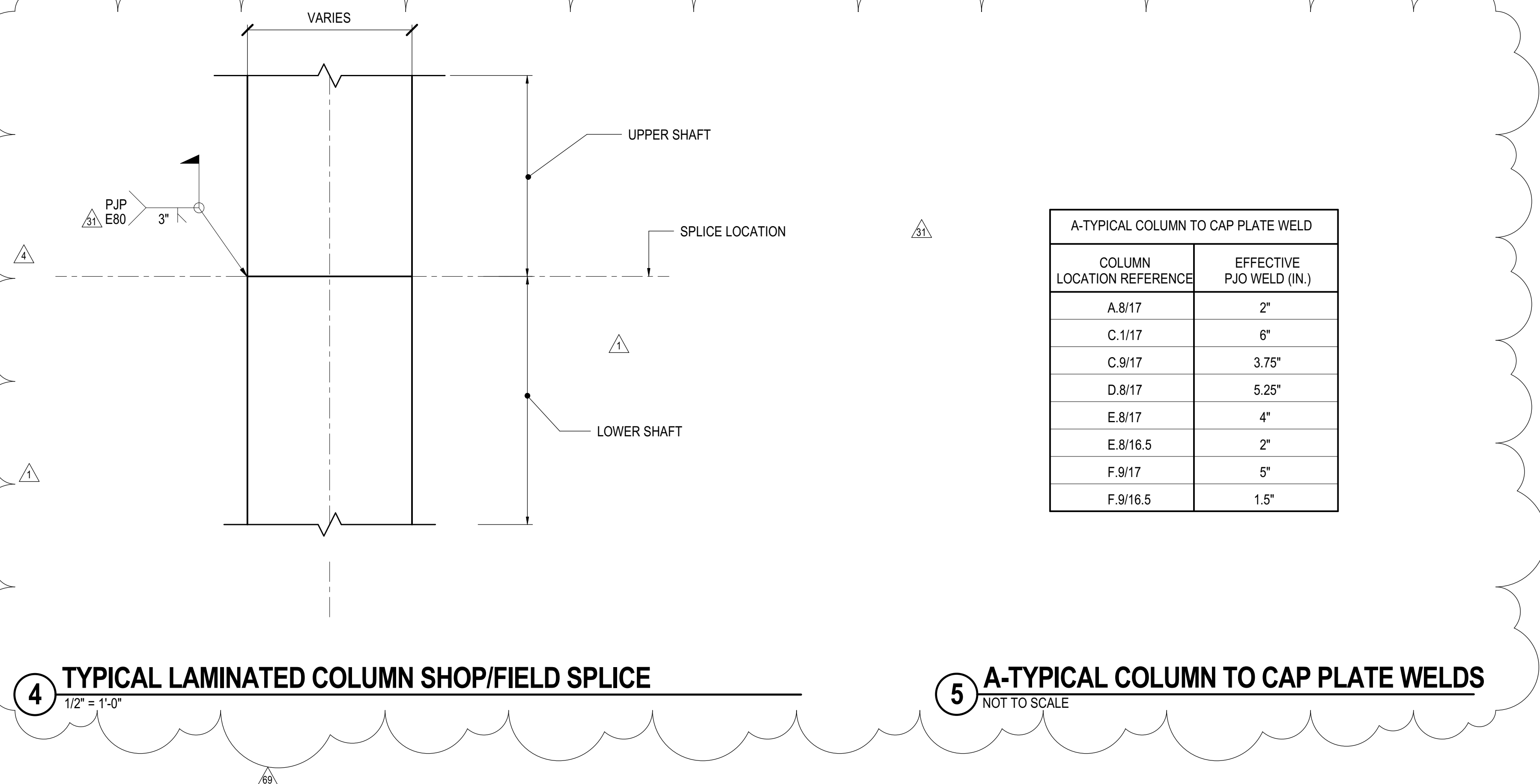


**1 A FRAME DOUBLE COLUMN OPTIONS**  
1/2" = 1'-0"

**2 A FRAME TRIPLE COLUMN OPTIONS**  
1/2" = 1'-0"

LOCATION REFERENCE	COLUMN SIZE		TIE	LOWER SHAFT	TOP WP ELEVATION	BOTTOM WP ELEVATION	TIE AXIAL TENSION FORCE (KIPS)
	OUTER LEGS	INNER LEG					
A/14	(2) 24"x24"		8"x20"	24"x40"	25'-11"	8'-2"	7200
B/14	(2) 24"x28"	24"x24"	8"x24"	24"x60"	25'-11"	8'-0"	9200
C/14	(2) 24"x28"	24"x24"	8"x24"	24"x60"	25'-11"	7'-6"	5900
D/14	(2) 24"x24"		12"x16"	24"x40"	25'-11"	6'-2"	5900
E/14	(A) 20"x36", (B) 20"x28"		12"x20"	20"x48"	25'-11"	5'-10"	5400
G/14	(A) 20"x24", (B) 20"x48"		12"x16"	20"x60"	25'-11"	6'-5"	5600
A/14.8	(2) 24"x24"		8"x16"	24"x40"	25'-11"	8'-2"	4600
C/9/15	(A) 14"x32", (B) 22"x32"		(2) 8"x24" 50 ksi	32"x32"	25'-11"	7'-3"	1100
D/8/15	(A) 16"x32", (B) 18"x32"		(2) 8"x24" 50 ksi	32"x32"	25'-11"	7'-3"	9600
E/8/15	(A) 16"x32", (B) 20"x32"		(2) 8"x24" 50 ksi	32"x32"	25'-11"	7'-3"	8900
F/9/15	(A) 16"x30", (B) 18"x30"		(2) 8"x10" 50 ksi	30"x30"	25'-11"	9'-6"	3500
C/15.3	(A) 24"x16", (B) 24"x32"		8"x16"	24"x36"	25'-11"	7'-4"	6000
B/15.5	(A) 24"x32", (B) 24"x20"		8"x20"	24"x36"	25'-11"	7'-10"	8000

**3 A-FRAMED COLUMN TABLE**  
NOT TO SCALE



**4 TYPICAL LAMINATED COLUMN SHOP/FIELD SPLICE**  
1/2" = 1'-0"

**5 A-TYPICAL COLUMN TO CAP PLATE WELDS**  
NOT TO SCALE

DESCRIPTION	DATE
DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0046	9/24/2014
ASH0028 - SEQUENCE 11 FRAMING	6/9/2014
ASH0007	2/29/2014
PDC #4	2/5/2014
ASH0005	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
MoE - PLATFORM SUBMISSION	
DI-02 PHASE 1 STRUCTURE UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DI-01 PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 60% SUBMISSION	8/9/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE 1 FDNS	3/29/2013
MoE - Description	08/

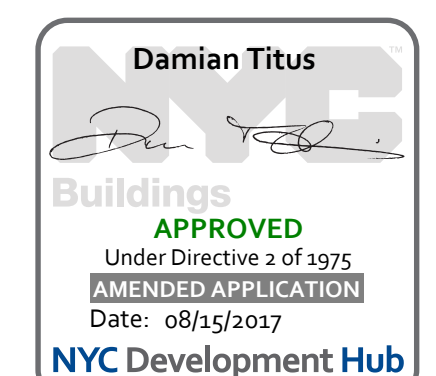
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Date: 03/29/2013  
Project No: N11330.00  
Author: Author

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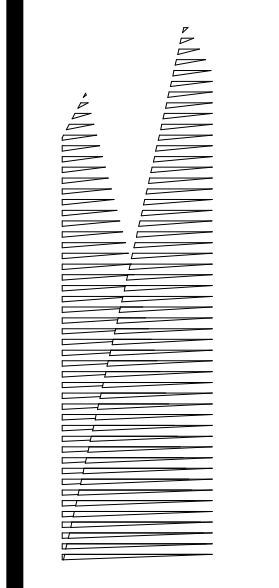
**A-FRAME COLUMN DETAILS**

Drawing Number / B.O.C.A.N. Drawing Number  
**S-322.01**



APPROVED Under Directive 3 of 1975  
DATE OF APPROVAL: 08/15/2017  
NYC Development Hub





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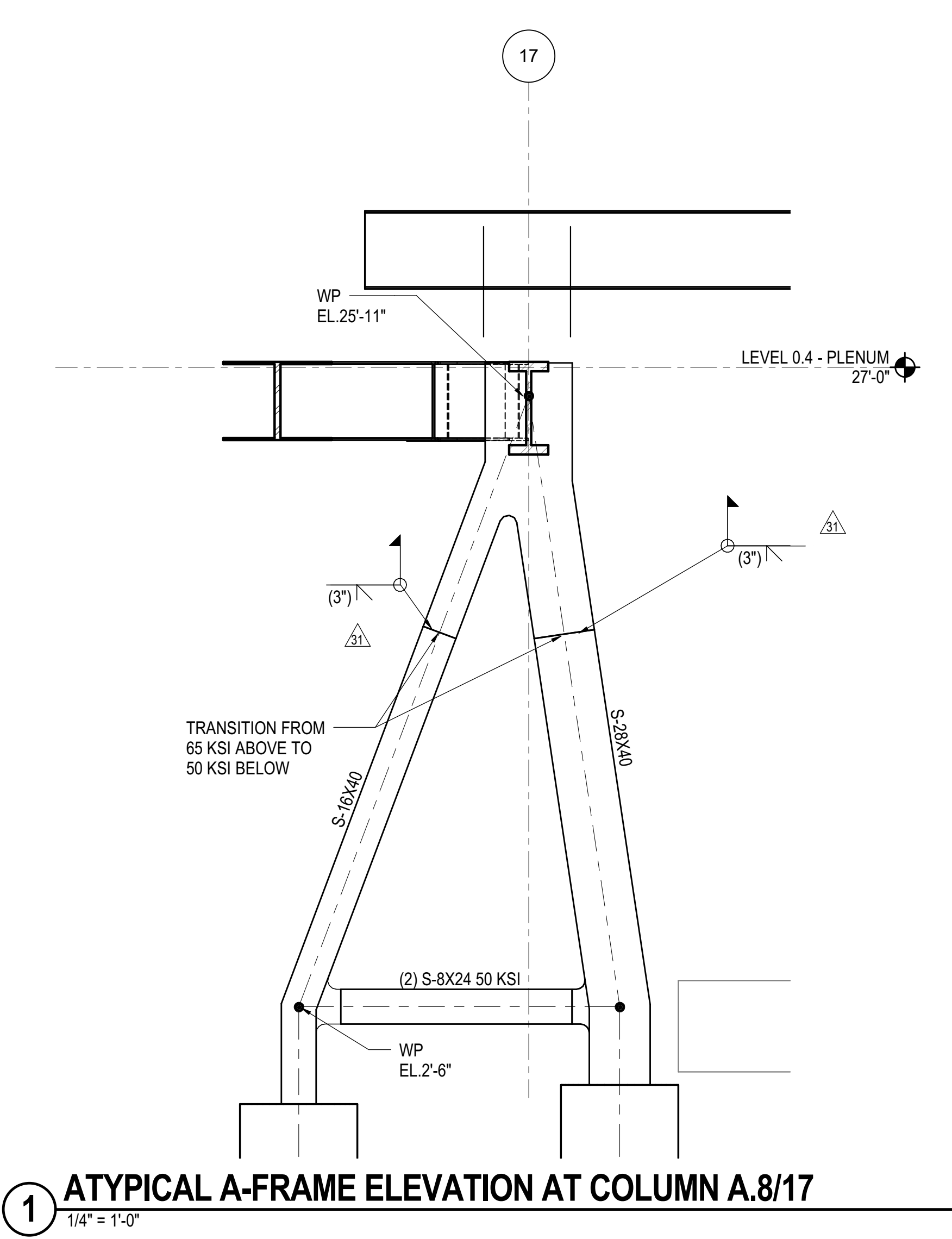
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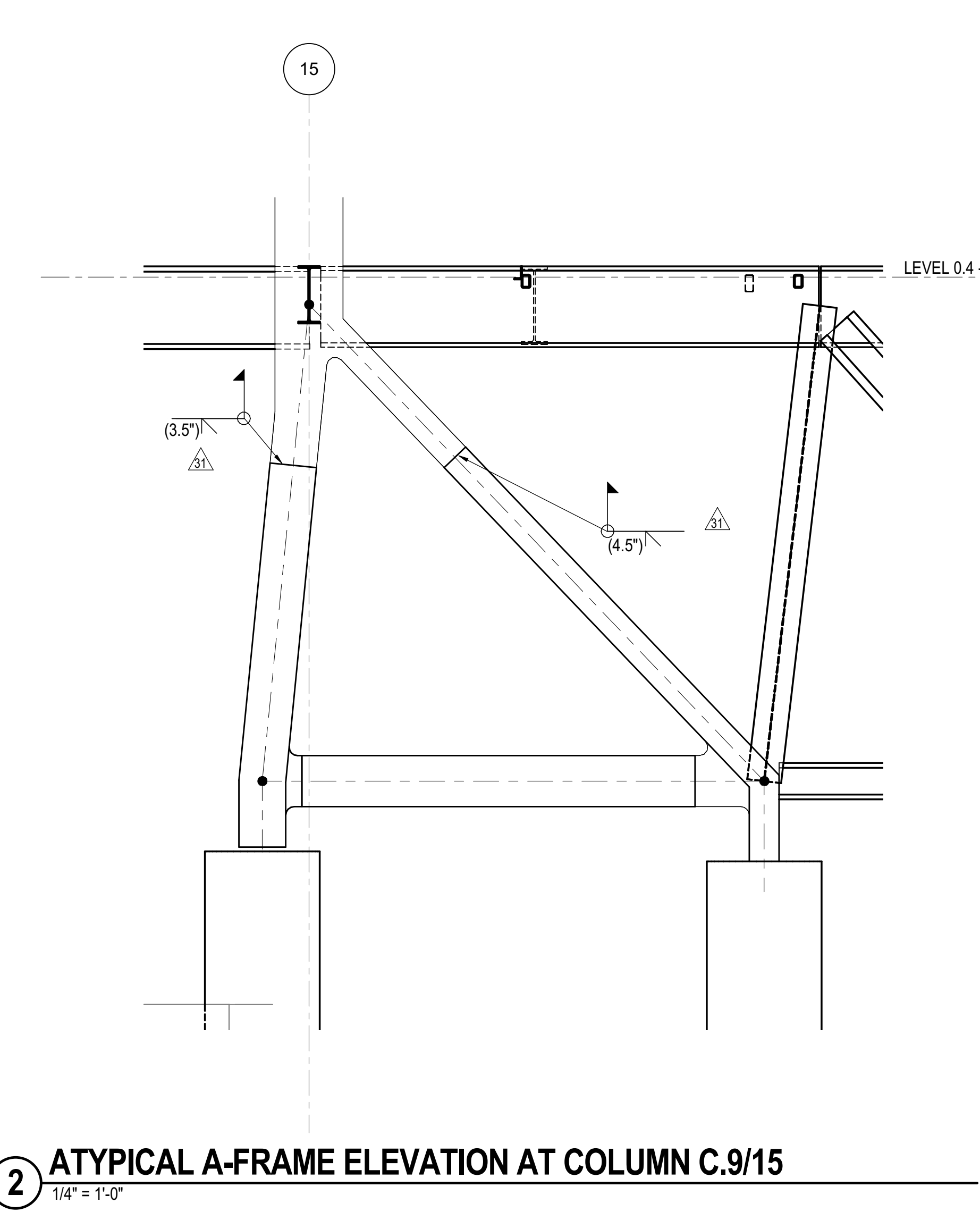
Civil, Mechanical, Electrical, Plumbing,  
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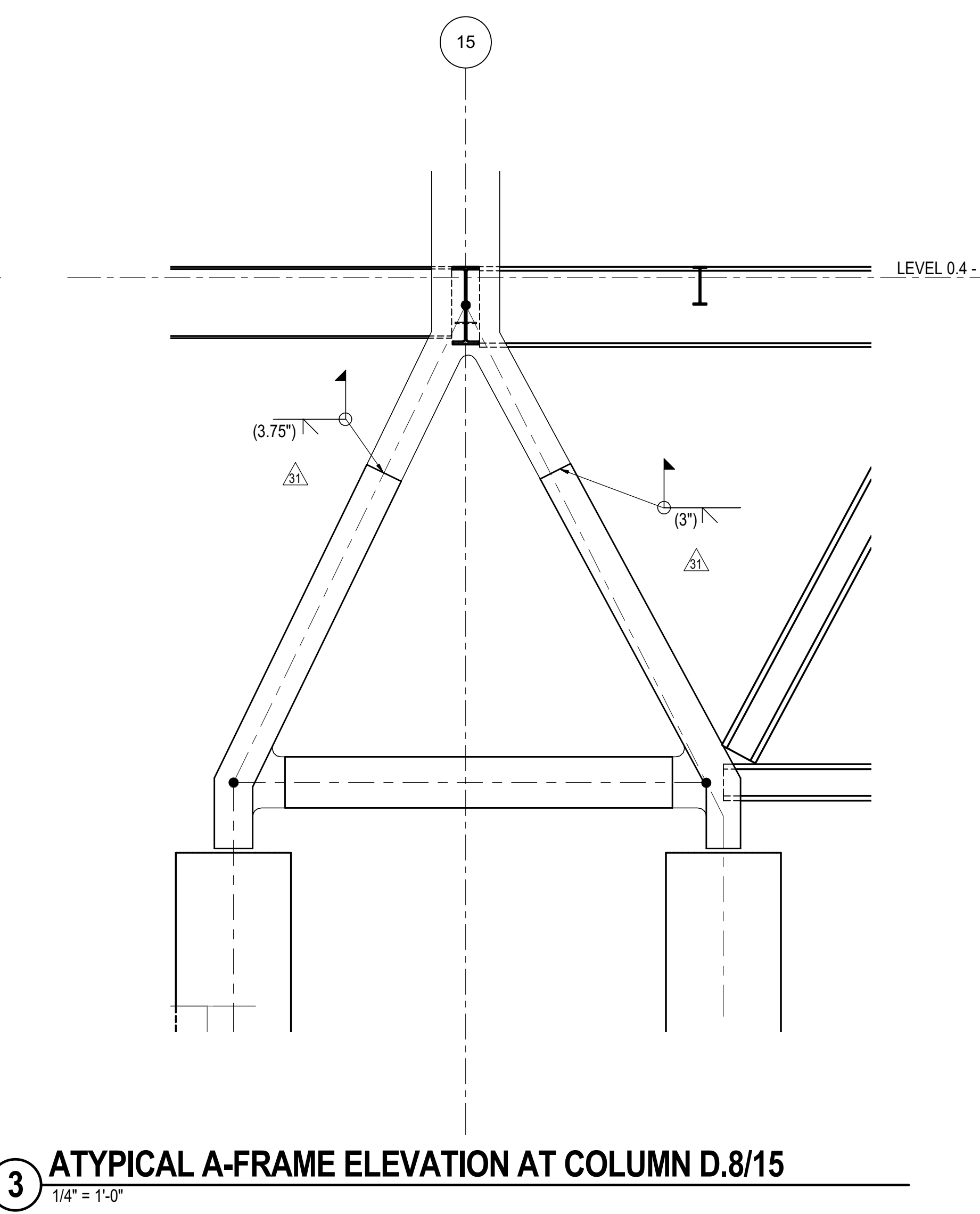
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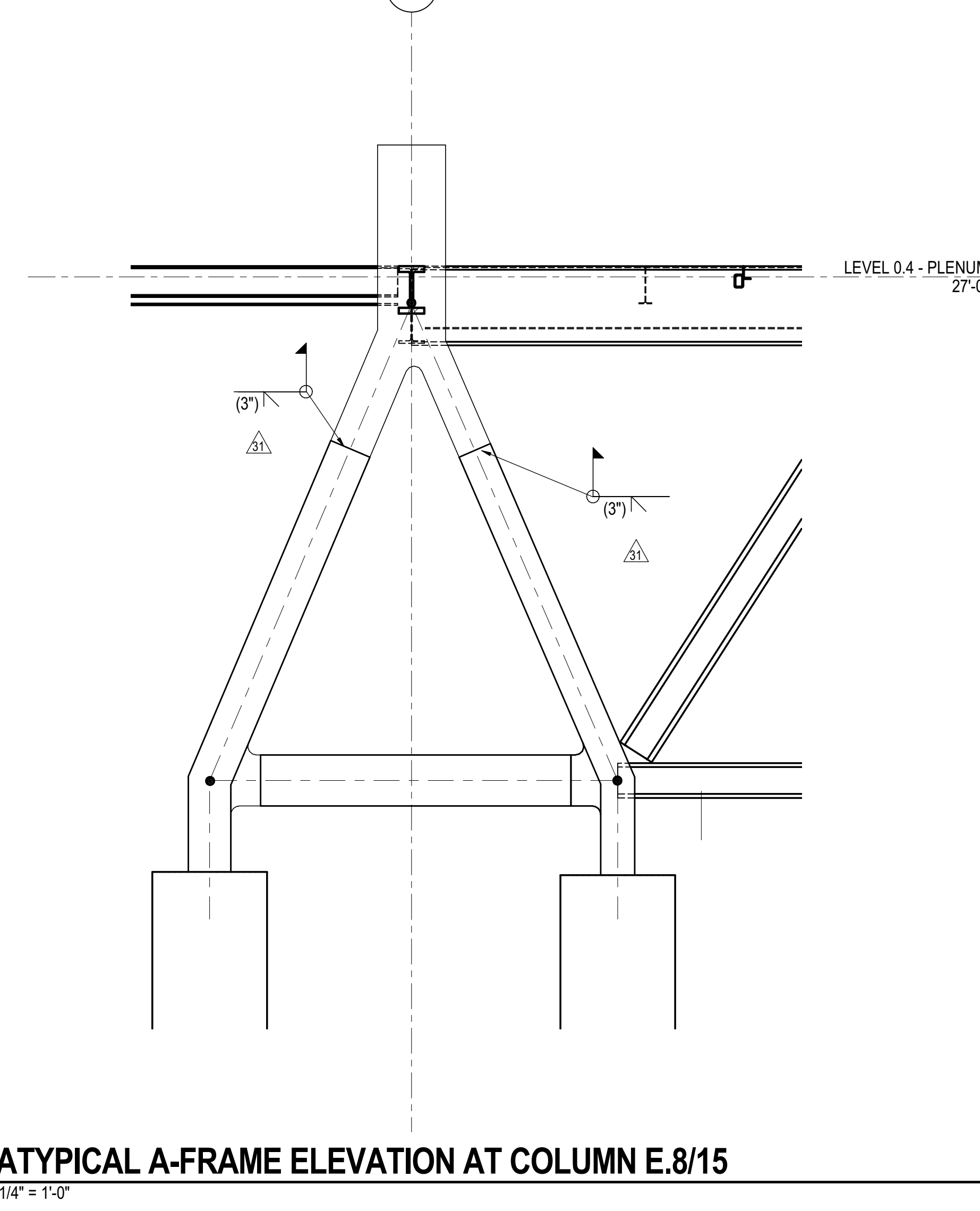
1 ATYPICAL A-FRAME ELEVATION AT COLUMN A.8/17  
1/4" = 1'-0"



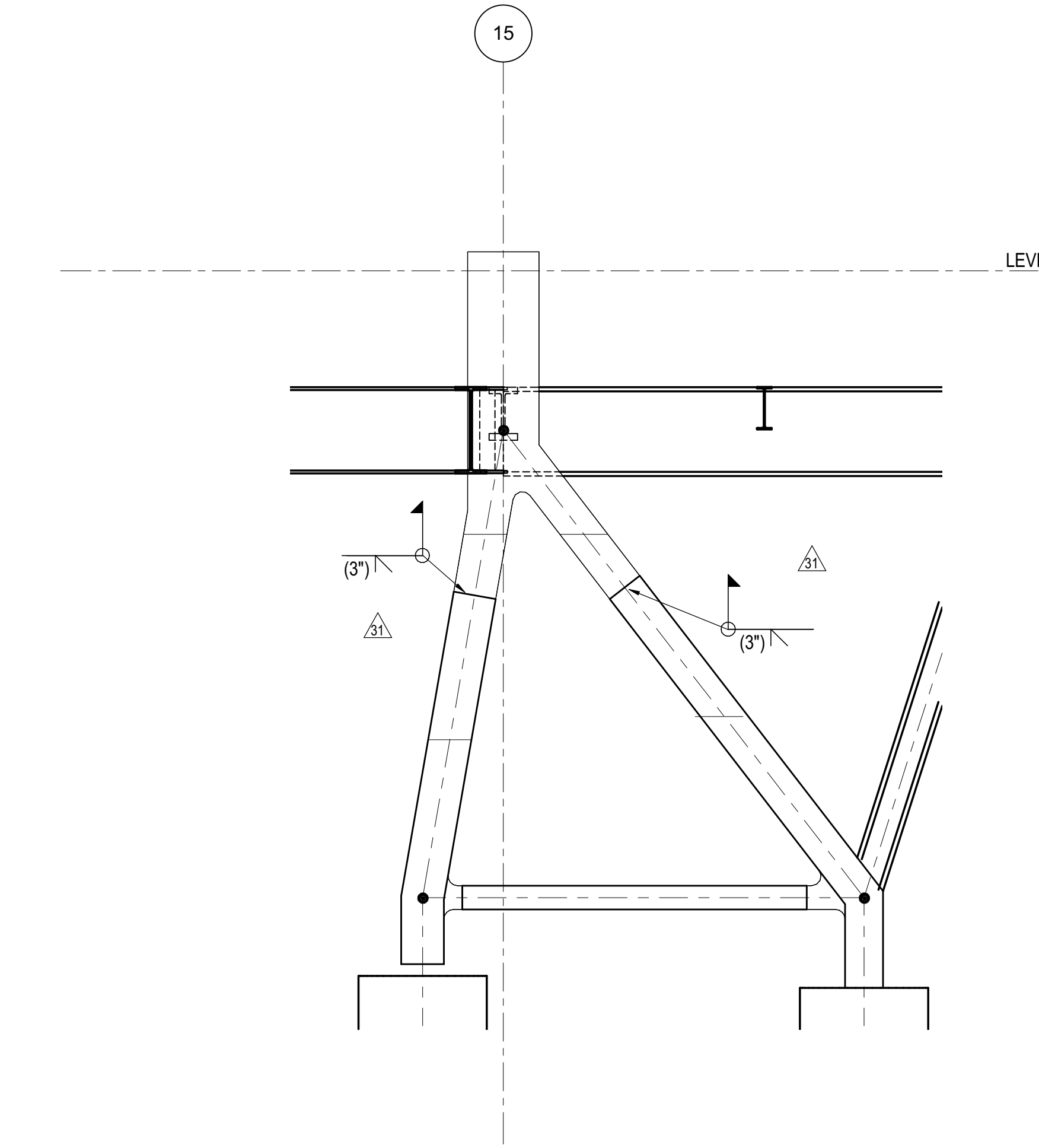
2 ATYPICAL A-FRAME ELEVATION AT COLUMN C.9/15  
1/4" = 1'-0"



3 ATYPICAL A-FRAME ELEVATION AT COLUMN D.8/15  
1/4" = 1'-0"



4 ATYPICAL A-FRAME ELEVATION AT COLUMN E.8/15  
1/4" = 1'-0"



5 ATYPICAL A-FRAME ELEVATION AT COLUMN F.9/15  
1/4" = 1'-0"

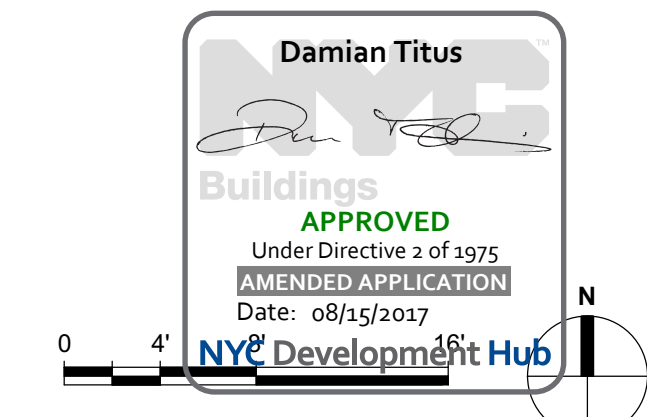
DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	9/24/2014
ASH0046	6/06/2014
ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
Rev	Description

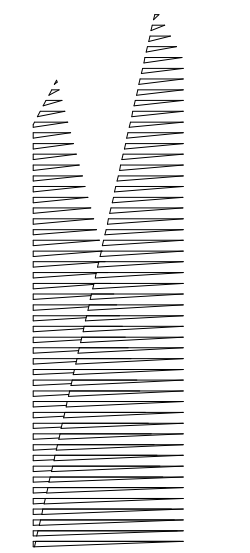
Rev Plot

Date: 06/06/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE -PL -S-325.00**  
**ATYPICAL COLUMNS (A-FRAME COLUMNS)**

Drawing Number / B.C.A.N. Drawing Number  
**S-325.00**  
SHEET 59 of 163





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PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0000	10/14/2014
ASH0007	2/20/2014
PDC #4	2/8/2014
Revision	000

Key Plan

Date: 02/05/14  
Project No: N11330.00  
Revision By: Author  
Sheet Number



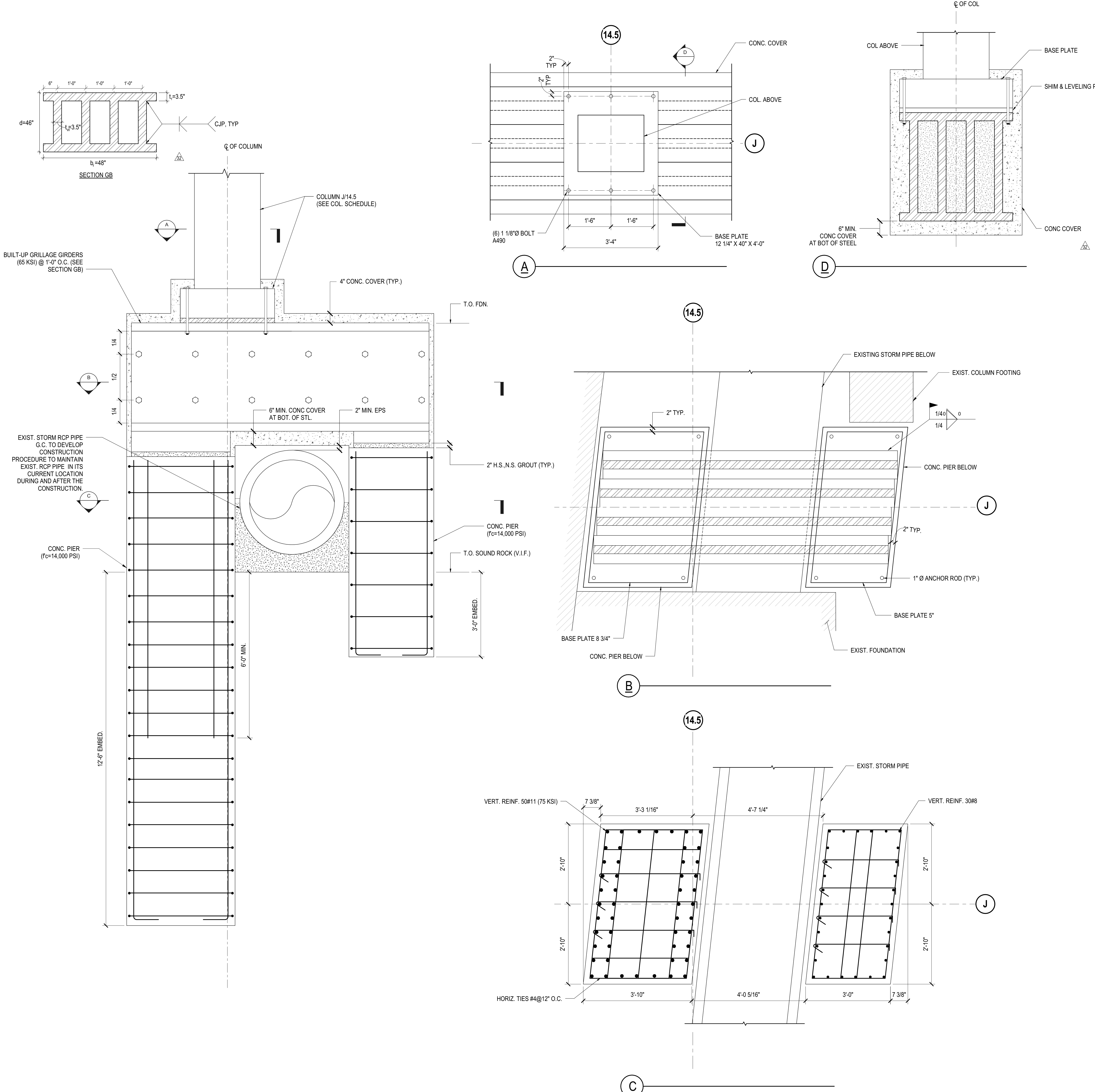
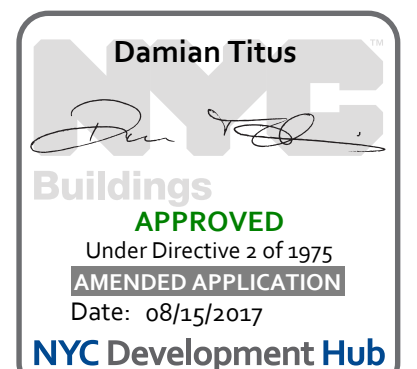
**HYE -PL -S-359.00**

**EAST PLATFORM FOUNDATION SECTIONS AND DETAILS**

Drawing Number / B.SCAN Drawing Number

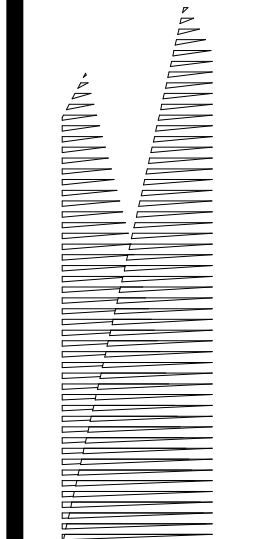
**S-359.00**

SHEET 60 of 163



**6 EMBEDDED PIER & TRANSFER GRILLAGE BM. AT J/14.5**  
3/4" = 1'-0"

S-359.00 EAST PLATFORM FOUNDATION SECTIONS AND DETAILS 10/18/2014 2:37:34 PM C:\Users\mkp\Desktop\Rev\N11330.00 - East Platform - skg.rvt



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

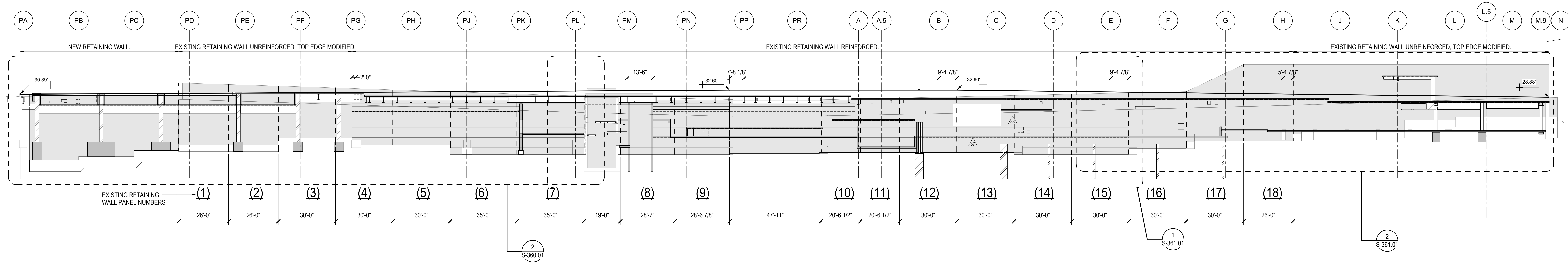
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

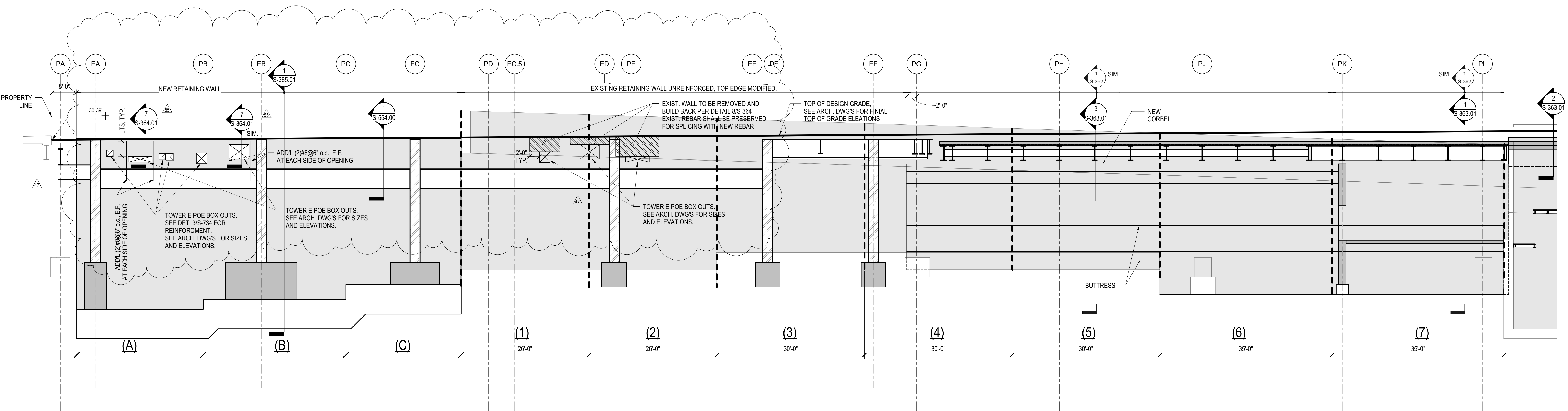
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
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LJRR Substation  
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1 RETAINING WALL @ 33rd STREET - FULL ELEVATION  
1" = 20'-0"



2 2/360 - RETAINING WALL @ 33rd STREET - ELEVATION FROM 11TH AVE TO GRIDLINE PL  
1/8" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH00985	6/17/2015
ASH00974	4/22/2015
ASH00661	2/24/2015
ASH00659	1/29/2014
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00608	10/14/2014
NYC DOB FILING	12/4/2013
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
DR42 PHASE I STRUCTURAL UPDATE	11/1/2013
Rev	Description

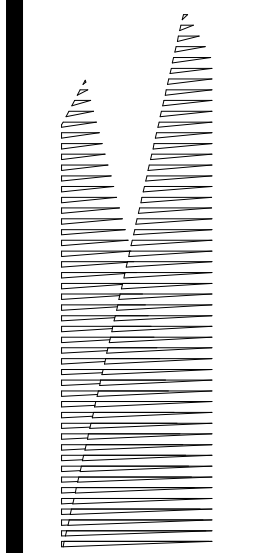
Rev. Description

Date:	11/01/13
Project No:	N11330.00
Drawn By:	Author
Sheet Number:	

**HYE -PL -S-360.01**  
**RETAINING WALL @ 33rd STREET - ELEVATIONS I**

Drawing Number / B.C.A.N. Drawing Number  
**S-360.01**  
: SHEET 61 of 163





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
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Oxford Properties Group  
330 Park Avenue, 17th Floor  
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Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

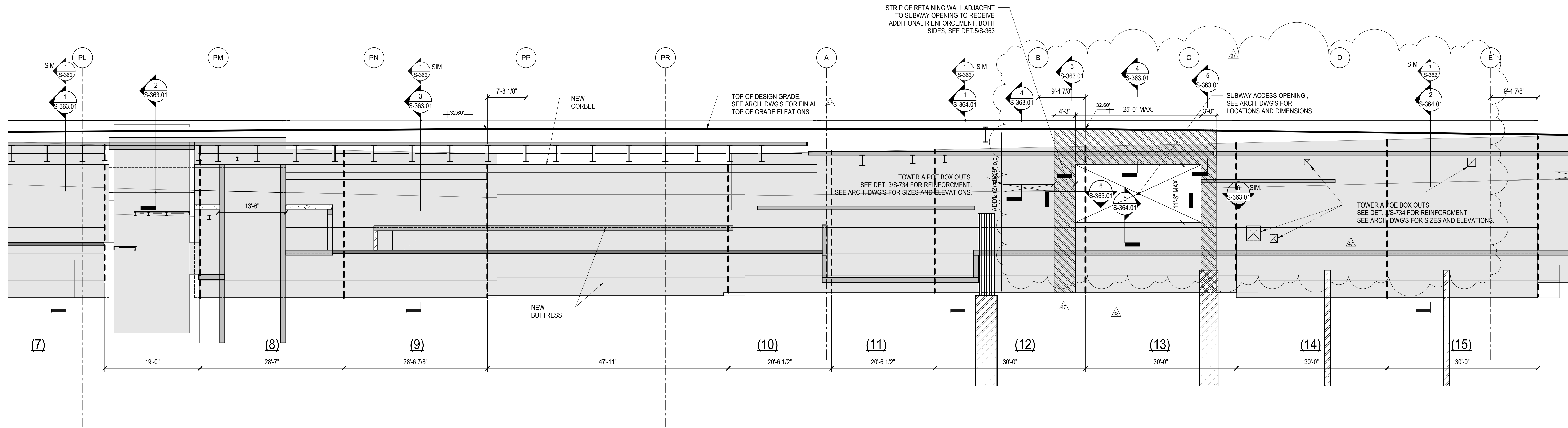
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

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Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

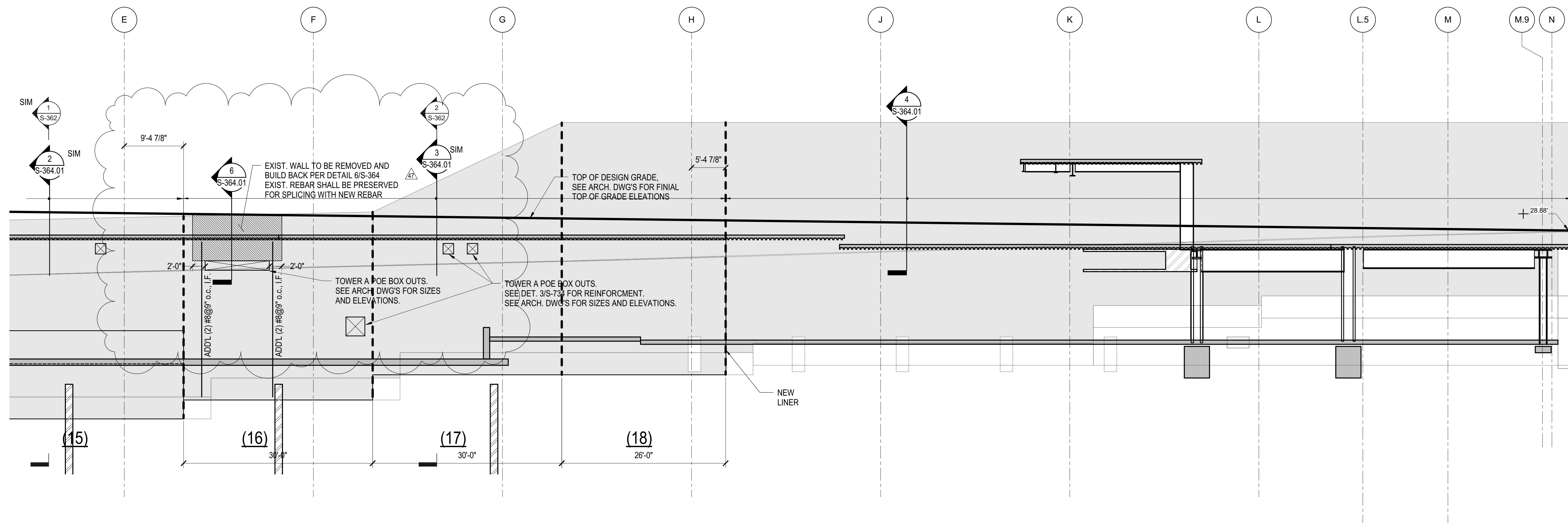
LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
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Tel: 212.973.9200 Fax: 212.682.6172



1 RETAINING WALL @33rd STREET - ELEVATION FROM GRIDLINE PL TO GRIDLINE E

1/8" = 1'-0"



2 RETAINING WALL @33rd STREET - ELEVATION FROM GRIDLINE E TO 10th AVE

1/8" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0074	4/22/2013
ASH0061	2/24/2013
ASH0059	1/8/2014
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	
DLQ2 PHASE I STRUCTURAL UPDATE	11/1/2013
Rev	000

Rev Plot

Drawn By: 11/01/13  
Project No: N11330.00  
Revision By: Author  
Sheet Number: Author

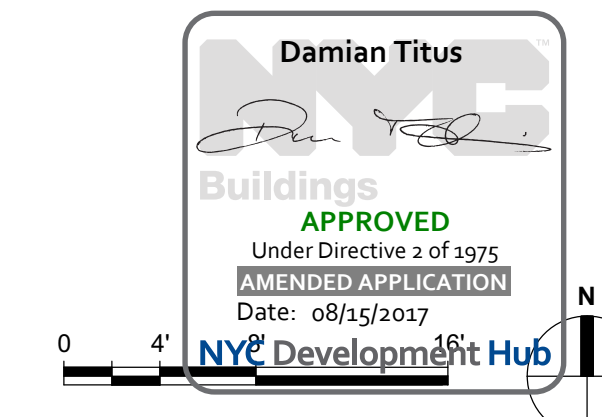
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**RETAINING WALL @ 33rd STREET - ELEVATIONS II**

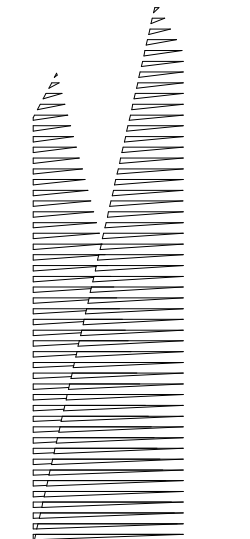
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**S-361.01**

SHEET 62 of 163



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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

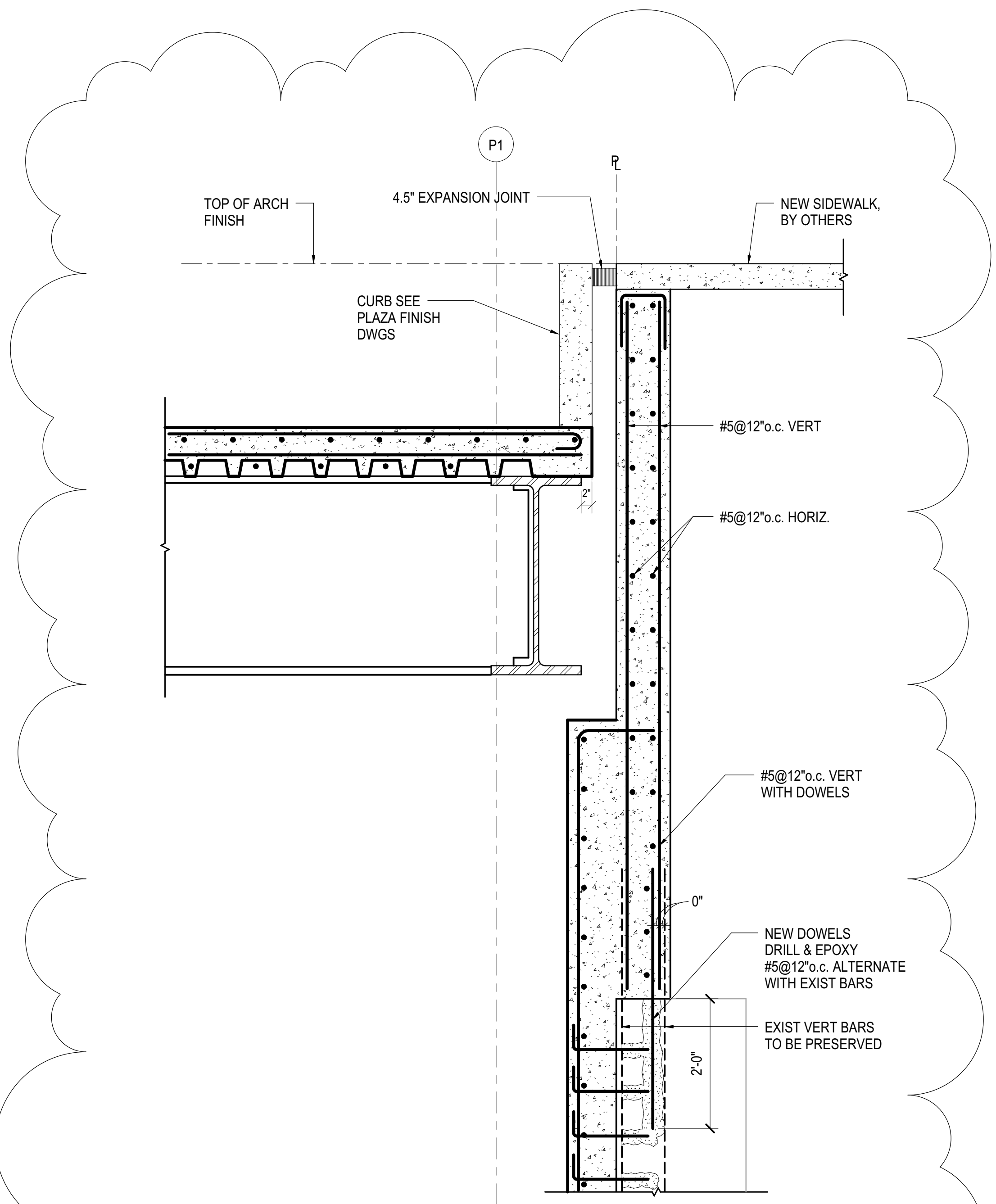
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

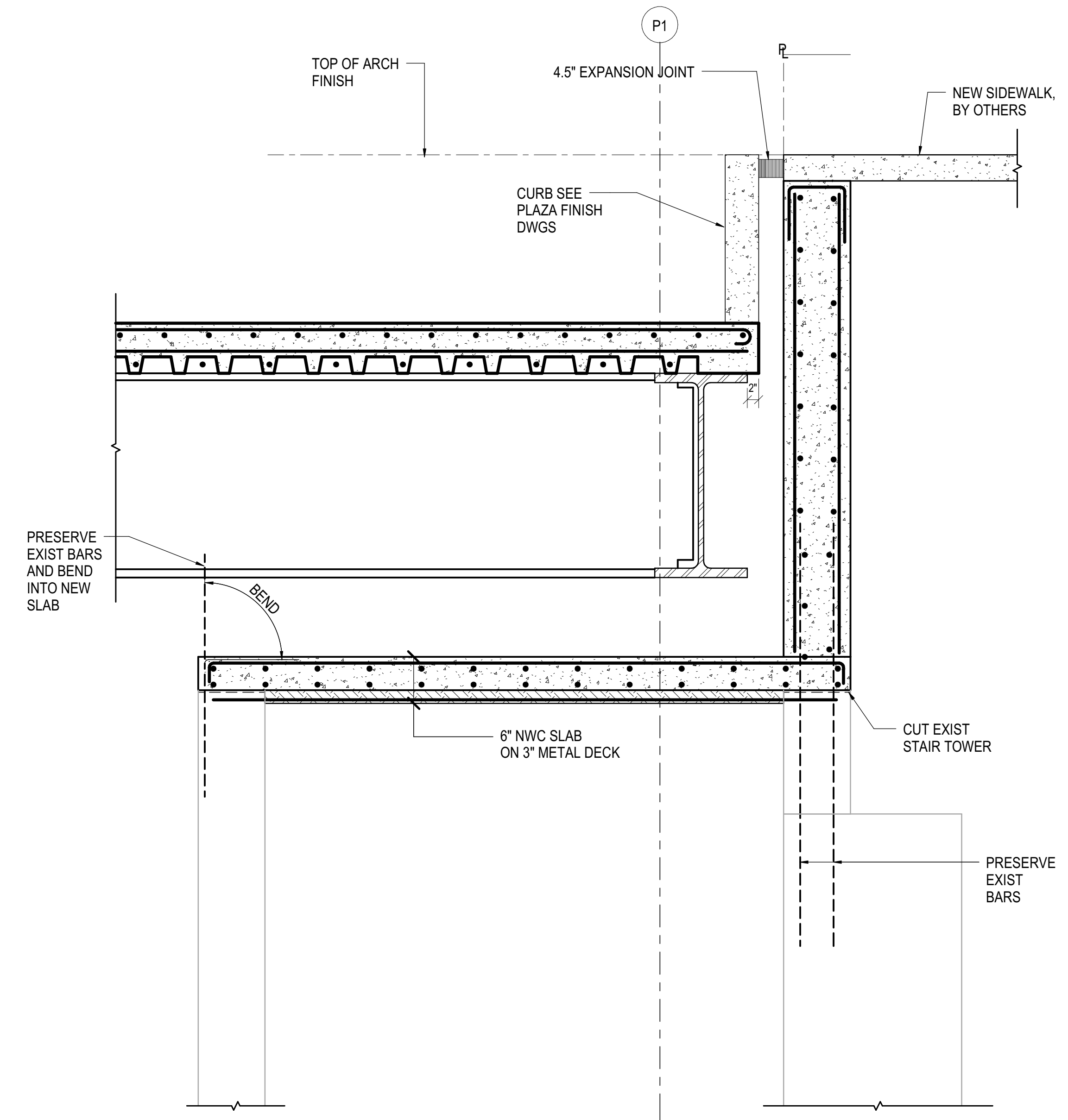
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
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Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

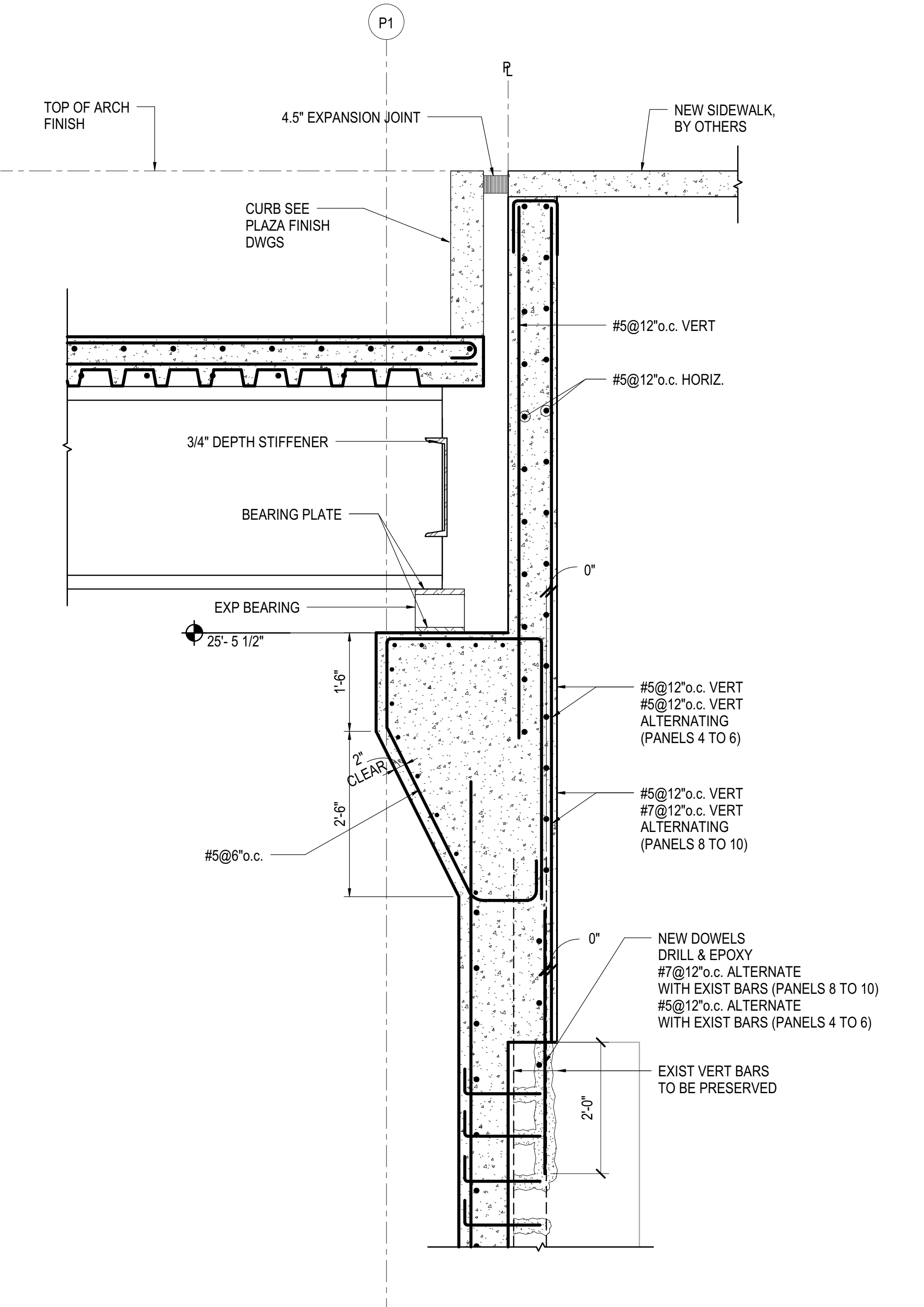
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



**1 SECTION AT PLAZA WITH EXISTING WALL REBUILT - NO CORBEL**  
3/4" = 1'-0"



**2 SECTION AT PLAZA - EXISTING AMTRACK STAIRTOWER**  
3/4" = 1'-0"



**3 SECTION AT PLAZA WITH UPPER PART OF EXISTING WALL TO BE REBUILT**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0074	4/22/2013
ASH0061	2/24/2015
ASH0059	1/9/2014
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
DR42 PHASE I STRUCTURAL UPDATE	11/1/2013

Key Plan

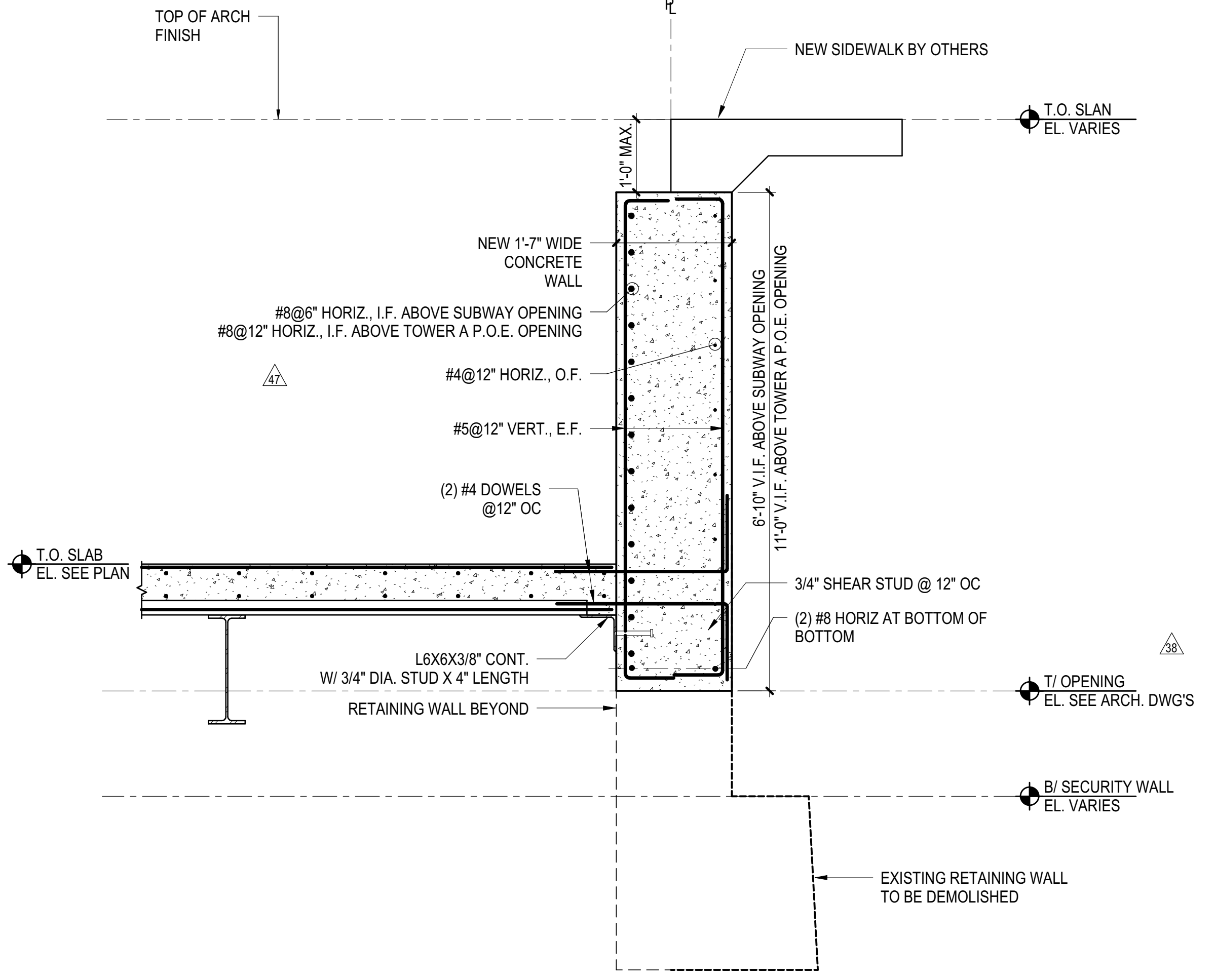
EXISTING HORIZ RETAINING WALL REINF	RETAINING WALL	SUBWAY OPENING
EXISTING CONC RETAINING WALL		FUTURE SUBWAY TUNNEL WALL 18"
		CONTIN. KEY WAY
		PRESERVE EXISTING HORIZ RETAINING WALL REINF
		SAW CUT OPENING FOR SUBWAY CONNECTION INTO EXISTING RETAINING WALL
		NEW CONC LINER

Date: 11/01/13  
Project No: N11330.00  
Revision By: Author  
Sheet Number: Author

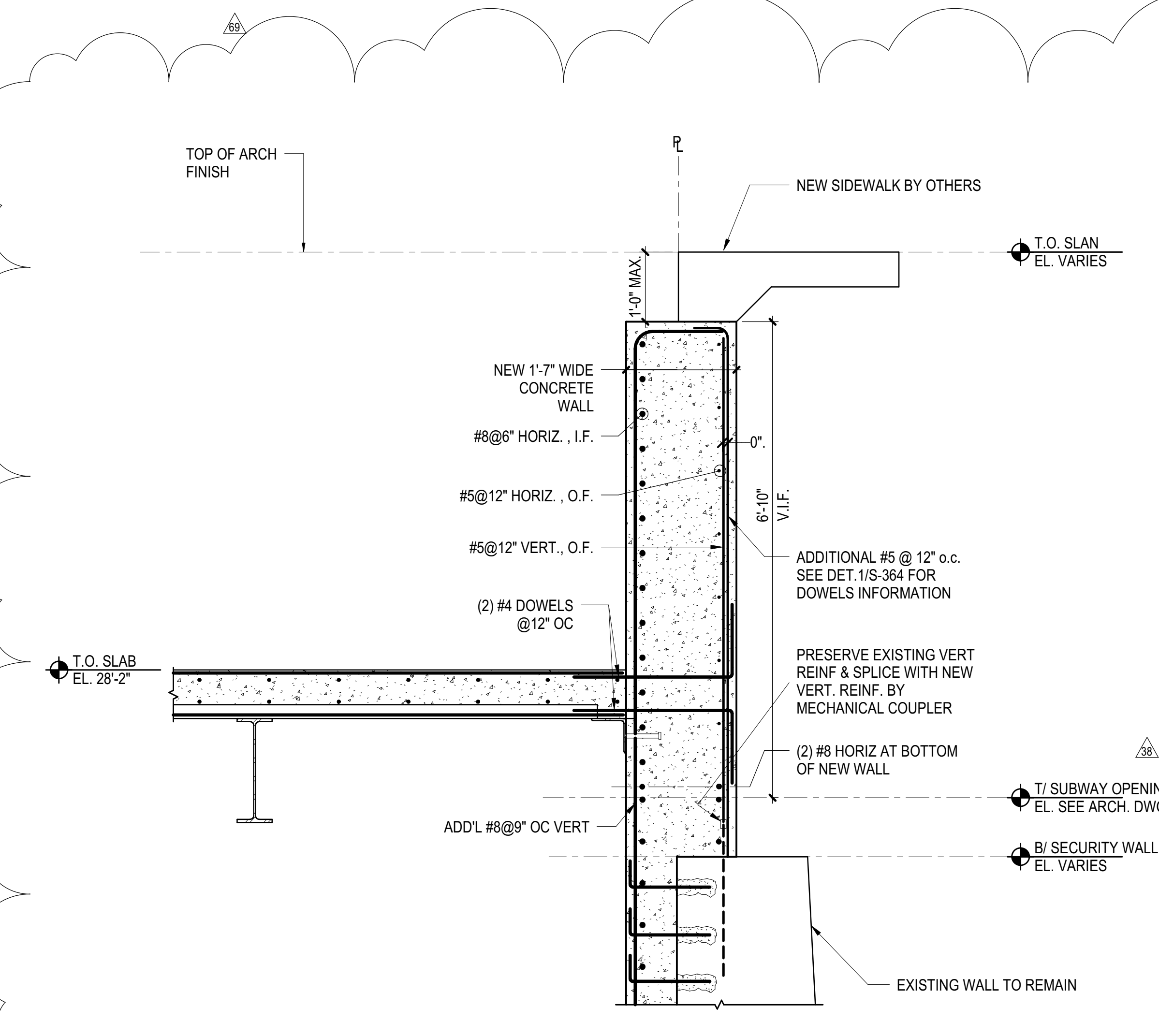
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**RETAINING WALL @ 33rd STREET - TOP SECTION DETAILS I**

Drawing Title  
**S-363.01**  
Drawing Number / Revision Drawing Number  
**S-363.01**

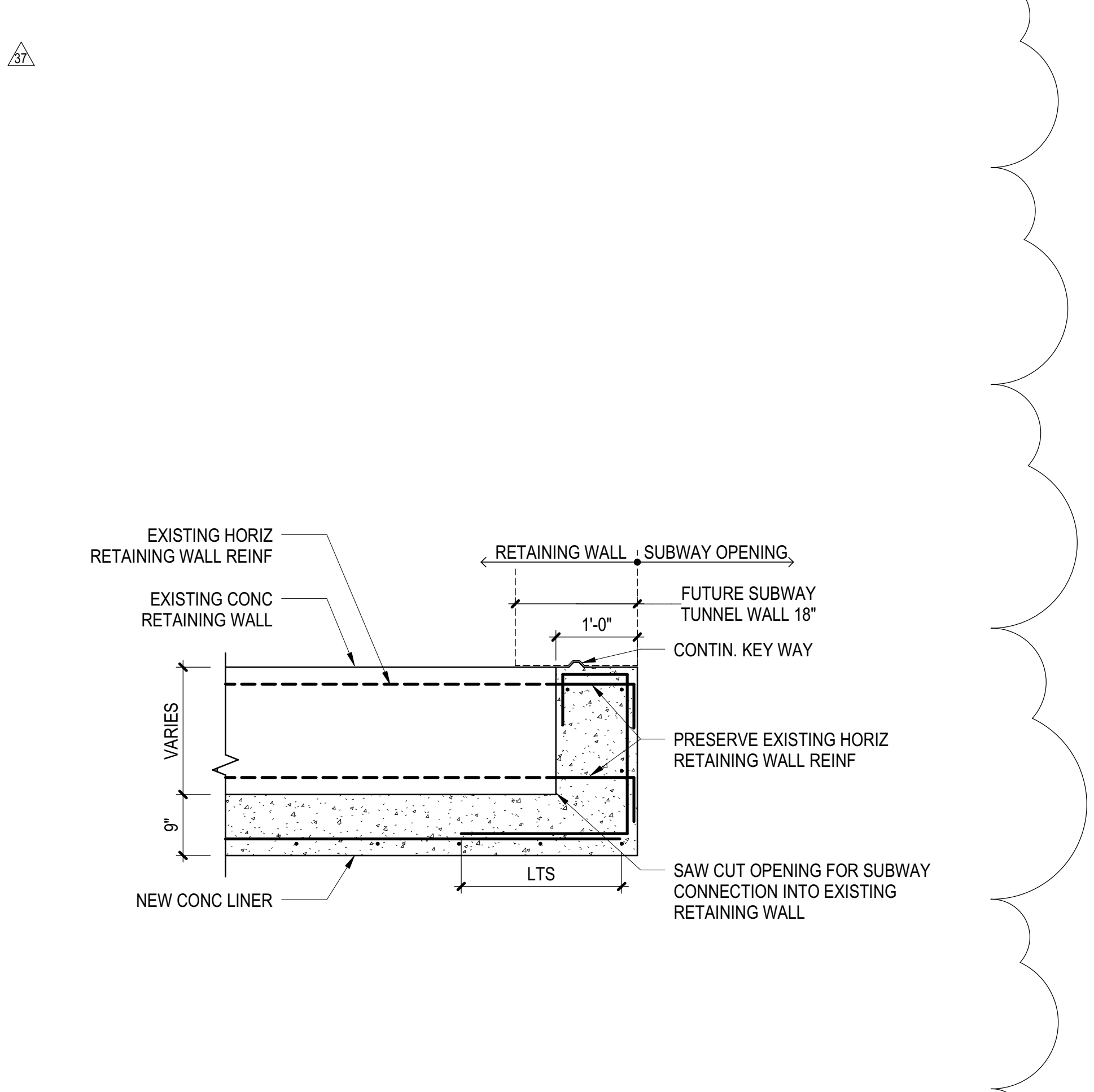
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**4 SECTION AT SUBWAY CONNECTION WITH UPPER PART OF EXISTING WALL TO BE REBUILT**  
3/4" = 1'-0"

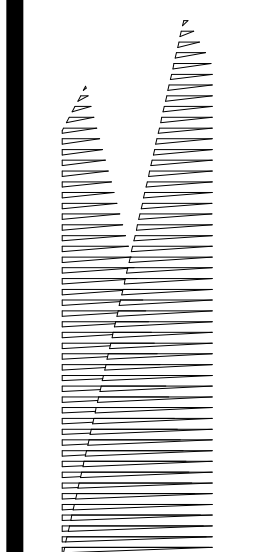


**5 SECTION AT SUBWAY CONNECTION WITH UPPER PART OF EXISTING WALL TO BE REBUILT**  
3/4" = 1'-0"



**6 SECTION AT EDGE OF NEW SUBWAY OPENING**  
3/4" = 1'-0"

Damian Titus  
APPROVED  
Under Directive 3 of 1975  
NYC Development Hub  
Date: 08/15/2017



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
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Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0074	4/22/2013
ASH0061	2/24/2015
ASH0059	1/8/2014
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	11/22/2013
DH42 PHASE I STRUCTURAL UPDATE	11/1/2013
Design	086

Project No.	11.01.13
Revision No.	N11330.00
Author	

Drawn By: **DAMIAN TITUS**  
Checked By: **DAMIAN TITUS**  
Date: 08/15/2017

Approved By: **DAMIAN TITUS**  
Date: 08/15/2017

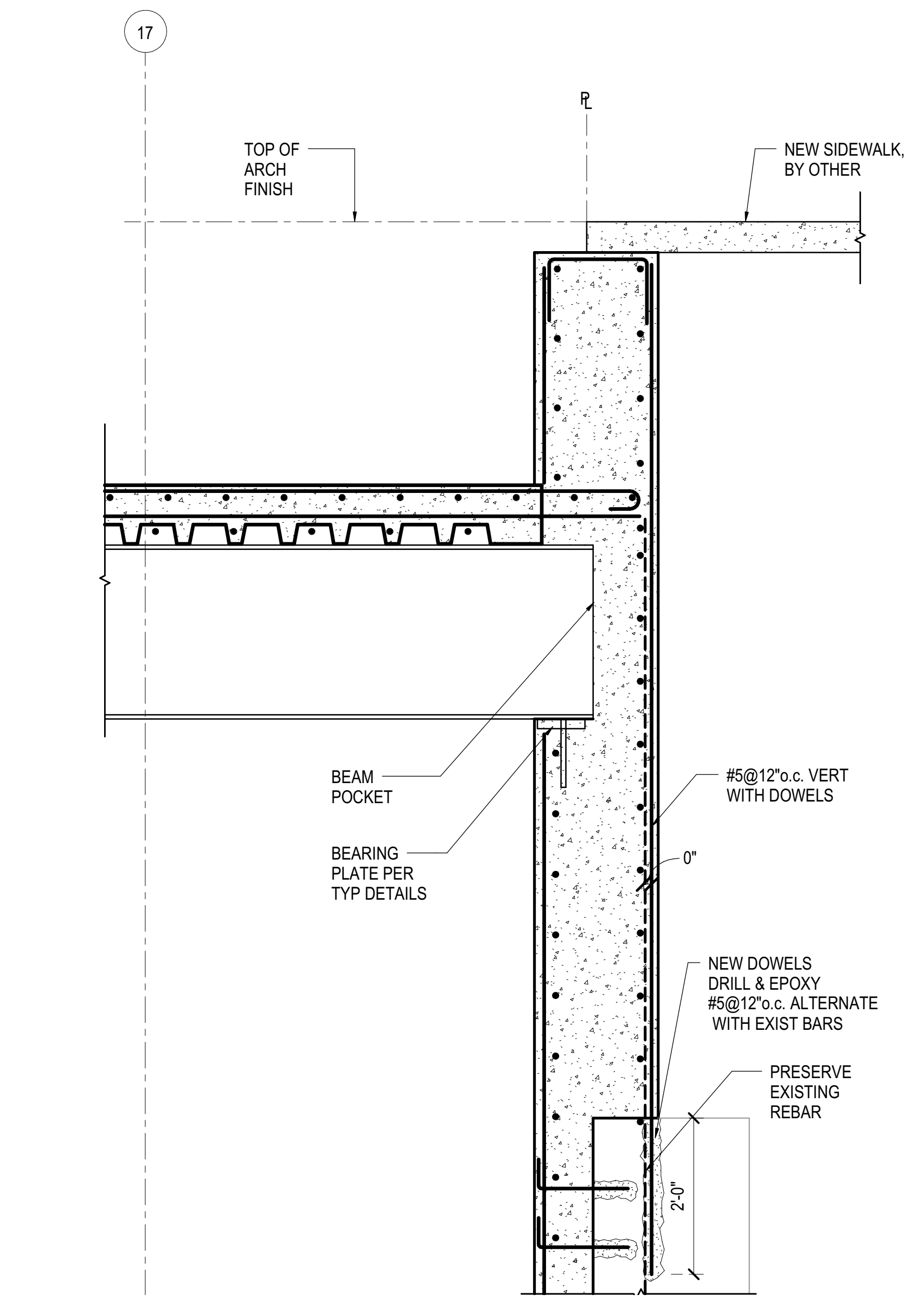
Approved By: **DAMIAN TITUS**  
Date: 08/15/2017

Approved By: **DAMIAN TITUS**  
Date: 08/15/2017

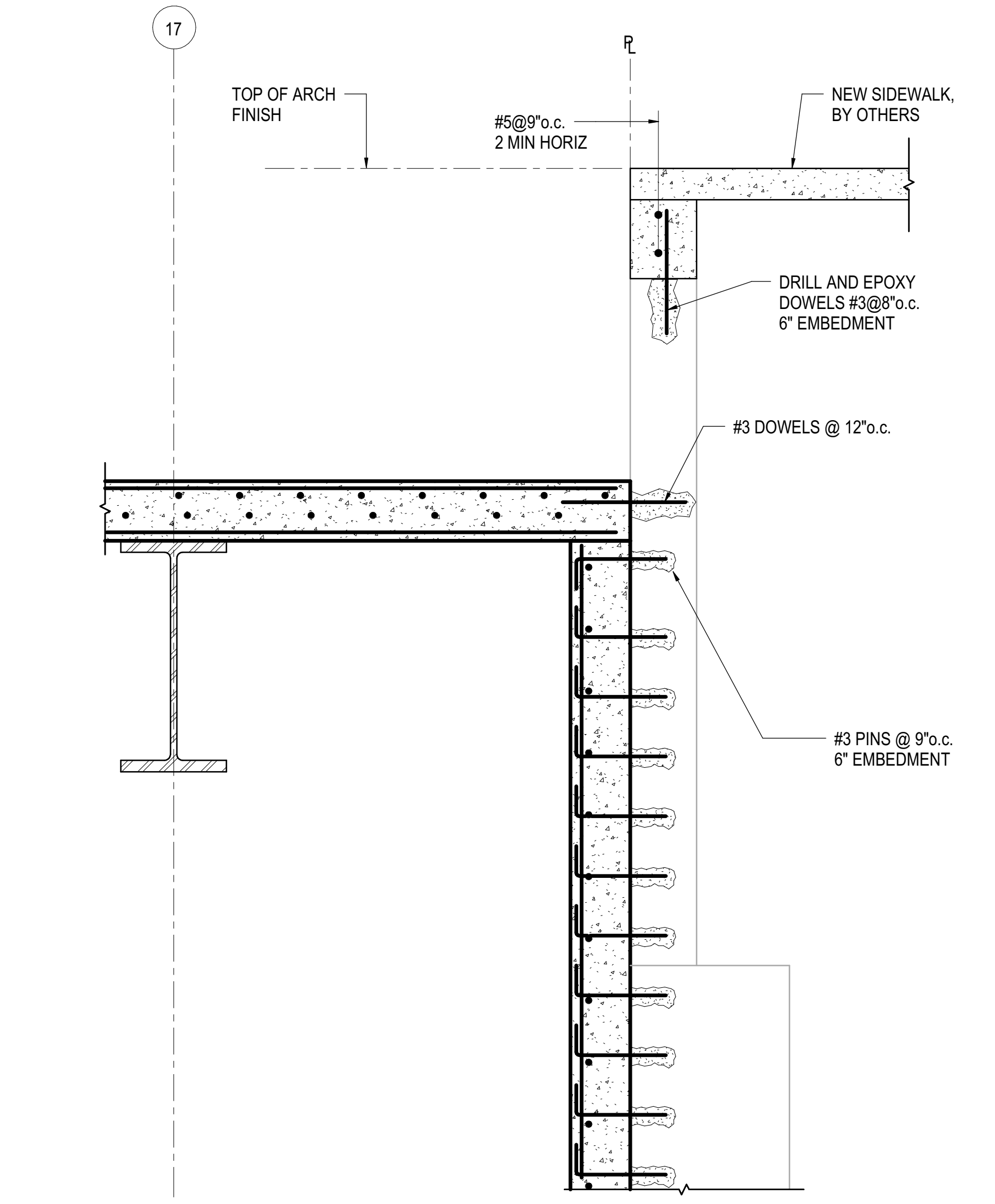
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Date: 08/15/2017

Approved By: **DAMIAN TITUS**  
Date: 08/15/2017

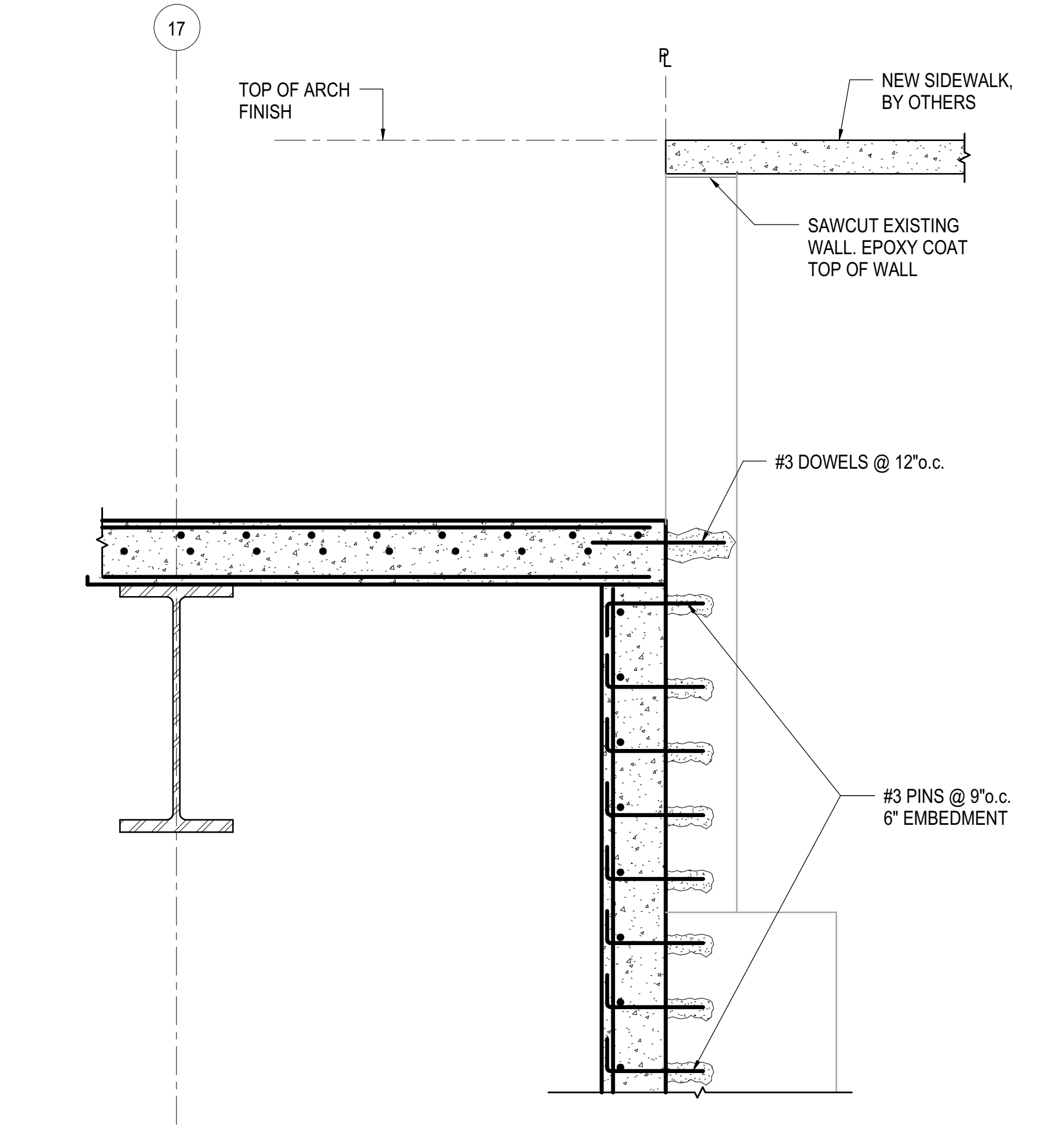
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Date: 08/15/2017



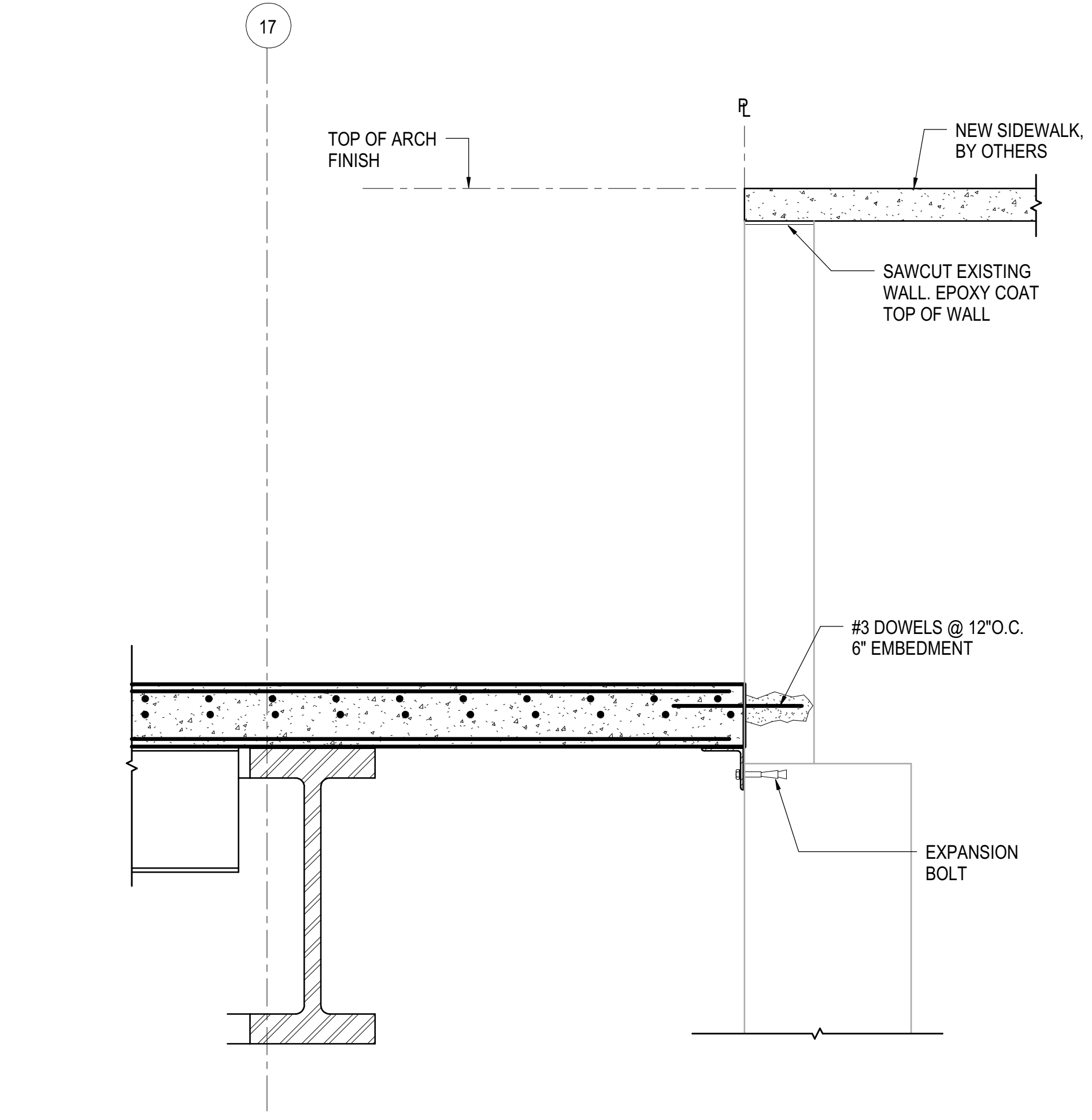
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3/4" = 1'-0"



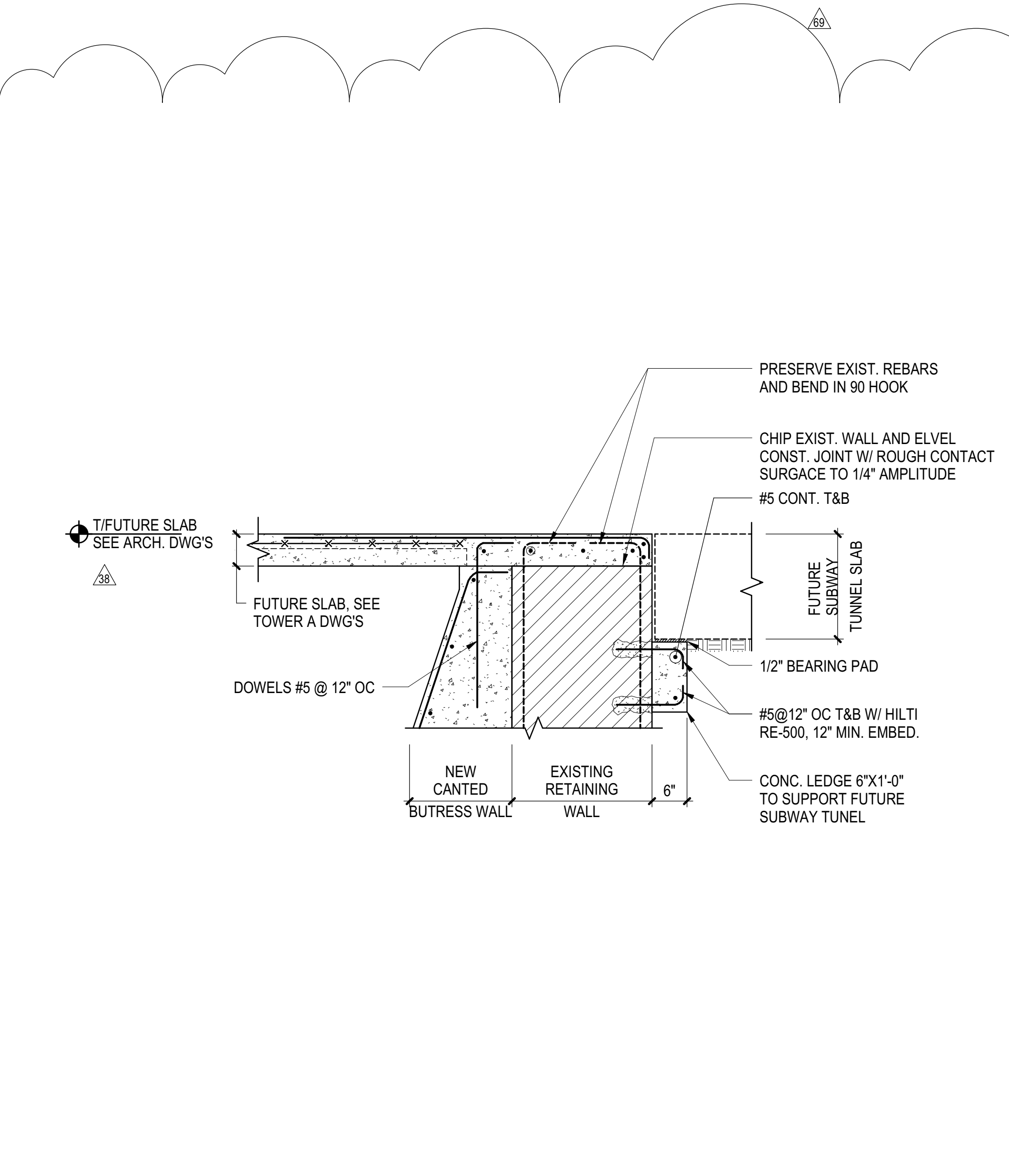
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3/4" = 1'-0"



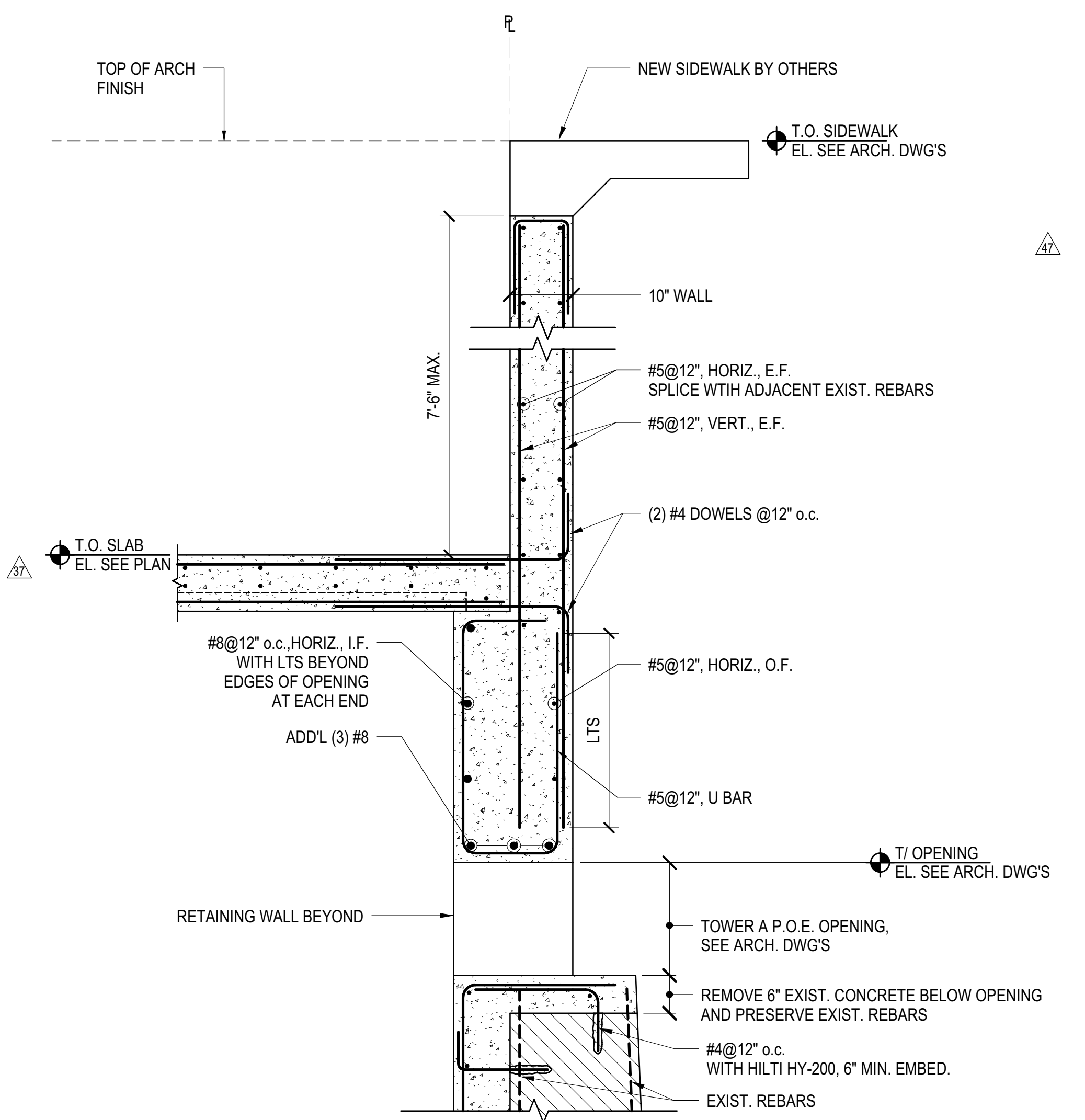
**3** SECTION AT TOWER A WITH EXISTING WALL HIGHER THAN TOP OF CURB  
3/4" = 1'-0"



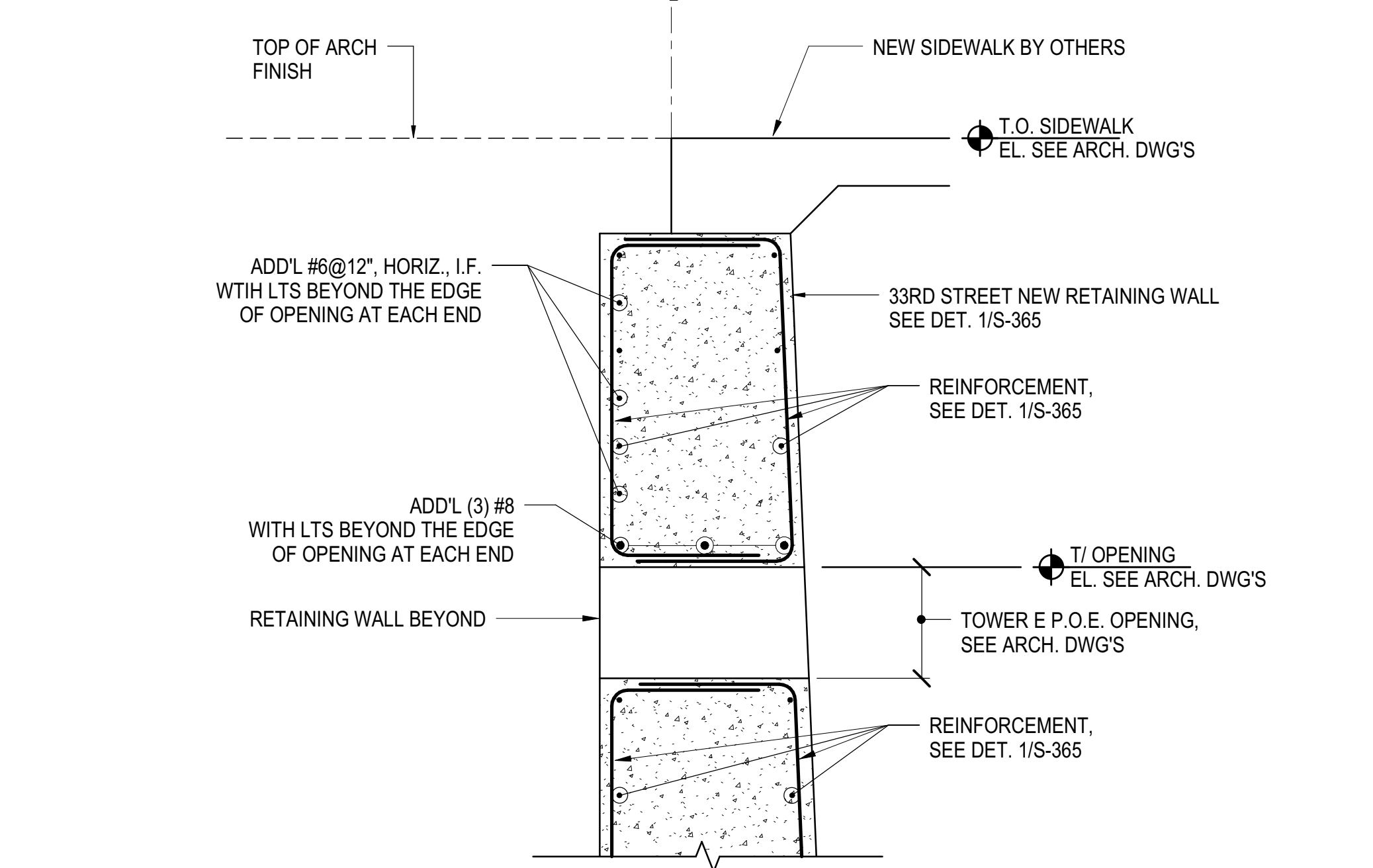
**4** SECTION AT TOWER A WITH EXISTING WALL HIGHER THAN TOP OF CURB - NO LINER  
3/4" = 1'-0"



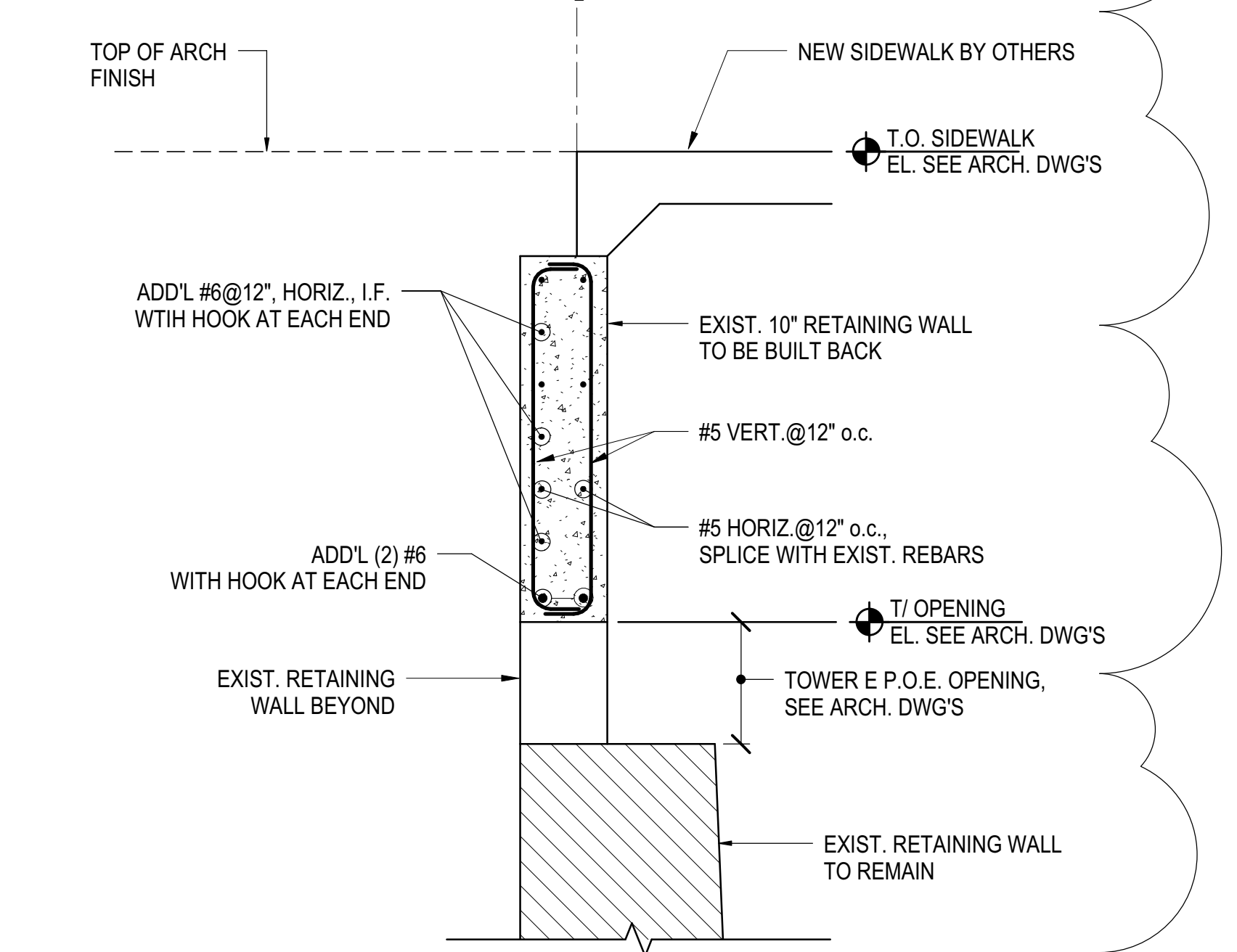
**5** SECTION AT BOTTOM OF NEW SUBWAY OPENING  
3/4" = 1'-0"



**6** SECTION AT P.O.E. OPENING  
3/4" = 1'-0"



**7** SECTION AT P.O.E. OPENING  
3/4" = 1'-0"



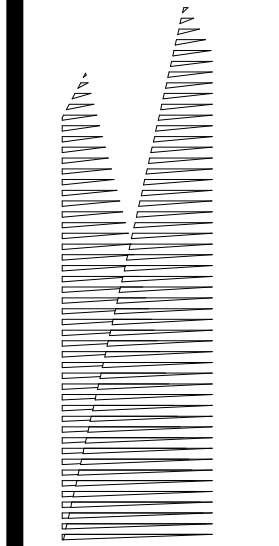
**8** SECTION AT P.O.E. OPENING  
3/4" = 1'-0"

**HYE -PL -S-364.01**

**RETAINING WALL @ 33rd STREET - TOP SECTION DETAILS II**

Project No. 11.01.13  
Revision No. N11330.00  
Author  
Drawing Number

Approved By: **DAMIAN TITUS**  
Date: 08/15/2017



*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Owner*  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

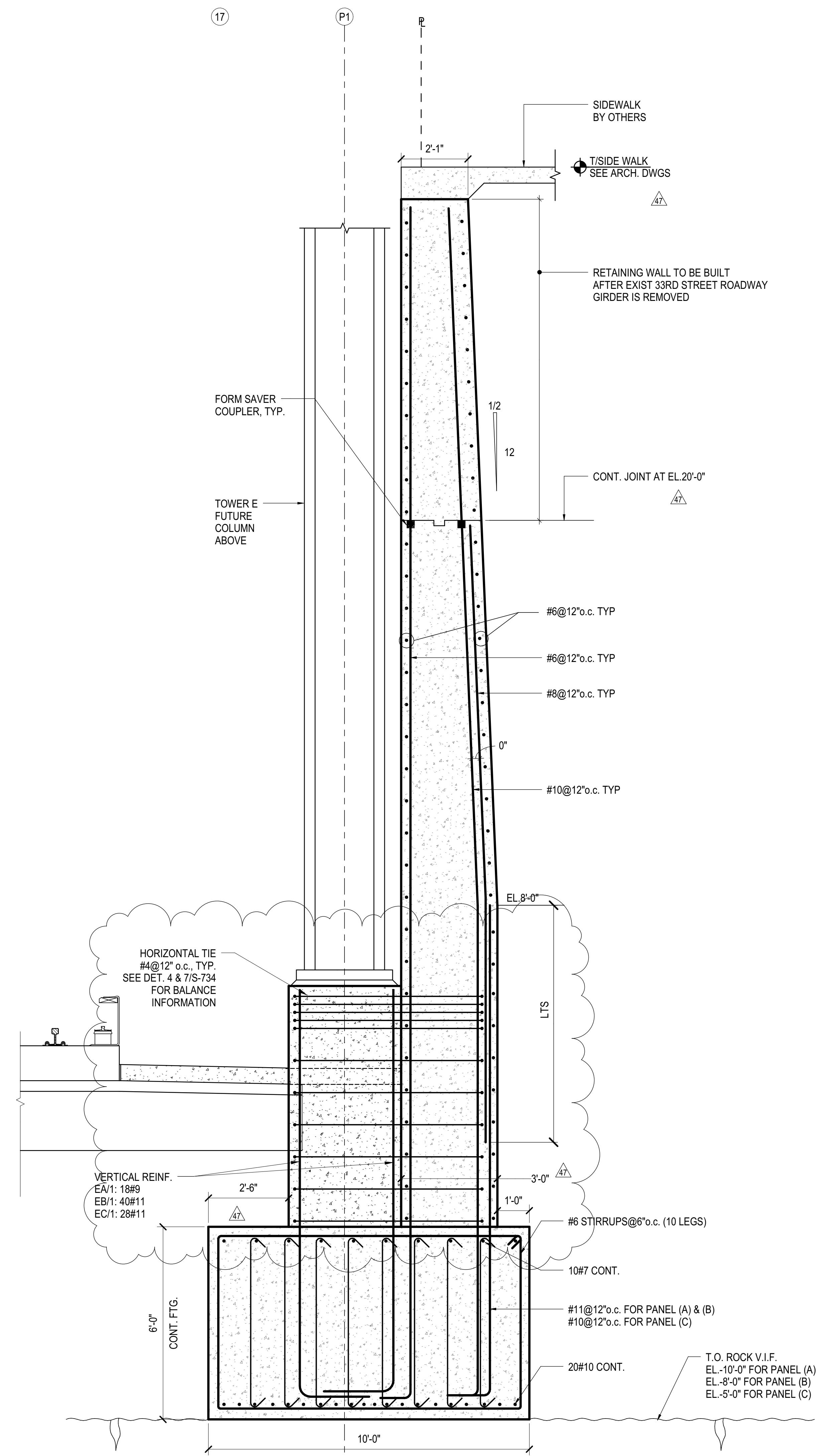
*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

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New York, NY 10010  
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*Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Elevators, Transportation Group*  
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New York, NY 10005  
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77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

*LJRR Substation*  
AECOM  
605 Third Avenue  
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Tel: 212.973.9200 Fax: 212.682.6172



**1** TYPICAL NEW RETAINING WALL AT 33RD STREET  
1/2" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
AS180071	4/23/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
AS18008	10/14/2014
AS180003	1/14/2014
NYC DOB FILING	12/4/2013
NYC	DOB

Key Plan

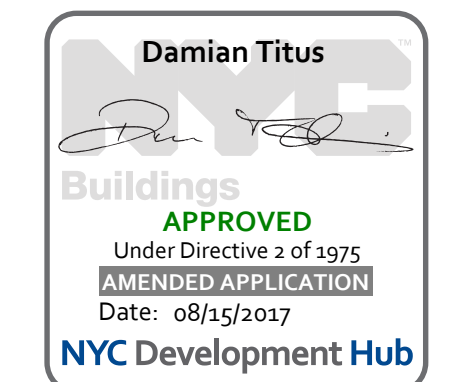
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Project No.	N11330.00
Drawn By	Author
Sheet Number	

**HYE -PL -S-365.01**

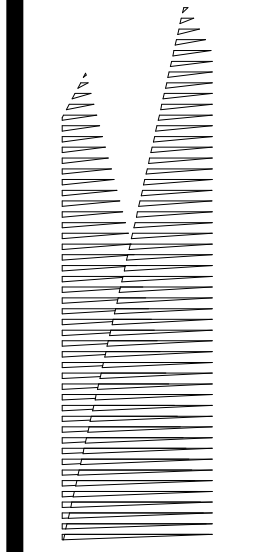
**TYPICAL NEW  
RETAINING WALL AT  
33RD STREET**

Drawing Number / B.C.A.N. Drawing Number  
**S-365.01**

**SHEET 65 of 163**



APPROVED  
Under Directive 1 of 1975  
Professional Application  
Date: 08/15/2017  
NYC Development Hub



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
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New York, NY 10022  
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Construction Manager  
Fishman Construction Corporation  
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Tel: 212.708.3600

Architect  
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New York, NY 10005  
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LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASHP0123	06/29/2016
ASHP0111	03/02/2016
ASHP0111	03/02/2016
ASHP0111	03/02/2016

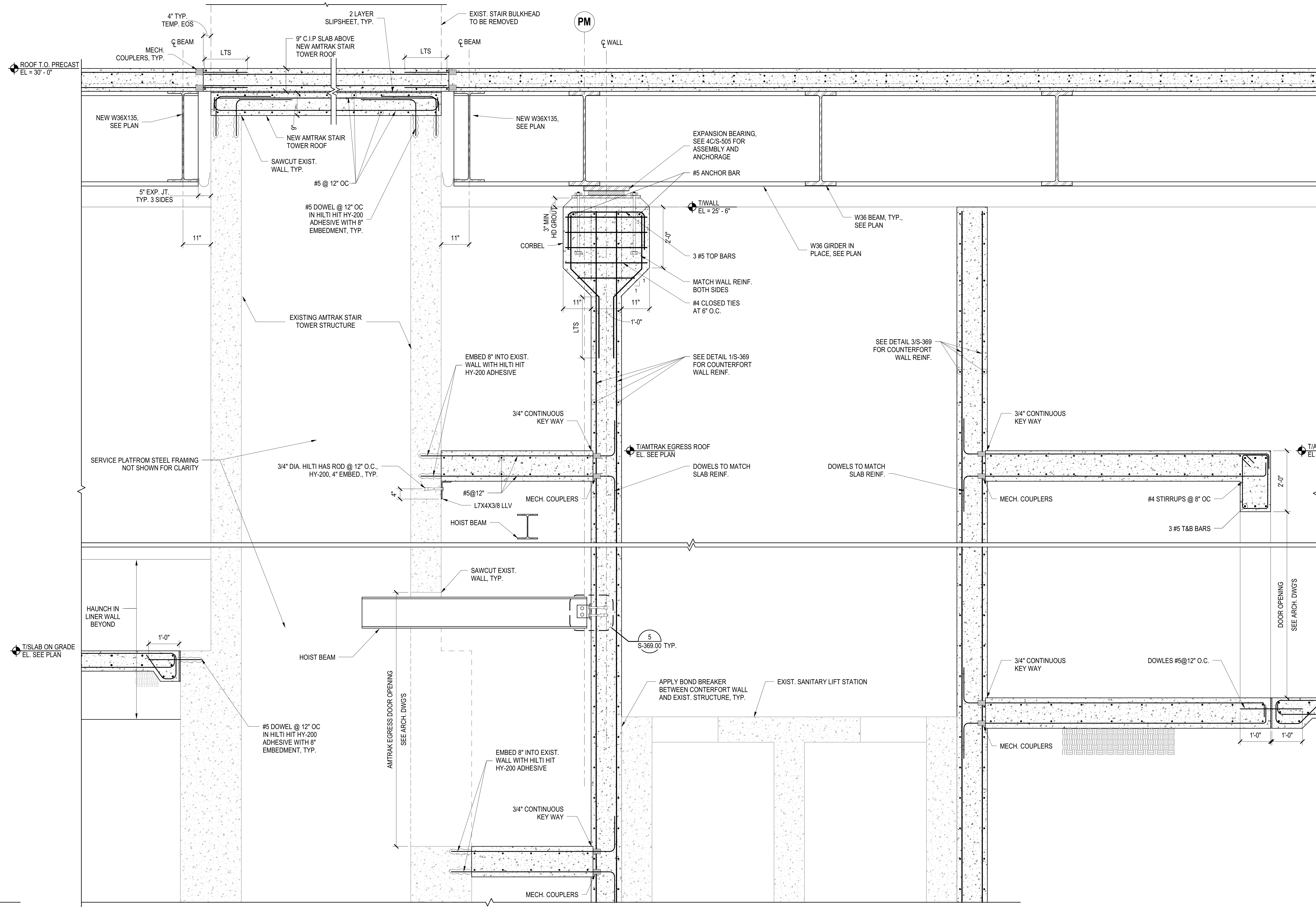
Key Plan

Date: 03/02/16  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

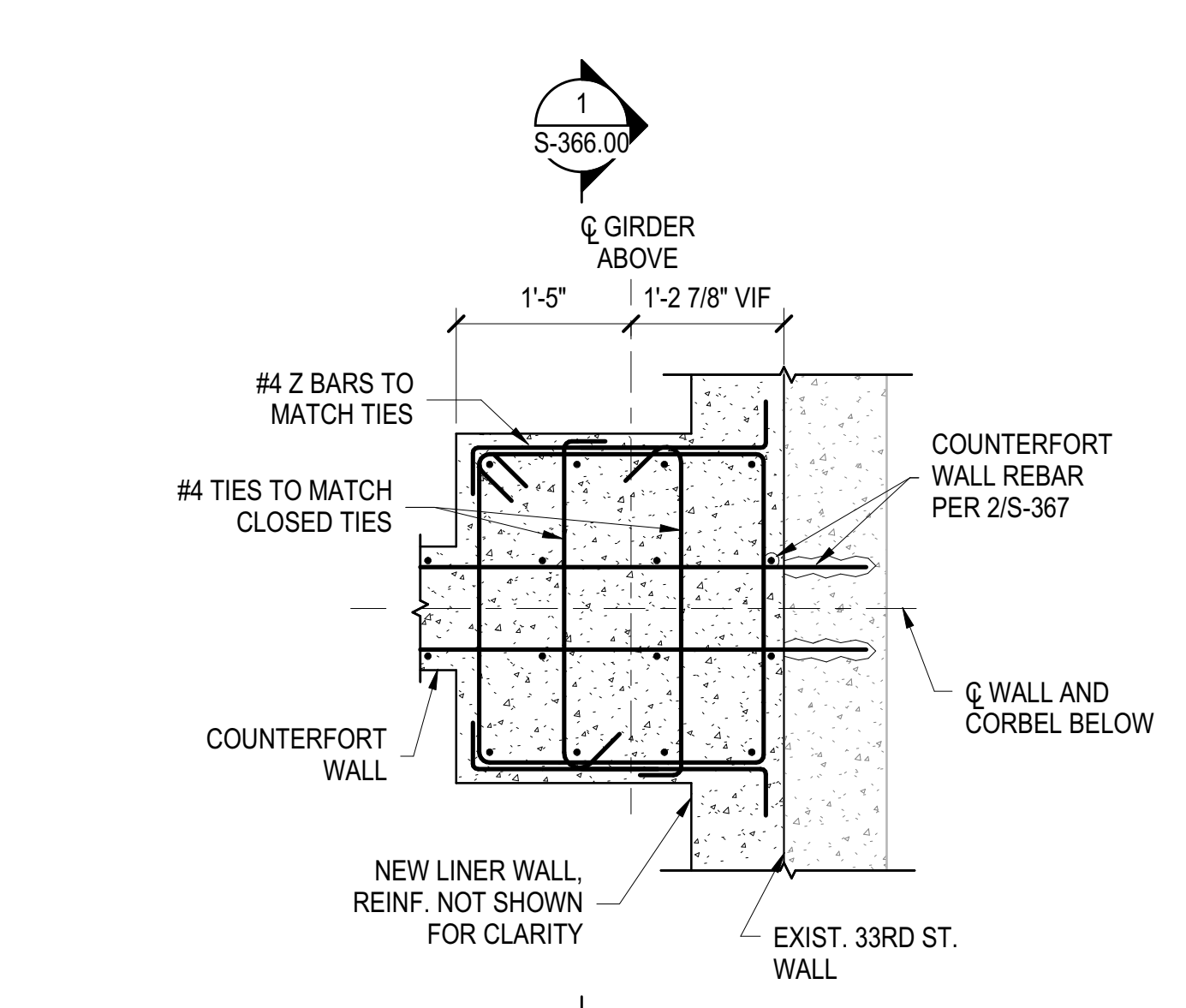
**HYE -PL -S-366.00**

SECTIONS AT AMTRAK STAIR

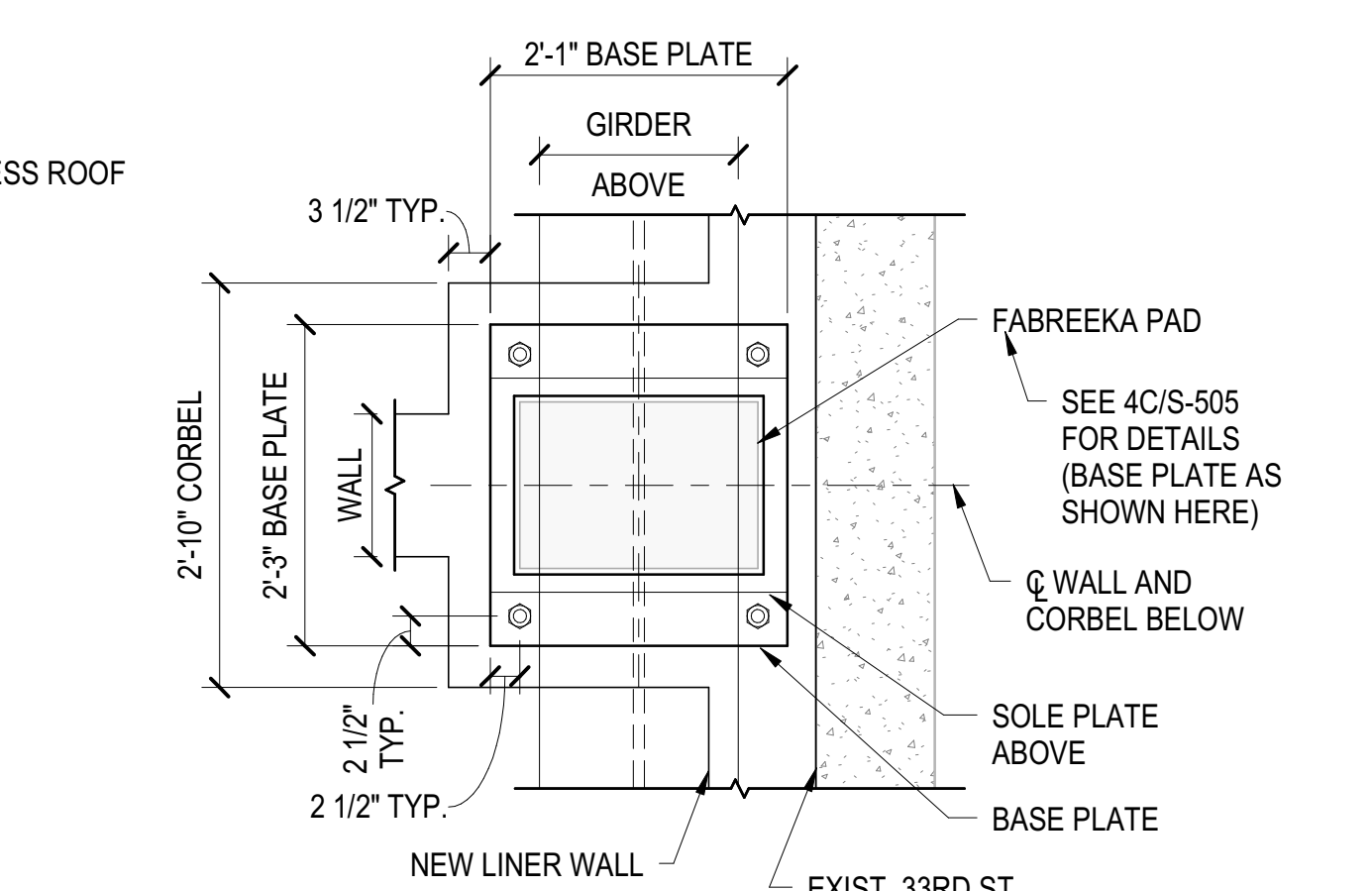
Drawing Number / Revision Drawing Number  
S-366.00  
Date: 08/15/2017  
NYC Development Hub



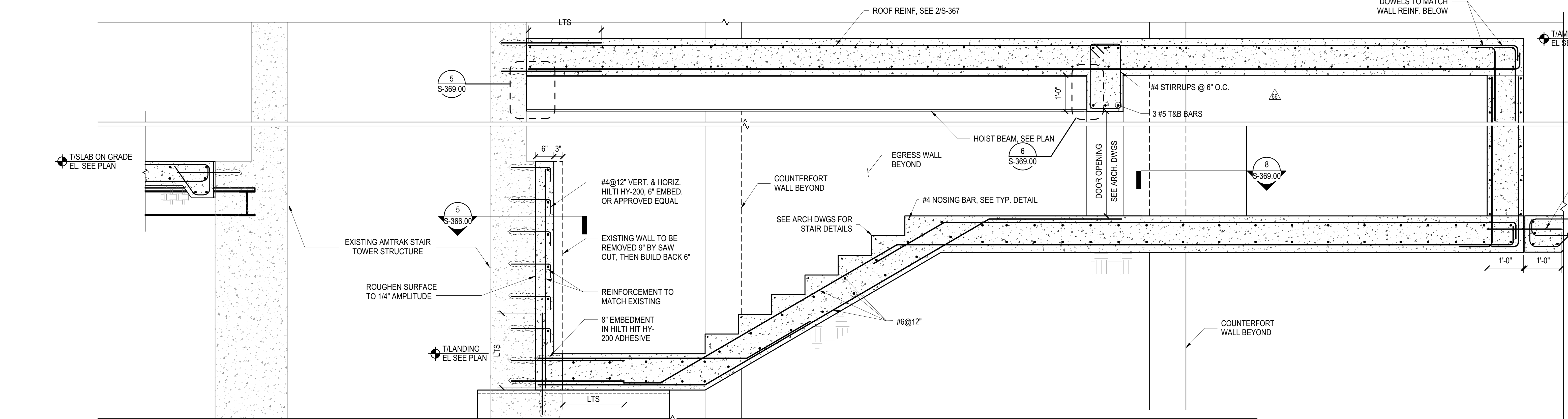
**1 SECTION THROUGH AMTRAK STAIR TOWER**  
3/4" = 1'-0"



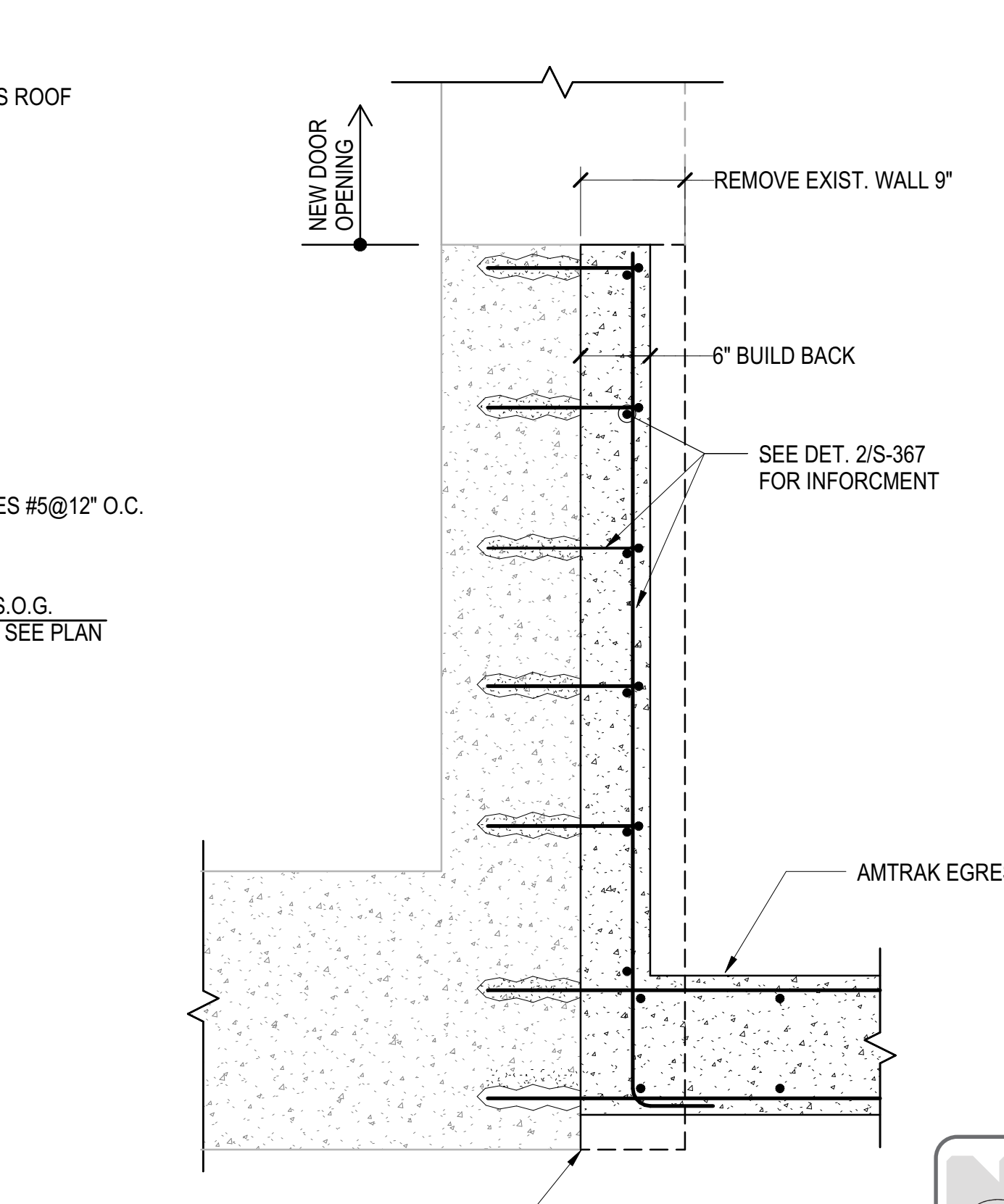
**3 BASE PLATE DETAIL AT CORBEL**  
3/4" = 1'-0"



**4 BASE PLATE DETAIL AT CORBEL**  
3/4" = 1'-0"



**2 SECTION AT NEW EGRESS**  
3/4" = 1'-0"

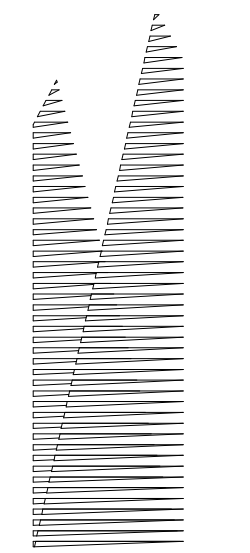


**5 AMTRAK STAIR - EXIST. WALL PLAN AT NEW EGRESS**  
3/4" = 1'-0"

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S-366.00  
10/16/2017 2:38:55 PM  
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Etc.: Transportation Group  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH#0111	03/02/2016
Rev	Description
1	Original

For Plot

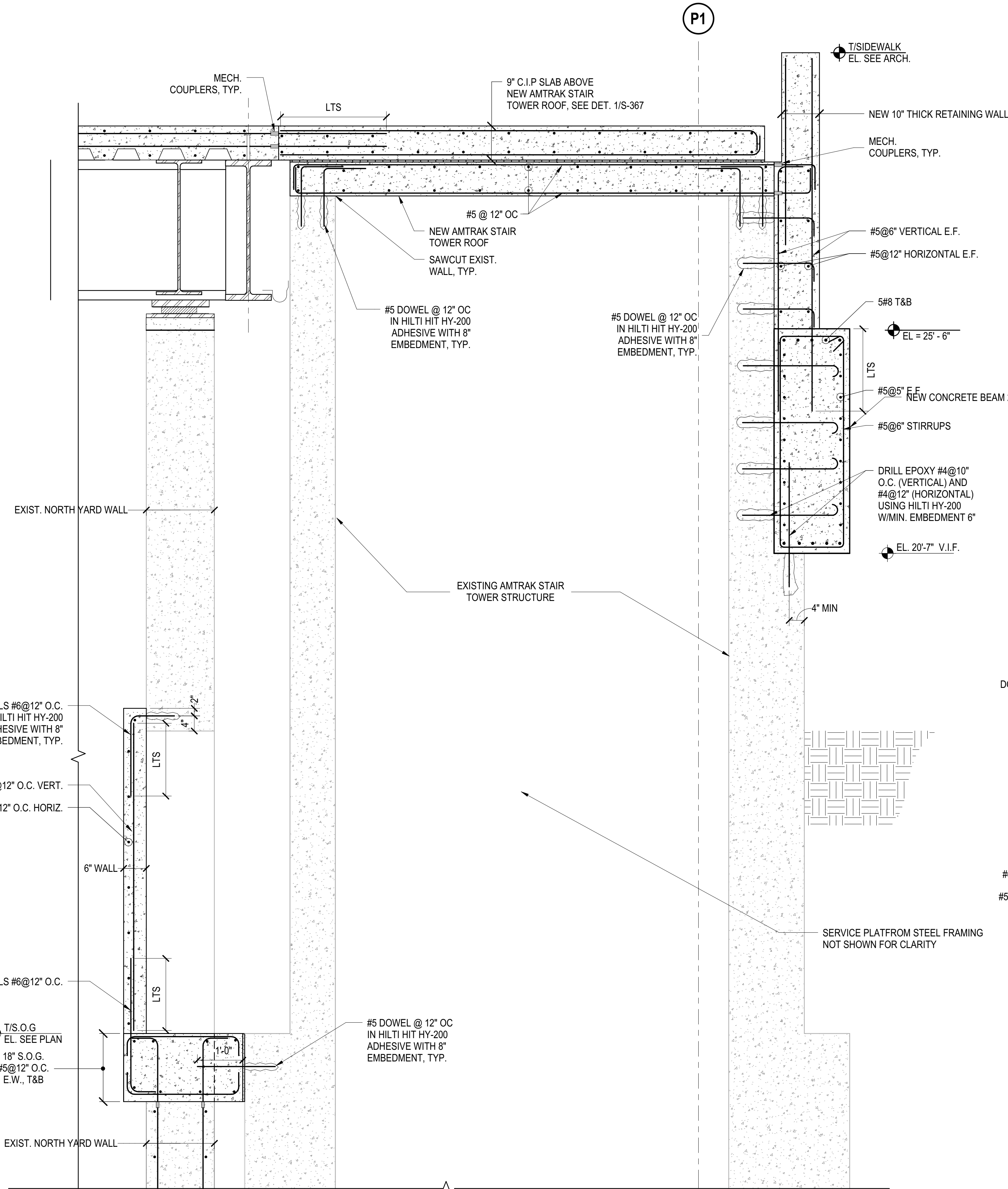
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Project No	N11330.00
Drawn By	Author
Sheet Number	

**HYE -PL -S-367.00**

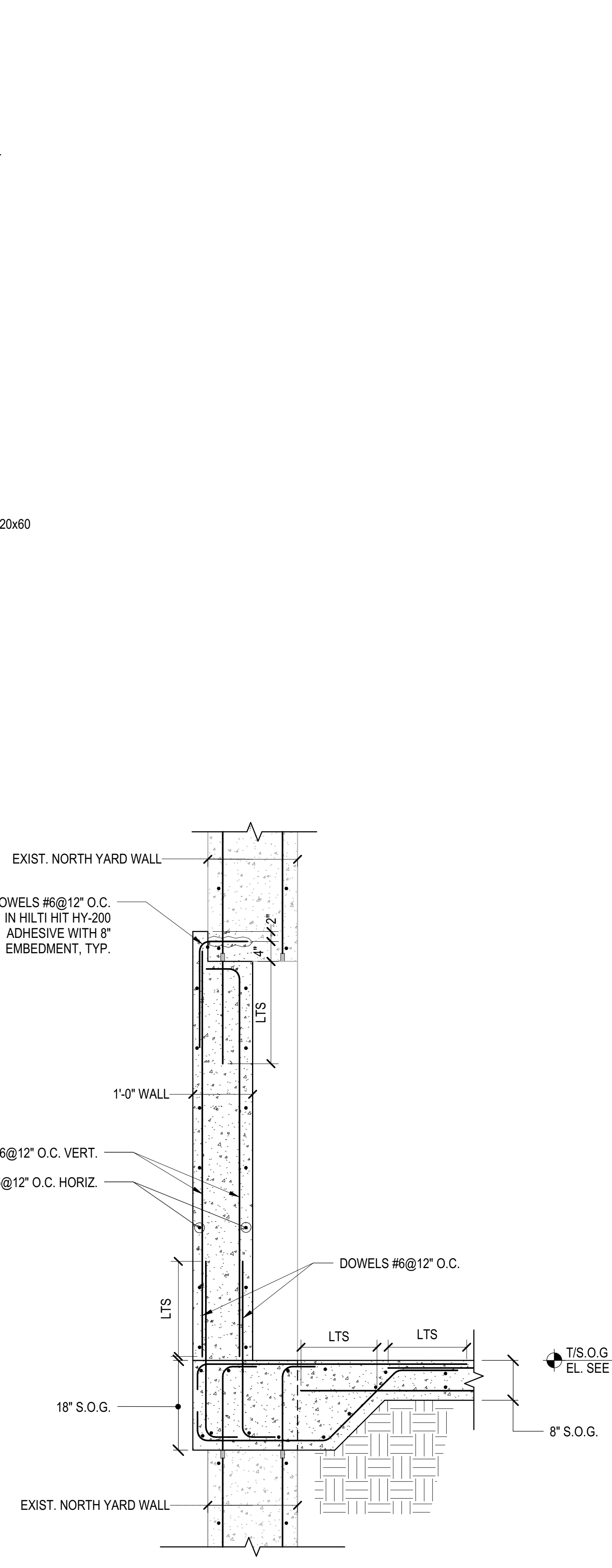
Sections at Amtrak Stair

Drawing Number / Revision Drawing Number  
**S-367.00**

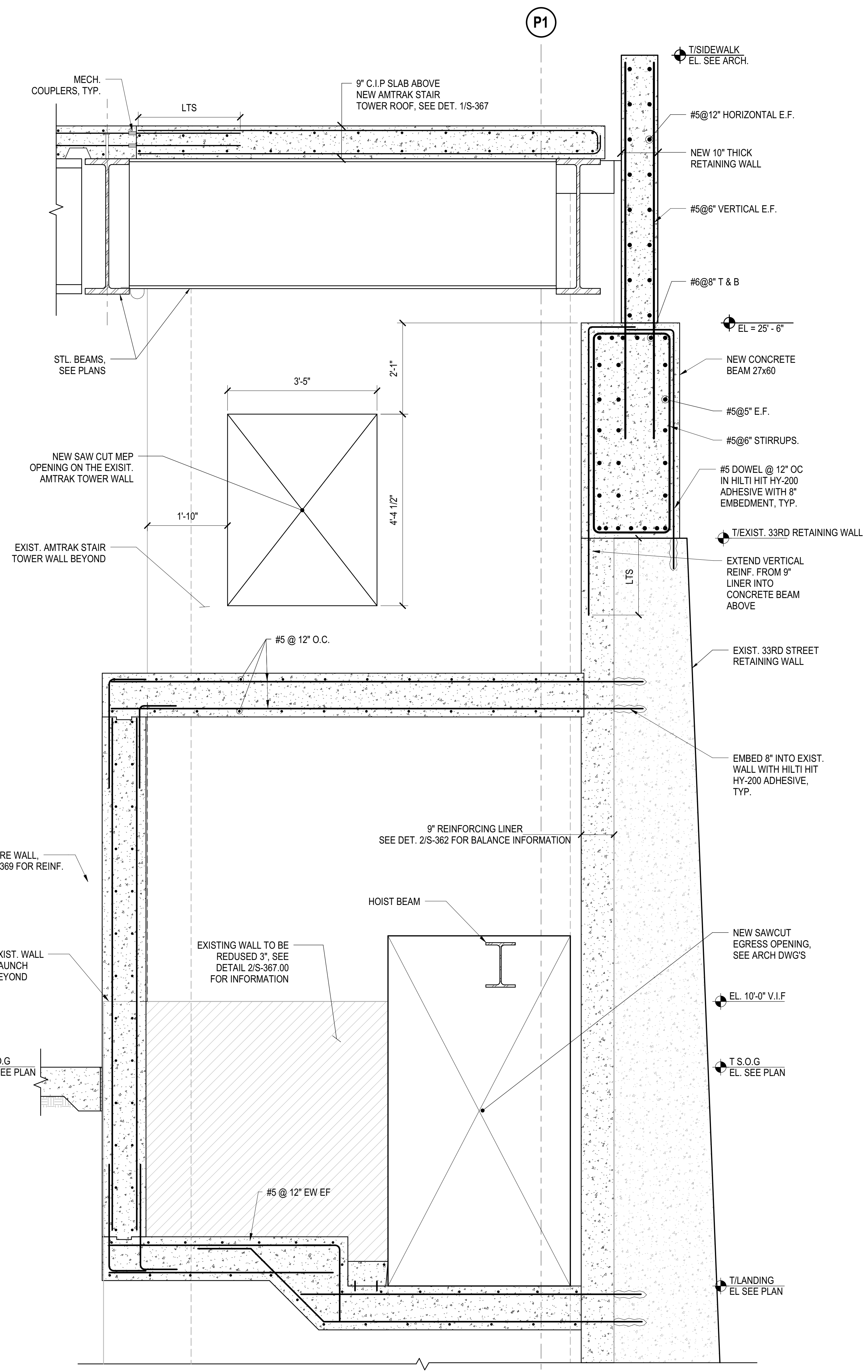
SHEET 67 OF 163



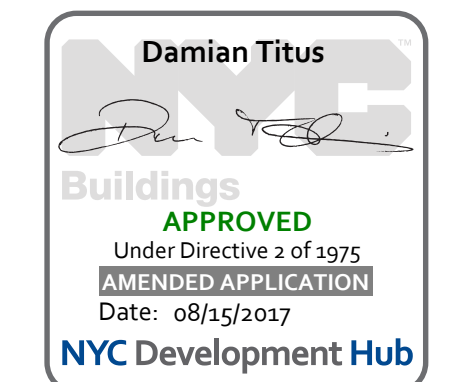
**1 SECTION AT EXISTING AMTRAK STAIR**  
3/4" = 1'-0"



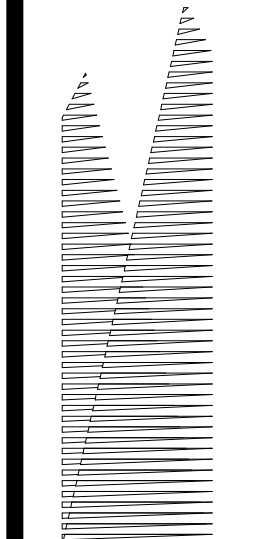
**2 SECTION AT BUMP OUT WALL**  
3/4" = 1'-0"



**3 SECTION AT EXISTING AMTRAK STAIR EAST WALL**  
3/4" = 1'-0"



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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH#0123	06/29/2016
ASH#0111	03/02/2016
ASH#0111	03/02/2016

Drawn By	03/02/16
Project No	N11330.00
Drawn By	Author
Sheet Number	Author

**HYE -PL -S-368.00**

**SECTIONS AT AMTRAK STAIR**

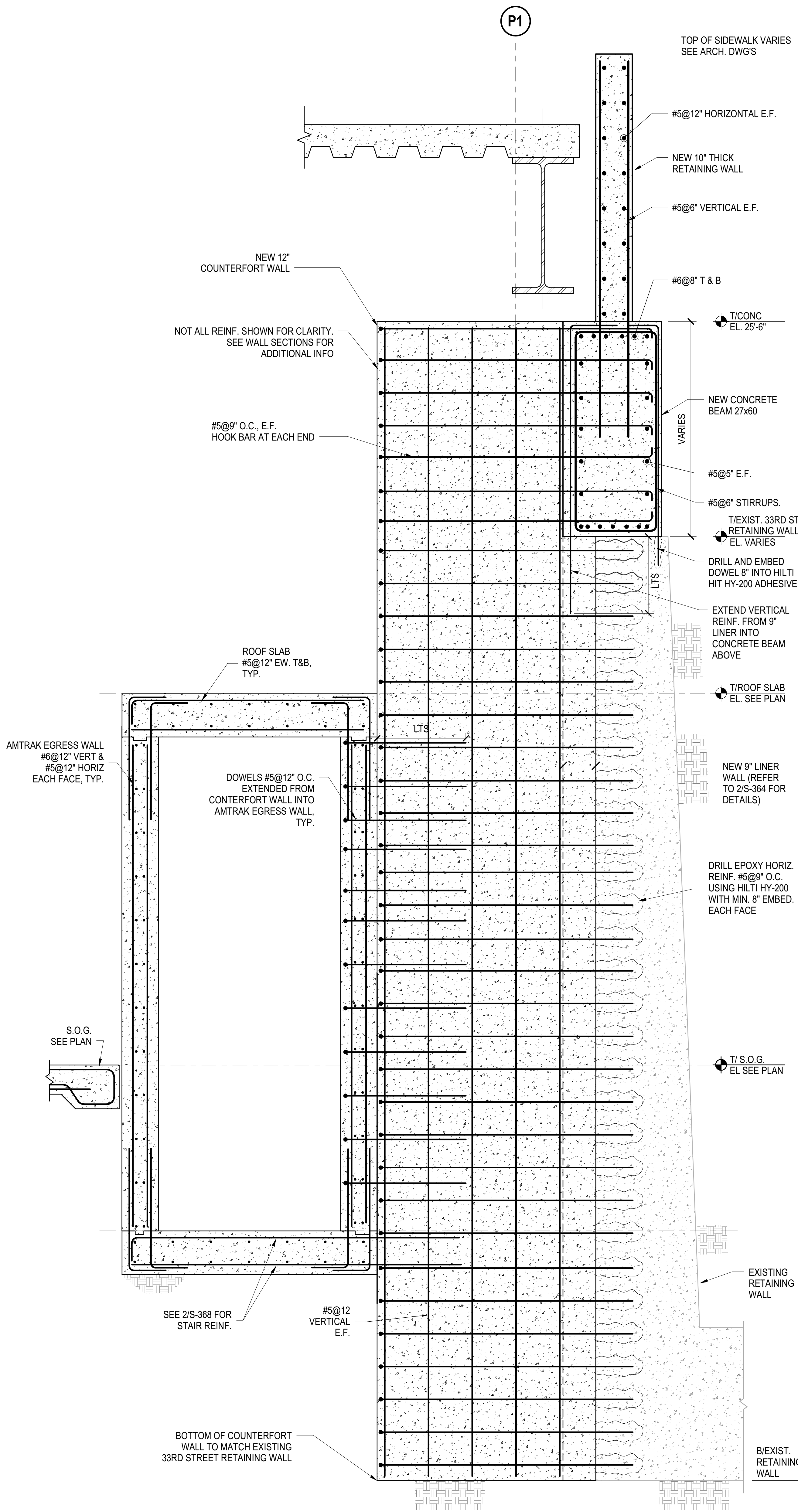
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Drawing Number / B/CAN Drawing Number

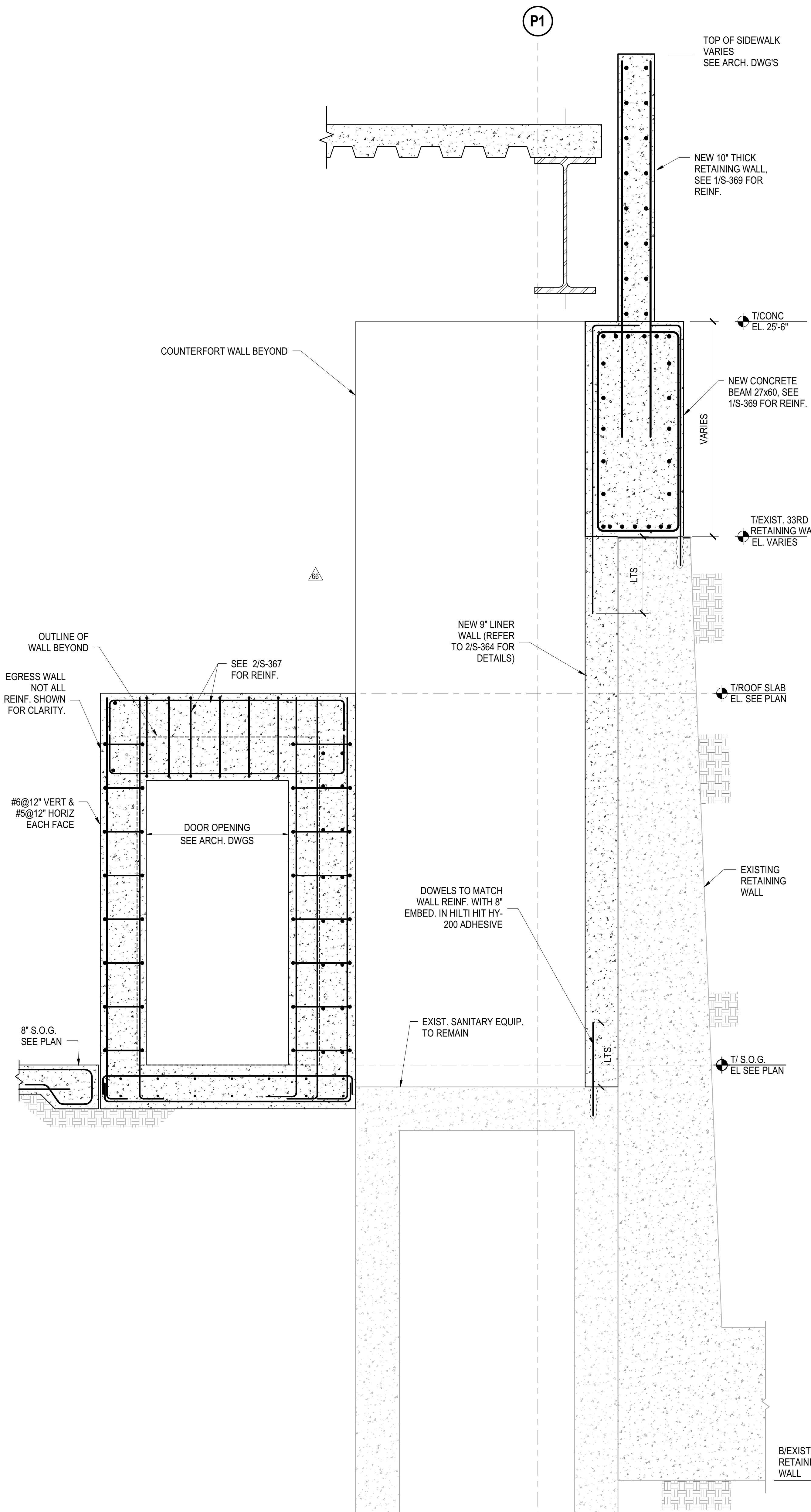
**S-368.00**

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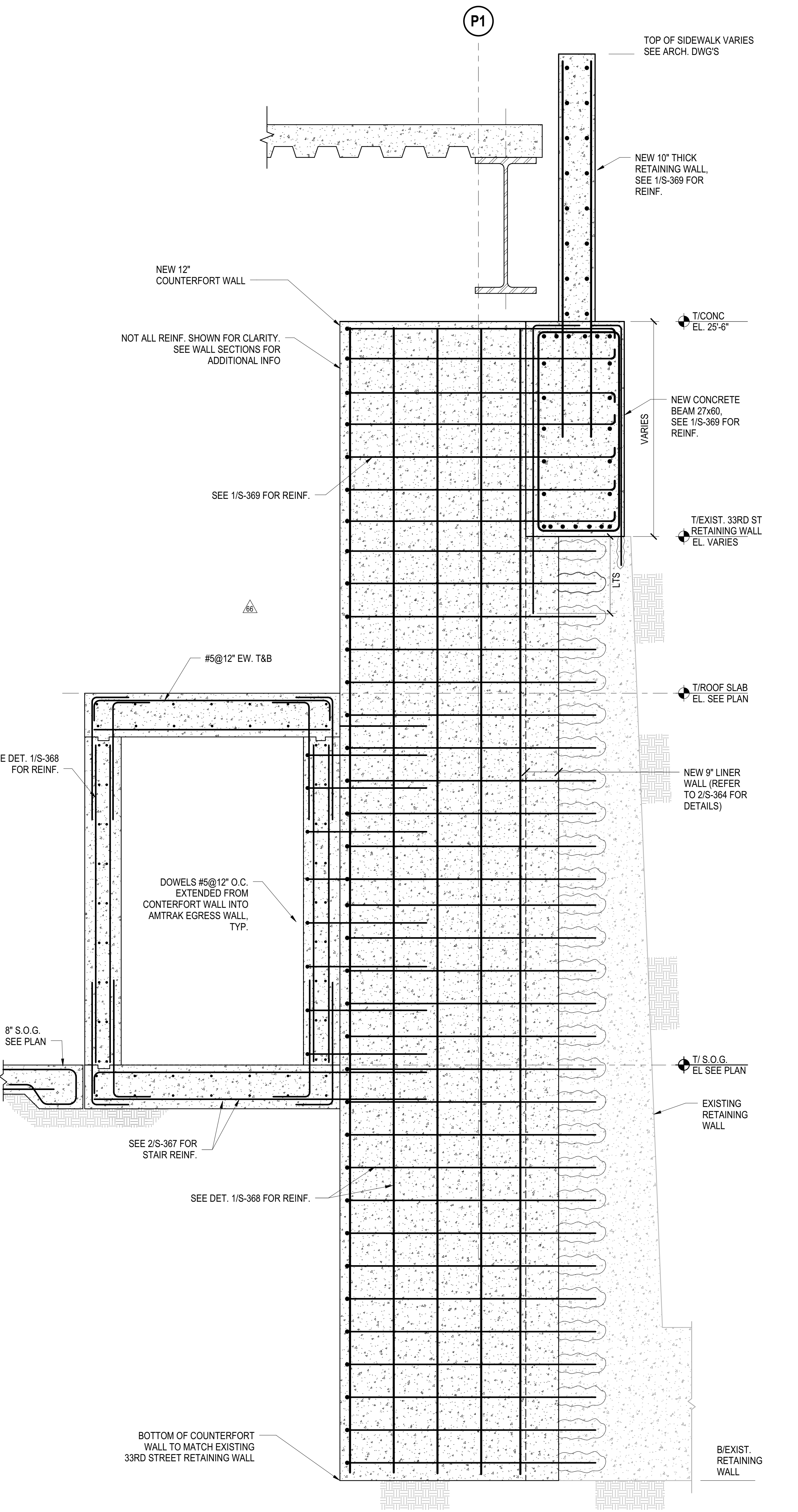
© 2012 KOHN PEDERSEN FOX ASSOCIATES PC. All rights reserved.



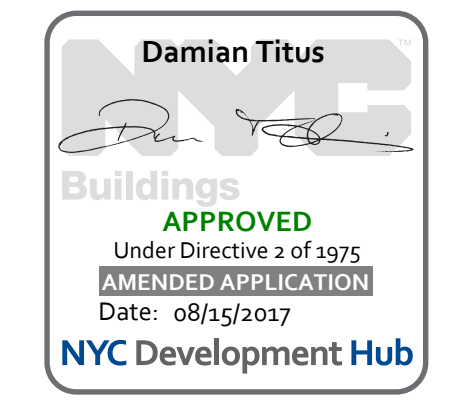
**1 SECTION AT 33RD STREET RETAINING WALL**  
3/4" = 1'-0"



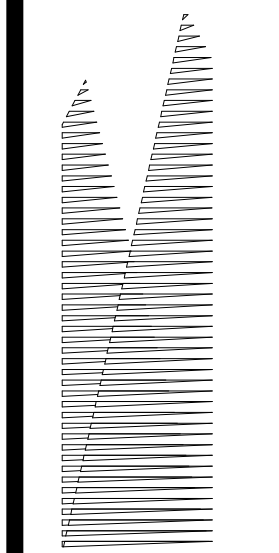
**2 SECTION AT 33RD STREET RETAINING WALL**  
3/4" = 1'-0"



**3 SECTION AT 33RD STREET RETAINING WALL**  
3/4" = 1'-0"



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10/16/2016 2:38:16 PM  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
AS100123	06/29/2016
AS100111	03/02/2016
Rev	Description

Rev Plot

Date: 03/02/16  
Project No: N11330.00  
Revision: Author  
Sheet Number

**HYE -PL -S-369.00**

**SECTION AND DETAIL AT AMTRAK STAIR**

Drawing Title

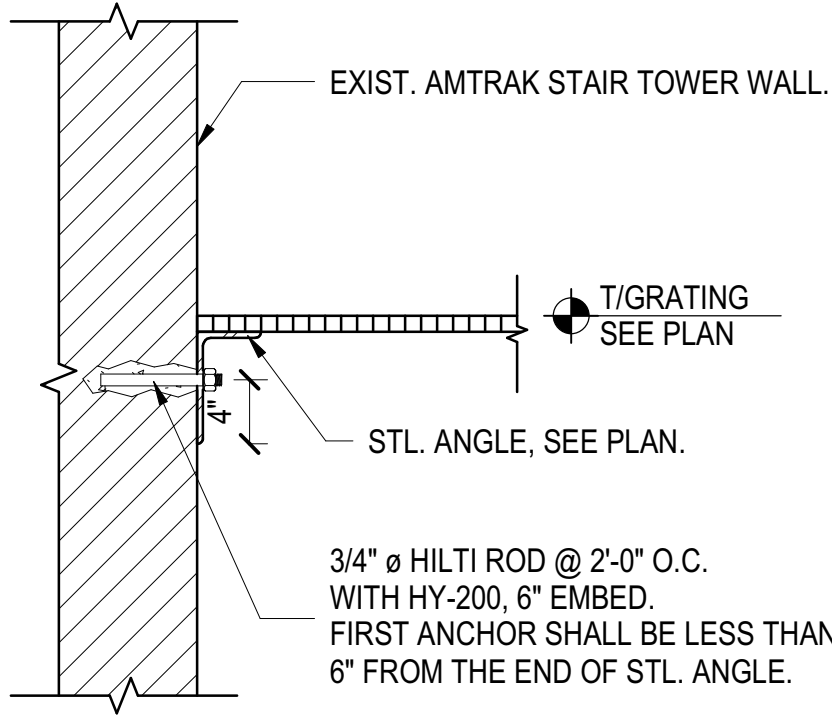
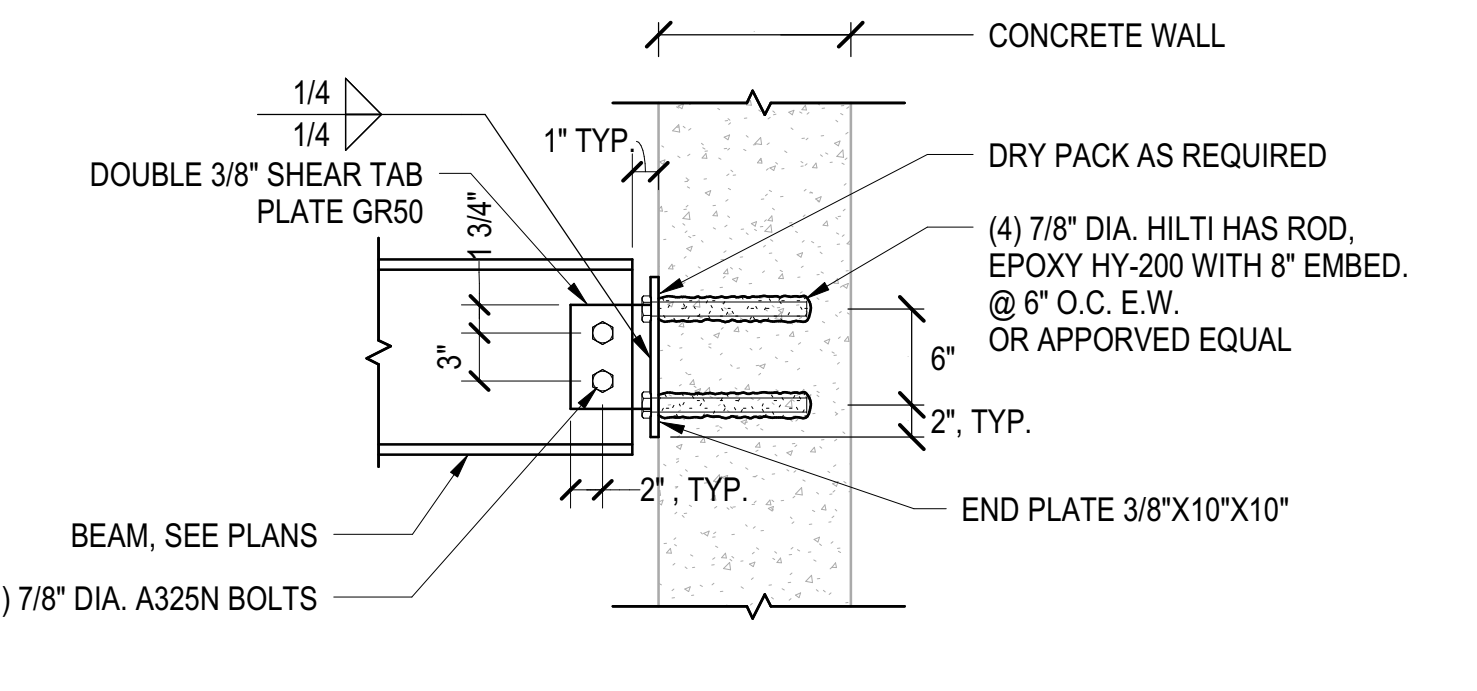
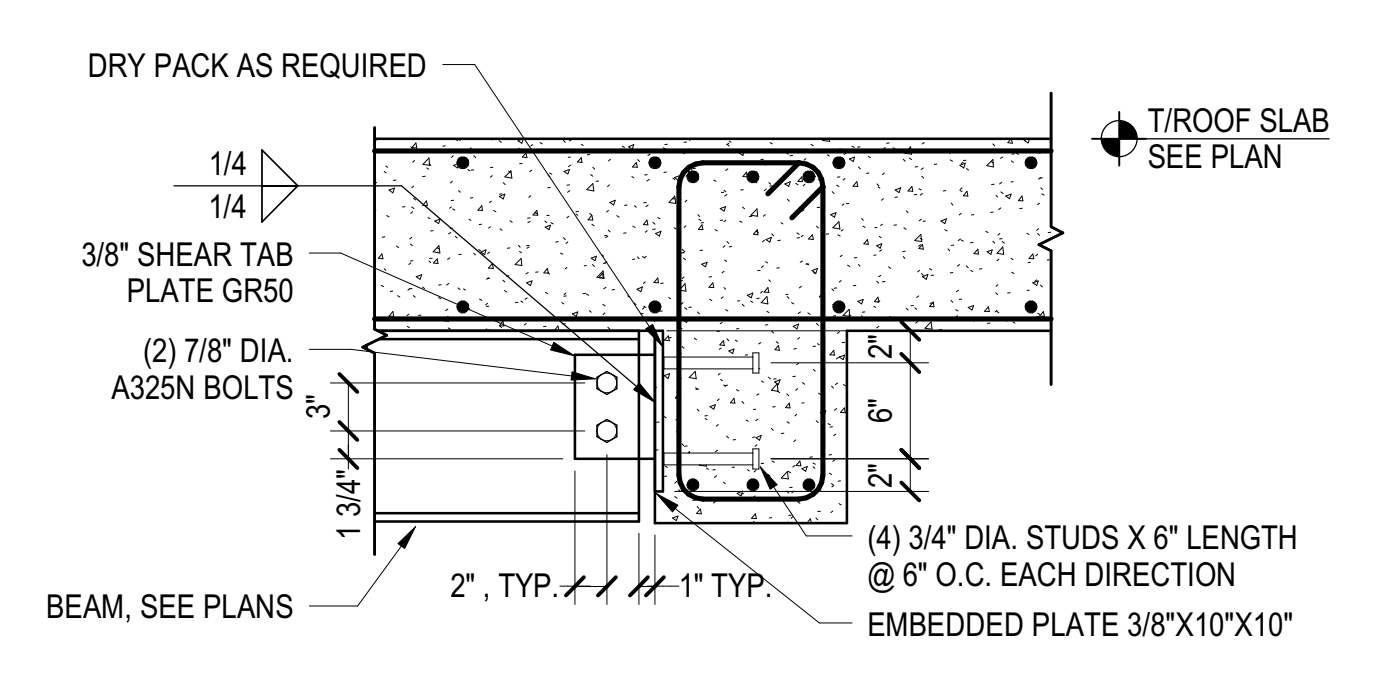
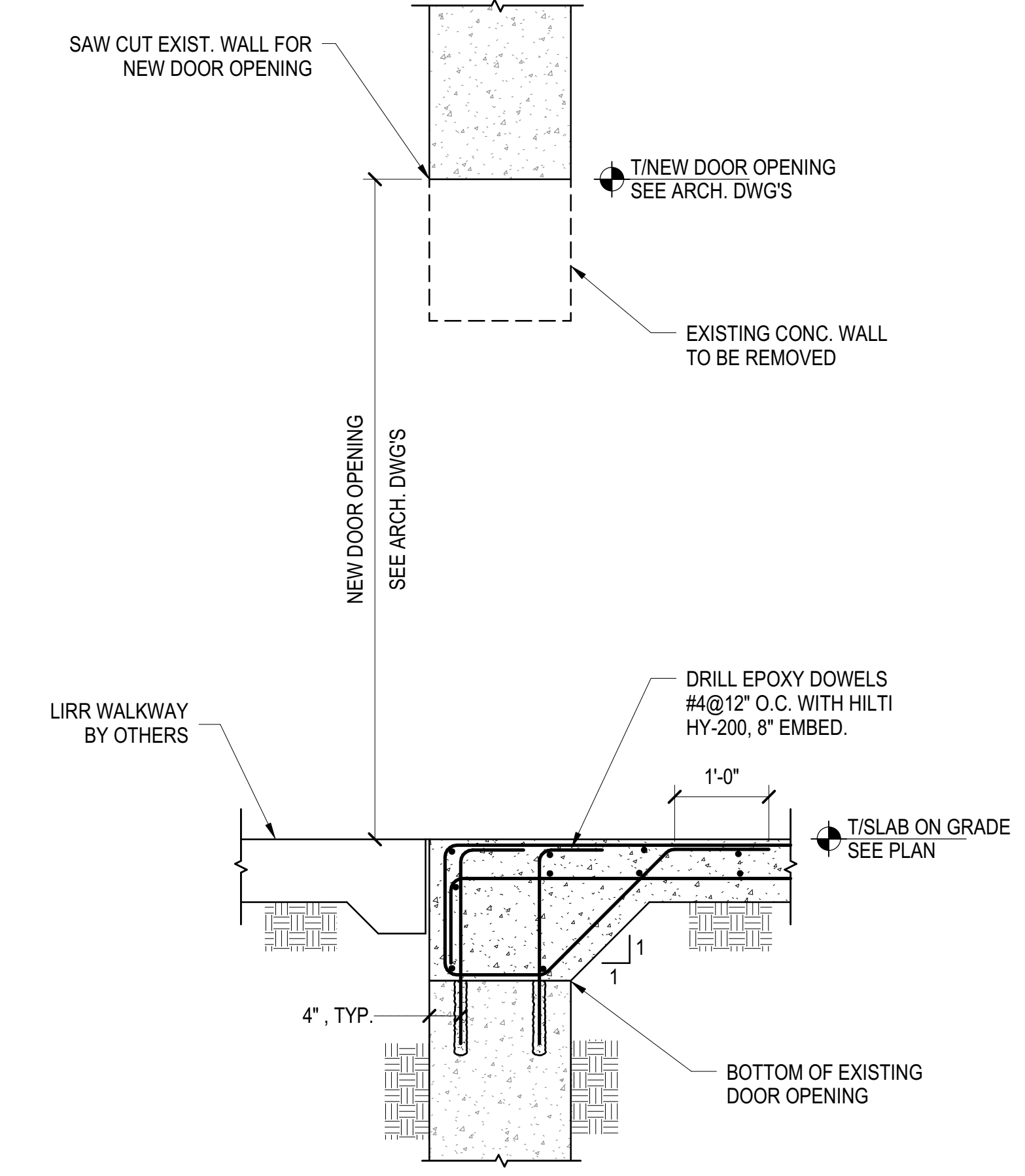
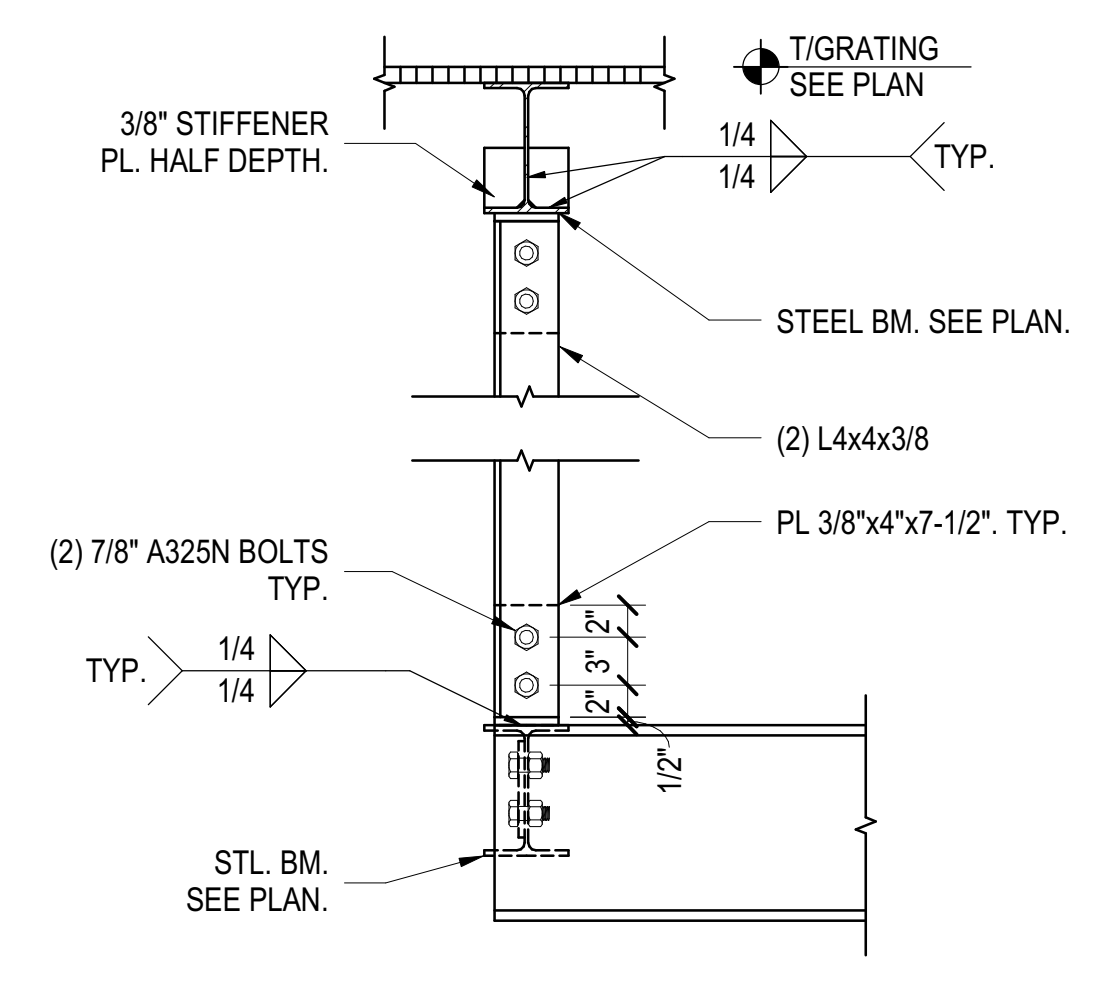
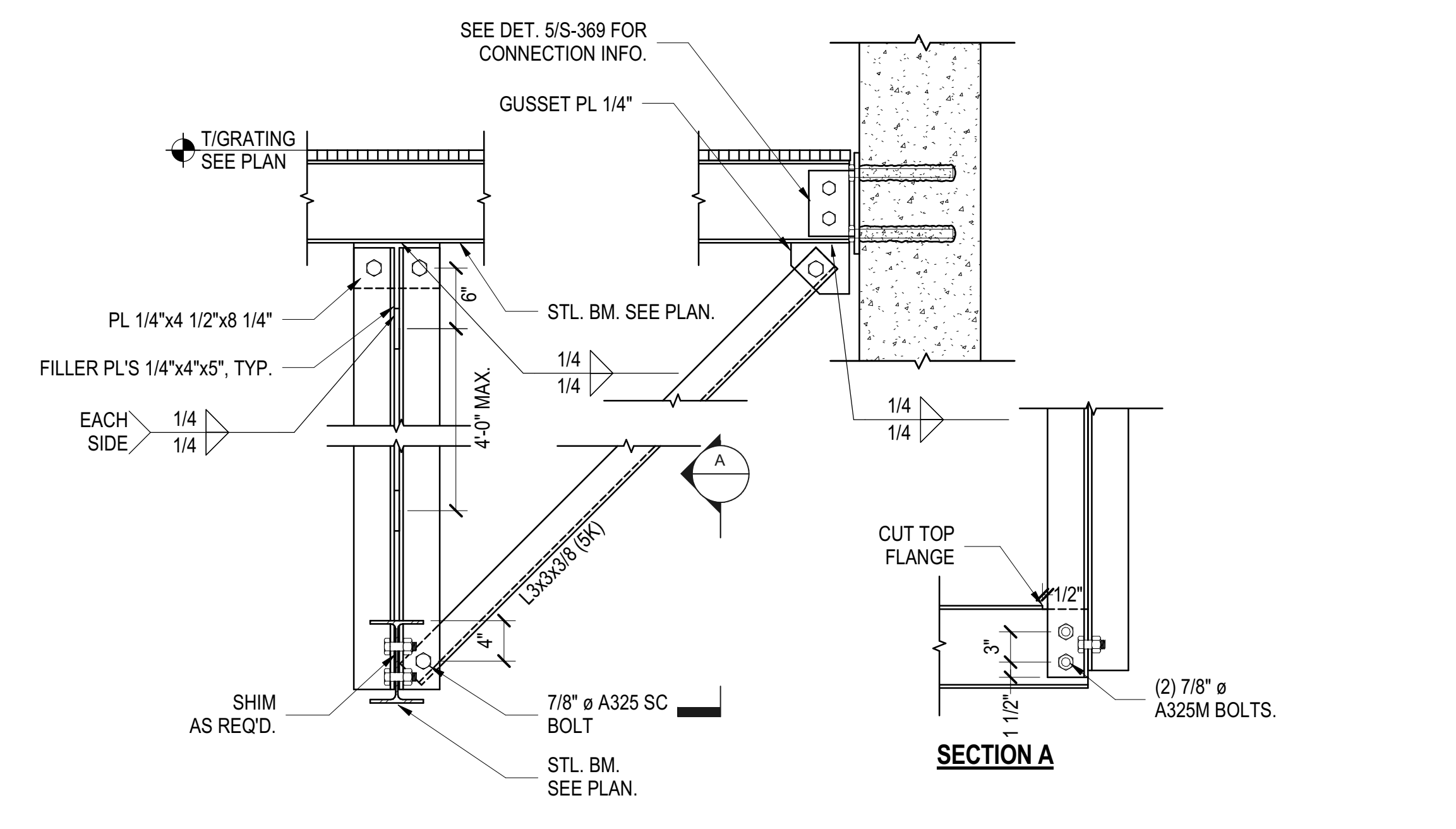
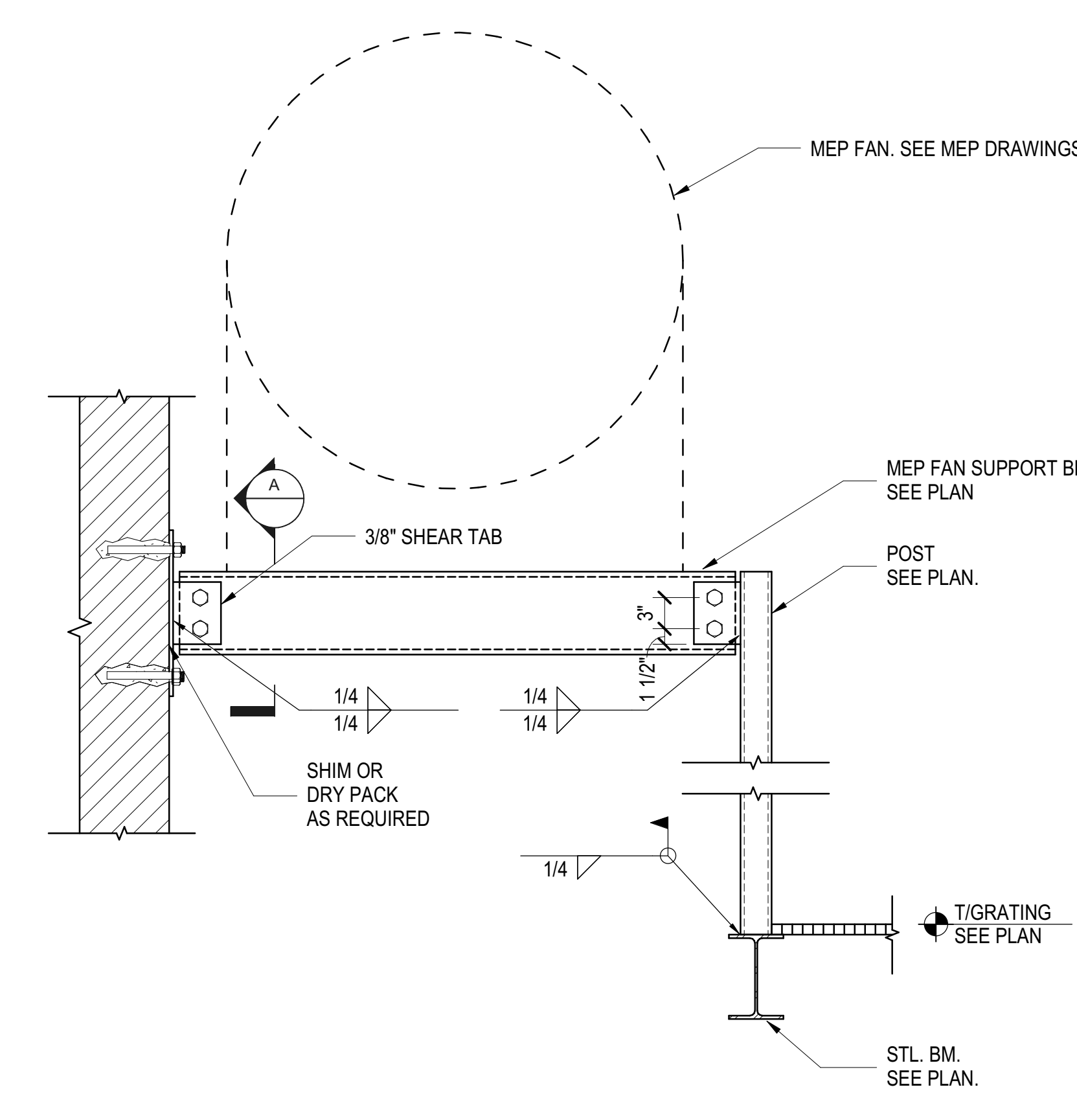
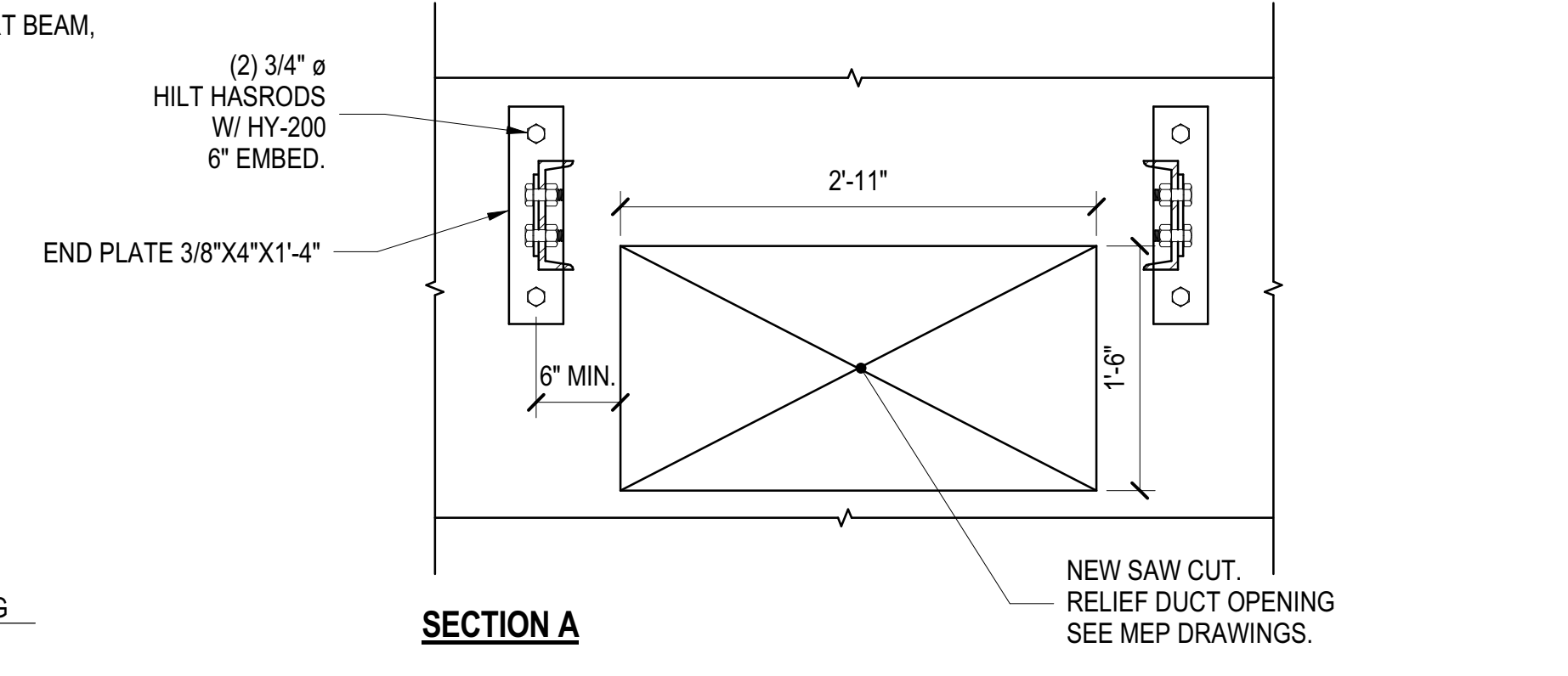
Drawing Number / Revision Drawing Number

**S-369.00**

SHEET 69 of 163



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Under Directive 3 of 1975  
Professional Registration  
Date: 08/15/2017  
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**1 HOIST BEAM HANGER DETAIL**  
1" = 1'-0"

**2 HANGER DETAIL AT SERVICE PLATFORM**  
1" = 1'-0"

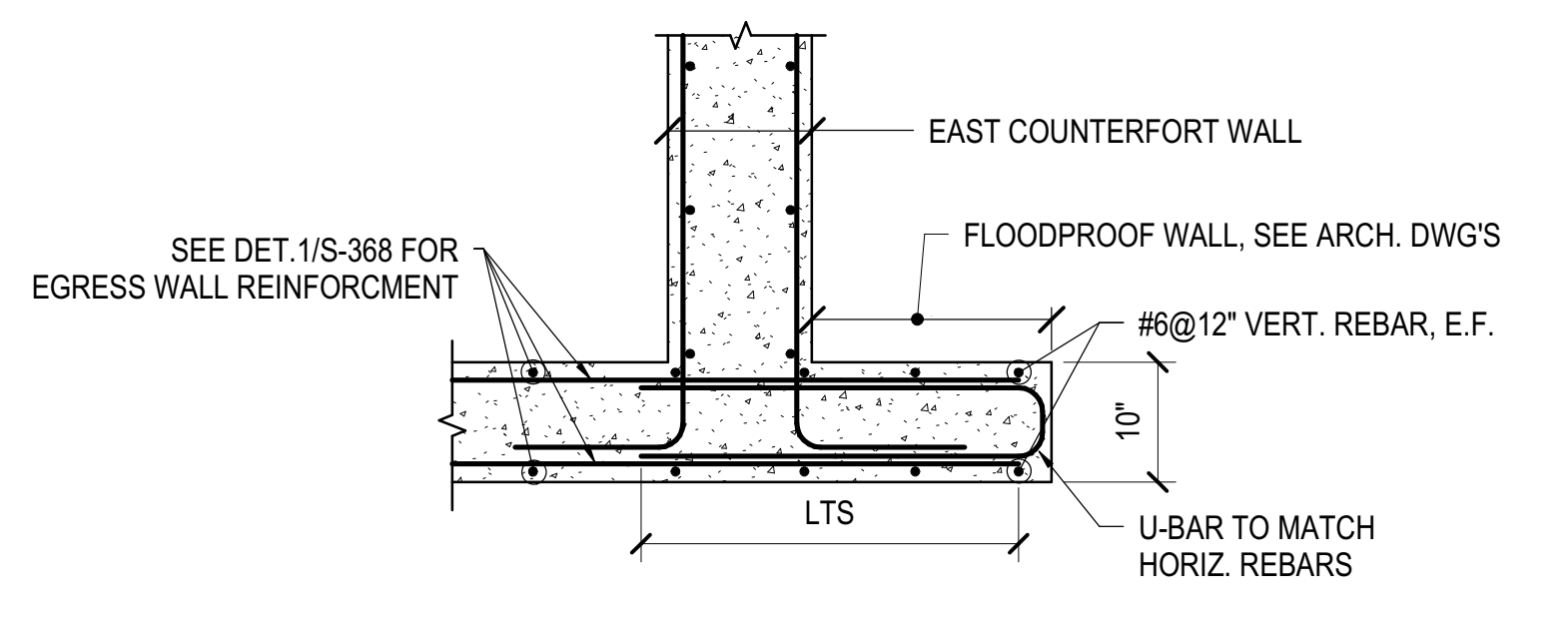
**3 MECH FAN SUPPORT BEAMS**  
1" = 1'-0"

**4 STEEL ANGLE CONN. TO EXIST. CONC. WALL**  
1" = 1'-0"

**5 TYP. STEEL BEAM CONN. TO CONC. WALL (MAX V35)**  
1" = 1'-0"

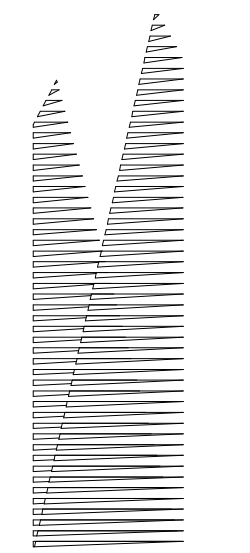
**6 STEEL BEAM CONN. TO CONC. BEAM (MAX V20)**  
1" = 1'-0"

**7 STEEL BEAM CONN. TO CONC. BEAM (MAX V20)**  
3/4" = 1'-0"



**8 FLOODPROOF WALL DETAIL - PLAN**  
3/4" = 1'-0"

SECTION AND DETAIL AT AMTRAK STAIR  
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*Construction Manager*  
Fishman Construction Corporation  
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New York, NY 10017  
Tel: 212.708.3600

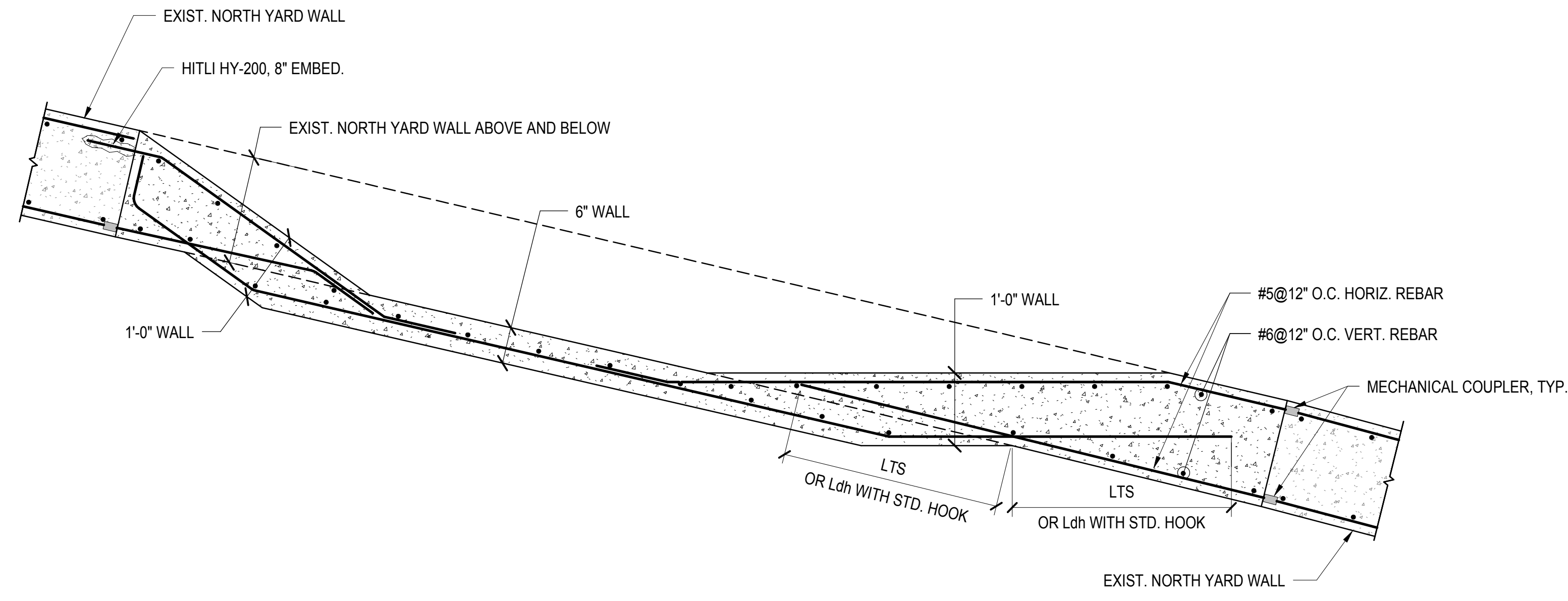
*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

*Structural Engineer*  
Thornton Tomasetti, Inc.  
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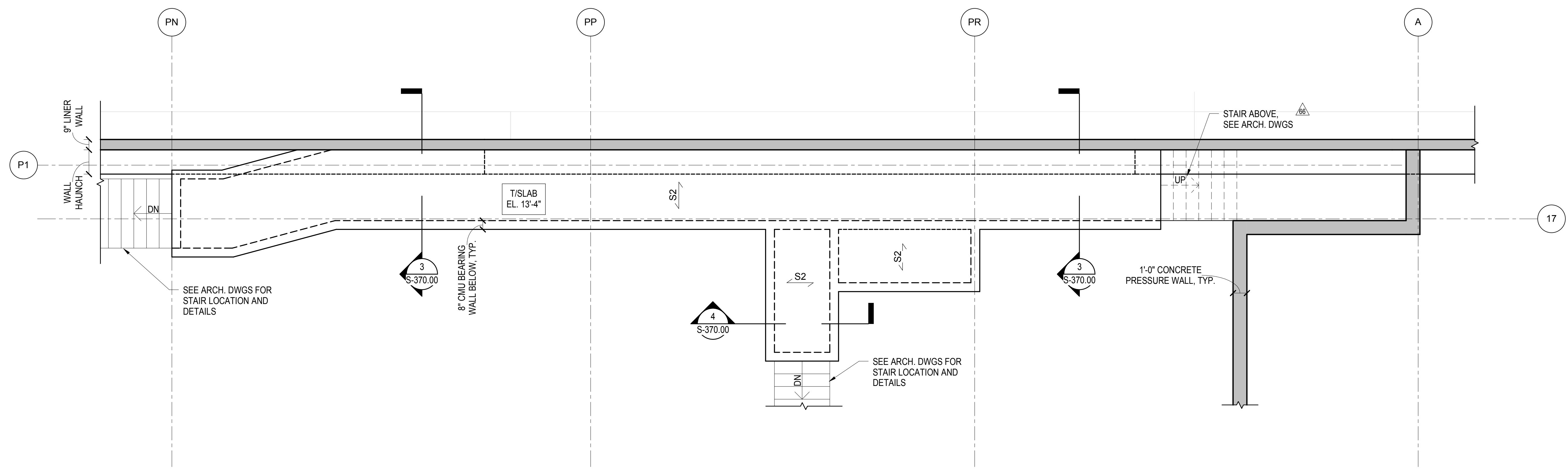
*Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Personnel, Transportation Group*  
100 Broadway  
New York, NY 10005  
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77 Water Street  
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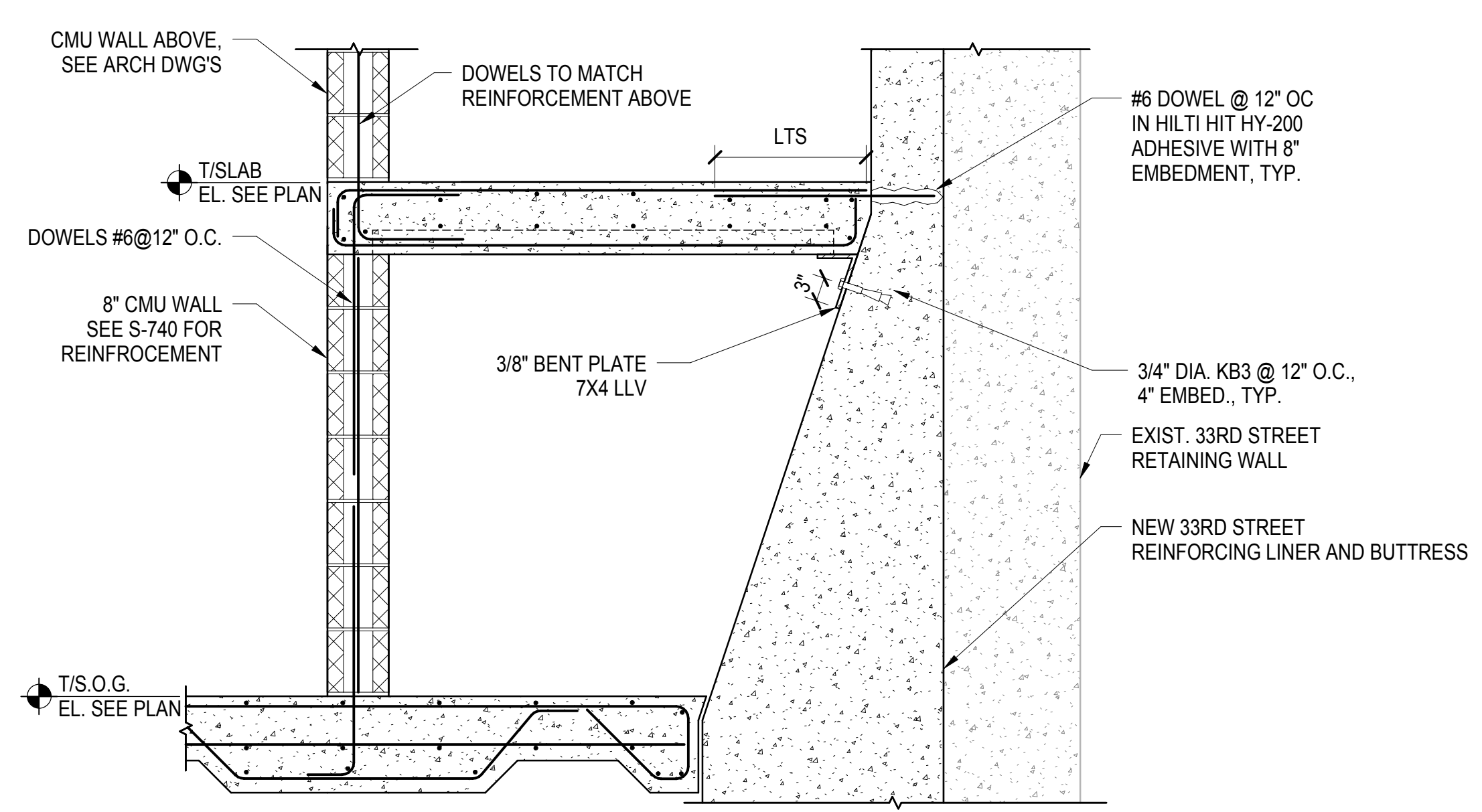
*LJRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
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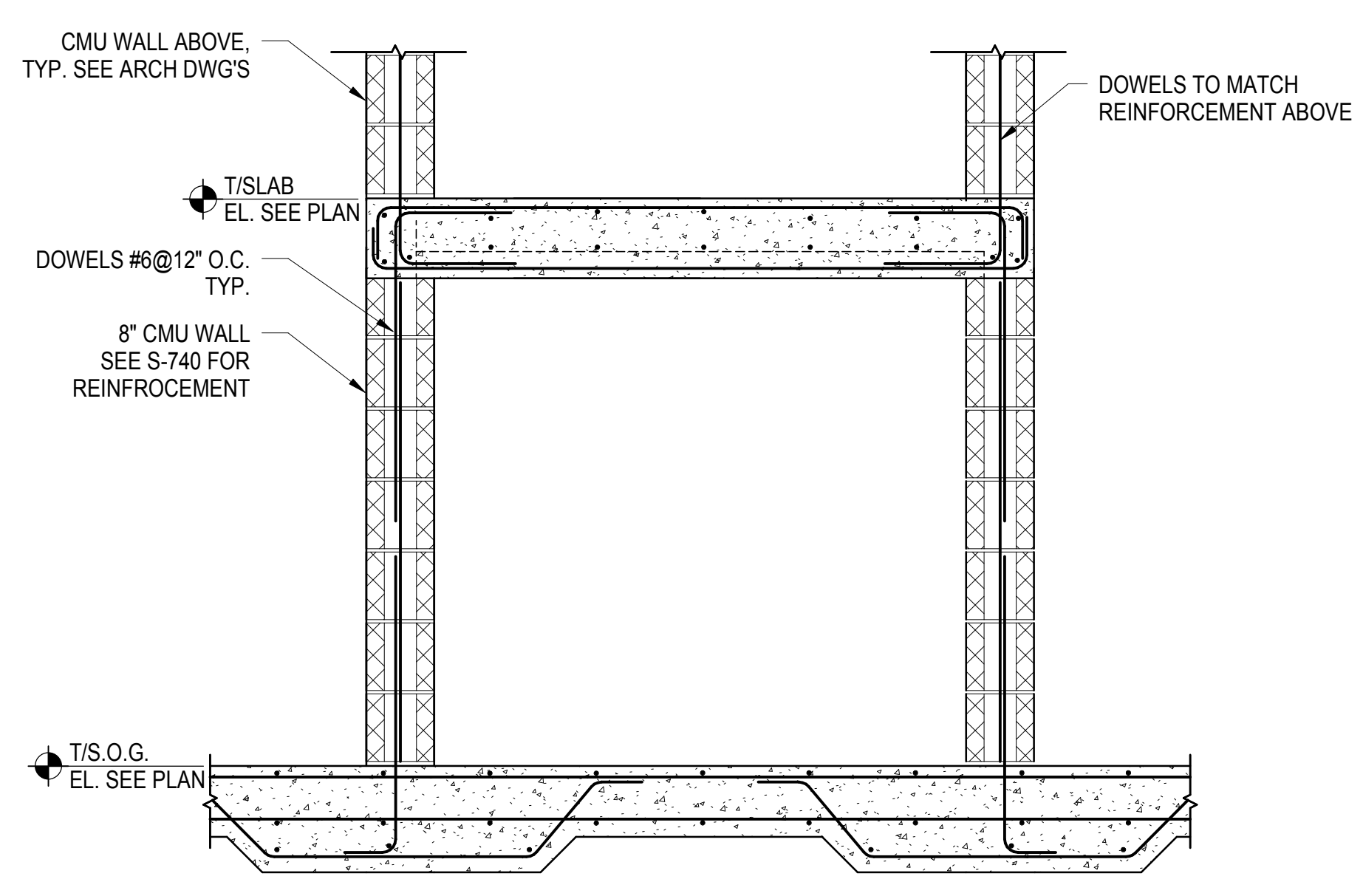
**1 BUMP OUT WALL REINFORCEMENT LAYOUT**  
3/4" = 1'-0"



**2 PART PLAN AT AMTRAK STAIR EGRESS PATH**  
1/4" = 1'-0"



**3 EGRESS PATH SECTION 1**  
3/4" = 1'-0"



**4 EGRESS PATH SECTION 2**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	Date
ASB0123	06/29/2016
ASB0111	03/02/2016

Key Plan	Description	Date

Date	03/02/16
Project No.	N11330.00
Revision	Author
Sheet Number	

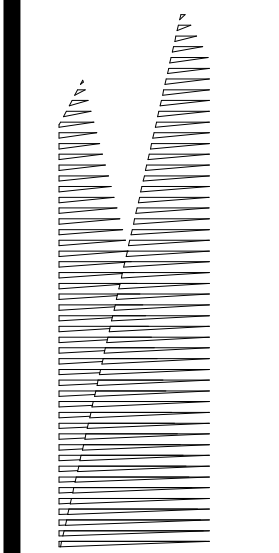
**HYE-PL-S-370.00**

**EGRESS PATH AT  
AMTRAK STAIR**

Drawing Title

Under Directive 1 of 1975  
**APPROVED**  
Date: 08/15/2017

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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0073	4/20/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
Rev	Description
01	Issue

Key Plan

Date: 06/06/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

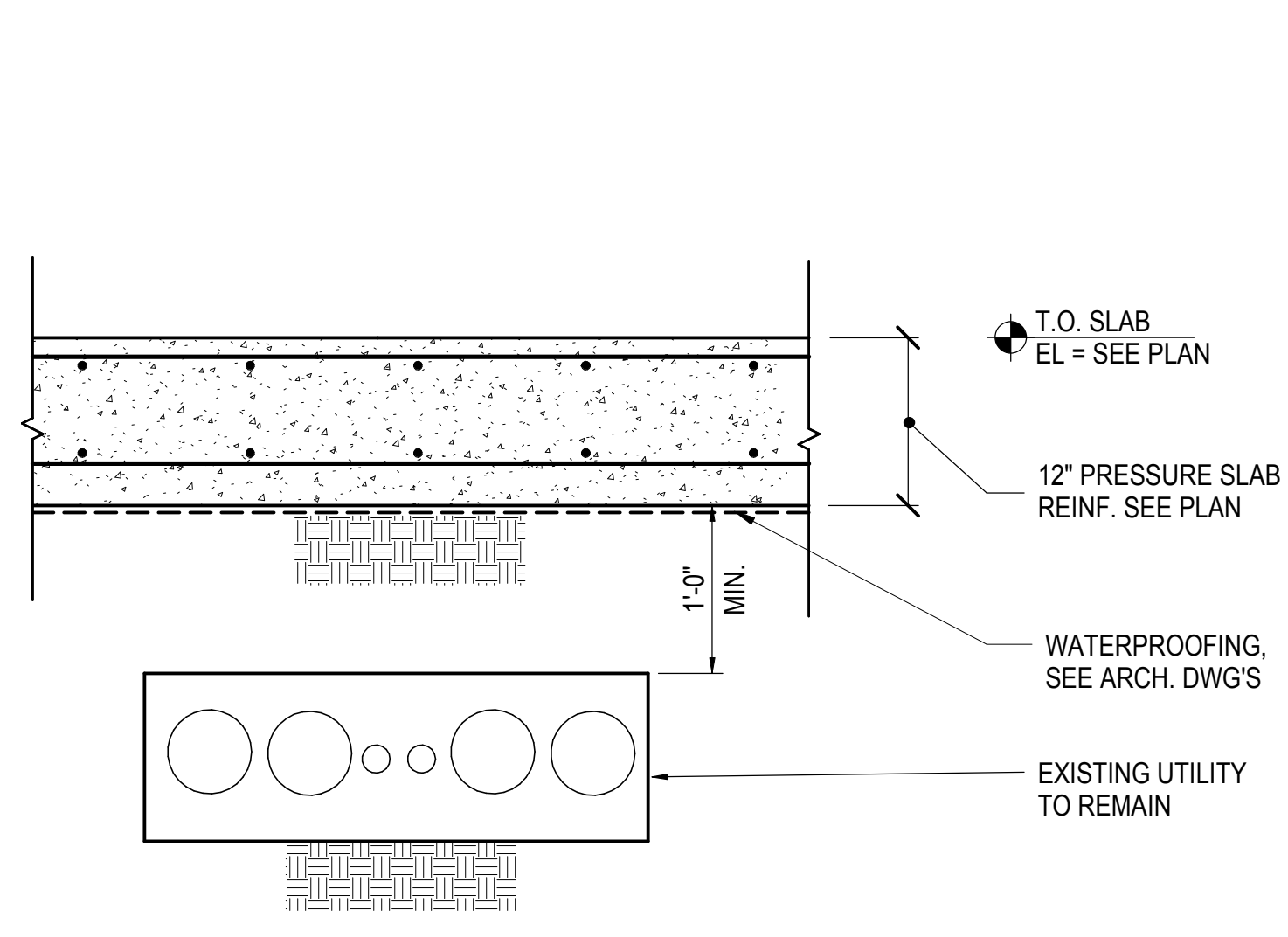
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**EAST PLATFORM  
FOUNDATION  
SECTIONS AND  
DETAILS**

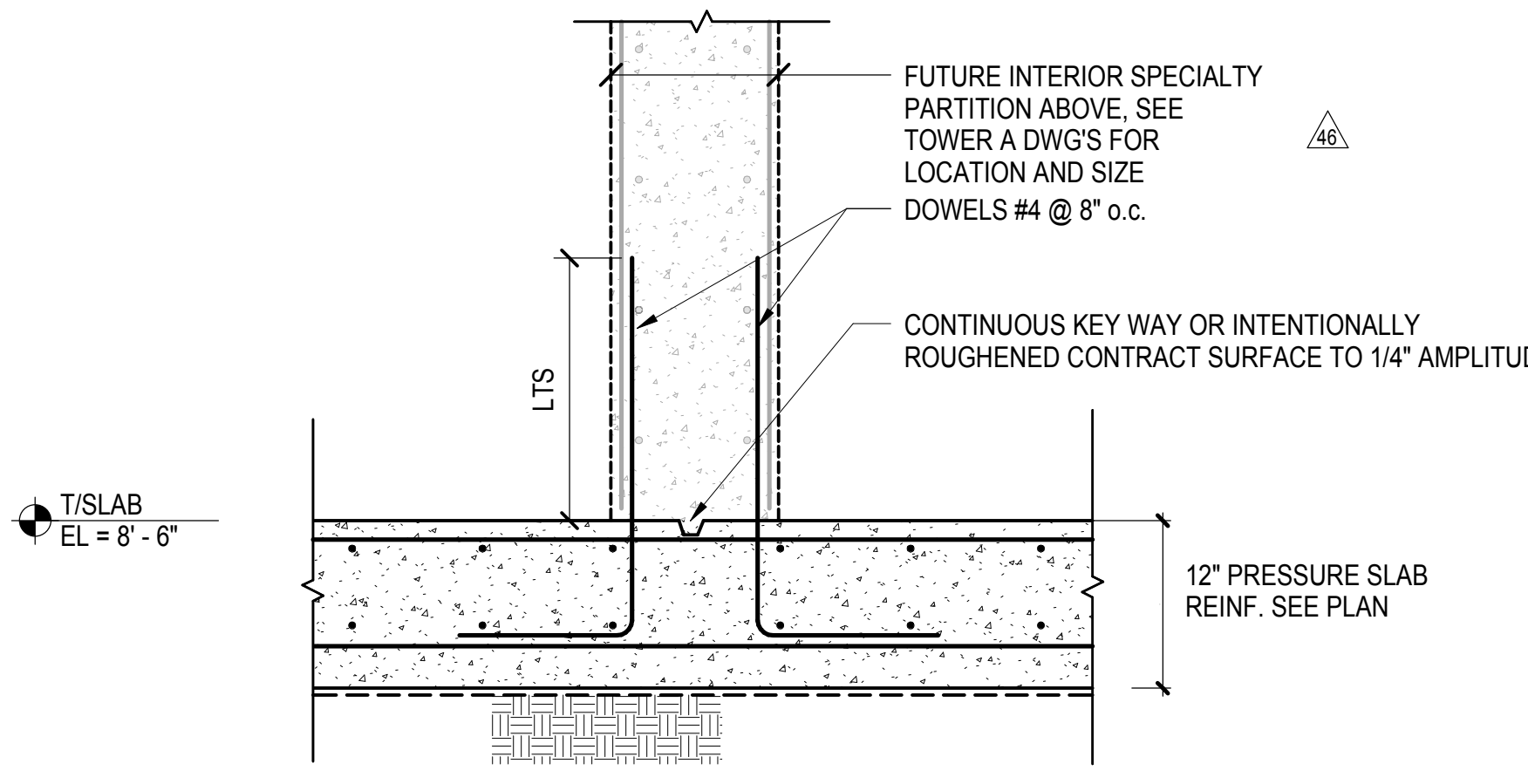
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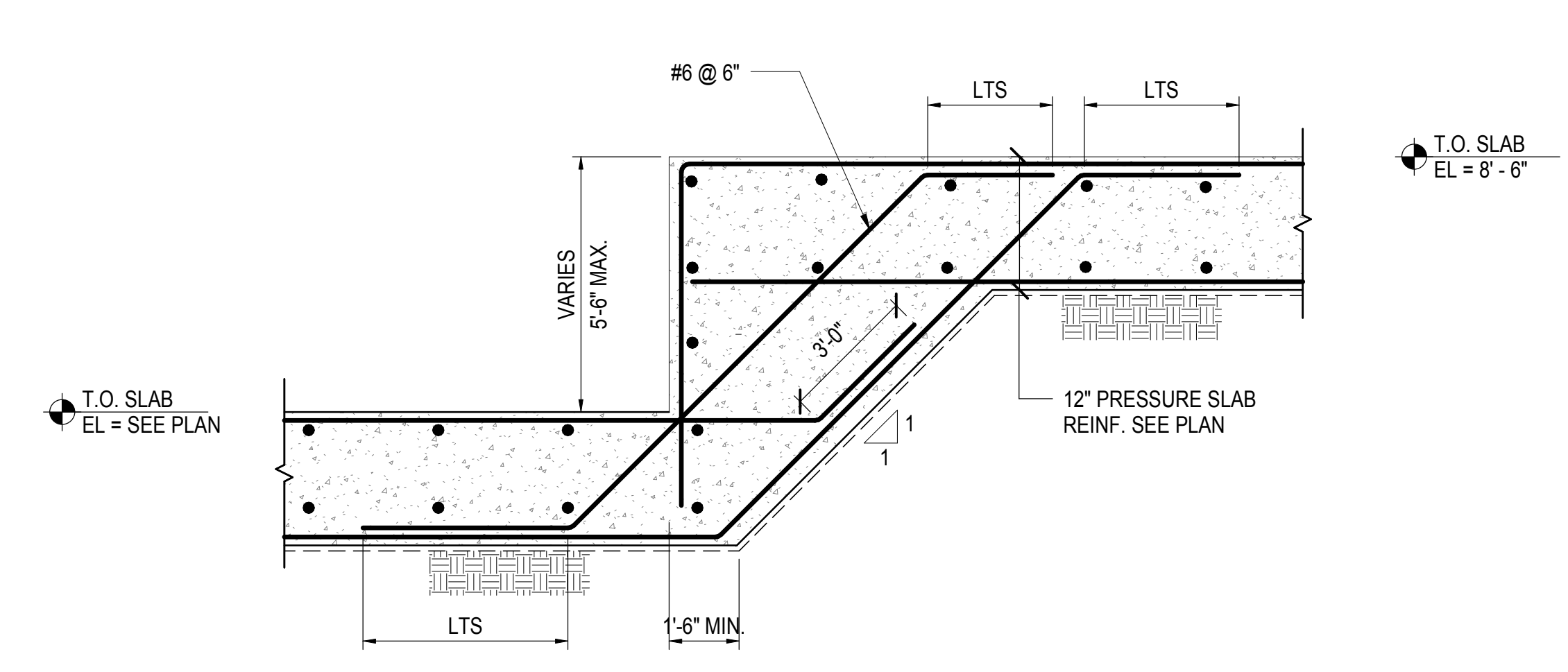
SHEET 71 of 163



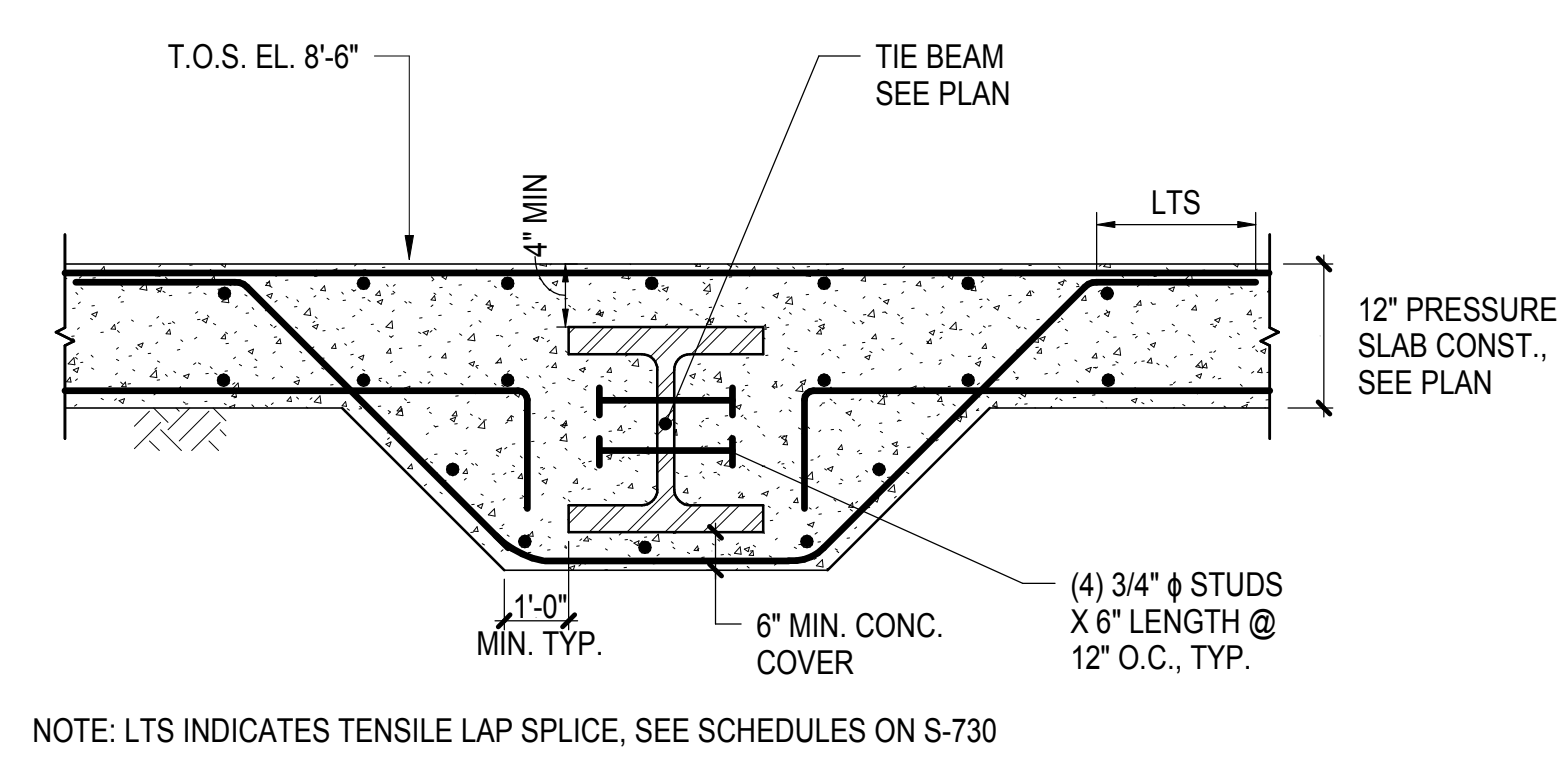
**1 SLAB ON GRADE OVER EXIST. UTILITY**  
1" = 1'-0"



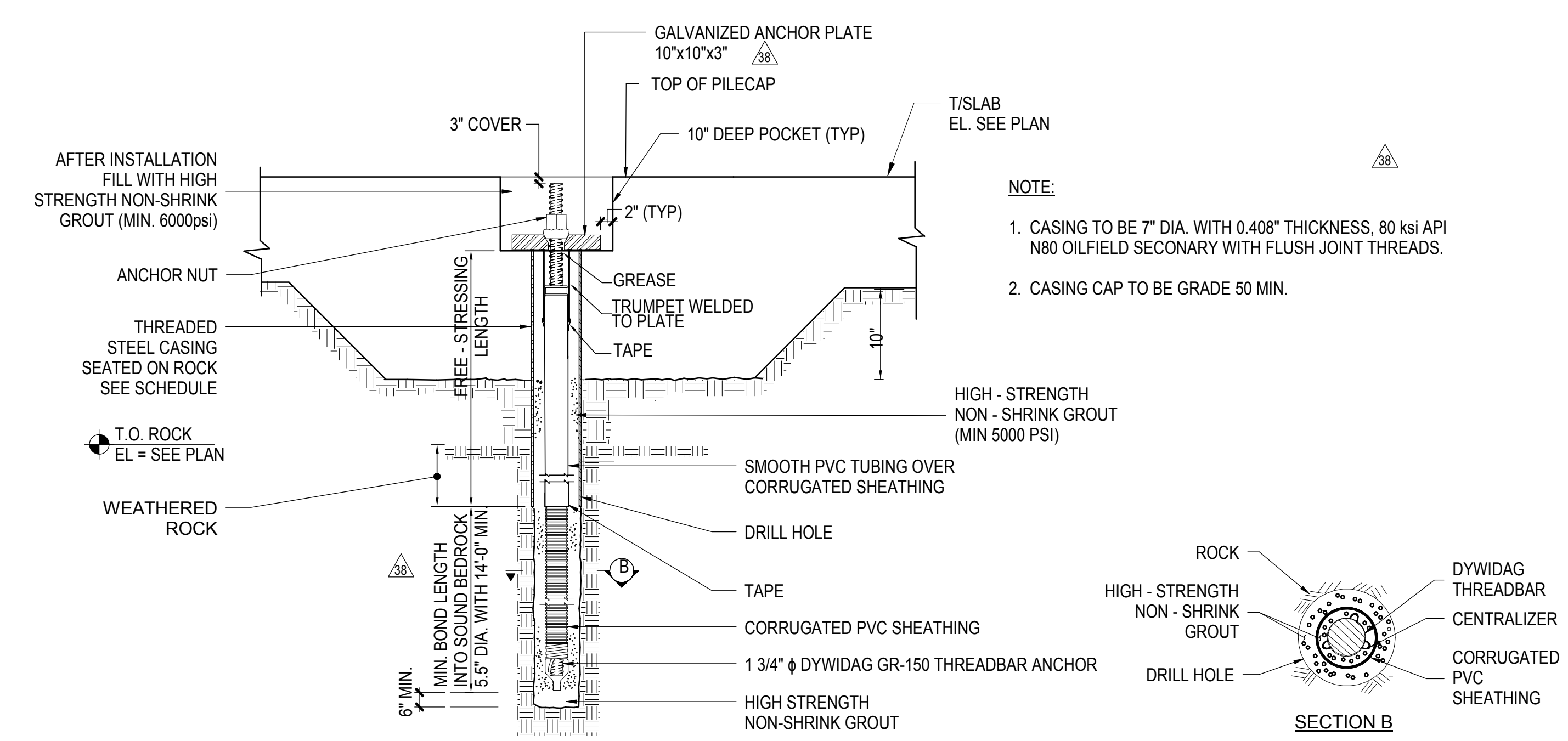
**2 PRESSURE SLAB CONN. TO FUTURE INTERIOR SPECIALTY PARTITION**  
1" = 1'-0"



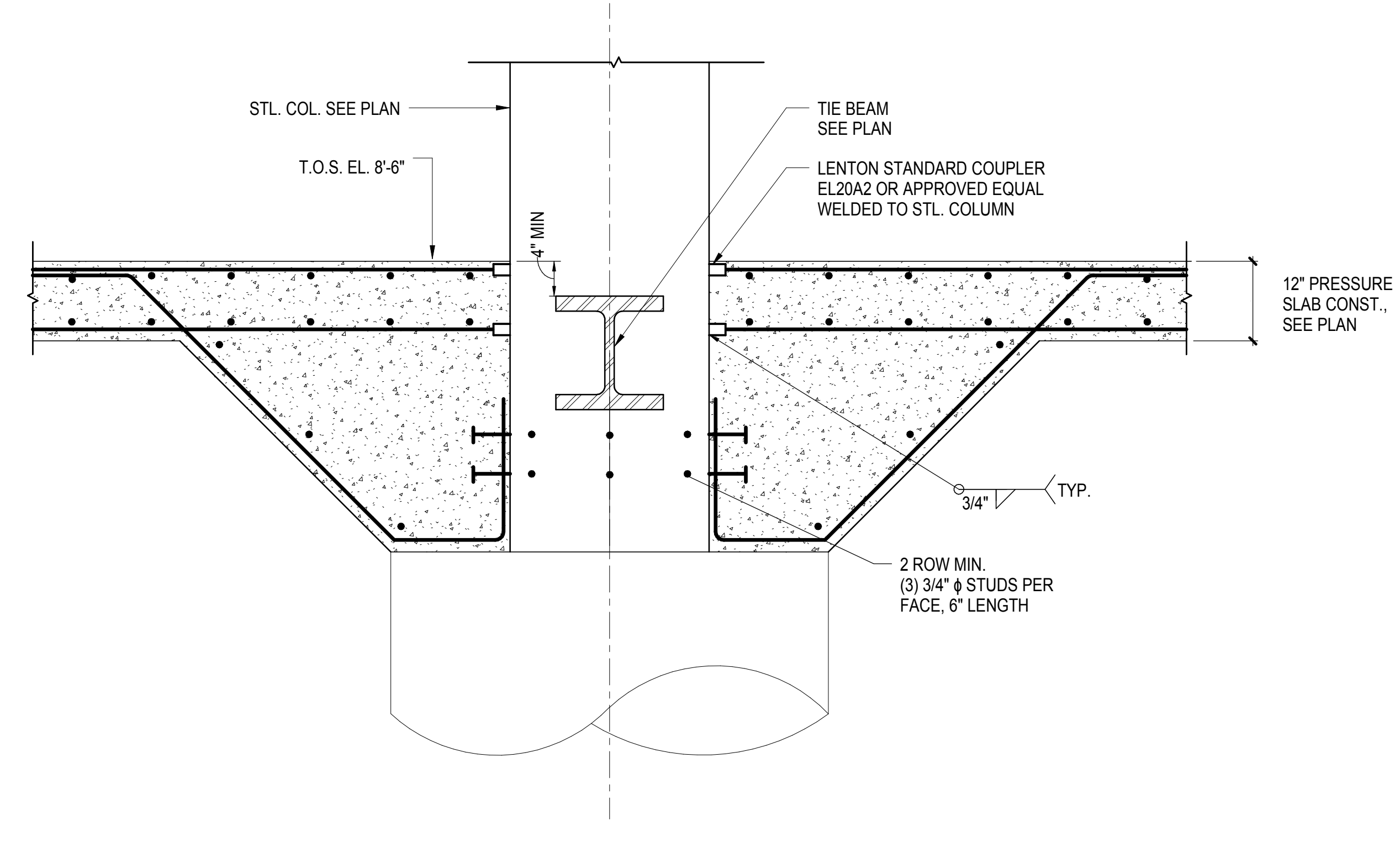
**3 TYPICAL STEP AT PRESSURE SLAB**  
1" = 1'-0"



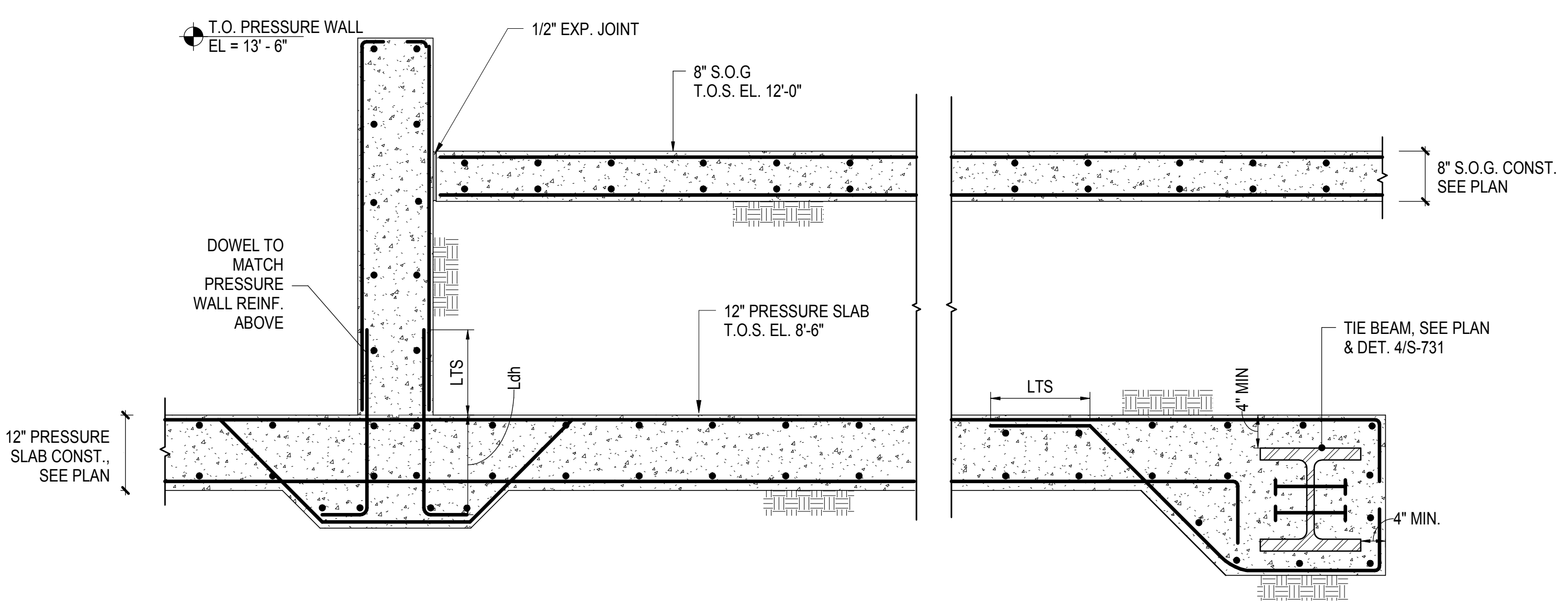
**4 SLAB SECTION AT TIE BEAM**  
3/4" = 1'-0"



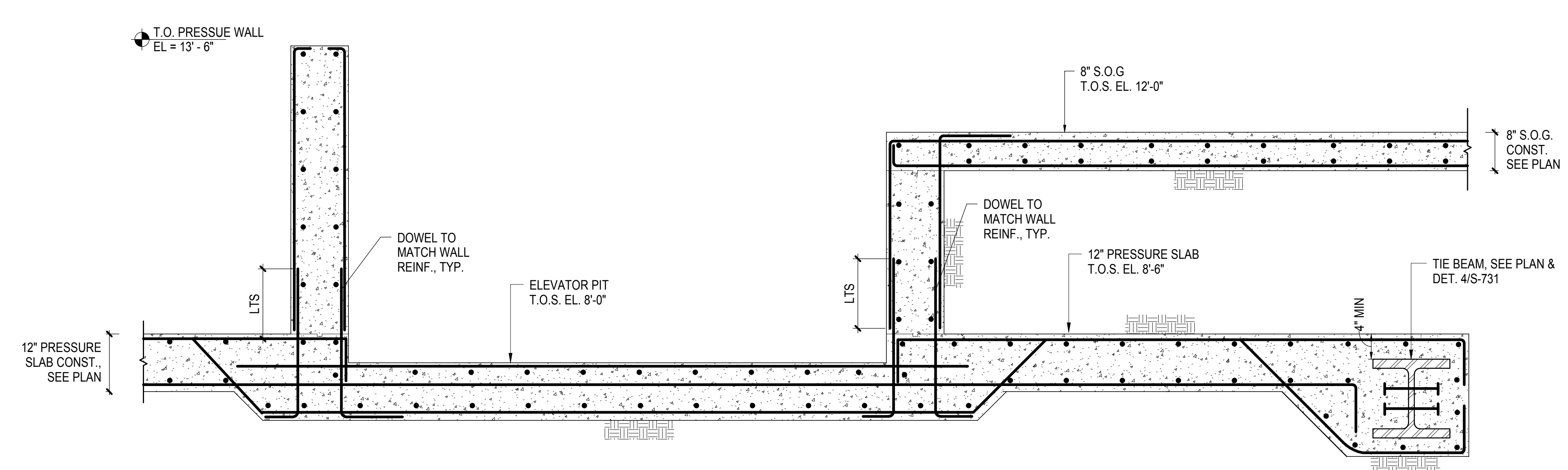
**5 TYPICAL ROCK ANCHOR SECTION**  
NOT TO SCALE



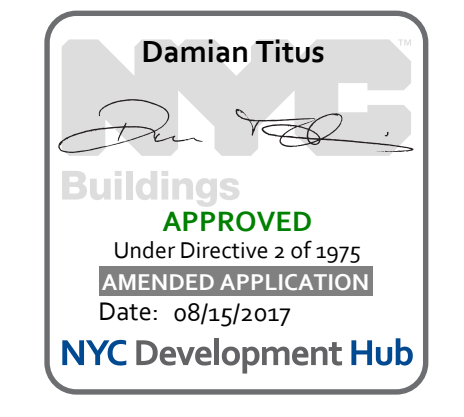
**6 TYP. SLAB REINFORCEMENT CONN. TO COLUMN**  
3/4" = 1'-0"



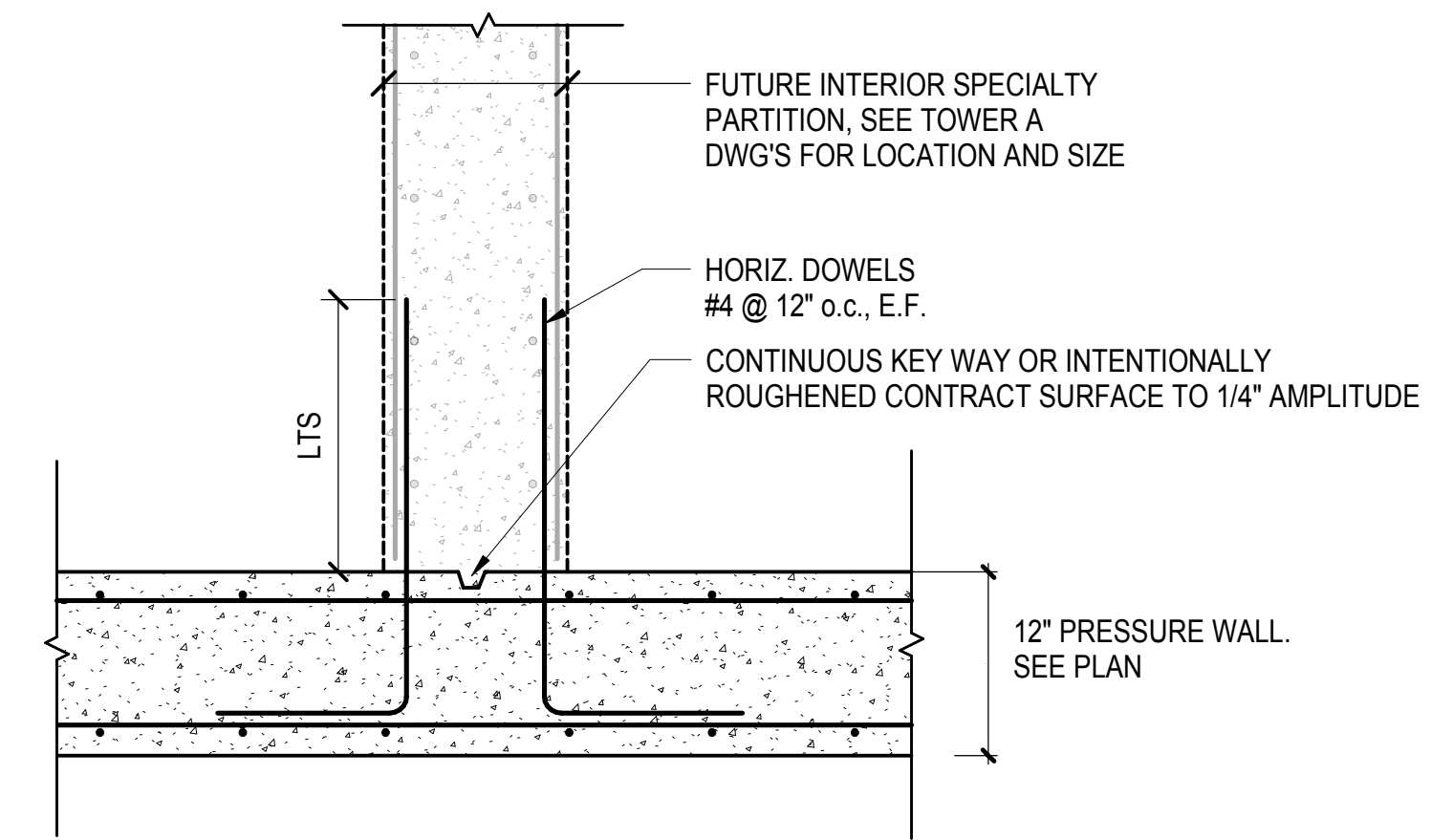
**7 SECTION AT WALL TO SLAB ON GRADE**  
3/4" = 1'-0"



**8 SECTION AT ELEVATOR PIT TO SLAB ON GRADE**  
3/4" = 1'-0"



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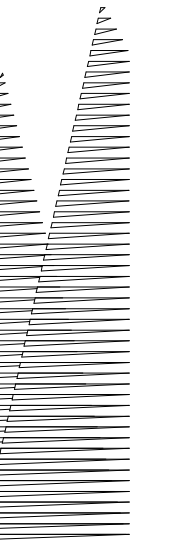
NOTE: LTS INDICATES TENSILE LAP SPLICE, SEE SCHEDULES ON S-730.

**PART PLAN AT CONNECTION TO FUTURE INTERIOR SPECIALTY PARTITION**

① 1" = 1'-0"

**HUDSON YARDS PLATFORM**

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NEW YORK, NY



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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0073	4/20/2015
Revised	4/20/2015

Key Plan

Date: 04/20/15  
Project No: N11330.00  
Designed By: Author  
Sheet Number: 72

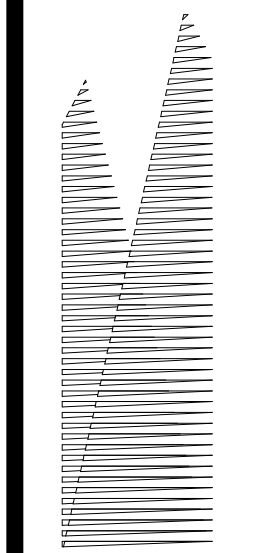
**HYE -PL -S-372.00**

**EAST PLATFORM FOUNDATION SECTIONS AND DETAILS**

Drawing Number / BCCAN Drawing Number  
**S-372.00**

SHEET 72 of 163





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

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330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
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Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

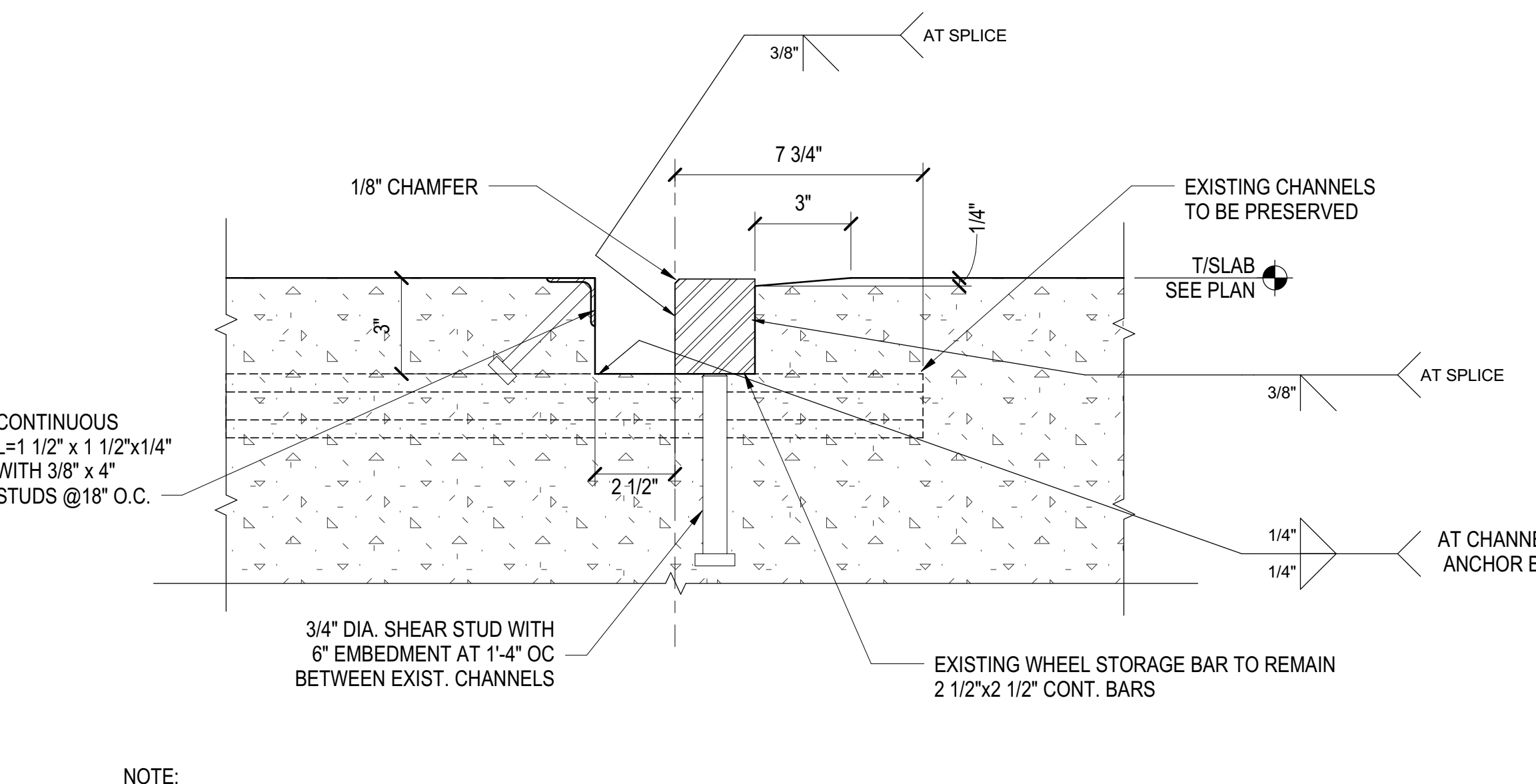
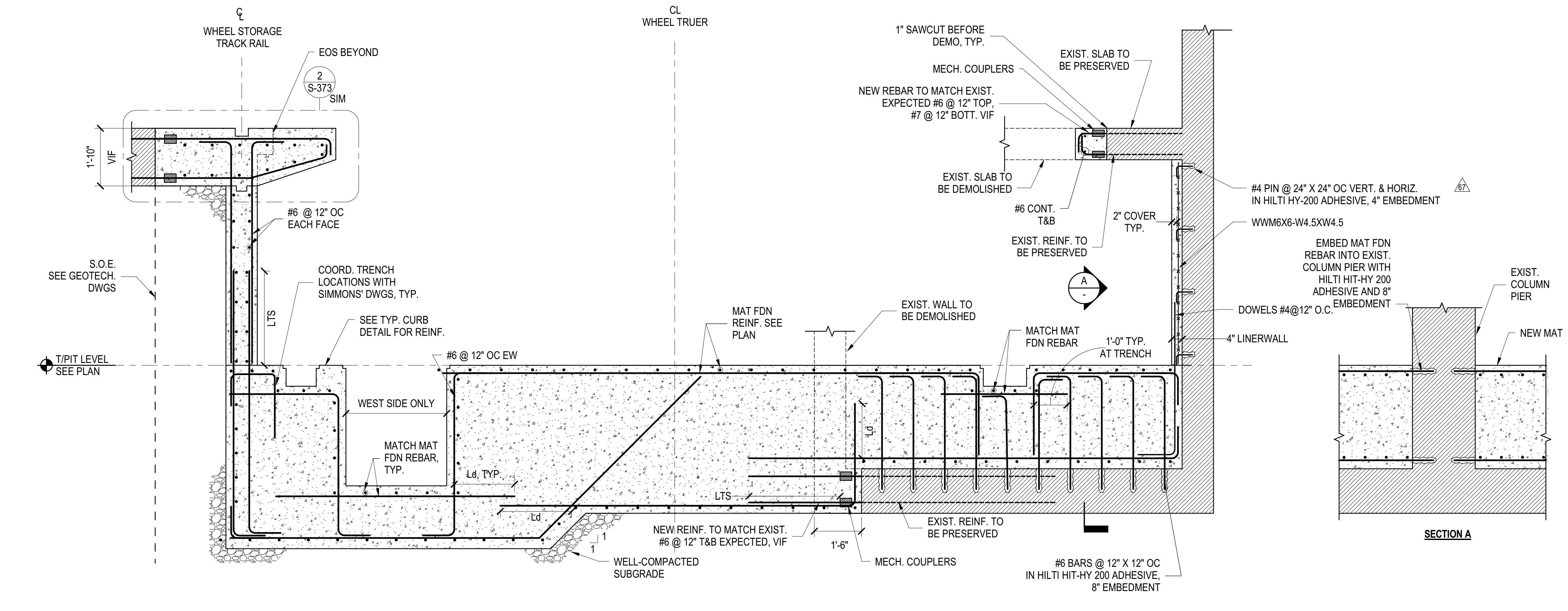
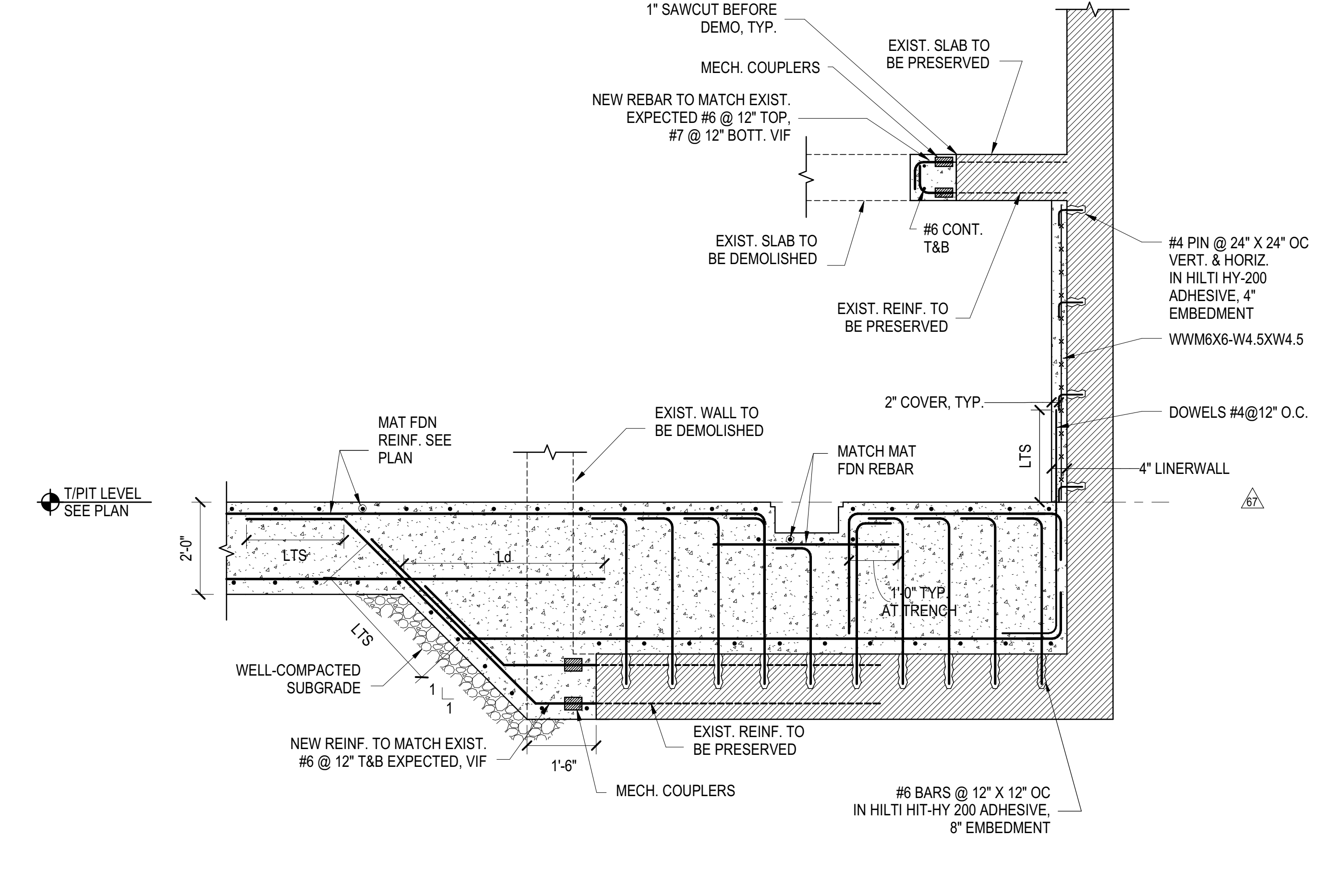
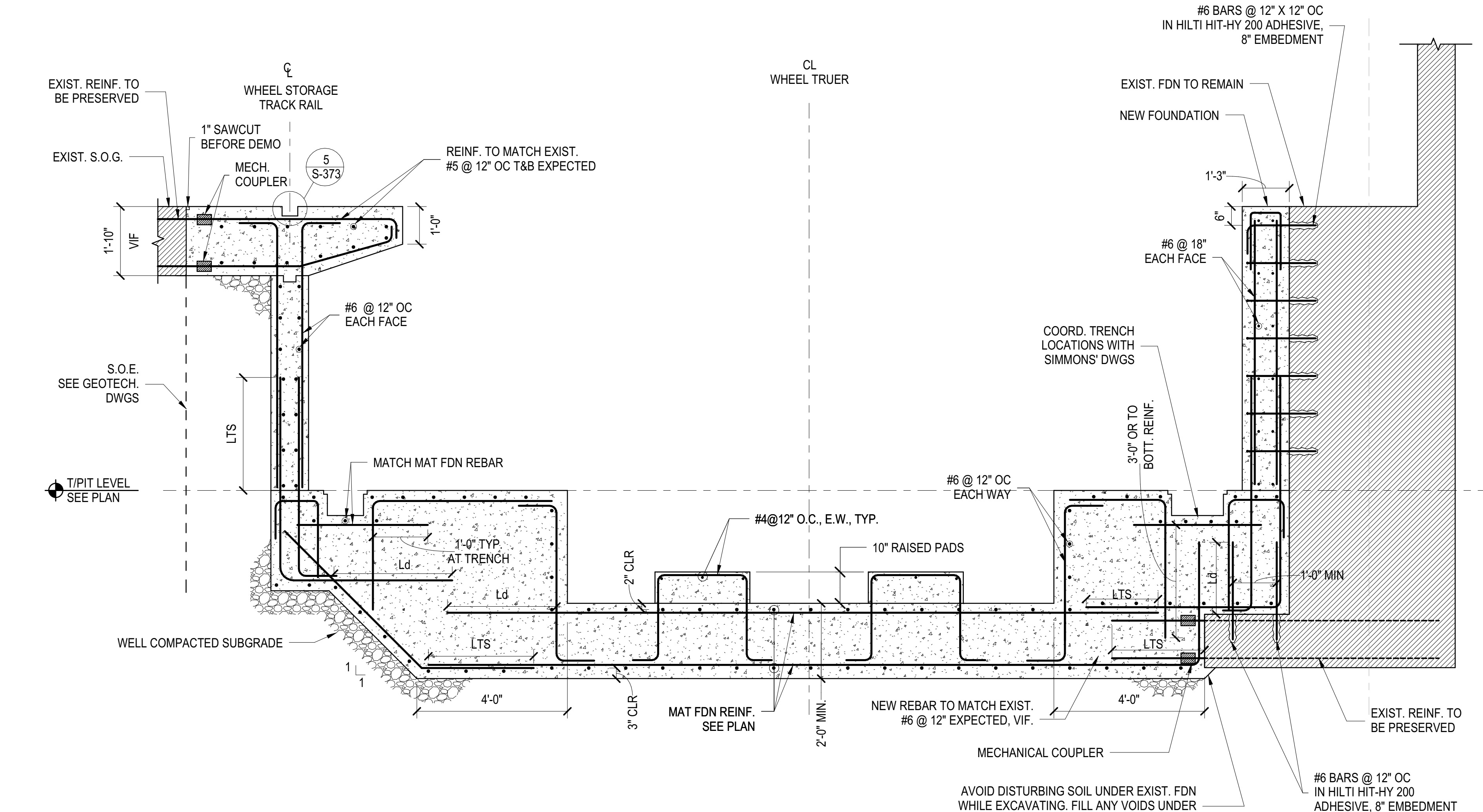
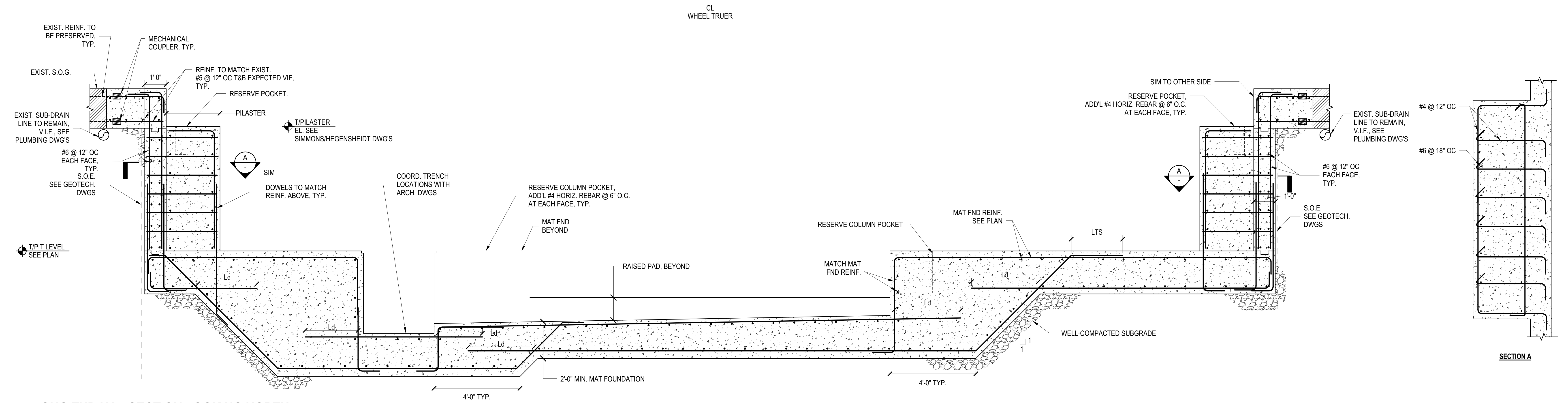
Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

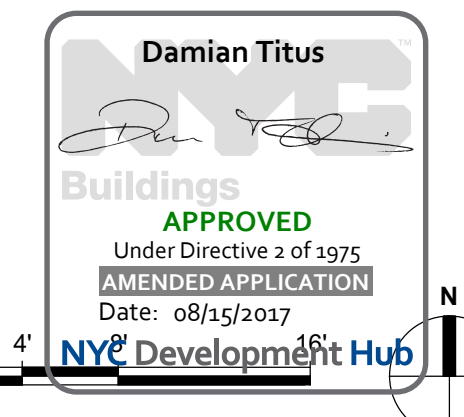
LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
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NO.	DESCRIPTION	DATE
1	DRB POST-APPROVAL AMENDMENT	10/28/2016
2	AS-BUILT	07/15/2016
3	Mod. 100% Wheel Truer Design	5/31/2016
4	Submission Rev. 1	3/23/2016
5	Mod. 100% Wheel Truer Design	3/23/2016
6	Submission	1/29/2016
7	LJRR MOE 90% WIM	1/29/2016
8	As-Built	As-Built



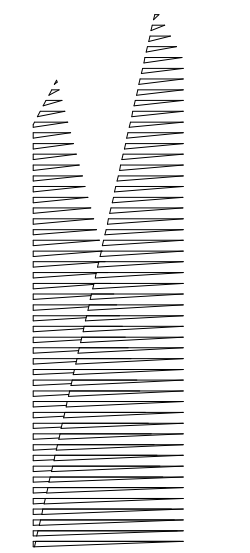
NOTE:  
1. ALL THE SPLICE WELDS SHALL BE GROUND SMOOTH



**HYE-PL-S-373.00**  
NEW WHEEL TRUER SECTIONS AND DETAILS

Project No: N11330.00  
Drawing No: S-373.00  
SHEET 73 OF 163

NEW WHEEL TRUER SECTIONS AND DETAILS  
S-373.00  
10/27/2016 5:45:17 PM  
C:\Users\mkp\Desktop\Rev\N11330.00 - East Platform - skg.rvt



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Construction Manager  
Fishman Construction Corporation  
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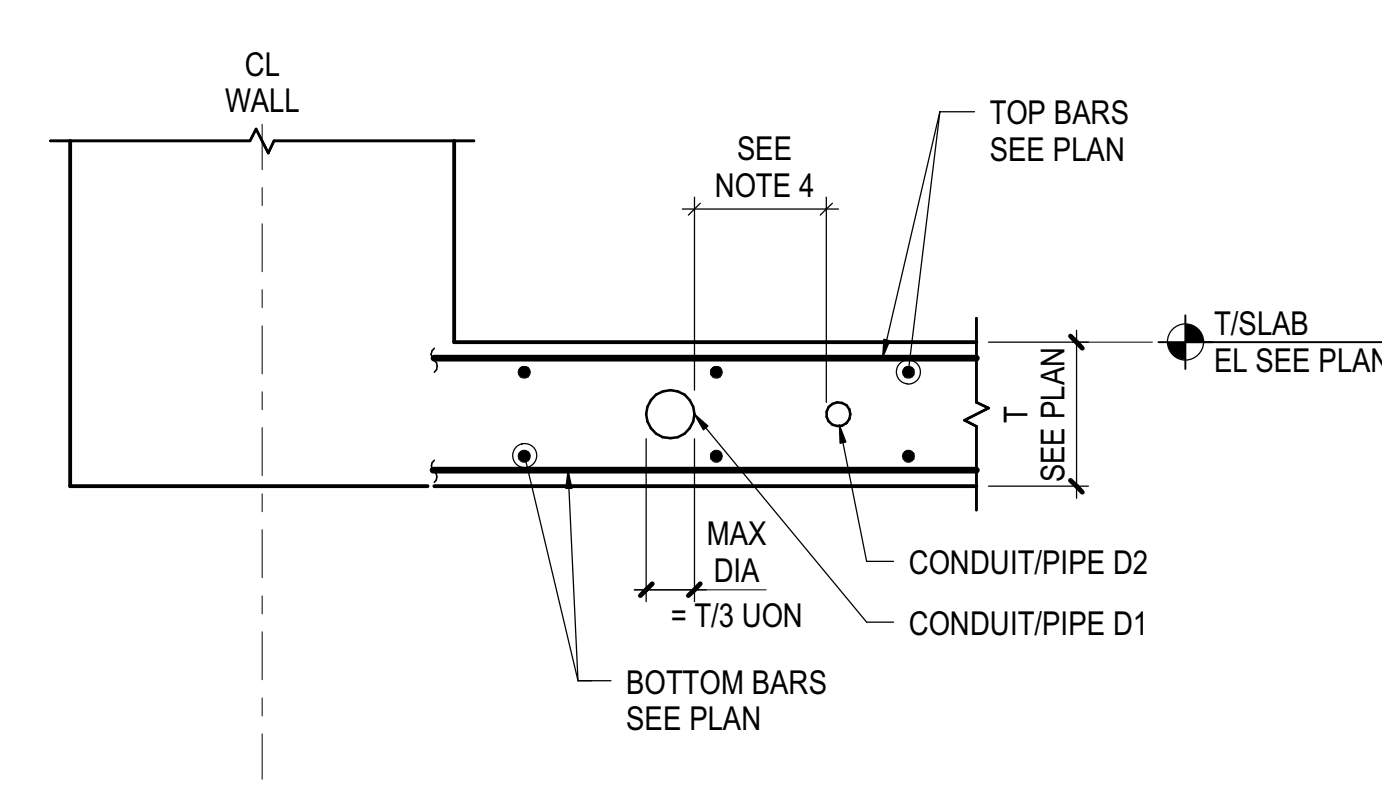
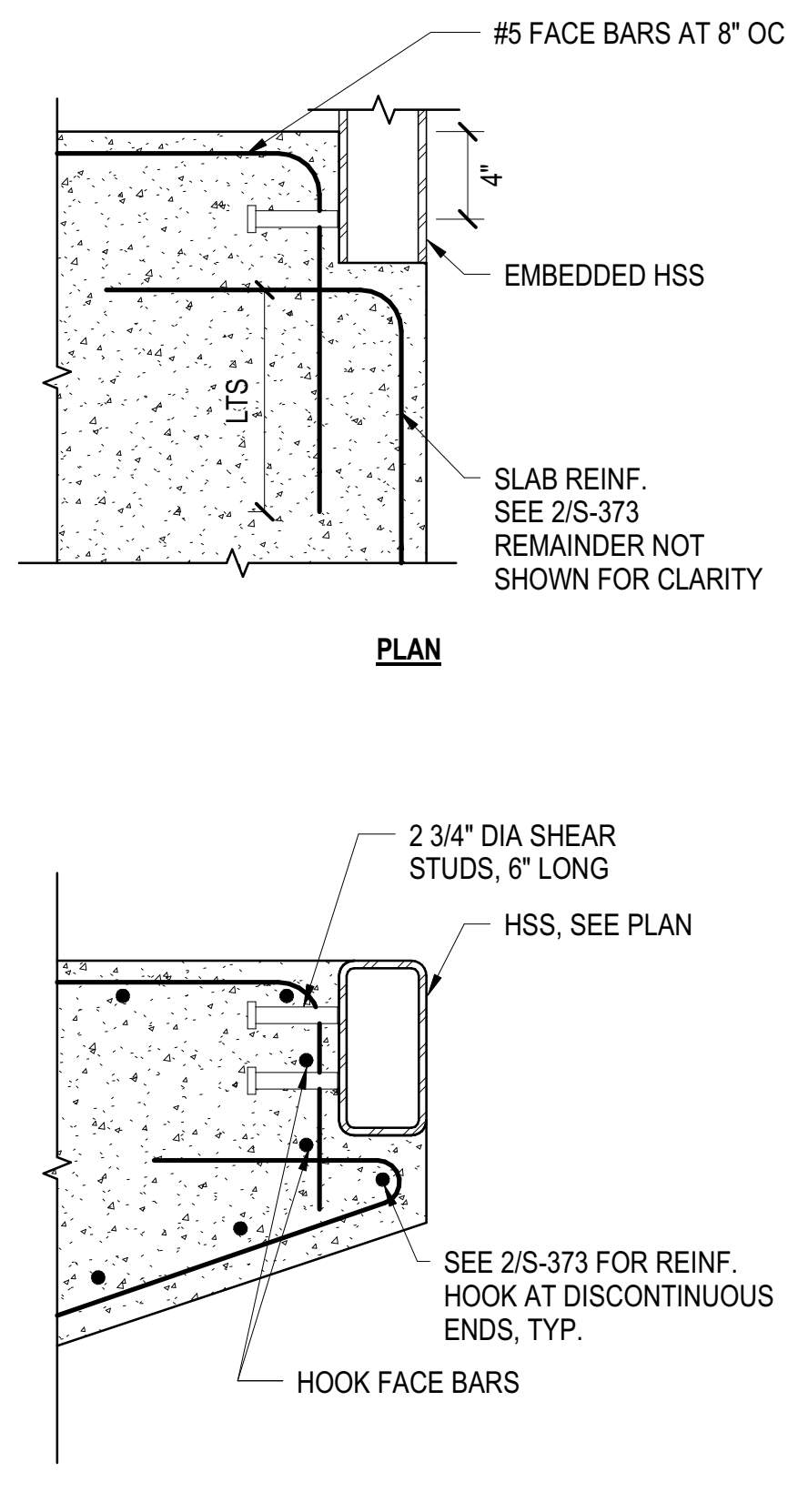
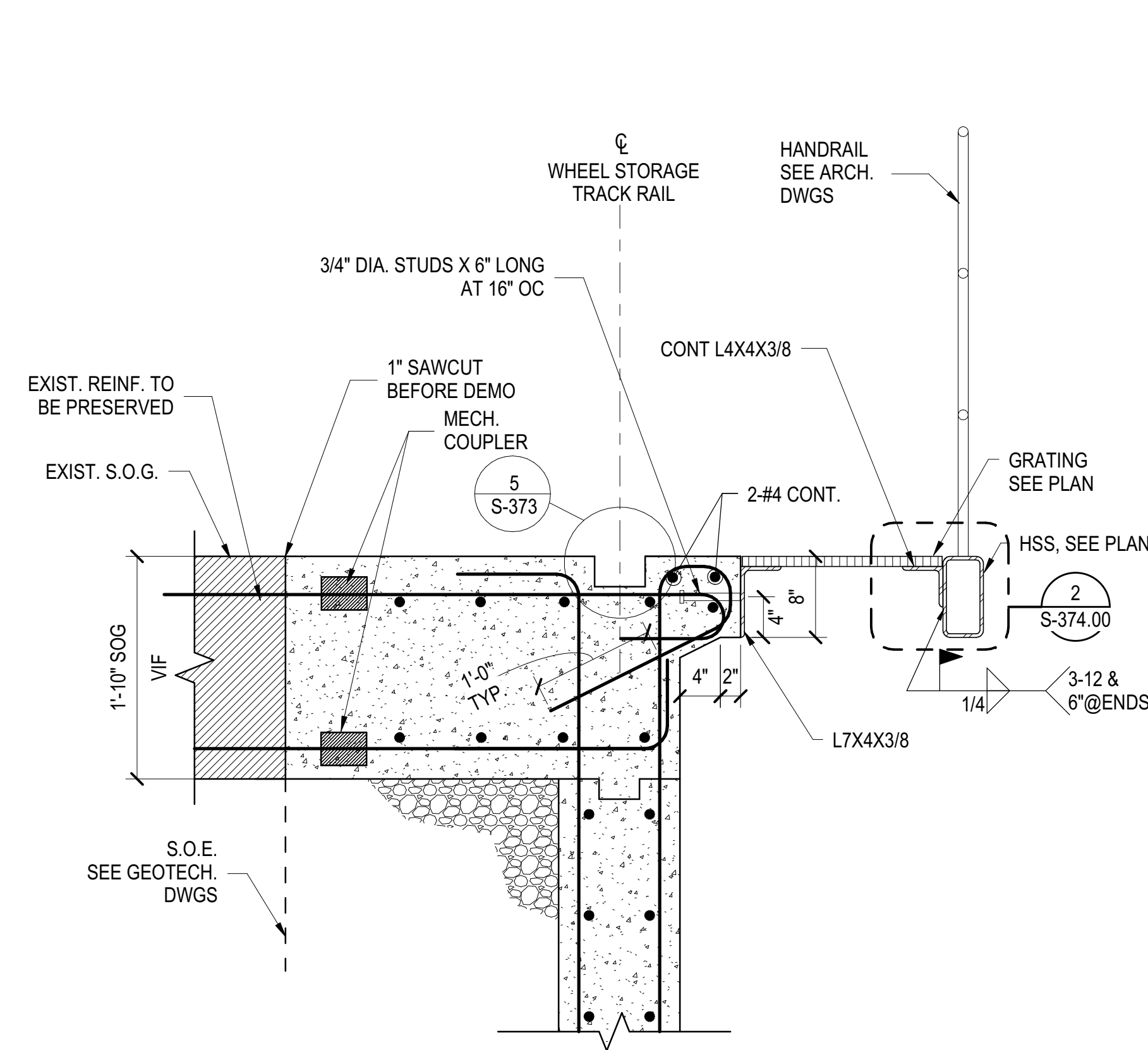
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
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LIRR Substation  
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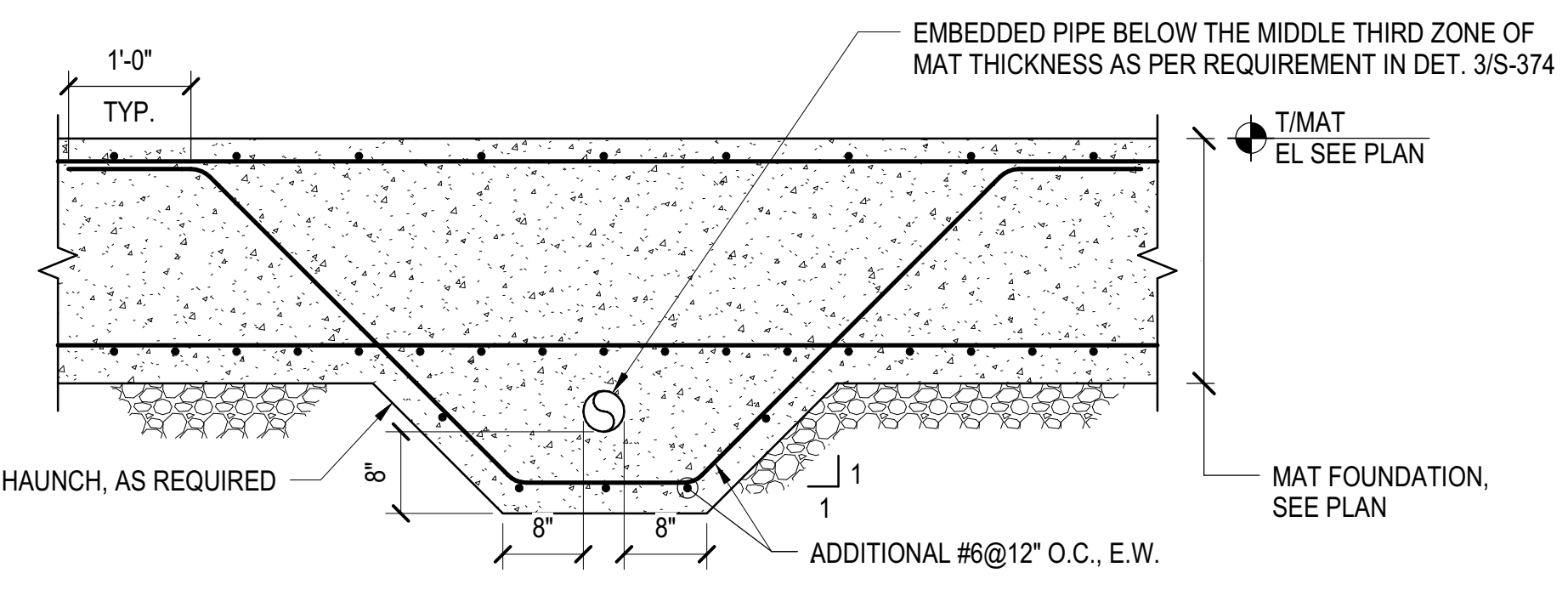
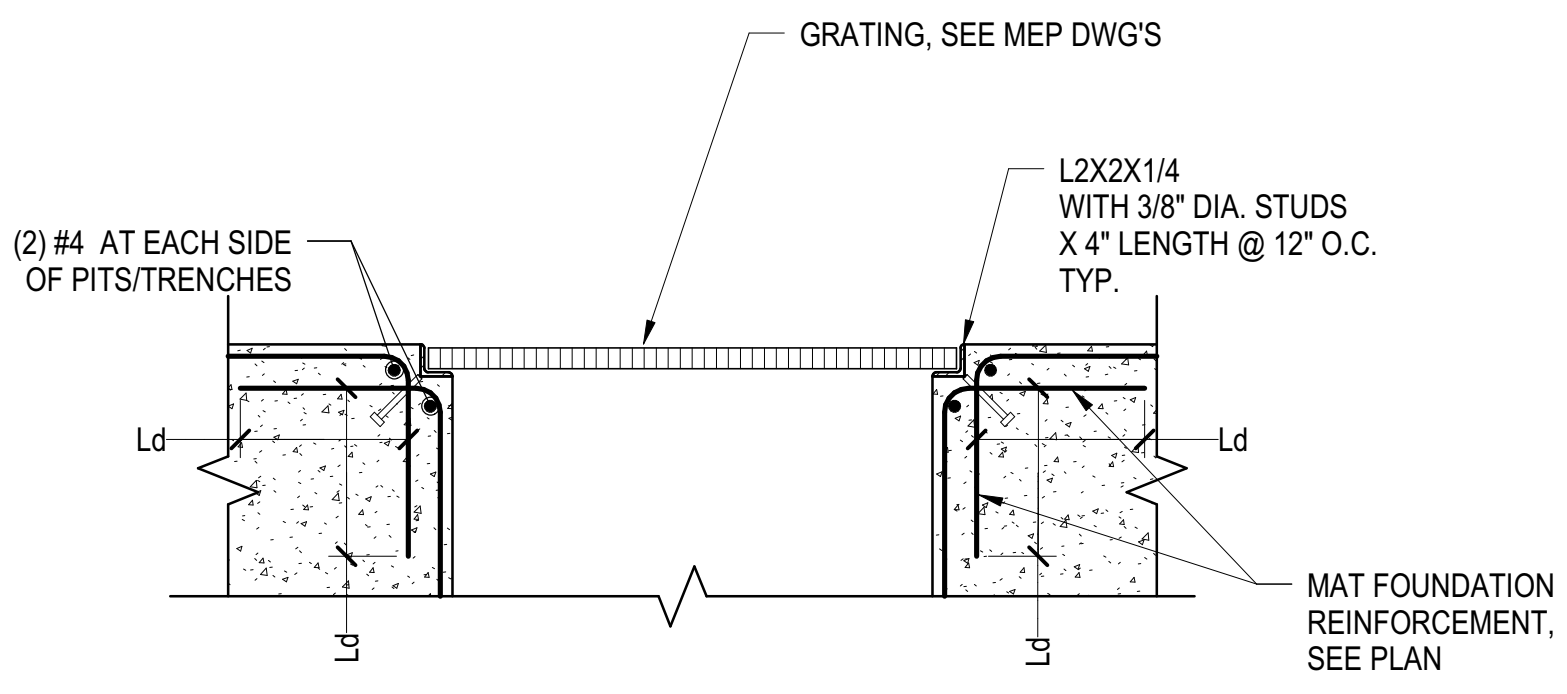


- NOTES:**
- PLACE CONDUITS/PIPES BETWEEN TOP AND BOTTOM LAYER OF REINFORCEMENT WITHIN MIDDLE THIRD ZONE OF MAT
  - CROSSOVER OF CONDUITS AND/OR PIPES IS NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL BY SER
  - CONDUITS/PIPES TO BE PLASTIC OR STEEL. USE OF ALUMINUM CONDUITS IS NOT PERMITTED
  - MAINTAIN A CLEAR SPACING BETWEEN CONDUITS AND/OR PIPE OF THREE TIMES THE LARGER OUTER DIAMETER OF D1 AND D2, BUT NOT LESS THAN 6" MIN.
  - NO MORE THAN THREE (3) CONDUITS OR PIPE PER SIX (6) FT WIDTH OF MAT ARE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL BY SER
  - WHERE LARGE NUMBERS OF CONDUIT/PIPE ENTER THE SLAB AT ONE LOCATION:
    - SUBMIT LAYOUT FOR APPROVAL BY SER
    - FAN OUT CONDUITS IMMEDIATELY
    - PROVIDE ADDITIONAL TOP & BOTTOM REINFORCEMENT AS DIRECTED BY SER UNTIL NOTES 4 AND 5 SPACING REQUIREMENTS ARE MET
  - NO CONDUITS/PIPES ARE PERMITTED WITHIN 1'-0" CLEAR FROM MAT EDGE
  - ANY DEVIATIONS FROM THE ABOVE STATED CONDITIONS REQUIRE WRITTEN APPROVAL BY SER

**1 SECTION THROUGH GRATING**  
1" = 1'-0"

**2 EMBED DETAIL AT ENDS OF HSS**  
1 1/2" = 1'-0"

**3 TYPICAL CONDUITS/PIPES IN MAT**  
NOT TO SCALE



**4 GRATING RECESS AT PITS/TRENCHES**  
1" = 1'-0"

**5 HUANCH AT LOW EMBEDDED PIPE**  
3/4" = 1'-0"

NO.	Description	Date
1	DO NOT POST-APPROVAL AMENDMENT	10/28/2016
2	AS-BUILT	07/15/2015
3	Mod: 100% Wheel Truss Design	5/31/2016
4	Submission Rev. 1	
5	Mod: 100% Wheel Truss Design	3/23/2016
6	Submission	
7	LIRR MOE 90% WTM	1/28/2016
8		

Key Plan

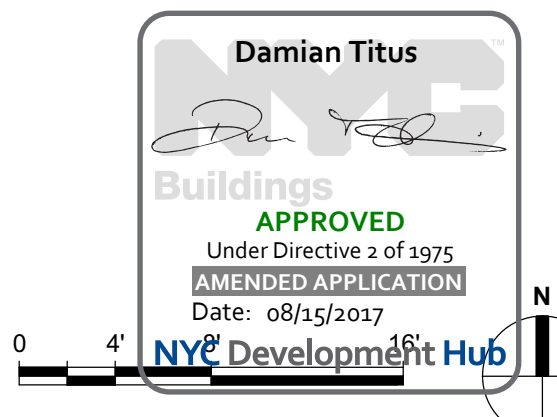
Date: 01/19/16  
Project No: N11330.00  
Revision By: Author  
Sheet Number: Author

**HYE -PL -S-374.00**

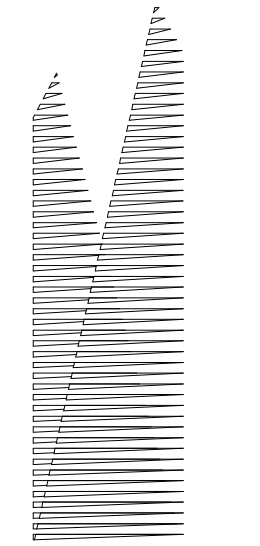
**NEW WHEEL TRUER SECTIONS AND DETAILS**

Drawing Number / B.C.A.N. Drawing Number  
**S-374.00**

SHEET 74 of 163







Client  
Related Companies  
330 Park Avenue, 17th Floor  
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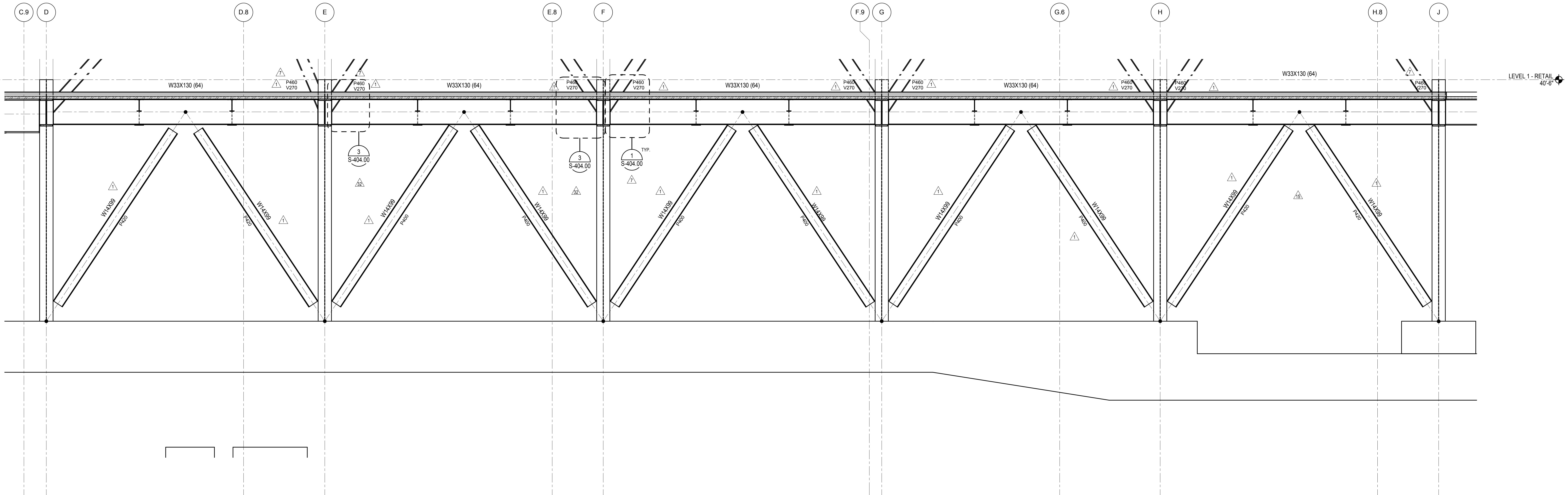
Architect  
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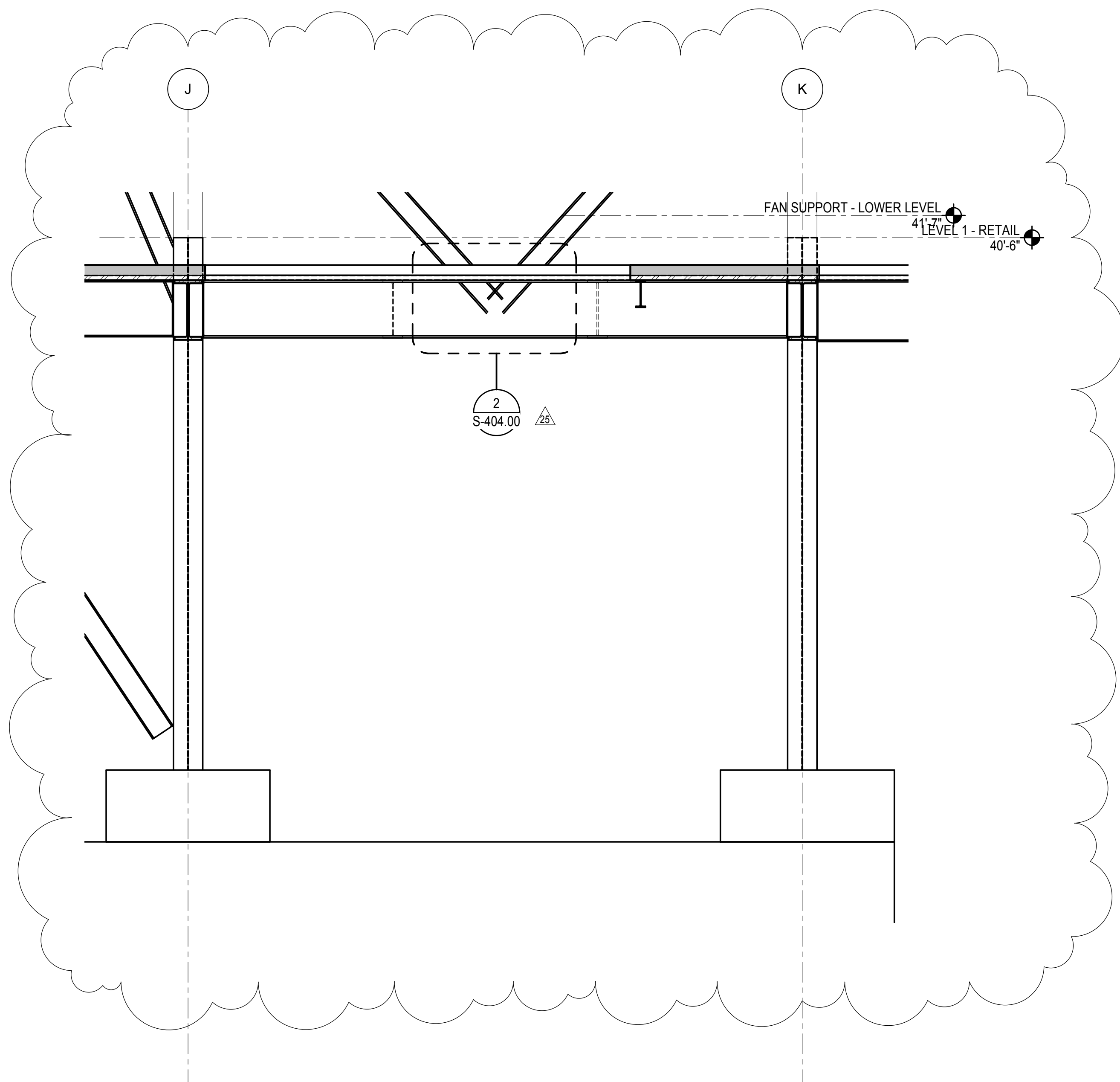
Civil, Mechanical, Electrical, Plumbing,  
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77 Water Street  
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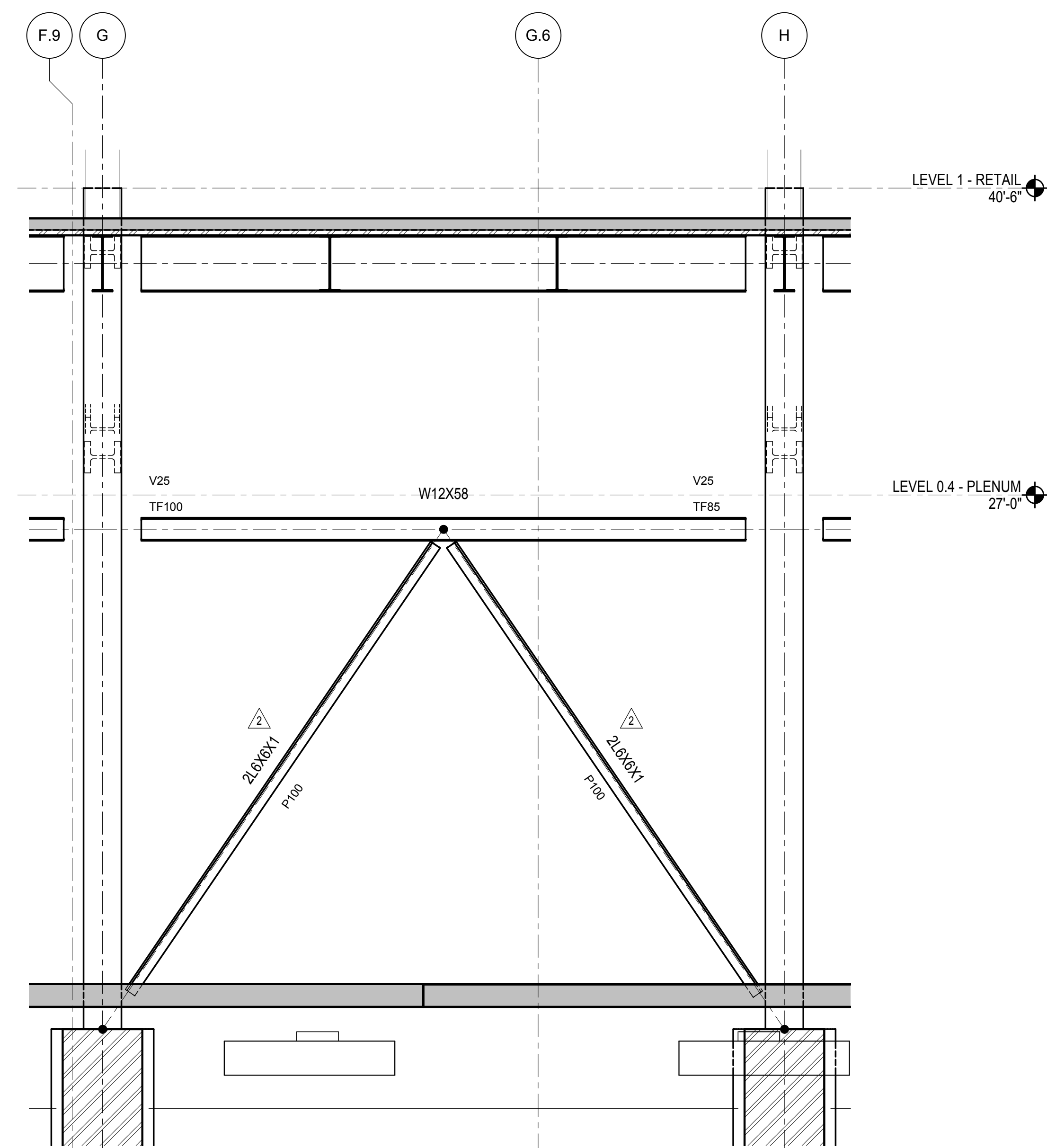
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



**1 BRACED FRAME AT GRID 1**  
1/4" = 1'-0"



**2 BRACED FRAME AT GRID 1 - CONTINUED**  
1/4" = 1'-0"



**3 BRACED FRAME AT GRID 5**  
1/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASD0049	10/14/2014
ASD0049 - PLATFORM GRID 1 BRACE	08/13/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	11/22/2013
MdL - PLATFORM SUBMISSION	11/1/2013
DB-02 PHASE 1 STRUCTURAL UPDATE	10/4/2013
NYC DOB FILING	9/20/2013
DB-01 PHASE 1 STRUCTURE UPDATE	8/09/2013
LJRR - 90% SUBMISSION	6/17/2013
NYC DOB FILING	5/29/2013
LJRR - 60% SUBMISSION	
NY	

Key Plan

Date: 05/29/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

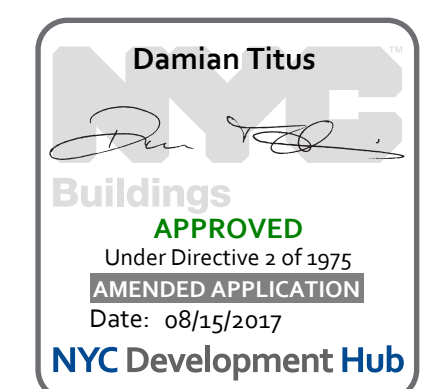


**HYE -PL -S-400.01**

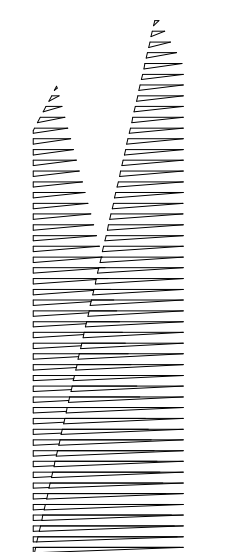
**EAST PLATFORM BRACED FRAME ELEVATIONS**

Drawing Number / B/CAN Drawing Number

**S-400.01**



**APPROVED**  
Under Directive 3 of 1975  
Professional Registration  
Date: 08/15/2017  
NYC Development Hub



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DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00049	10/14/2014
ASH00048 - PODIUM GRID 7 BRACE	09/09/2014
ASH00036 - PODIUM GRID 1 BRACE	08/13/2014
ASH00005	2/18/2014
Rev	Description
0	000

Key Plan

Date: 02/18/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number:

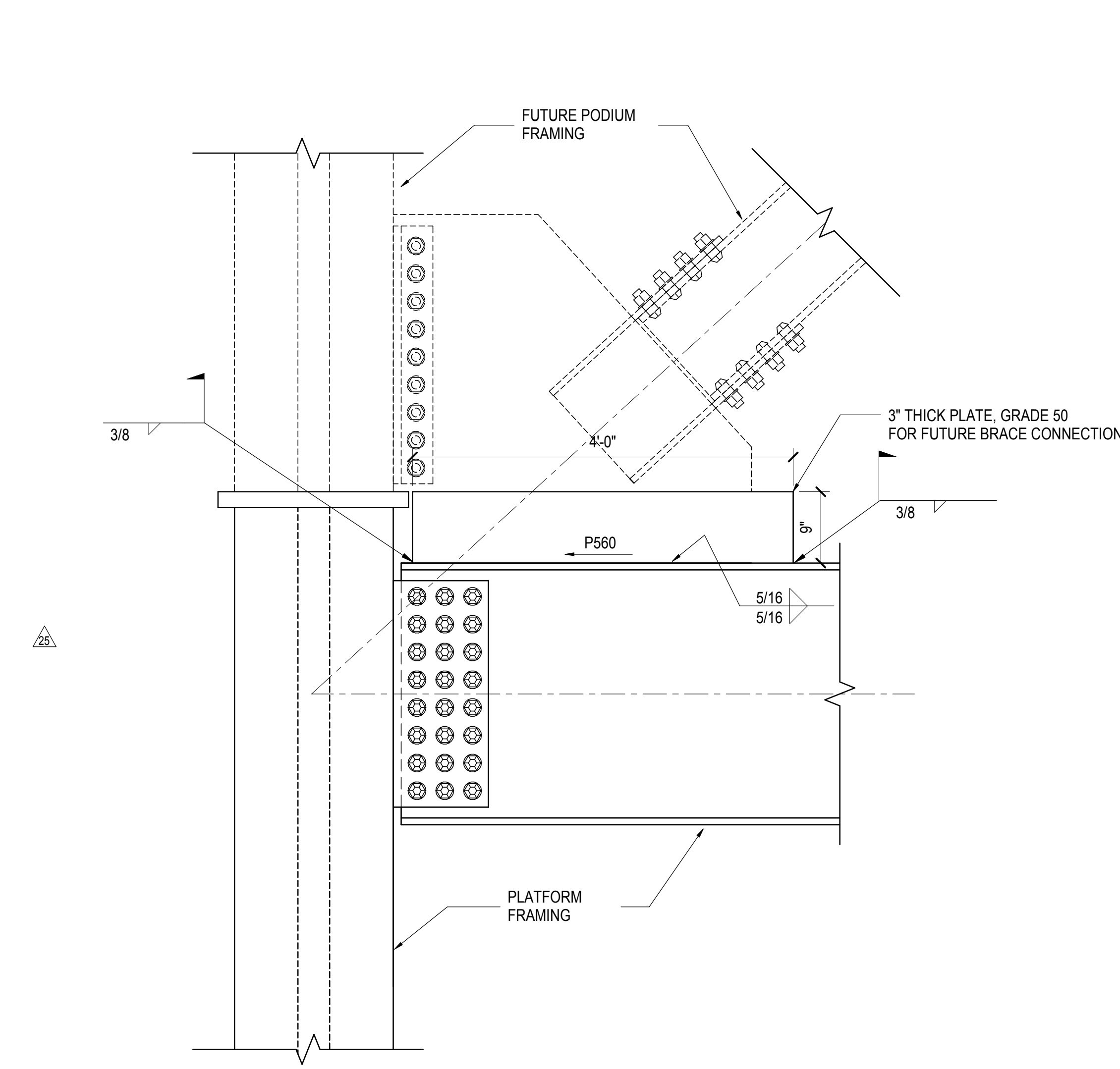
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Drawing Title

FUTURE BRACE  
CONNECTION

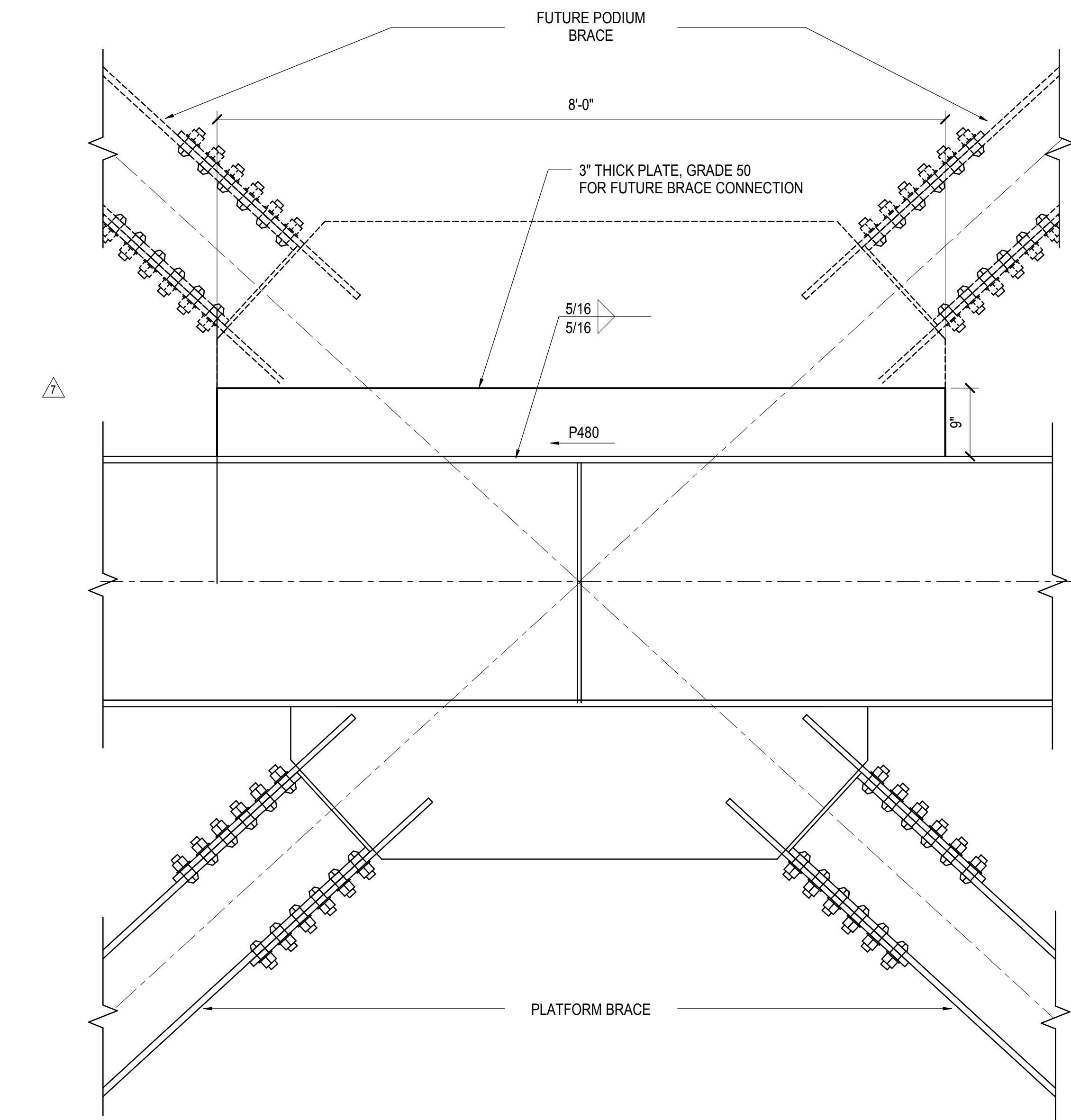
Drawing Number / B/CAN Drawing Number

S-404.00  
SHEET 76 of 163

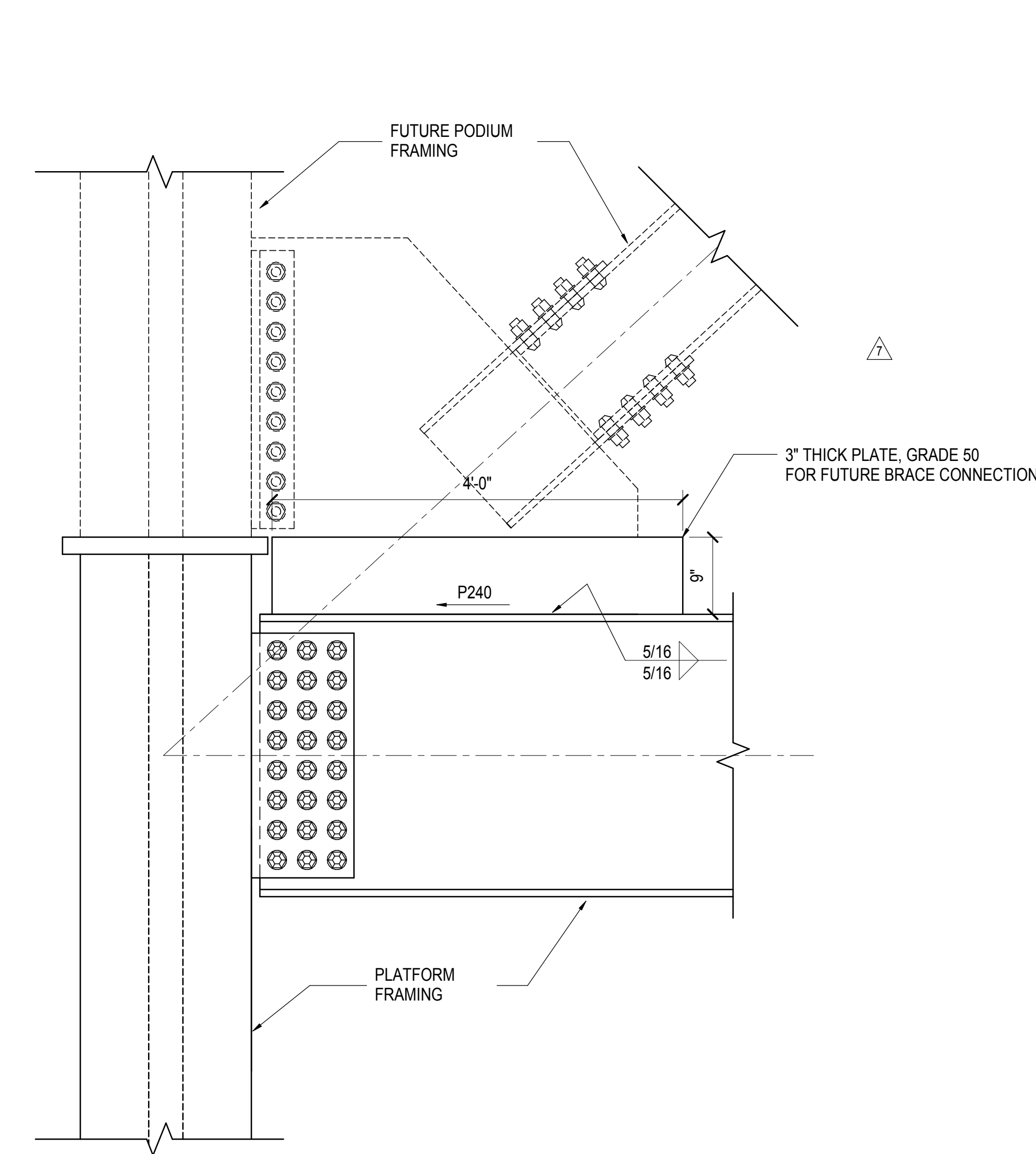
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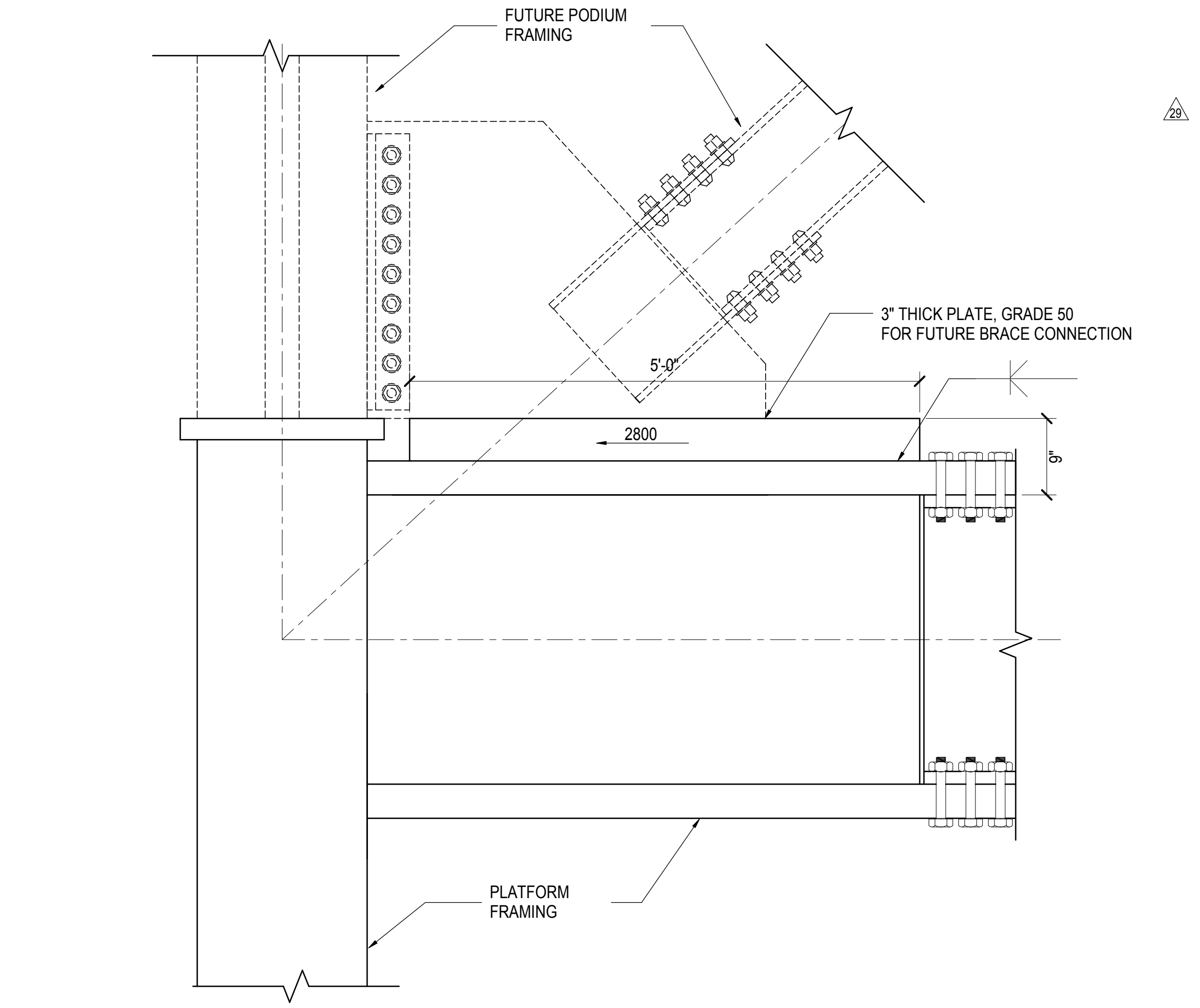
3 FUTURE BRACE CONNECTION TO BEAM END AT GRID 1 BETWEEN E&F  
1" = 1'-0"



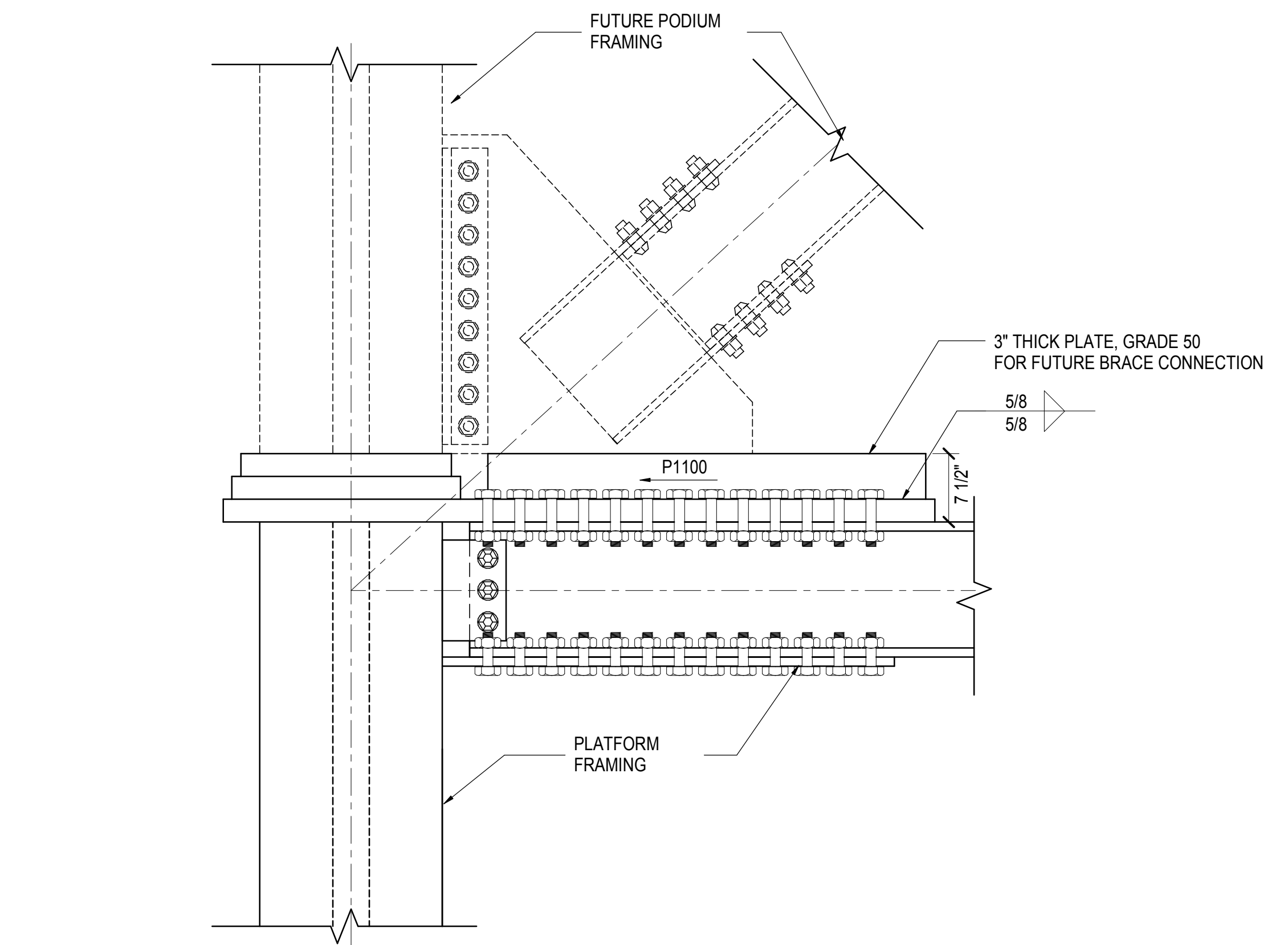
2 FUTURE BRACE CONNECTION TO BEAM MIDSPAN AT GRID 1  
1" = 1'-0"



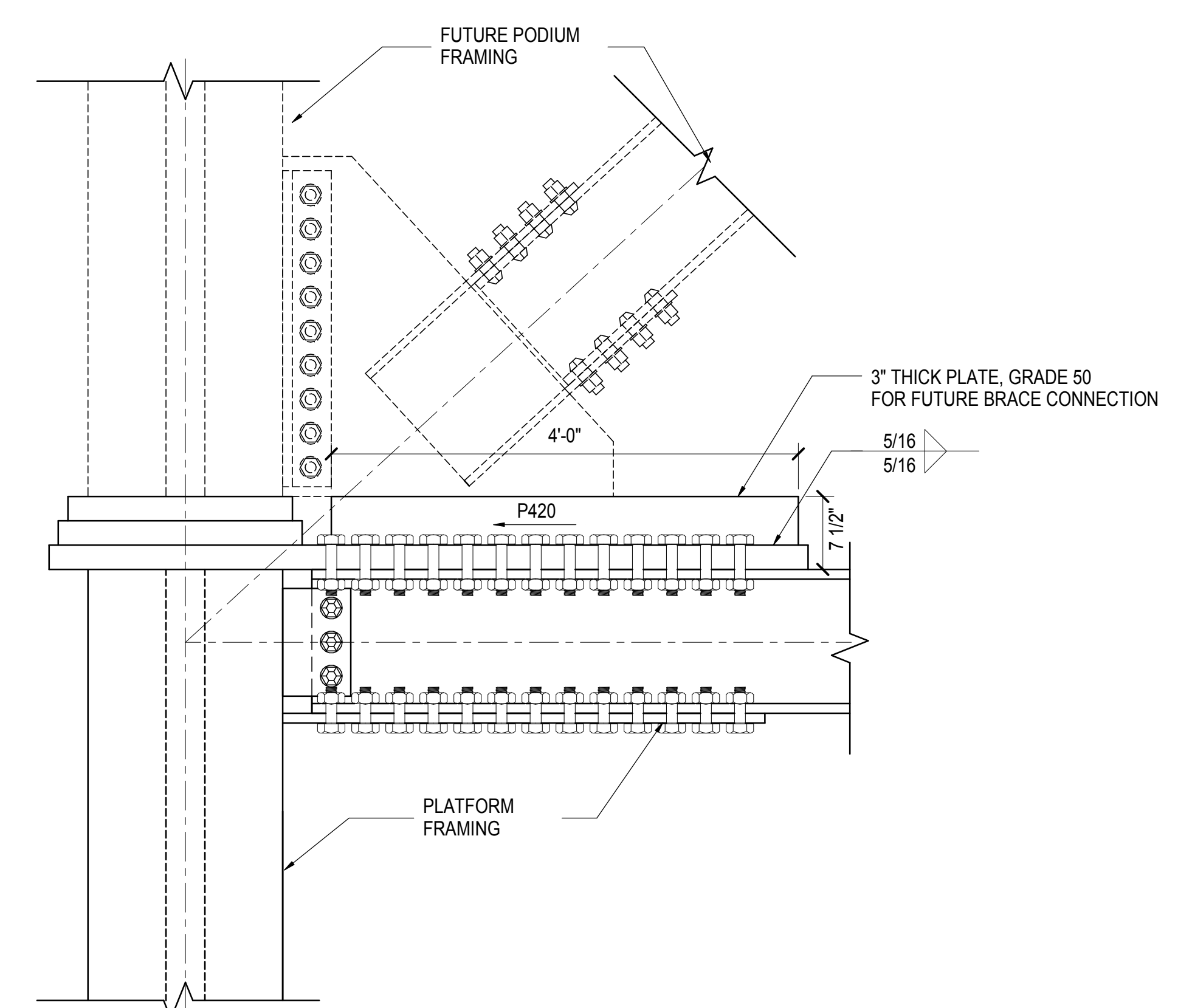
1 TYPICAL FUTURE BRACE CONNECTION TO BEAM END AT GRID 1  
1" = 1'-0"



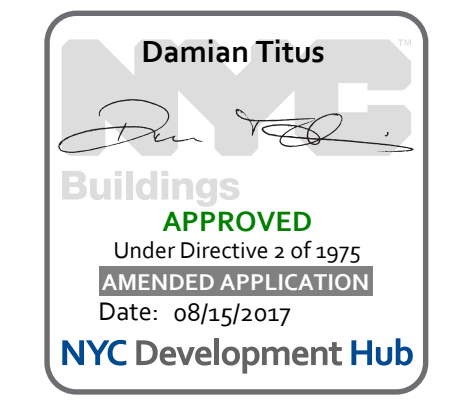
6 TYPICAL FUTURE BRACE CONNECTION TO BEAM END AT GRID 14  
1" = 1'-0"



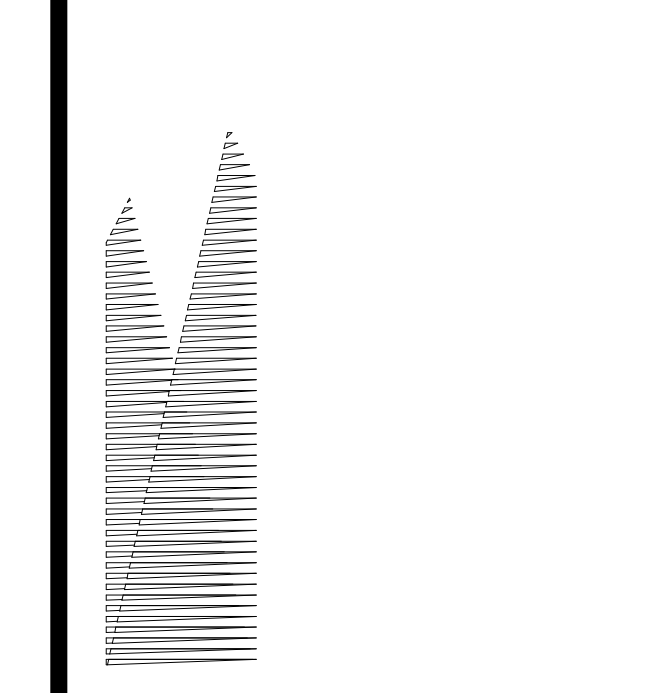
5 FUTURE BRACE CONNECTION ALONG GRID 7 BETWEEN GRID F&G  
1" = 1'-0"



4 TYPICAL FUTURE BRACE CONNECTION TO BEAM END AT GRID 7  
1" = 1'-0"



APPROVED  
Under Directive 2 of 1975  
Professional Regulation  
Date: 08/15/2017  
NYC Development Hub



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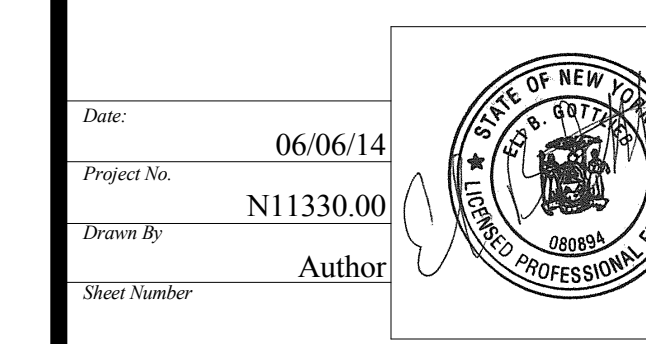
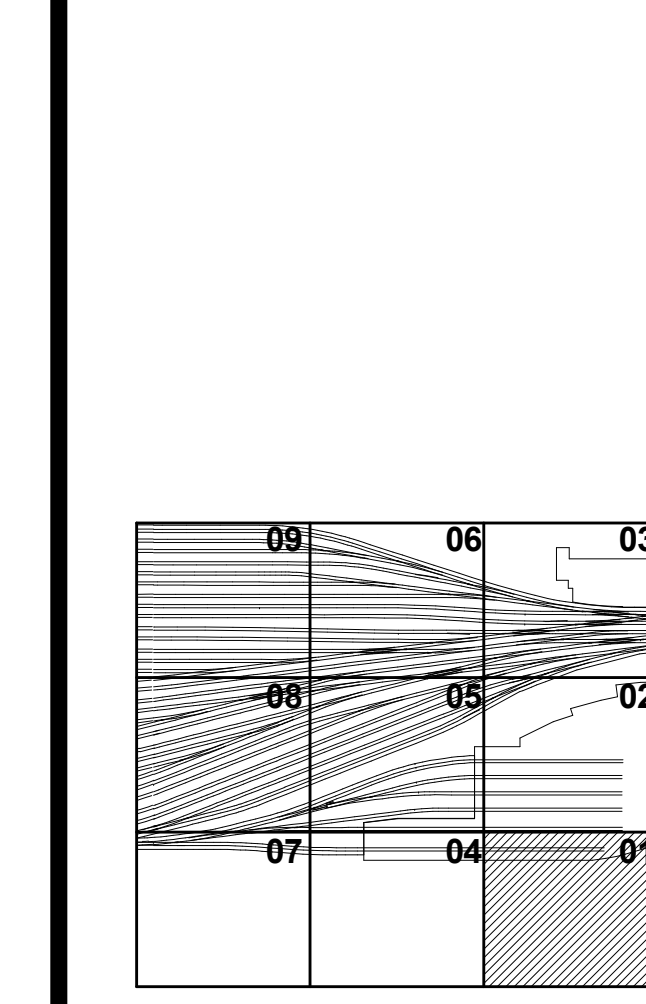
**Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**  
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DOR POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0008	10/14/2014
ASH0034	7/23/2014
ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
Rev. Description	Date

Key Plan

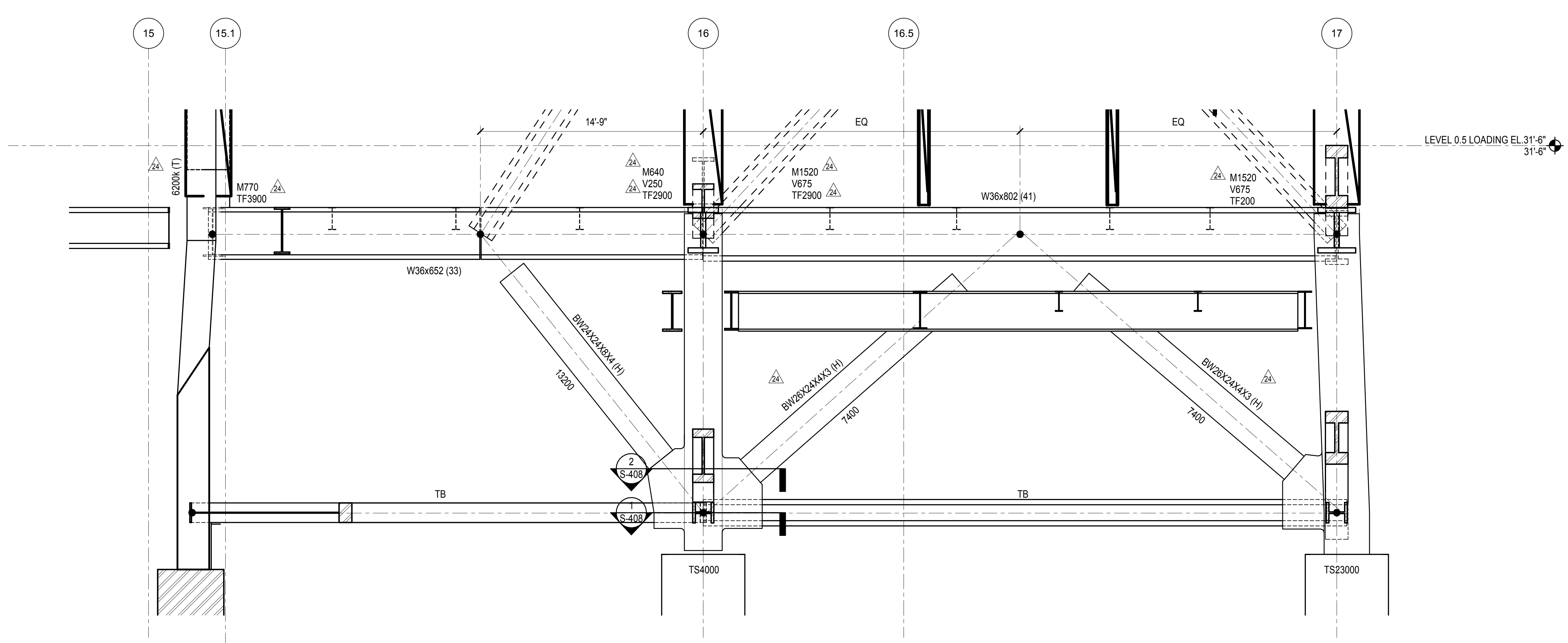


**HYE - PL - S-405.00**

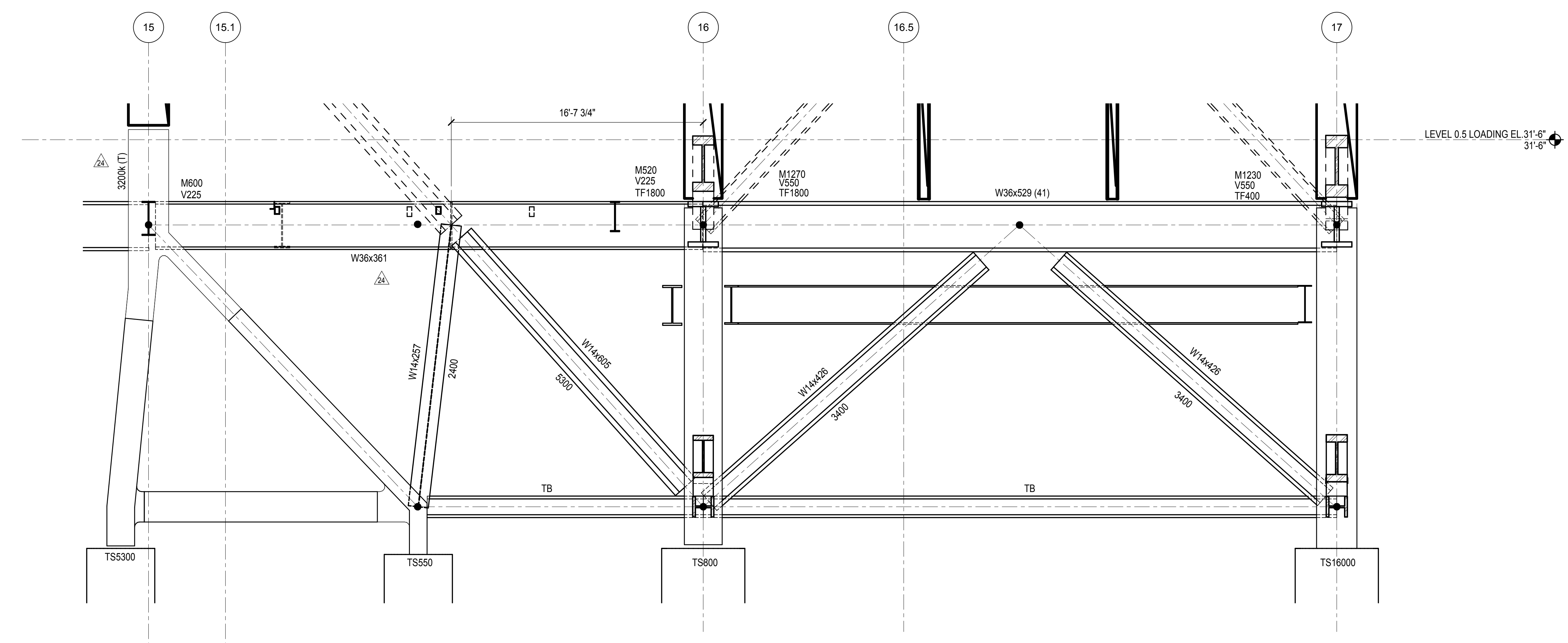
**TOWER A BRACED FRAME ELEVATIONS**

Drawing Number / Revision Drawing Number

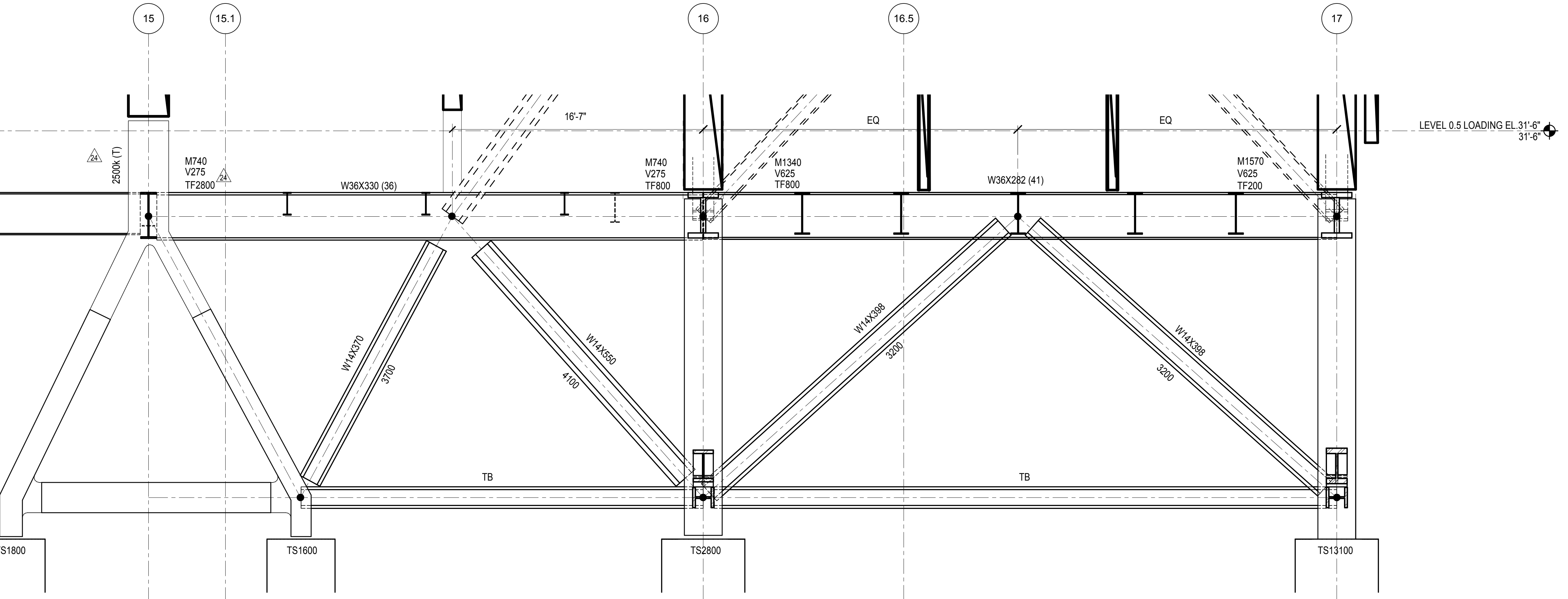
**S-405.00**



**1 BRACED FRAME AT GRID C.1**  
1/4" = 1'-0"



**2 BRACED FRAME AT GRID C.9**  
1/4" = 1'-0"



**3 BRACED FRAME AT GRID D.8**  
1/4" = 1'-0"

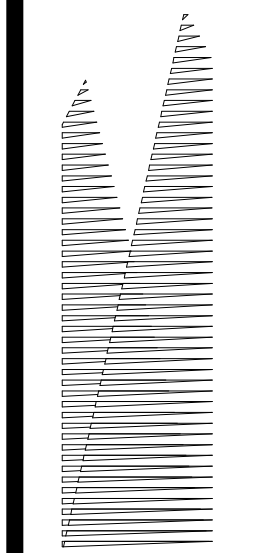
**GENERAL BRACED FRAME NOTES:**

- REFER TO PLANS FOR TOP STEEL ELEVATIONS AND FOR GRIDLINE DIMENSIONS
- ALL FORCES (KIPS) ARE FACTORED AND ARE TO BE CONSIDERED FULLY REVERSIBLE UNLESS OTHERWISE NOTED AS FOLLOWS:  
+XXX INDICATES TENSION ONLY  
-XXX INDICATES COMPRESSION ONLY
- SEE TYPICAL BRACE CONNECTION DETAILS
- ALL BRACE AND BEAM MEMBERS ARE ORIENTED WEB VERTICAL UNLESS OTHERWISE NOTED ON ELEVATION AS FOLLOWS:  
(H) INDICATES MEMBER WITH WEB ORIENTED HORIZONTAL
- SEE PLAN FOR COLUMN ORIENTATION
- SEE STEEL COLUMN SCHEDULE FOR SHEAR BASE MARK AND SCHEDULE
- SEE STEEL BEAM LEGEND ON FRAMING PLAN FOR KEY TO BEAM DATA AND FOR FORCES NOT SHOWN
- ALL BRACED FRAME LINE DIAGRAMS DENOTE CENTERLINES FOR BEAMS AND COLUMNS AND WORKING LINES FOR BRACES (SEE BRACE DETAILS)
- MINIMIZE LENGTH OF GUSSET AT BRACE TO GUSSET CONNECTIONS

**LEGEND:**

- TFXX INDICATES FACTORED AXIAL FORCE TRANSFERRED THROUGH THE CONNECTION JOINT INTO THE MEMBER IN KIPS
- TSXX INDICATES FACTORED TENSION COLUMN SPLICE FORCE OR NET UPLIFT AT BASE IN KIPS  
SEE TENSION / MOMENT COLUMN SPLICE DETAIL
- EPX INDICATES SHEAR EMBED PLATE  
SEE SCHEDULE AND NOTE 7 ABOVE
- BW INDICATES BUILT UP WIDE FLANGE WITH DIMENSION  
BW - d x w x h x tw. SEE DETAIL 1/5-610 FOR DETAIL
- TB INDICATES TIE BEAM. SEE S-120 SERIES FOR SIZES AND FORCES

**Damian Titus**  
Under Directive 3 of 1975  
Professional Engineer  
Date: 08/15/2017  
NYC Development Hub



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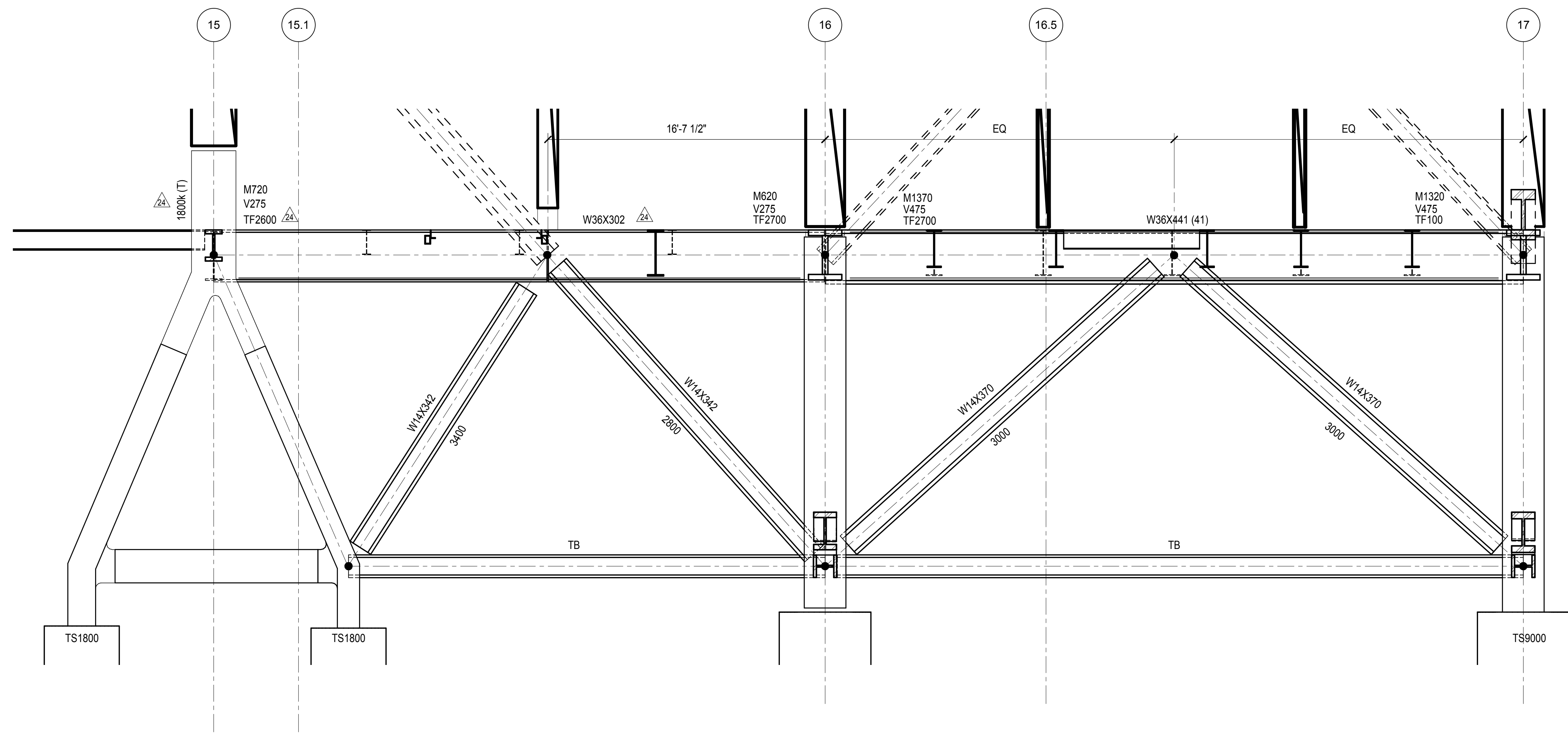
Architect  
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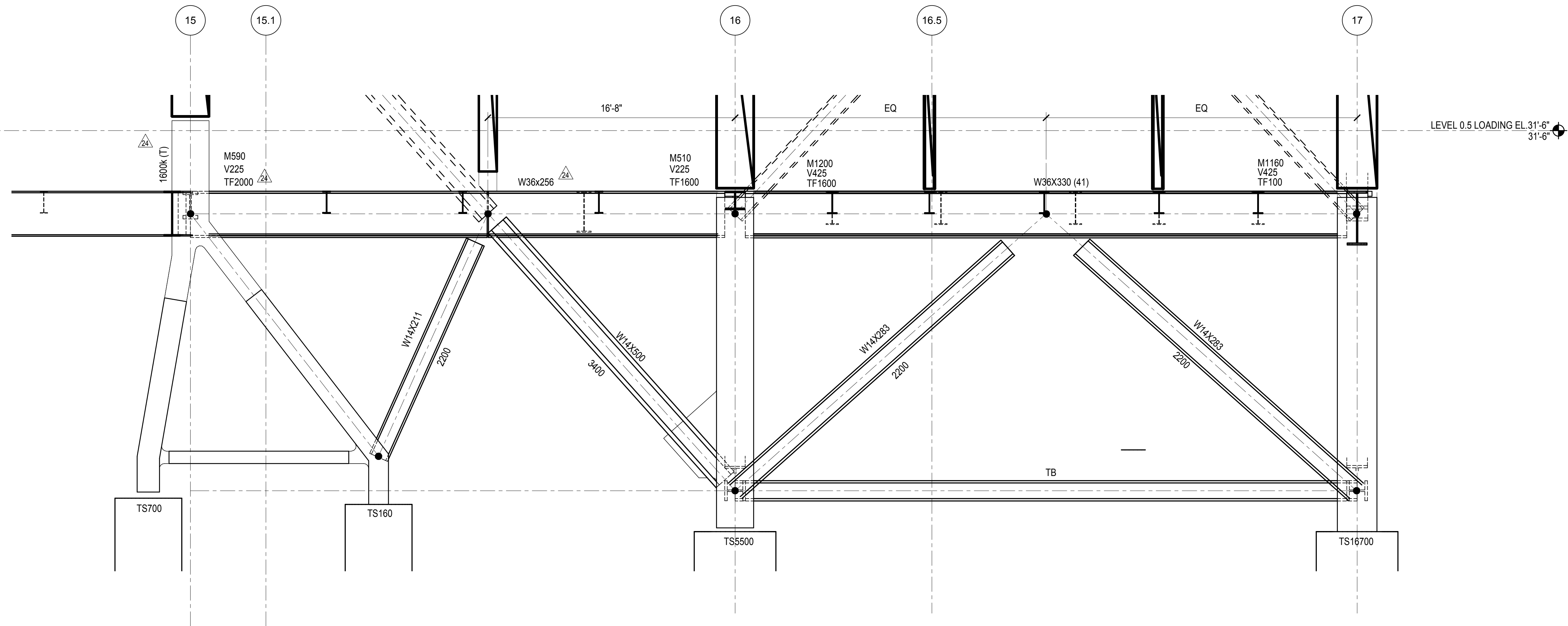
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Egress, Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



**1 BRACED FRAME AT GRID E.8**  
1/4" = 1'-0"



**2 BRACED FRAME AT GRID F.9**  
1/4" = 1'-0"

**GENERAL BRACED FRAME NOTES:**

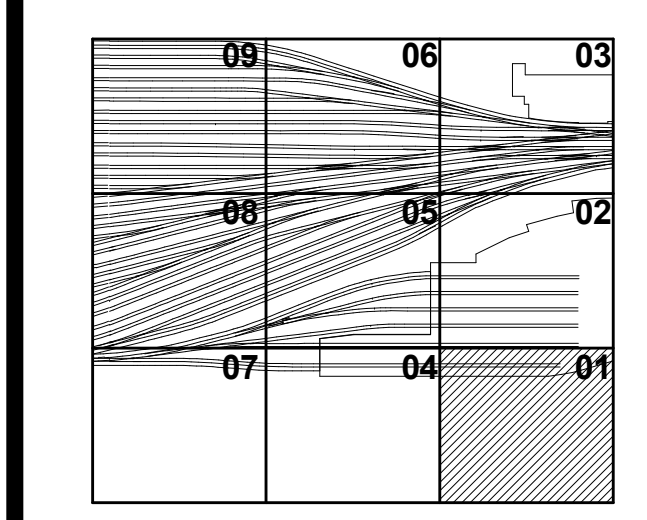
- REFER TO PLANS FOR TOP STEEL ELEVATIONS AND FOR GRIDLINE DIMENSIONS
- ALL FORCES (KIPS) ARE FACTORED AND ARE TO BE CONSIDERED FULLY REVERSIBLE UNLESS OTHERWISE NOTED AS FOLLOWS:  
  
+XXX INDICATES TENSION ONLY  
-XXX INDICATES COMPRESSION ONLY
- SEE TYPICAL BRACE CONNECTION DETAILS
- ALL BRACE AND BEAM MEMBERS ARE ORIENTED WEB VERTICAL UNLESS OTHERWISE NOTED ON ELEVATION AS FOLLOWS:  
  
(H) INDICATES MEMBER WITH WEB ORIENTED HORIZONTAL
- SEE PLAN FOR COLUMN ORIENTATION
- SEE STEEL COLUMN SCHEDULE FOR SHEAR BASE MARK AND SCHEDULE
- SEE STEEL BEAM LEGEND ON FRAMING PLAN FOR KEY TO BEAM DATA AND FOR FORCES NOT SHOWN
- ALL BRACED FRAME LINE DIAGRAMS DENOTE CENTERLINES FOR BEAMS AND COLUMNS AND WORKING LINES FOR BRACES (SEE BRACE DETAILS)
- MINIMIZE UNBRACED LENGTH OF GUSSET AT BRACE TO GUSSET CONNECTIONS

**LEGEND:**

- TFXX INDICATES FACTORED AXIAL FORCE TRANSFERRED THROUGH THE CONNECTION JOINT INTO THE FAR MEMBER IN KIPS
- TSXX INDICATES FACTORED TENSION COLUMN SPLICE FORCE OR NET UPLIFT AT BASE IN KIPS  
SEE TENSION / MOMENT COLUMN SPLICE DETAIL
- EPX INDICATES SHEAR EMBED PLATE  
SEE SCHEDULE AND NOTE 7 ABOVE
- BW INDICATES BUILT UP WIDE FLANGE WITH DIMENSIONS IN INCHES  
BW - d X w X bf X tw. SEE DETAIL 1/S-610.0 FOR DETAIL
- TB INDICATES TIE BEAM. SEE S-120 SERIES FOR SIZES AND FORCES

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	7/28/2014
ASH0034	6/06/2014
ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
Rev. Description	Date

Key Plan

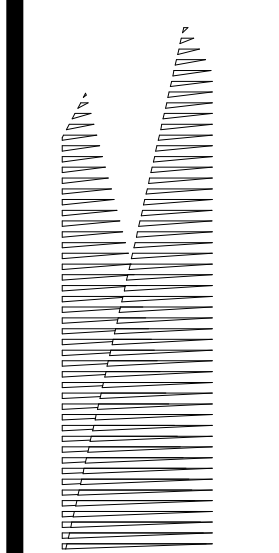


Date: 06/06/14  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

**HYE -PL -S-406.00**  
**TOWER A BRACED FRAME ELEVATIONS**

Drawing Number / Revision Drawing Number  
**S-406.00**  
SHEET 78 of 163





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

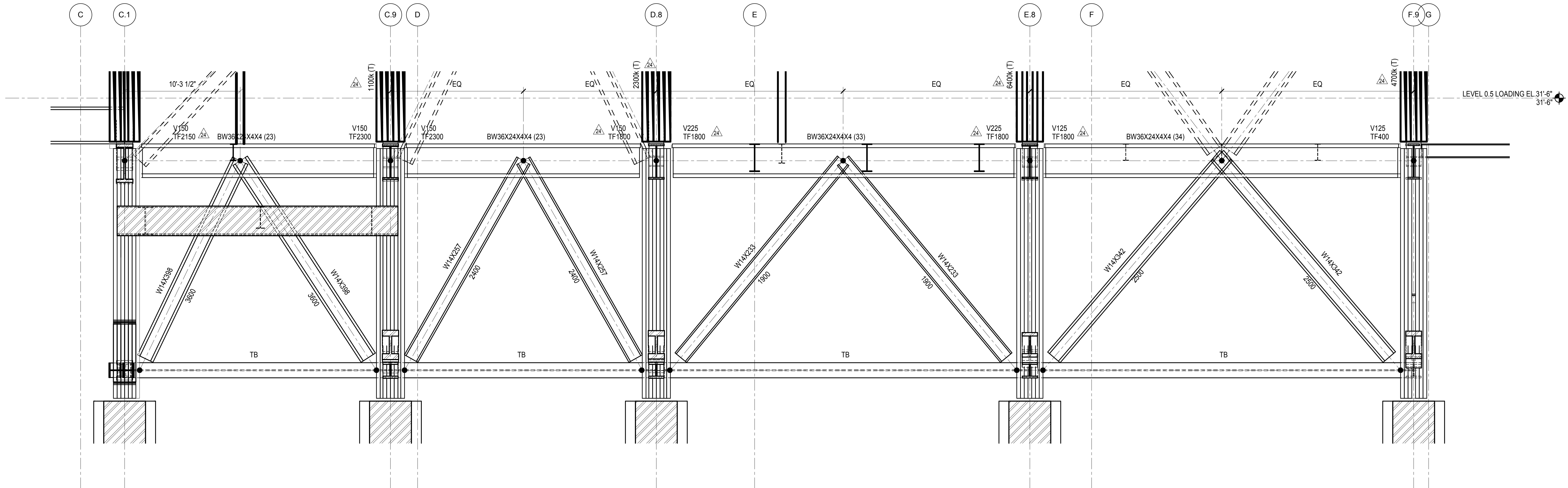
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

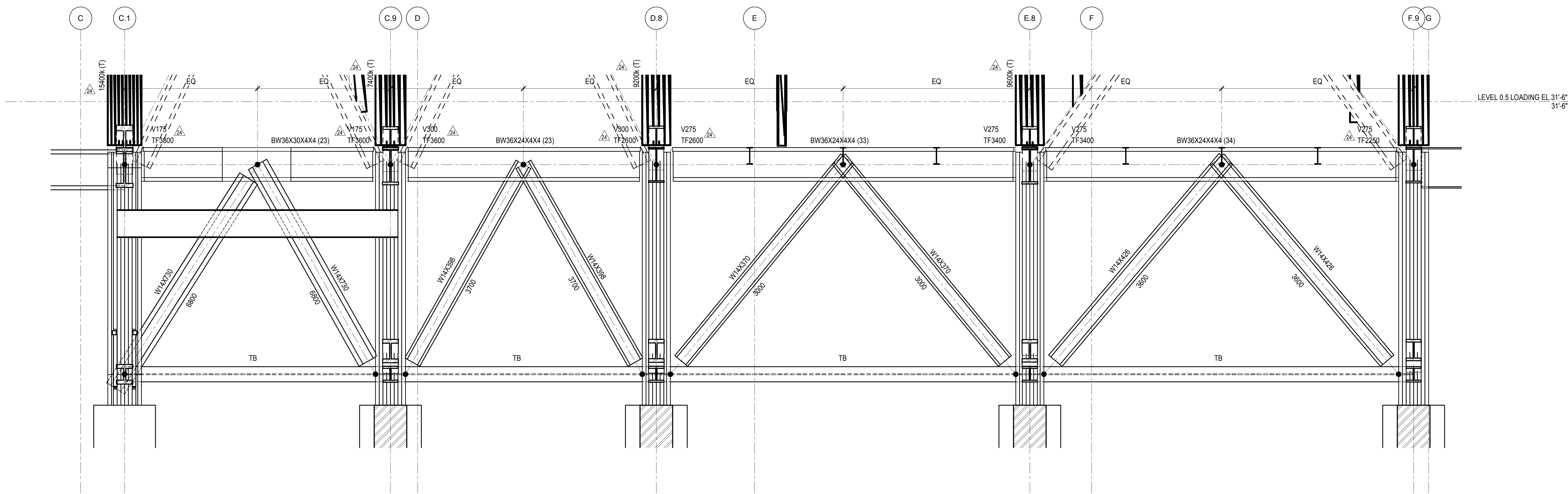
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



**1 BRACED FRAME AT GRID 16**  
1/4" = 1'-0"

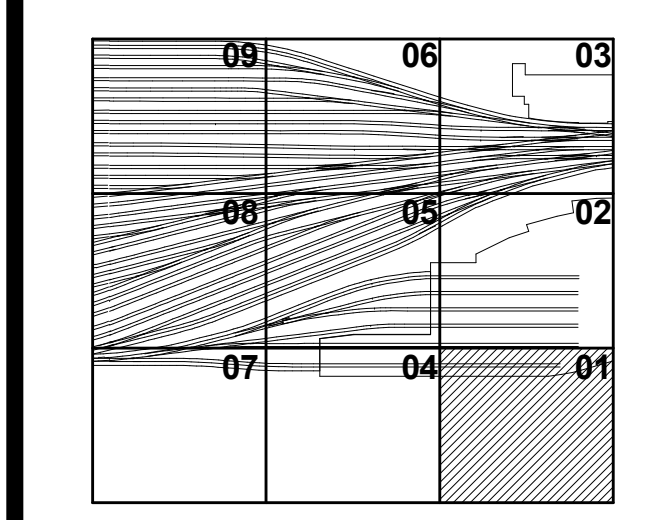


**2 BRACED FRAME AT GRID 17**  
1/4" = 1'-0"

- GENERAL BRACED FRAME NOTES:**
- REFER TO PLANS FOR TOP STEEL ELEVATIONS AND FOR GRIDLINE DIMENSIONS
  - ALL FORCES (KIPS) ARE FACTORED AND ARE TO BE CONSIDERED FULLY REVERSIBLE UNLESS OTHERWISE NOTED AS FOLLOWS:  
+XXX INDICATES TENSION ONLY  
-XXX INDICATES COMPRESSION ONLY
  - SEE TYPICAL BRACE CONNECTION DETAILS
  - ALL BRACE AND BEAM MEMBERS ARE ORIENTED WEB VERTICAL UNLESS OTHERWISE NOTED ON ELEVATION AS FOLLOWS:  
(H) INDICATES MEMBER WITH WEB ORIENTED HORIZONTAL
  - SEE PLAN FOR COLUMN ORIENTATION
  - SEE STEEL COLUMN SCHEDULE FOR SHEAR BASE MARK AND SCHEDULE
  - SEE STEEL BEAM LEGEND ON FRAMING PLAN FOR KEY TO BEAM DATA AND FOR FORCES NOT SHOWN
  - ALL BRACED FRAME LINE DIAGRAMS DENOTE CENTERLINES FOR BEAMS AND COLUMNS AND WORKING LINES FOR BRACES (SEE BRACE DETAILS)
  - MINIMIZE UNBRACED LENGTH OF GUSSET AT BRACE TO GUSSET CONNECTIONS

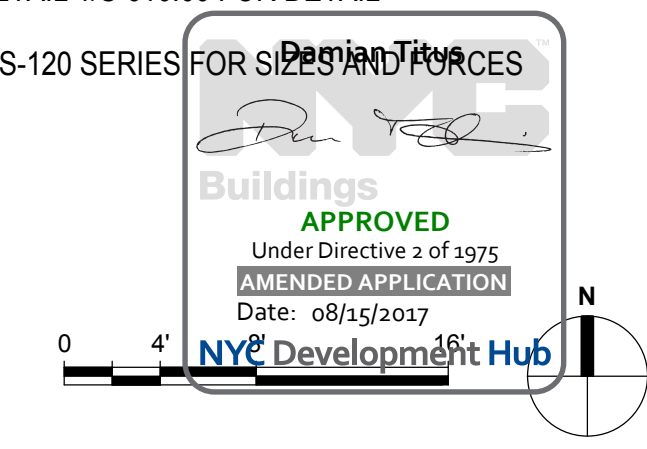
- LEGEND:**
- TFXX INDICATES FACTORED AXIAL FORCE TRANSFERRED THROUGH THE CONNECTION JOINT INTO THE FAR MEMBER IN KIPS
  - TSXX INDICATES FACTORED TENSION COLUMN SPLICE FORCE OR NET UPLIFT AT BASE IN KIPS  
SEE TENSION / MOMENT COLUMN SPLICE DETAIL
  - EPX INDICATES SHEAR EMBED PLATE  
SEE SCHEDULE AND NOTE 7 ABOVE
  - BW INDICATES BUILT UP WIDE FLANGE WITH DIMENSION  
BW - d X w X t X tw. SEE DETAIL 1/S-610.00 FOR DETAIL
  - TB INDICATES TIE BEAM. SEE S-120 SERIES FOR SHEAR BRACES

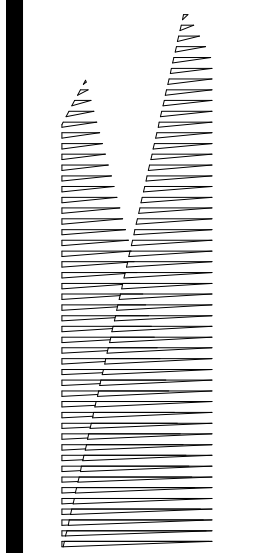
DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0008	10/14/2014
ASH0034	7/28/2014
ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
	06/



Drawn By: 06/06/14  
Project No: N11330.00  
Checked By: Author  
Sheet Number: HYE -PL -S-407.00

**TOWER A BRACED FRAME ELEVATIONS**





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
230 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

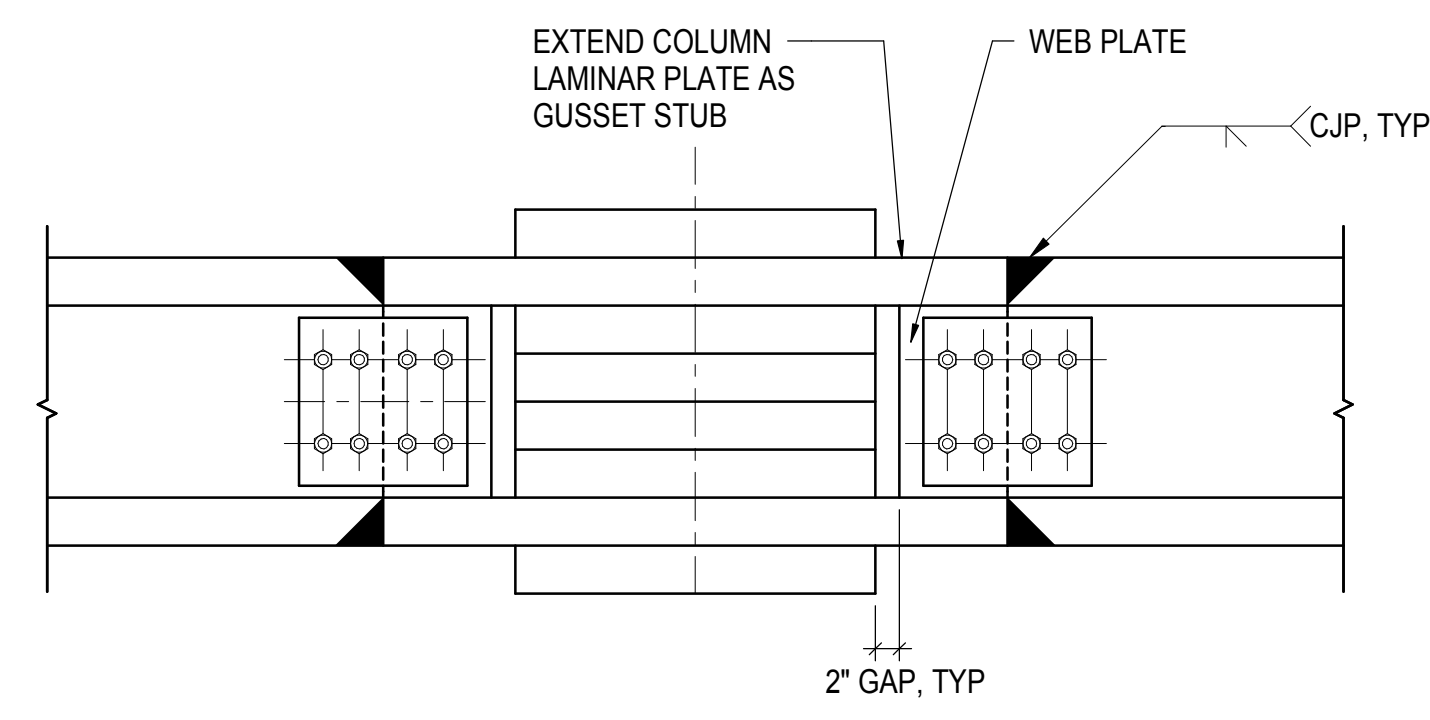
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

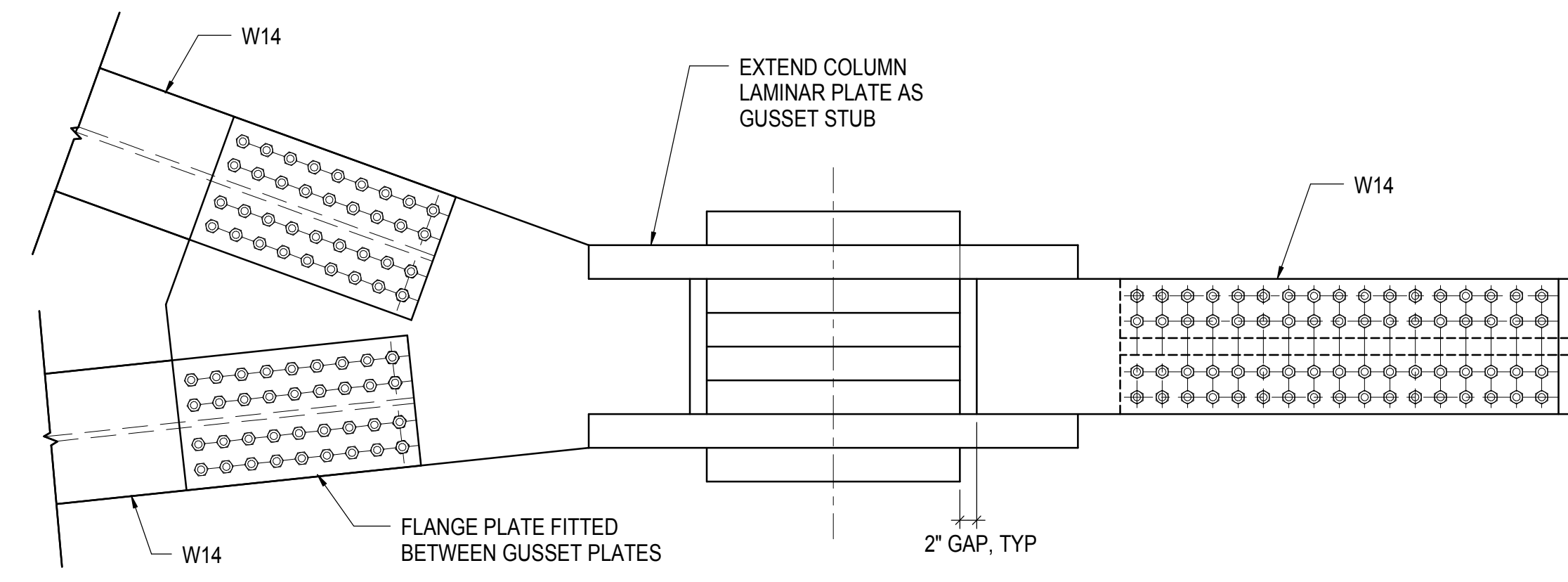
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



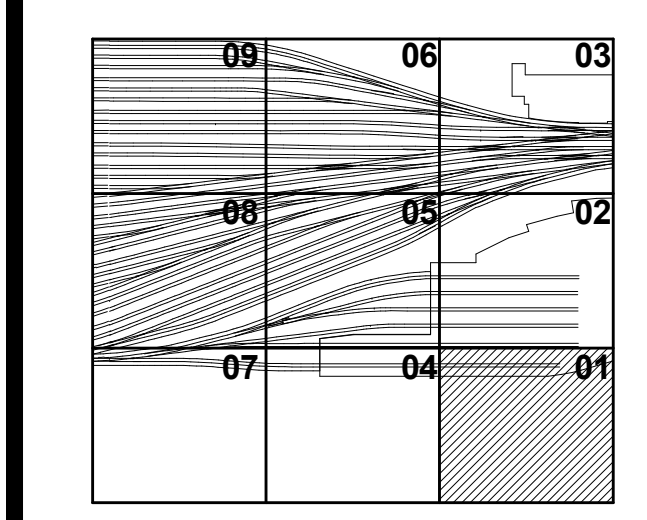
**1** DETAIL AT COLUMN C.1-16 BRACE  
3/4" = 1'-0"



**2** DETAIL AT COLUMN C.1-16 TIE BEAMS  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
Rev	Desc

Key Plan



Date	06/06/14
Project No	N11330.00
Drawn By	Author
Sheet Number	

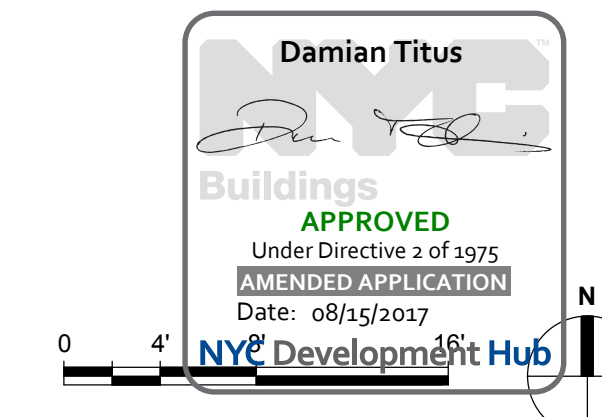
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**TOWER A BRACED FRAME DETAILS**

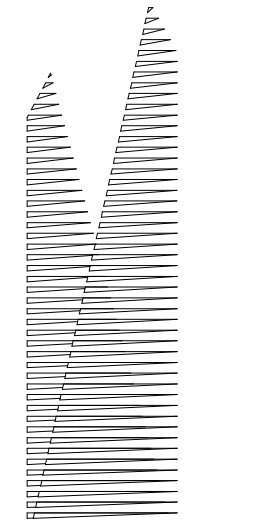
Drawing Title

Drawing Number / B/CAN Drawing Number  
**S-408.00**

SHEET 80 of 163







Client  
Related Companies  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.801.1000 Fax: 212.801.1048

Contractor  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

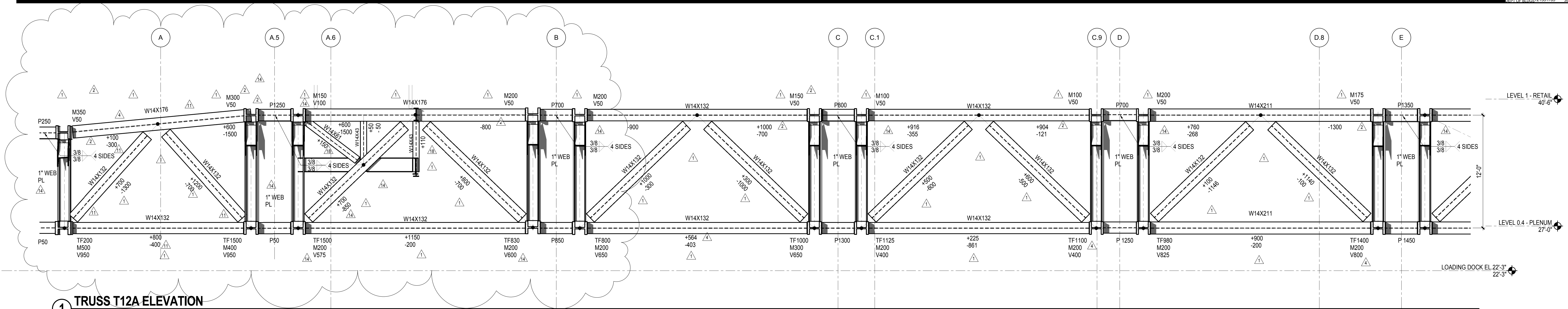
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

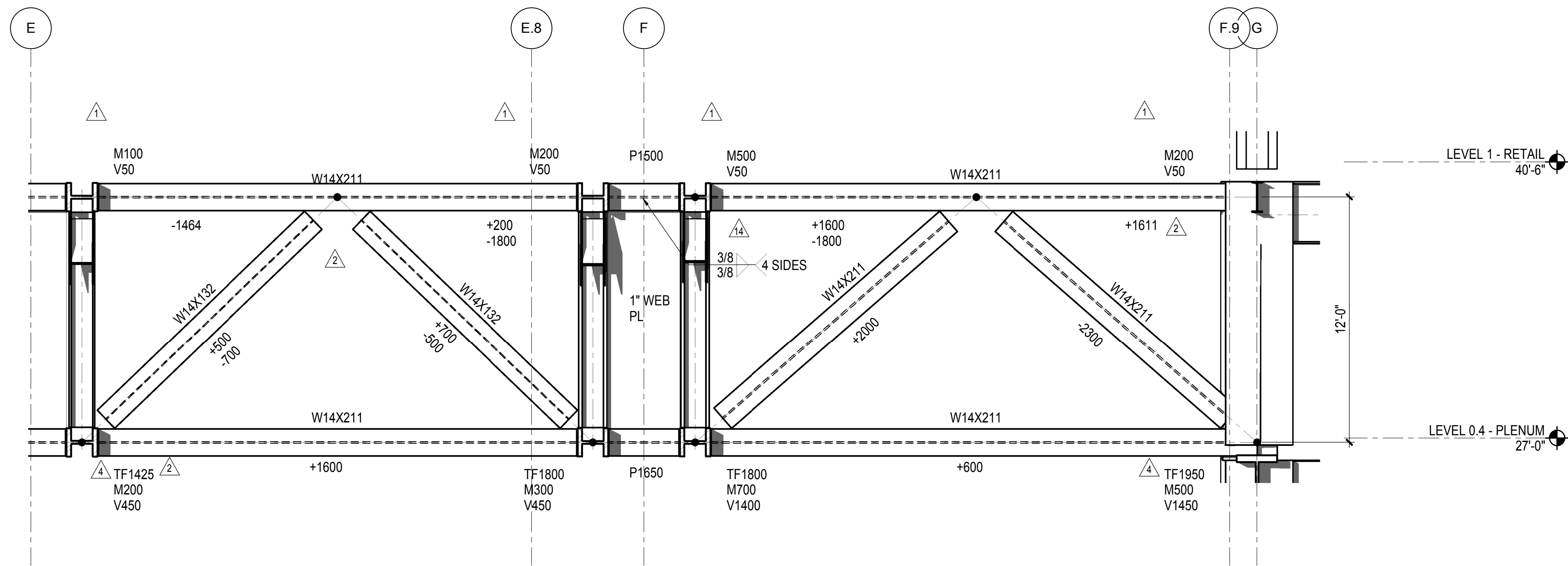
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

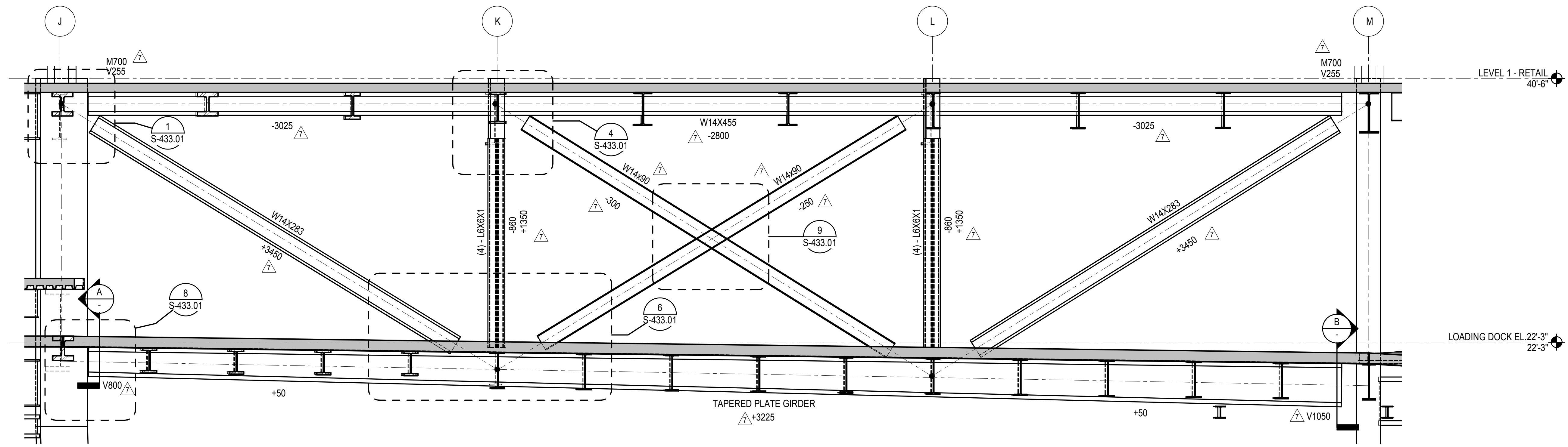
LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



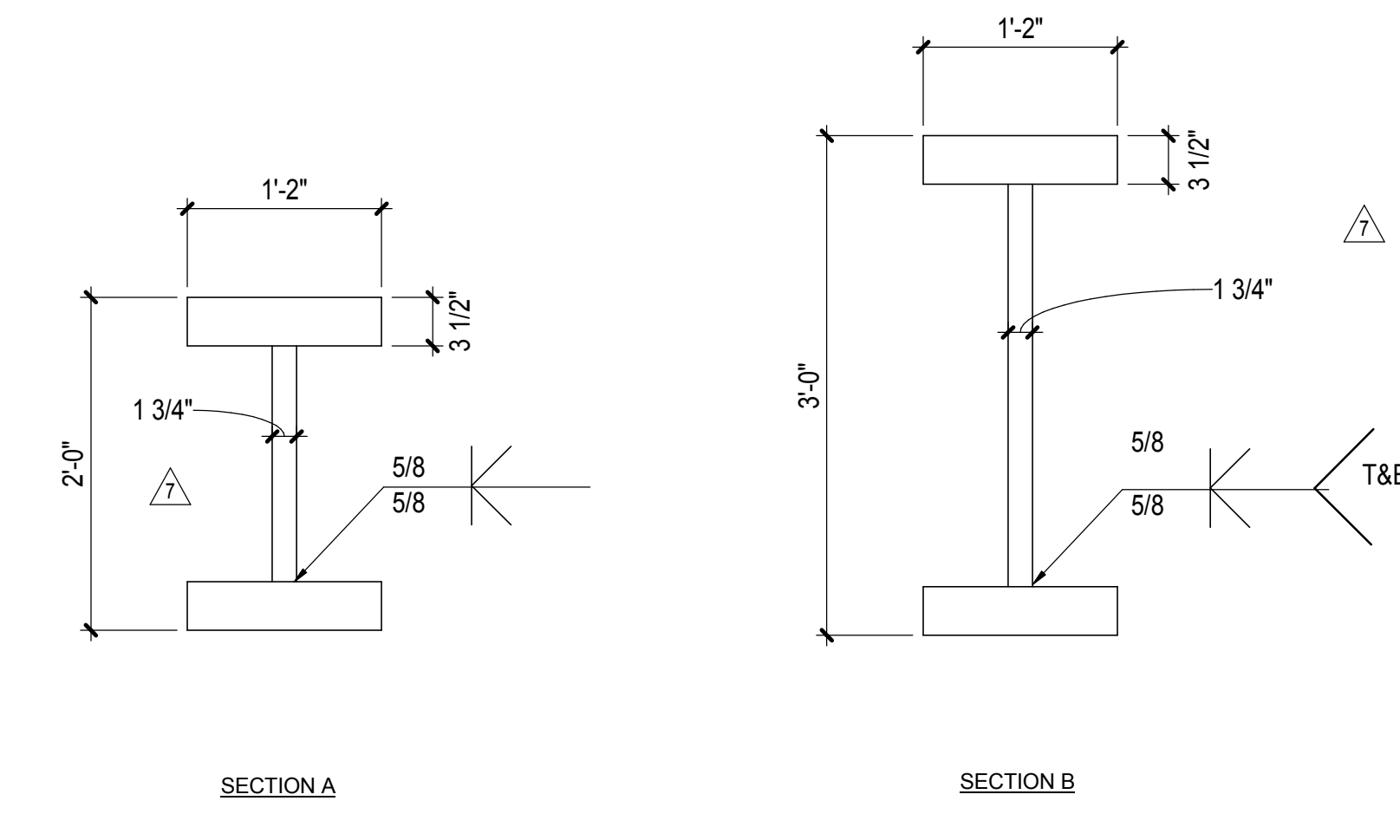
**1 TRUSS T12A ELEVATION**  
1/4" = 1'-0"



**2 TRUSS T12A ELEVATION - CONTINUED**  
1/4" = 1'-0"



**3 TRUSS T12H ELEVATION**  
1/4" = 1'-0"



DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00049	10/14/2014
ASH00021	5/7/2014
ASH00113	3/29/2014
ASH00110 - PODIUM AA-LINE TRUSS	3/7/2014
MODIFICATIONS	
ASH00005	2/18/2014
ASH00003	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R. - PRE-FINAL 100%	11/22/2013
ME - PLATFORM SUBMISSION	
DL62 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DEAL PHASE 1 STRUCTURE UPDATE	9/29/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
LIRR - 60% - PHASE 1 FDS	3/29/2013
LIRR - 30% SUBMISSION	2/15/2013
Rev	Date

Key Plan

Date: 03/29/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

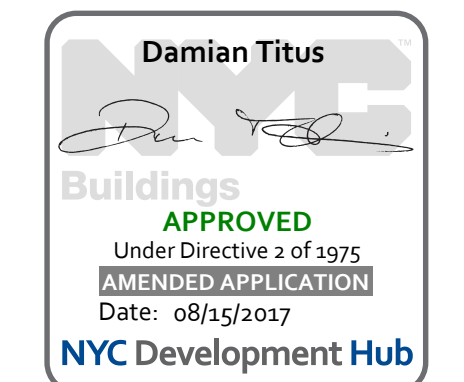
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**EAST PLATFORM TRUSS ELEVATIONS AT GRID 12**

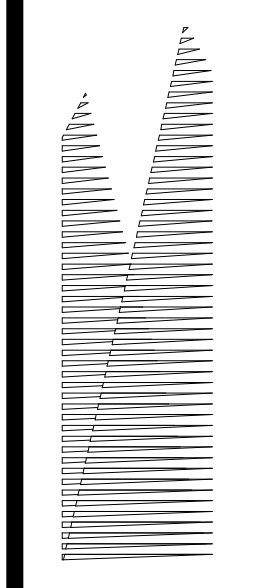
Drawing Number: 03/29/2013 Drawing Number

**S-419.01**

SHEET 82 of 163







*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Owner*  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

*Structural Engineer*  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

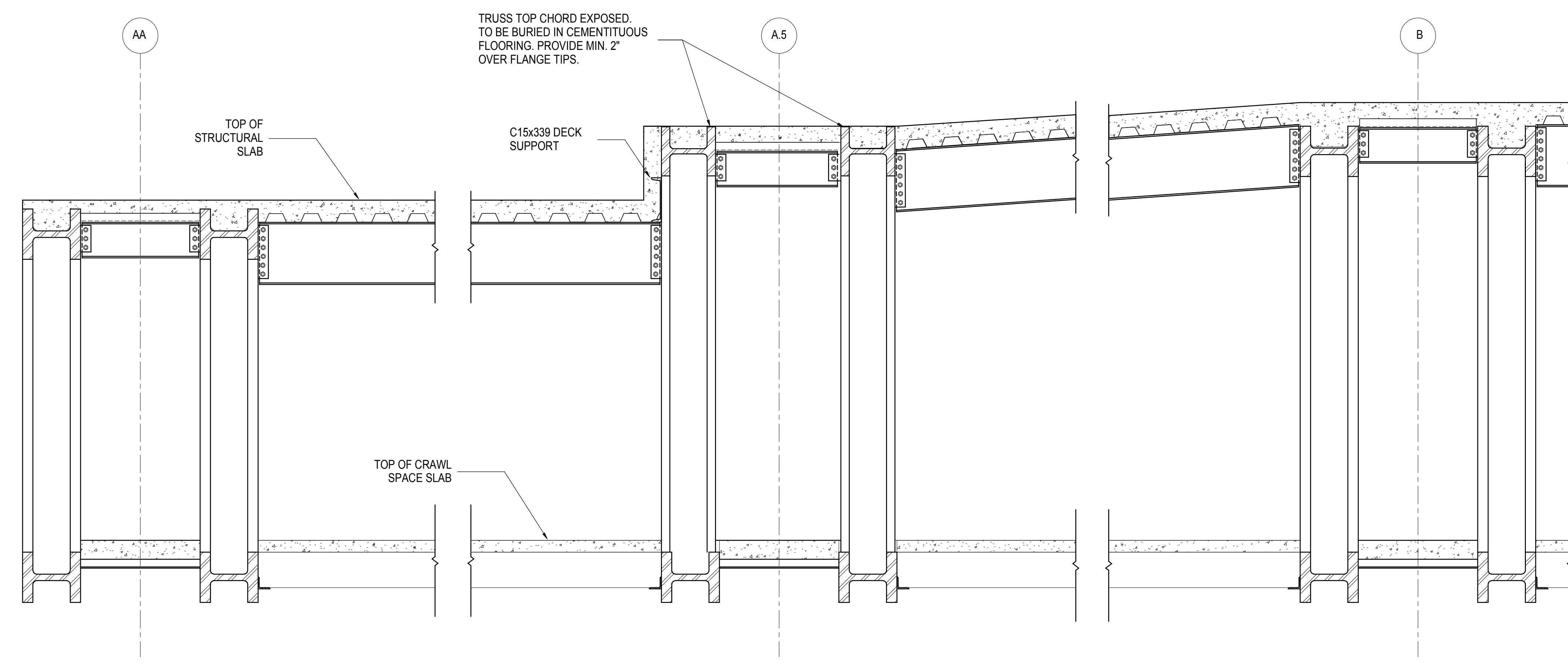
*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LJRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

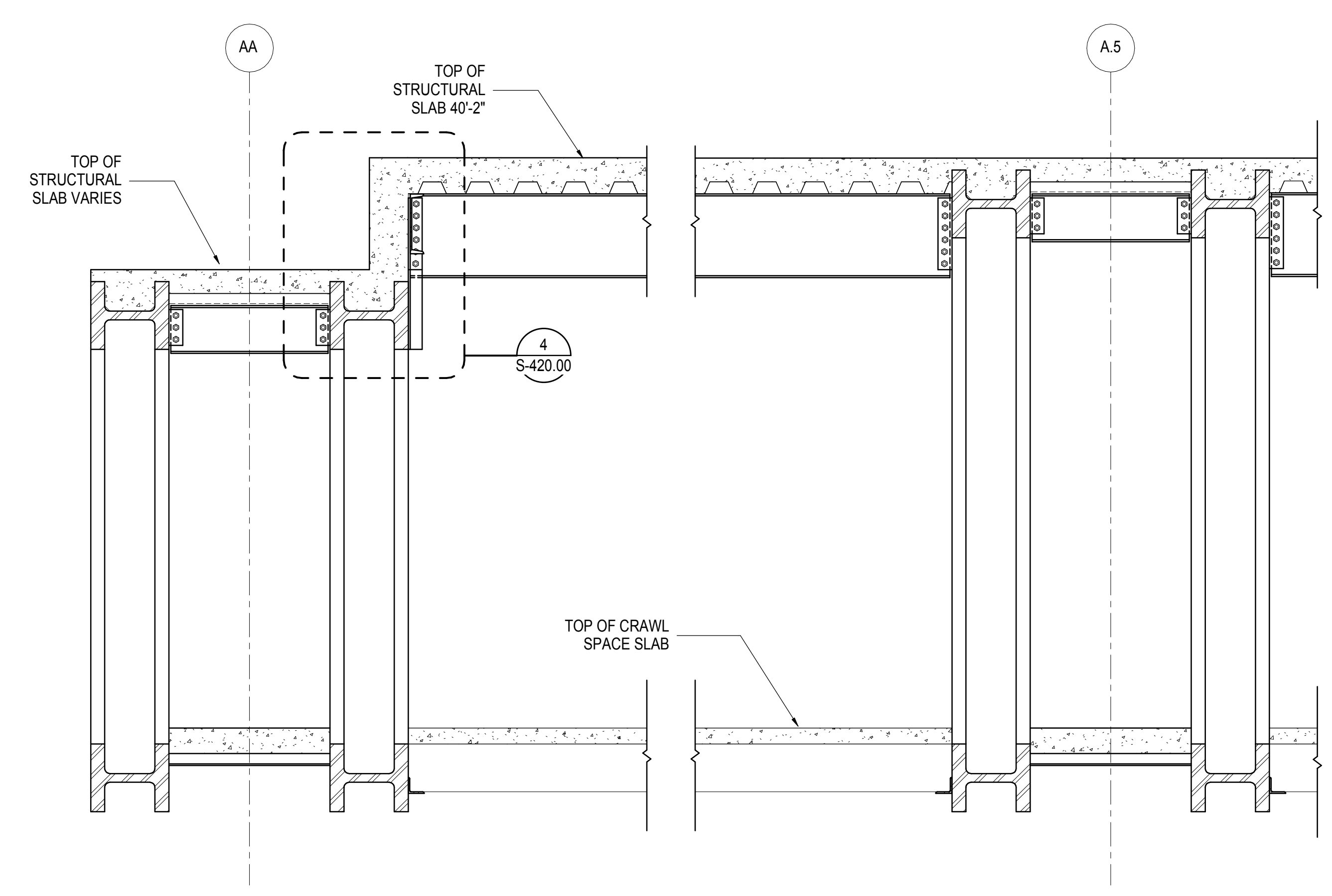
*LJRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016	
LJRR - FINAL 100%	10/14/2014	
DESIGN SUBMISSION FOR RECORDS		
ASHROOF	10/14/2014	
ASHROOF - PODIUM AA-LINE TRUSS	3/7/2014	
MODIFICATIONS		
No.	Description	Date

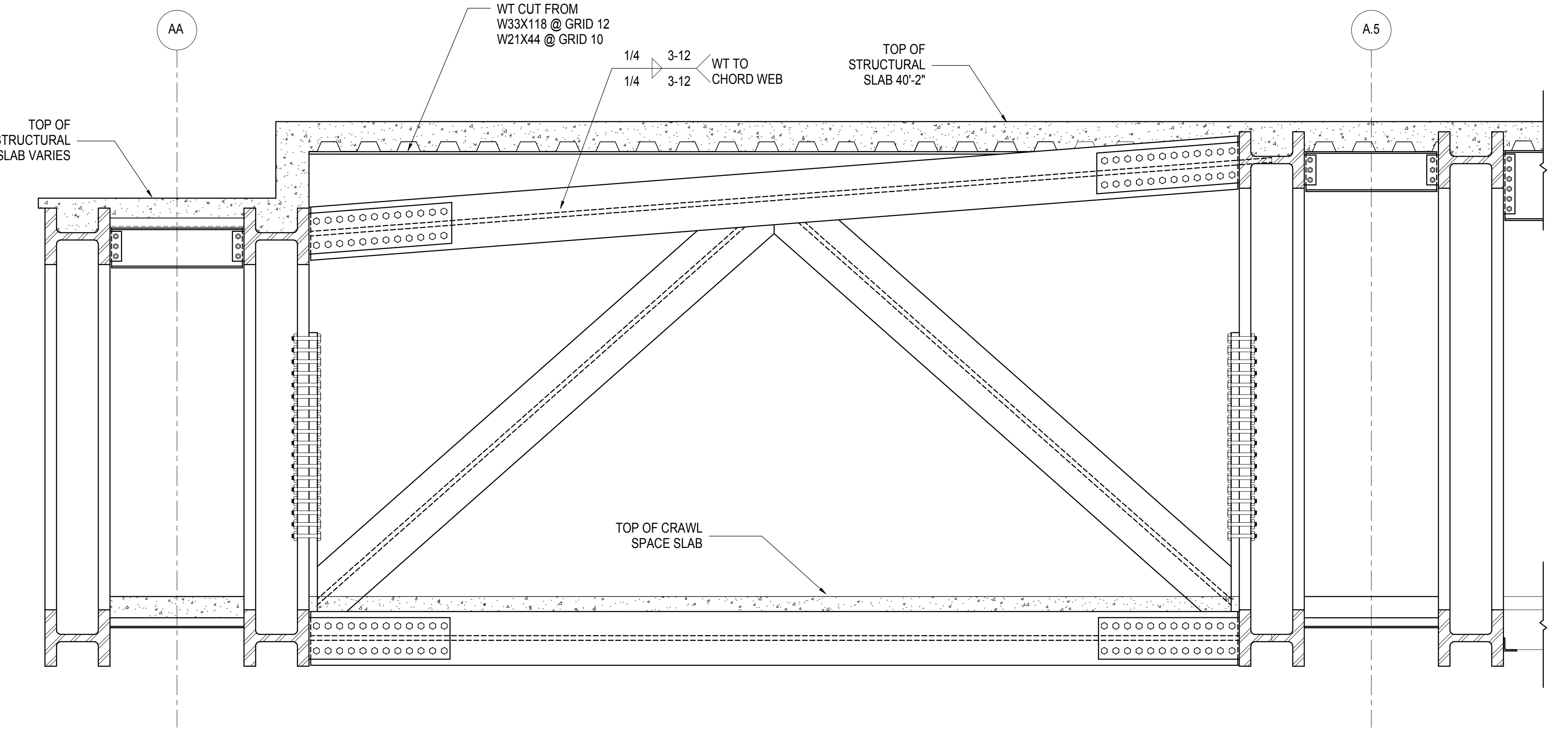
Key Plan



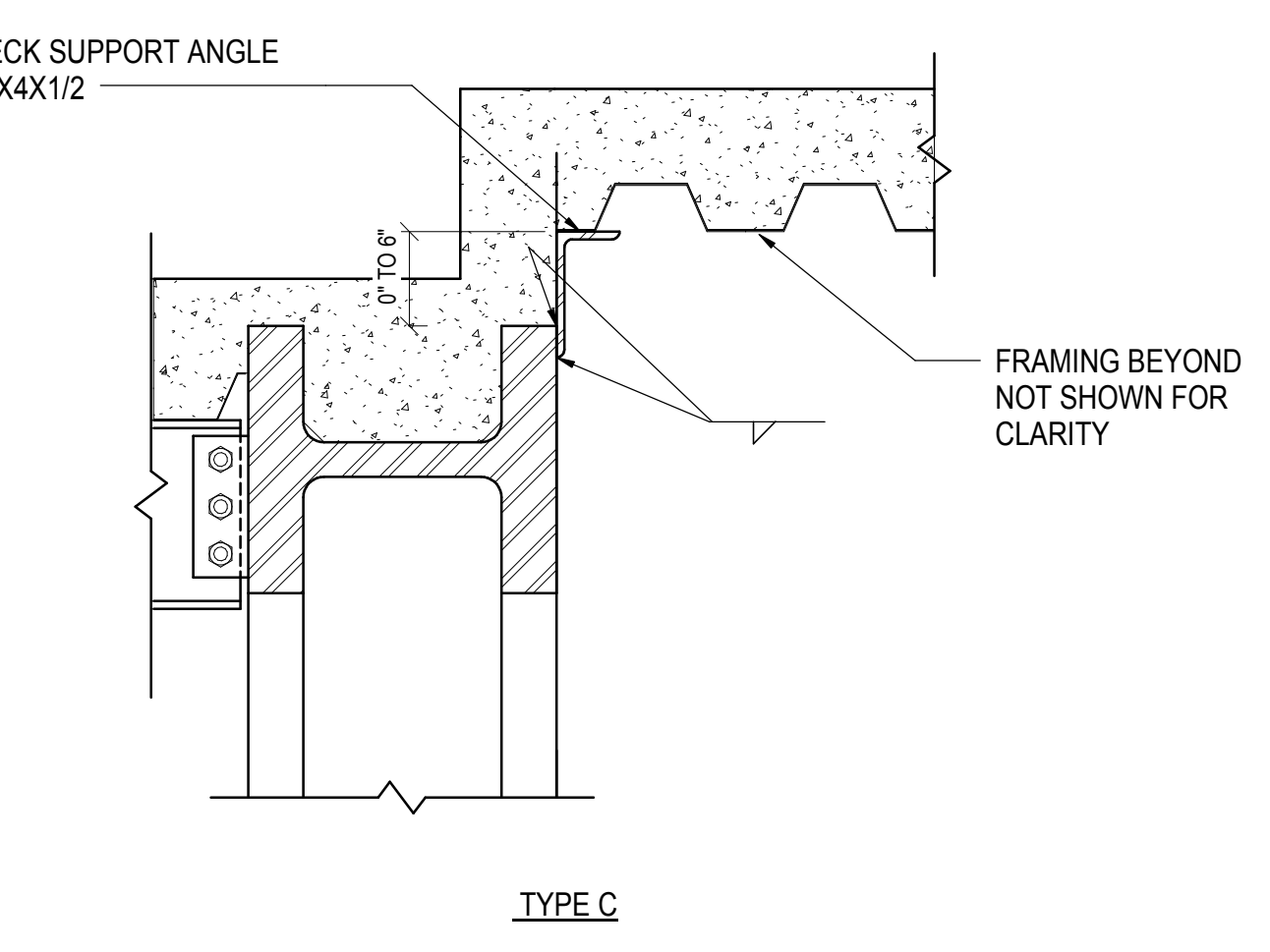
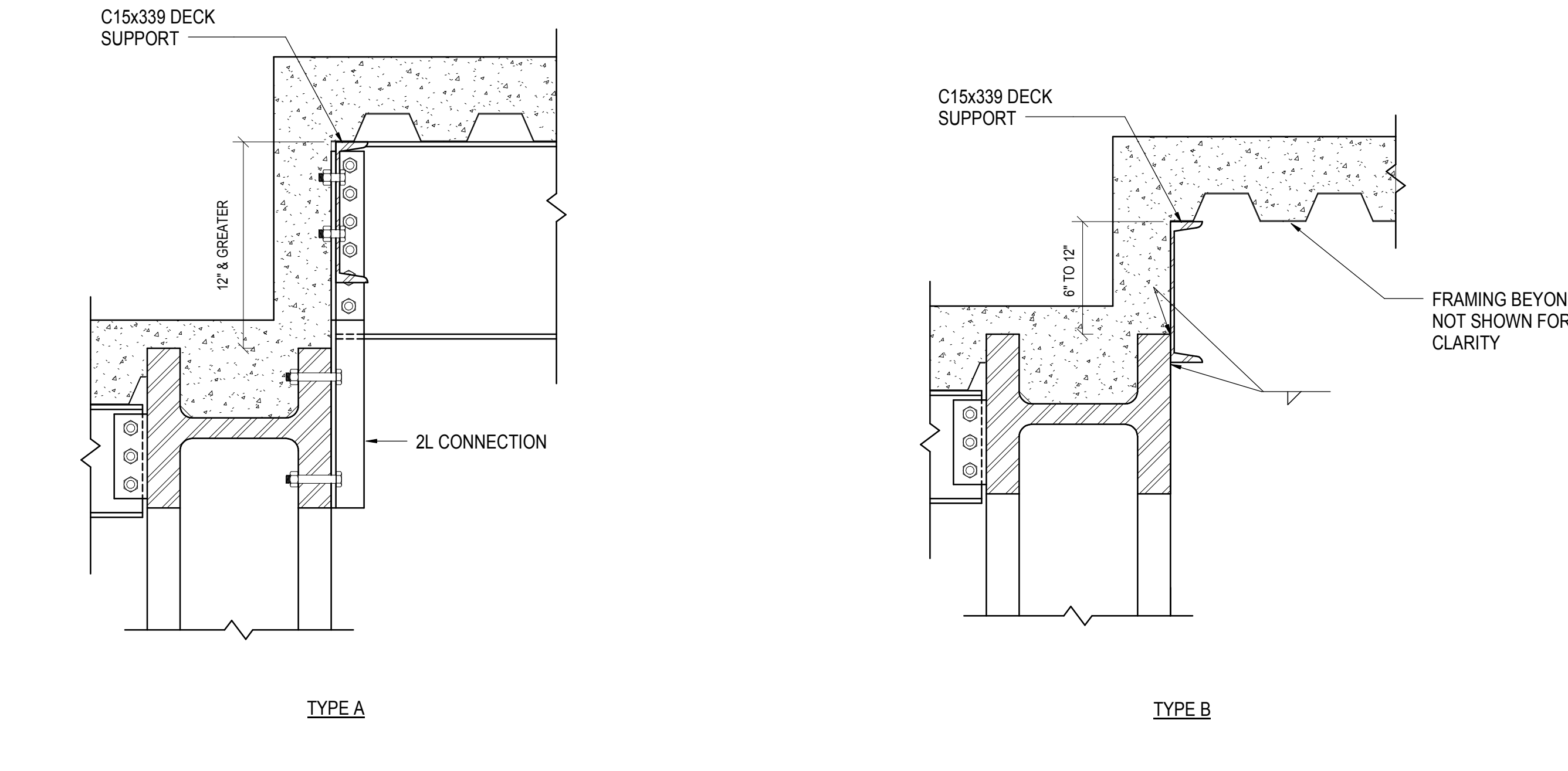
**1 AA TRUSS SECTION BETWEEN GRID 13 & 13.5**  
1/2" = 1'-0"



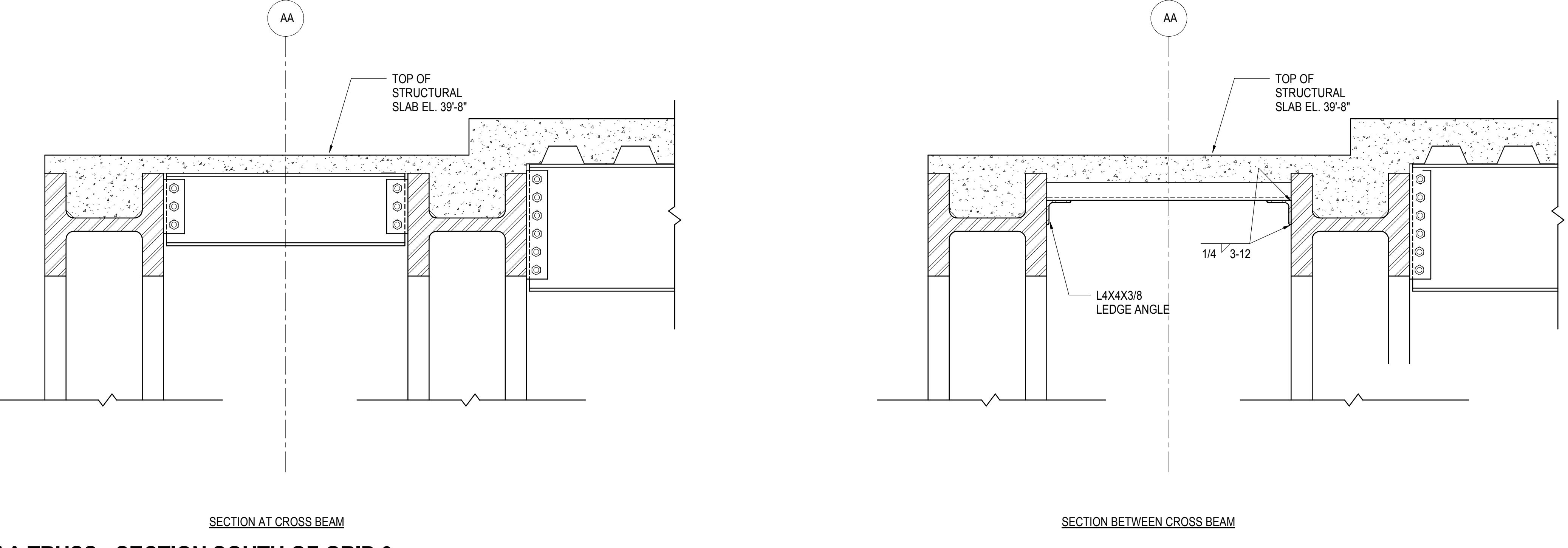
**2 AA TRUSS - TYPICAL SECTION AT STEP IN SLAB**  
1/2" = 1'-0"



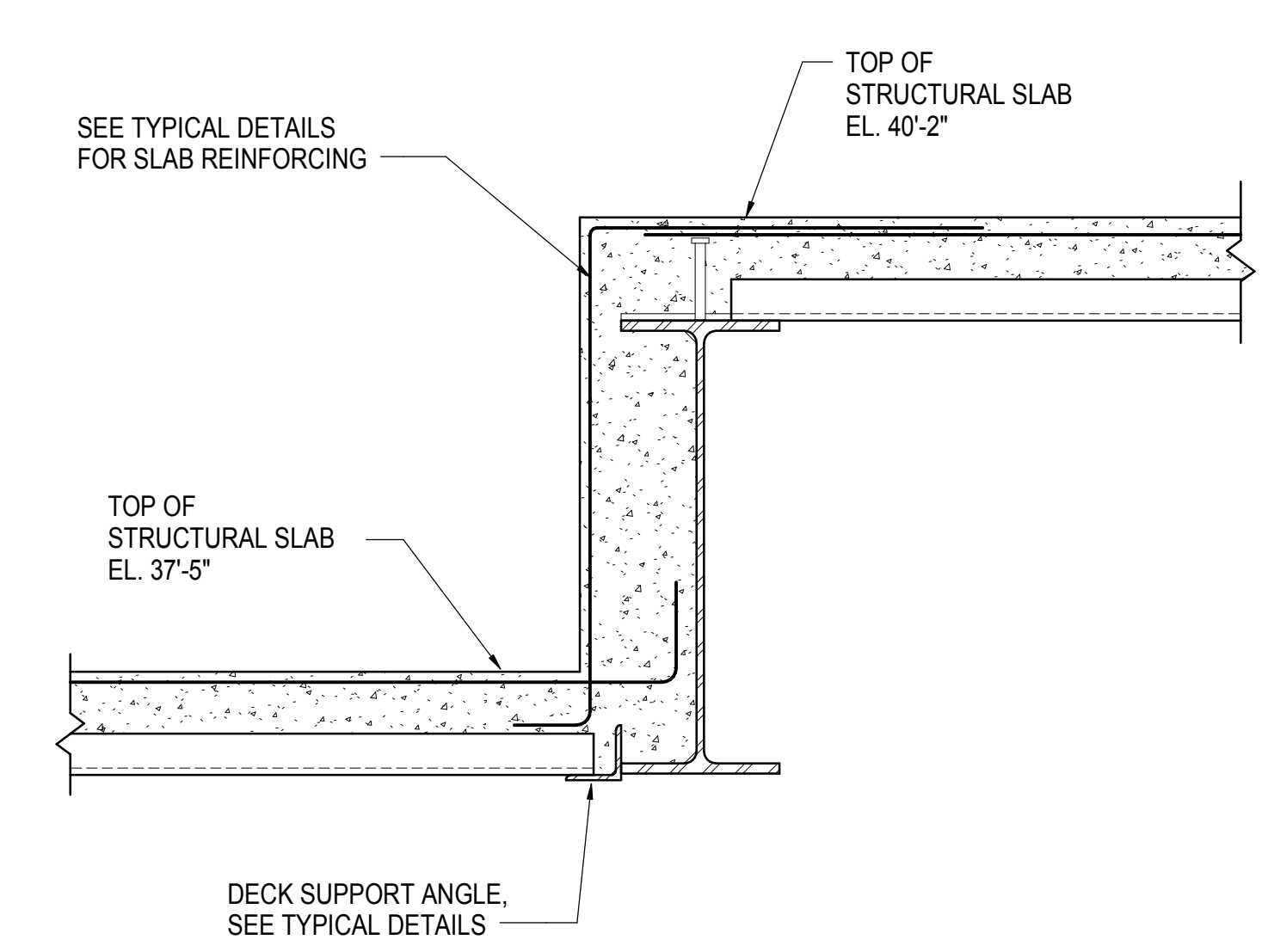
**3 AA TRUSS - SECTION AT CROSS TRUSS**  
1/2" = 1'-0"



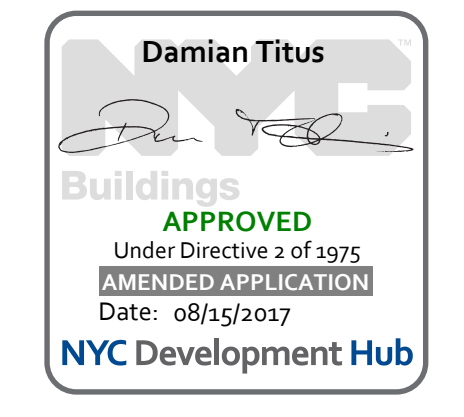
**4 SECTION AT AA TRUSS - STEP IN SLAB**  
1" = 1'-0"



**5 AA TRUSS - SECTION SOUTH OF GRID 9**  
1" = 1'-0"



**6 AA-TRUSS - STEP IN SLAB AT GRID 13**  
1" = 1'-0"



Drawn By: 03/07/14  
Project No: N11330.00  
Designed By: Author  
Sheet Number: Author

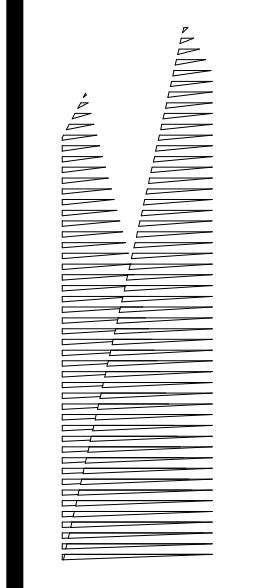
**HYE -PL -S-420.00**

**AA TRUSS SECTIONS AND DETAILS**

Drawing Number / B/CAN Drawing Number  
**S-420.00**

**SHEET 83 of 163**

S-420.00  
10/17/2016 11:22:31 AM  
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AA TRUSS SECTIONS AND DETAILS



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Etc.: Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

No.	Description	Date
1	DOH POST-APPROVAL AMENDMENT	10/28/2016
2	ASHROK	12/19/2014
3	L.I.R.R. - FINAL 100%	10/14/2014
4	DESIGN SUBMISSION FOR RECORDS	
5	ASHROK	10/14/2014
6	ASHR010 - PODIUM AA-LINE TRUSS	3/7/2014
MODIFICATIONS		
No.	Description	Date

Key Plan

Date: 03/07/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number:

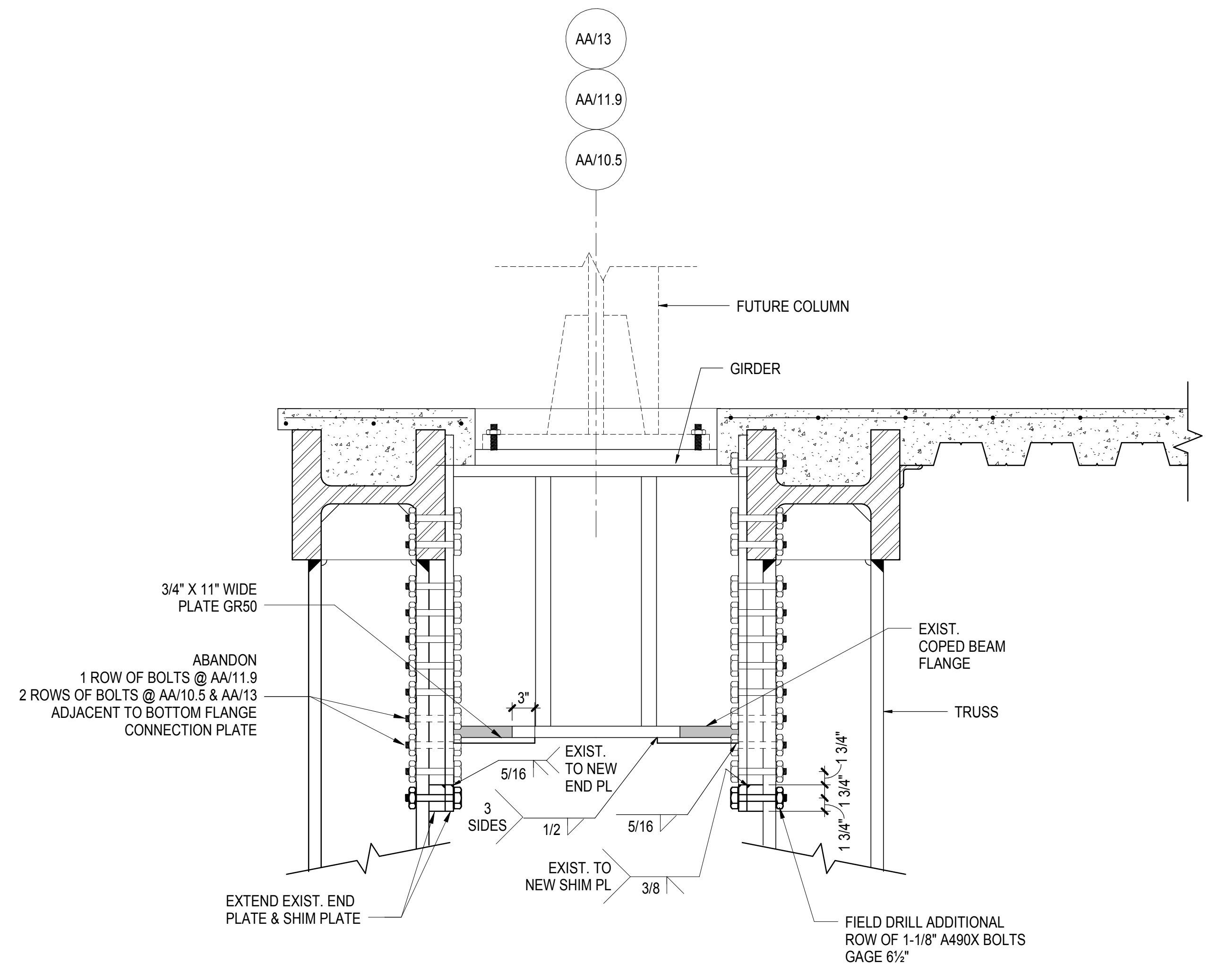
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**AA TRUSS SECTIONS & DETAILS**

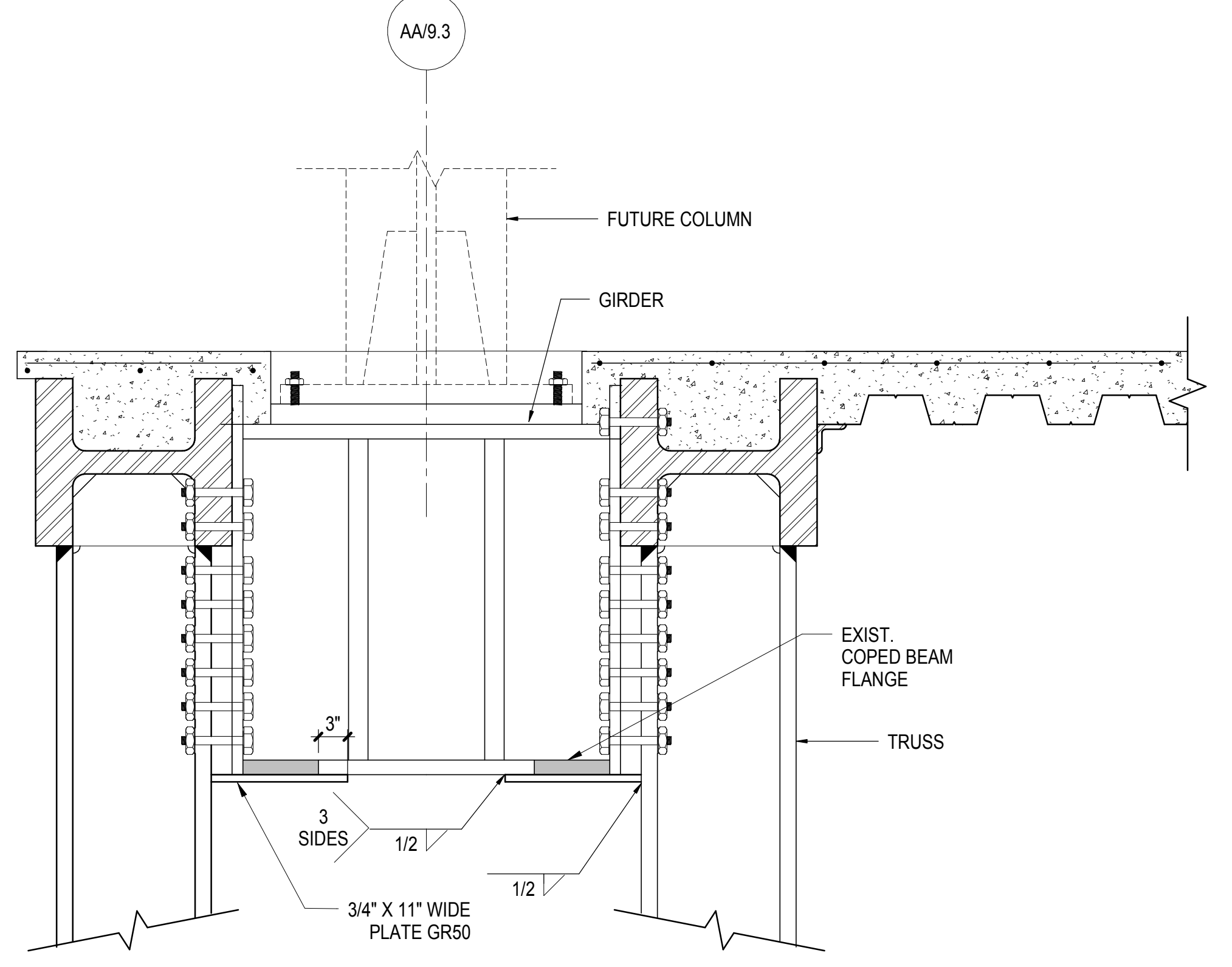
Drawing Title / B/CAN Drawing Number

**S-421.00**

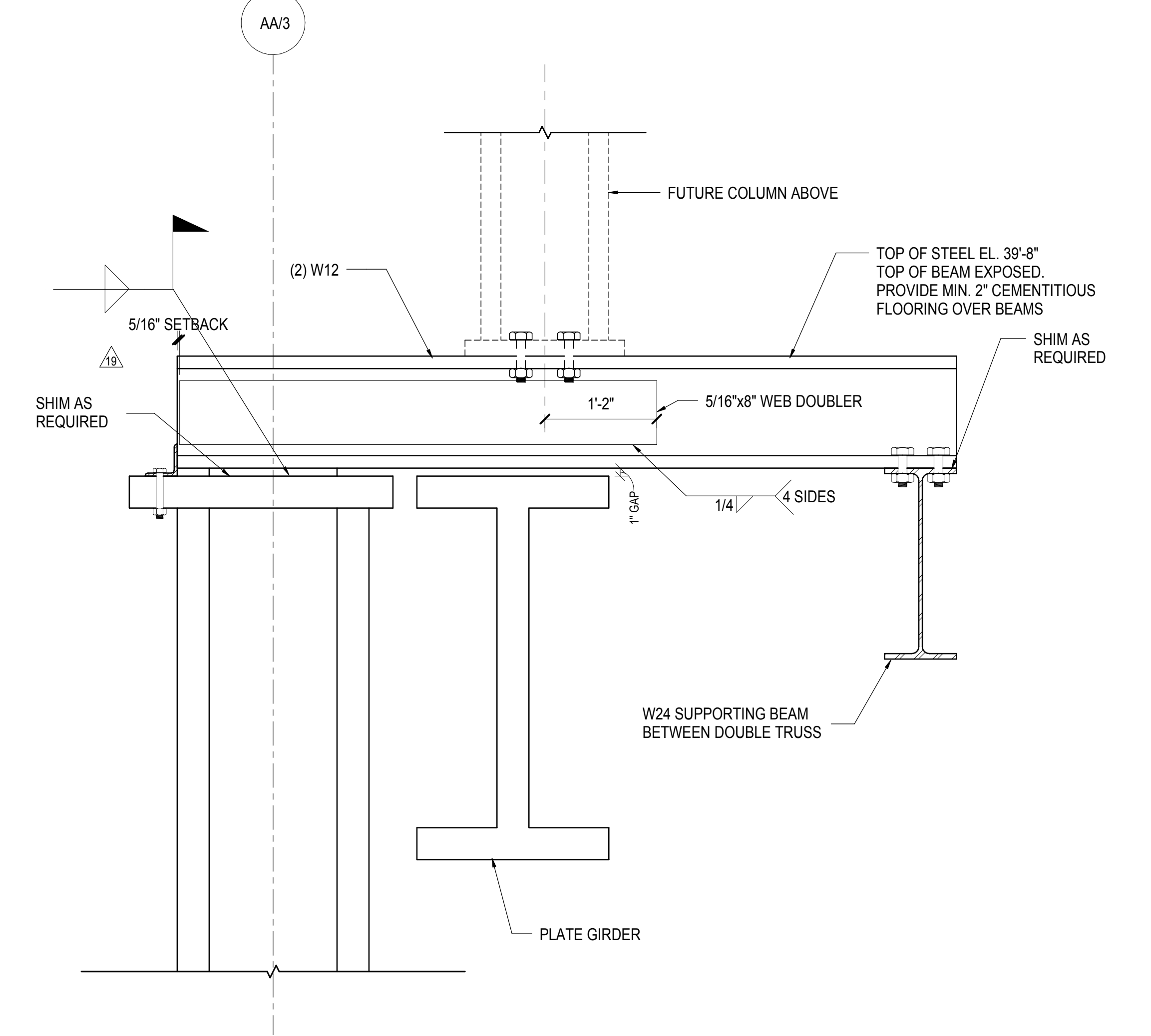
SHEET 84 of 163



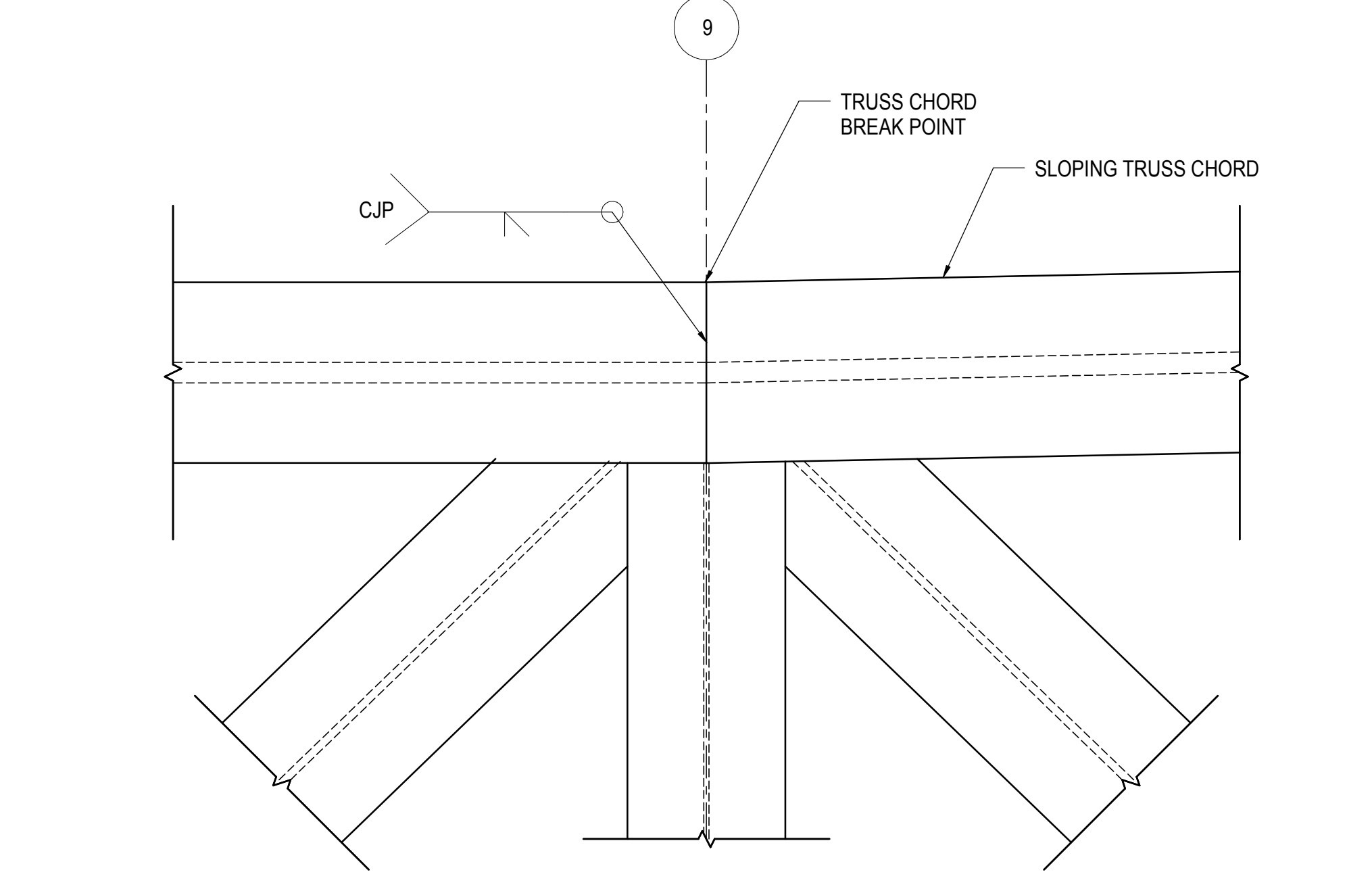
**3 TYPICAL DETAIL AT FUTURE COLUMN SUPPORTED ON DOUBLE TRUSS**  
1" = 1'-0"



**4 TYPICAL DETAIL AT FUTURE COLUMN SUPPORTED ON DOUBLE TRUSS**  
1" = 1'-0"



**2 AA TRUSS AT GRID 3**  
1" = 1'-0"



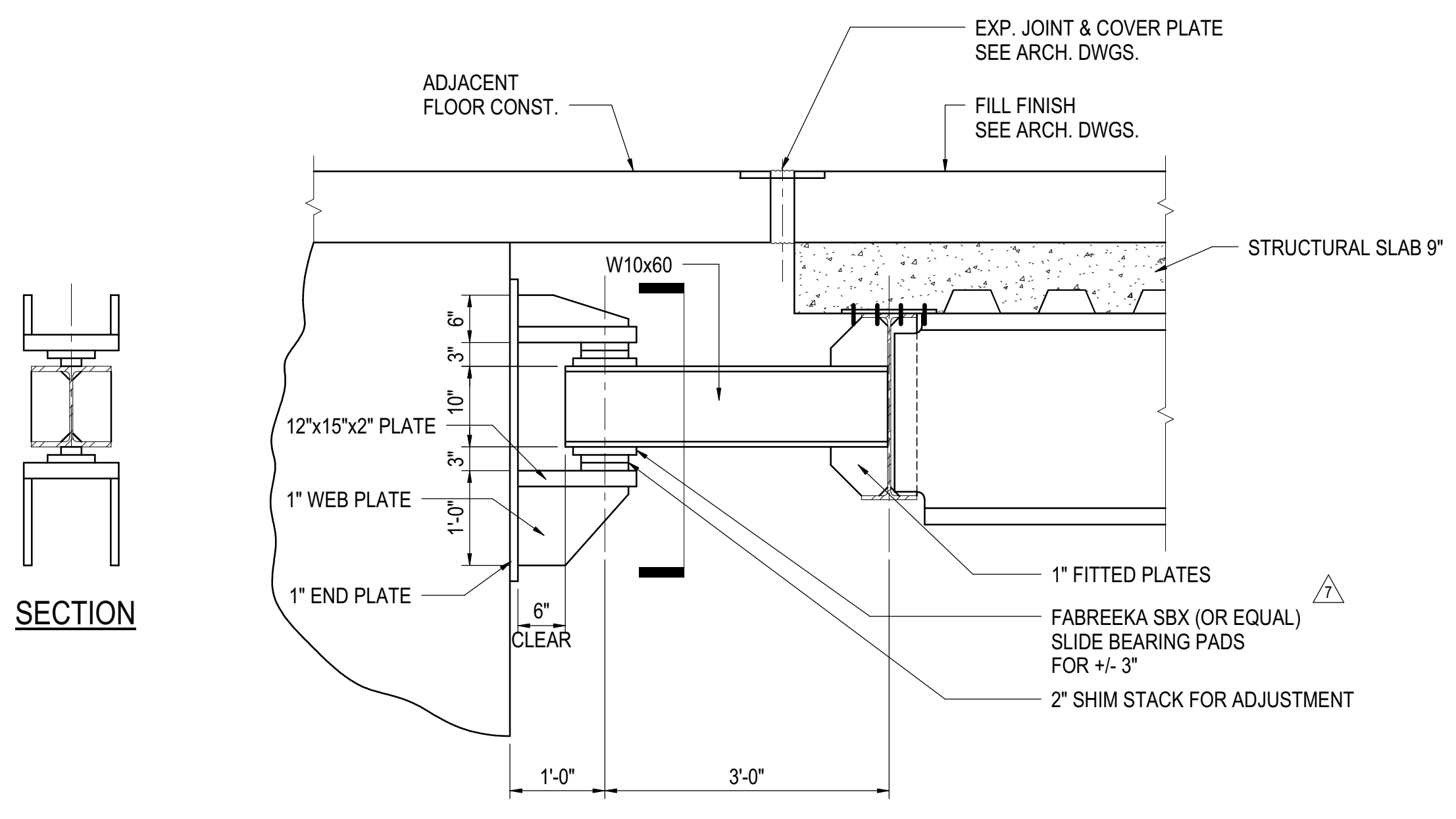
**1 AA-TRUSS CHORD KINK**  
1" = 1'-0"



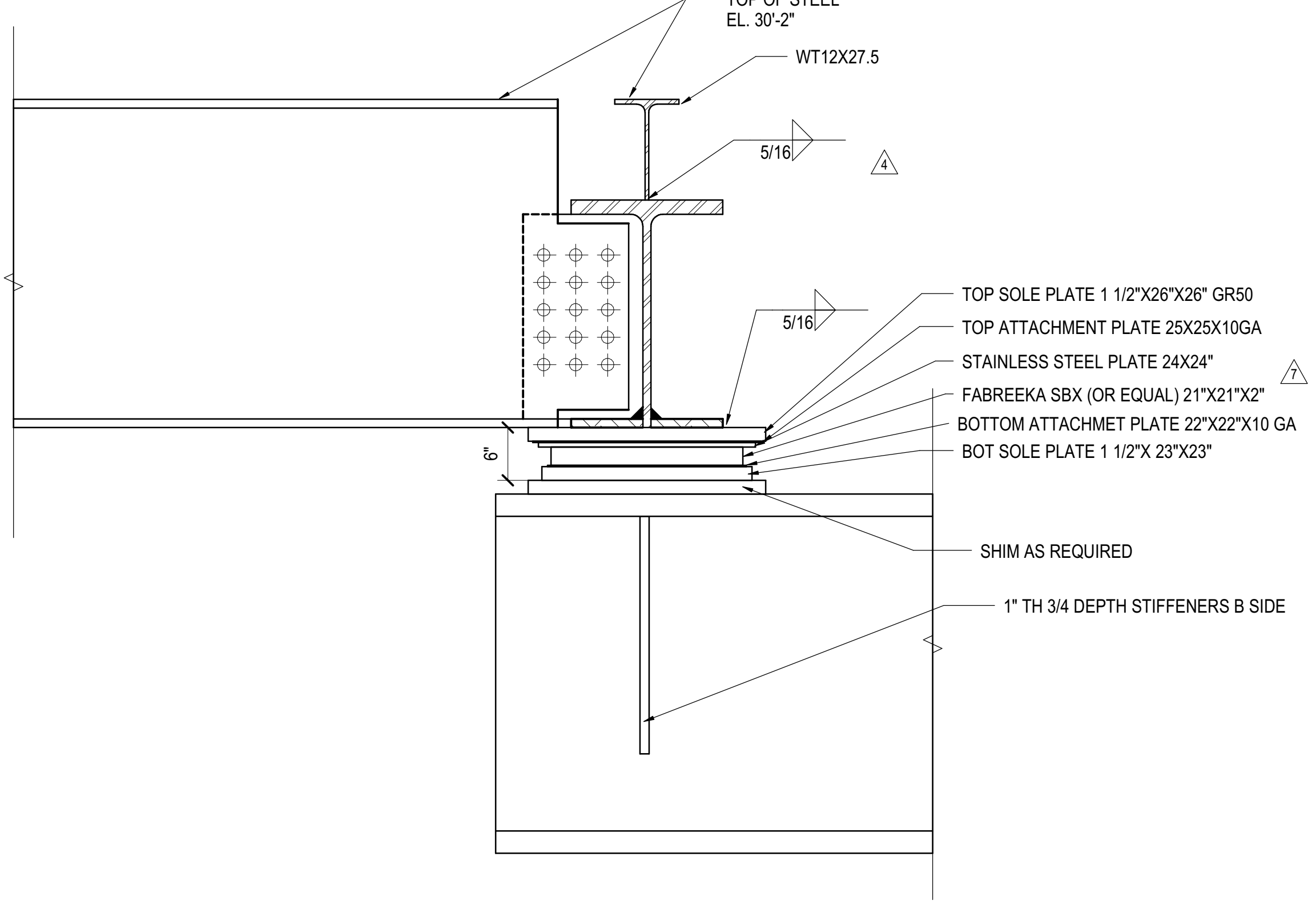
APPROVED  
Under Directive 3 of 1975  
Professional Registration  
Date: 08/15/2017  
NYC Development Hub

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0018	09/28/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0009	10/14/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Med. PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/29/2013
L.I.R.R. - 90% SUBMISSION	8/29/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE 1 FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
NYC Description	000

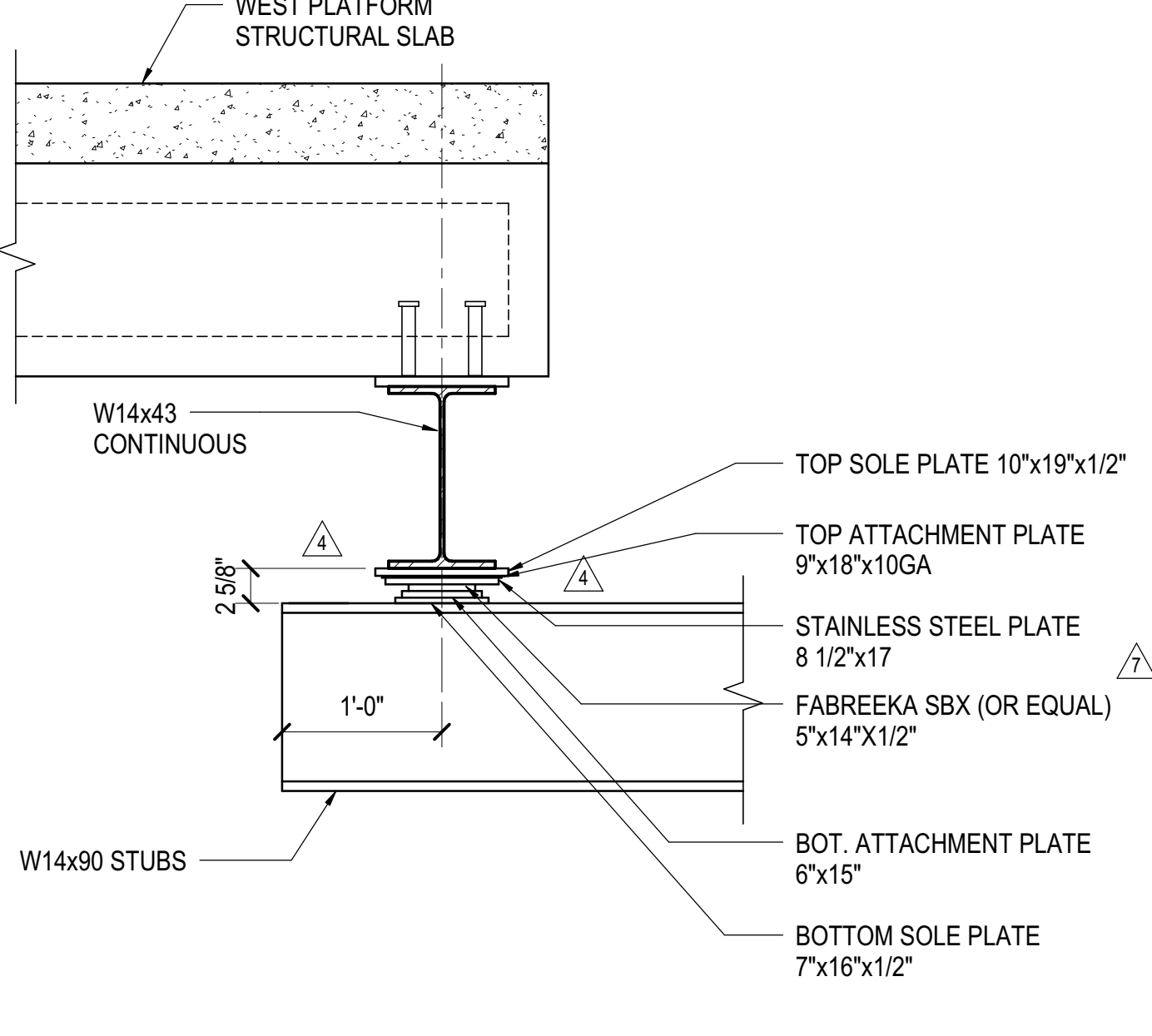
Rev. Plot



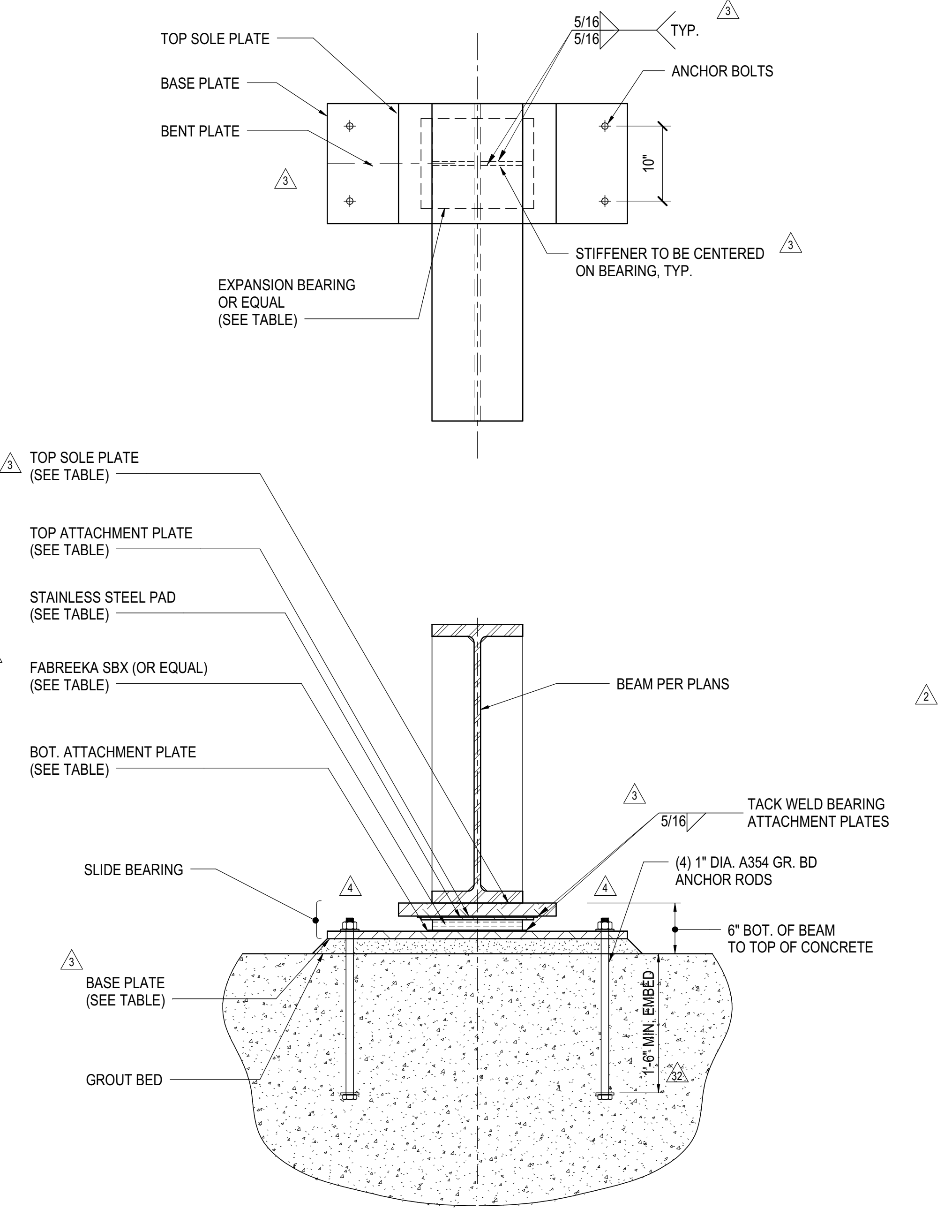
**1 TYPE A - ALIGNMENT SLIDE BRG DETAILS (60k CAPACITY)**  
TYPICAL (15' O.C. TYPICAL OR AS INDICATED ON PLAN)  
1\" = 1\"-0\"



**2 EXPANSION BEARING AT A14.8 (680k CAPACITY)**  
1\" = 1\"-0\"

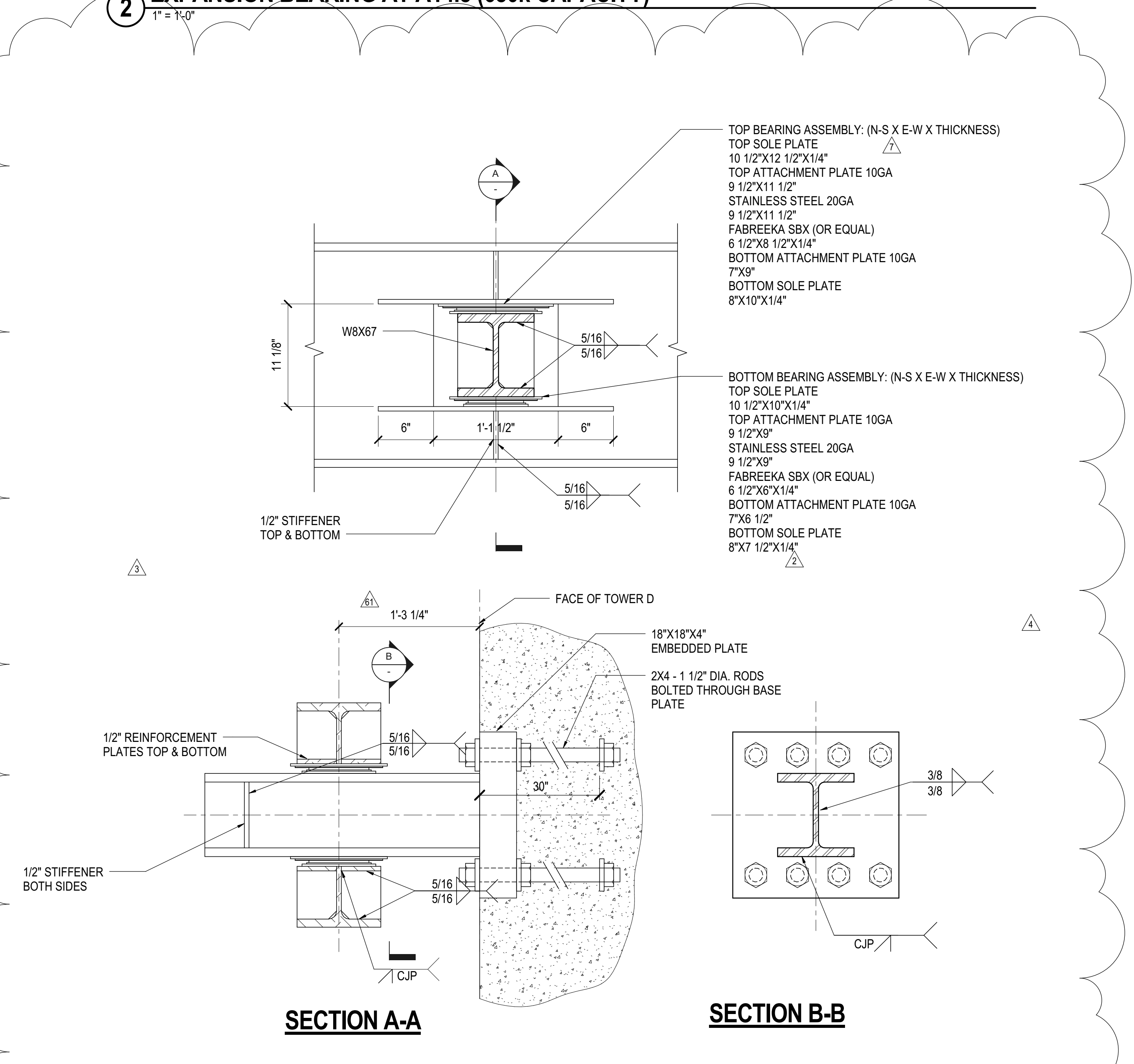


**3 TYP. EXPANSION BEARING ALONG GRID A.A (113k CAPACITY)**  
1\" = 1\"-0\"

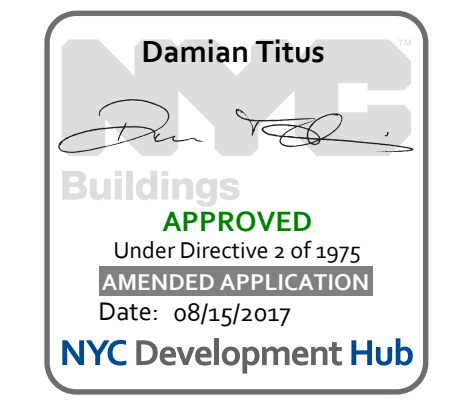


	DETAIL 4A	DETAIL 4B	DETAIL 4C
TOP SOLE PLATE	16\"X17\"X1 3/4	18\"X19\"X1 3/4	18\"X25\"X1 3/4
TOP ATTACHMENT PLATE	16\"X16\"X10GA	18\"X18\"X10GA	18\"X24\"X10GA
STAINLESS STEEL PAD	15 1/2\"X15 1/2\"X20GA	17 1/2\"X17 1/2\"X20GA	17 1/2\"X23 1/2\"X20GA
FABREEKA PAD +PTFE	12\"X12\"X1 5/8	14\"X14\"X1 5/8	14\"X20\"X1 5/8
BOT. ATTACHMENT PLATE	13\"X13\"X10GA	15\"X15\"X10GA	15\"X21\"X10GA
BASE PLATE	16\"X40\"X1	16\"X40\"X1	16\"X40\"X1

**4 EXPANSION BEARING AT PG TO PS ALONG GRIDS 1 & 1A (230k CAPACITY)**  
1\" = 1\"-0\"



**5 ALIGNMENT SLIDE BEARING DETAIL AT TOWER D (SEE PLAN) TYPICAL (95k CAPACITY)**  
1 1/2\" = 1\"-0\"



Date: 12/14/2012  
Project No: N11330.00  
Drawing No: Author

**HYE -PL -S-505.01**

**SLIDE BEARING DETAILS**

Under Directive 3 of 1975  
APPROVED  
Date: 08/15/2017  
NYC Development Hub

Drawing Number / B.SCAN Drawing Number  
**S-505.01**

: SHEET 85 of 163

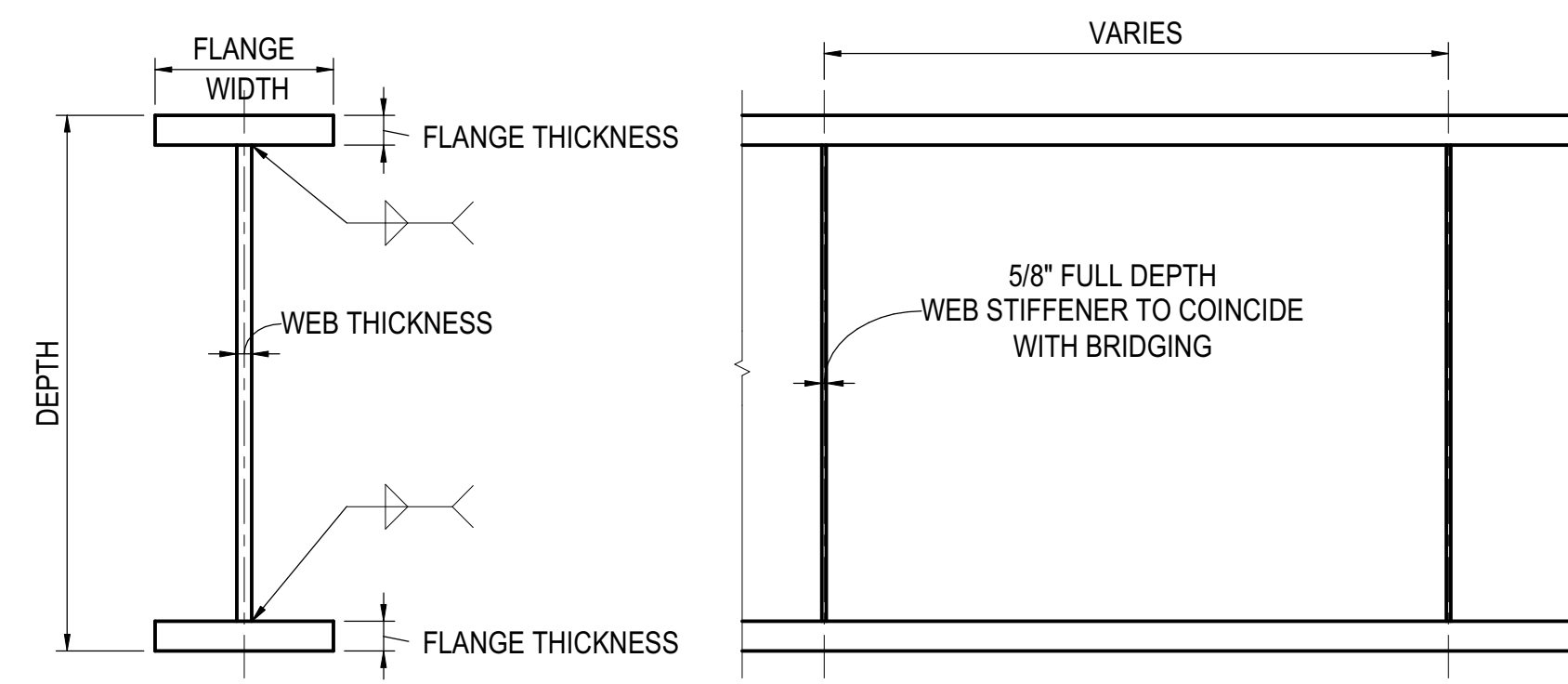
TYPICAL PLATFORM PLATE GIRDERS									
LABEL	DEPTH (IN)	FLANGE WIDTH (IN)	FLANGE TH. (IN)	WEB TH. (IN)	SELFWGT (LB/FT)	F <sub>y</sub> (KSI)	FILLET WELD SIZE (IN)	PJP EFFECTIVE THROAT ALTERNATIVE	
PGW4-1	48	24	1.50	0.875	380	50	1/2"		
PGW4-2	48	24	2.00	0.875	459	50	1/2"		
PGW4-3	48	24	2.50	1.00	556	50	1/2"		
PGW4-4	48	24	3.00	1.50	706	50	5/8"	1/2"	
PGW4-5	48	24	3.50	2.00	853	50	3/4"	5/8"	
PGW4-6	48	24	4.00	2.50	996	50	3/4"	5/8"	
PGW4-7	48	24	4.00	4.00	1200	50	1"	3/4"	
PGW5-1	60	24	1.50	1.00	440	50	1/2"		
PGW5-2	60	24	2.00	1.00	518	50	1/2"		
PGW5-3	60	24	2.50	1.00	597	50	1/2"		
PGW5-4	60	24	3.00	1.50	767	50	5/8"	1/2"	
PGW5-5	60	24	3.50	2.00	934	50	3/4"	5/8"	
PGW5-6	60	24	4.00	2.50	1098	50	3/4"	5/8"	
PGW6-1	72	24	1.50	1.375	569	50	1/2"	3/8"	
PGW6-2	72	24	2.00	1.375	646	50	1/2"	3/8"	
PGW6-3	72	24	2.50	1.375	723	50	1/2"	3/8"	
PGW6-4	72	24	3.00	1.50	829	50	5/8"	1/2"	
PGW6-5	72	24	3.50	2.00	1016	50	3/4"	5/8"	
PGW6-6	72	24	4.00	2.50	1200	50	3/4"	5/8"	
PGW6-7	72	24	4.00	4.00	1528	50	1"	3/4"	
PGW6-8	72	28	4.00	3.00	1419	65	1"	3/4"	
PGW6-1*	60	24	1.50	0.875	416	50	1/2"		
PGW6-2*	60	24	2.00	0.875	494	50	1/2"		
PGW6-3*	60	24	2.50	1.00	597	50	1/2"		
PGW6-4*	60	24	3.00	1.50	767	50	5/8"	1/2"	
PGW6-5*	60	24	3.50	2.00	934	50	3/4"	5/8"	
PGW6-6*	60	24	4.00	2.50	1098	50	3/4"	5/8"	
PGW6-7*	60	24	4.00	4.00	1364	50	1"	3/4"	

\* TAPERED BEAMS FROM 6' DEEP TO 4' DEEP (SHOWING AVERAGE DEPTH AND SELFWEIGHT)

**1 TYPICAL PLATFORM PLATE GIRDER SCHEDULE**  
1/2" = 1'-0"

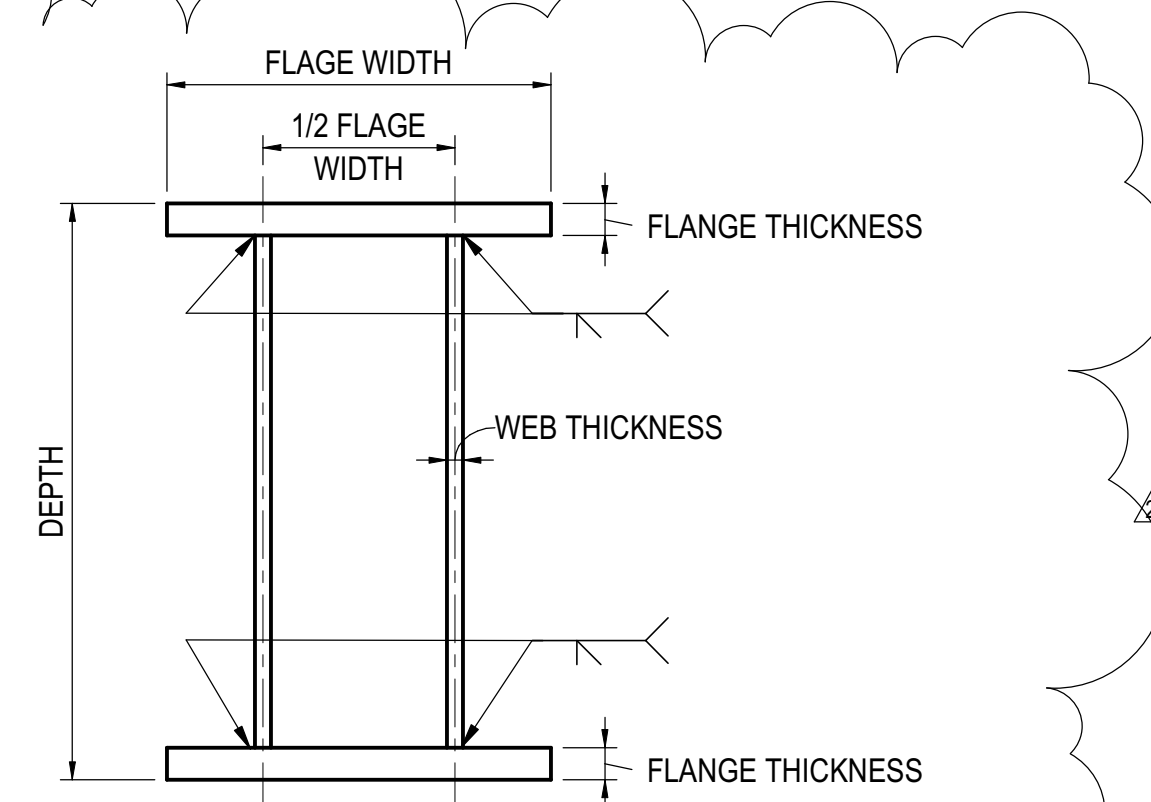
TOWER E TYPICAL PLATFORM PLATE GIRDERS									
LABEL	DEPTH (IN)	FLANGE WIDTH (IN)	FLANGE TH. (IN)	WEB TH. (IN)	SELFWGT (LB/FT)	F <sub>y</sub> (KSI)	FILLET WELD SIZE (IN)	PJP EFFECTIVE THROAT ALTERNATIVE	
PG4-1	48	24	1.50	1.00	380	65	1/2"		
PG4-2	48	24	1.50	1.50	475	65	1/2"	5/8"	
PG4-6	48	24	4.00	2.50	996	65	3/4"		

TOWER E BOX PLATE GIRDERS									
LABEL	DEPTH (IN)	FLANGE WIDTH (IN)	FLANGE TH. (IN)	WEB TH. (IN)	SELFWGT (LB/FT)	F <sub>y</sub> (KSI)	FILLET WELD SIZE (IN)	PJP EFFECTIVE THROAT ALTERNATIVE	
BPG4-4	48	48	3.00	1.50	1412	65	3/4"	7/8"	
BPG4-5	48	48	3.50	2.00	1706	65	-	7/8"	
BPG4-6	48	48	4.00	2.50	1992	65	-	1 1/4"	



NOTE:  
1. SEE PLATE GIRDER CHART FOR PLATE THICKNESS

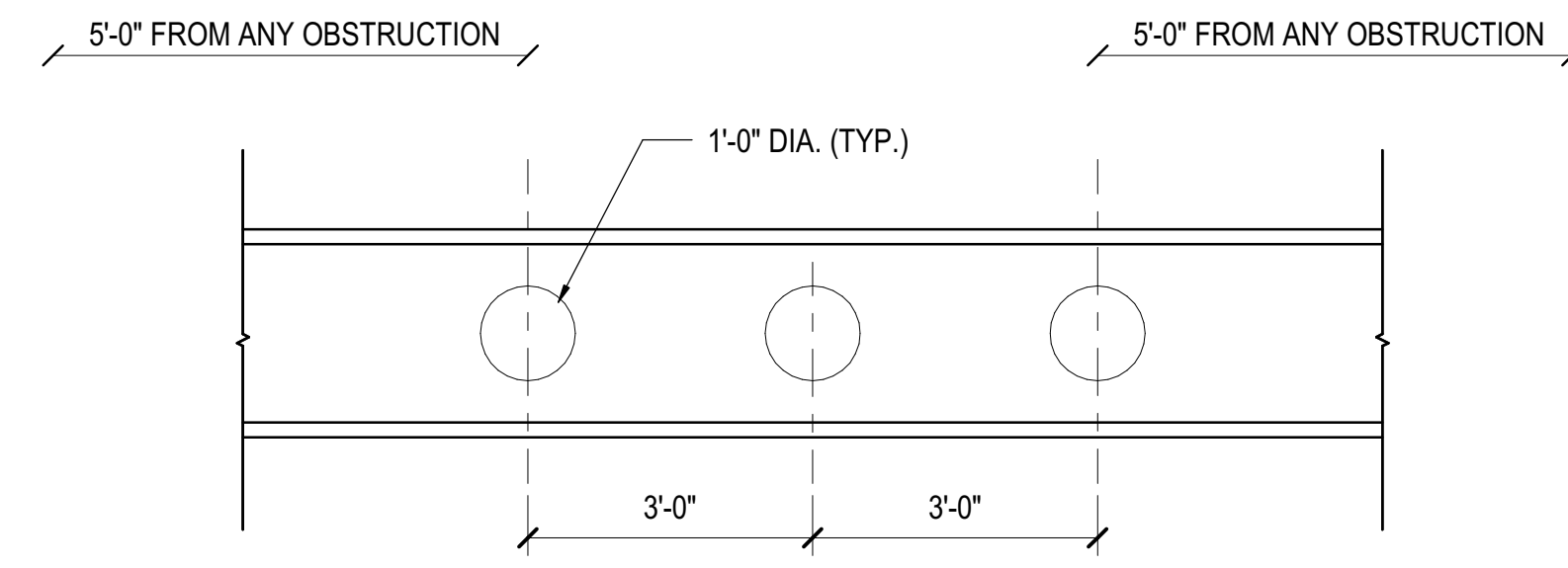
**TYPICAL PLATE GIRDER DETAIL**



NOTE:  
1. SEE PLATE GIRDER CHART FOR PLATE THICKNESS

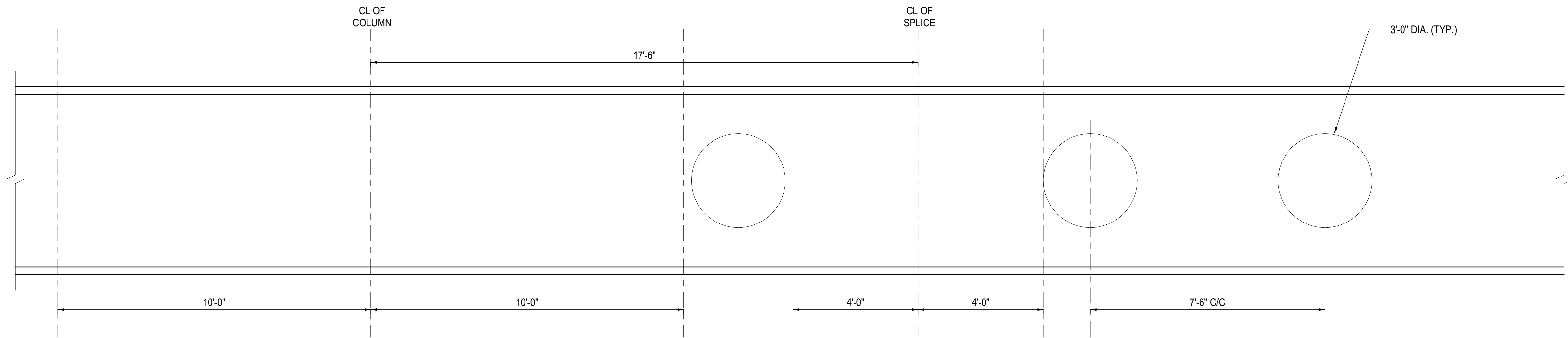
**BOX PLATE GIRDER DETAIL**

**2 TYPICAL PLATE AND BOX GIRDER DETAILS**  
1/2" = 1'-0"



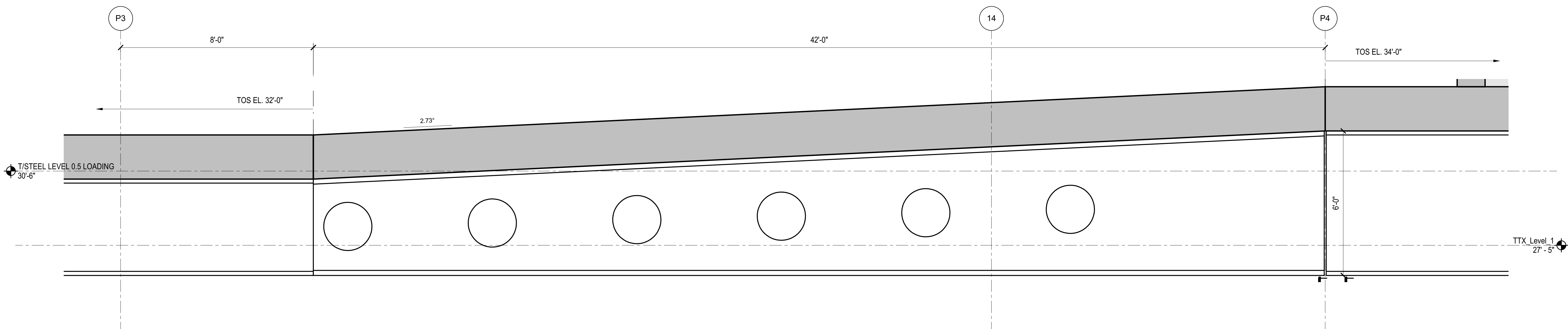
NOTE: TYPICAL ON WIDE FLANGE BEAMS, BETWEEN COLUMNS PF8, PF9 AND PF9, PF9, BETWEEN COLUMNS PF8, PG8 AND PF10, PG11, BETWEEN COLUMNS PG9, PJ9 AND PG11, PJ11. FINAL POSITION TO BE CONFIRMED FOLLOWING MECHANICAL MODELING

**3 TYPICAL DENSE GRID FRAMING OPENINGS**  
1/2" = 1'-0"



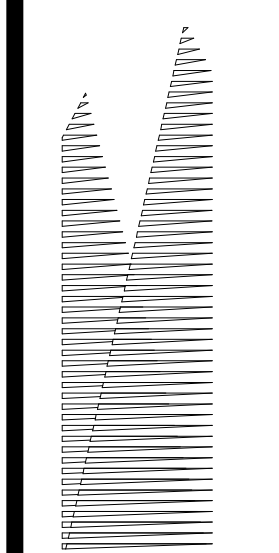
NOTE: FOR ALL NORTH-SOUTH PLATE GIRDERS, ON ALL THE GRIDLINES EXCEPT PC, ALLOW FOR 3'-0" DIAMETER OPENINGS AT 7'-6" CENTERS, EXCLUDING 10'-0" EITHER SIDE OF COLUMNS AND 4'-0" EITHER SIDE OF SPLICES. FINAL POSITION TO BE CONFIRMED FOLLOWING MECHANICAL MODELING

**4 TYPICAL PLATE GIRDER OPENINGS**  
1/2" = 1'-0"



**5 TYPICAL TAPERED GIRDER**  
1/2" = 1'-0"

Address  
530 WEST 33RD STREET  
NEW YORK, NY



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Related Companies  
60 Columbus Circle  
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Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

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PC Architects & Planning Consultants  
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Fire Alarm, Fire Protection, Security  
Personnel Transportation Group  
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New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

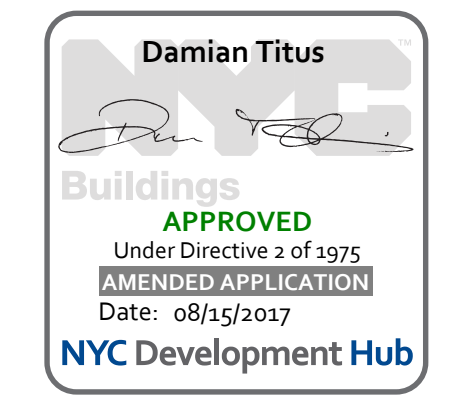
NO.	DESCRIPTION	DATE
DOB POST-APPROVAL AMENDMENT		10/28/2016
LJRR - FINAL 100%		10/14/2014
DESIGN SUBMISSION FOR RECORDS		
ASH0000		10/14/2014
ASH0040 - TOWER E STEEL FRAMING		8/28/2014
ASH0009 - PLATFORM REDESIGN		3/13/2014
FOR VESSEL		
ASH0003		1/14/2014
NYC DOB FILING		12/4/2013
LJRR - PRE-FINAL 100%		11/22/2013
Mod - PLATFORM SUBMISSION		
DL02 PHASE 1 STRUCTURAL UPDATE		11/1/2013
NYC DOB FILING		10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE		9/20/2013
LJRR - 90% SUBMISSION		8/09/2013
NYC DOB FILING		6/17/2013
LJRR - 60% SUBMISSION		5/29/2013
LJRR - 60% - PHASE 1 FDNS		3/29/2013
LJRR - 30% SUBMISSION		2/15/2013
Rev		000

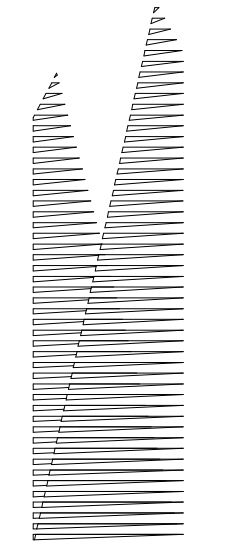
Date: 12/14/2012  
Project No: N11330.00  
Author: [Signature]

**HYE-PL-S-511.01**

**WEST PLATFORM PLATE GIRDER SCHEDULES & DETAILS**

Drawing Number / Revision Number  
**S-511.01**





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Related Companies  
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Oxford Properties Group  
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Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

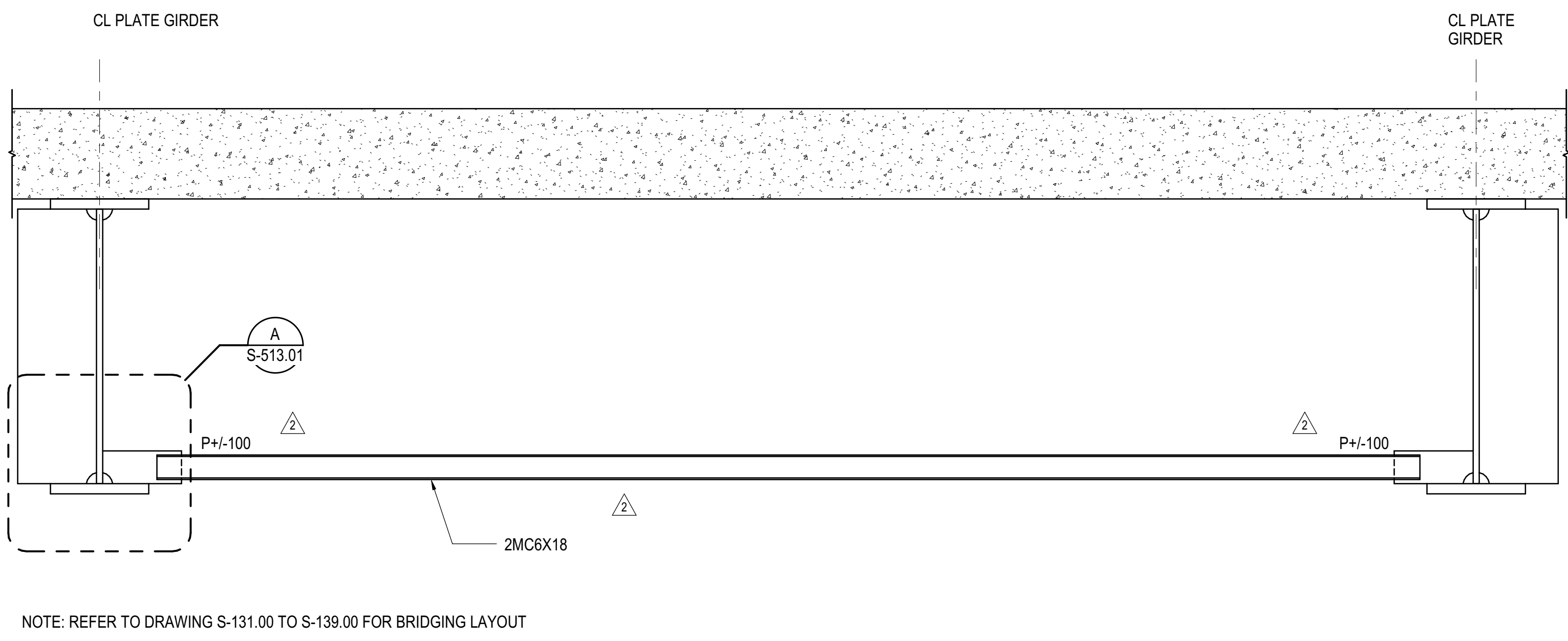
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

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New York, NY 10010  
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Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Easements: Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

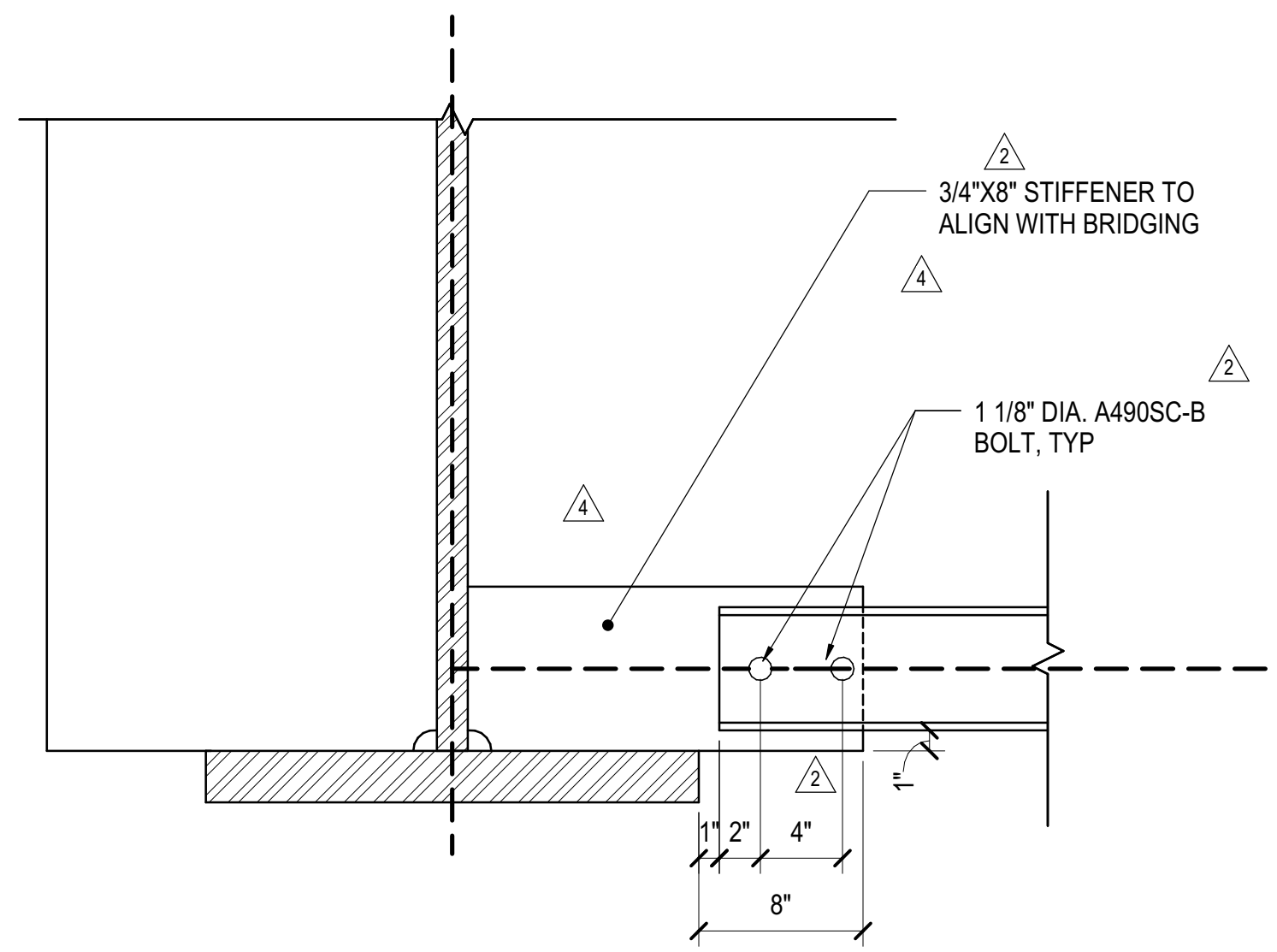
LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

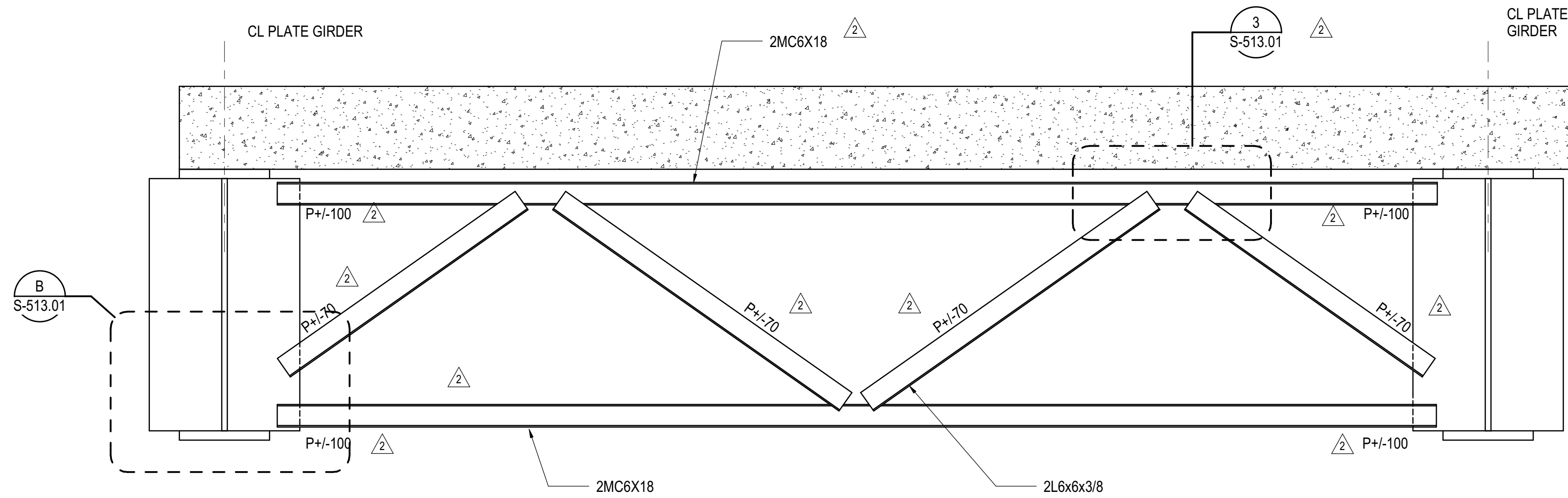


NOTE: REFER TO DRAWING S-131.00 TO S-139.00 FOR BRIDGING LAYOUT

**1 TYPICAL BRIDGING BR1 SECTION AND DETAIL**  
1/2" = 1'-0"

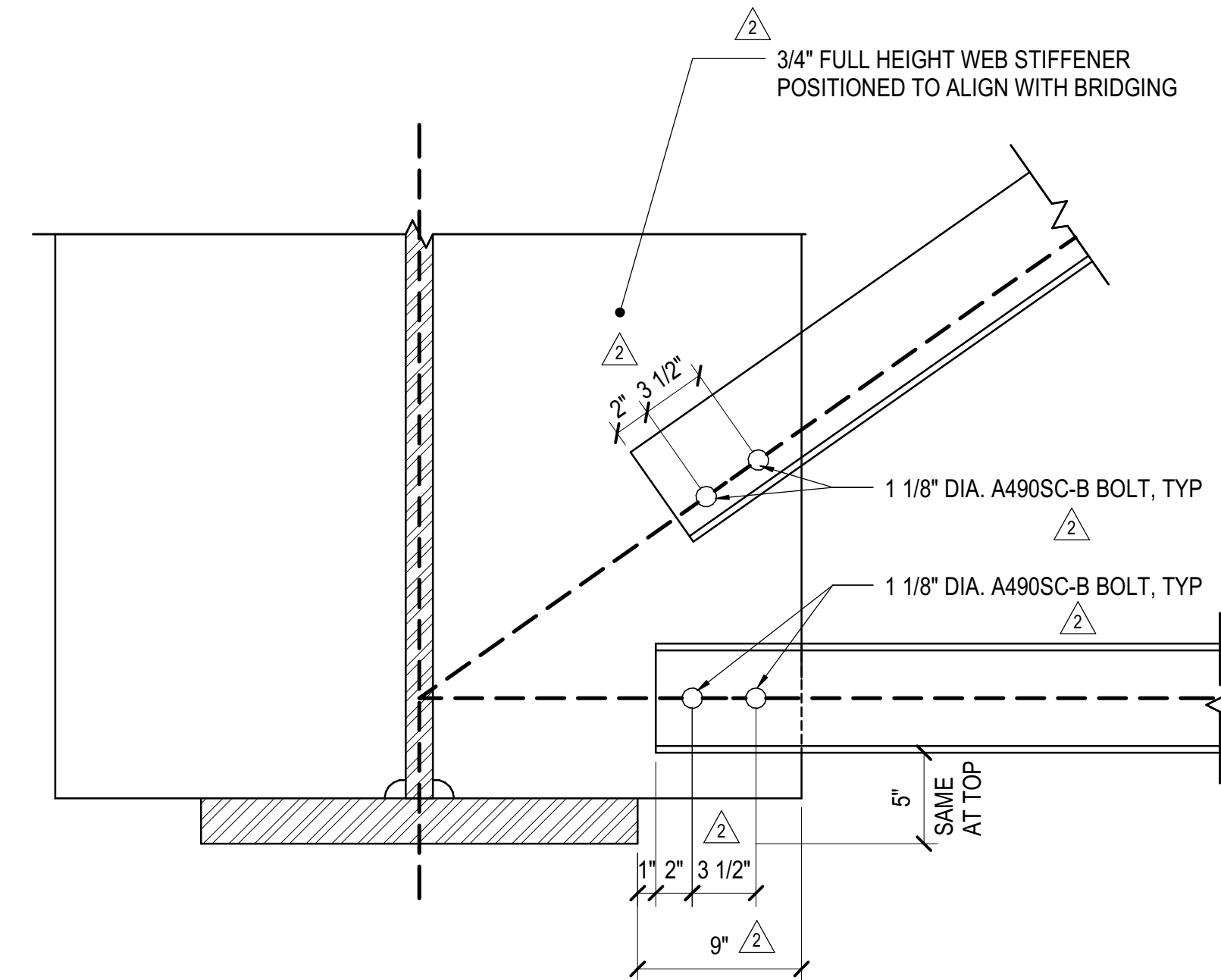


**A SECTION**  
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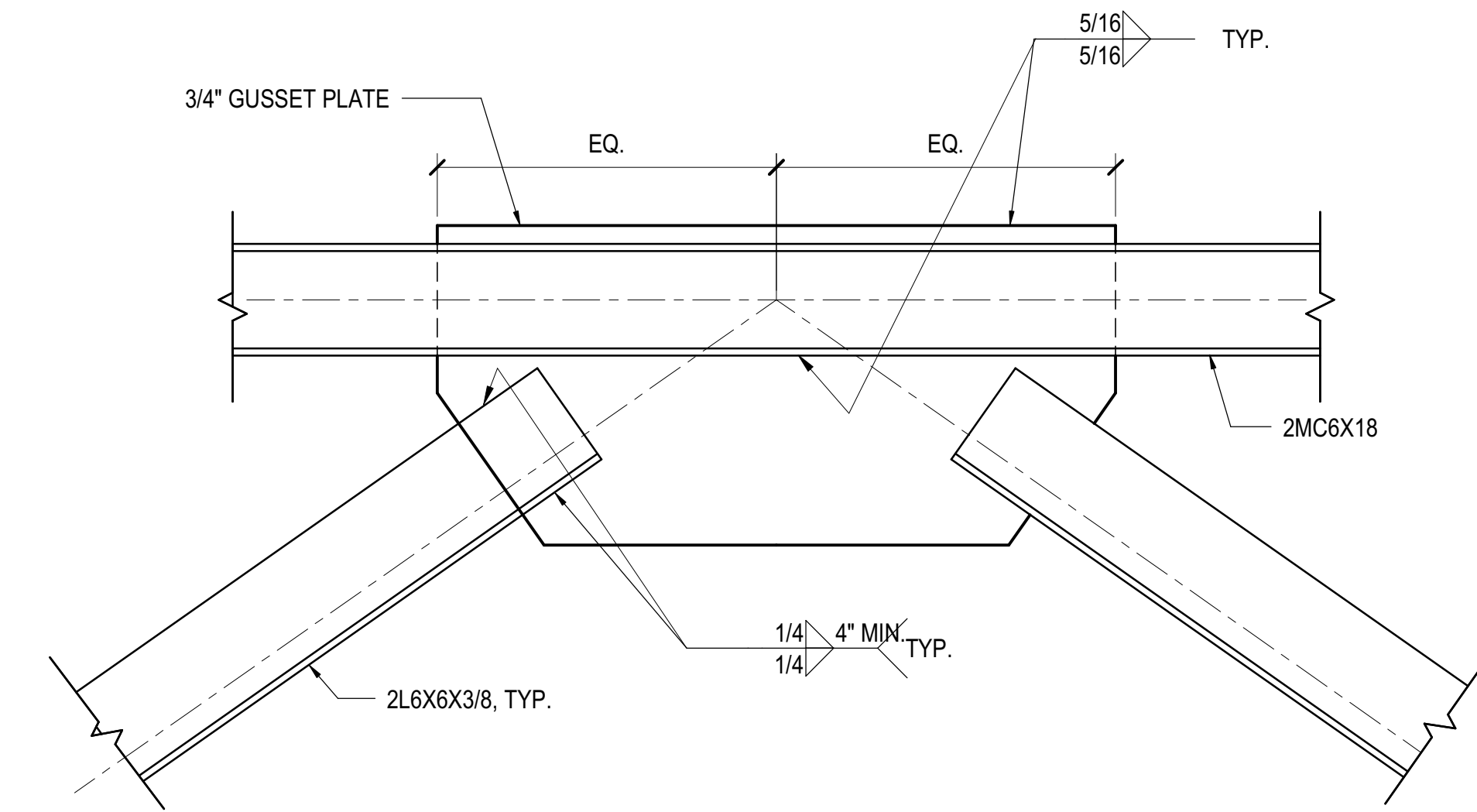


NOTES:  
1. REFER TO DRAWING S-131.00 TO S-139.00 FOR BRIDGING LAYOUT  
2. LAYOUT BASED ON ASSUMED CONSTRUCTION SEQUENCE AND SUBJECT TO MODIFICATION BASED ON CONTRACTORS FINAL CHOSEN SEQUENCE.

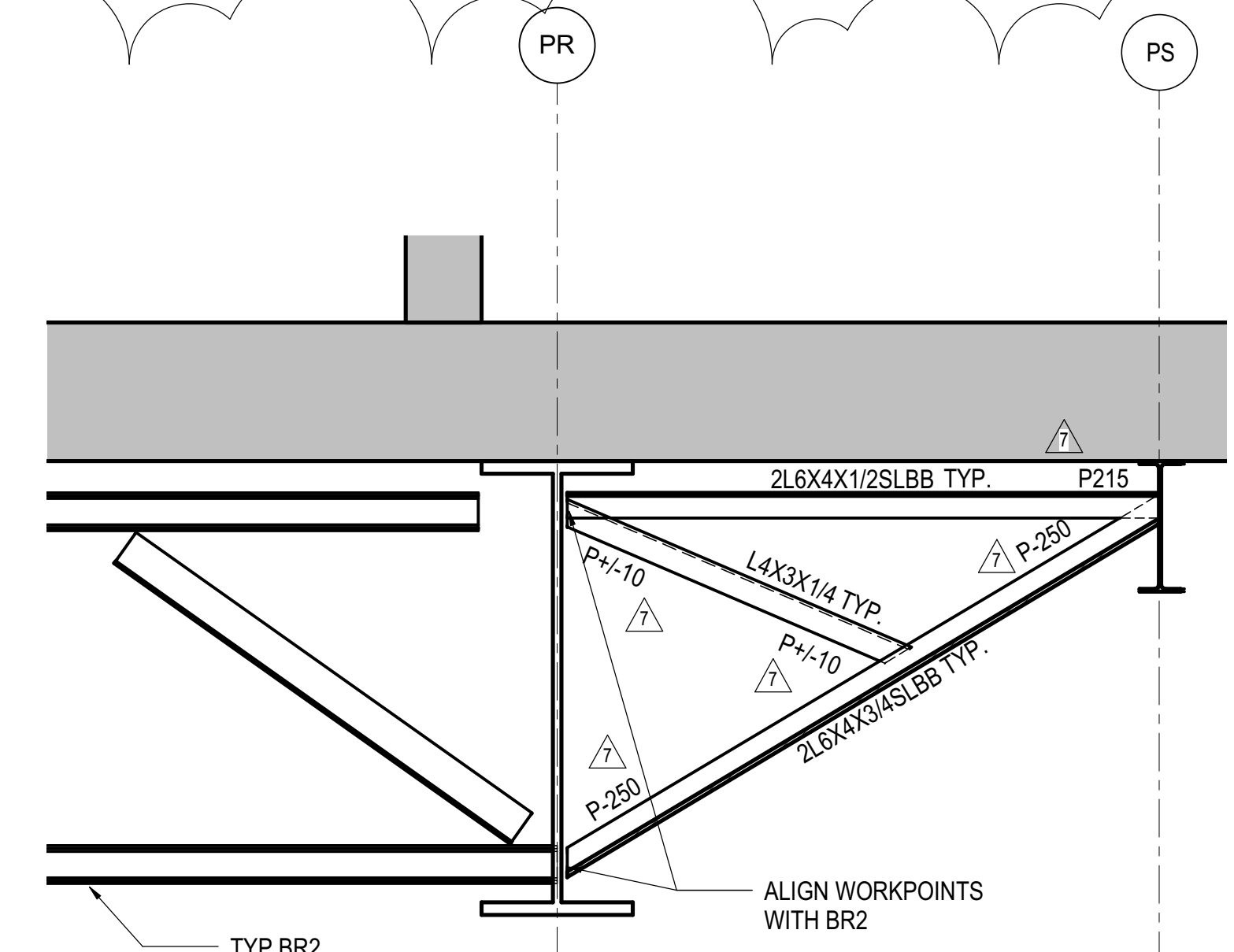
**2 END BAY BRIDGING BR2 SECTION AND DETAIL**  
1/2" = 1'-0"



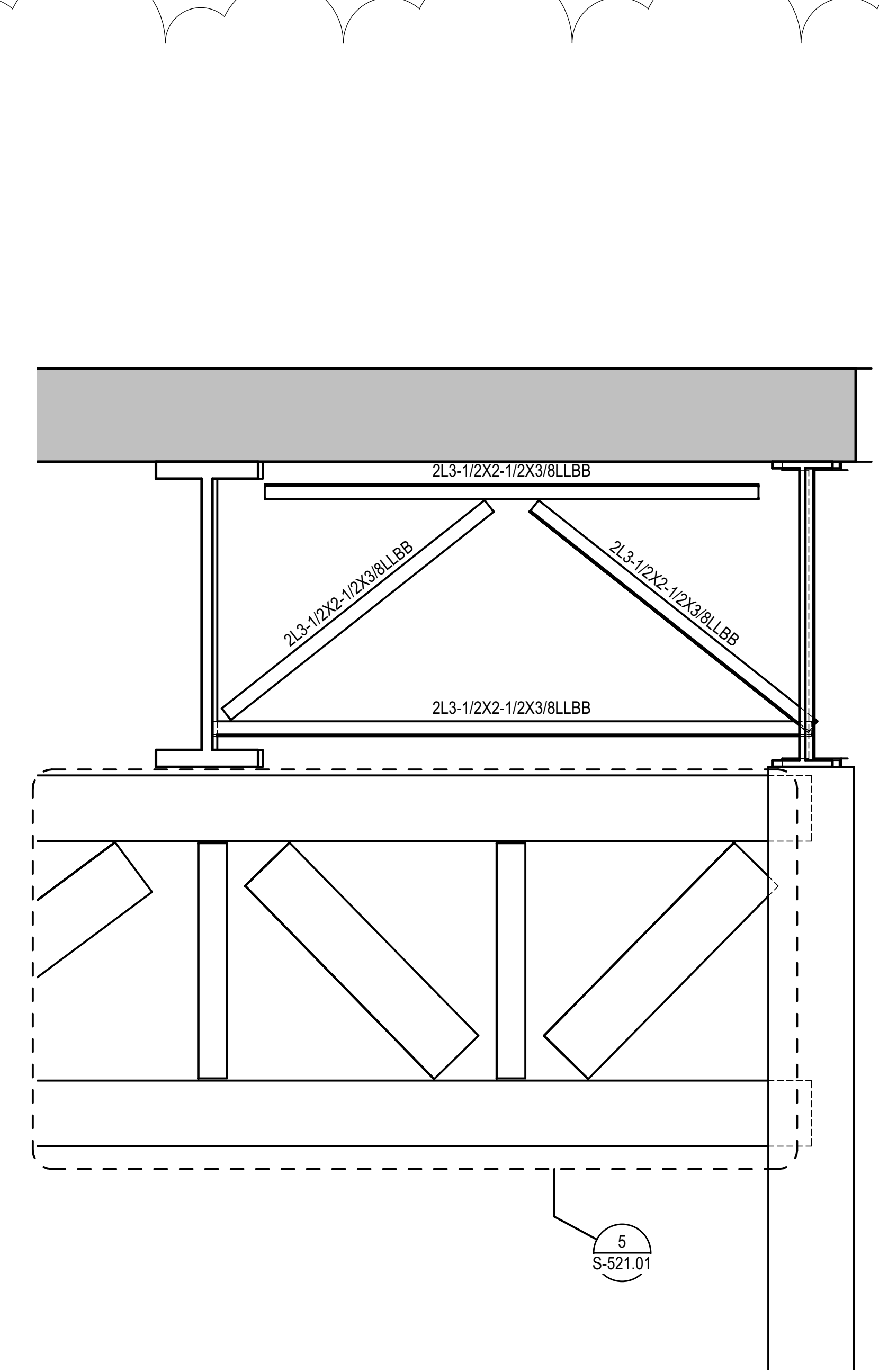
**B SECTION**  
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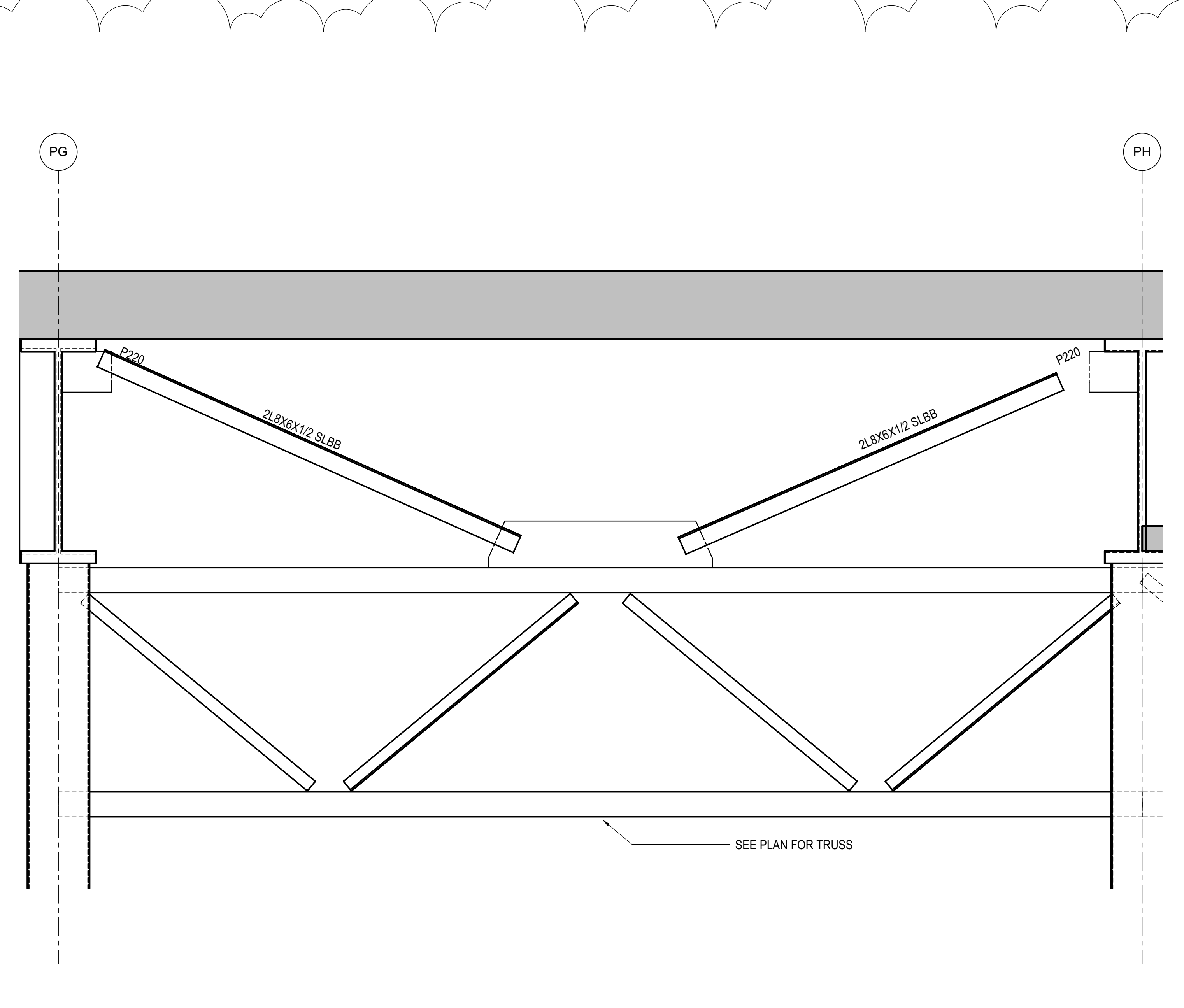
**3 BRIDGING TRUSS WELDED GUSSET PLATE DETAIL**  
1 1/2" = 1'-0"



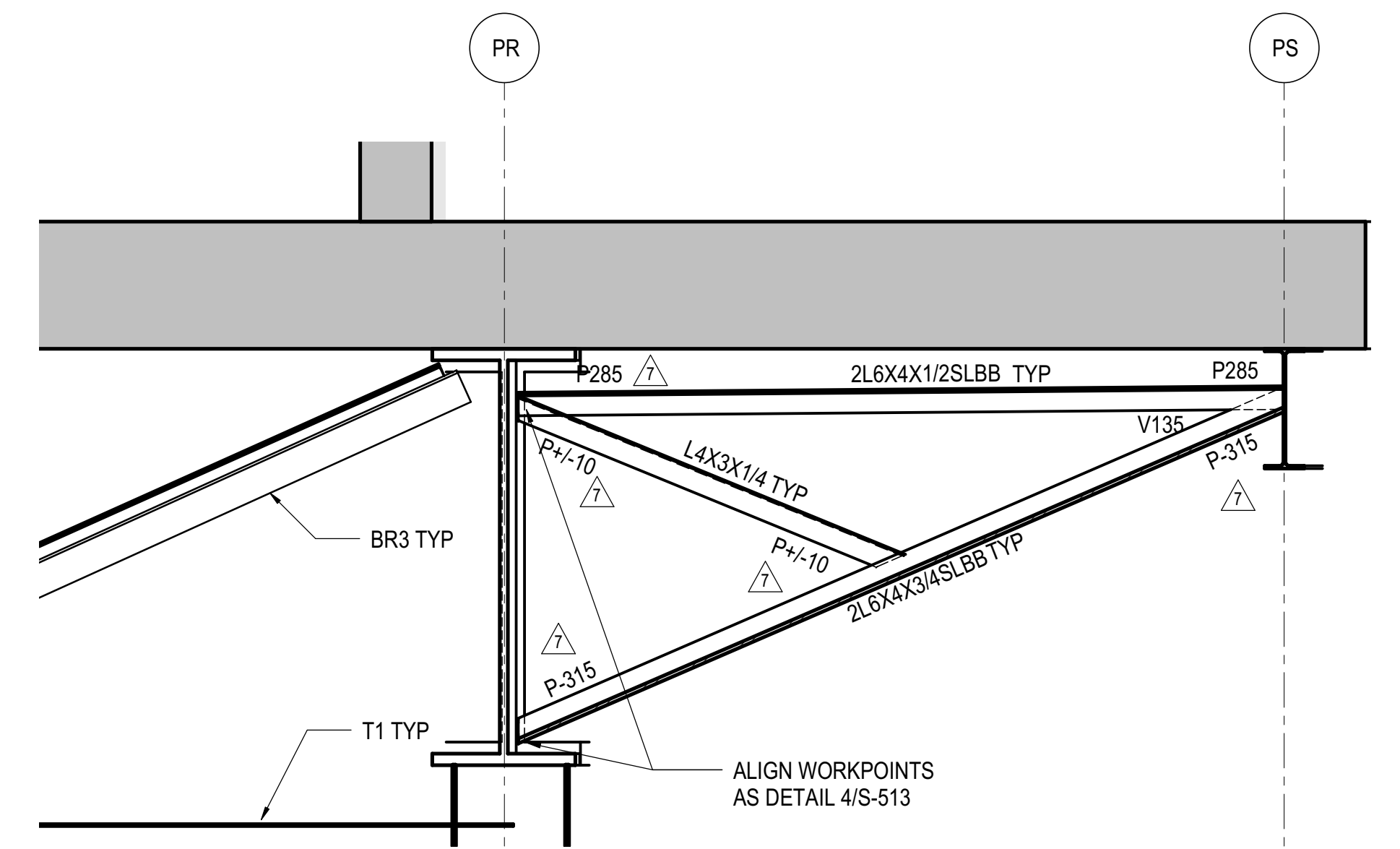
**4 TYPICAL PS SLAB EDGE BRACKET SUPPORT AT BR2 LINES**  
1/2" = 1'-0"



**6 PLATE GIRDER BRACING AT PR9A**  
1/2" = 1'-0"



**7 PLATE GIRDERS KICKERS BR3 TYPICAL SECTION**  
1/2" = 1'-0"



**5 TYPICAL PS SLAB EDGE BRACKET SUPPORT AT COLUMN LINES**  
1/2" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
MOE - PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/29/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE 1 FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
NYC DOB FILING	08/

Exp. Date

Date: 12/14/2012  
Project No: N11330.00  
Drawing By: Author  
Sheet Number

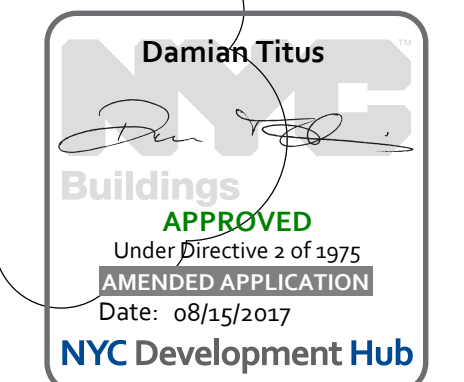
**HYE -PL -S-513.01**

**BRIDGING SECTIONS AND DETAILS**

Drawing Number / B/CAN Drawing Number

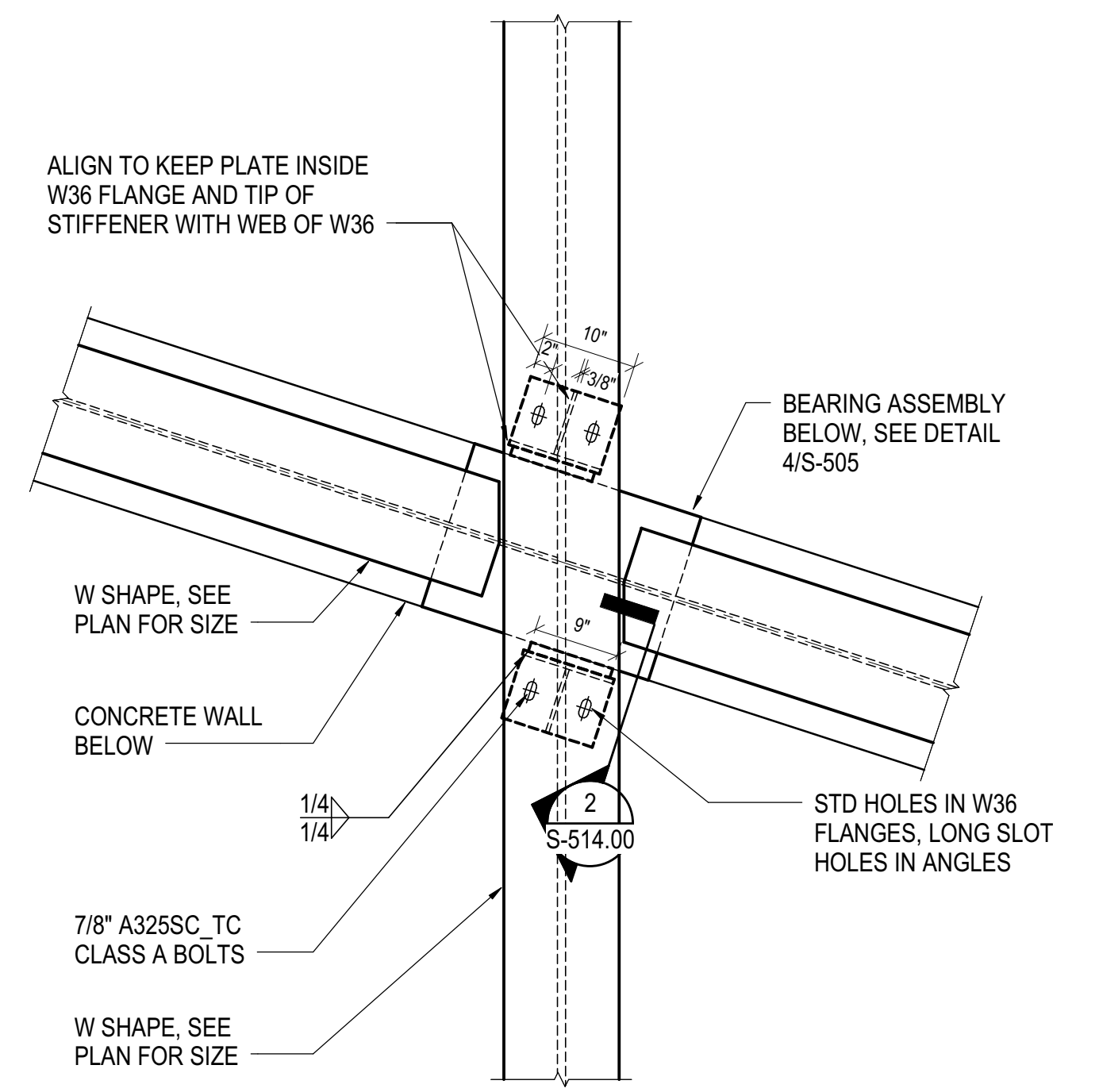
**S-513.01**

SHEET 87 of 163

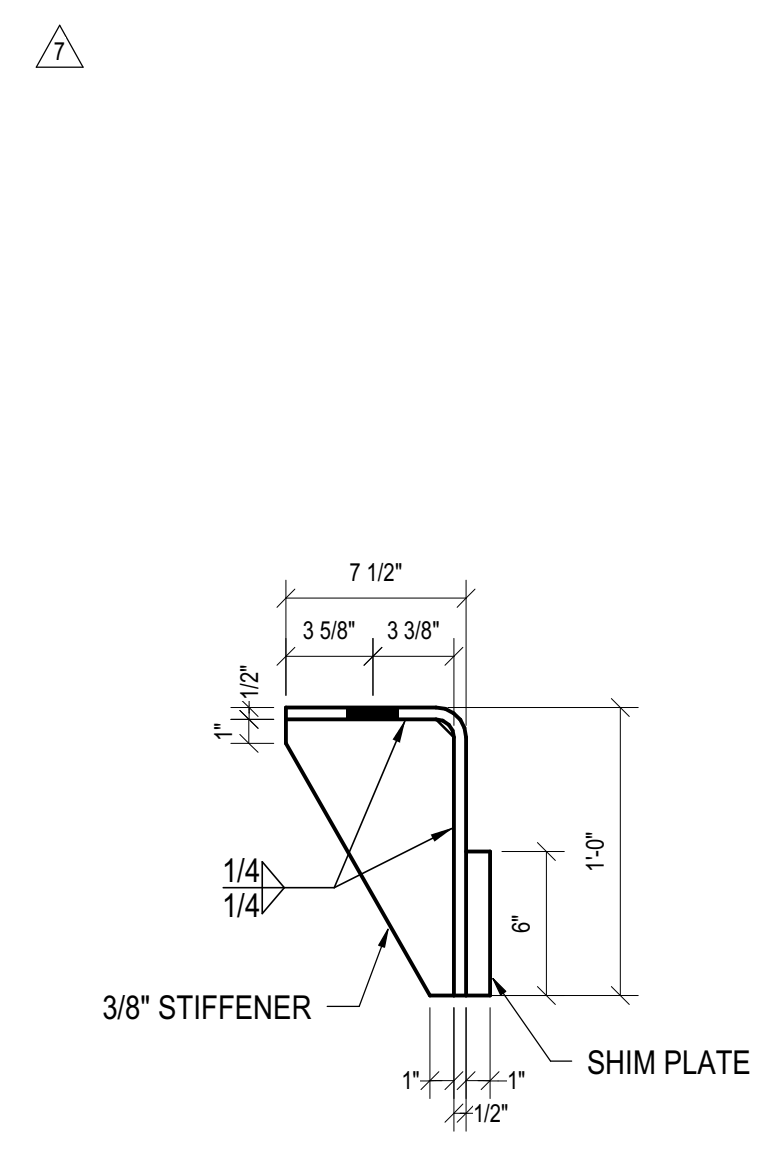


APPROVED  
Under Executive Order 1 of 1975  
OFFICE OF PROFESSIONAL REGULATION  
Date: 08/15/2017  
NYC Development Hub

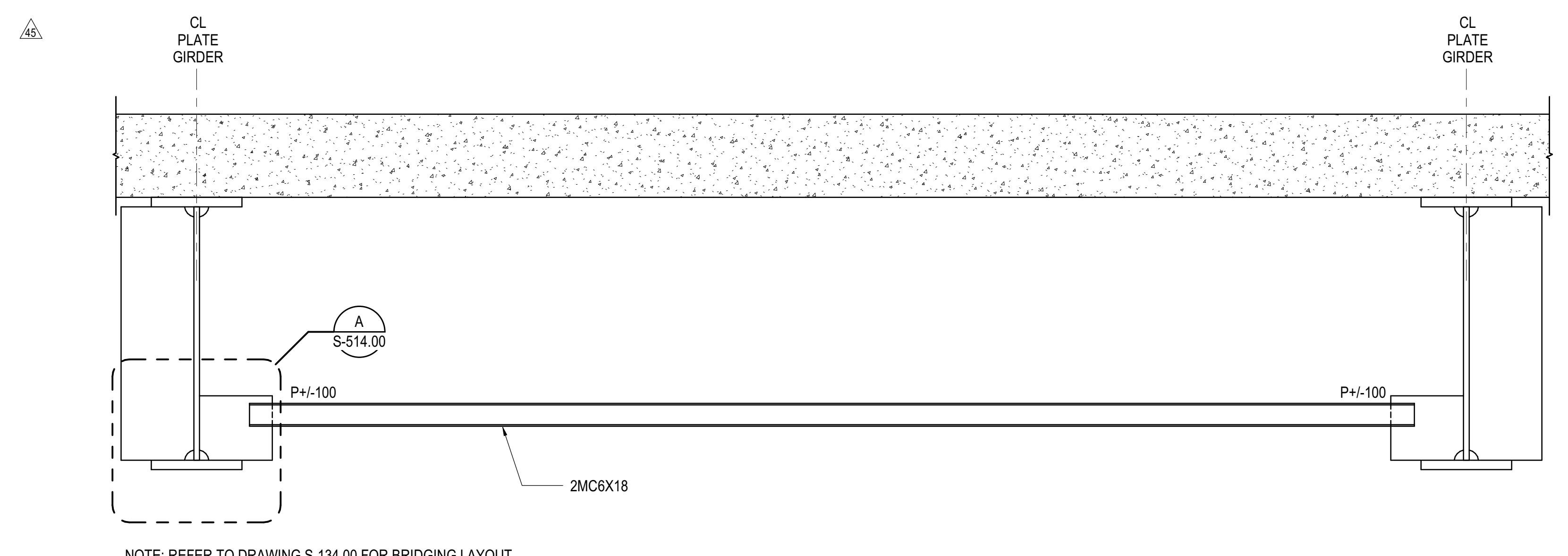
BRIDGING SECTIONS AND DETAILS  
S-513.01  
10/18/2018 5:20:18 PM  
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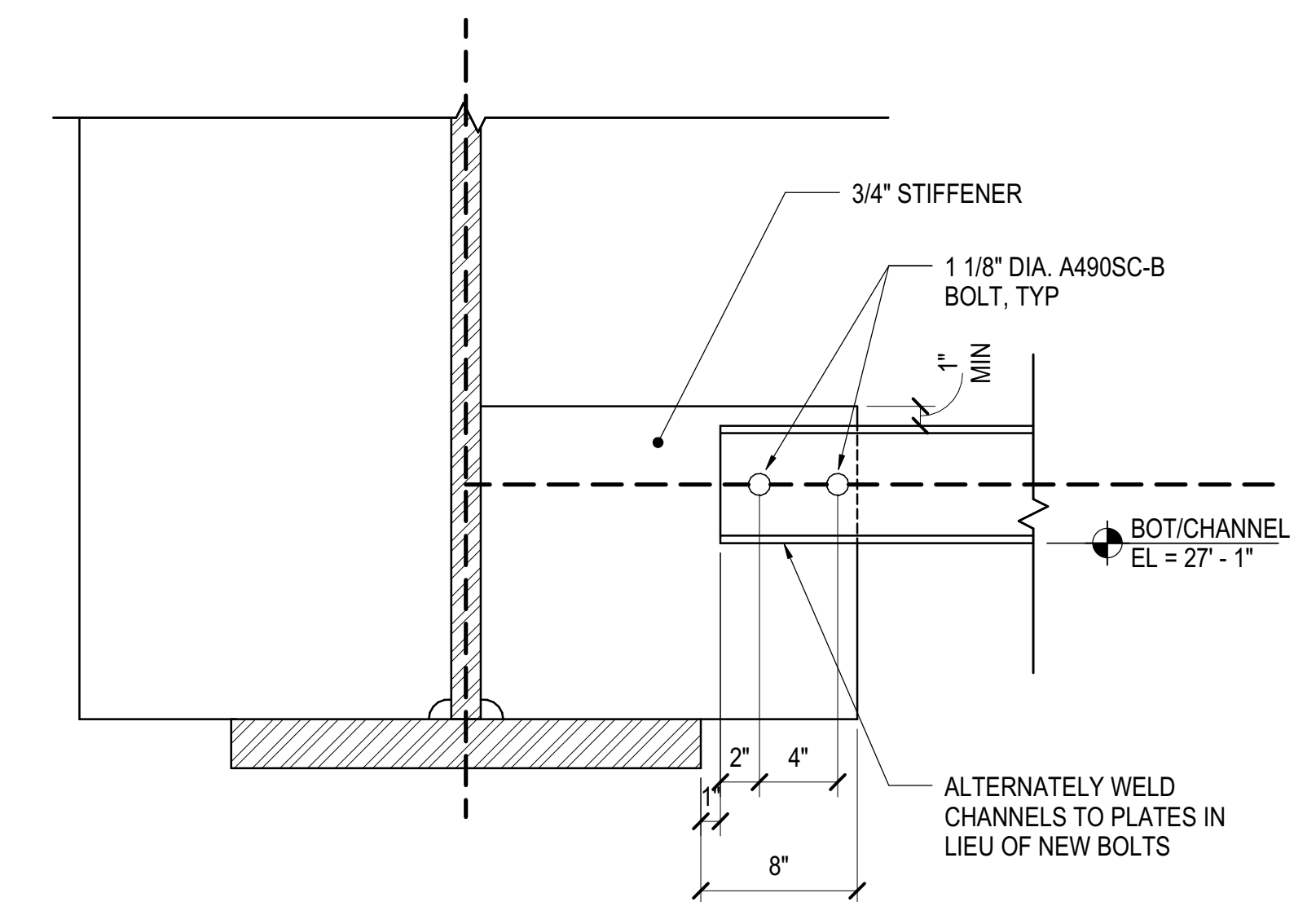
**1** TYPICAL ANGLE TO BRACE TOP OF NORTH YARD WALL  
3/4" = 1'-0"



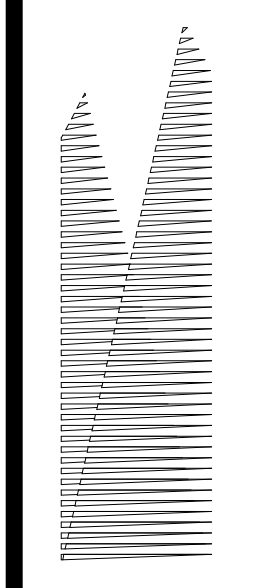
**2** SECTION OF TYPICAL ANGLE  
1 1/2" = 1'-0"



**3A** MODIFIED BRIDGING BR1 SECTION AND DETAIL  
1/2" = 1'-0"



**A** SECTION A  
NOT TO SCALE



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Owner  
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Architect  
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Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
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New York, NY 10005  
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LIRR Substation  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASB0071	04/03/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSIONS FOR RECORDS	
ASB0049	10/14/2014
ASB0005	2/18/2014
ASB0005	08/15/2017

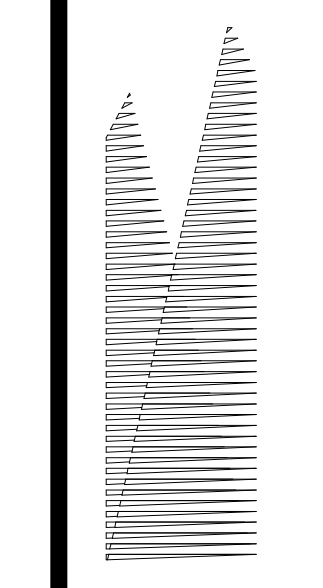
Over: 02/18/14  
Project No: N11330.00  
Division By: Author  
Sheet Number: 88

**HYE -PL -S-514.00**

**BRIDGING SECTIONS AND DETAILS**

Drawing Number / B-SCAN Drawing Number  
**S-514.00**





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
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Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
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New York, NY 10017  
Tel: 212.708.3600

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PC Architects & Planning Consultants  
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Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
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LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASIS/009	3/13/2014
ASIS/0099 - PLATFORM REDESIGN	3/13/2014
FOR VESSEL	
No. Description	Date

Rev. Plot

Date: 03/13/14  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

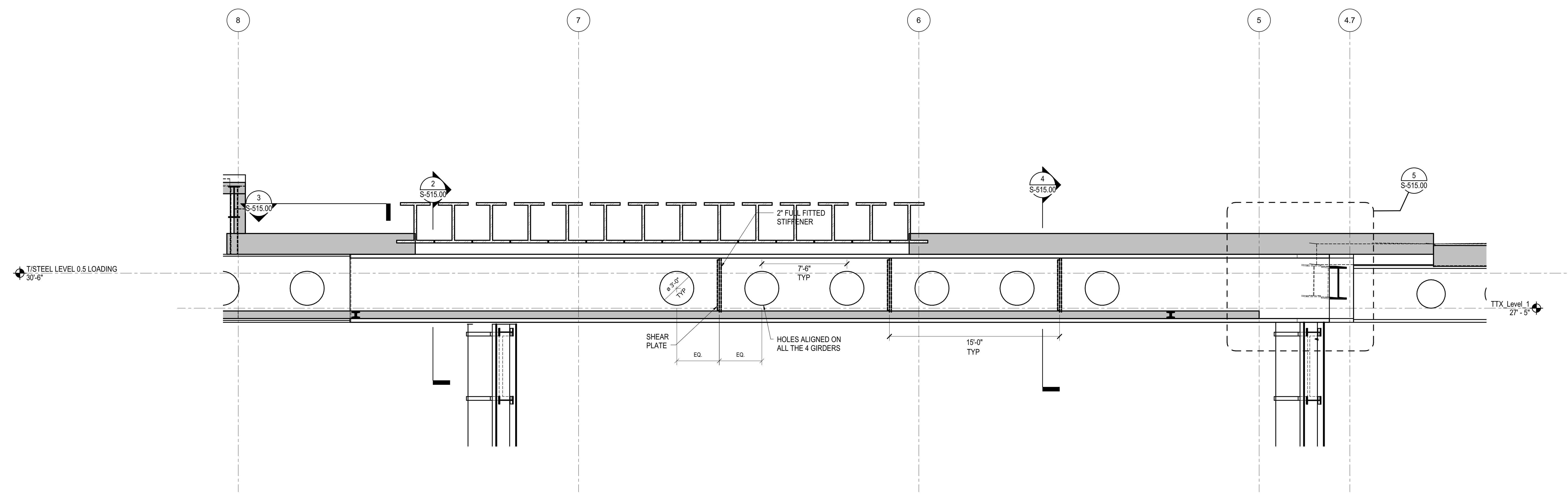
**HYE-PL-S-515.00**

**WEST PLATFORM  
PLATE GIRDERS AND  
BEAMS UNDER VESSEL**

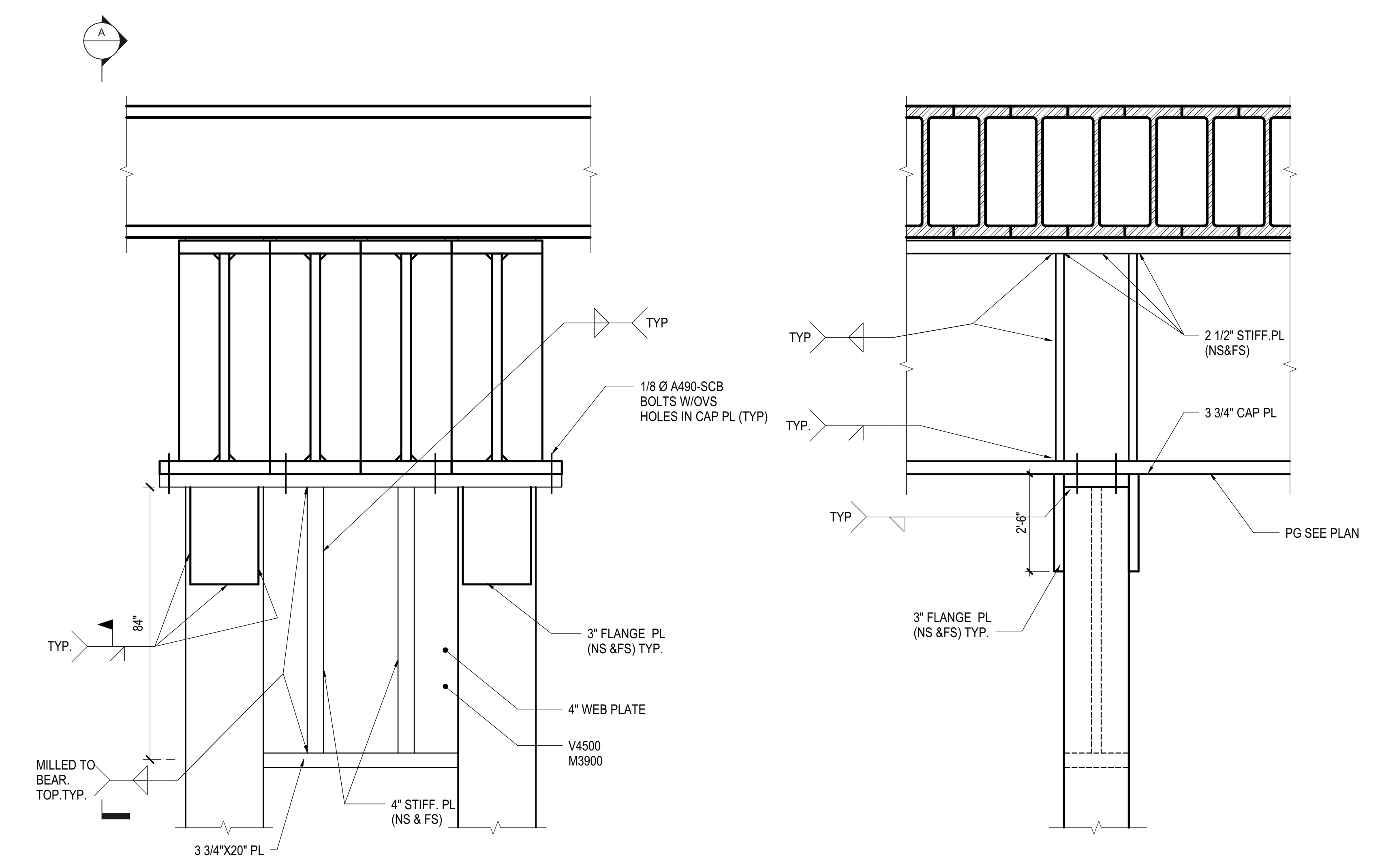
Drawing Title / B/CAN Drawing Number

**S-515.00**

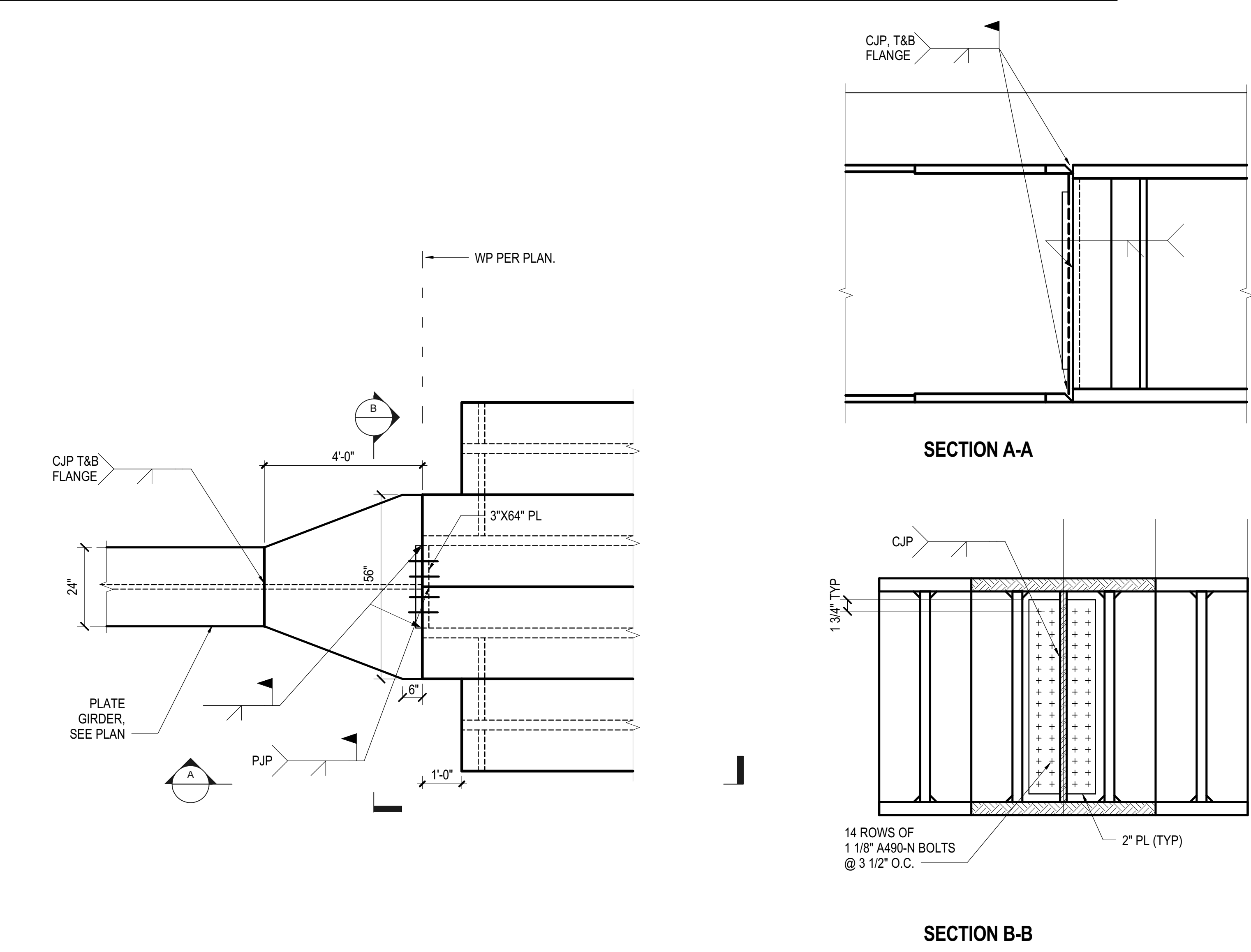
SHEET 89 of 163



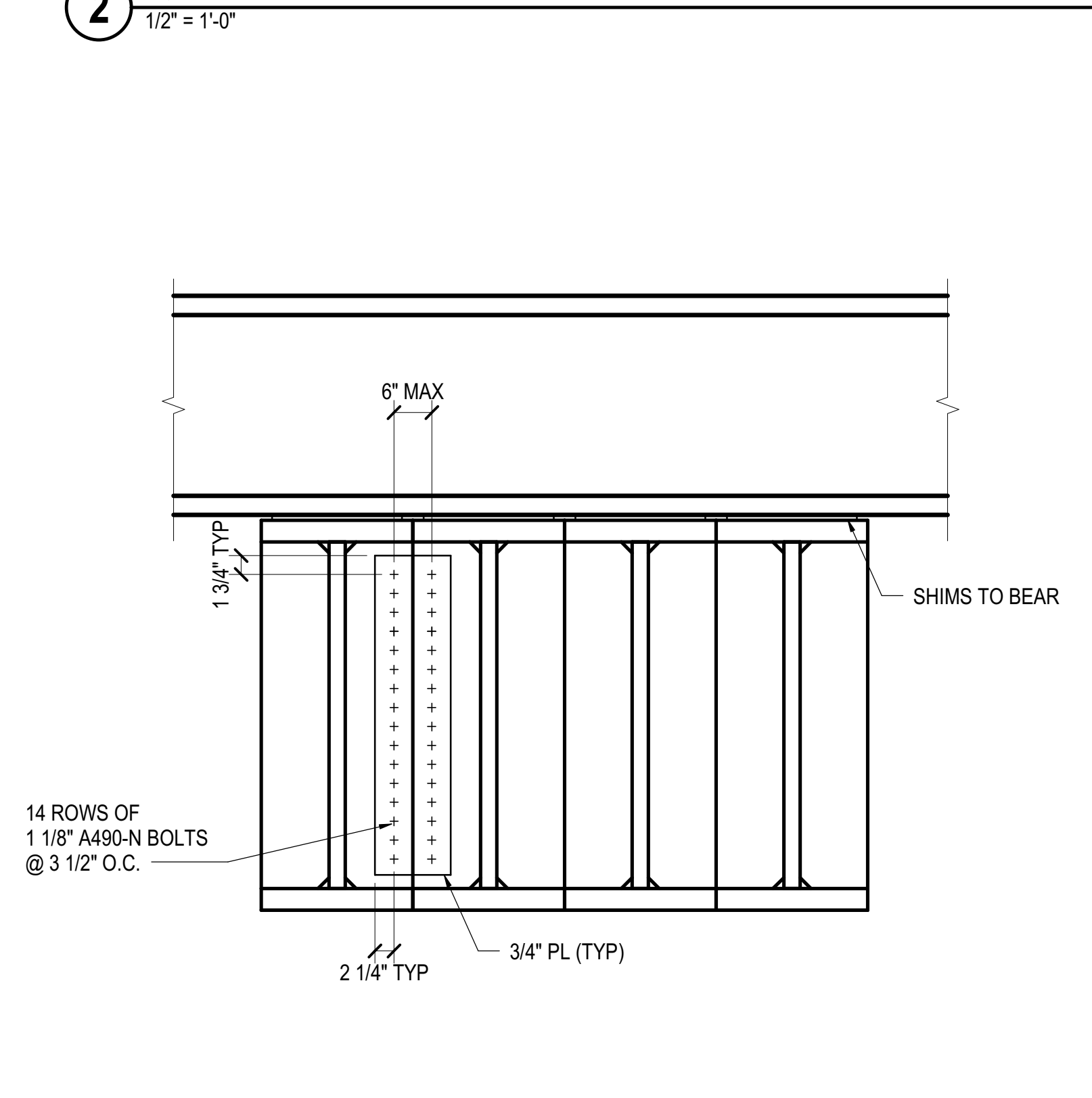
**1 QUADRUPLE GIRDER ELEVATION AT PK GRIDLINE**  
1/4" = 1'-0"



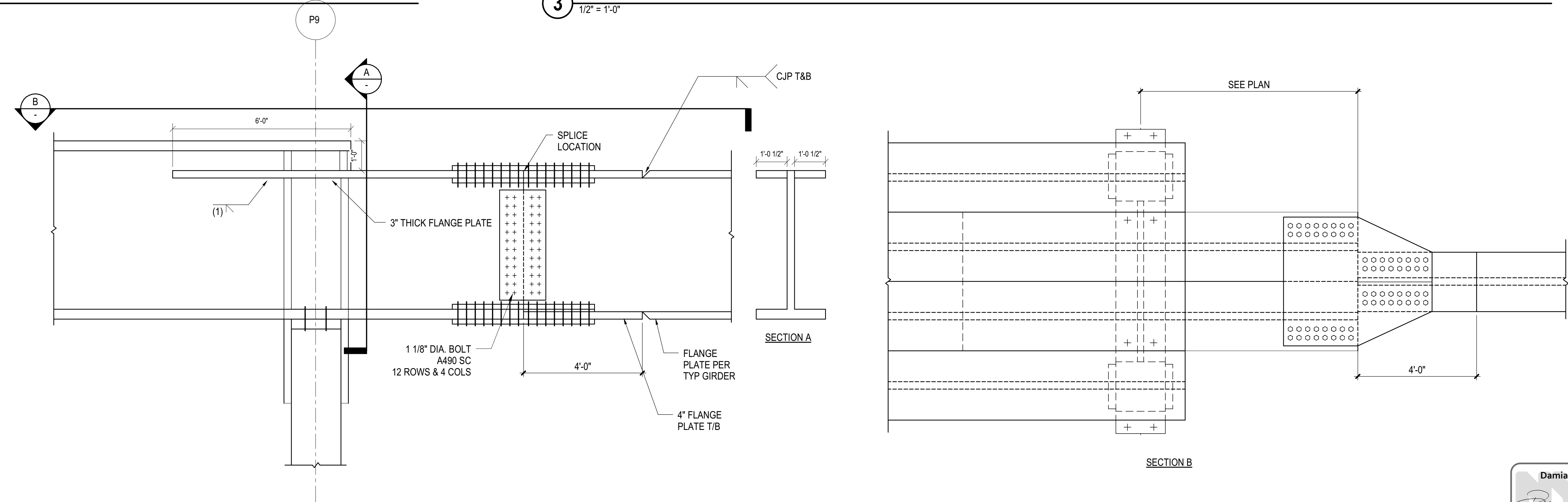
**2 QUADRUPLE GIRDER TYPICAL CONNECTION AT COLUMN**  
1/2" = 1'-0"



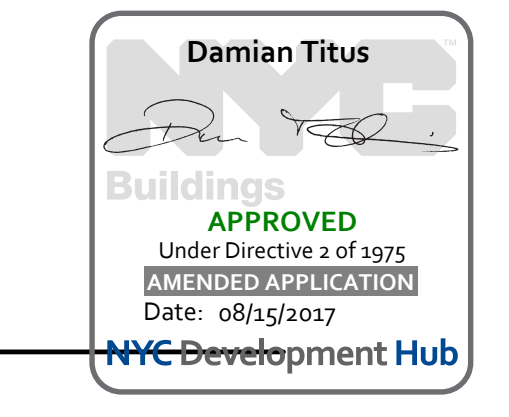
**3 QUADRUPLE GIRDER SPLICE TO SINGLE GIRDER**  
1/2" = 1'-0"



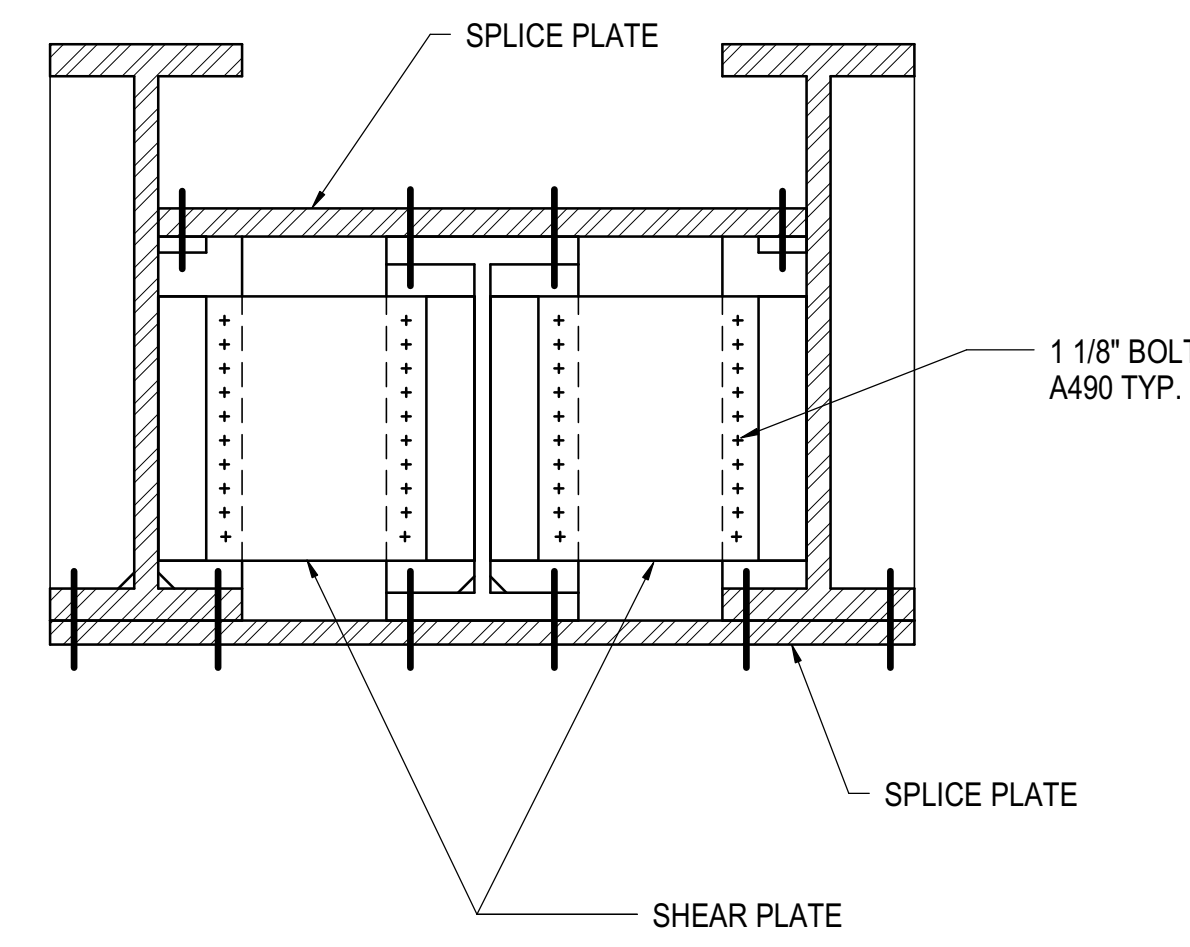
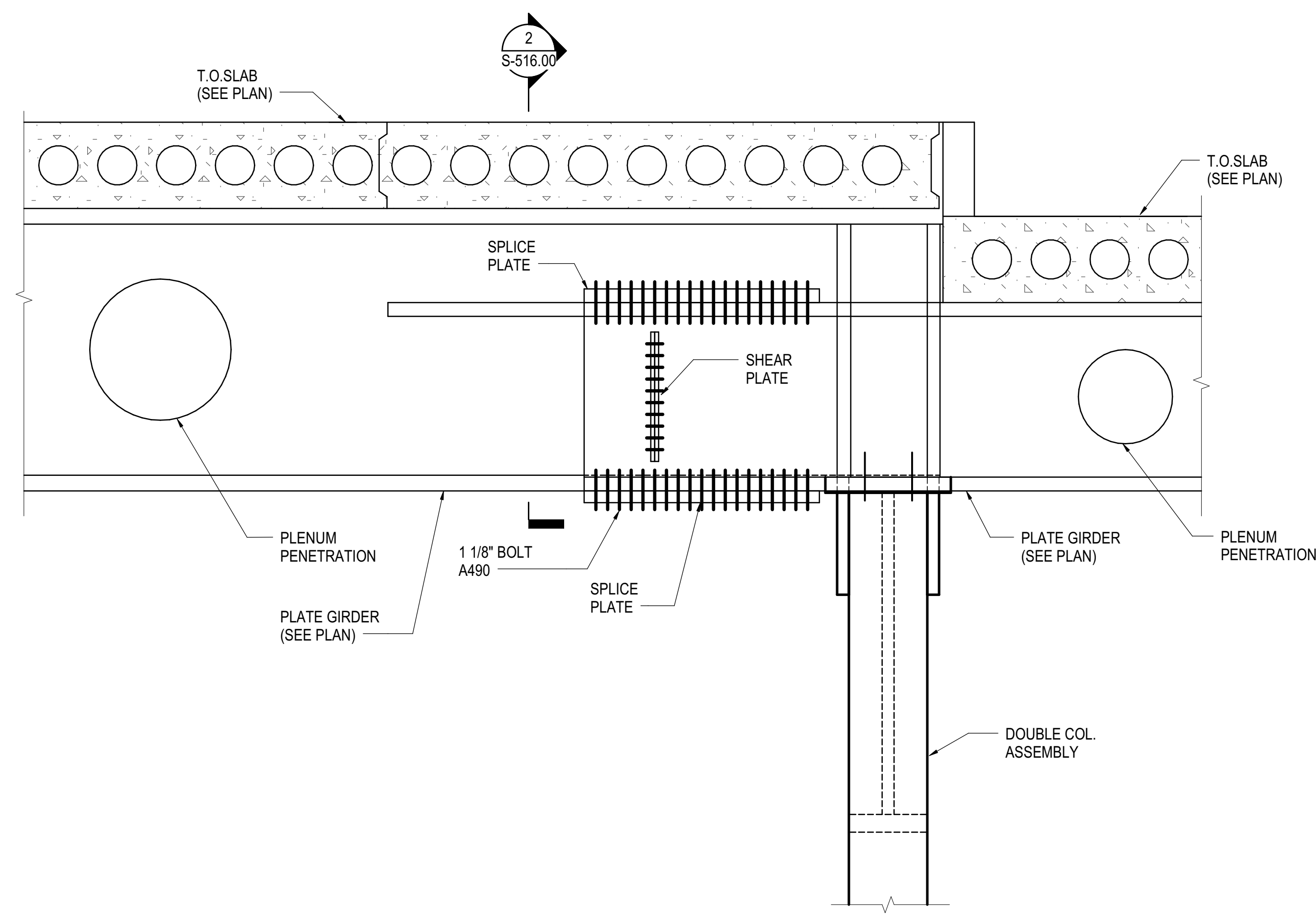
**4 QUADRUPLE GIRDER TYPICAL SHEAR CONNECTOR DETAIL**  
1/2" = 1'-0"



**5 QUADRUPLE GIRDER TO SINGLE GIRDER SPLICE AT STEP IN SLAB**  
1/2" = 1'-0"

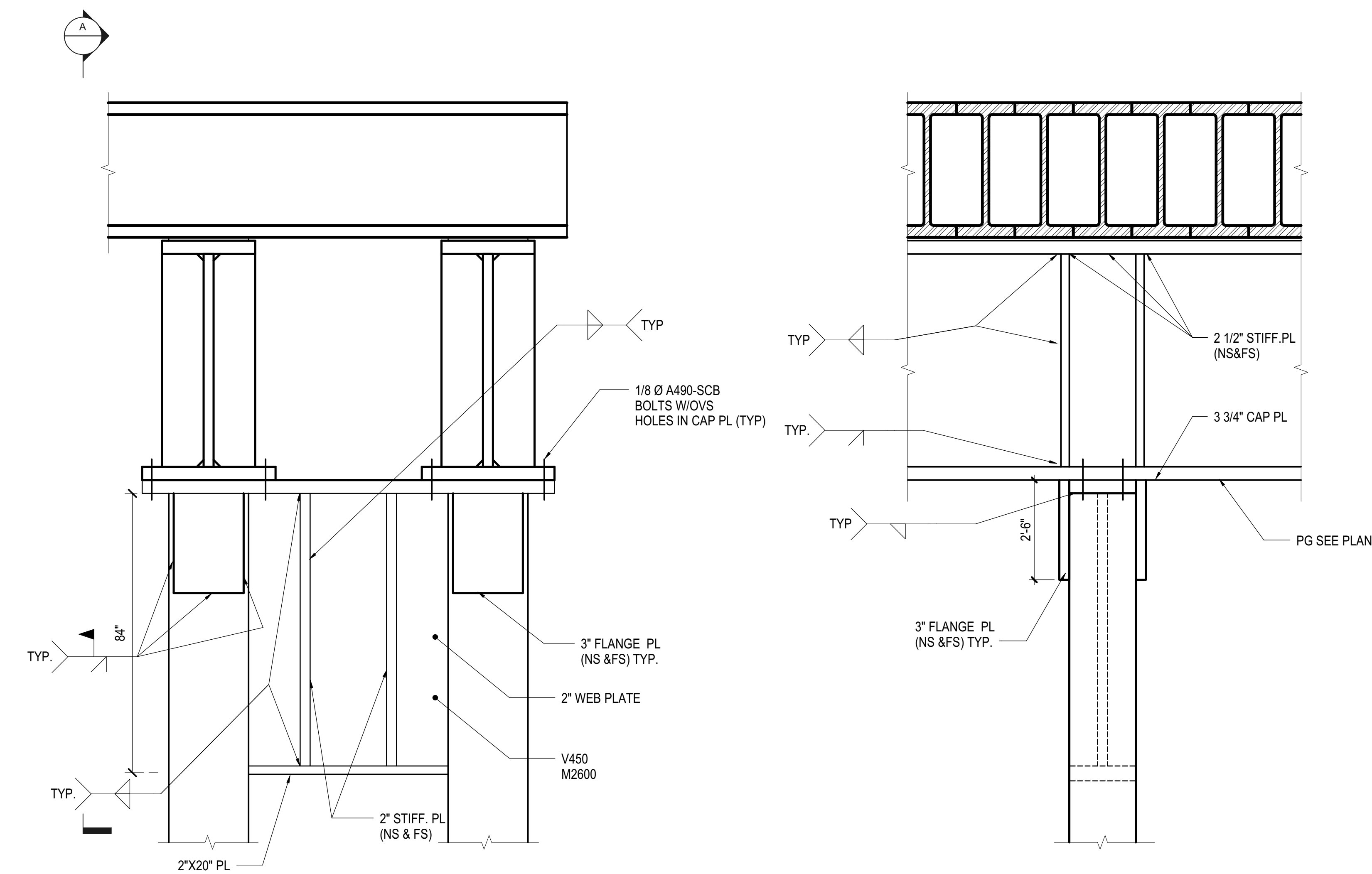


WEST PLATFORM PLATE GIRDERS AND BEAMS UNDER VESSEL  
S-515.00  
10/16/2016 5:04:05 PM  
WBF/Mark/Chang/Rev/INT/1330.00 - East Platform - skg.rvt



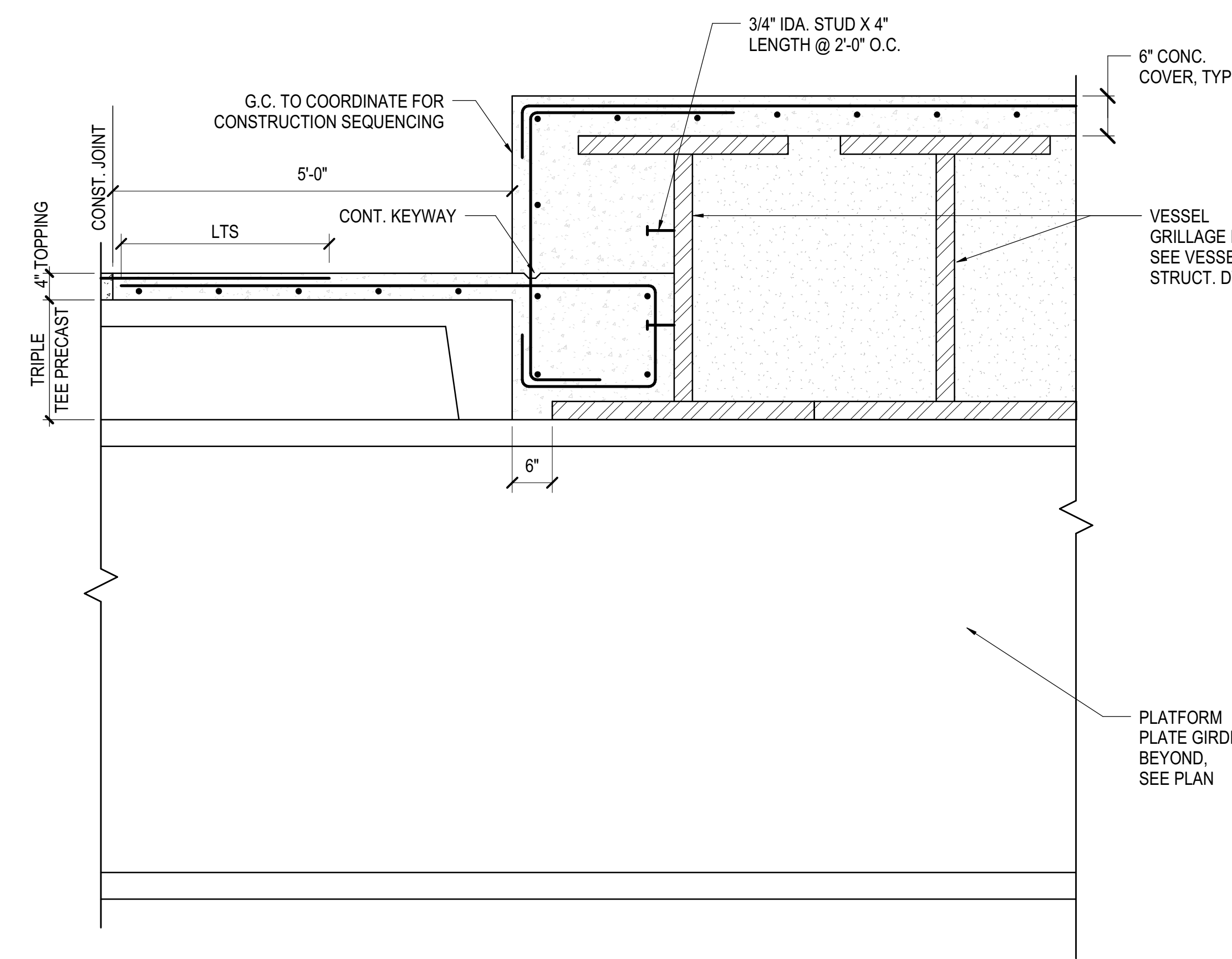
1 DOUBLE GIRDERS TO SINGLE GIRDER SPLICE AT STEP  
NOT TO SCALE

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

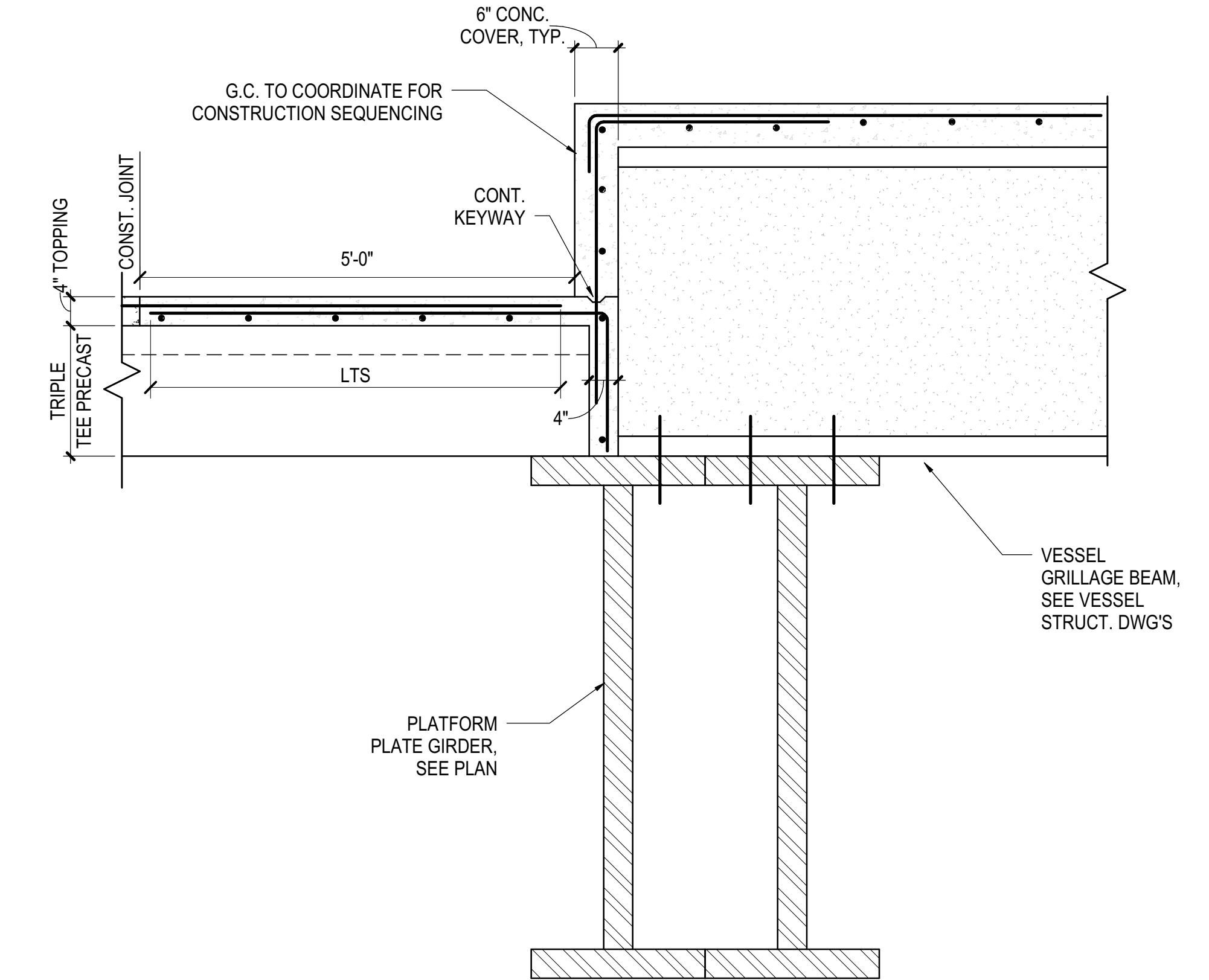


SECTION A-A

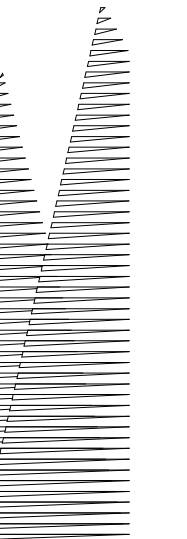
3 DOUBLE GIRDER CONNECTION AT COLUMN  
1/2" = 1'-0"



4 PLANK TO VESSEL GRILLAGE BEAM CONNECTION  
3/4" = 1'-0"



5 PLANK TO VESSEL GRILLAGE BEAM CONNECTION  
3/4" = 1'-0"



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
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New York, NY 10017  
Tel: 212.708.3600

Architect  
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PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
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Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
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Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
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LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
AS180007	3/29/2015
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
AS180009	10/14/2014
AS180009 - PLATFORM REDESIGN	3/13/2014
FOR VESSEL	
No. Description	Date

Key Plan

Date: 03/13/14  
Project No: N11330.00  
Author: [Signature]  
Check: [Signature]

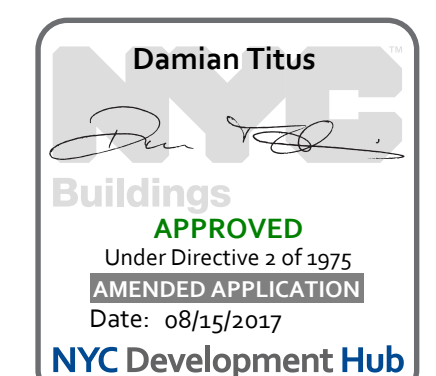
HYE-PL-S-516.00

WEST PLATFORM  
PLATE GIRDERS AND  
BEAMS UNDER VESSEL

Drawing Number / B.SCAN Drawing Number

S-516.00

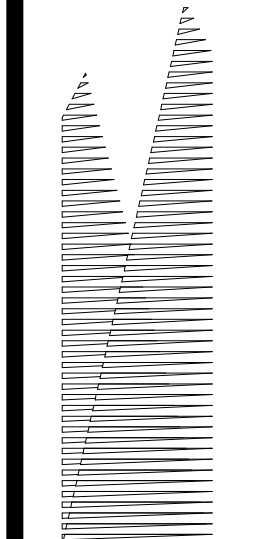
SHEET 90 of 163



APPROVED  
Under Directive 3 of 1975  
Professional Regulation  
Date: 08/15/2017  
NYC Development Hub







Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
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New York, NY 10017  
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Fire Alarm, Fire Protection, Security  
Personnel, Transportation Group  
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LJRR Ventilation  
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Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOR POST-APPROVAL AMENDMENT	10/28/2016
ASH0066	3/18/2015
L.I.R.R. - FINAL 1095	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0024	5/28/2014
Rev Description	Date

Rev Description Date

Date: 05/28/14

Project No: N11330.00

Drawn By: Author

Sheet Number

**HYE-PL-S-518.00**

Drawing Title

**WEST PLATFORM SECTIONS**

Drawing Number / Revision Drawing Number

**S-518.00**

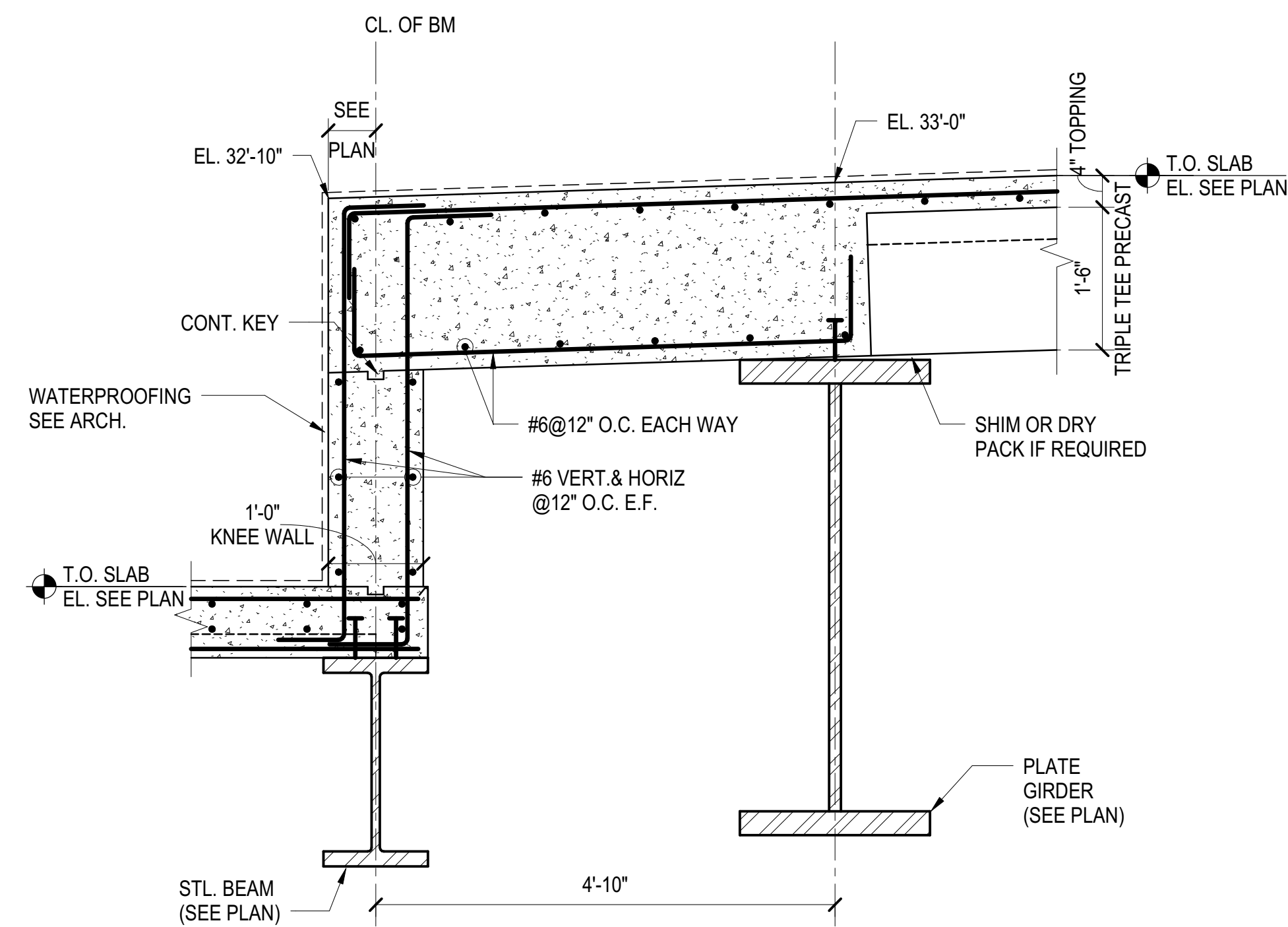
Under Directive 3 of 1975

NYC Development Hub

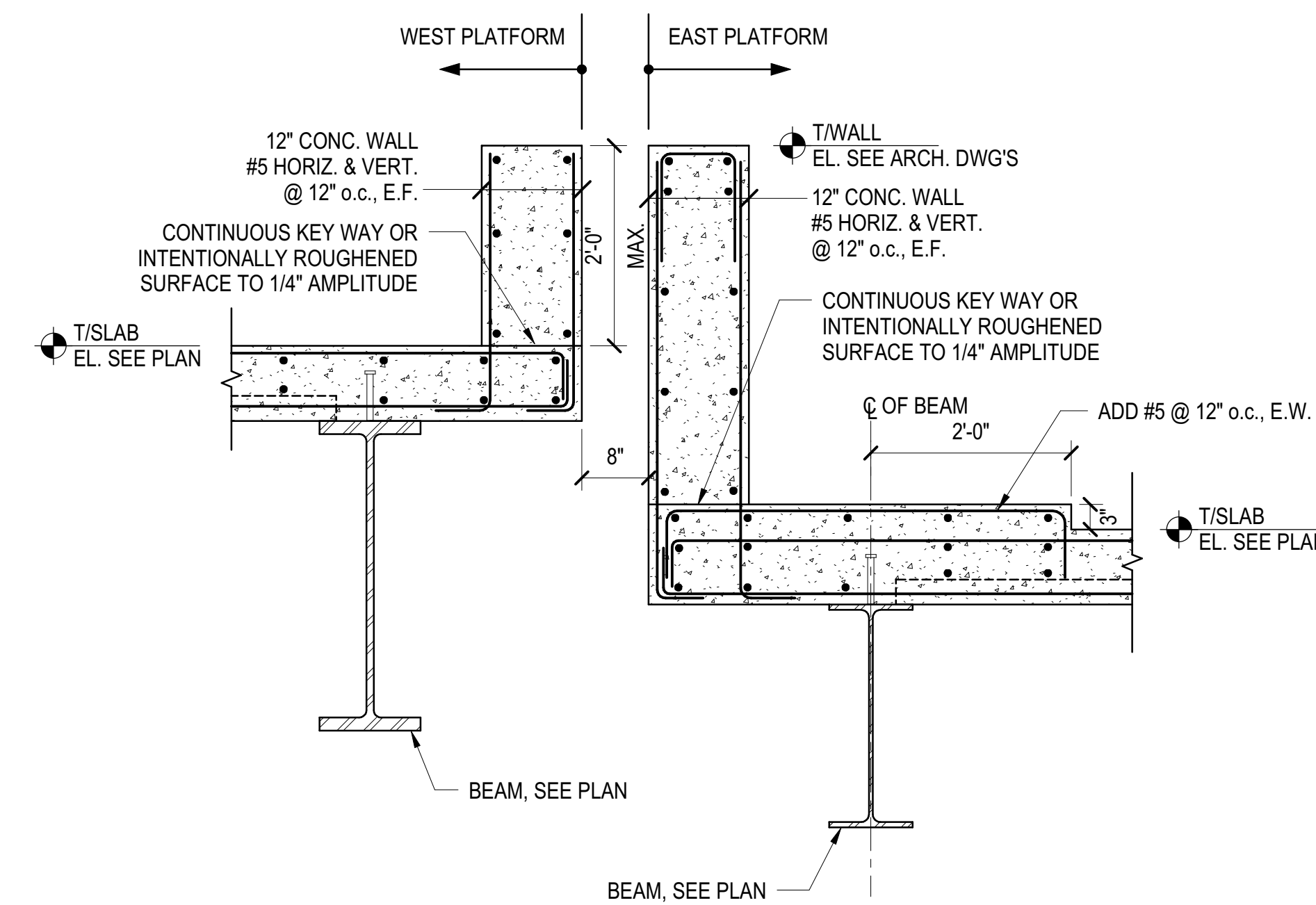
Date: 08/15/2017

APPROVED

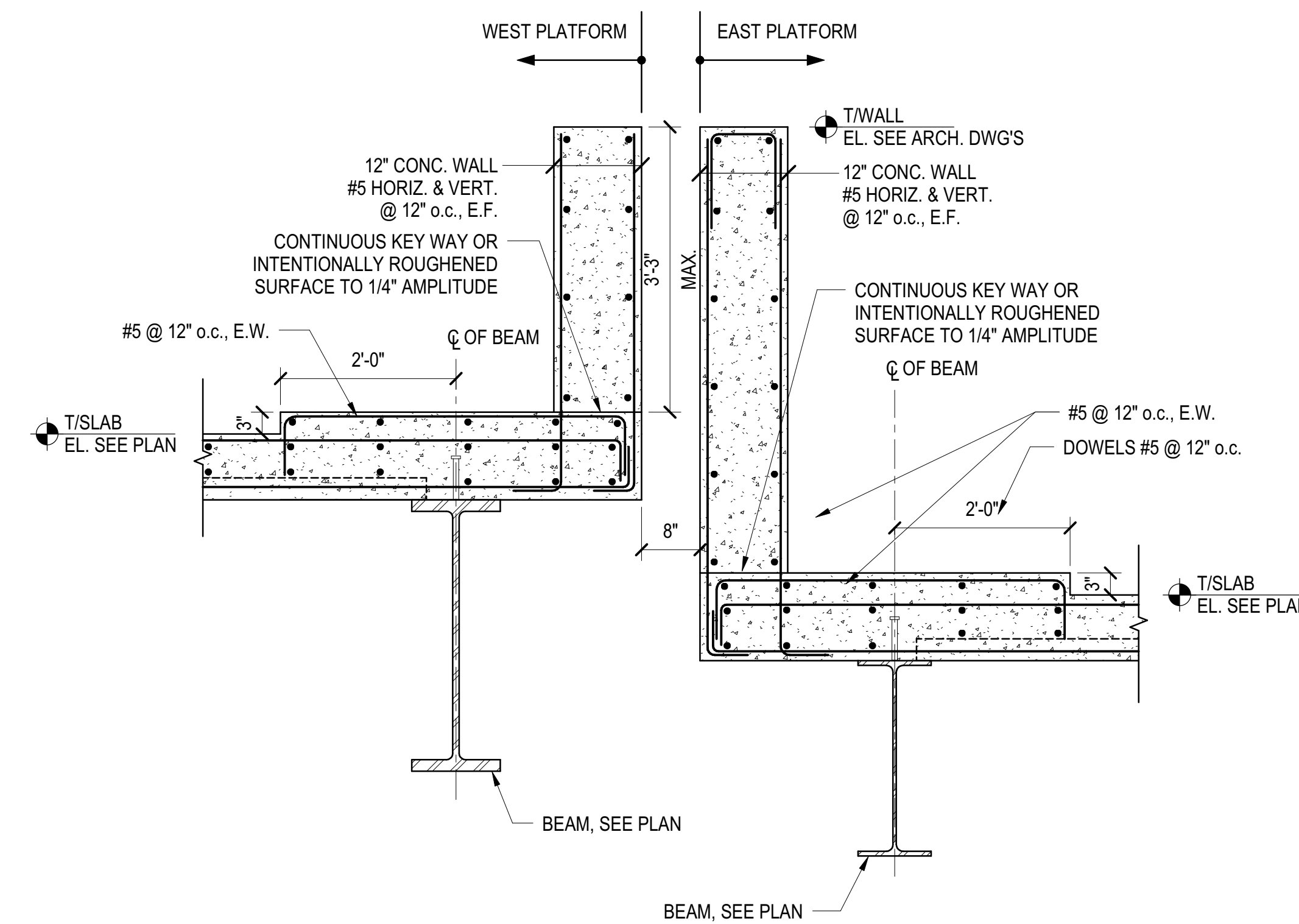
NYC Development Hub



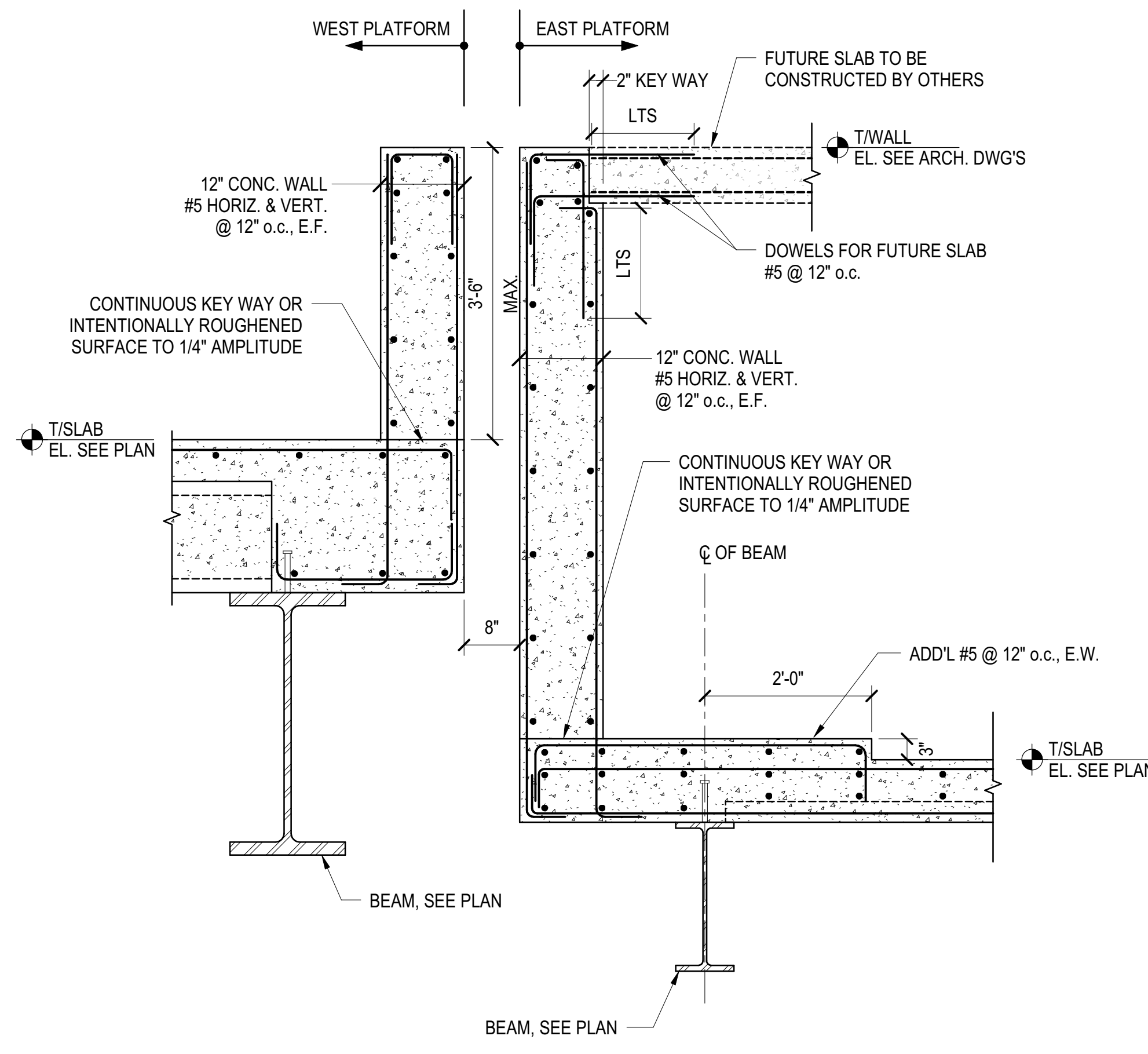
**1 STEP AT GL PH**  
3/4" = 1'-0"



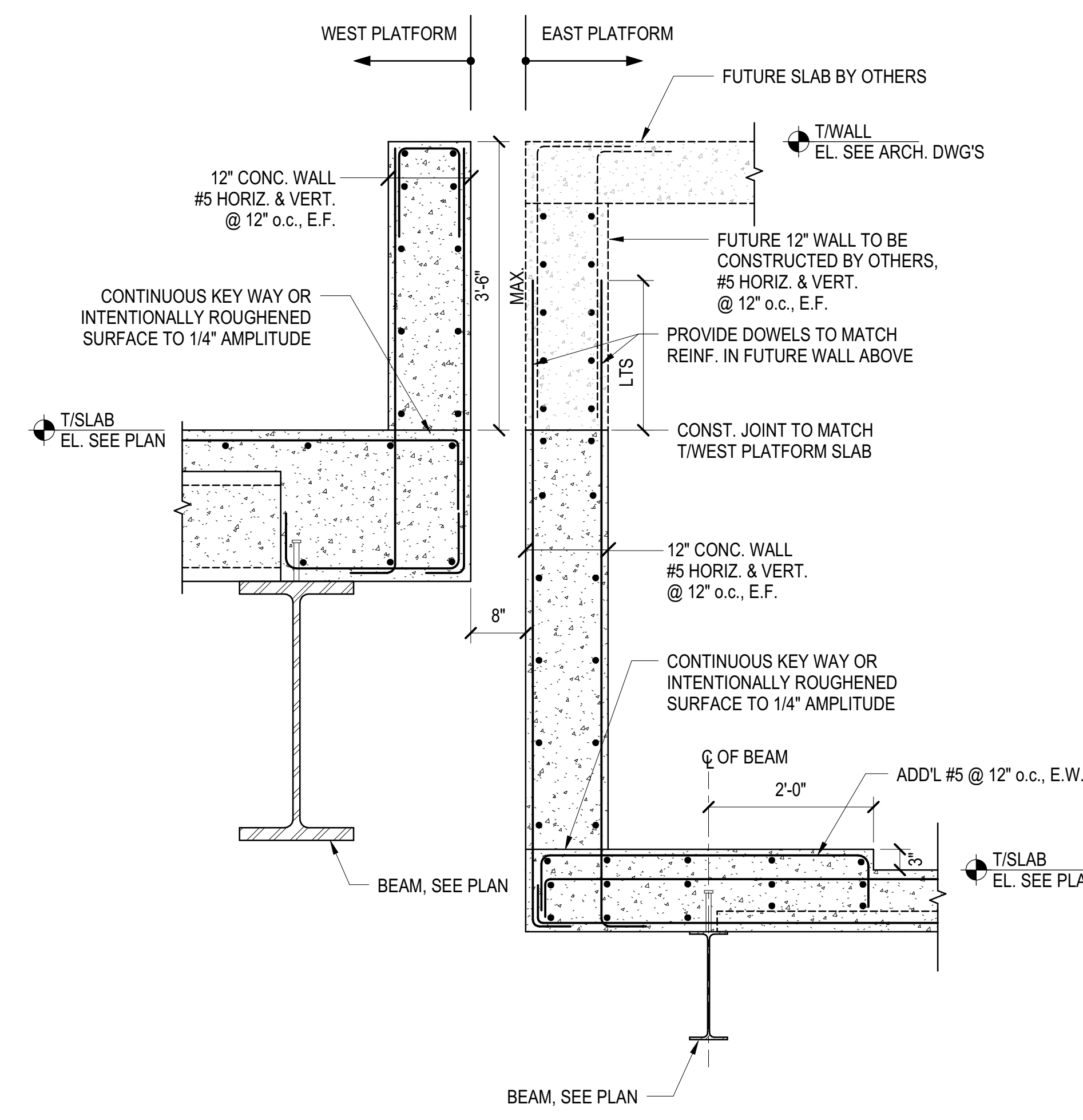
**2 PERIMETER WALL AT EXP. JOINT**  
3/4" = 1'-0"



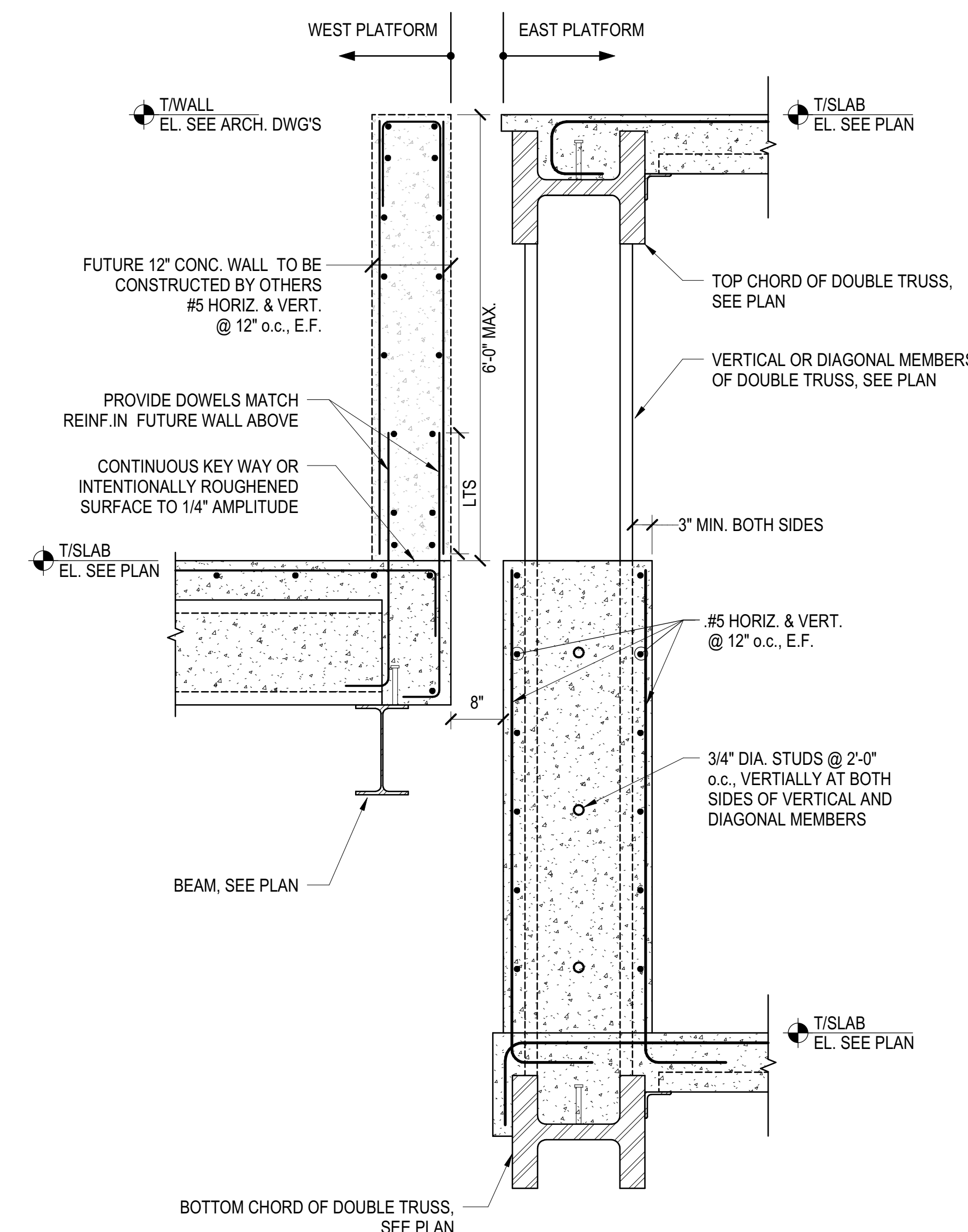
**3 PERIMETER WALL AT EXP. JOINT**  
3/4" = 1'-0"



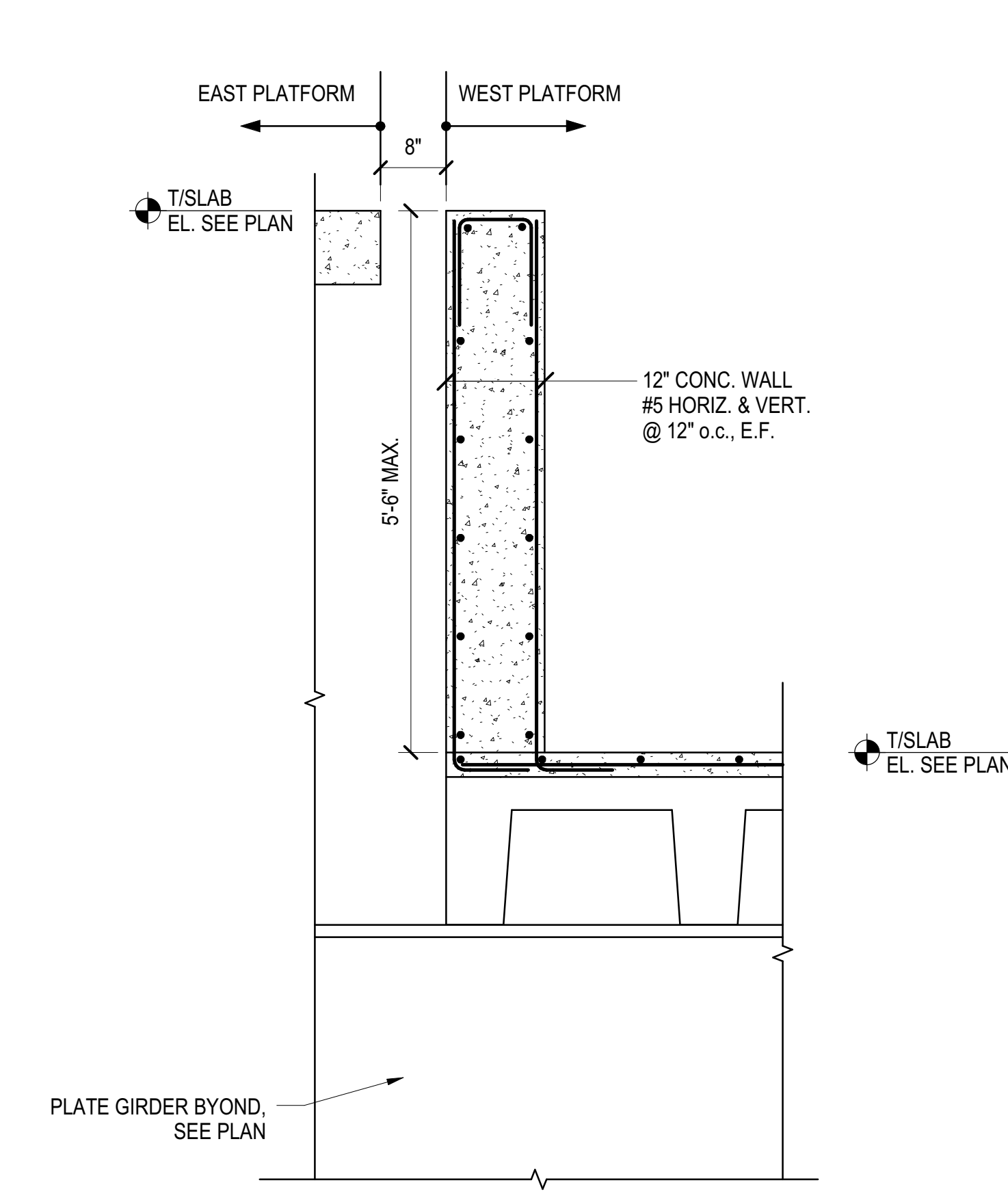
**4 PERIMETER WALL AT EXP. JOINT**  
3/4" = 1'-0"



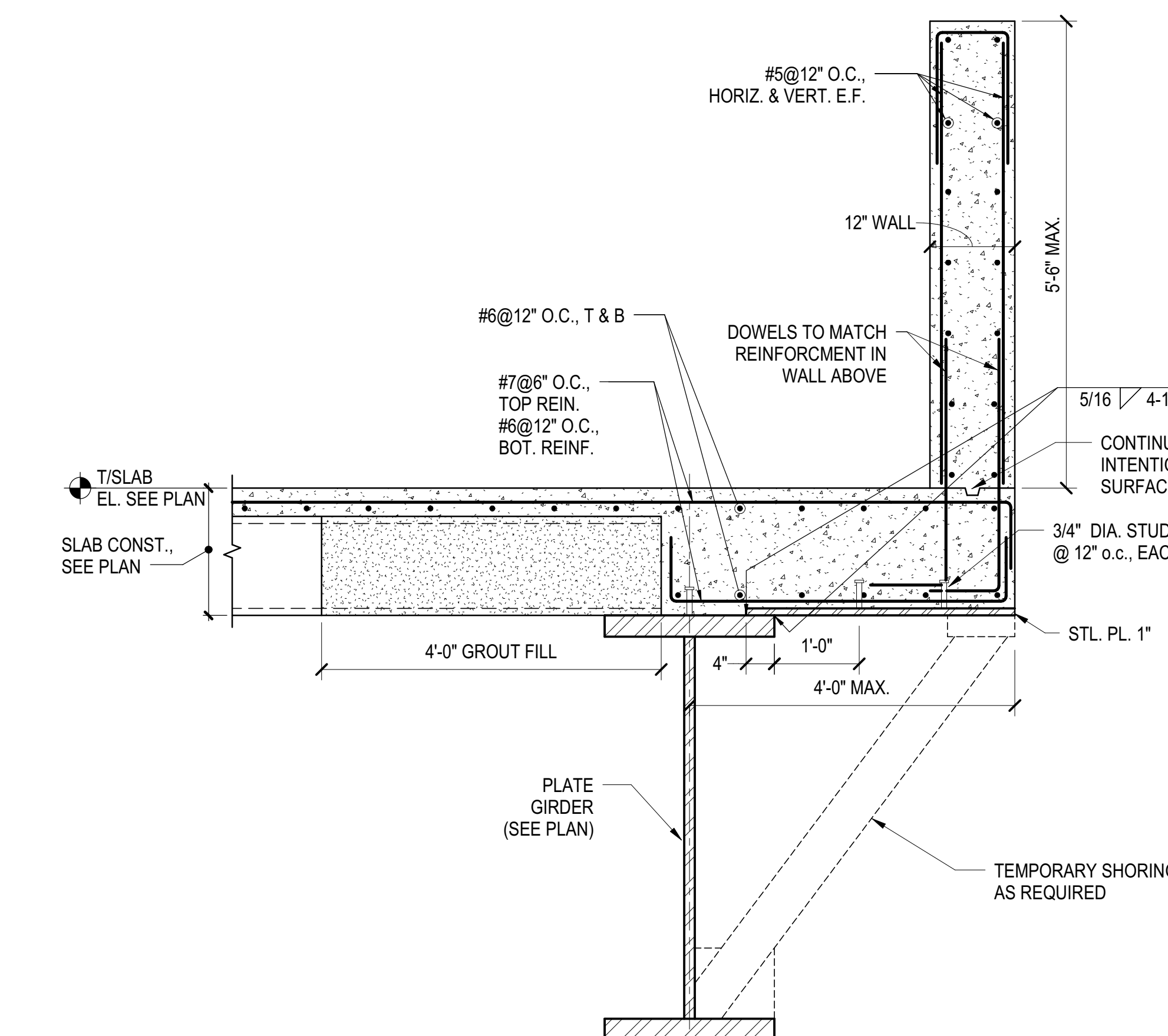
**5 PERIMETER WALL AT EXP. JOINT**  
3/4" = 1'-0"



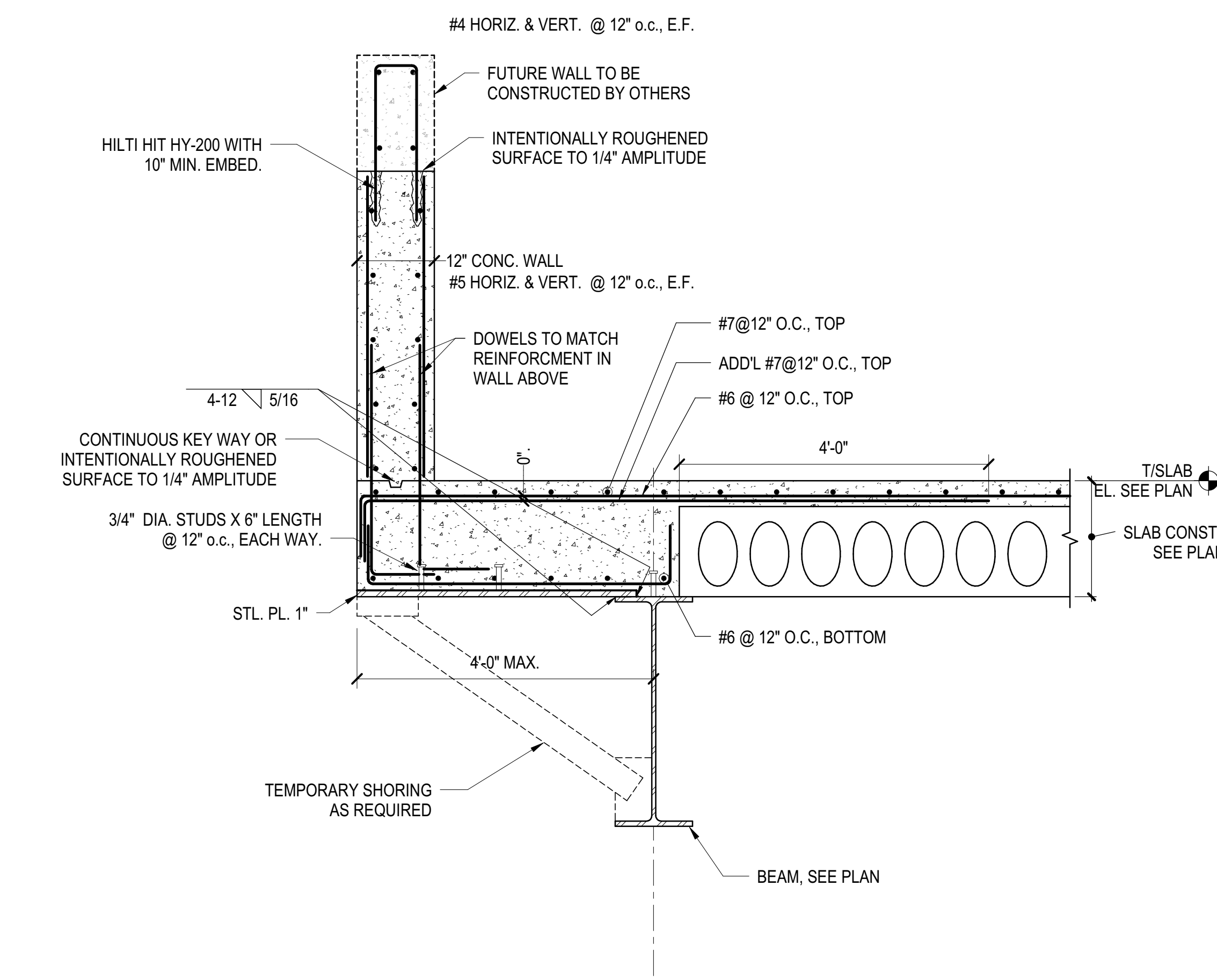
**6 PERIMETER WALL AT EXP. JOINT**  
3/4" = 1'-0"



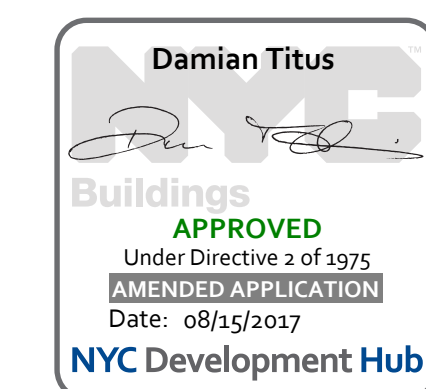
**7 PERIMETER WALL AT EXP. JOINT**  
3/4" = 1'-0"



**8 PERIMETER WALL AT EXP. JOINT**  
3/4" = 1'-0"



**9 PERIMETER WALL AT EXP. JOINT**  
3/4" = 1'-0"



Damian Titus

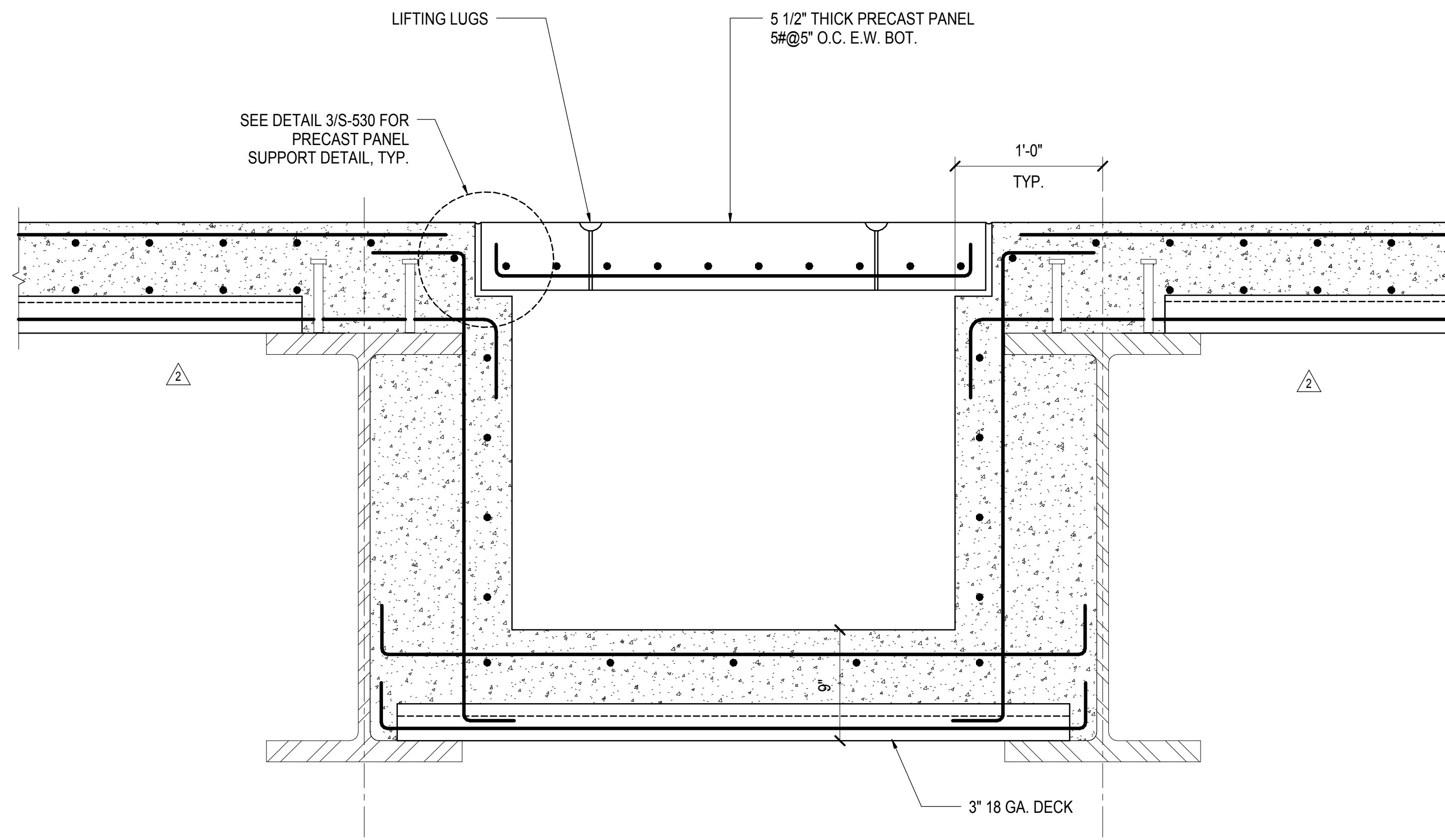
APPROVED

NYC Development Hub

WEST PLATFORM SECTIONS  
S-518.00  
10/18/2016 5:50:26 PM  
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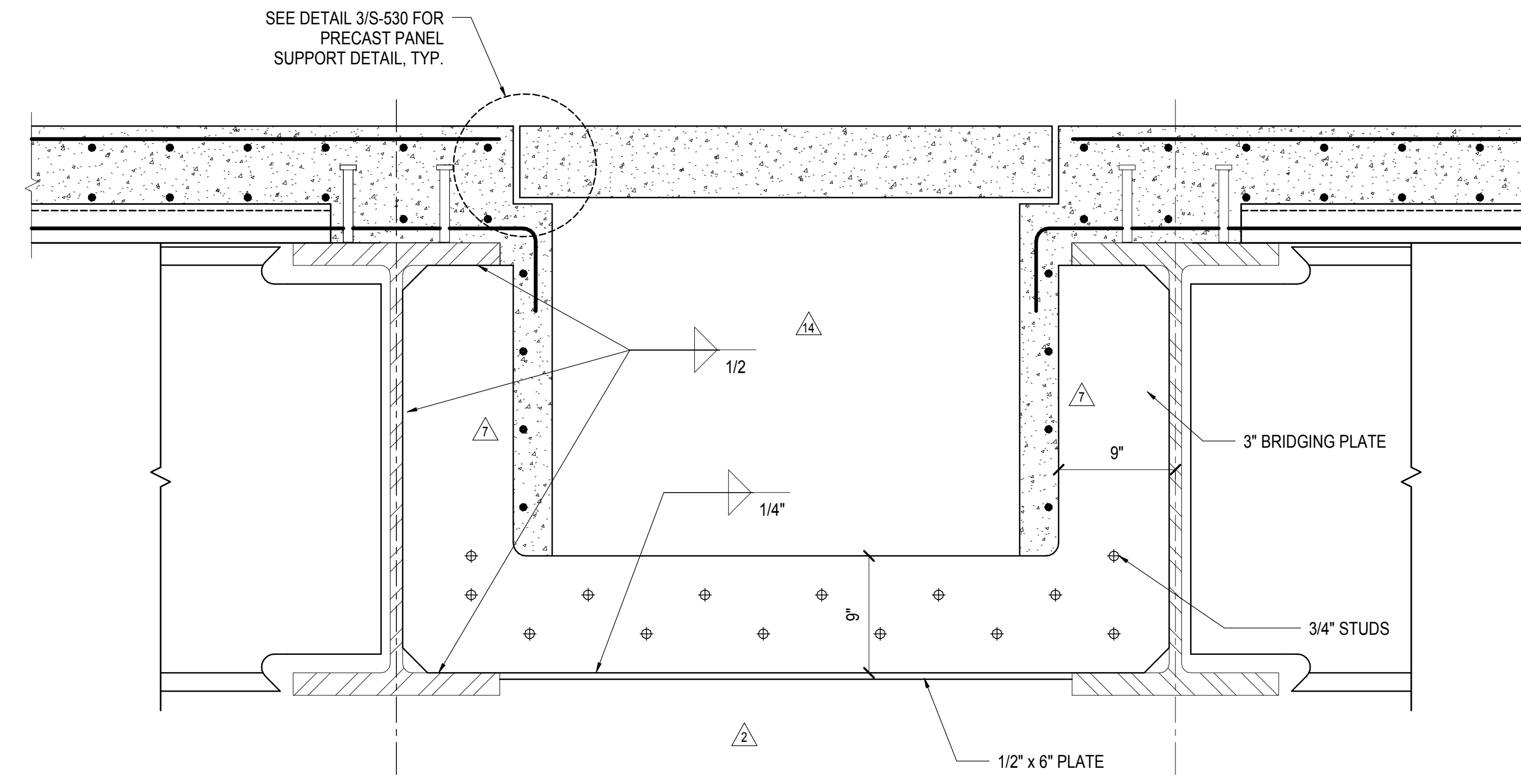




**1 SECTION AT UTILITY TRENCH**

1 1/2" = 1'-0"

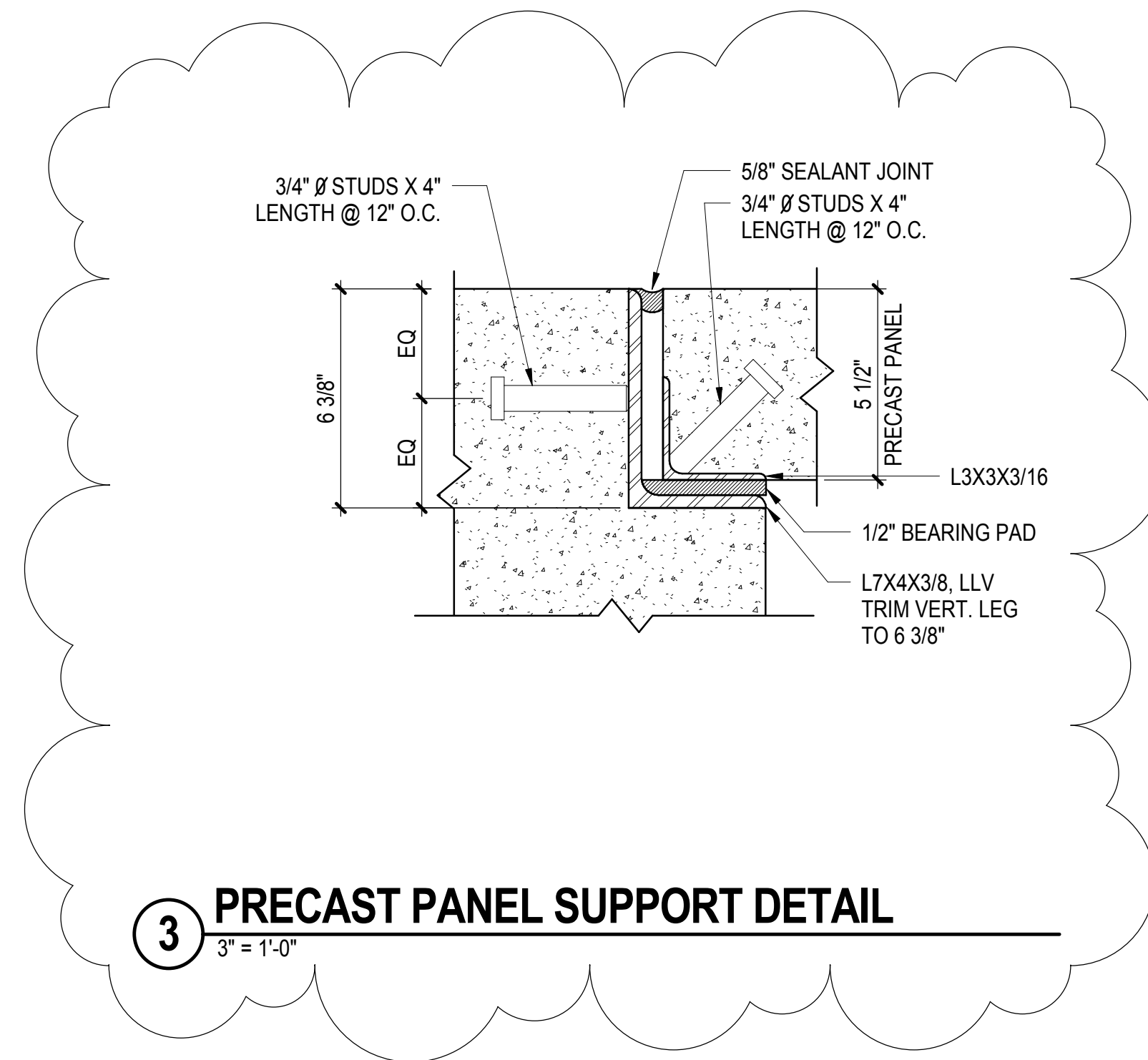
NOTE: REINFORCEMENT SHOWN INDICATIVELY. MIN REINFORCEMENT REQUIREMENTS PER S2 SLAB TYPE APPLY.



**2 SECTION AT BRIDGING IN UTILITY TRENCH**

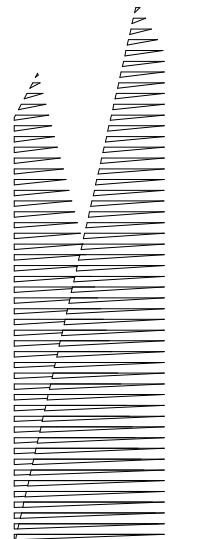
1 1/2" = 1'-0"

NOTE: BRIDGING DETAIL APPLICABLE AT EVERY LINE OF TRANSVERSE FRAMING IN THE WEST GRID AREA (BETWEEN PA AND PC) TO PROVIDE CONTINUITY IN THE EAST-WEST DIRECTION THROUGH THE UTILITY TRENCHES.  
REINFORCEMENT SHOWN INDICATIVELY. MIN REINFORCEMENT REQUIREMENTS PER S2 SLAB TYPE APPLY.



**3 PRECAST PANEL SUPPORT DETAIL**

3" = 1'-0"



Client  
Related Companies  
60 Columbus Circle  
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Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
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Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
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Architect  
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PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
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Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
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Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Etc.: Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod. PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE 1 FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
NYC Description	000

Key Plan

Date: 12/14/2012  
Project No: N11330.00  
Drawn By: Author  
Sheet Number



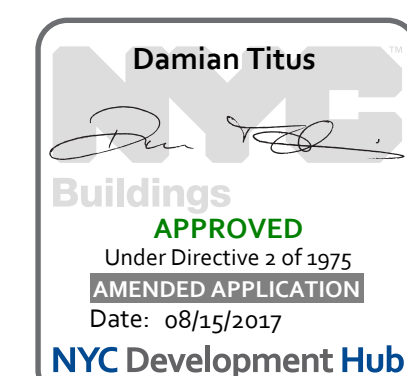
**HYE -PL -S-530.01**

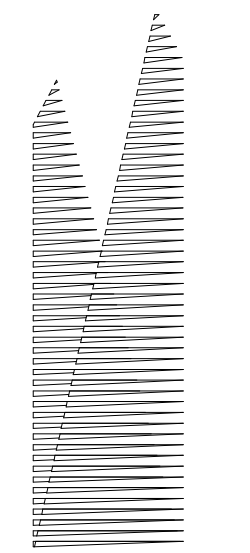
**TRENCH SECTIONS AND DETAILS**

Drawing Number / B/CAN Drawing Number

**S-530.01**

: SHEET 95 of 163





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

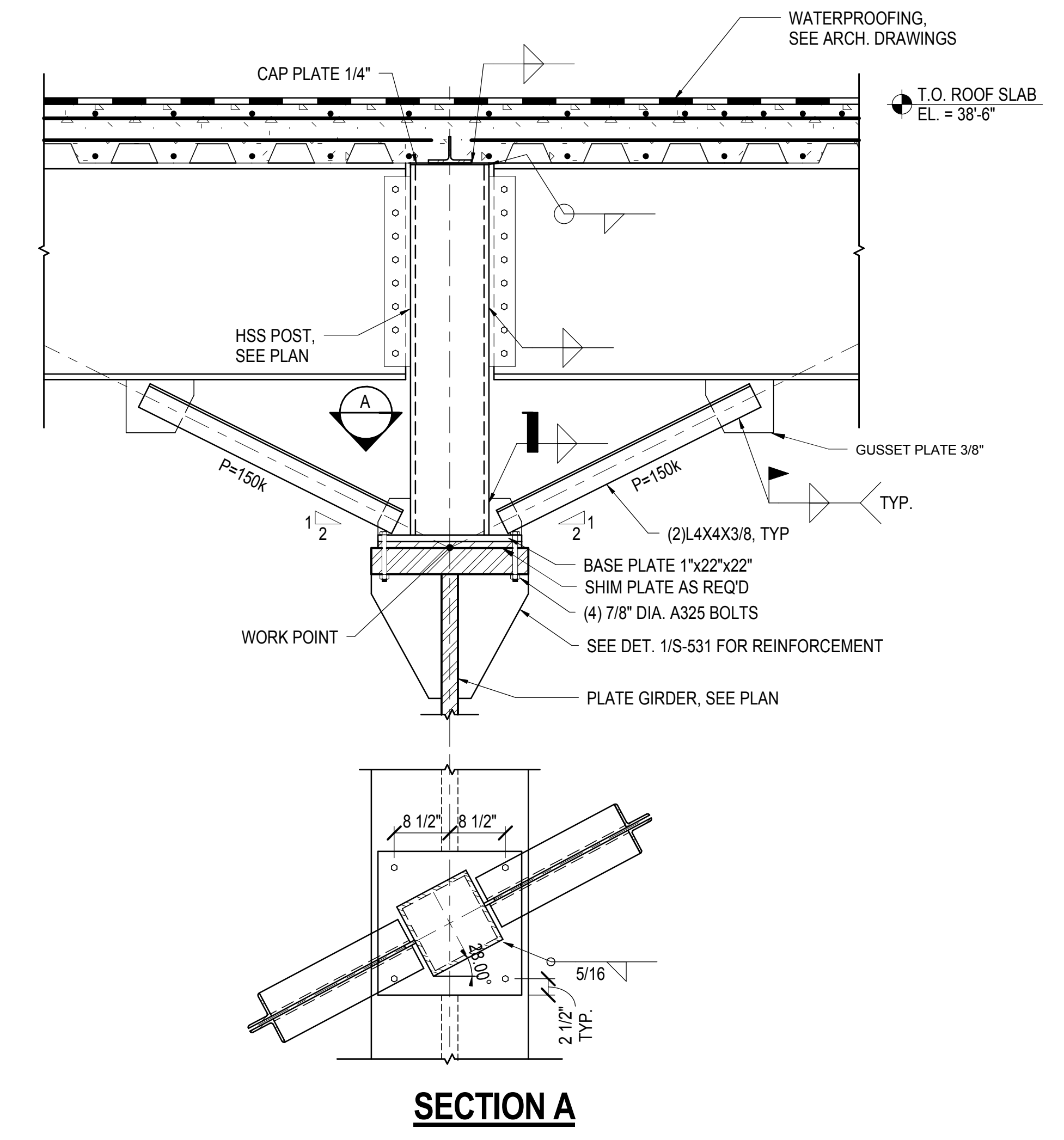
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Systems, Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

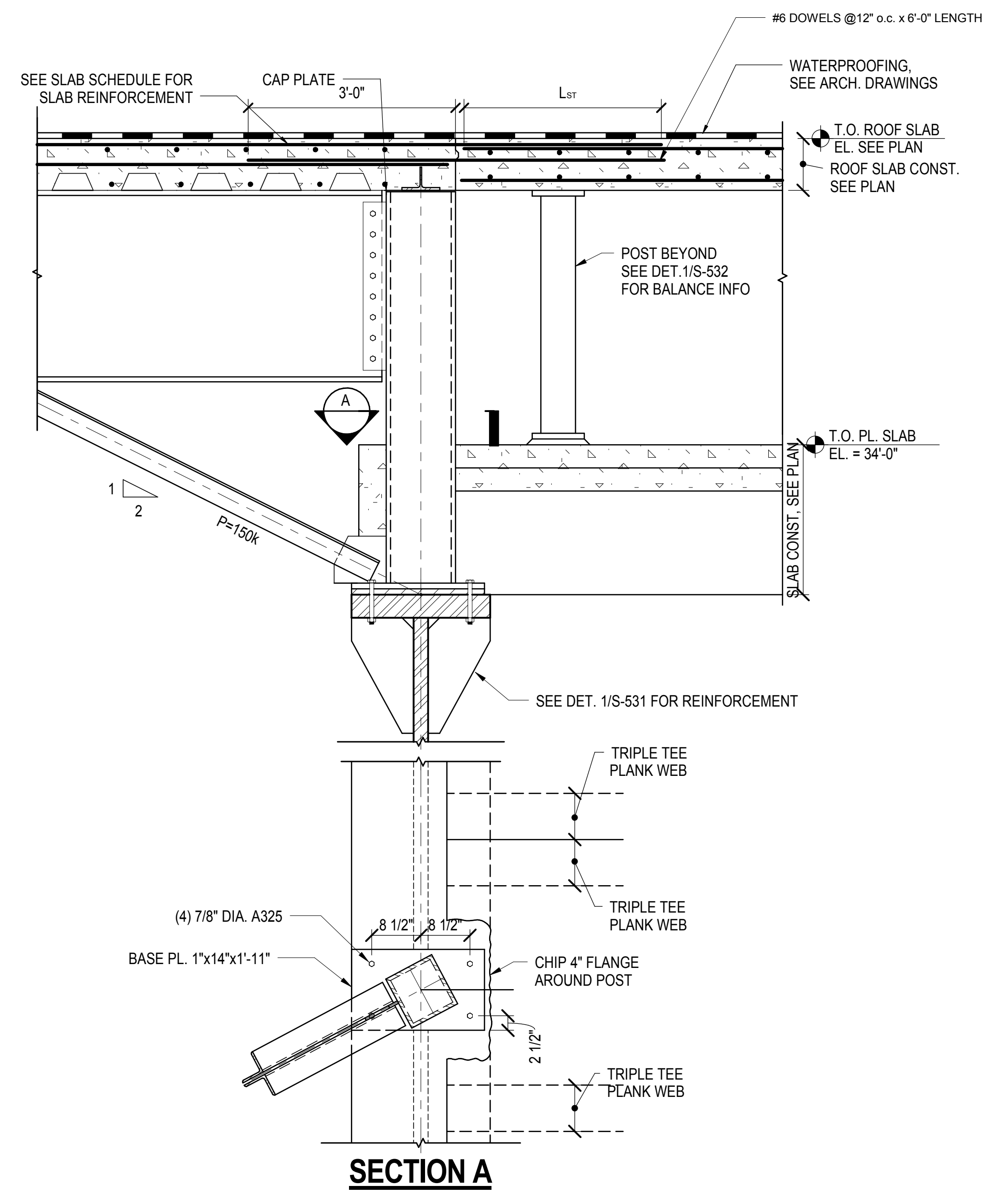
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOOR POST-APPROVAL AMENDMENT	10/28/2016
ASH0121	6/7/2016
ASH0067	3/20/2015
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	5/28/2014
ASH0024	5/28/2014
ASH0002	5/28/2014
ASH0001	5/28/2014

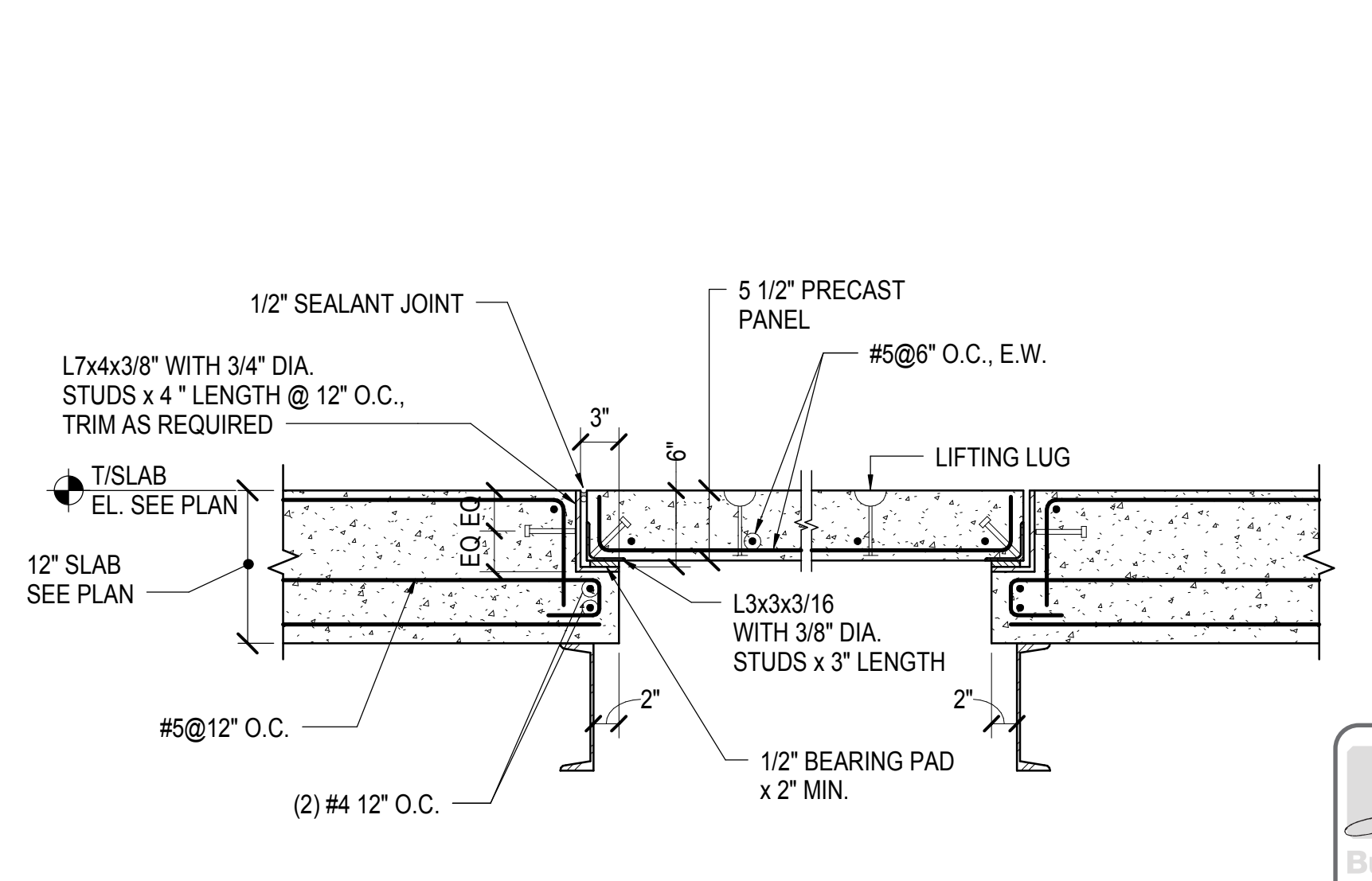
Rev. No.



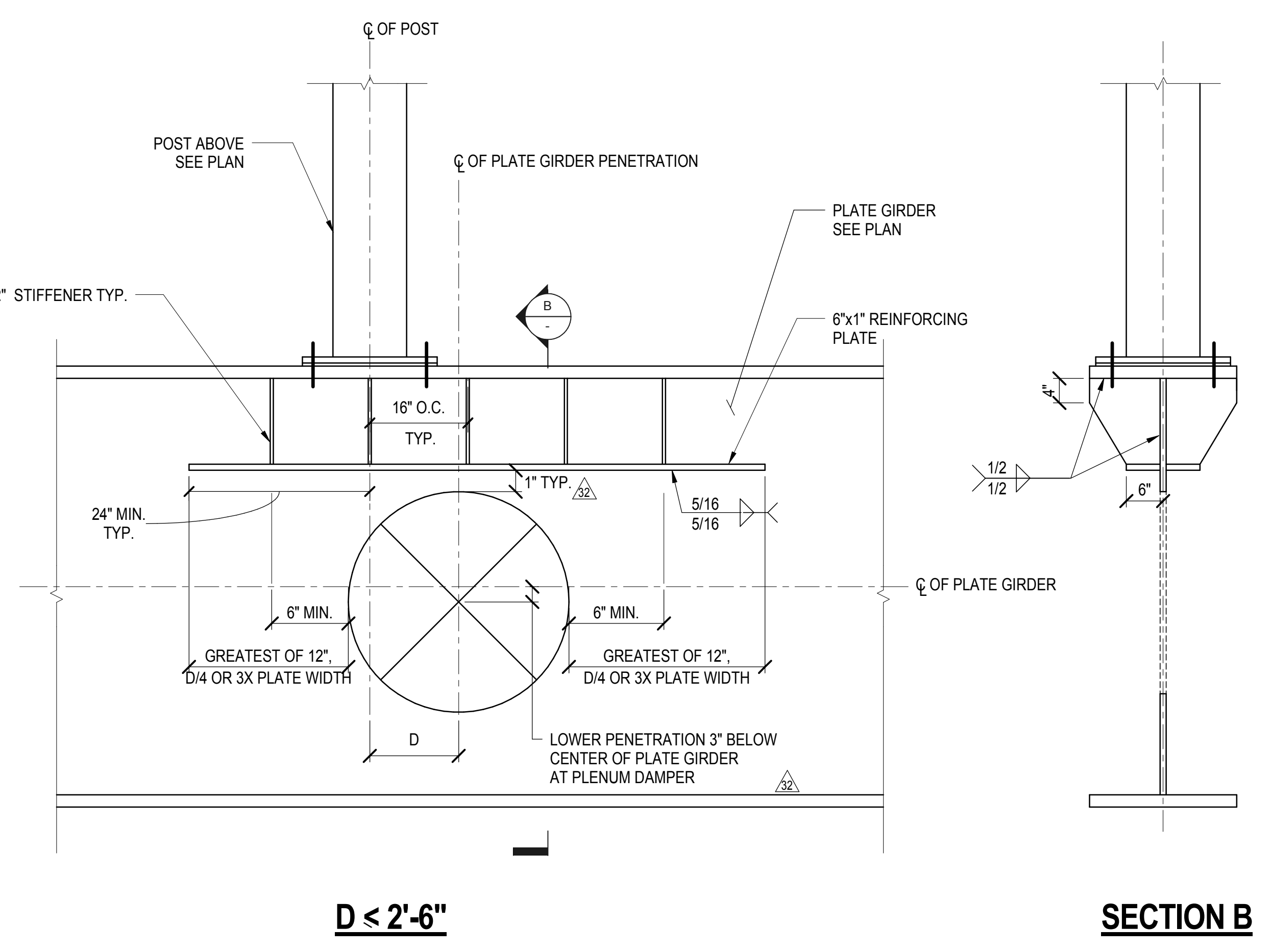
**2 TYPICAL POST AT VENT TRANSFER**  
3/4" = 1'-0"



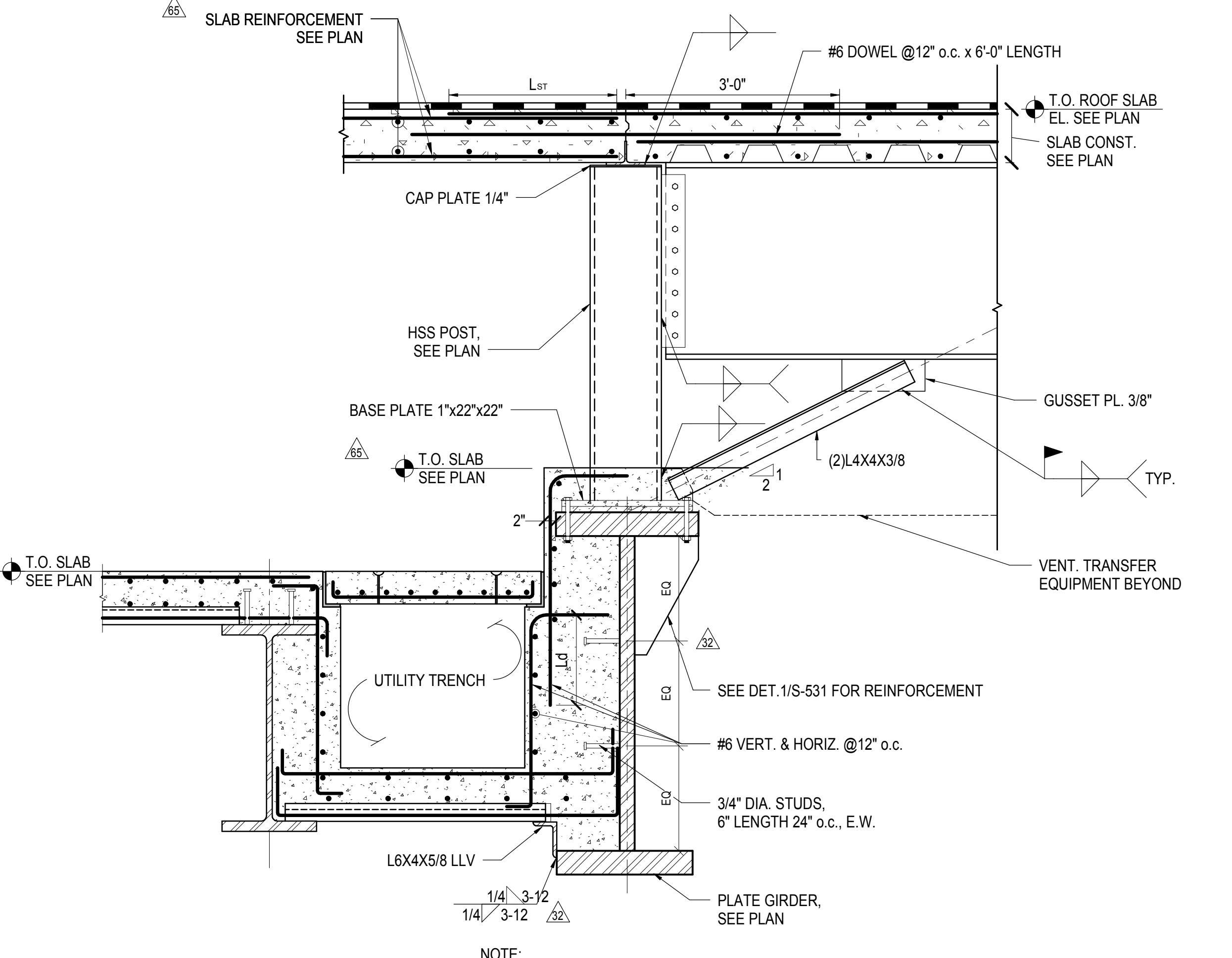
**5 CENTRAL VENT TRANSFER SECTION**  
3/4" = 1'-0"



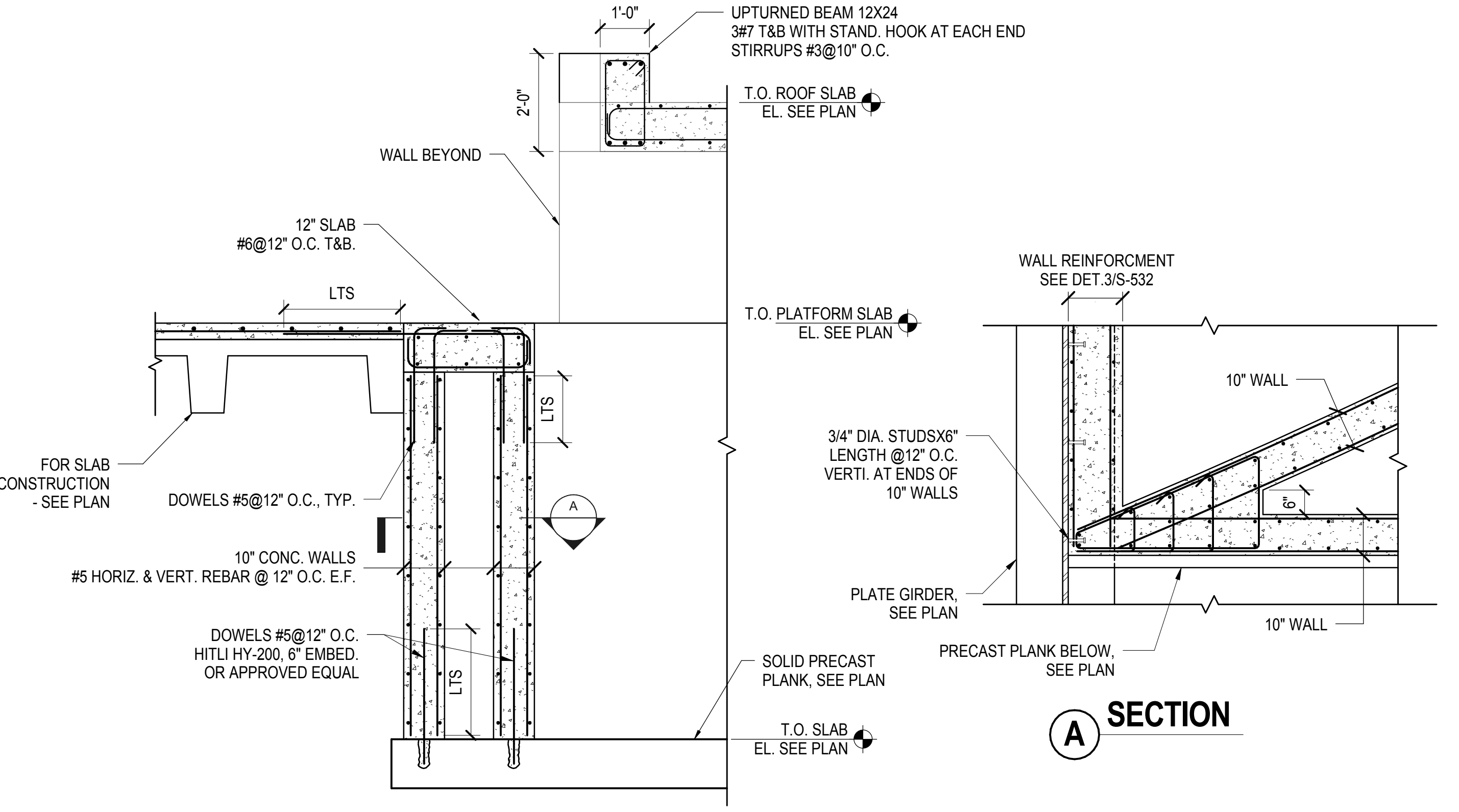
**8 SECTION AT EXHAUST PLENUM ACCESS HATCH**  
1" = 1'-0"



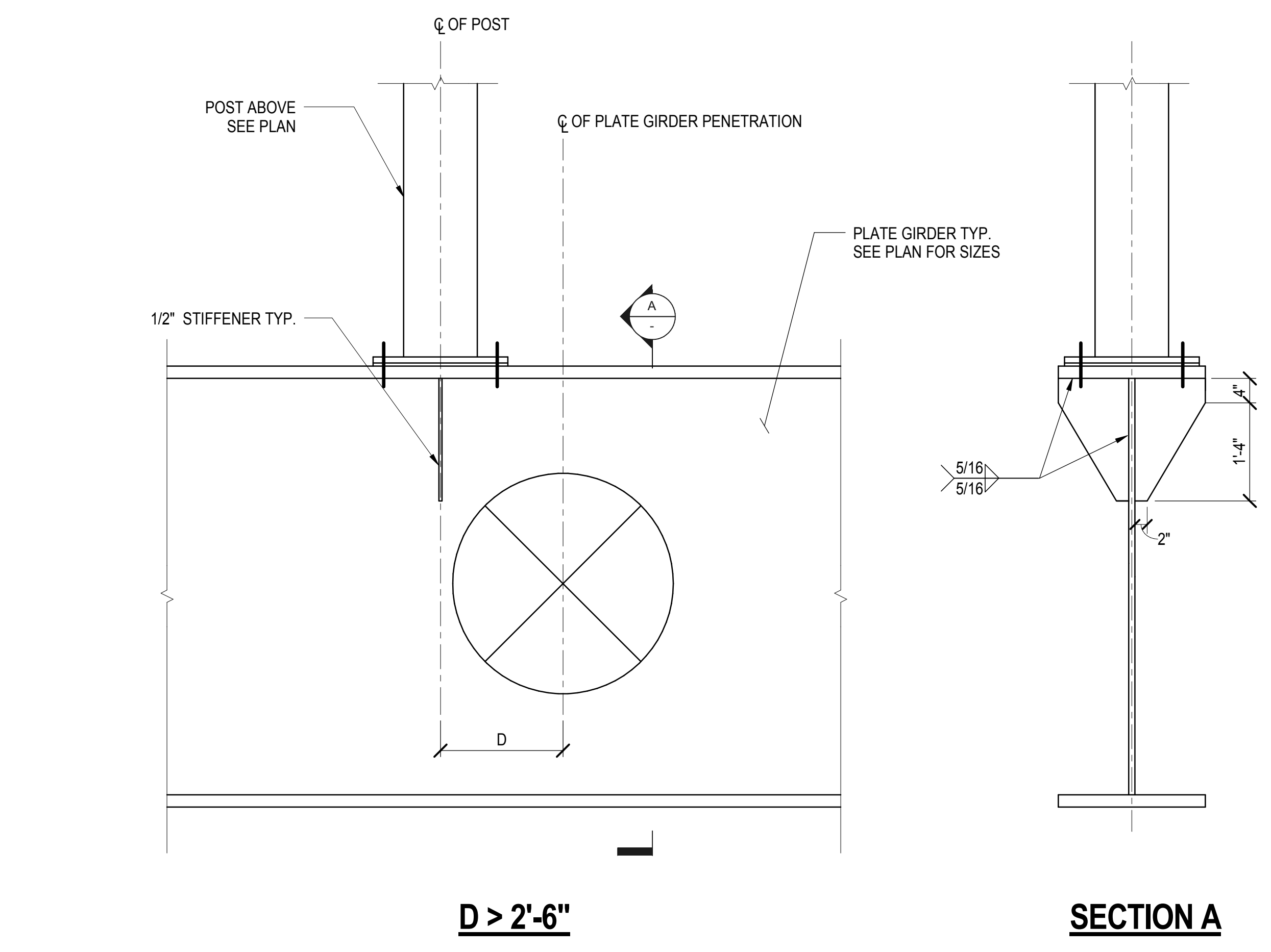
**SECTION B**



**4 WEST VENT TRANSFER SECTION**  
3/4" = 1'-0"

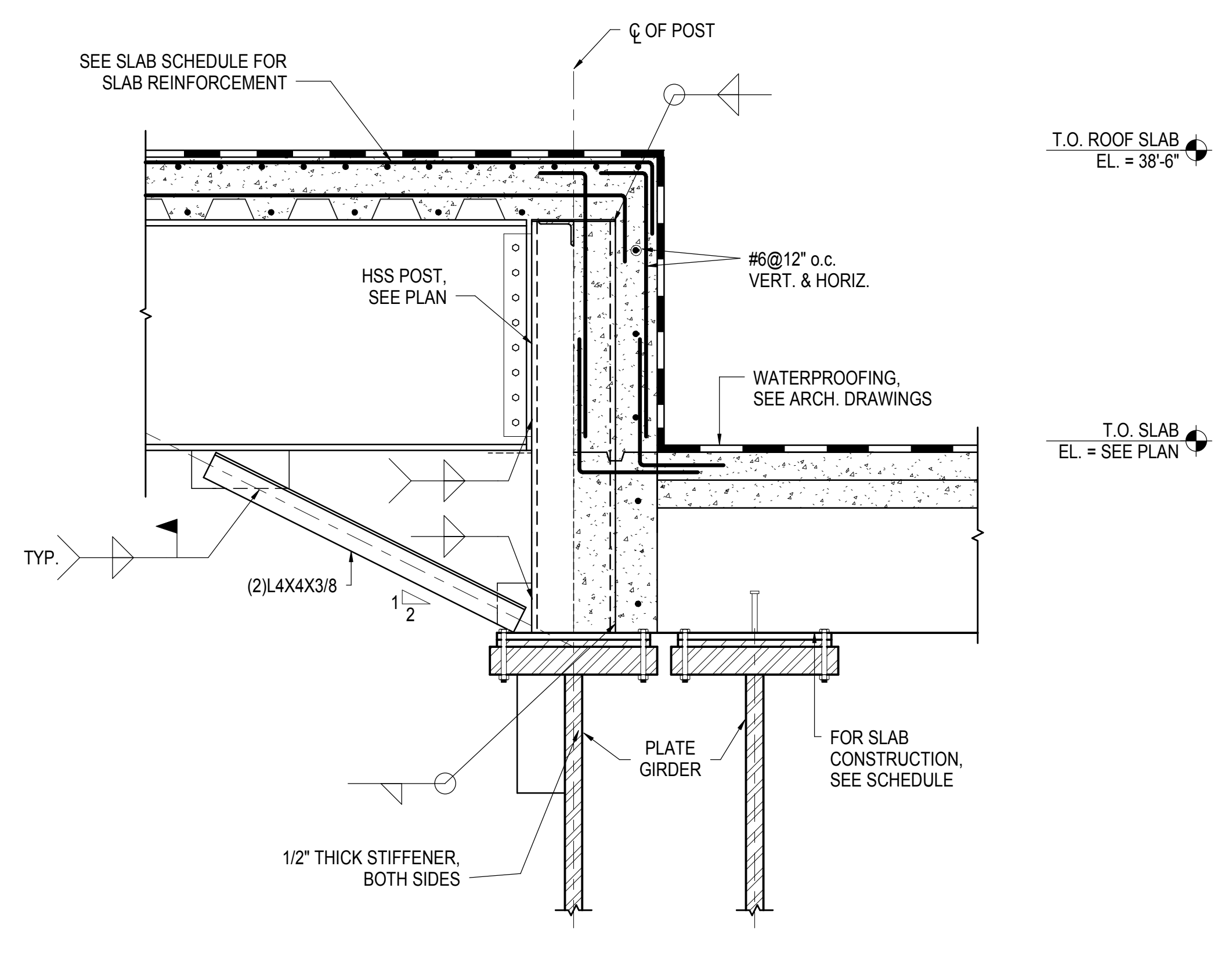


**7 SECTION AT CURVED STAIR SLAB**  
1/2" = 1'-0"

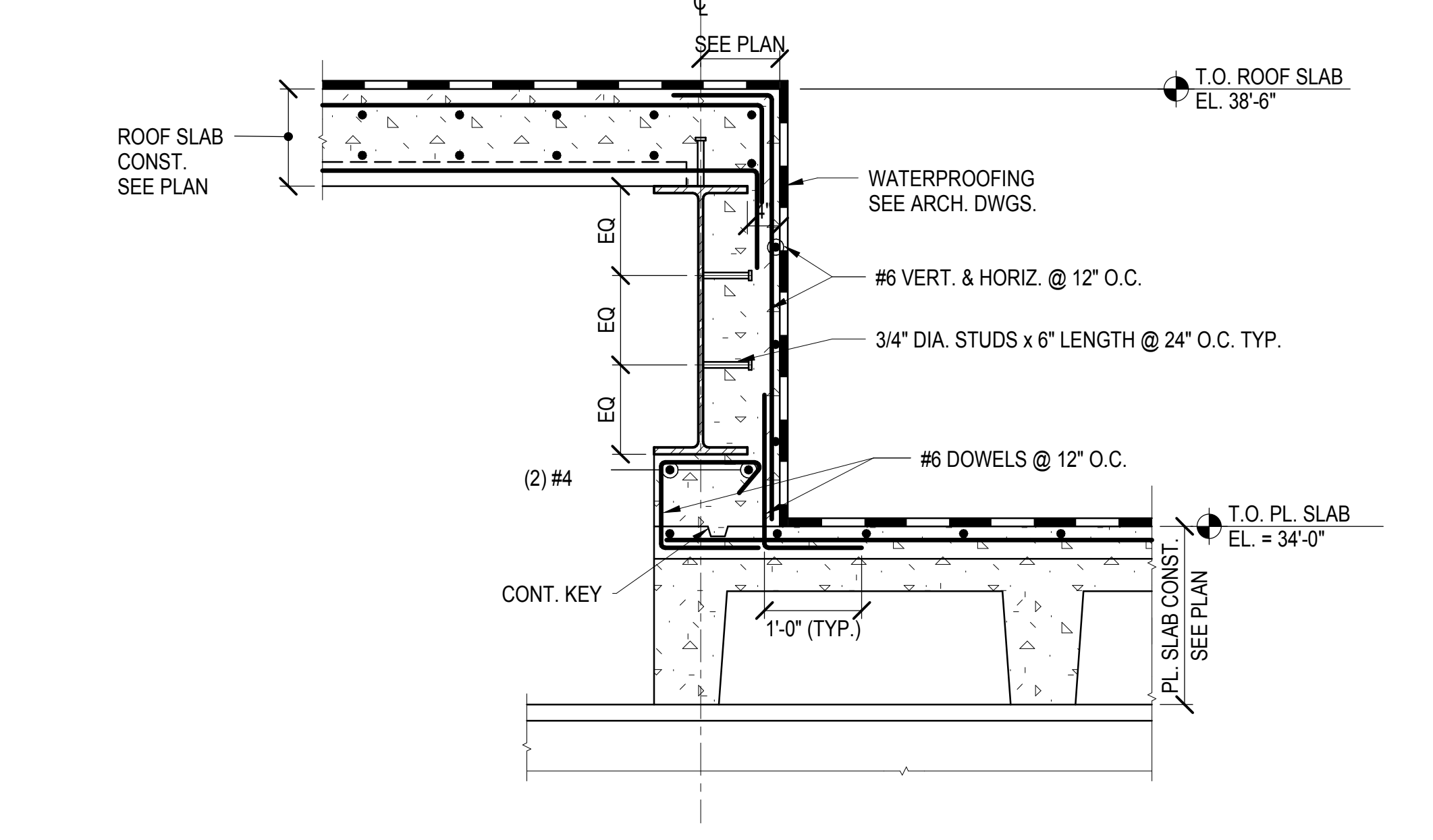


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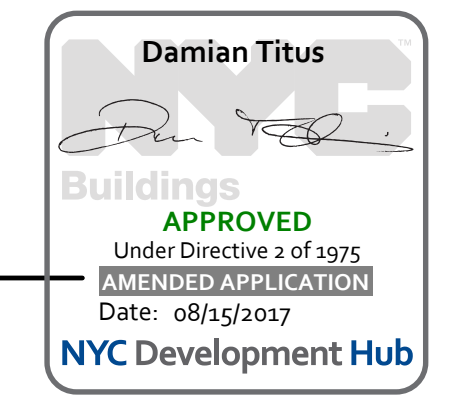
**1 TYPICAL REINFORCEMENT SUPPORT VENT TRANSFER POST**  
3/4" = 1'-0"



**3 WEST VENT TRANSFER SECTION**  
3/4" = 1'-0"



**6 VENT TRANSFER WALL WITH STEEL FRAMING**  
3/4" = 1'-0"



Date: 05/28/14  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

**HYE-PL-S-531.00**

**WEST PLATFORM VENT TRANSFER SECTIONS AND DETAILS**

Under Directive 3 of 1975  
Date: 08/15/2017  
NYC Development Hub

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0002	6/29/2015
ASH0075	5/1/2015
ASH0067	3/20/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0024	5/28/2014
W. Description	000

Key Plan

Date: 05/28/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE-PL-S-532.00**

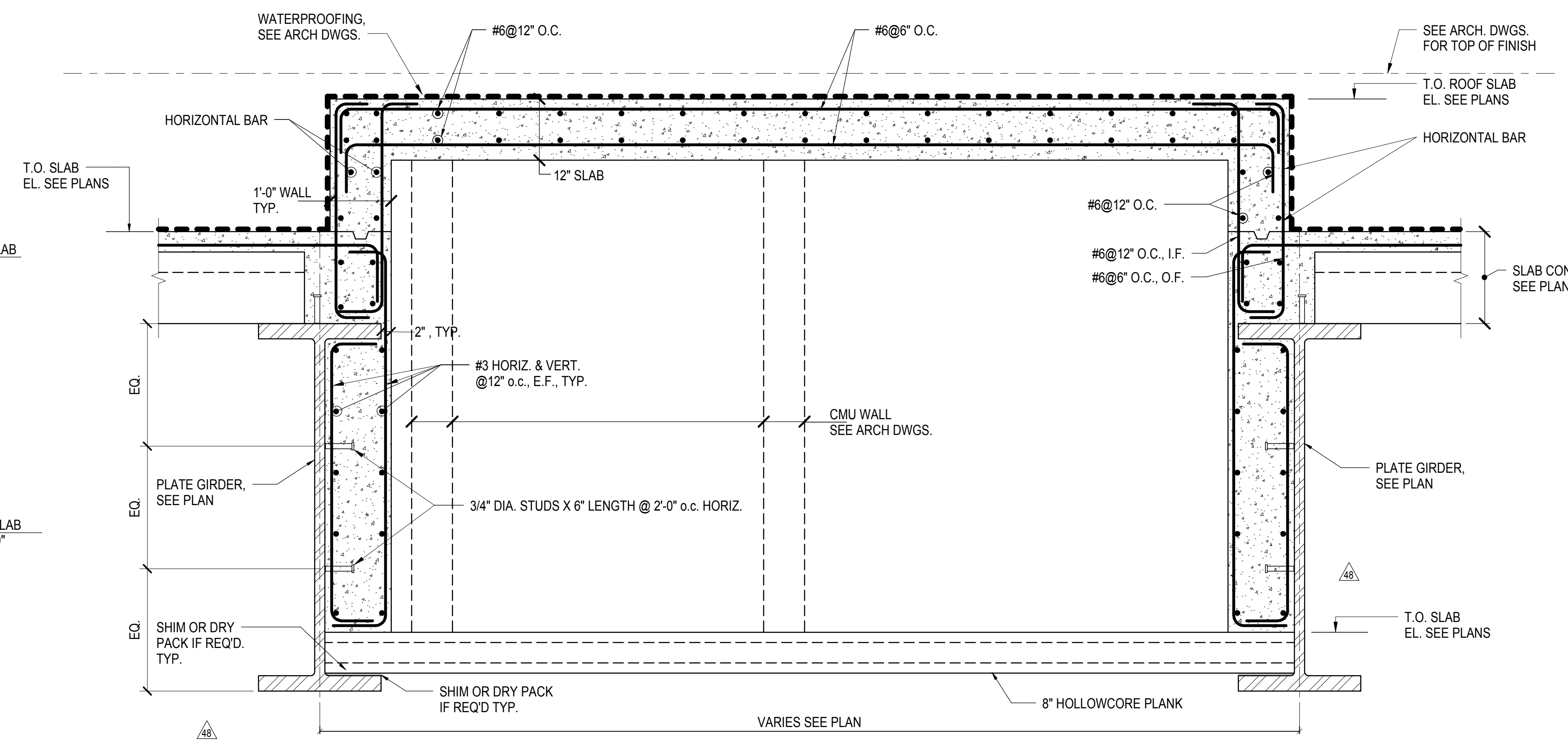
**WEST PLATFORM VENT TRANSFER SECTIONS AND DETAILS**

Drawing Title

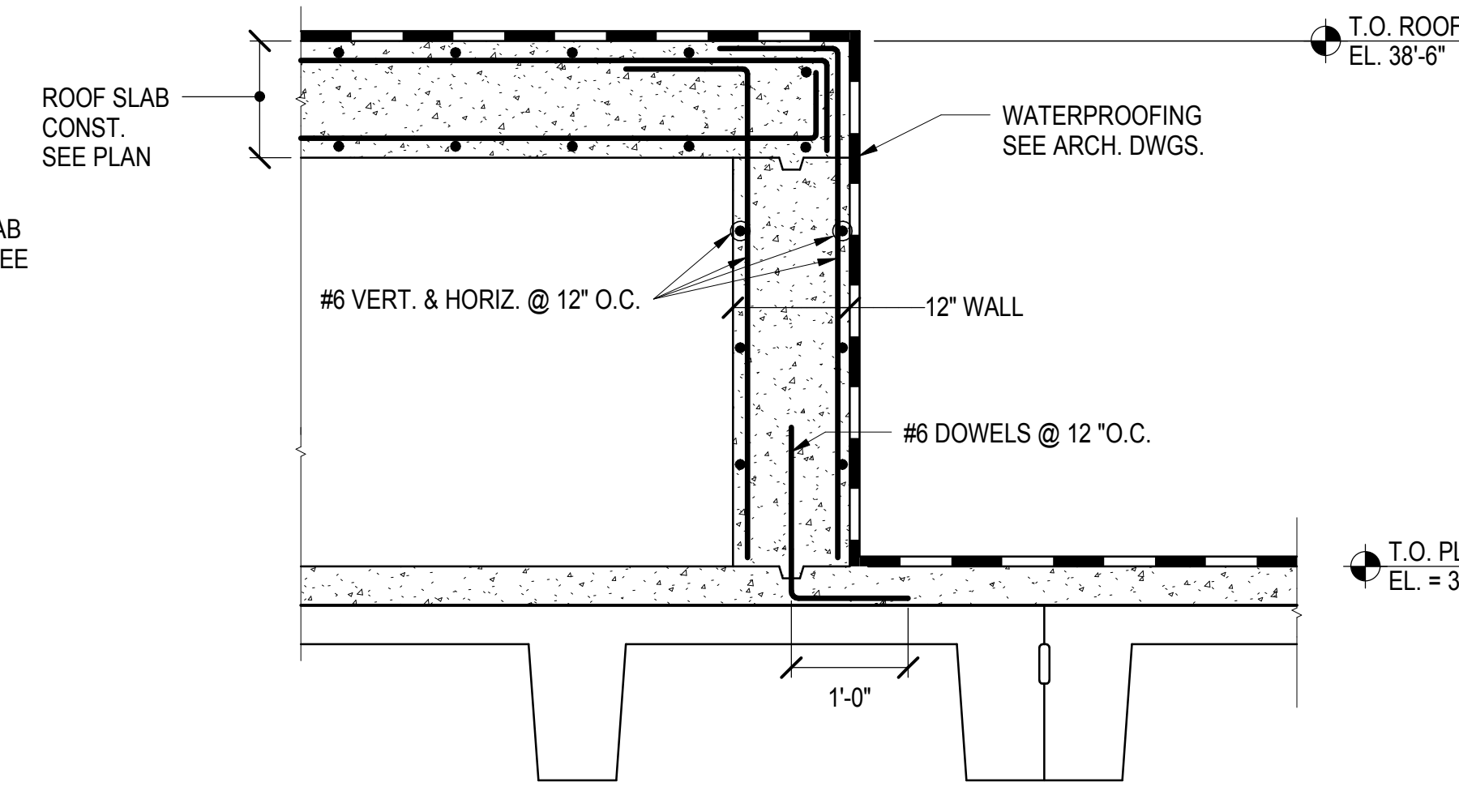
Drawing Number / B.C.M. Drawing Number

**S-532.00**

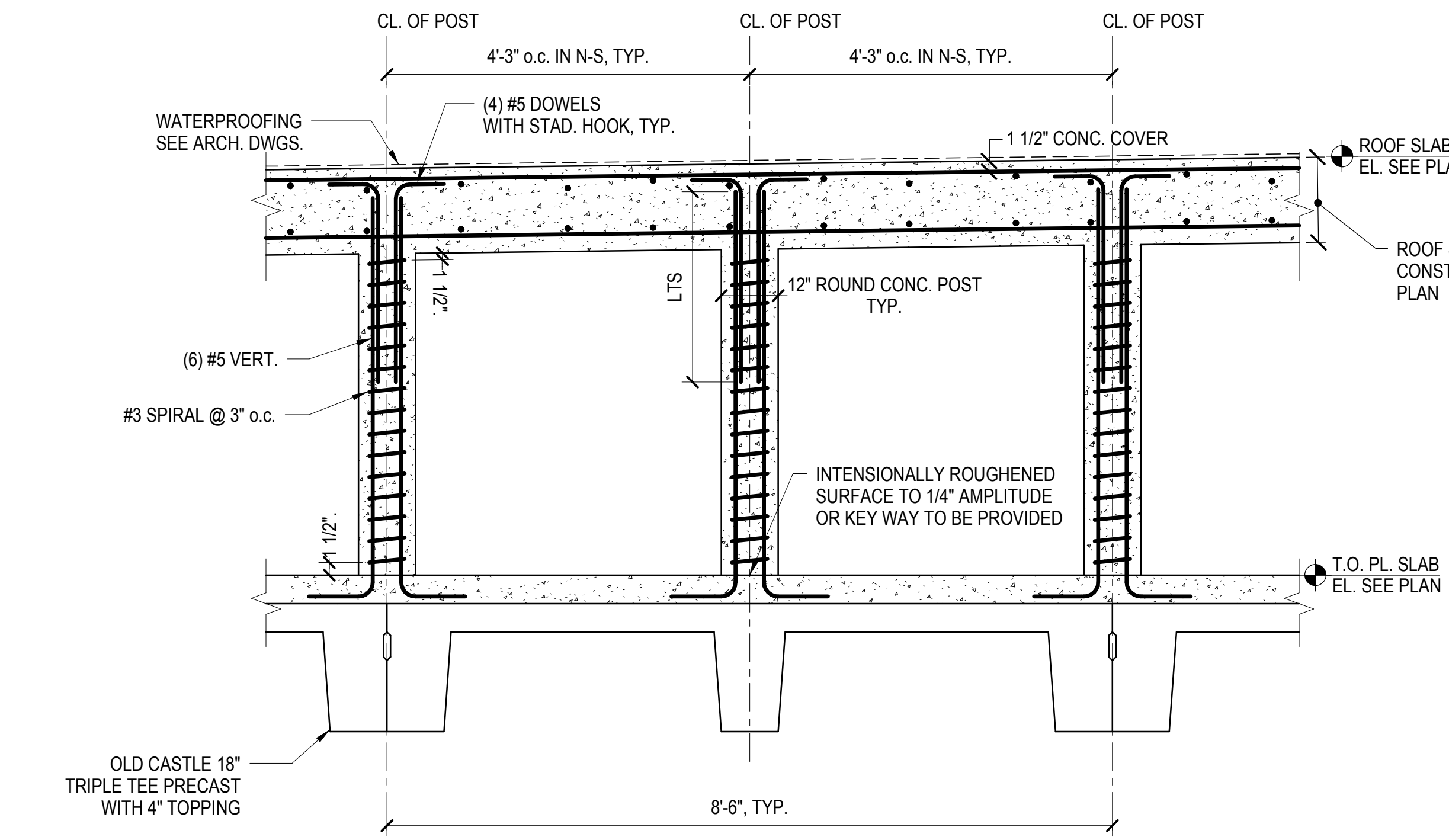
SHEET 97 of 163



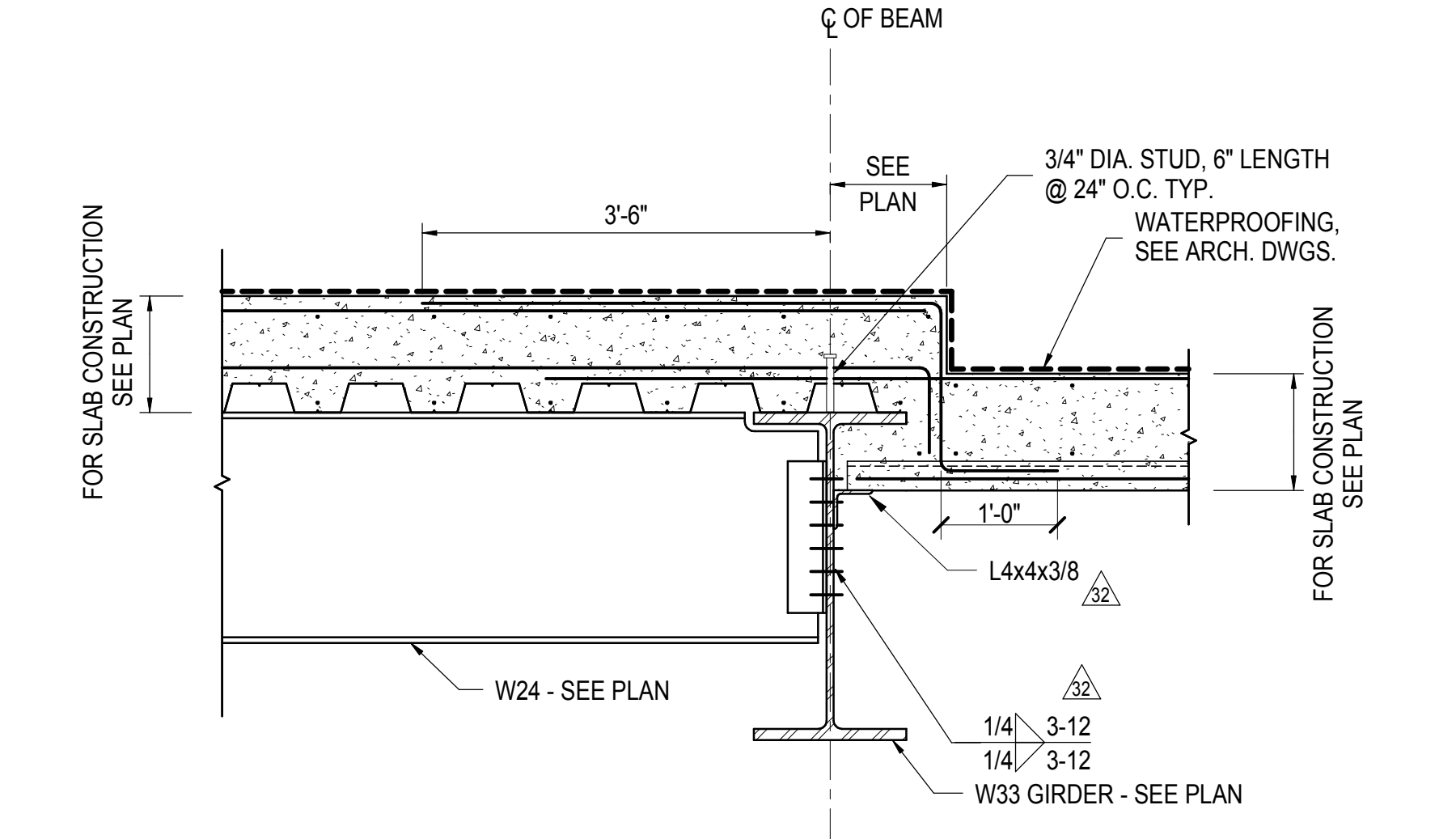
**3 SECTION AT ELECTRICAL ROOM ACCESS CORRIDOR**  
3/4" = 1'-0"



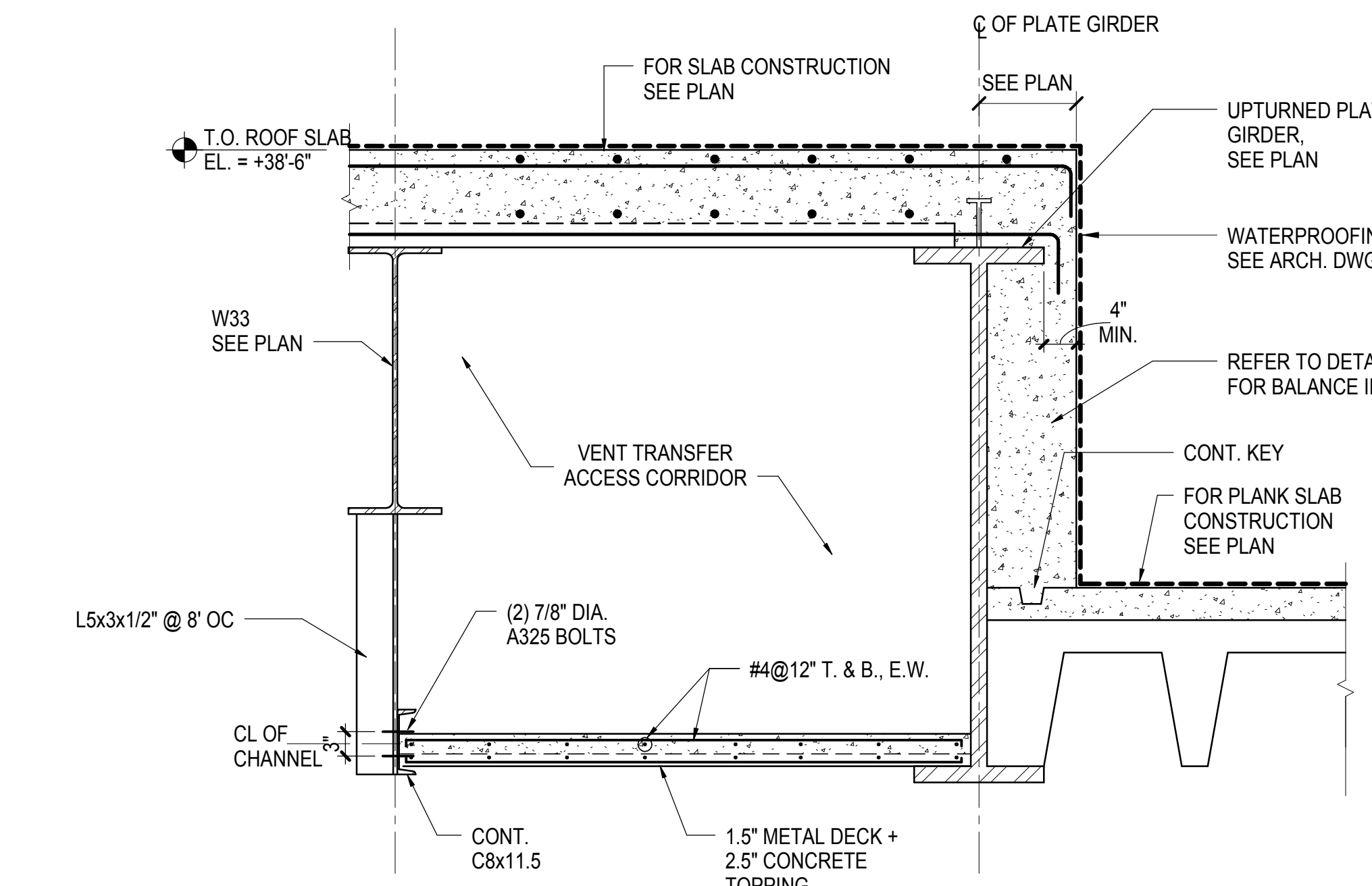
**2 TYPICAL WALL DETAIL AT VENT TRANSFER**  
3/4" = 1'-0"



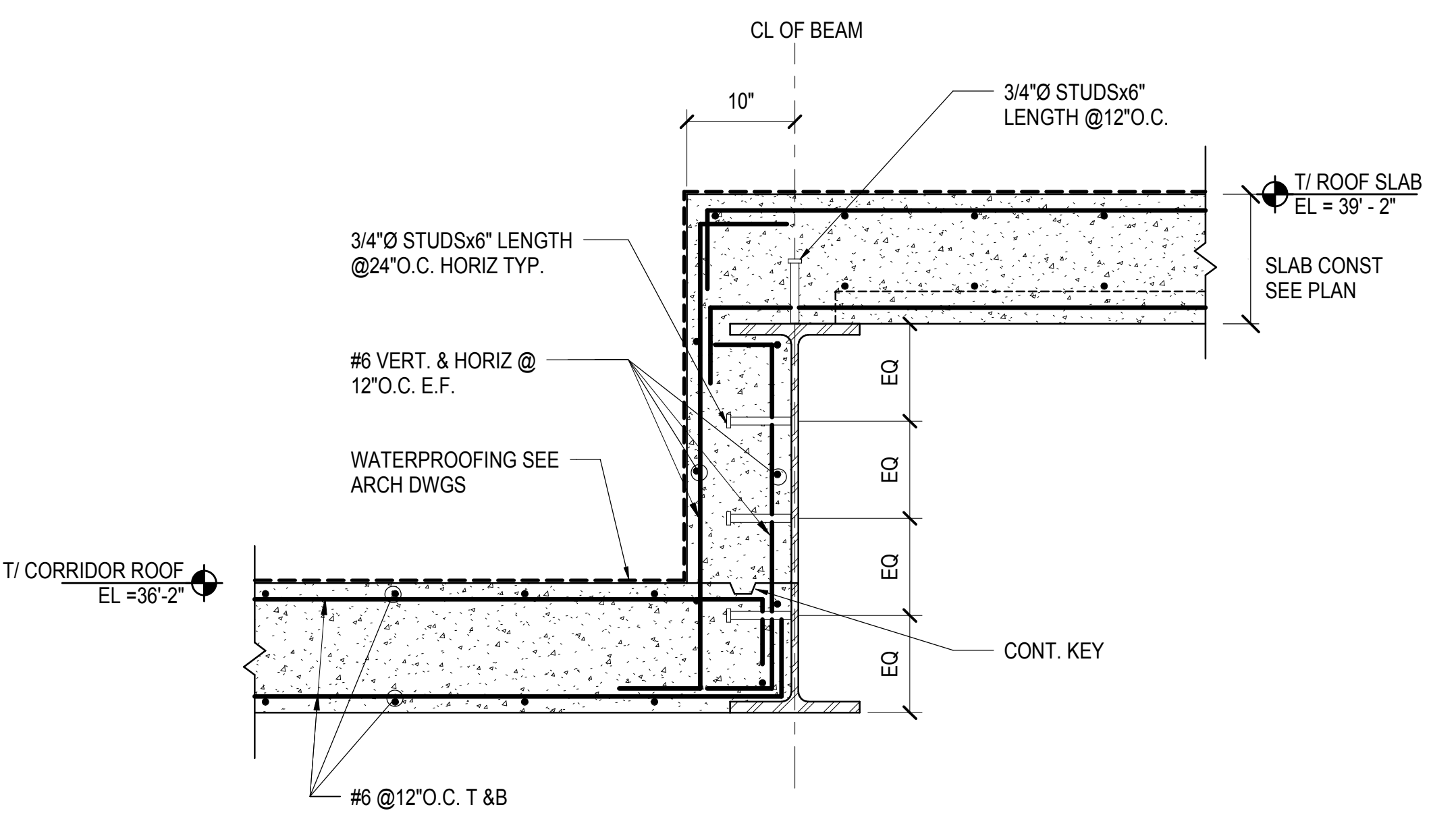
**1 TYPICAL POST DETAIL AT VENT TRANSFER**  
3/4" = 1'-0"



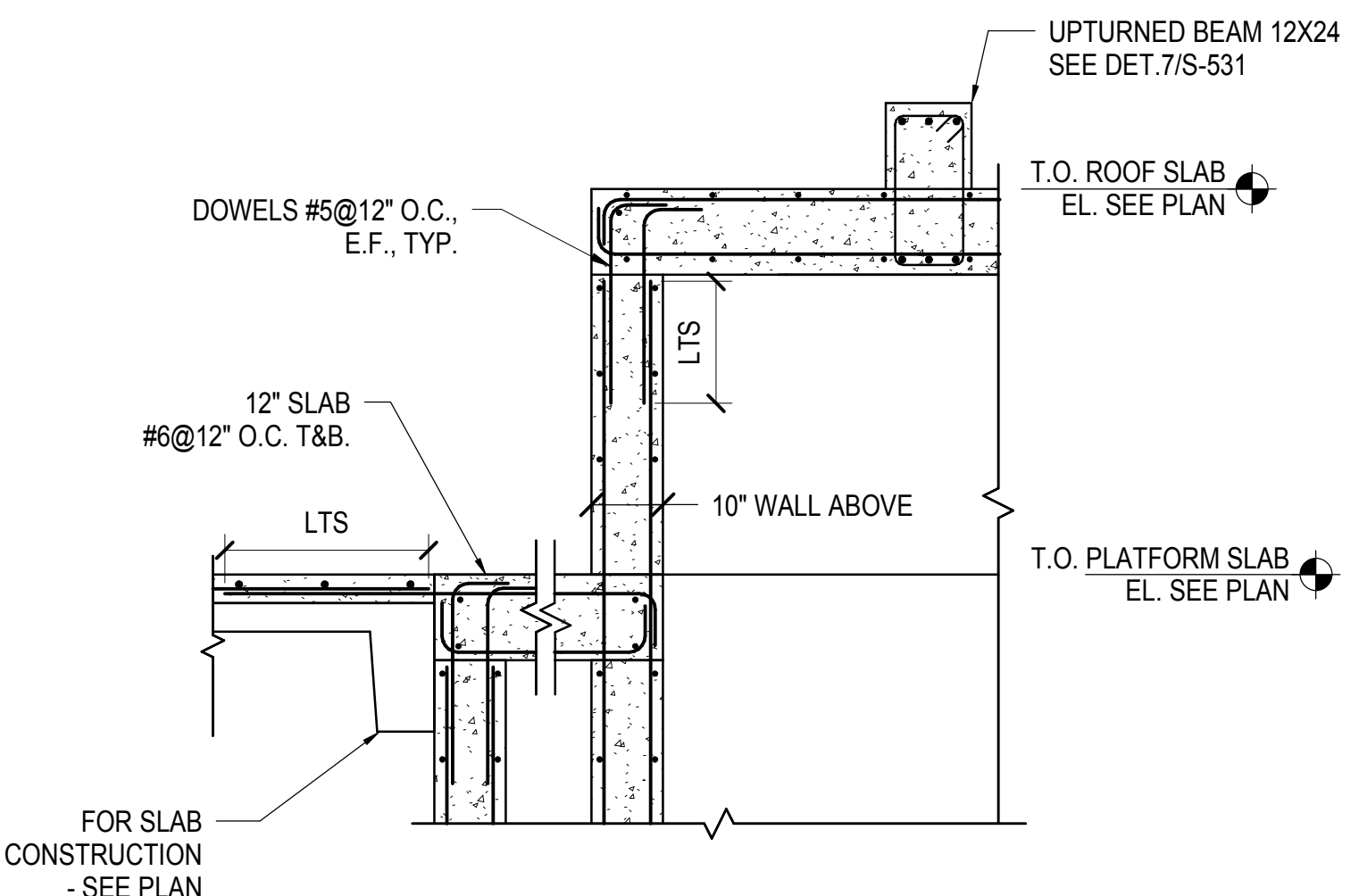
**6 SECTION AT STEP IN SLAB AT VENT TRANSFER ROOF**  
NOT TO SCALE



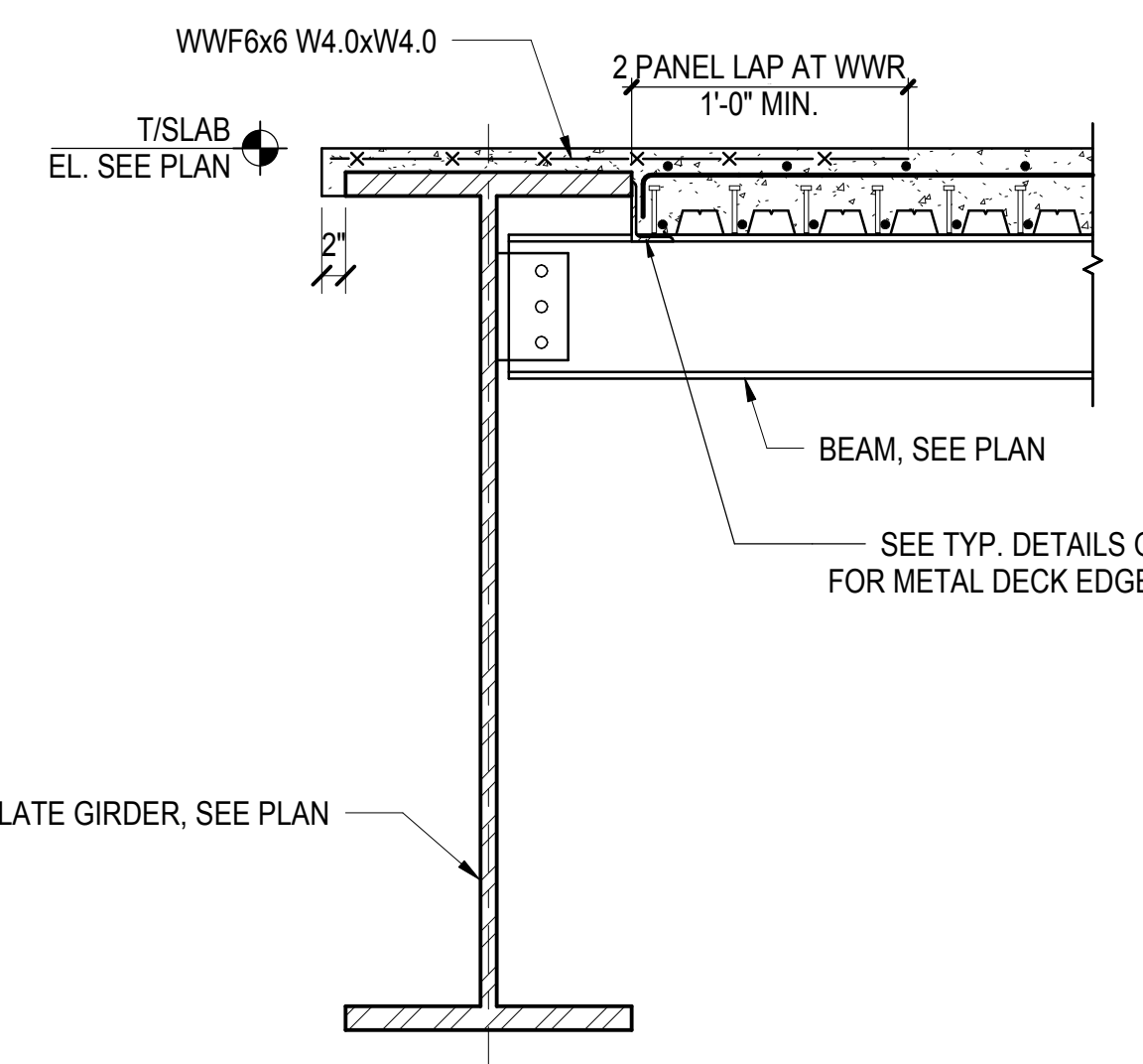
**5 SECTION**  
3/4" = 1'-0"



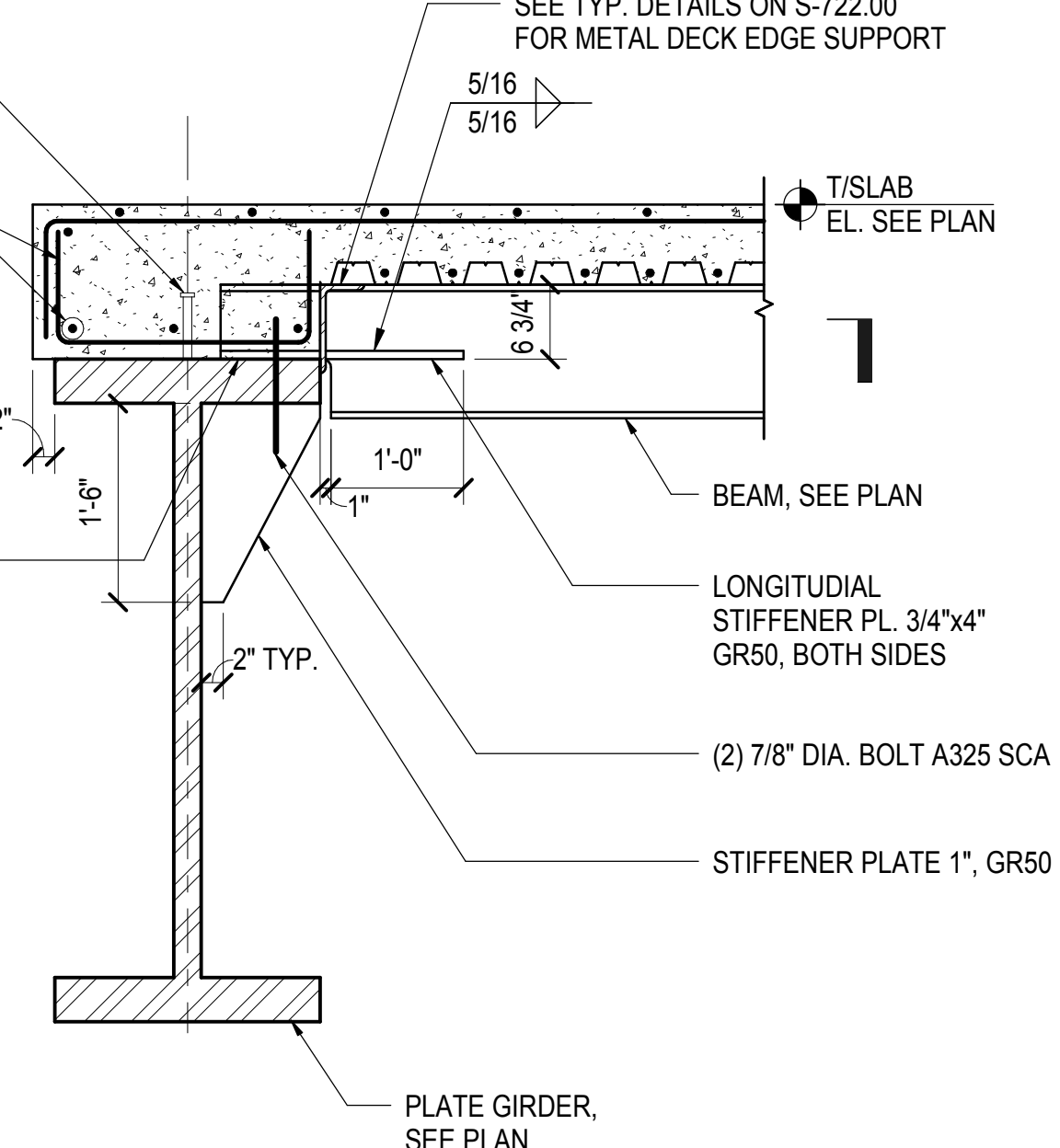
**4 STEPPED ROOF SLAB AT ELECTRICAL ROOM**  
1" = 1'-0"



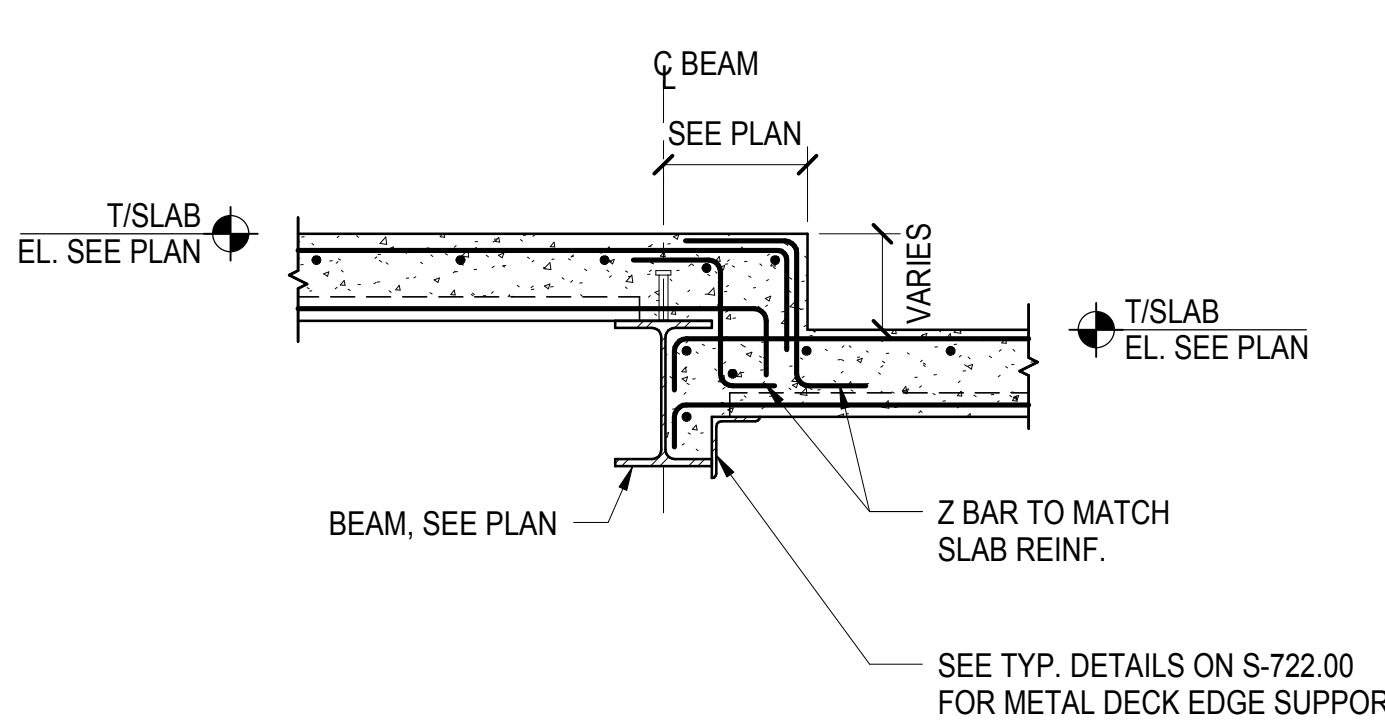
**11 SECTION AT CURVED STAIR SLAB**  
1/2" = 1'-0"



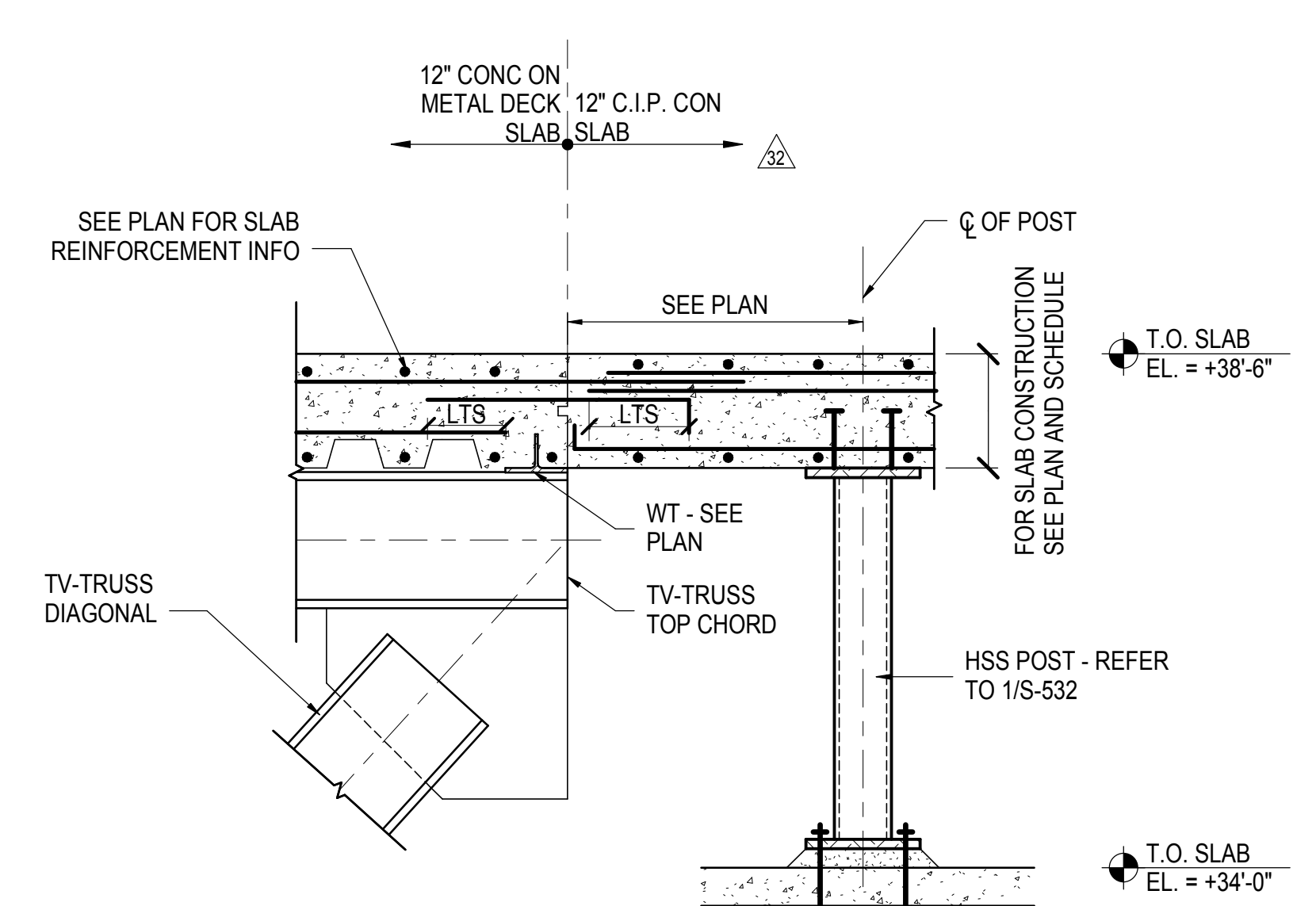
**9 TYPICAL BEAM CONN. TO PLATE GIRDER AT FAN PLANT**  
3/4" = 1'-0"



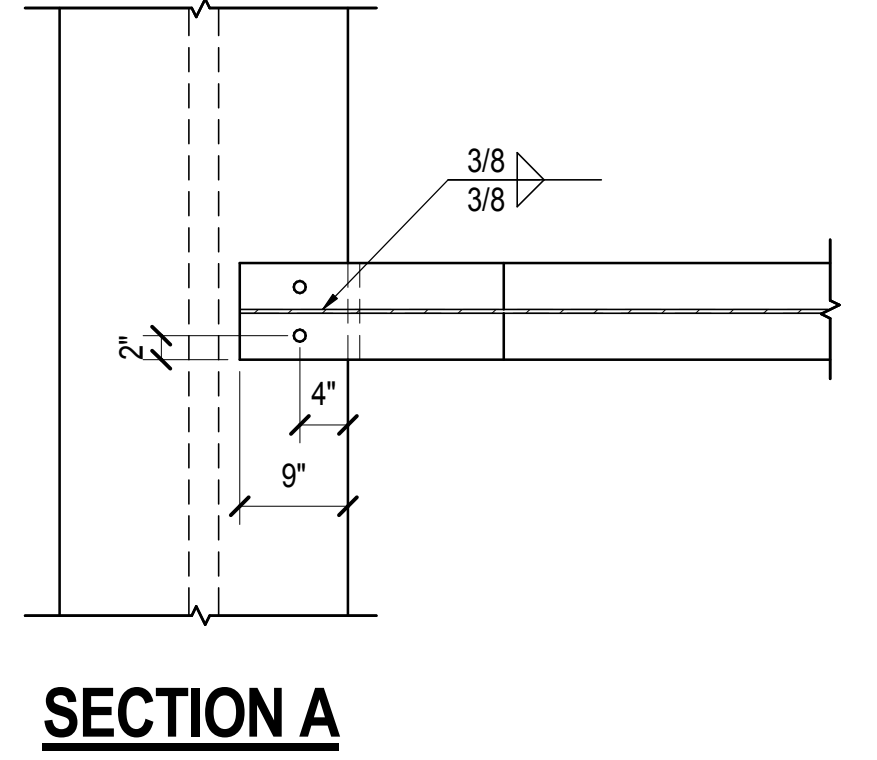
**8 TYPICAL BEAM CONN. TO TOP OF PLATE GIRDER AT FAN PLANT**  
3/4" = 1'-0"



**10 SLAB STEP AT FAN PLANT**  
3/4" = 1'-0"

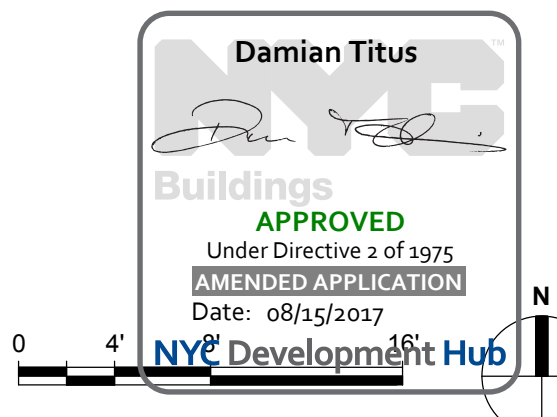


**7 SECTION**  
3/4" = 1'-0"

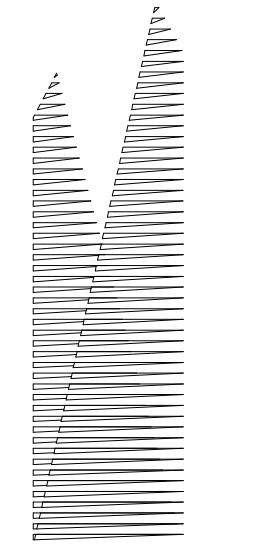


**SECTION A**

S-532.00  
10/18/2016 5:41:40 PM  
C:\Users\mkay\Desktop\Rev\N11330.00 - East Platform - skg.rvt



**NYC Development Hub**



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

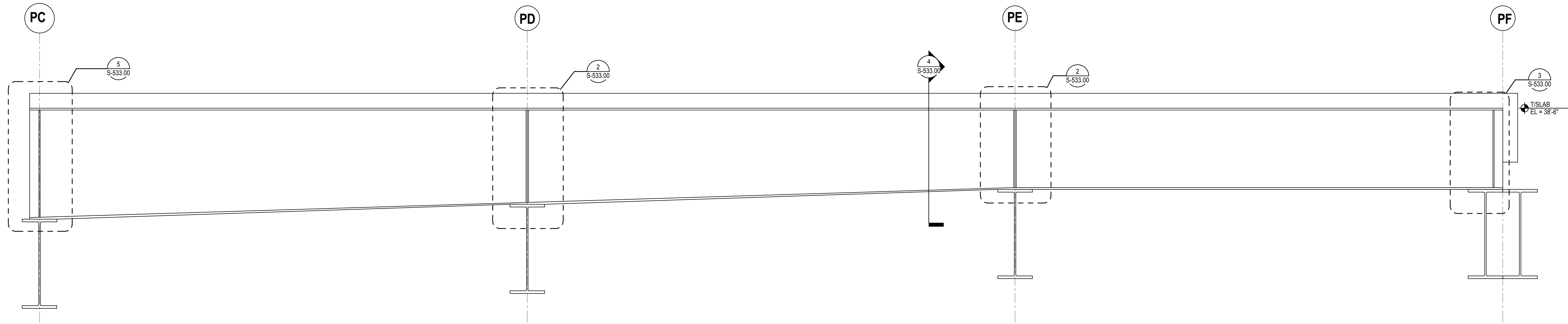
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

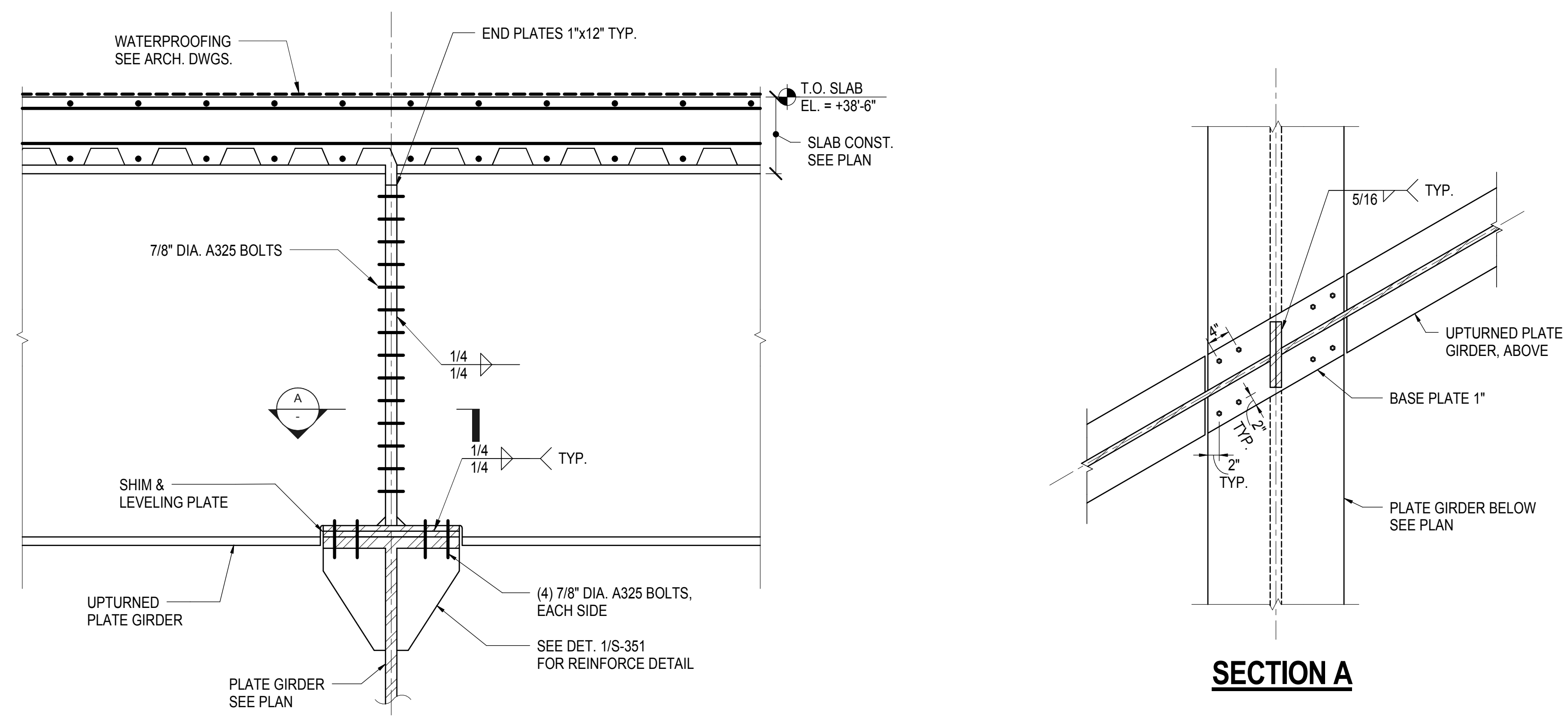
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

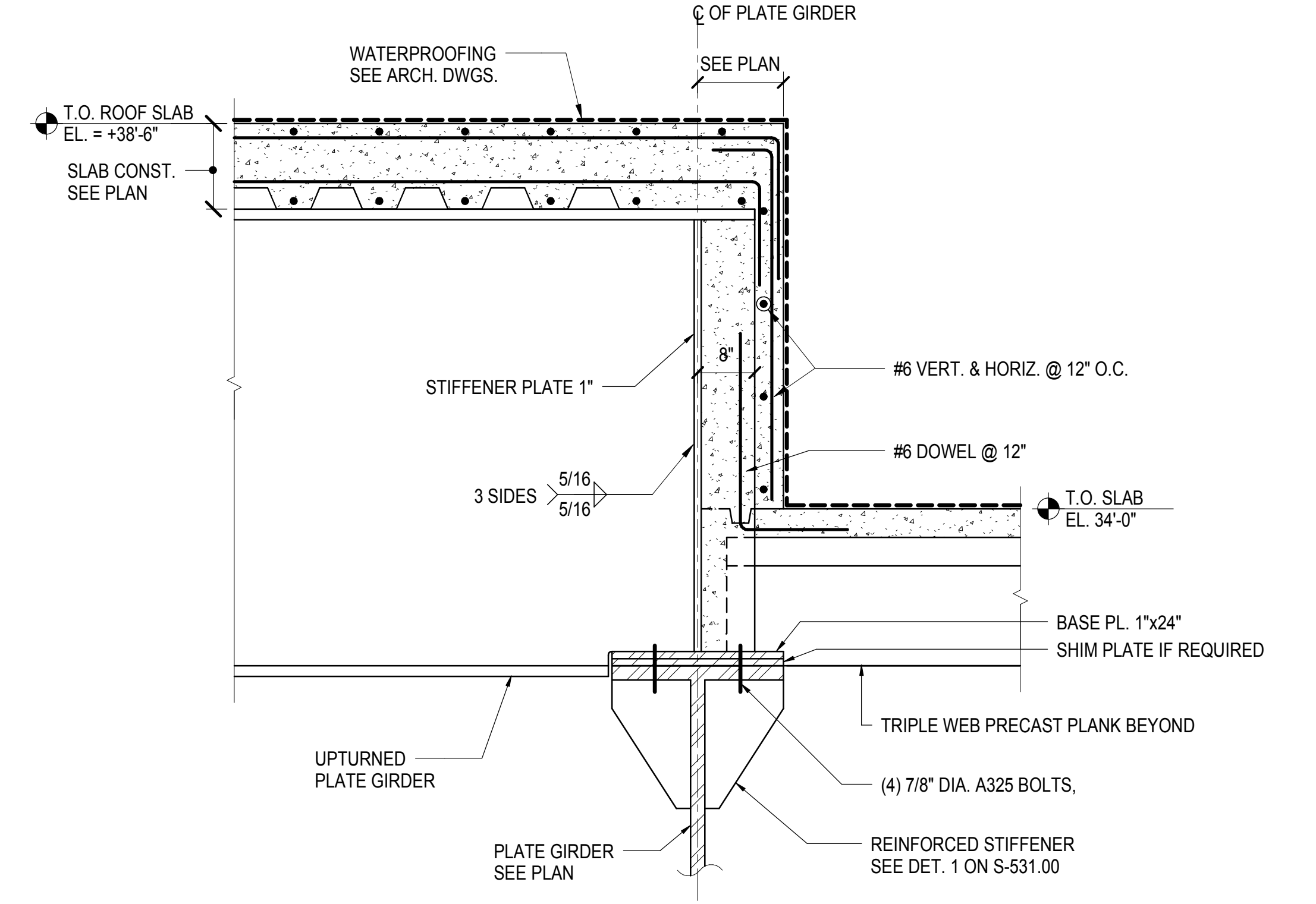
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



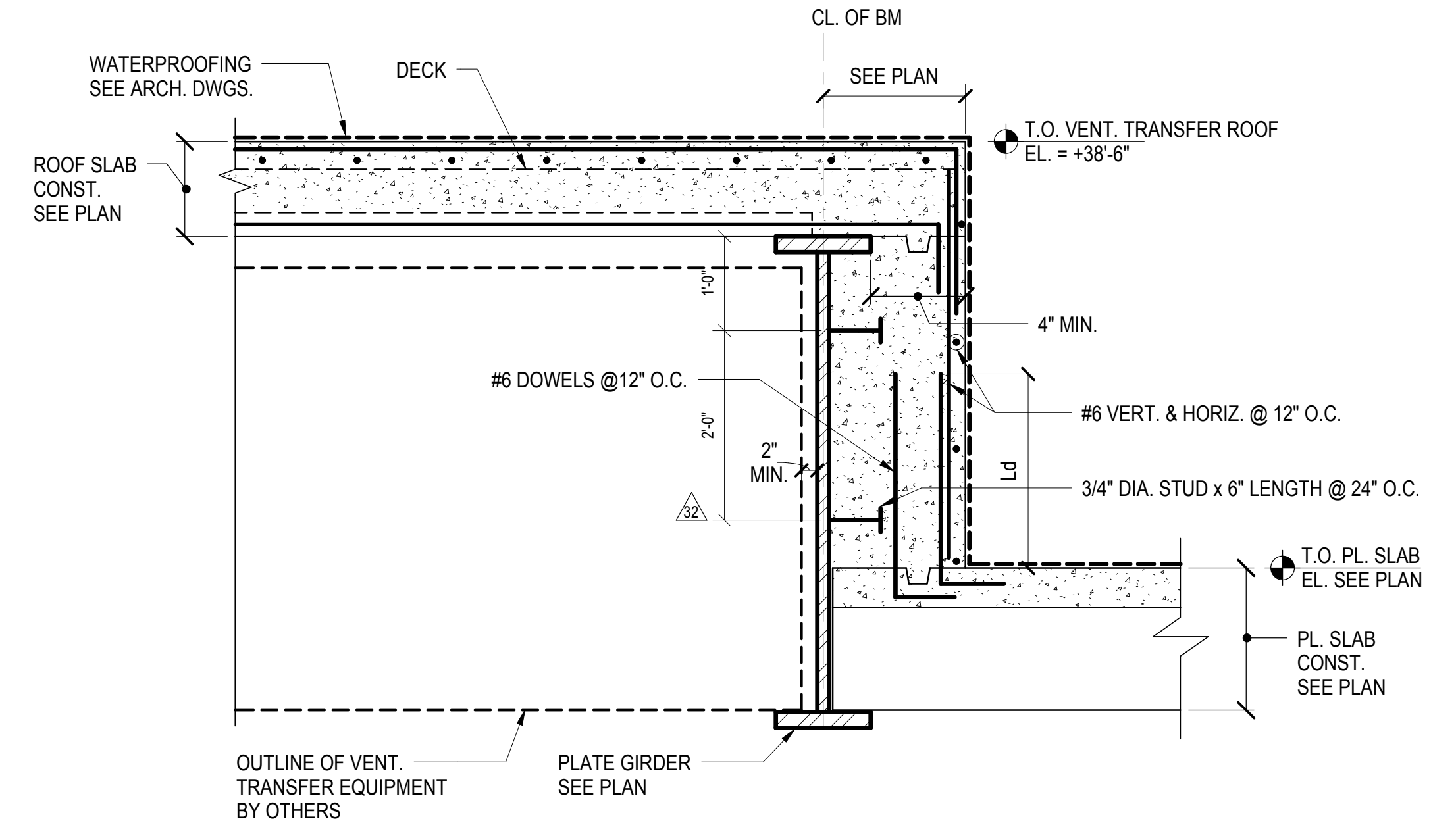
**1 ELEVATION AT UPTURNED PLATE GIRDER**  
3/8" = 1'-0"



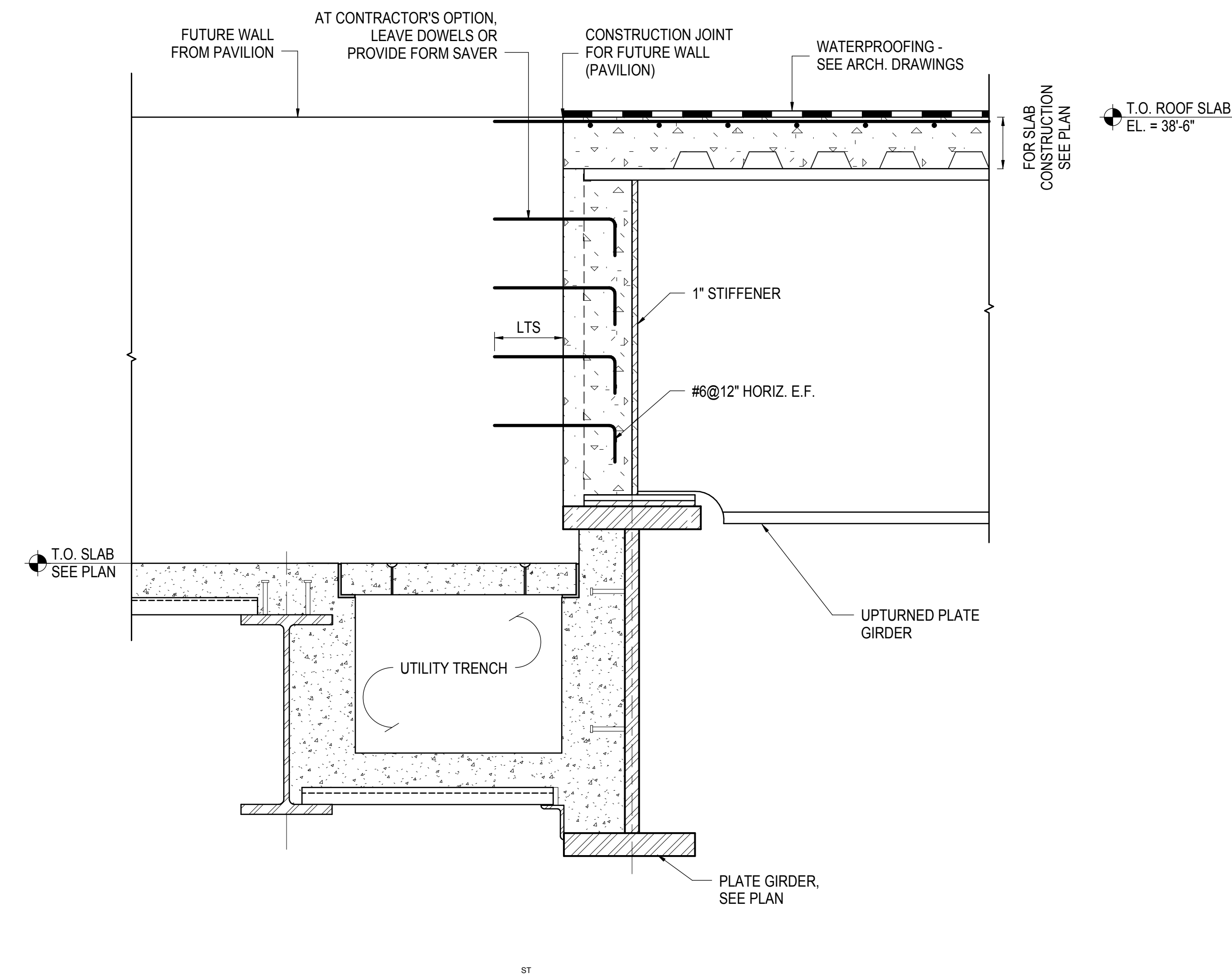
**2 ELEVATION AT UPTURNED PLATE GIRDER**  
3/4" = 1'-0"



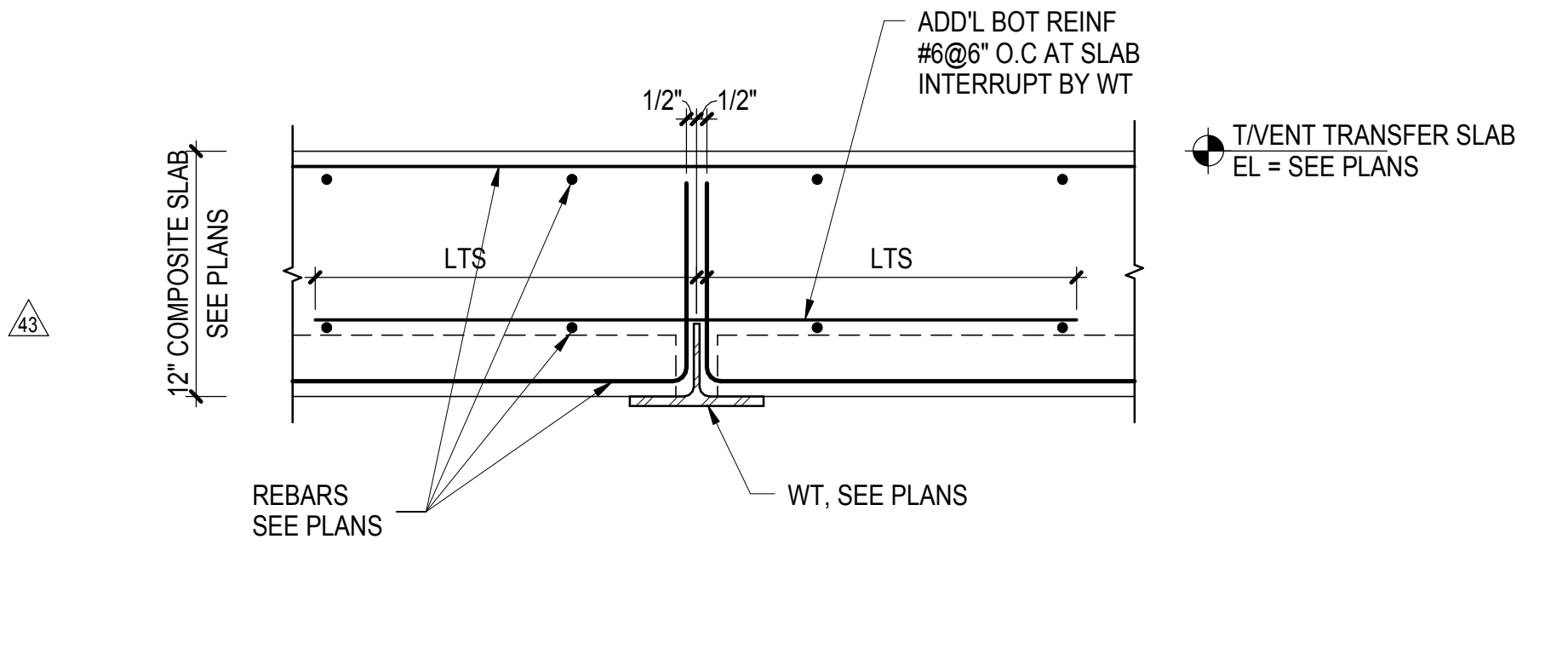
**3 UPTURNED PLATE GIRDER END SEATED DETAIL**  
3/4" = 1'-0"



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



**5 SECTION AT EDGE OF FUTURE PAVILION WALL**  
3/4" = 1'-0"



**6 ADDITIONAL REINFORCEMENT AT WT**  
1-1/2" = 1'-0"

DOR POST-APPROVAL AMENDMENT	10/28/2016
ASH0067	3/20/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0024	5/28/2014
No. Description	Date

Key Plan

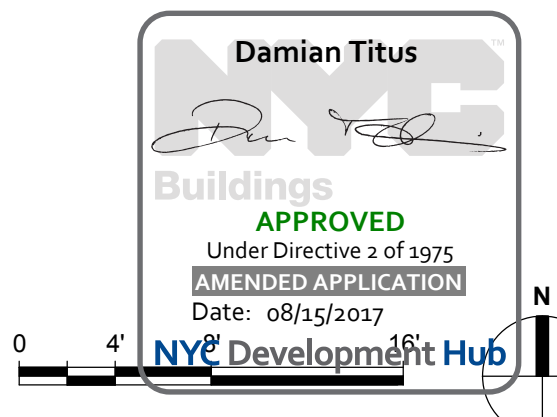
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Project No: N11330.00  
Author: [Signature]  
Sheet Number: [Signature]

**HYE -PL -S-533.00**

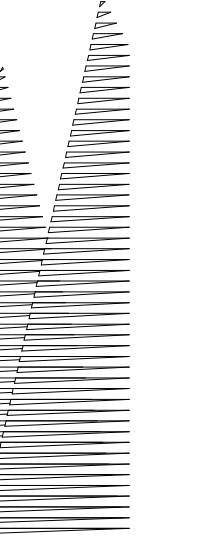
**WEST PLATFORM VENT TRANSFER SECTIONS AND DETAILS**

Drawing Number / B.S.C.A.N. Drawing Number  
**S-533.00**

SHEET 98 of 163







Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
130 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
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Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

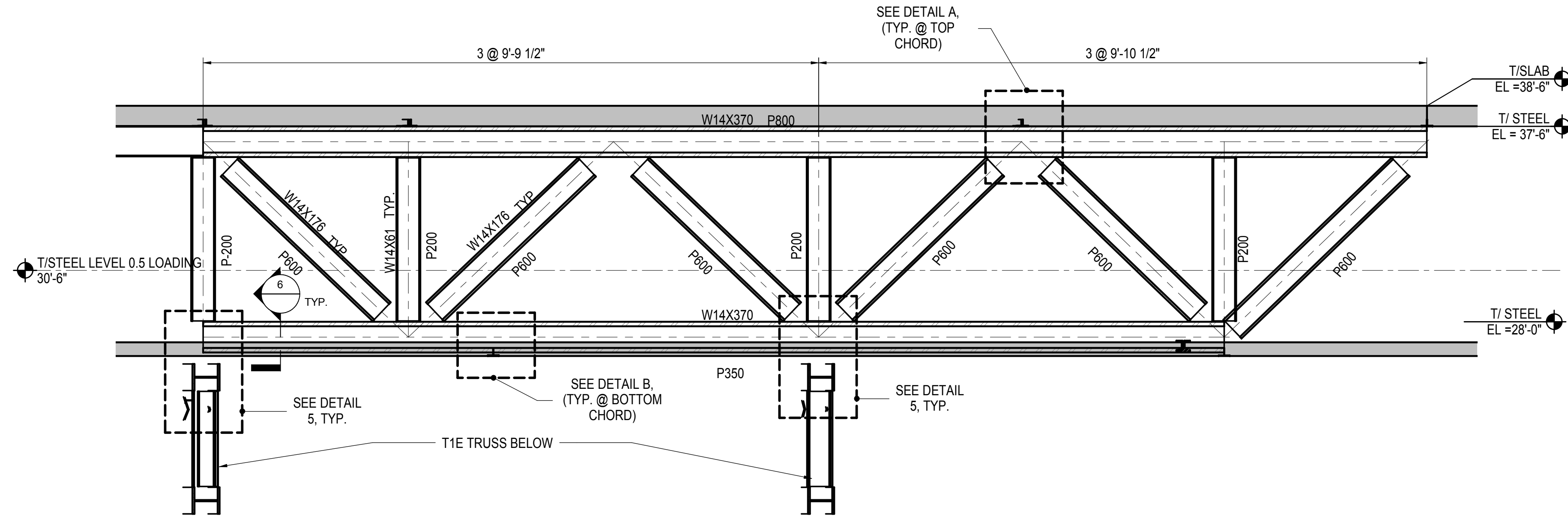
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Engineers: Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

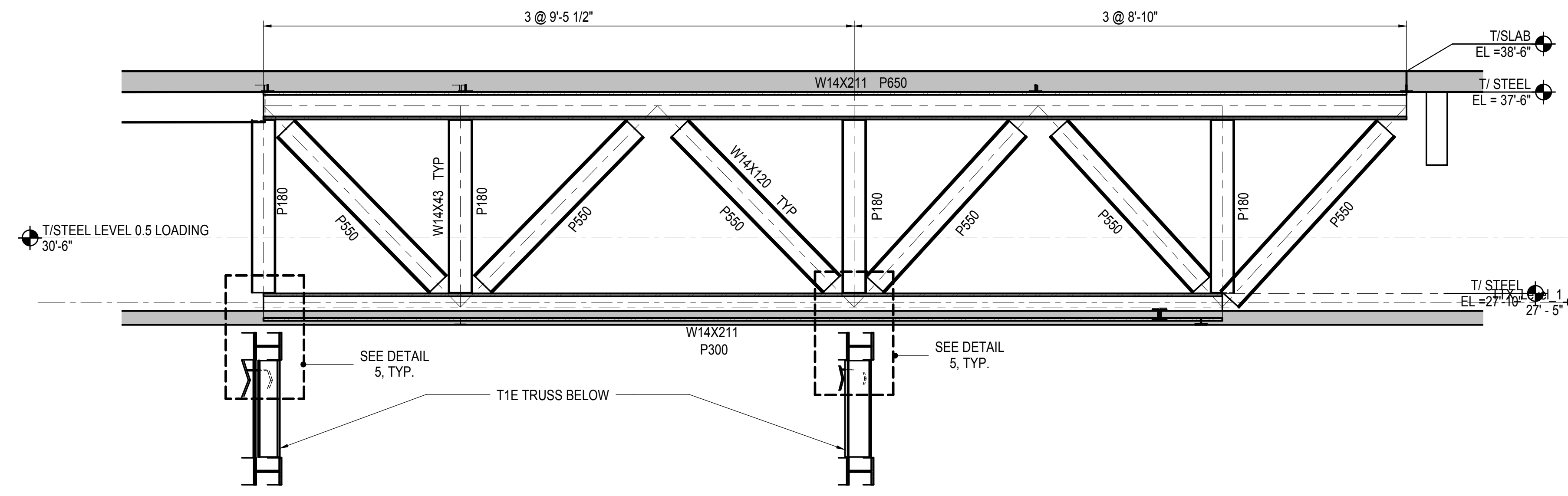
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0024	5/28/2014
Rev	Description

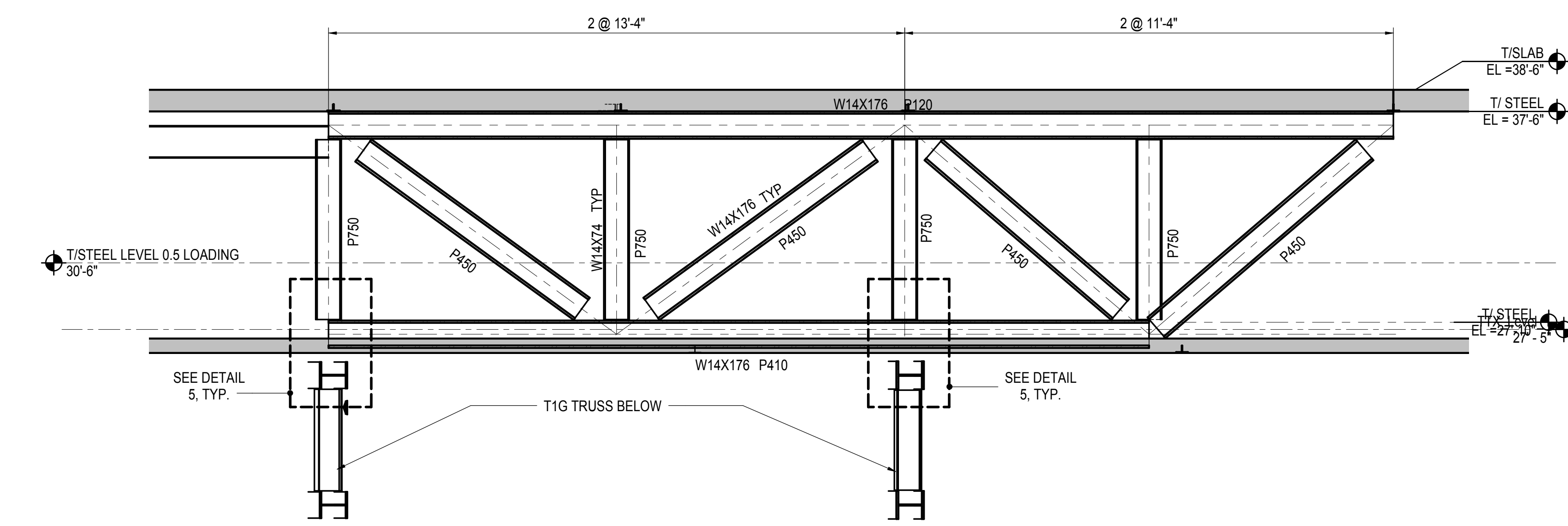
Key Plan



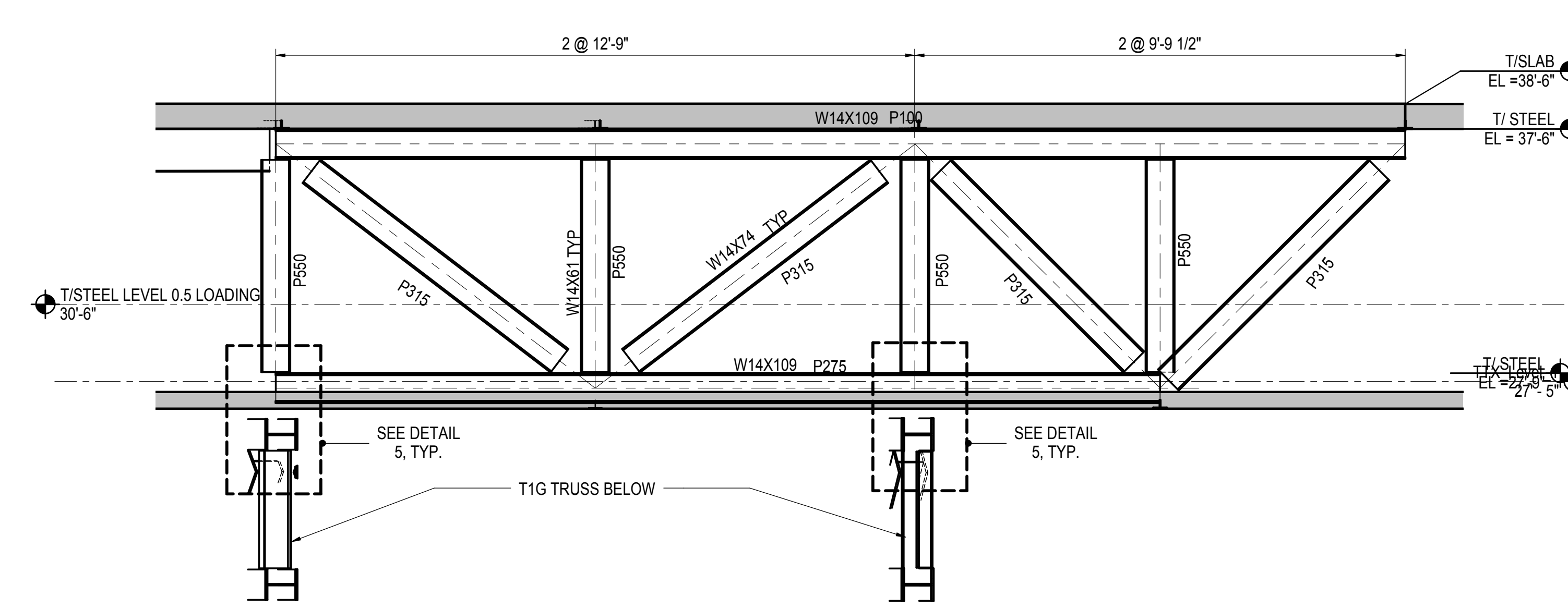
**1 TRUSS TV-1 ELEVATION**  
1/4" = 1'-0"



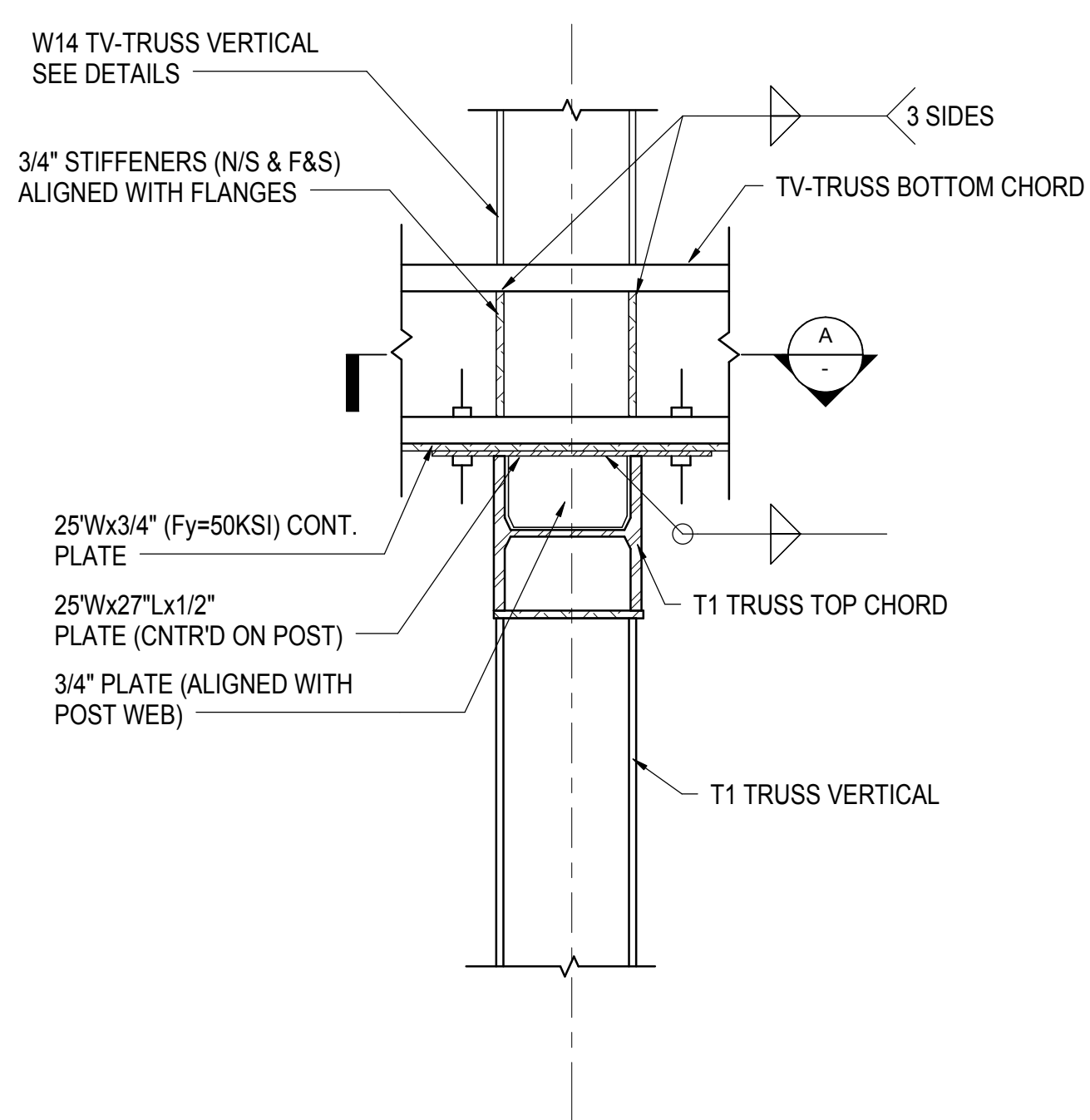
**2 TRUSS TV-2 ELEVATION**  
1/4" = 1'-0"



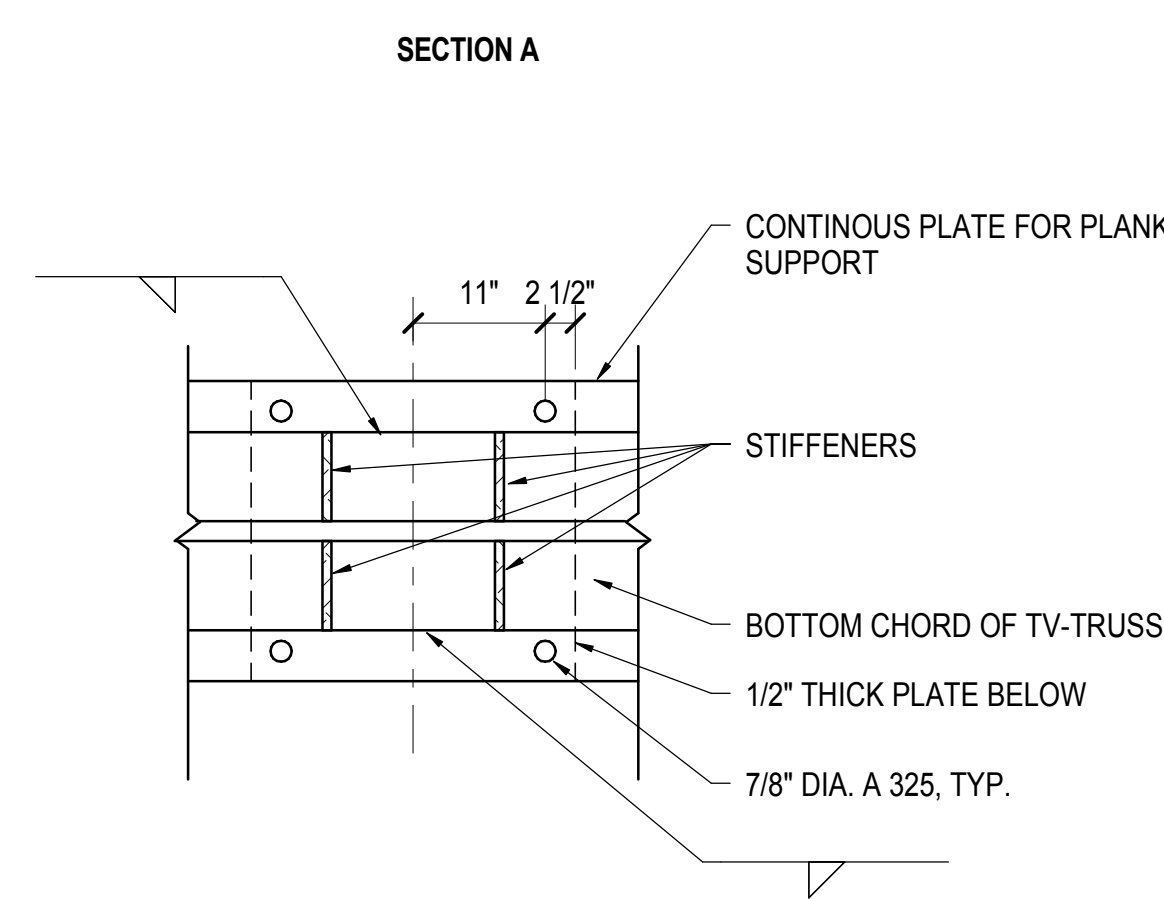
**3 TRUSS TV-3 ELEVATION**  
1/4" = 1'-0"



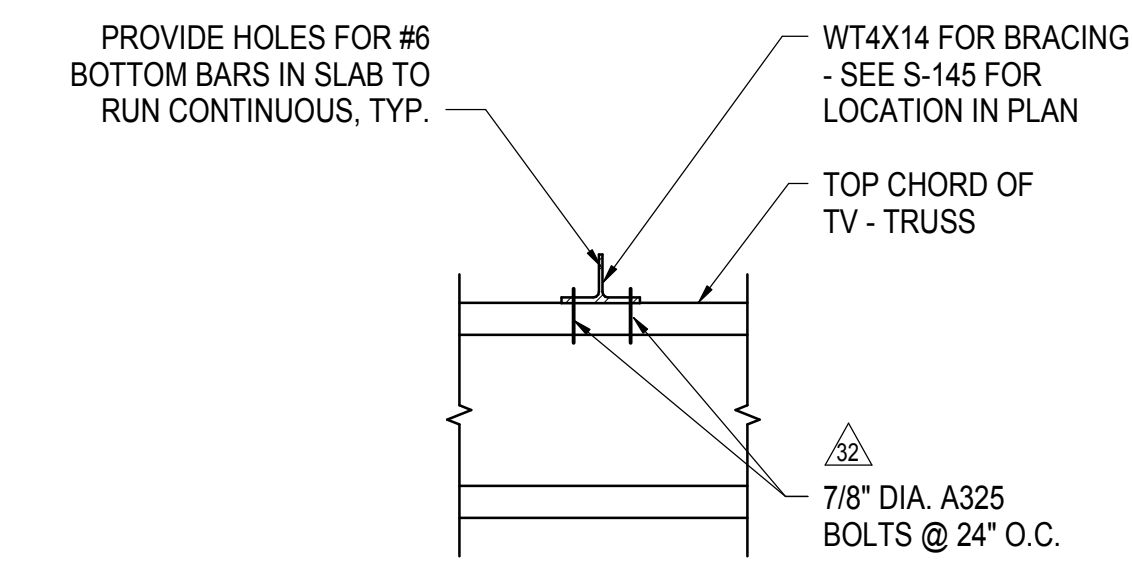
**4 TRUSS TV-4 ELEVATION**  
1/4" = 1'-0"



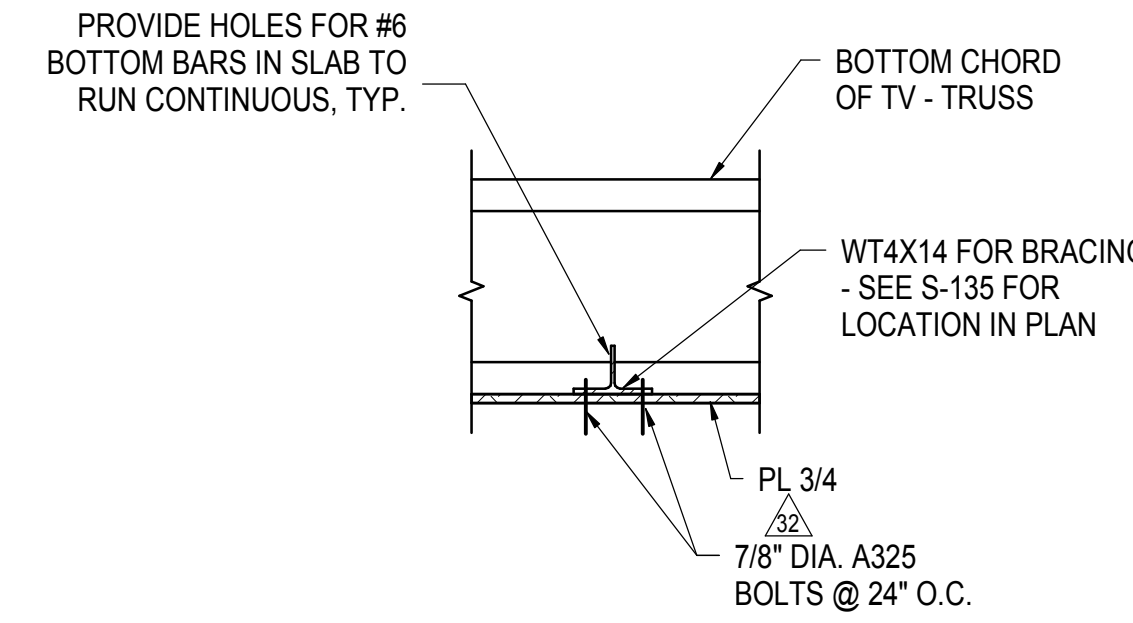
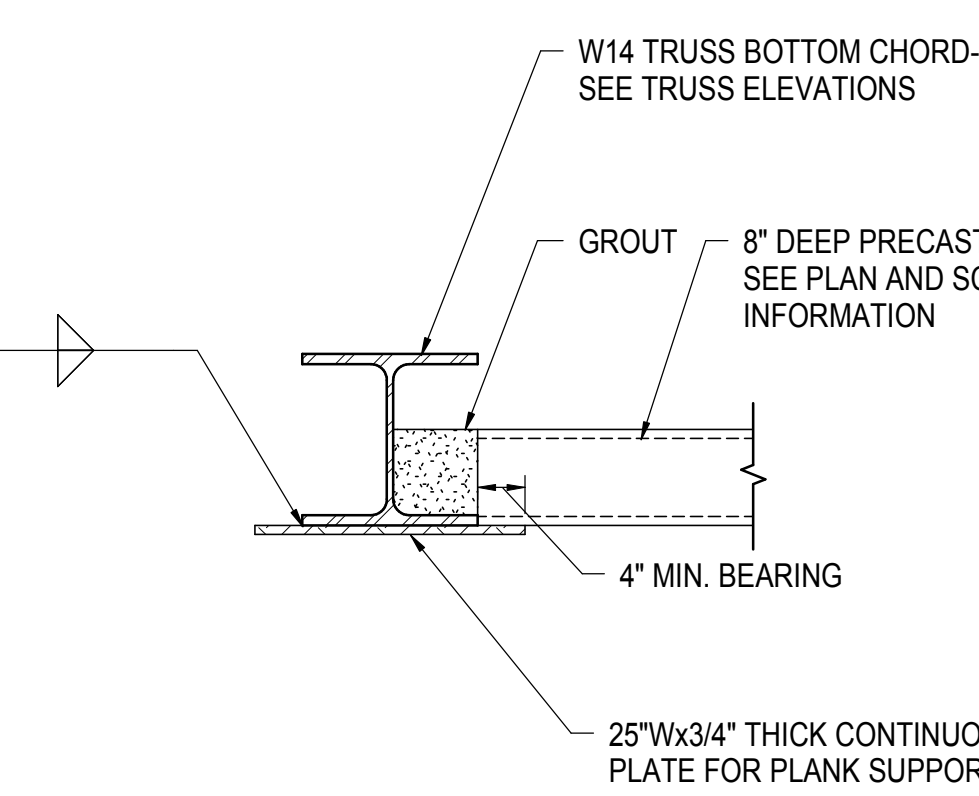
**5 TRUSS VERTICAL TO T1 TRUSS CONNECTION**  
3/4" = 1'-0"



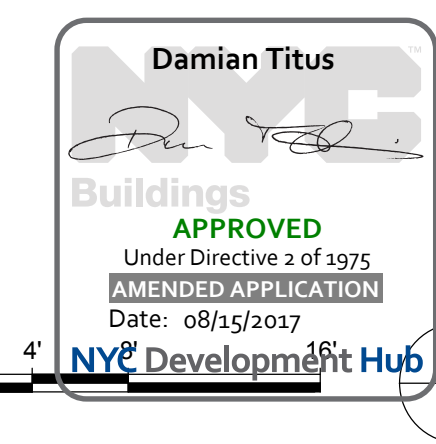
**6 BEARING OF PLANK ON TRUSS BOTTOM CHORD**  
3/4" = 1'-0"



**7 ATTACHMENT OF WT TO TOP CHORD OF TV-TRUSSES**  
3/4" = 1'-0"



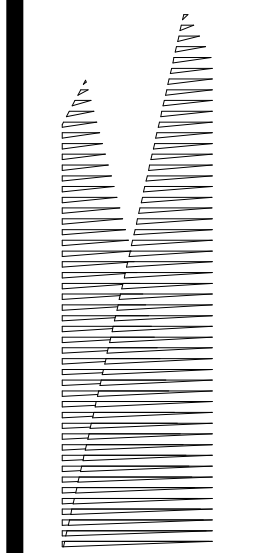
**8 ATTACHMENT OF WT TO BOTTOM CHORD OF TV-TRUSSES**  
3/4" = 1'-0"



Date: 05/01/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

**HYE -PL -S-534.00**  
WEST PLATFORM VENT TRANSFER TRUSSES

Drawing Number / B/CAN Drawing Number  
**S-534.00**



Client  
Related Companies  
60 Columbus Circle  
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Parsons Transportation Group  
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New York, NY 10005  
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LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOR POST-APPROVAL AMENDMENT	10/28/2016
ASH00129	9/16/2016
L.I.R.R. - FINAL 109%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0024	5/28/2014
W. Description	Rev.

Key Plan

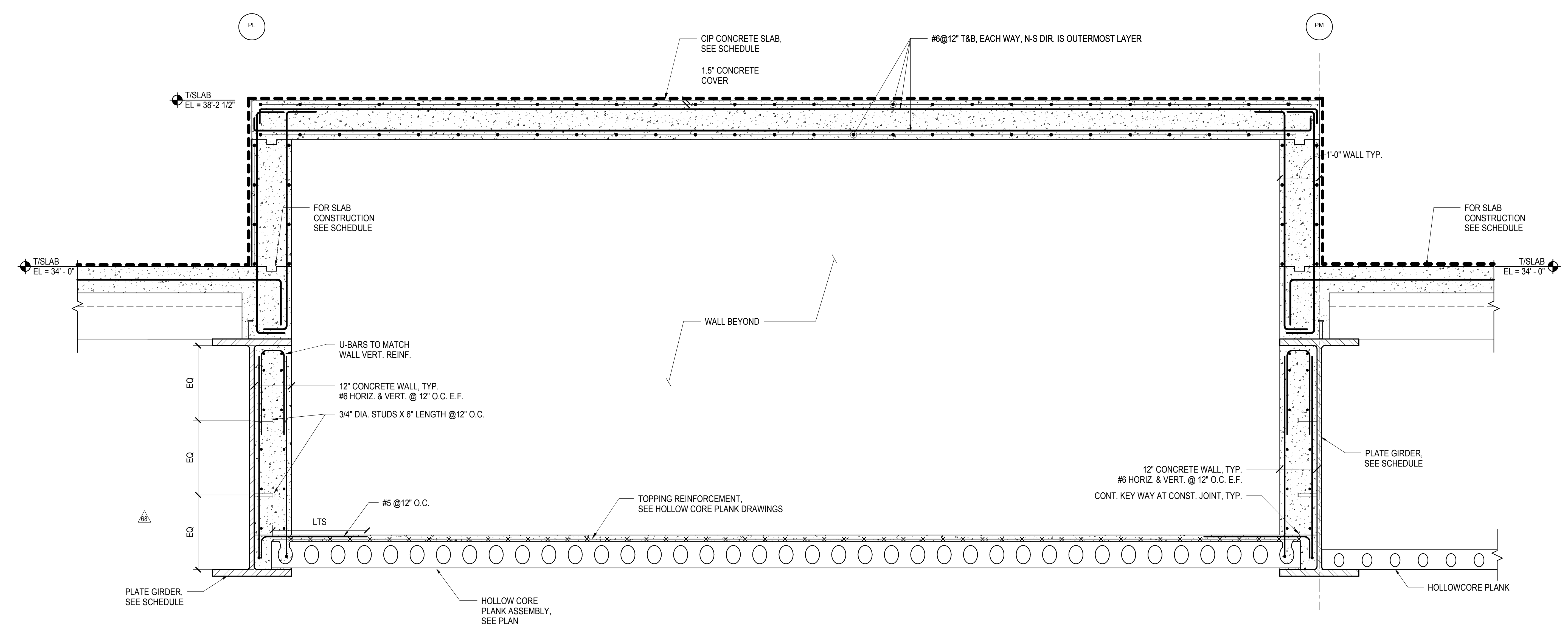
Date: 05/28/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

HYE -PL -S-535.00

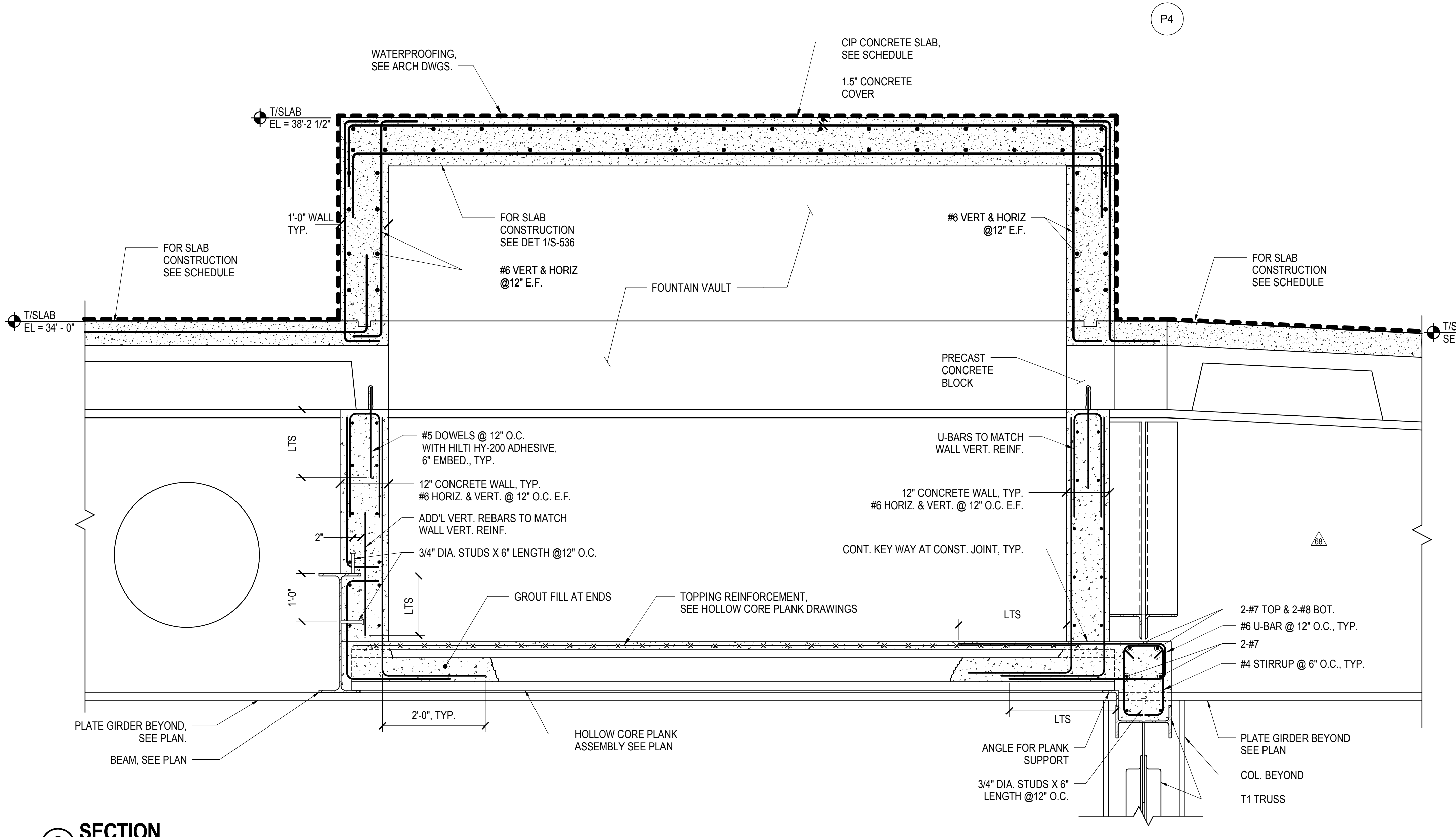
WEST PLATFORM  
FOUNTAIN VAULT  
SECTIONS

Drawing Number / B/CAN Drawing Number  
S-535.00

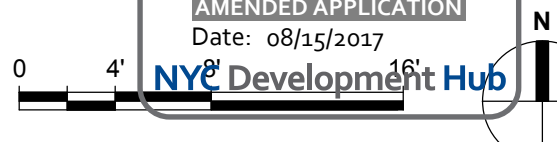
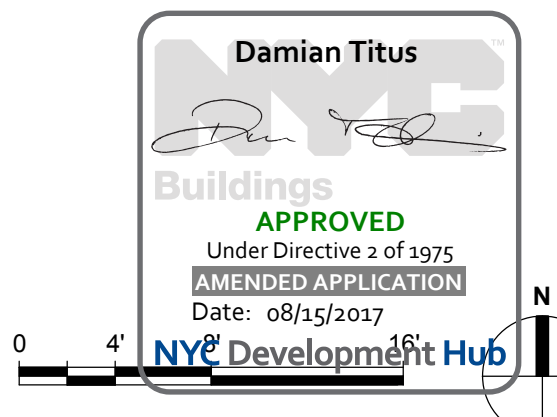
SHEET 100 of 163

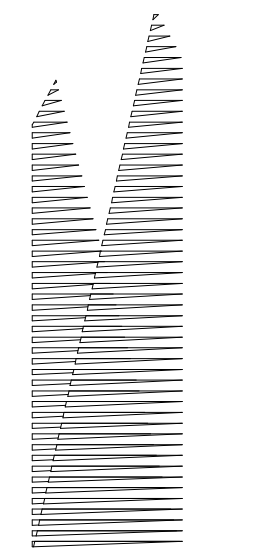


1 SECTION  
3/4" x 1'-0"



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





*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Oxford Properties Group*  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
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*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
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*LJRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

*LJRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
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DOR POST-APPROVAL AMENDMENT	10/28/2016
AS100115	03/22/2015
AS100100 - Track 20 Exhaust Updates	09/24/2015
AS100075	5/1/2015
AS	Description

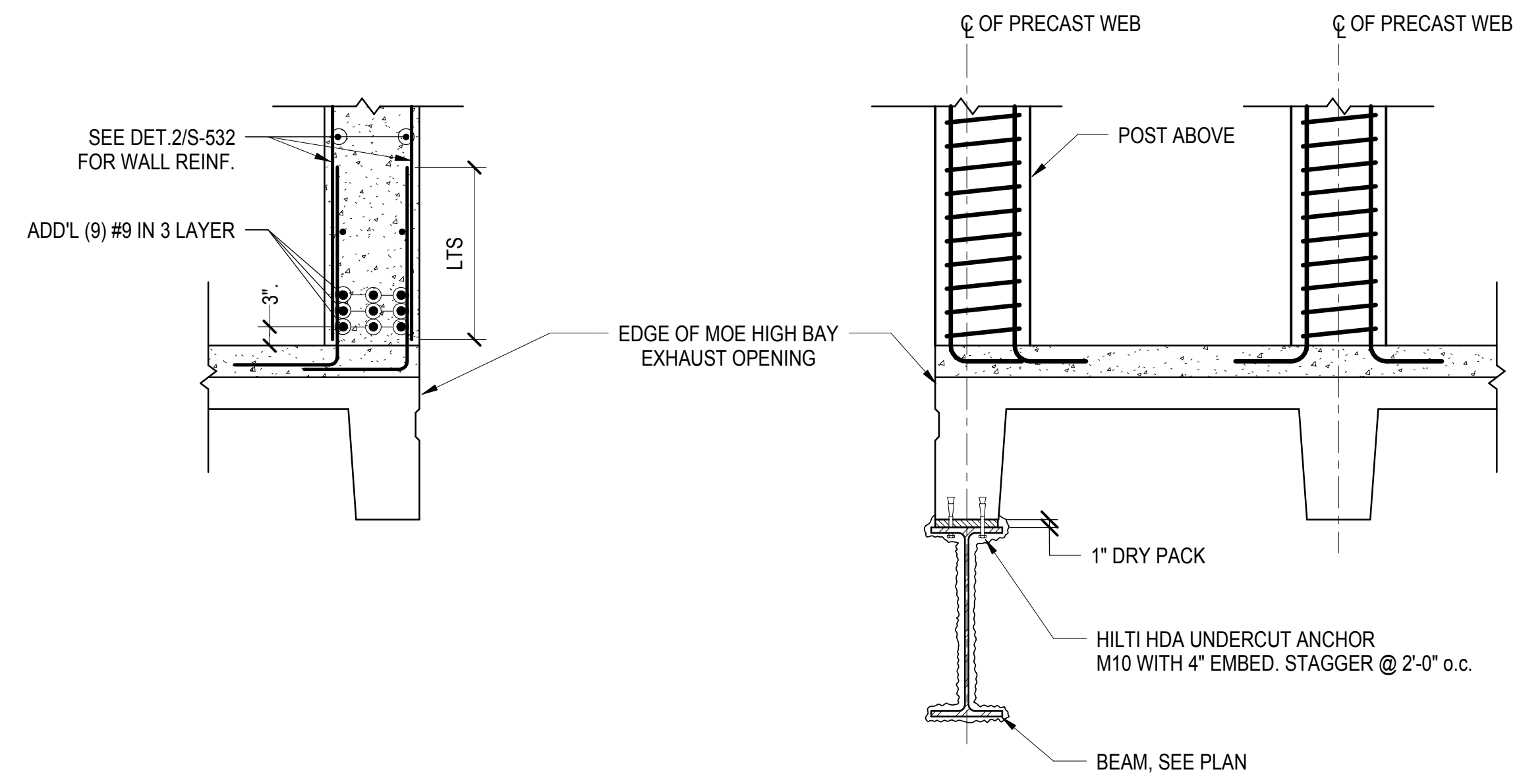
Rev Plot

Date:	05/01/15
Project No:	N11330.00
Drawn By:	Author
Sheet Number:	

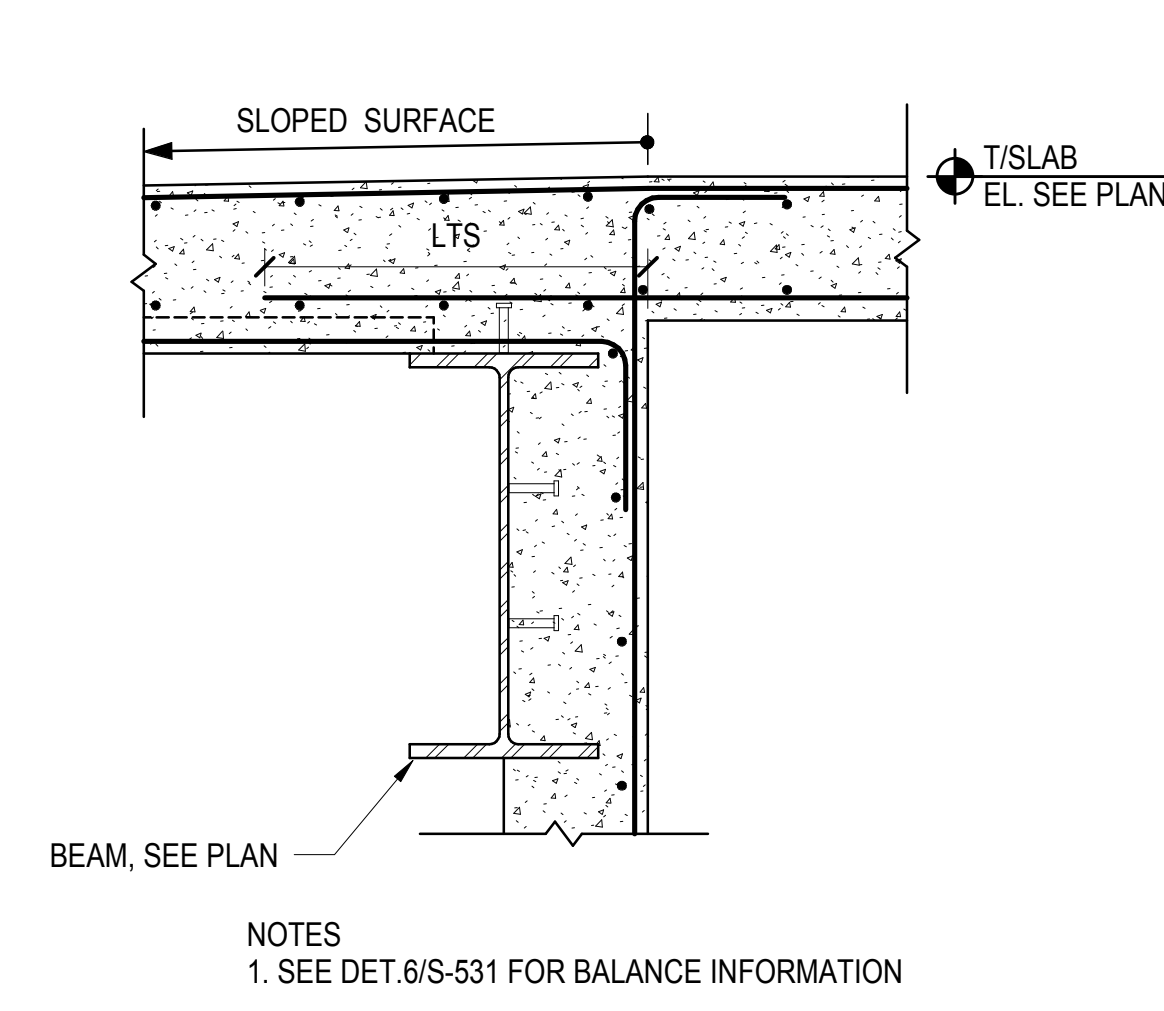
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**WEST PLATFORM VENT TRANSFER SECTIONS AND DETAILS**

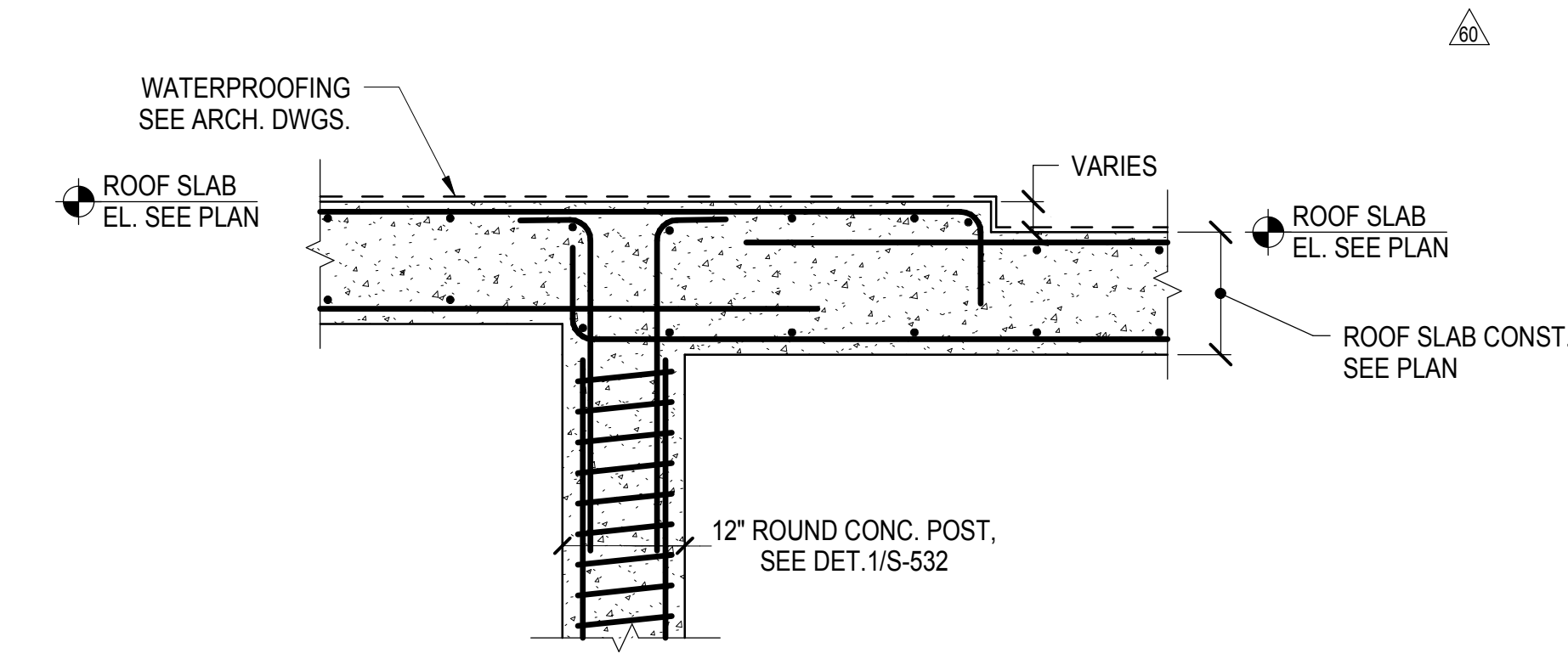
Drawing Number / B.SCAN Drawing Number  
**S-536.00**



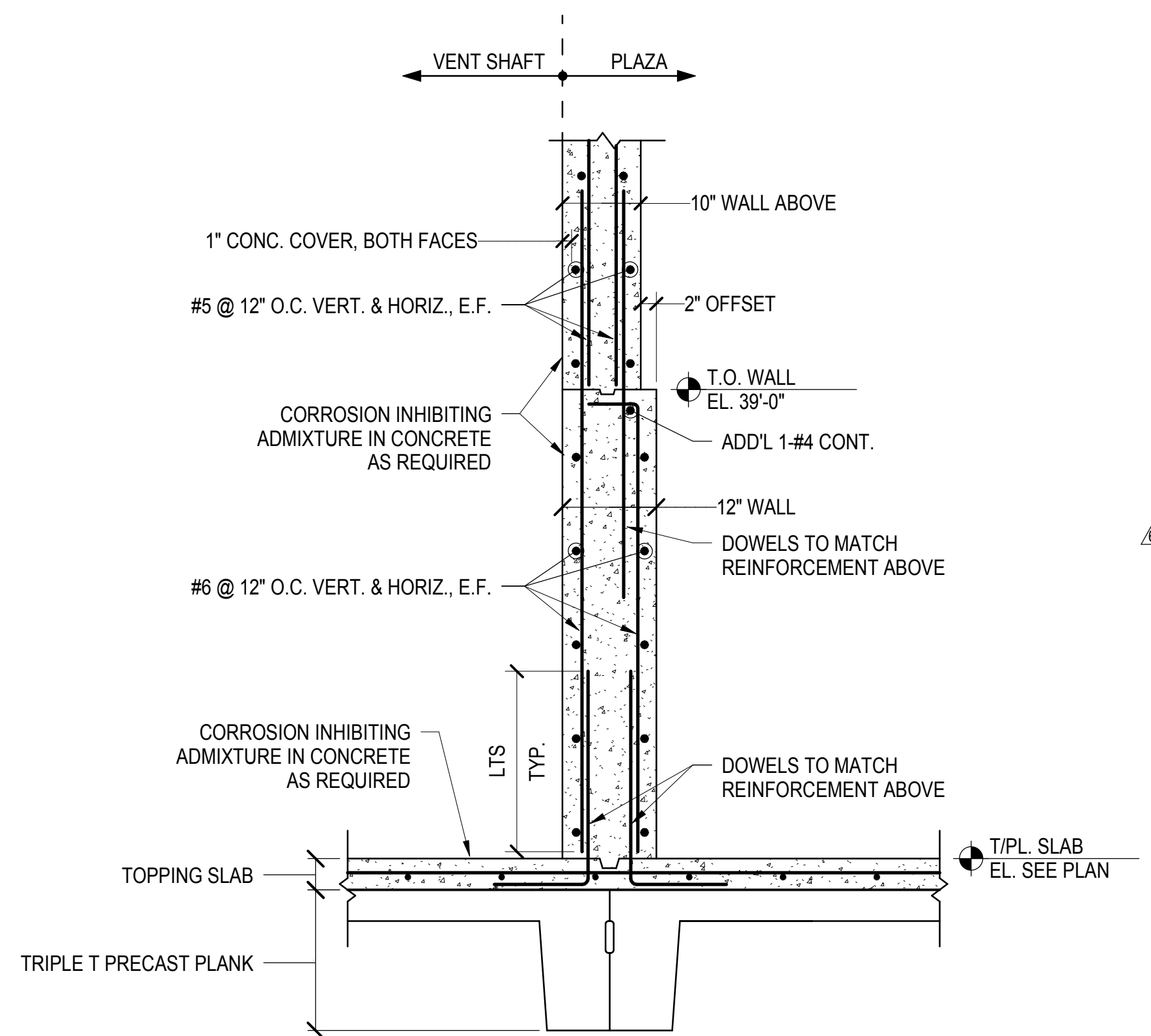
**1** EDGE OF MOE EXHAUST OPENING  
3/4" = 1'-0"



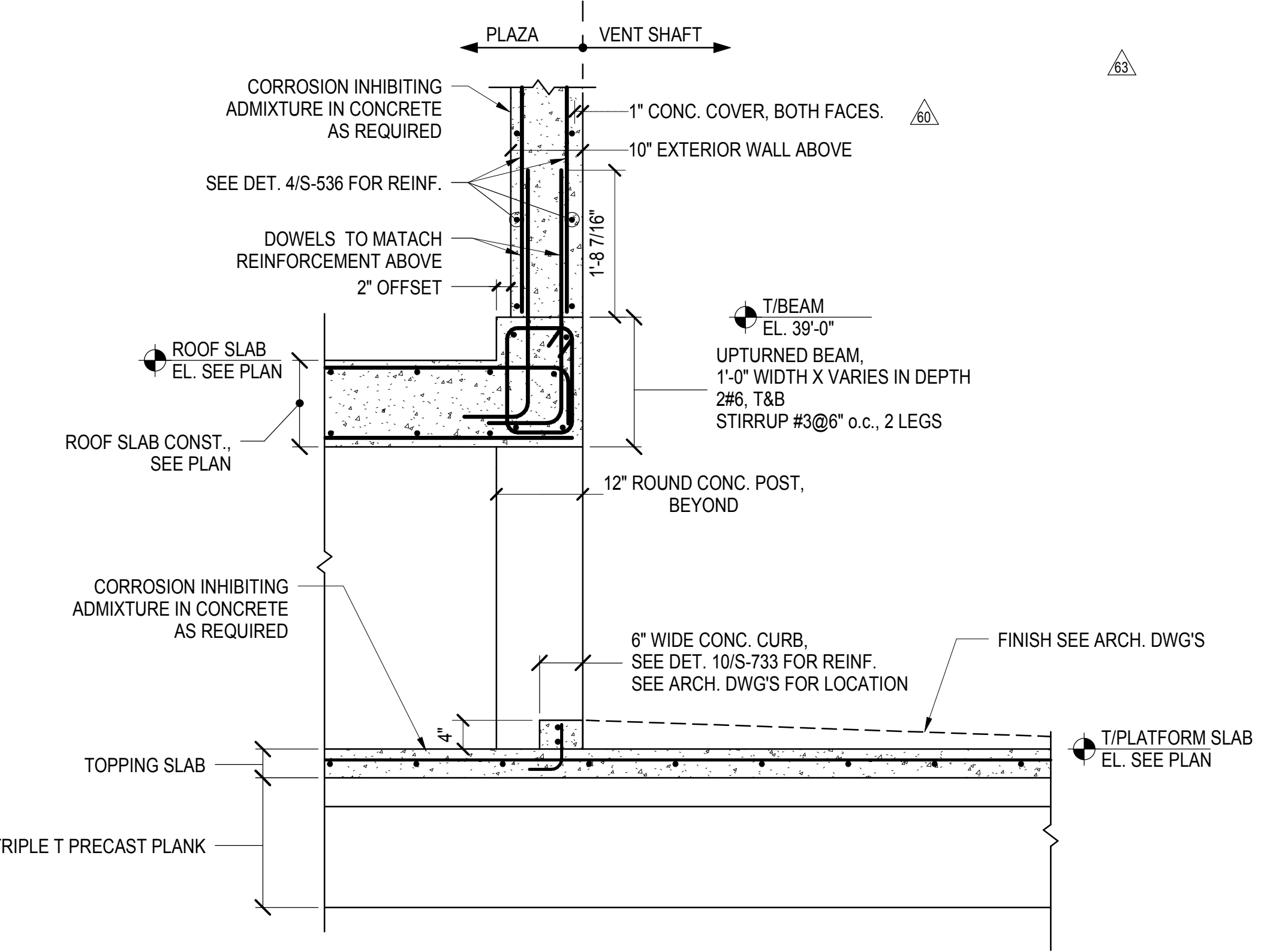
**2** EDGE OF MOE EXHAUST OPENING  
3/4" = 1'-0"



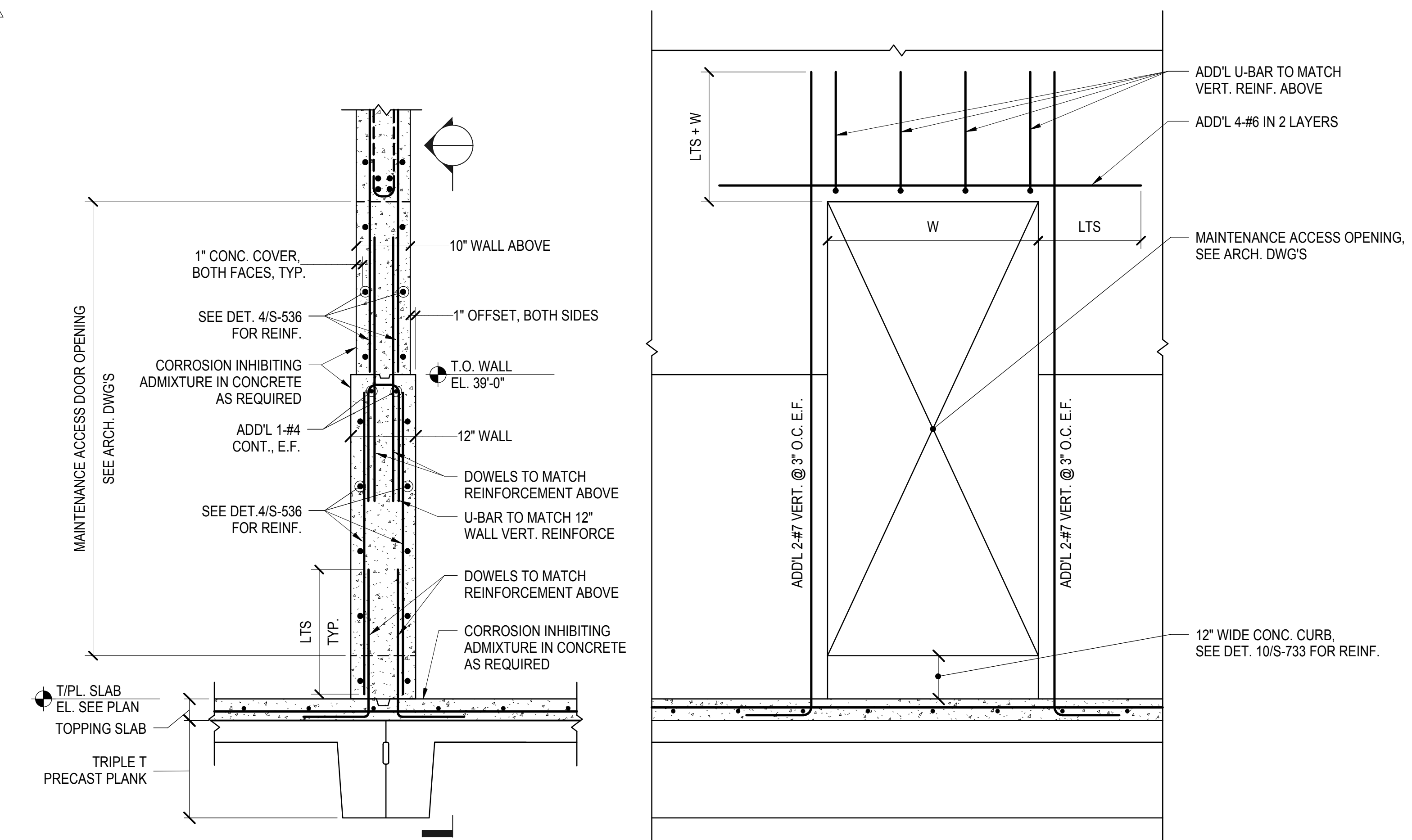
**3** ROOF SLAB STEP AT VENT PLANT  
3/4" = 1'-0"



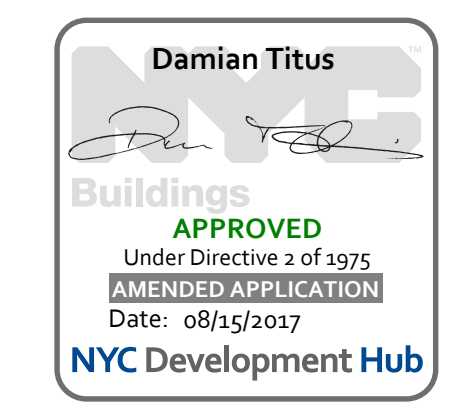
**4** TYPICAL WALL AT KIOSK SHAFT  
3/4" = 1'-0"



**5** EDGE OF ROOF SLAB AT KIOSK SHAFT  
3/4" = 1'-0"



**6** TYPICAL INTERIOR WALL AT KIOSK SHAFT  
3/4" = 1'-0"



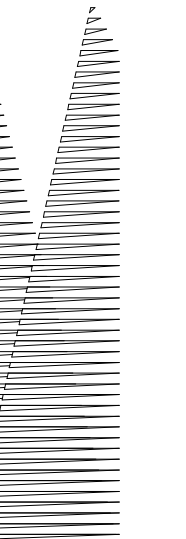
APPROVED Under Directive 3 of 1975  
DATE OF APPROVAL  
Date: 08/15/2017  
NYC Development Hub



**HYE -PL -S-536.00**

**WEST PLATFORM VENT TRANSFER SECTIONS AND DETAILS**

Drawing Number / B.SCAN Drawing Number  
**S-536.00**



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
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Structural Engineer  
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Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASHP0115	03/22/2015
Revisions	000

Key Plan

Date	03/2016
Project No	N11330.00
Drawn By	Author
Sheet Number	

**HYE -PL -S-537.00**

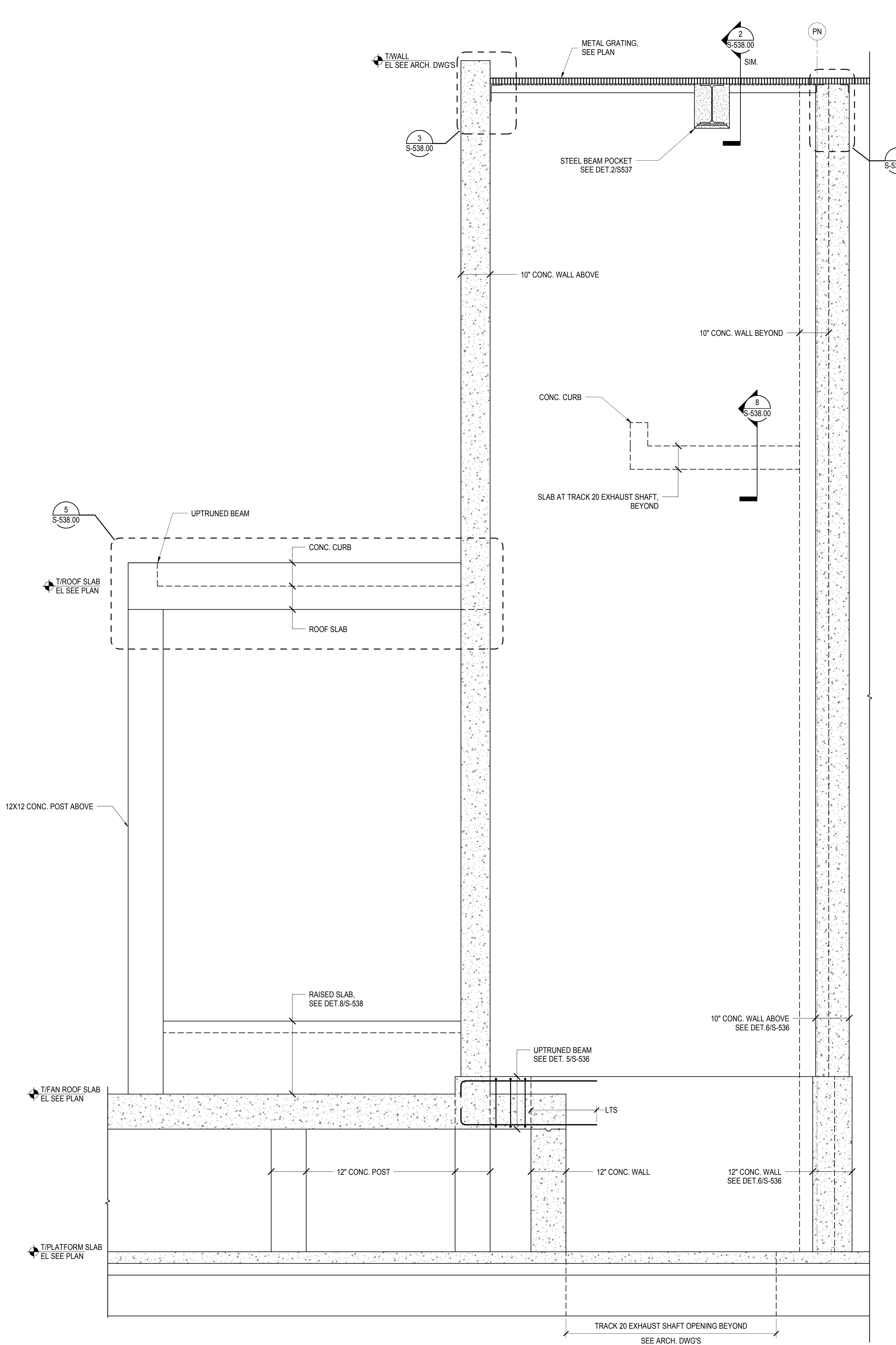
**WEST PLATFORM  
KIOSK SECTIONS AND  
DETAILS**

Drawing Number / B/CAN Drawing Number

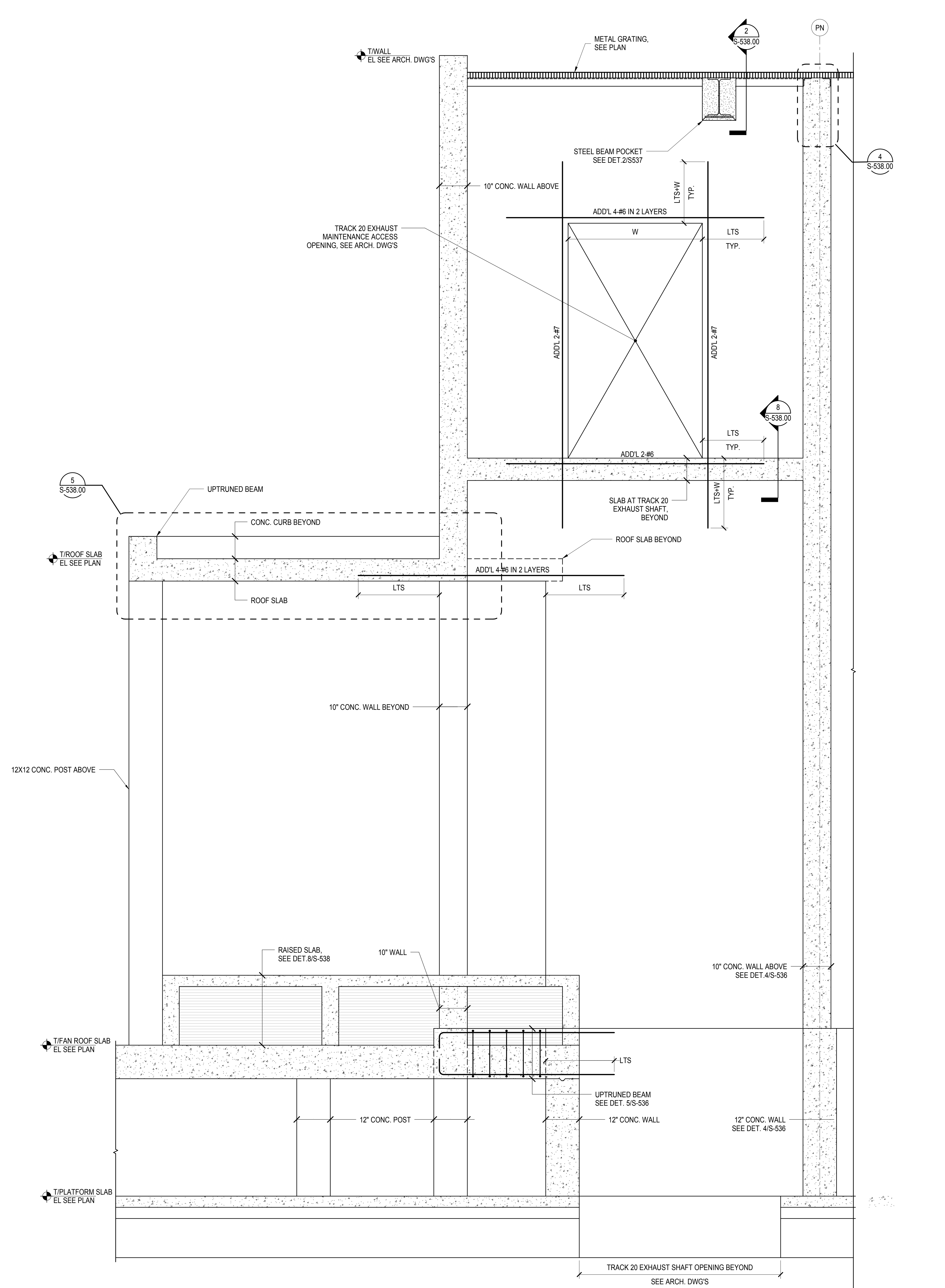
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SHEET 102 of 163

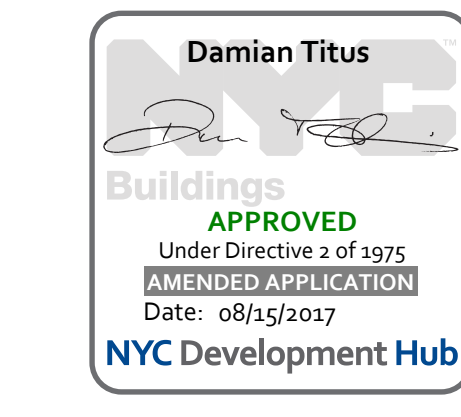
© 2012 KOHN PEDERSEN FOX ASSOCIATES PC. All rights reserved.



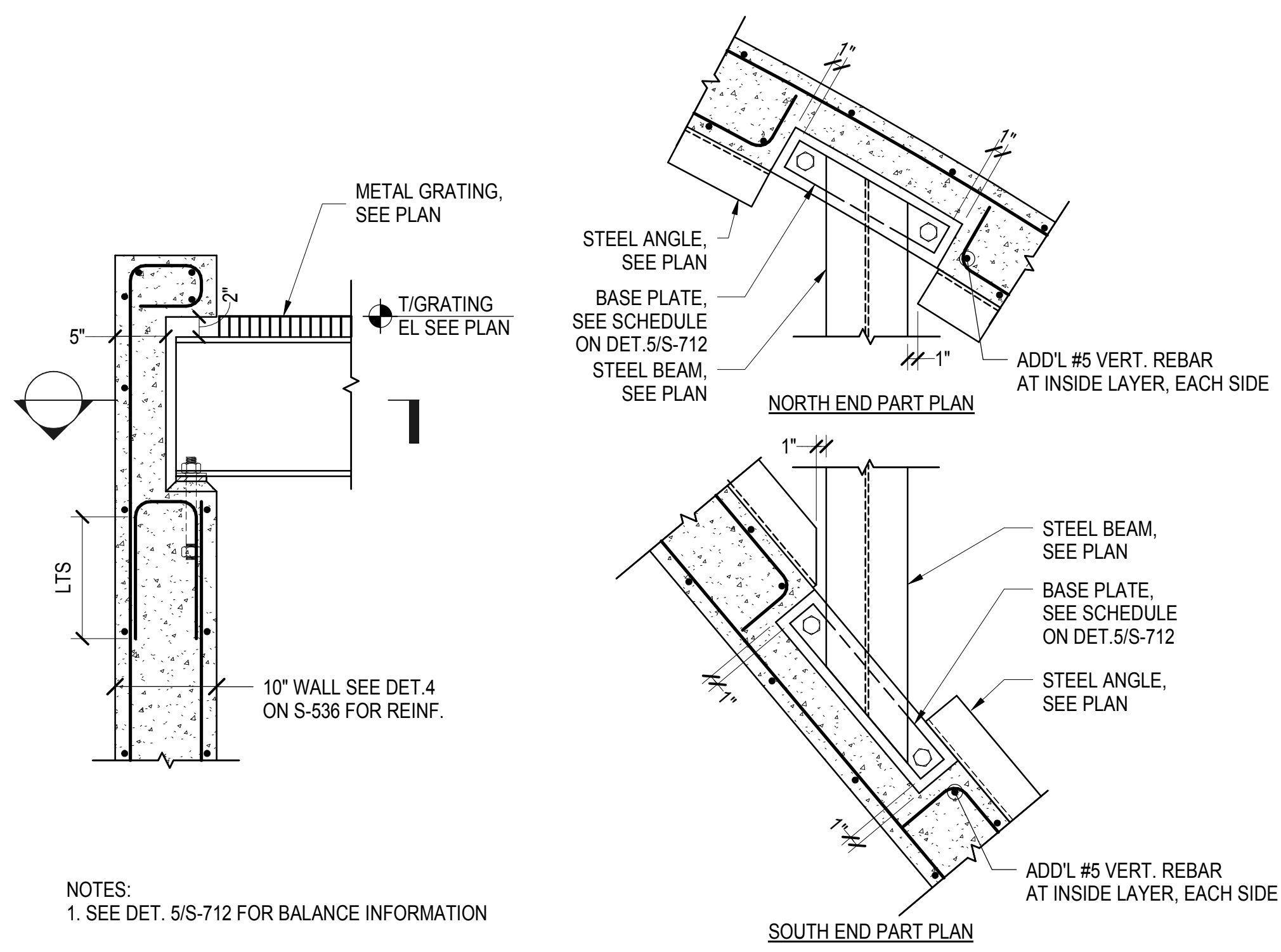
**1** ELEVATION AT SOUTH TRACK20 WALL  
3/4" = 1'-0"



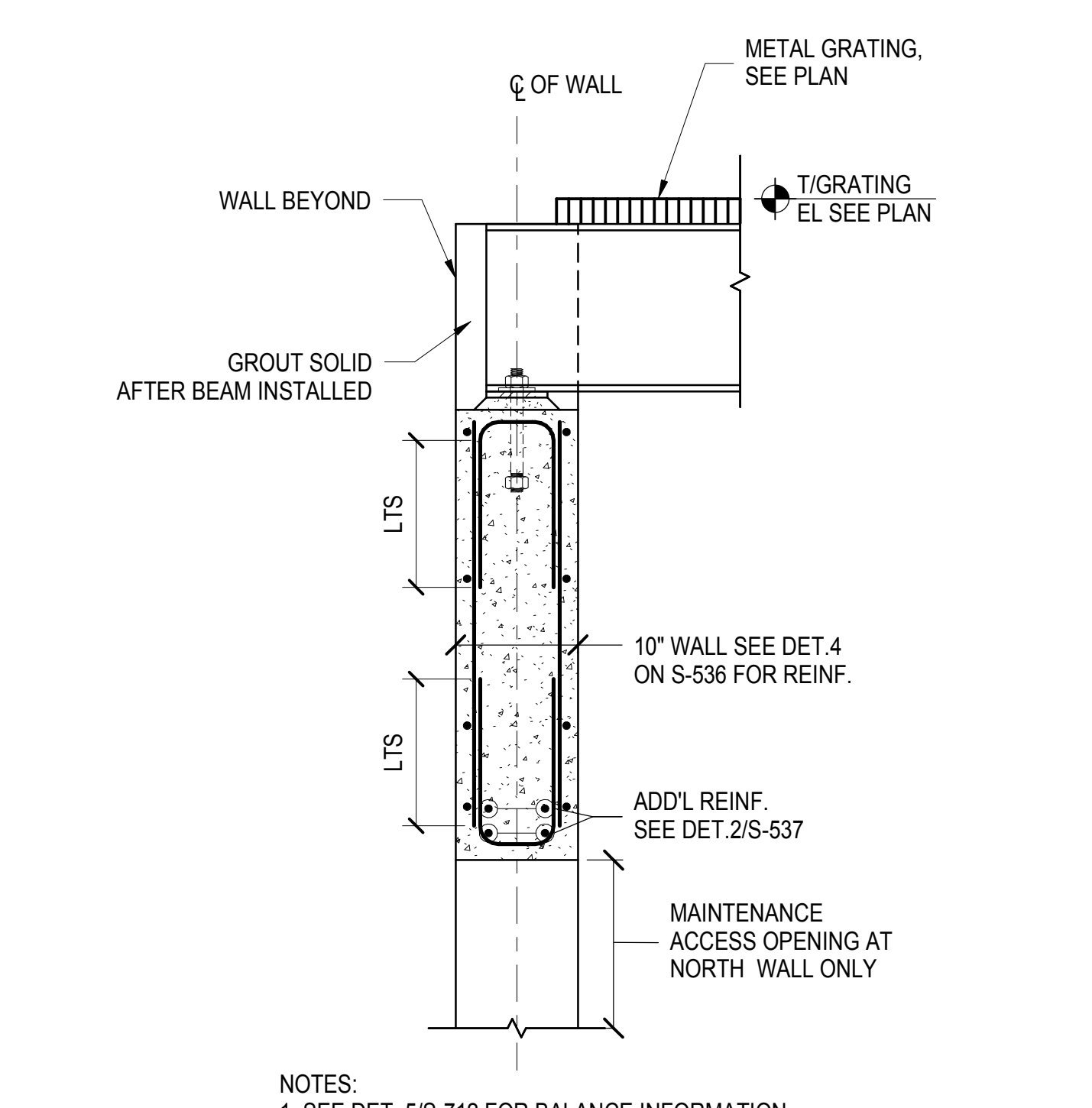
**2** ELEVATION AT SOUTH TRACK20 WALL  
3/4" = 1'-0"



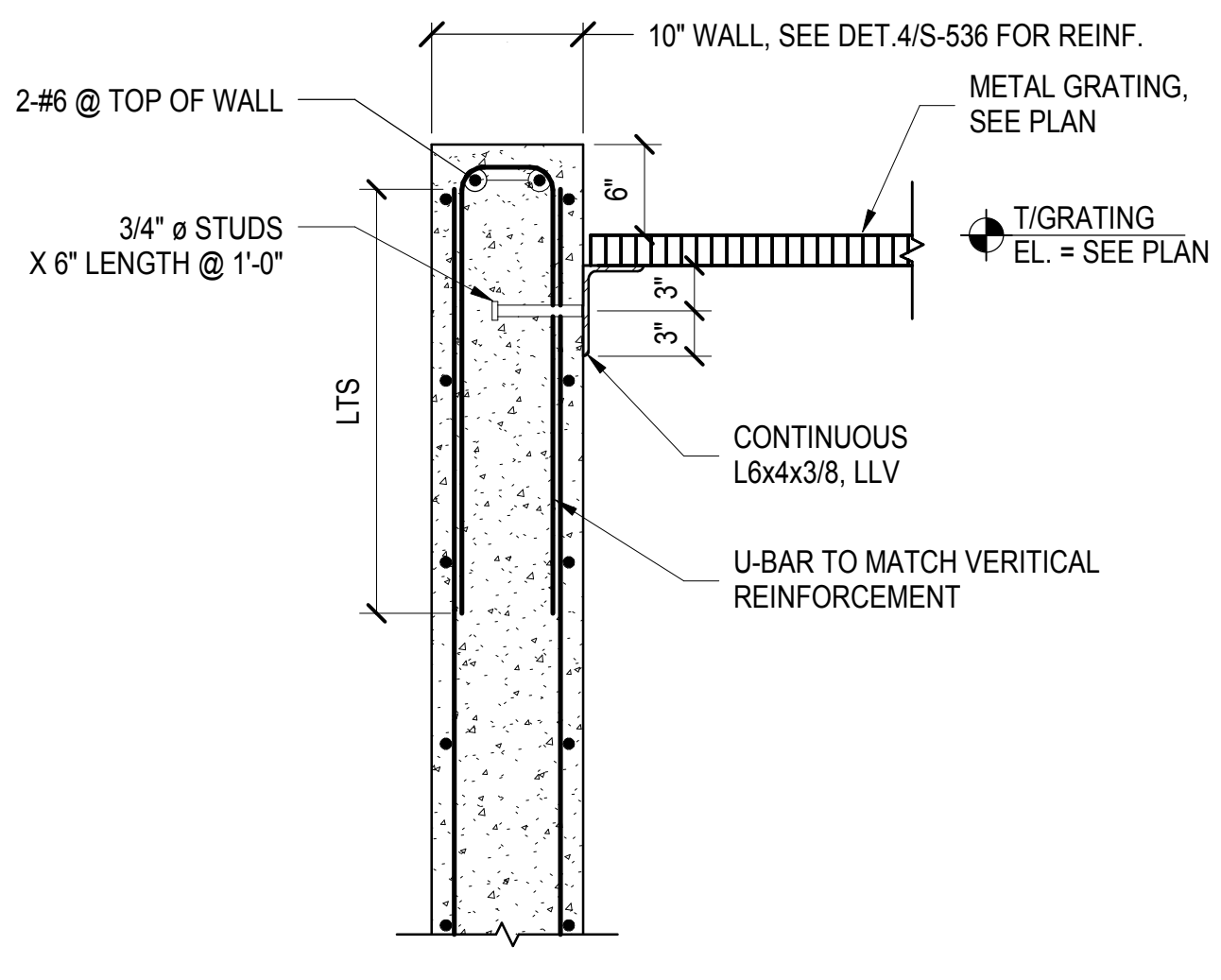
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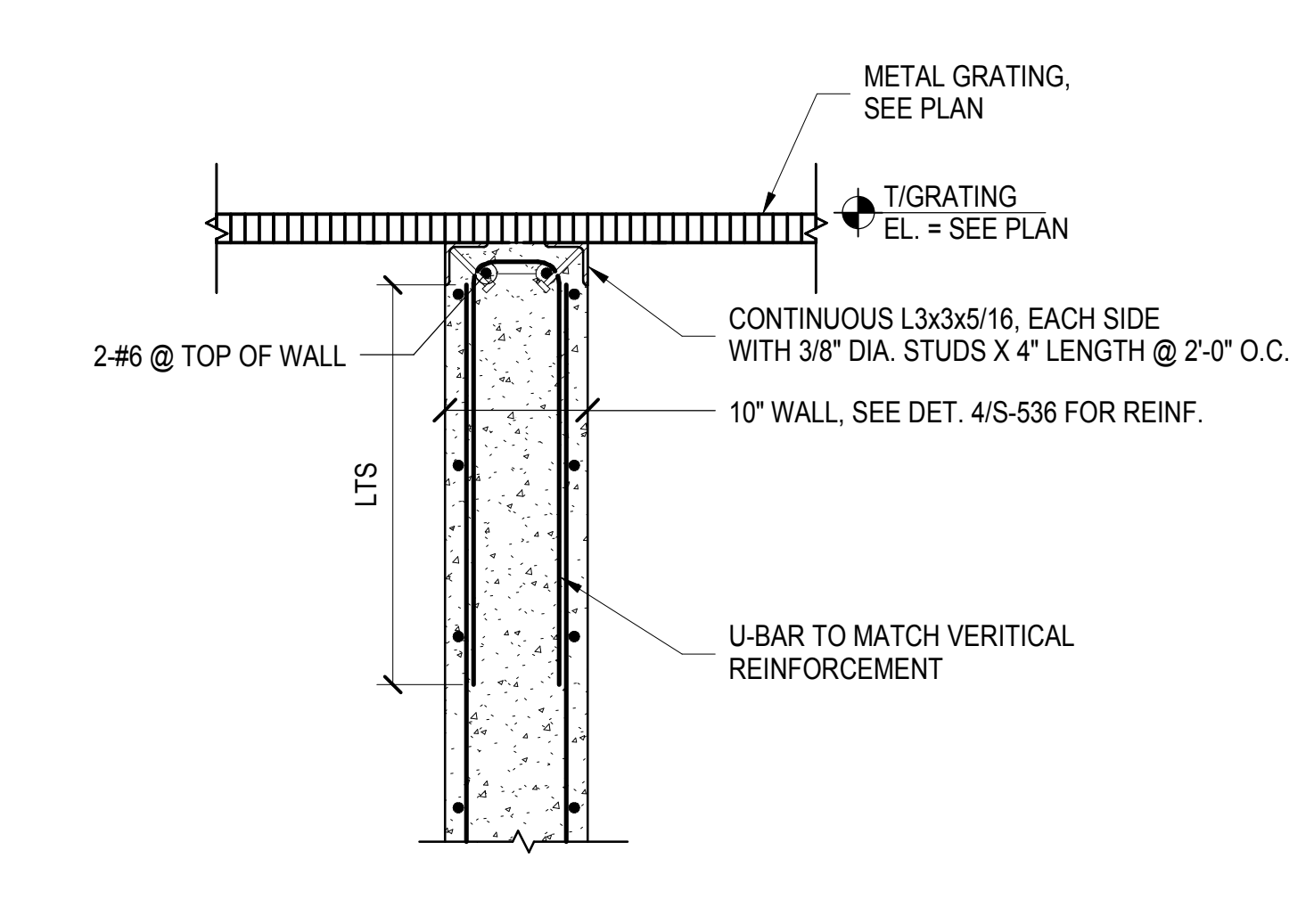
**1 BEAM POCKET AT EXTERIOR WALL**  
1" = 1'-0"



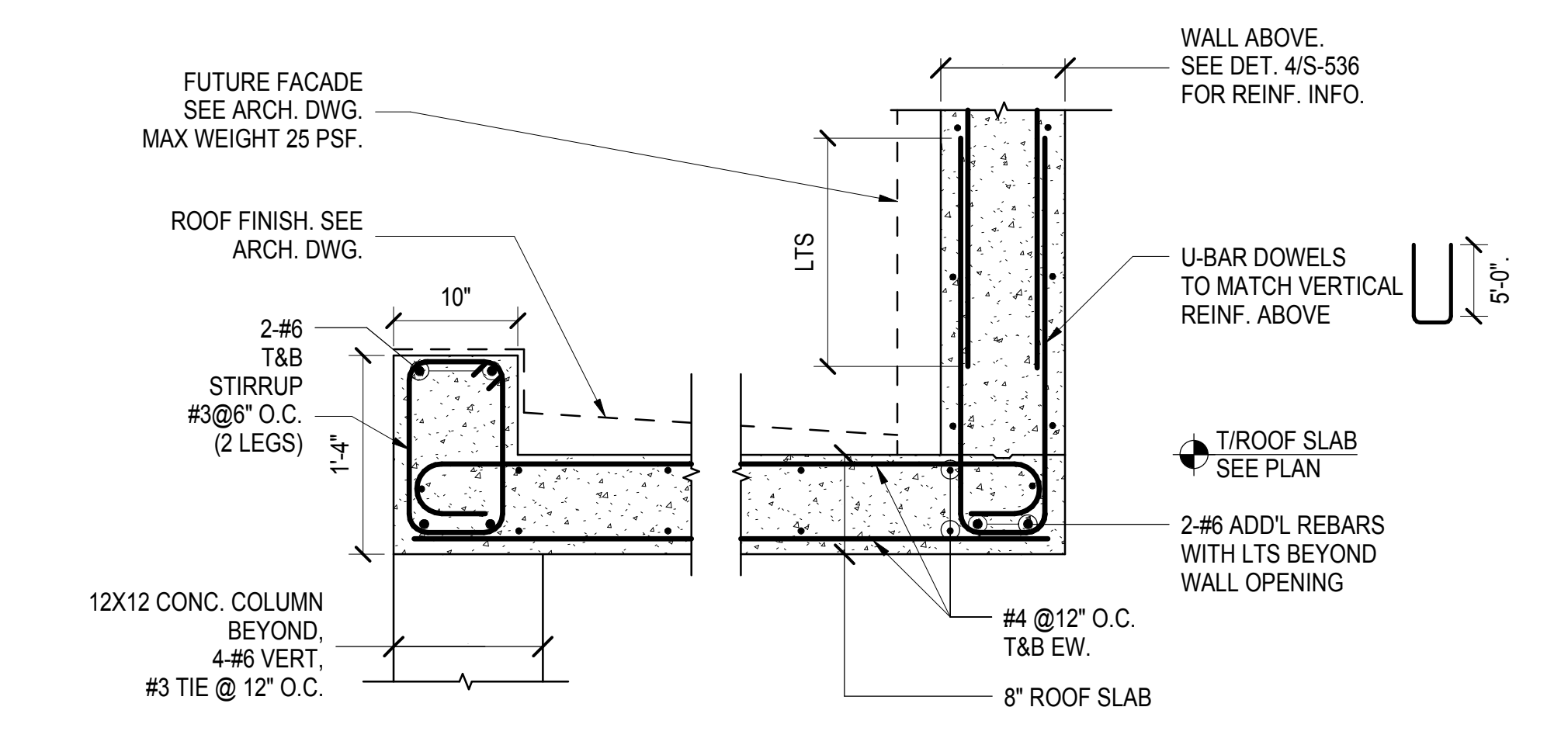
**2 BEAM POCKET AT TRACK 20 INTERIOR WALL**  
1" = 1'-0"



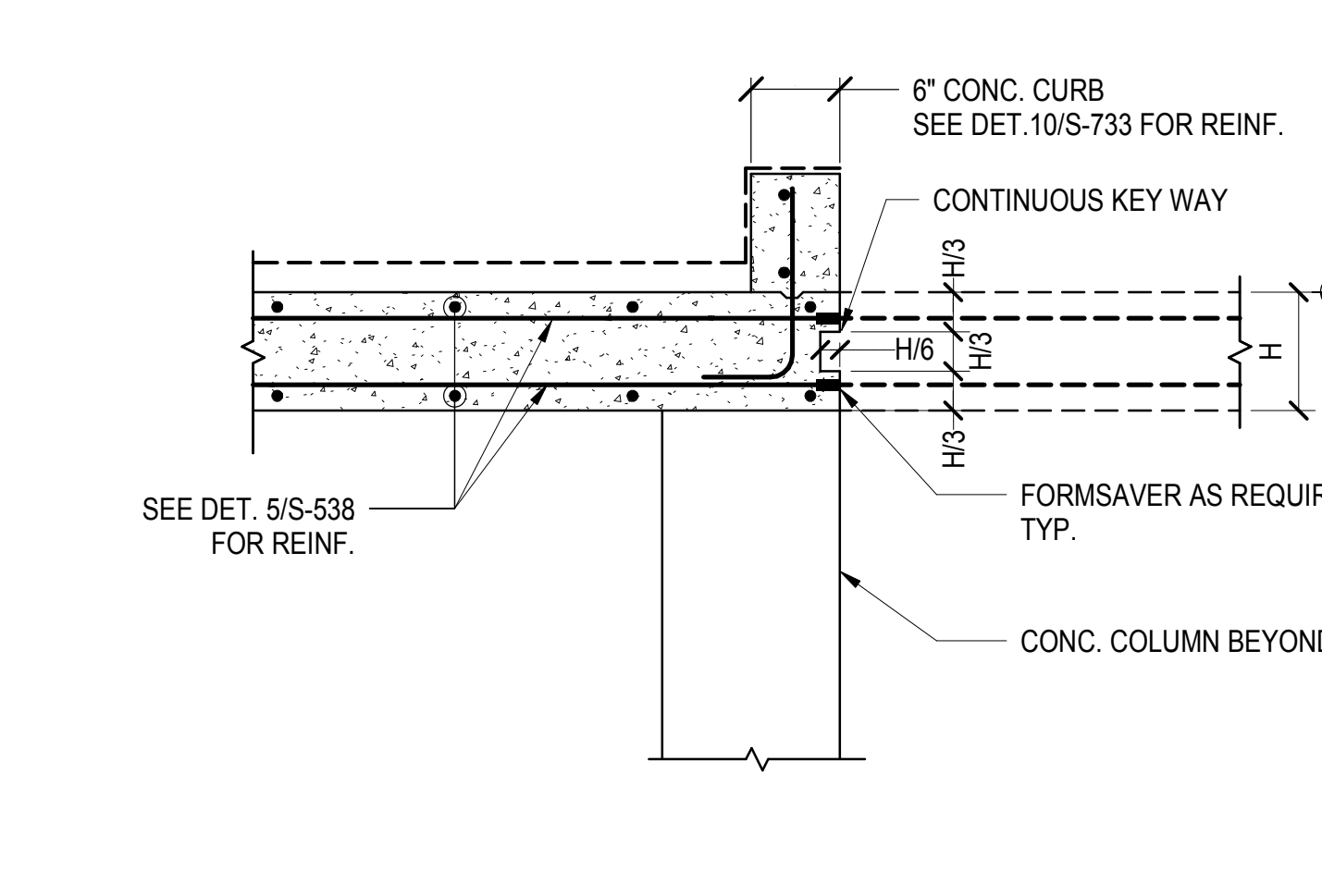
**3 TOP OF EXTERIOR WALL**  
1" = 1'-0"



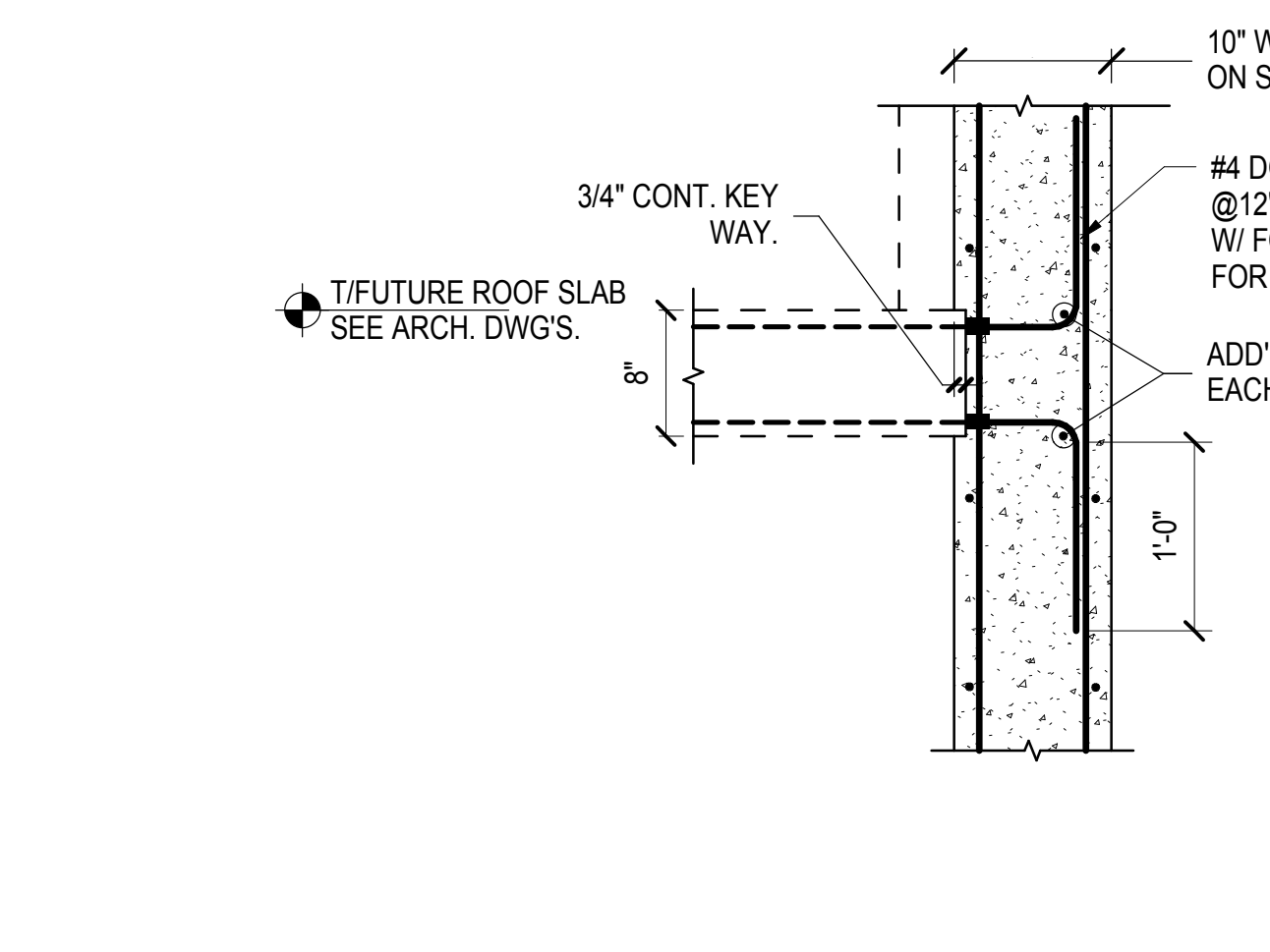
**4 TOP OF INTERIOR WALL**  
1" = 1'-0"



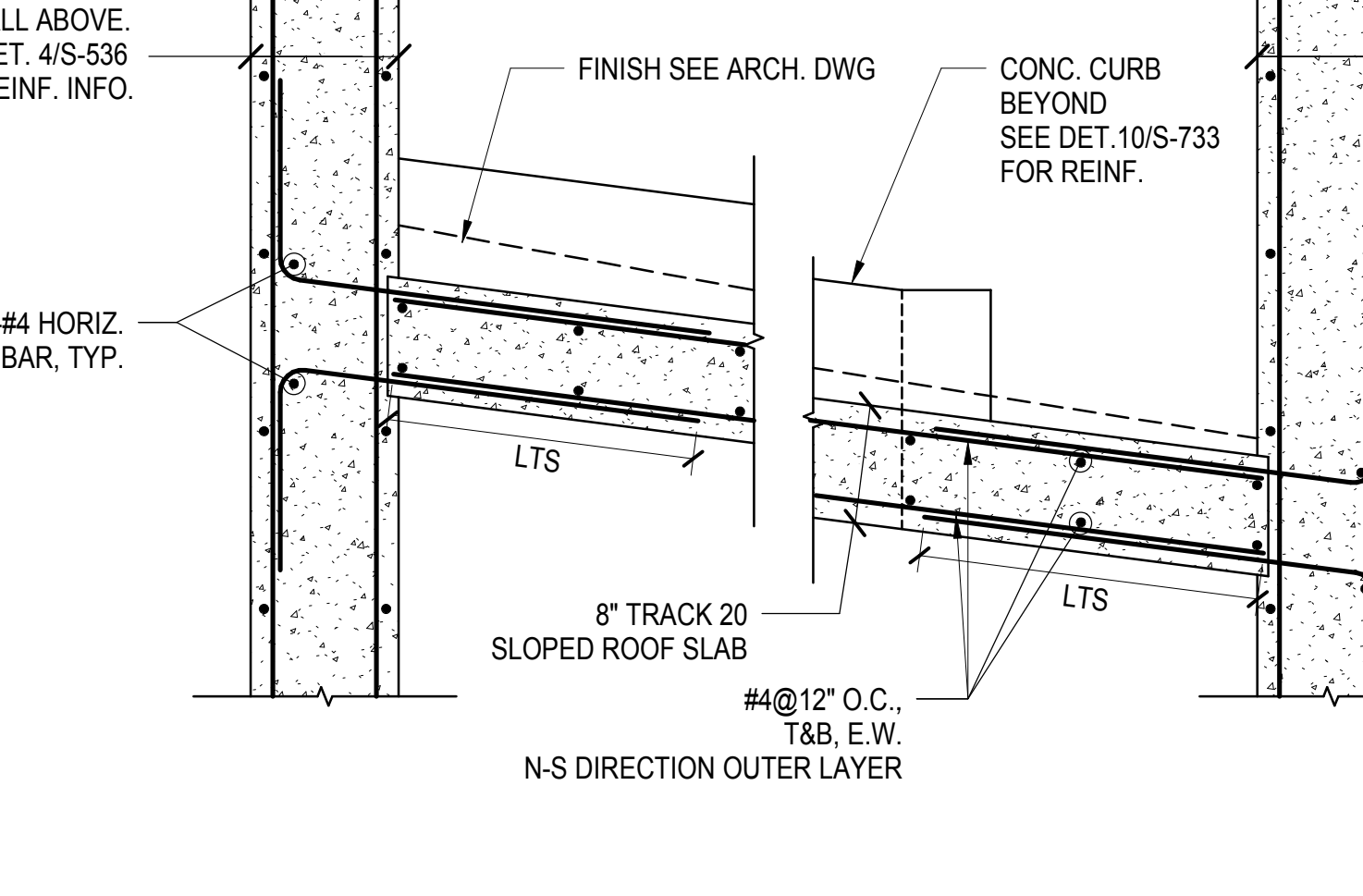
**5 KIOSK LOWER ROOF SLAB**  
1" = 1'-0"



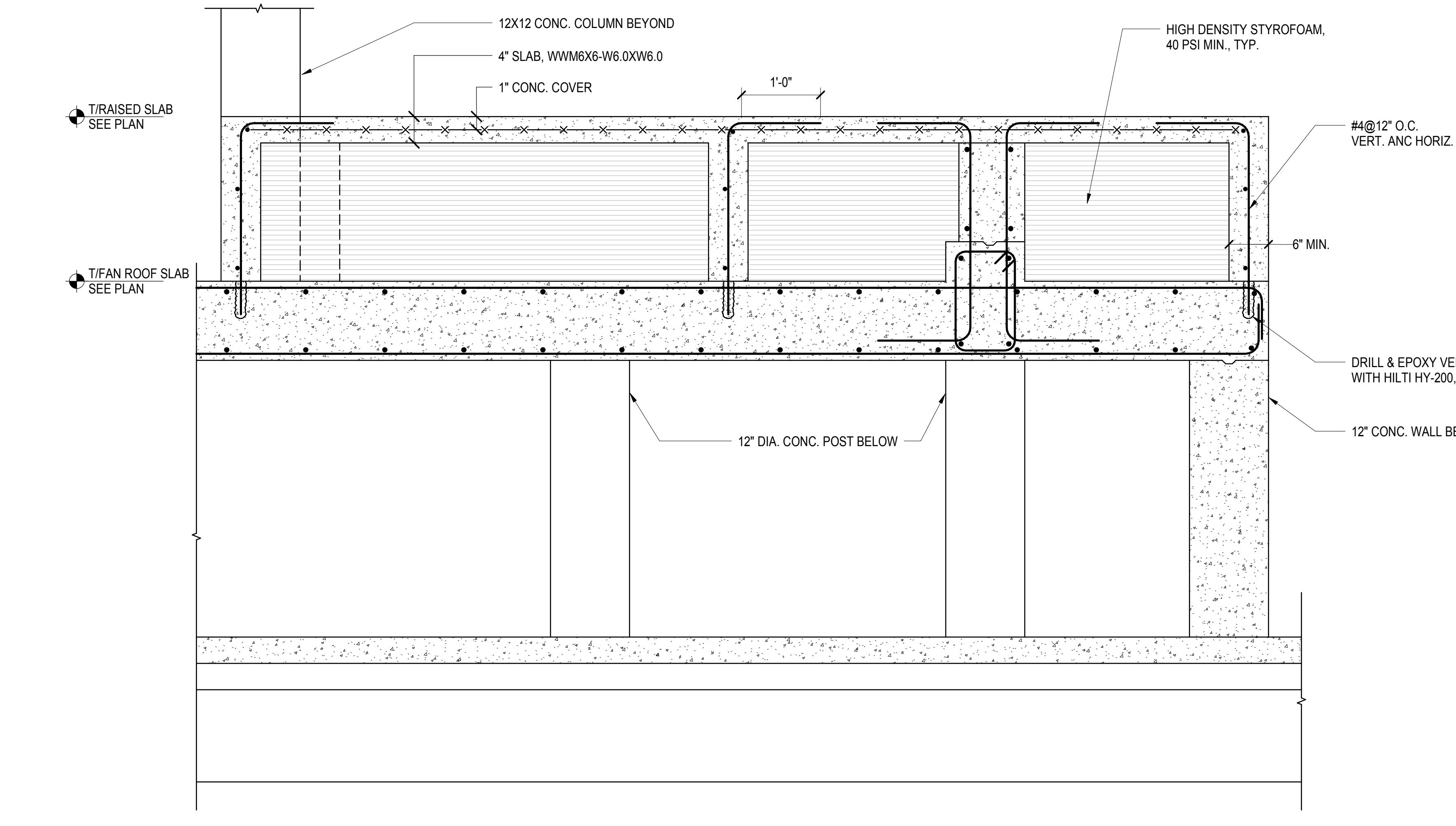
**6 CONN. TO FUTURE ROOF SLAB AT ROOF SLAB**  
1" = 1'-0"



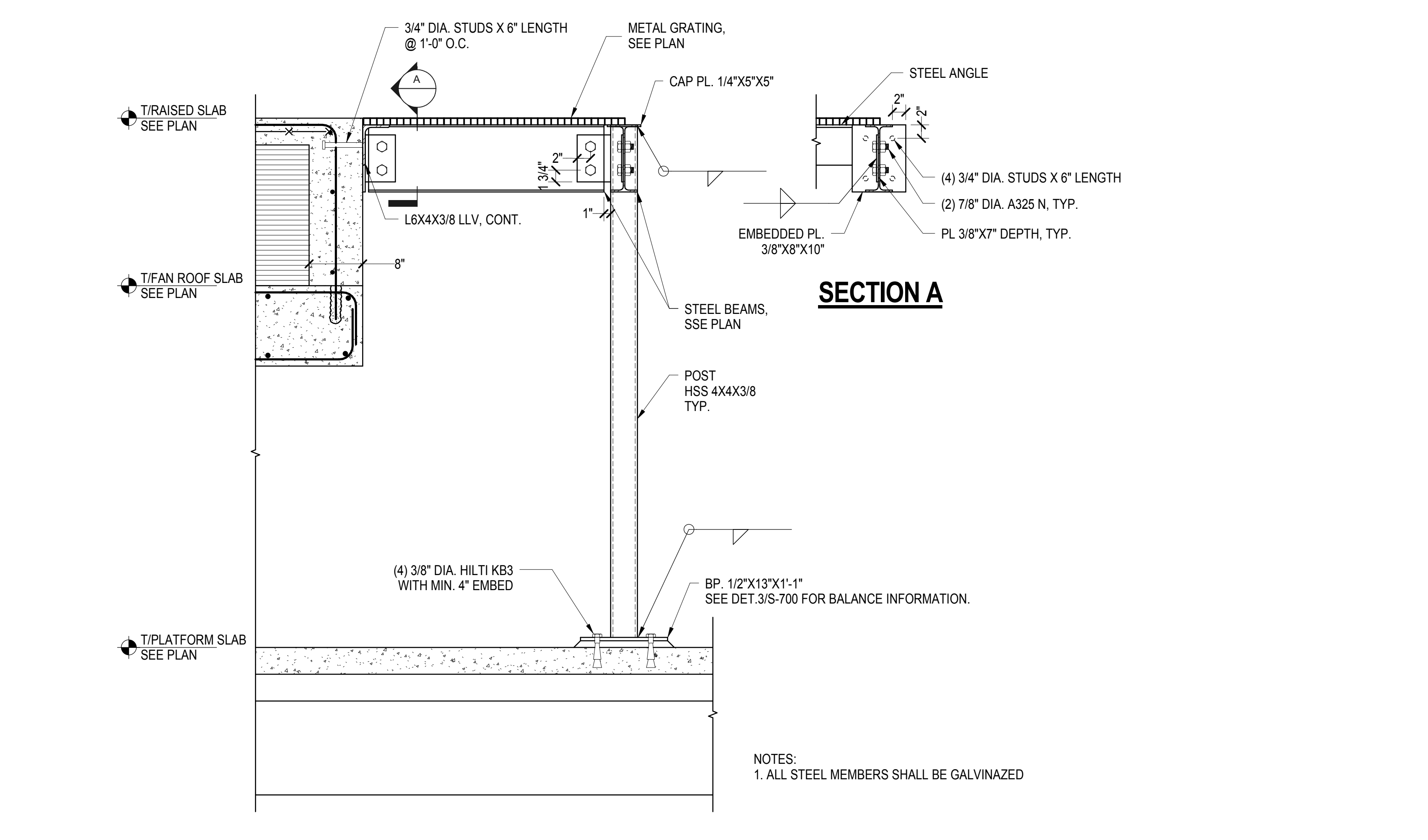
**7 CONN. TO FUTURE ROOF SLAB AT WALL**  
1" = 1'-0"



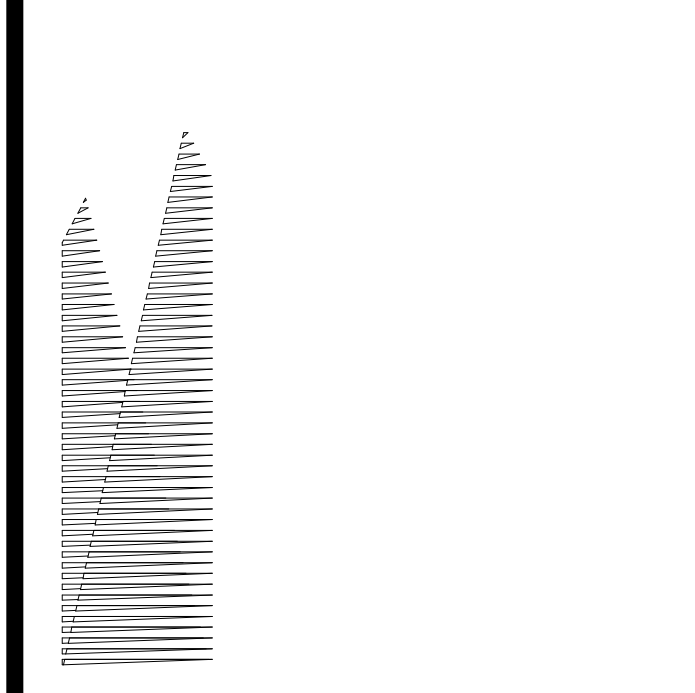
**8 TRACK 20 ROOF SLAB**  
1" = 1'-0"



**9 RAISED SLAB AT KIOSK**  
1" = 1'-0"



**10 RAISED SLAB AT KIOSK Copy 1**  
1" = 1'-0"



*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Owner*  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
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Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
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*Structural Engineer*  
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Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LIRR Ventilation*  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

*LIRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASHP#0115	03/22/2015
Rev	0

Rev. Plan

Date: 03/02/16  
Project No: N11330.00  
Drawing By: Author  
Sheet Number

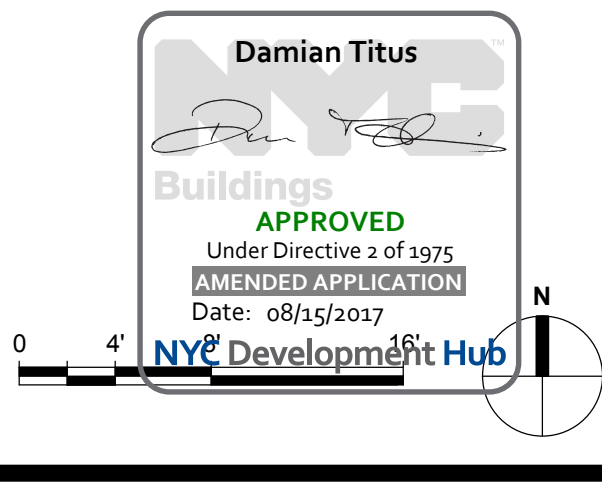
**HYE -PL -S-538.00**

**WEST PLATFORM KIOSK SECTIONS AND DETAILS**

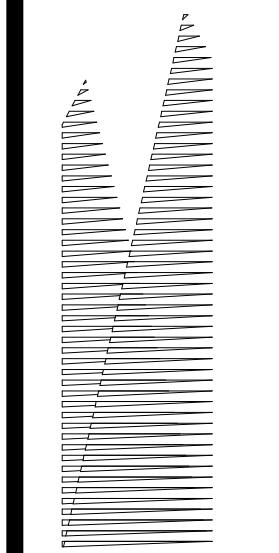
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**S-538.00**

SHEET 103 of 163



S-538.00  
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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
130 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

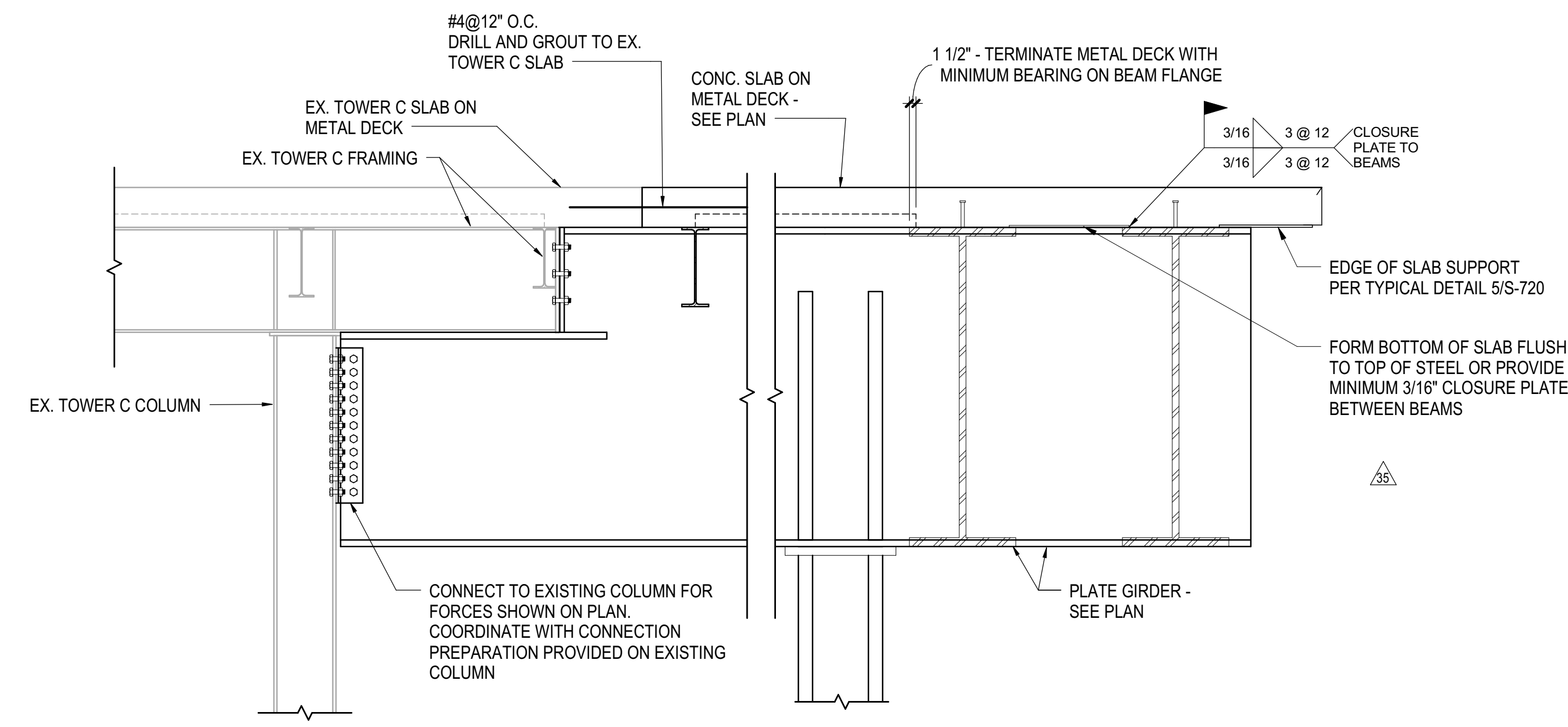
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

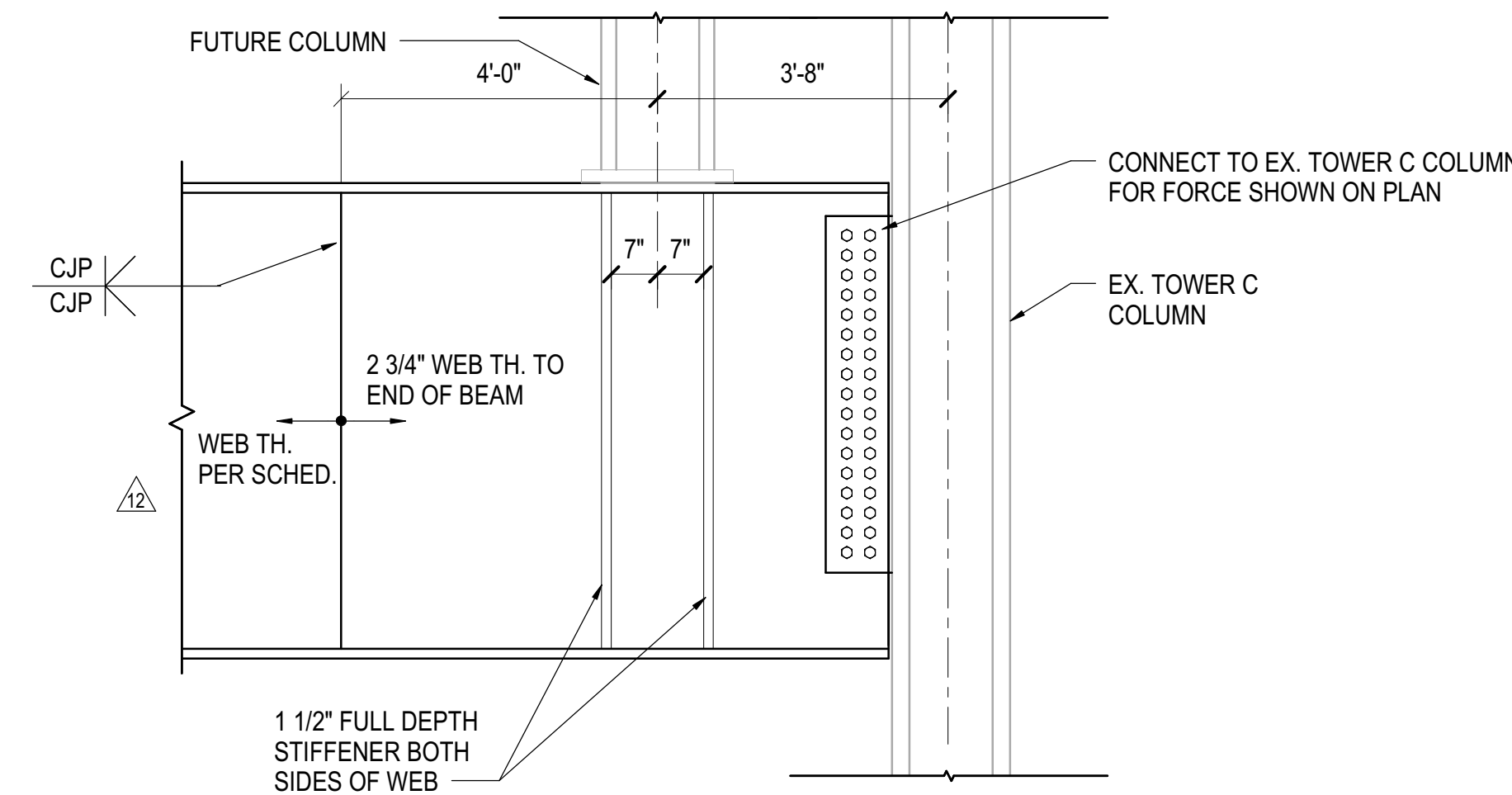
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

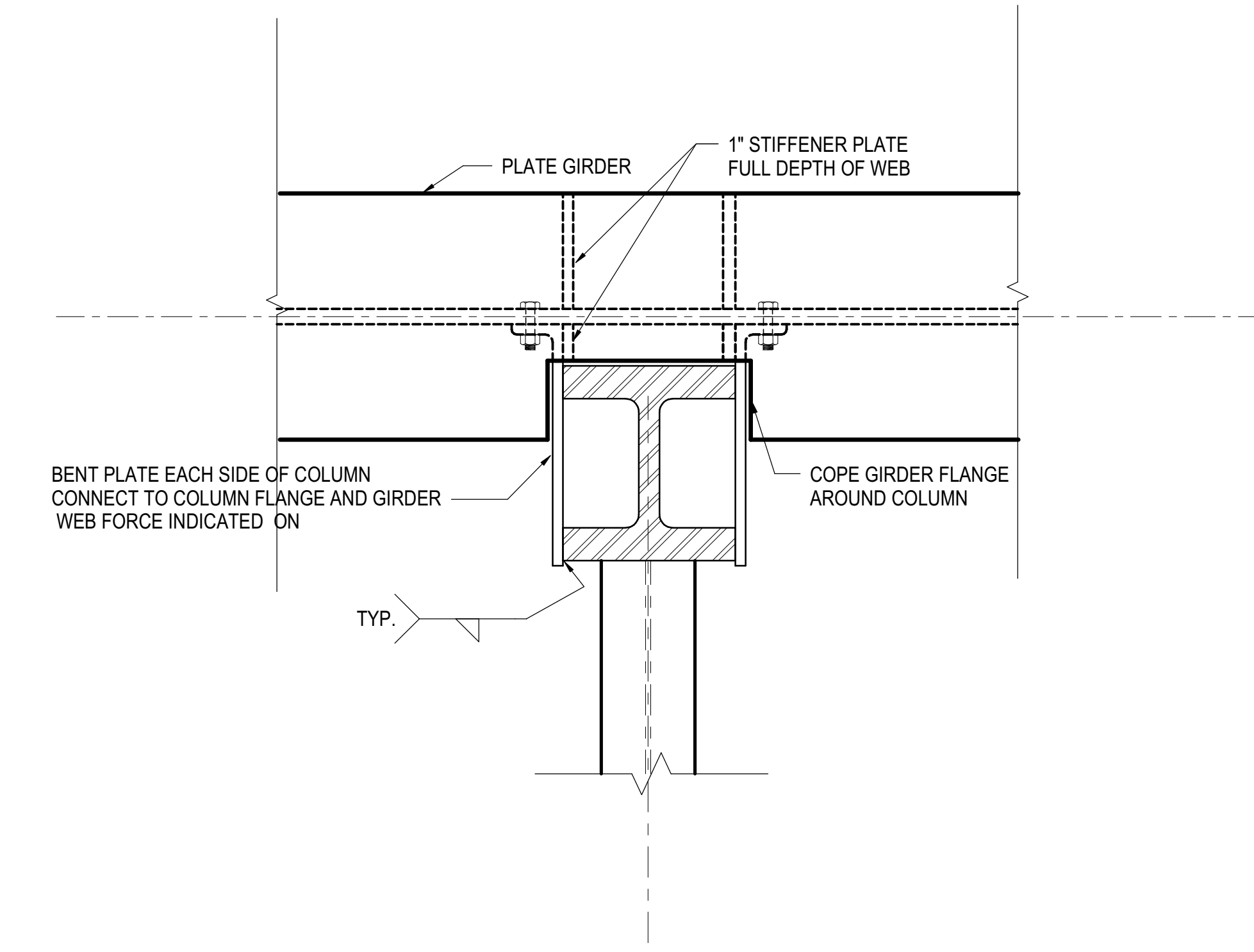
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AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



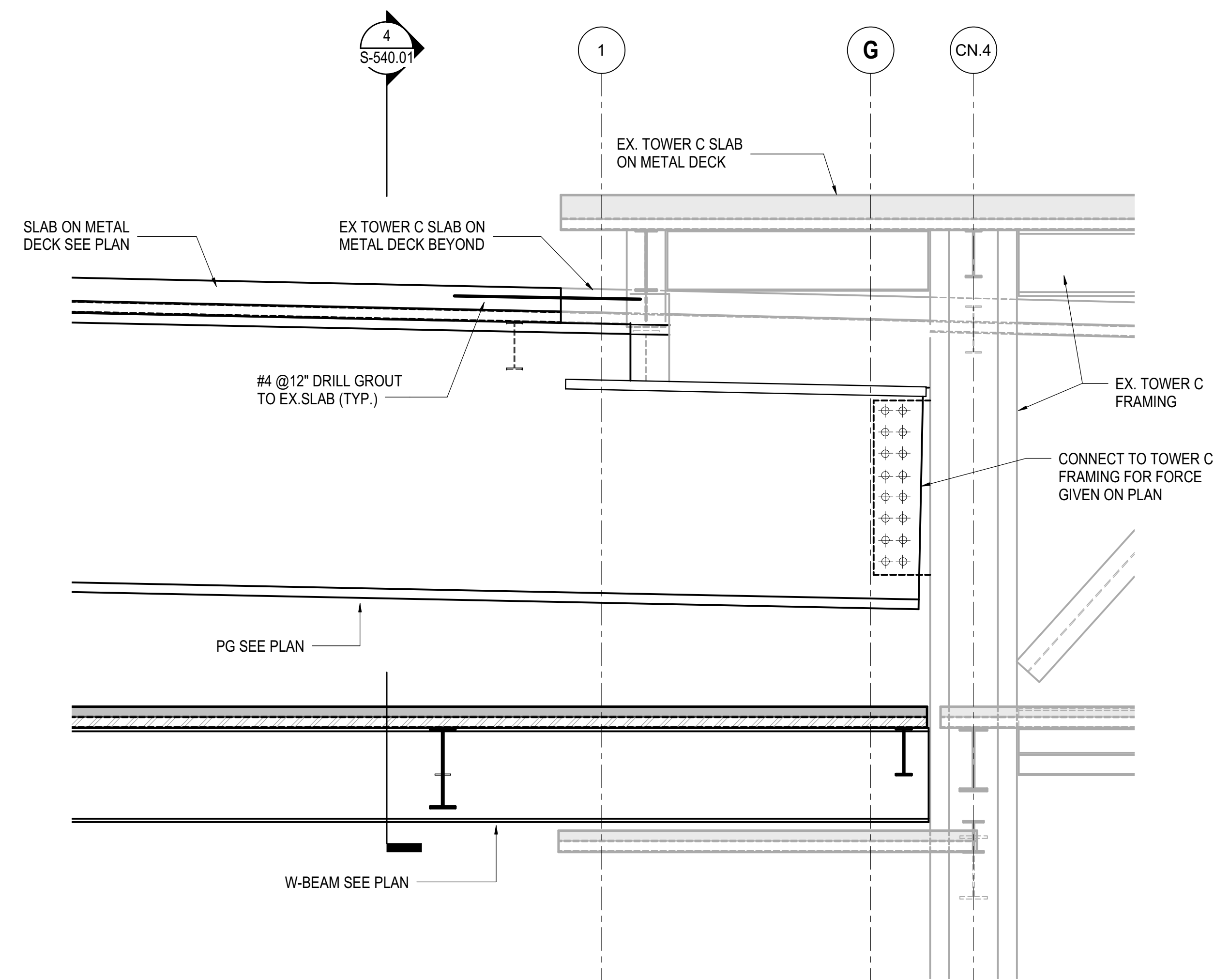
**1 SECTION AT CONNECTION TO TOWER C**  
1/2" = 1'-0"



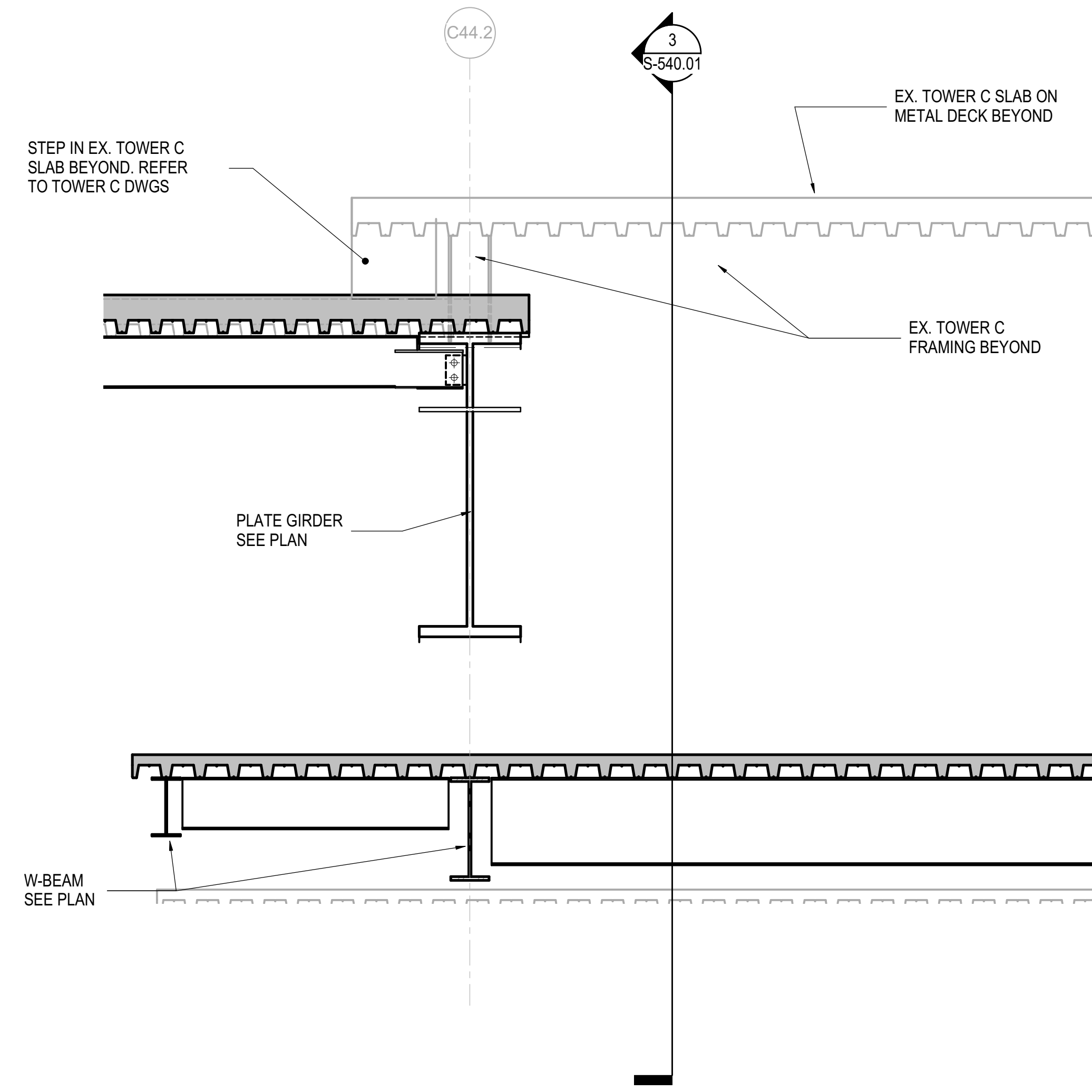
**2 SECTION AT FUTURE COLUMN TRANSFER**  
1/2" = 1'-0"



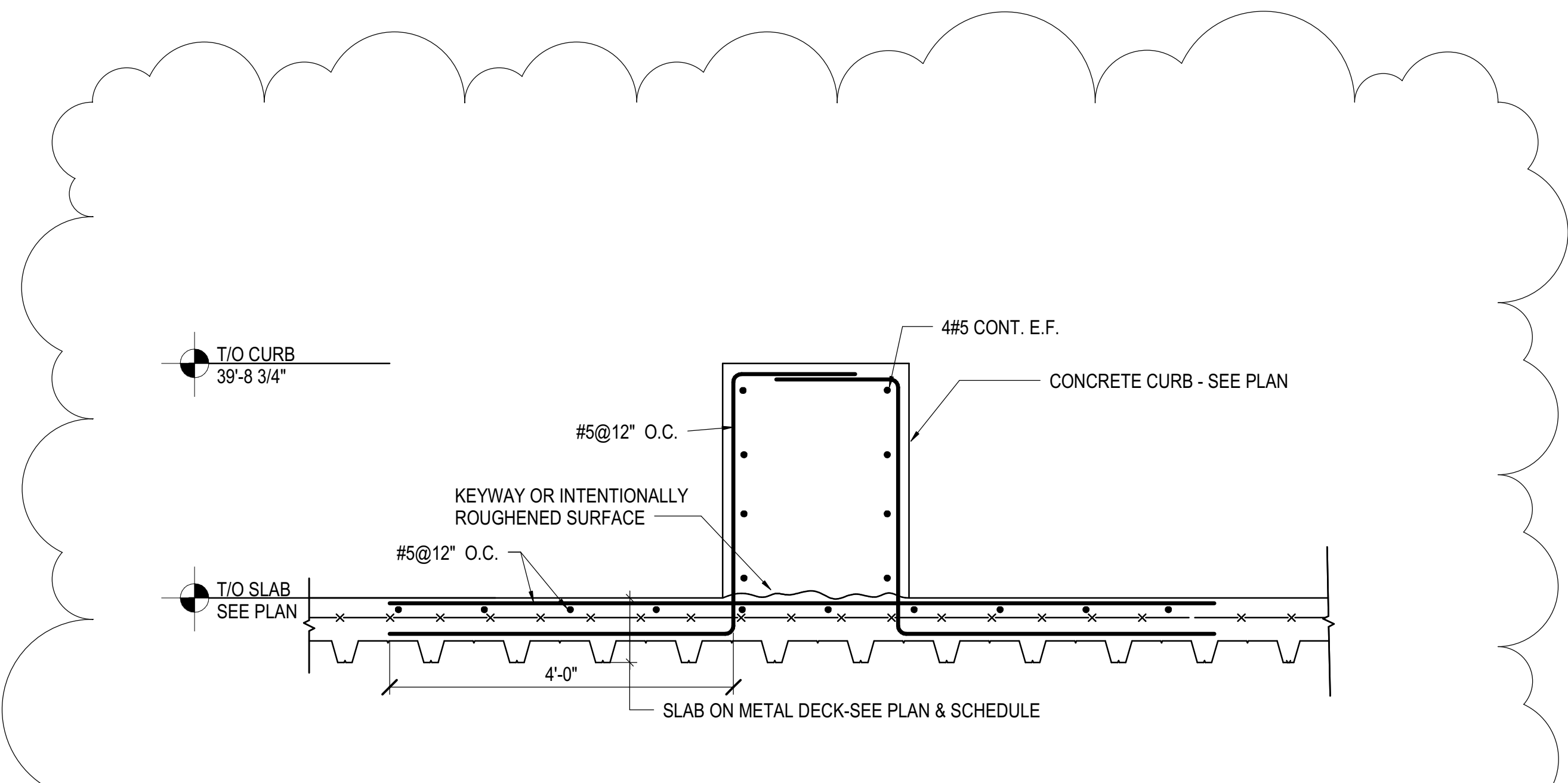
**5 PLAN DETAIL AT OFFSET GIRDER TO COLUMN CONNECTION**  
1" = 1'-0"



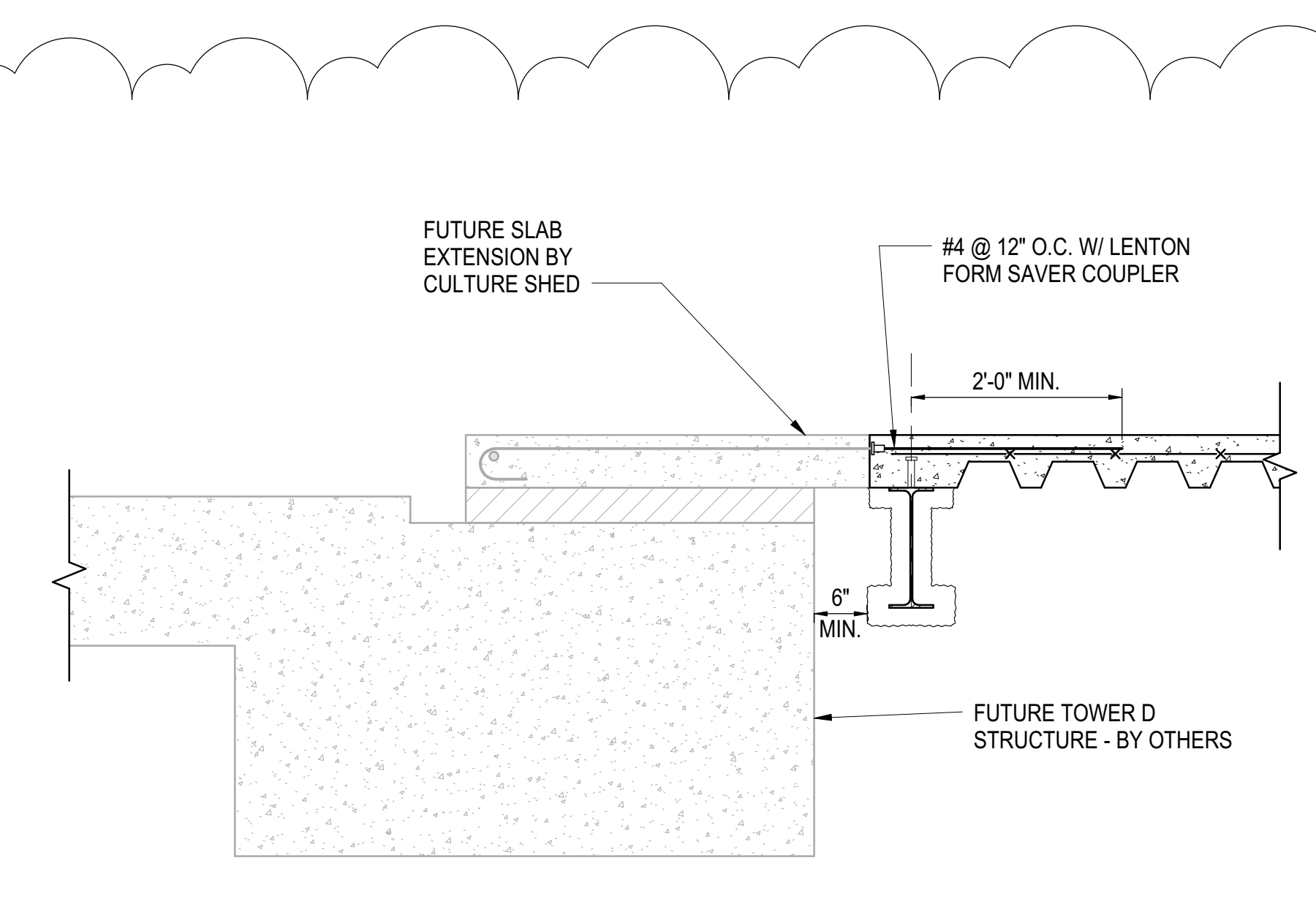
**3 SECTION AT CONNECTION TO TOWER C GRID 44.2**  
1/2" = 1'-0"



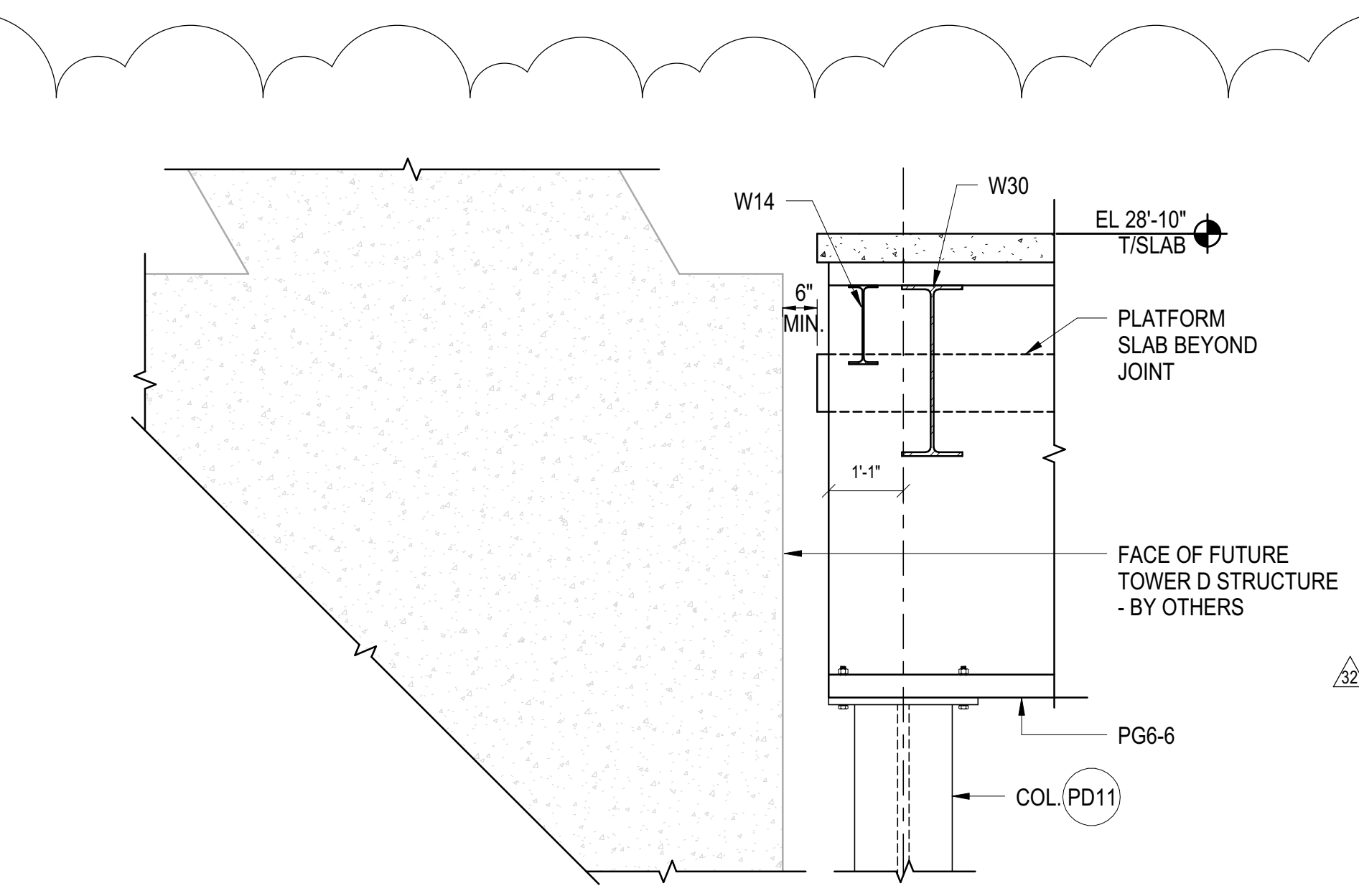
**4 SECTION AT CONNECTION TO TOWER C GRID CN4**  
1/2" = 1'-0"



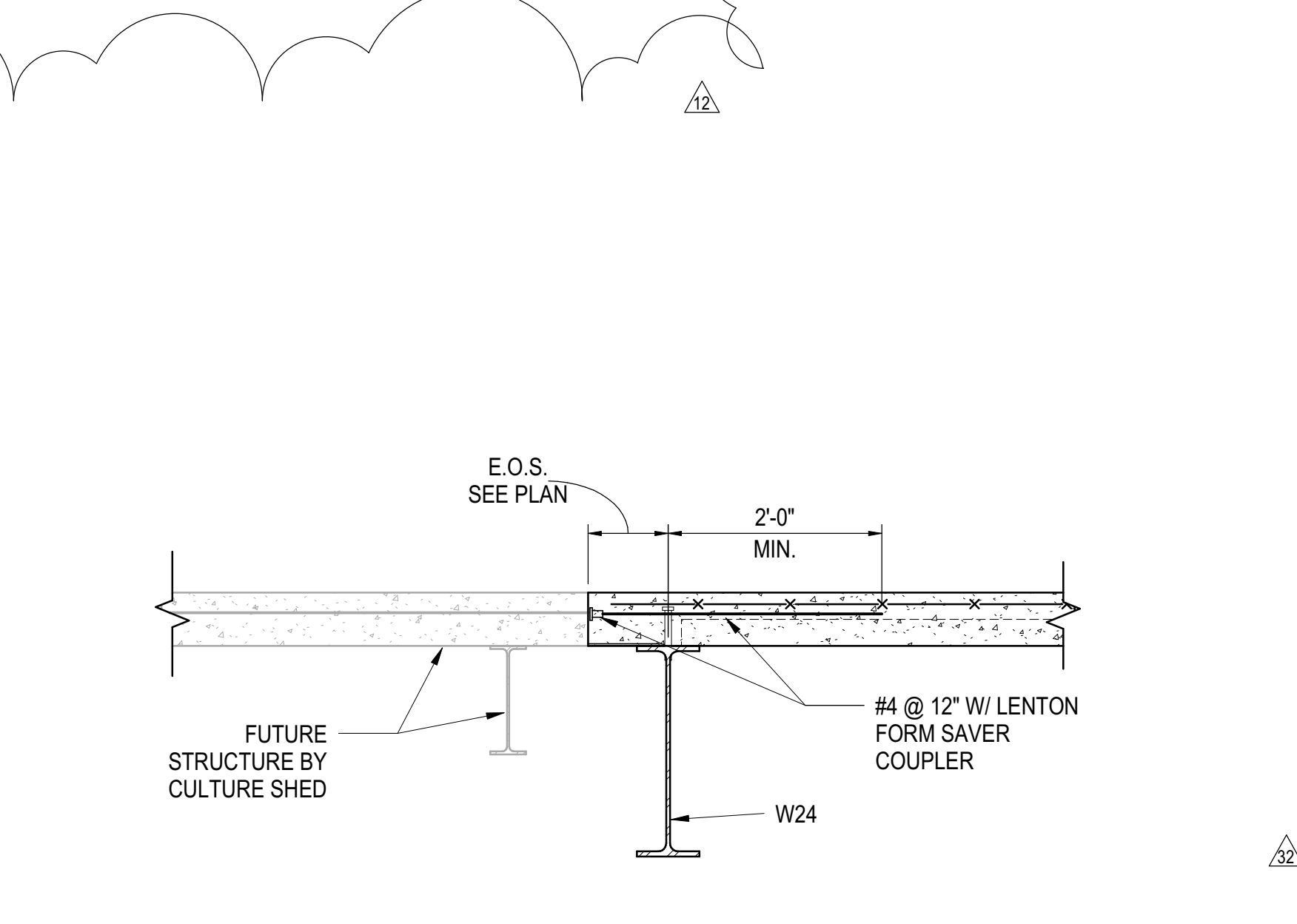
**6 SECTION AT CURB**  
3/4" = 1'-0"



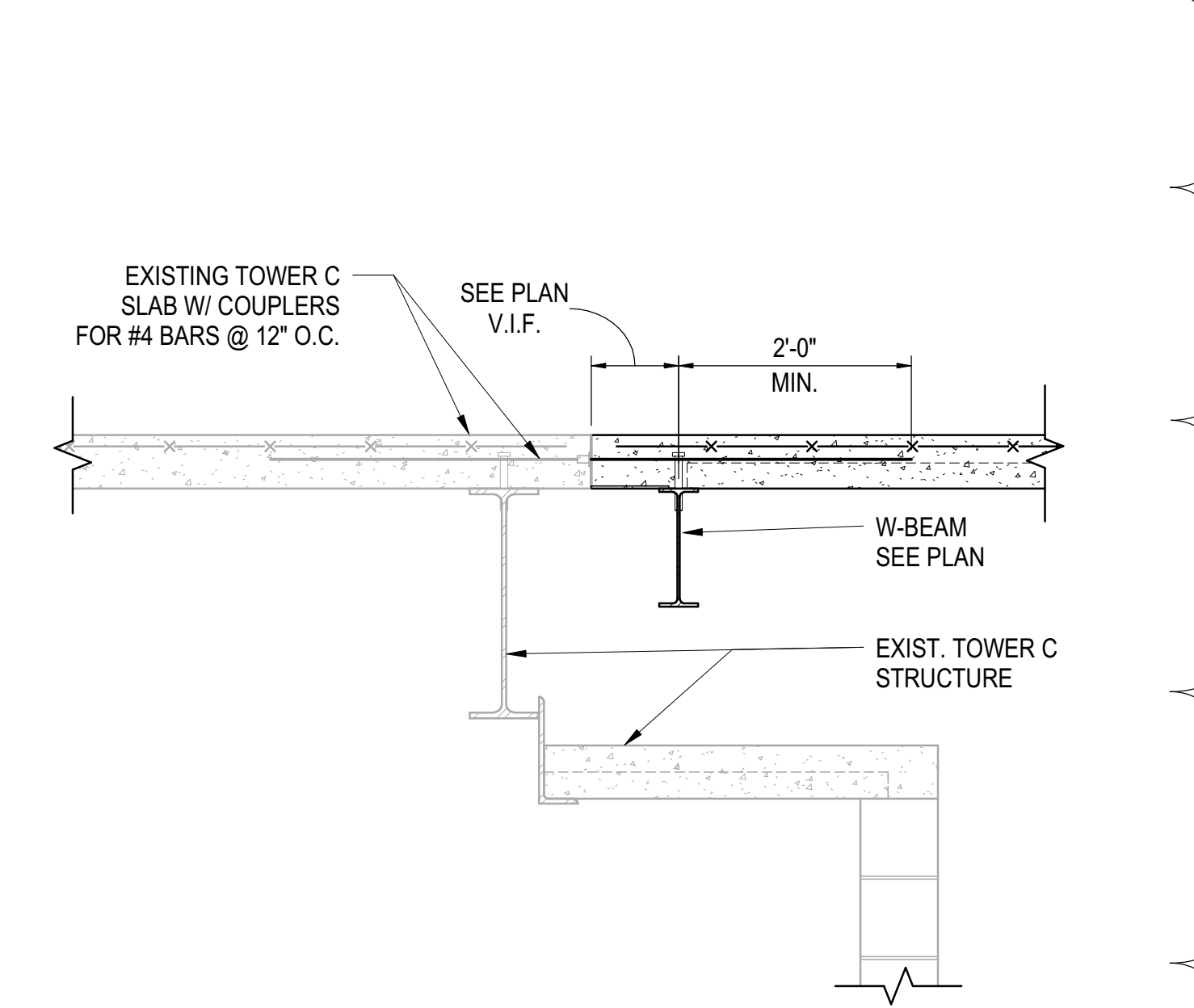
**7 SECTION AT FUTURE TOWER D INTERFACE**  
3/4" = 1'-0"



**8 SECTION AT INTERFACE WITH FUTURE TOWER D AT COLUMN PD11**  
1/2" = 1'-0"



**9 SECTION AT FUTURE CULTURE SHED INTERFACE**  
3/4" = 1'-0"



**10 TYPICAL SECTION AT LOWER LEVEL INTERFACE WITH EXISTING TOWER C SLAB**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/26/2016
ASH0054	11/26/2014
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0011 - PLATFORM CONNECTIONS	3/7/2014
TO TOWER C - SEQUENCE 7	
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
MoE - PLATFORM SUBMISSION	
Rev	Date

Drawn By	11/01/13
Project No.	N11330.00
Drawn By	Author
Sheet Number	

**HYE - PL - S-540.01**

**TOWER C INFILL SECTIONS AND DETAILS**

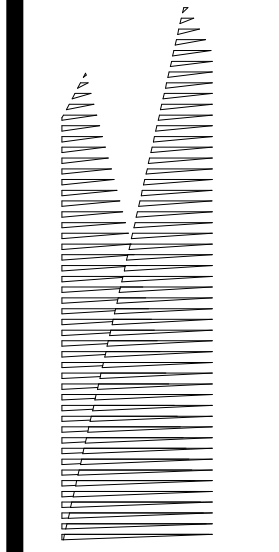
Approved Under Directive 1 of 1975  
Date: 08/15/2017  
NYC Development Hub

Damian Titus  
Buildings

Project No. N11330.00  
Date: 08/15/2017

SHEET 104 OF 163

TOWER C INFILL SECTIONS AND DETAILS  
 S-540.01  
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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owned Properties Group  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

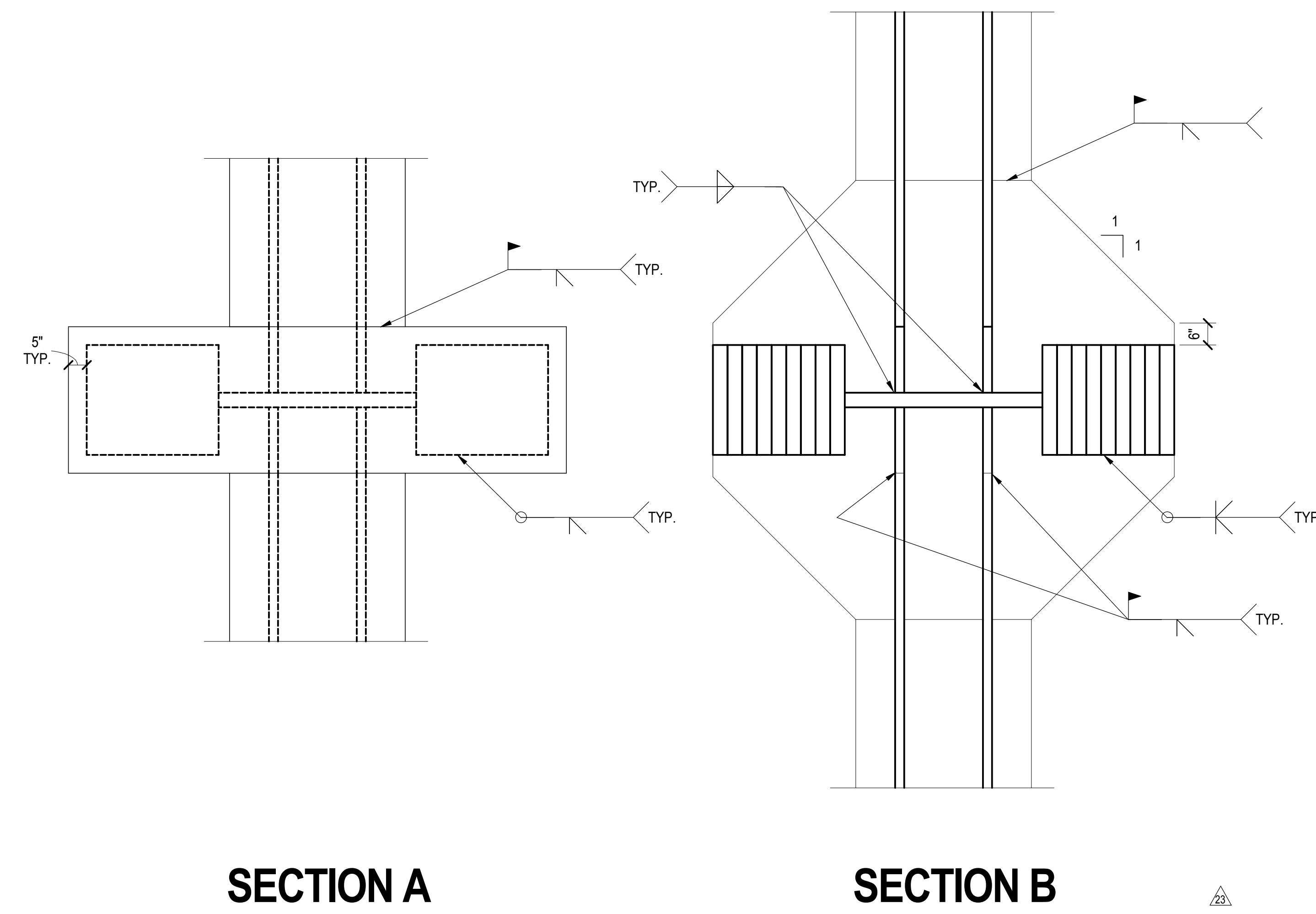
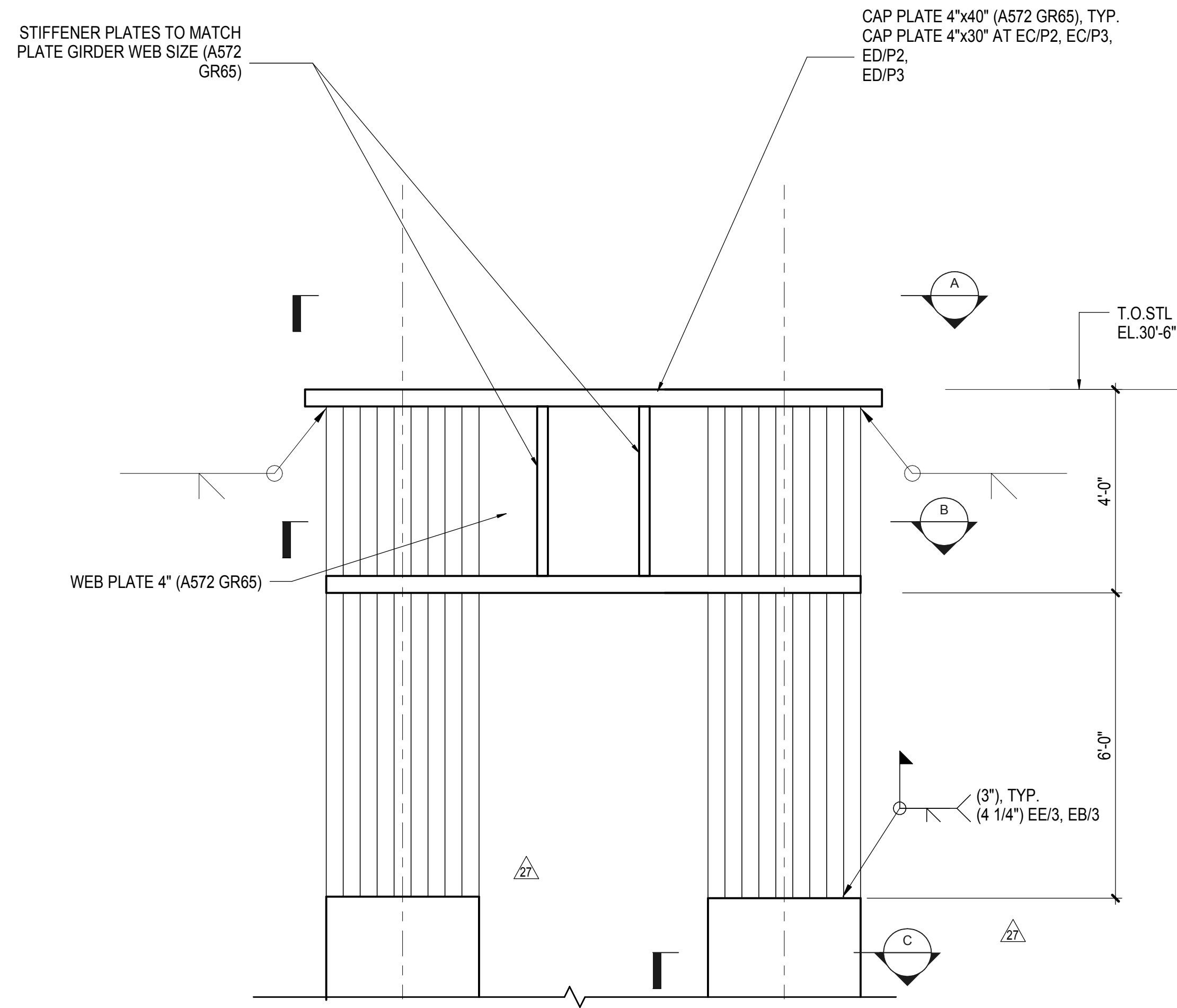
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

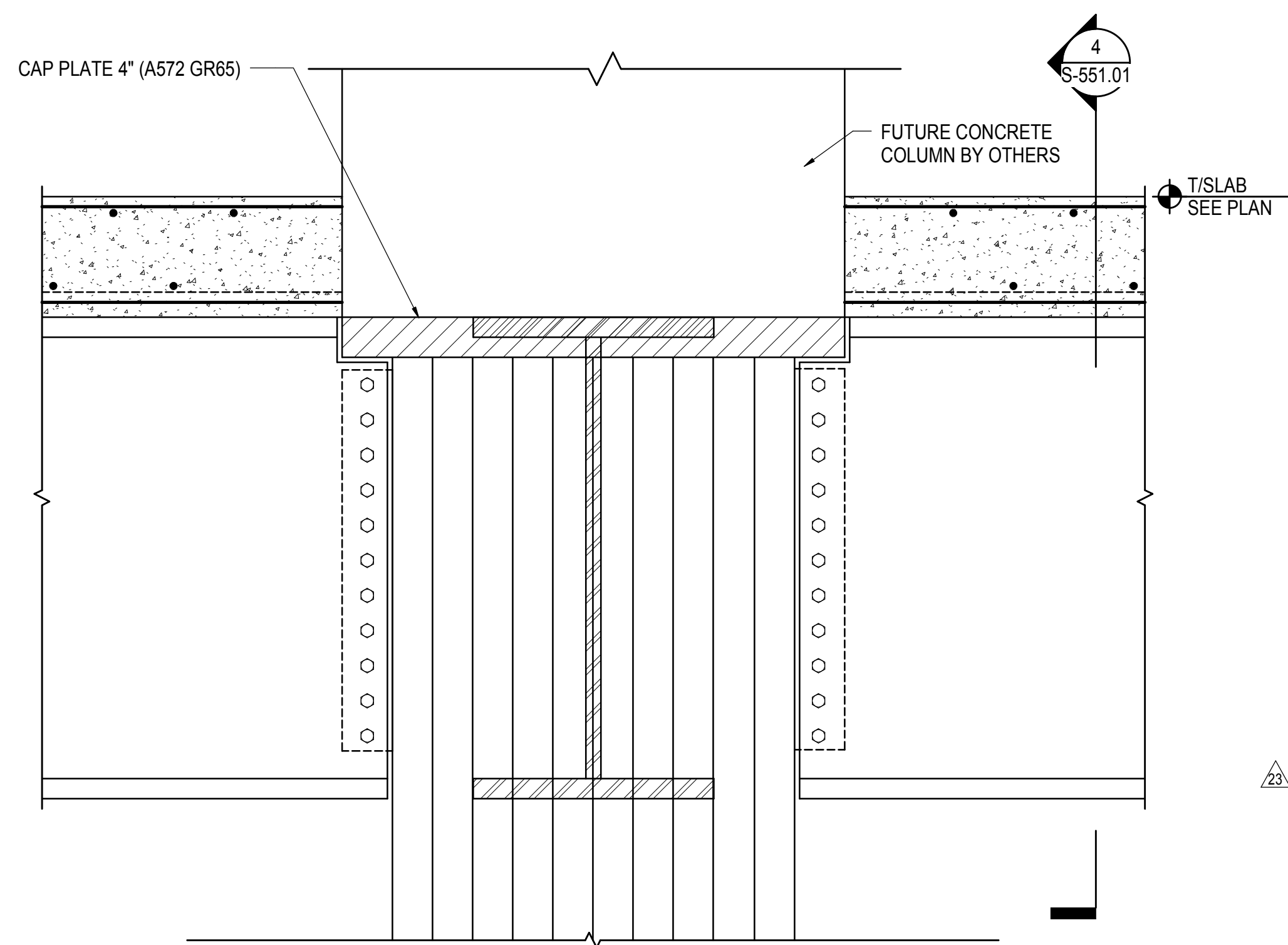
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Easements Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

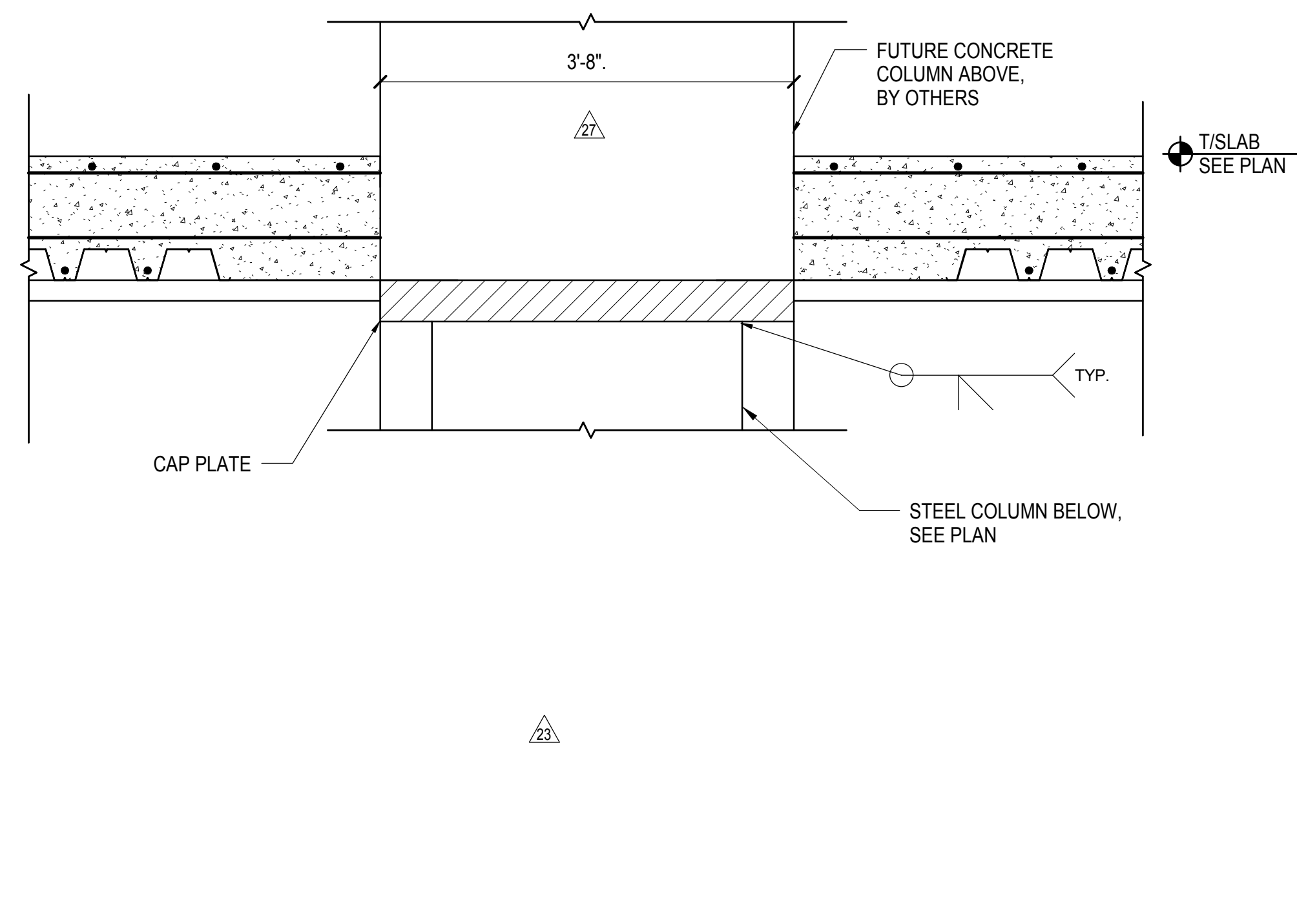
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AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



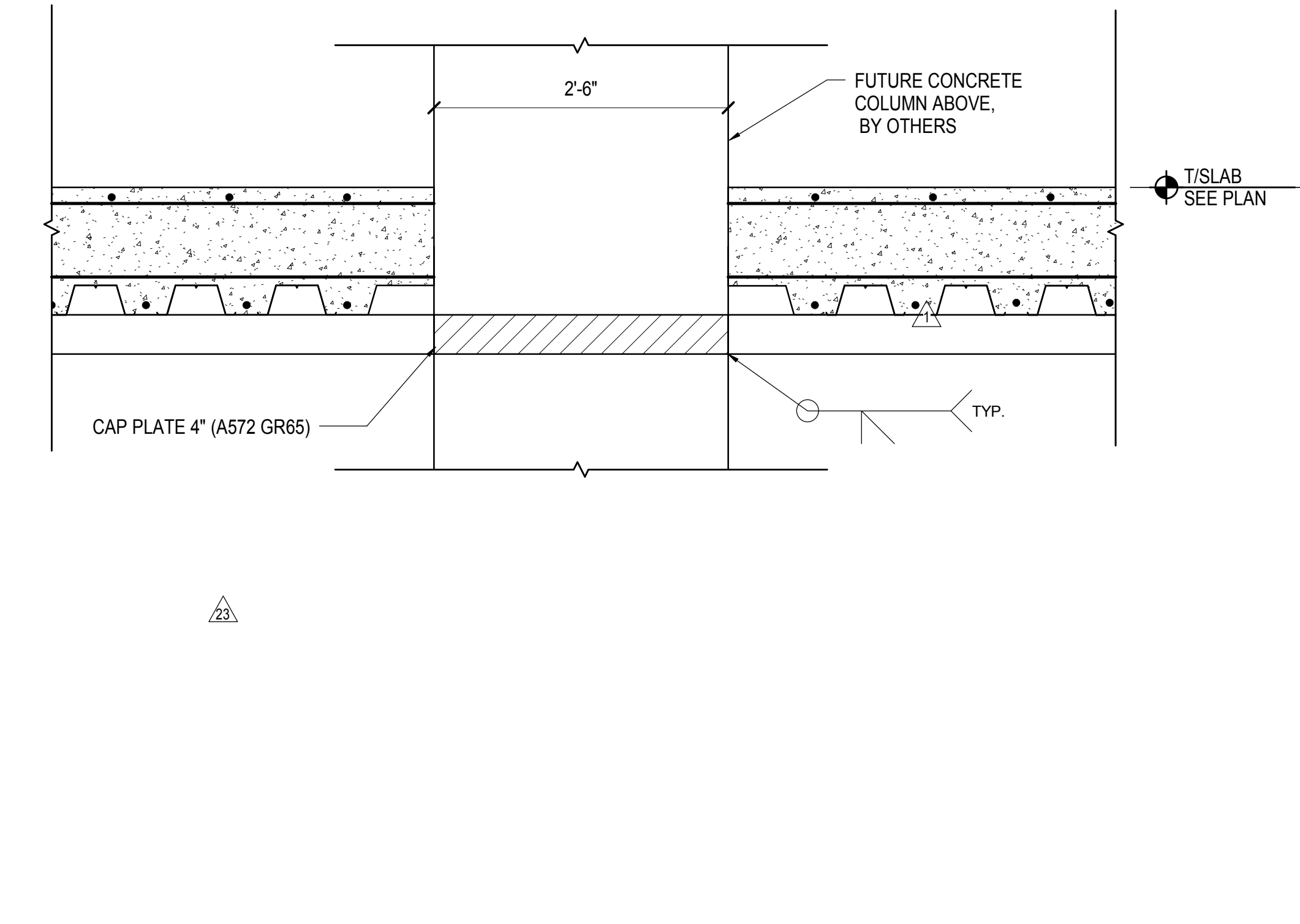
**1 DOUBLE COLUMN ASSEMBLY**  
1/2" = 1'-0"



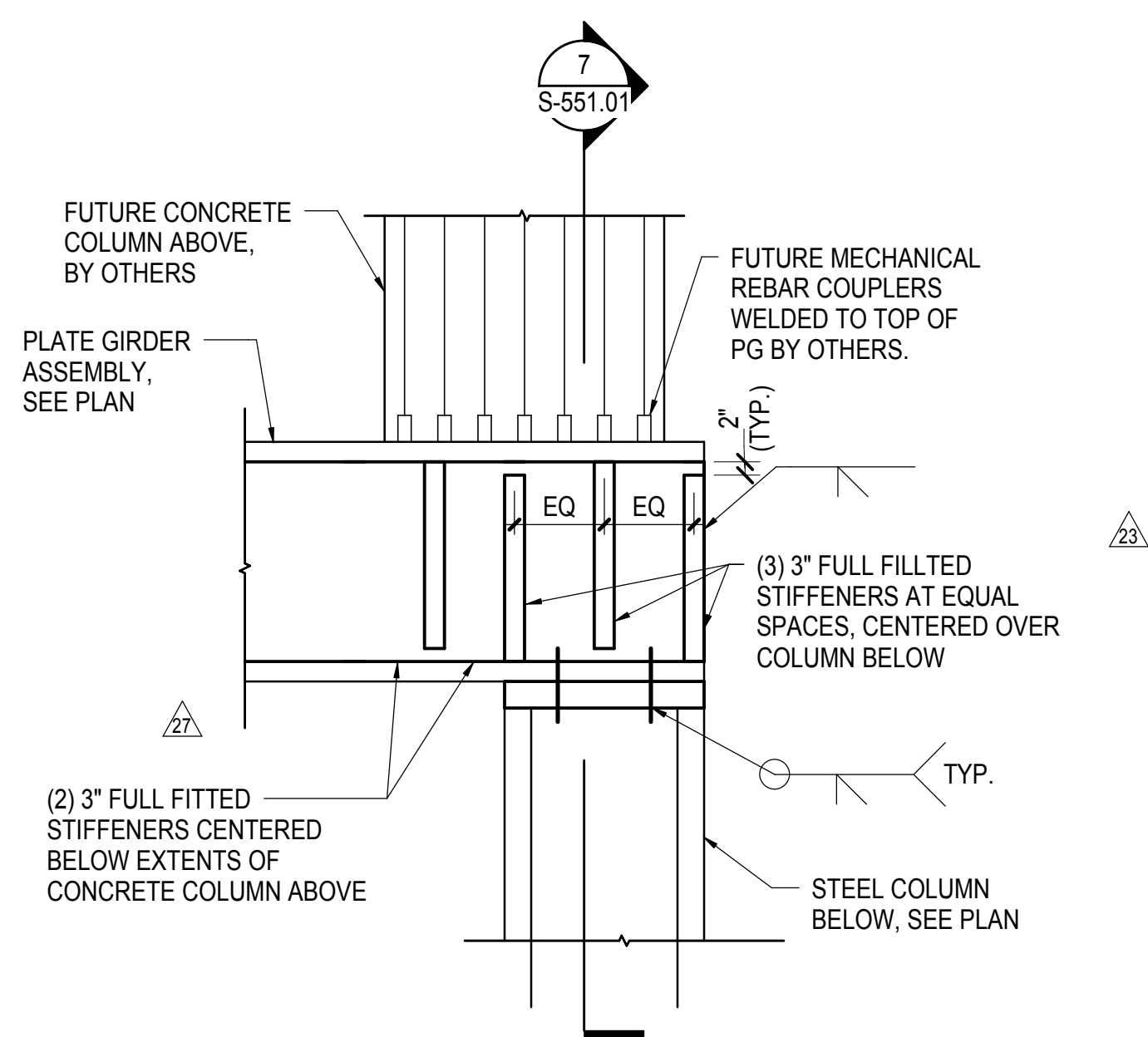
**3 TYPICAL CAP PLATE AT CONCRETE COLUMN TRANSFER**  
1" = 1'-0"



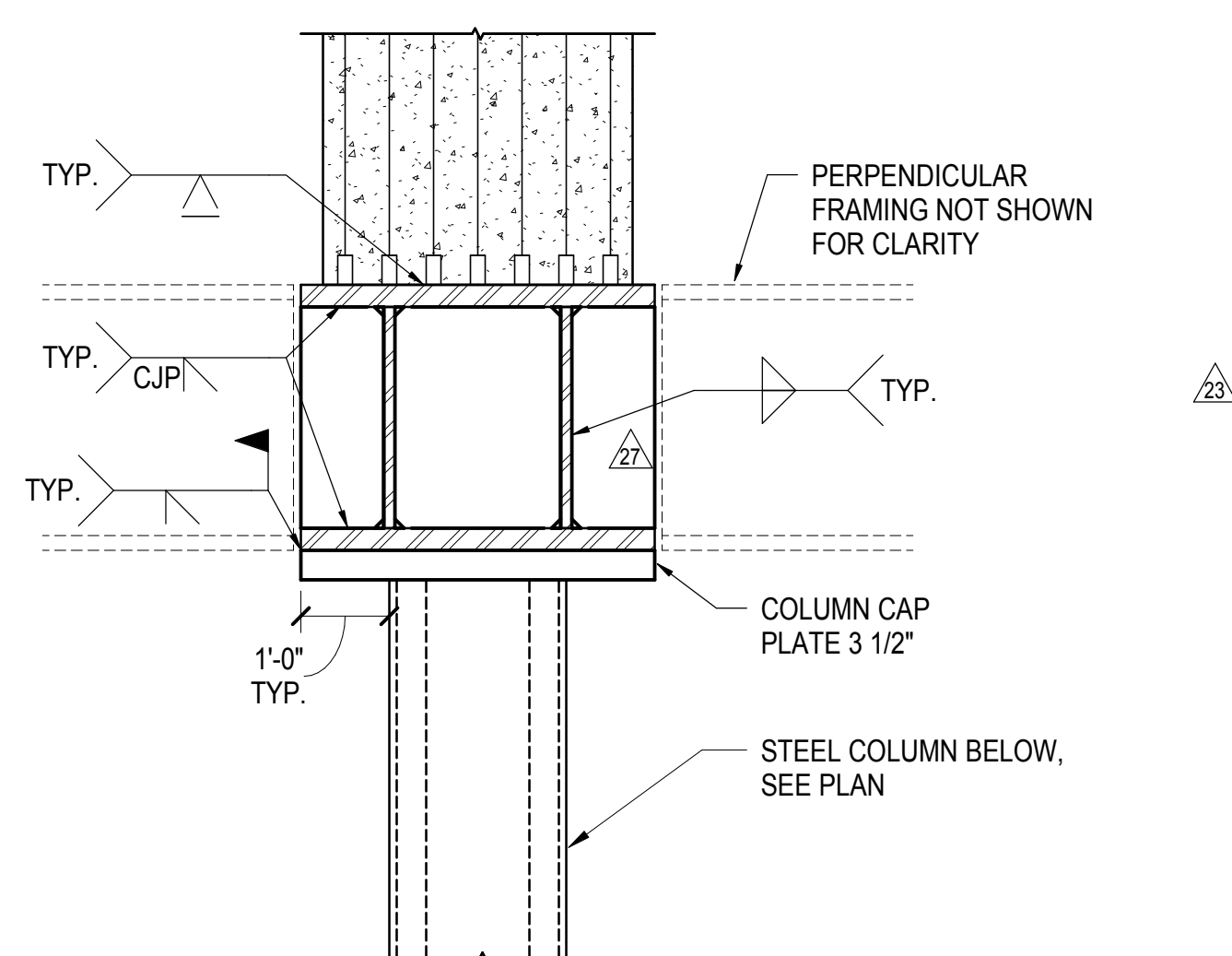
**4 TYPICAL CAP PLATE AT CONCRETE COLUMN ABOVE**  
1" = 1'-0"



**5 TYPICAL CAP PLATE AT CONCRETE WALL ABOVE**  
1" = 1'-0"



**6 TYPICAL GRID LINE P1 COLUMN TRANSFER**  
1/2" = 1'-0"



**7 SECTION AT GRID LINE P1 COLUMN TRANSFER**  
1/2" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/29/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0009	10/14/2014
ASH0048 - TOWER E STEEL FRAMING	8/25/2014
ASH0032 - TOWER E STEEL FRAMING	7/22/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Med. PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
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L.I.R.R. - 30% SUBMISSION	2/15/2013
Rev	000

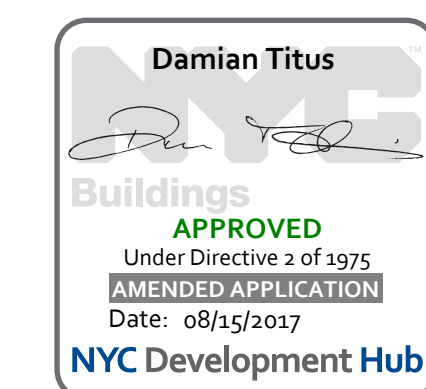
Exp. Plan

Date: 12/14/2012  
Project No: N11330.00  
Revision By: Author  
Sheet Number

**HYE -PL -S-551.01**

**TOWER E SECTIONS  
AND DETAILS**

Drawing Number / B/CAN Drawing Number  
**S-551.01**



APPROVED  
Under Directive 3 of 1975  
Professional Regulation  
Date: 08/15/2017  
NYC Development Hub

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00049 - TOWER E STEEL FRAMING	10/14/2014
ASH00040 - TOWER E STEEL FRAMING	8/28/2014
ASH00032 - TOWER E STEEL FRAMING	7/22/2014
Designation	Asst

Rev. Plan

Date:	07/22/14
Project No.:	N11330.00
Drawn By:	Author
Sheet Number:	Author

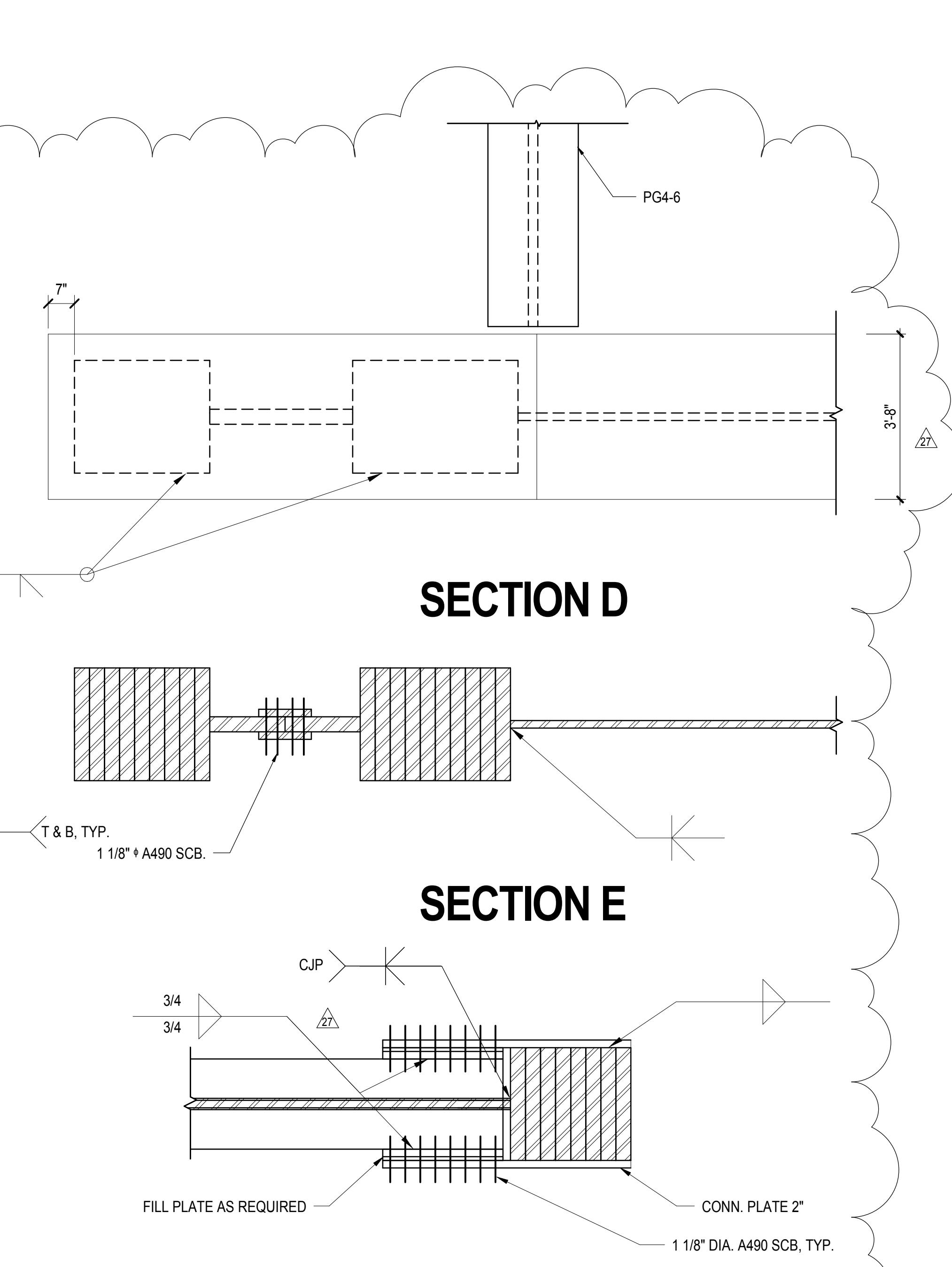
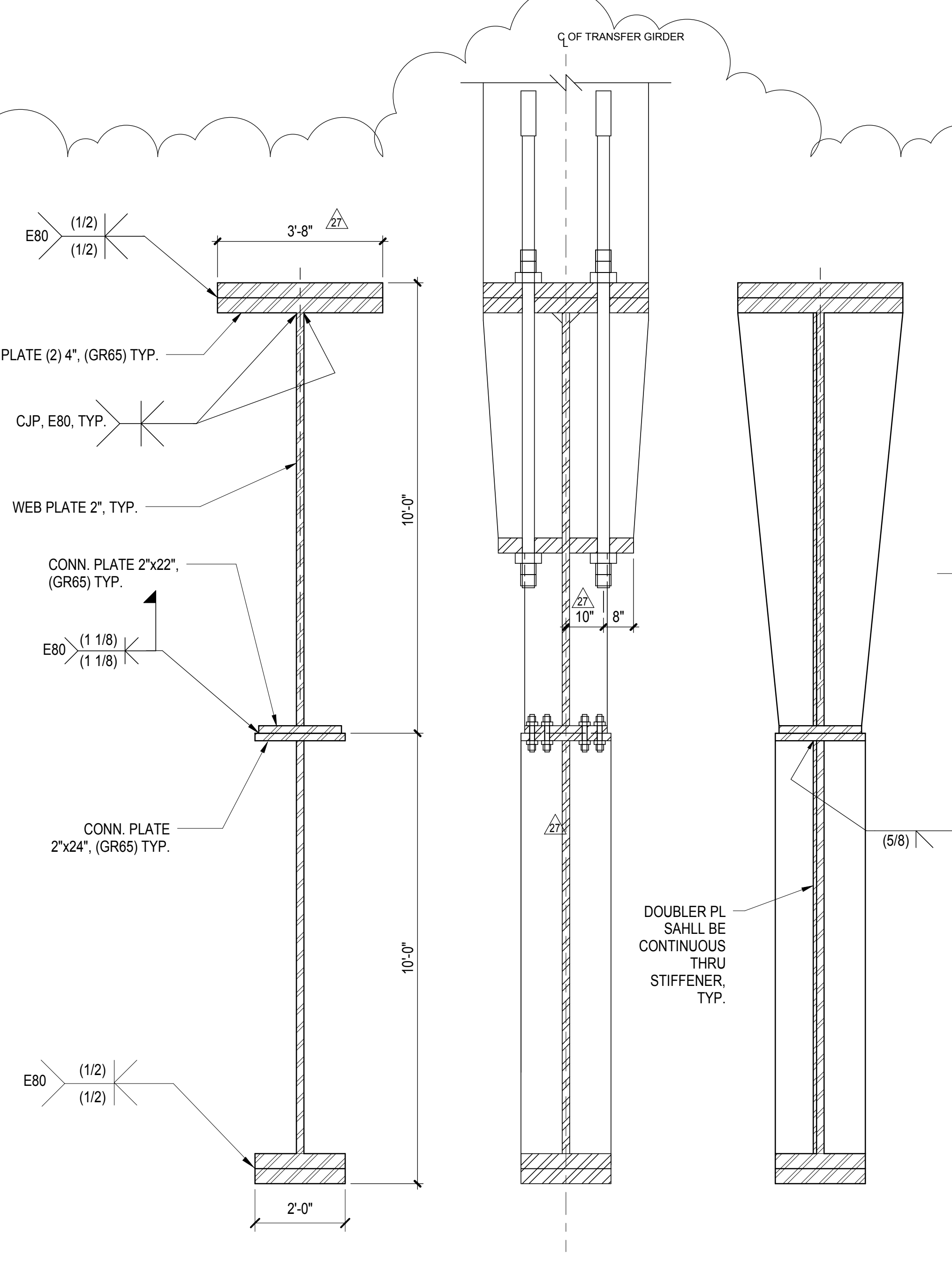
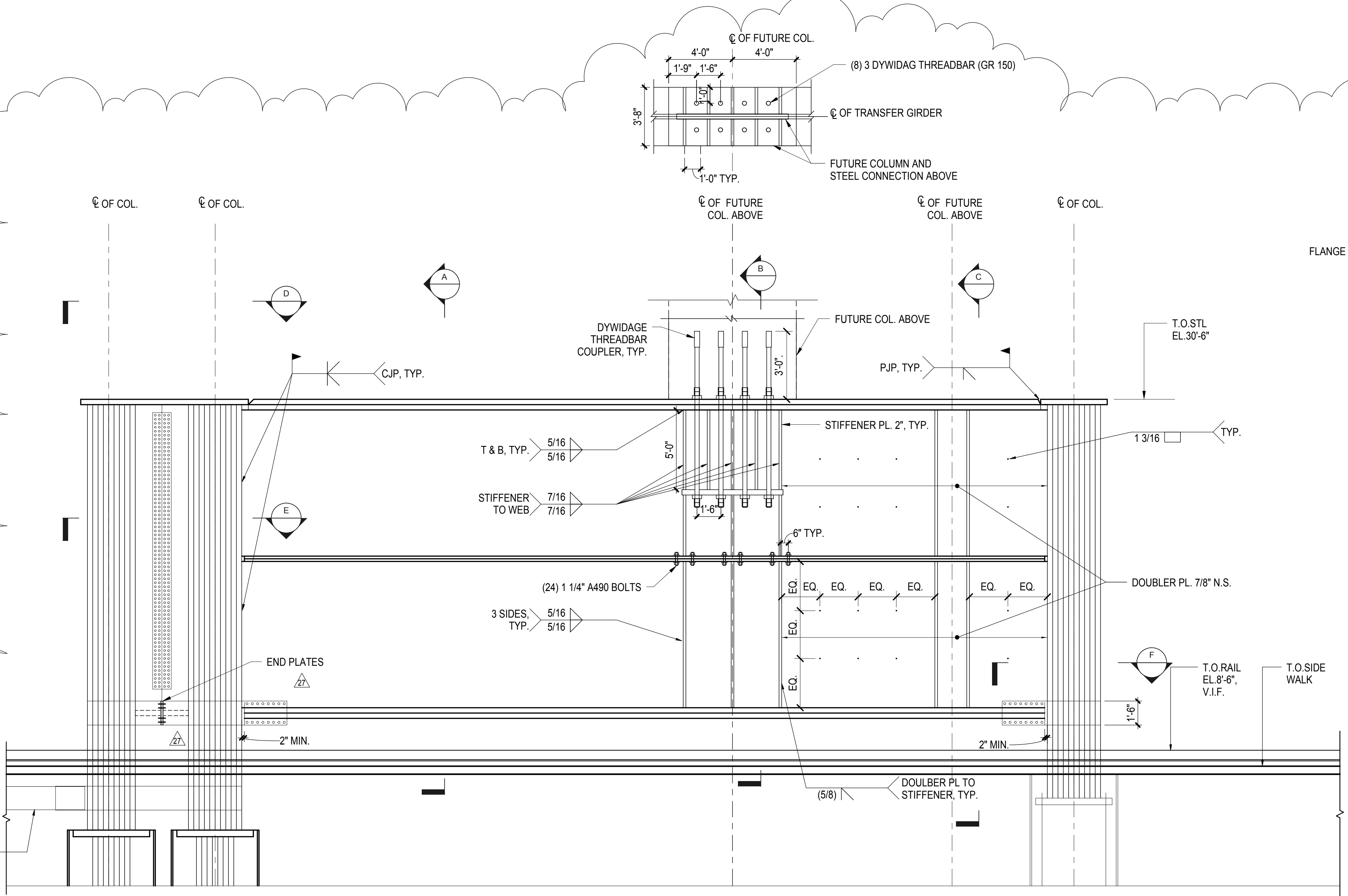
HYE-PL-S-552.01

TOWER E SECTIONS AND DETAILS

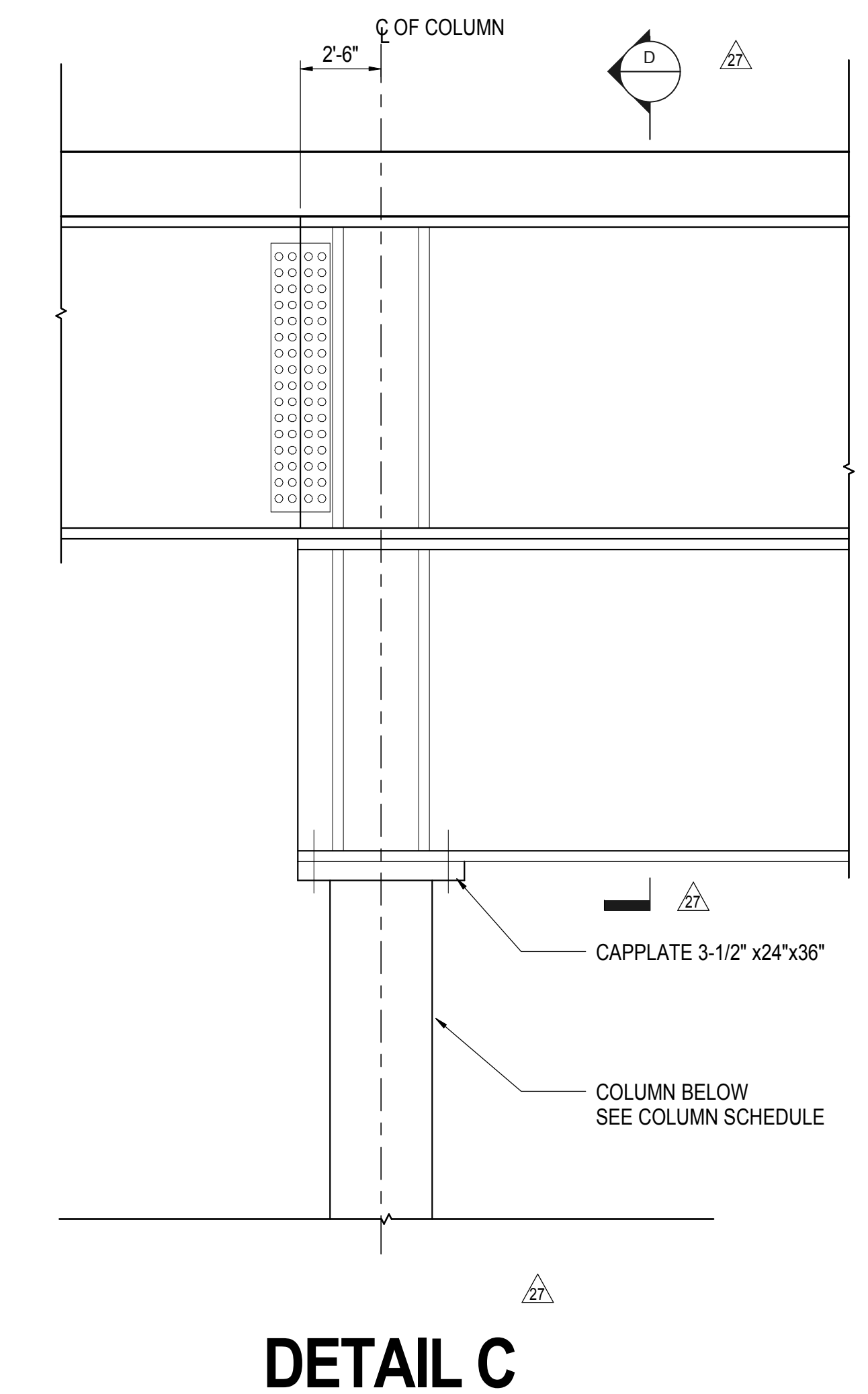
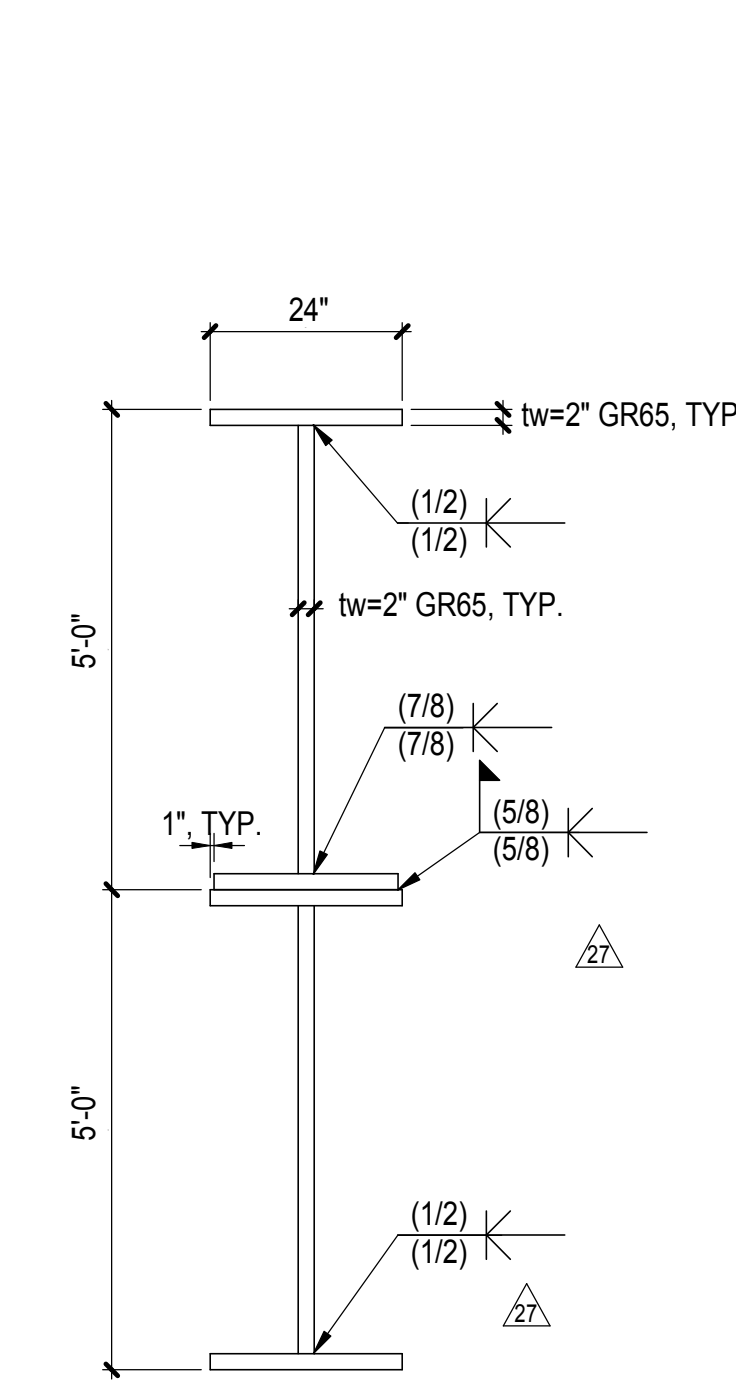
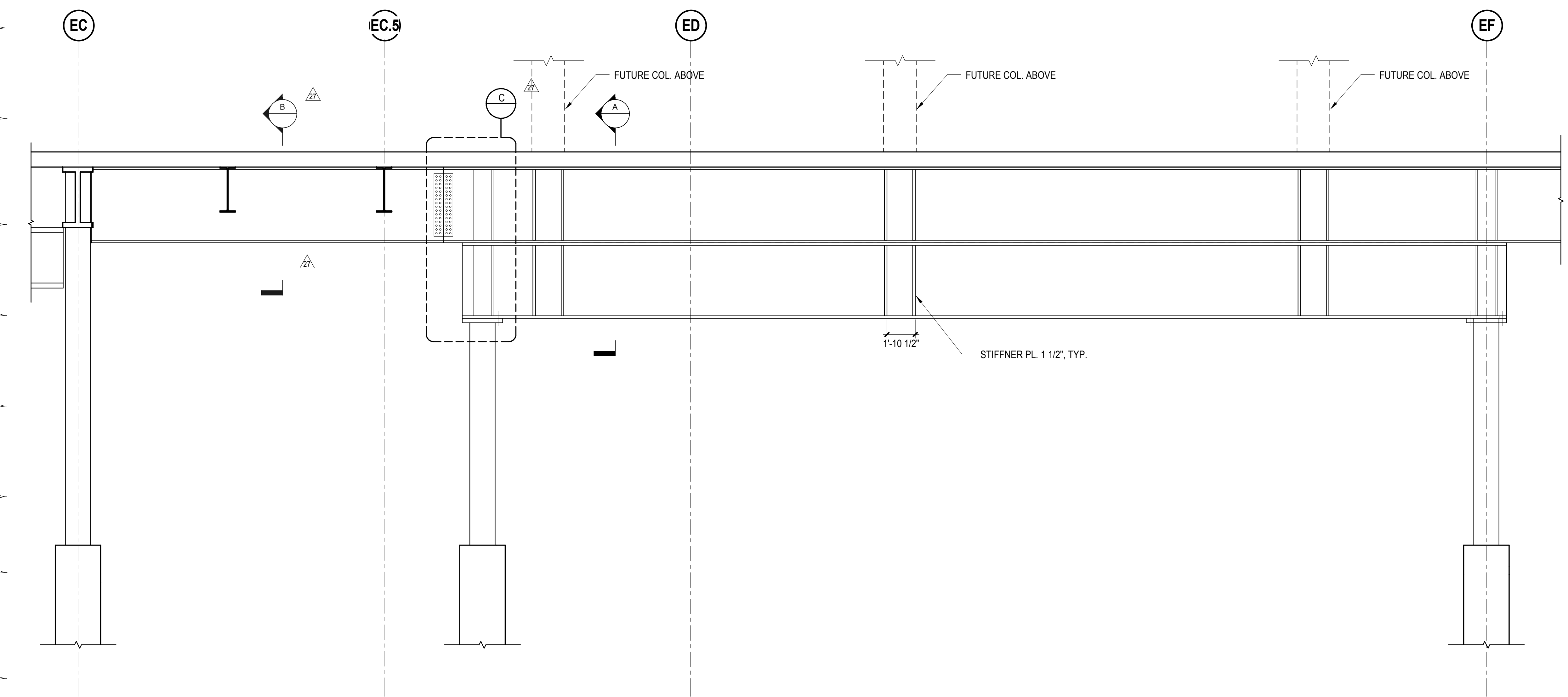
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S-552.01

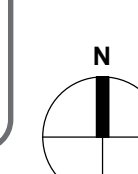
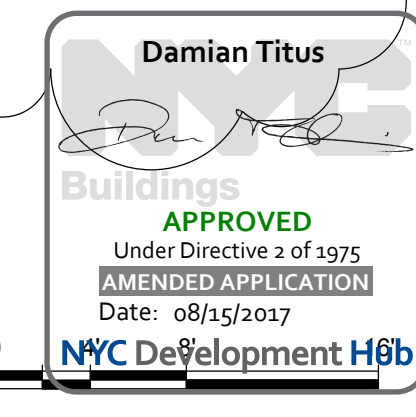
SHEET 106 of 163



1 TRANSFER GIRDER -1 AT GRIDLINE P4  
1/4\"/>

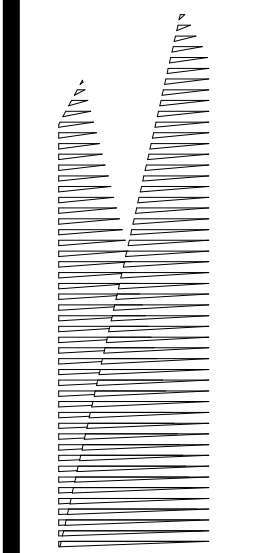


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1/4\"/>



8/22/14  
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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
130 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

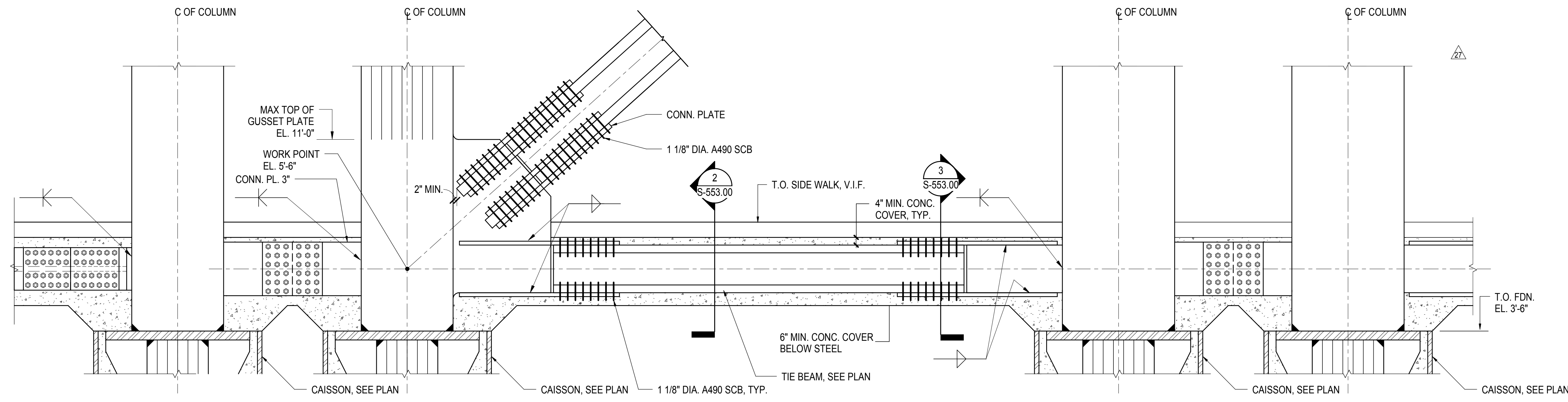
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

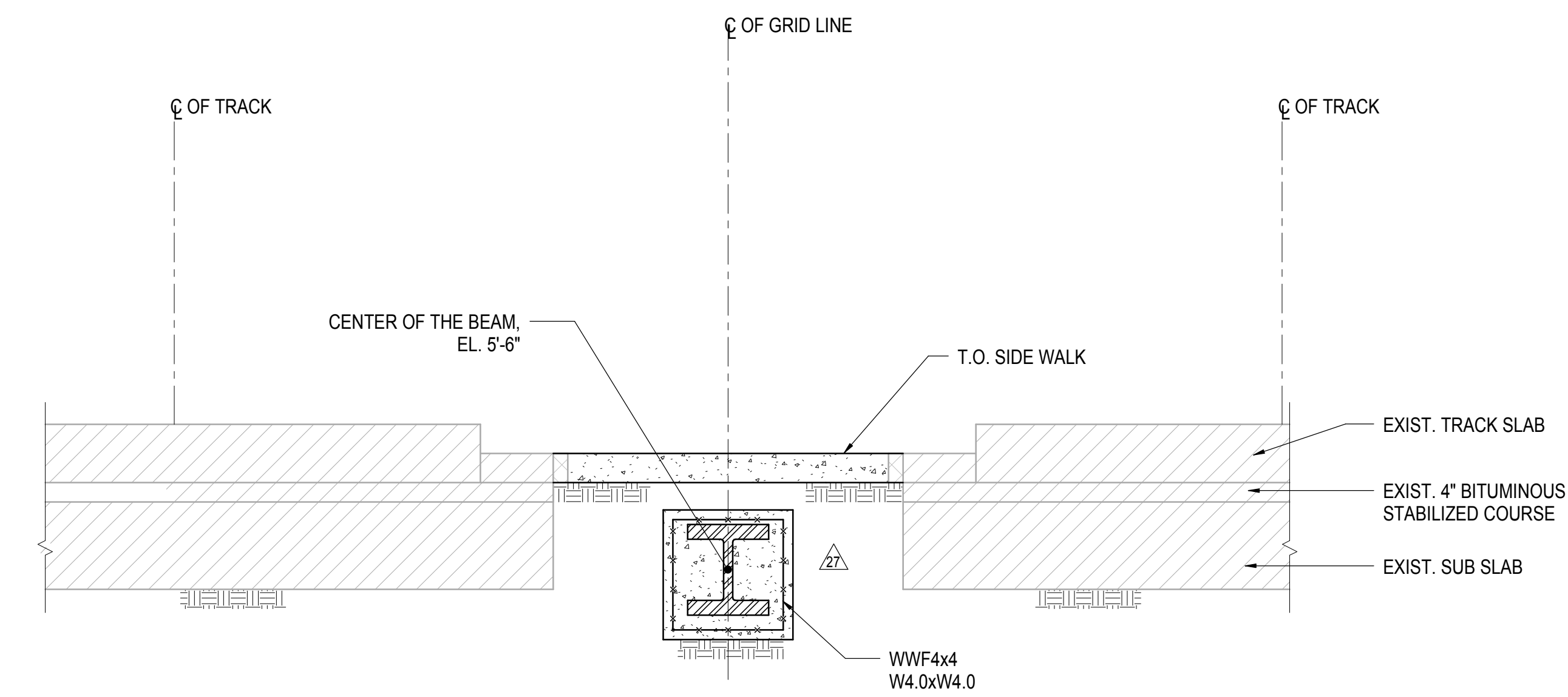
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

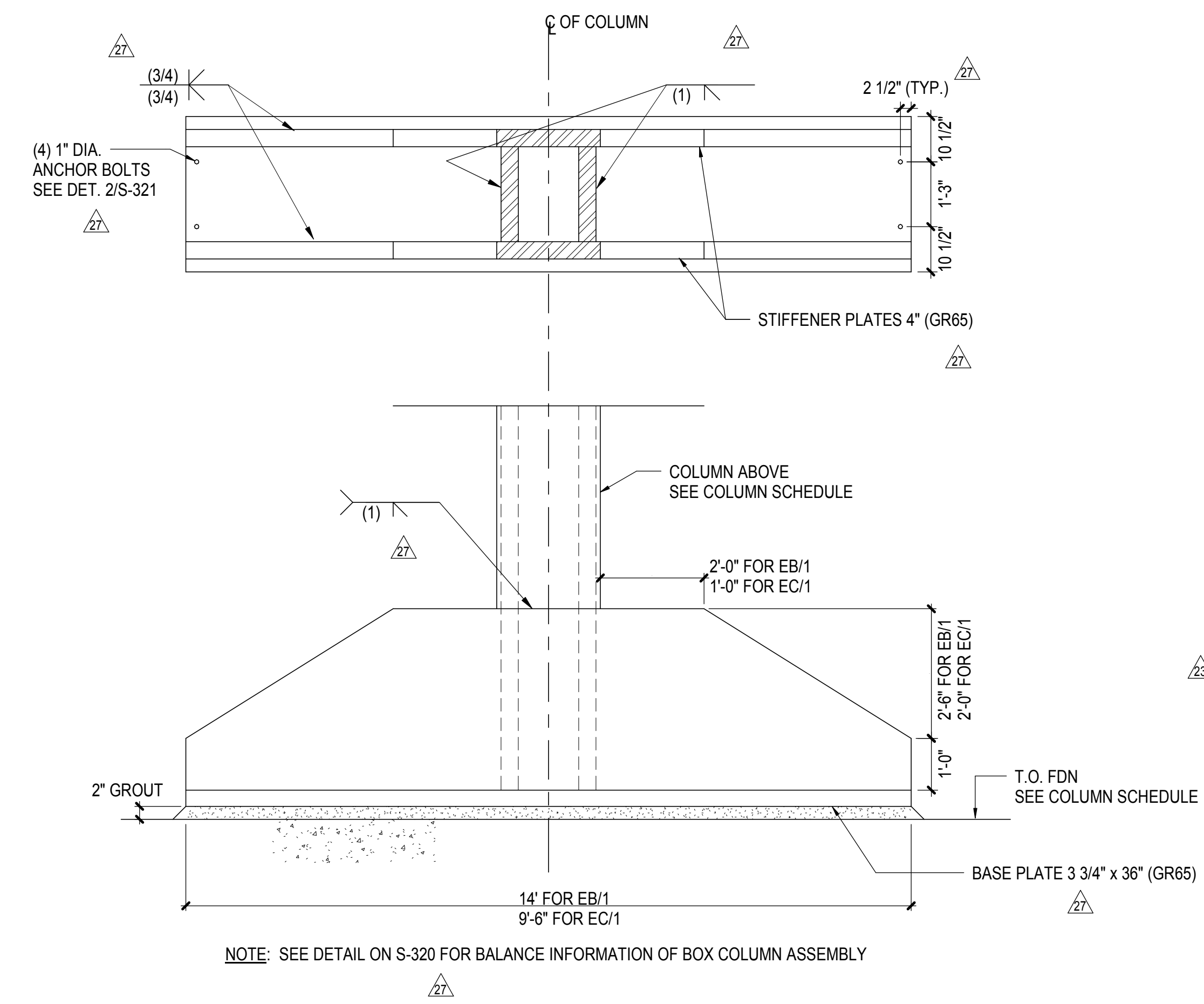
LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172



**1 UNDER GRADE TIE BEAM DETAIL**  
1/2" = 1'-0"



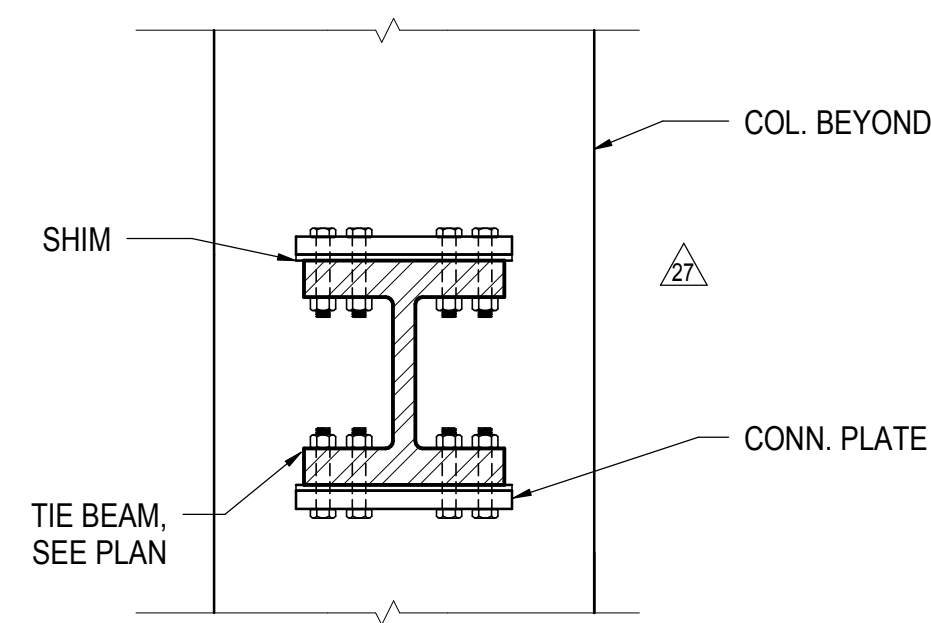
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1/2" = 1'-0"



**3 TIE BEAM CONNECTION**  
3/4" = 1'-0"



**4 BASE PLATE DETAIL OF COLUMN EB/1 & EC/1**  
1/2" = 1'-0"



**3 TIE BEAM CONNECTION**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/29/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0005 - TOWER E STEEL FRAMING	10/14/2014
ASH0010 - TOWER E STEEL FRAMING	8/28/2014
ASH0002 - TOWER E STEEL FRAMING	7/22/2014
ASH0030 - TOWER E FOUNDATION	6/24/2014
Rev	Date

Key Plan

Date	06/24/14
Project No.	N11330.00
Drawn By	Author
Sheet Number	

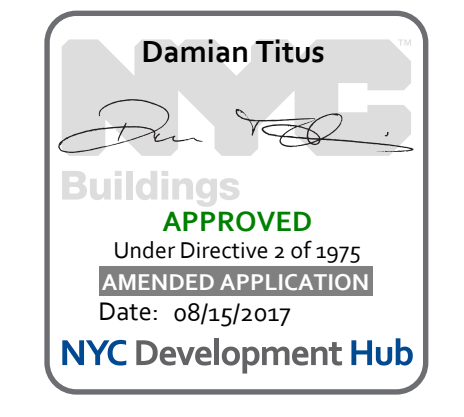
**HYE-PL-S-553.00**

**TOWER E SECTIONS AND DETAILS**

Drawing Number / R/CAN Drawing Number

**S-553.00**

SHEET 107 OF 163



DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH004	6/17/2015
L.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH009	10/14/2014
ASH0040 - TOWER E STEEL FRAMING	8/28/2014
ASH0032 - TOWER E STEEL FRAMING	7/22/2014
Revised	06/11/14

Key Plan

Date: 07/22/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

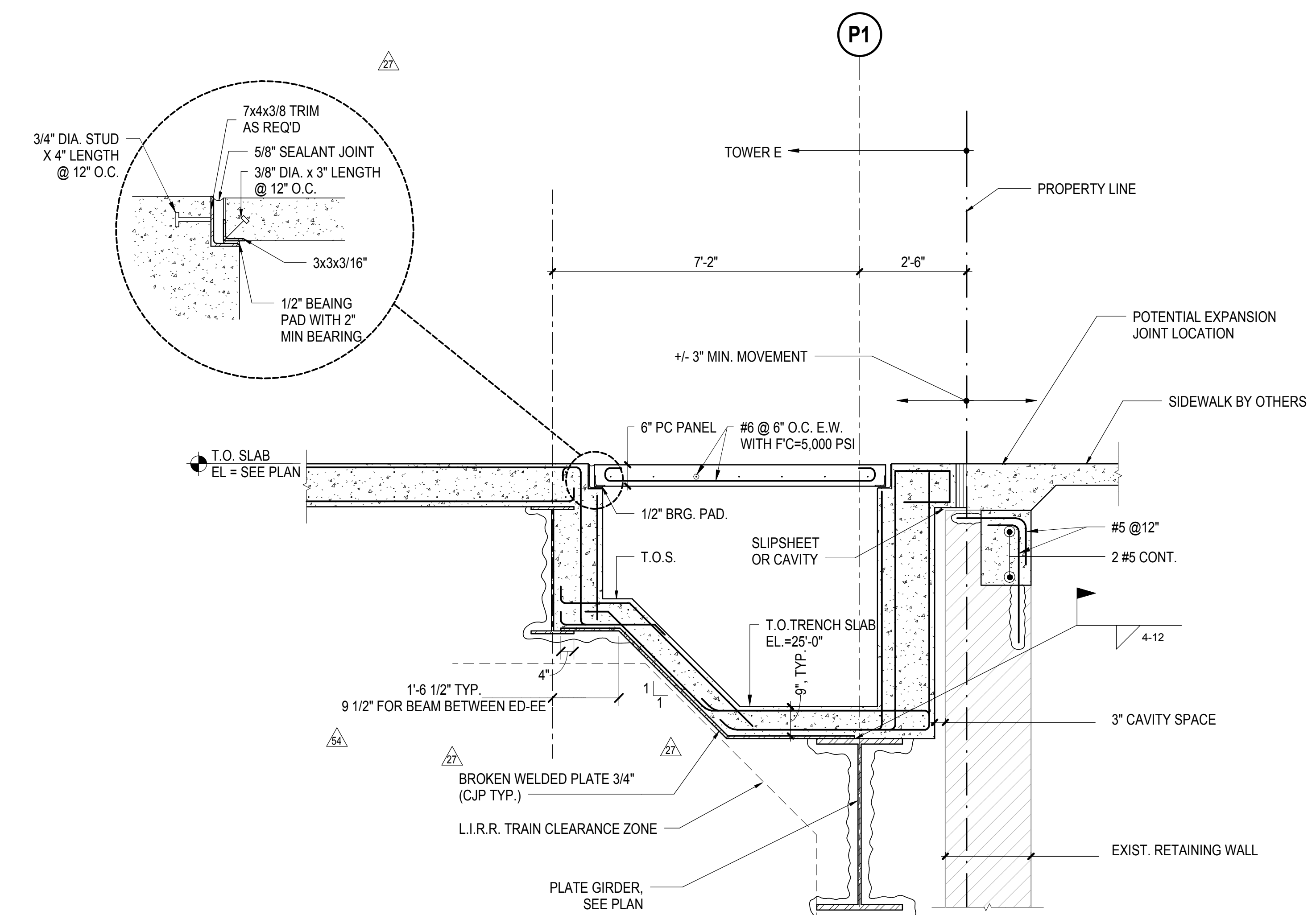
**HYE -PL -S-554.00**

**TOWER E SECTIONS AND DETAILS**

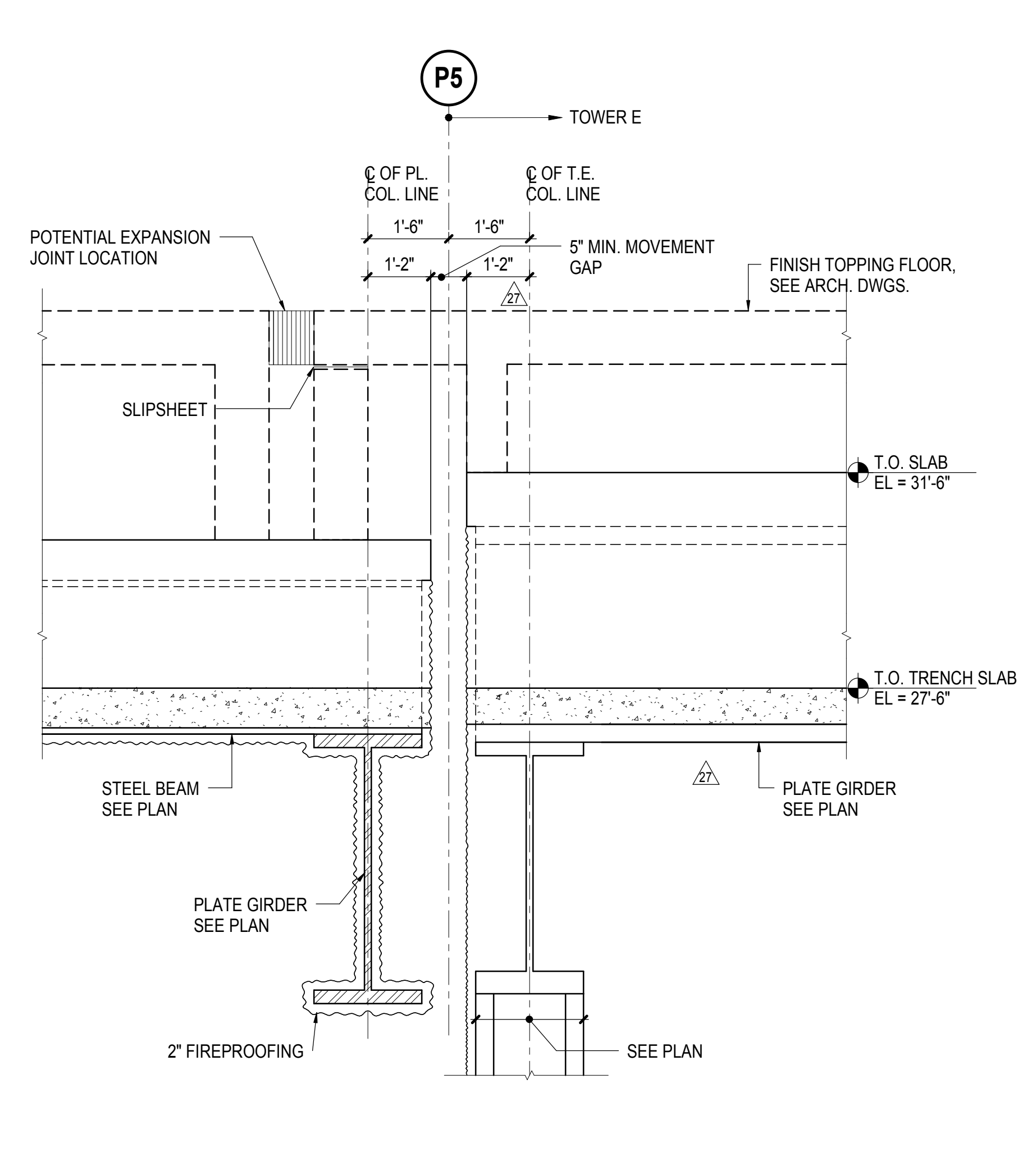
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**S-554.00**

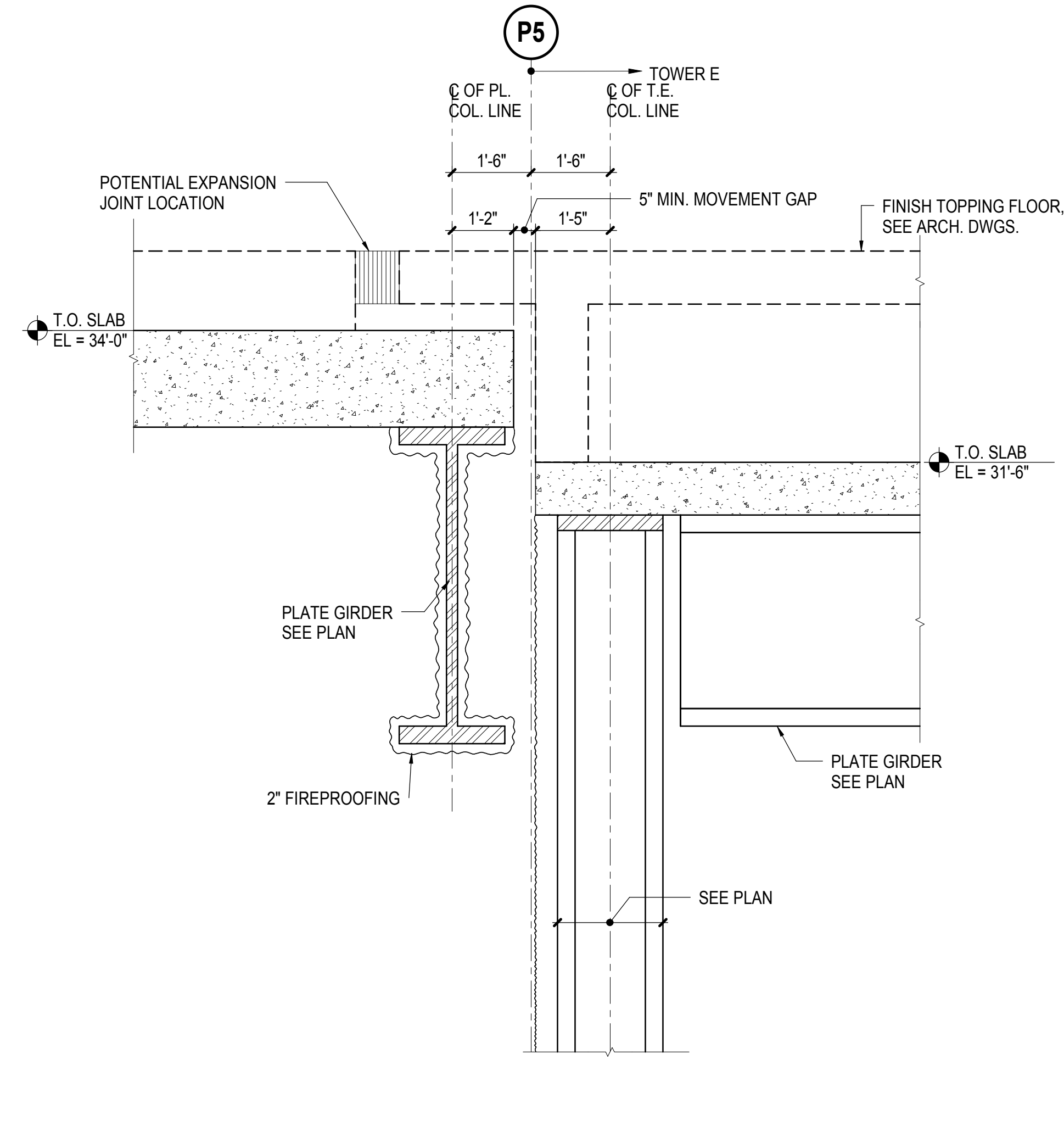
SHEET 108 of 163



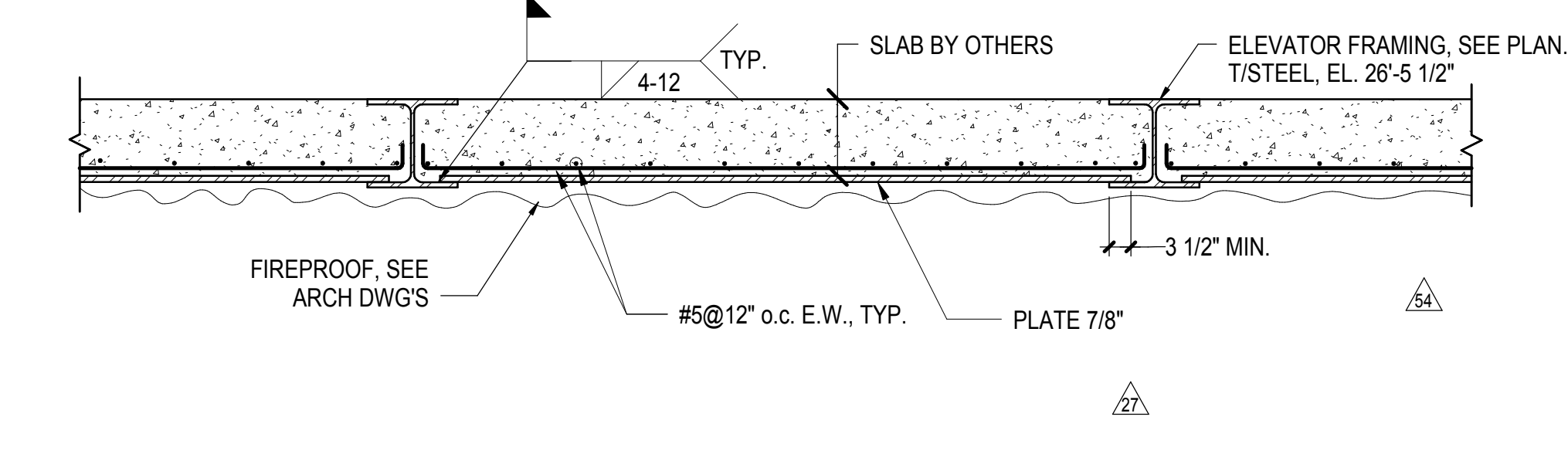
**1 UTILITY TRENCH AT NORTH**  
1/2" = 1'-0"



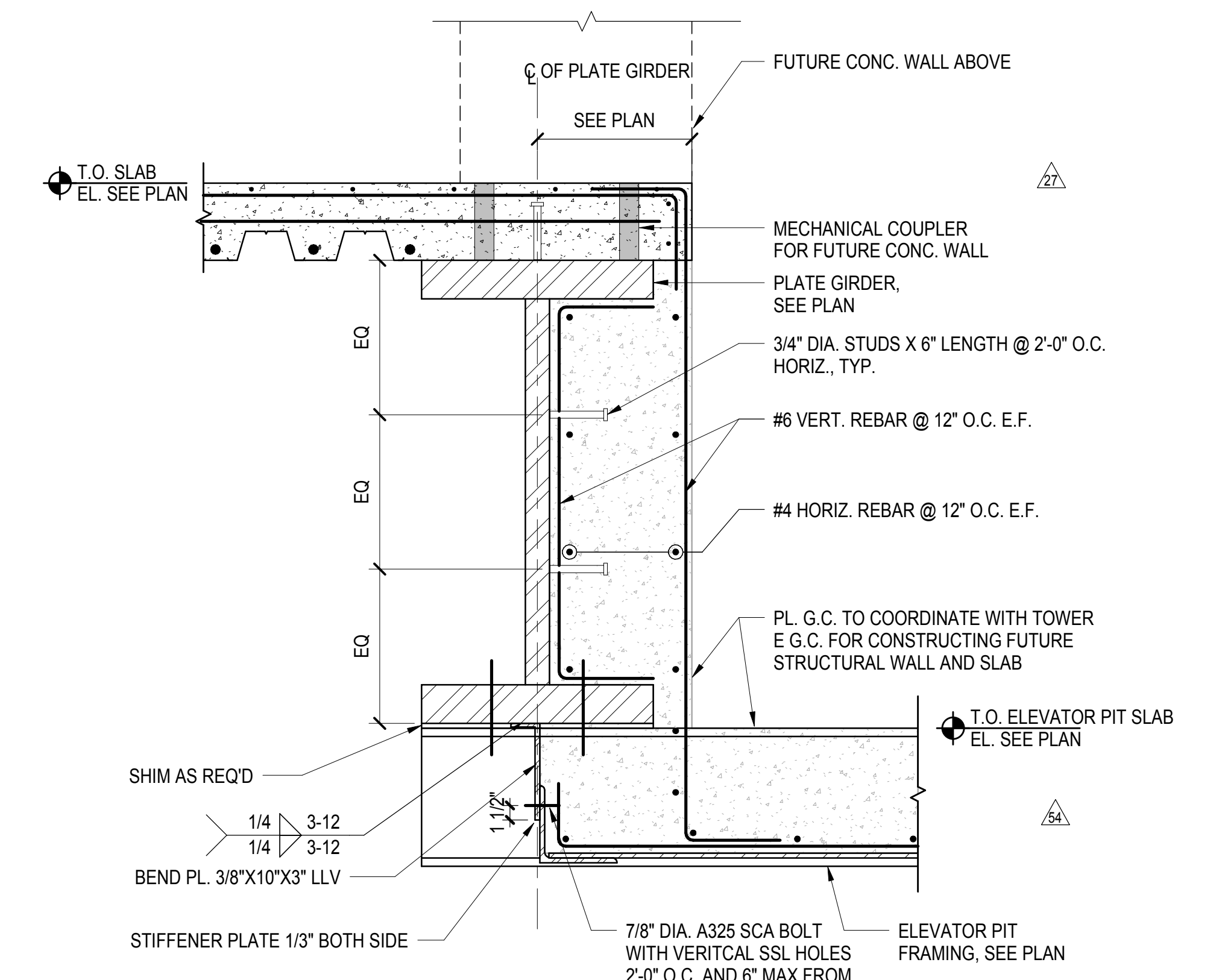
**2 SECTION**  
1/2" = 1'-0"



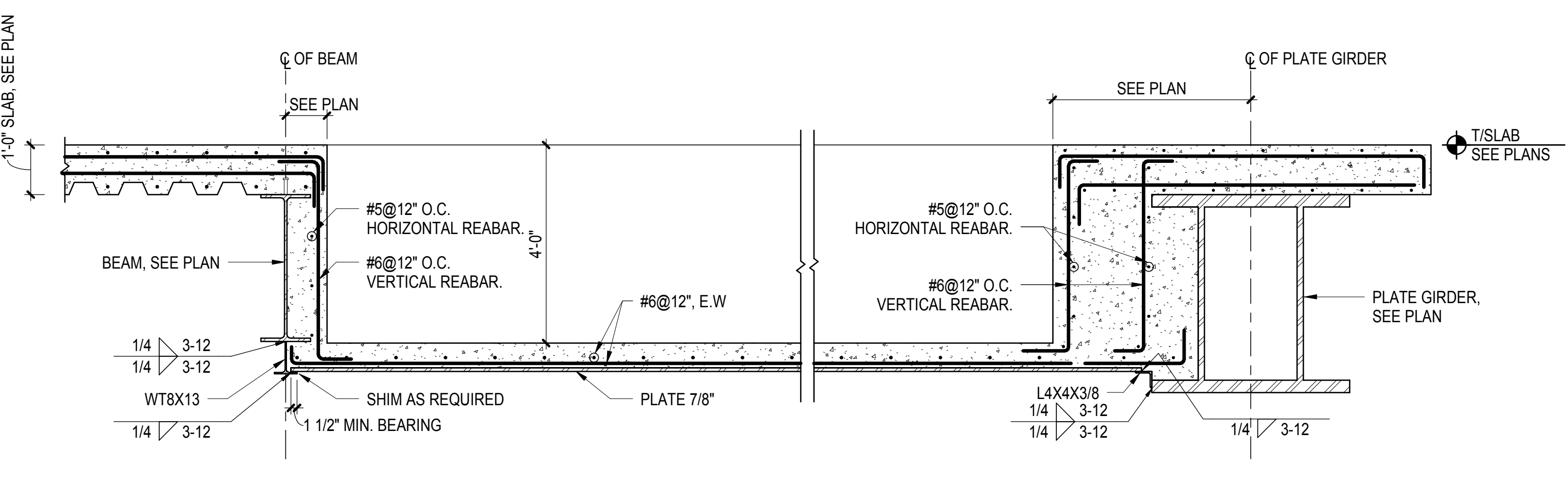
**3 SECTION**  
1/2" = 1'-0"



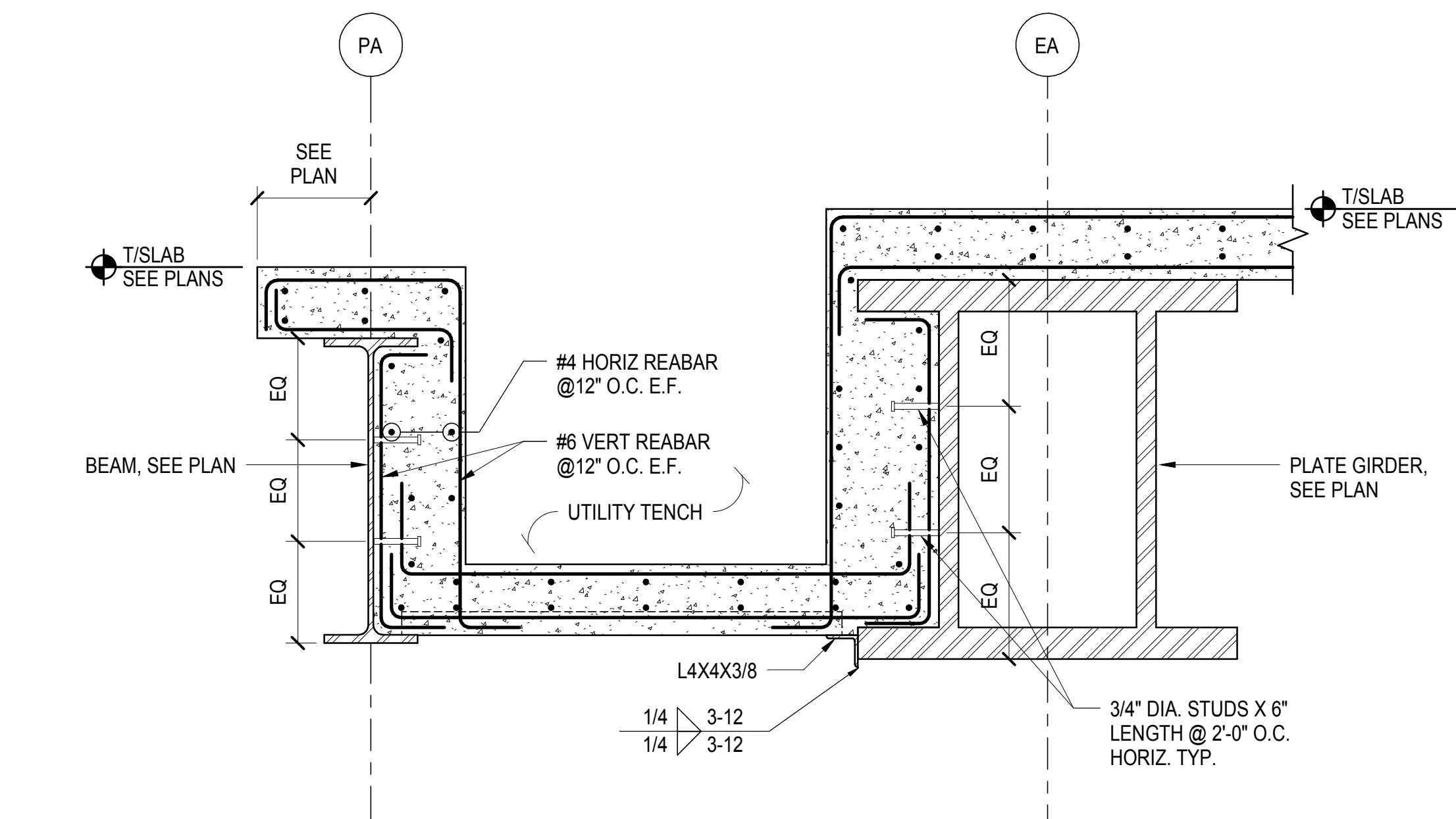
**4 ELEVATOR PIT SLAB ASSEMBLY**  
1/2" = 1'-0"



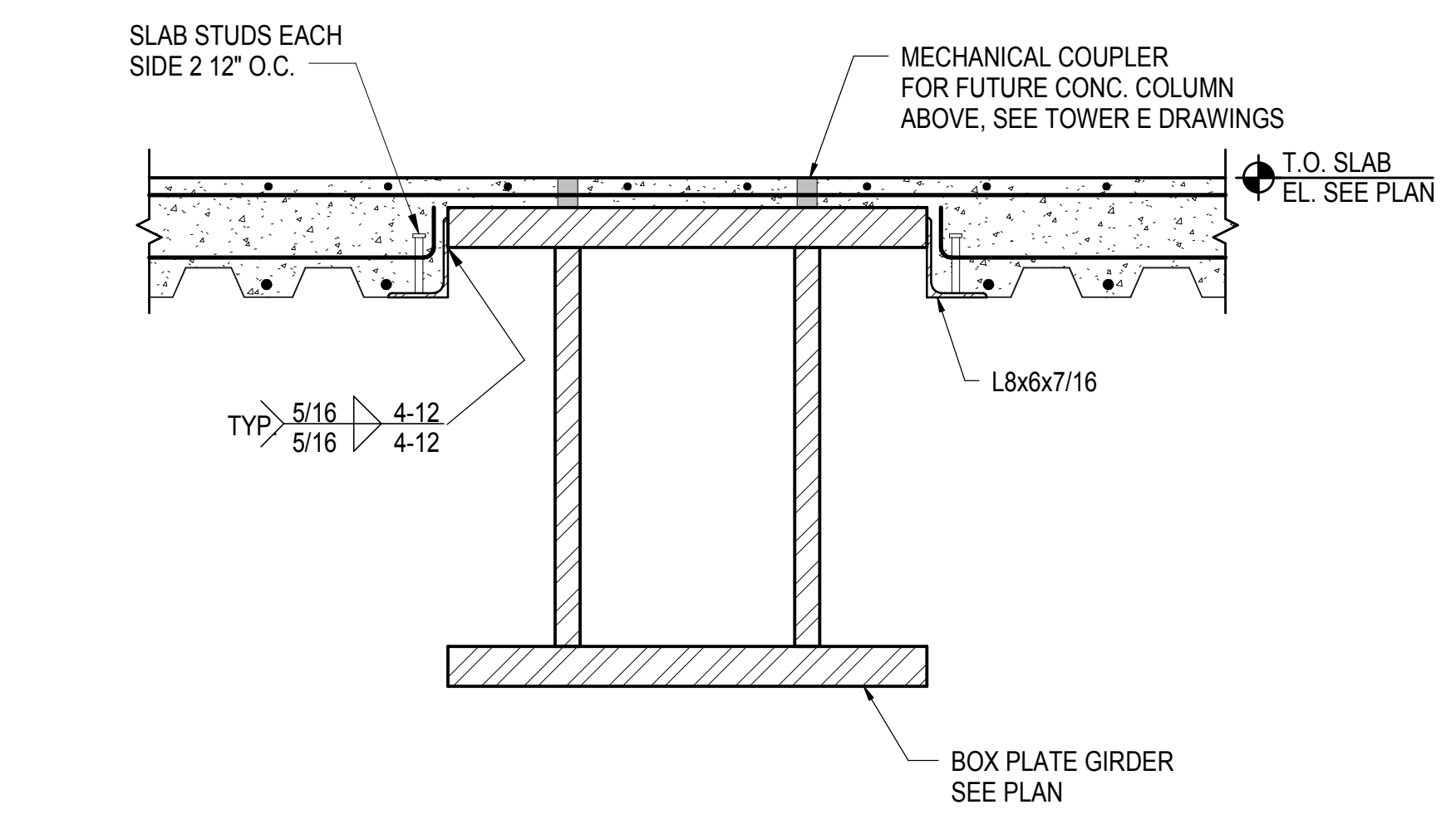
**5 ELEVATOR PIT STEP**  
1" = 1'-0"



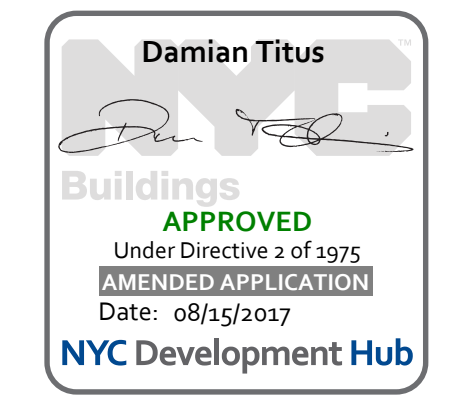
**6 SECTION AT ELEVATOR PIT**  
1/2" = 1'-0"



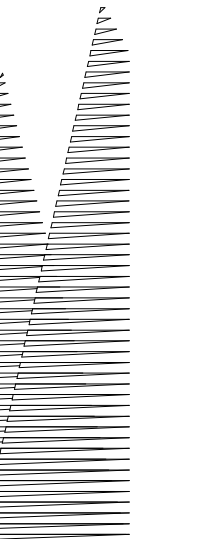
**7 UTILITY TRENCH BETWEEN PA & EA**  
3/4" = 1'-0"



**8 BOX PLATE GIRDER EMBEDDED IN SLAB**  
3/4" = 1'-0"



TOWER E SECTIONS AND DETAILS  
S-554.00  
10/20/2016 11:55:44 AM  
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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

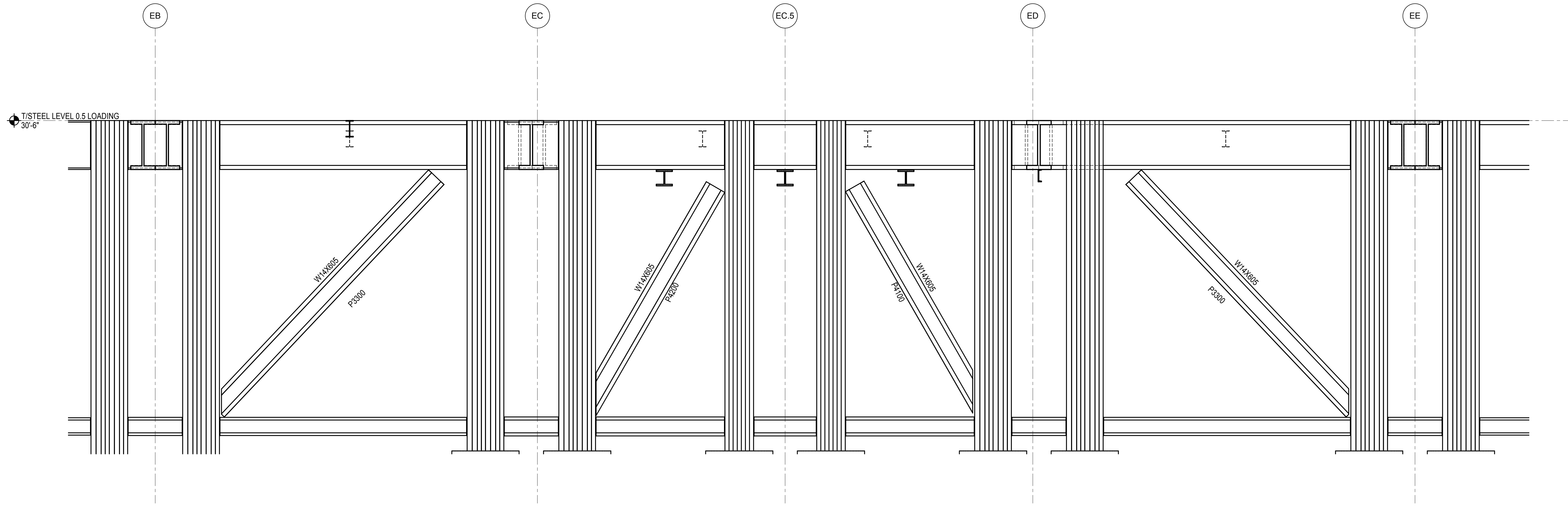
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
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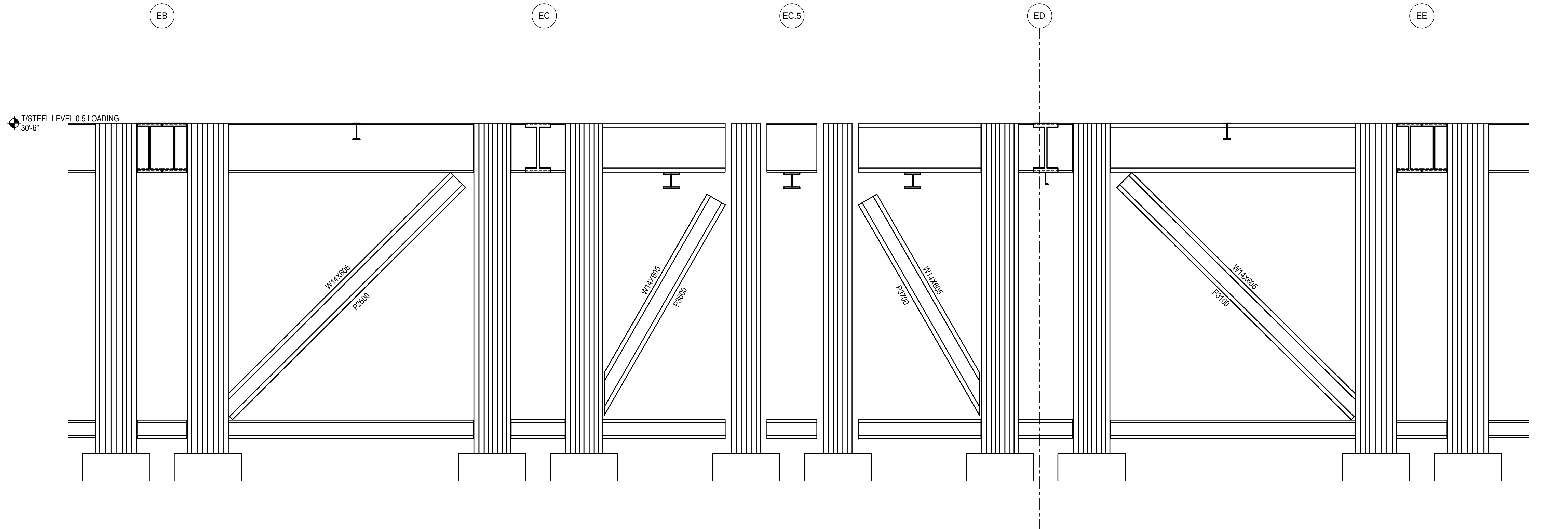
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

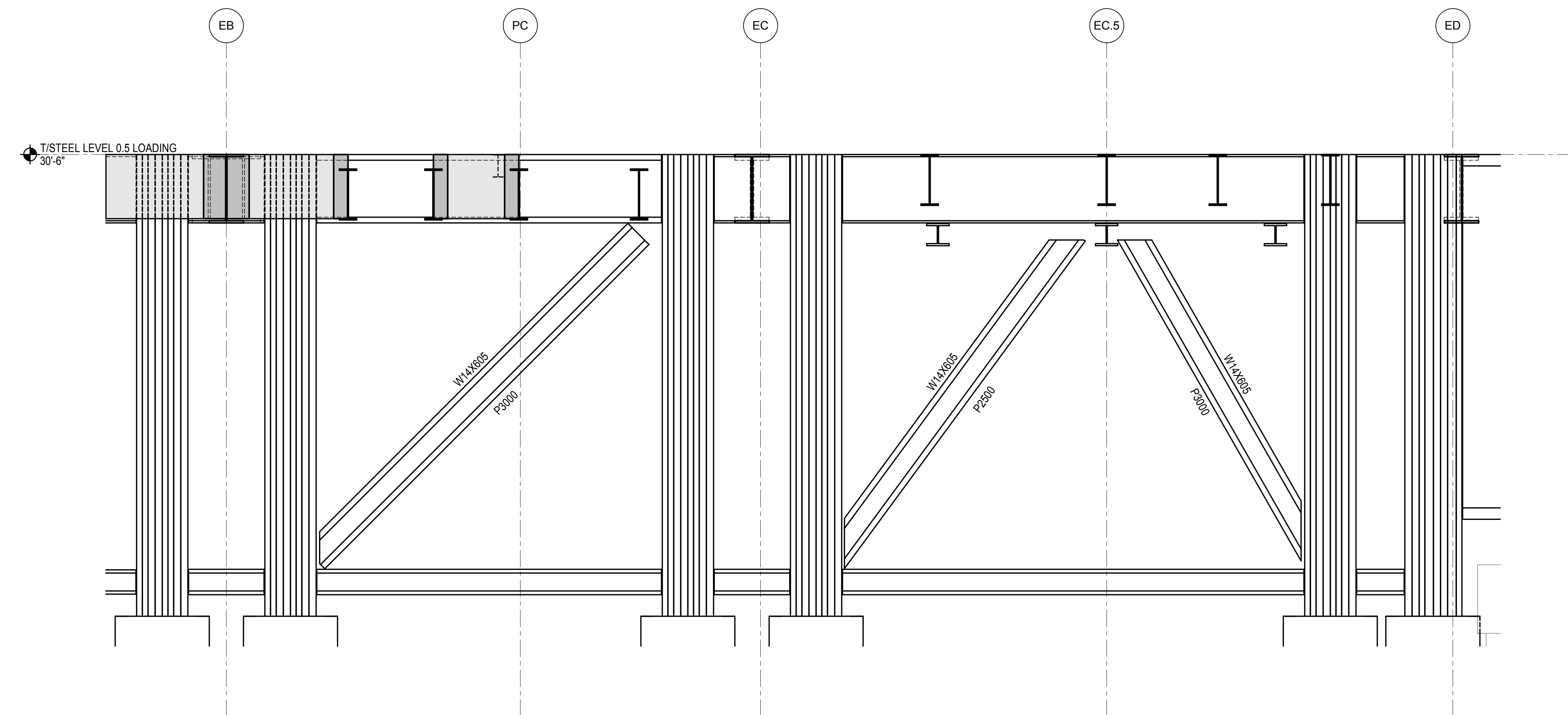
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



**1 Callout of TOWER E-GRID LINE P2**  
1/4" = 1'-0"



**2 Callout of TOWER E-P3**  
1/4" = 1'-0"



**3 Callout of TOWER E-P4**  
1/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 109%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0032 - TOWER E STEEL FRAMING	7/22/2014
Rev	Date

Key Plan

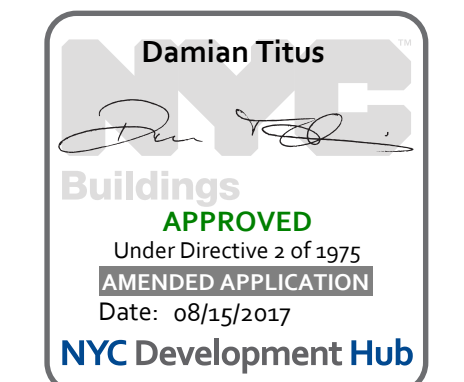
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Project No.	N11330.00
Drawn By	Author
Sheet Number	

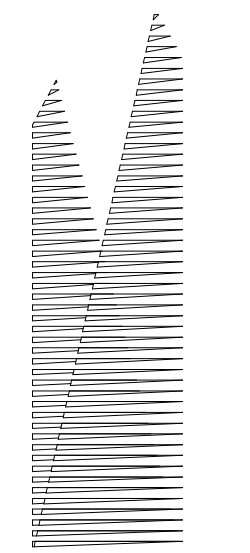
**HYE -PL -S-555.00**

**TOWER E SECTIONS  
AND DETAILS**

Drawing Number / B/CAN Drawing Number  
**S-555.00**

**SHEET 109 of 163**





Client  
Related Companies  
60 Columbus Circle  
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Construction Manager  
Fishman Construction Corporation  
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New York, NY 10017  
Tel: 212.708.3600

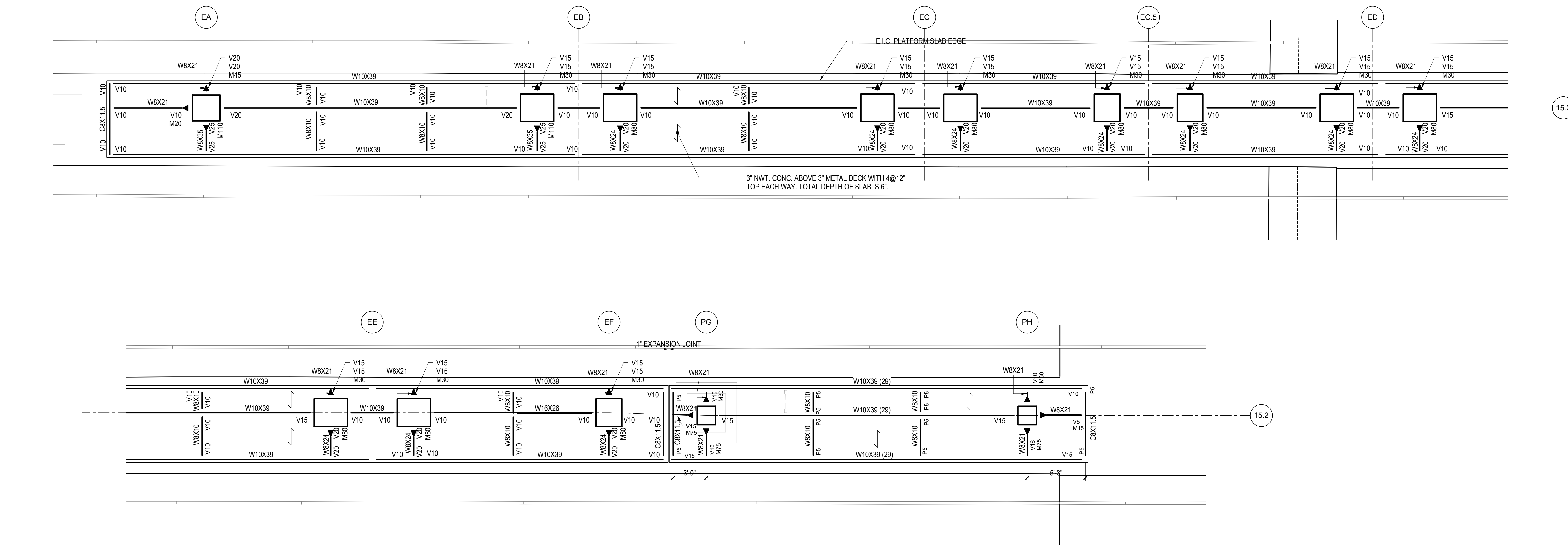
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
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Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
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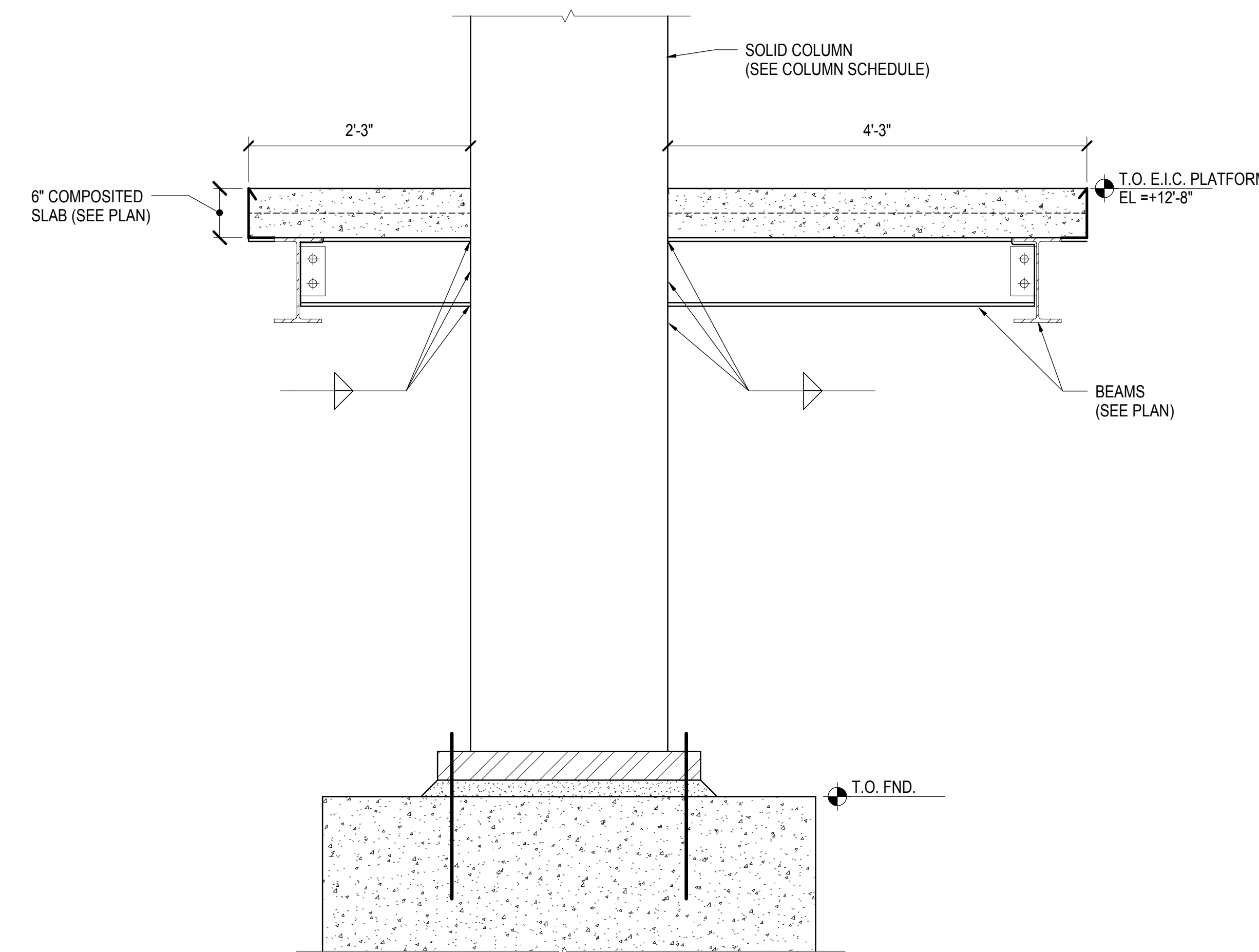
Civil, Mechanical, Electrical, Plumbing,  
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Parsons Transportation Group  
100 Broadway  
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Tel: 212.266.8300 Fax: 212.571.6825

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LIRR Substation  
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605 Third Avenue  
New York, NY 10158  
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**1 E.I.C. PLATFORM PLAN**  
1/4" = 1'-0"



**2 E.I.C. PLATFORM SECTION AT COLUMN**  
1" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 109%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0040 - TOWER E STEEL FRAMING	8/28/2014
By	Author

Exp. Plan

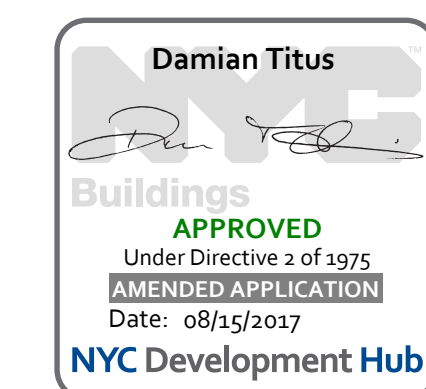
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Project No: N11330.00  
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Sheet Number: Author

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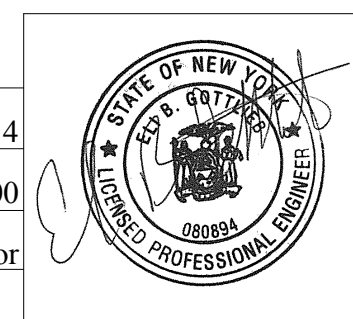
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Drawing Number / B/CAN Drawing Number  
**S-556.00**

SHEET 110 of 163

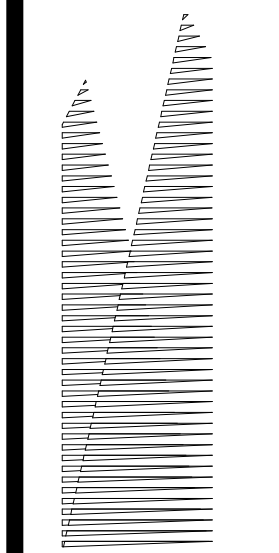


**Damian Titus**  
APPROVED  
Under Directive 3 of 1975  
EXERCISE OF PROFESSION  
Date: 08/15/2017  
NYC Development Hub



Under Directive 3 of 1975  
EXERCISE OF PROFESSION  
Date: 08/15/2017

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Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

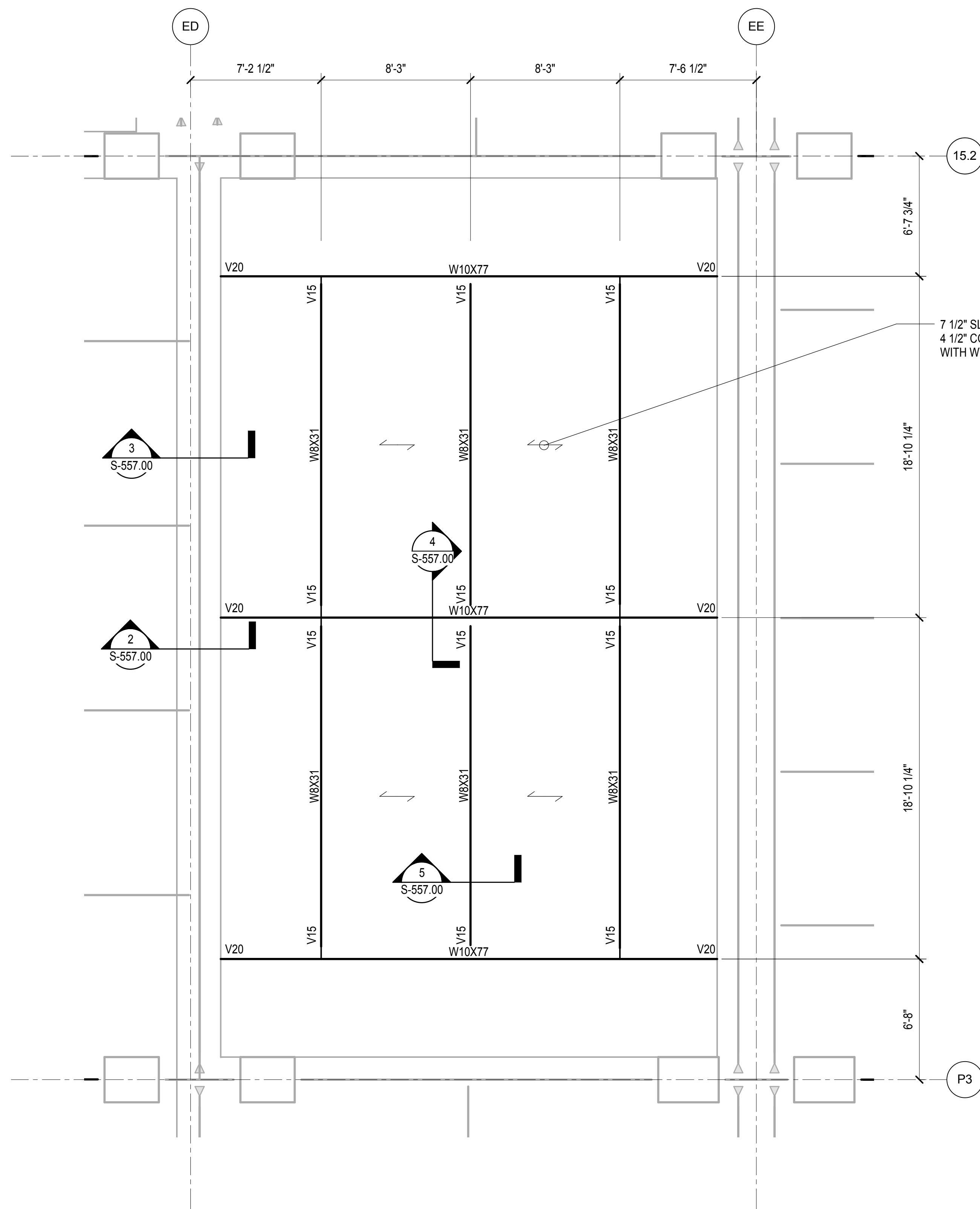
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

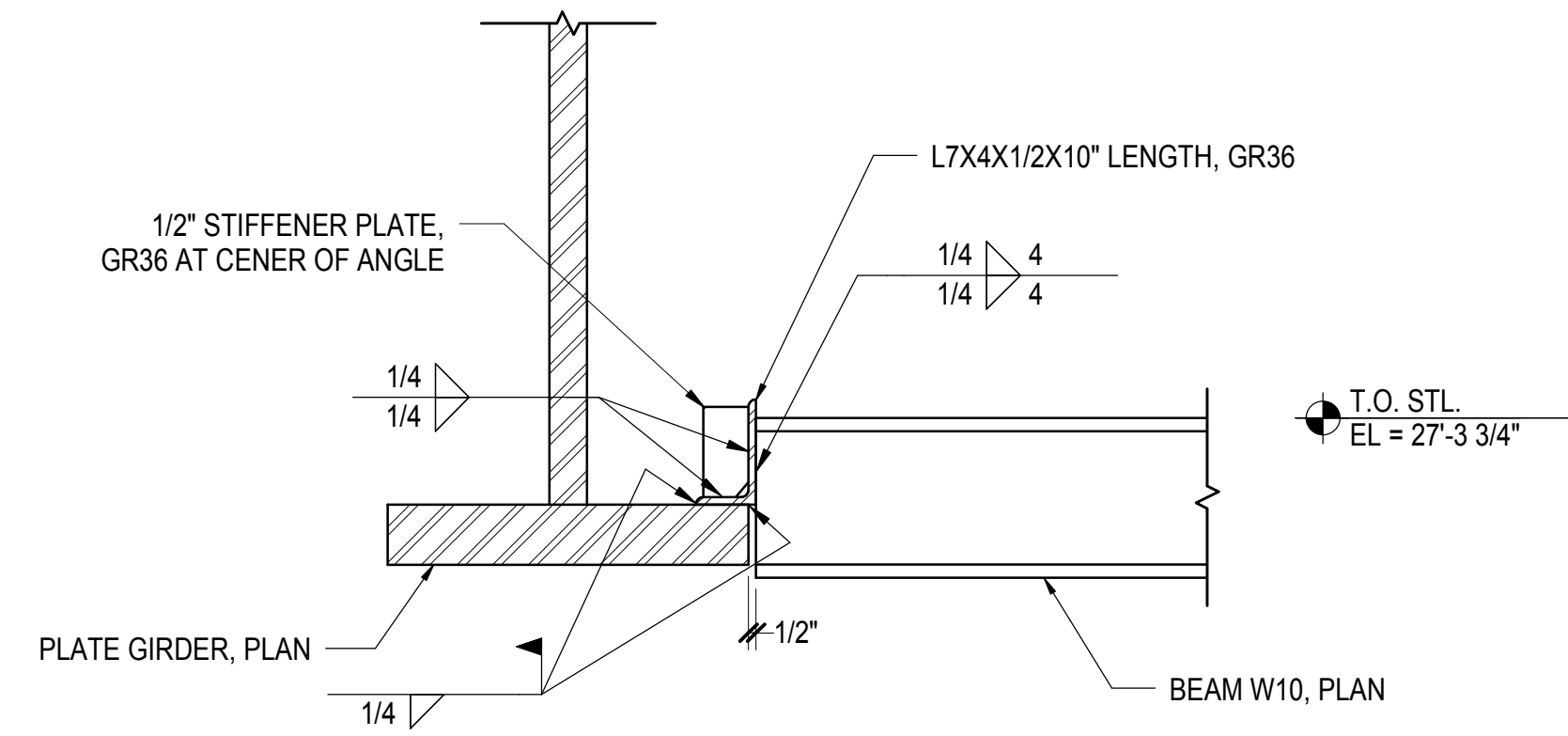
Civil, Mechanical, Electrical, Plumbing  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
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LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

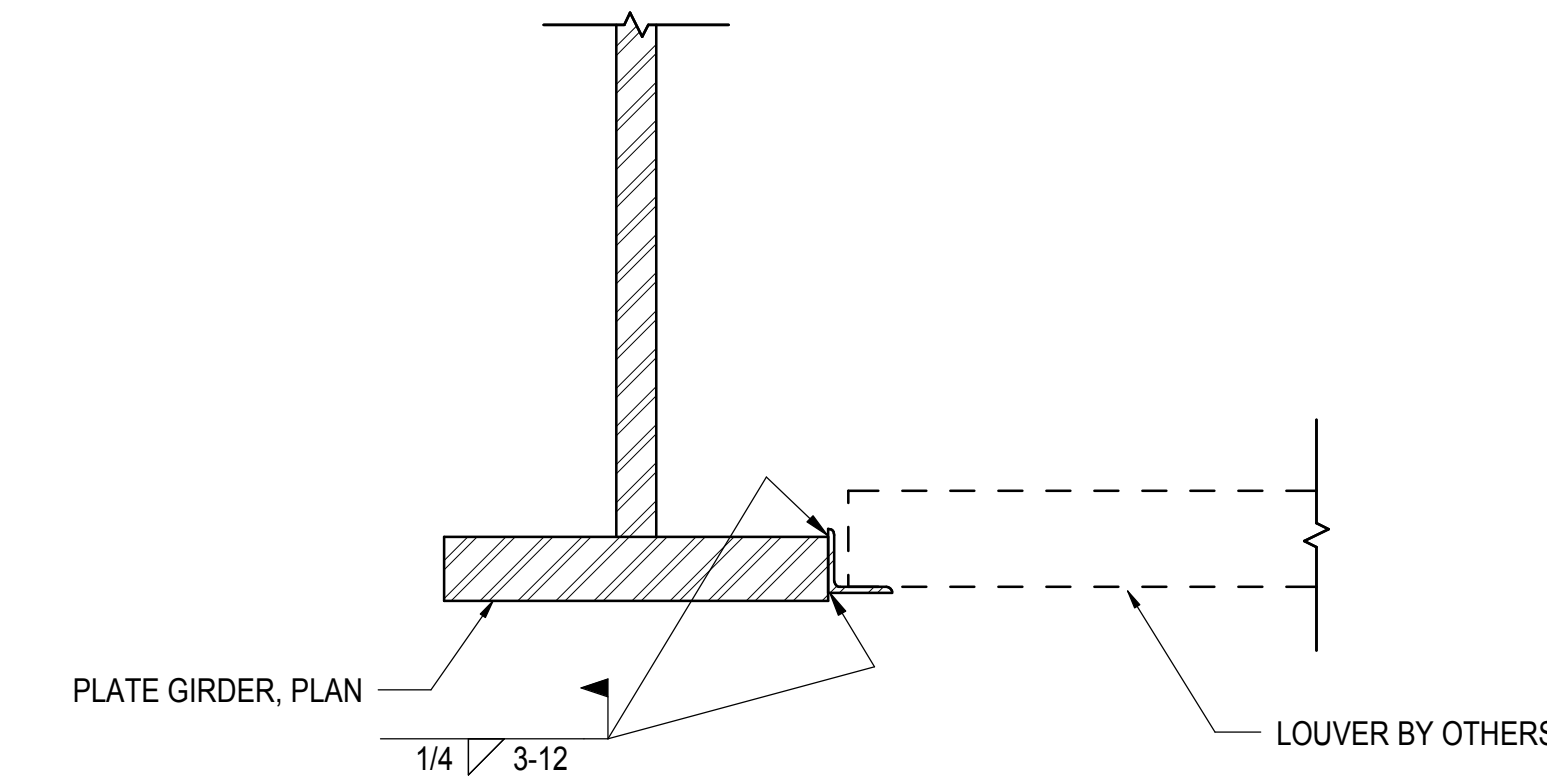
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



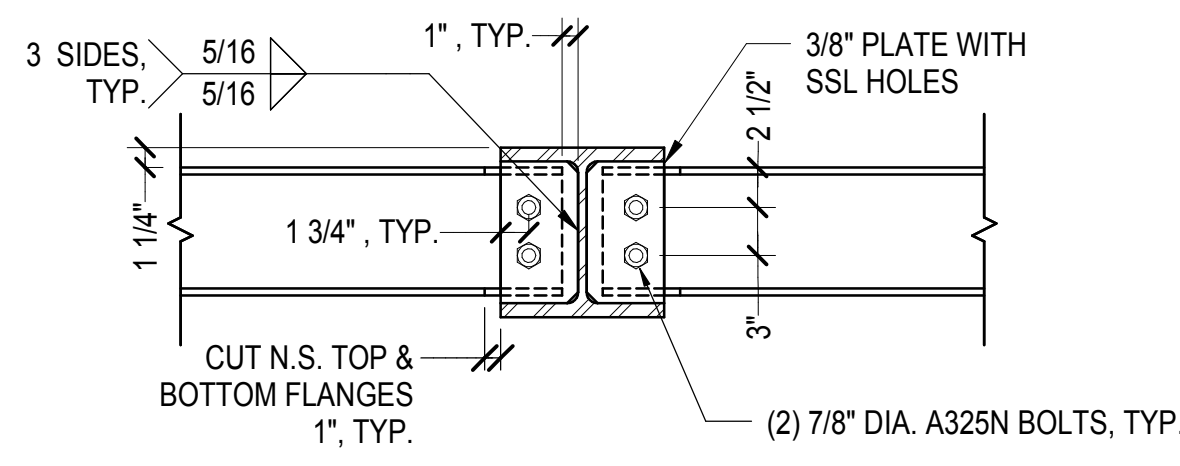
**1 TOWER E PLENUM PART PLAN**  
1/4" = 1'-0"



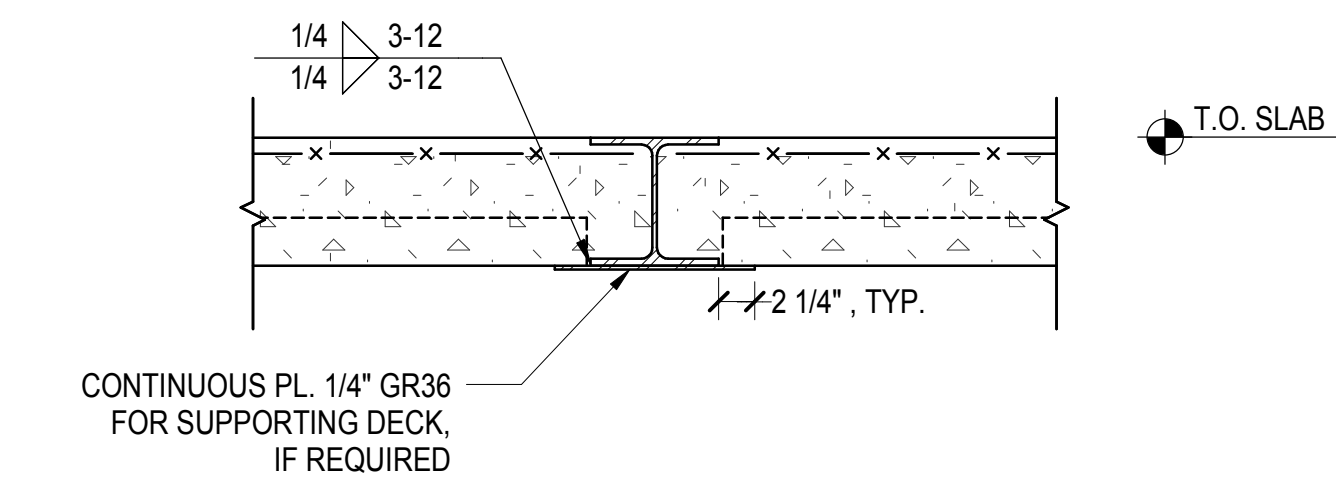
**2 TYPICAL W10 CONNECTION TO PLATE GIRDER**  
1" = 1'-0"



**3 TYPICAL SUPPORT FOR LOUVER**  
1" = 1'-0"



**4 TYPICAL W8 CONNECTION TO W10**  
1" = 1'-0"



**5 TYPICAL SECTION AT W8**  
1" = 1'-0"

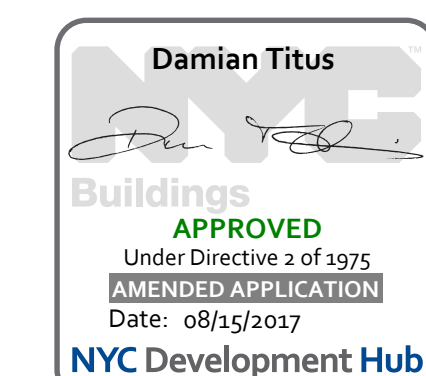
DOB POST-APPROVAL AMENDMENT	10/28/2016
ASHP0103	10/6/2015
By	DRG

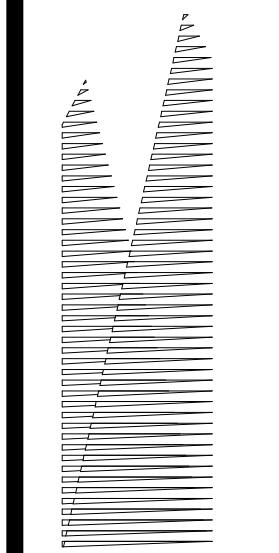
Key Plan

Date	10/06/15
Project No.	N11330.00
Drawn By	Author
Sheet Number	

**HYE -PL -S-557.00**  
Drawing Title  
**TOWER E PLENUM**

Drawing Number / B/CAN Drawing Number  
**S-557.00**





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Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Owner*  
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New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

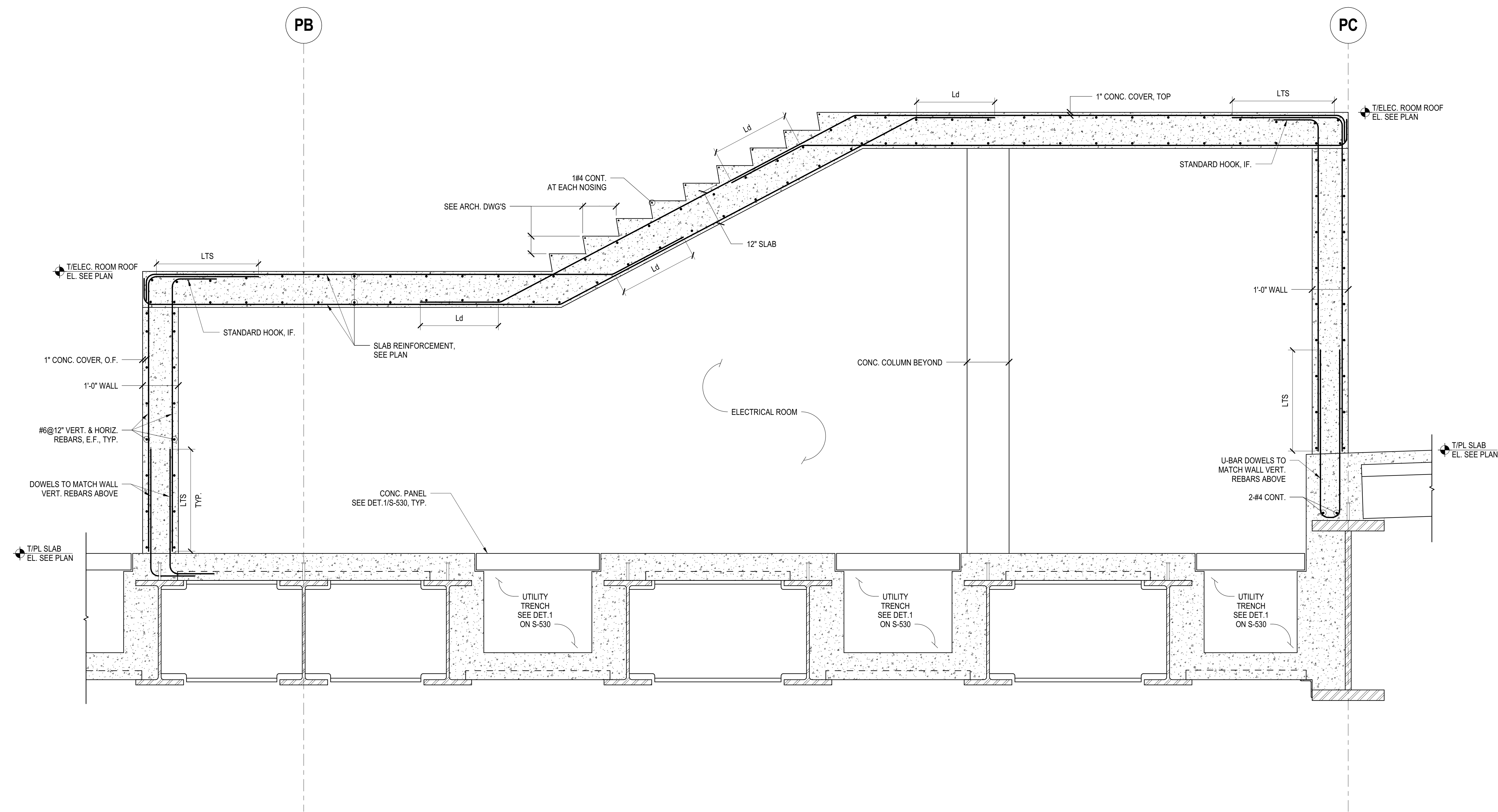
*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
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New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

*Structural Engineer*  
Thornton Tomasetti, Inc.  
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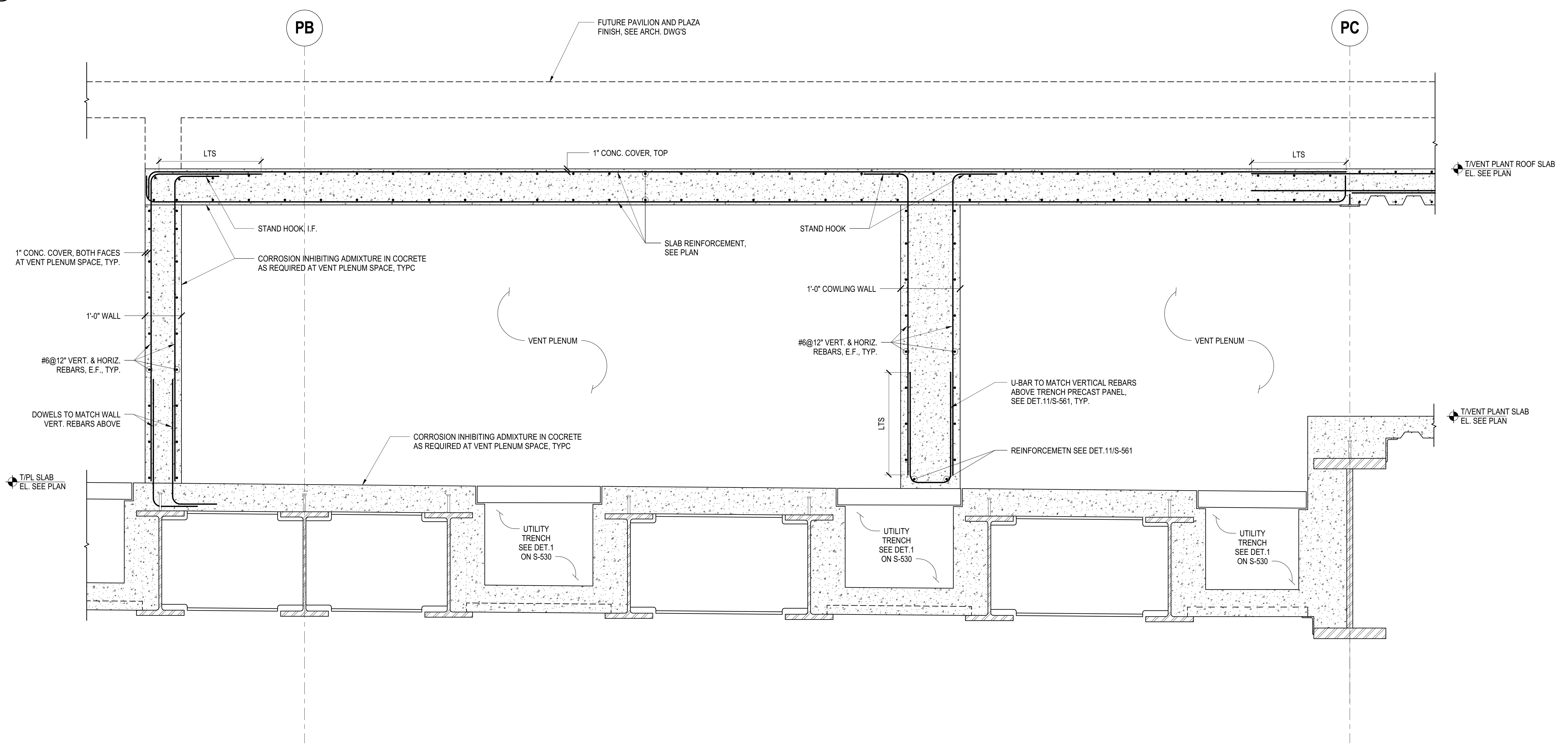
*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

*LJRR Ventilation*  
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*LJRR Substation*  
AECOM  
605 Third Avenue  
New York, NY 10158  
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**1 SECTION AT ELECTRICAL ROOM**  
3/4" = 1'-0"



**2 SECTION AT VENT PLENUM SPACE**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
AS#	AS#0121
Rev	6/7/2016
Rev	Rev

Rev. Plan

Date	05/06/16
Project No.	N11330.00
Drawn By	Author
Sheet Number	

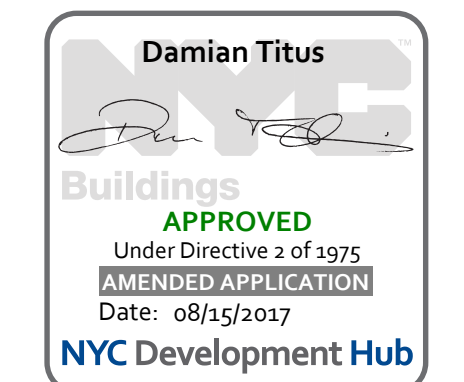
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**WEST PLATFORM PAVILION SECTIONS AND DETAILS**

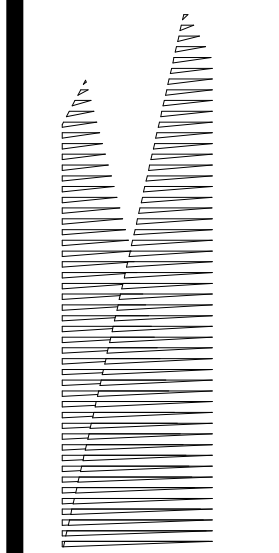
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**S-560.00**

SHEET 112 of 163



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Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

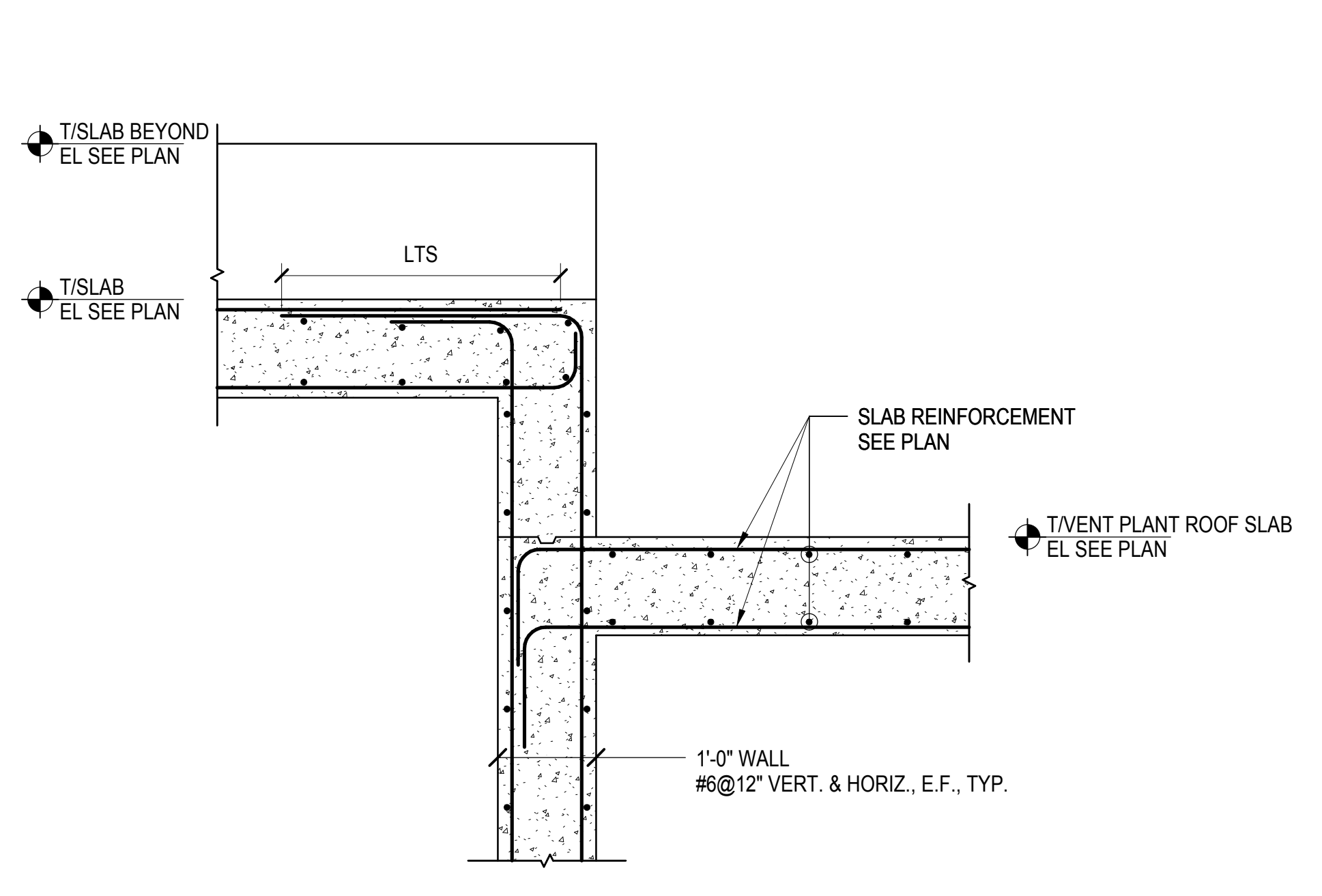
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

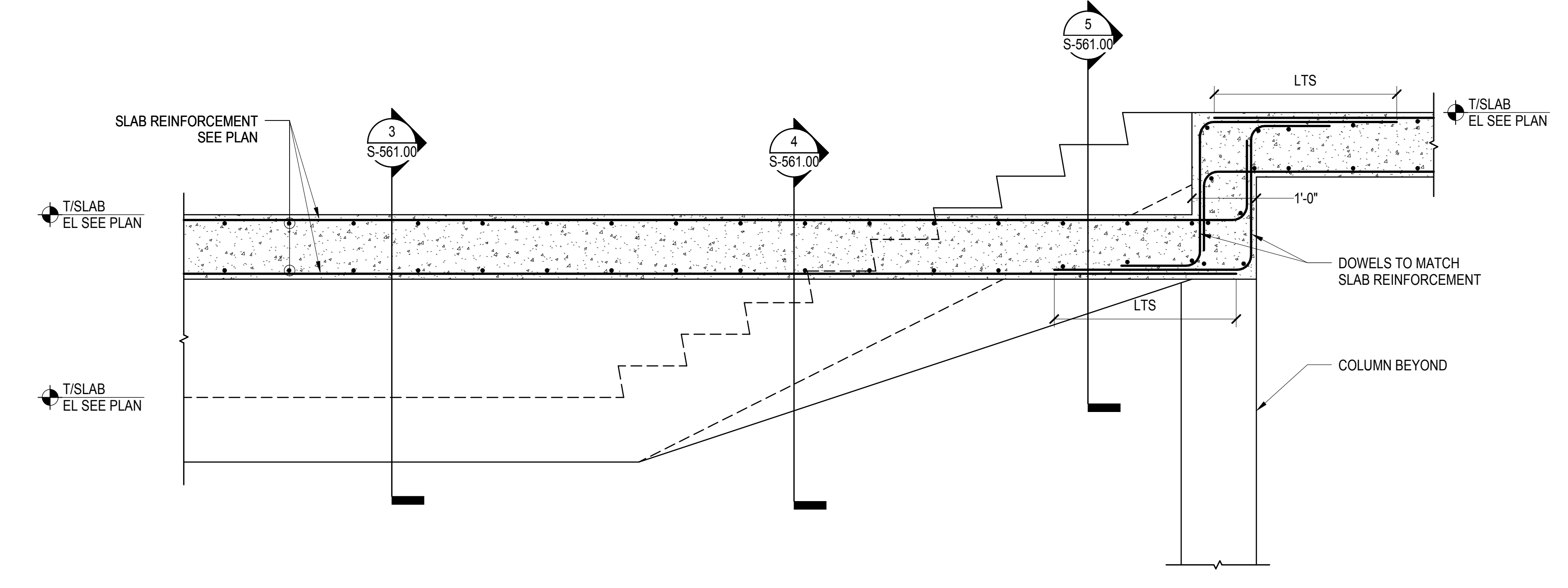
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Fascos Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

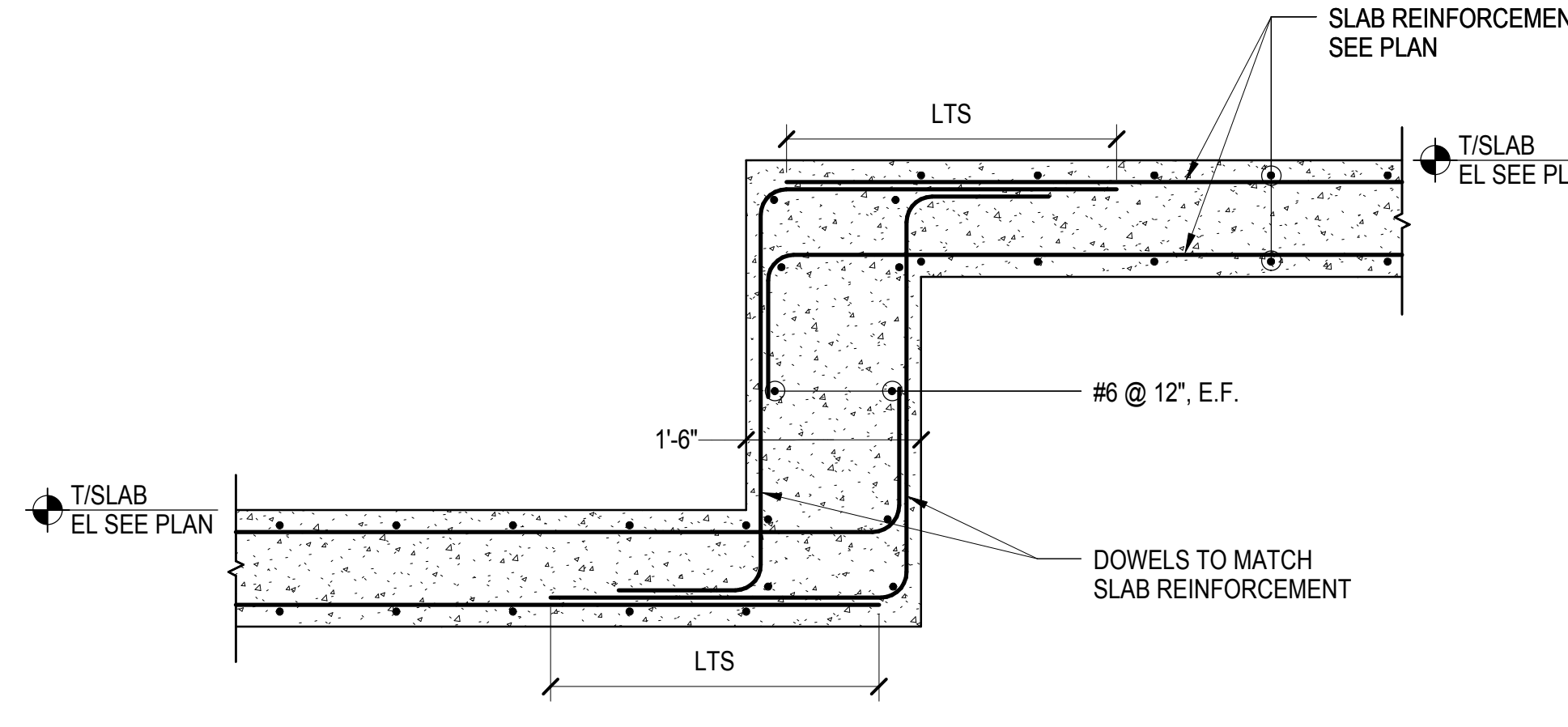
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



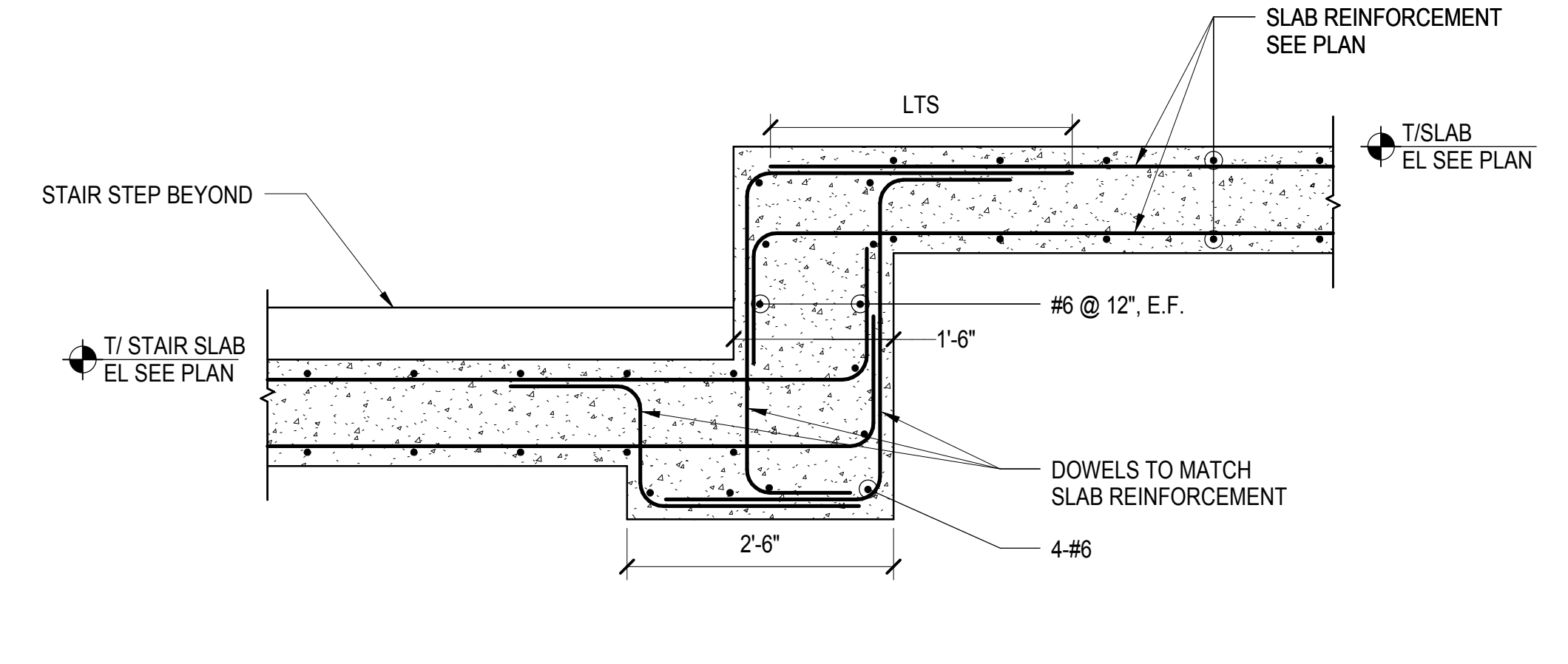
**1 SLAB STEP AT WALL**  
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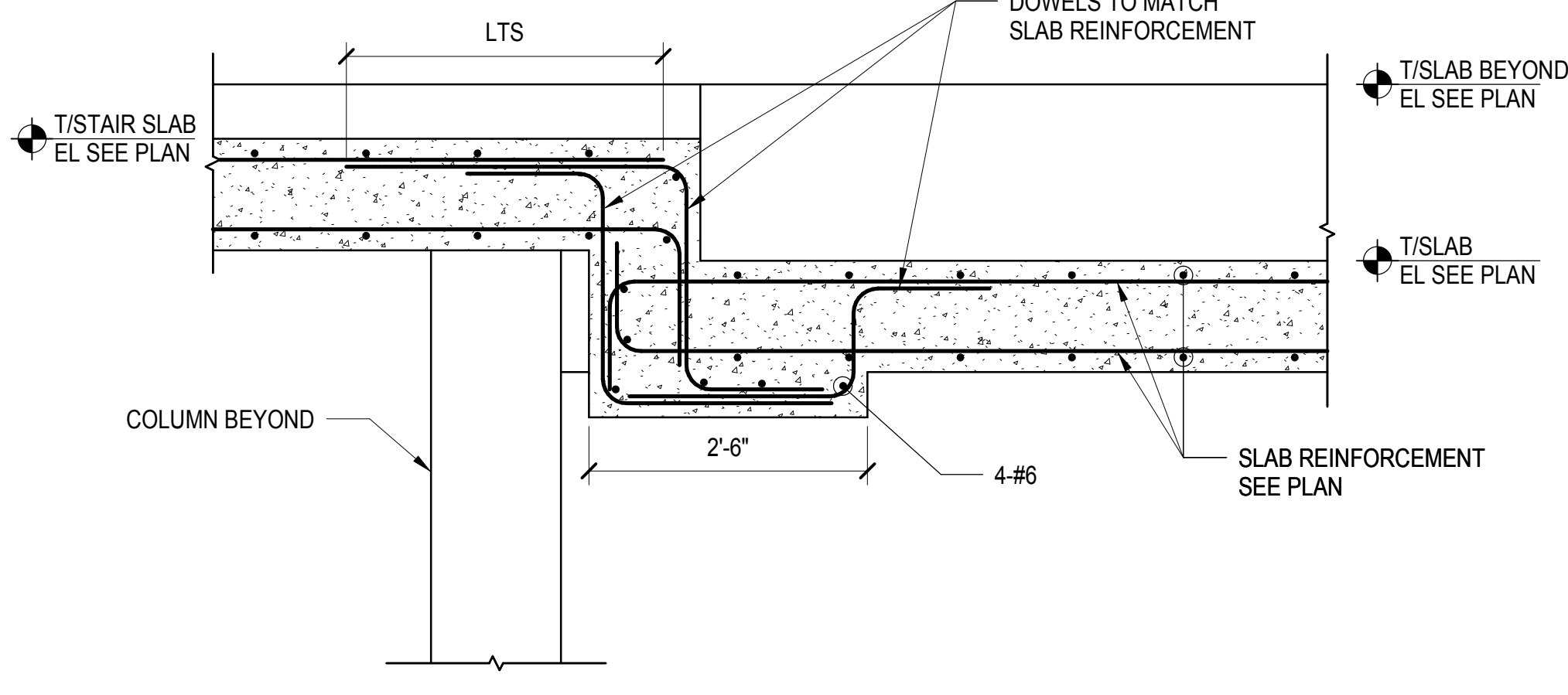
**2 SLAB STEP ELEVATION**  
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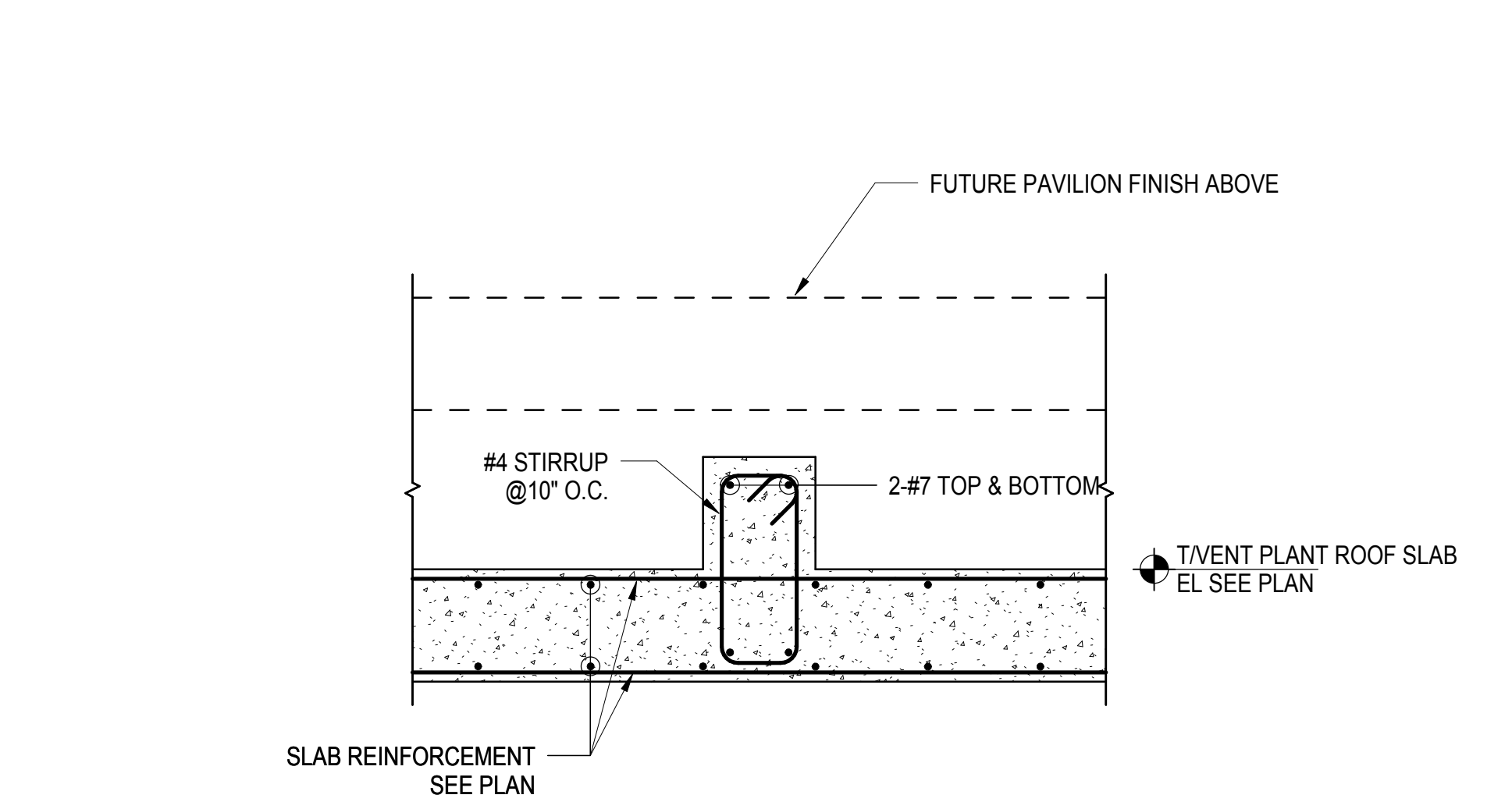
**3 SLAB STEP DETAIL**  
3/4" = 1'-0"



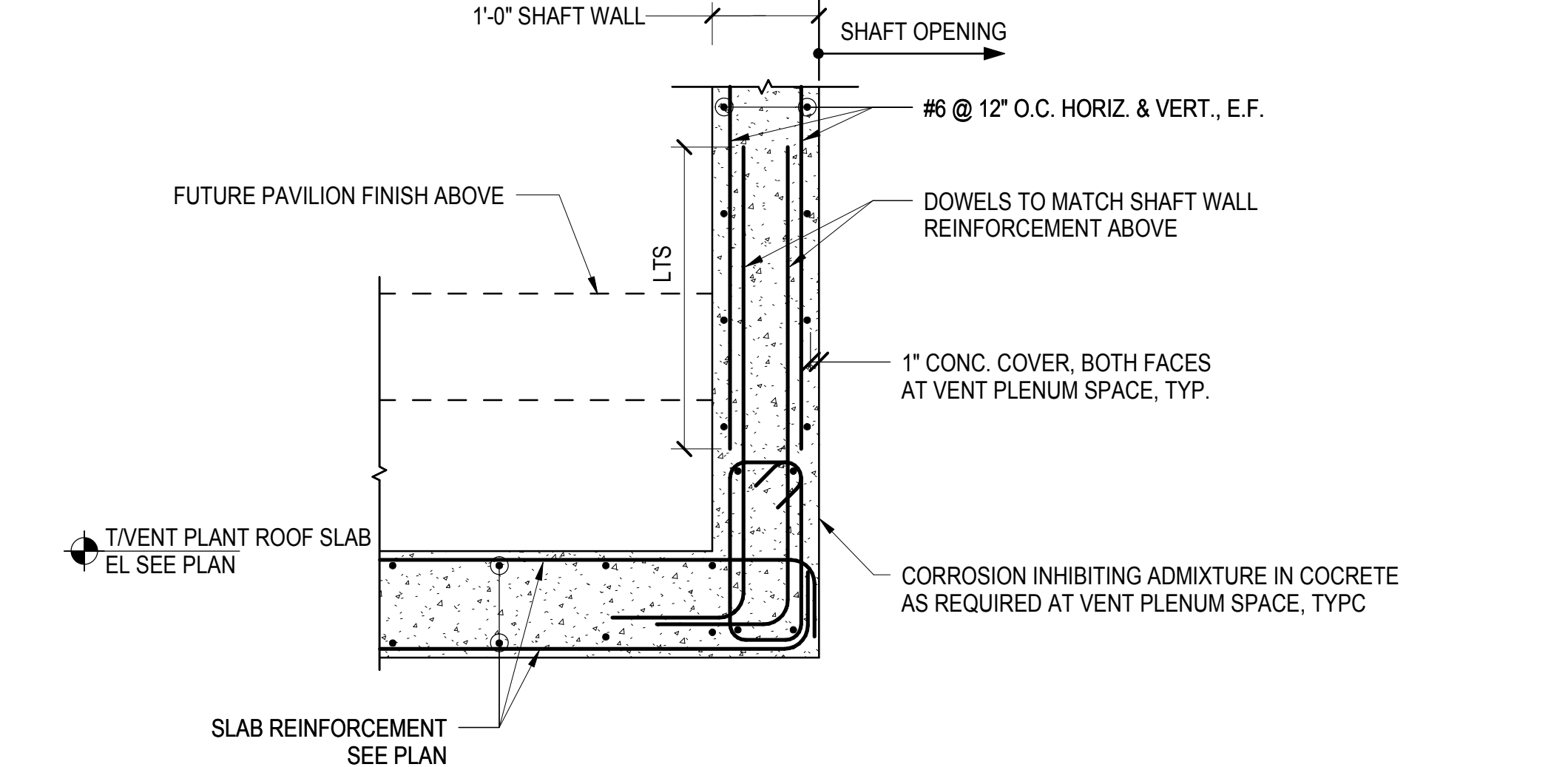
**4 SLAB STEP DETAIL**  
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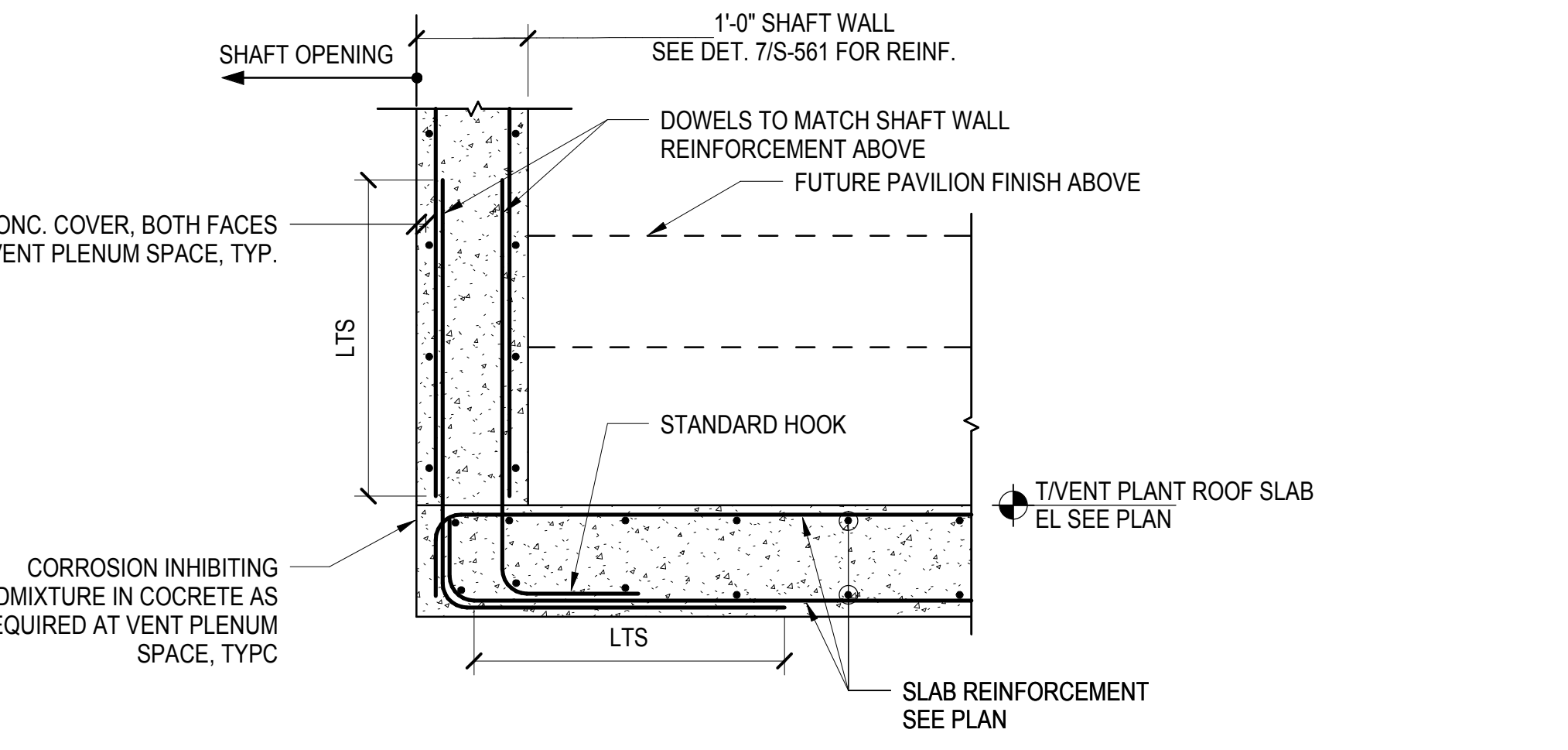
**5 SLAB STEP DETAIL**  
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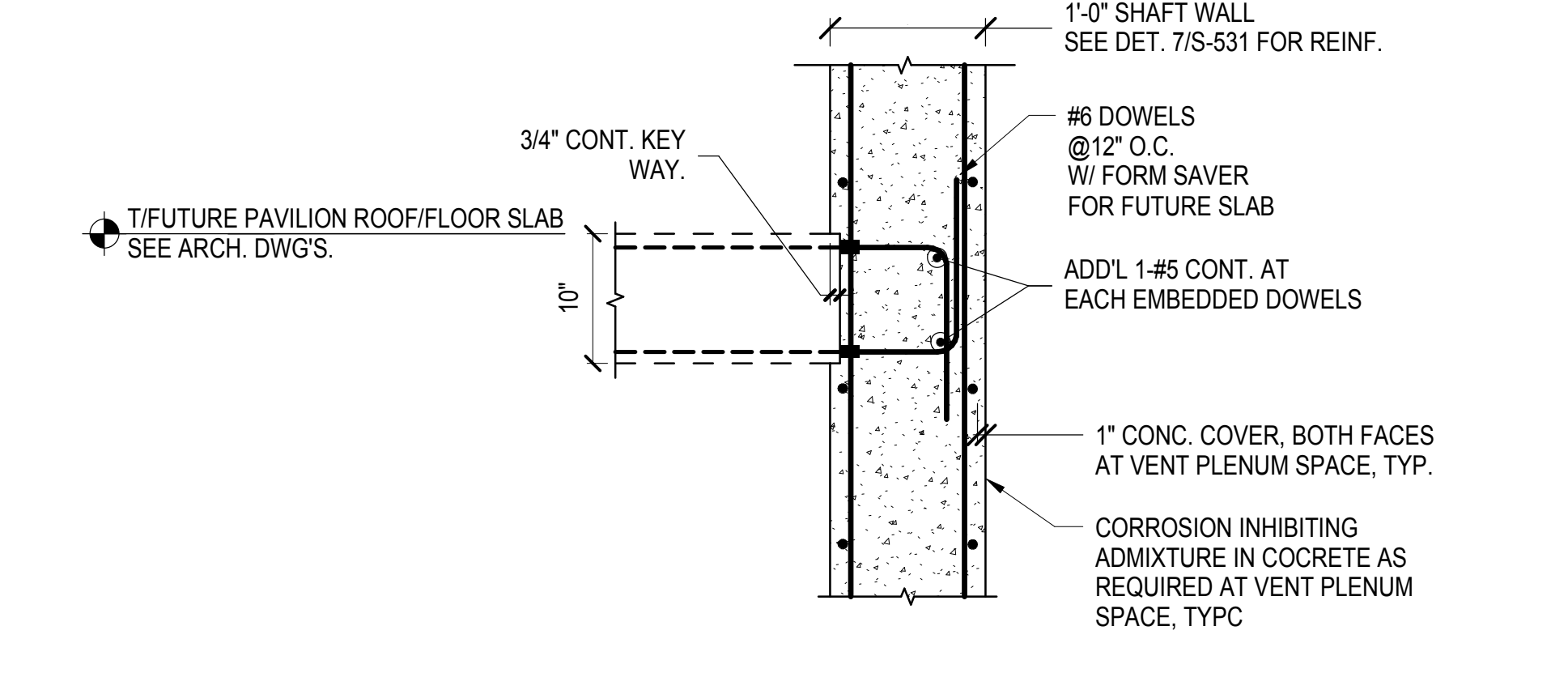
**6 UPTURNED BEAM AT FAN PLANT ROOF**  
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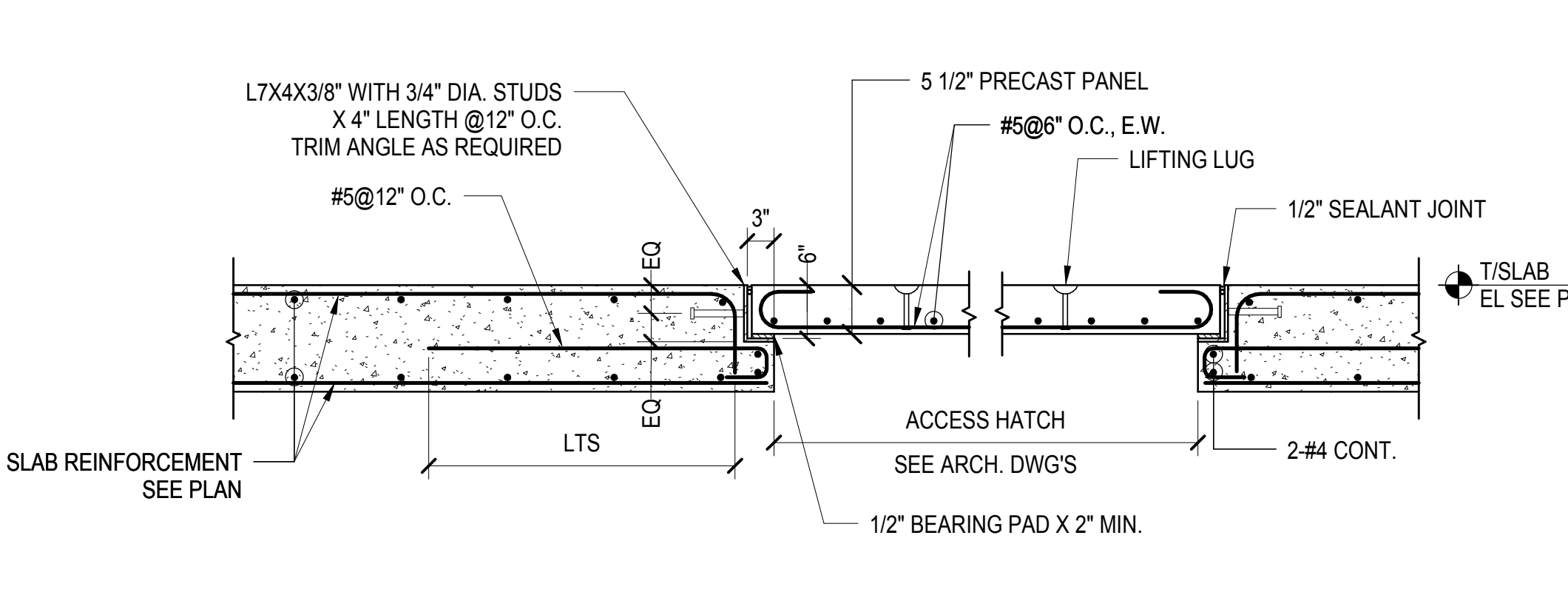
**7 UPTURNED BEAM AT SHAFT WALL**  
3/4" = 1'-0"



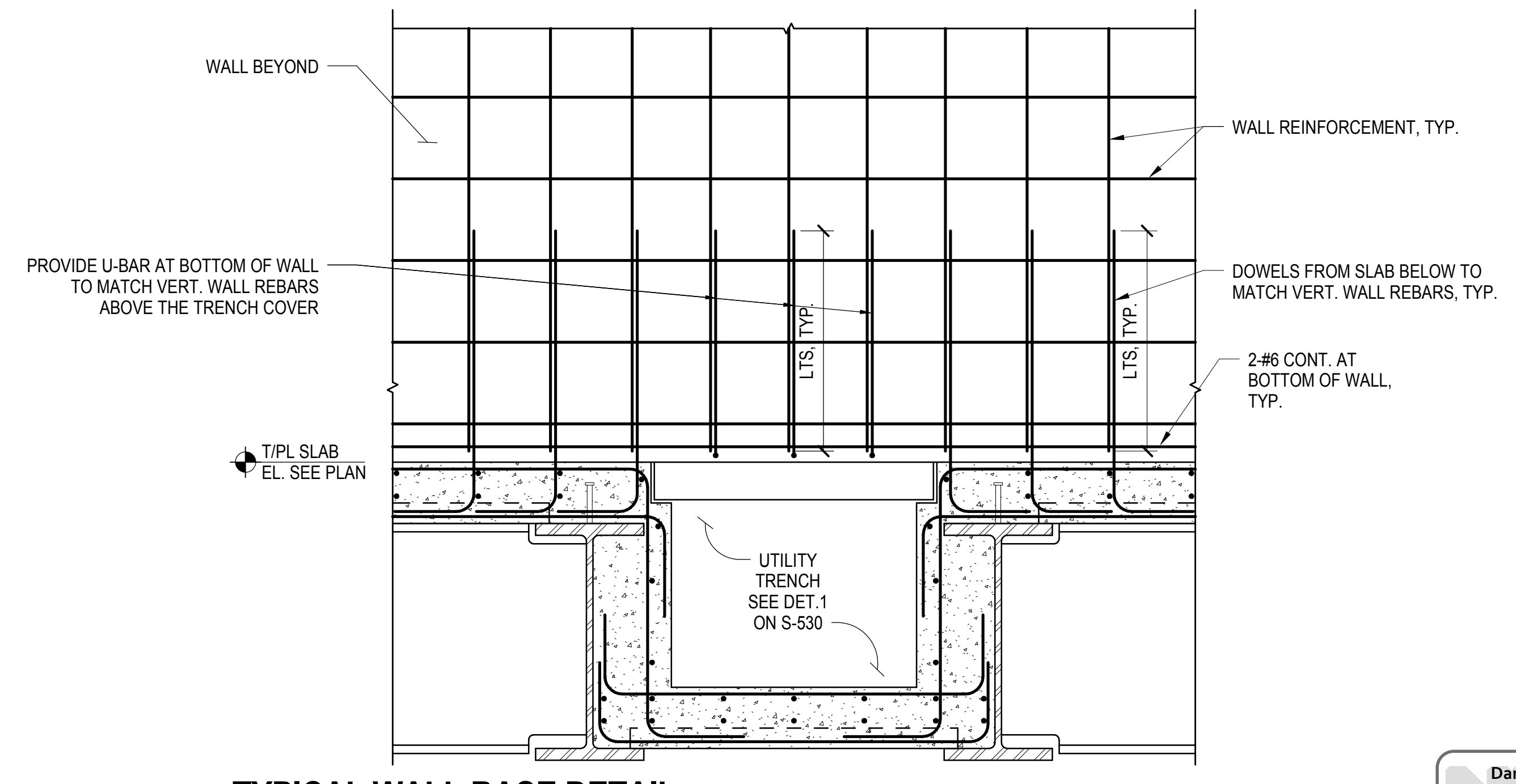
**8 SHAFT WALL AT FAN PLANT ROOF**  
3/4" = 1'-0"



**9 CONN. TO FUTURE ROOF/FLOOR SLAB AT WALL**  
1" = 1'-0"



**10 ACCESS HATCH**  
3/4" = 1'-0"



**11 TYPICAL WALL BASE DETAIL**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
AS#0121	6/7/2016
Rev	Discipline

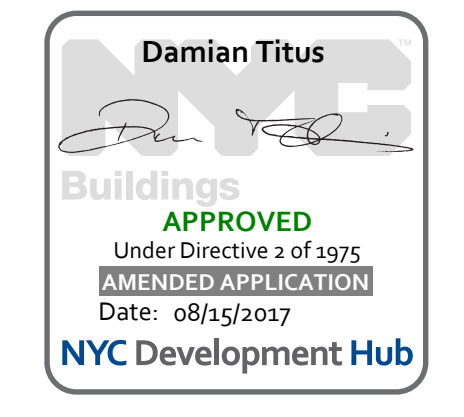
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Date: 05/10/16  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

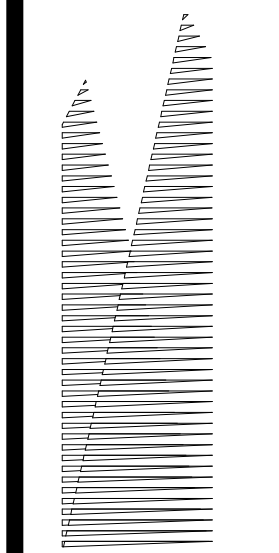
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**WEST PLATFORM PAVILION SECTIONS AND DETAILS**

Drawing Number / B/CAN Drawing Number  
**S-561.00**



S-561.00  
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Client  
Related Companies  
60 Columbus Circle  
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Architect  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
AS#0121	6/7/2016
By: [Signature]	Date:

Key Plan

Date:	05/12/16
Project No:	N11330.00
Drawn By:	Author
Sheet Number:	

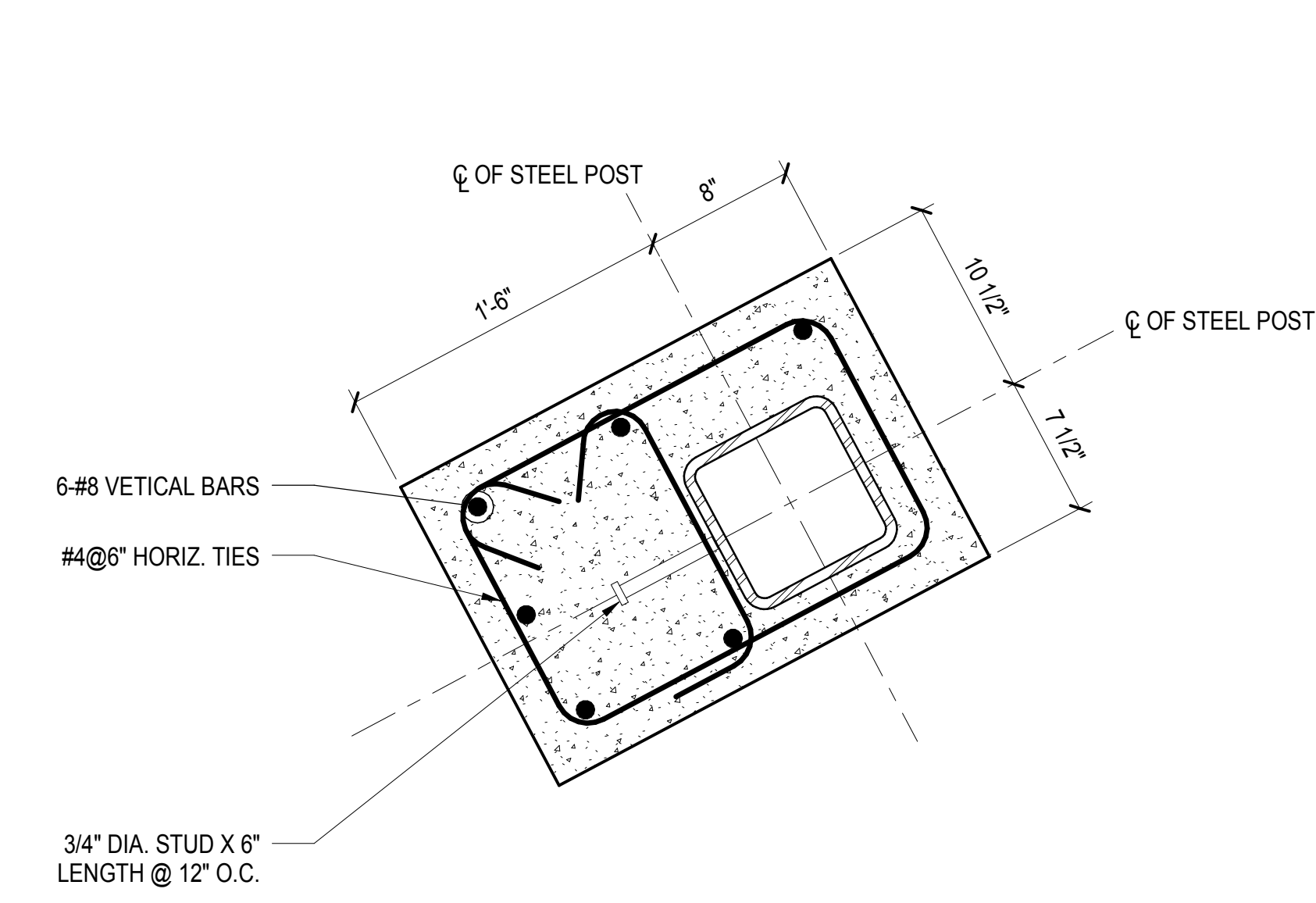
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**WEST PLATFORM PAVILION SECTIONS AND DETAILS**

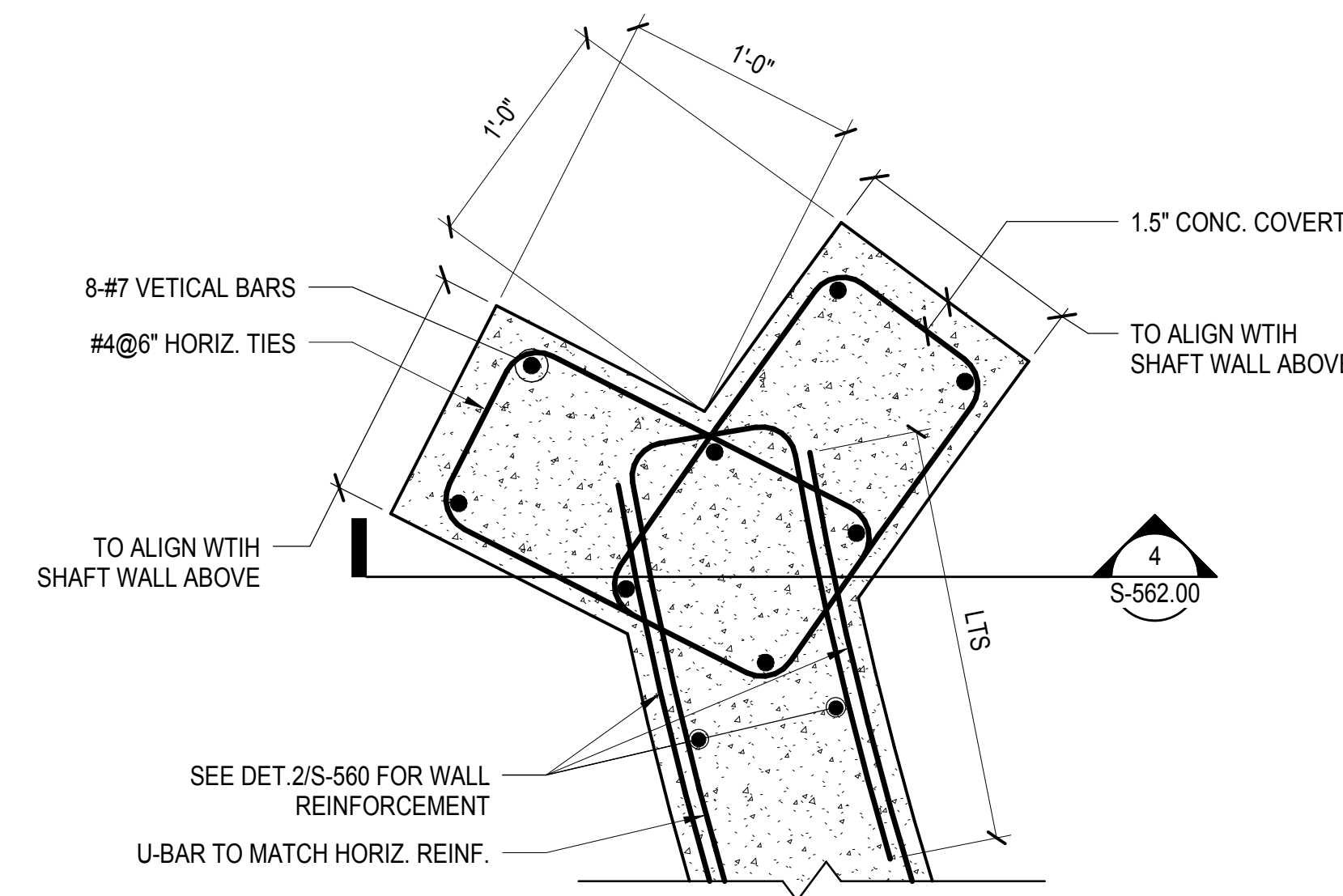
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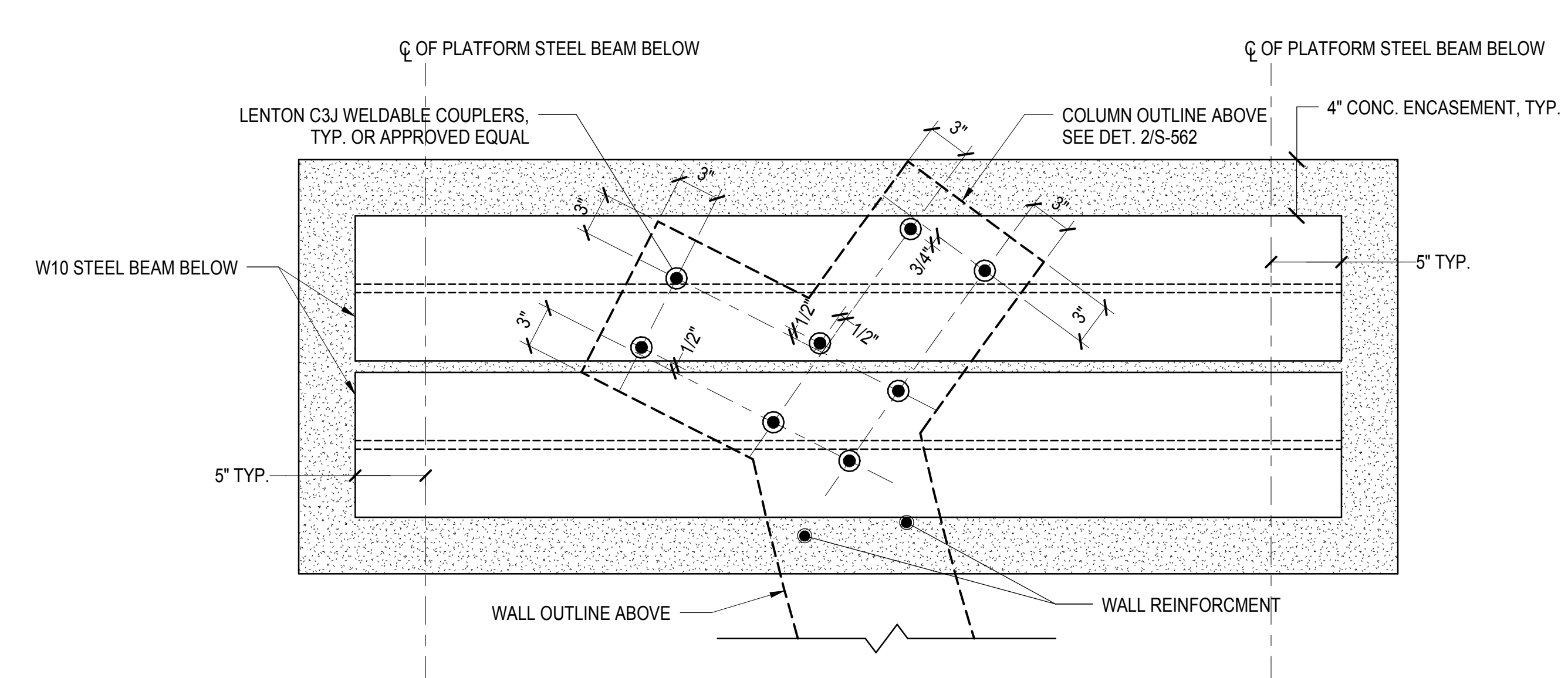
SHEET 114 of 163



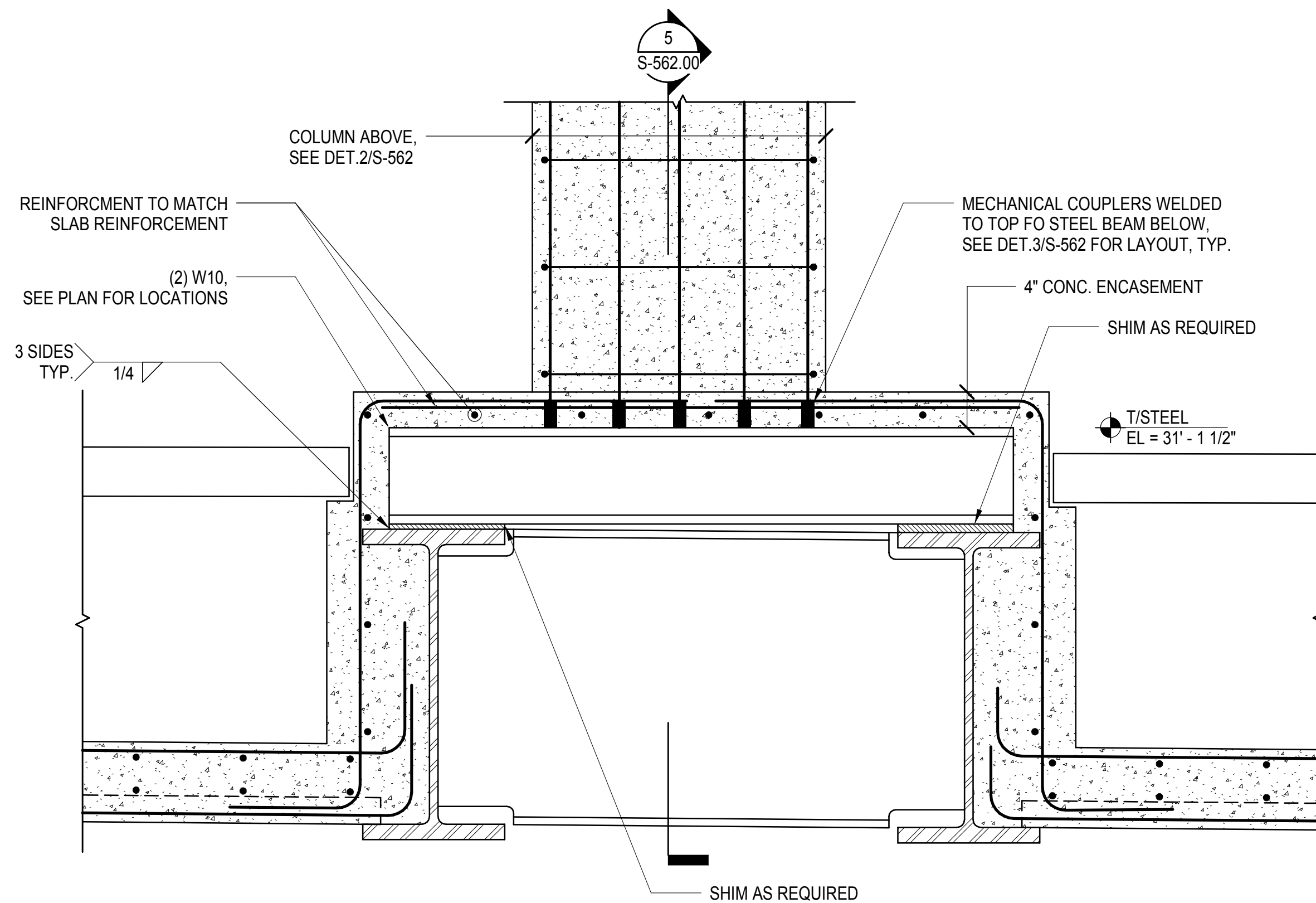
**1 PAVILION SHAFT NE COLUMN DETAIL - PLAN**  
1 1/2" = 1'-0"



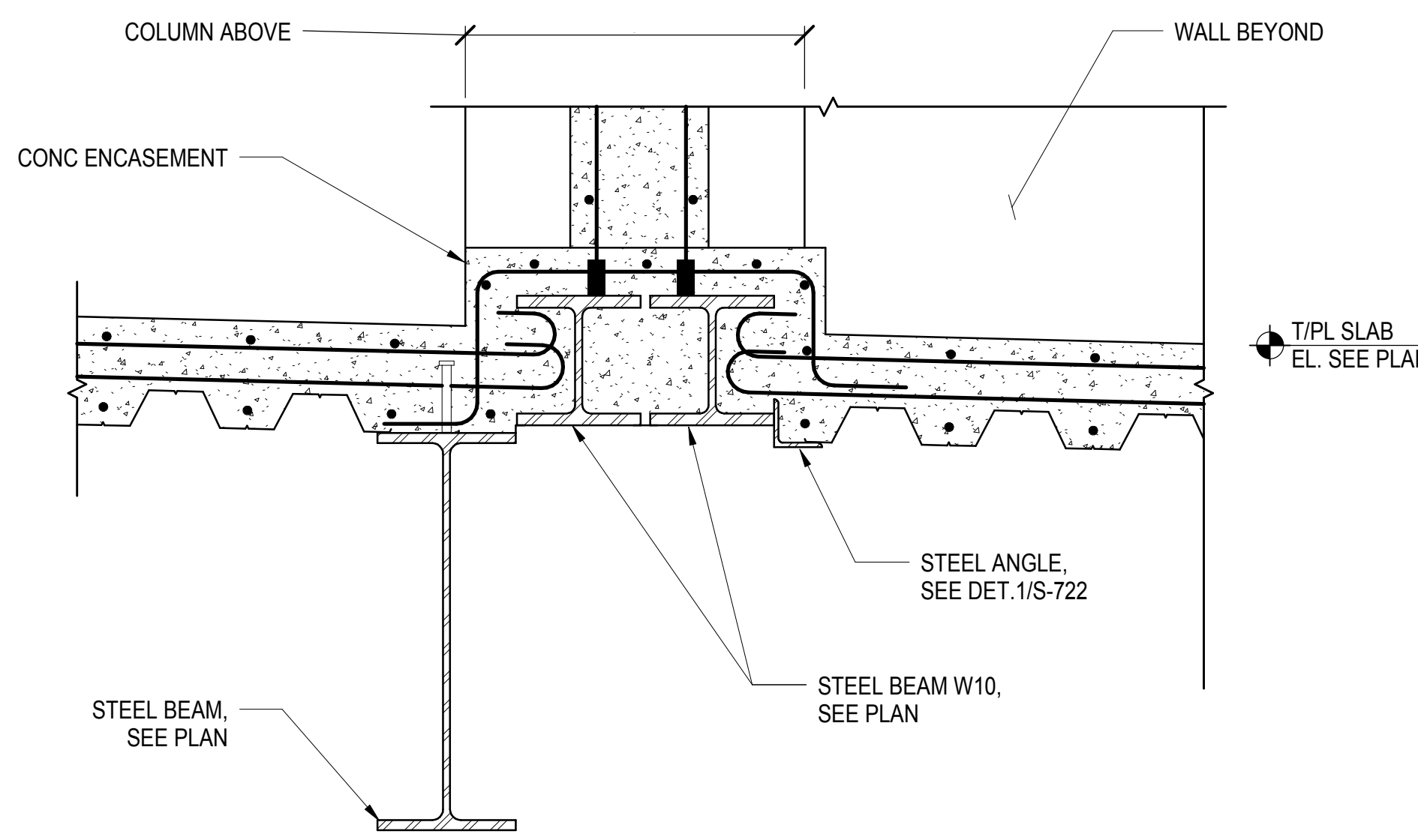
**2 PAVILION SHAFT SE COLUMN DETAIL - PLAN**  
1 1/2" = 1'-0"



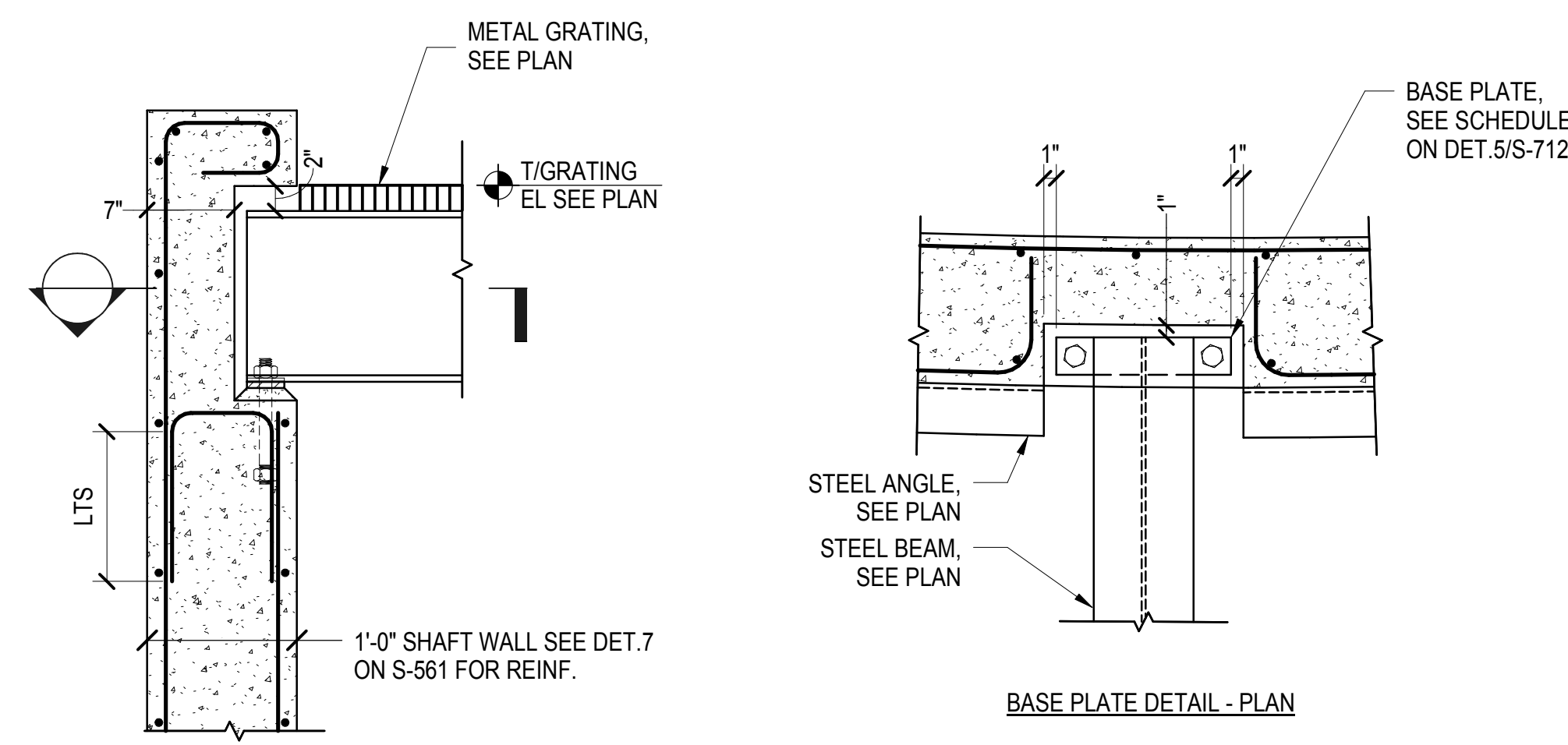
**3 MECHANICAL COUPLER LAYOUT AT SE COLUMN - PLAN**  
1 1/2" = 1'-0"



**4 SECTION AT BASE OF SE SHAFT COLUMN**  
1" = 1'-0"

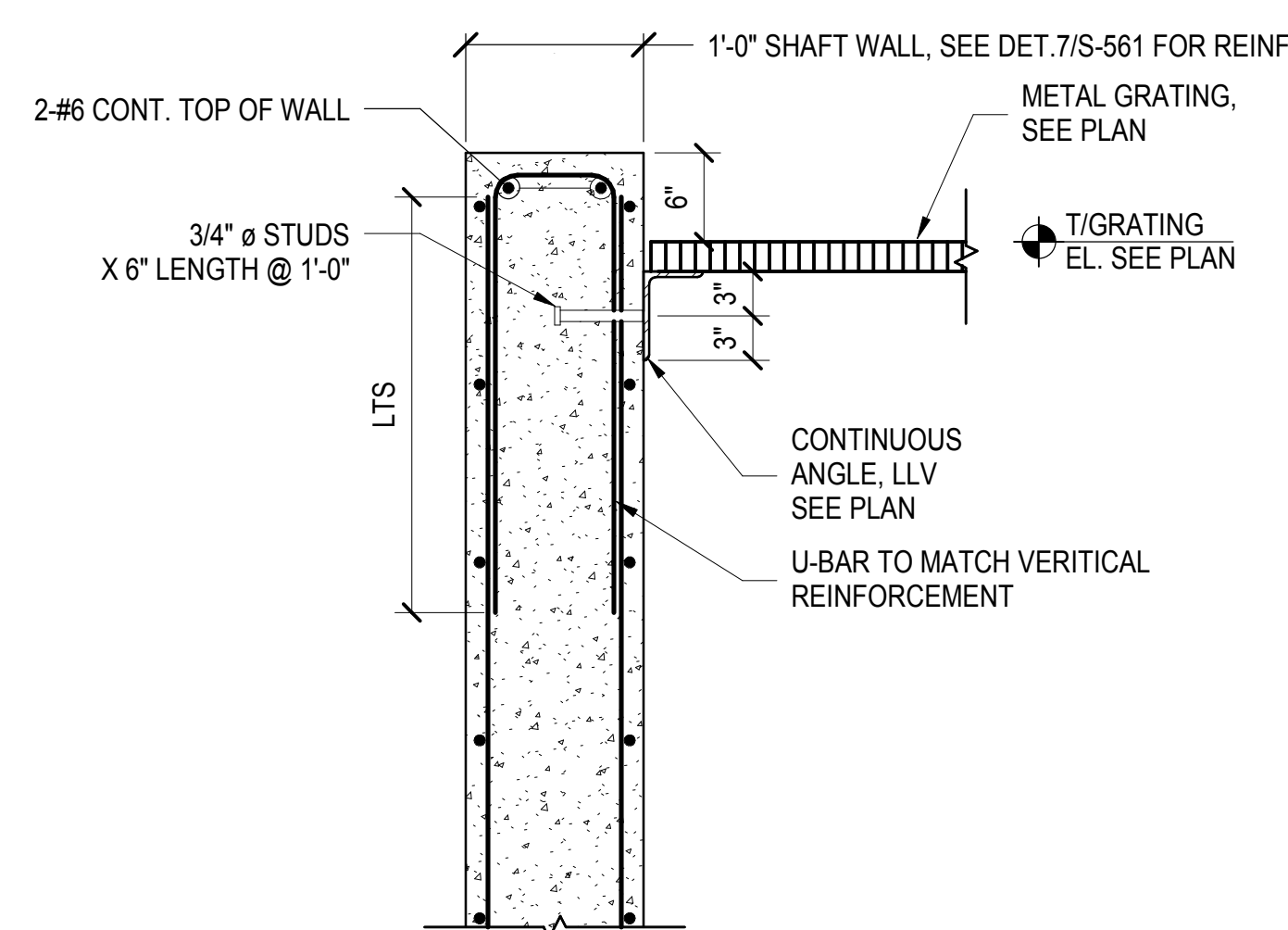


**5 SECTION AT BASE OF SE SHAFT COLUMN**  
1" = 1'-0"

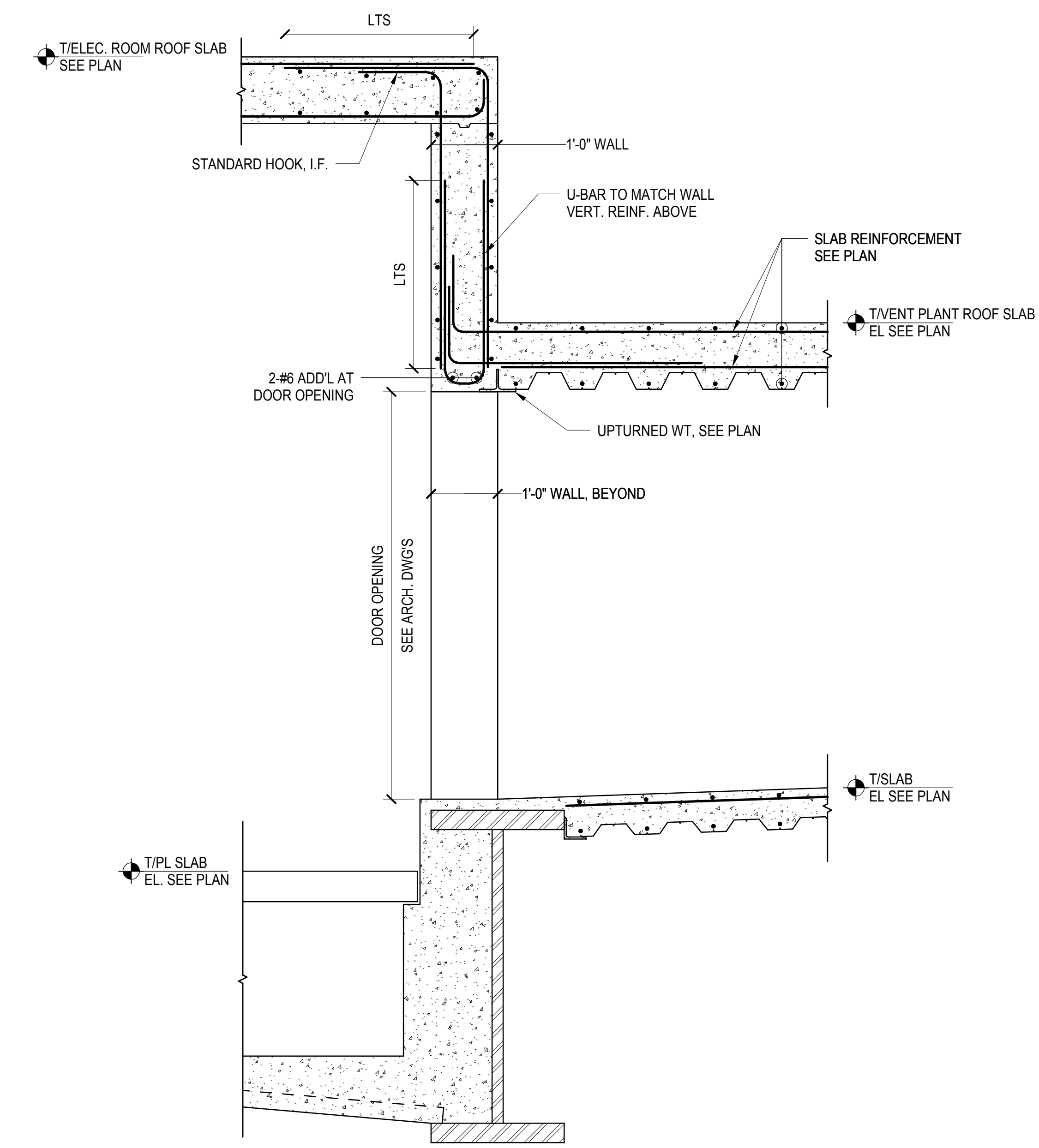


**7 BEAM POCKET AT SHAFT WALL**  
1" = 1'-0"

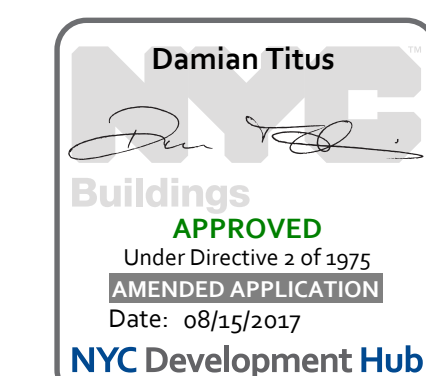
NOTES:  
1. SEE DET. S/S-712 FOR BALANCE INFORMATION



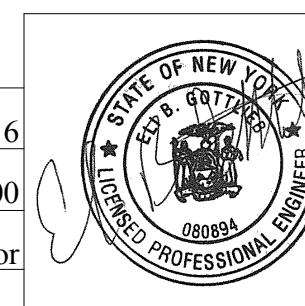
**8 TOP OF SHAFT WALL**  
1" = 1'-0"



**6 SECTION AT FAN PLANT CORRIDOR**  
3/4" = 1'-0"



**APPROVED**  
Under Directive 2 of 1975  
Professional Regulation  
Date: 08/15/2017  
NYC Development Hub



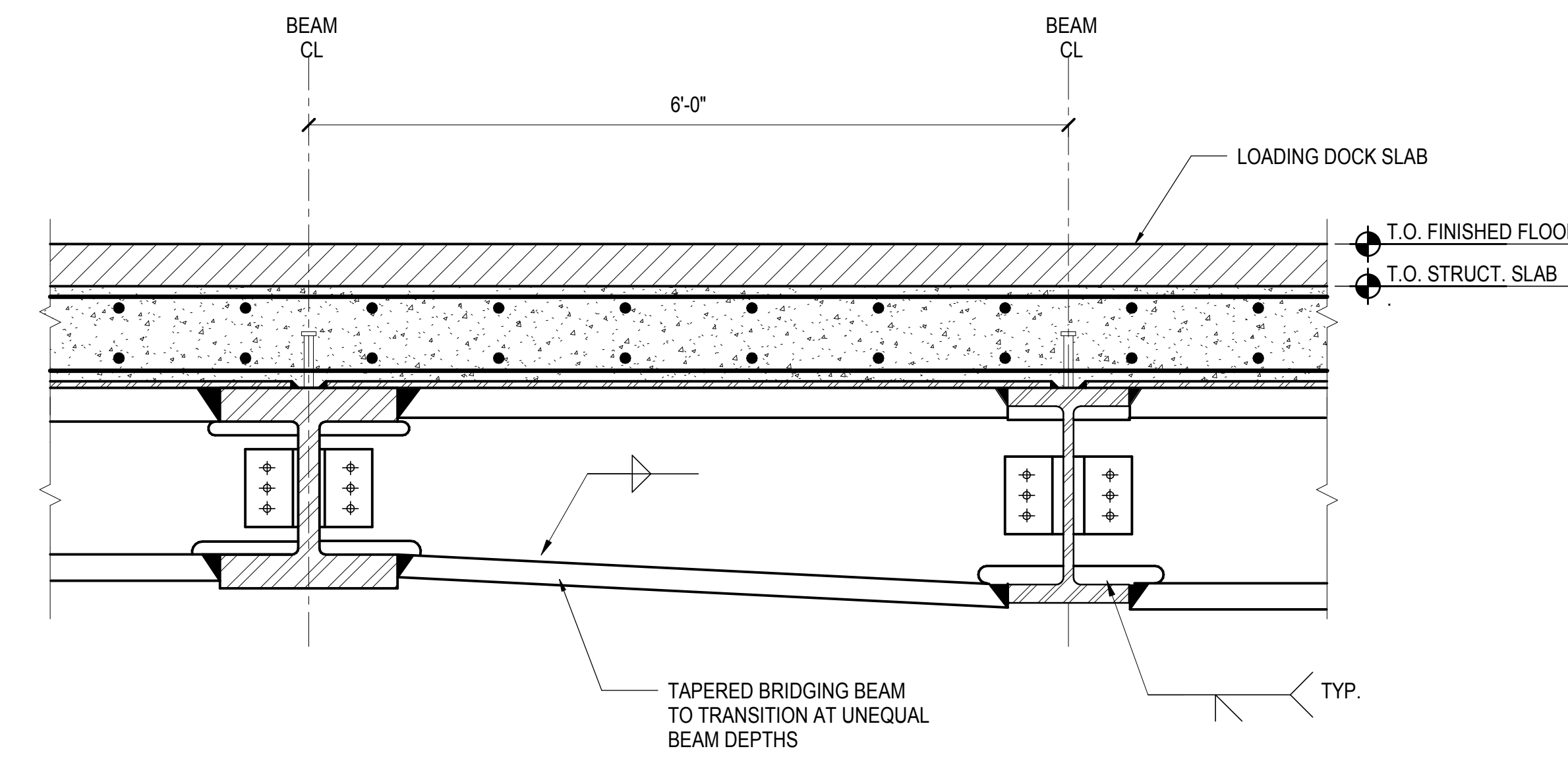
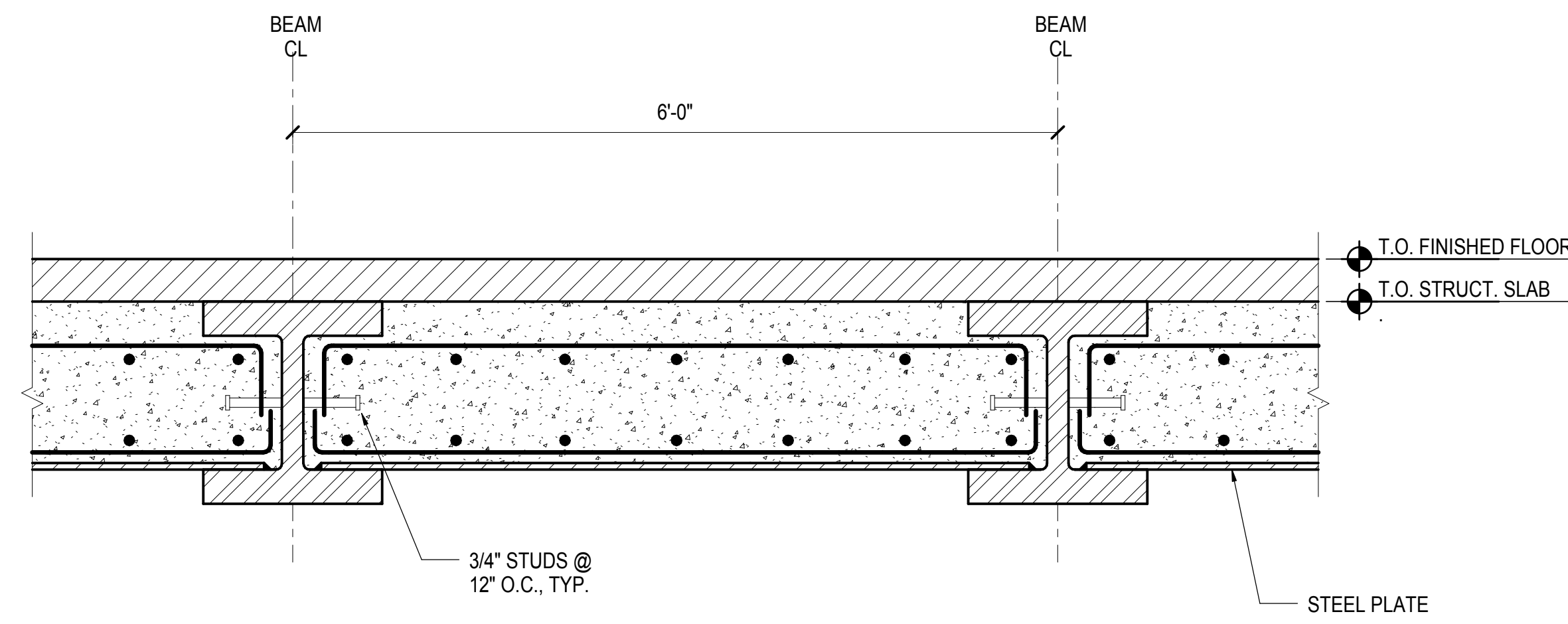
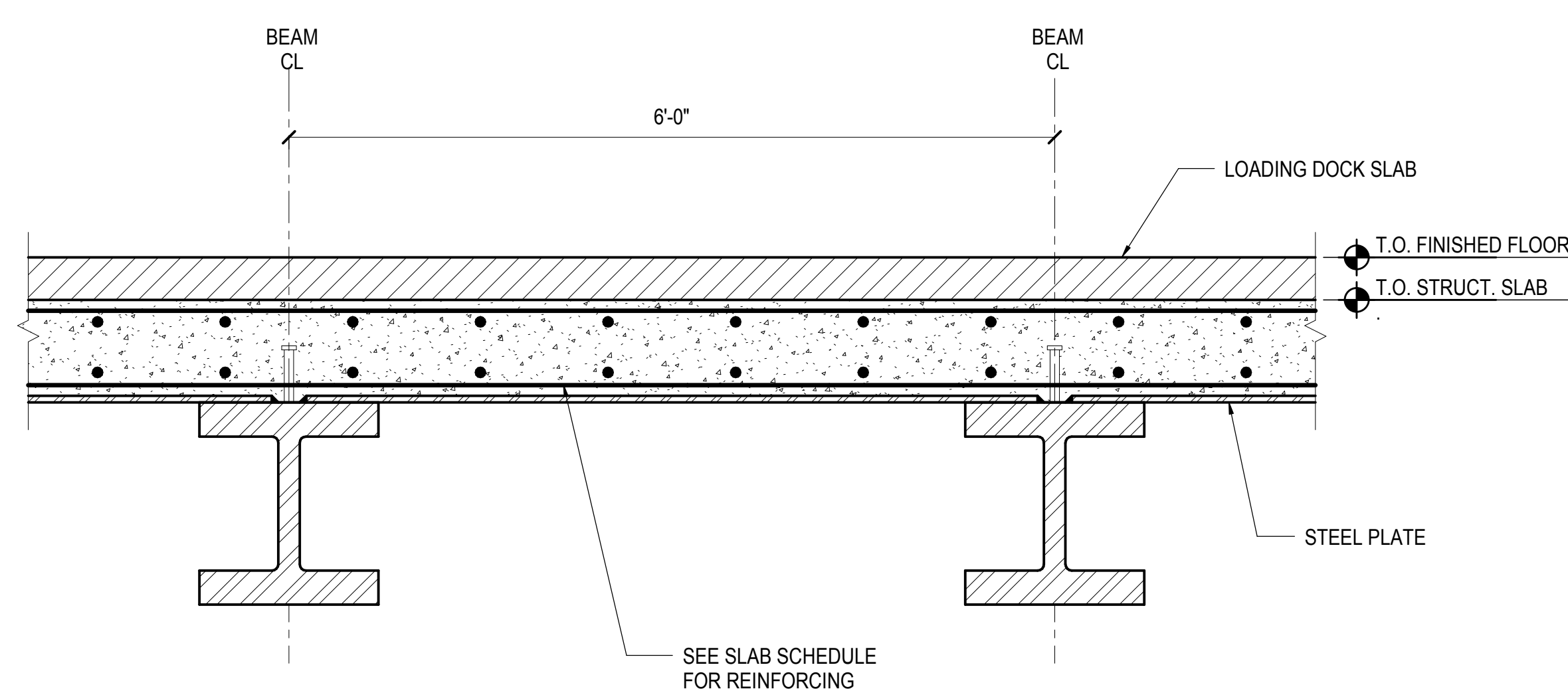
**WEST PLATFORM PAVILION SECTIONS AND DETAILS**

Drawing Number / B/CAN Drawing Number

**S-562.00**

SHEET 114 of 163

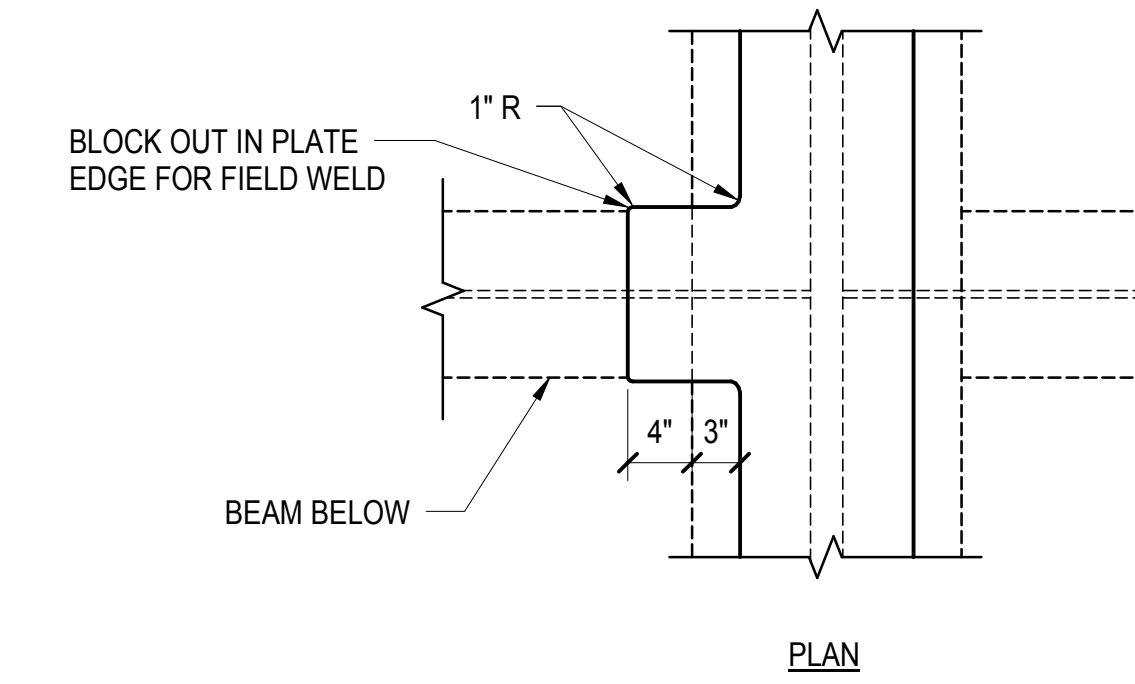
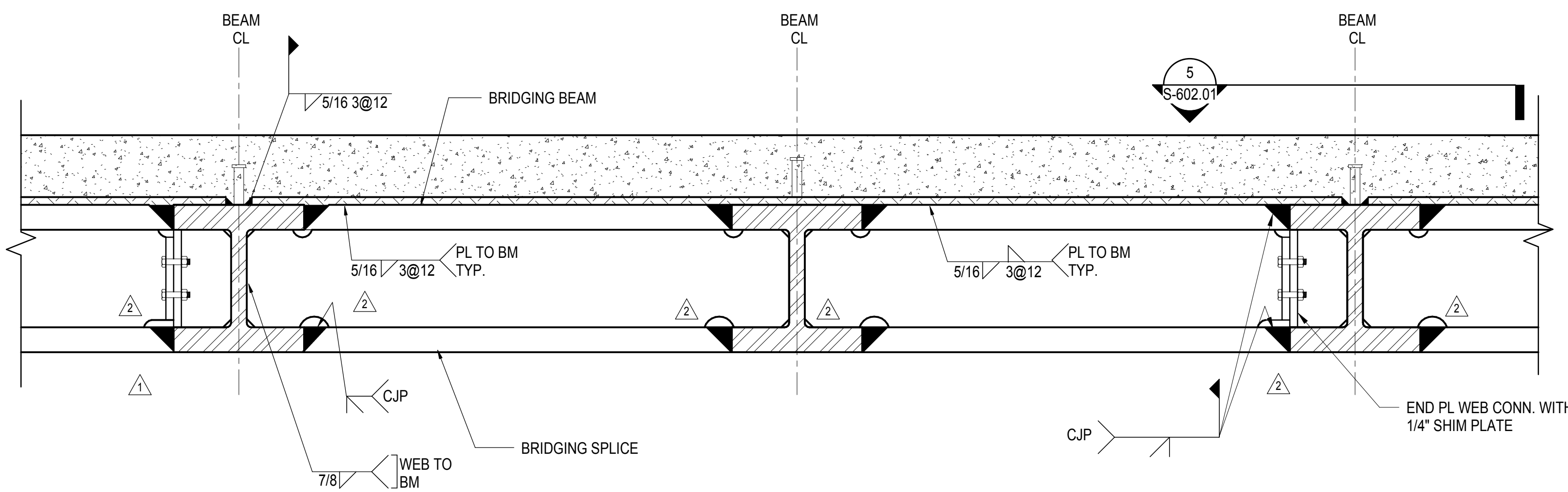




1 TYPICAL 10TH AVE LOADING DOCK SLAB  
1" = 1'-0"

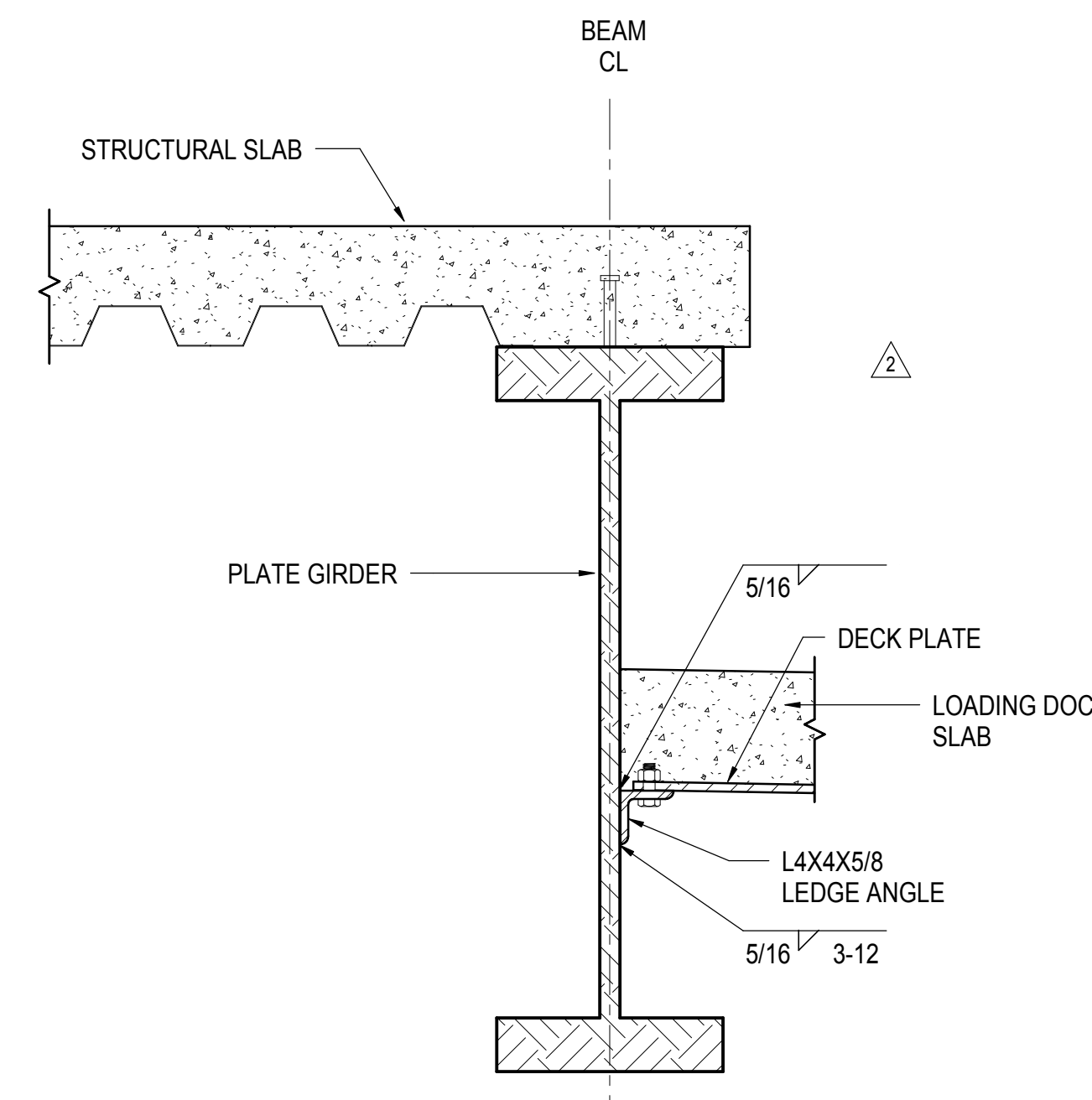
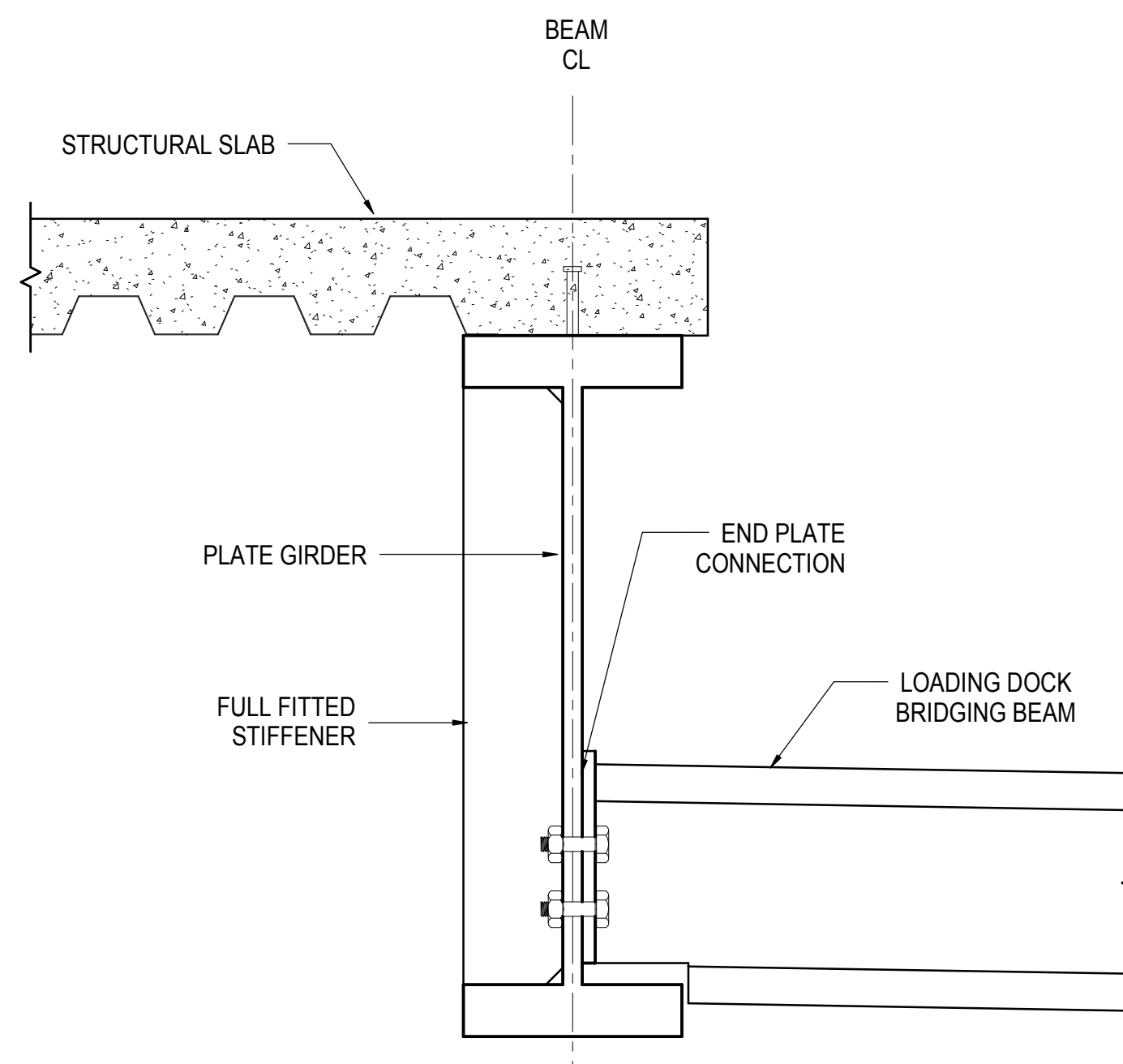
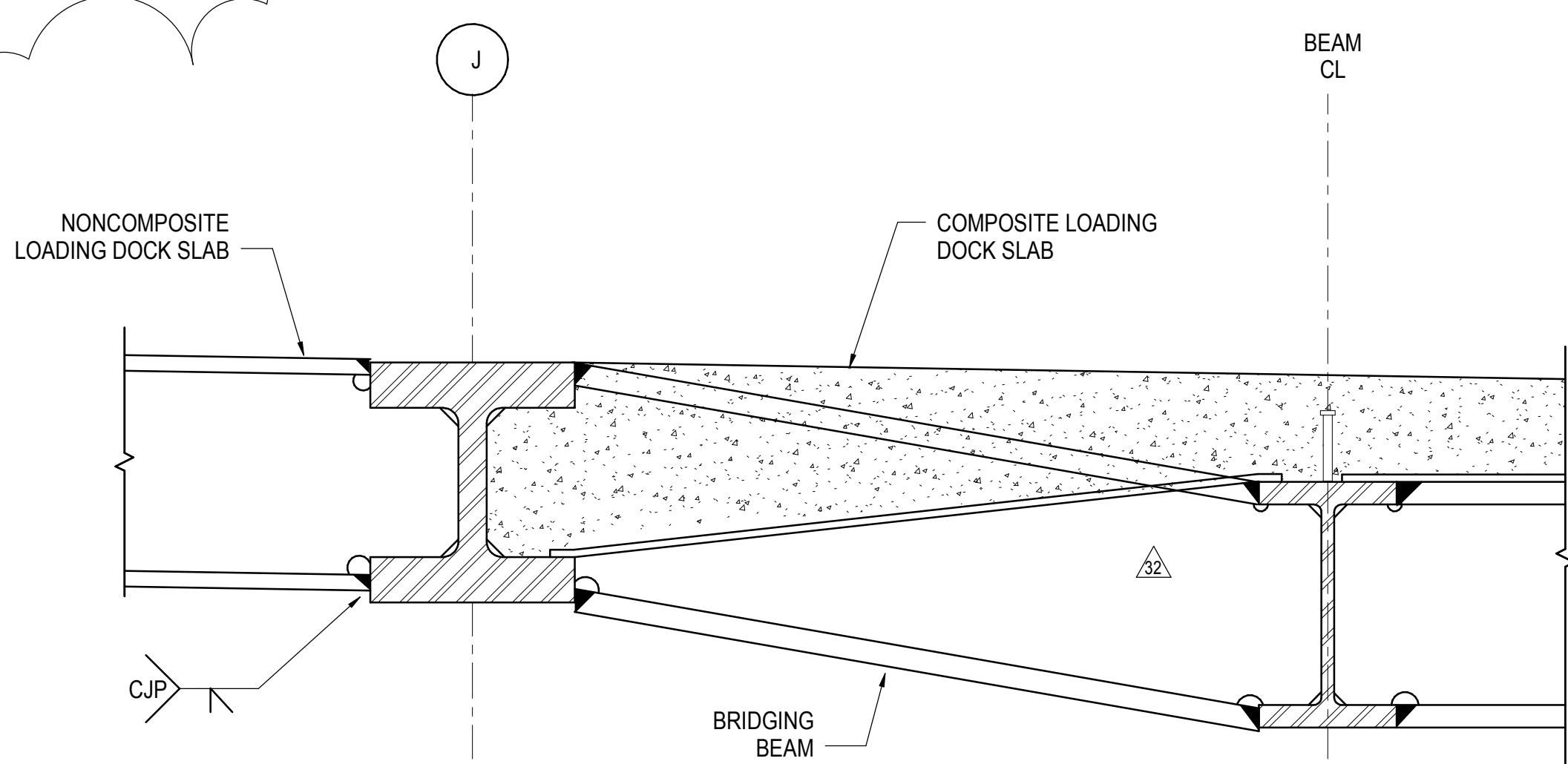
2 10TH AVE. LOADING DOCK SLAB AT HIGH FRAMING  
1" = 1'-0"

3 TRANSITION BRIDGING BEAM AT 10TH AVE. LOADING DOCK  
1" = 1'-0"



4 TYPICAL BRIDGING BEAM SPLICE AT 10TH AVE. LOADING DOCK  
1" = 1'-0"

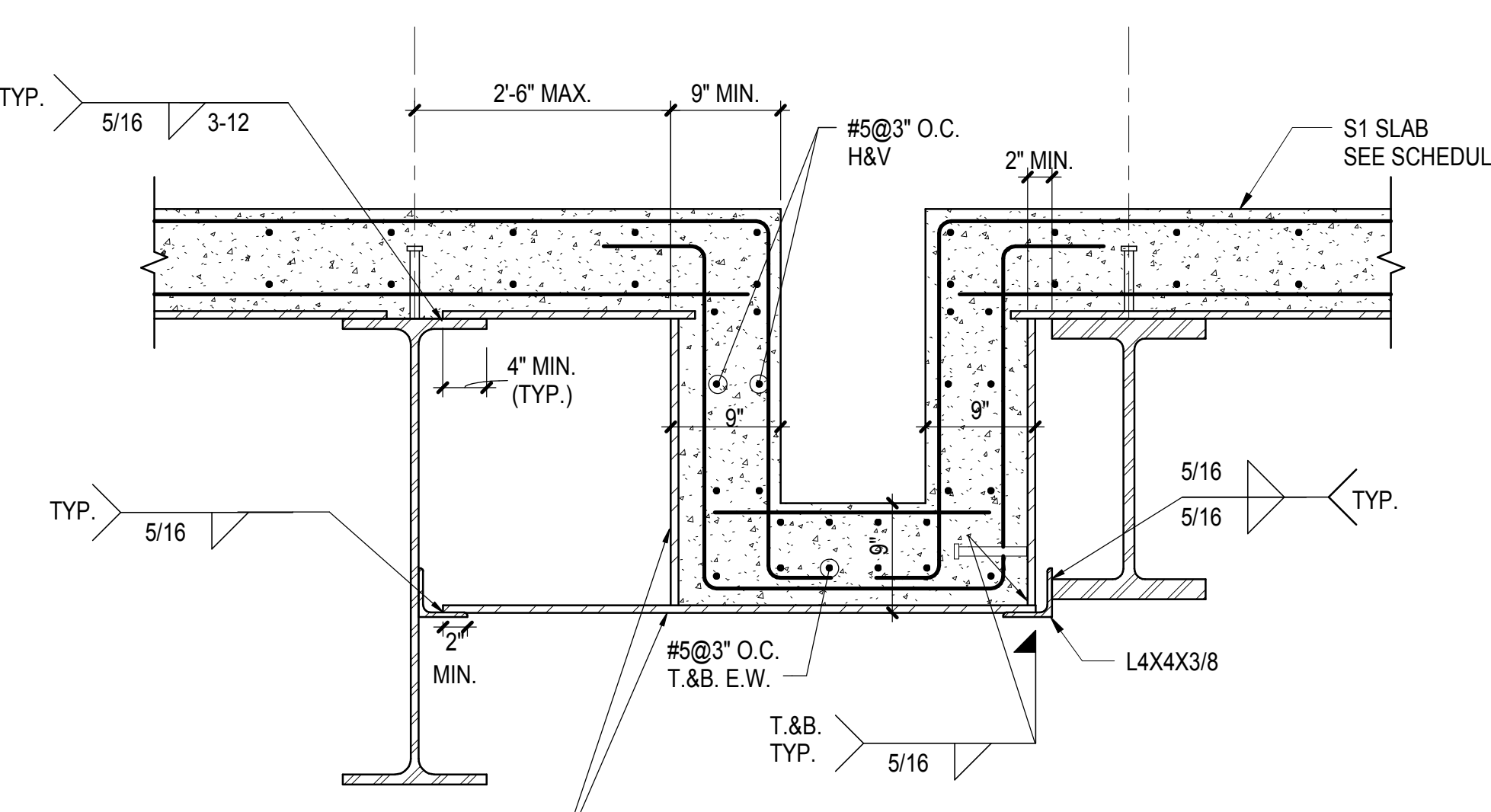
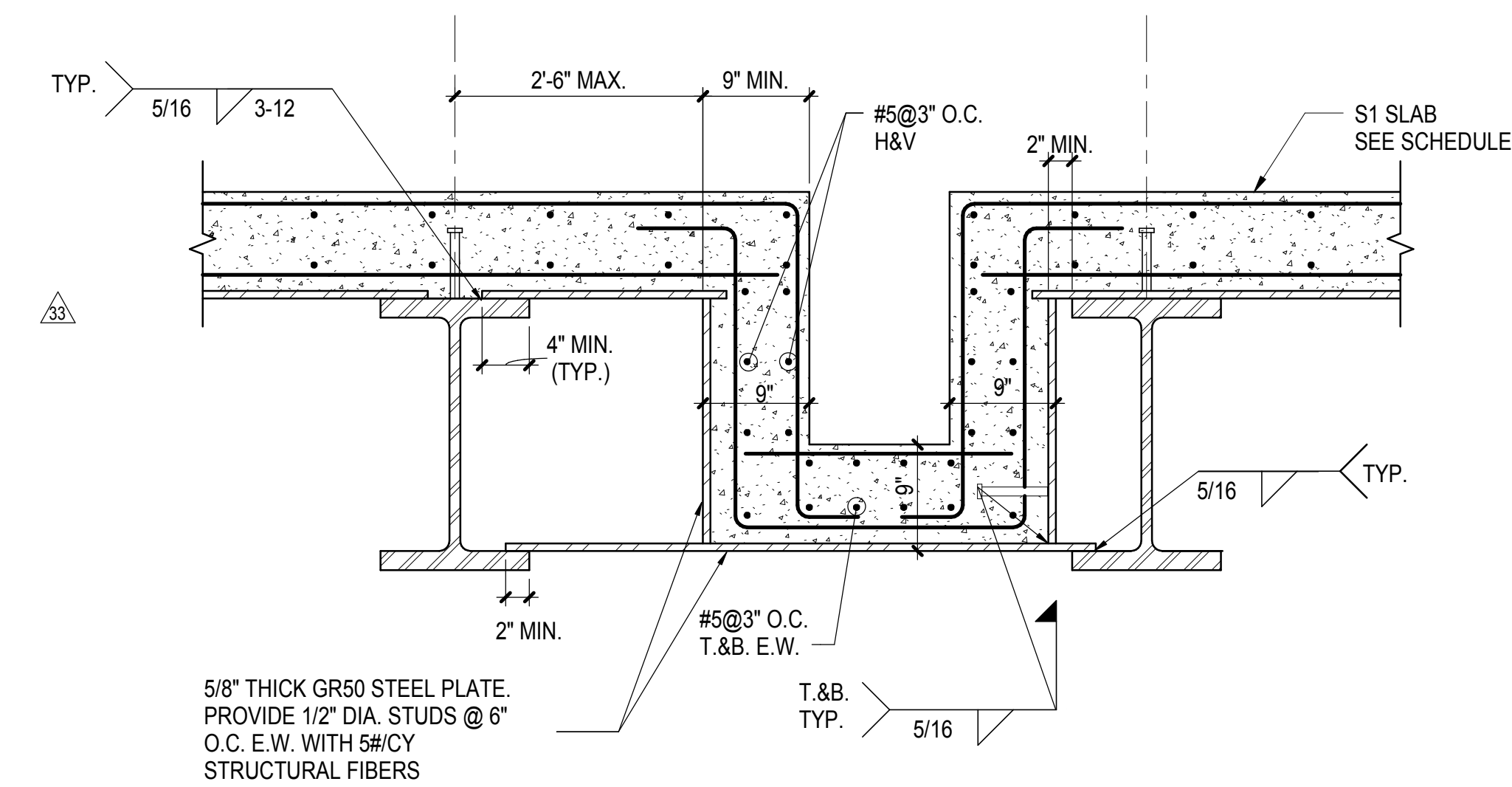
5 PLAN OF TYPICAL BRIDGING BEAM SPLICE AT 10TH AVE. LOADING DOCK  
1" = 1'-0"



6 SECTION AT LOADING DOCK TRANSITION BETWEEN COMPOSITE AND NONCOMPOSITE SLAB  
1" = 1'-0"

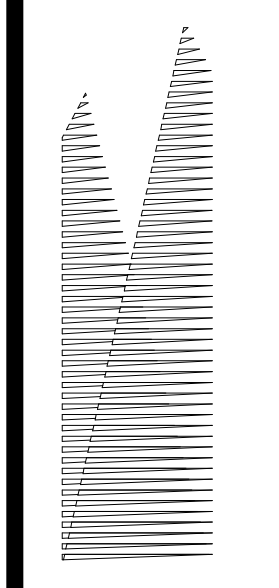
7 SECTION AT GRID G PLATE GIRDER AND BRIDGING BEAM  
1" = 1'-0"

8 SECTION AT GRID G PLATE GIRDER AND SLAB  
1" = 1'-0"



9 10TH AVE. LOADING DOCK DRAINAGE DETAIL  
1" = 1'-0"

10 ALTERNATE 10TH AVE. LOADING DOCK DRAINAGE DETAIL  
1" = 1'-0"



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10017  
Tel: 917.661.7800 Fax: 718.661.7801

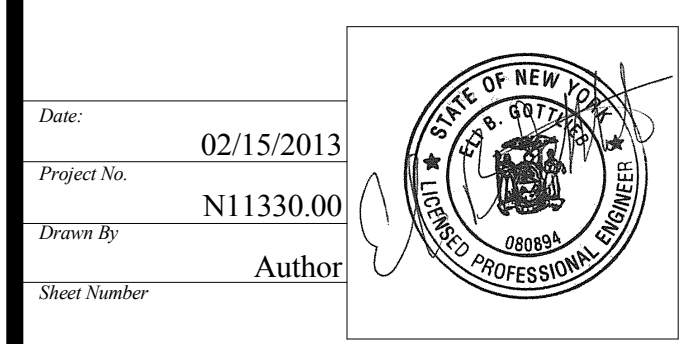
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Personnel Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0050	10/21/2014
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
Mod. PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE 1 FDNS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
NYC Description	000

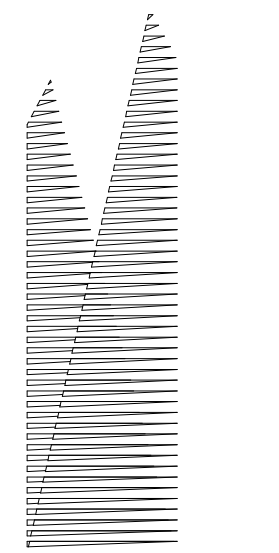
Date	02/15/2013
Project No	N11330.00
Drawn By	Author
Sheet Number	



HYE -PL -S-602.01

10TH AVE LOADING DOCK - SECTIONS AND DETAILS

Approved Under Directive 1 of 1975  
Date: 08/15/2017  
NYC Development Hub



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
230 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

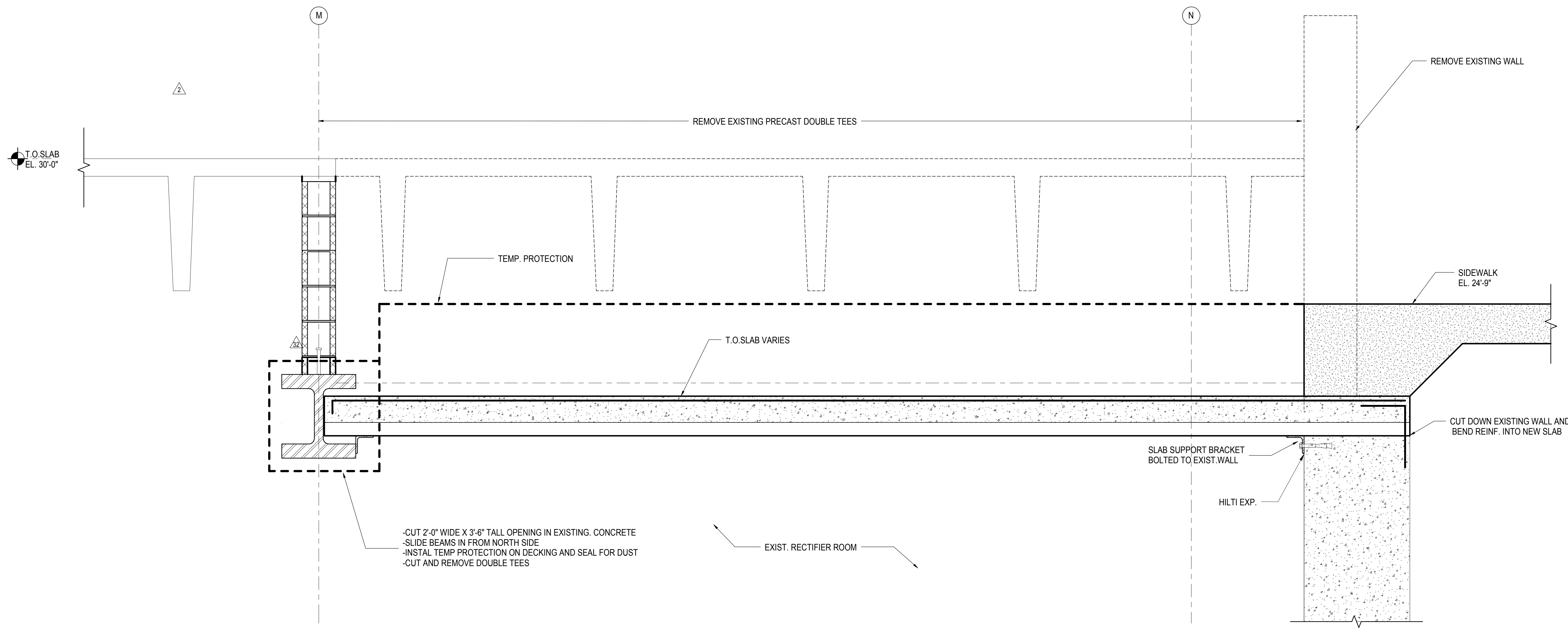
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

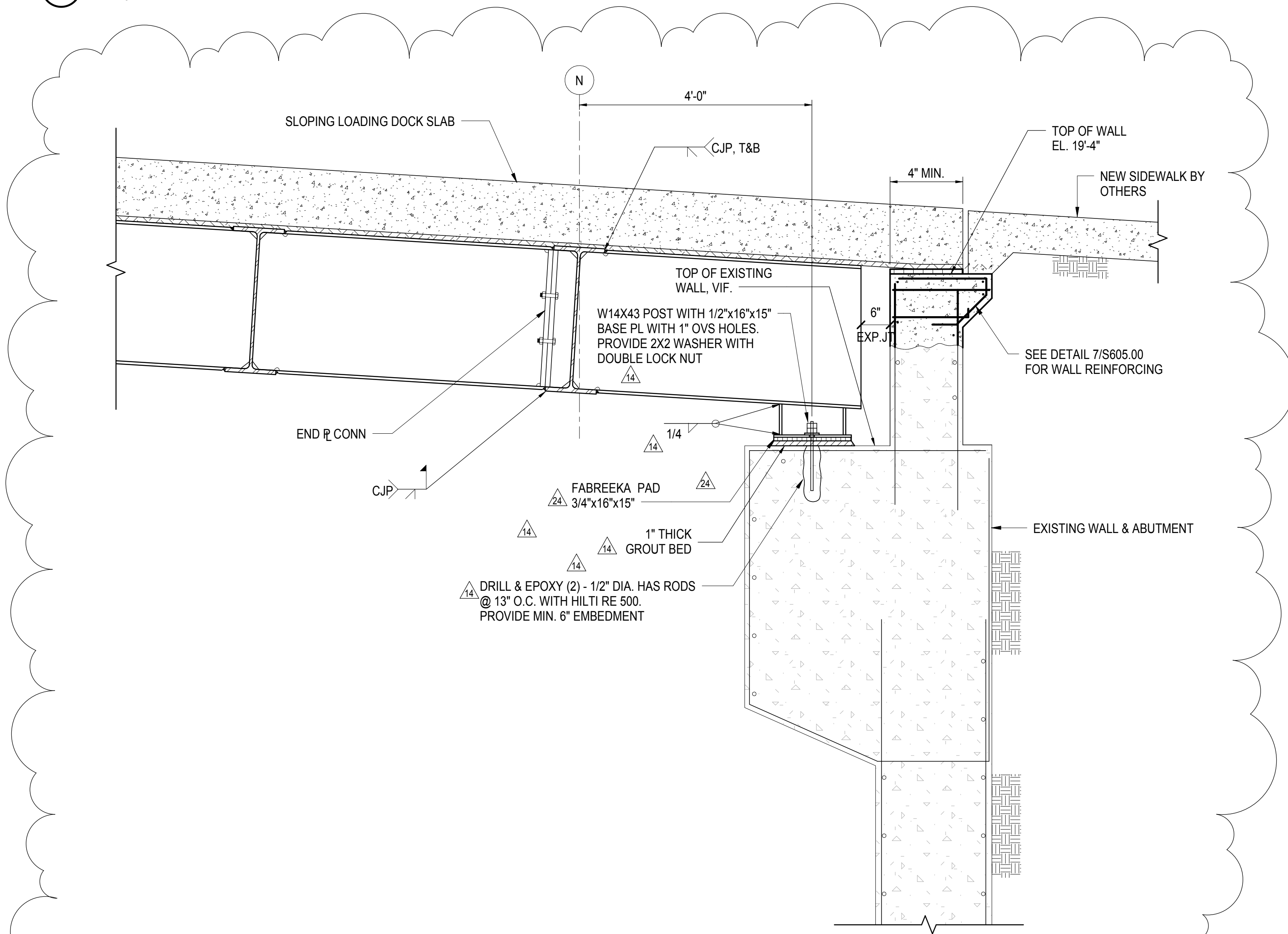
LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0054	11/26/2014
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0099	10/14/2014
ASH0021	5/7/2014
ASH0013	3/20/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
MOE - PLATFORM SUBMISSION	11/1/2013
DOB PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DOB PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LIRR - 60% SUBMISSION	5/29/2013
NYC DOB FILING	5/29/2013

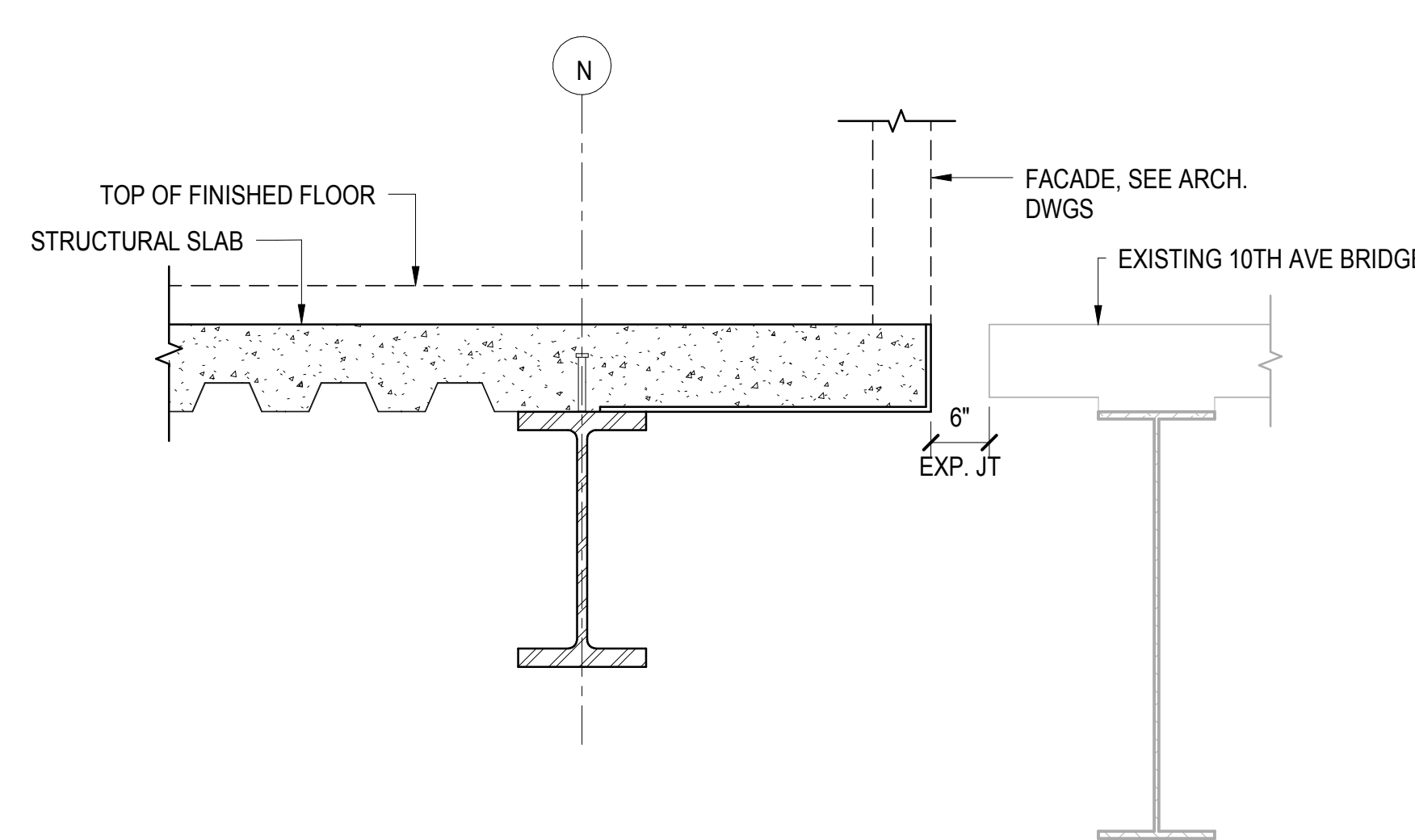
Key Plan



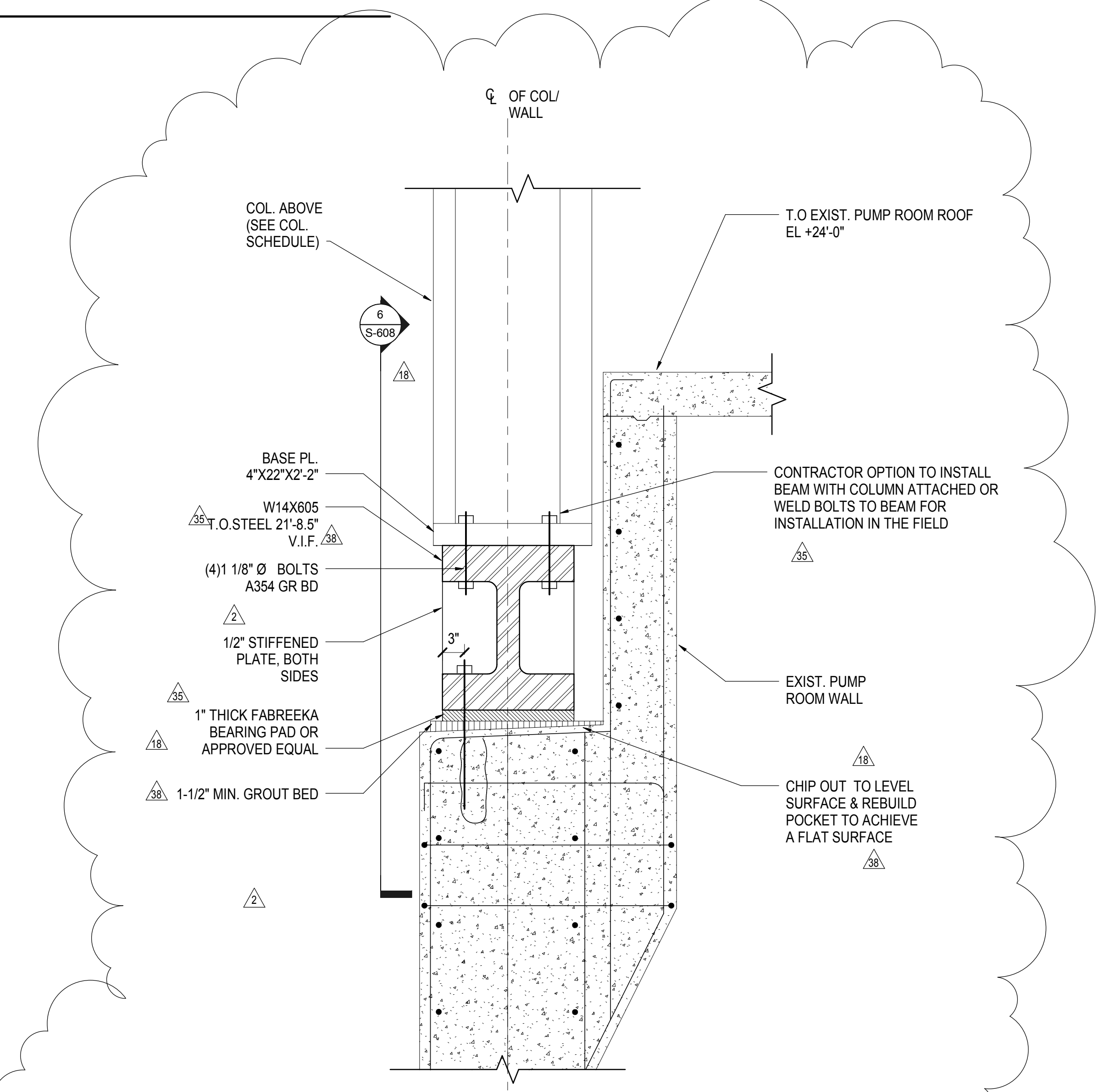
**1 SECTION AT EXISTING SUBSTATION BUILDING**  
1" = 1'-0"



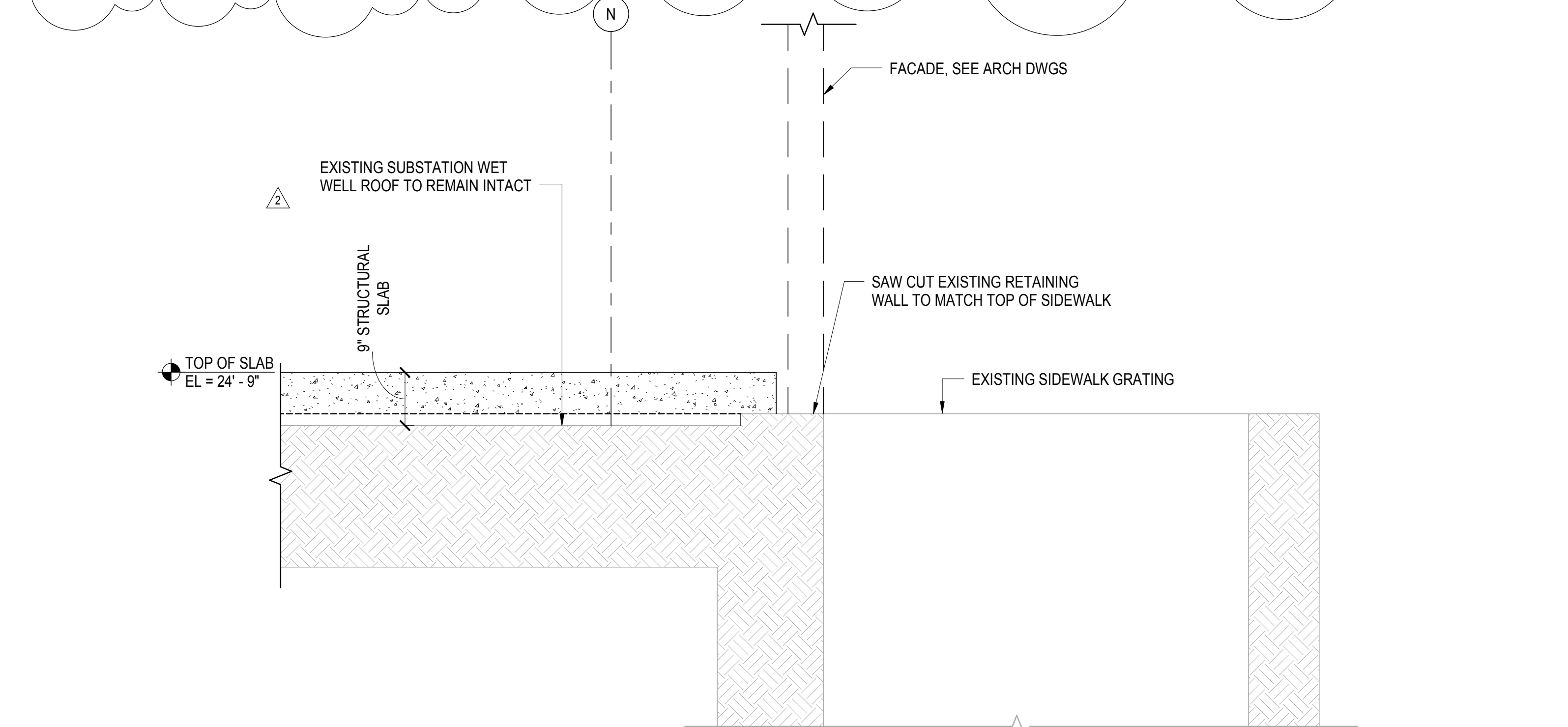
**2 SECTION AT 10TH AVE LOADING DOCK**  
3/4" = 1'-0"



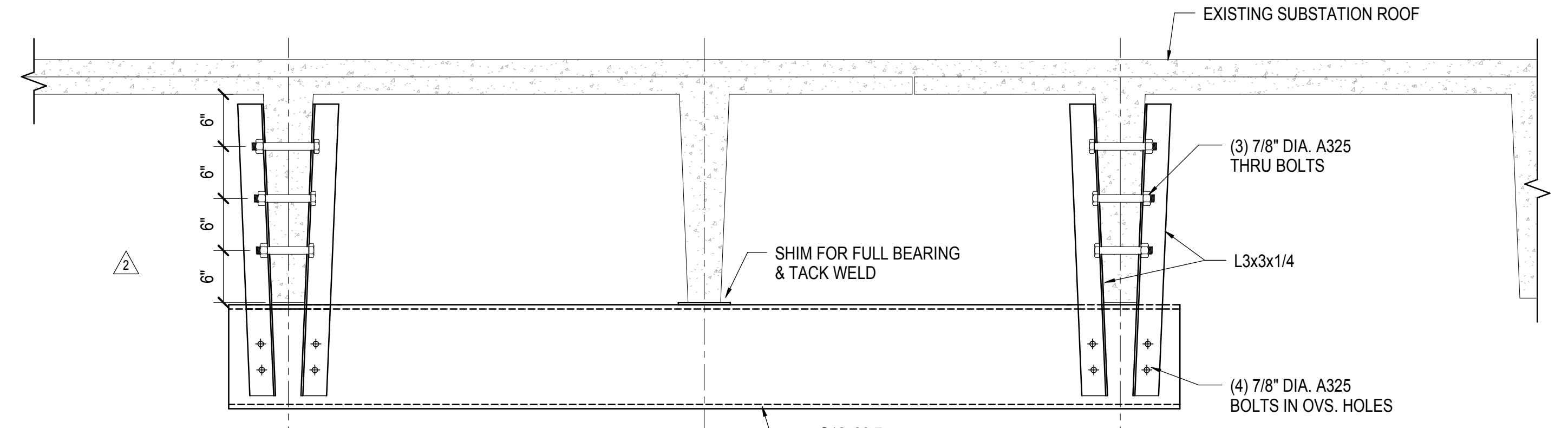
**4 SECTION AT 10TH AVE BRIDGE**  
3/4" = 1'-0"



**5 COLUMN SUPPORT AT M14.3**  
1" = 1'-0"



**3 SECTION AT GRID N - AT EXISTING SUBSTATION WET WELL**  
3/4" = 1'-0"



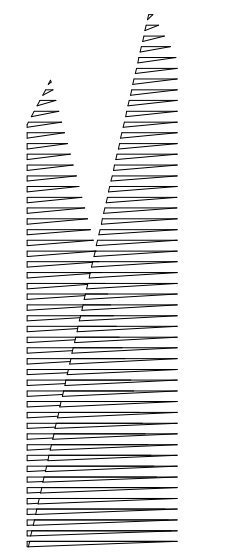
**7 SECTION AT EXIST. SUBSTATION PRECAST REMOVAL**  
1" = 1'-0"



Date: 05/29/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: HYE-PL-S-606.01

**SECTIONS AND DETAILS ALONG GRIDLINE N**

Drawing Number: 05/29/2013  
**S-606.01**



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
230 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0021	5/7/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
ASH0000	12/20/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M.O.E. - PLATFORM SUBMISSION	
DH42 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/9/2013
DH41 PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
Rev.	Description
	AW

Key Plan

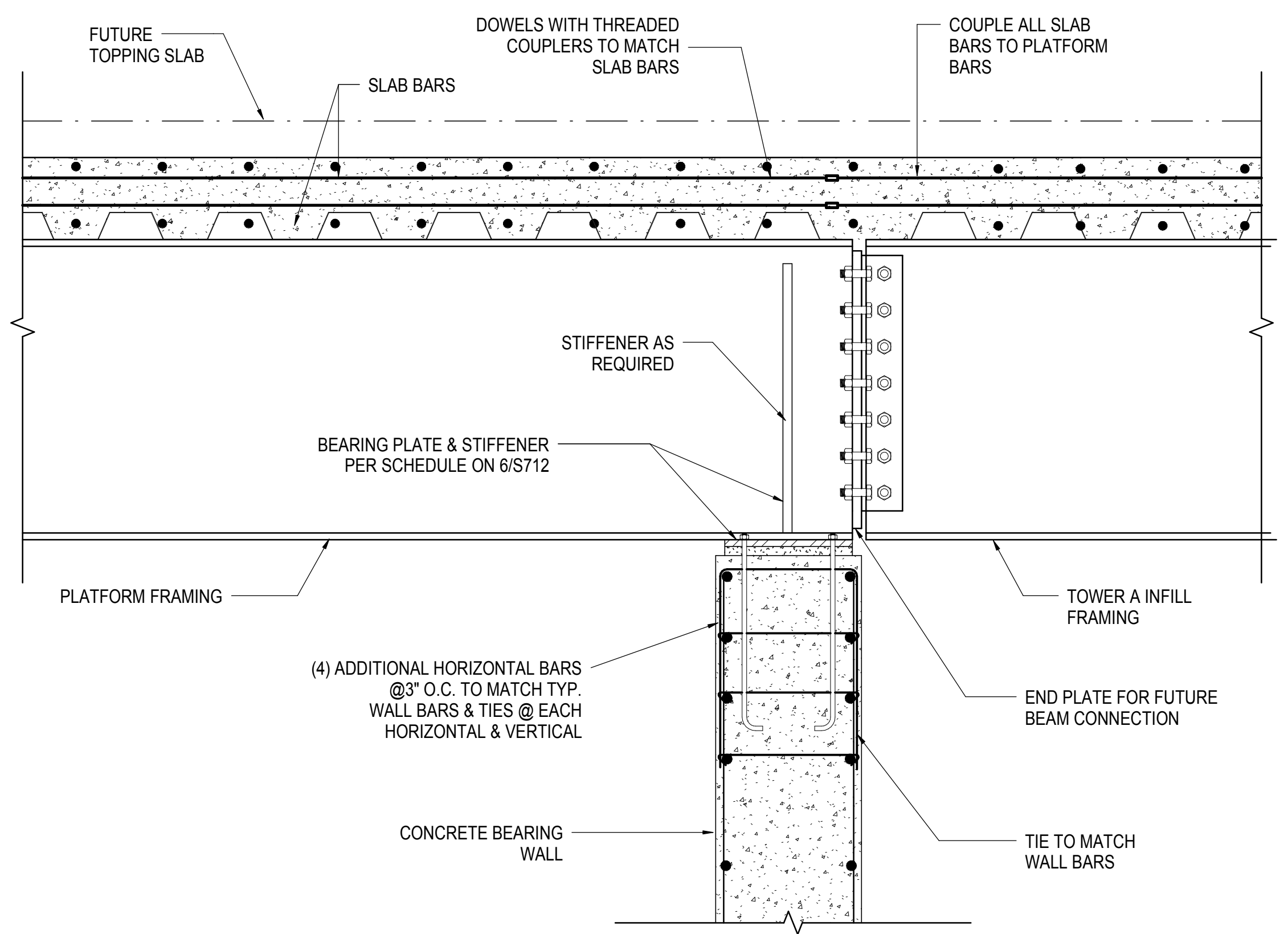
Date: 08/09/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE-PL-S-607.01**

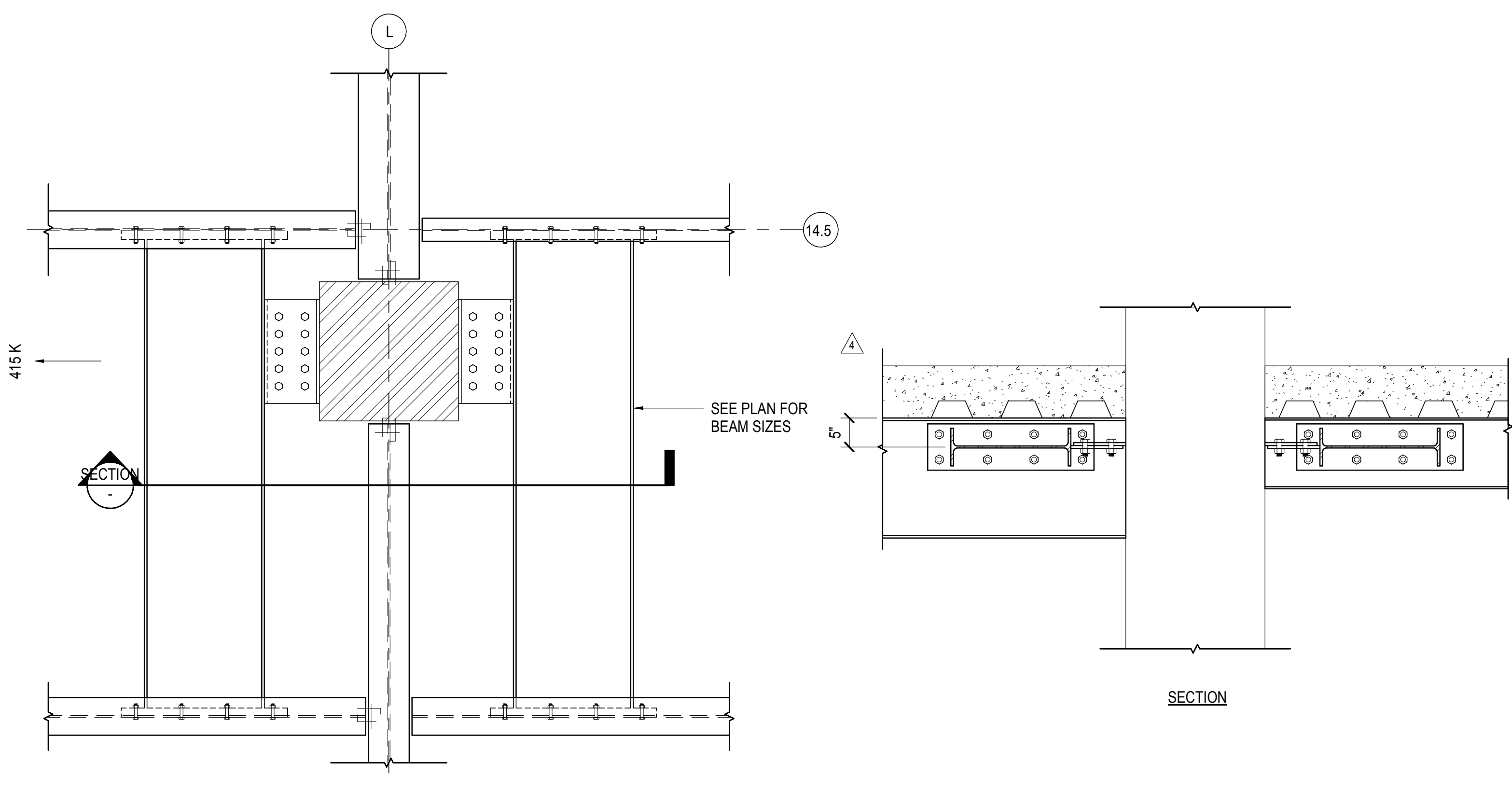
**SECTIONS AND DETAILS I**

Drawing Number: /000/000/000/000  
**S-607.01**

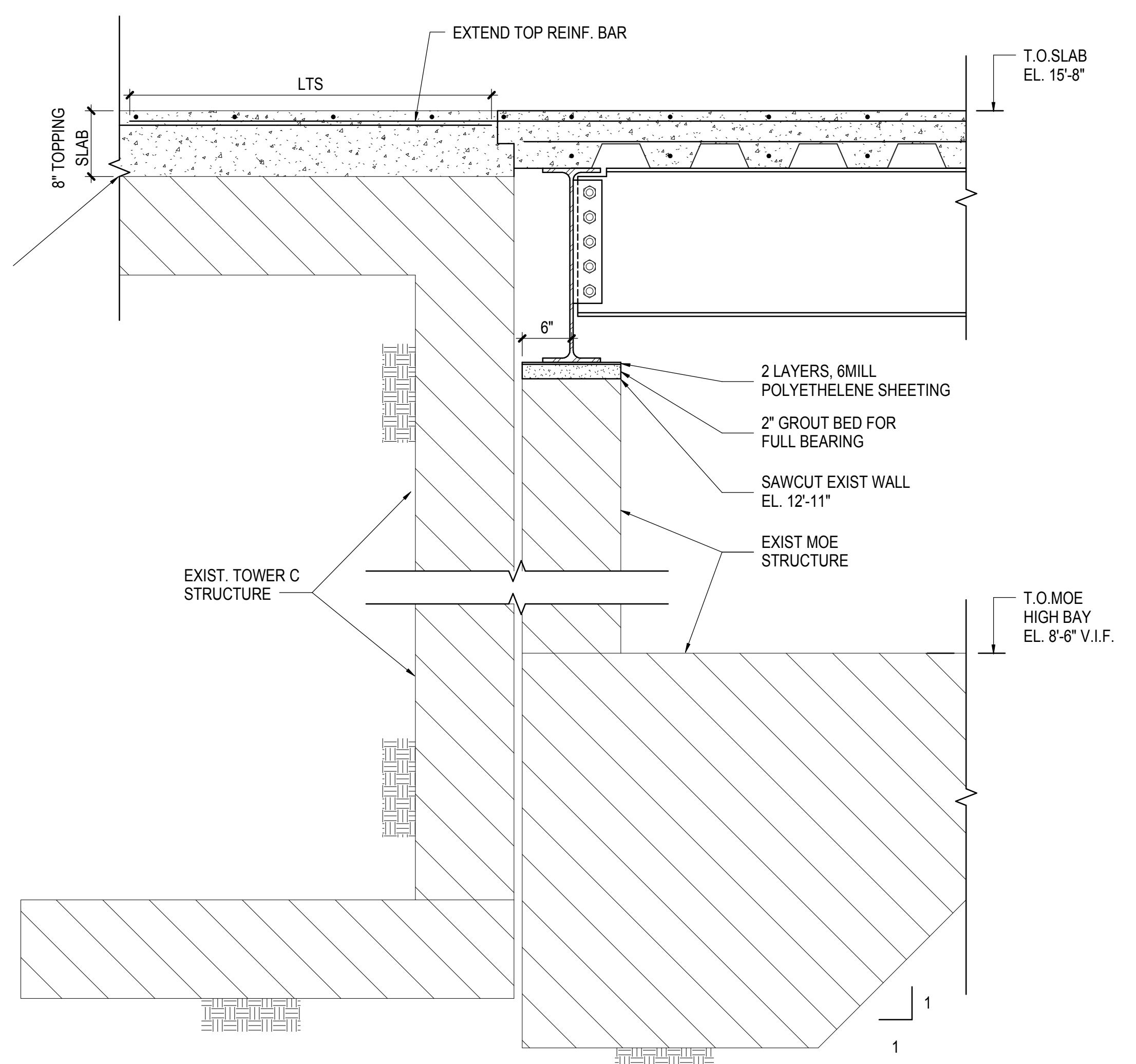
SHEET 117 of 163



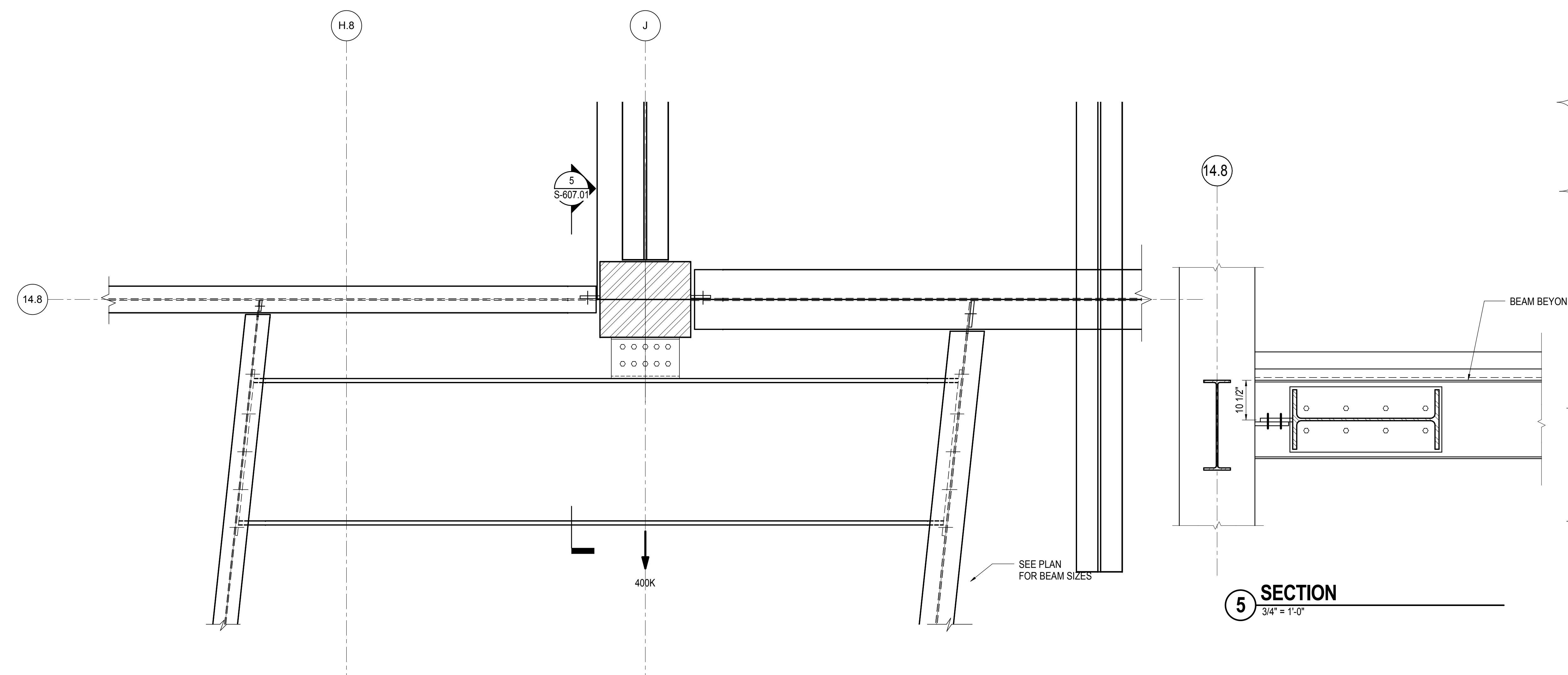
**1 SECTION AT WALL ALONG NORTH EDGE OF YARDS**  
1" = 1'-0"



**2 PLAN DETAIL AT COLUMN L/14.5 - LOWER PLATFORM**  
3/4" = 1'-0"

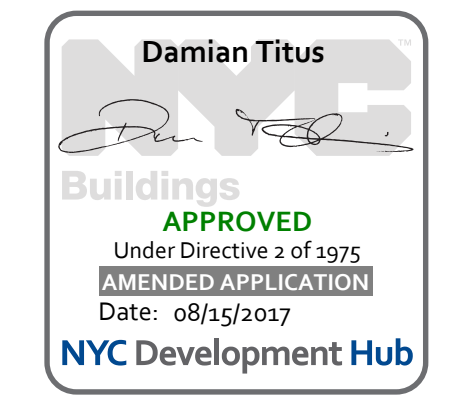


**3 SECTION AT SE CORNER**  
1" = 1'-0"

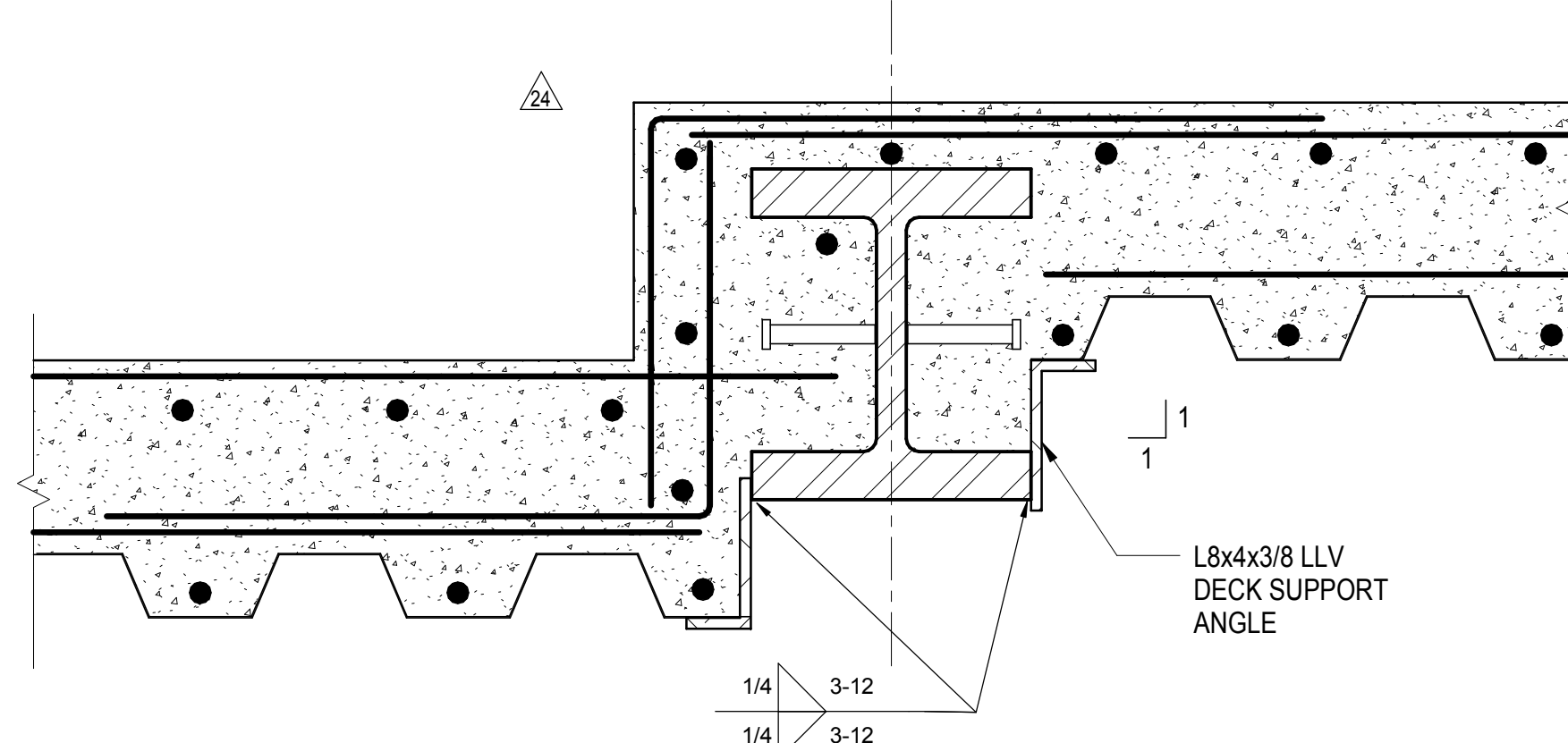


**4 PLAN DETAIL AT COLUMN J/14.8 - UPPER PLATFORM**  
3/4" = 1'-0"

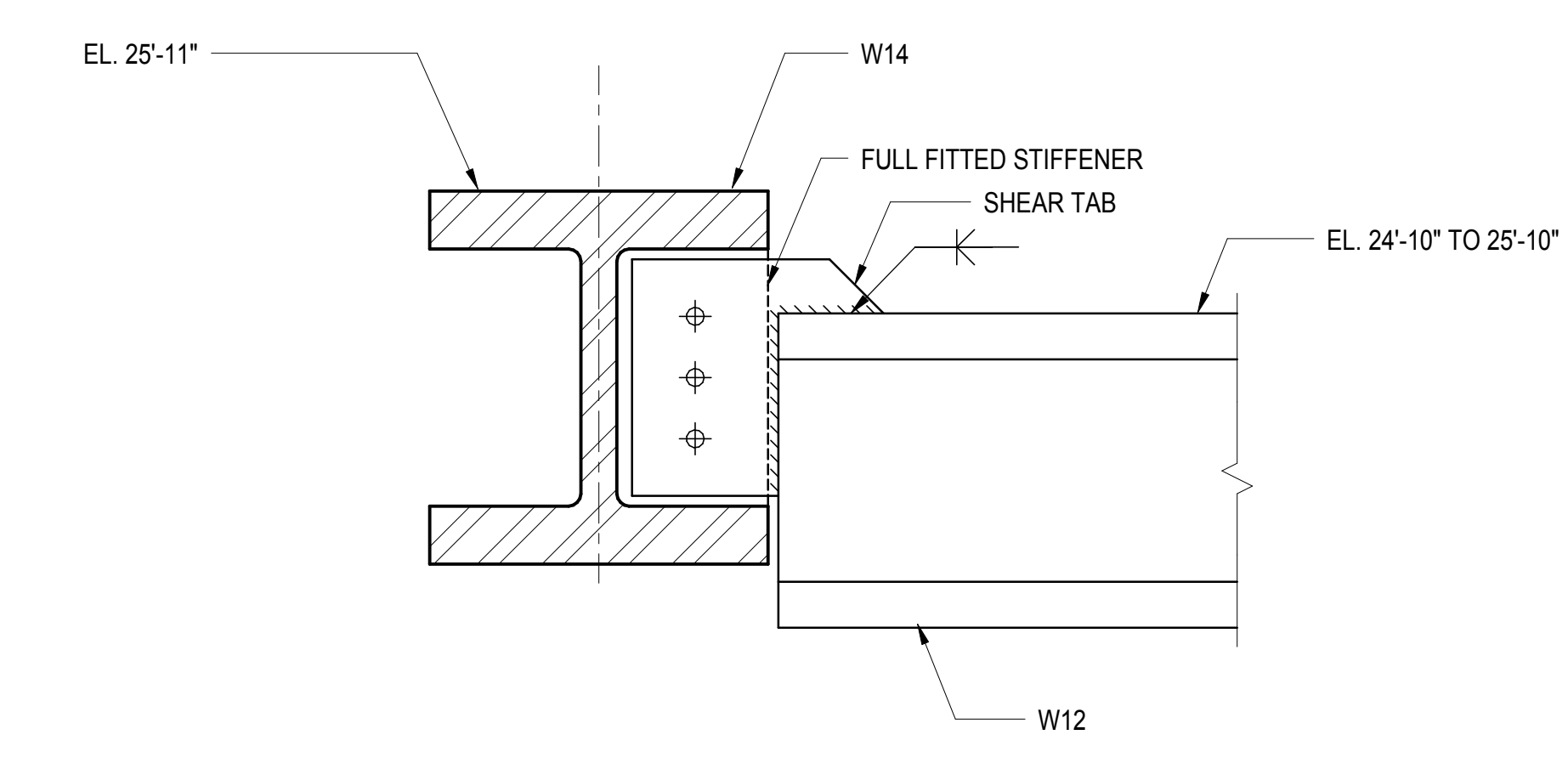
**5 SECTION**  
3/4" = 1'-0"



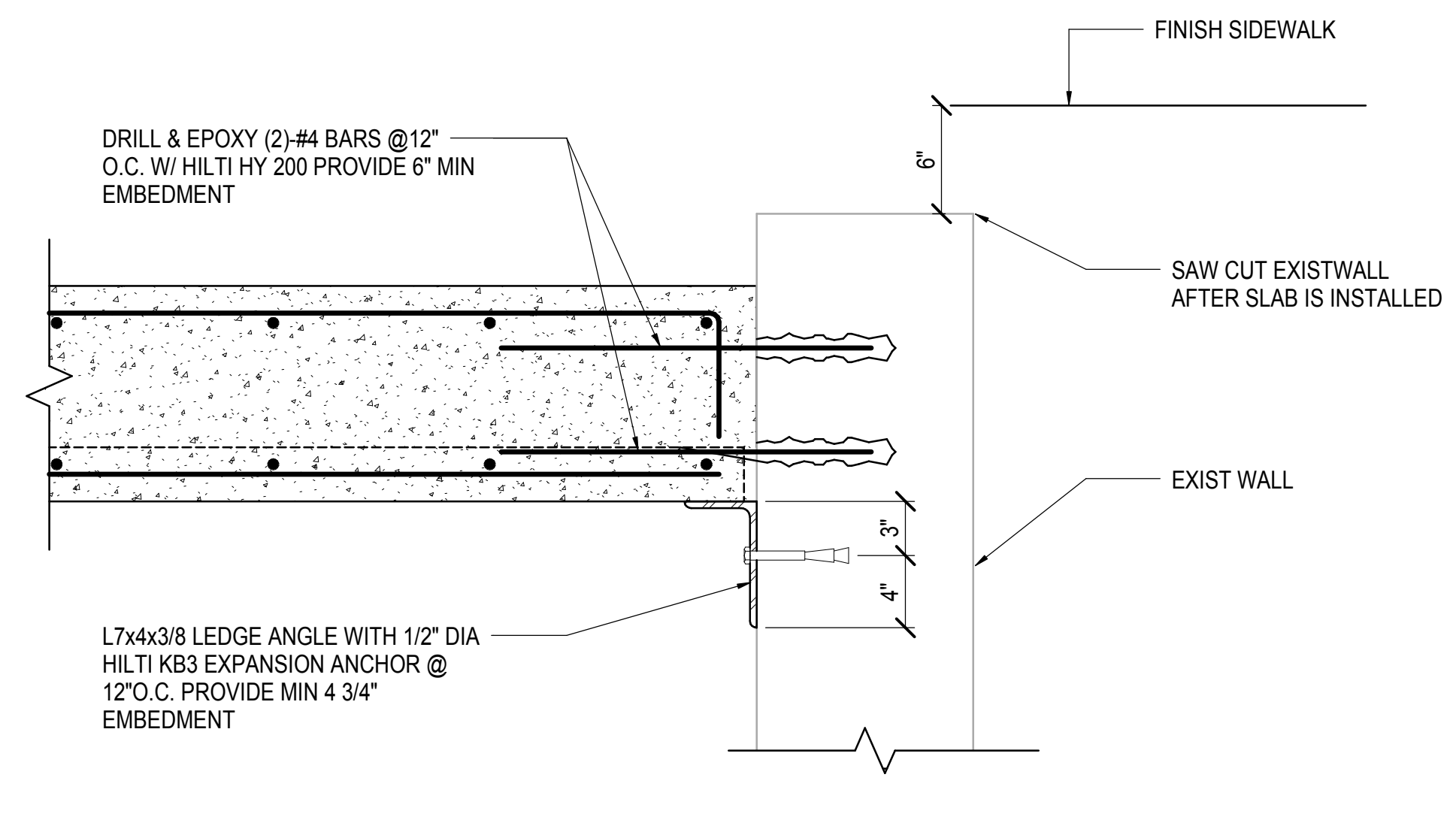
APPROVED Under Directive 3 of 1975  
DATE OF APPLICATION 08/15/2017  
NYC Development Hub



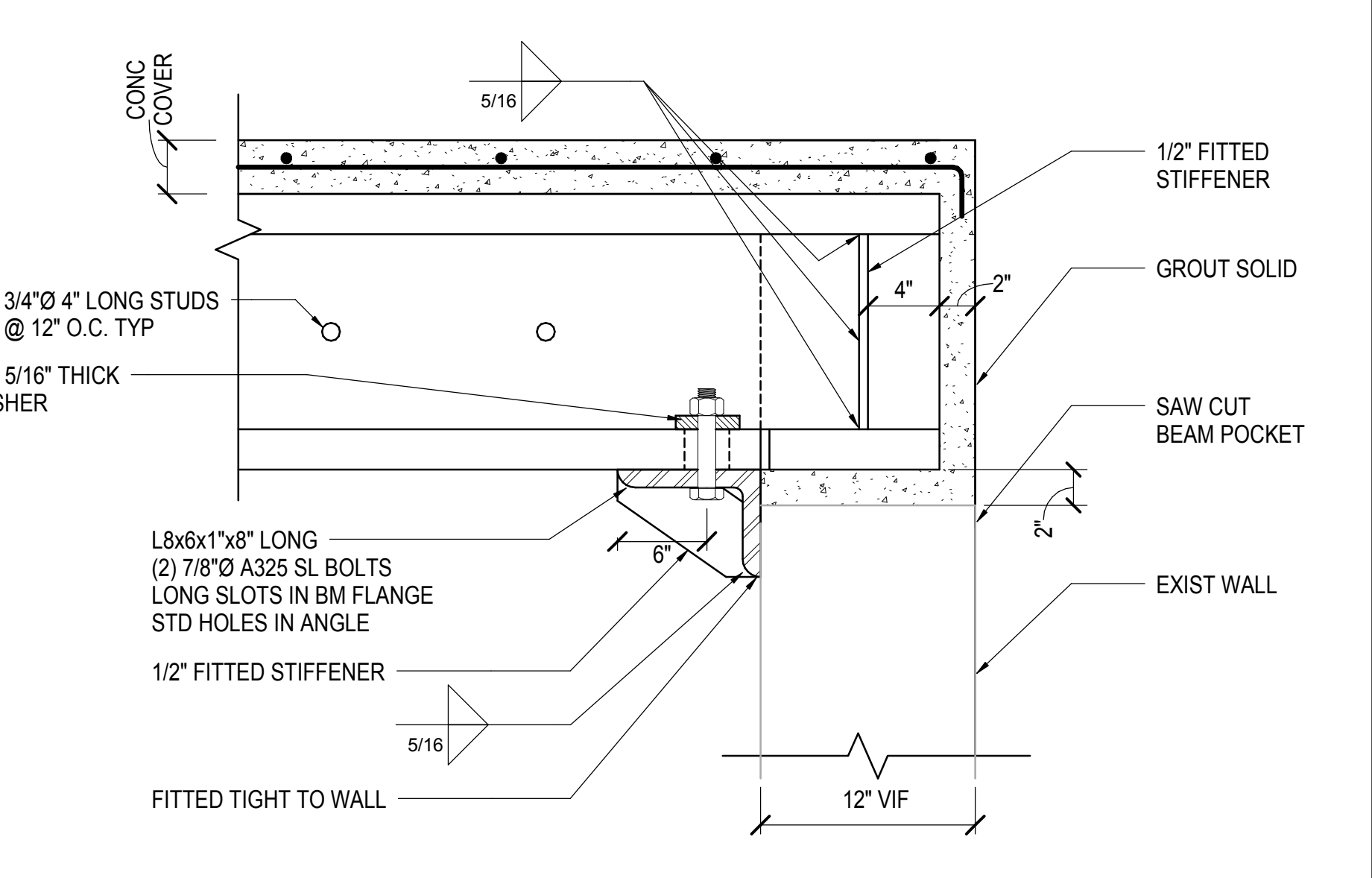
**1 SECTION AT STEP IN SLAB OVER EXIST. SUBSTATION**  
1 1/2" = 1'-0"



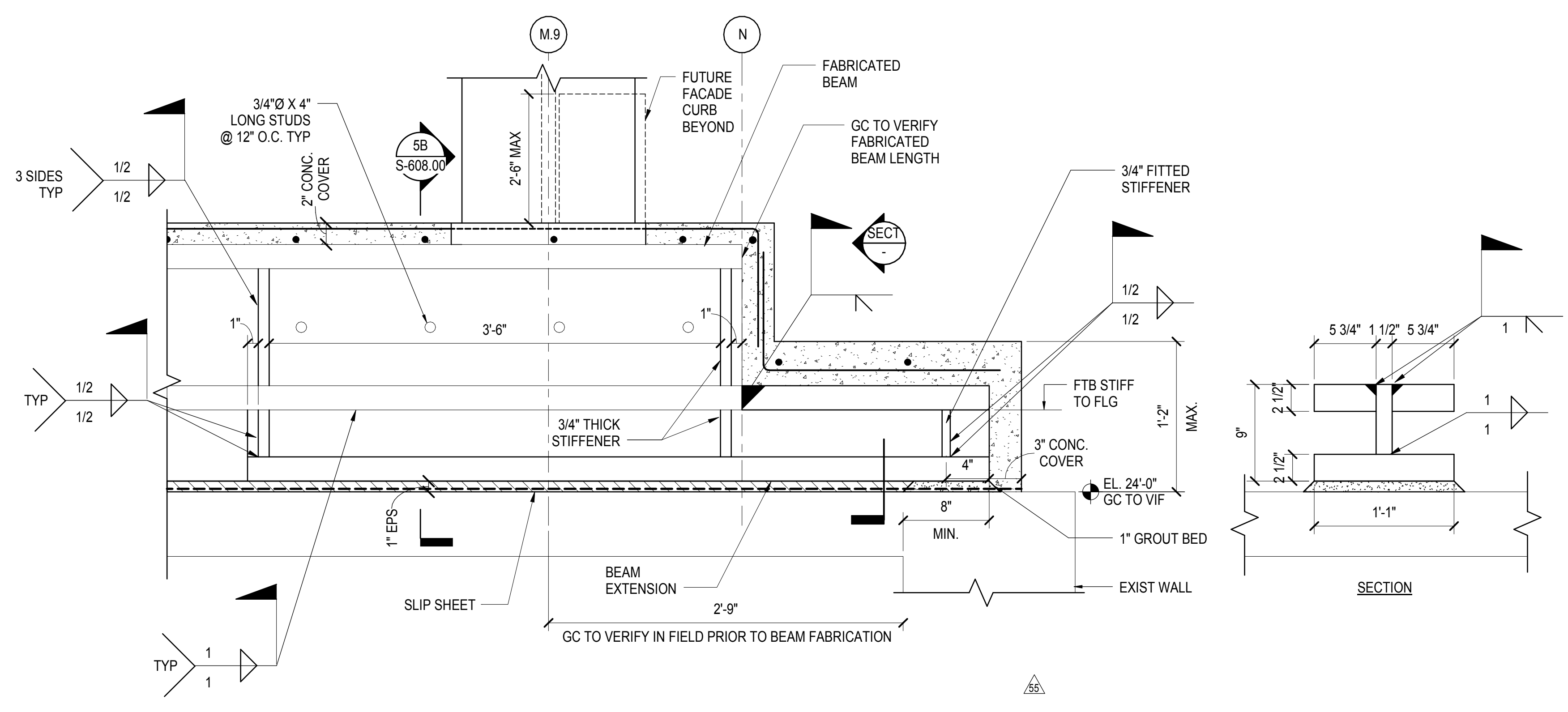
**2 SECTION AT LOW BEAM CONNECTION**  
1 1/2" = 1'-0"



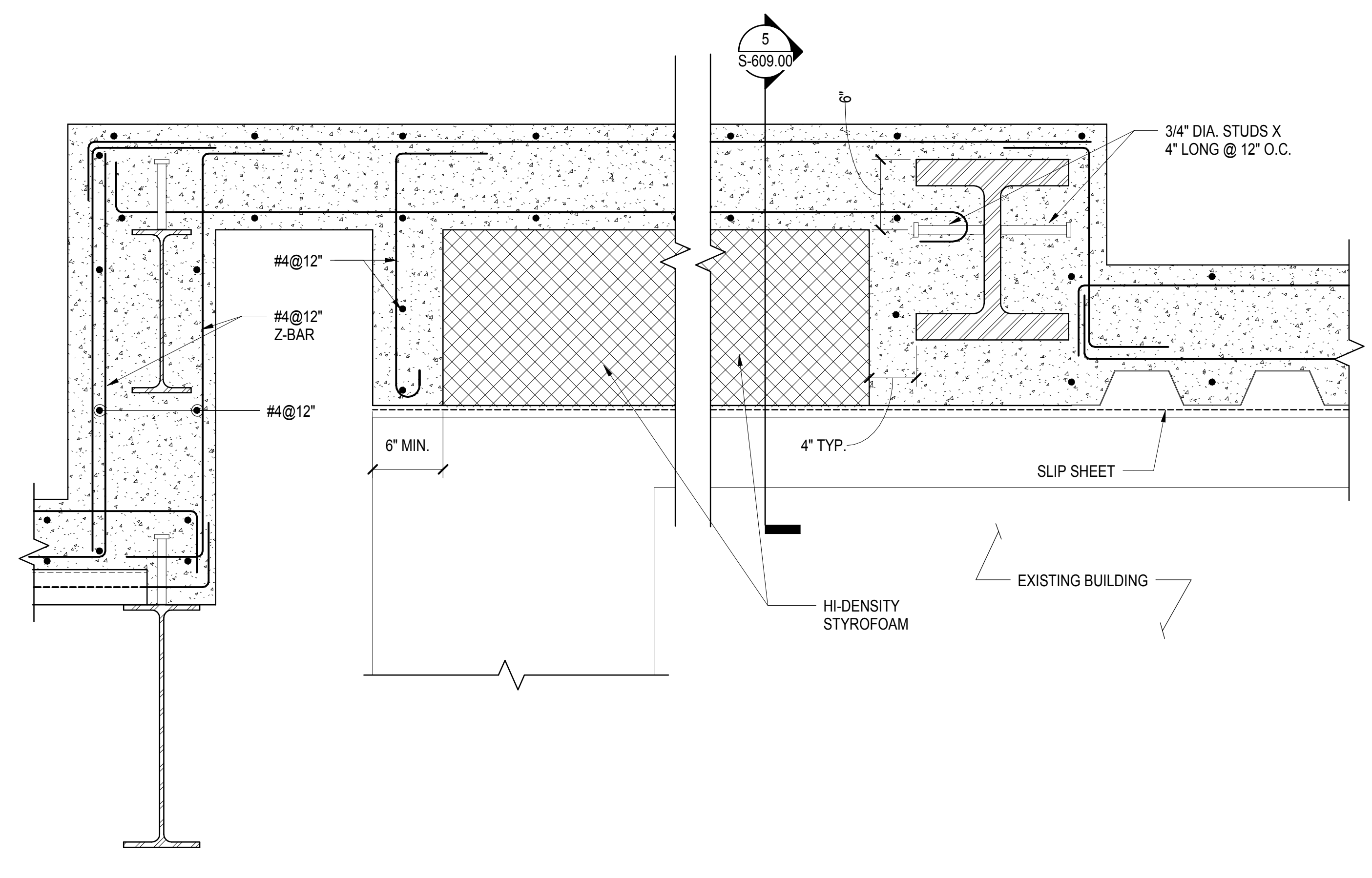
**3 SECTION AT EXIST. SUBSTATION WALL**  
1 1/2" = 1'-0"



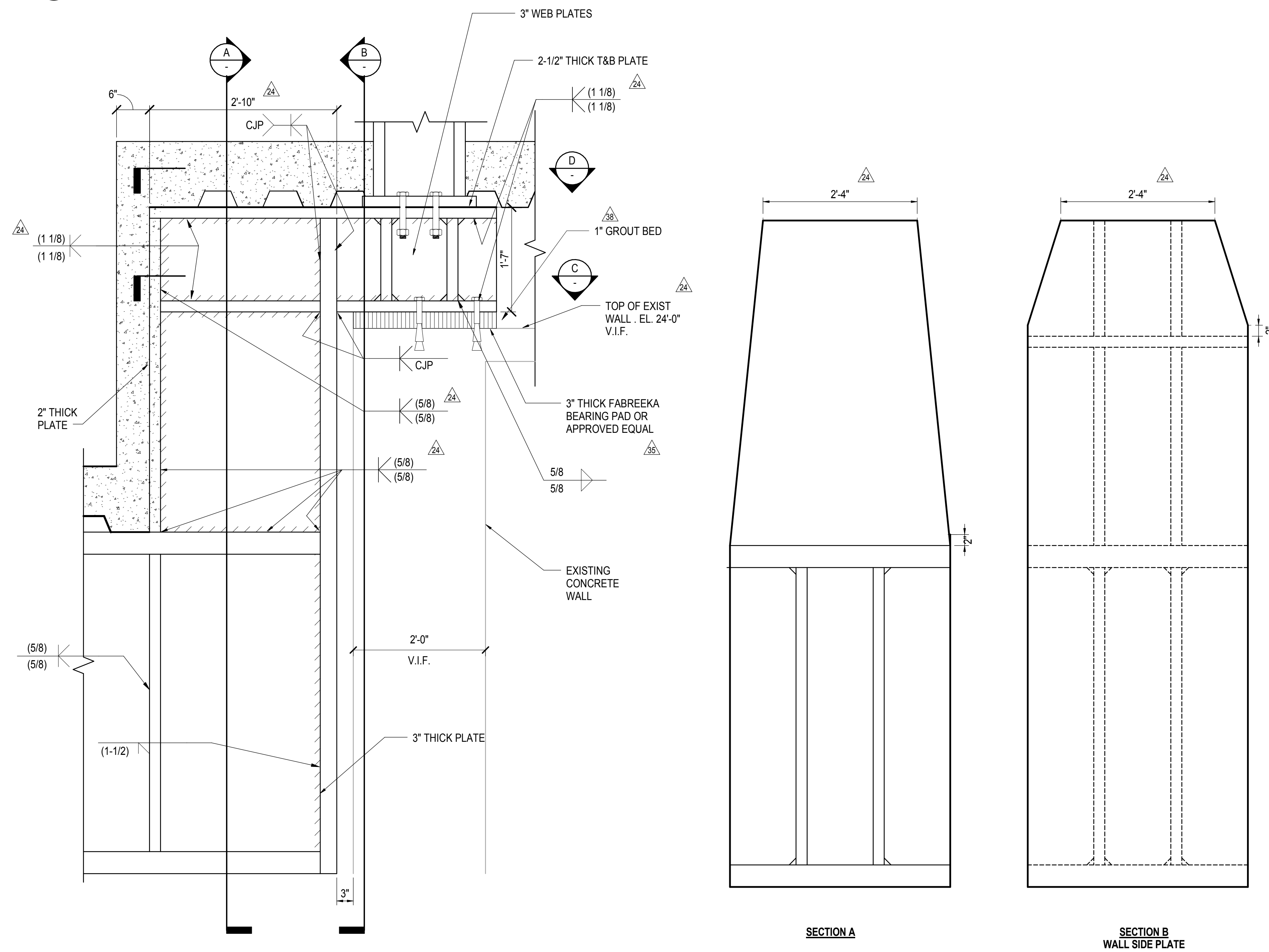
**4 SECTION AT EXIST. SUBSTATION WALL**  
1 1/2" = 1'-0"



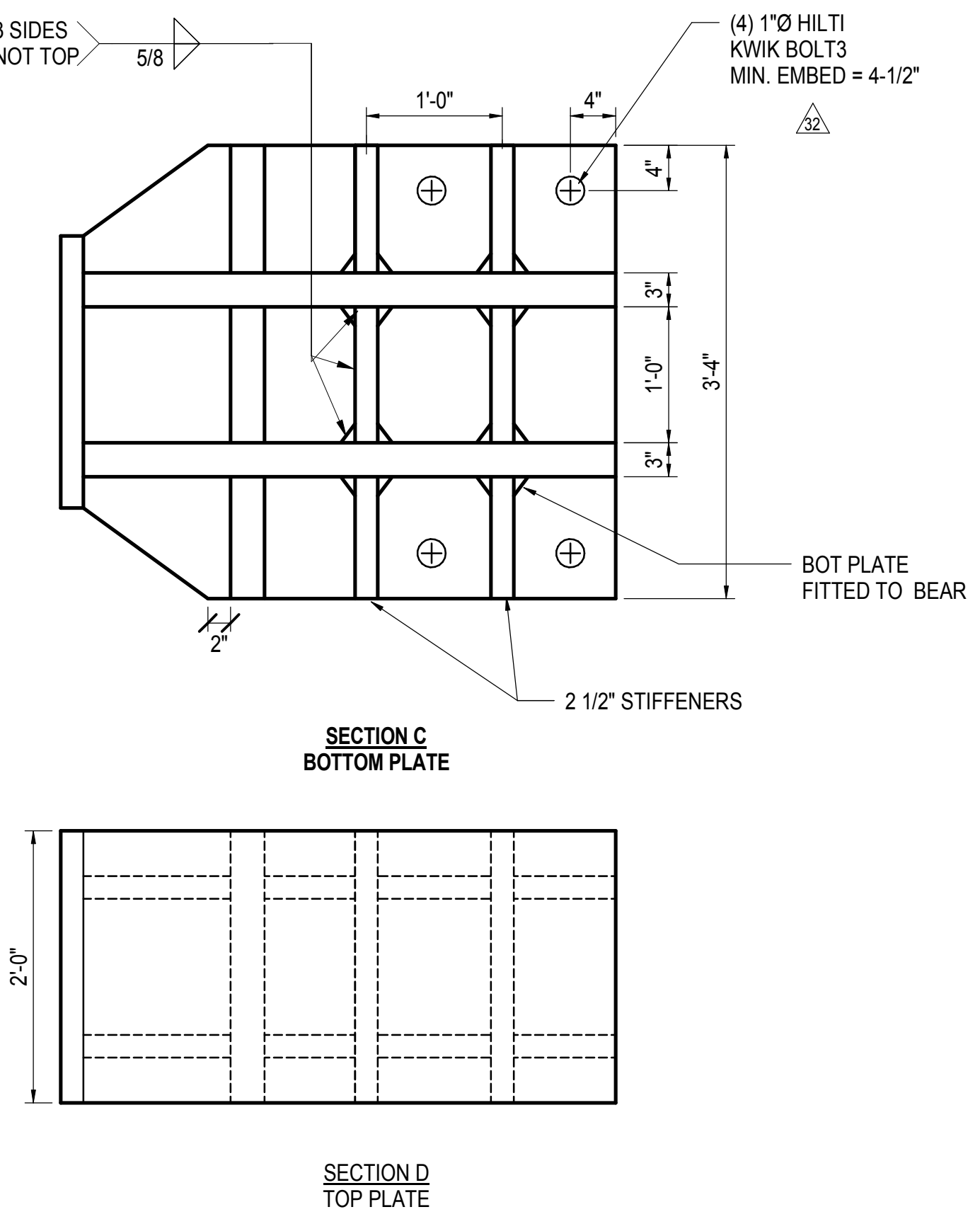
**5A SECTION OVER EXISTING WET WELL**  
1 1/2" = 1'-0"



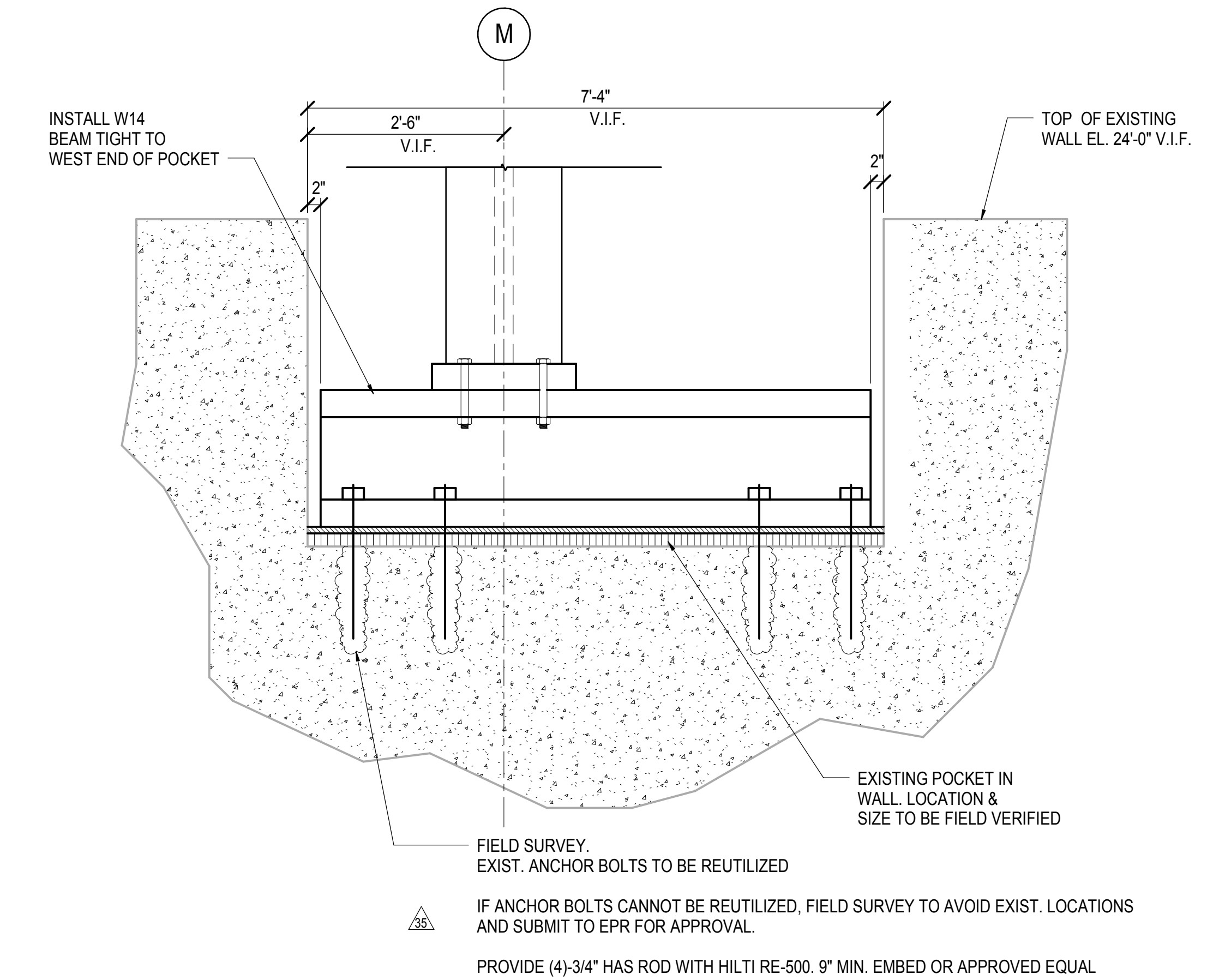
**5B SECTION OVER EXISTING WET WELL**  
1 1/2" = 1'-0"



**7 SECTION ALONG GRID M.9 PLATE GIRDER TO EXIST. WALL**  
1" = 1'-0"



**SECTION C BOTTOM PLATE**



**6 SECTION AT TM TRUSS CONNECTION TO EXIST. WALL**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH9086	06/30/2015
ASH9084	11/26/2014
E.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH9009	10/14/2014
ASH9034	7/28/2014
ASH9021	5/7/2014
Author	AW

Key Plan

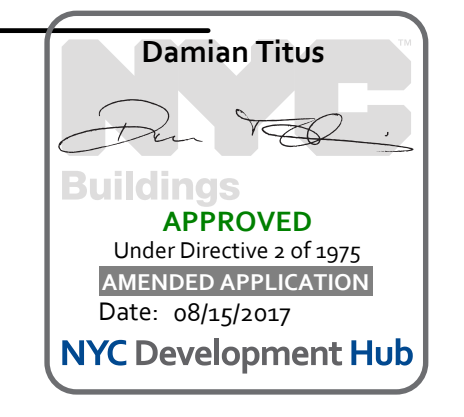
Date: 05/05/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: 118

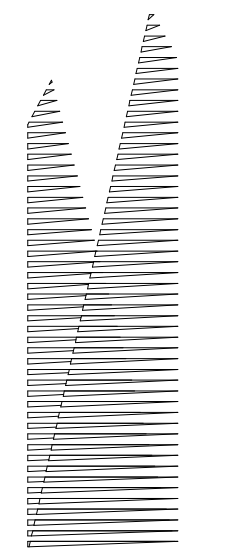
**HYE -PL -S-608.00**

**SECTIONS AND DETAILS II**

Drawing Number: 05/05/14  
**S-608.00**

SHEET 118 OF 163





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner Properties Group  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

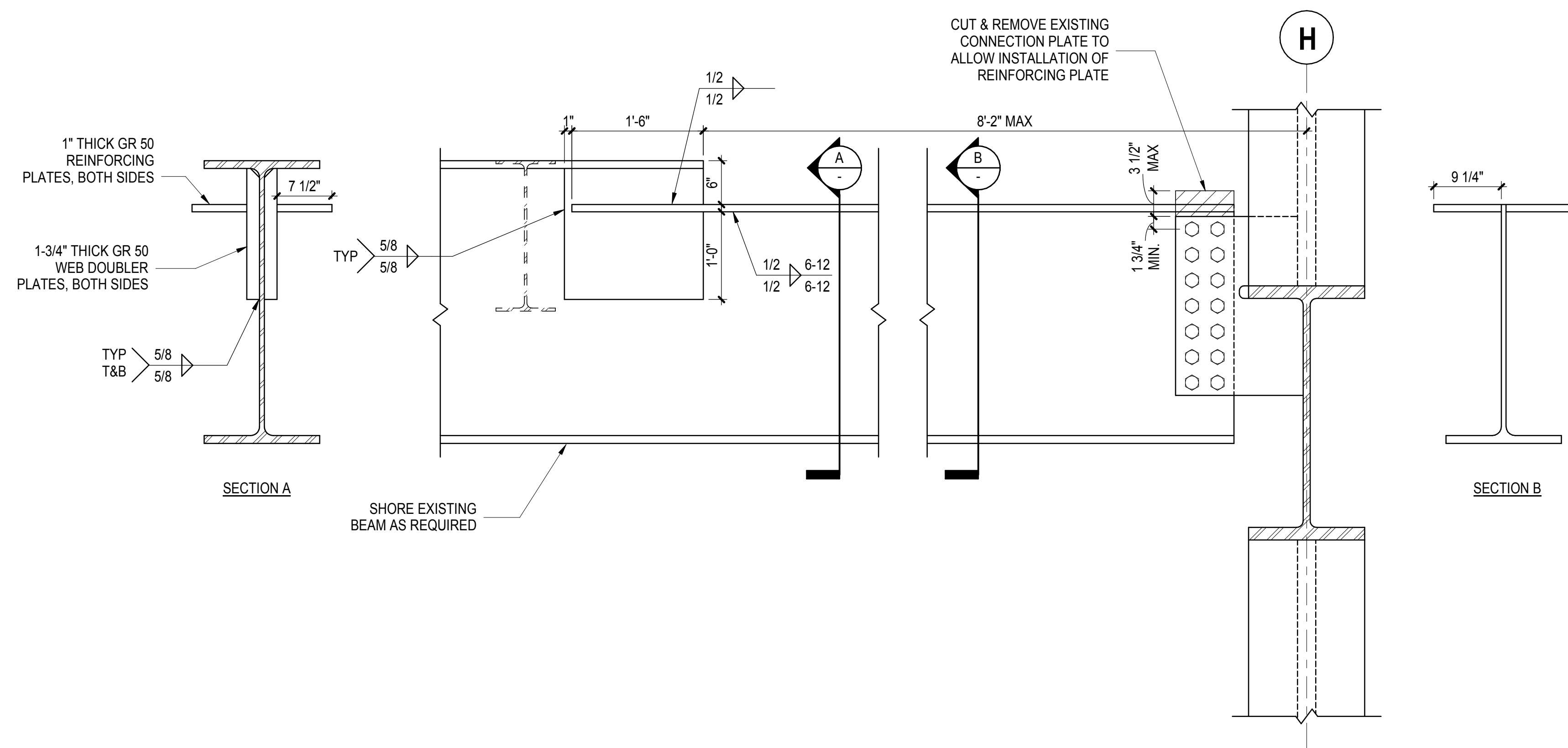
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

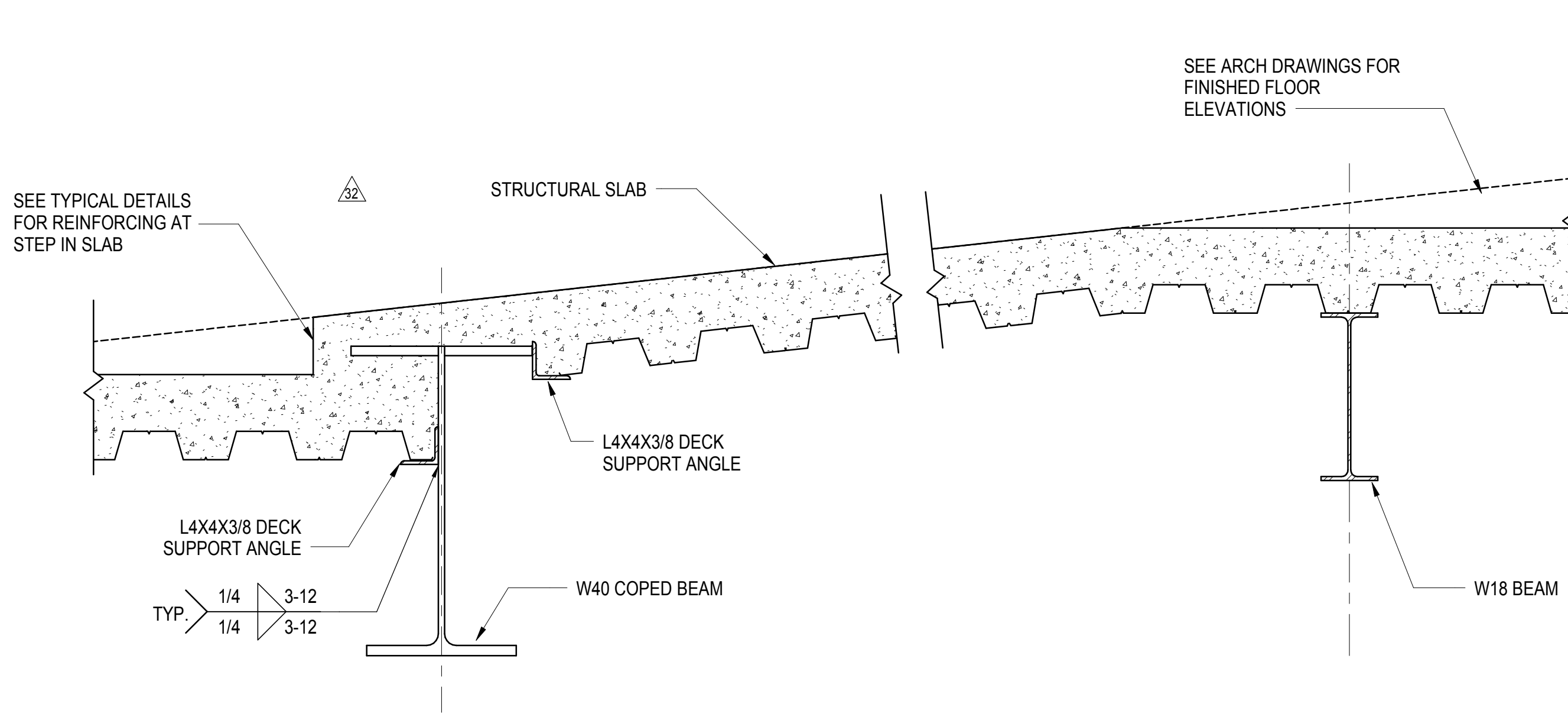
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

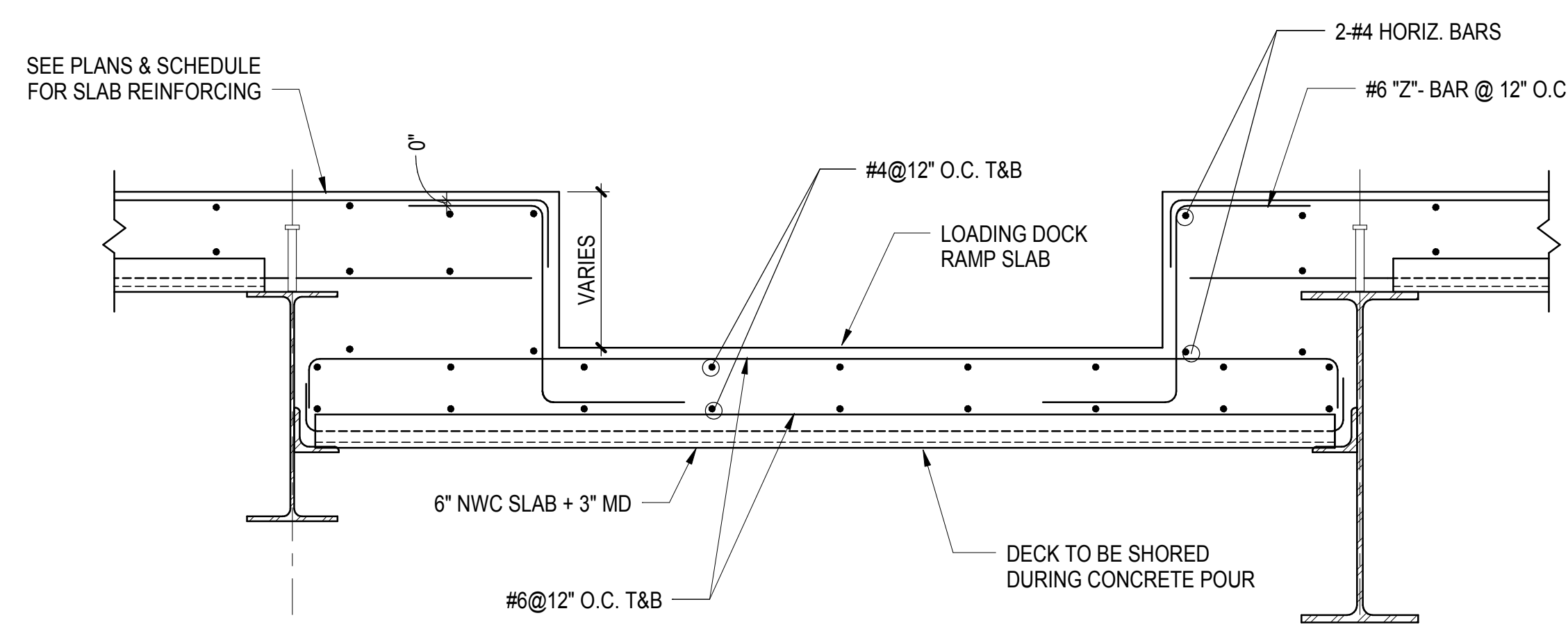
LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



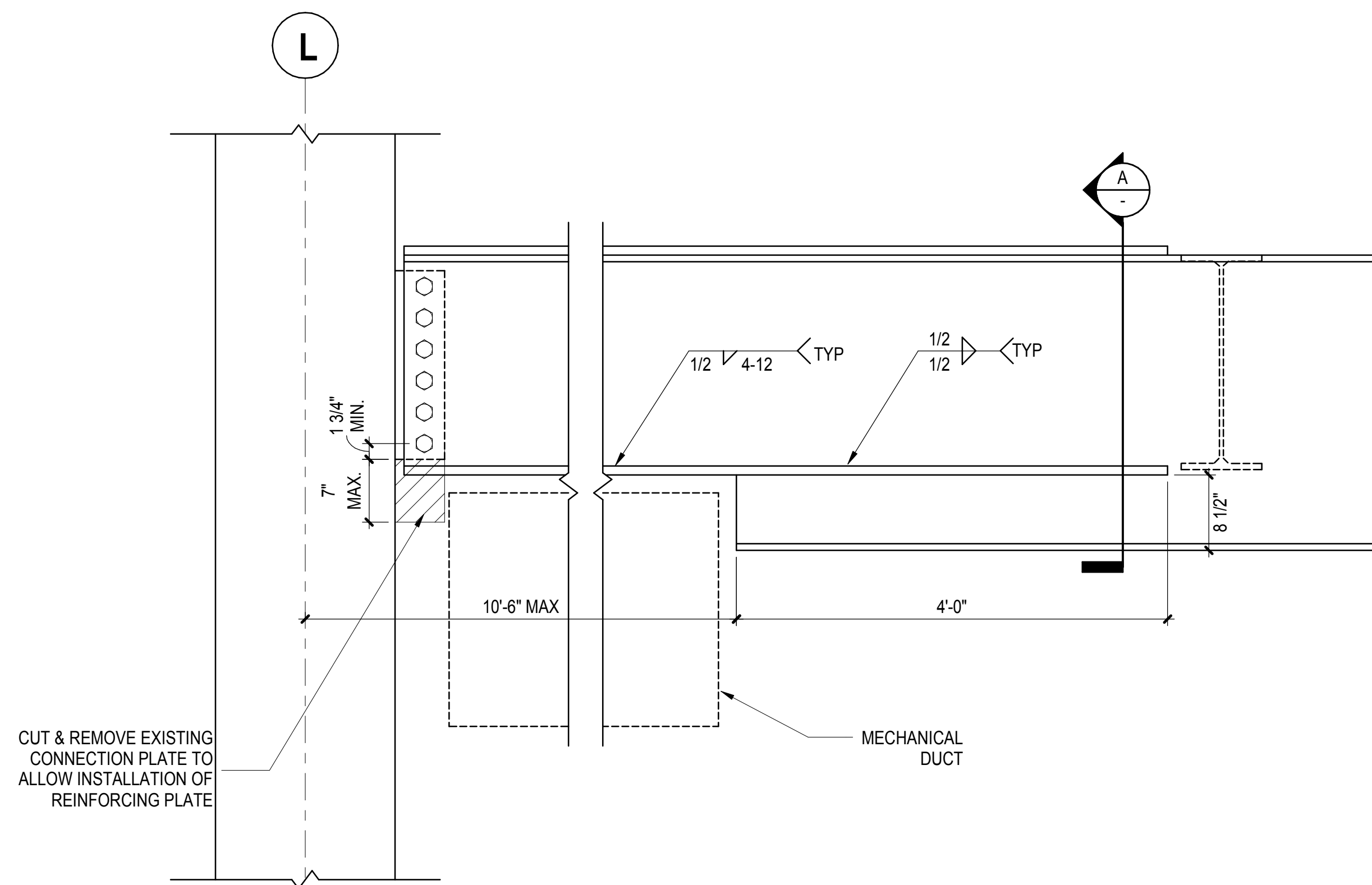
**1** LOADING DOCK RAMP BEAM REINFORCING DETAIL  
1" = 1'-0"



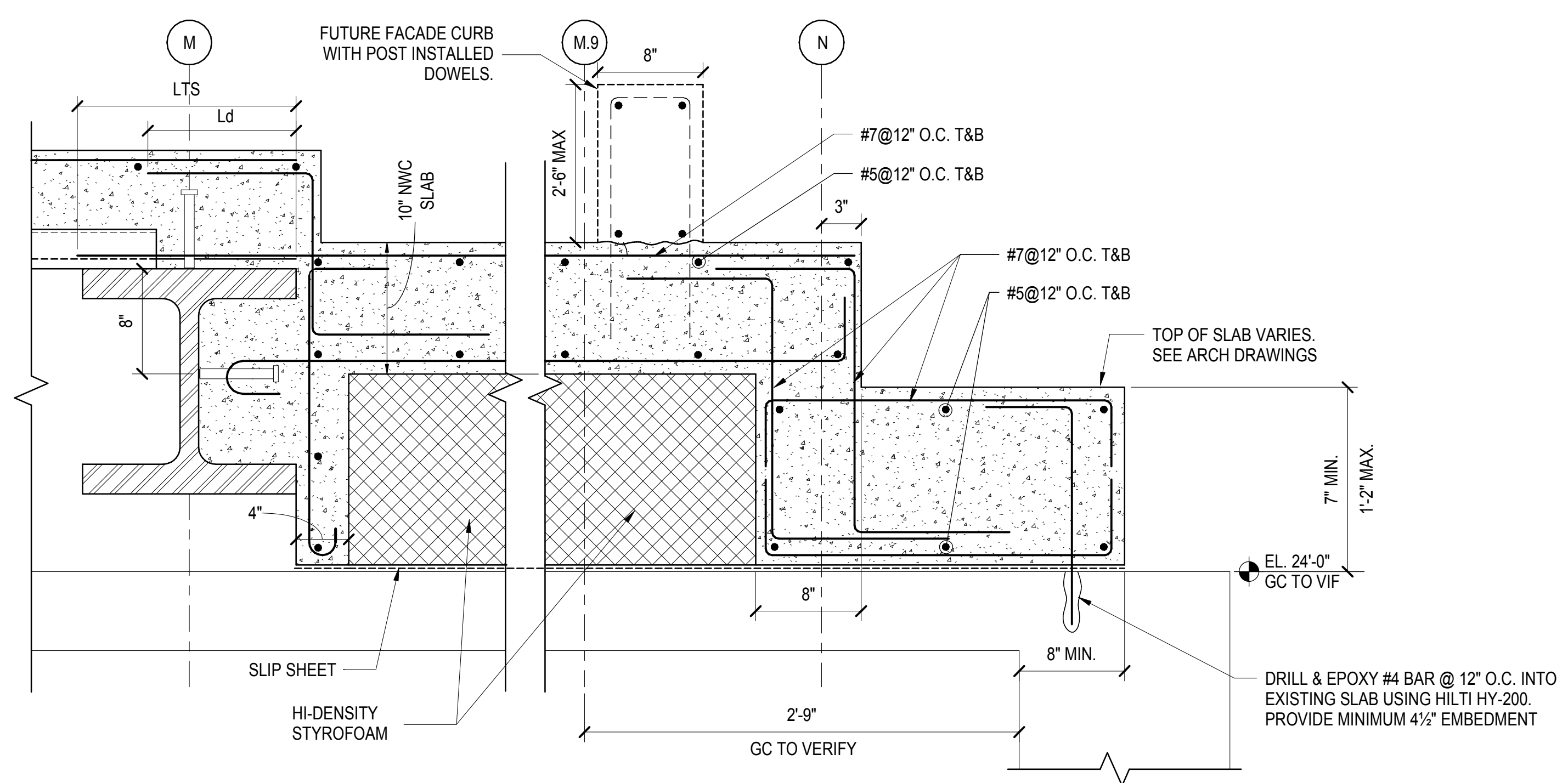
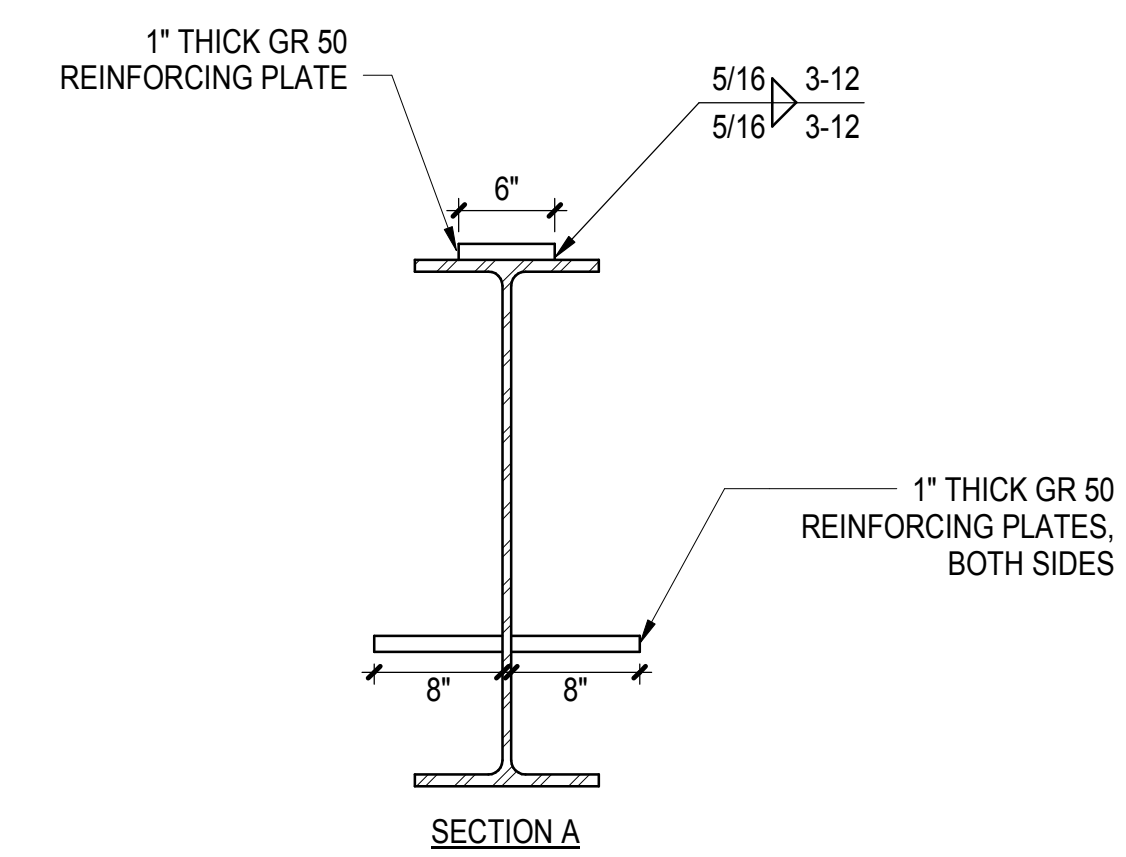
**2** SECTION AT RAMP SLAB LOOKING WEST  
1" = 1'-0"



**3** SECTION AT RAMP SLAB LOOKING NORTH  
1" = 1'-0"



**4** DUCT NOTCH BEAM REINFORCING DETAIL  
1" = 1'-0"



**5** SECTION OVER EXISTING WET WELL  
1 1/2" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/25/2016
ASH0006	06/30/2015
ASH0052 - WEST ATRIUM	10/31/2014
ASH0050	10/21/2014
L.I.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
Description	AW

Key Plan

Date: 10/21/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

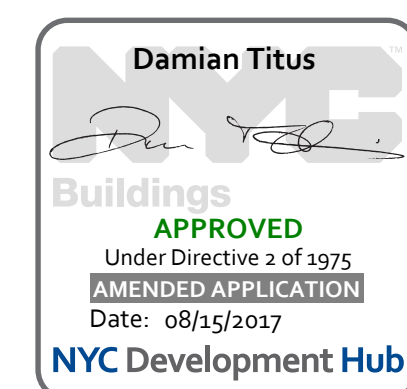
**HYE -PL -S-609.00**

**SECTIONS AND  
DETAILS III**

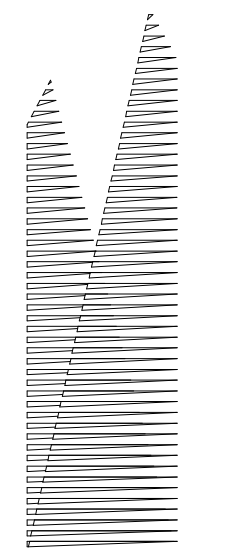
Drawing Number: /RCC/4/ Drawing Number

**S-609.00**

SHEET 119 of 163



Damian Titus  
Buildings  
APPROVED  
Under Directive 1 of 1975  
Date: 08/15/2017  
NYC Development Hub



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner Properties Group  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

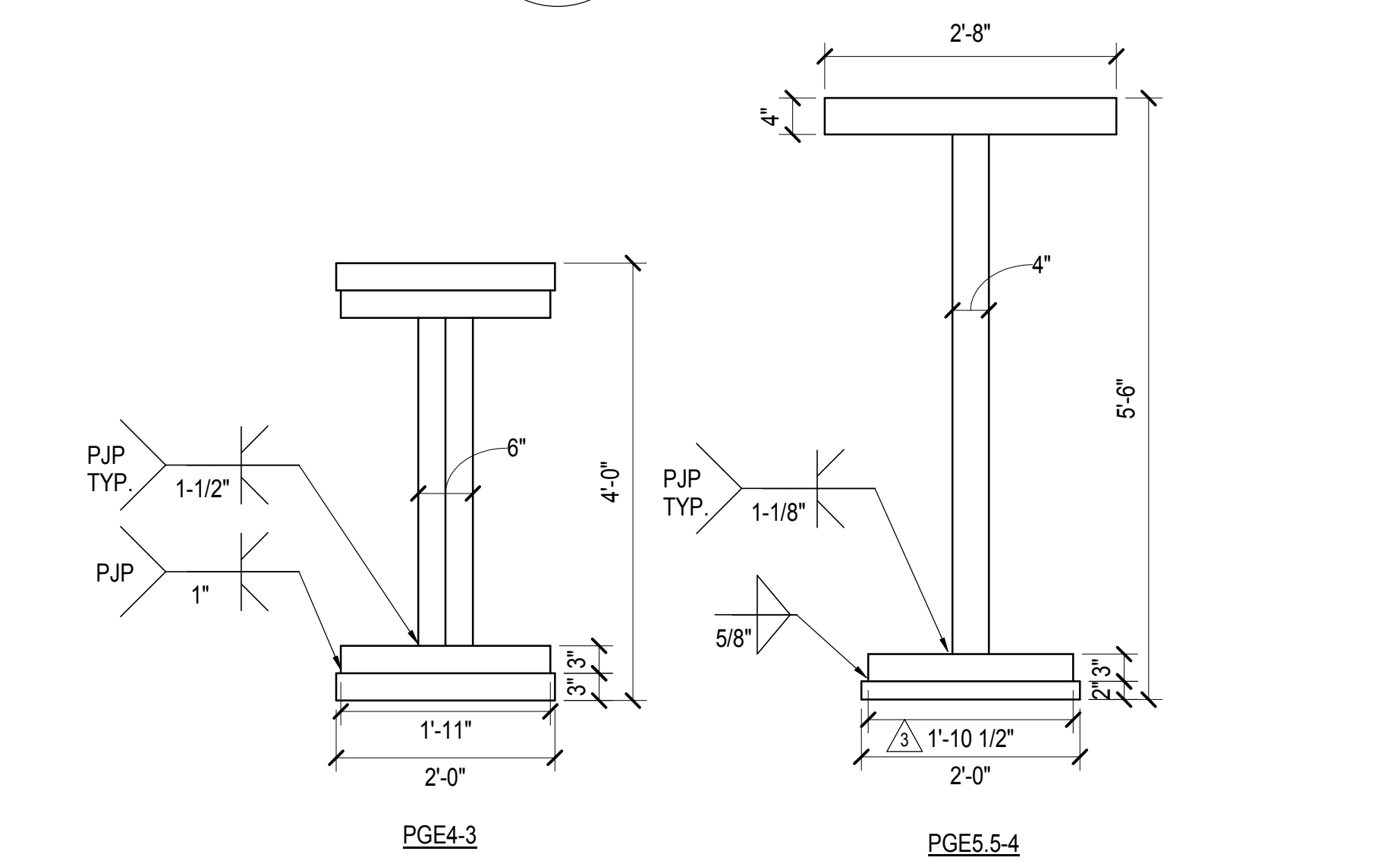
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

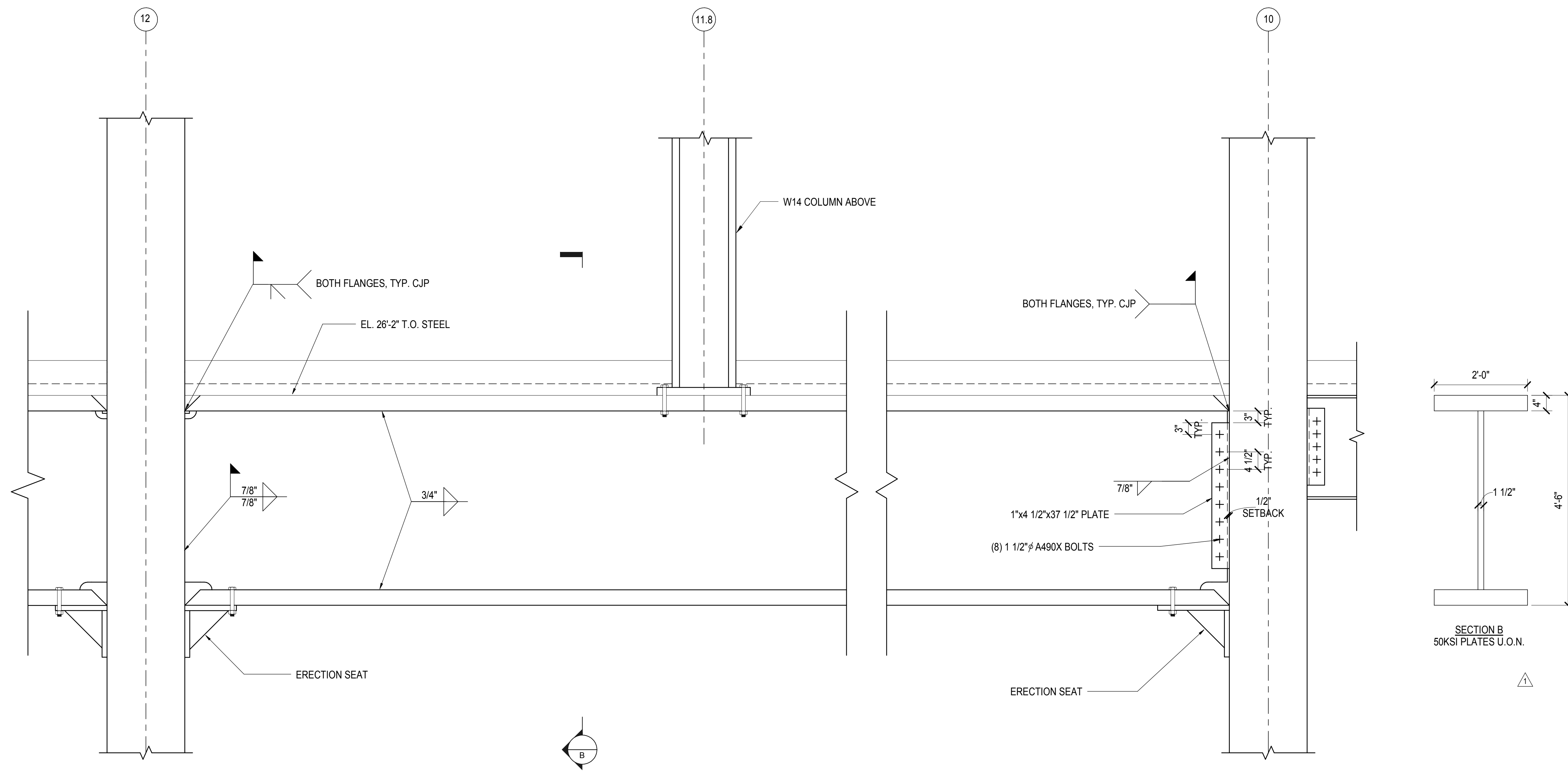
LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

TYPICAL PLATFORM PLATE GIRDERS						
LABEL	DEPTH (d) [IN]	WIDTH (w) [IN]	FLANGE TH [IN]	WEB TH [IN]	SELFWEIGHT (LBF/FT)	F <sub>y</sub> (KSI)
PGE3-1	32.5	15.5	4.00	4.00	756	50
PGE3-3-1	42	16.5	2.75	2.00	558	50
PGE3-3-2	43	16.75	3.25	2.00	619	50
PGE3-3-3	40.5	18	3.00	4.00	837	50
PGE4-1	48	24	4.00	2.50	926	50
PGE4-2	48	24	4.00	4.00	1198	50
PGE4-3	SEE SECTION 2/S610.00					
PGE5-1	60	24	4.00	2.50	1096	50
PGE5-5-1	66	24	4.00	2.50	1147	50
PGE5-5-2	66	24	4.00	3.50	1344	50
PGE5-5-3	66	30	4.00	4.00	1607	50
PGE5-5-4	SEE SECTION 2/S610.00					
PGE6-1	72	24	3.00	2.00	940	50
PGE6-2	72	30	4.00	4.00	1661	50
PGE6-3	72	18	3.00	2.00	817	50

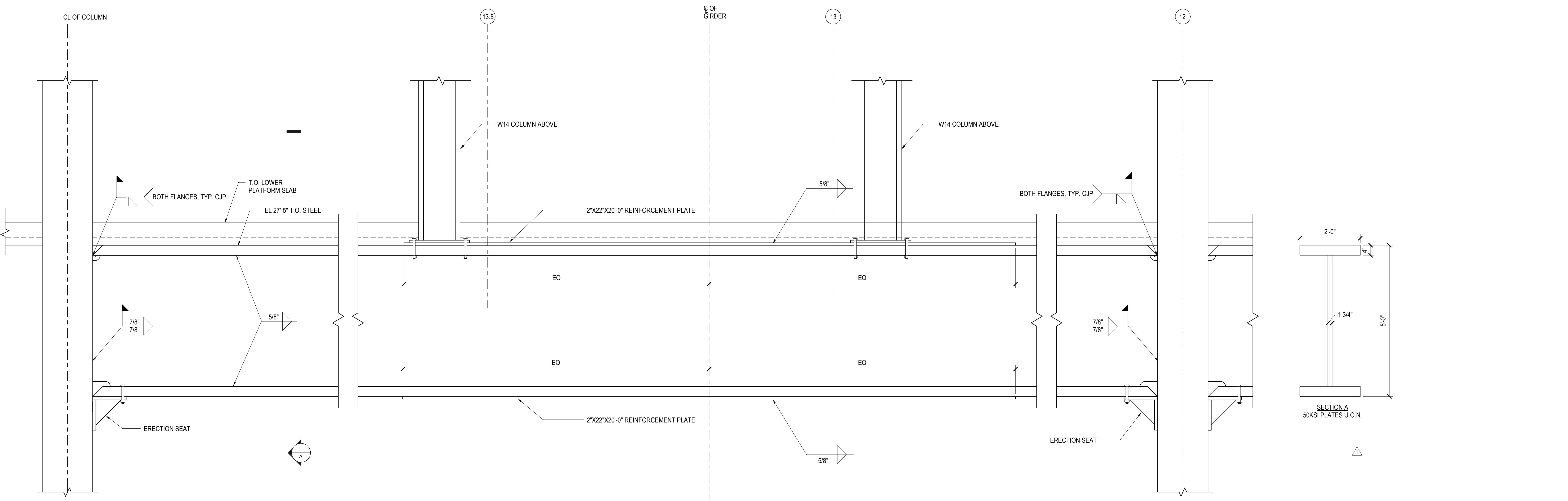
**1 TYPICAL PLATFORM PLATE GIRDER SCHEDULE**  
1/4" = 1'-0"



**2 ATYPICAL PLATE GIRDERS**  
3/4" = 1'-0"



**3 TRANSFER GIRDER BETWEEN COLS G12 AND G10**  
3/4" = 1'-0"



**4 TRANSFER GIRDER BETWEEN COLS G14 AND G12**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0009	10/14/2014
ASH0034	7/28/2014
ASH0021	5/7/2014
ASH0005	2/18/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
ASH0000	12/20/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
DH02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/9/2013
DH01 PHASE 1 STRUCTURE UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
Rev	Description

Key Plan

Date: 08.09.2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

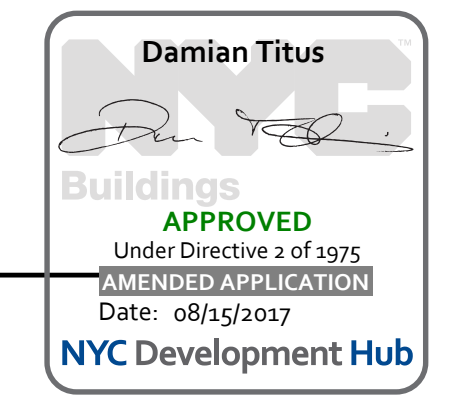
**HYE-PL-S-610.01**

**EAST PLATFORM  
PLATE GIRDER  
DETAILS**

Drawing Number: 08/09/2013

**S-610.01**

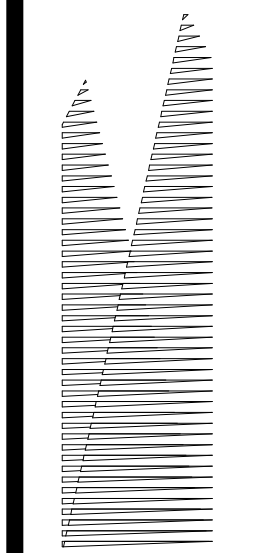
SHEET 120 of 163











Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

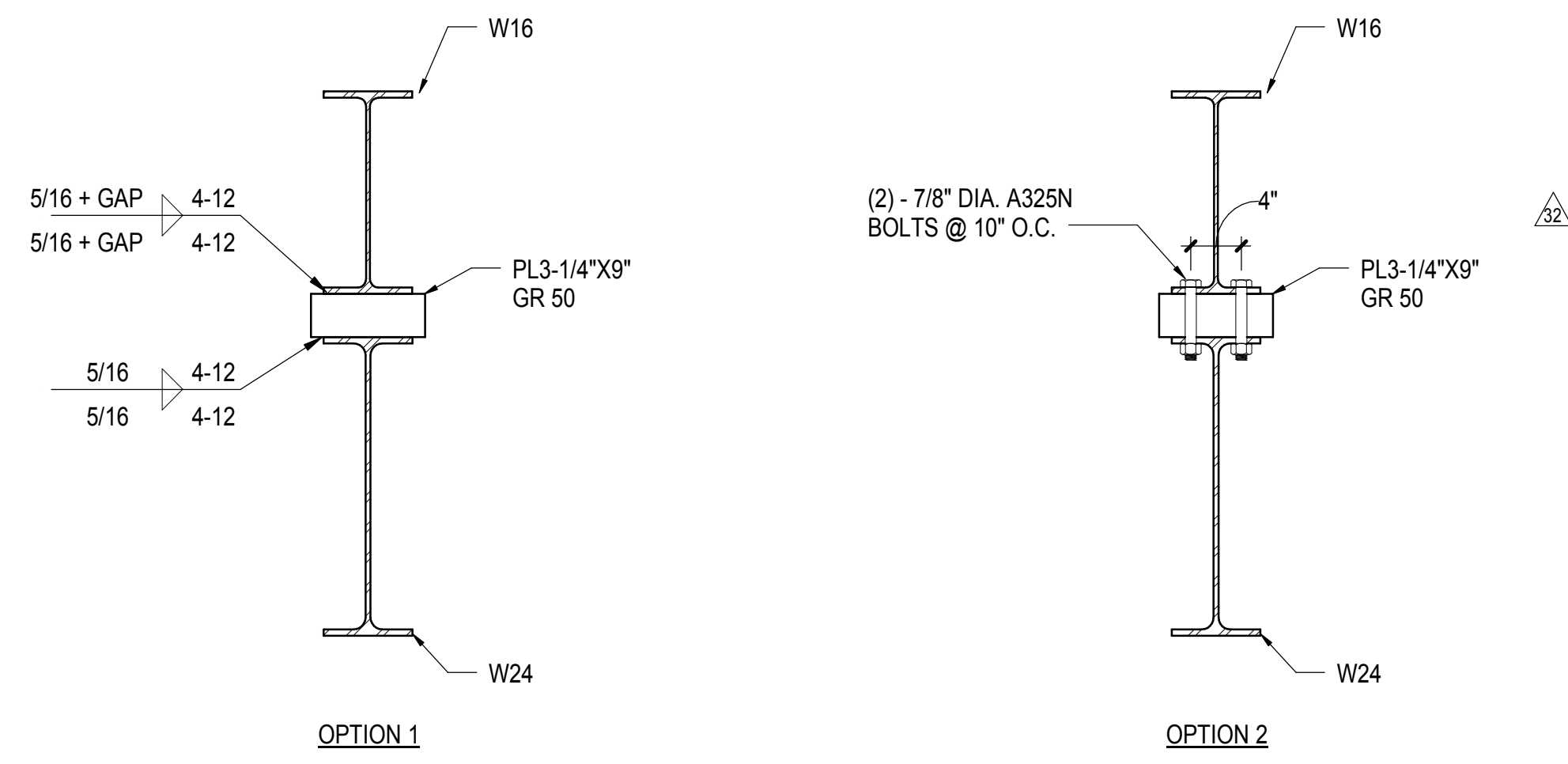
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

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Fire Alarm, Fire Protection, Security  
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LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

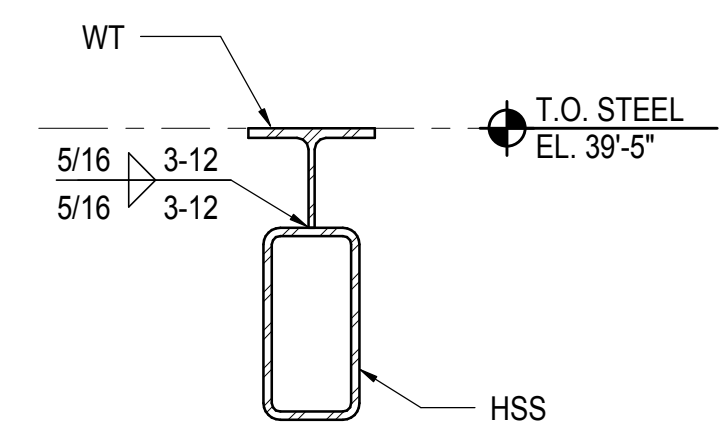
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



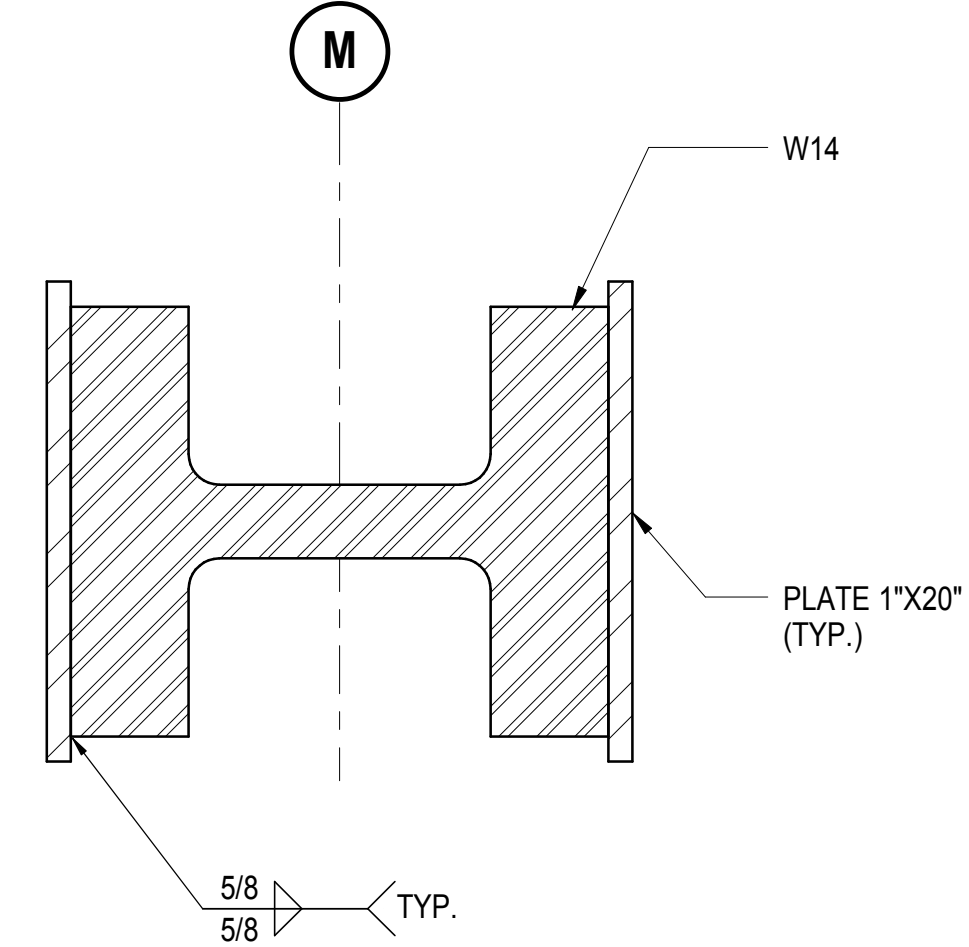
NOTE: FOR GAPS LARGER THAN 3/16", PROVIDE SHIM PLATES BETWEEN PLATE AND UPPER BEAM FLUSH WITH BEAM FLANGE TIPS

**1 SECTION**  
1" = 1'-0"

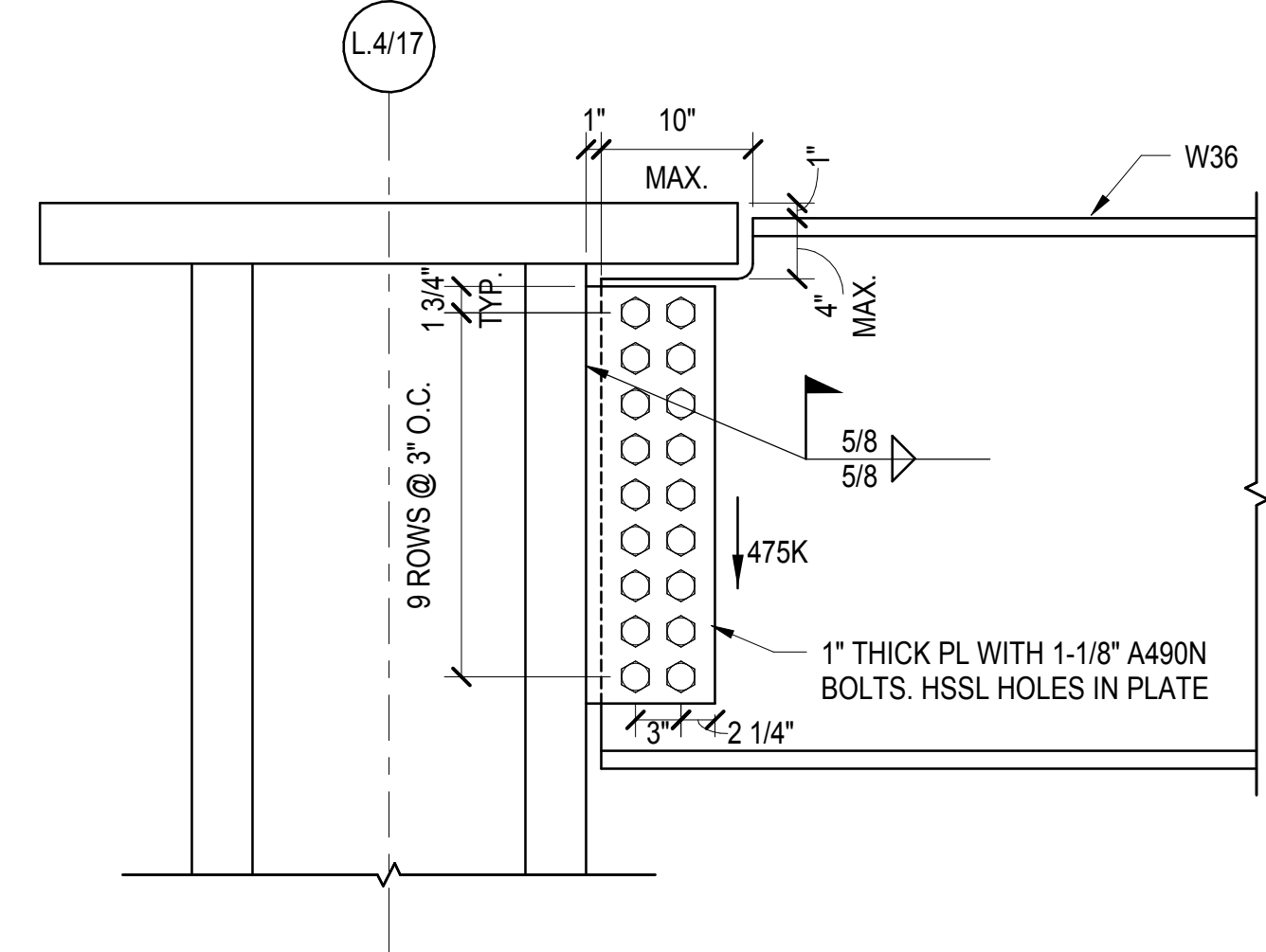
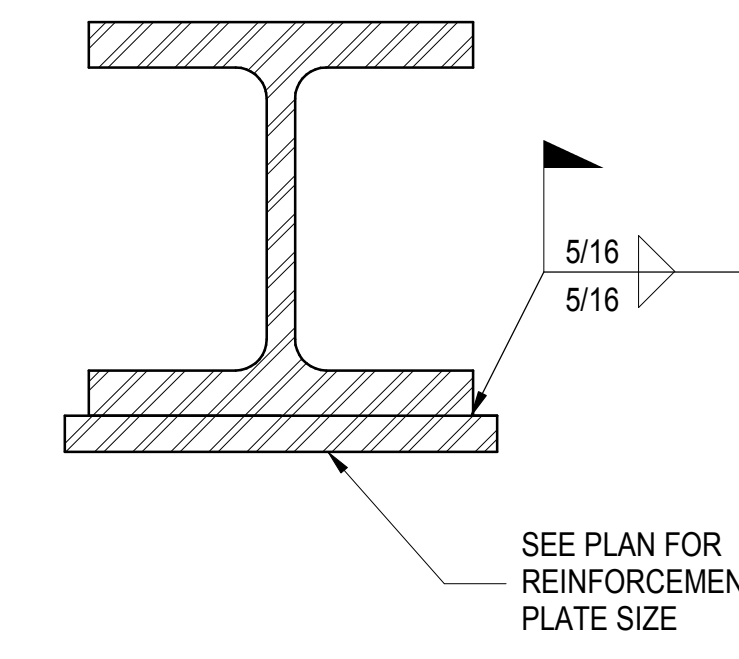
**2 NE ELEVATOR HSS AND WT CONNECTION**  
1 1/2" = 1'-0"



**3 COLUMN M16 BETWEEN LOWER AND UPPER PLATFORM**  
1 1/2" = 1'-0"

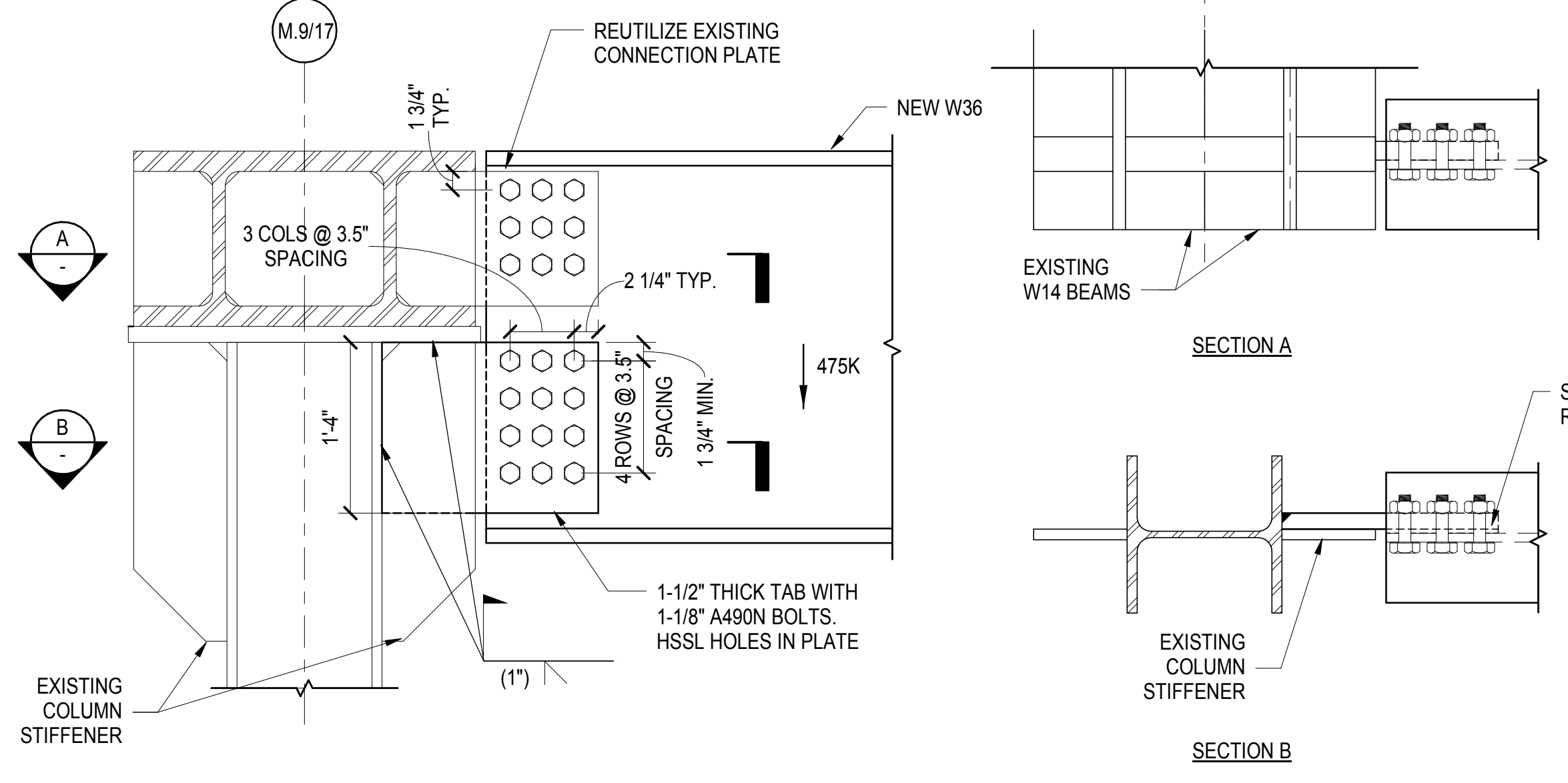


**4 BEAM REINFORCEMENT AT NE CORNER**  
1 1/2" = 1'-0"



**5 W36 CONNECTION AT L.4/17**  
1" = 1'-0"

**6 W36 CONNECTION AT M.9/17**  
1" = 1'-0"



DOB POST-APPROVAL AMENDMENT	10/28/2016
ASHB0079	5/21/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASHB0049	10/14/2014
Revisions	000

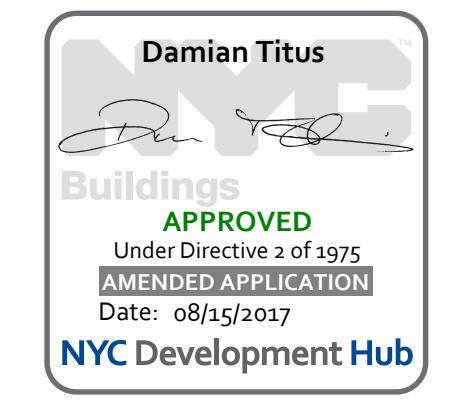
Key Plan

Date: 08/27/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

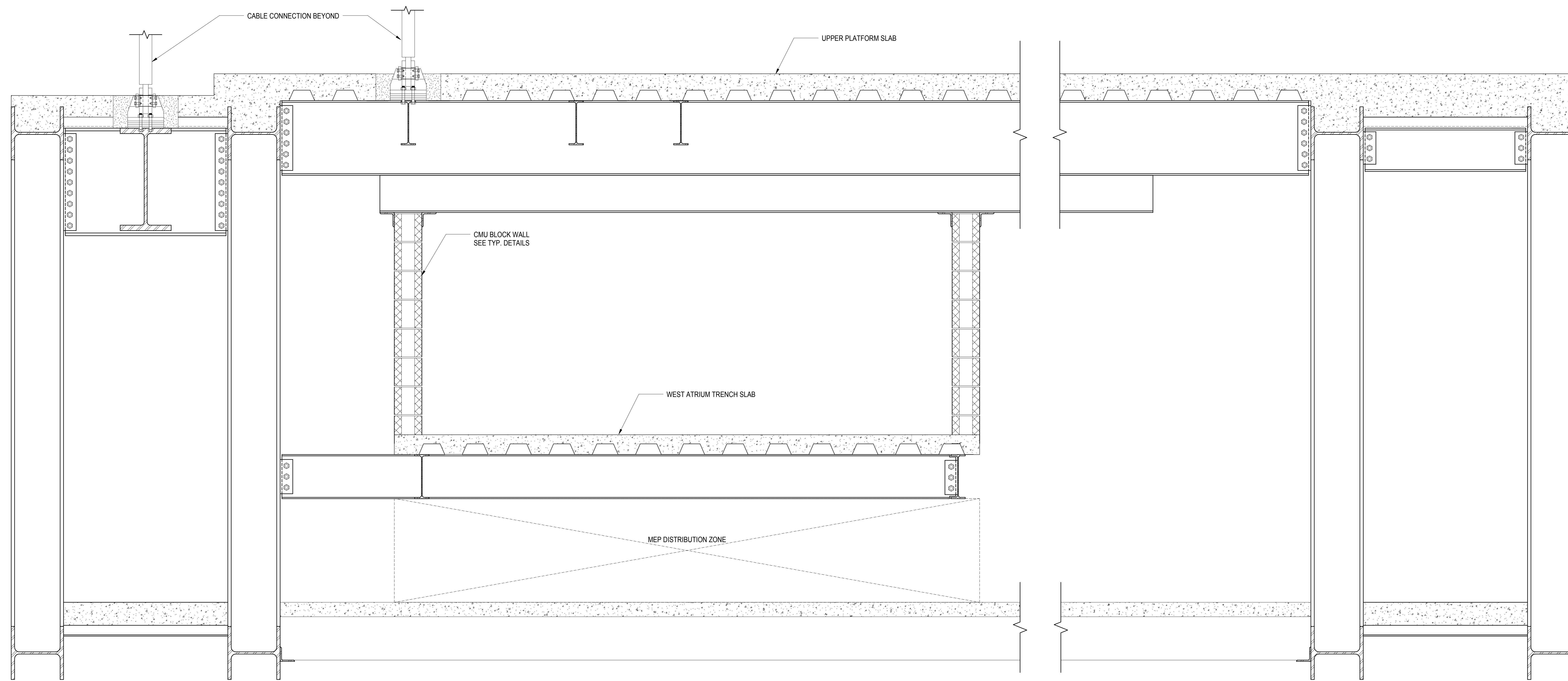
**HYE -PL -S-621.00**

Drawing Title  
**STEEL DETAILS**

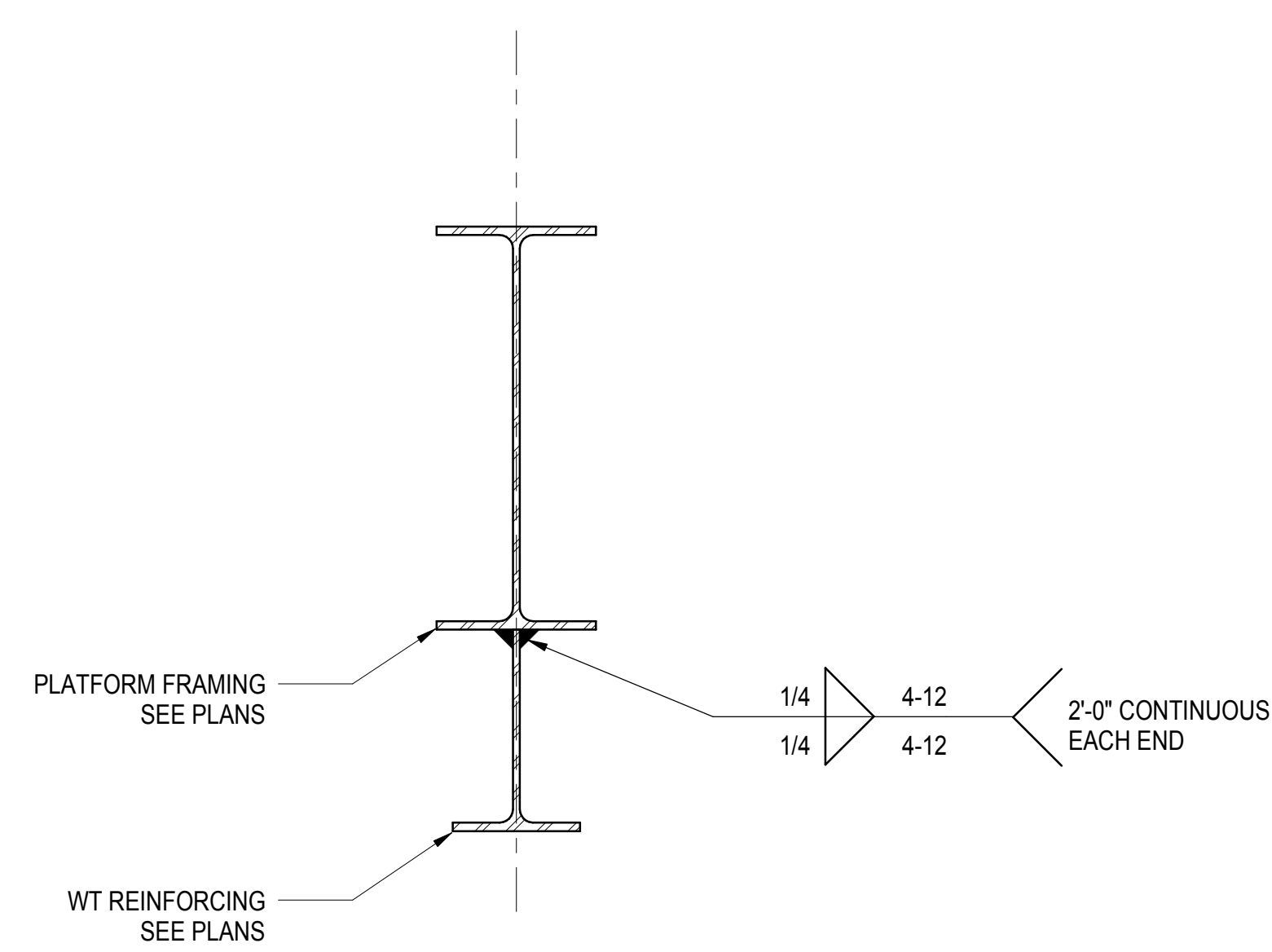
Drawing Number / Revision Drawing Number  
**S-621.00**



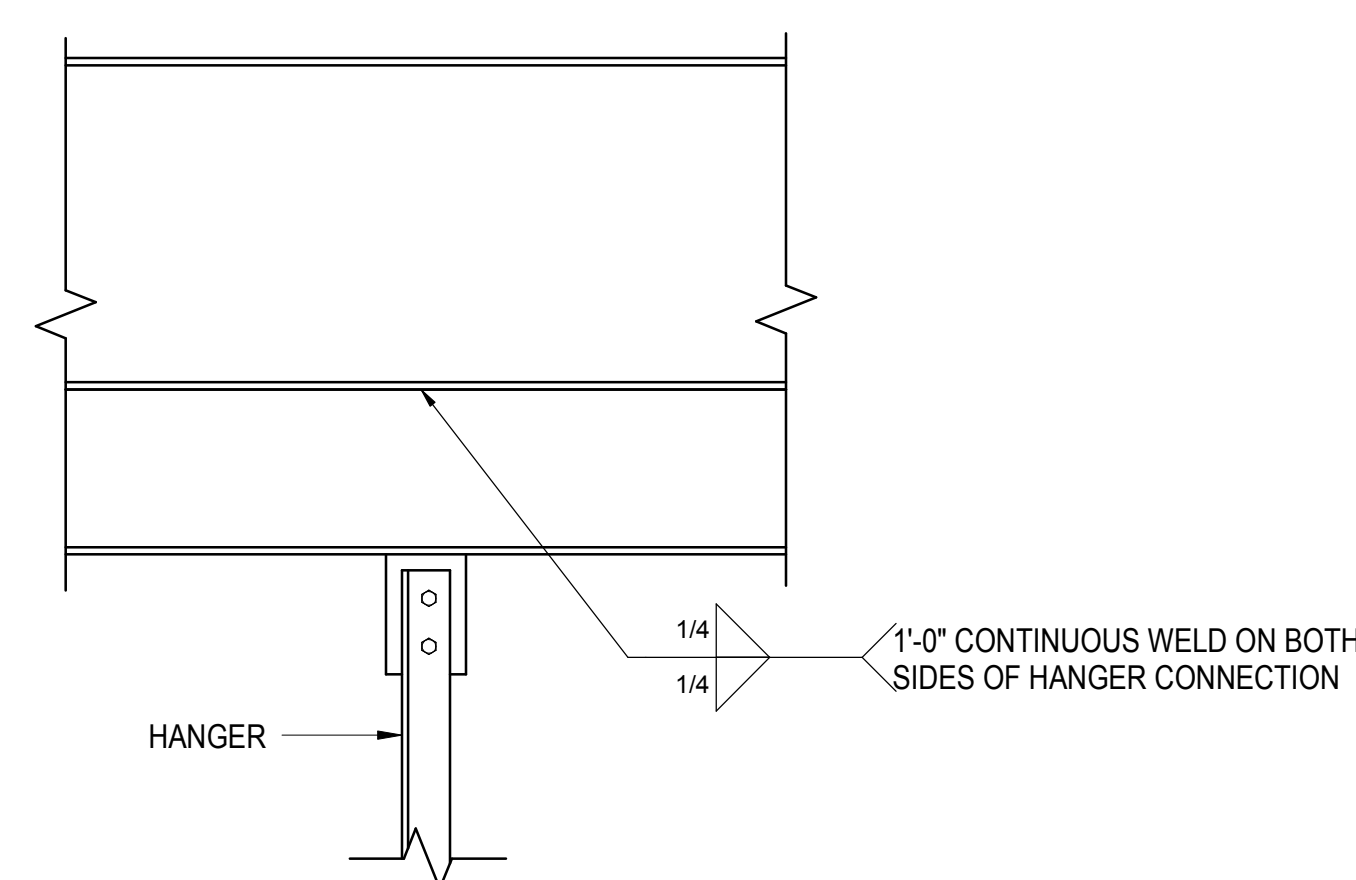
APPROVED  
Under Directive 3 of 1975  
Professional Regulation  
Date: 08/15/2017  
NYC Development Hub



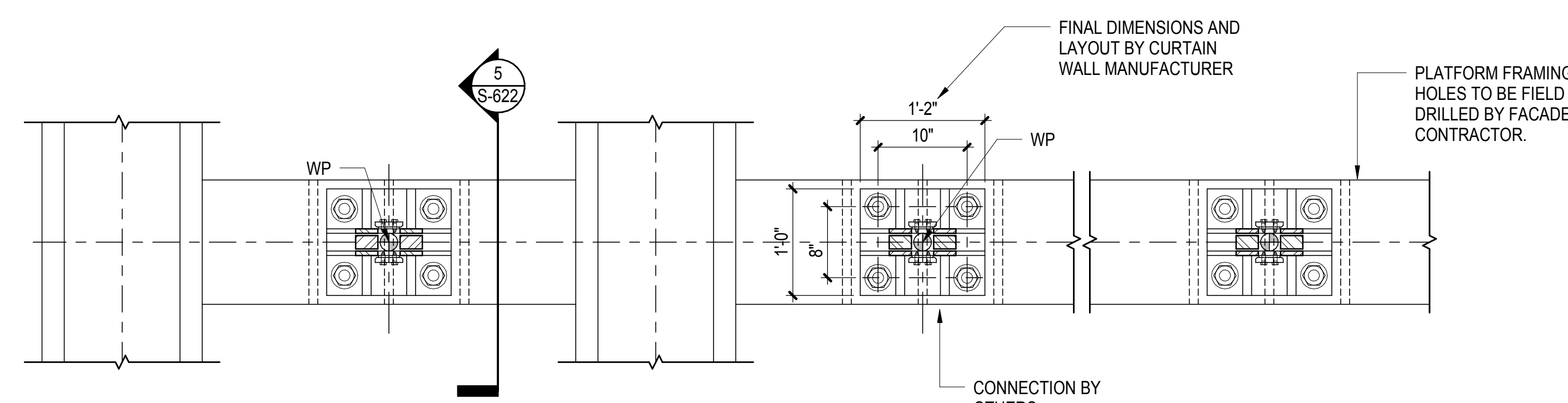
1 WEST ATRIUM TRENCH ELEVATION  
1" = 1'-0"



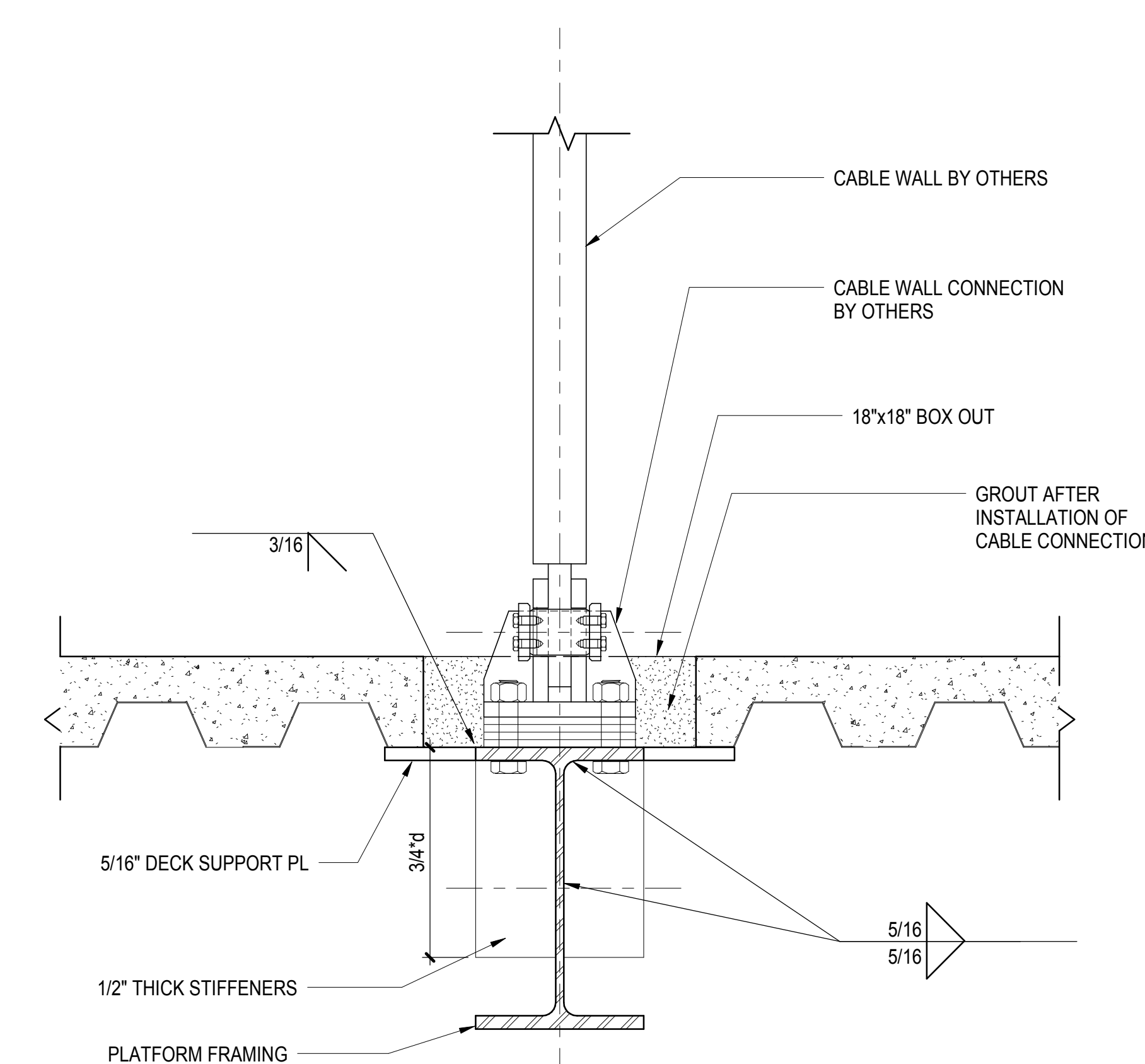
2 WEST ATRIUM REINFORCING  
1 1/2" = 1'-0"



3 WEST ATRIUM HANGER DETAIL  
1" = 1'-0"



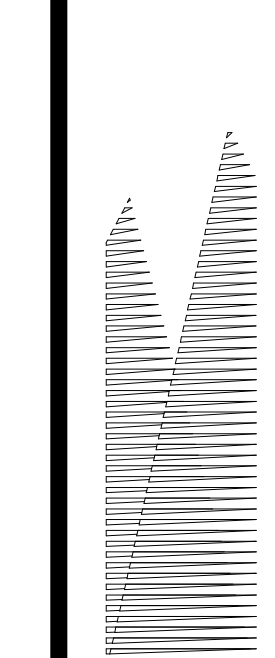
4 WEST ATRIUM VESTIBULE FOOTING PLAN  
1" = 1'-0"



5 WEST ATRIUM VESTIBULE CONNECTION, TYP  
1 1/2" = 1'-0"

**HUDSON YARDS PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY



**Client**  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

**Owner**  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

**Construction Manager**  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

**Architect**  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

**Structural Engineer**  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

**Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

**LJRR Ventilation**  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

**LJRR Substation**  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0052 - WEST ATRIUM	10/31/2014
Rev	Description

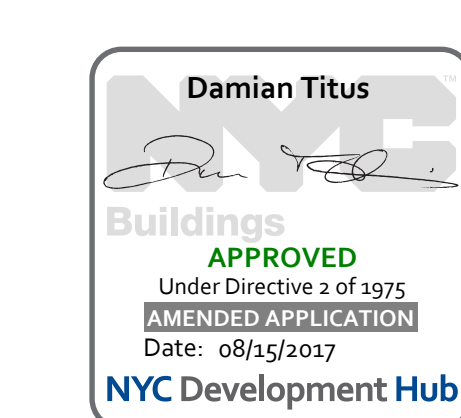
Key Plan

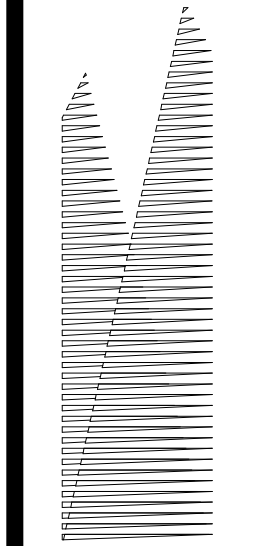
Date	10/30/14
Project No	N11330.00
Drawn By	Author
Sheet Number	

**HYE -PL -S-622.00**

**STEEL DETAILS**

Drawing Number / B/CAN Drawing Number  
**S-622.00**





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 212.571.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Ransom, Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

NO.	DESCRIPTION	DATE
1	DOE POST-APPROVAL AMENDMENT	10/20/2016
2	ASH0077	5/13/2015
3	ASH0056	12/19/2014
4	L.I.R.R. - FINAL 100%	10/14/2014
5	DESIGN SUBMISSION FOR RECORDS	10/14/2014
6	ASH0049	10/14/2014
7	ASH0046	9/24/2014
8	ASH0034	7/28/2014
9	ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
10	ASH0005	2/18/2014
11	Revisions	000

NO.	DESCRIPTION	DATE
1	DOE POST-APPROVAL AMENDMENT	10/20/2016
2	ASH0077	5/13/2015
3	ASH0056	12/19/2014
4	L.I.R.R. - FINAL 100%	10/14/2014
5	DESIGN SUBMISSION FOR RECORDS	10/14/2014
6	ASH0049	10/14/2014
7	ASH0046	9/24/2014
8	ASH0034	7/28/2014
9	ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
10	ASH0005	2/18/2014
11	Revisions	000

By Title

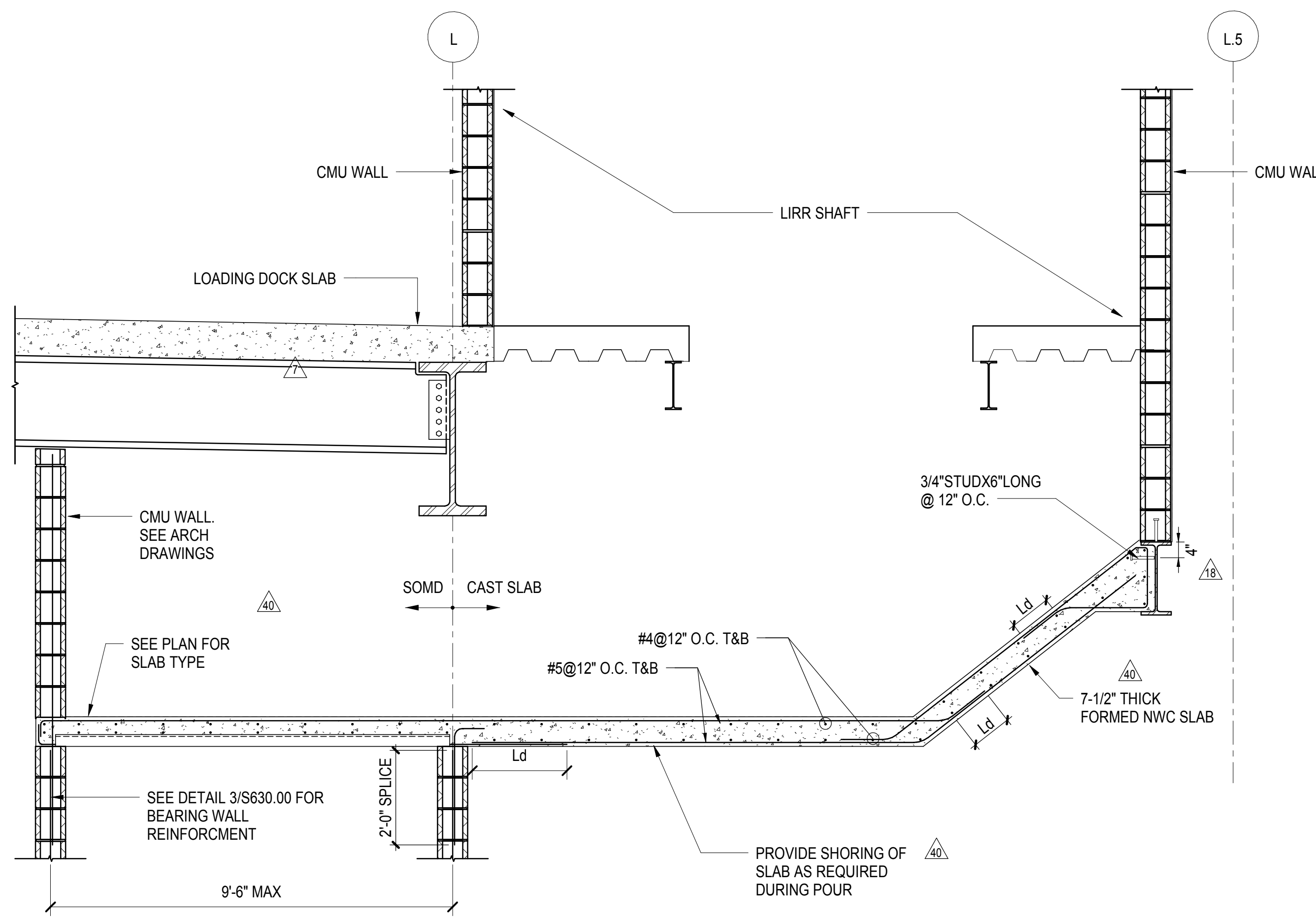
Date: 02/18/14  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

**HYE-PL-S-630.00**

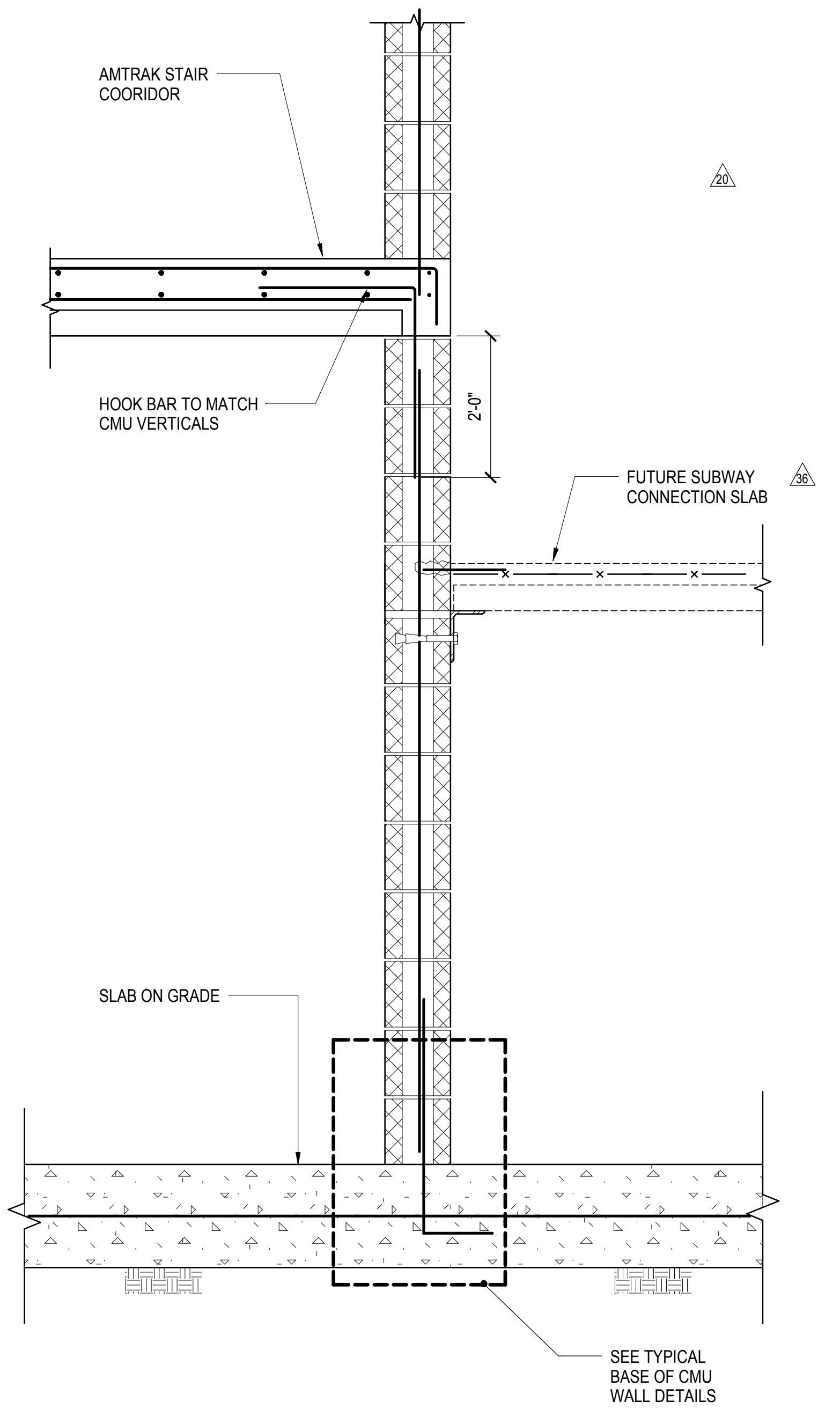
SECTIONS AND DETAILS I

Drawing Number / Revision Drawing Number

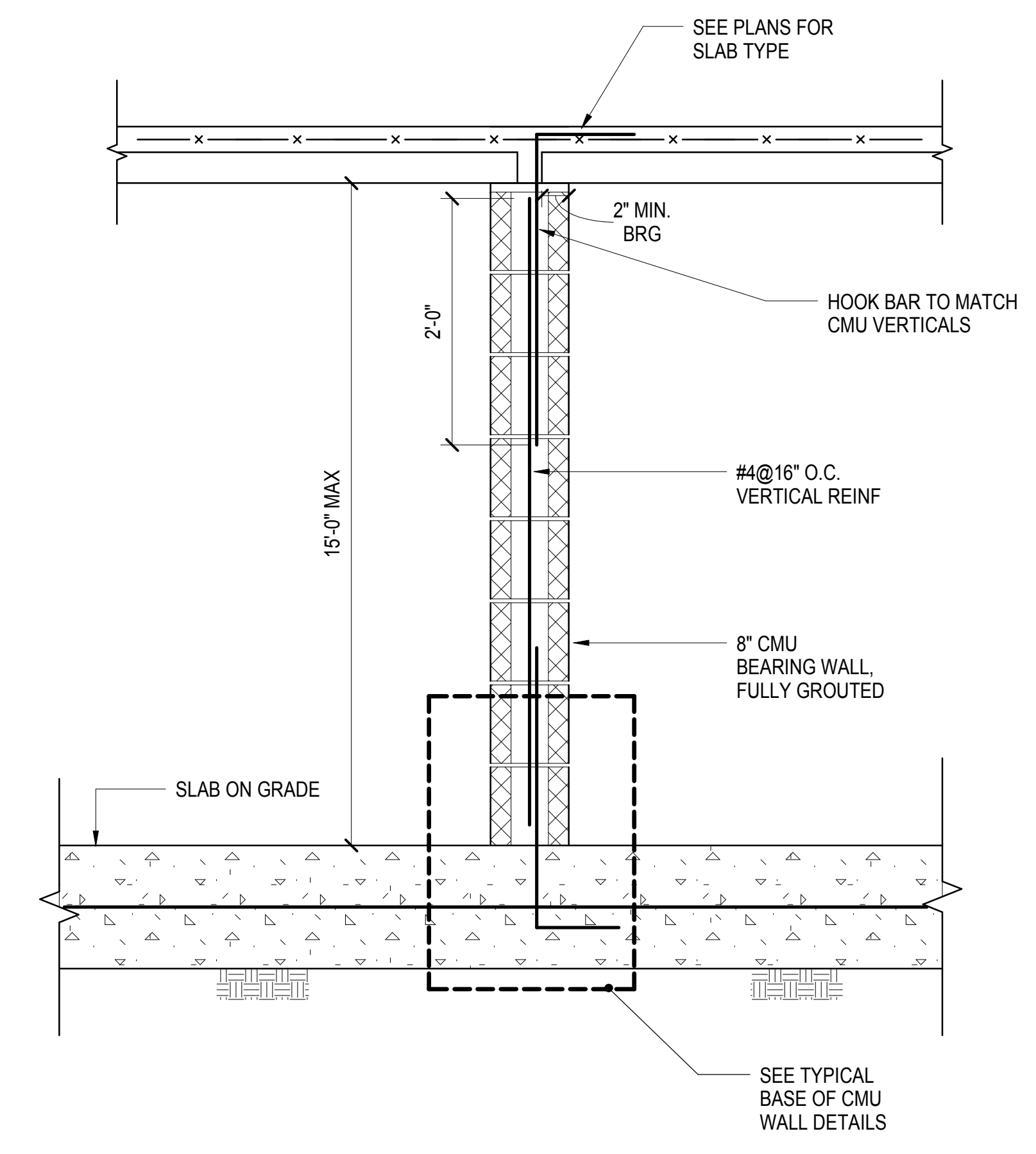
**S-630.00**



**1 SECTION AT LIRR PLENUM SLAB**  
1/2" = 1'-0"

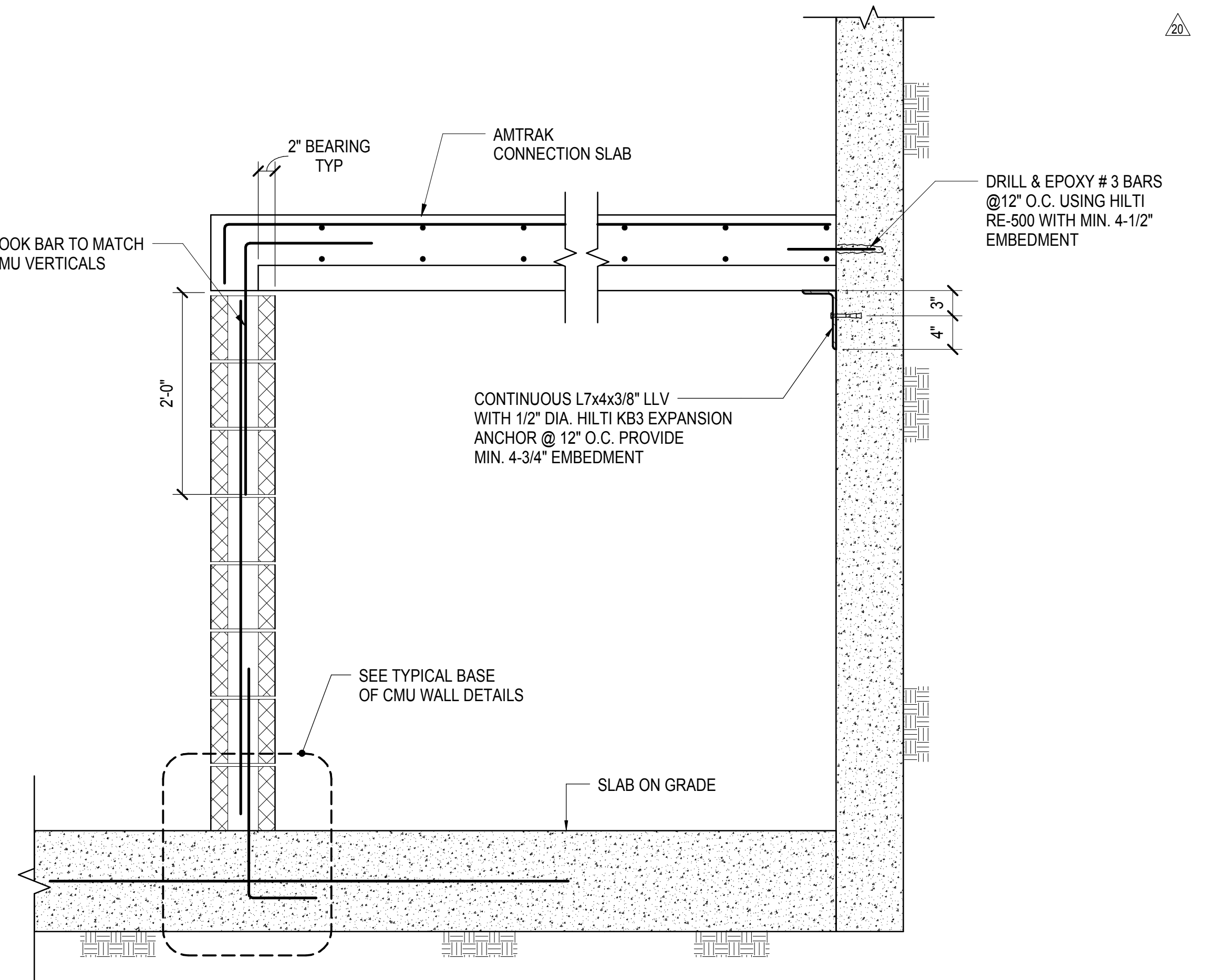


**2 SECTION AT SUBWAY/AMTRAK CONNECTIONS**  
1" = 1'-0"

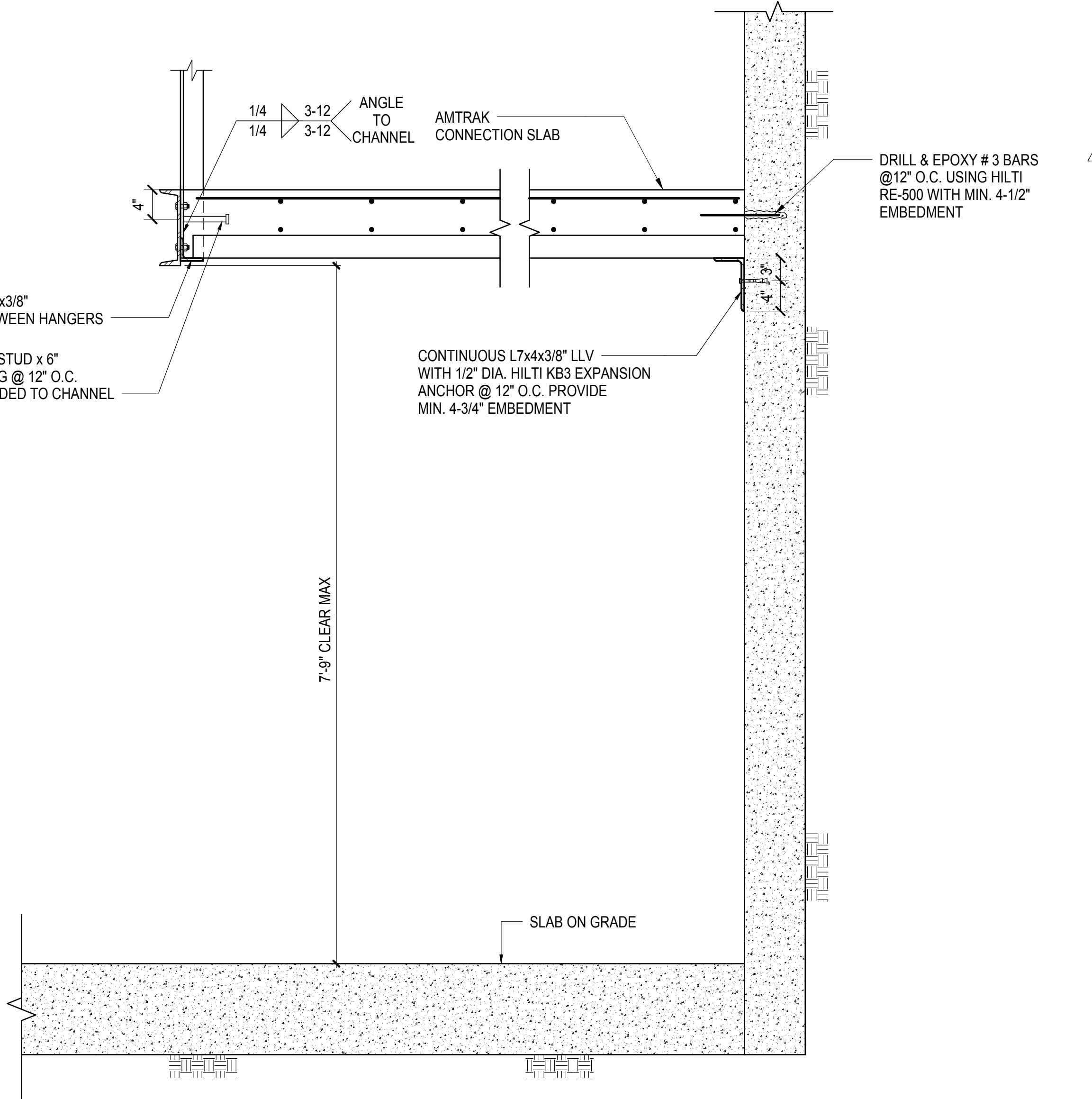


**3 SECTION AT CMU BEARING WALL FOR PLENUM SLAB**  
1" = 1'-0"

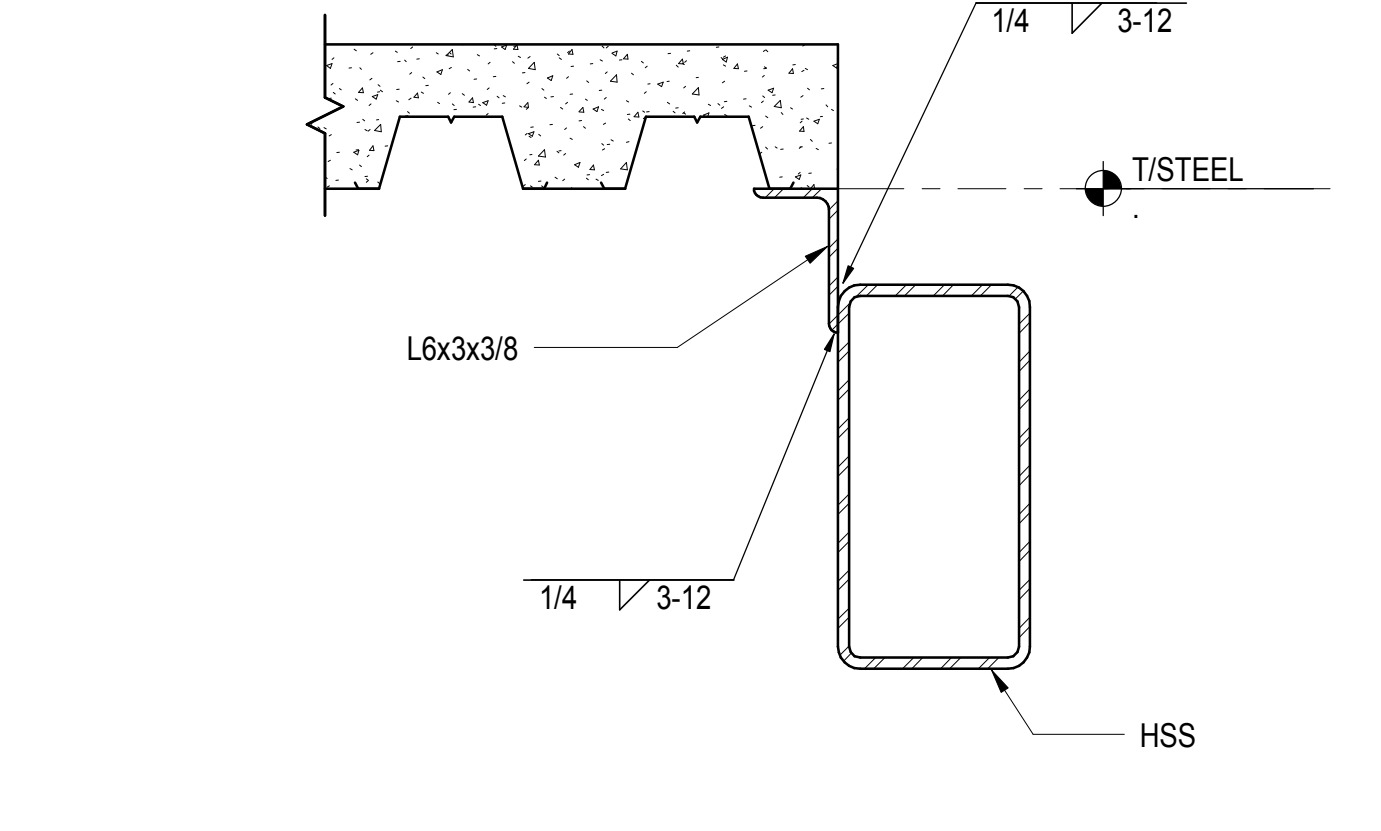
- NOTES**
1. PROVIDE MIN. (2) 9 GAGE WIRES EVERY OTHER COURSE.
  2. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF MASONRY WALLS.
  3. VERTICAL REINFORCEMENT TO BE SECURED WITH WIRE POSITIONERS ETC AT INTERVALS NOT TO EXCEED 18" AND BE LOCATED AT THE CENTER OF THE WALL UNO.



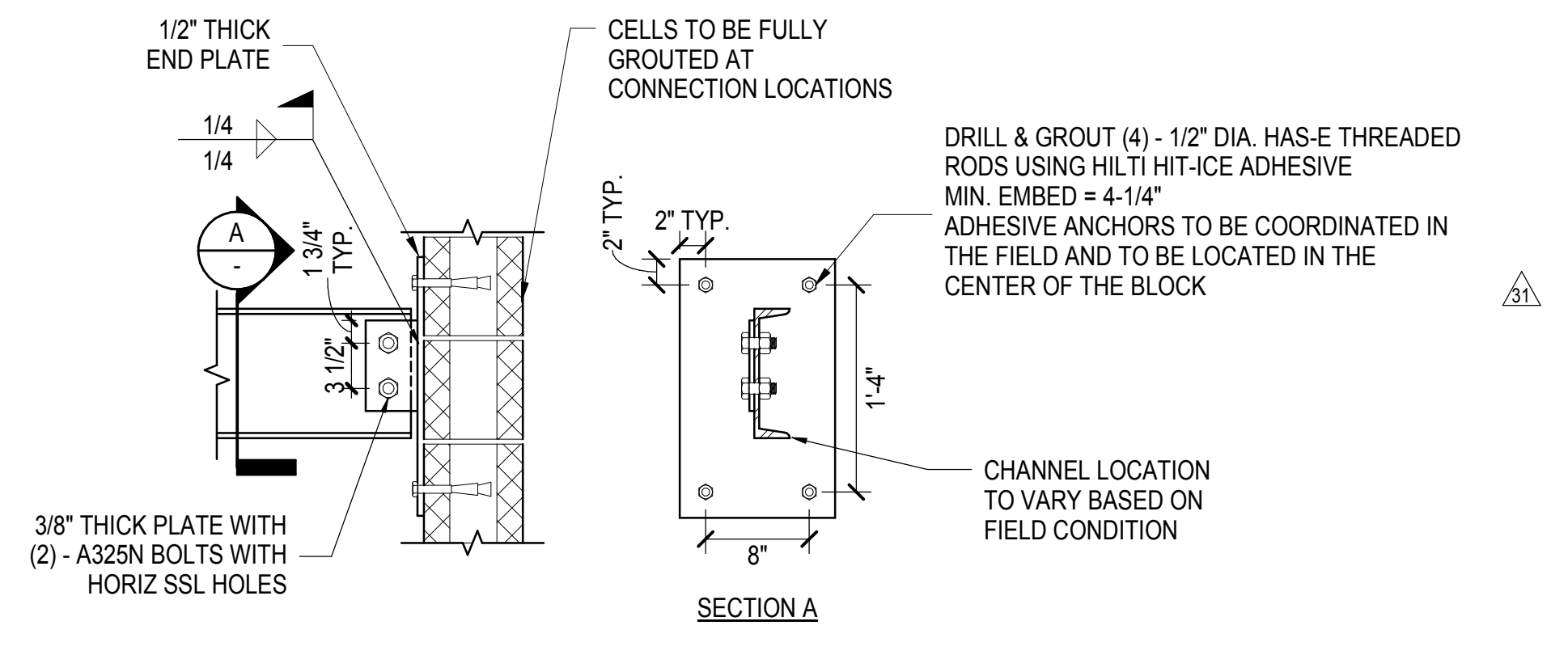
**4 SECTION AT AMTRAK CONNECTION SLAB**  
1" = 1'-0"



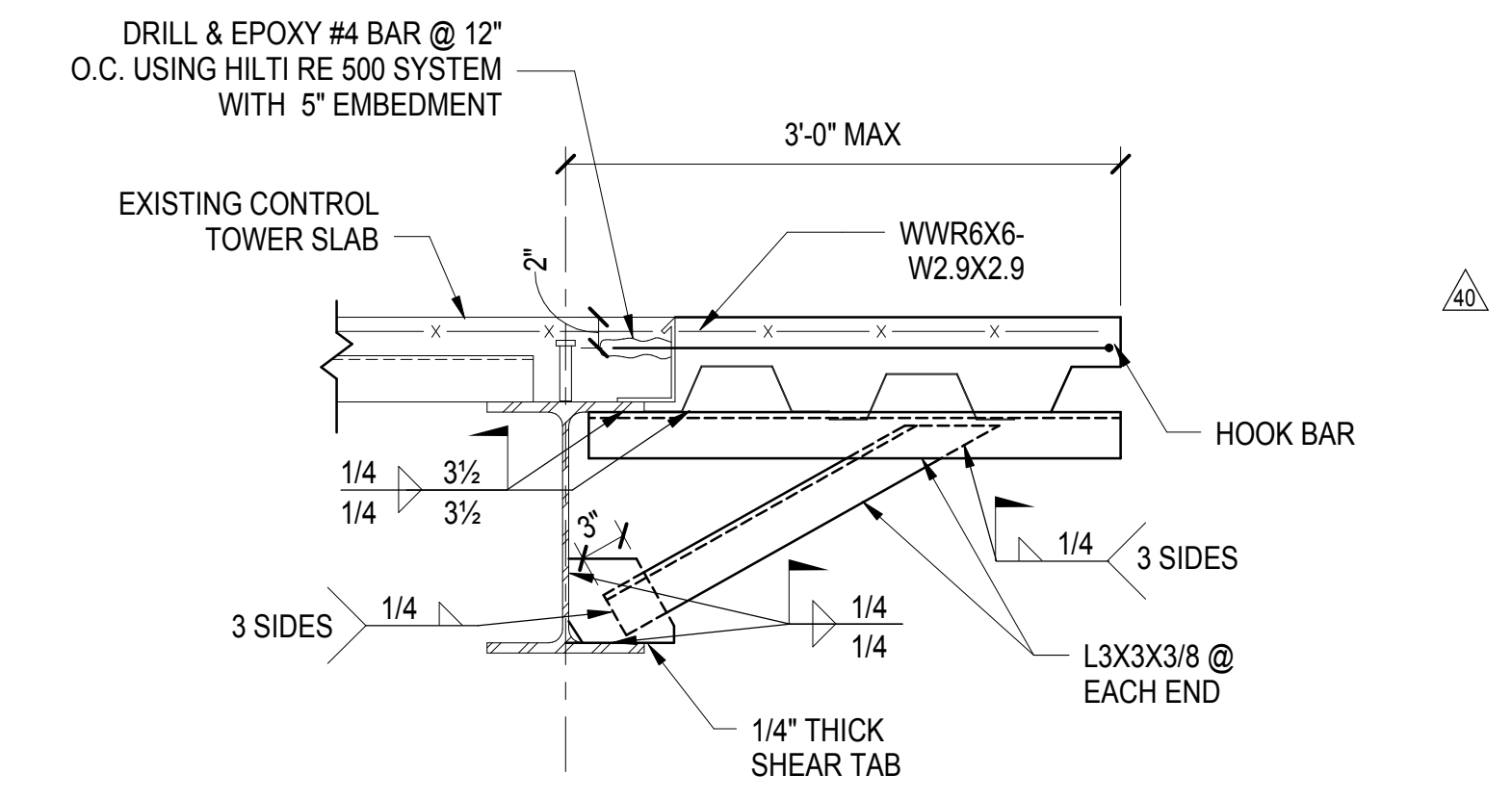
**5 SECTION AT AMTRAK CONNECTION SLAB**  
1" = 1'-0"



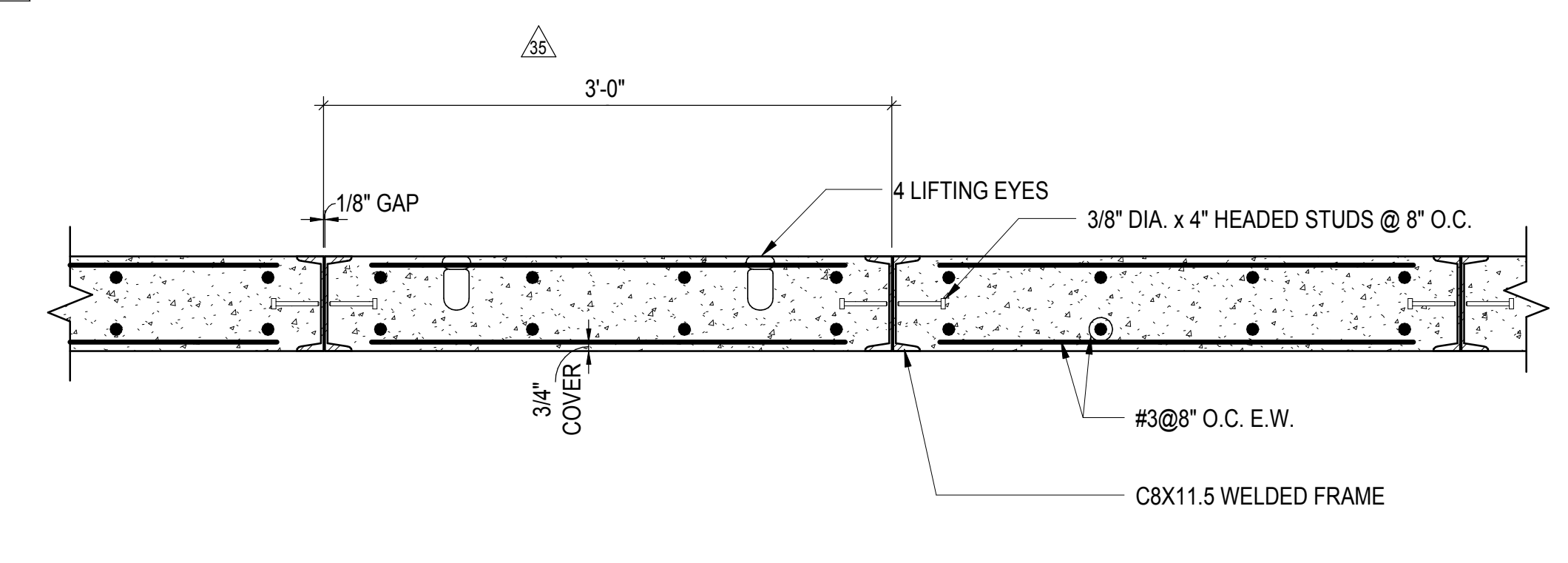
**6 SECTION AT HSS WITH ANGLE DECK CLOSURE**  
1 1/2" = 1'-0"



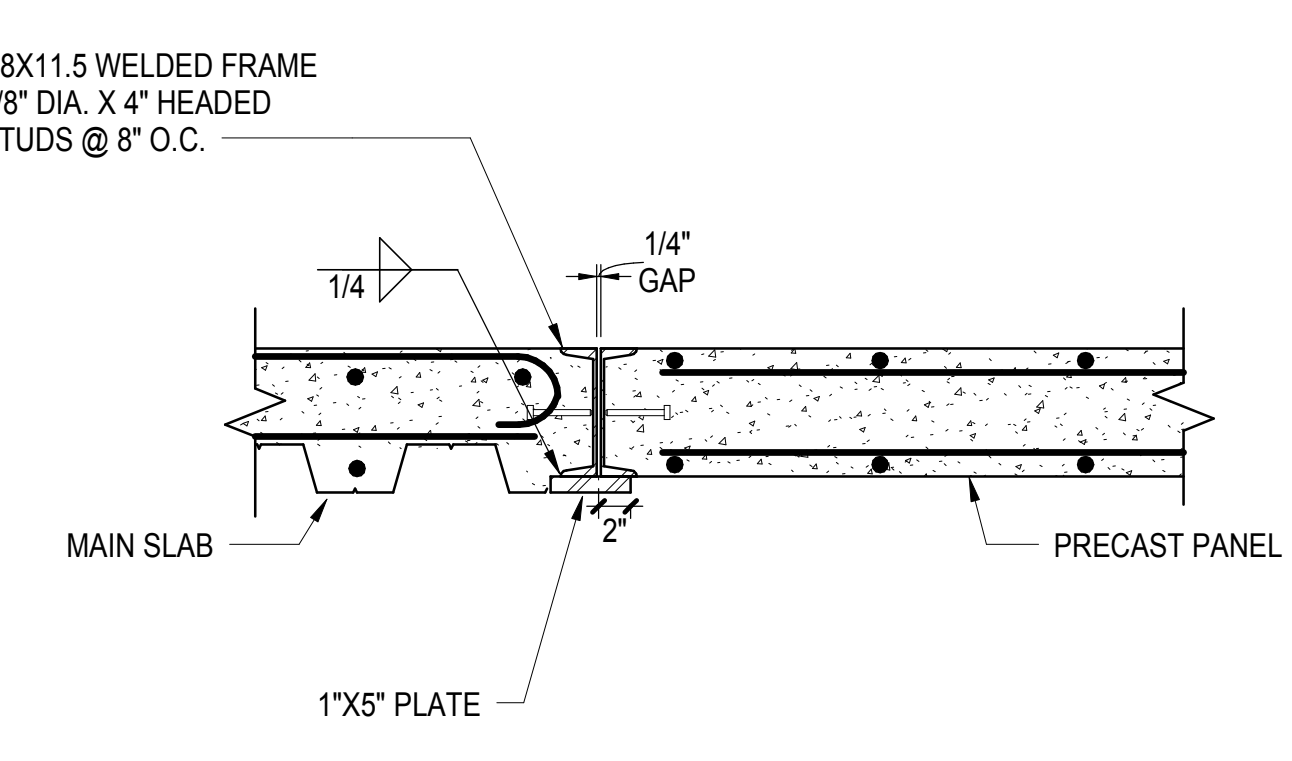
**7 SECTION AT SUBWAY/AMTRAK CONNECTIONS**  
1" = 1'-0"



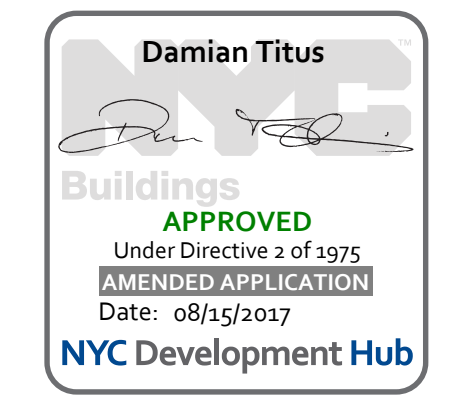
**10 SLAB EXTENSION AT CONTROL TOWER**  
1" = 1'-0"



**8 DETAIL**  
1" = 1'-0"



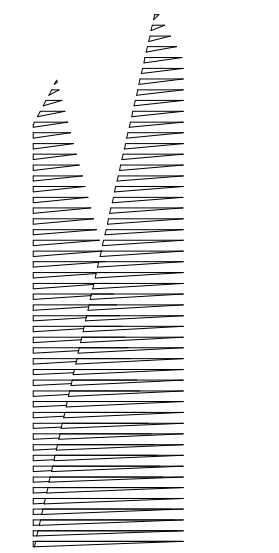
**9 DETAIL**  
1" = 1'-0"



APPROVED  
Under Directive 3 of 1975  
Professional Registration  
Date: 08/15/2017  
NYC Development Hub



SECTIONS AND DETAILS I



Client  
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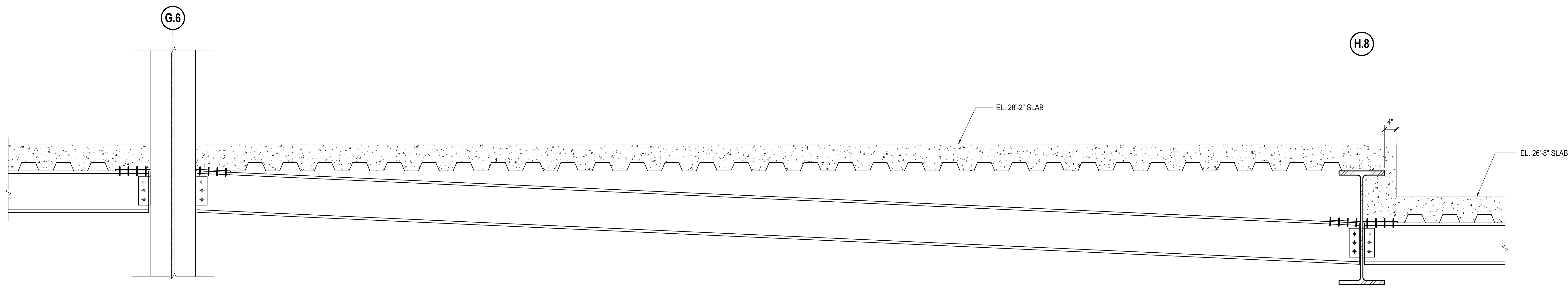
Architect  
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PC Architects & Planning Consultants  
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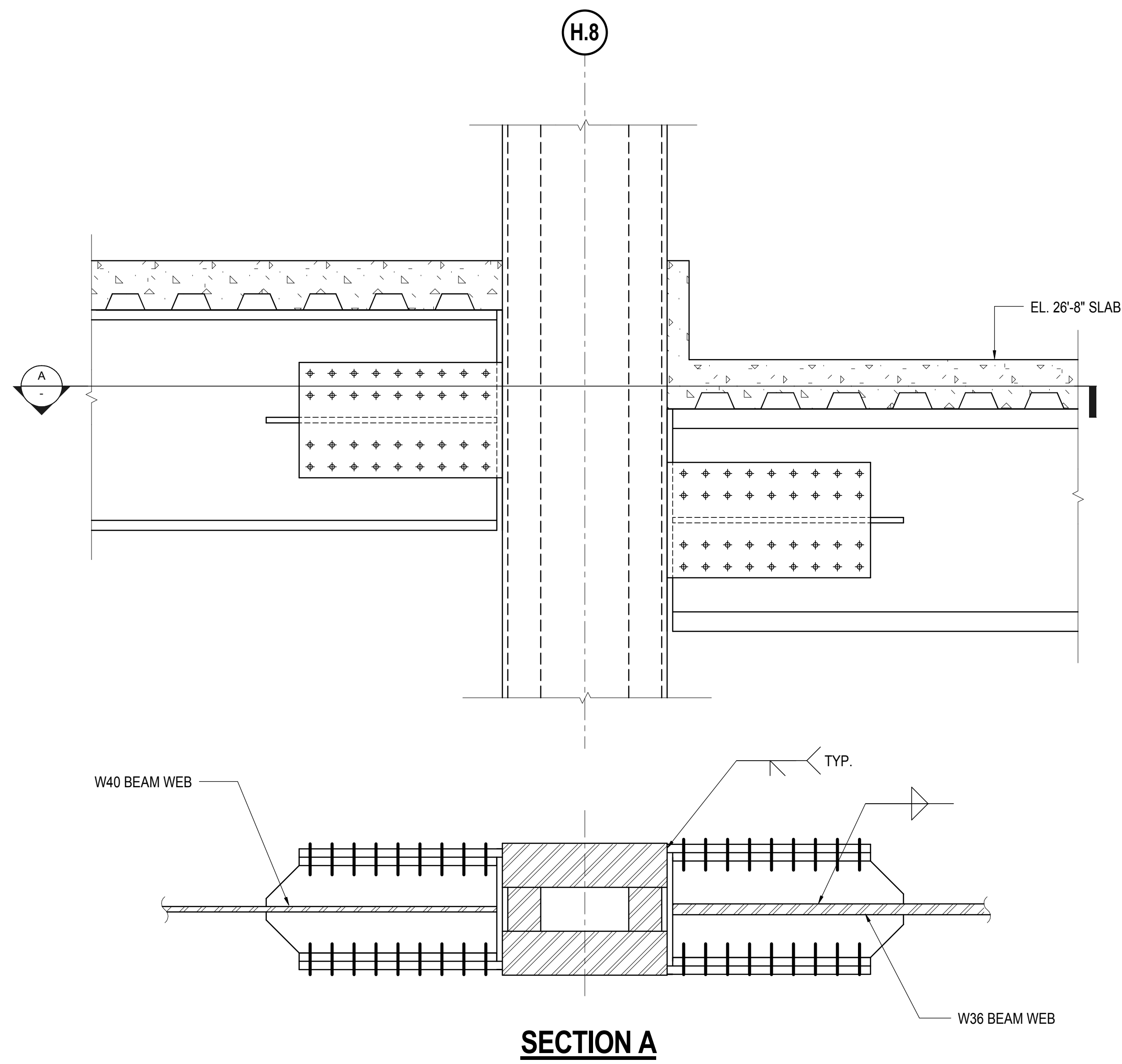
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
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New York, NY 10005  
Tel: 212.896.3000

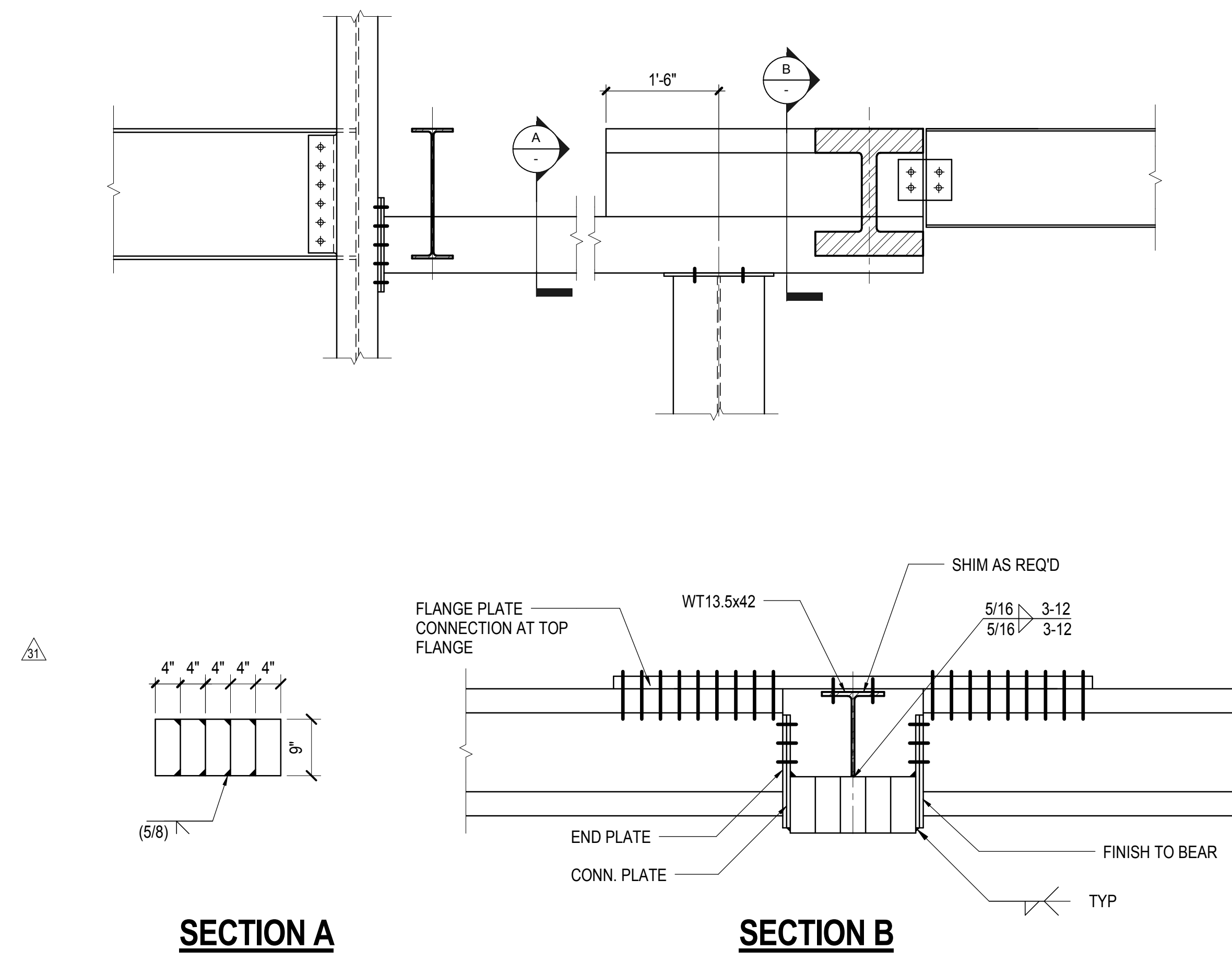
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



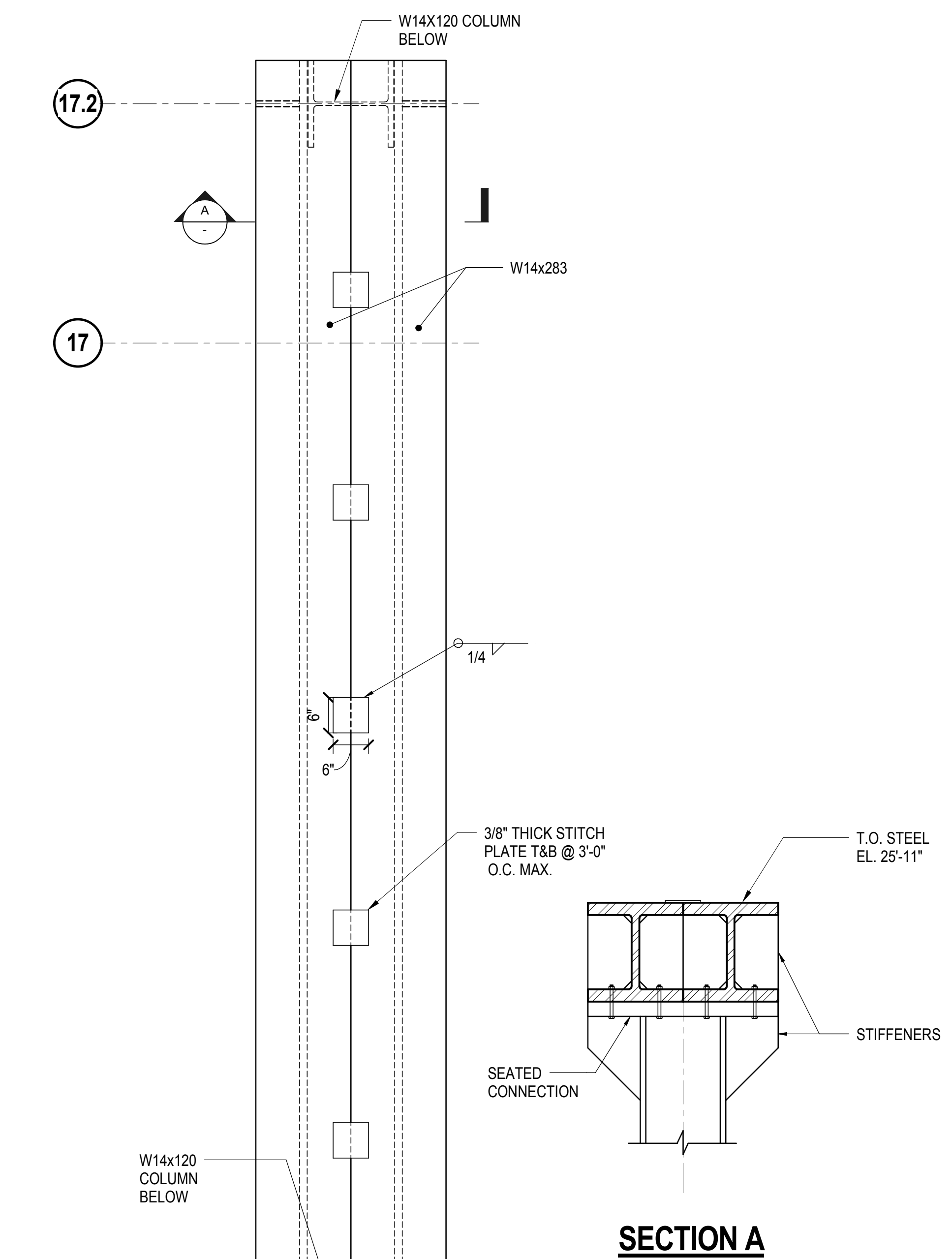
**1 SECTION ALONG GRID 16**  
3/4" = 1'-0"



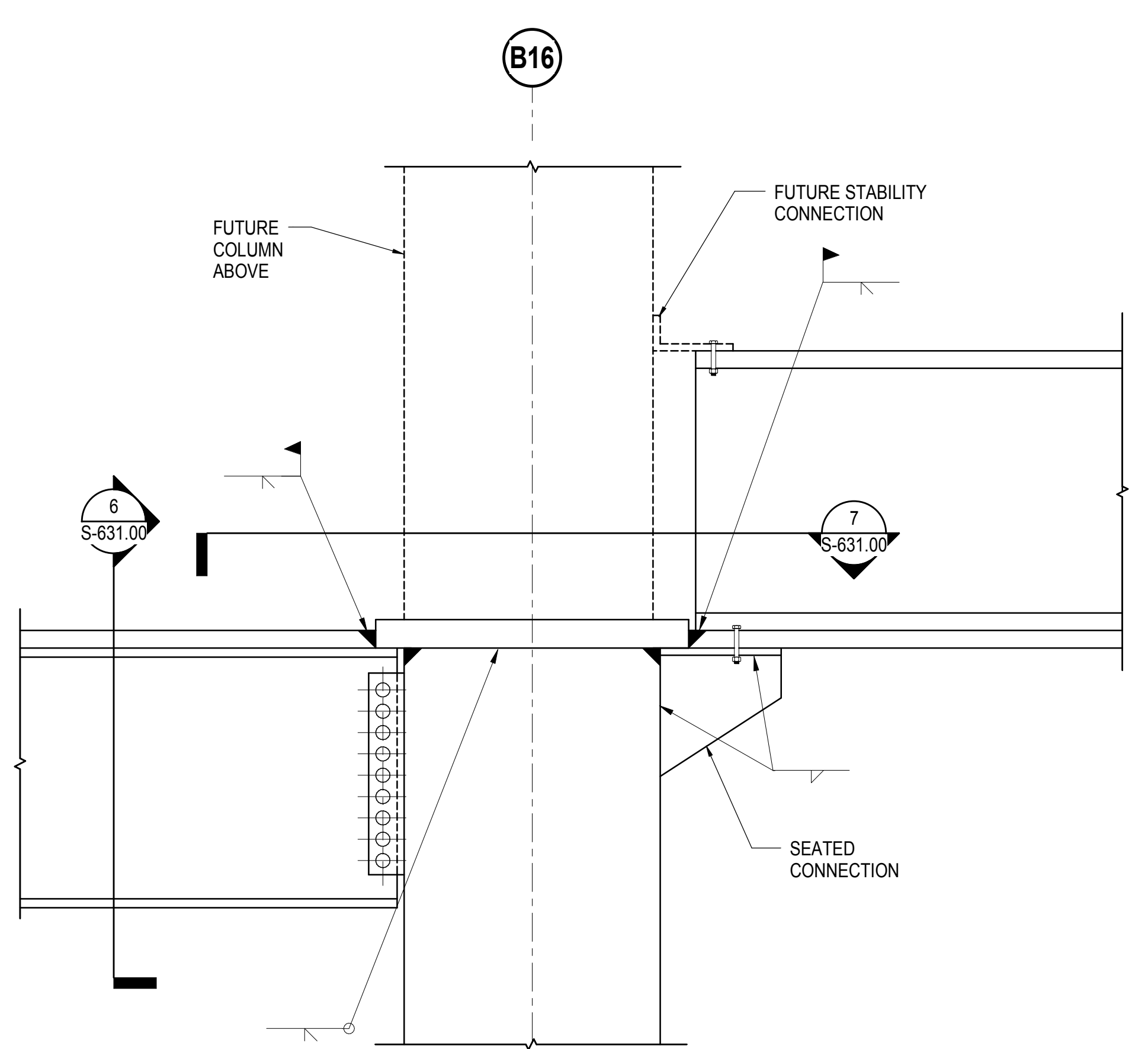
**2 SECTION ALONG GRID 17**  
3/4" = 1'-0"



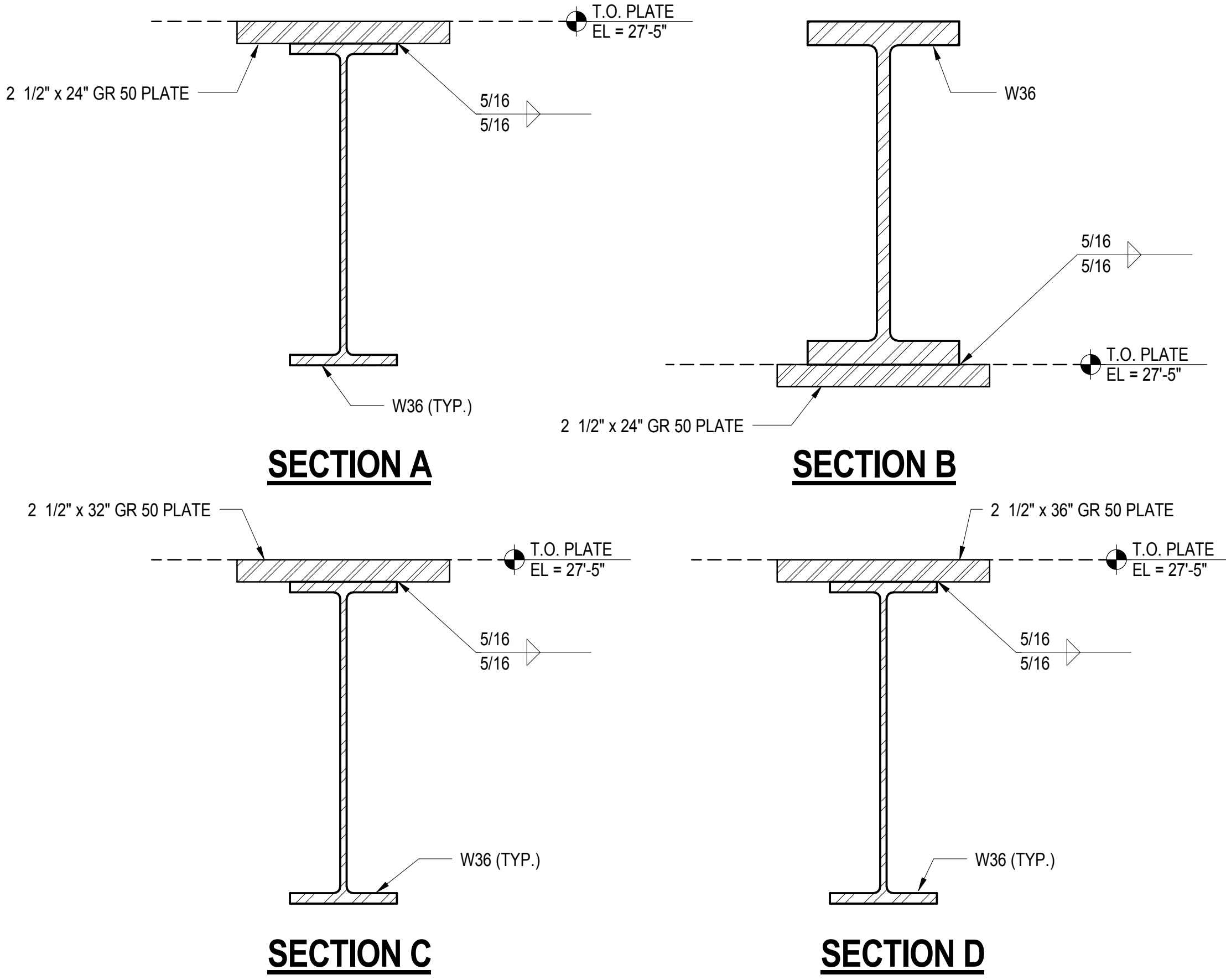
**3 SECTION ALONG GRID 17**  
3/4" = 1'-0"



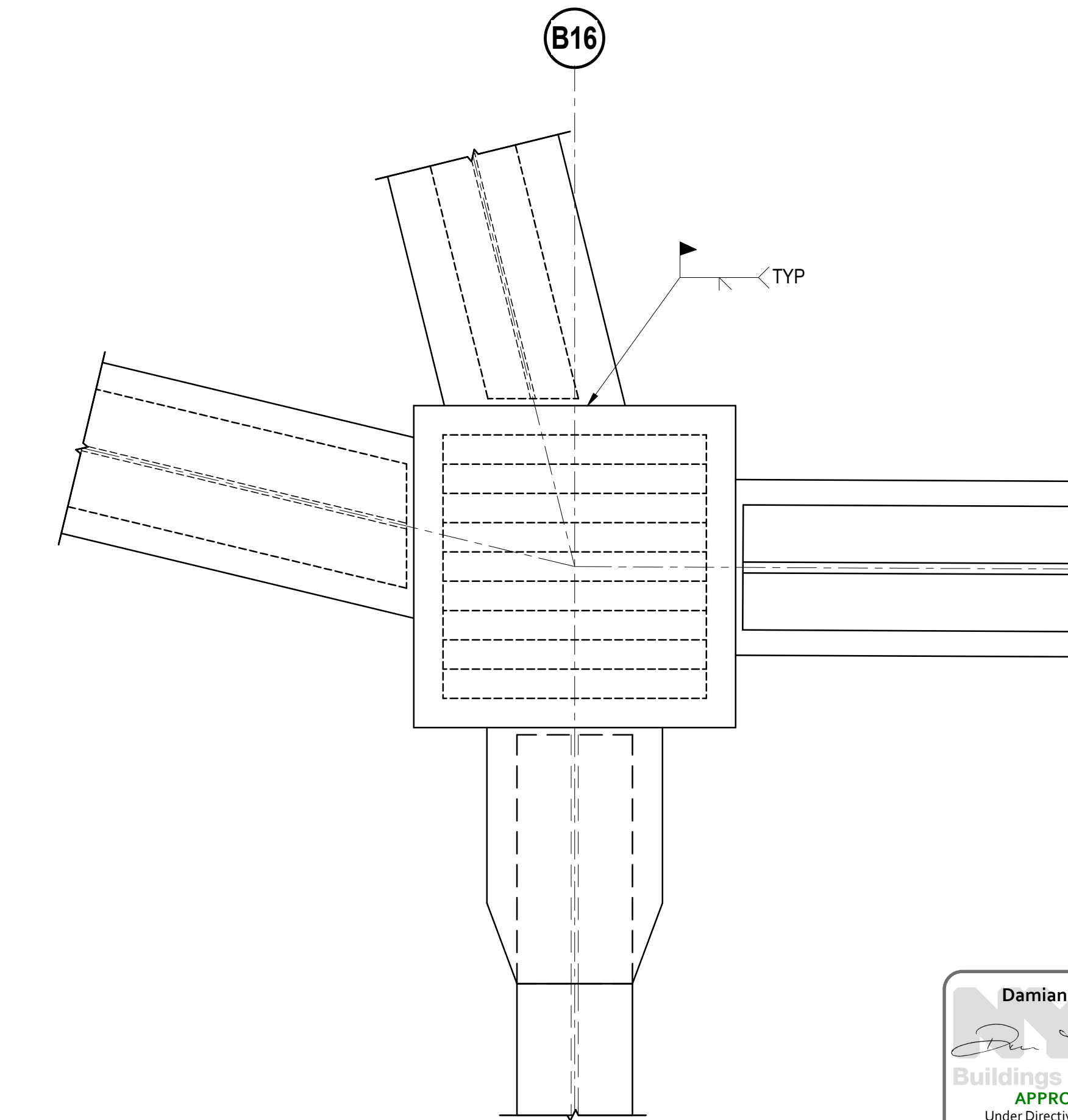
**4 COLUMN N/17 TRANSFER GIRDERS**  
3/4" = 1'-0"



**5 AXIAL CONNECTION AT HIGH/LOW BEAM**  
3/4" = 1'-0"

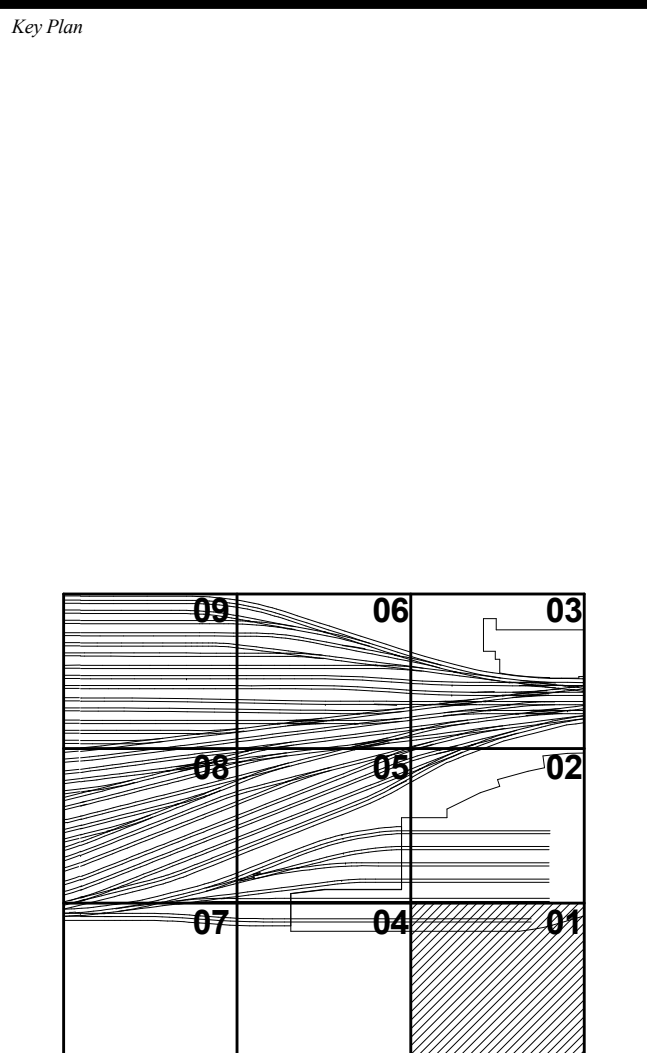


**6 AXIAL TRANSFER PLATE BETWEEN COLUMNS**  
1" = 1'-0"



**7 AXIAL CONNECTION AT HIGH/ LOW BEAMS**  
3/4" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00049	10/14/2014
ASH00045	9/24/2014
ASH00034	7/28/2014
ASH00028 - SEQUENCE 11 FRAMING	6/06/2014
Rev	Desc



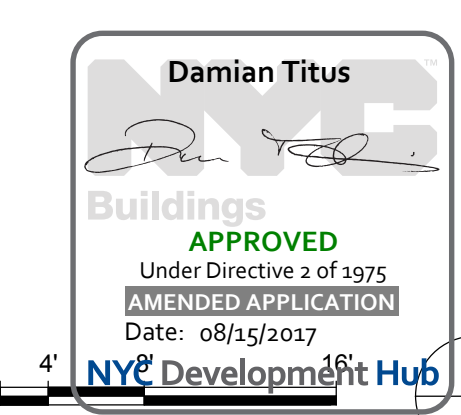
Date: 06/06/14  
Project No: N11330.00  
Drawing By: Author  
Sheet Number: HYE -PL -S-631.00

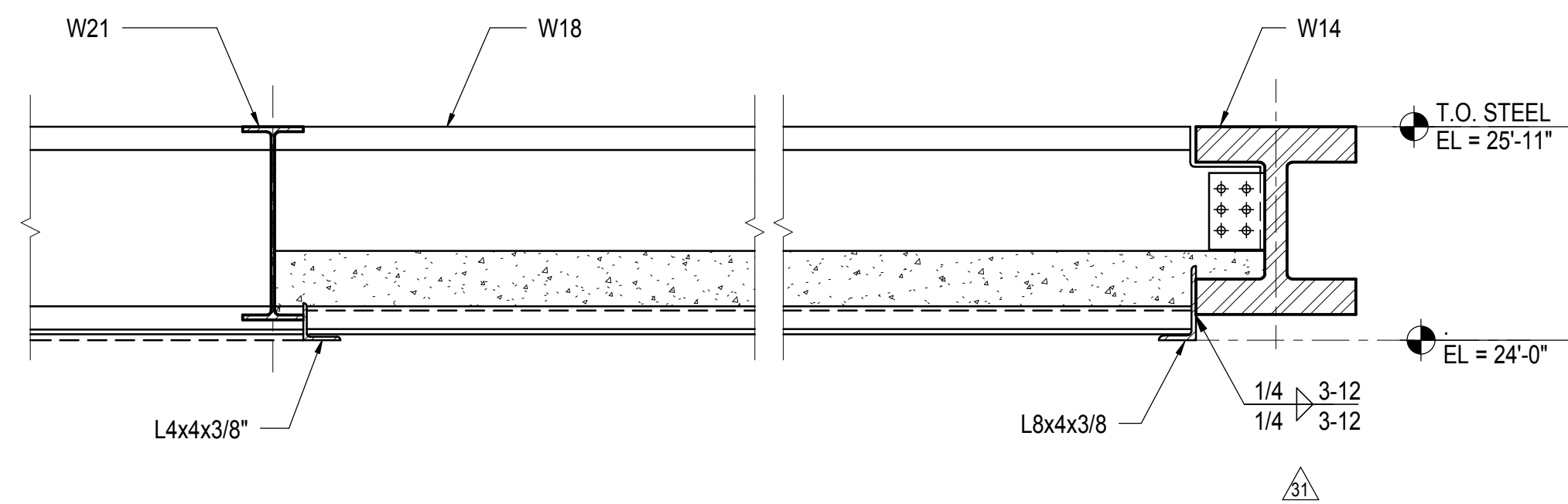
**HYE -PL -S-631.00**

**SECTIONS AND DETAILS II**

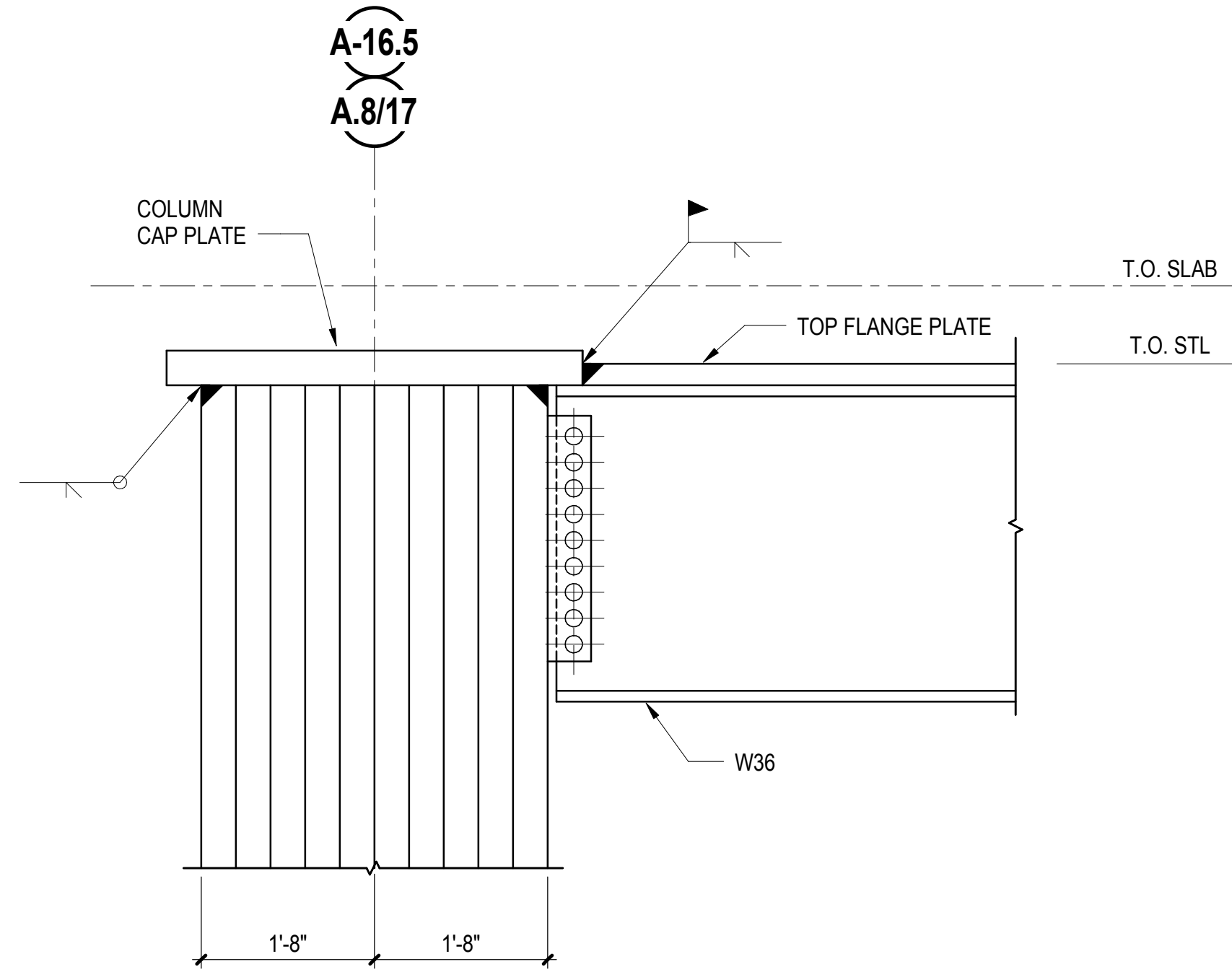
Drawing Number / B/CAN Drawing Number  
**S-631.00**

SHEET 126 of 163

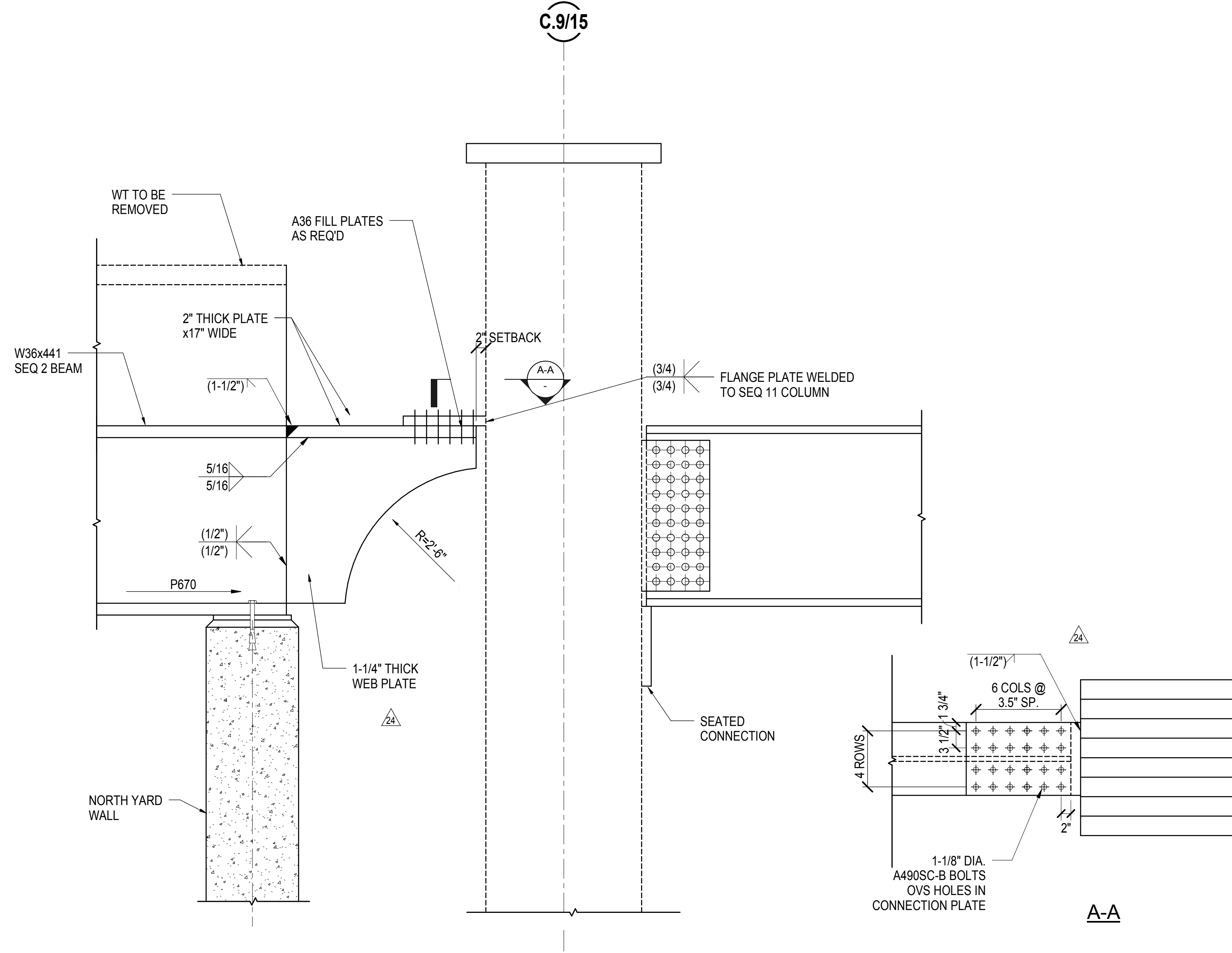




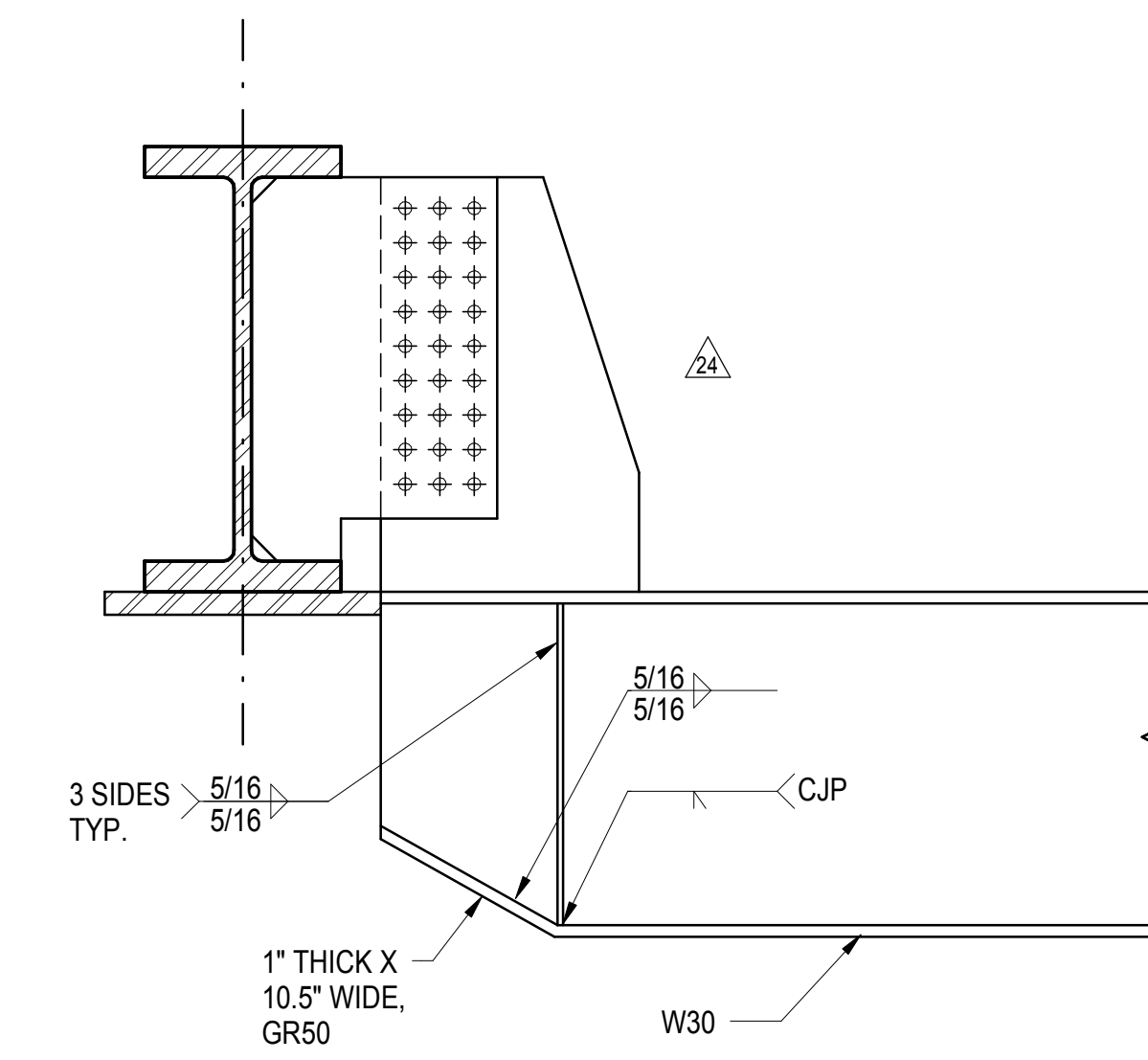
1 DECK SUPPORT FOR ESCALATOR AND ELEVATOR PITS  
3/4" = 1'-0"



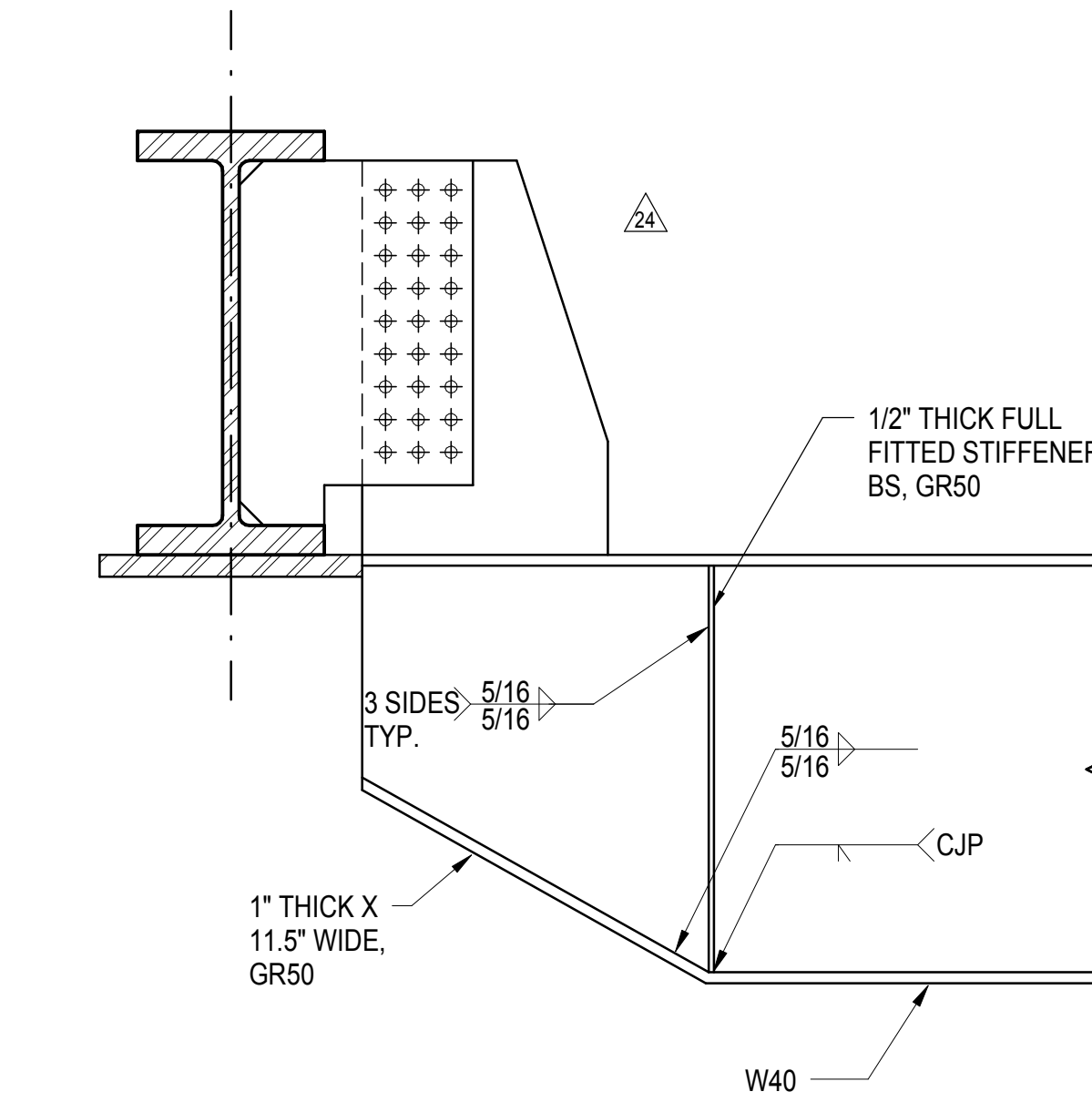
2 AXIAL CONNECTION AT COLUMN A16.5 & A.8/17  
3/4" = 1'-0"



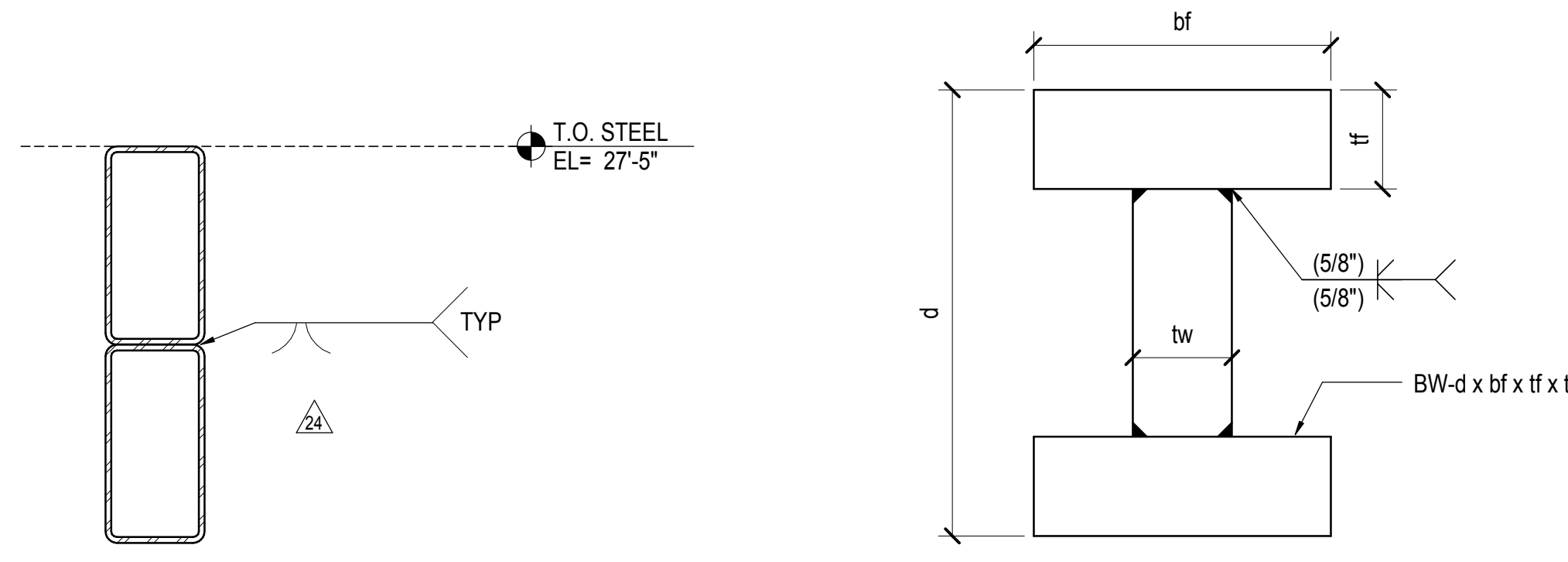
3 AXIAL CONNECTION AT BETWEEN SEQ2 BEAM AND SEQ11 COLUMN AT C.19/A5.3  
3/4" = 1'-0"



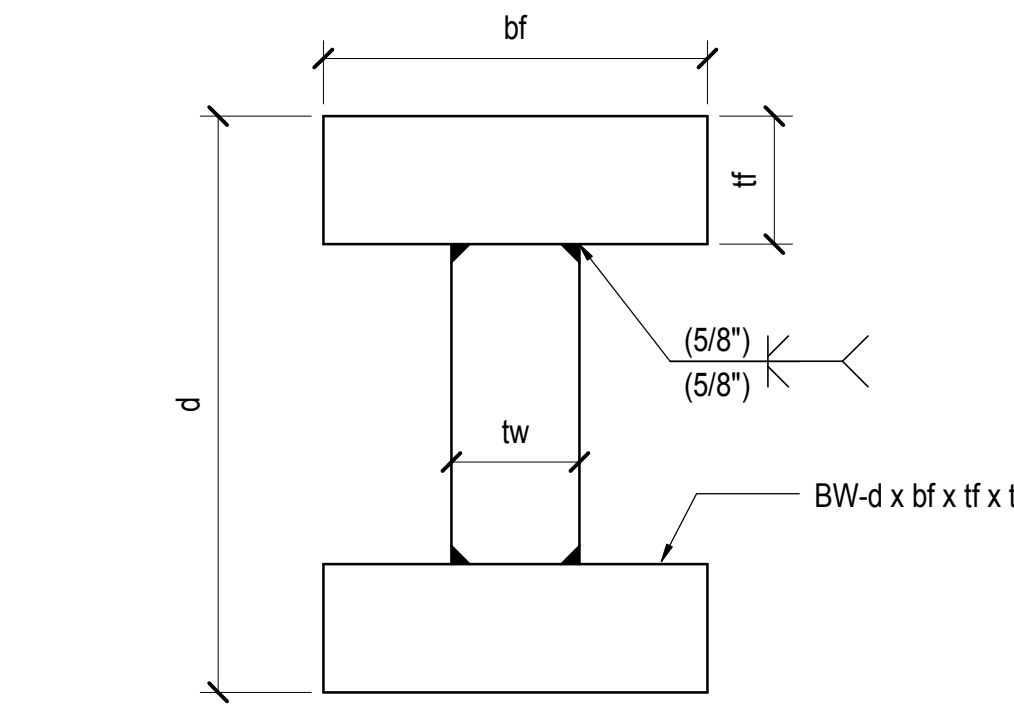
4 W30 DAPPED BEAM DETAIL AT SUBWAY CONNECTION  
3/4" = 1'-0"



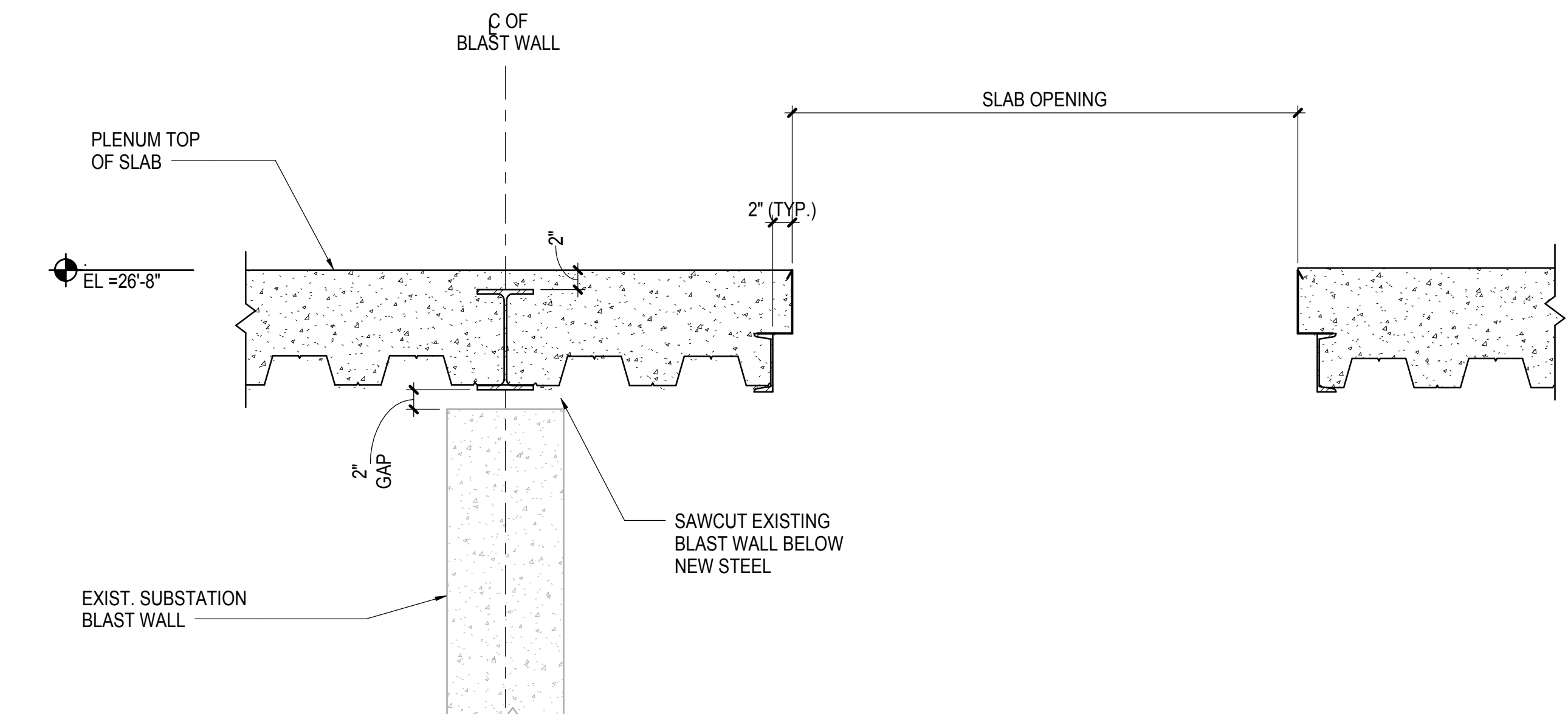
5 W40 DAPPED BEAM DETAIL AT SUBWAY CONNECTION  
3/4" = 1'-0"



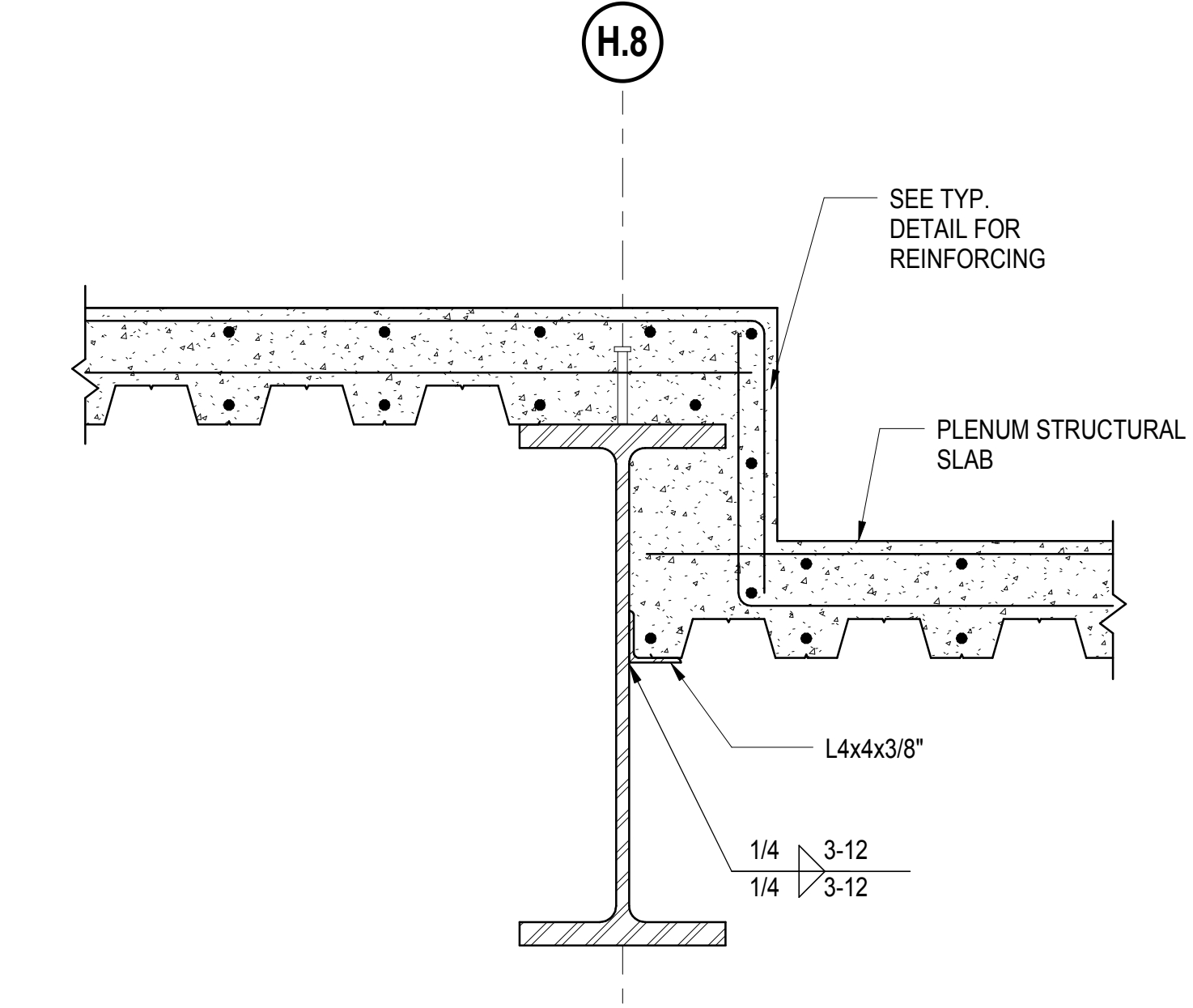
6 DOUBLE STACKED HSS16x8x1/2  
1" = 1'-0"



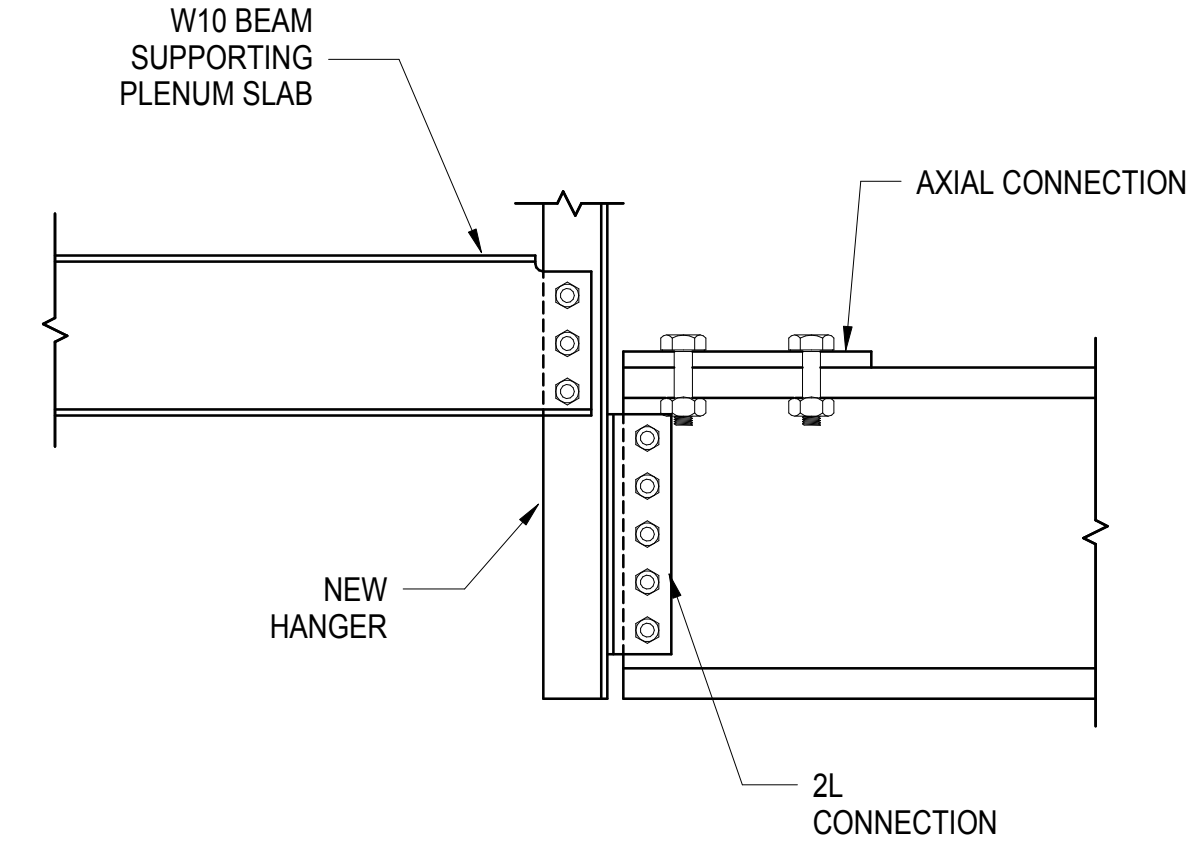
7 TOWER A CORE - BUILT UP SHAPES  
1" = 1'-0"



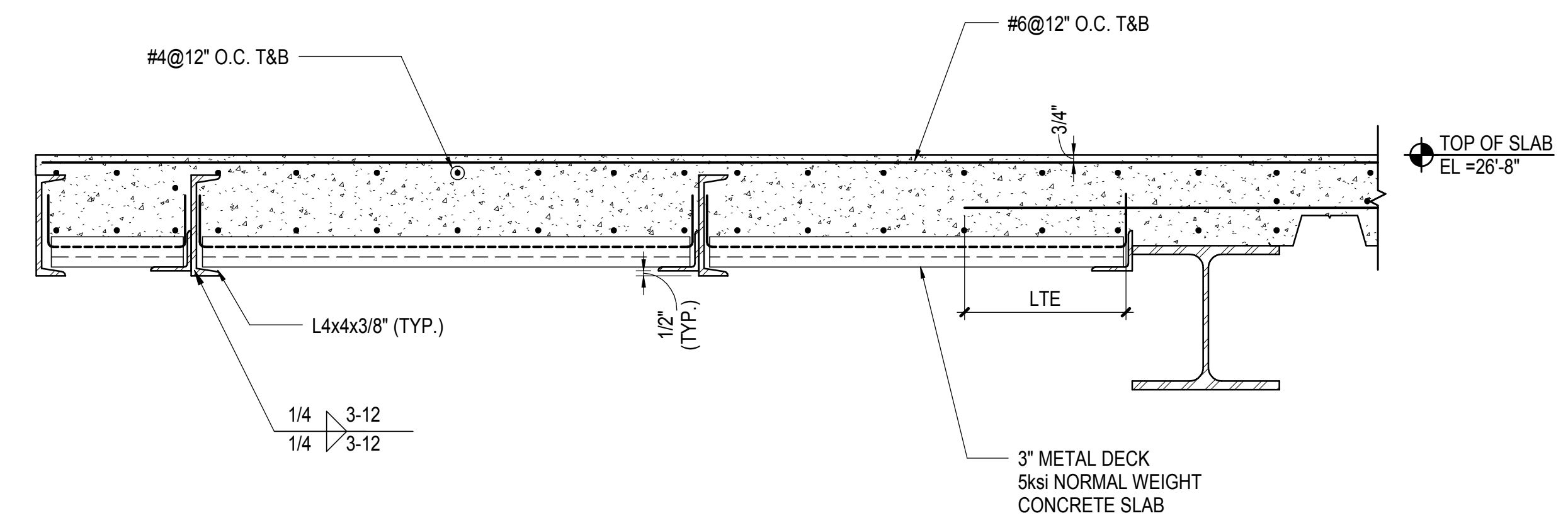
8 TYPICAL SECTION AT PLENUM SLAB OVER BLAST WALL  
1" = 1'-0"



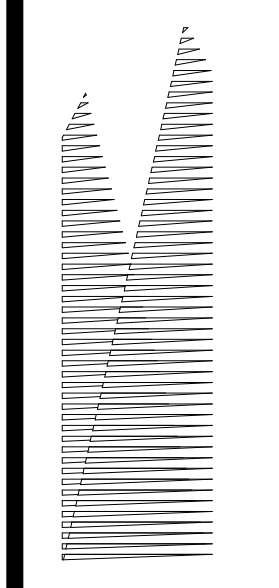
9 SECTION AT GRID H.8  
1" = 1'-0"



10 SECTION THROUGH PLENUM SLAB  
1" = 1'-0"



11 SECTION THROUGH PLENUM SLAB  
1" = 1'-0"



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
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Construction Manager  
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Architect  
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PC Architects & Planning Consultants  
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Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10017  
Tel: 917.661.7800 Fax: 718.661.7801

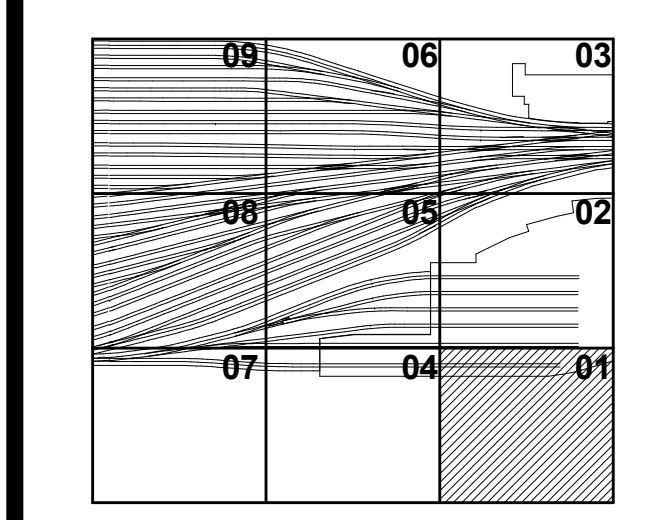
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
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Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R. - FINAL 1095	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0009	10/14/2014
ASH0006	9/24/2014
ASH0034	7/28/2014
ASH0028 - SEQUENCE 11 FRAMING	6/06/2014
Rev	Desc

Key Plan



Date: 06/04/14  
Project No: N11330.00  
Drawing By: Author  
Sheet Number

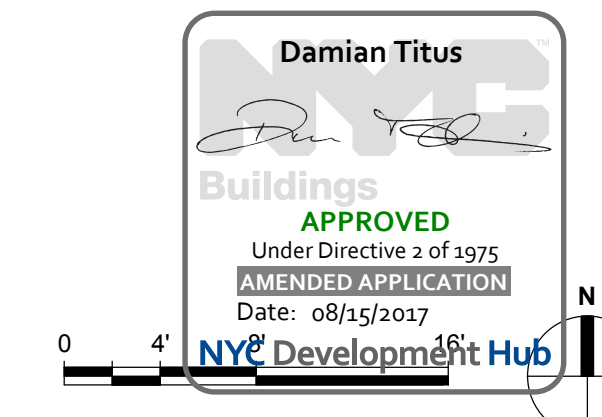
HYE -PL -S-632.00

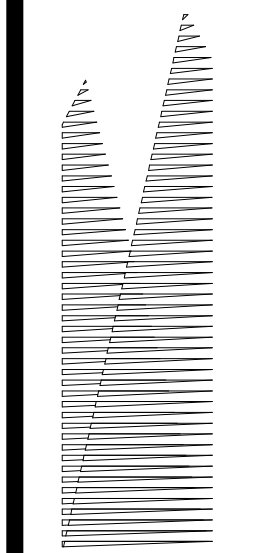
SECTIONS AND DETAILS III

Drawing Number / B/CAN Drawing Number

S-632.00

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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
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Construction Manager  
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New York, NY 10017  
Tel: 212.708.3600

Architect  
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PC Architects & Planning Consultants  
11 West 42nd Street  
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Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

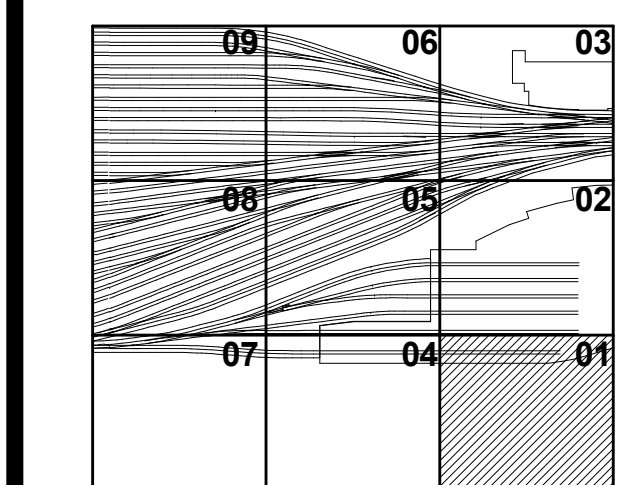
Civil, Mechanical, Electrical, Plumbing  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
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Tel: 212.896.3000

LJRR Substation  
AECOM  
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New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0046	9/24/2014
Rev	Description
01	Issue

Key Plan



Date: 09/23/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

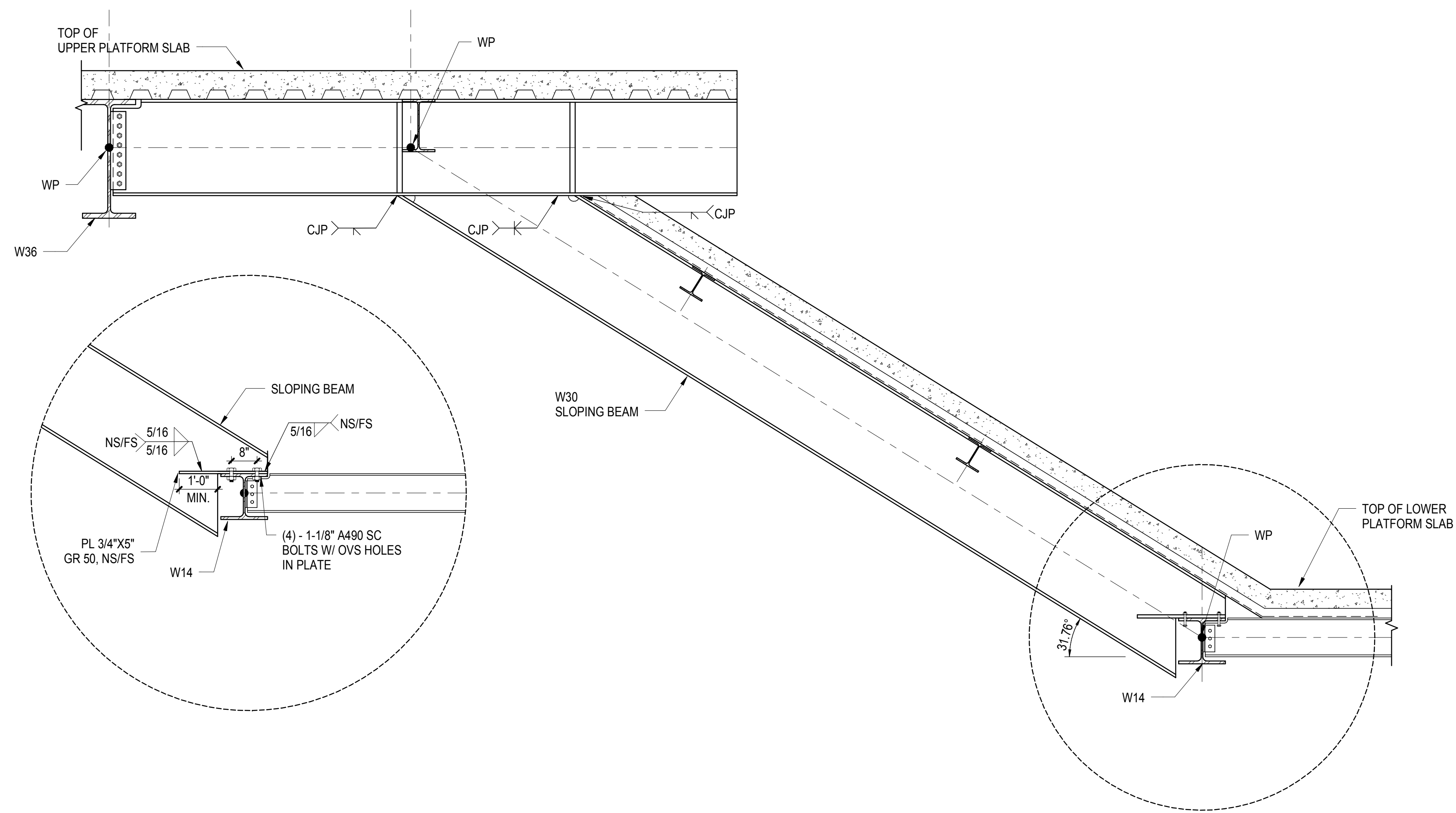
**HYE -PL -S-633.00**

SECTION AND DETAILS IV

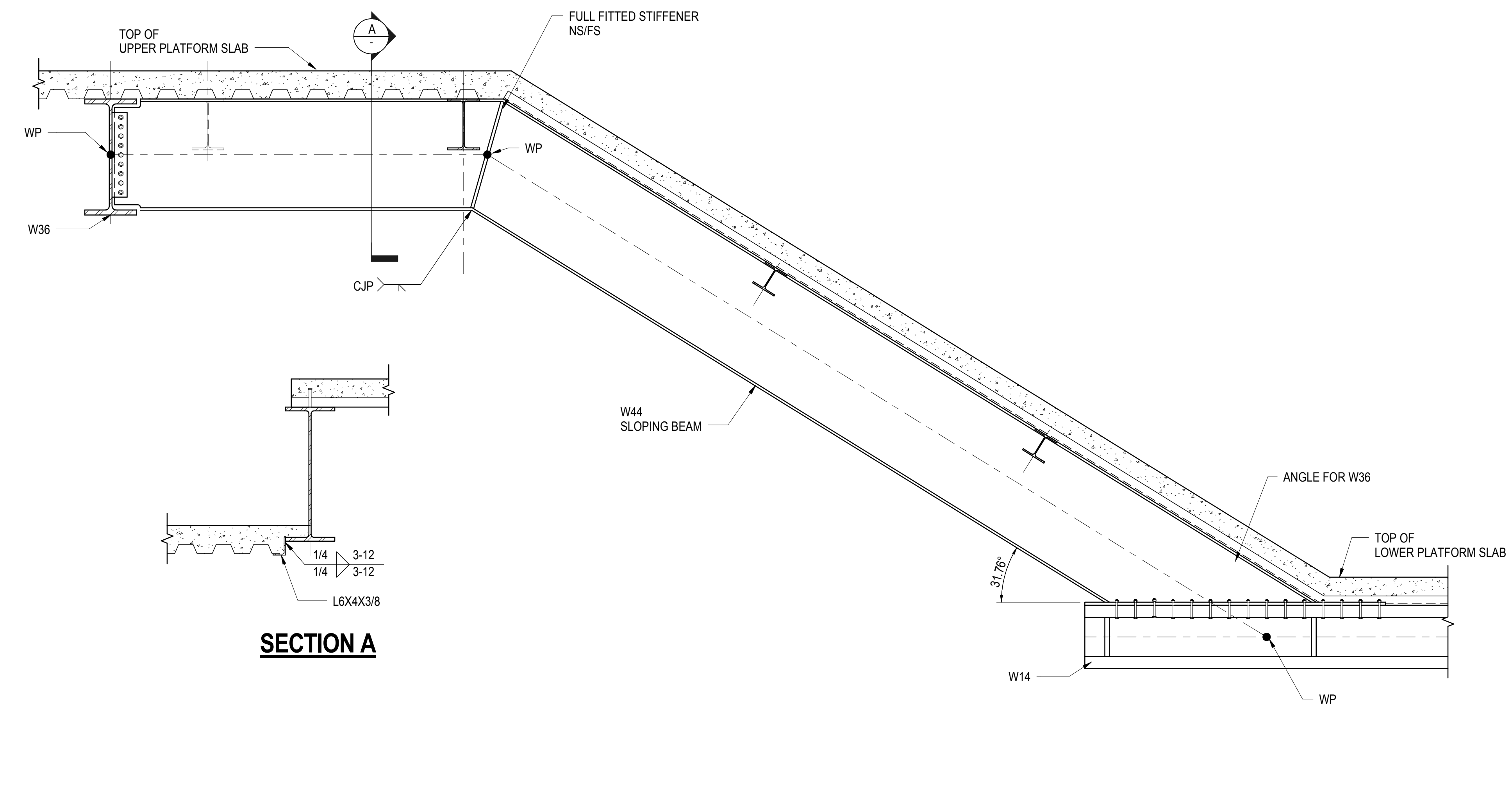
Drawing Number / Revision Drawing Number

**S-633.00**

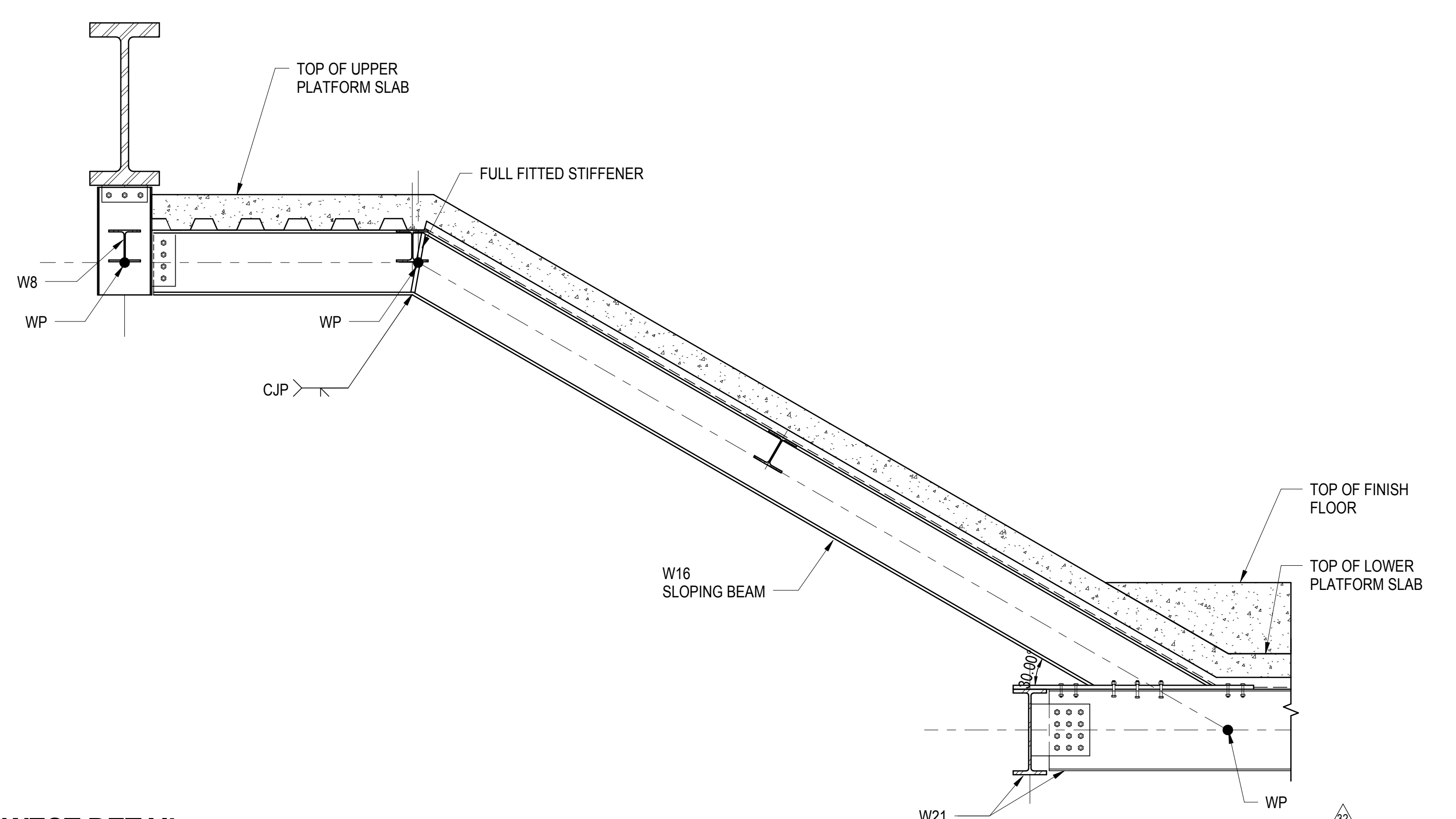
SHEET 128 of 163



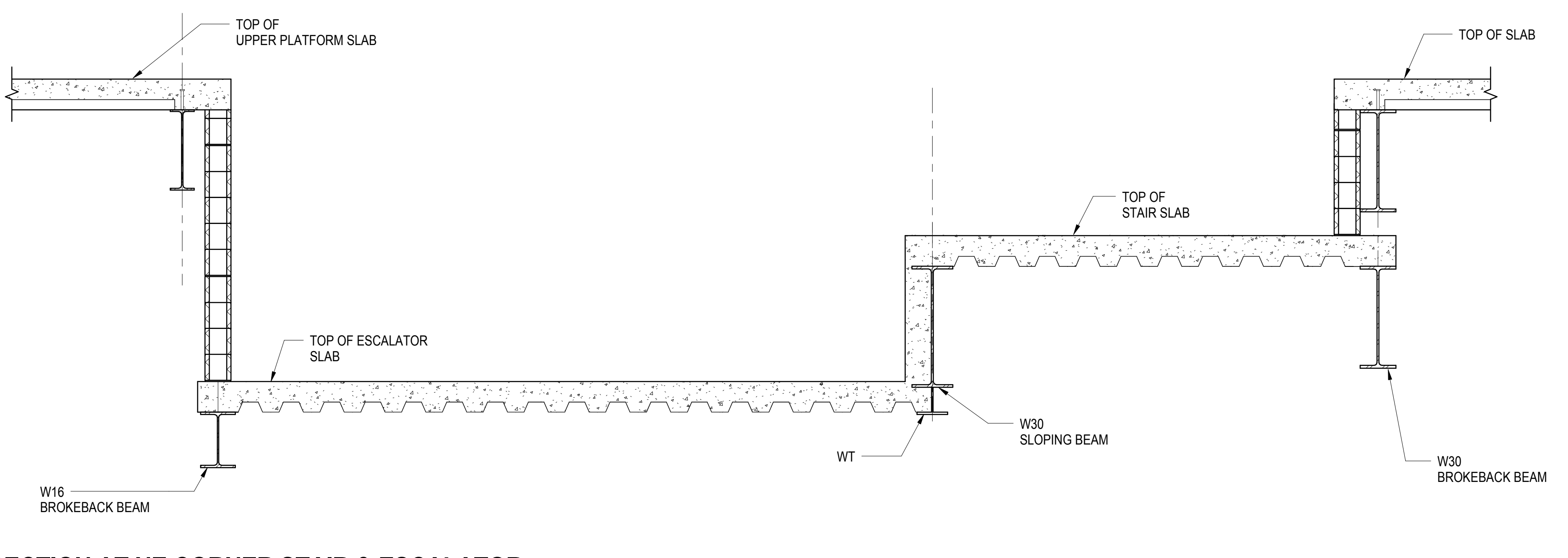
**1 STAIR - EAST DETAIL**  
1/2" = 1'-0"



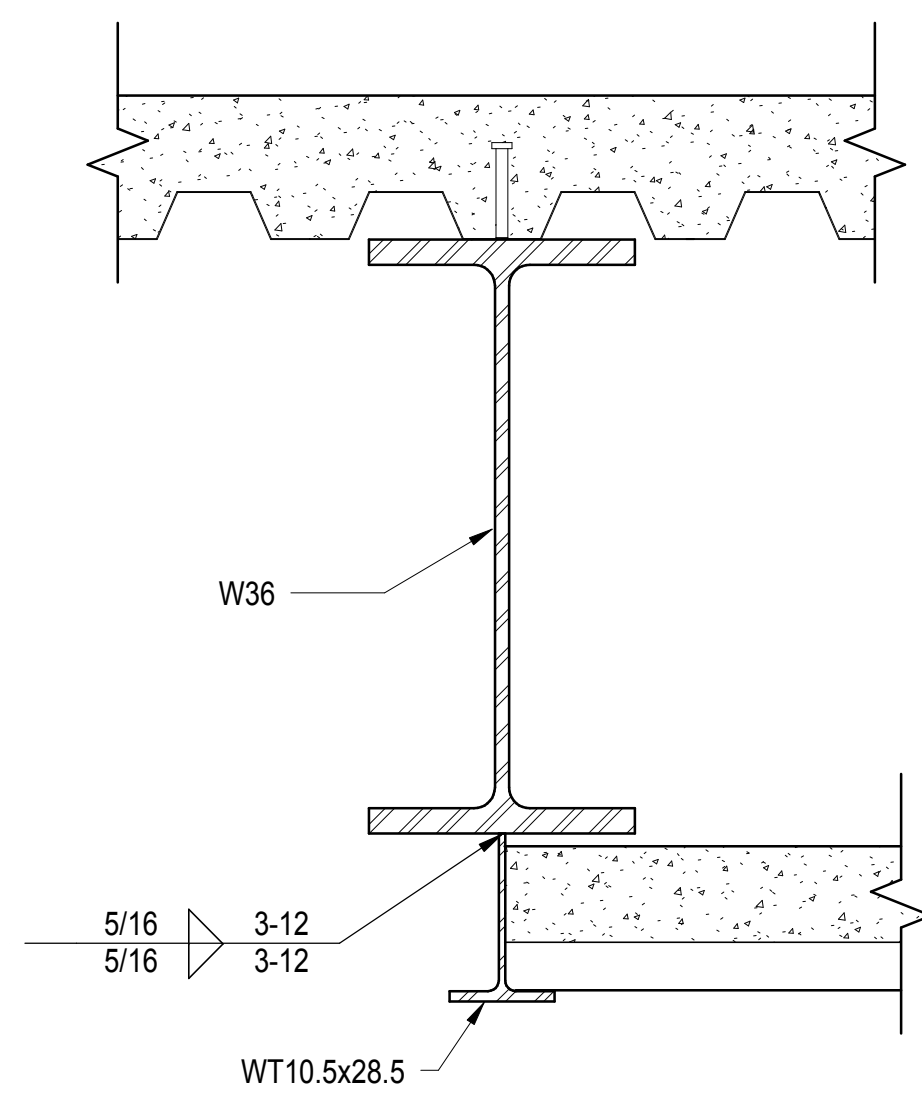
**2 STAIR - WEST DETAIL**  
1/2" = 1'-0"



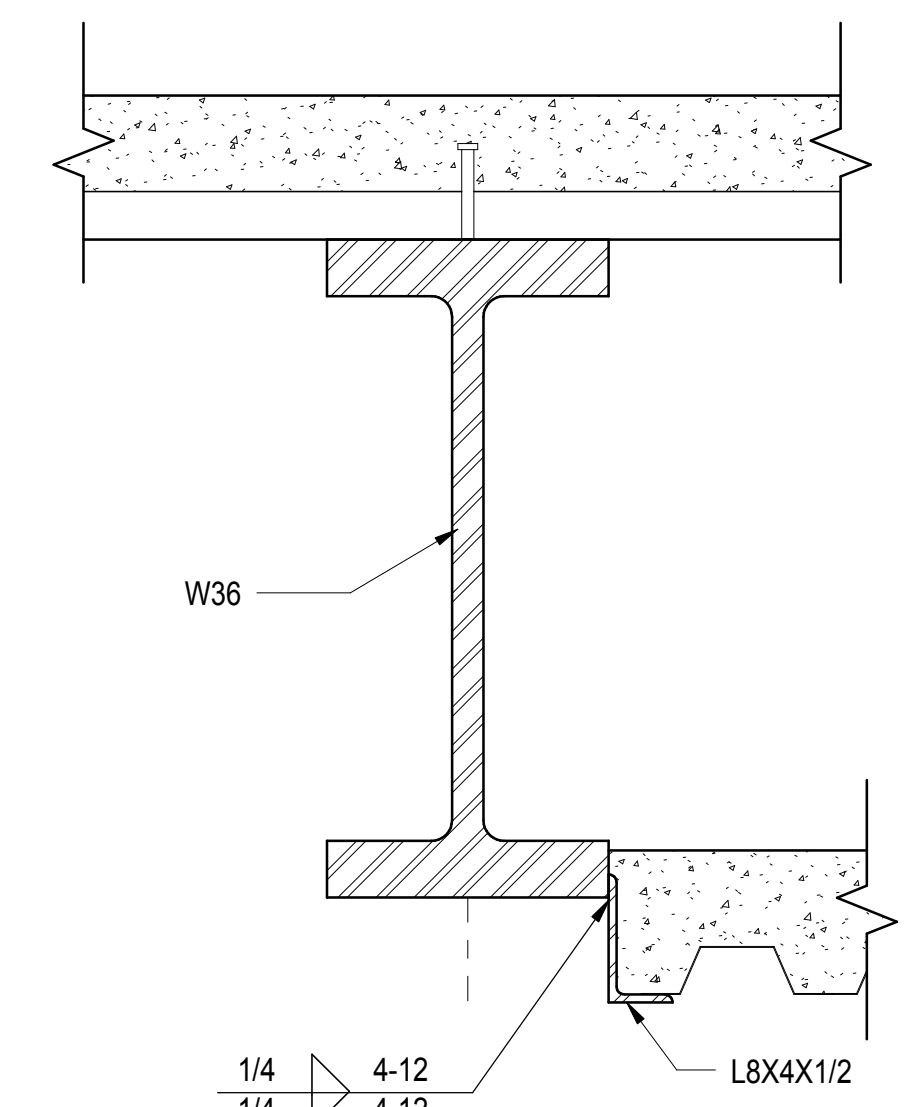
**3 ESCALATOR - WEST DETAIL**  
1/2" = 1'-0"



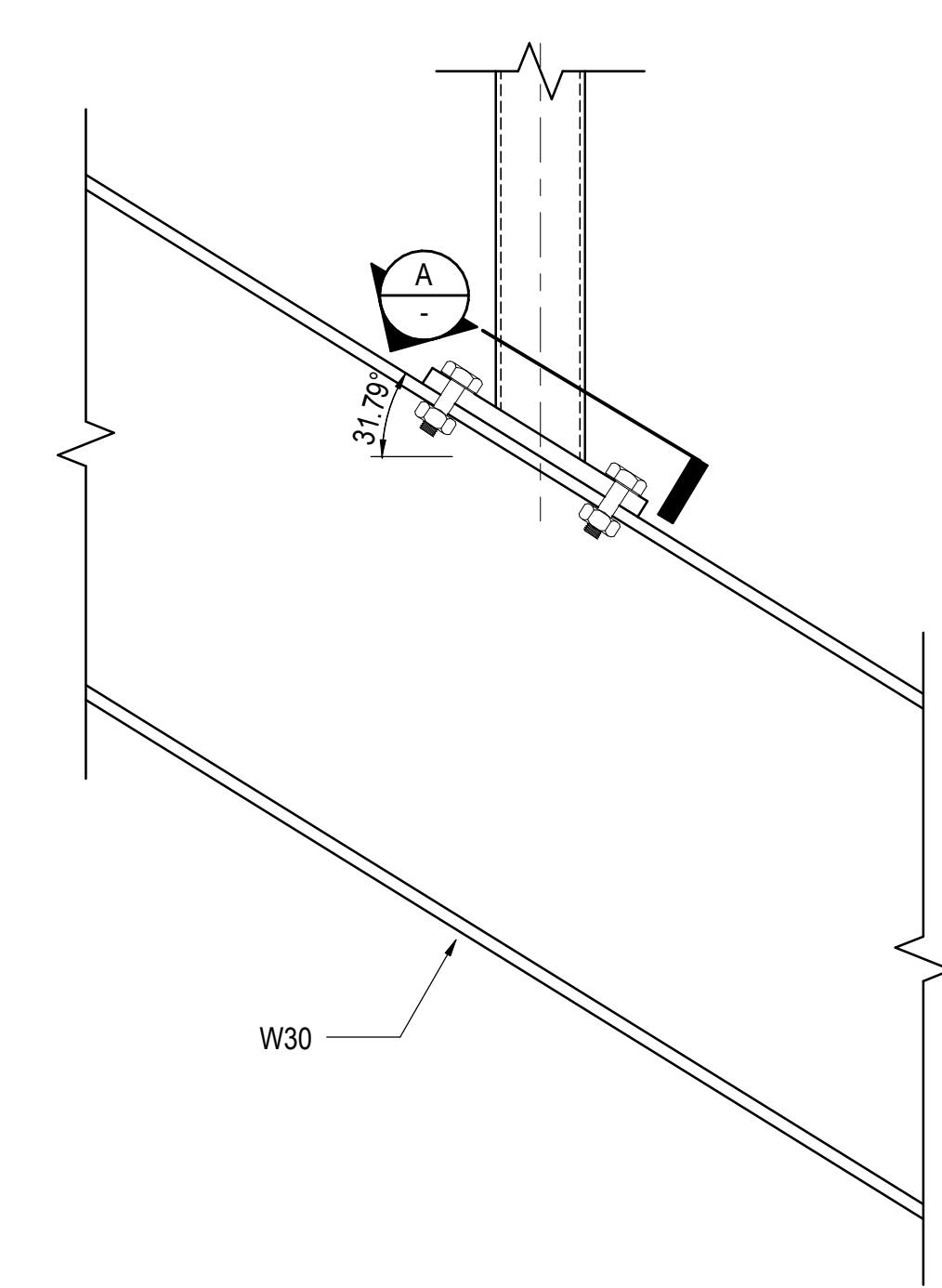
**4 SECTION AT NE CORNER STAIR & ESCALATOR**  
1/2" = 1'-0"



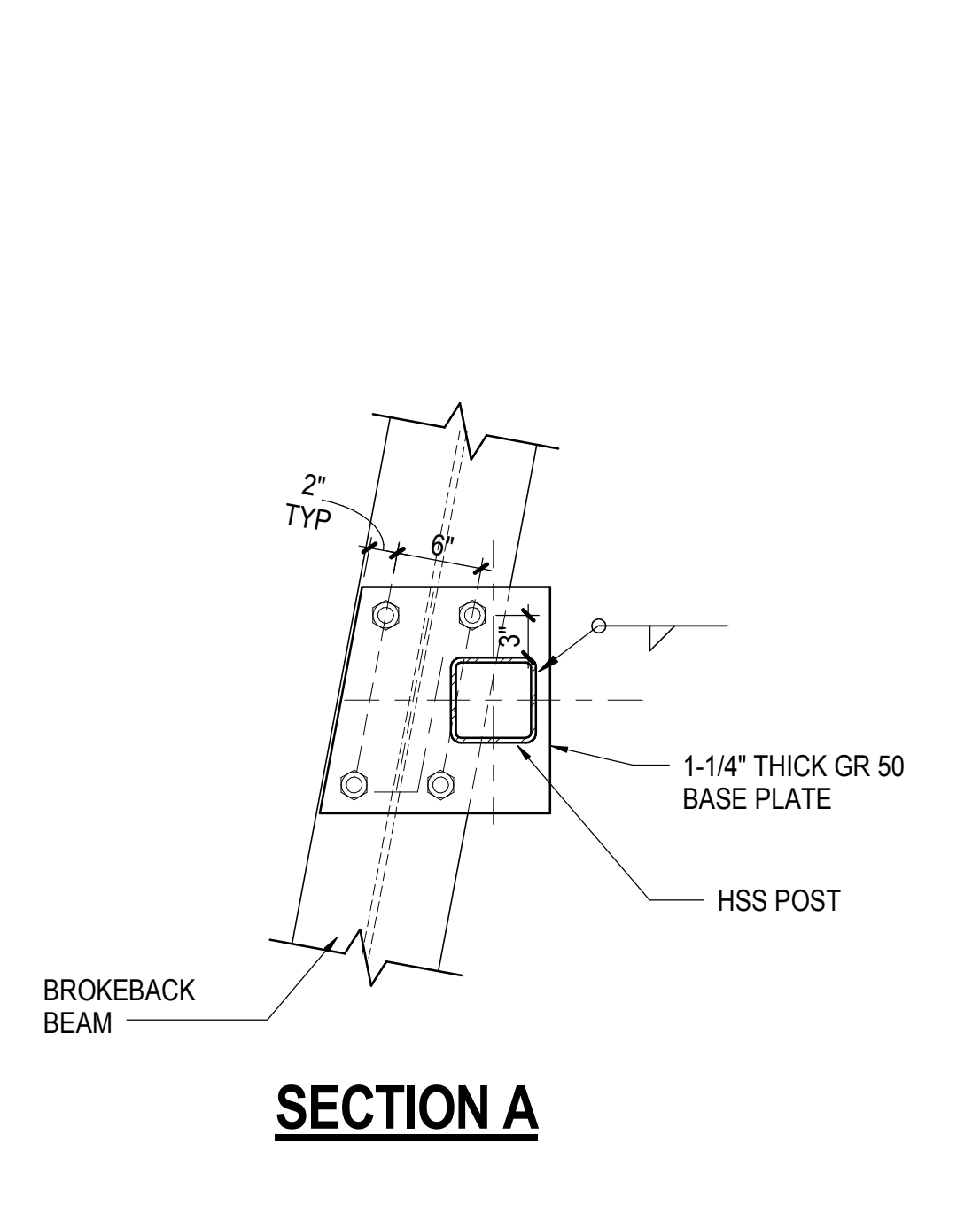
**5 WT DECK CLOSURE AT UPPER PLATFORM**  
1" = 1'-0"



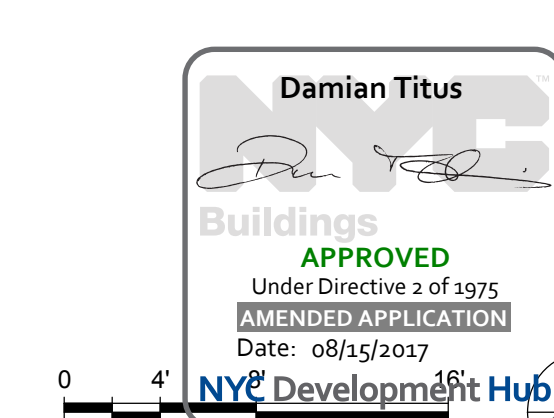
**6 WT DECK CLOSURE AT UPPER PLATFORM**  
1" = 1'-0"



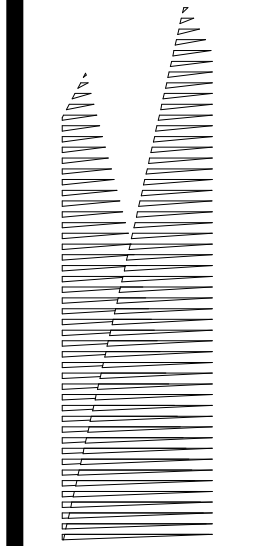
**7 POST SITTING ON BROKEBACK BEAM**  
1" = 1'-0"



**SECTION A**



SECTION AND DETAILS IV  
10/14/2014 5:03:38 PM C:\Users\N11330\OneDrive - Central Agency\...  
S-633.00



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
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Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Person: Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOR POST-APPROVAL AMENDMENT	10/28/2016
ASH0073	4/20/2015
L.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0046	9/24/2014
Rev	Rev

Rev Plot

Date: 09/23/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

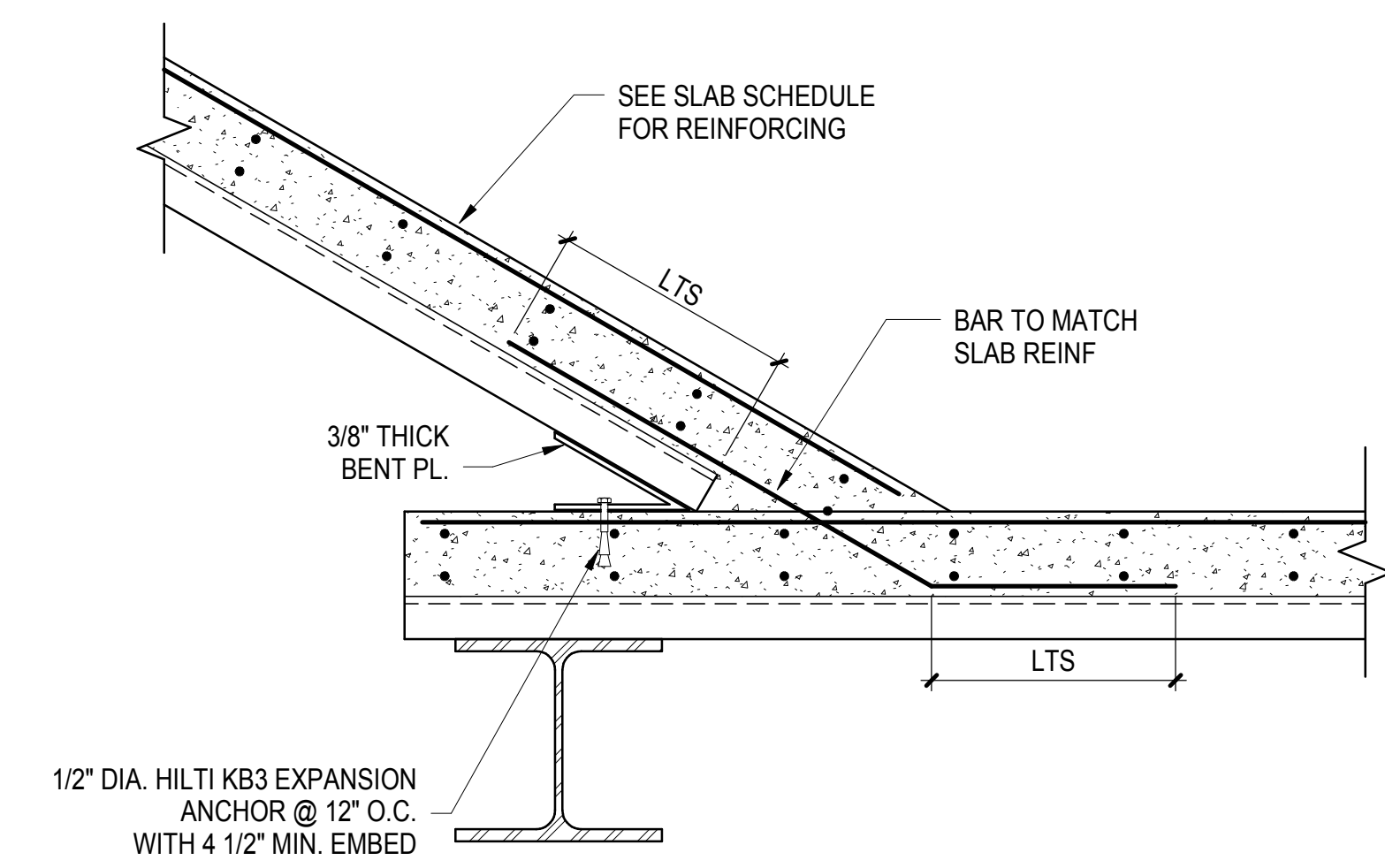
**HYE -PL -S-634.00**

**SECTIONS AND DETAILS V**

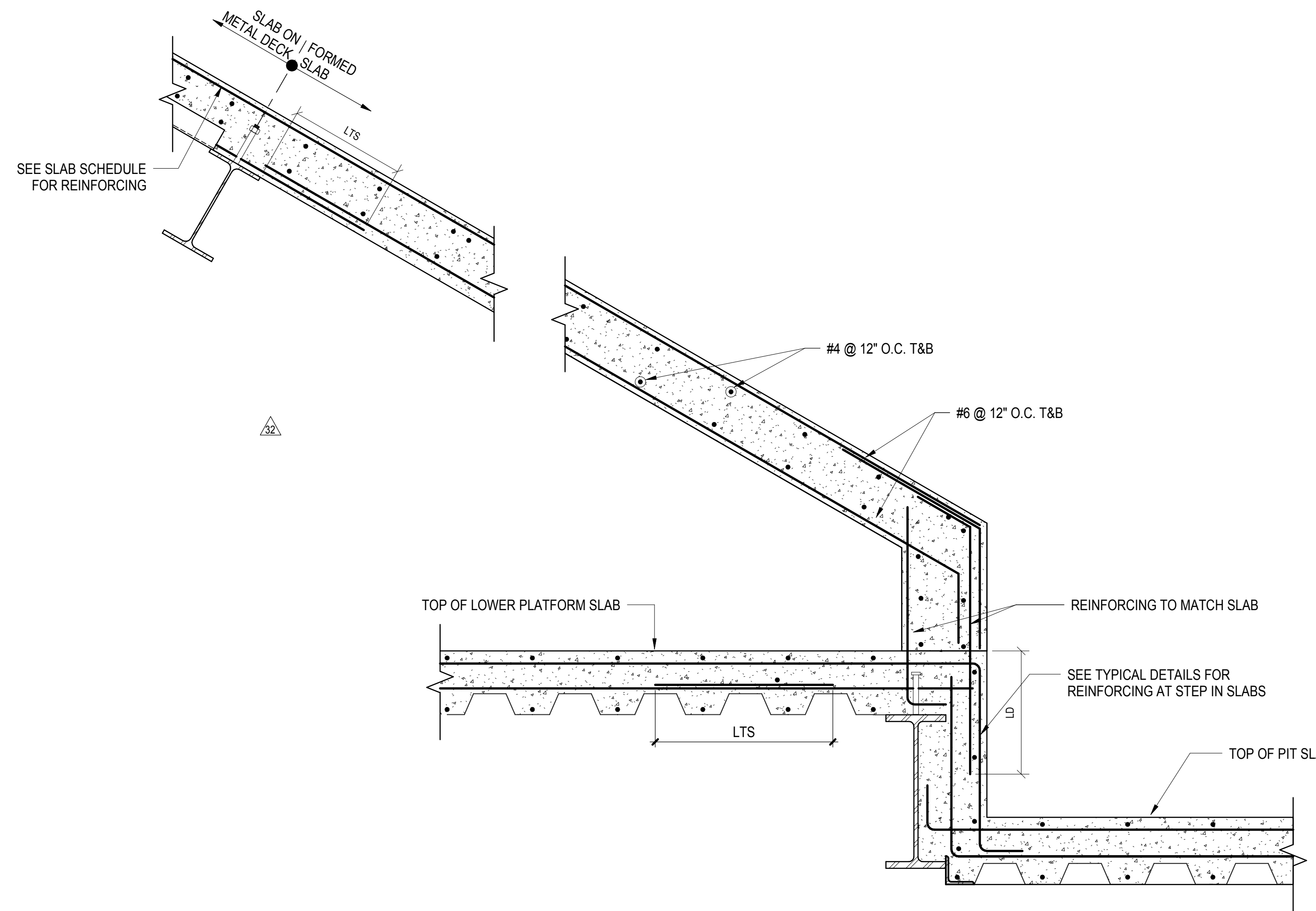
Drawing Number / B/CAN Drawing Number

**S-634.00**

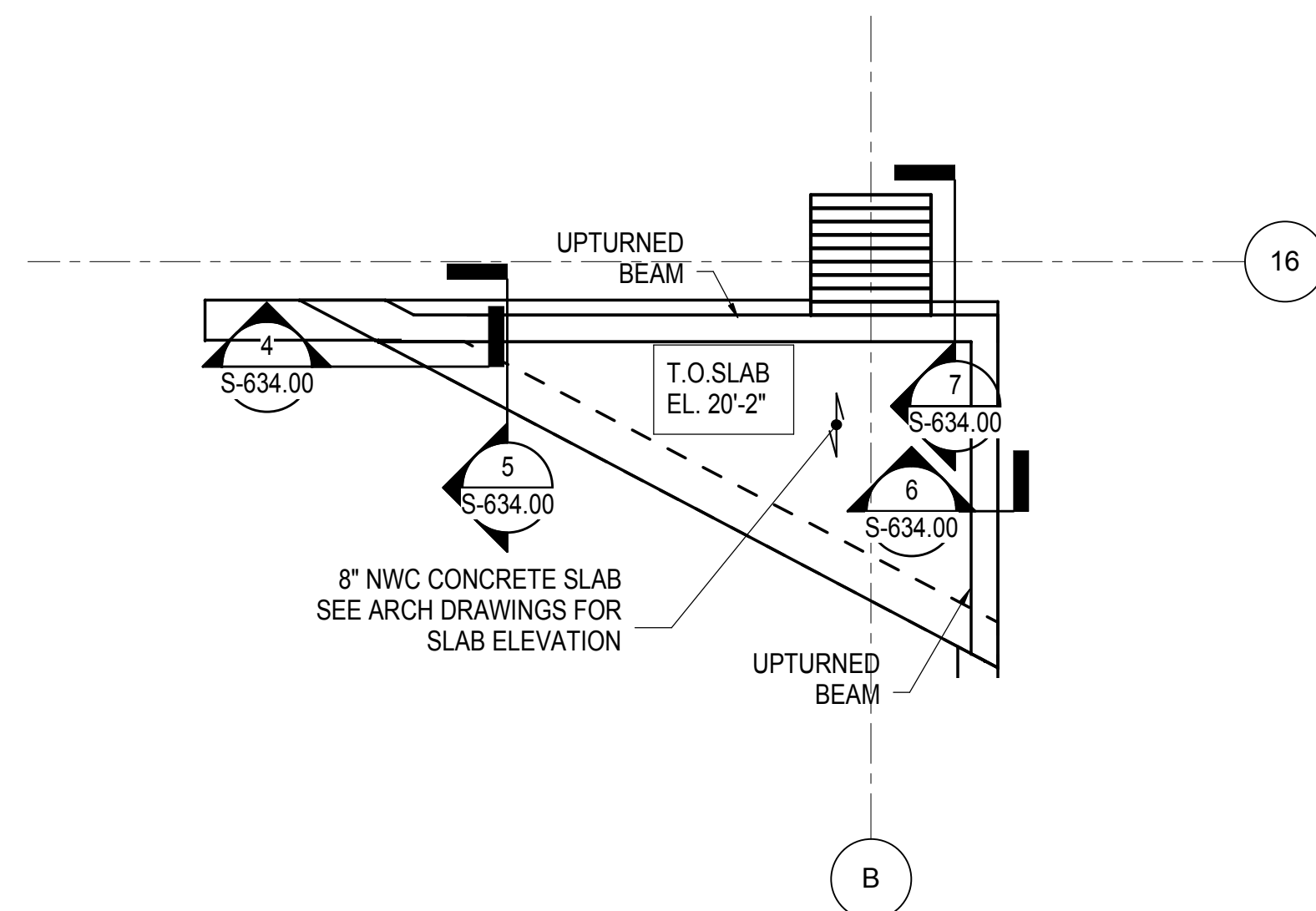
SHEET 129 of 163



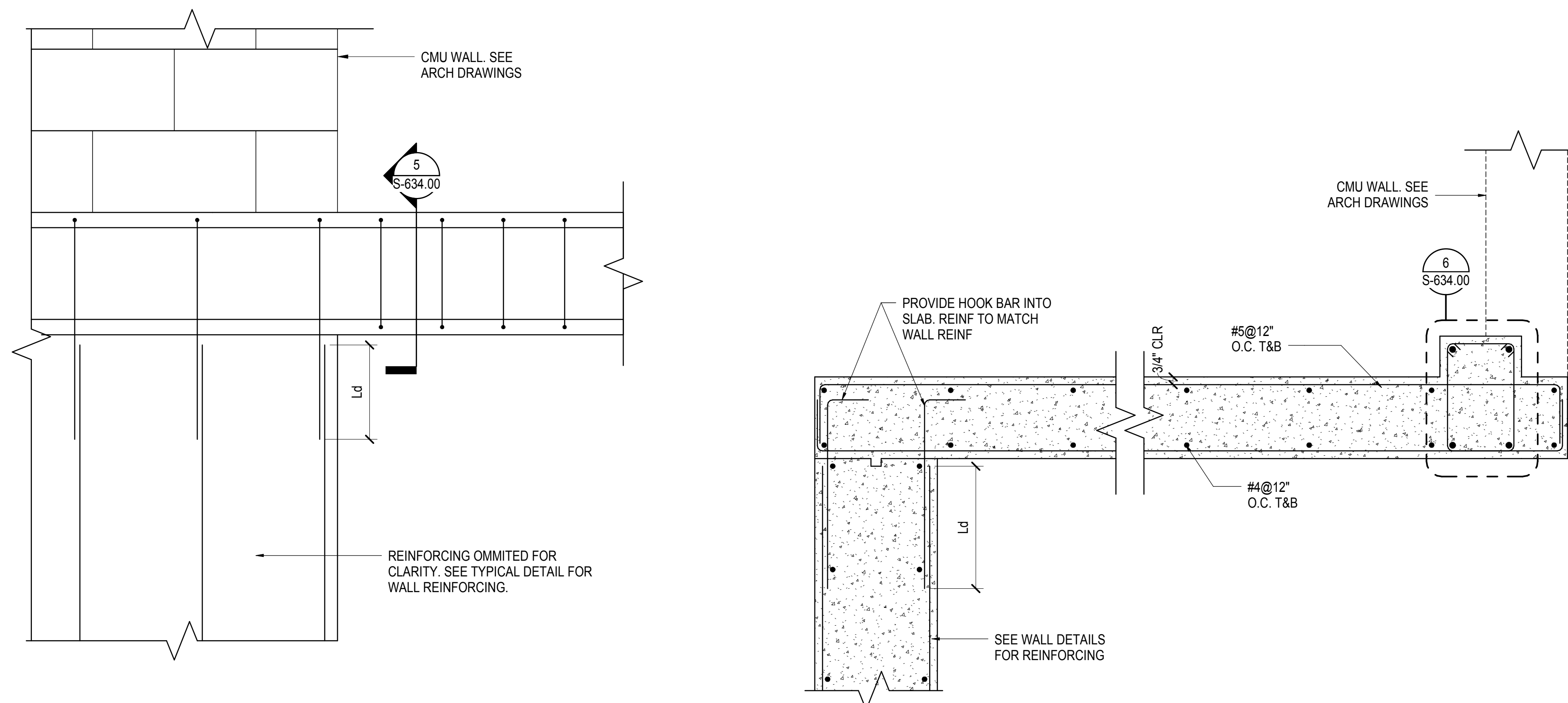
**1** SLAB ENCLOSURE FOR NE STAIR  
1" = 1'-0"



**2** SLAB ENCLOSURE FOR NE ESCALATORS  
1" = 1'-0"



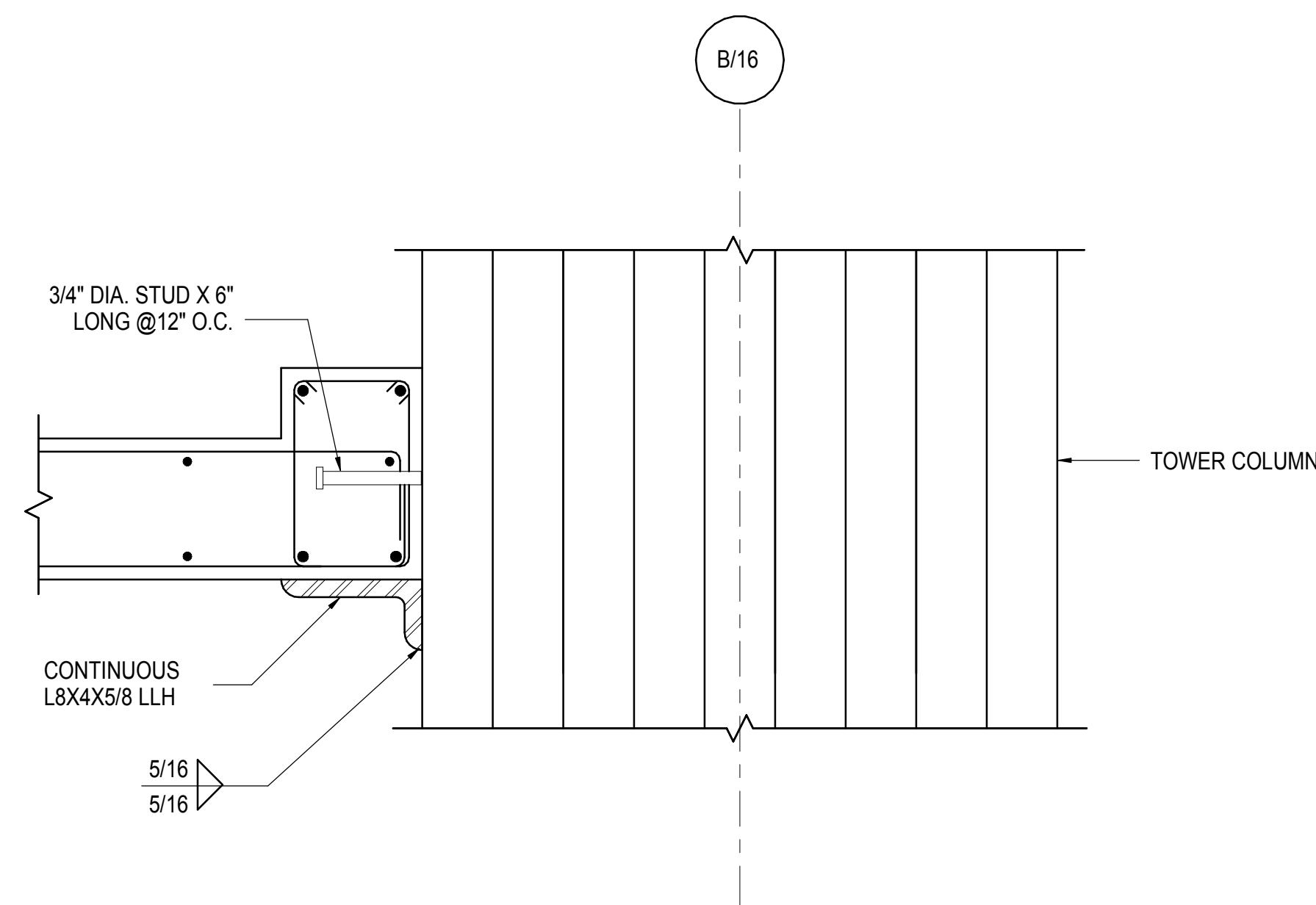
**3** PART PLAN AT DUST SHELF  
1/4" = 1'-0"



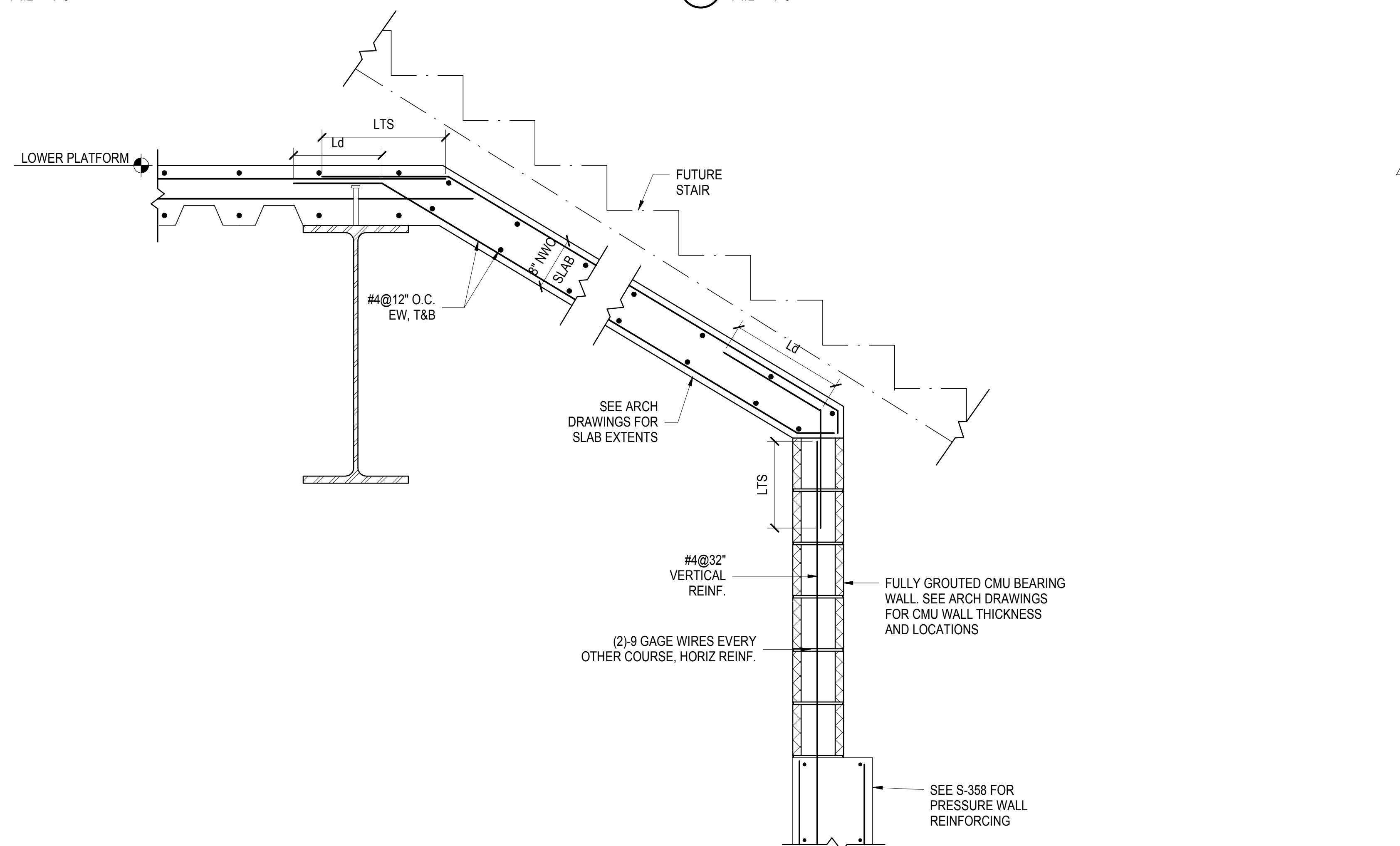
**4** SECTION AT TOWER A CORRIDOR  
1 1/2" = 1'-0"

**5** SECTION AT TOWER A CORRIDOR DUST SHELF SLAB  
1 1/2" = 1'-0"

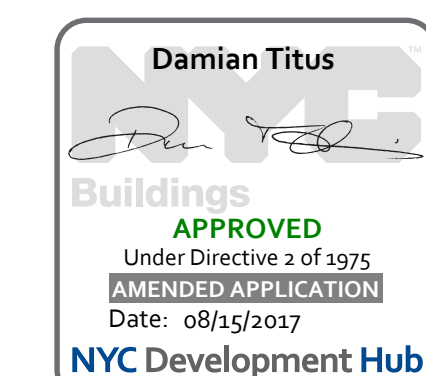
**6** SECTION AT TOWER A CORRIDOR BEAM  
3" = 1'-0"



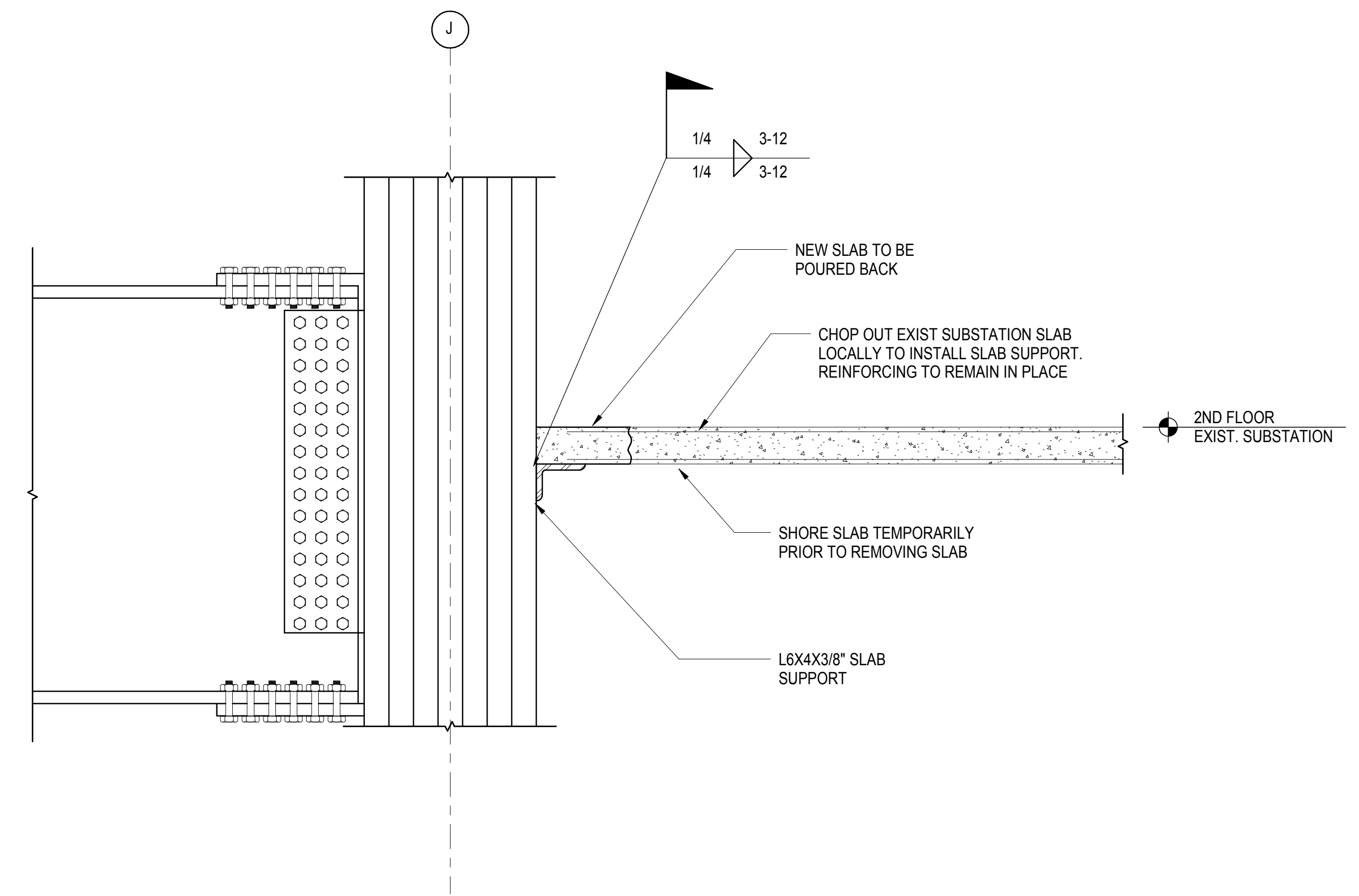
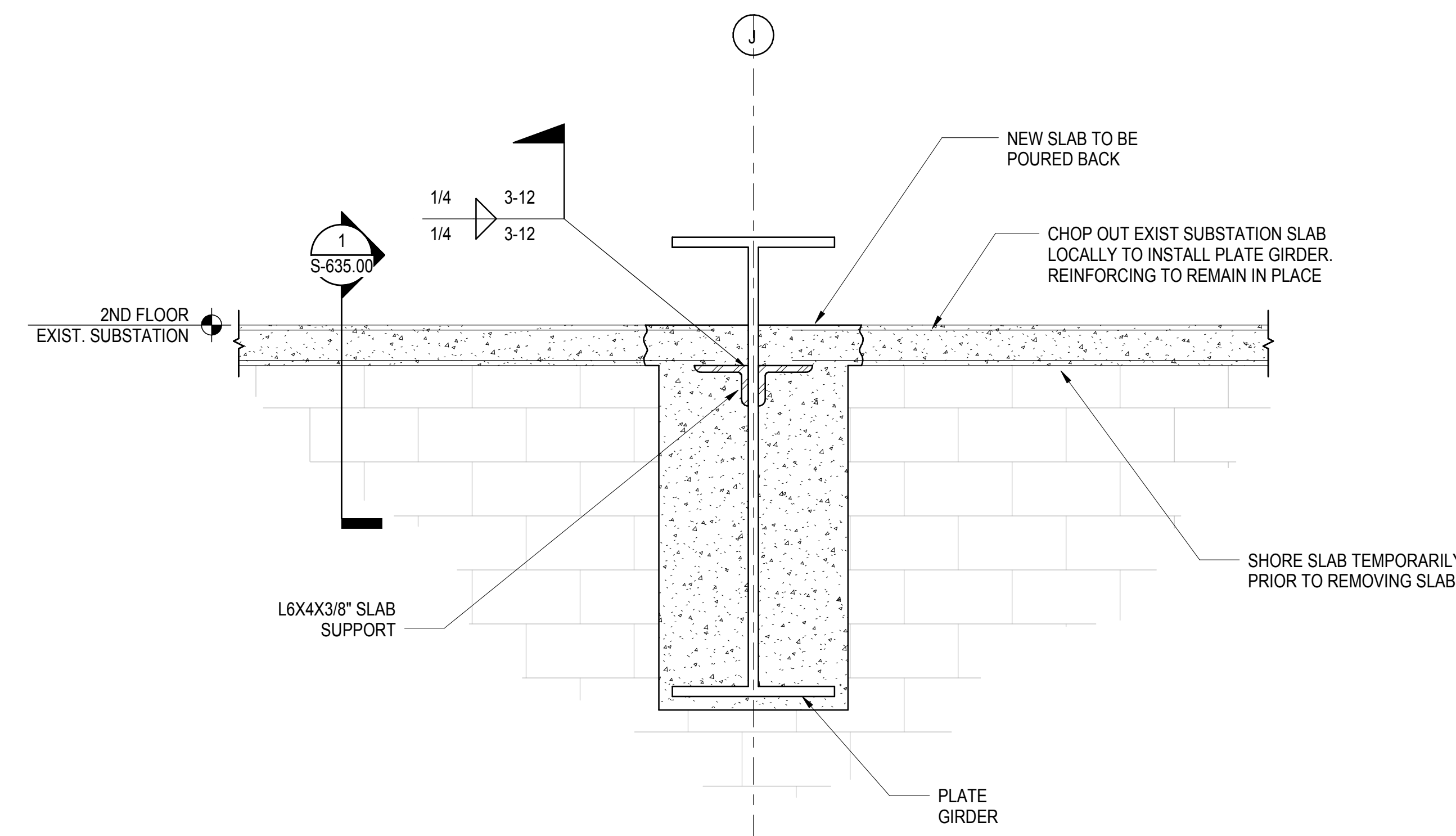
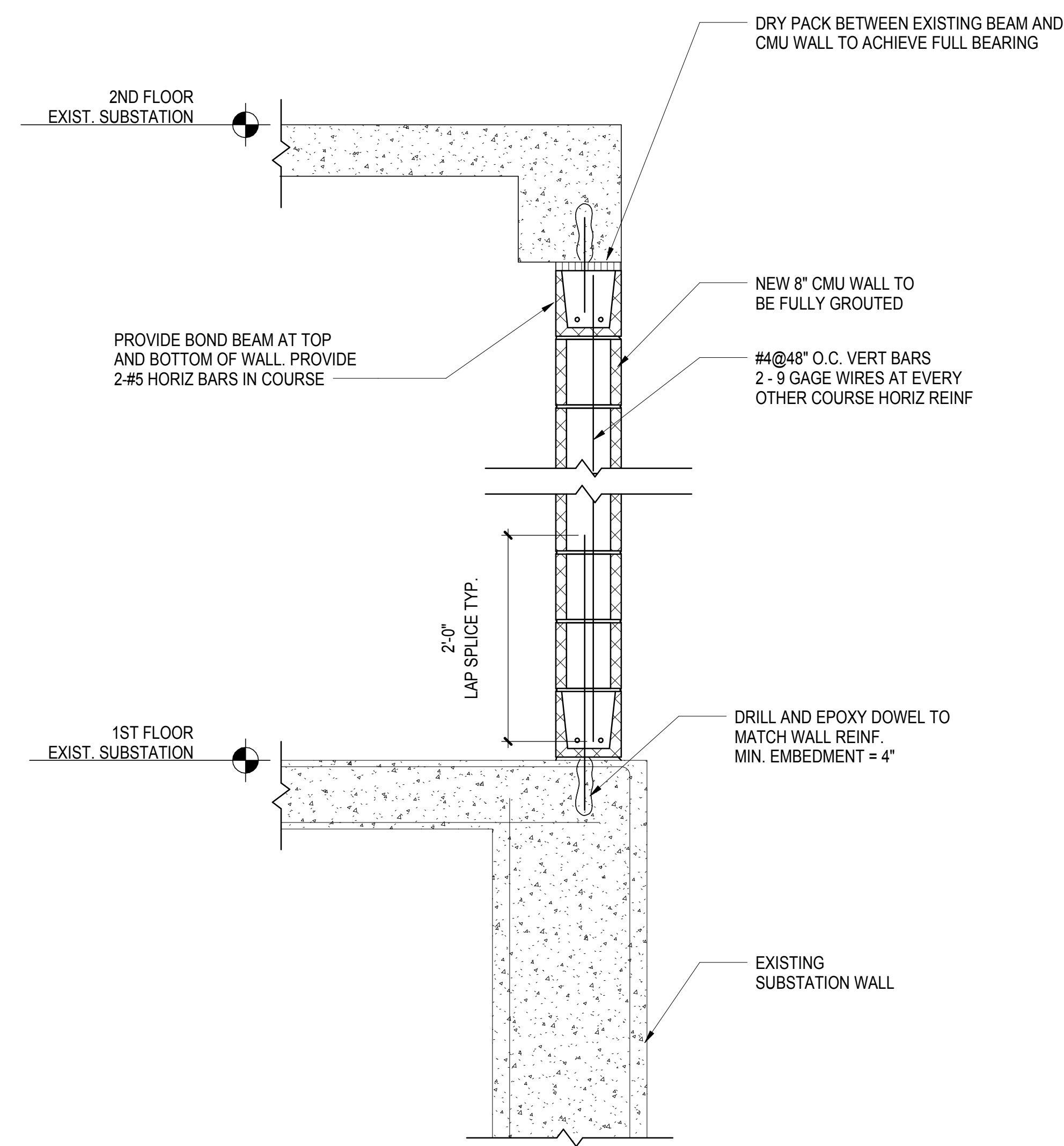
**7** CONCRETE BEAM SUPPORT OFF STEEL COLUMN  
1 1/2" = 1'-0"



**8** CONCRETE BEAM SUPPORT OFF STEEL COLUMN  
1" = 1'-0"



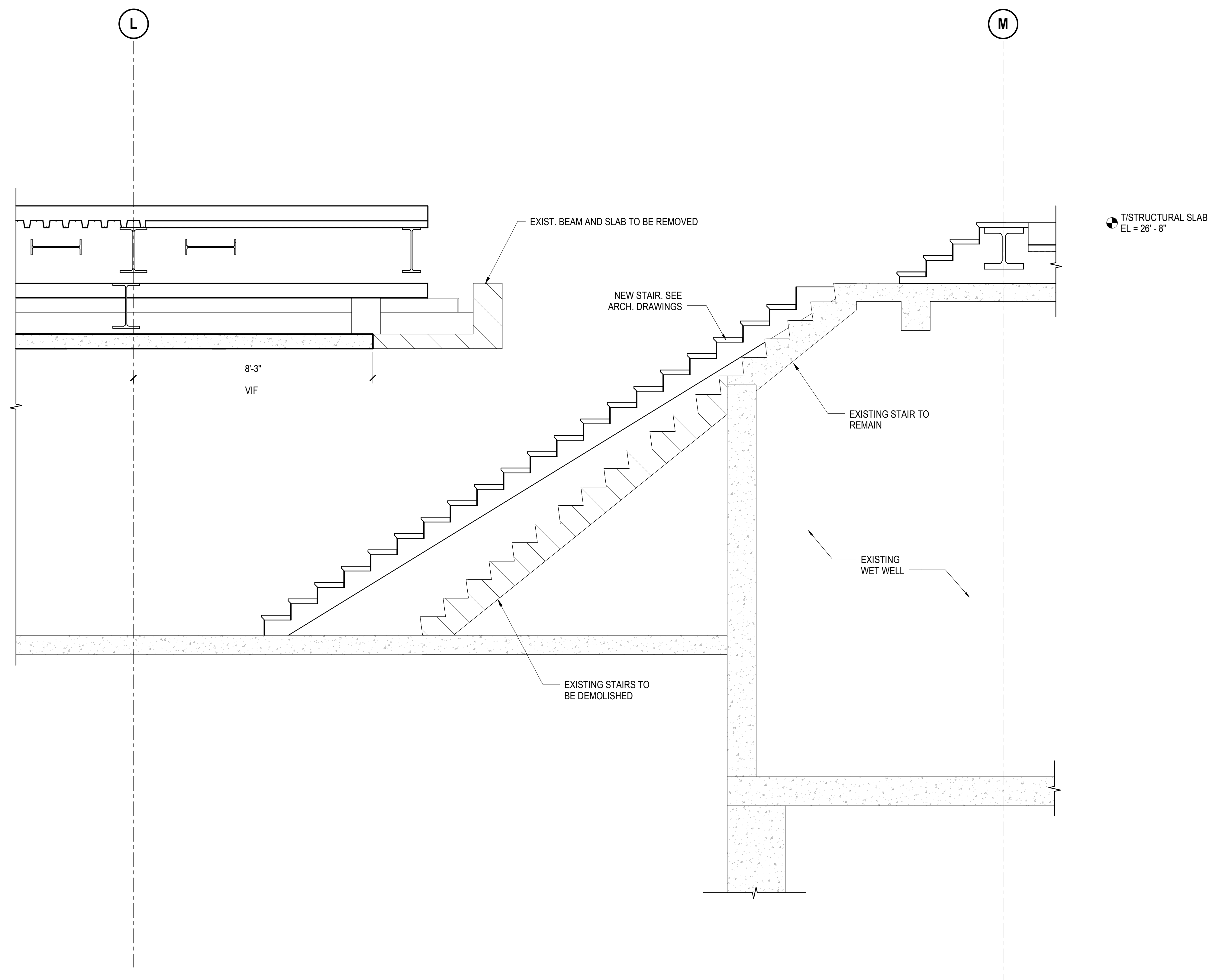
APPROVED Under Directive 1 of 1975  
DATE OF APPROVAL Date: 08/15/2017  
NYC Development Hub



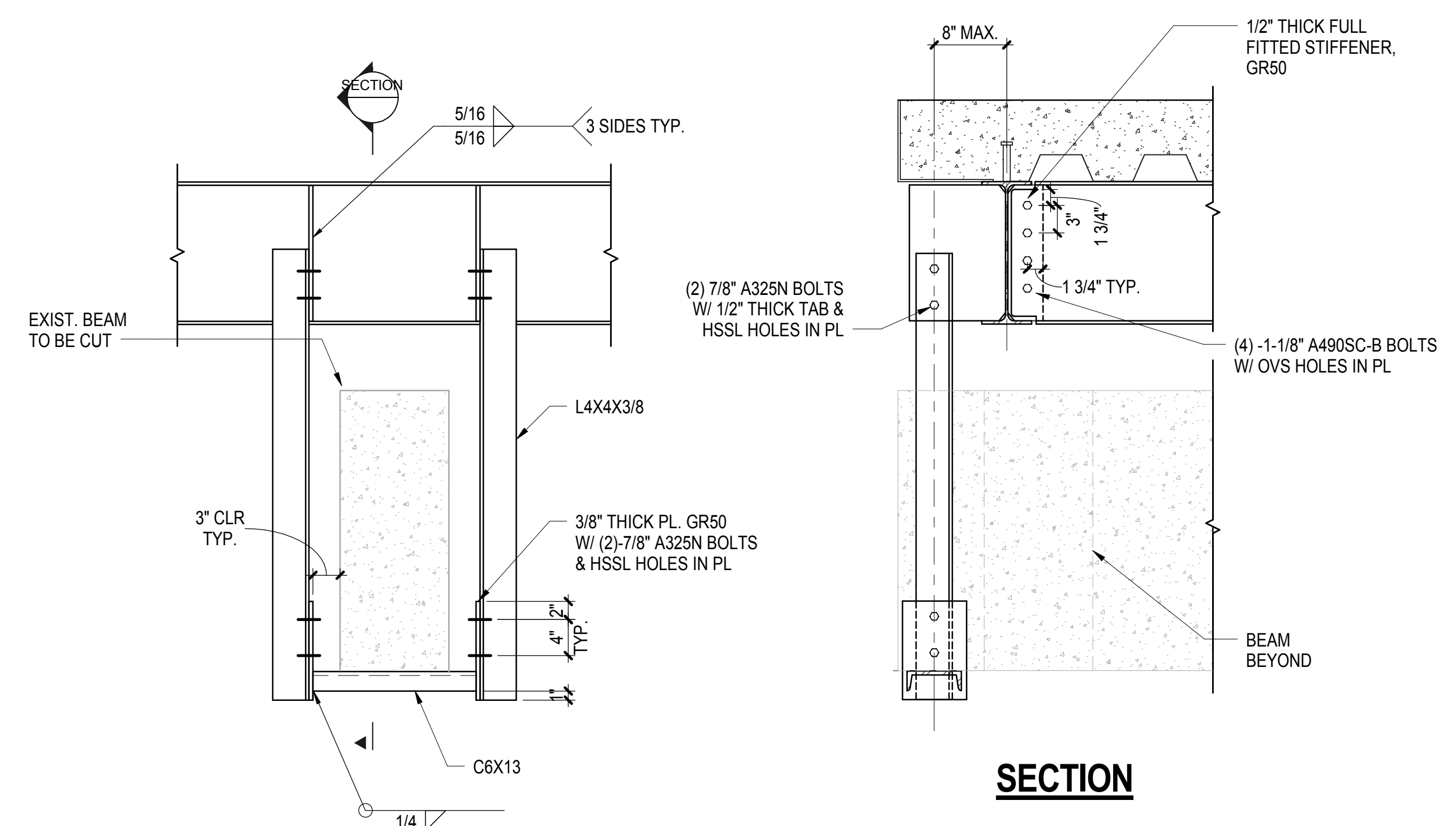
1 EXIST. SUBSTATION WALL ADJACENT TO GRID J PLATE GIRDER  
1" = 1'-0"

2 EXIST. SUBSTATION SLAB RE-SUPPORT AT NEW PLATE GIRDER  
3/4" = 1'-0"

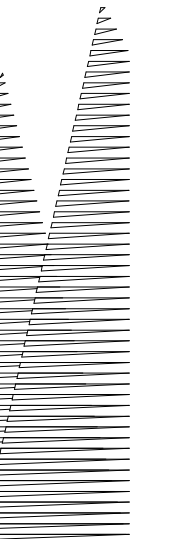
3 EXIST. SUBSTATION SLAB RE-SUPPORT AT NEW COLUMN  
3/4" = 1'-0"



4 SUBSTATION STAIR  
1/2" = 1'-0"



5 SUBSTATION RESUPPORT  
1" = 1'-0"



Client  
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60 Columbus Circle  
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Tel: 212.801.1000 Fax: 212.801.1048

Outford Properties Group  
330 Park Avenue, 17th Floor  
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Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

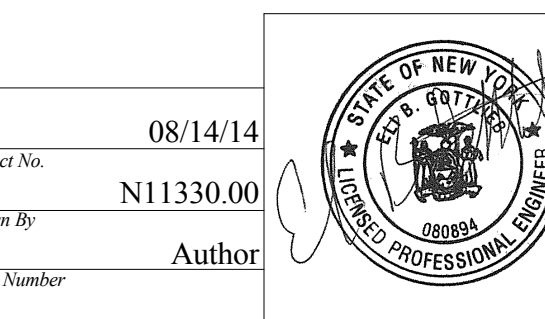
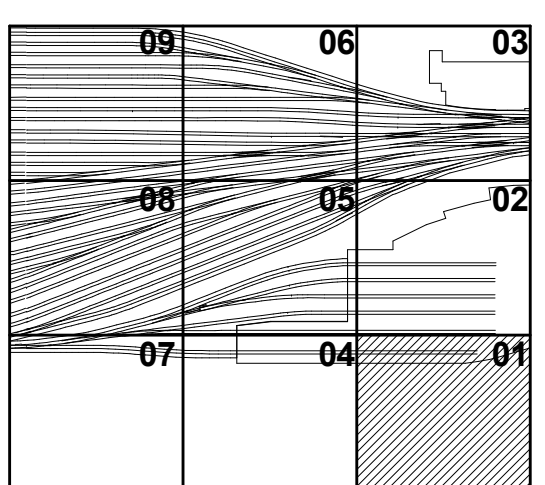
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Erosion, Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
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Tel: 212.896.3000

LJRR Substation  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0046	9/24/2014
ASH0045	9/24/2014
ASH0044	9/24/2014

Key Plan



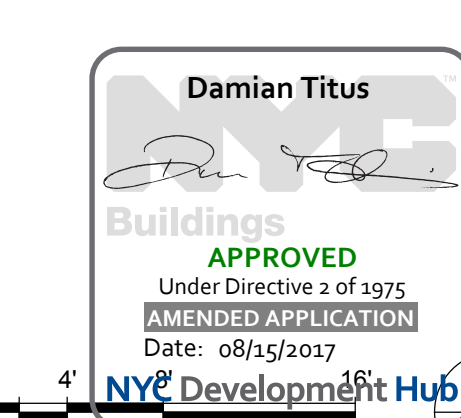
HYE - PL - S-635.00

SECTIONS AND DETAILS VI

Drawing Number / Revision Drawing Number

S-635.00

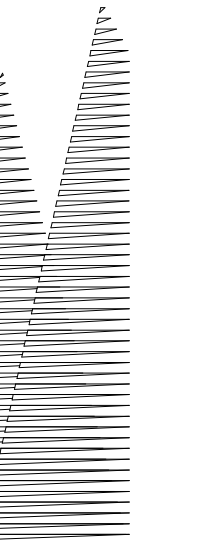
SHEET 130 of 163



APPROVED Under Directive 1 of 1975  
DATE OF APPROVAL  
Date: 08/15/2017  
NYC Development Hub

0 4' 8' 16'





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
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Outford Properties Group  
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New York, NY 10022  
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Construction Manager  
Fishman Construction Corporation  
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Architect  
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PC Architects & Planning Consultants  
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Structural Engineer  
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New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

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Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
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LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 109%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
ASH0005	2/18/2014
ASH	08/

Key Plan

Date: 02/18/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number:



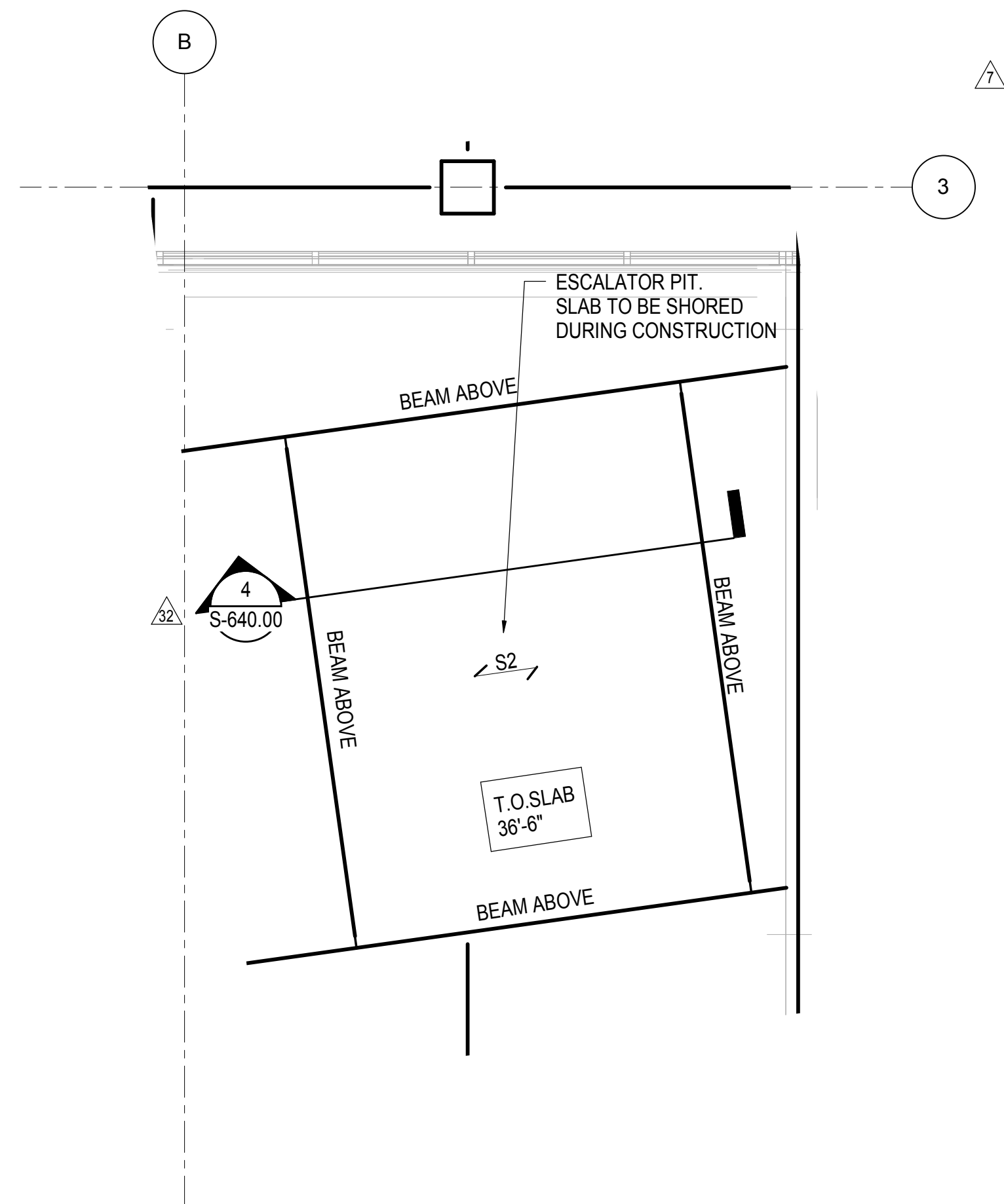
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**ESCALATOR DETAILS**

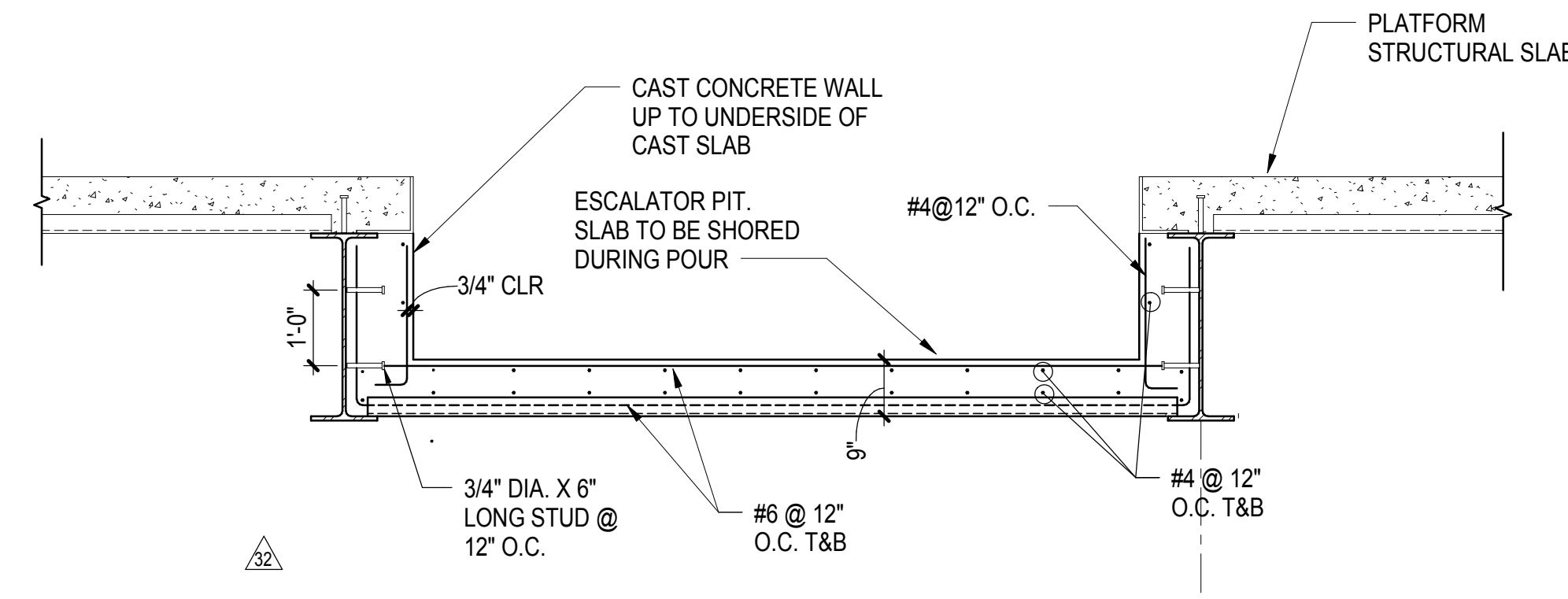
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**S-640.00**

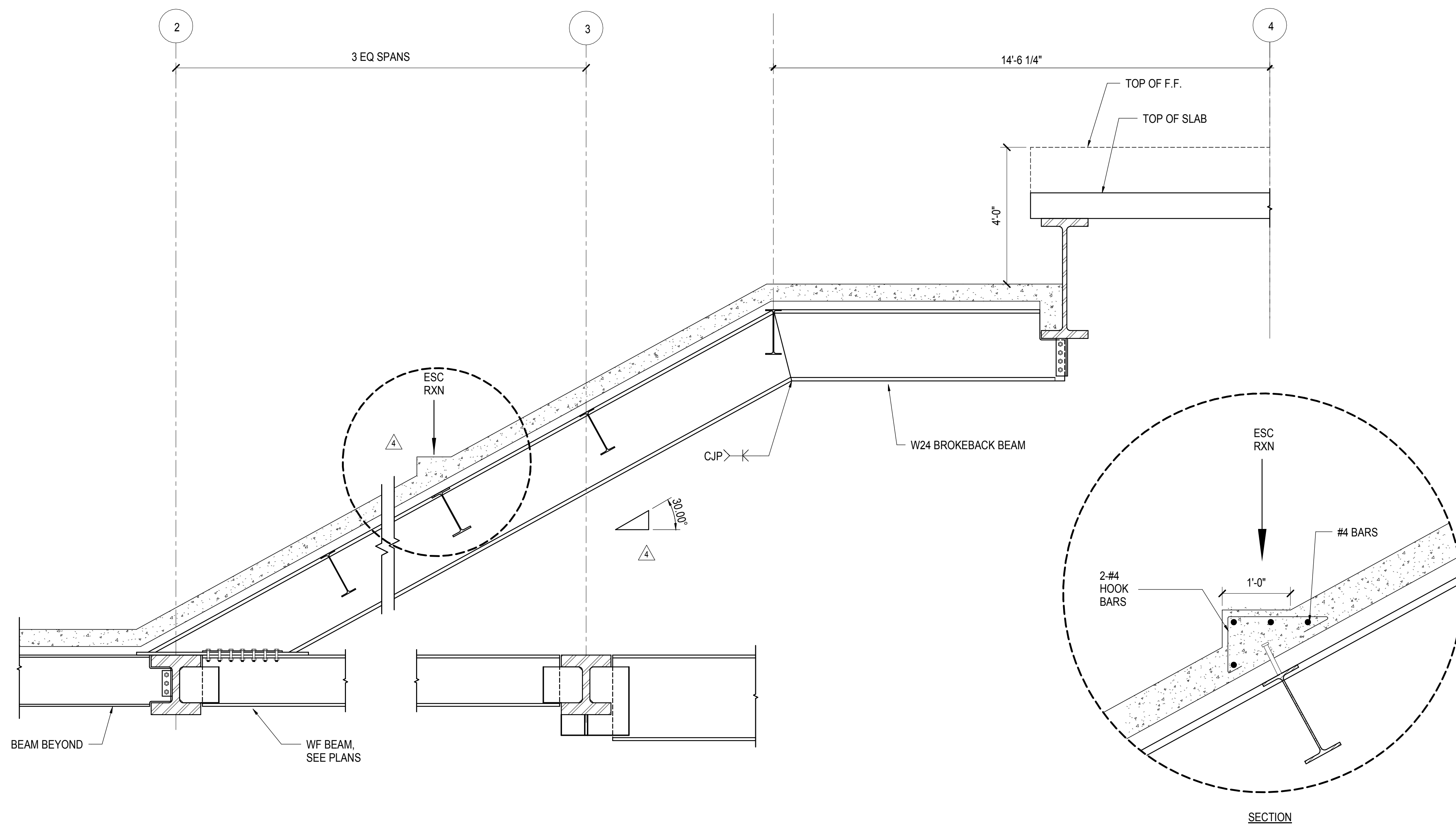
SHEET 131 of 163



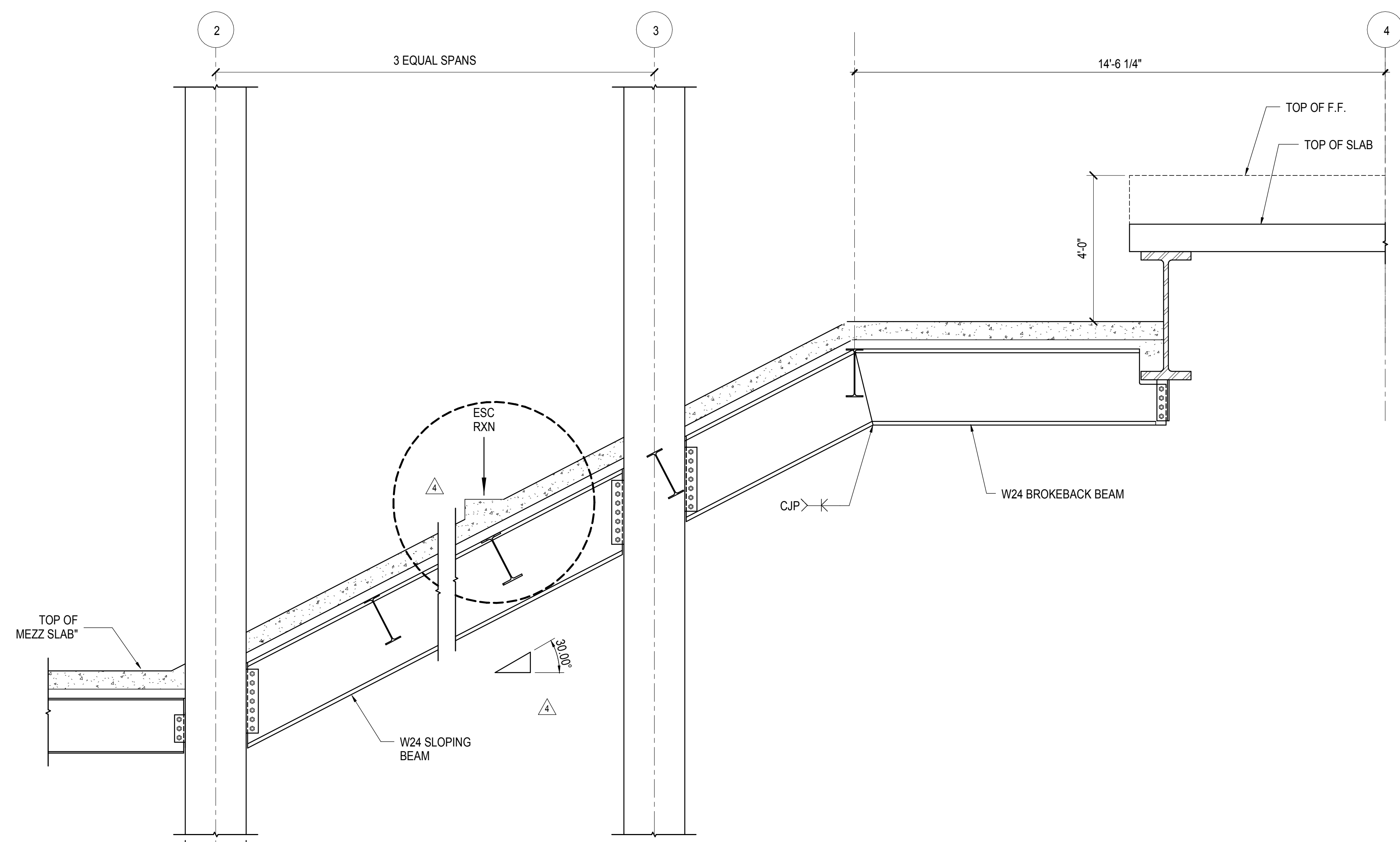
**1 ESCALATOR PIT NEAR GRIDS B/3**  
1/4" = 1'-0"



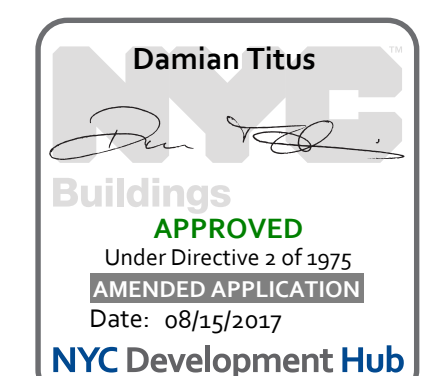
**4 ESCALATOR PIT DETAIL NEAR GRID B/3**  
1/2" = 1'-0"



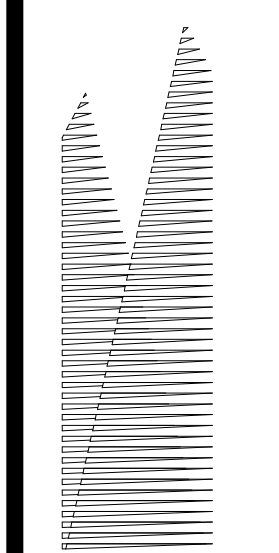
**2 SECTION AT SE CORNER ESCALATOR AT GRID M**  
1/2" = 1'-0"



**3 SECTION AT SE CORNER ESCALATOR AT GRID L.5**  
1/2" = 1'-0"



**Damian Titus**  
Buildings  
APPROVED  
Under Directive 1 of 1975  
EXERCISE OF PROFESSION  
Date: 08/15/2017  
NYC Development Hub



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60 Columbus Circle  
New York, NY 10023  
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Outford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
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100 Park Avenue, 5th Floor  
New York, NY 10017  
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Fire Alarm, Fire Protection, Security  
Easements, Transportation Group  
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LJRR Substation  
AECOM  
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DOB POST-APPROVAL AMENDMENT	10/26/2016
ASH0096	09/02/2015
ASH0092	08/10/2015
ASH0081	06/05/2015
ASH0065	03/17/2015
ASH0056	12/19/2014
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0013	3/20/2014
Rev	Description
0	000

Key Plan

Date: 02/25/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

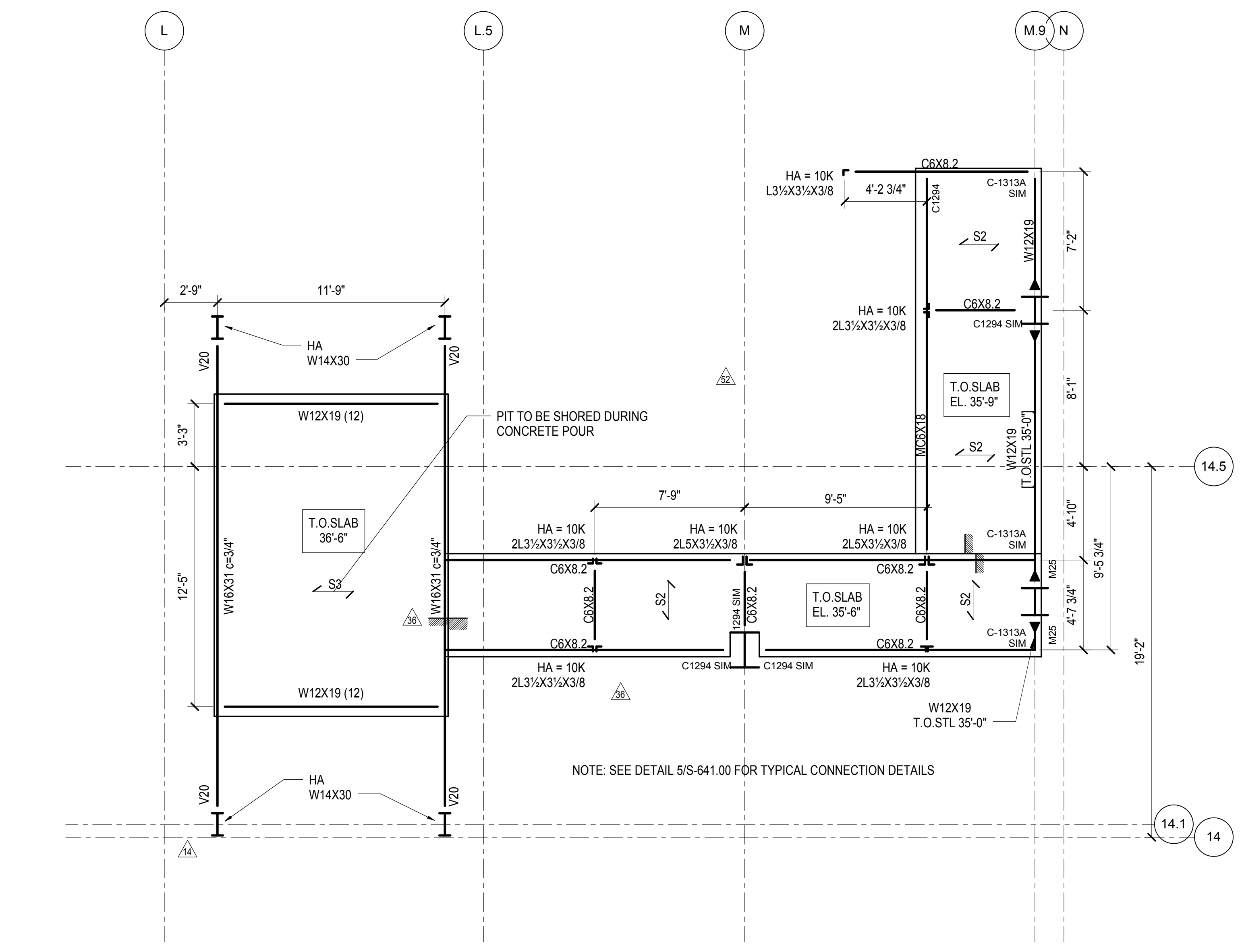
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**SECTION AND DETAILS**

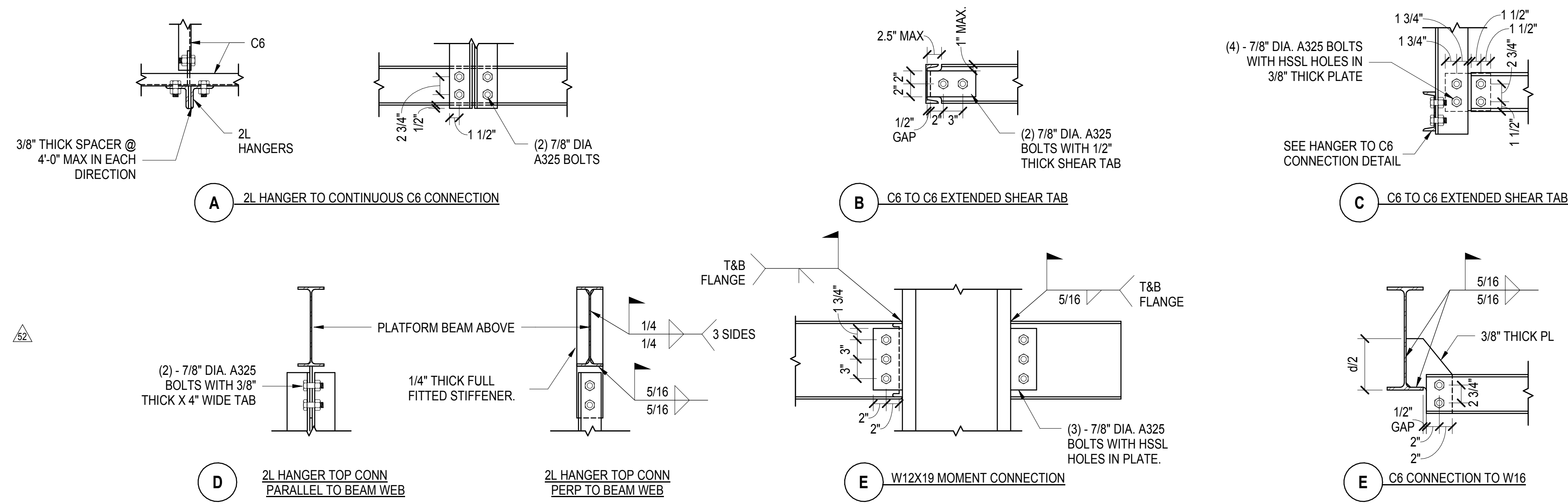
Drawing Number / Revision Drawing Number

**S-641.00**

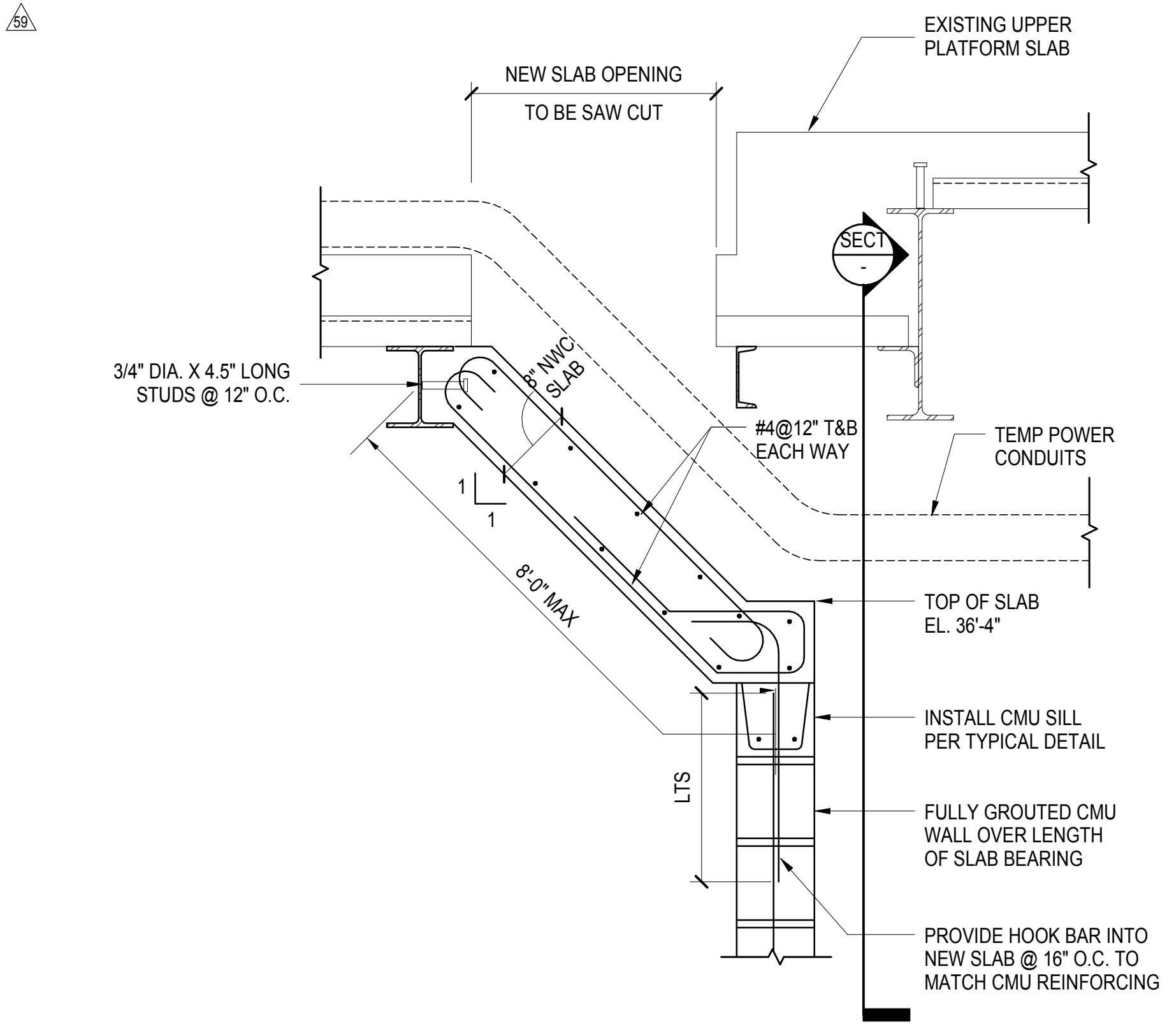
SHEET 132 of 163



**1 ESCALATOR PIT AND LJRR STAIR ENCLOSURE**  
1/4" = 1'-0"



**5 TYPICAL CONNECTION DETAILS AT LJRR ENCLOSURE**  
1" = 1'-0"



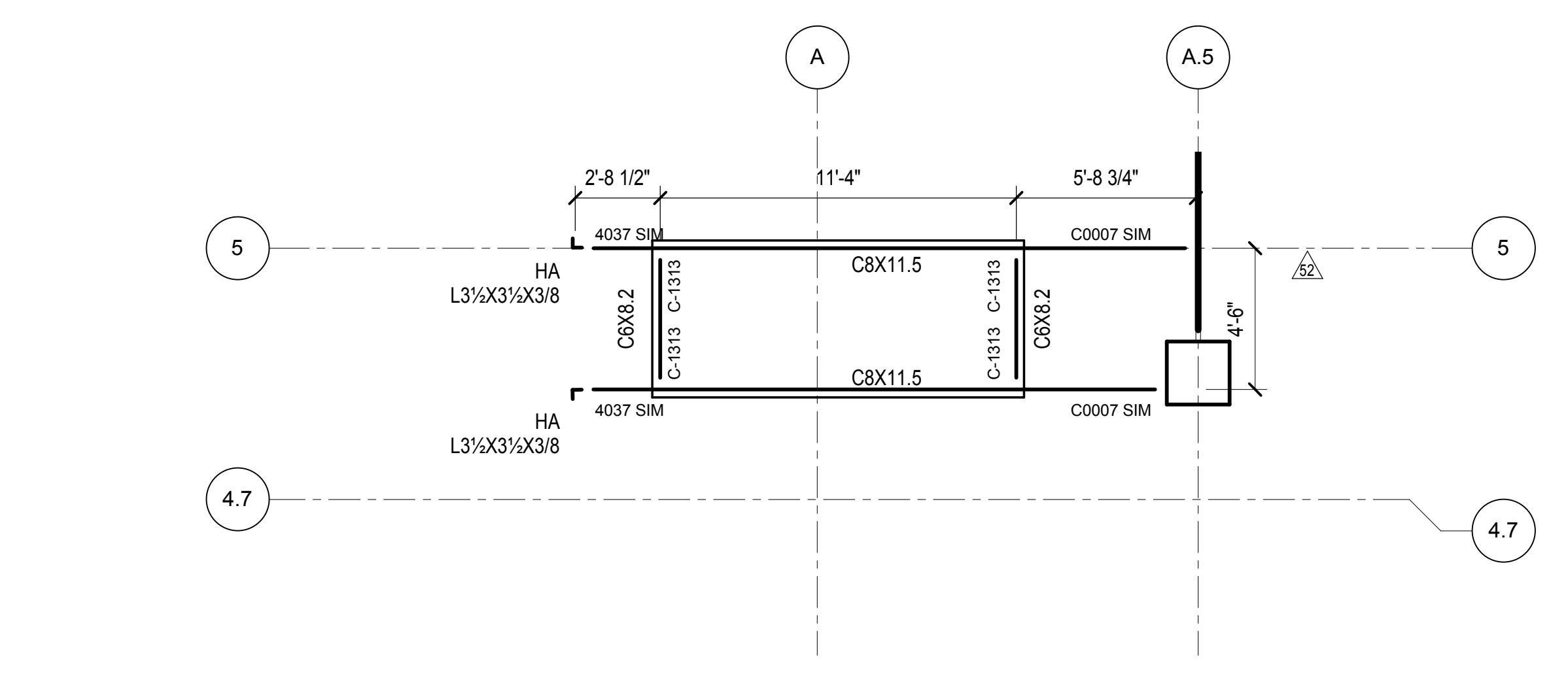
**6 TEMP POWER ENCLOSURE**  
1" = 1'-0"

NOTE: GC TO COORDINATE WITH MOE TEAM FOR CMU WALL CONSTRUCTION

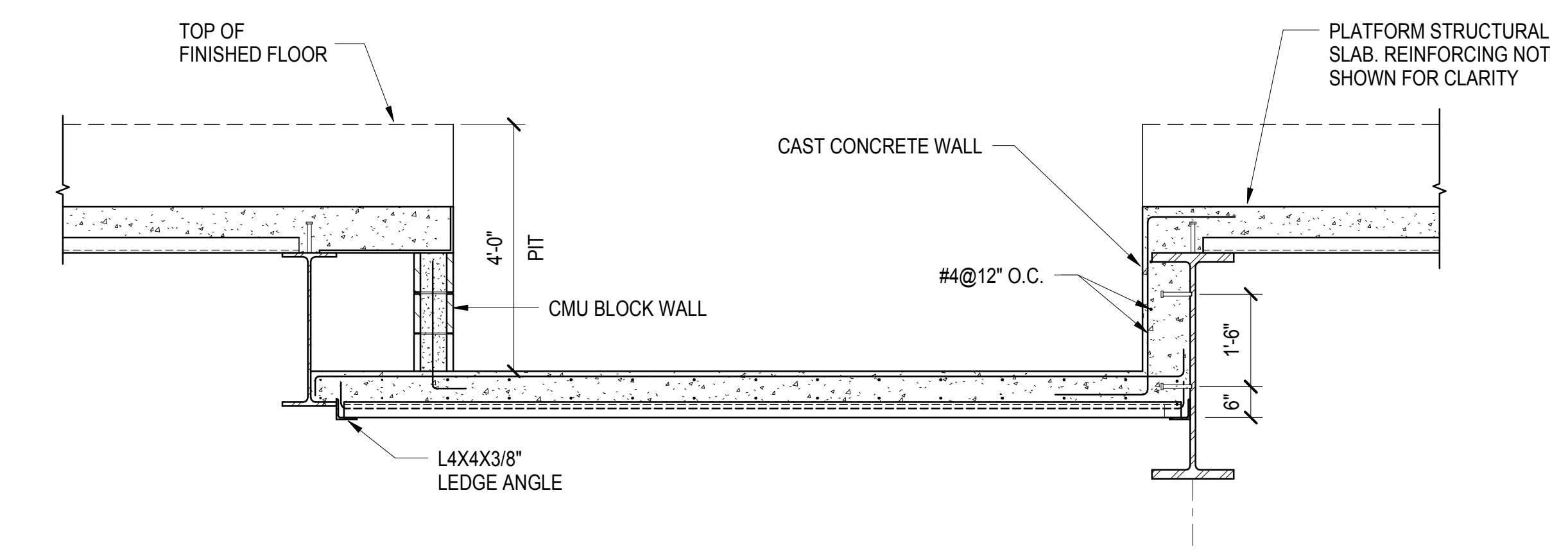
**2 ESCALATOR PIT BETWEEN GRID 4-5/L-L.5**  
1/4" = 1'-0"



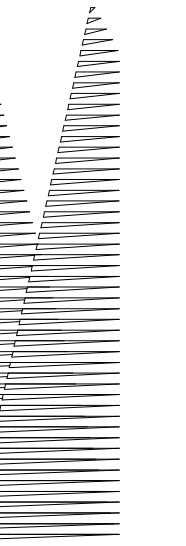
**3 ESCALATOR PIT BETWEEN GRID 4-5/L-L.5**  
1/2" = 1'-0"



**4 SITEWIDE IT LOOP PART PLAN**  
1/4" = 1'-0"



Damian Titus  
APPROVED  
Under Directive 3 of 1975  
Professional Registration  
Date: 08/15/2017  
NYC Development Hub



Client  
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60 Columbus Circle  
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330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

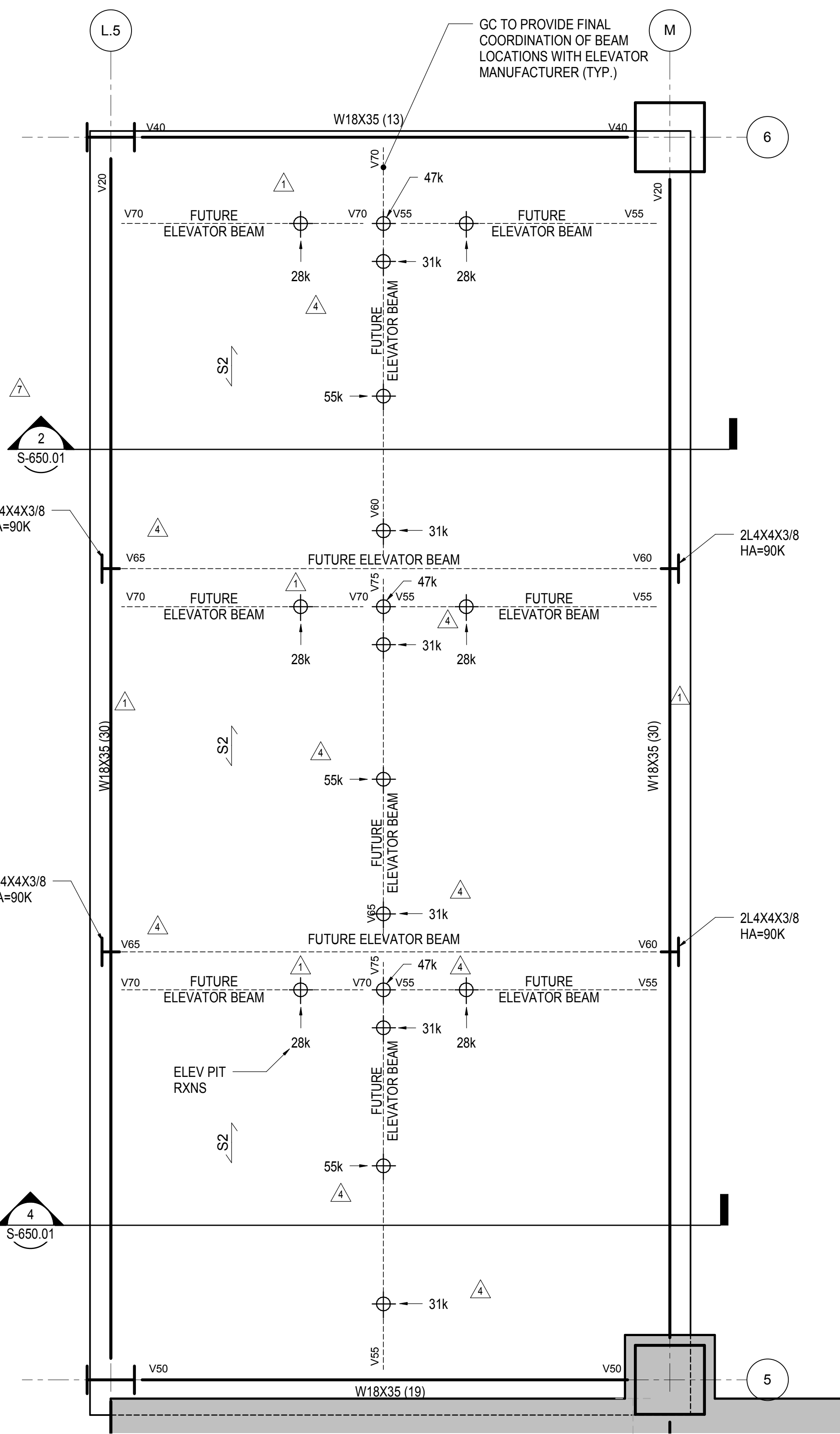
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
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Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
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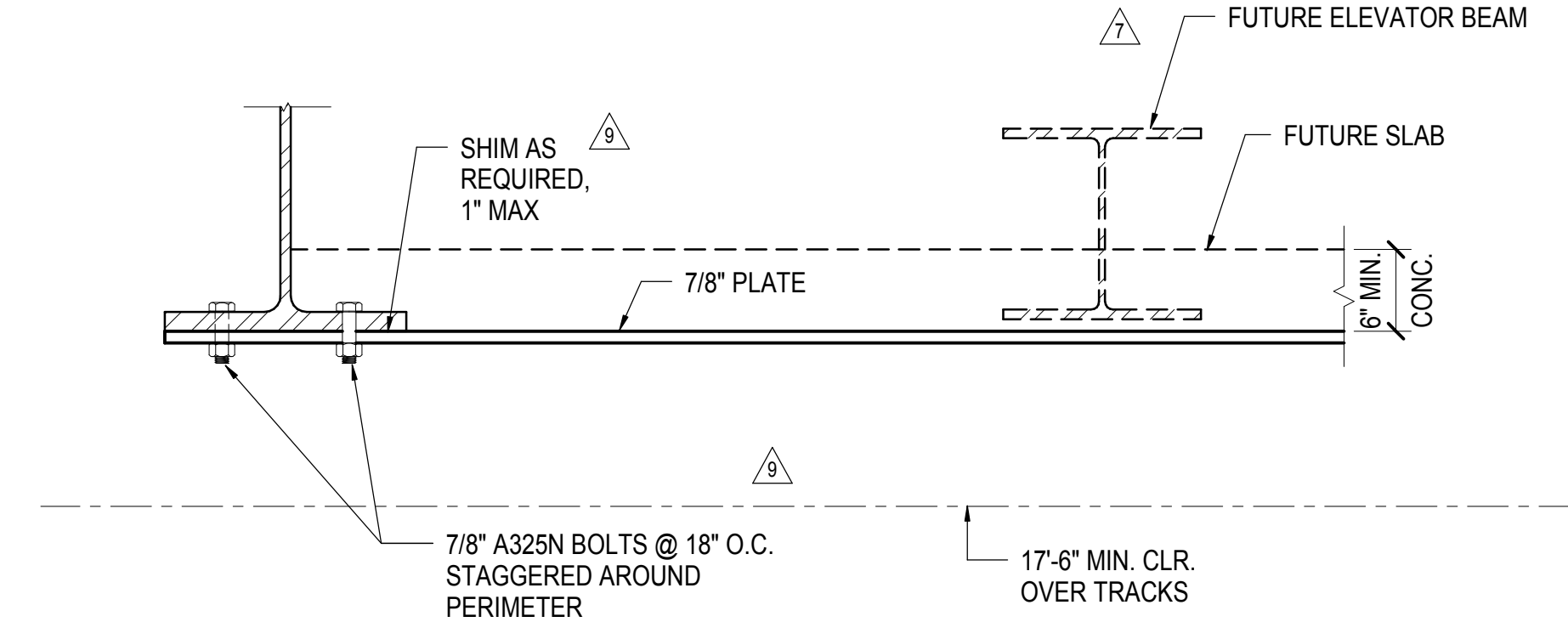
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Easements, Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
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New York, NY 10005  
Tel: 212.896.3000

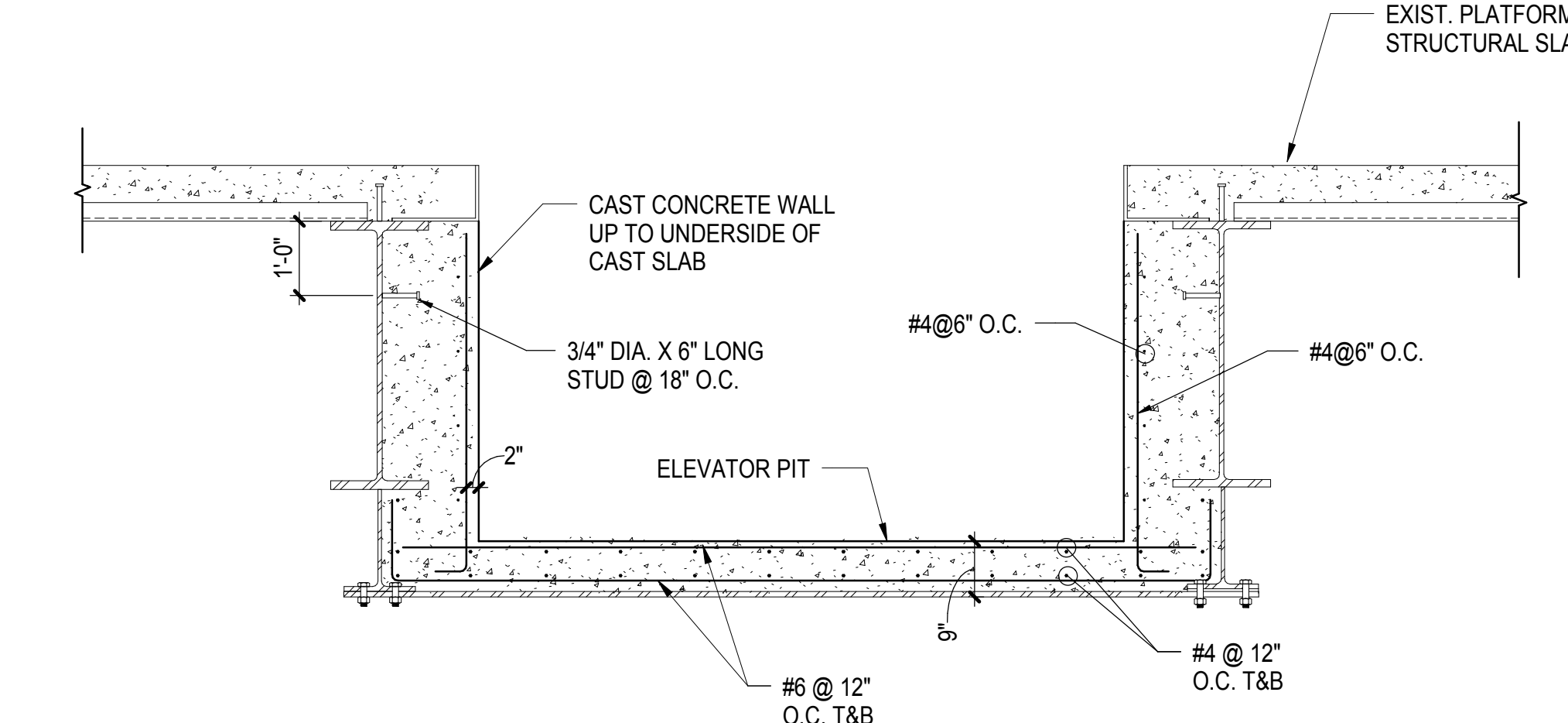
LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



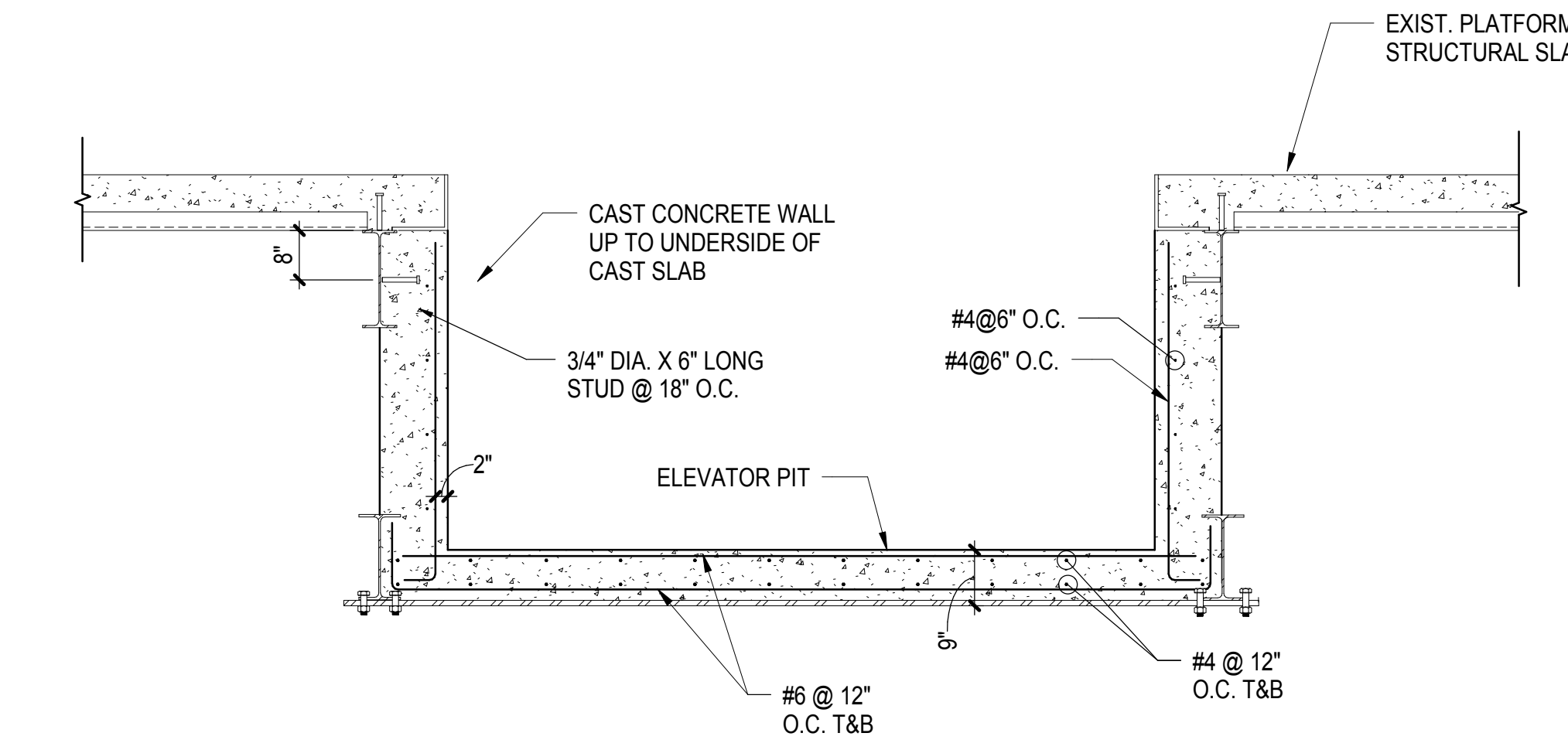
**1 ELEVATOR PIT D-2 PART PLAN**  
1/2" = 1'-0"



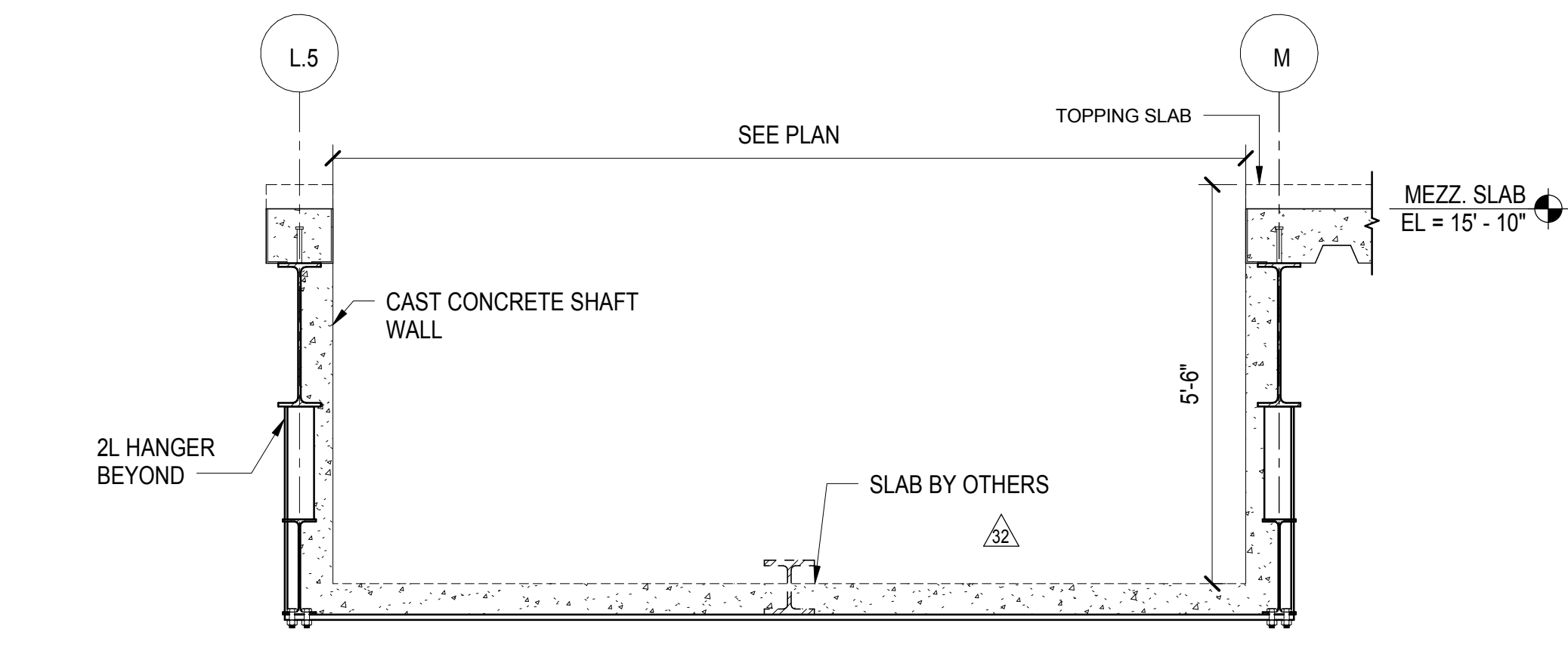
**2 TYPICAL ELEVATOR PIT DETAIL**  
1" = 1'-0"



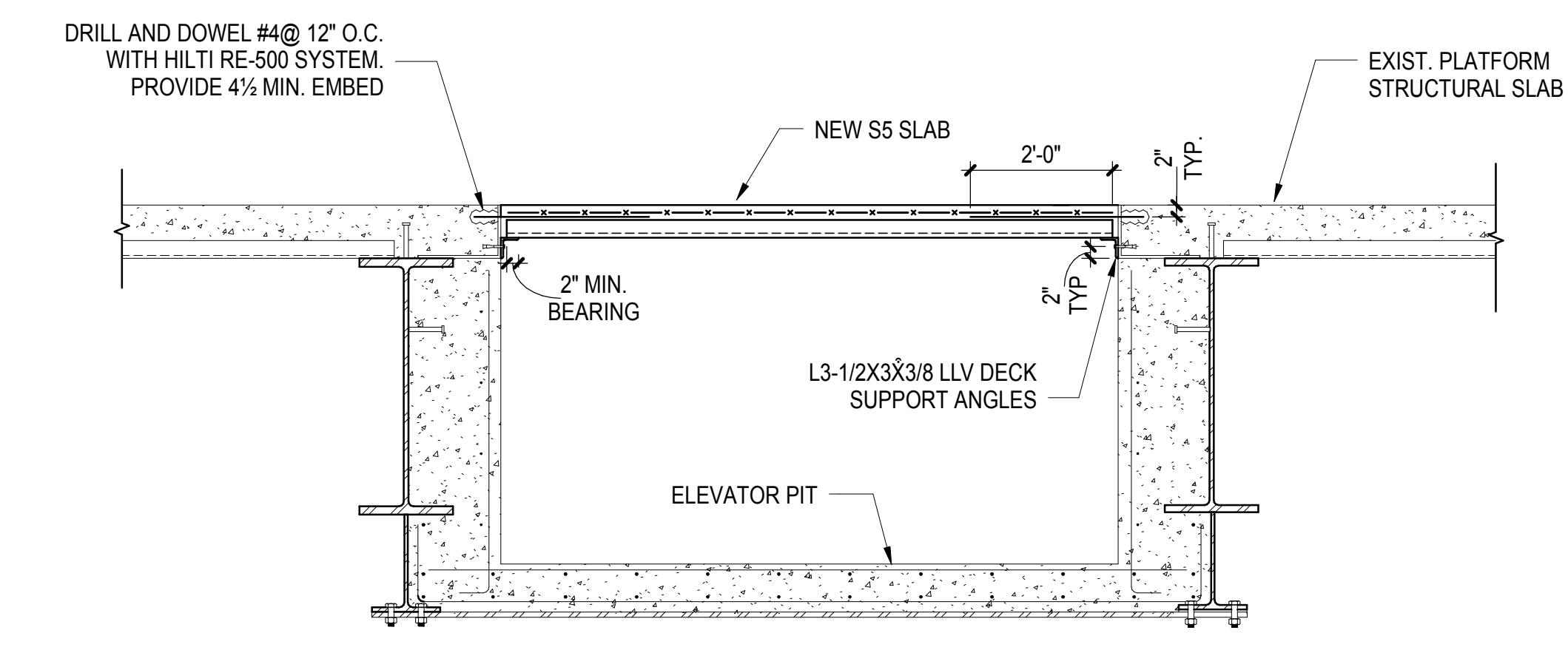
**3 TYPICAL ELEVATOR PIT DETAIL AT POURED PLATFORM SLAB**  
1/2" = 1'-0"



**5 TYPICAL ELEVATOR PIT DETAIL AT POURED PLATFORM SLAB II**  
1/2" = 1'-0"



**4 SECTION AT ELEVATOR PIT D-2**  
1/2" = 1'-0"



**6 SLAB OVER AT ABANDONED ELEVATOR PIT**  
1/2" = 1'-0"

DESCRIPTION	DATE
DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH00056	12/19/2014
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0008	2/28/2014
ASH0005	2/18/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	11/22/2013
Mod - PLATFORM SUBMISSION	
DL02 PHASE I STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DL01 PHASE I STRUCTURE UPDATE	9/20/2013
LJRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
LJRR - 60% SUBMISSION	5/29/2013
LJRR - 60% - PHASE I FDNS	3/29/2013
LJRR - 30% SUBMISSION	2/15/2013
Mod - Revision	08/

Key Plan

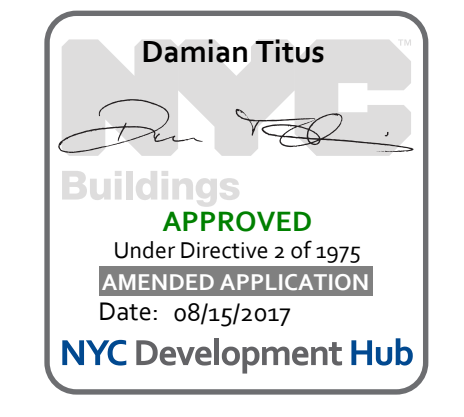
Date: 08/09/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE -PL -S-650.01**

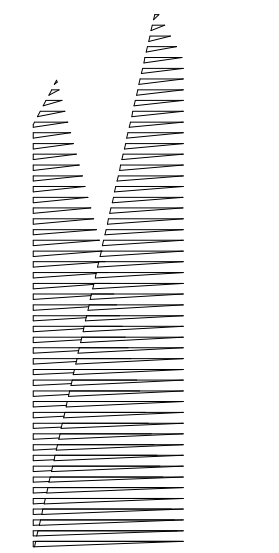
**ELEVATOR PIT  
SECTIONS & DETAILS**

Drawing Number / Revision Drawing Number  
**S-650.01**

**SHEET 133 of 163**



APPROVED  
Under Directive 3 of 1975  
Professional Regulation  
Date: 08/15/2017  
NYC Development Hub



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Fire Alarm, Fire Protection, Security  
Personnel, Transportation Group  
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LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0009	10/14/2014
ASH0013	3/20/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	11/22/2013
M&E - PLATFORM SUBMISSION	
DE42 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DE41 PHASE 1 STRUCTURE UPDATE	9/20/2013
LJRR - 90% SUBMISSION	8/09/2013
NYC DOB FILING	08/09/2013

Key Plan

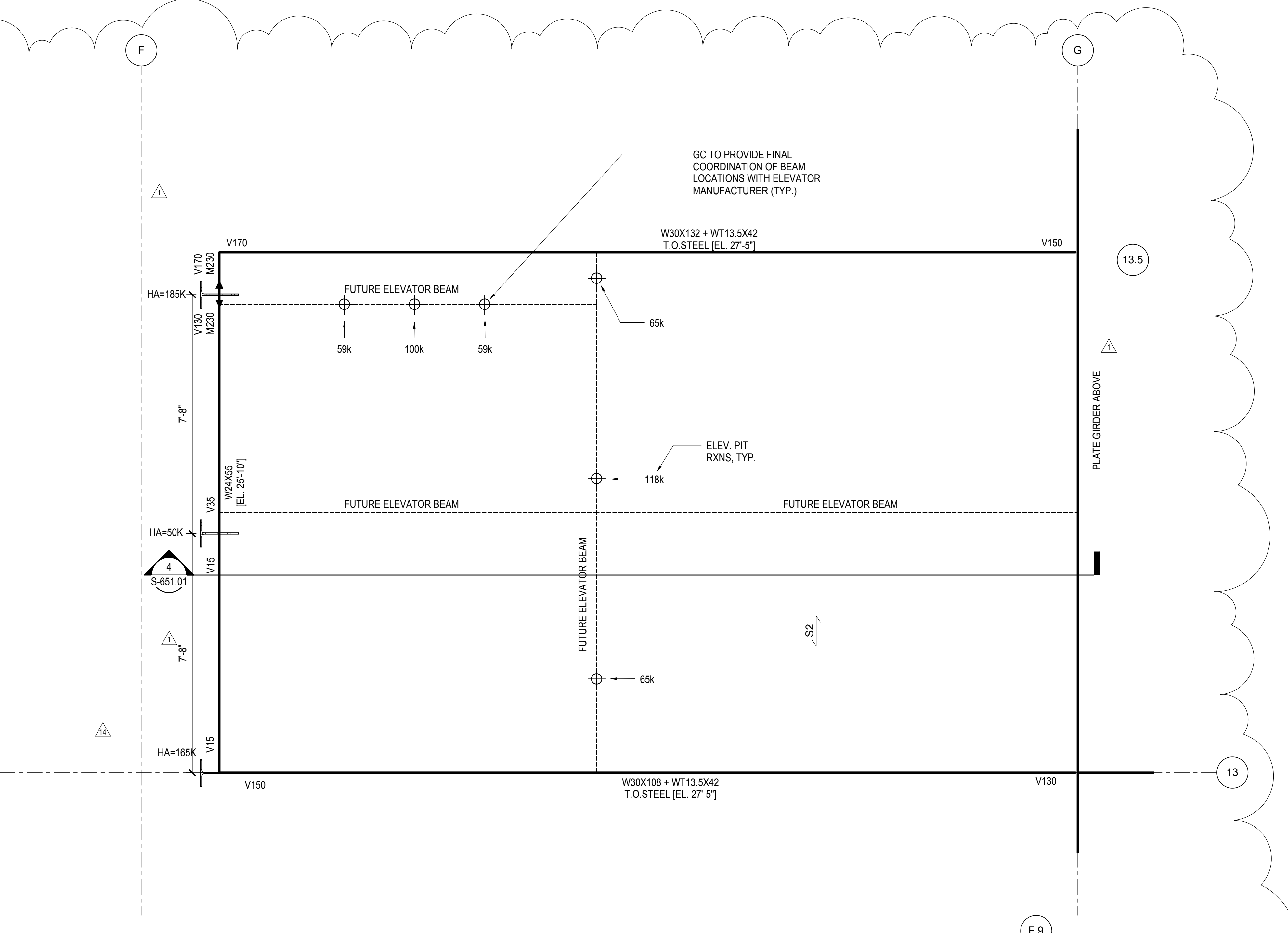
Date: 08/09/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE -PL -S-651.01**

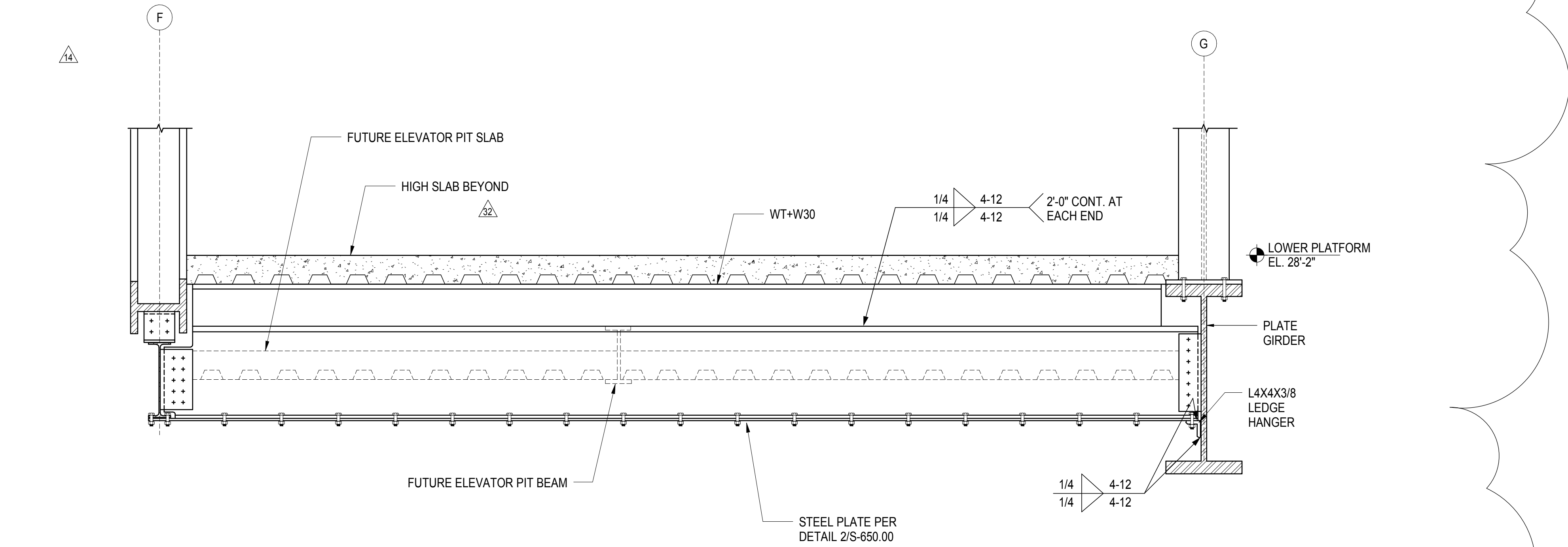
**ELEVATOR PIT SECTIONS & DETAILS**

Drawing Title

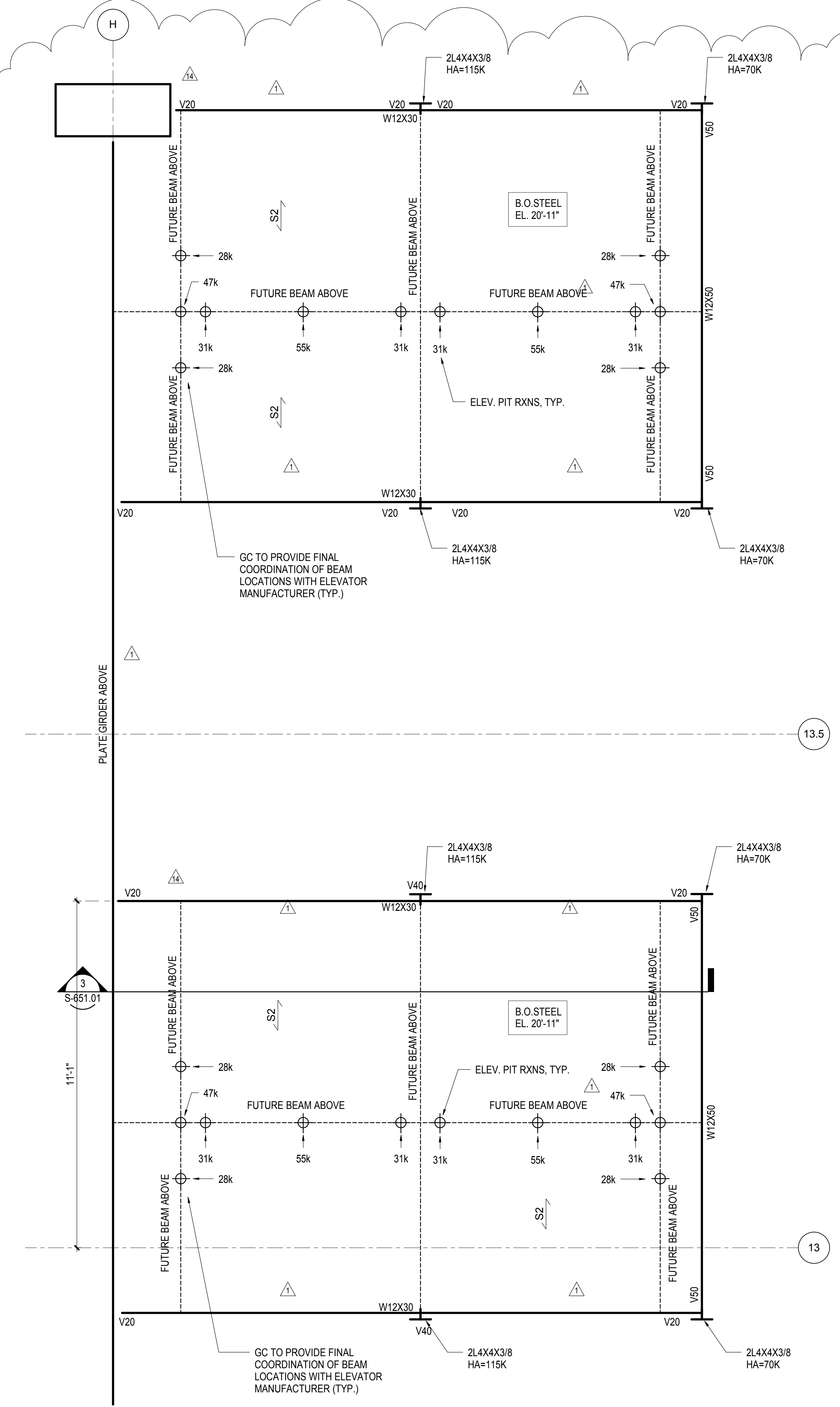
Under Directive 3 of 1975  
Date: 08/15/2017  
NYC Development Hub



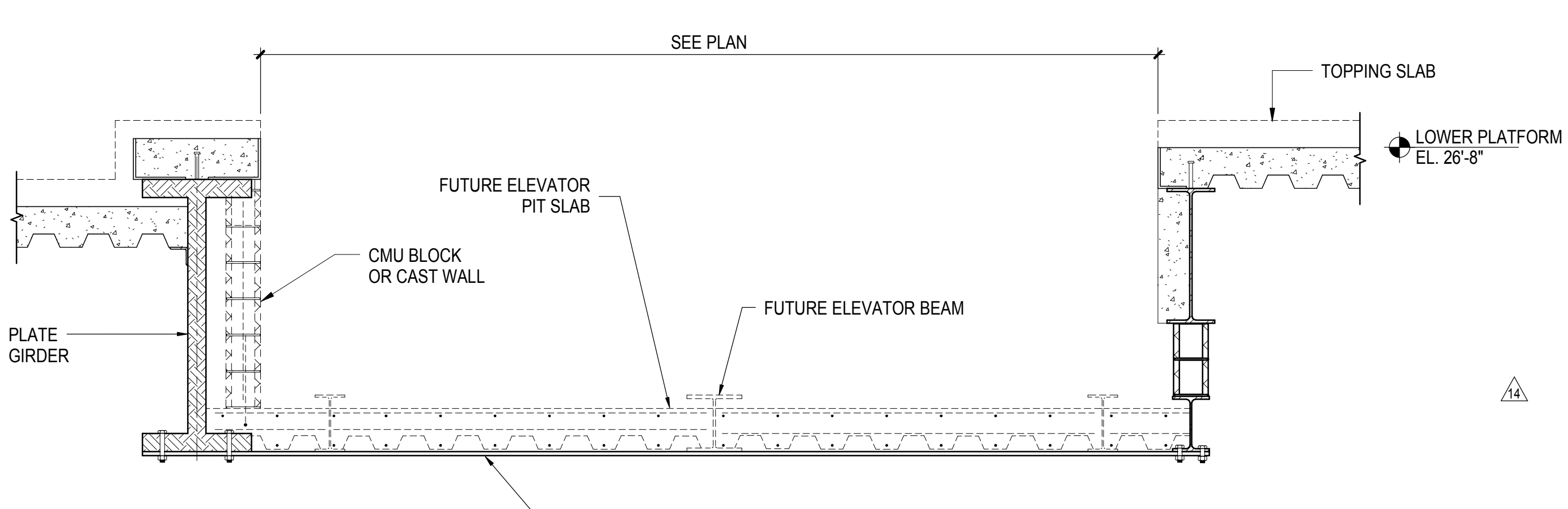
**2 FREIGHT ELEVATOR PIT PART PLAN**  
1/2" = 1'-0"



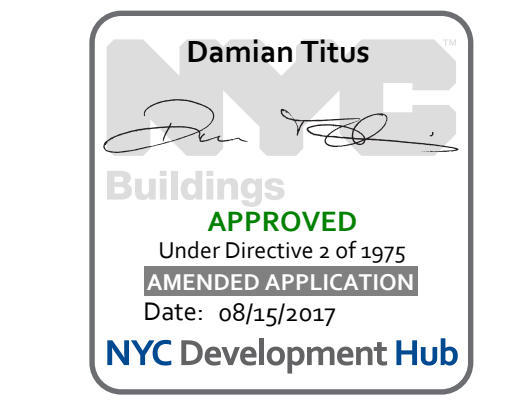
**4 SECTION AT FREIGHT ELEVATOR**  
1/2" = 1'-0"

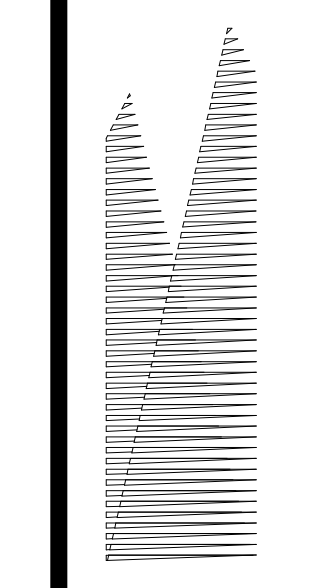


**1 ELEVATOR PIT S-1 PART PLAN**  
1/2" = 1'-0"



**3 SECTION AT ELEVATOR S-1**  
1/2" = 1'-0"





*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Oxford Properties Group*  
320 Park Avenue, 17th Floor  
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Tel: 212.896.3000

*LJRR Substation*  
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605 Third Avenue  
New York, NY 10158  
Tel: 212.973-9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0008	2/28/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
ASH0001	12/29/2013
L.I.R.R. - PRE-FINAL 100%	11/23/2013
Mod - PLATFORM SUBMISSION	
DE-2 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DE-1 PHASE 1 STRUCTURE UPDATE	9/20/2013
LJRR - 90% SUBMISSION	8/09/2013
Mod - Description	08/

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0008	2/28/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
ASH0001	12/29/2013
L.I.R.R. - PRE-FINAL 100%	11/23/2013
Mod - PLATFORM SUBMISSION	
DE-2 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DE-1 PHASE 1 STRUCTURE UPDATE	9/20/2013
LJRR - 90% SUBMISSION	8/09/2013
Mod - Description	08/

Exp. Plan

Date: 08/09/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: HYE-PL-S-652.01

**HYE-PL-S-652.01**

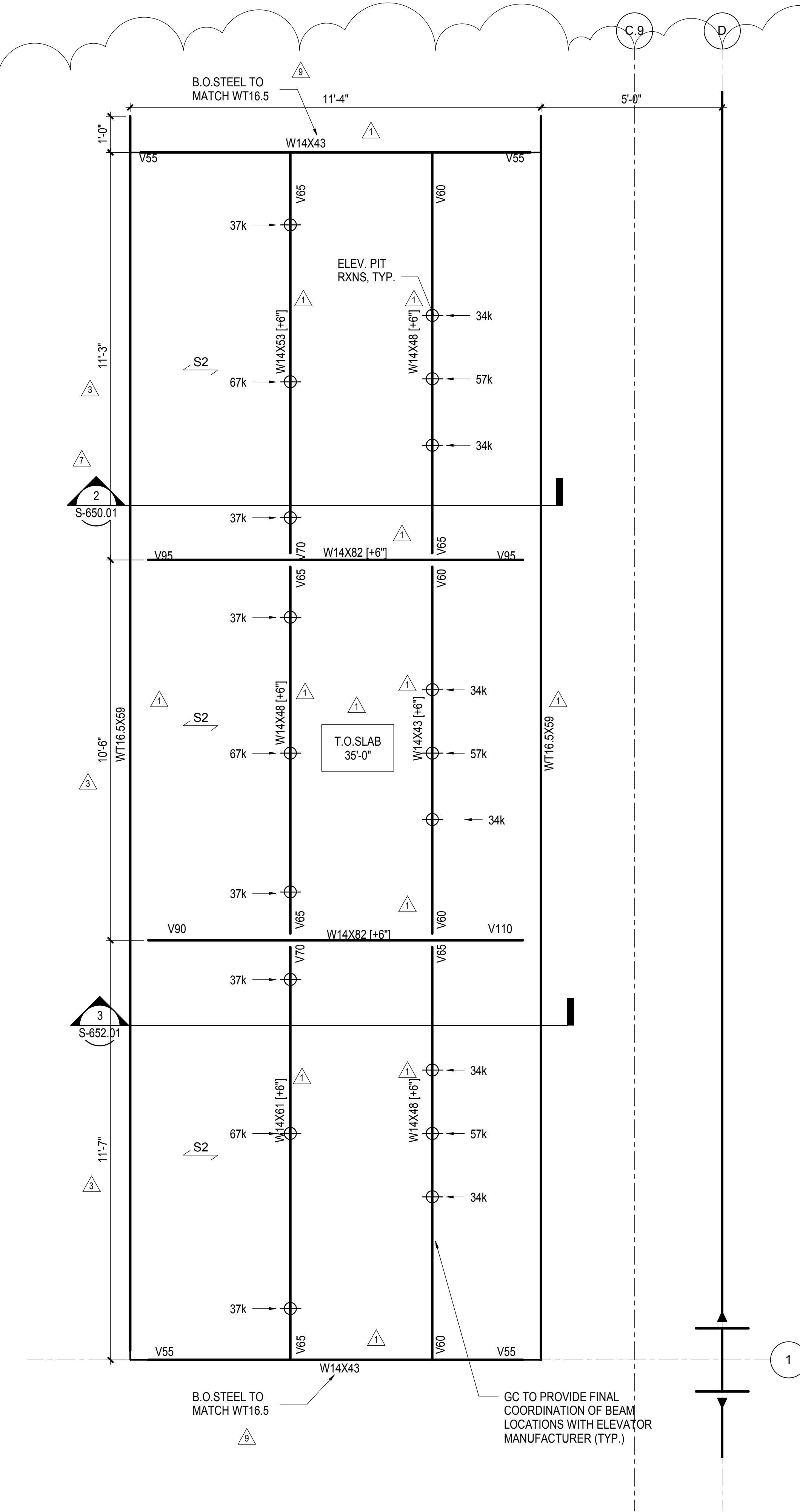
**ELEVATOR PIT SECTIONS & DETAILS**

Drawing Title

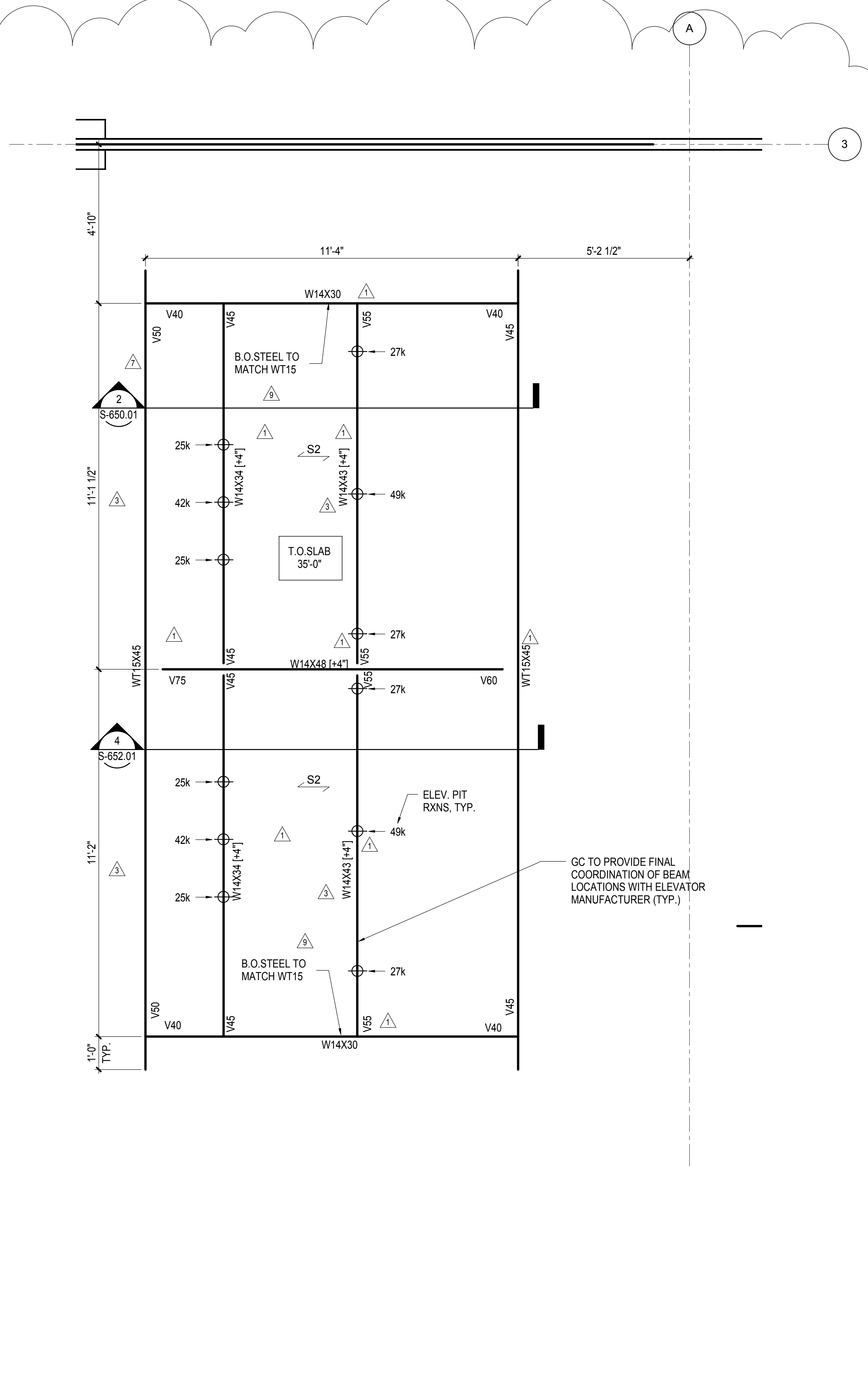
Under Directive 1 of 1975  
APPROVED  
Date: 08/15/2017  
NYC Development Hub

Drawing Number / Revision Drawing Number  
**S-652.01**

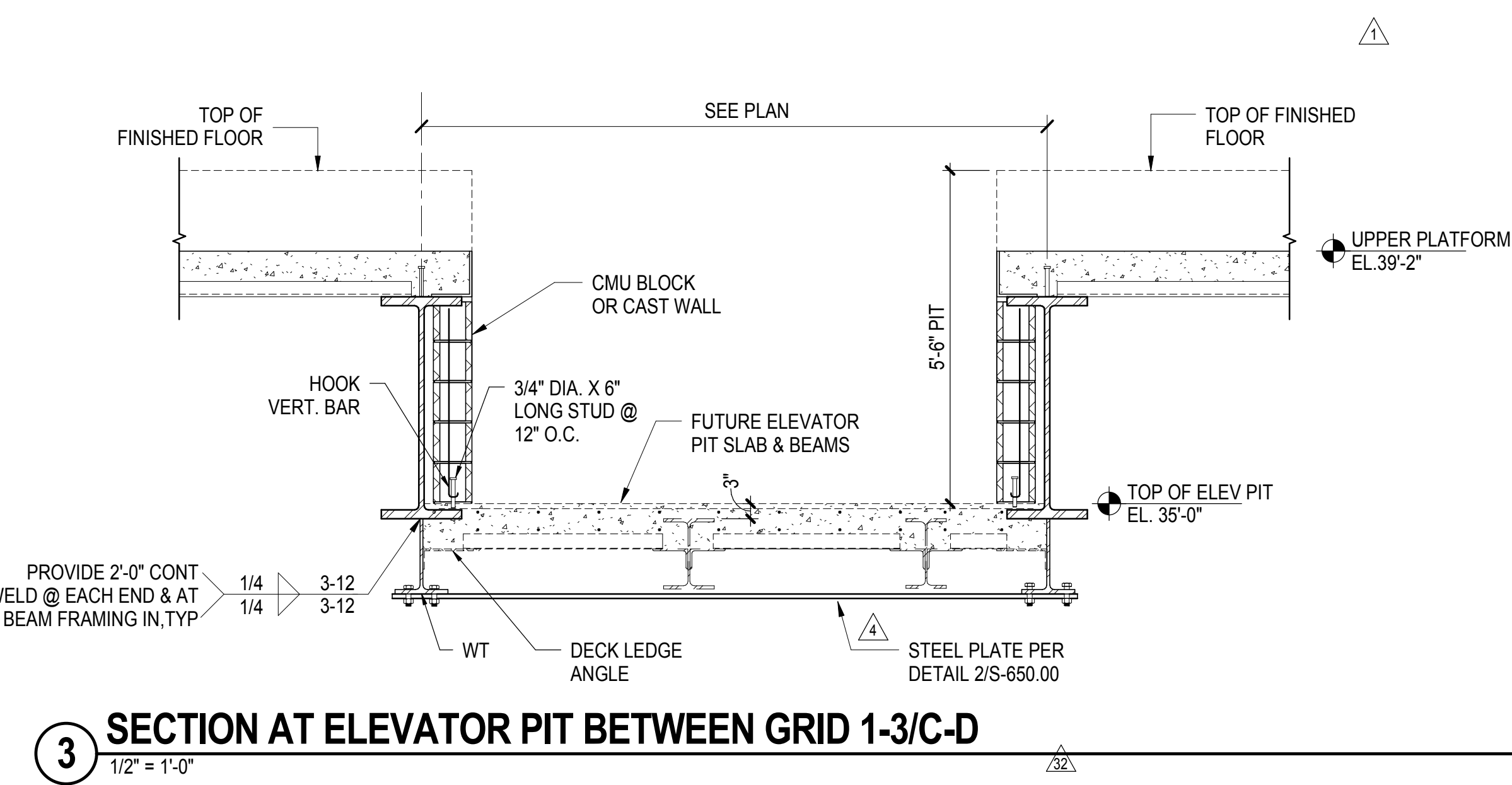
SHEET 135 OF 163



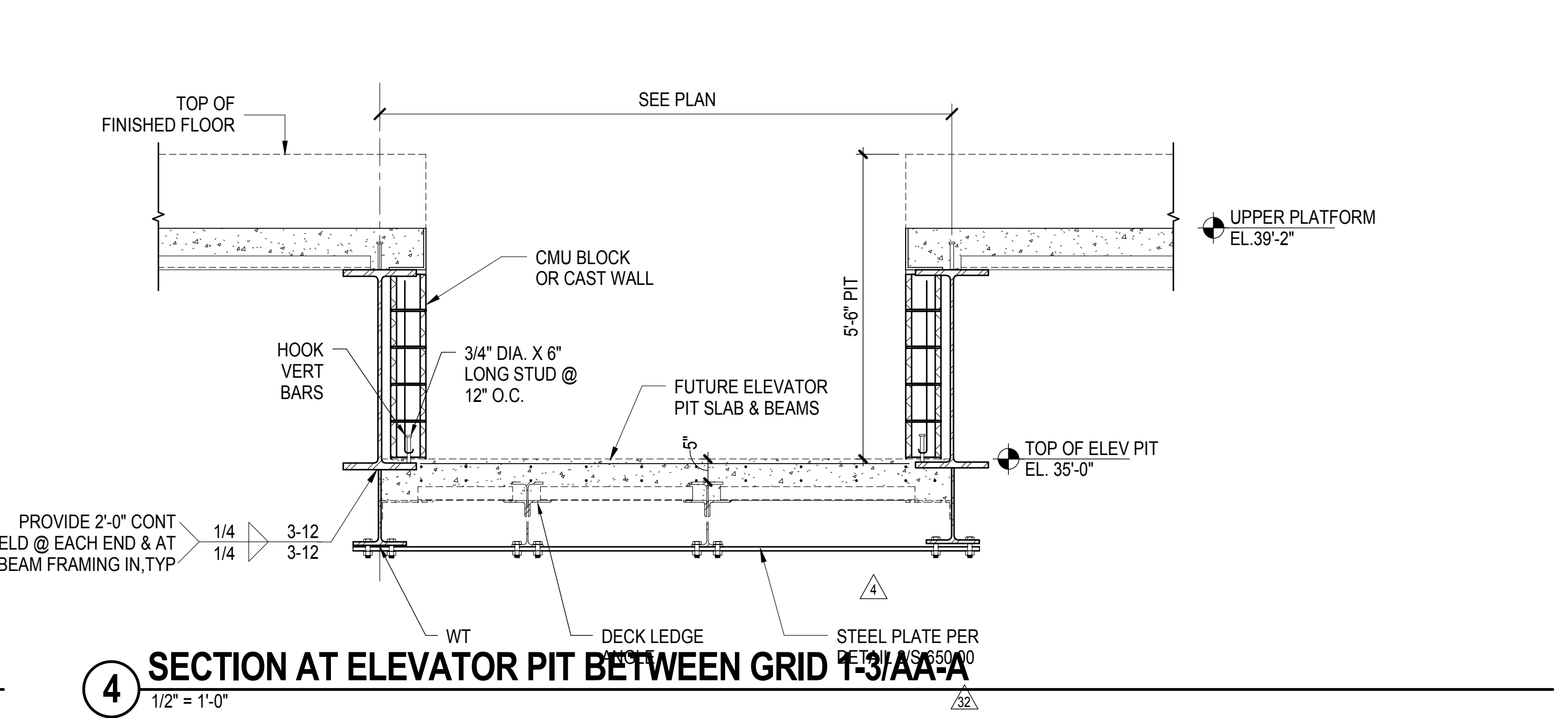
**1 ELEVATOR PIT BETWEEN GRID 1-3/C-D**  
1/2" = 1'-0"



**2 ELEVATOR PIT BETWEEN GRID 1-3/AA-A**  
1/2" = 1'-0"

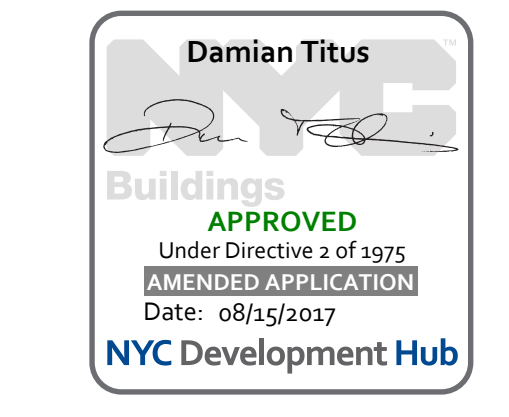


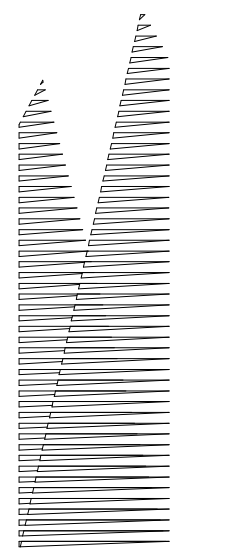
**3 SECTION AT ELEVATOR PIT BETWEEN GRID 1-3/C-D**  
1/2" = 1'-0"



**4 SECTION AT ELEVATOR PIT BETWEEN GRID 1-3/AA-A**  
1/2" = 1'-0"

ELEVATOR PIT SECTIONS & DETAILS  
S-652.01  
10/17/2016 9:49:40 AM  
C:\sra\nt\1330.00 - East Platform - Central\_ghans.nt





*Client*  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH009	10/14/2014
ASH0021	5/7/2014
ASH0013	3/20/2014
ASH0005	2/18/2014
ASH0003	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
MOE - PLATFORM SUBMISSION	
DI-02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DI-01 PHASE 1 STRUCTURAL UPDATE	9/29/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% PHASE 1 FDS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
NYC DOB FILING	1/15/2013

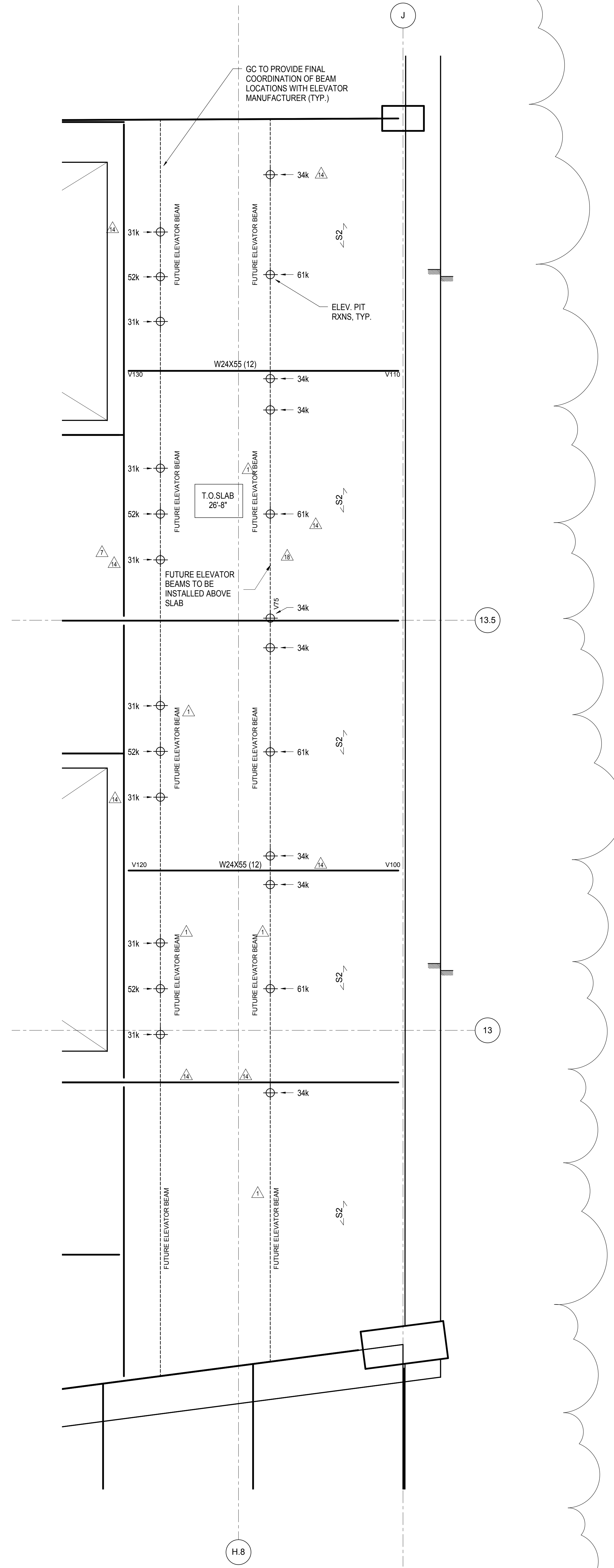
Key Plan

Date: 08/09/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

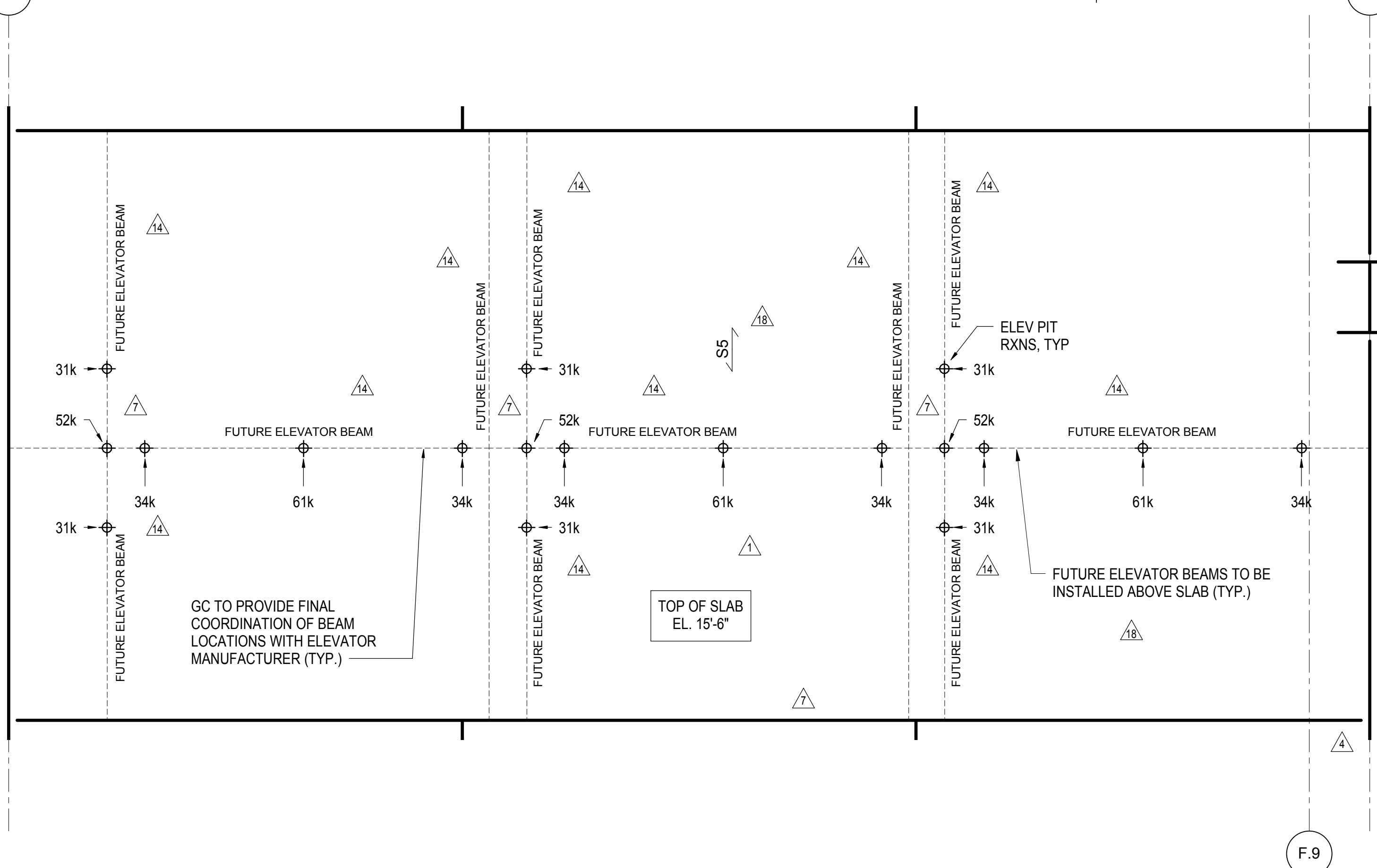
**HYE-PL-S-653.01**

**ELEVATOR PIT SECTIONS & DETAILS**

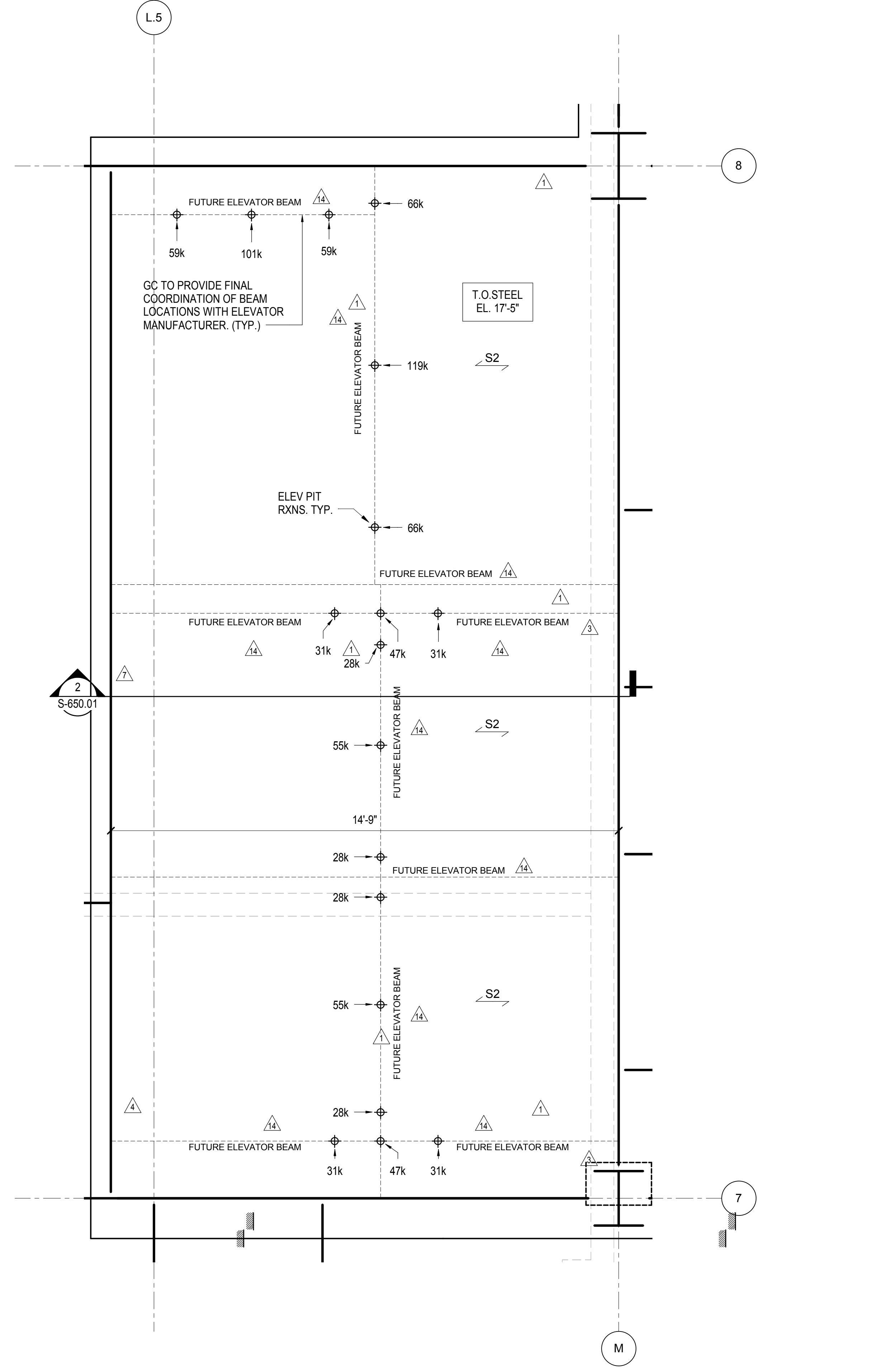
Drawing Number / A-SEC-05 Drawing Number  
**S-653.01**



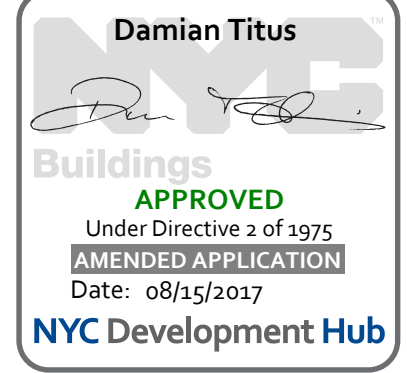
**3 ELEVATOR PIT PE-1 PART PLAN**  
1/2" = 1'-0"

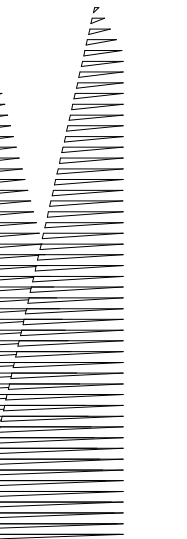


**1 ELEVATOR PIT S-3 PART PLAN**  
1/2" = 1'-0"



**2 ELEVATOR PIT S-2 PART PLAN**  
1/2" = 1'-0"





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
230 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
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Civil, Mechanical, Electrical, Plumbing  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0004	5/7/2014
ASH0021	5/7/2014
ASH0013	3/20/2014
ASH0001	1/20/2014

Key Plan

Date: 01/10/14  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

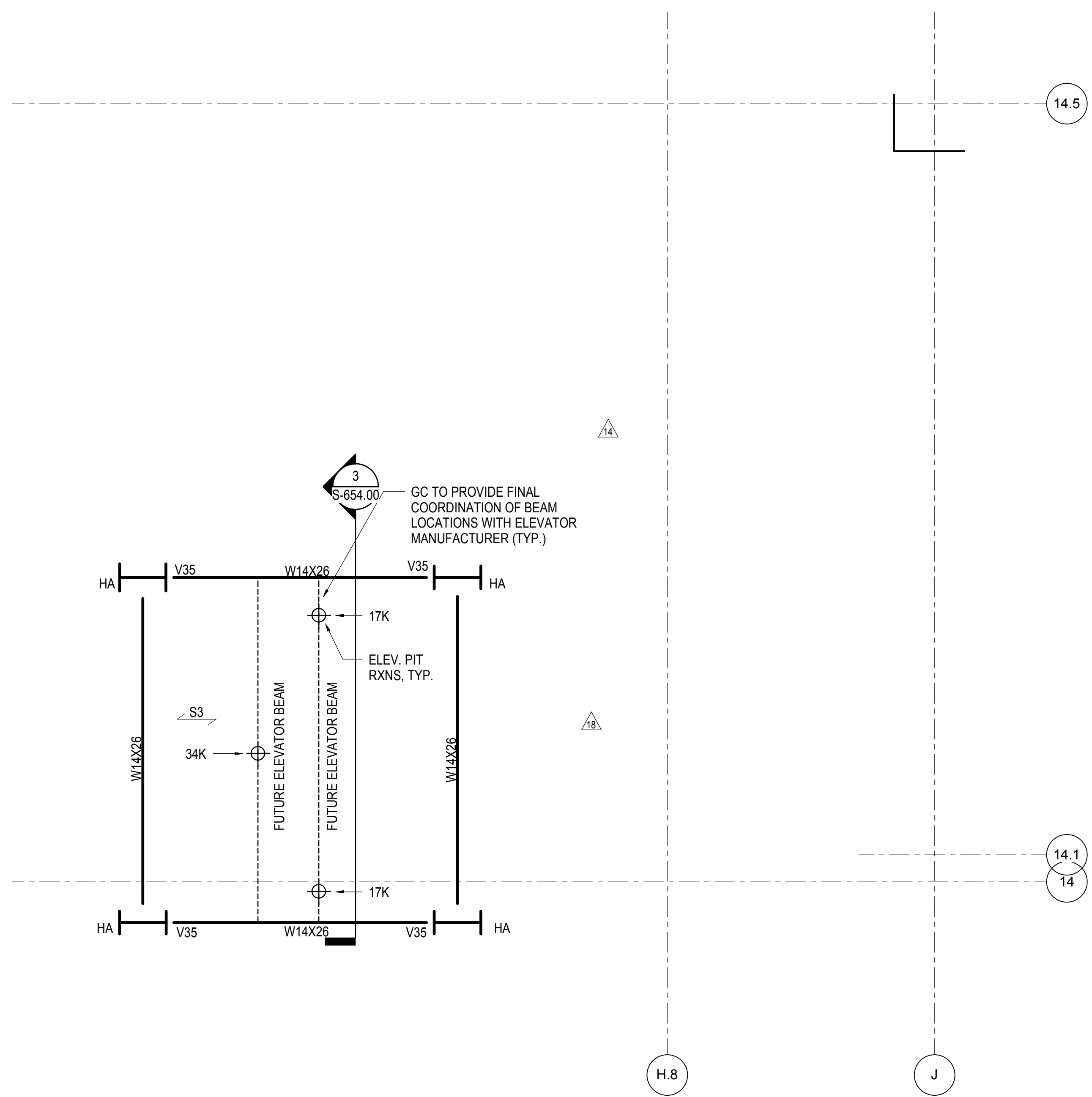
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**ELEVATOR PIT SECTIONS & DETAILS**

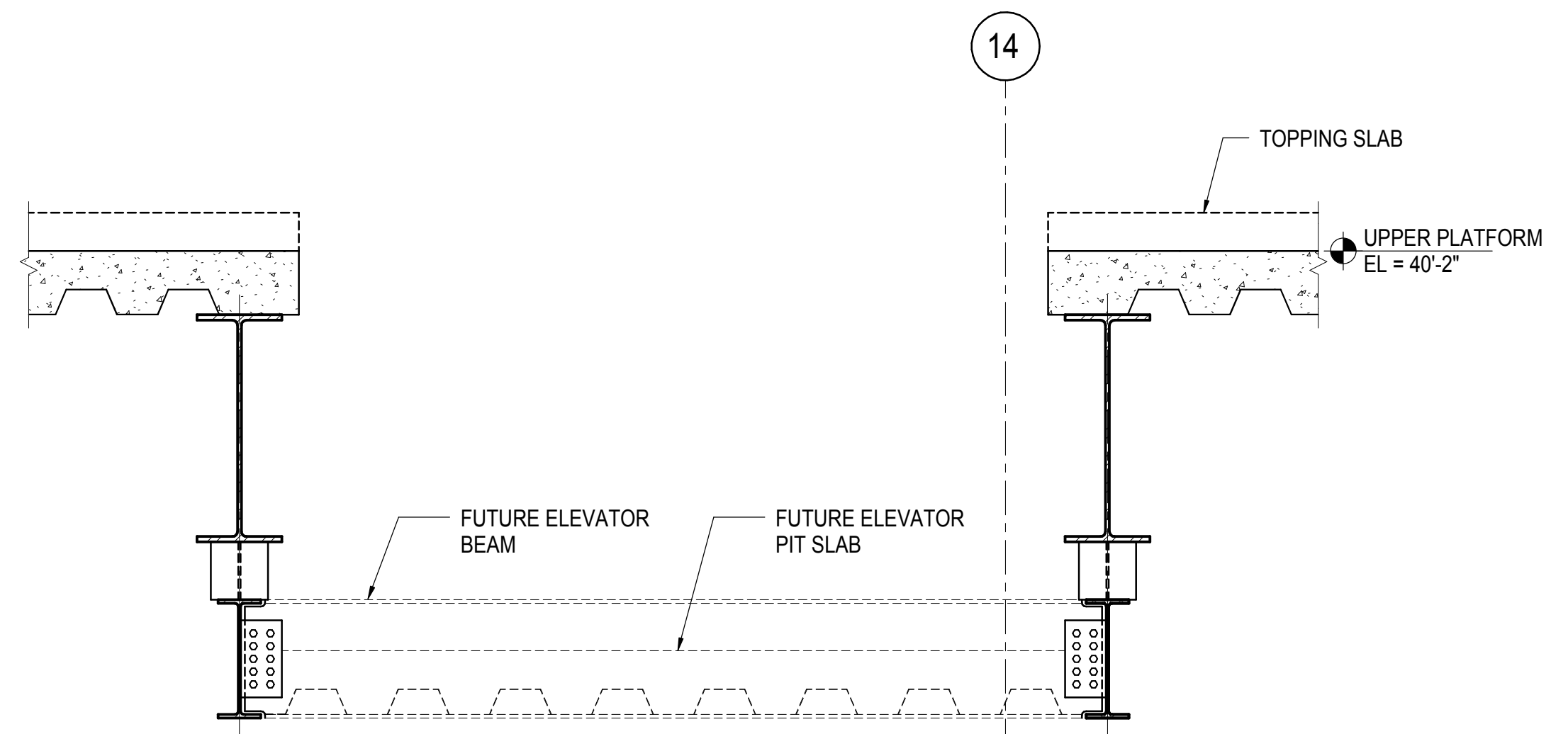
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**S-654.00**

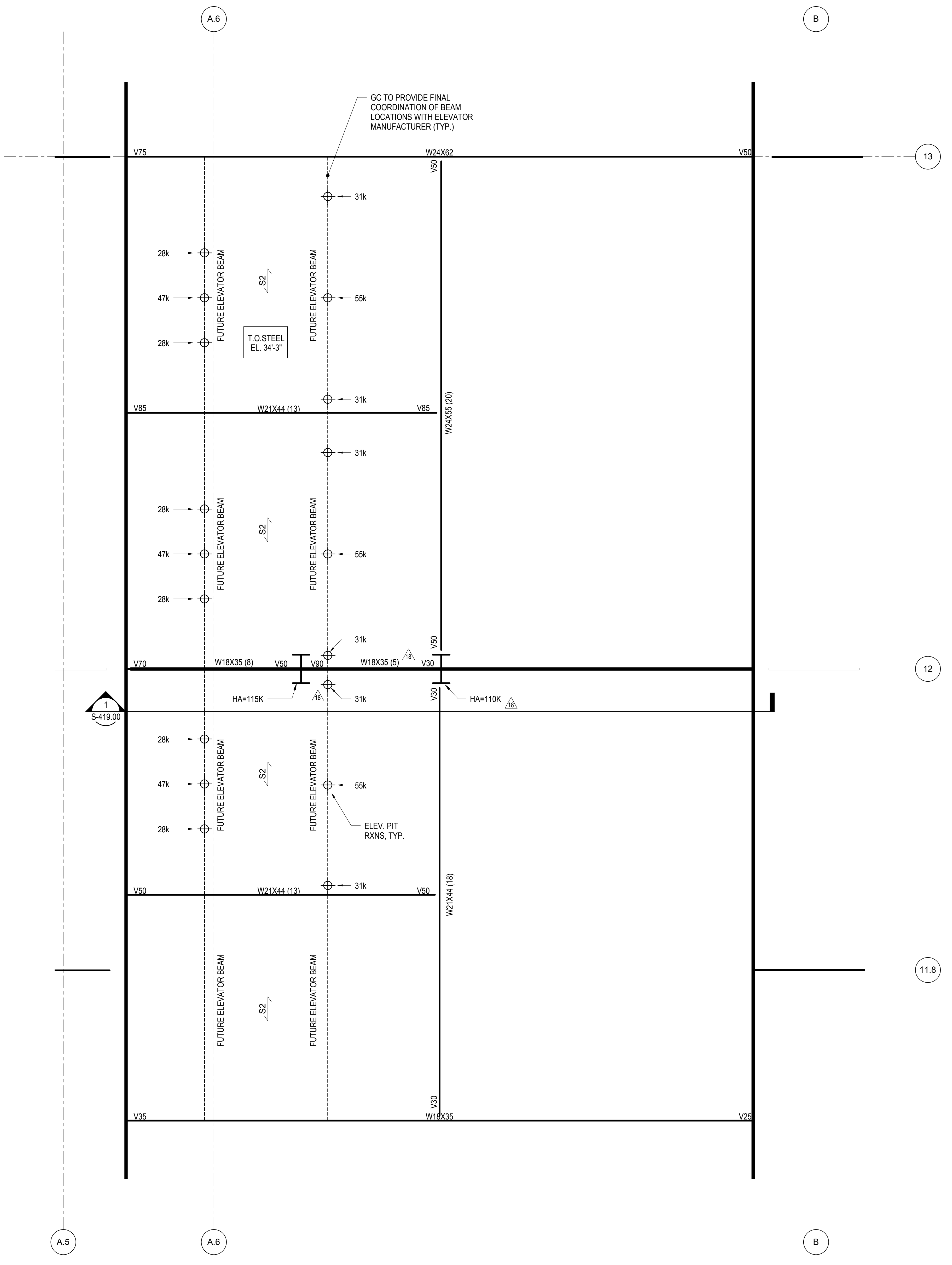
SHEET 137 of 163



**2 ELEVATOR PIT BETWEEN GRID 14-14.5/H-J**  
1/2" = 1'-0"

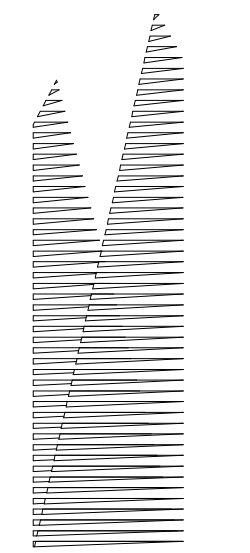


**3 SECTION AT ELEVATOR PIT BETWEEN GRID 14-14.5 / H-J**  
3/4" = 1'-0"



**1 ELEVATOR PIT BETWEEN GRID 11-13/A.5-B**  
1/2" = 1'-0"

S-654.00  
10/14/2016 5:08:25 PM  
C:\Users\N11330\OneDrive\Documents\Hudson Yards\Central\egenda.rvt



Client  
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60 Columbus Circle  
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Etc.: Transportation Group  
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LIRR Substation  
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DOB POST-APPROVAL AMENDMENT 10/28/2016  
ASH9077 5/13/2015  
Description: Other

Key Plan

Date: 03/09/2015  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

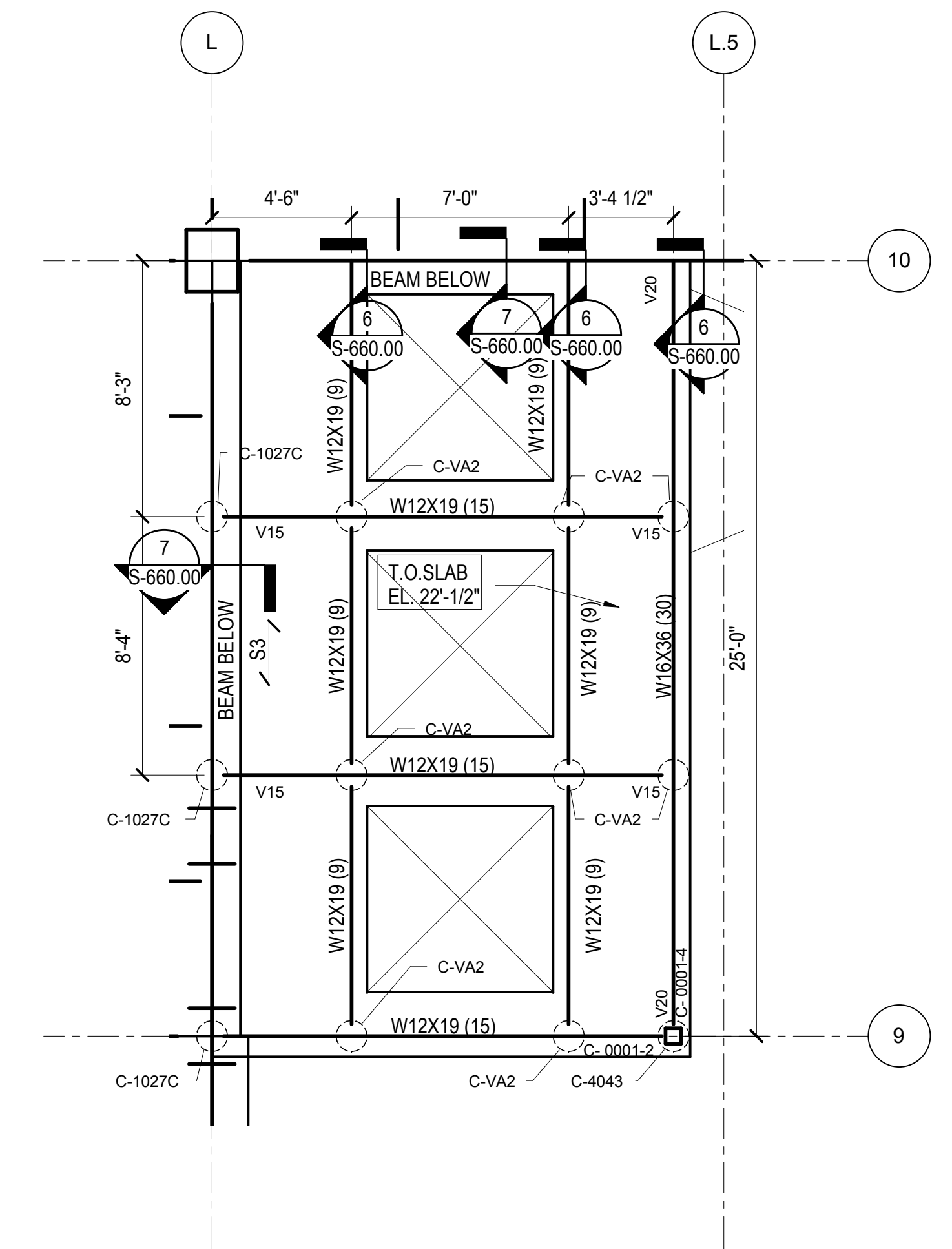
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SECTIONS AND DETAILS AT MEP

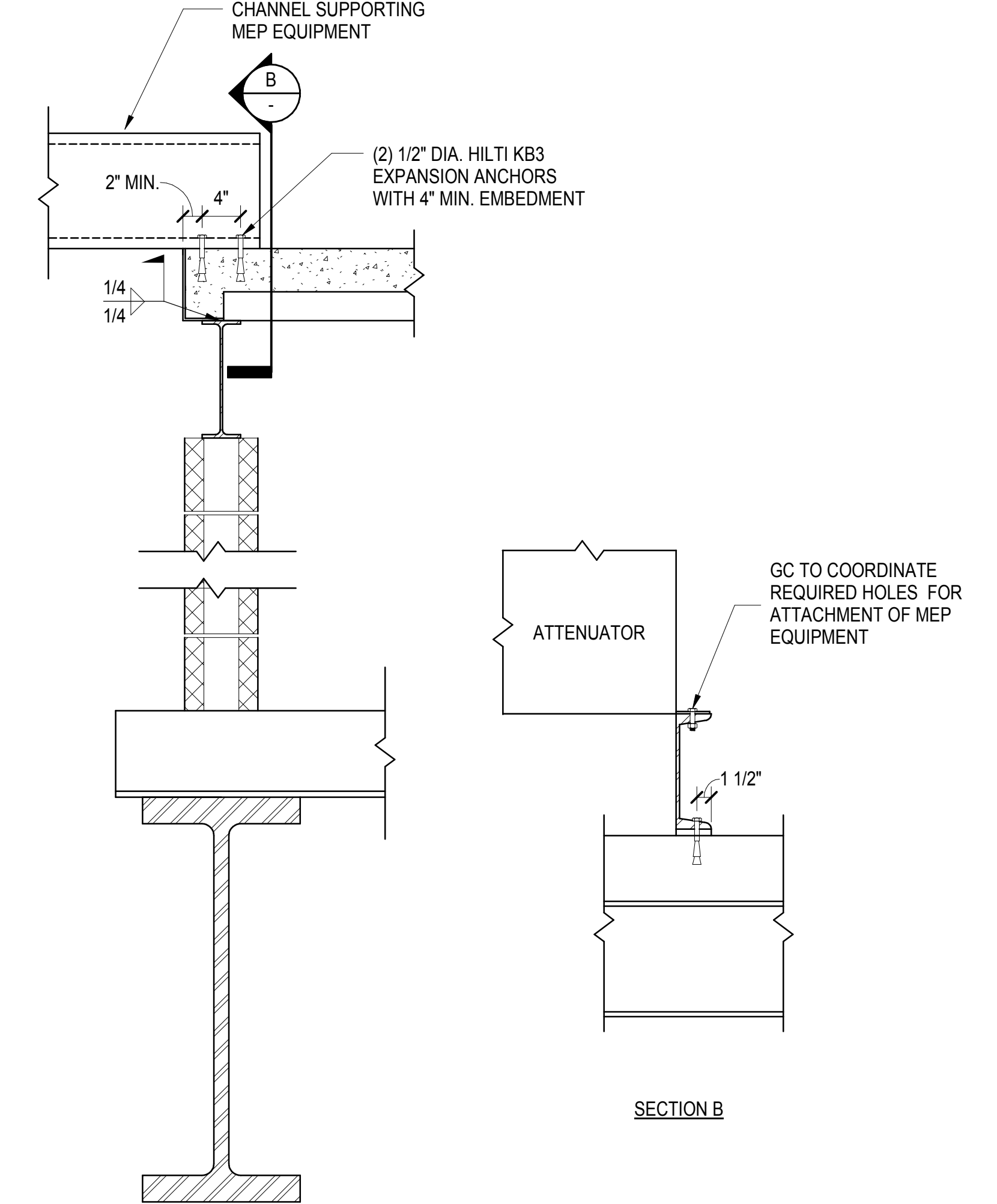
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Under Directive 3 of 1975  
APPROVED  
Date: 08/15/2017

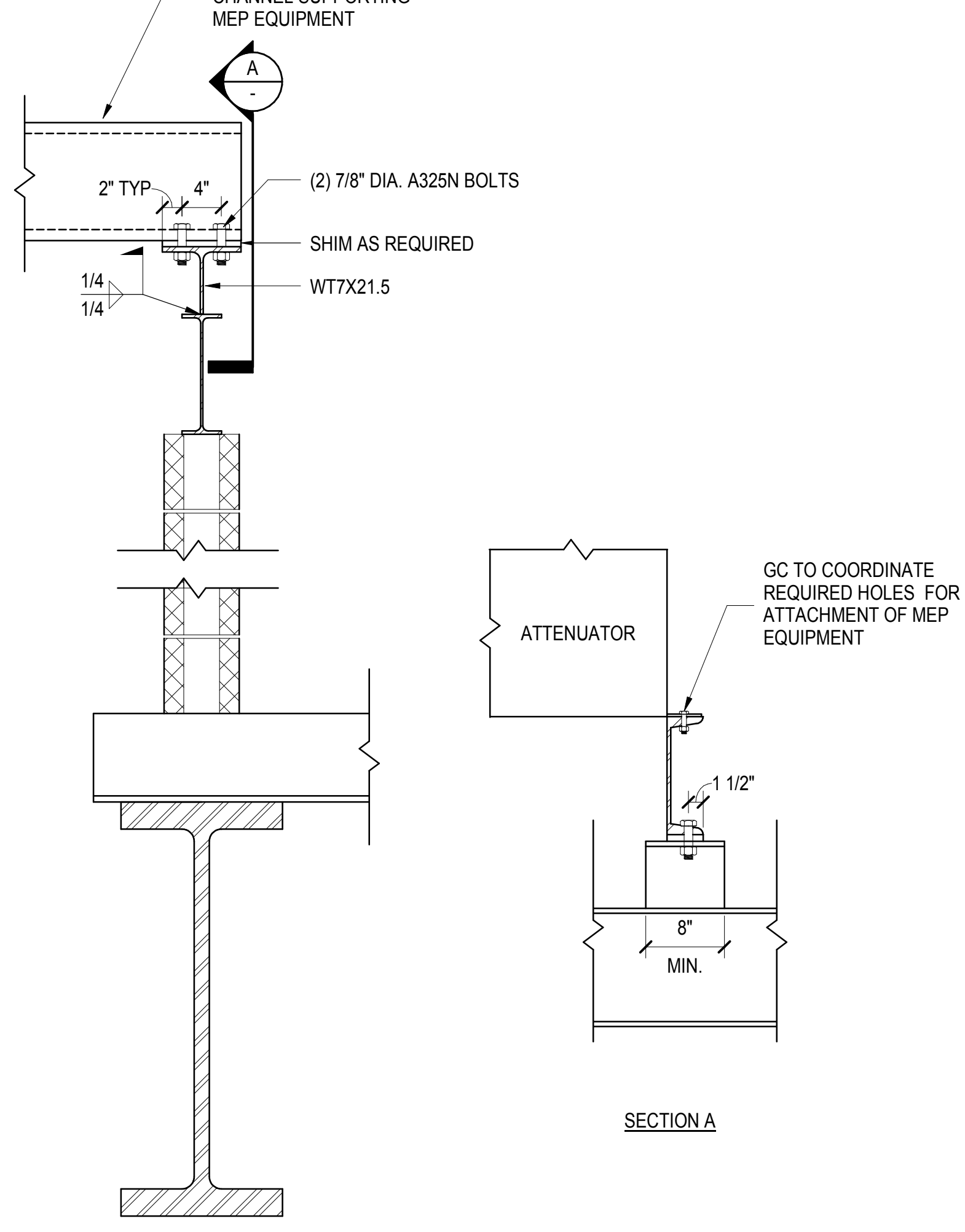
NYC Development Hub  
S-660.00  
SHEET 138 of 163



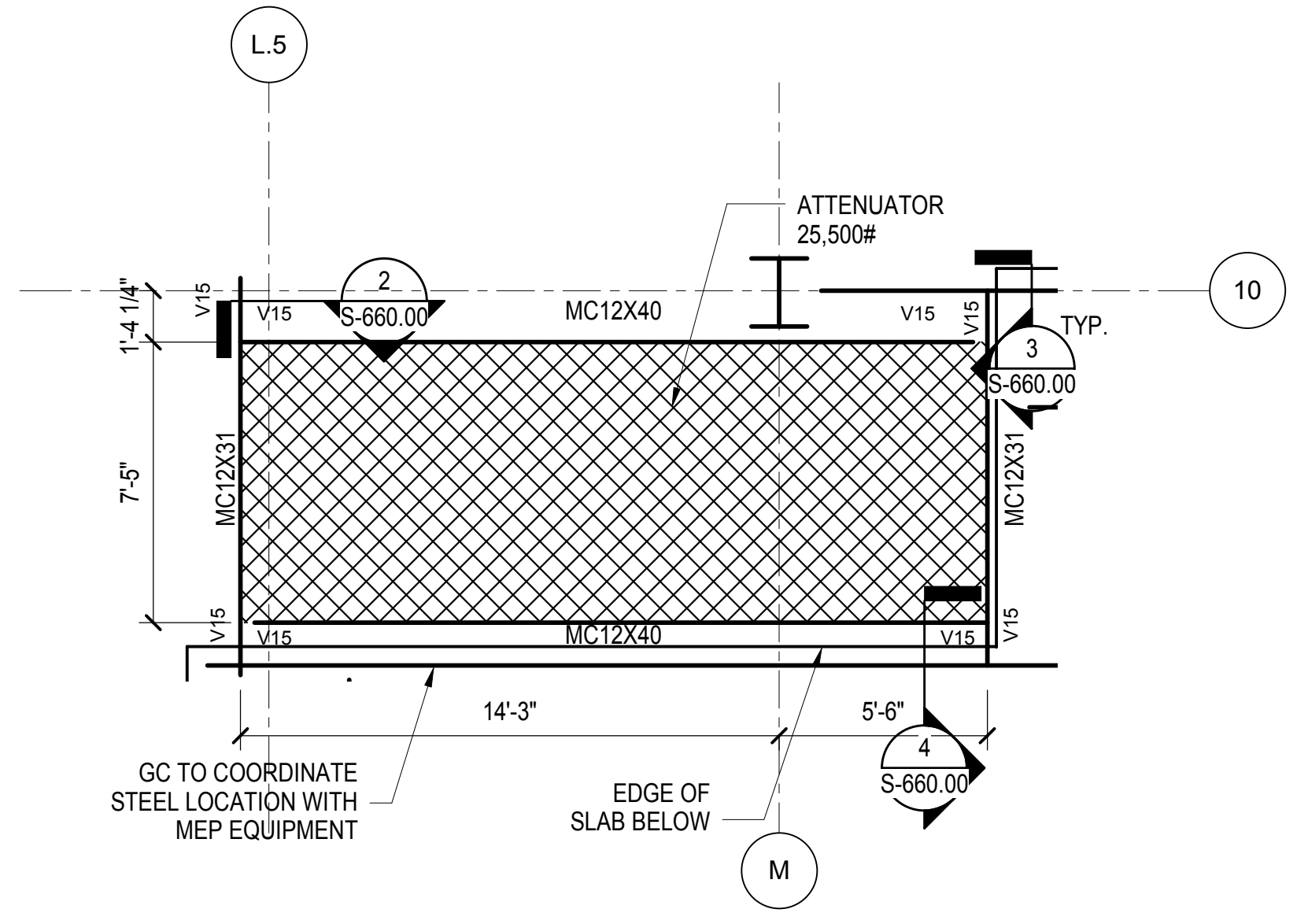
**5 PART PLAN AT LIRR VENT INTERMEDIATE SLAB**  
1/4" = 1'-0"



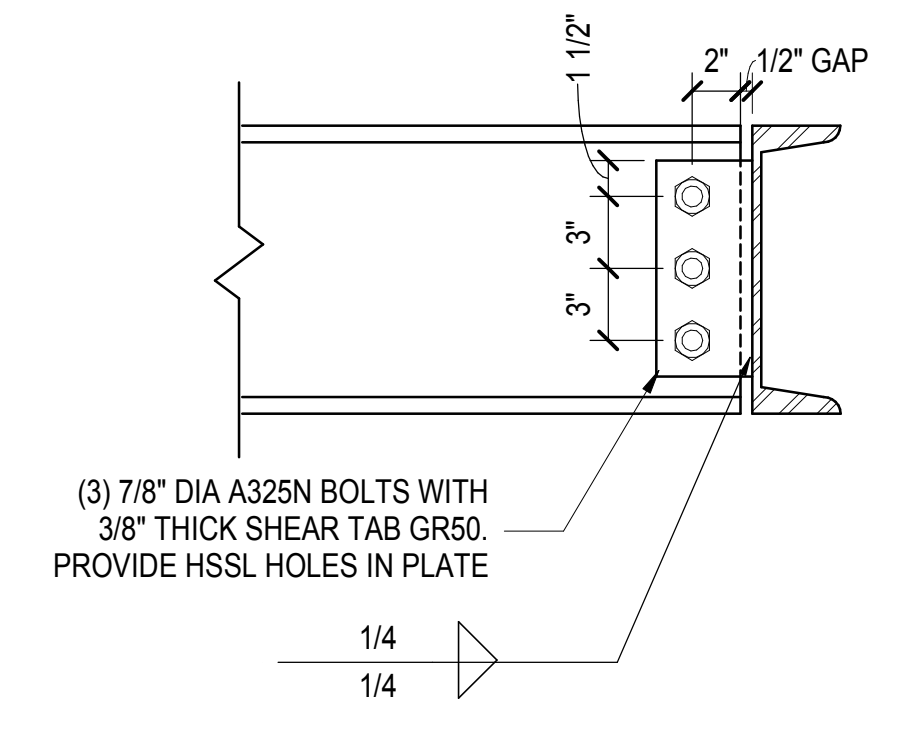
**4 SECTION AT SE FAN PLANT CONNECTION TO SLAB**  
1" = 1'-0"



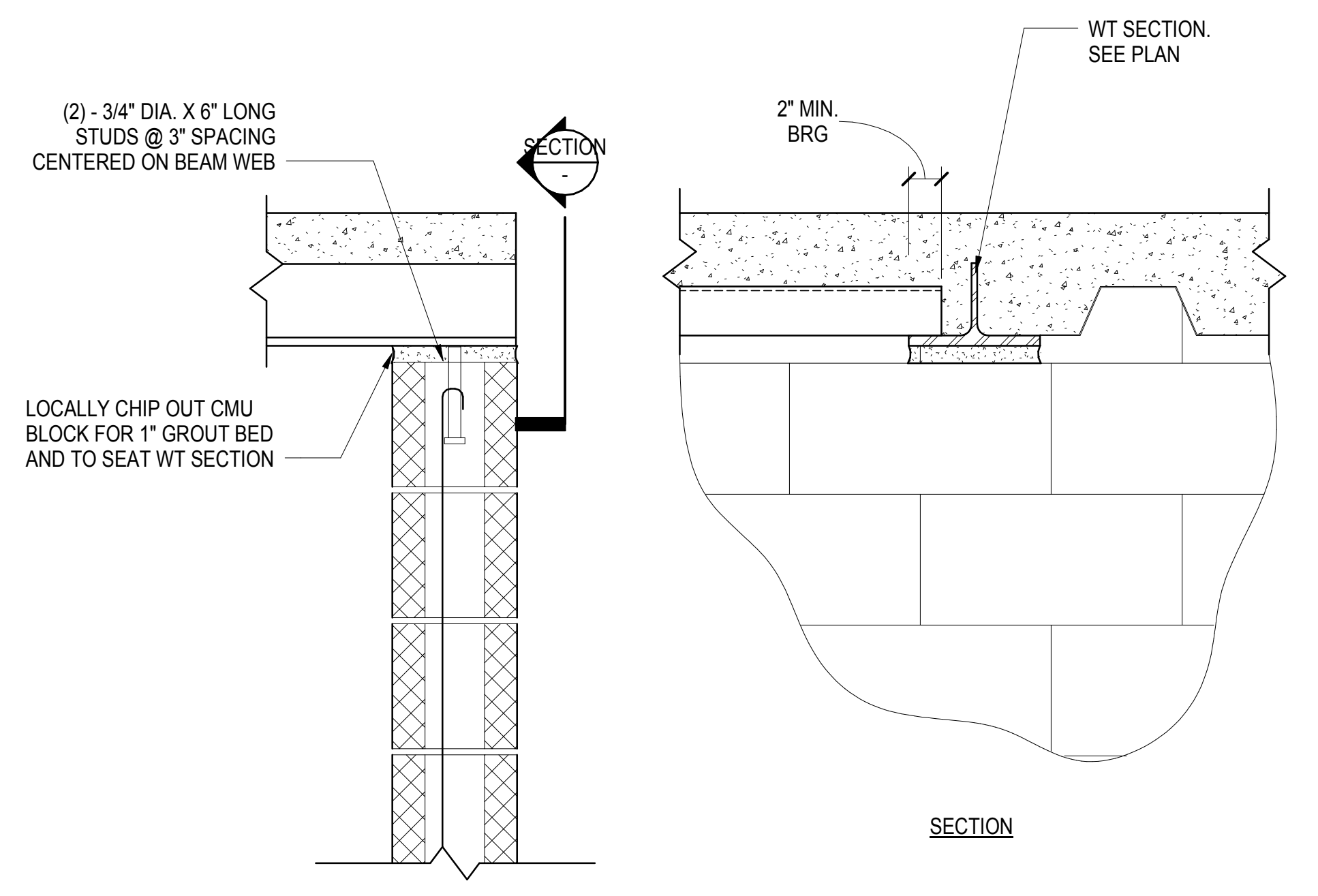
**3 SECTION AT SE FAN PLANT CONNECTION TO STEEL**  
1" = 1'-0"



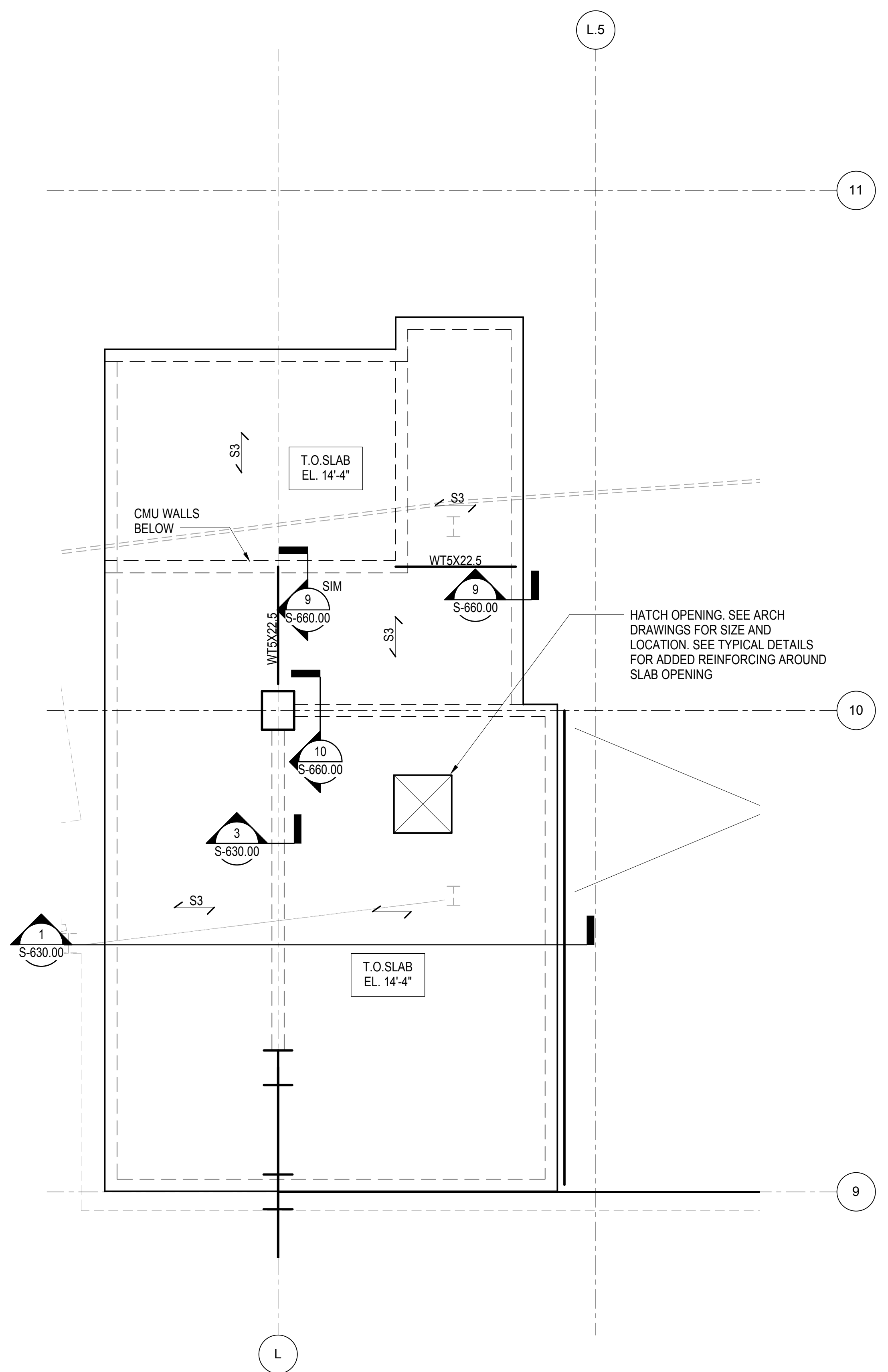
**1 PART PLAN AT SE FAN PLANT**  
1/4" = 1'-0"



**2 CHANNEL TO CHANNEL CONNECTION AT SE FAN PLANT**  
1 1/2" = 1'-0"

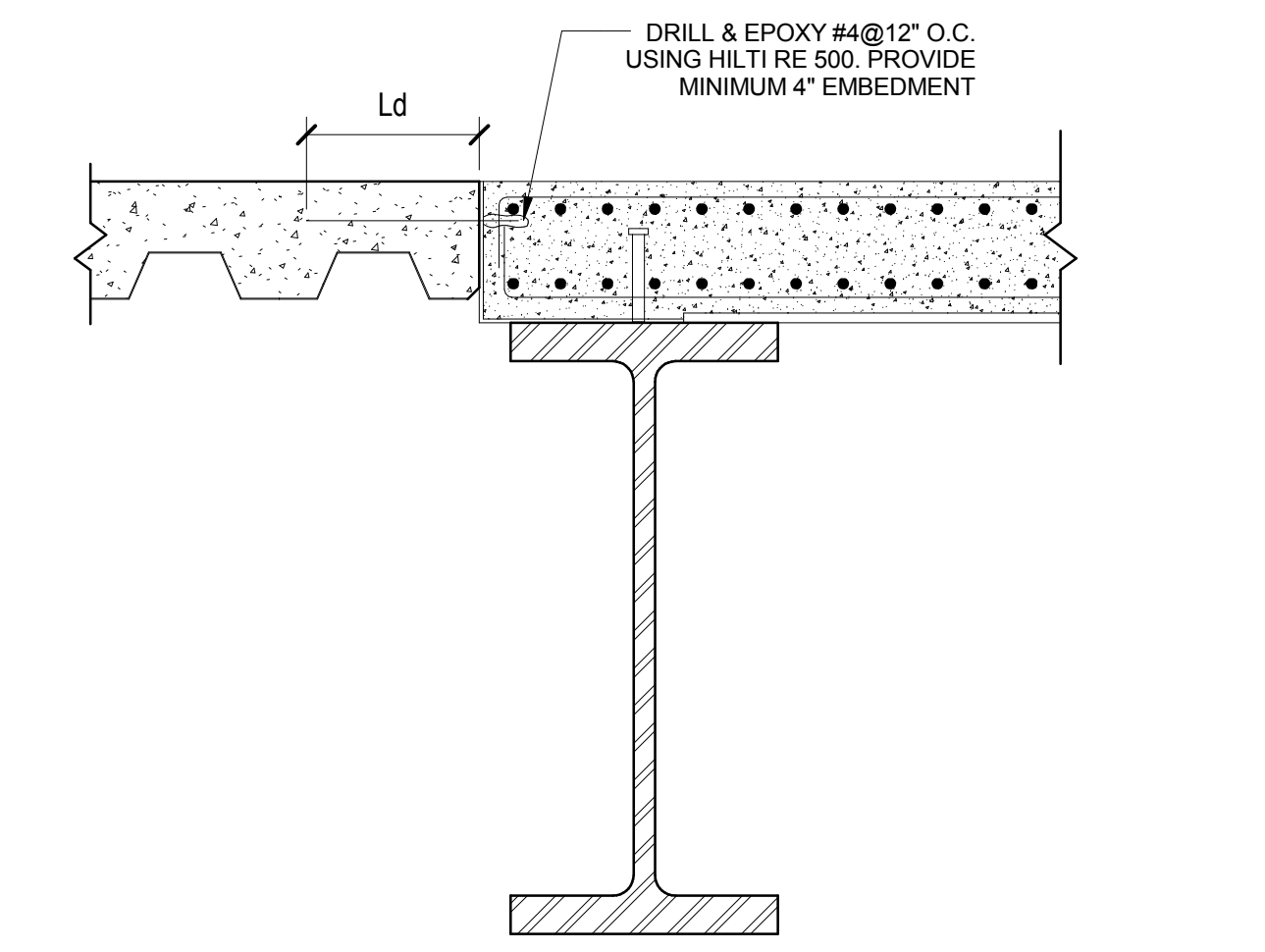


**9 SECTION AT LIRR VENT SLAB**  
1 1/2" = 1'-0"



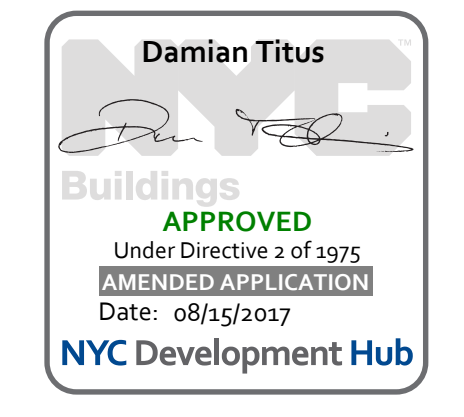
**8 PART PLAN AT LIRR VENT SLAB**  
1/4" = 1'-0"

**6 CONNECTION DETAIL**  
1" = 1'-0"

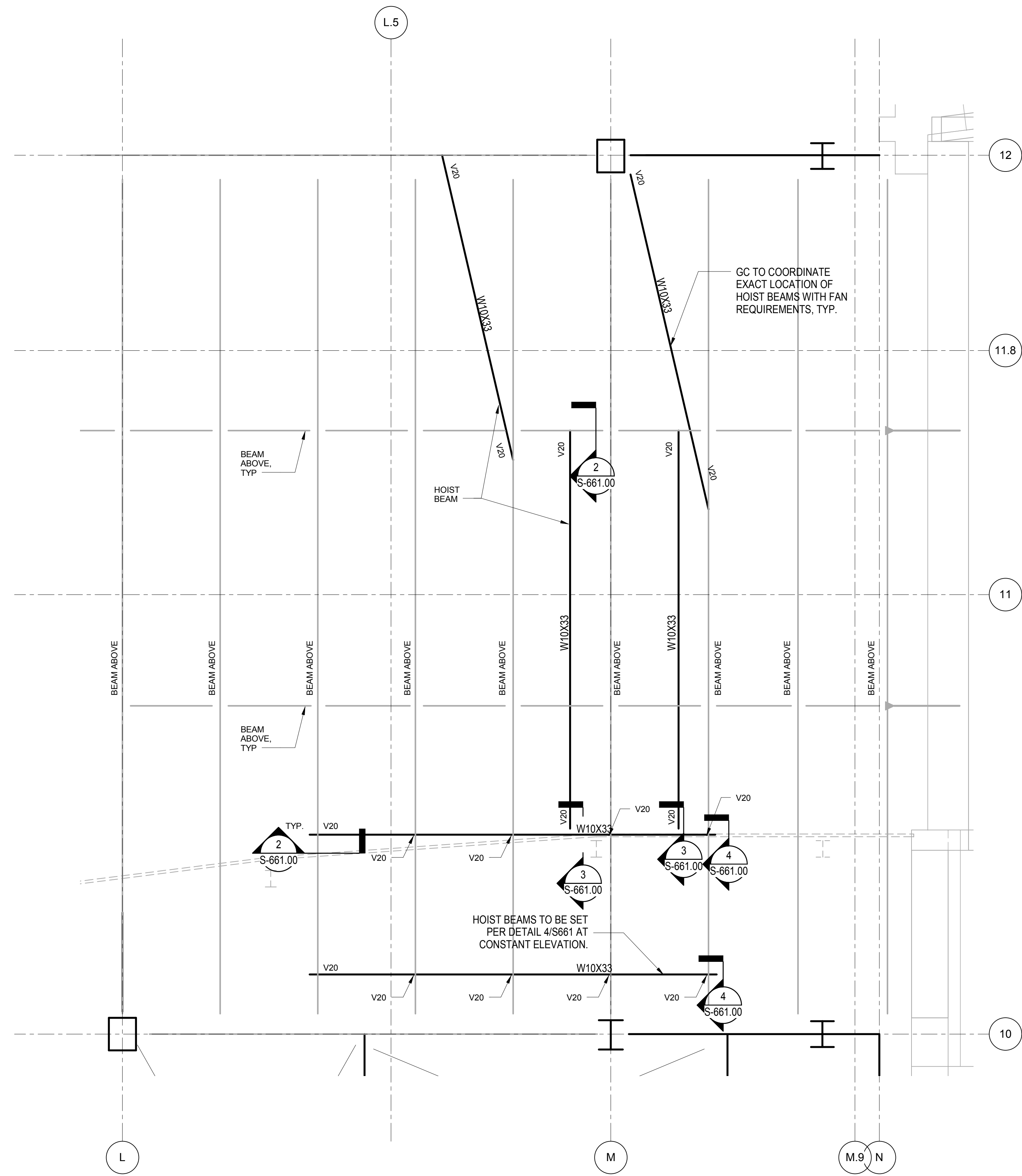


**7 SECTION BETWEEN NEW AND EXISTING SLAB**  
1" = 1'-0"

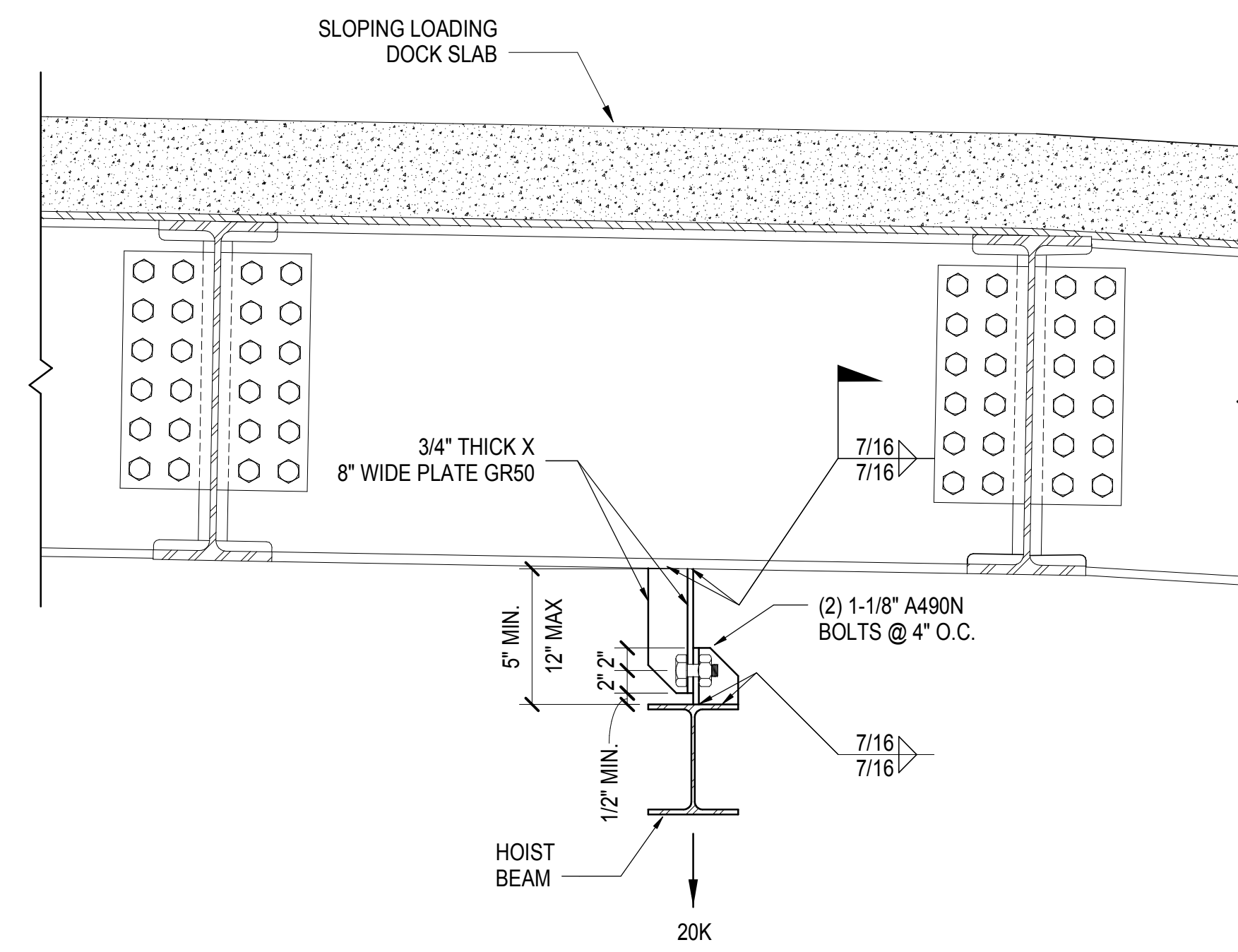
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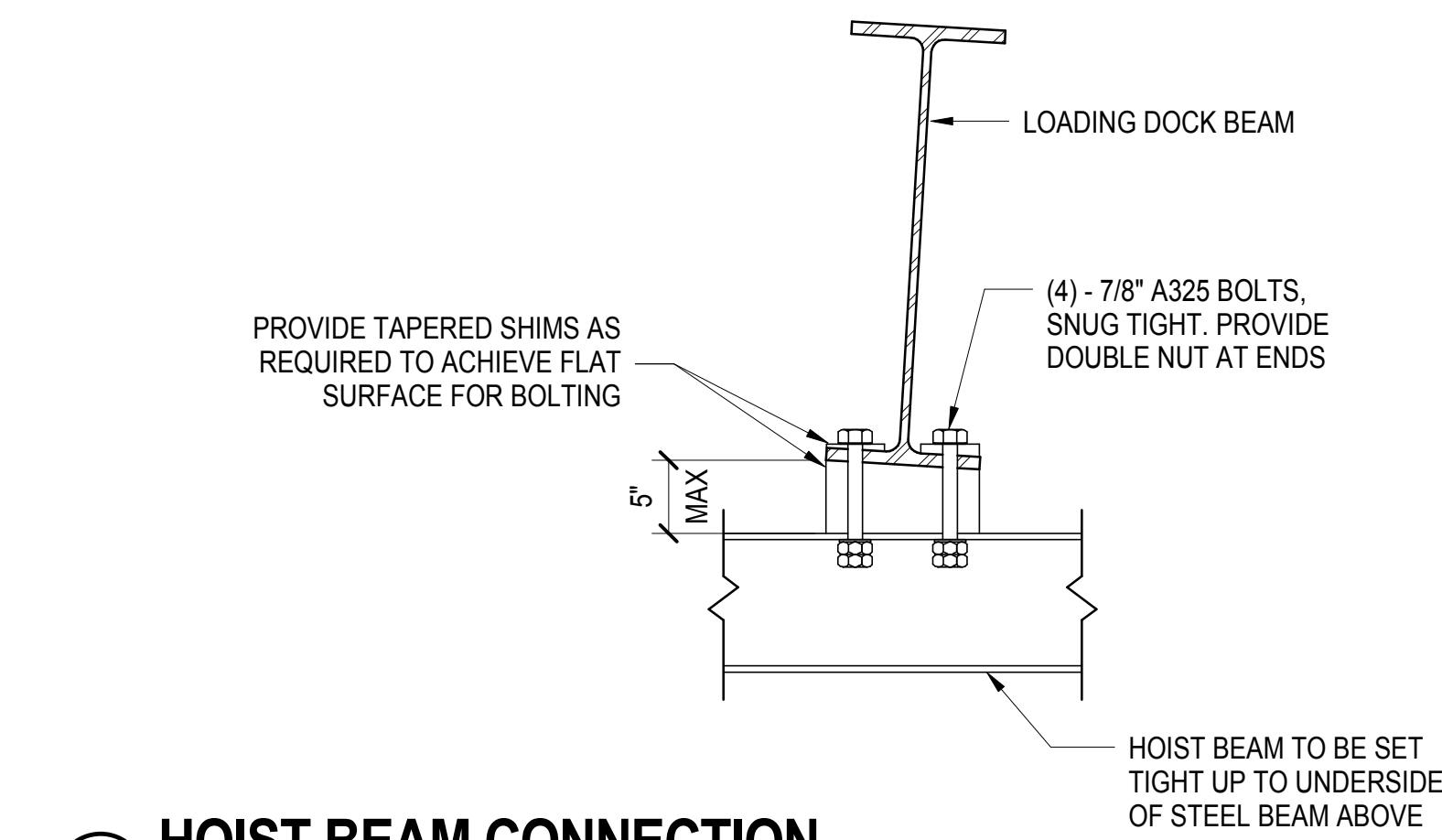


**1 PART PLAN AT SE FAN PLANT HOISTS**  
1/4" = 1'-0"



**2 TYPICAL HOIST BEAM CONNECTION**  
1" = 1'-0"

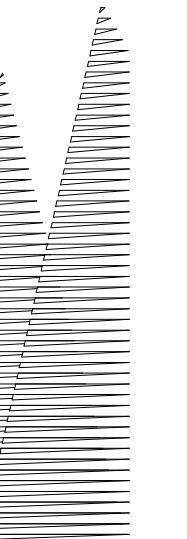
**3 W10 to W10 CONNECTION AT HOIST BEAM**  
1 1/2" = 1'-0"



**4 HOIST BEAM CONNECTION**  
1" = 1'-0"

**HUDSON YARDS PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY



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60 Columbus Circle  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0077	5/13/2015
By: [Signature]	Date:

Key Plan

Date: 03/09/2015  
Project No: N11330.00  
Drawn By: [Signature]  
Author: [Signature]  
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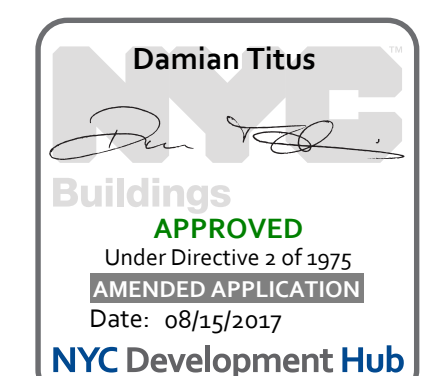
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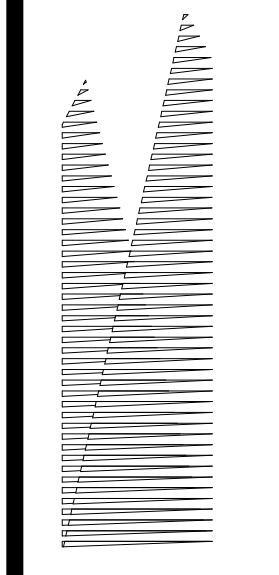
**SECTIONS AND DETAILS AT MEP**

Drawing Number / B/CAN Drawing Number

**S-661.00**

SHEET 139 of 163





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
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330 Park Avenue, 17th Floor  
New York, NY 10022  
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Fire Alarm, Fire Protection, Security  
Easements: Transportation Group  
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New York, NY 10005  
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New York, NY 10158  
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DOB POST-APPROVAL AMENDMENT 10/28/2016  
ASH9077 5/13/2015  
Description: Exhaust Fans  
Date: 08/15/2017

By: [Signature]

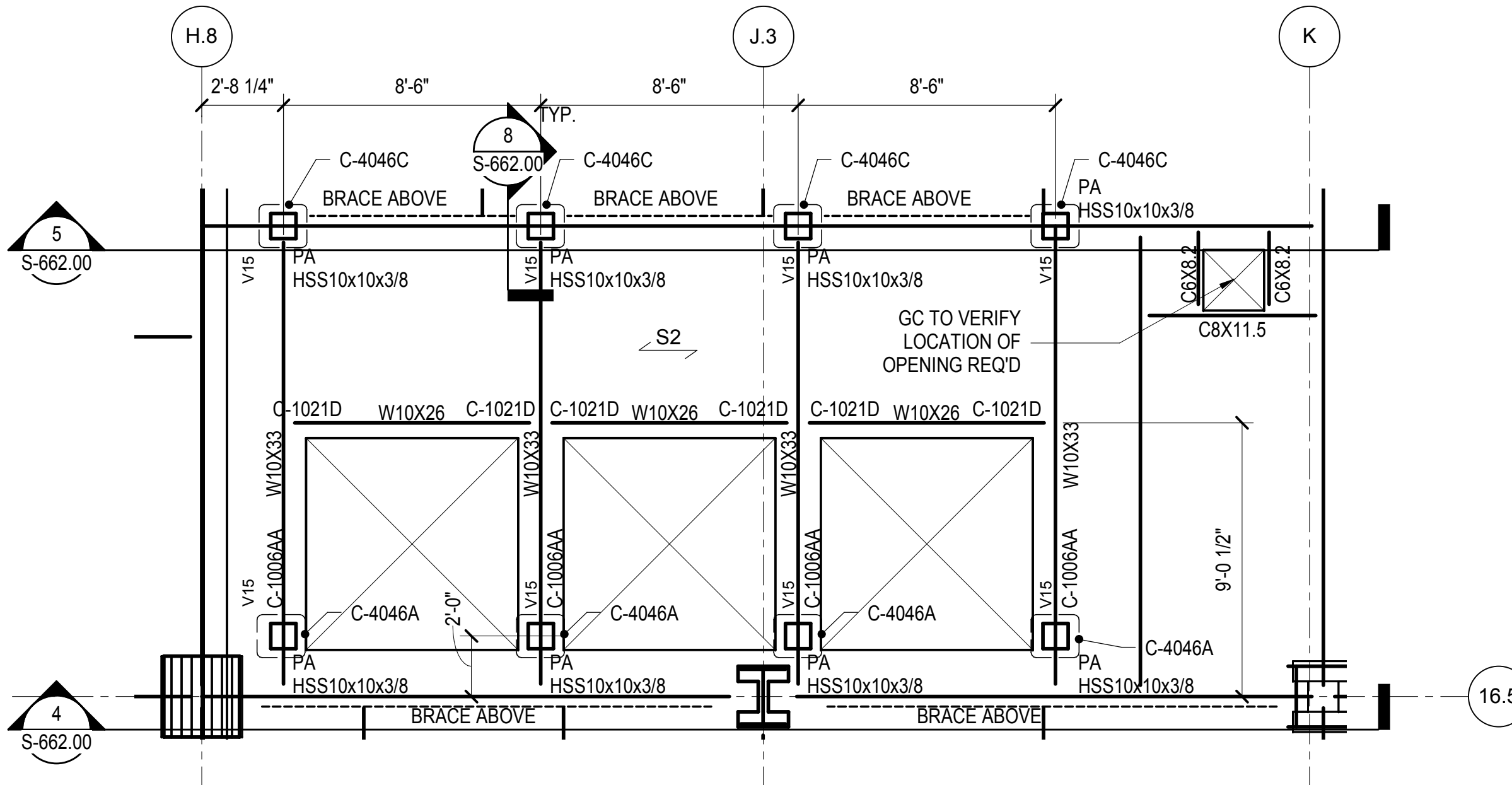
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Project No: N11330.00  
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Sheet Number: Author

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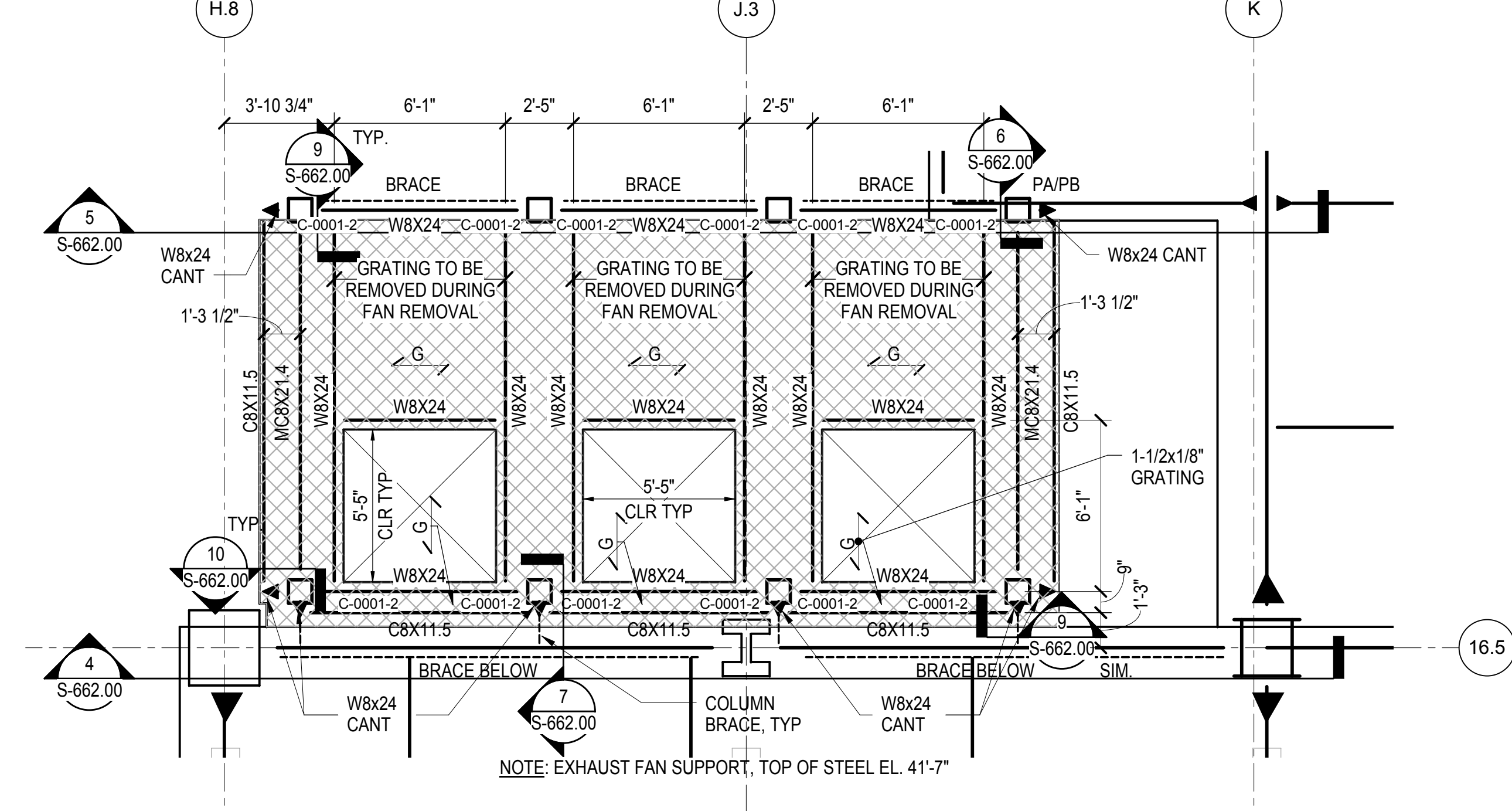
**SECTIONS AND DETAILS - SEQ 11 EXHAUST FANS**

Drawing Number / B/CAN Drawing Number  
**S-662.00**

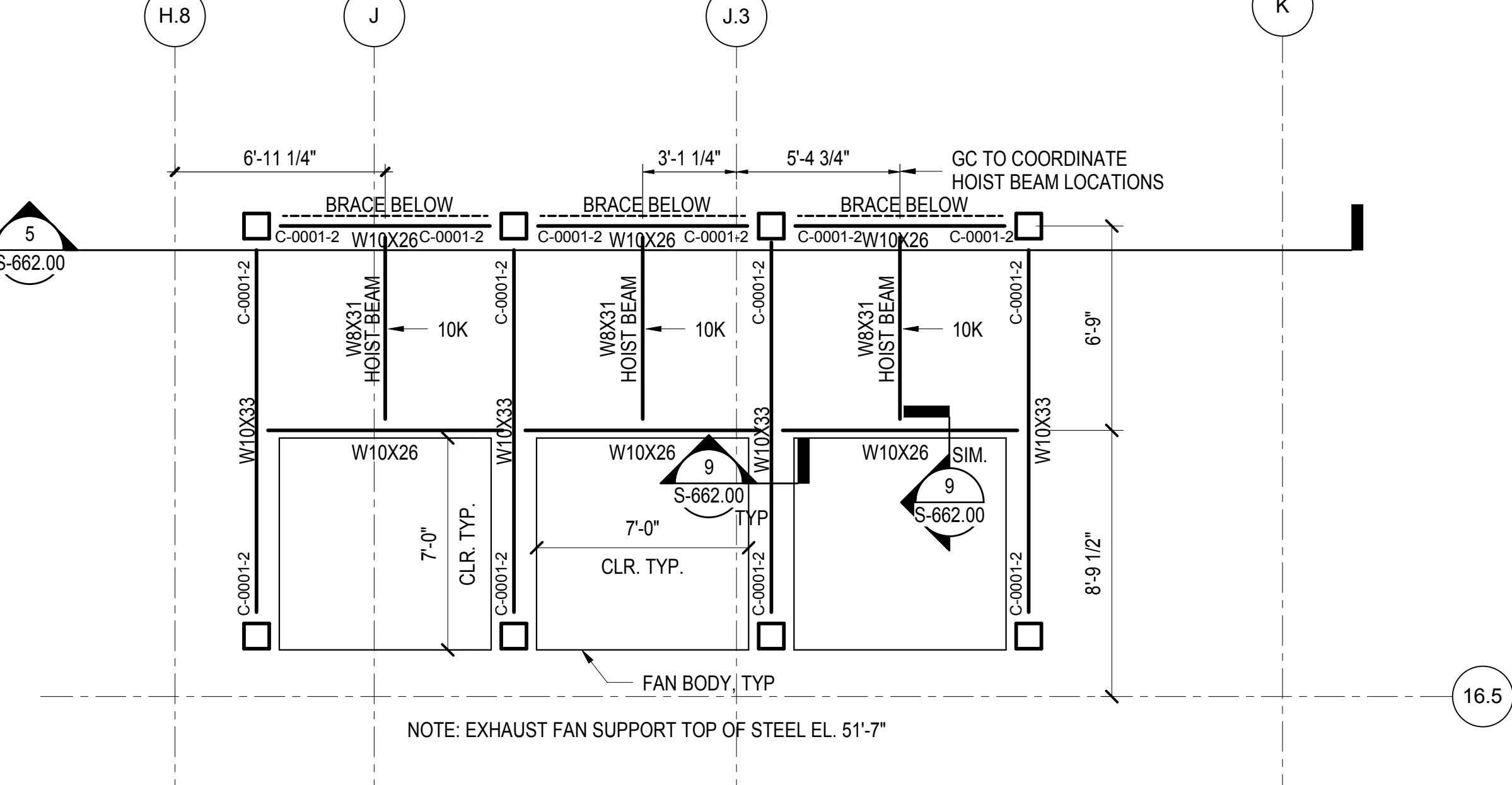
SHEET 140 of 163



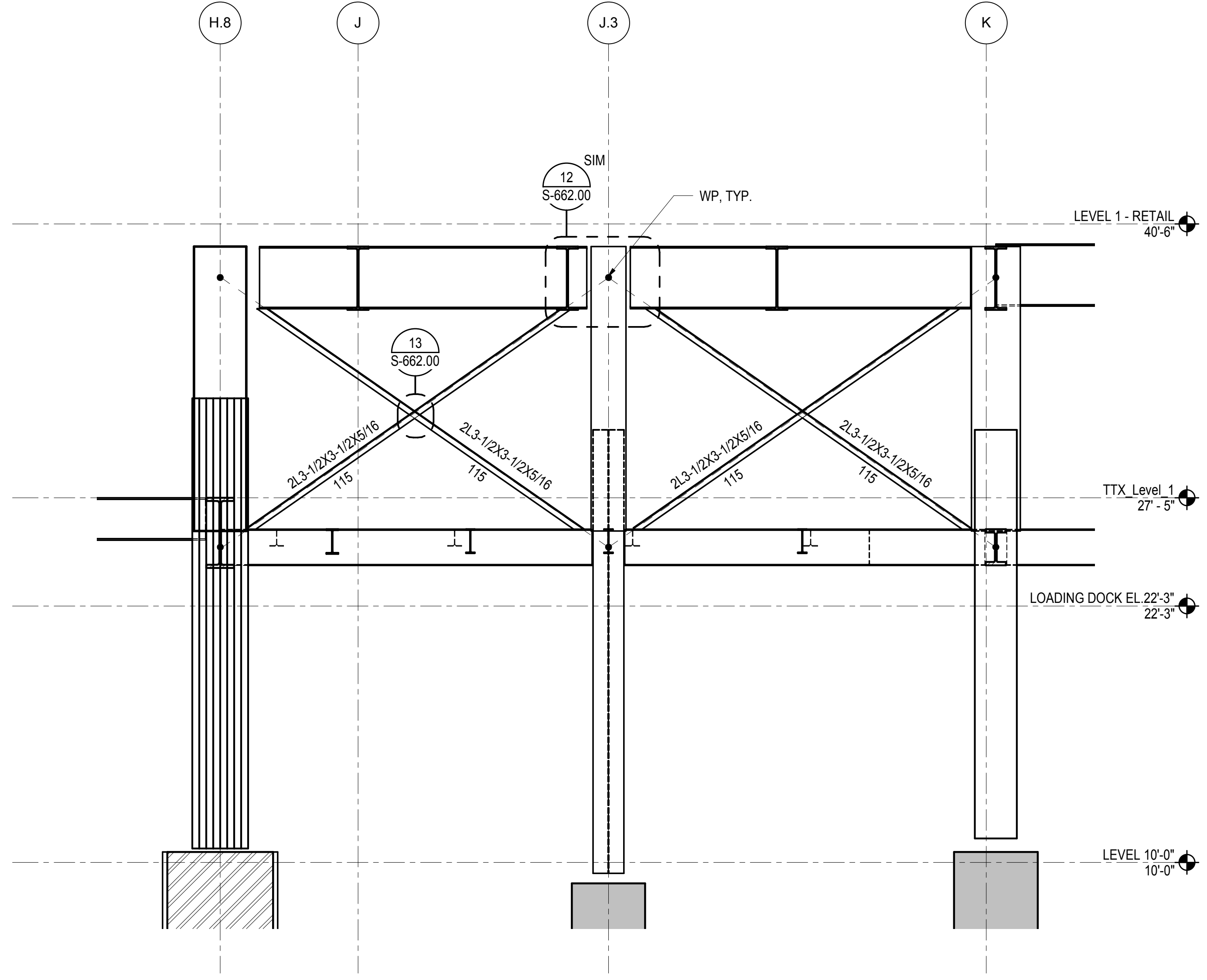
**1 SEQ 11 EXHAUST FANS - L. PLATFORM PART PLAN**  
1/4" = 1'-0"



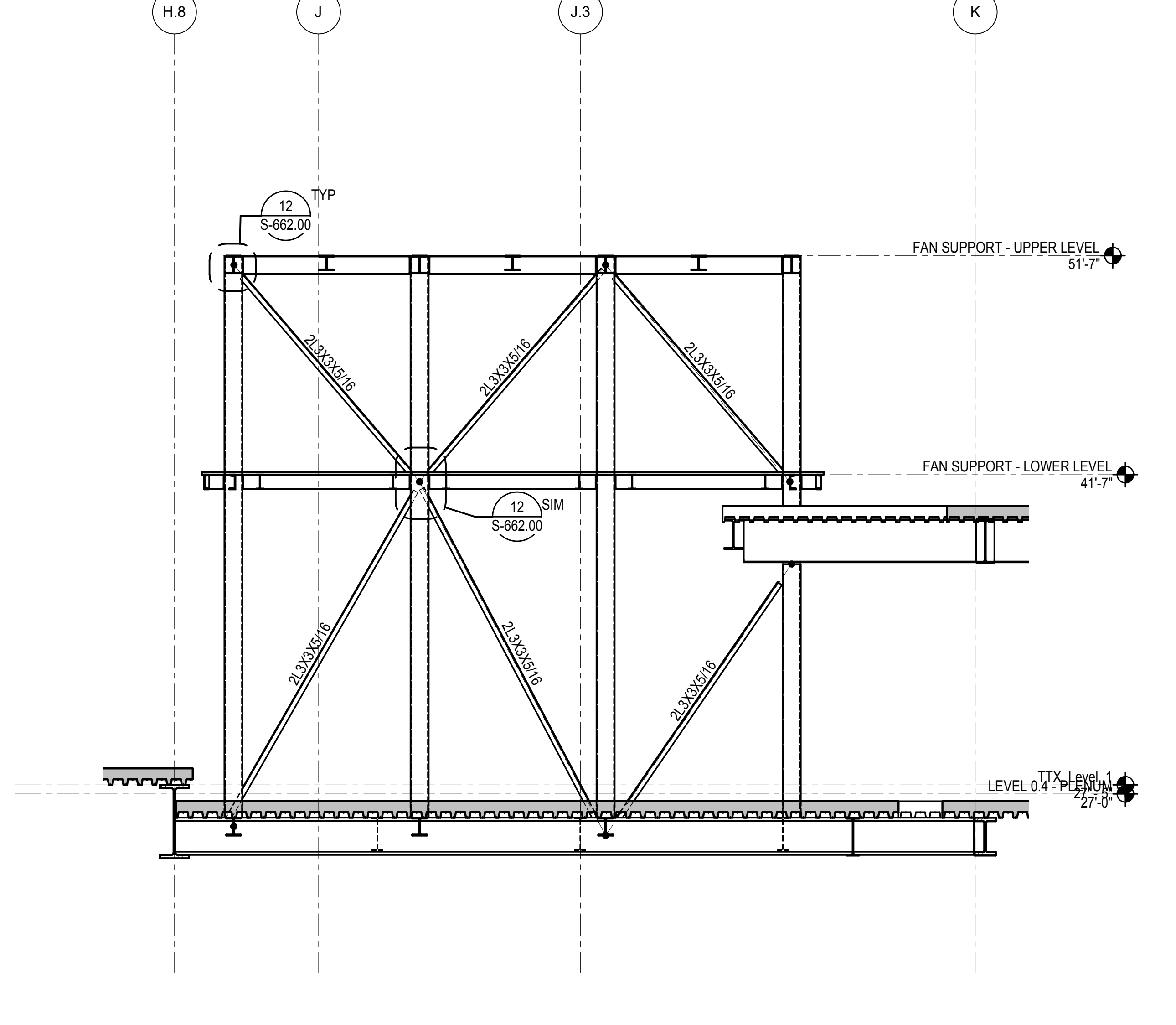
**2 SEQ 11 EXHAUST FAN SUPPORT - LOWER PART PLAN**  
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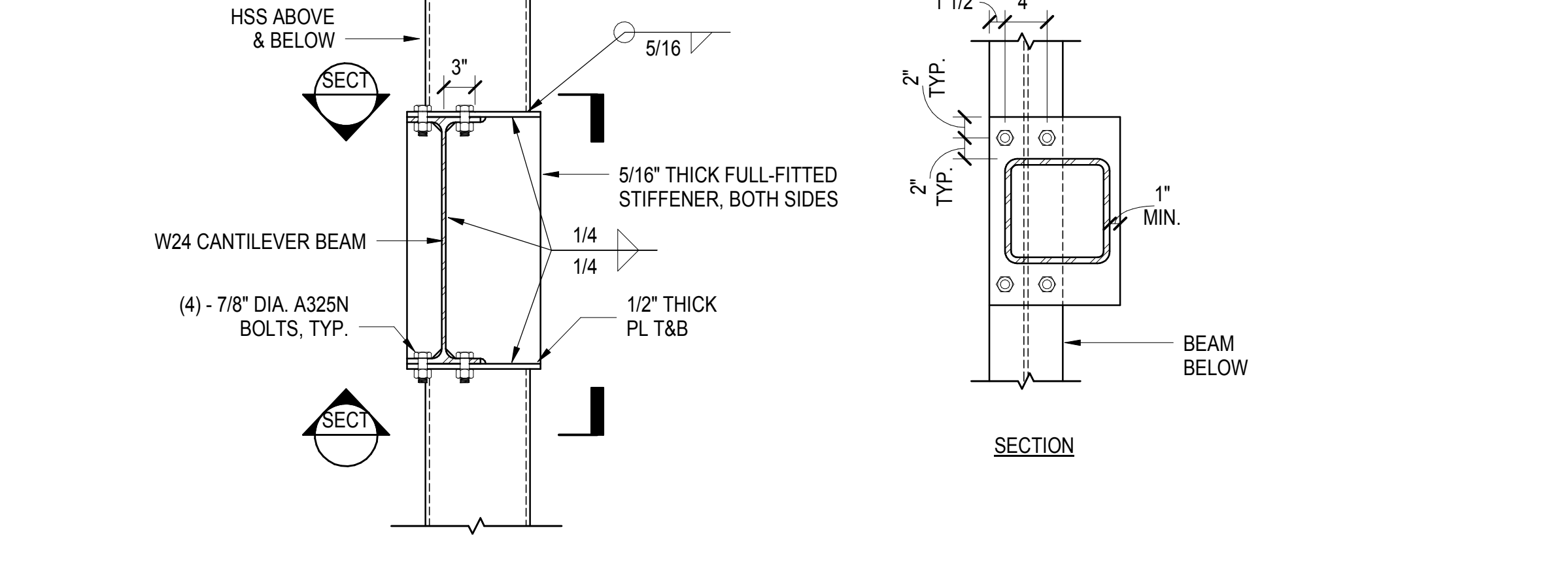
**3 SEQ 11 EXHAUST FAN SUPPORT - UPPER PART PLAN**  
1/4" = 1'-0"



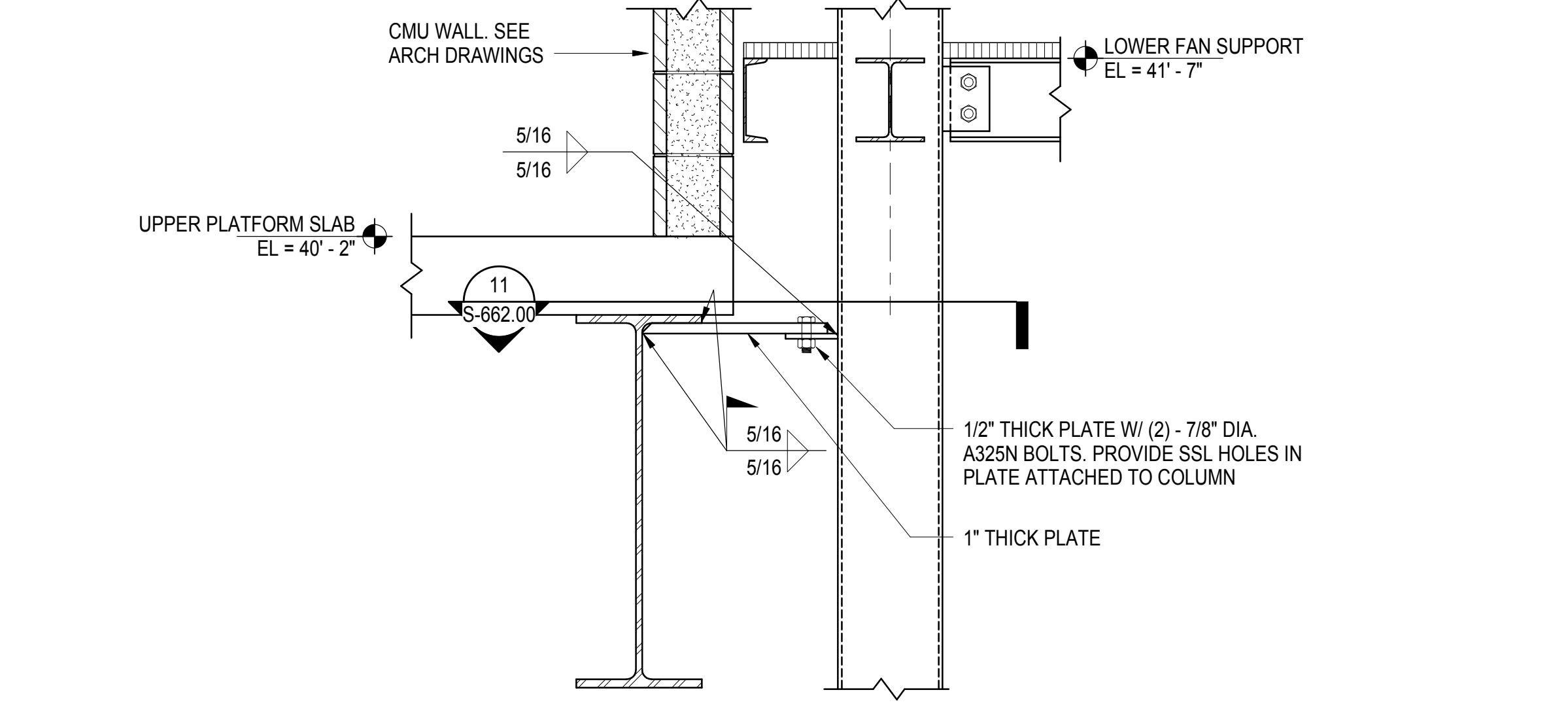
**4 SECTION - SEQ 11 EXHAUST FANS - SOUTH SIDE**  
1/4" = 1'-0"



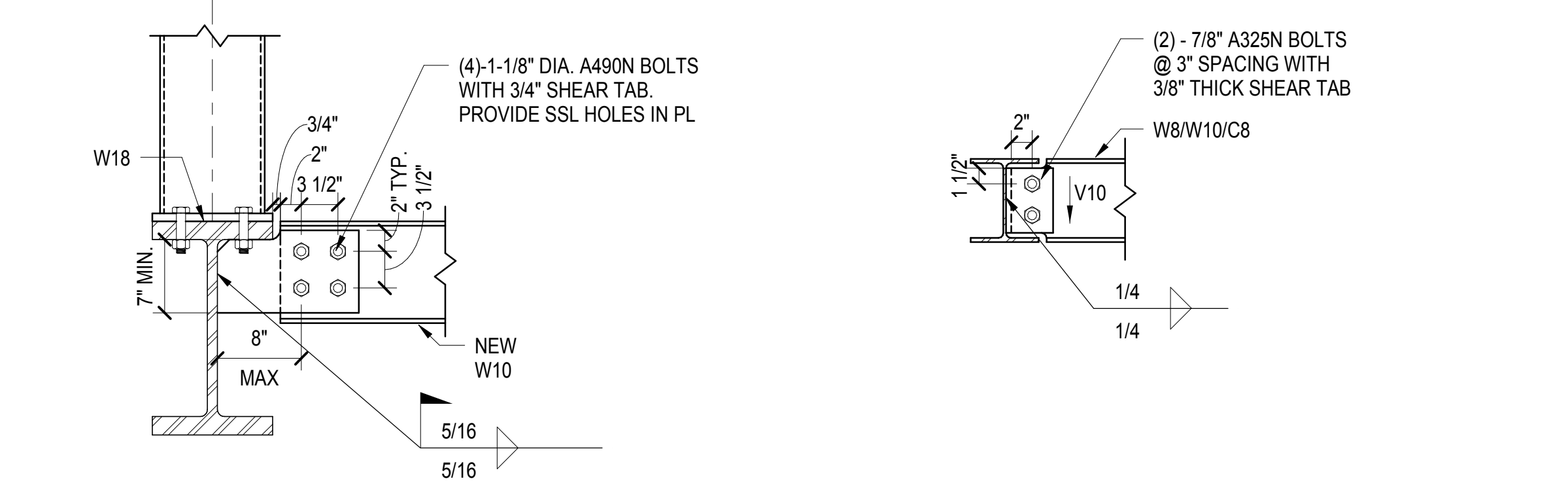
**5 SECTION - SEQ 11 EXHAUST FANS - NORTH SIDE**  
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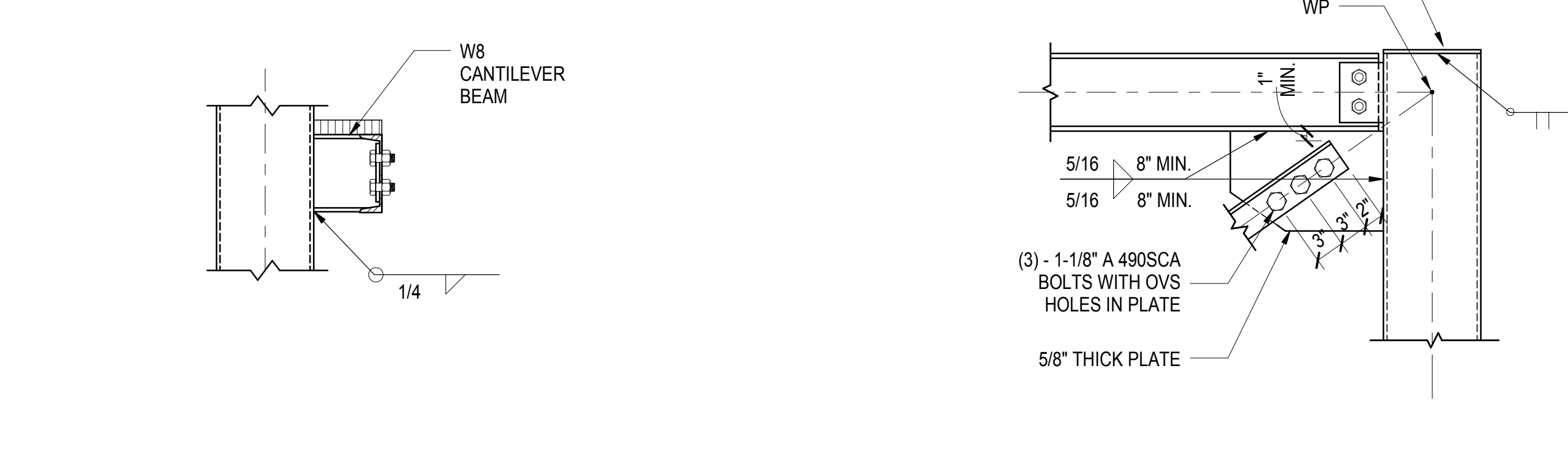
**6 CONNECTION AT OFFSET COLUMN**  
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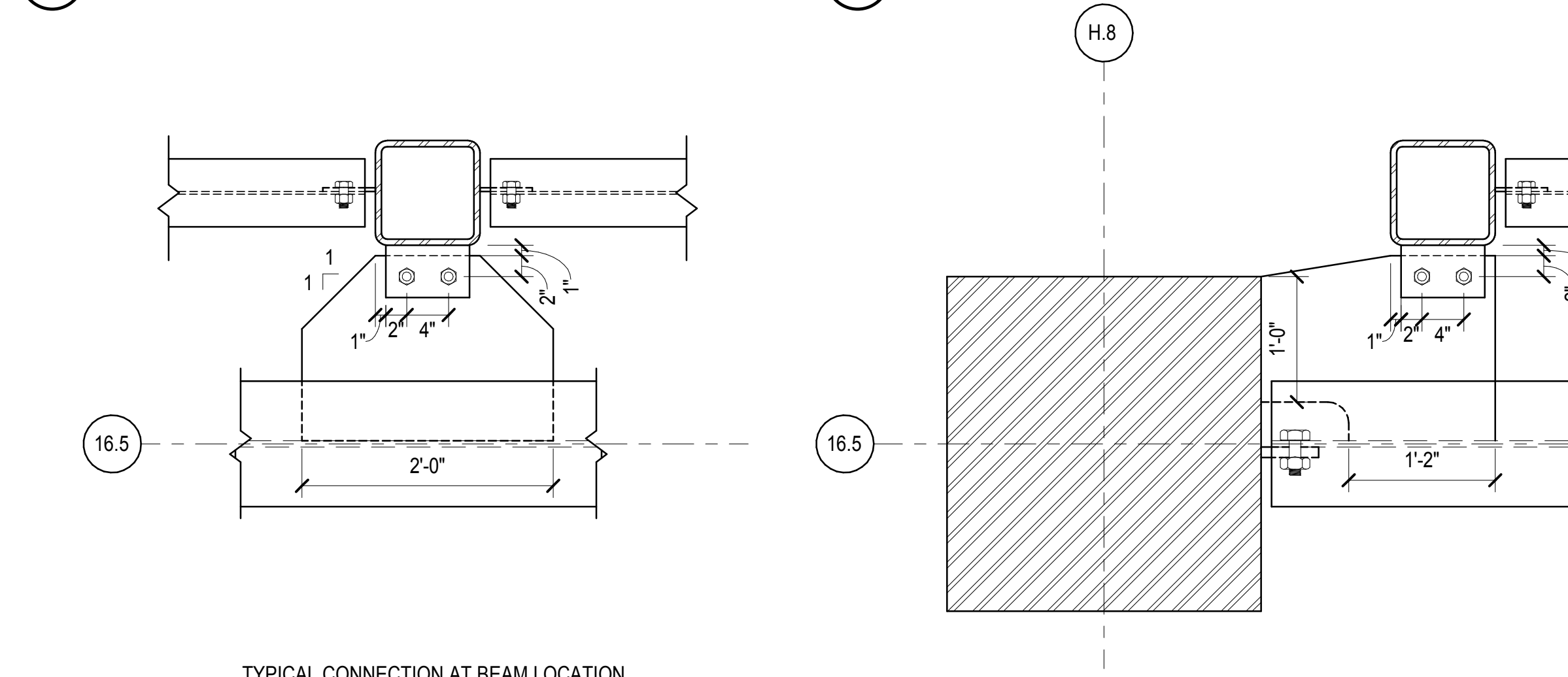
**7 TYPICAL COLUMN BRACE TO 40'-2" STRUCTURE**  
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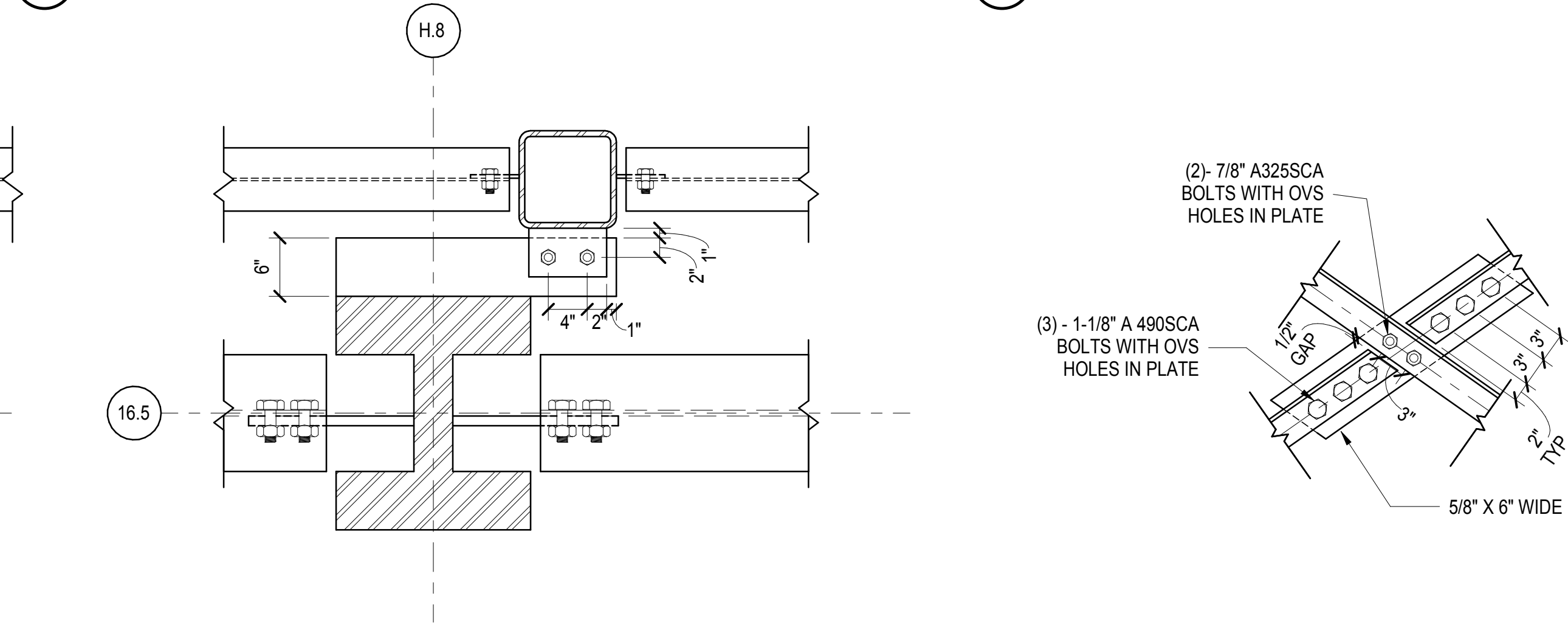
**8 CONNECTION**  
1" = 1'-0"



**12 TYPICAL BRACE CONNECTION**  
1" = 1'-0"

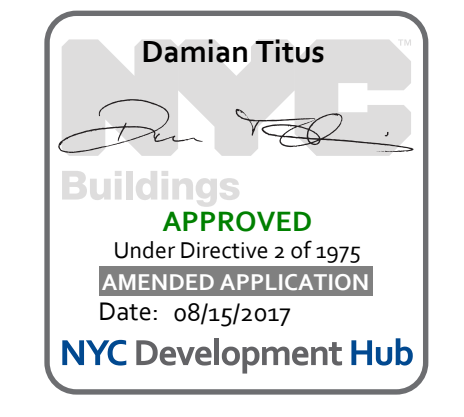


**11 TYPICAL COLUMN CONNECTION TO 40'-2" STRUCTURE**  
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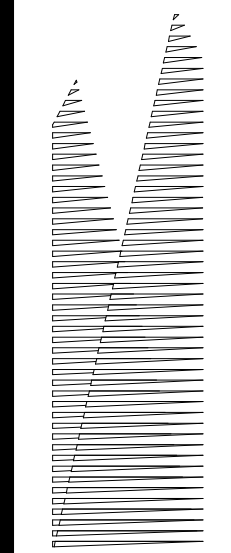


**13 TYPICAL CONNECTION AT X-BRACE**  
1" = 1'-0"

TYPICAL CONNECTION AT BEAM LOCATION



SECTIONS AND DETAILS - SEQ 11 EXHAUST FANS  
10/11/2016 5:10:03 PM C:\Users\N11330.00\Desktop\Central\_gdgnr.dwg



Client  
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60 Columbus Circle  
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Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
330 Park Avenue, 17th Floor  
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Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
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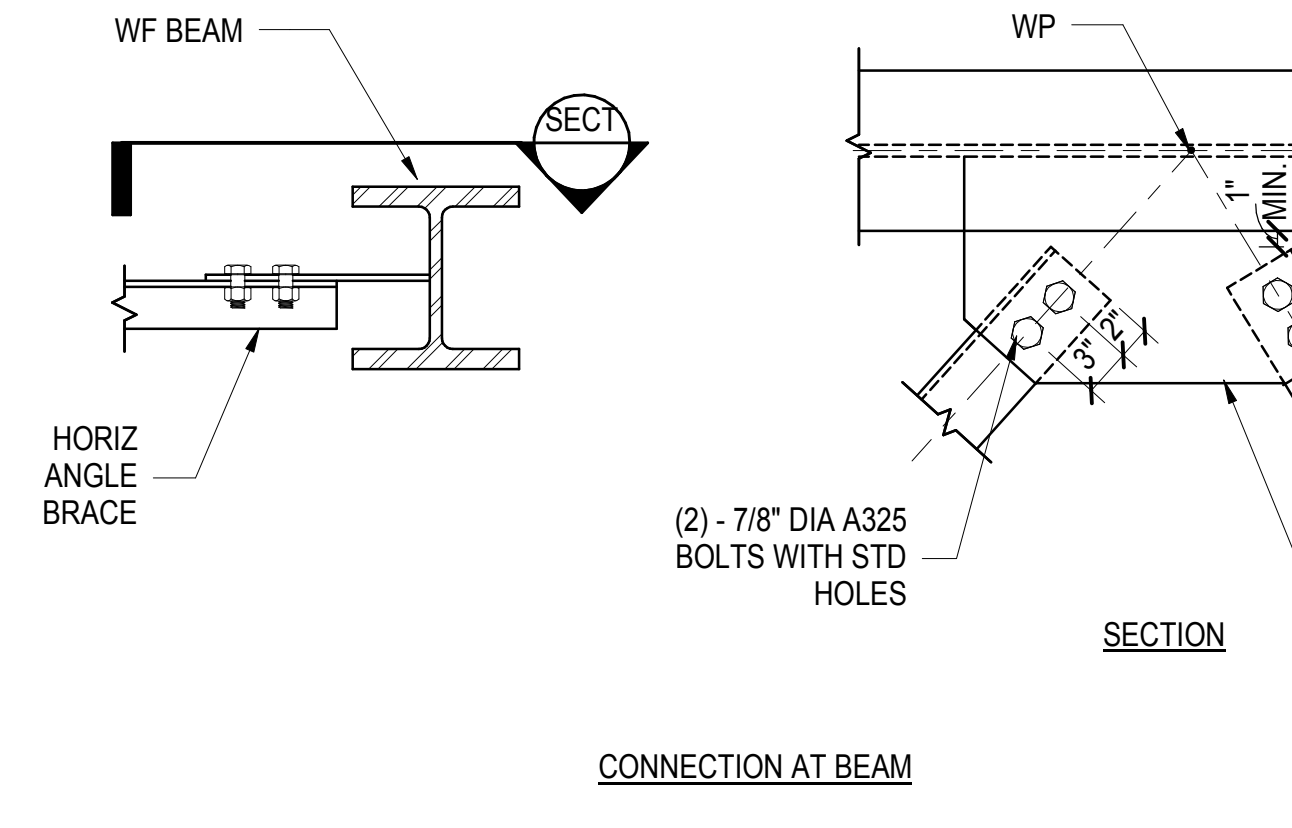
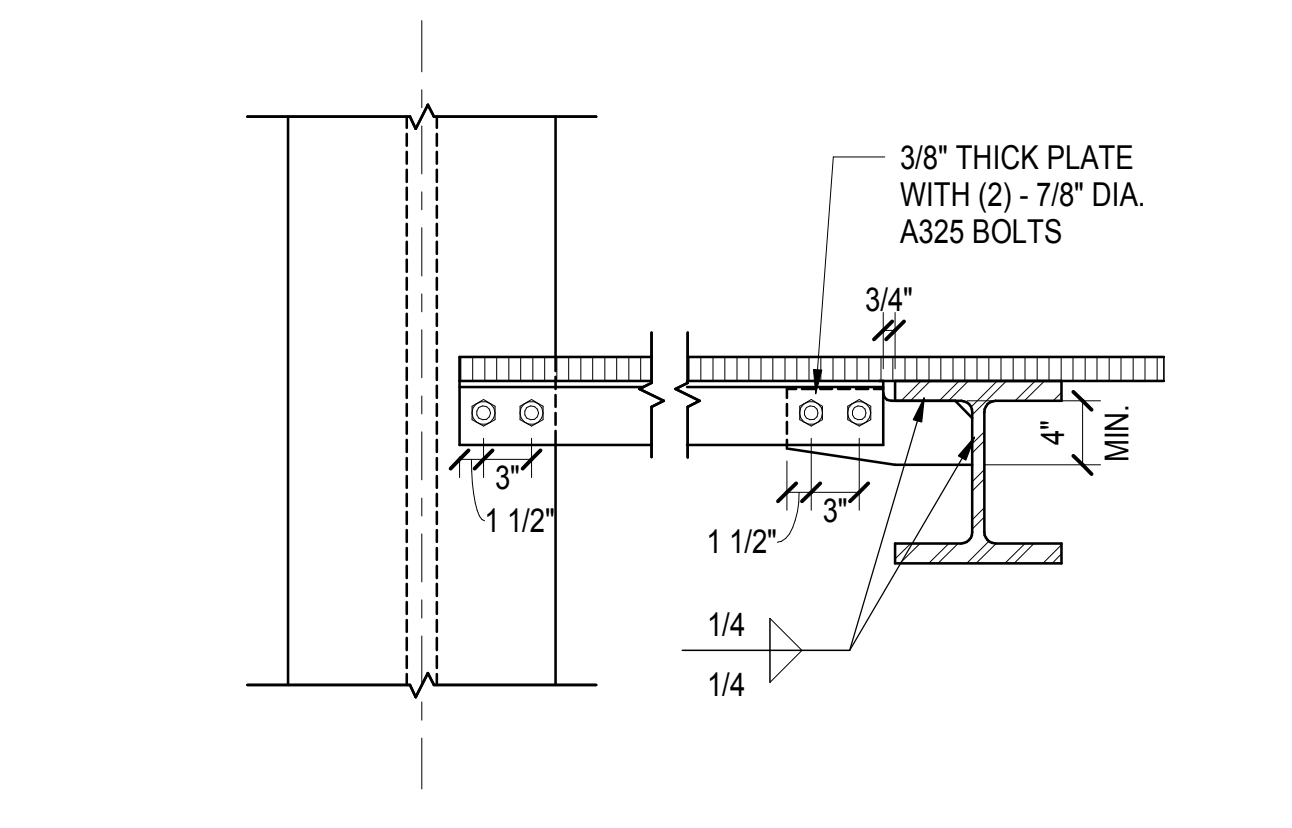
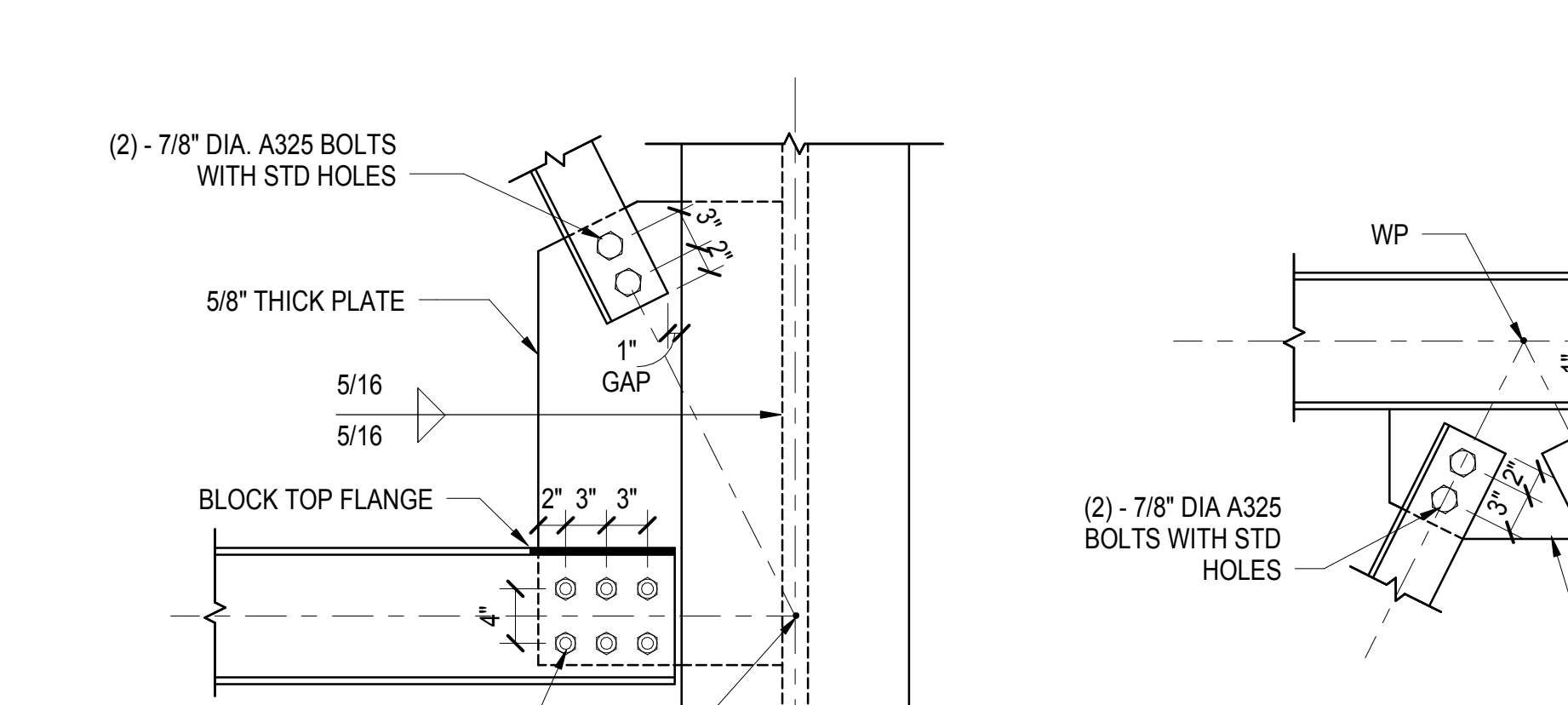
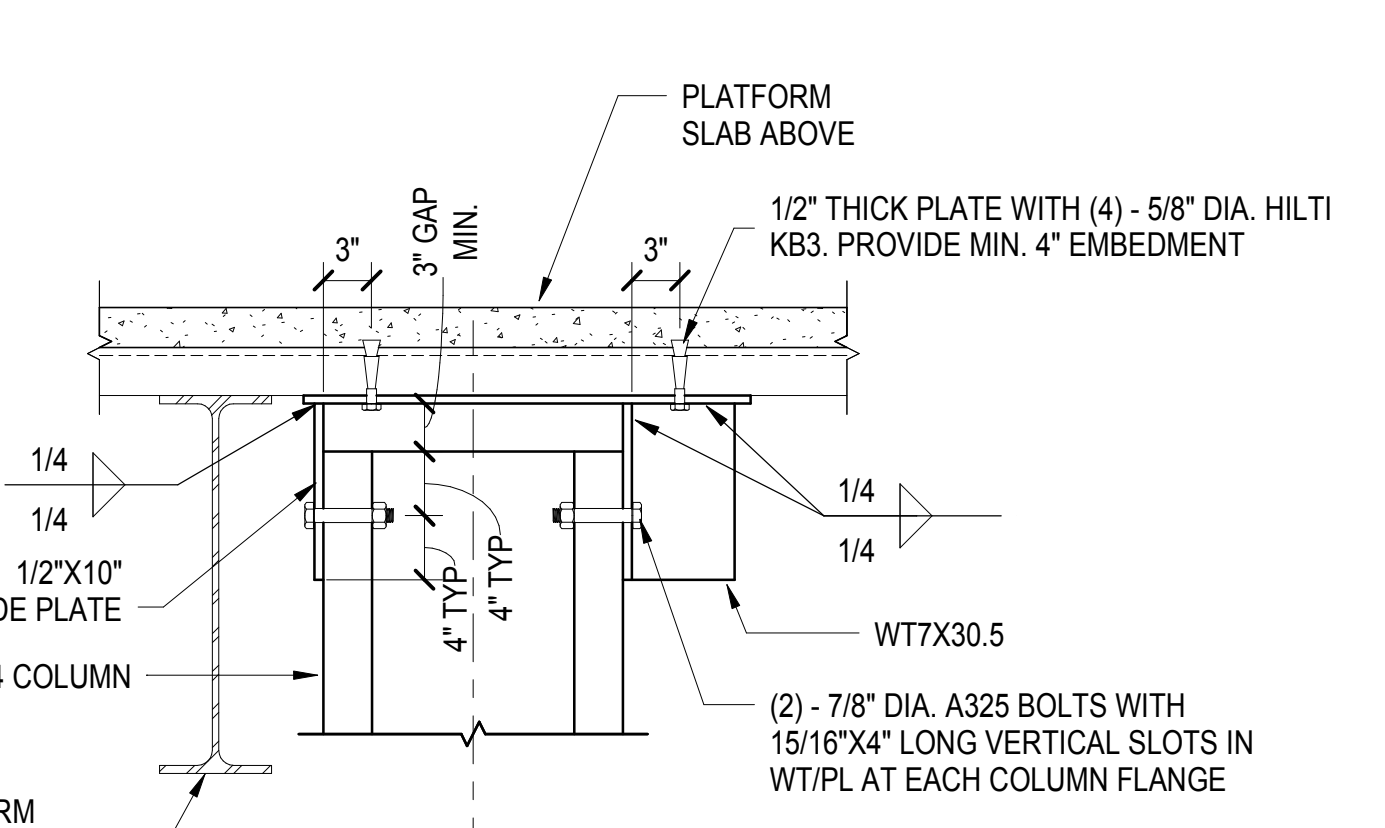
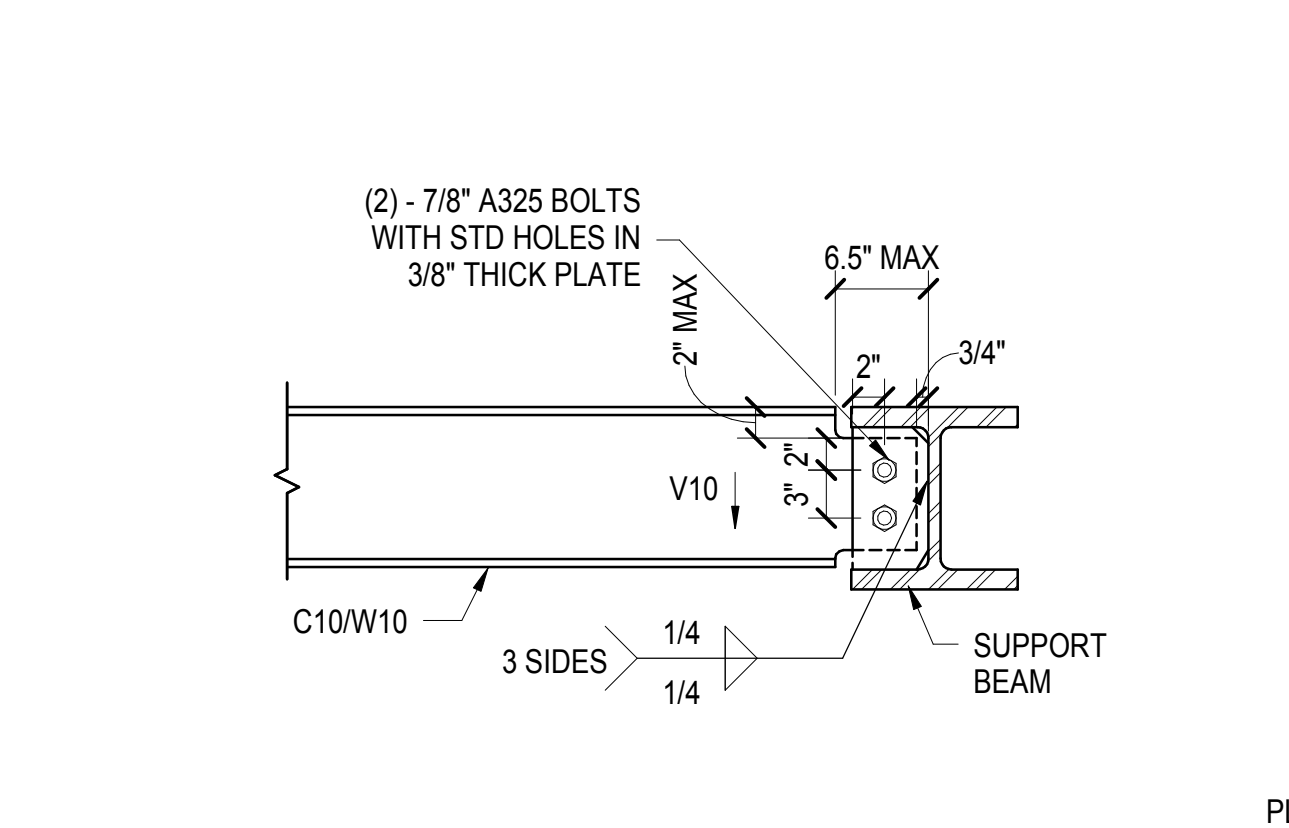
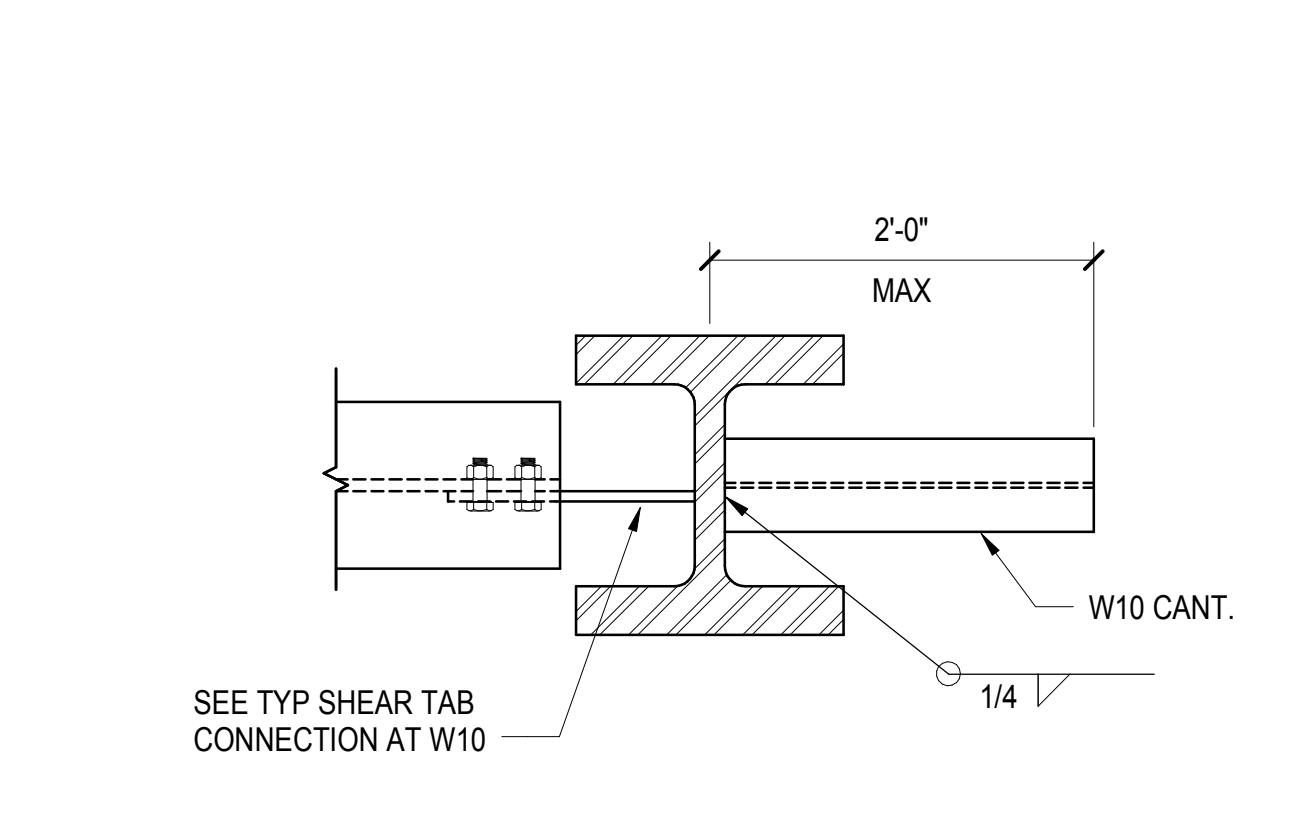
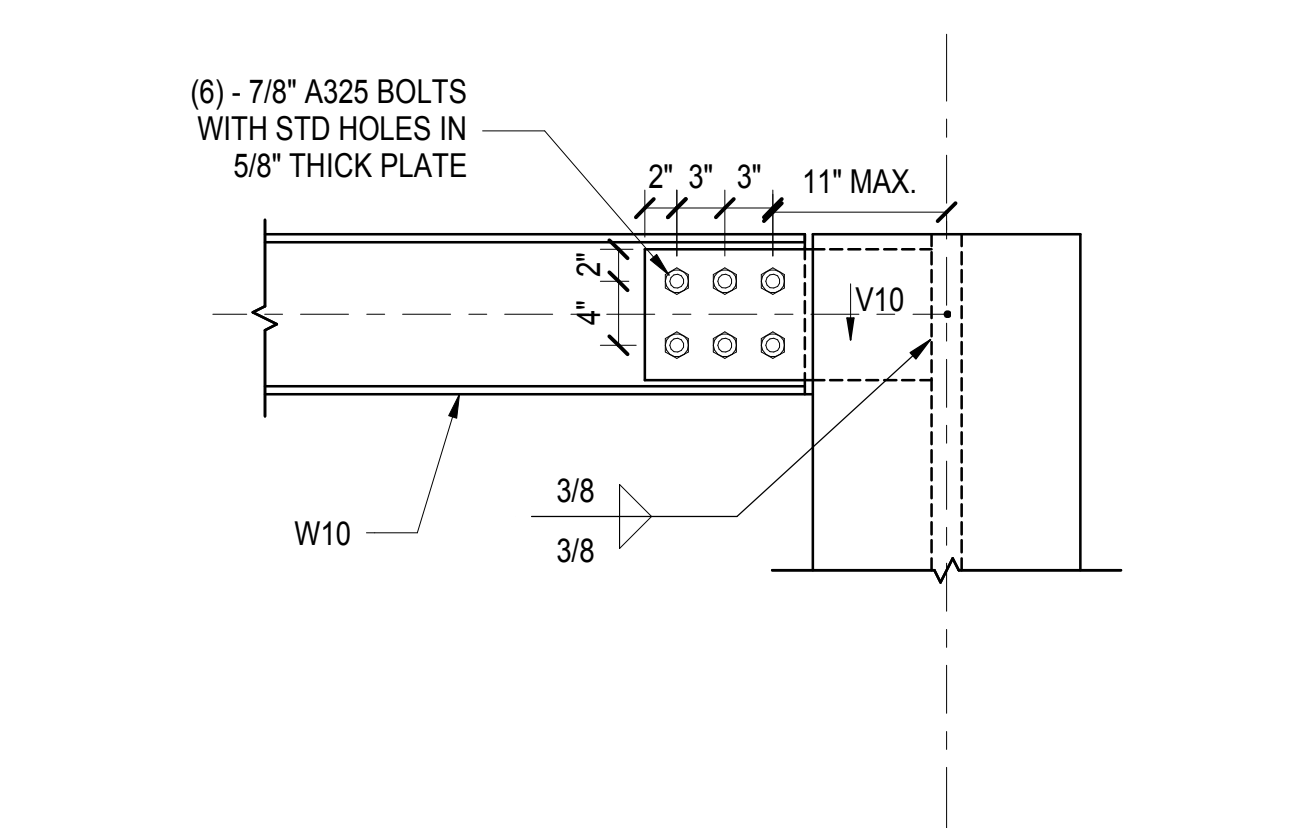
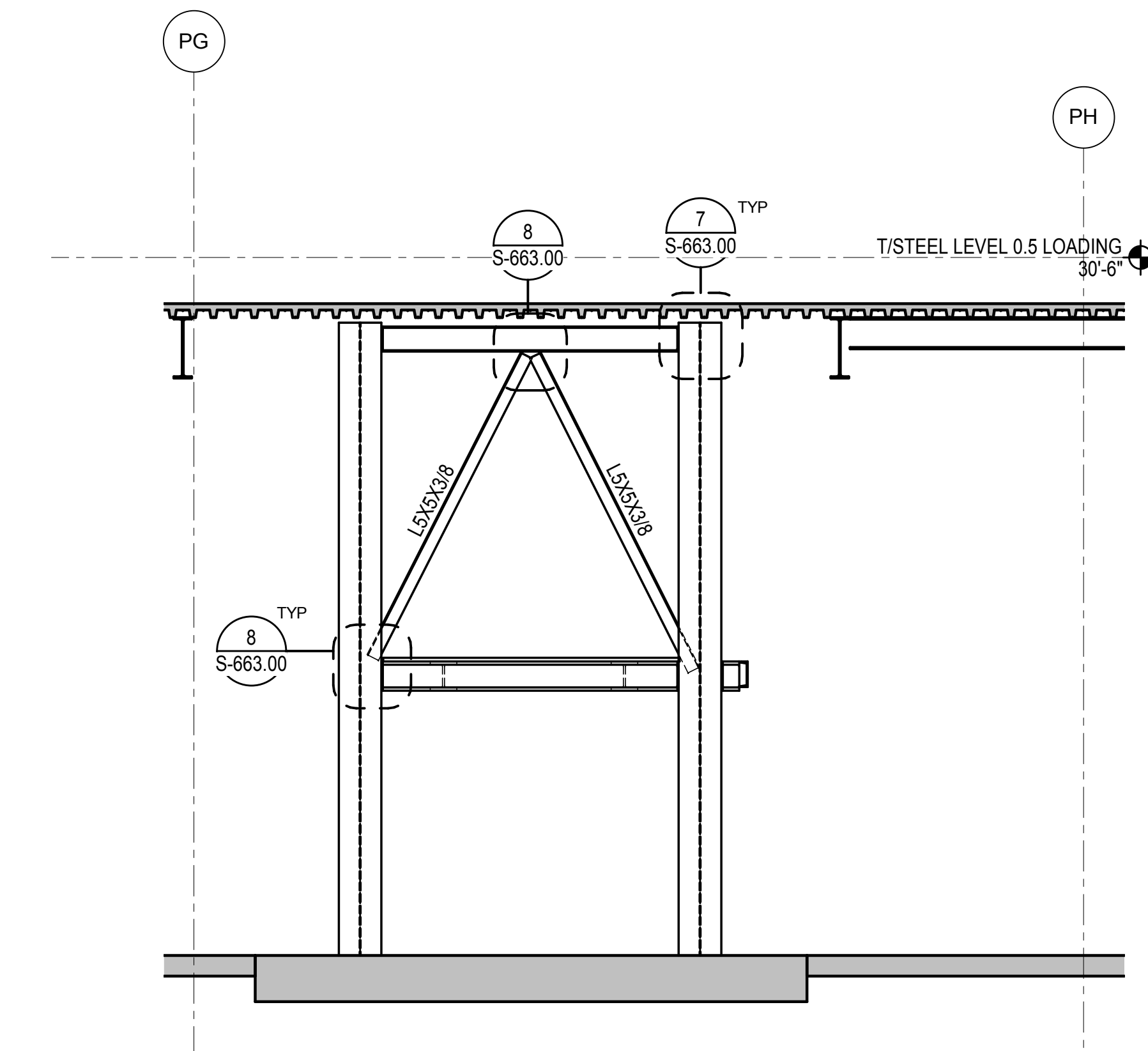
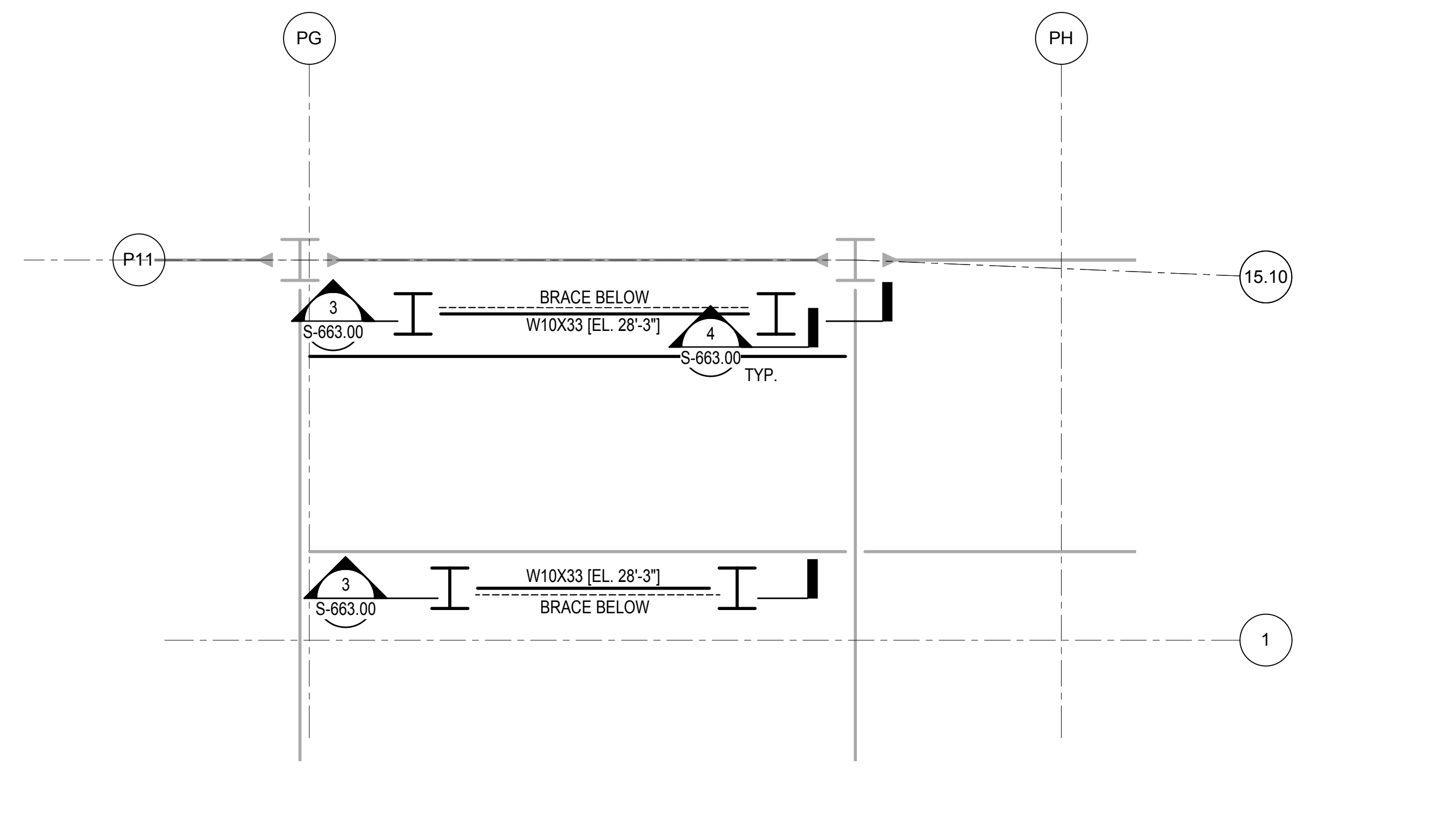
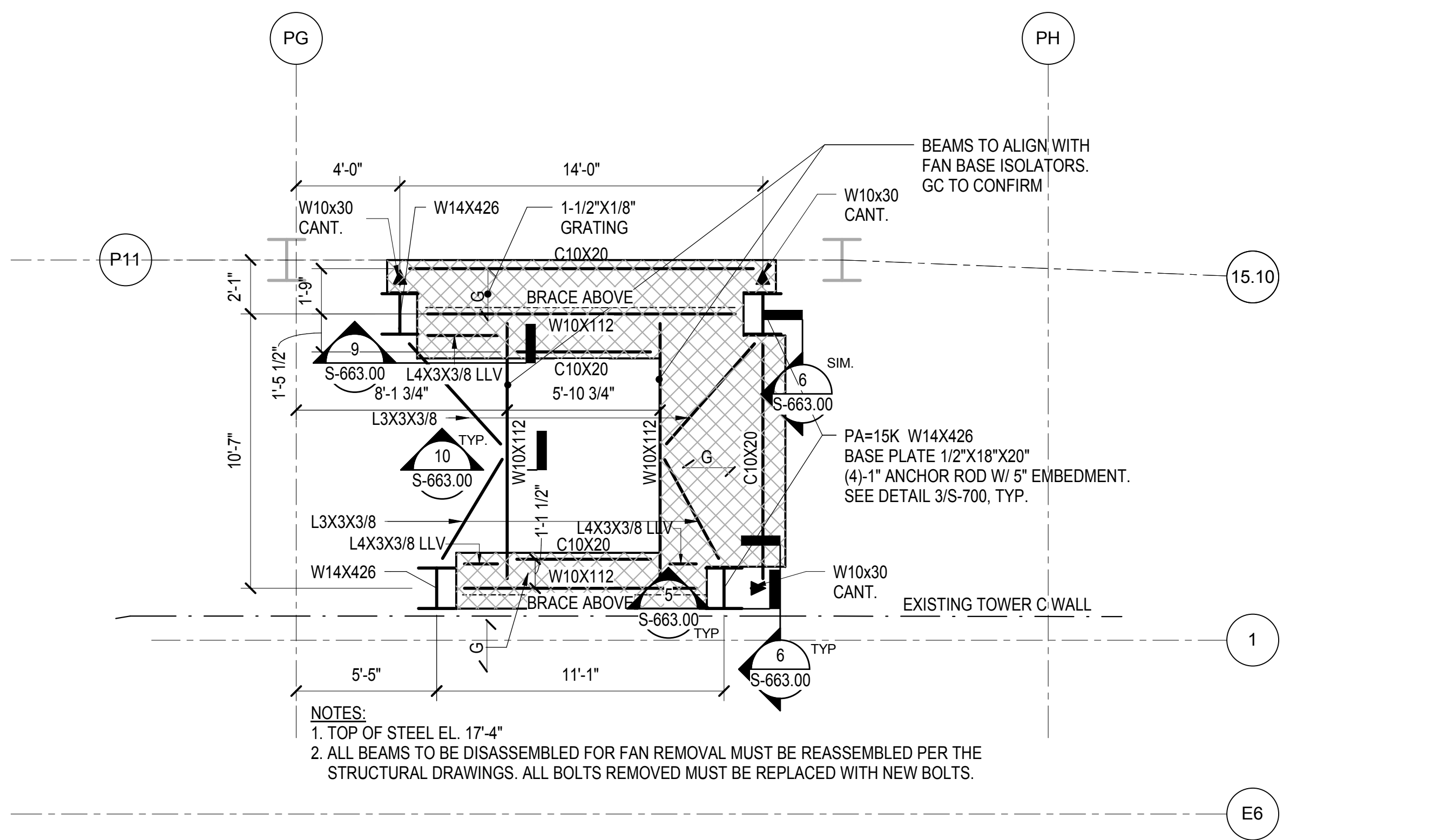
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
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Tel: 212.977.6500 Fax: 212.956.2526

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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH080	05/26/2015
Author	Author

Key Plan

Date:	05/26/15
Project No:	N11330.00
Drawn By:	Author
Sheet Number:	

**HYE -PL -S-663.00**

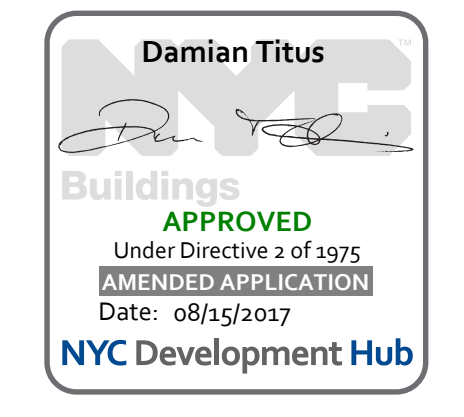
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DETAILS - SW FAN  
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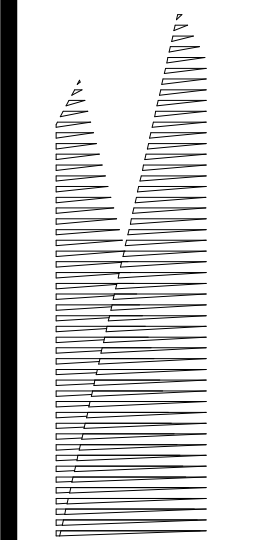
Drawing Title

Under Directive 1 of 1975  
APPROVED  
Date: 08/15/2017

NYC Development Hub

Drawing Number: B-RCM Drawing Number  
**S-663.00**  
SHEET 141 of 163





Client  
Related Companies  
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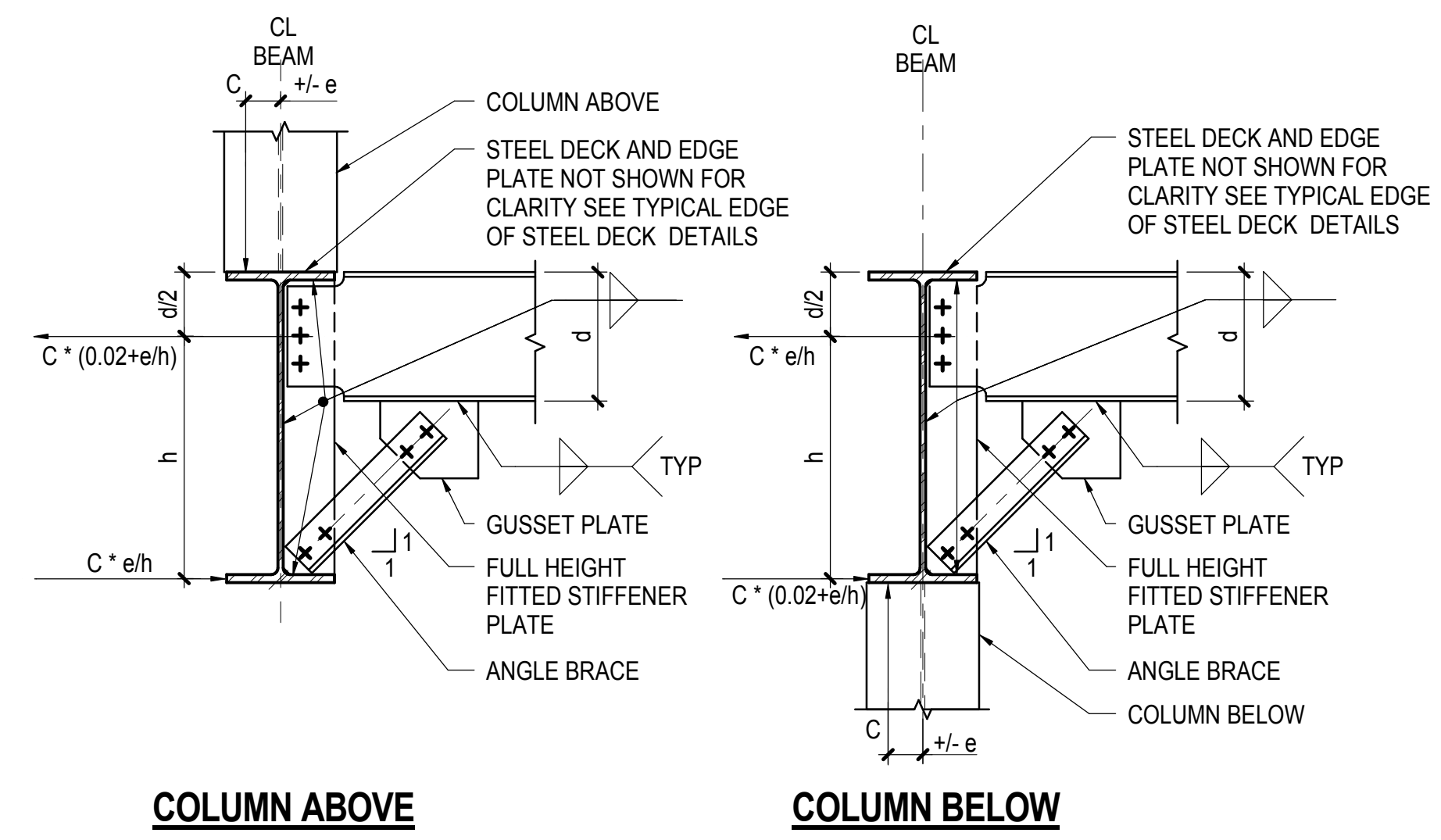
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Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Fishman Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

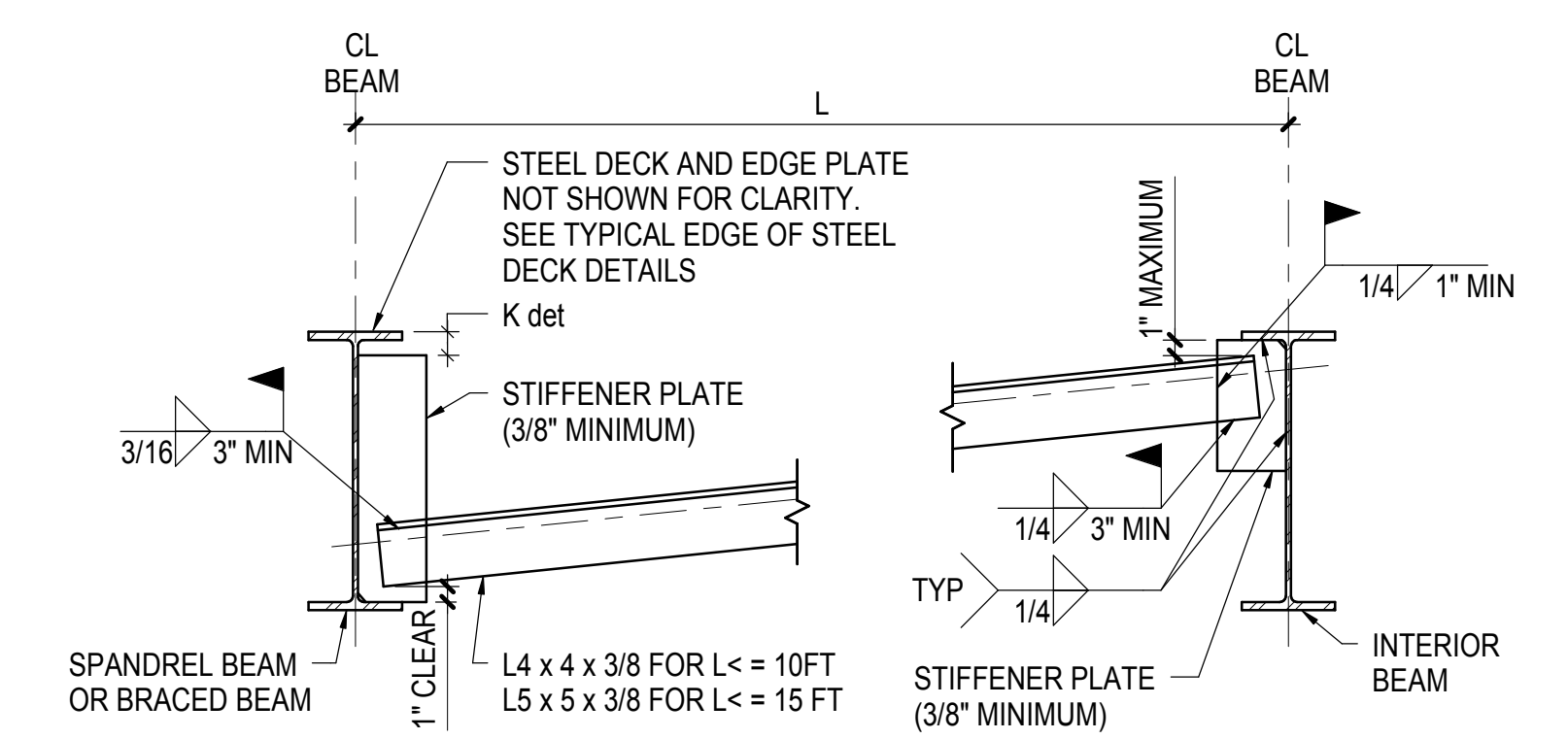
LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



**COLUMN ABOVE** **COLUMN BELOW**

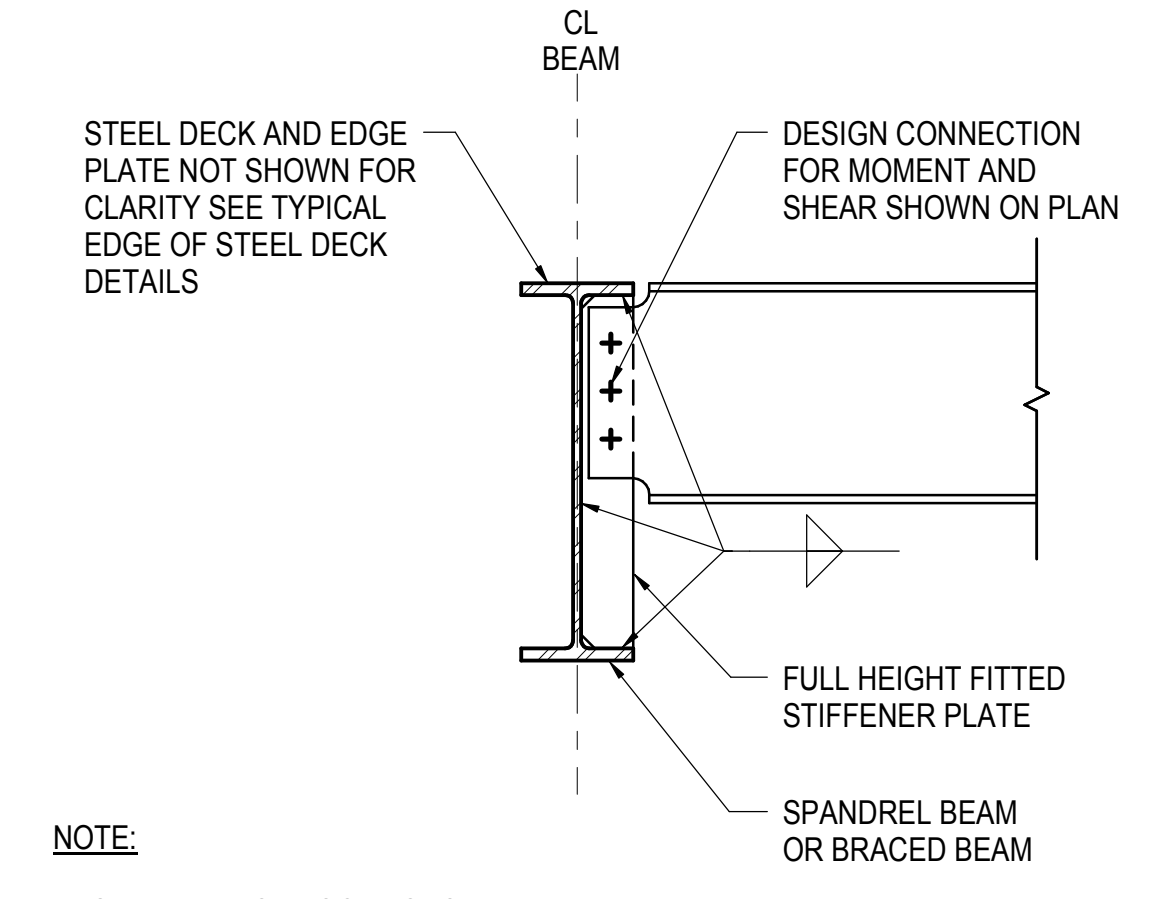
- NOTES:**
- DESIGN CONNECTION FOR FORCES BASED ON COLUMN AXIAL LOAD AS SHOWN AND FOR FORCES SHOWN ON PLAN
  - C = COLUMN AXIAL FORCE  
e = 1/2" ACCIDENTAL ECCENTRICITY UON

**1 TYPICAL DEEP BEAM BOTTOM FLANGE BRACING CONNECTION**  
NOT TO SCALE



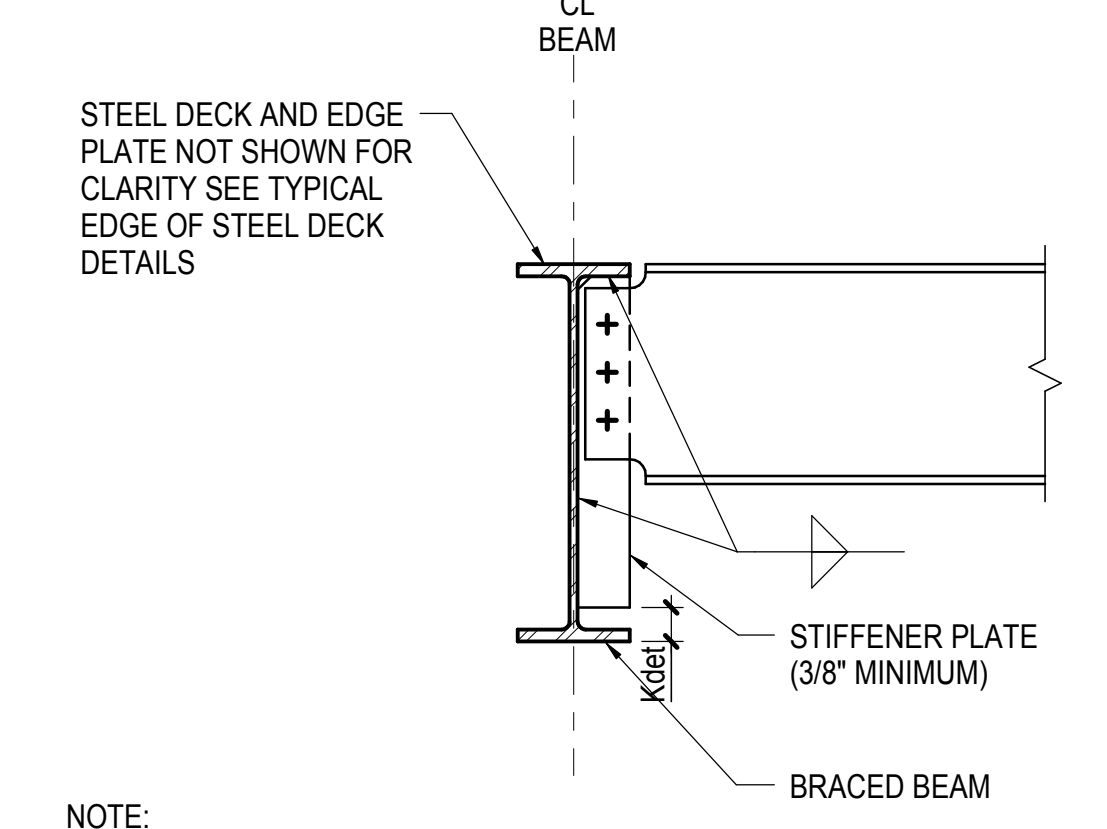
- NOTE:**
- SEE PLAN FOR LOCATIONS OR SPACING

**2 TYPICAL SPANDREL OR BRACED BEAM KICKER CONNECTION**  
NOT TO SCALE



- NOTE:**
- SEE PLAN FOR LOCATIONS

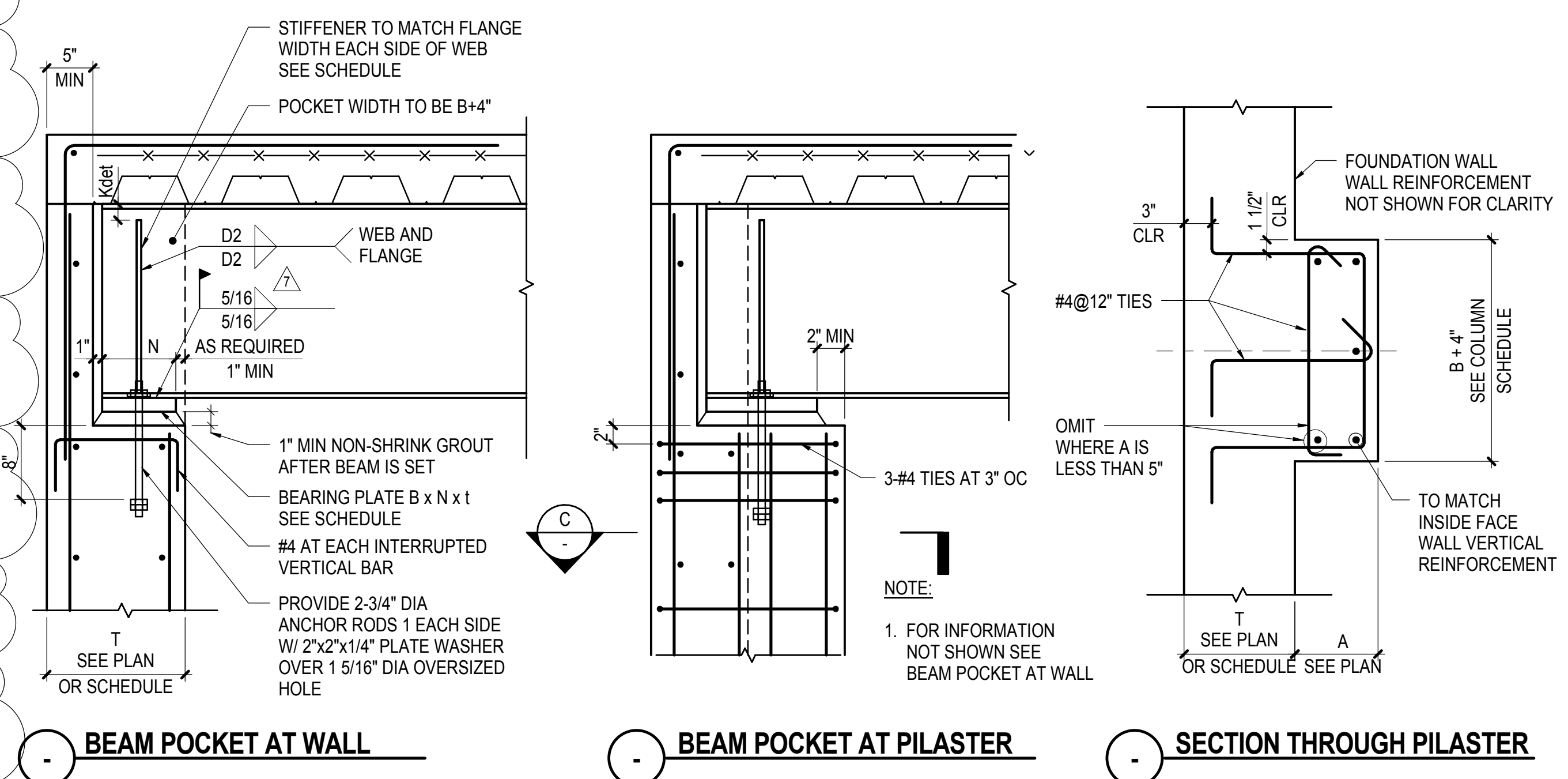
**3 TYPICAL FULL HEIGHT FITTED STIFFENER AT SPANDREL OR BRACED BEAM CONNECTION**  
NOT TO SCALE



- NOTE:**
- SEE PLAN FOR LOCATIONS

**4 TYPICAL FULL HEIGHT UNFITTED STIFFENER AT BRACED BEAM CONNECTION**  
NOT TO SCALE

BEARING PLATE SCHEDULE								
BEAM SIZE	B (INCH)	N (INCH)	t (INCH)	BEARING PLATE Fy (KSI)	STIFFENER (INCH)	D2	BEAM REACTION (KIPS)	COMMENTS
W14x120, W14x176	16	16	1-1/4	36	-	-	130	
W16x50, W21x44	13	16	5/8	36	1/2	5/16	180	
W21x48	15	16	5/8	36	1/2	5/16	180	
W24x55, W24x62	8	16	1	36	-	-	170	
W30x135, W36x162	12.5	16	1-1/2	36	-	-	250	
W36x160	18	16	1-1/4	36	5/8	5/16	400	FINISH TO BEAR BETWEEN BEAM AND BEARING PLATE
W33x387	40	16	3	50	1-1/4	3/8	1425	FINISH TO BEAR BETWEEN BEAM AND BEARING PLATE
W36x395, W36x441	37	16	2-3/4	50	1-1/4	3/8	1300	FINISH TO BEAR BETWEEN BEAM AND BEARING PLATE
W36x487	37	16	2-3/4	50	1-1/2	3/8	1300	FINISH TO BEAR BETWEEN BEAM AND BEARING PLATE
W18x71	17	12	2	50	1/2	5/16	200	FINISH TO BEAR BETWEEN STIFFENER AND FLANGE
W18x158	13	12	2	50	-	-	280	
W24x117	14	12	2	50	-	-	180	
W27x94	11	12	2	50	-	-	130	
W14x120	16	16	1-1/4	50	-	-	100	
W14x43	10	5	1/2	36	-	-	10	
W14x43	17	3	1/2	36	-	-	10	KIOSK NORTH END BEARING SEE DET. 1/S-537
W14x43	19	3	1/2	36	-	-	10	KIOSK SOUTH END BEARING SEE DET. 1/S-537
W14x30	15	3	1/2	36	-	-	10	PAVILION SHAFT BEARING SEE DET. 7/S-562



**5 TYPICAL BEAM POCKET IN FOUNDATION WALL**  
NOT TO SCALE

DESCRIPTION	DATE
DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0121	6/7/2016
ASH0115	02/22/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0021	5/7/2014
ASH0016 - FAN ROOM ACCESS PLATE	4/7/2014
GRIDER MODIFICATION	
ASH0013	3/28/2014
ASH0005	2/18/2014
NYC DOB FILING	12/4/2013
ASH0002	11/22/2013
L.I.R.R. - PRE-FINAL 100%	
ASH0016 - PLATFORM SUBMISSION	
DE.02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
NYC DOB FILING	10/4/2013
DE.01 PHASE 1 STRUCTURE UPDATE	9/29/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 60% SUBMISSION	5/29/2013
L.I.R.R. - 60% - PHASE 1/FDMS	3/29/2013
L.I.R.R. - 30% SUBMISSION	2/15/2013
Rev. Description	Date

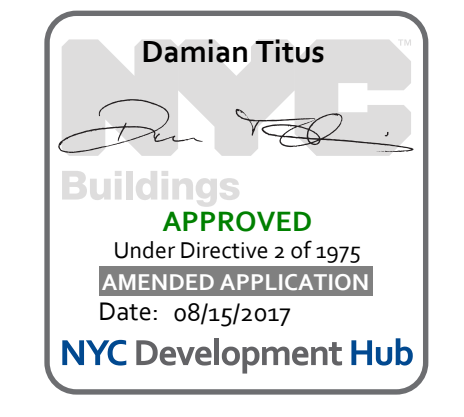
Key Plan

Date: 12/14/2012  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE-PL-S-712.01**

**TYPICAL STEEL BEAM DETAILS III**

Drawing Number: 8/0514/2012 Drawing Number  
**S-712.01**





DOR POST-APPROVAL AMENDMENT	10/28/2016
ASH0084	6/17/2015
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
ASH0037 - RETAIL FIELD MODE	8/19/2014
Rev	Rev

Rev File

Date	06/11/14
Project No	N11330.00
Drawn By	Author
Sheet Number	

**HYE -PL -S-715.00**

**TYPICAL STEEL BEAM DETAILS VI**

Drawing Number / B/CAN Drawing Number

**S-715.00**

SHEET 144 of 163

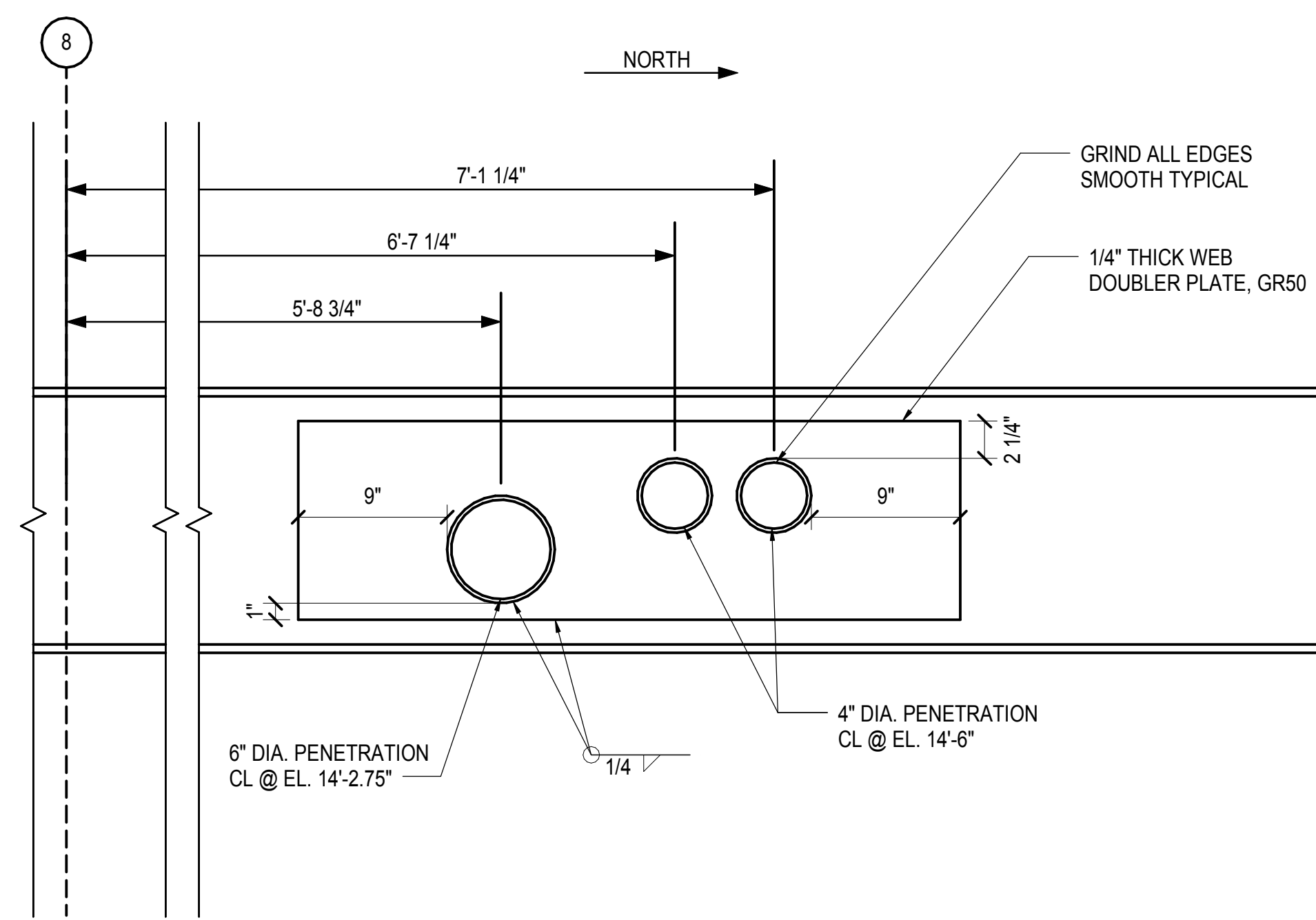
BEAM WEB PENETRATION SCHEDULE										PLATE REINFORCEMENT GRADE TO MATCH GRADE OF BEAM
MARK	TYPE	MAXIMUM SIZE (IN)			CL OF PENETRATION ELEVATION	PLATES (I x WIDTH (IN))			ADD. SLAB REINF REQD SEE NOTE 4	REMARKS
		W	H	DIAMETER		TOP NS & FS	BOTTOM NS & FS	SIDE NS & FS		
CH	S	-	-	-	-	-	-	-	-	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CI	D	11	8	-	CL OF BEAM	-	-	-	-	REFER TO DETAIL 3/S-715.00
CJ	D	14	13	-	CL OF BEAM	-	-	-	-	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CK	U	11	8	-	CL OF BEAM	-	-	-	-	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CL	S	11	8	-	CL OF BEAM	1 1/4" x 4 3/4"	1 1/4" x 4 3/4"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CM	S	11	8	-	CL OF BEAM	1 1/2" x 4 3/4"	1 1/2" x 4 3/4"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CN	S	11	8	-	CL OF BEAM	1 1/4" x 5"	1 1/4" x 5"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CO	S	11	8	-	CL OF BEAM	1" x 5"	1" x 5"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CP	S	11	8	-	CL OF BEAM	3/4" x 4 1/2"	3/4" x 4 1/2"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CQ	S	14	13	-	CL OF BEAM	1/2" x 3"	1/2" x 3"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CR	S	11	8	-	CL OF BEAM	3/4" x 5"	3/4" x 5"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CS	S	11	8	-	CL OF BEAM	3/4" x 3"	3/4" x 3"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CT	S	-	-	7	38'-8"	1/2" x 4 1/2"	1/2" x 4 1/2"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CU	S	-	-	8	38'-3 1/2"	1/2" x 4 1/2"	1/2" x 4 1/2"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CV	S	-	-	7	38'-8"	3/4 x 4 1/2"	3/4 x 4 1/2"	-	5/16	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CW	U	-	-	4	38'-9 1/2"	-	-	-	-	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CX	U	-	-	10	38'-3 1/2"	-	-	-	-	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
CY	S	-	-	-	-	-	-	-	-	SEE DETAIL 5/S-820.00
CZ	U	-	-	10	29'-3"	-	-	-	-	ADDITIONAL STUDS ONLY REQUIRED PER NOTE 4
										REFER TO DETAIL 4/S-715.00

**1 BEAM WEB PENETRATION SCHEDULE (CONT.)**

1" = 1'-0"

NOTES:

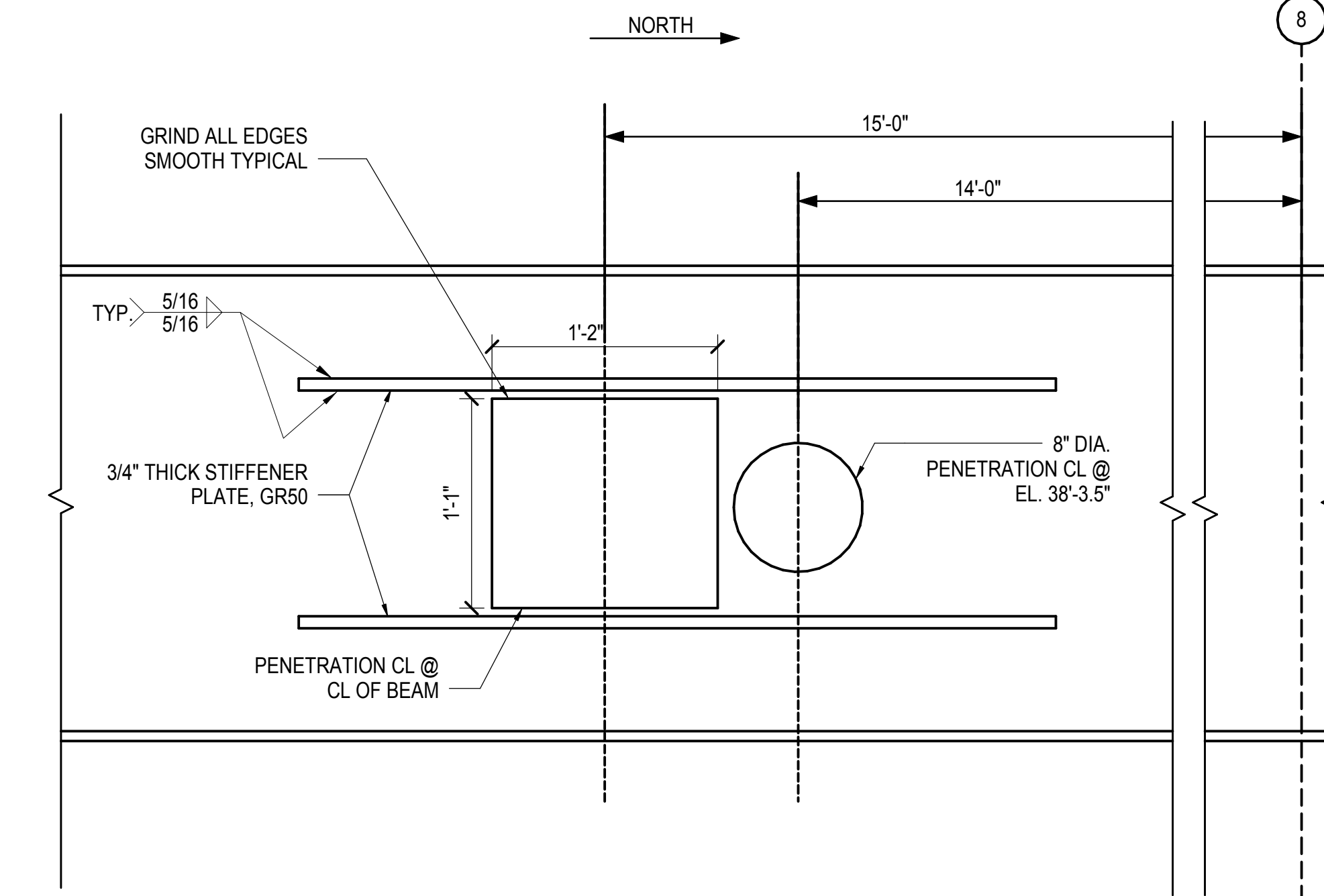
1. REFER TO S-714.00 FOR NOTES



NOTES: REFER TO DETAIL 3/S-714.00 FOR TYPICAL NOTES

**2 PENETRATION TYPE K ON CONTROL TOWER LEVEL ALONG GRID E**

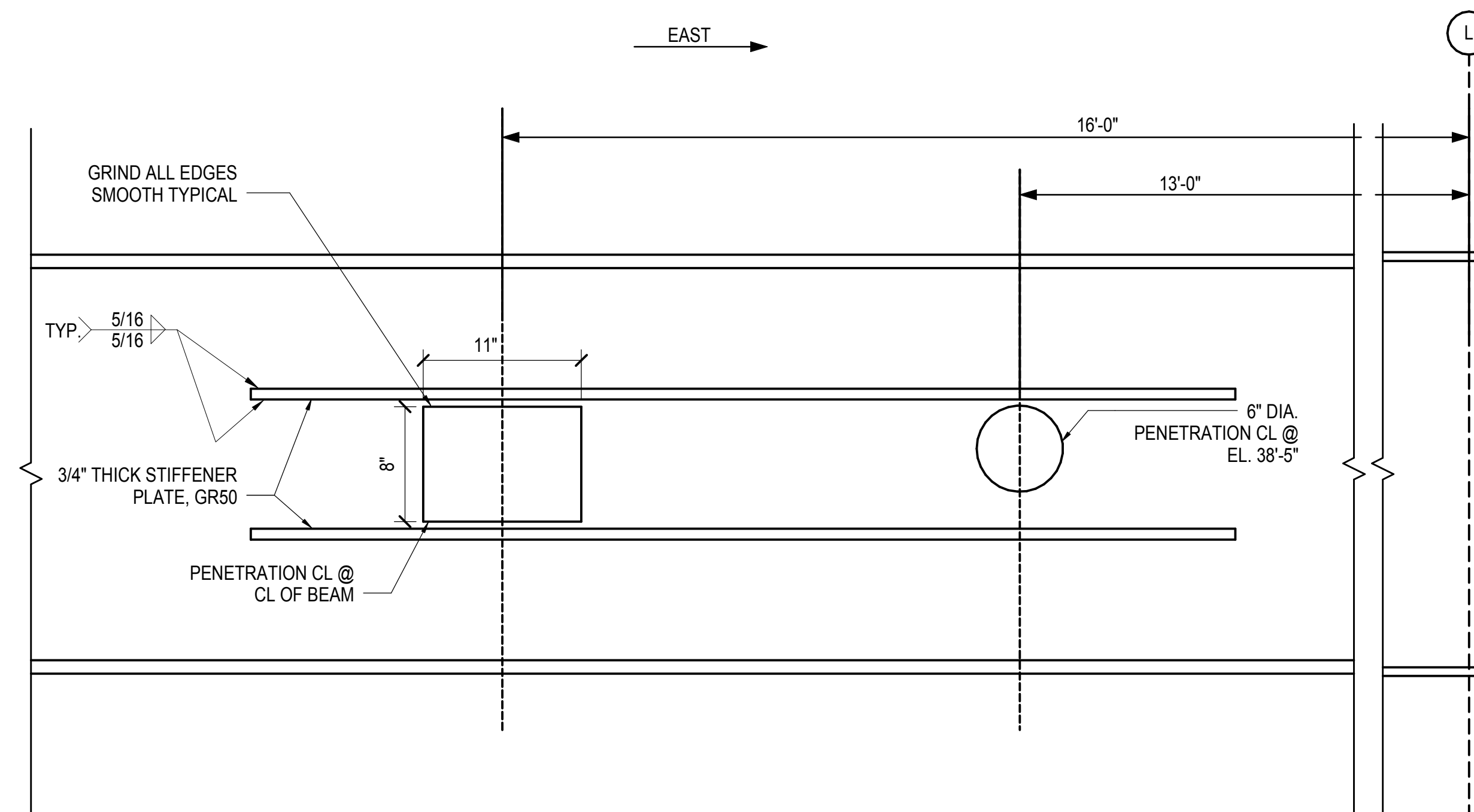
1 1/2" = 1'-0"



NOTES: REFER TO DETAIL 4/S-714.00 FOR TYPICAL NOTES

**3 PENETRATION TYPE CH ON UPPER PLATFORM LOADING DOCK ALONG GRID H**

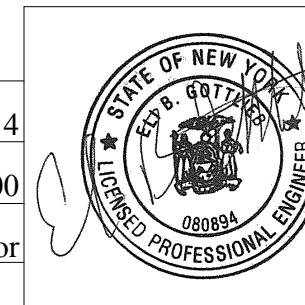
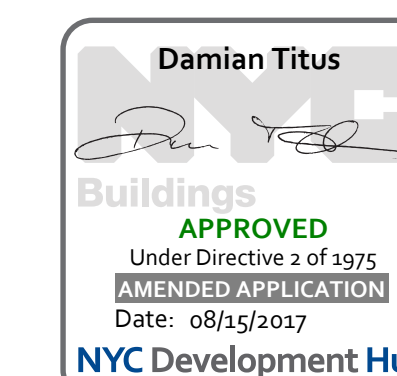
1 1/2" = 1'-0"



NOTES: REFER TO DETAIL 4/S-714.00 FOR TYPICAL NOTES

**4 PENETRATION TYPE CY ON UPPER PLATFORM LOADING DOCK ALONG GRID 10**

1 1/2" = 1'-0"



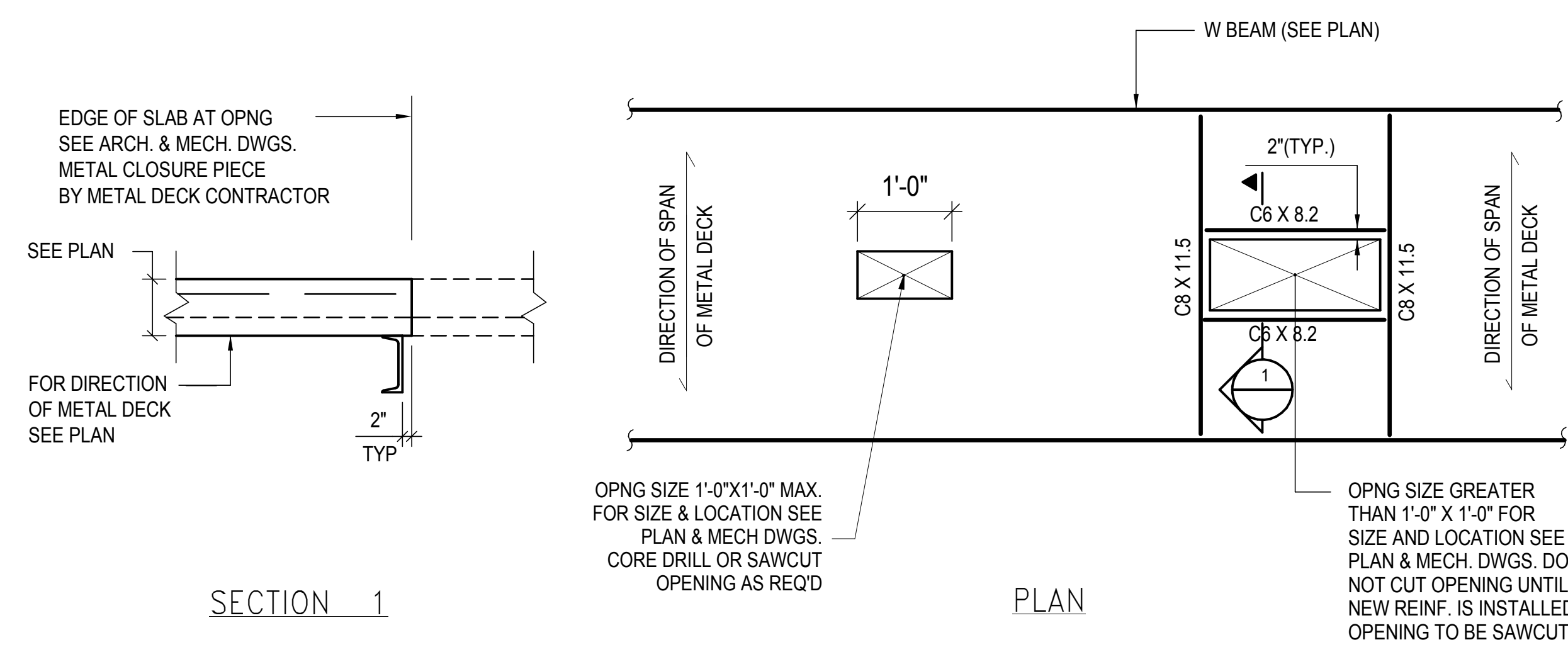
**HYE -PL -S-715.00**

**TYPICAL STEEL BEAM DETAILS VI**

Drawing Number / B/CAN Drawing Number

**S-715.00**

SHEET 144 of 163

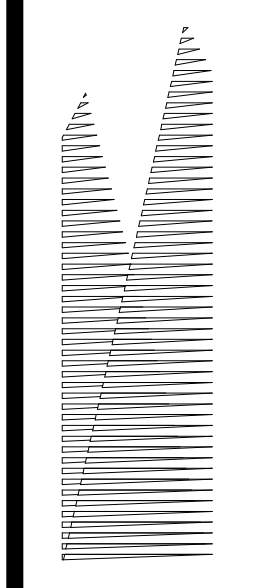


- NOTES:
1. CLUSTERED OPENINGS SPACED CLOSER THAN 12" CLEAR SHALL BE TREATED AS ONE LARGE OPENING, & PROVIDED THE REINF. OR FRAMING.
  2. DRYPACK BETWEEN CHANNELS & METAL DECK FOR FULL BEARING SUPPORT.

1 NEW OPENINGS IN EXISTING SLAB  
1" = 1'-0"

**HUDSON YARDS PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY



*Client*  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Outford Properties Group*  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

*Structural Engineer*  
Thornton Tomasetti, Inc.  
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New York, NY 10010  
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*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
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*LJRR Ventilation*  
Ove Arup & Partners P.C.  
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New York, NY 10005  
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*LJRR Substation*  
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605 Third Avenue  
New York, NY 10158  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASB0092	8/10/2015
ASB0092	8/10/2015

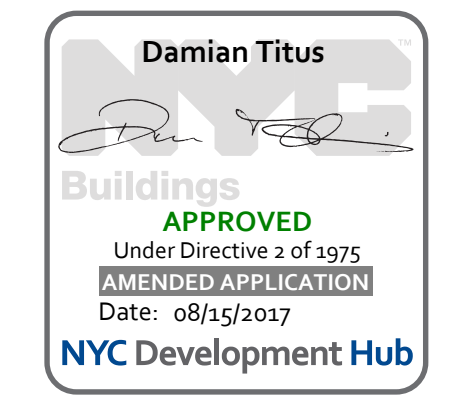
Key Plan

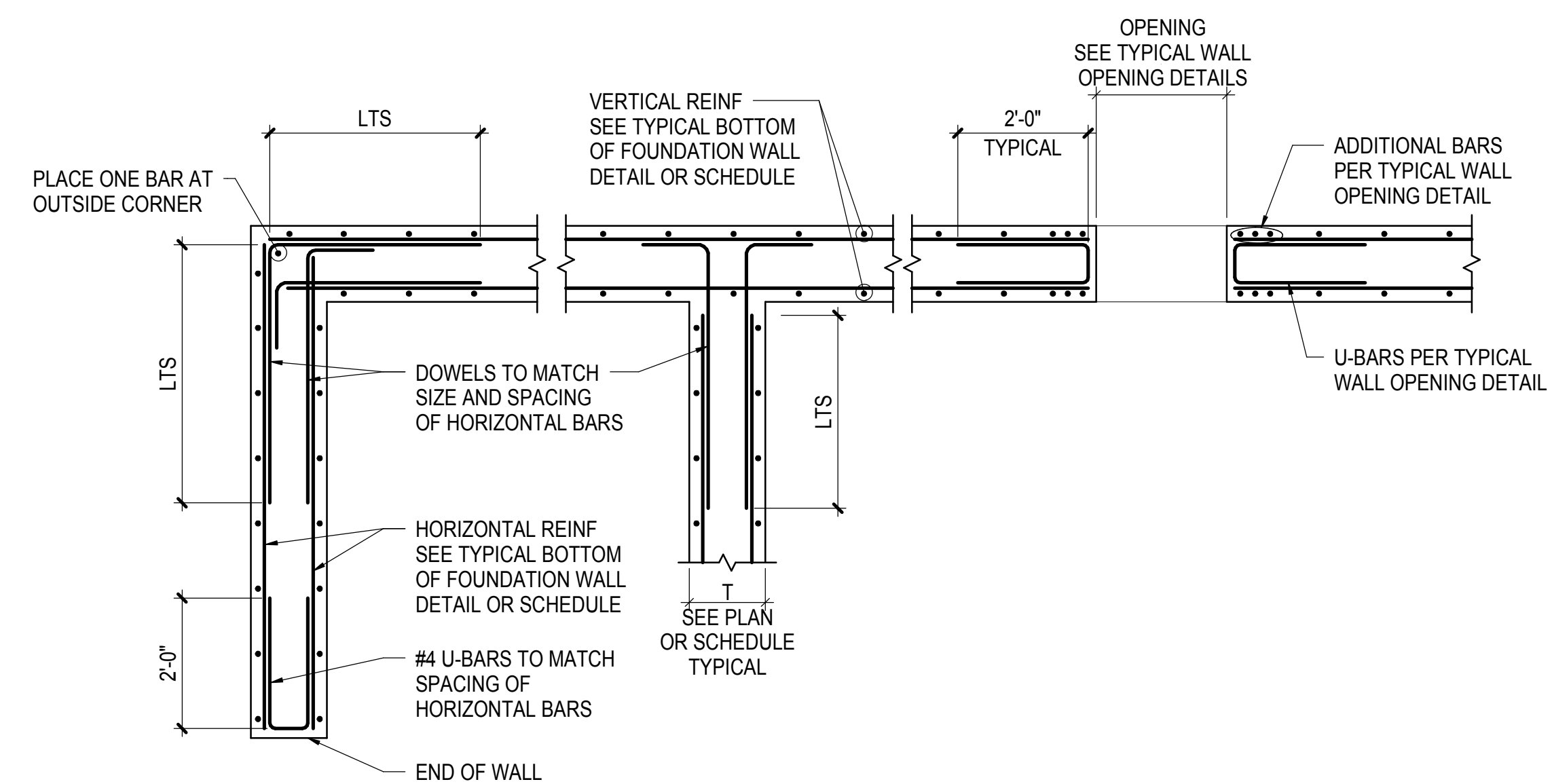
Date: 08/05/15  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

**HYE -PL -S-724.00**

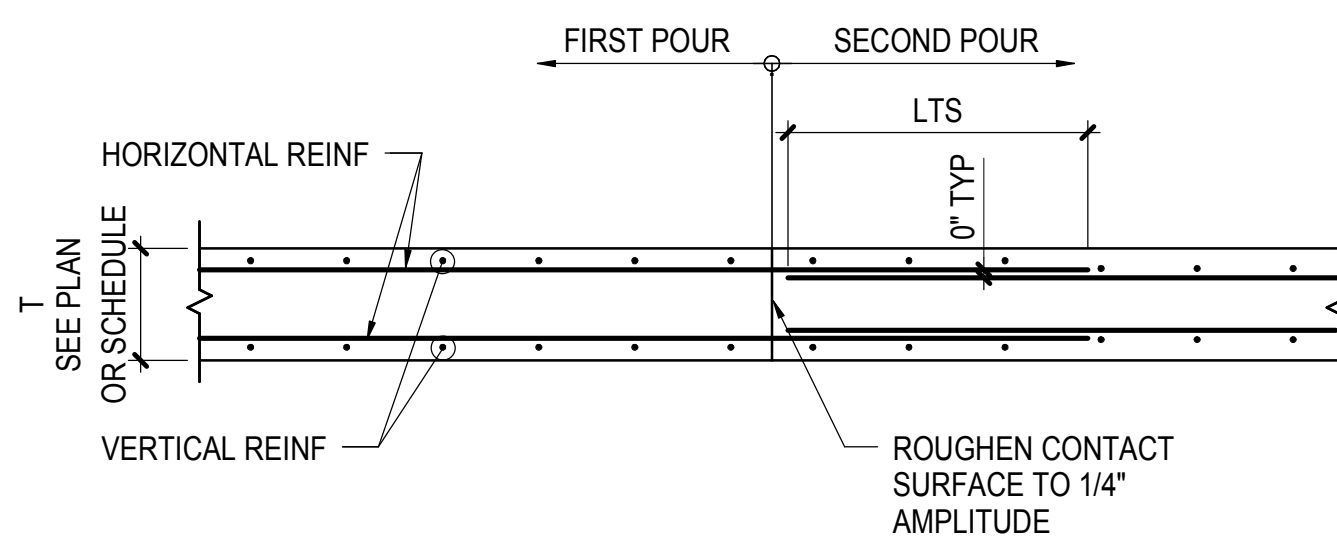
**TYPICAL COMPOSITE STEEL DECK DETAILS V**

Drawing Number / B/CAN Drawing Number  
**S-724.00**



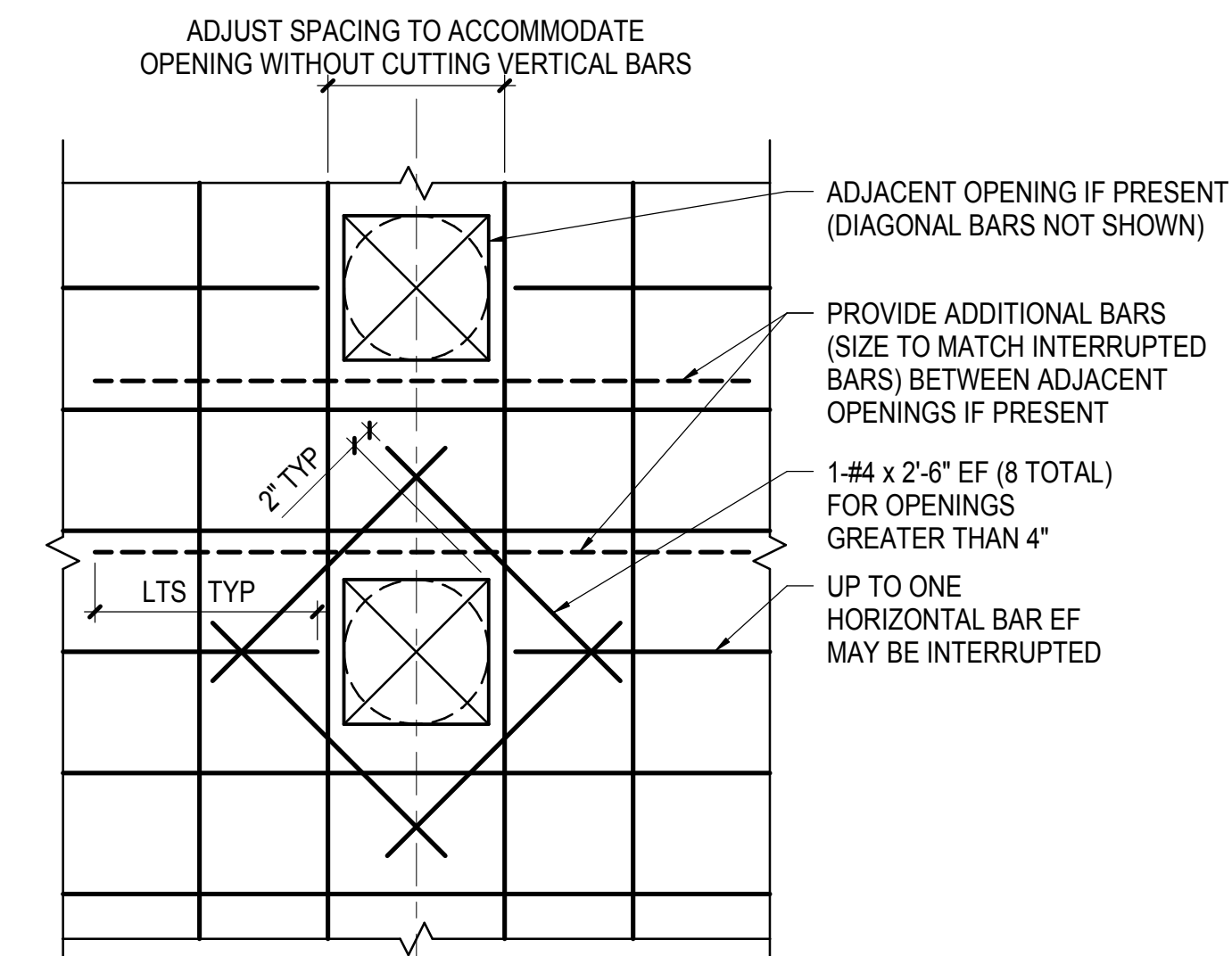


1 TYPICAL FOUNDATION WALL DETAIL - PLAN  
NOT TO SCALE



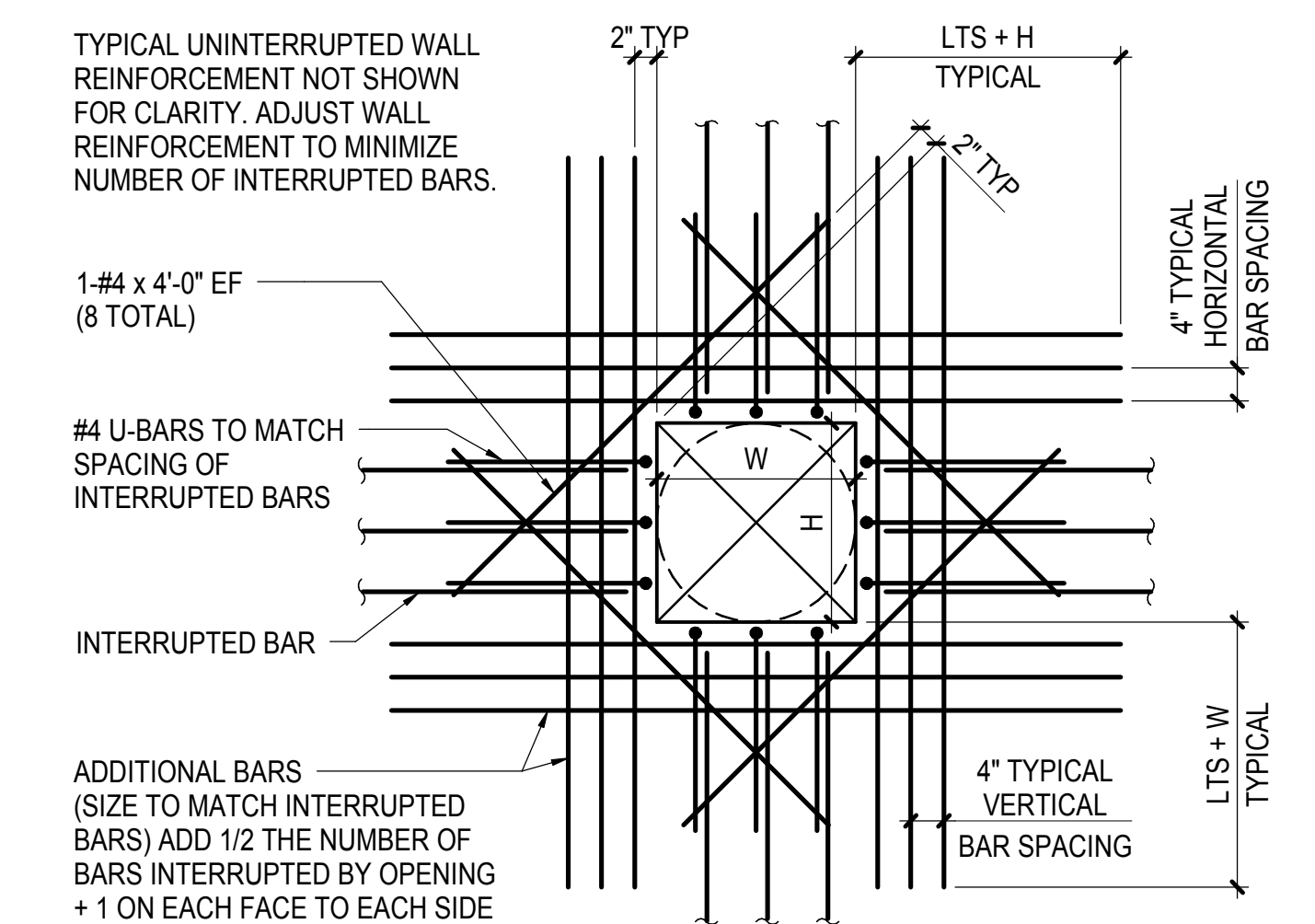
NOTES:  
1. SEE ARCHITECTURAL DOCUMENTS FOR WATERSTOP REQUIREMENTS  
2. SEE GENERAL NOTES FOR CONSTRUCTION JOINT MAXIMUM SPACING

2 TYPICAL VERTICAL CONSTRUCTION JOINT IN CONCRETE WALL  
NOT TO SCALE

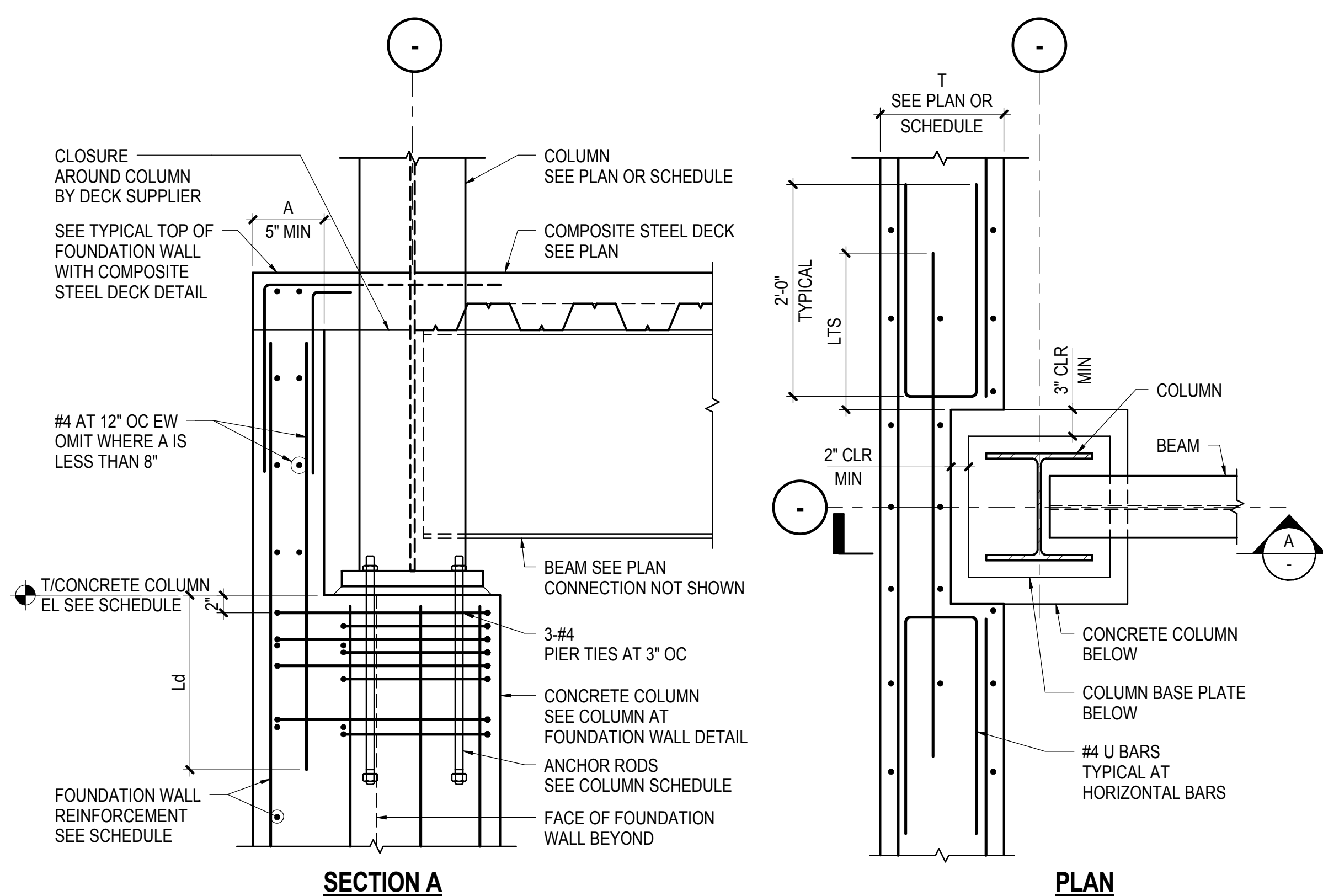


NOTES:  
1. MINIMUM CLEAR DISTANCE BETWEEN OPENINGS IS 2 TIMES MAXIMUM OPENING SIZE  
2. FOR OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS, CONTRACTOR TO SUBMIT LOCATIONS AND SPACING TO STRUCTURAL ENGINEER FOR WRITTEN APPROVAL

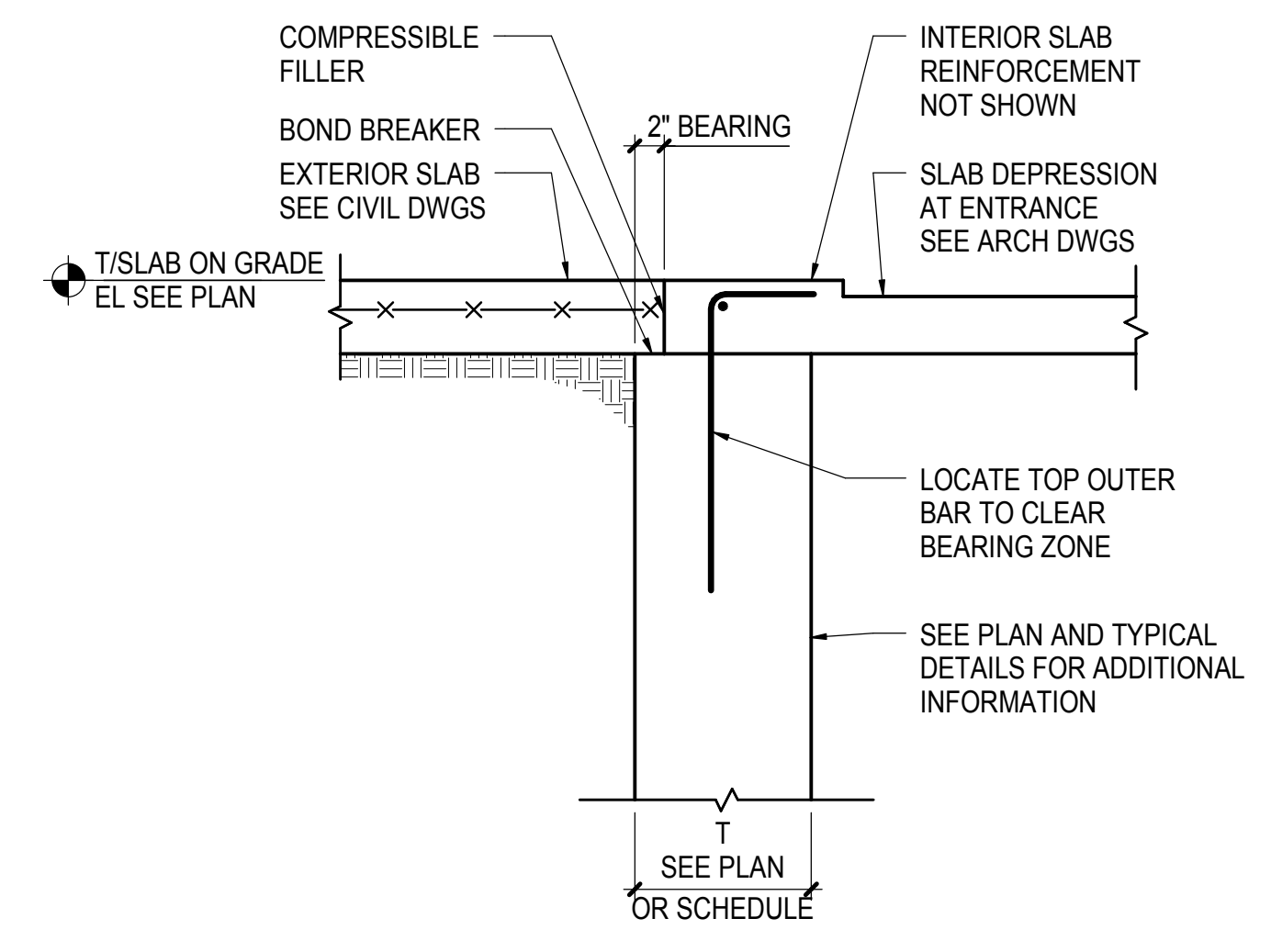
3 TYPICAL WALL OPENING DETAILS  
NOT TO SCALE



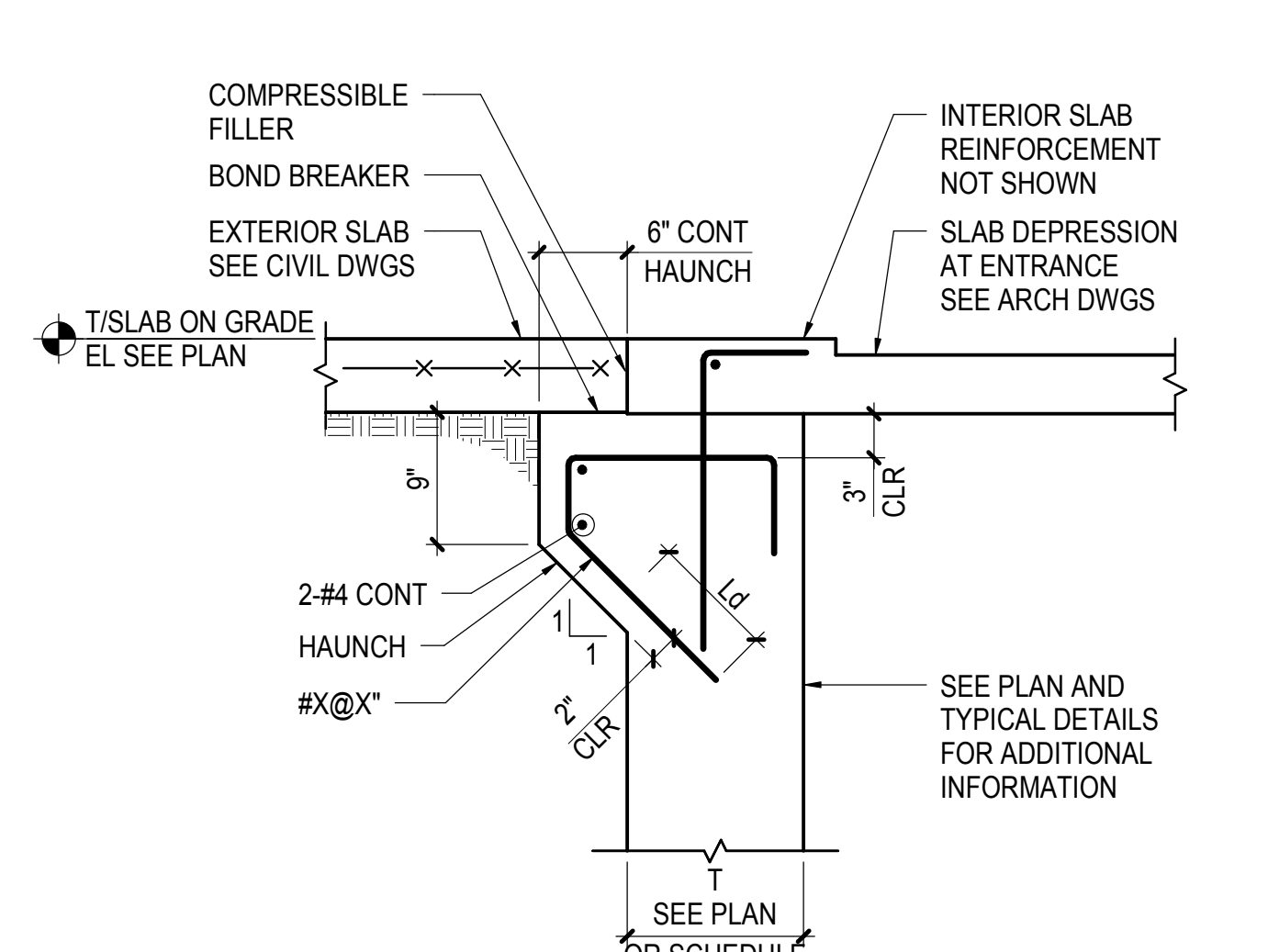
OPENING 10" TO 36"



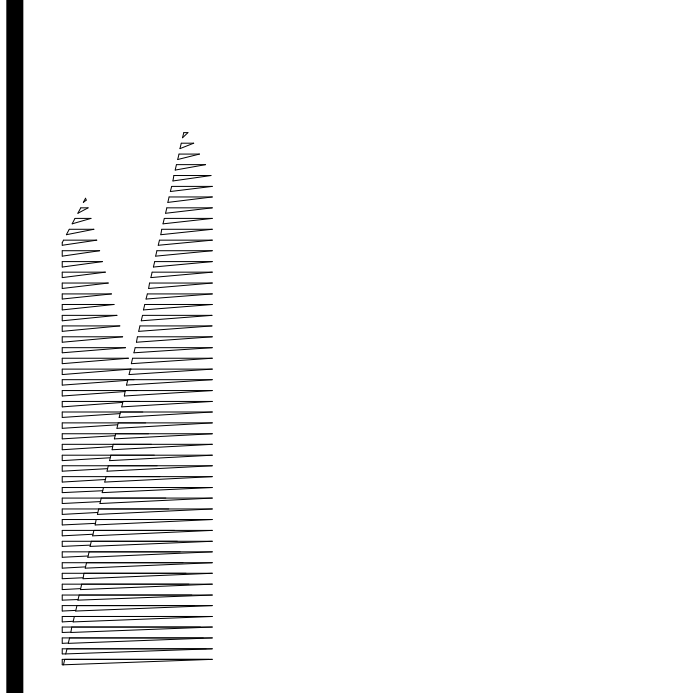
4 STEEL COLUMN AT FOUNDATION WALL  
NOT TO SCALE



5 TYPICAL SECTION AT ENTRANCE  
NOT TO SCALE



6 TYPICAL SECTION AT ENTRANCE WITH HAUNCH  
NOT TO SCALE



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owned Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
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Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
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Passes: Transportation Group  
100 Broadway  
New York, NY 10005  
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LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
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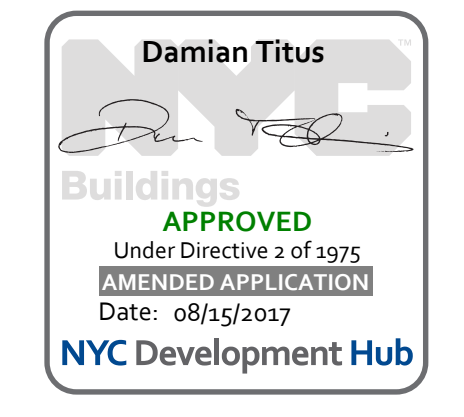
DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - M.o.E. FINAL 100% DESIGN	5/5/2015
SI SUBMISSION FOR RECORDS	
ASH0074	4/22/2015
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
LJRR M.o.E. PERMIT SET	8/1/2014
SI Description	086

Key Plan

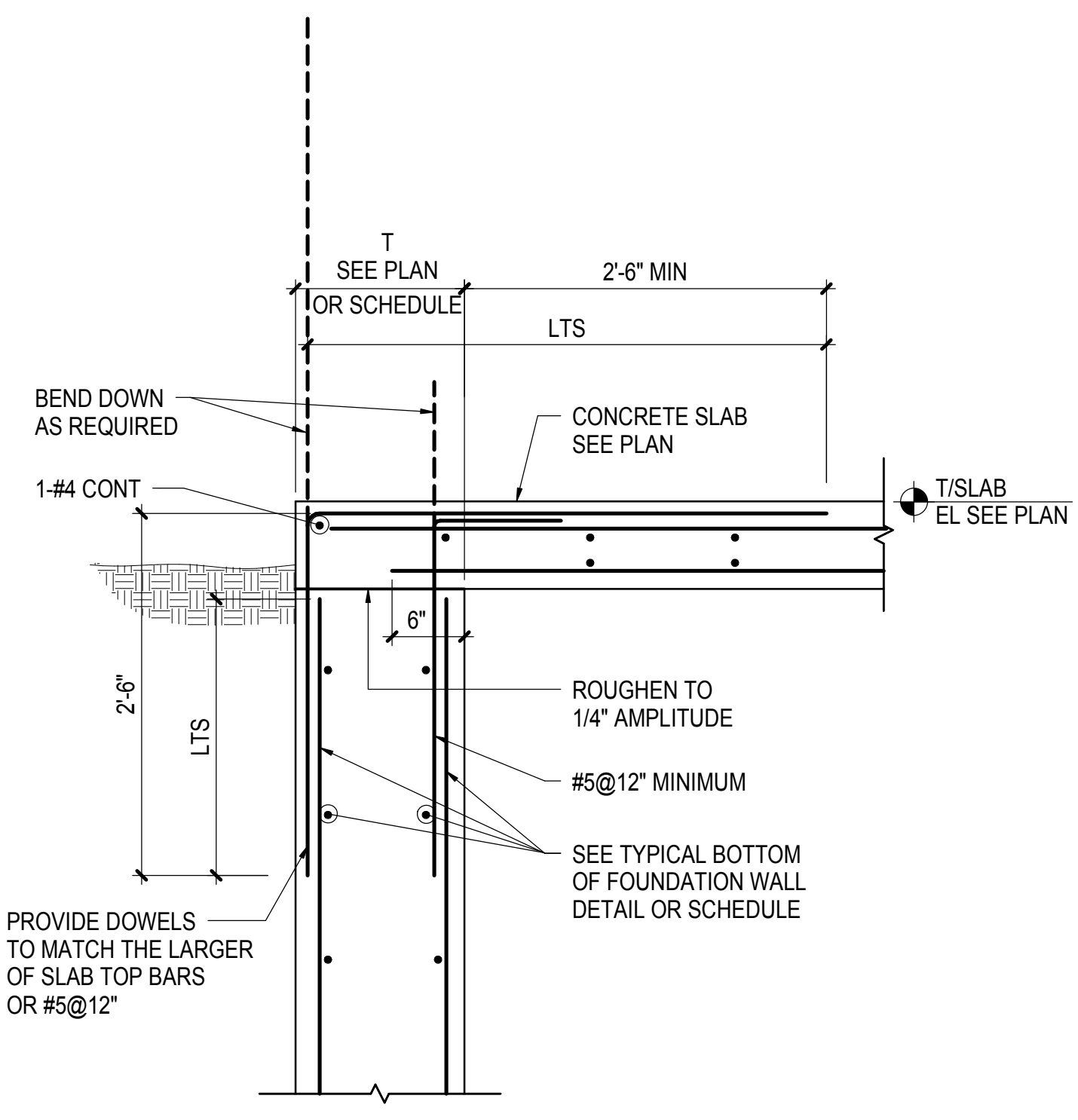
Date: 10/30/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

HYE -PL -S-734.00  
Drawing Title

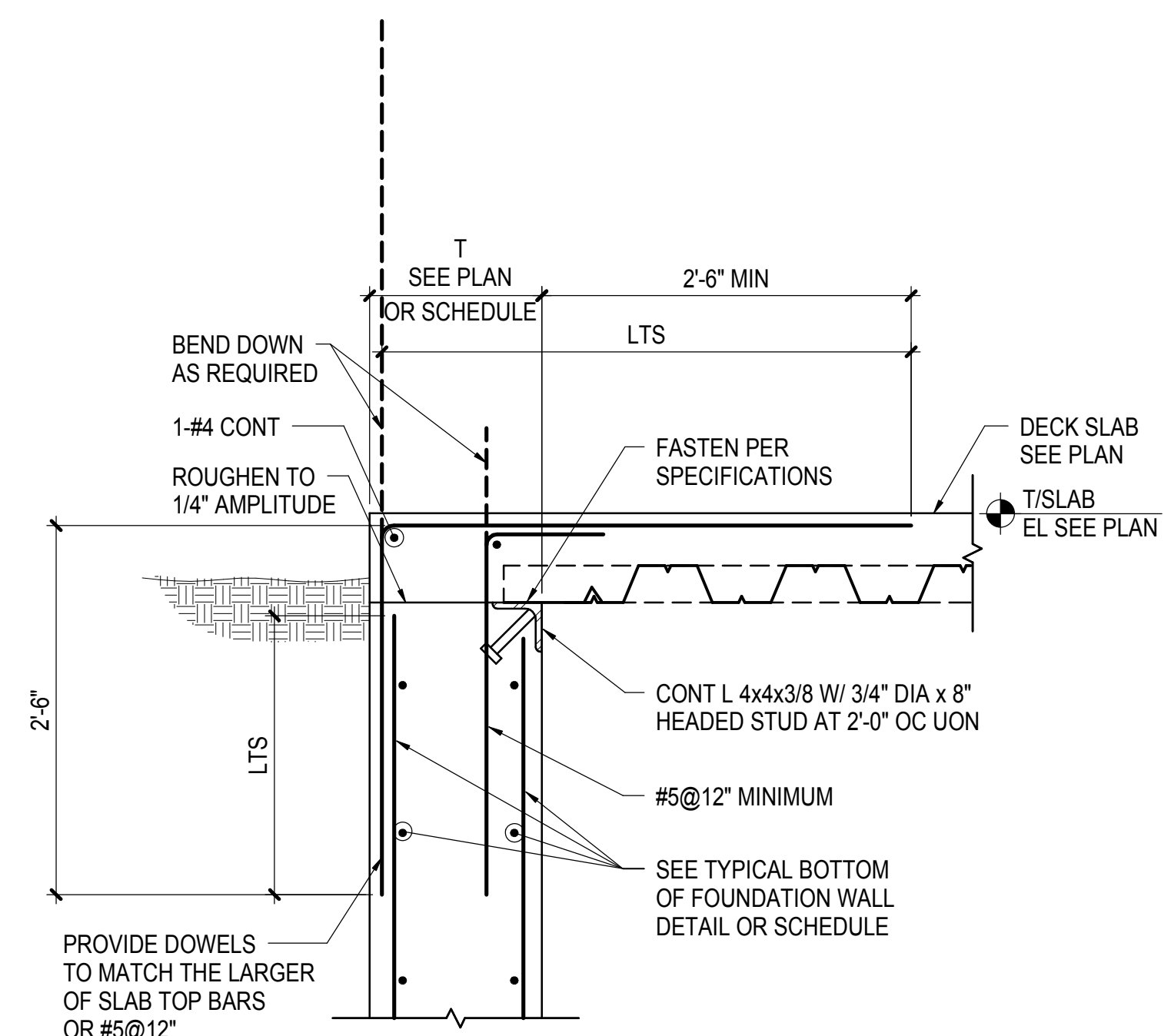
TYPICAL FOUNDATION WALL DETAILS I  
Drawing Number / B/CAN Drawing Number  
S-734.00  
SHEET 146 of 163



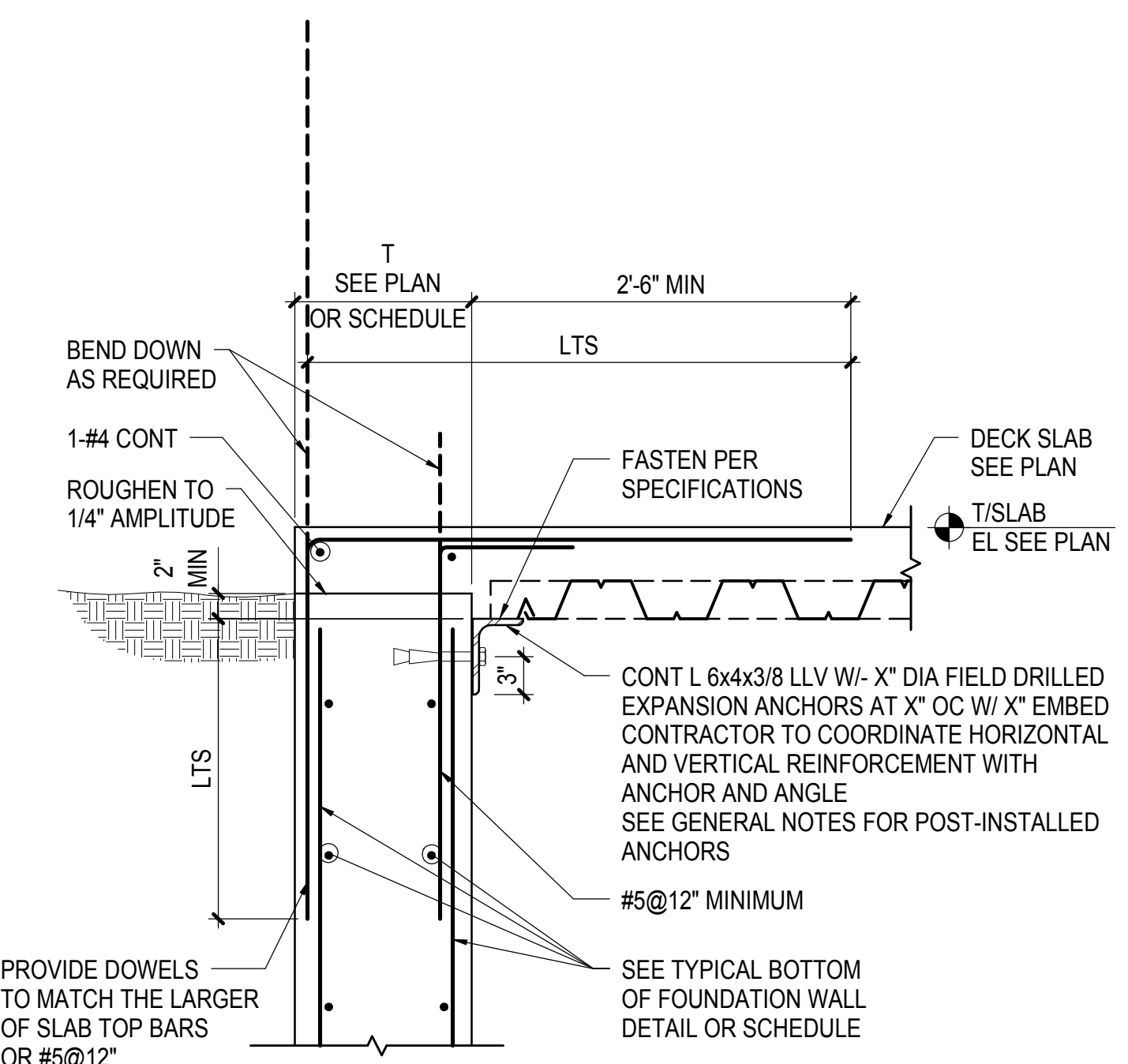




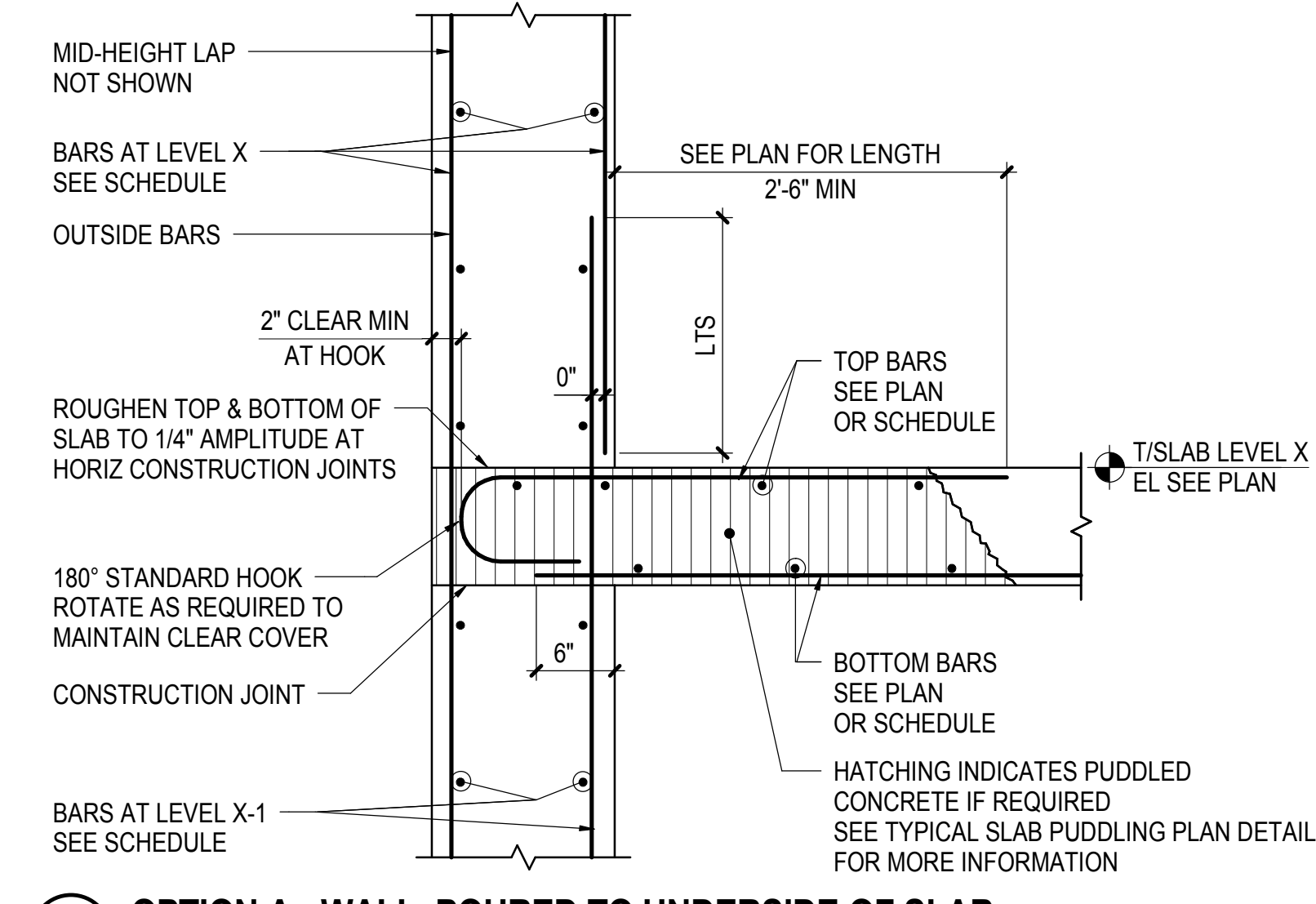
**1 TYPICAL TOP OF FOUNDATION WALL WITH CONCRETE SLAB**  
NOT TO SCALE



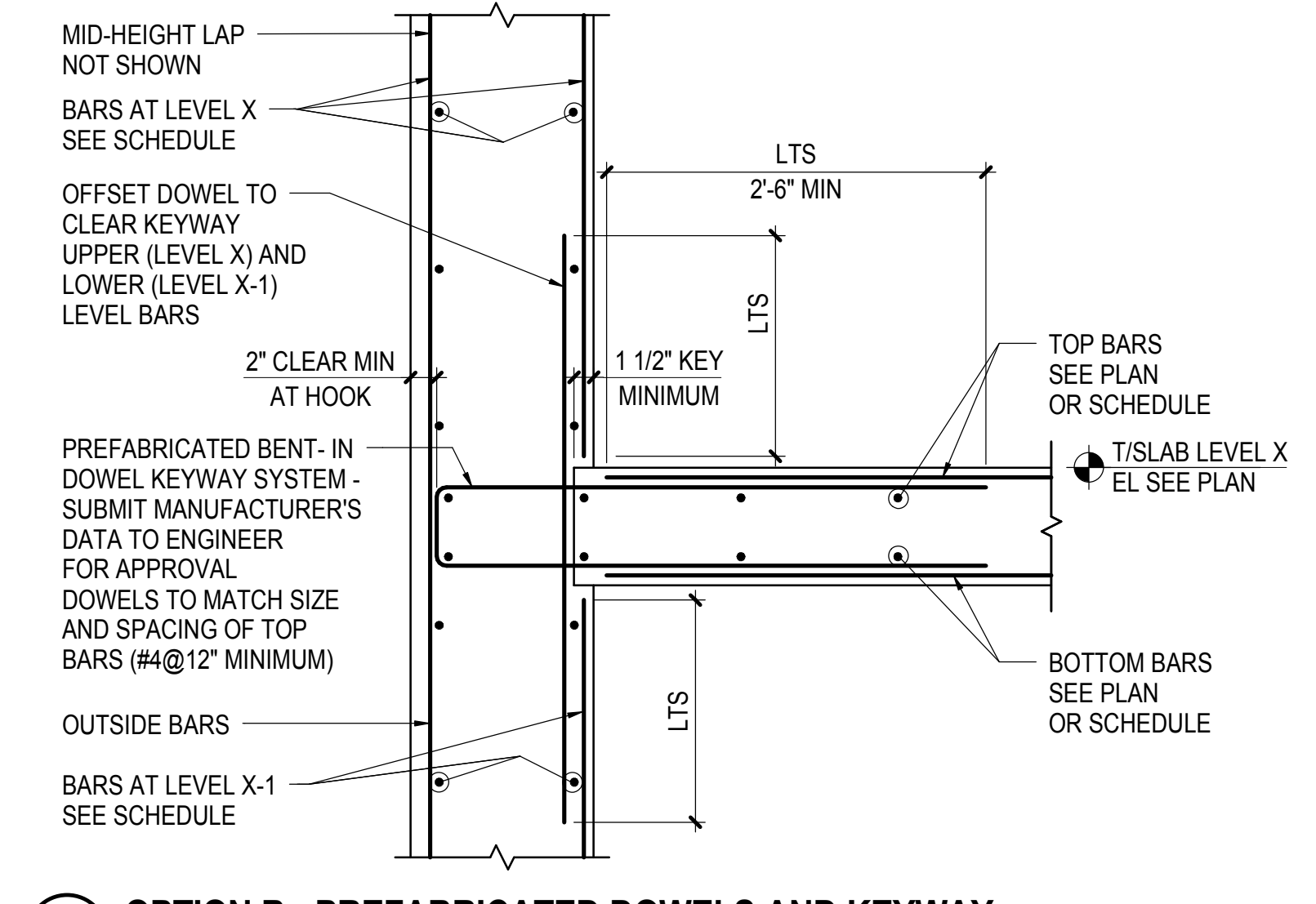
**2 TYPICAL TOP OF FOUNDATION WALL WITH COMPOSITE STEEL DECK**  
NOT TO SCALE



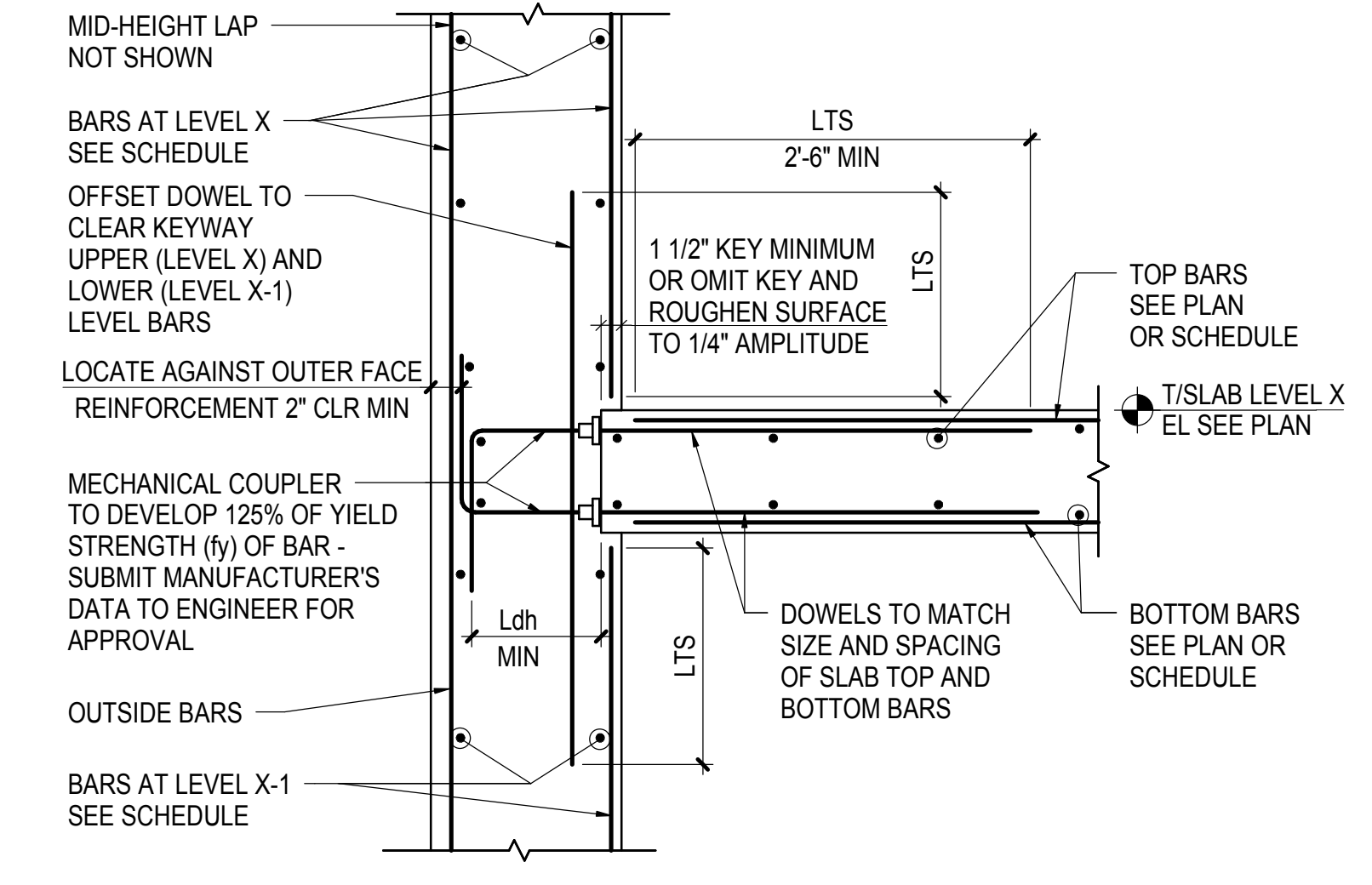
**3 TYPICAL BOTTOM OF FOUNDATION WALL**  
NOT TO SCALE



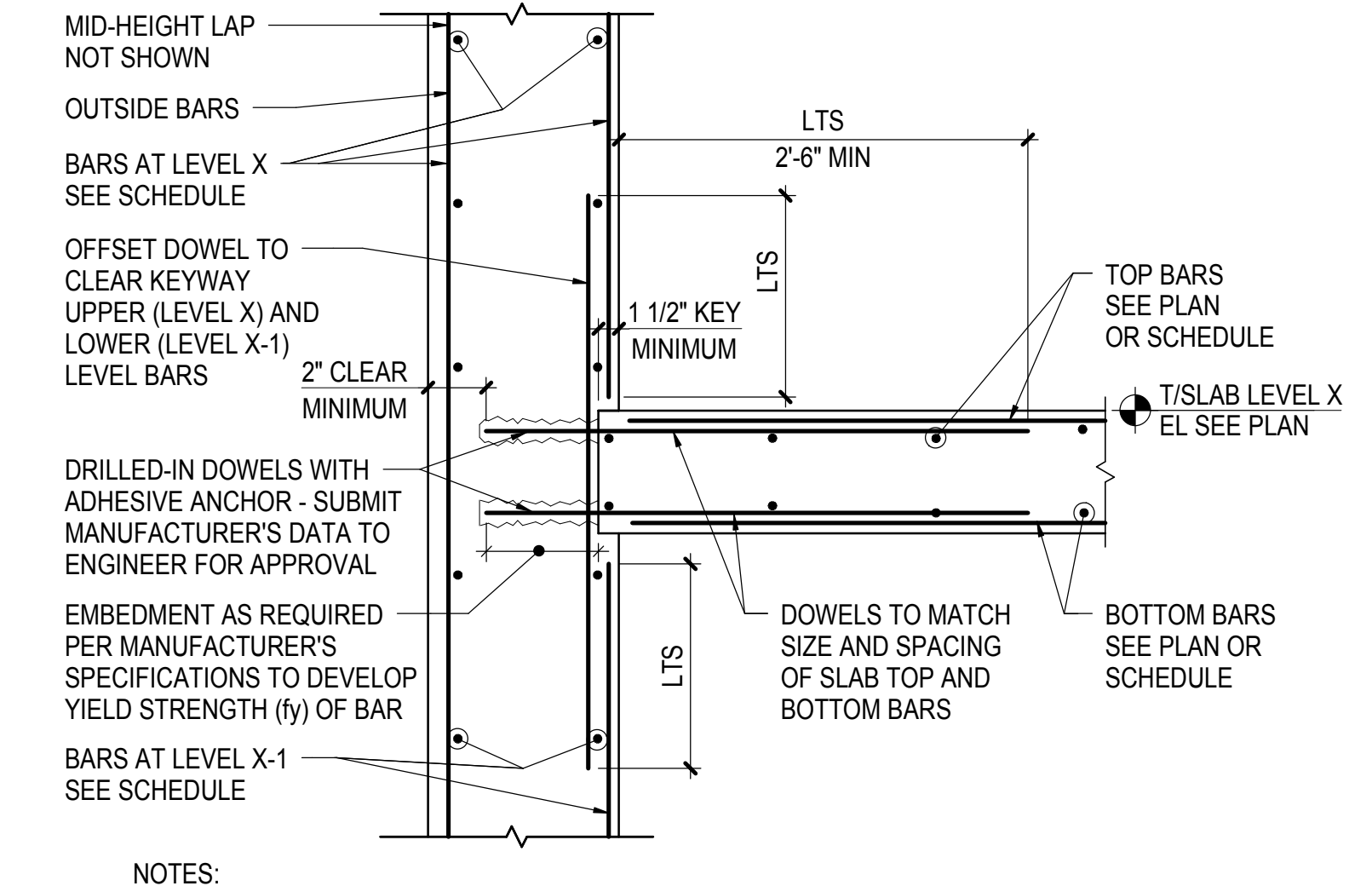
**A OPTION A - WALL POURED TO UNDERSIDE OF SLAB**



**B OPTION B - PREFABRICATED DOWELS AND KEYWAY**  
(IN WALL POURED MONOLITHIC)



**C OPTION C - MECHANICAL COUPLERS**  
(IN WALL POURED MONOLITHIC)

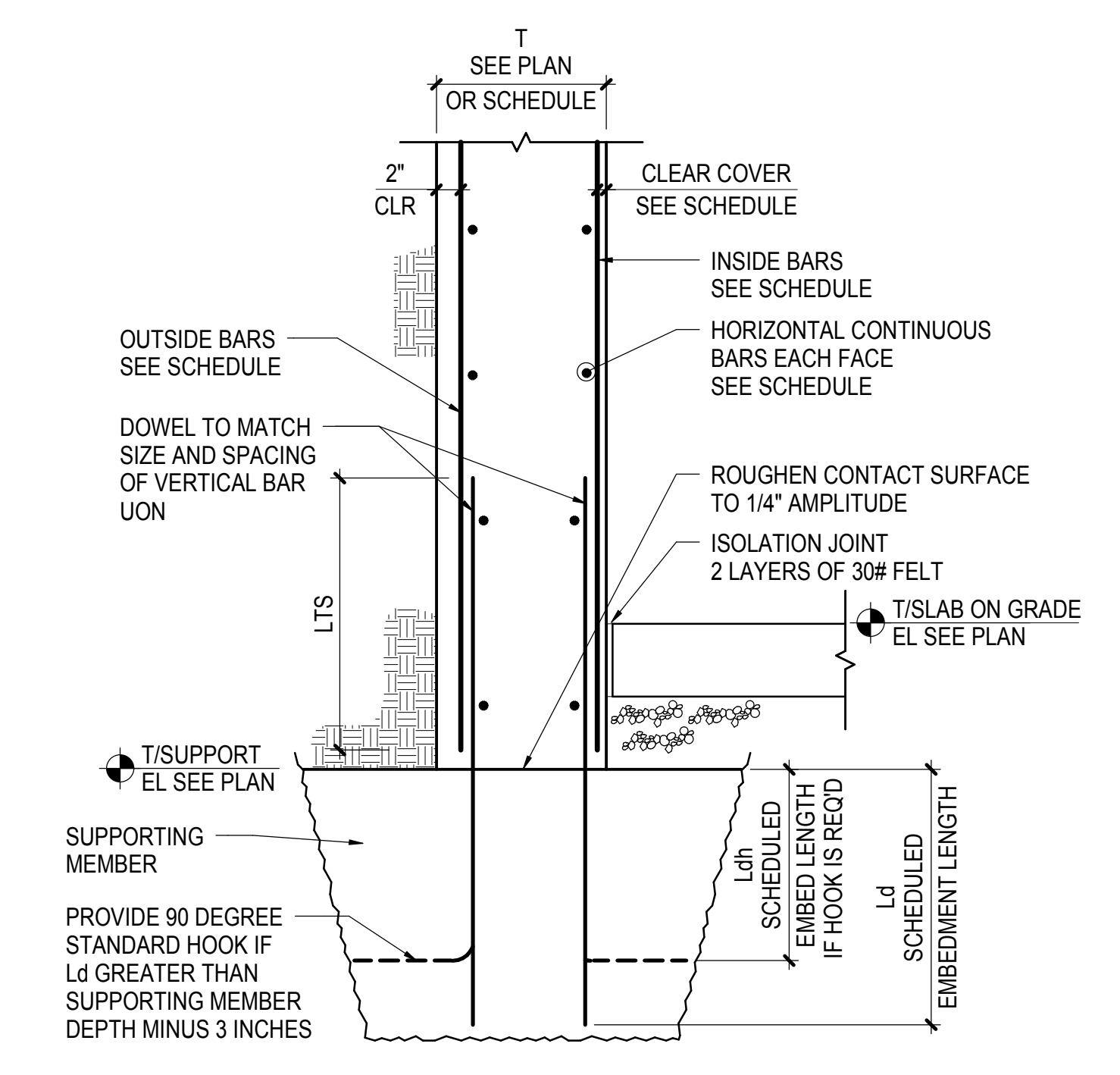


**D OPTION D - DRILLED IN DOWELS**  
(IN WALL POURED MONOLITHIC)

**NOTES:**  
1. OPTION D IS NOT TO BE USED UNLESS APPROVED IN WRITING BY THE ENGINEER OF RECORD. THE CONTRACTOR'S SUBMITTAL MUST CONSIDER AT A MINIMUM THE FOLLOWING:  
A. EMBEDMENT TO CONSIDER BAR SPACING AND EDGE CONDITION  
B. WALL REINFORCEMENT CONGESTION INCLUDING LAPS  
C. WALL THICKNESS TO DEVELOP REINFORCEMENT  
D. DESCRIPTION OF QUALITY CONTROL PROGRAM TO DEMONSTRATE ANCHORS ACHIEVE FULL STRENGTH OF DOWELS  
E. ANCHORS SHALL BE PULL TESTED FOLLOWING ACI STATISTICAL SAMPLING METHOD FOR TESTING FREQUENCY

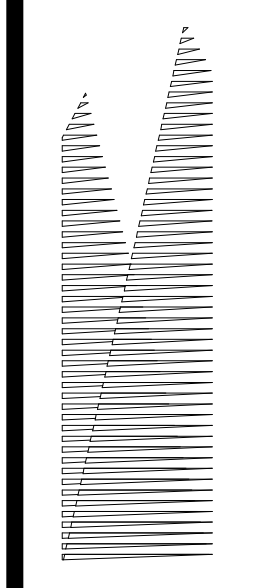
**NOTES:**  
1. SEE GENERAL NOTES FOR LAP SPLICE LOCATIONS FOR VERTICAL WALL REINFORCEMENT

**4 TYPICAL CONCRETE SLAB SUPPORT DETAILS AT FOUNDATION WALL**  
NOT TO SCALE



**HUDSON YARDS PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY



**Client**  
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60 Columbus Circle  
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**Owner**  
Oxford Properties Group  
130 Park Avenue, 17th Floor  
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Tel: 212.986.7514 Fax: 212.986.7510

**Construction Manager**  
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**Structural Engineer**  
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**Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**  
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Tel: 212.266.8300 Fax: 212.571.6825

**LJRR Ventilation**  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

**LJRR Substation**  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - M.O.E. FINAL 100% DESIGN	5/5/2015
SUBMISSION FOR RECORDS	
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
LJRR M.O.E. PERMIT SET	8/1/2014
% Description	Date

Key Plan

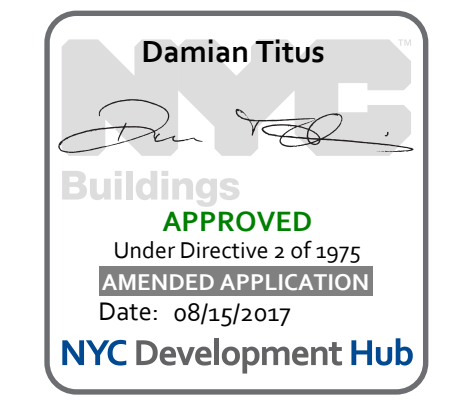
Date: 05/31/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

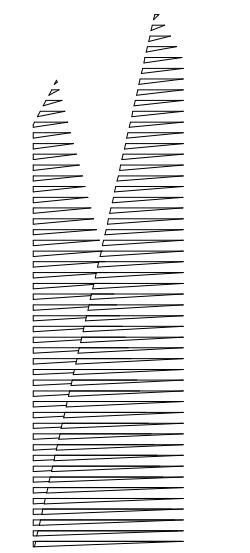
**HYE -PL -S-735.00**

**TYPICAL FOUNDATION WALL DETAILS II**

Drawing Title  
Drawing Number / Revision Drawing Number

**S-735.00**





Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
330 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Systems, Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

ILRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

ILRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0049	10/14/2014
Rev	Description
001	Issue

Rev

Date: 10/30/2013  
Project No: N11330.00  
Drawn By: Author  
Sheet Number



**HYE -PL -S-736.00**

**TYPICAL CONCRETE SLAB DETAILS**

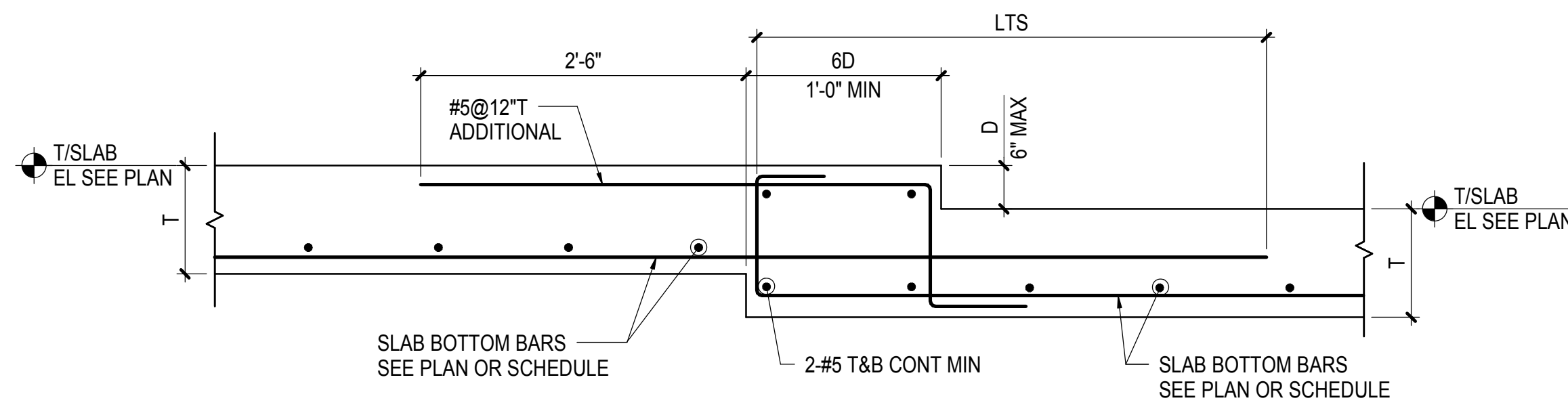
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**S-736.00**

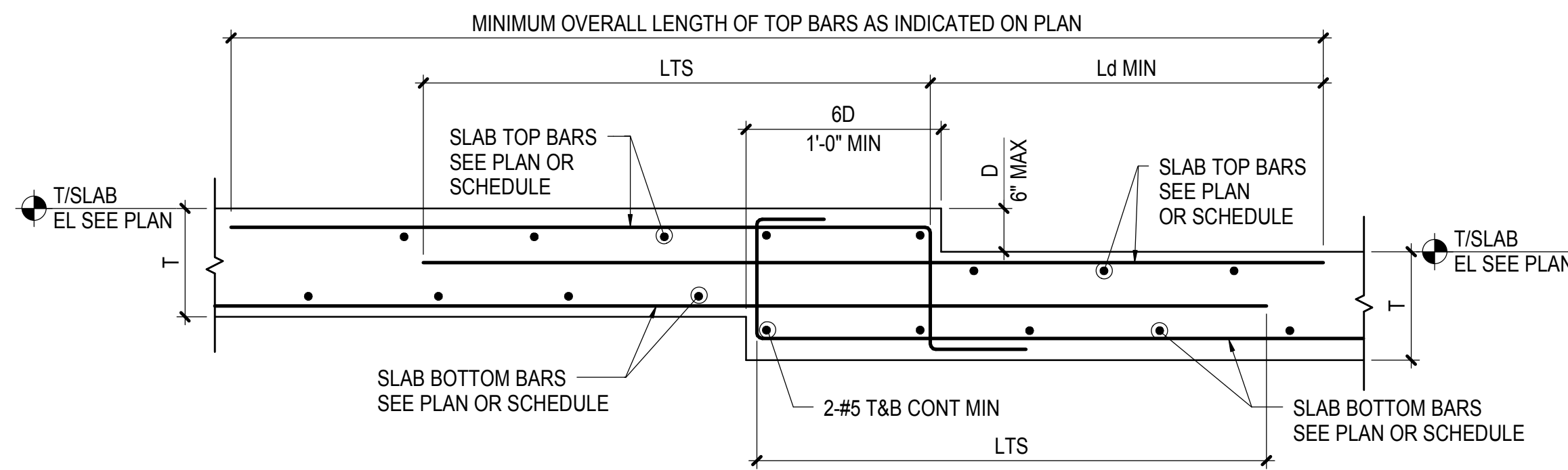
SHEET 148 of 163

**NOTES:**

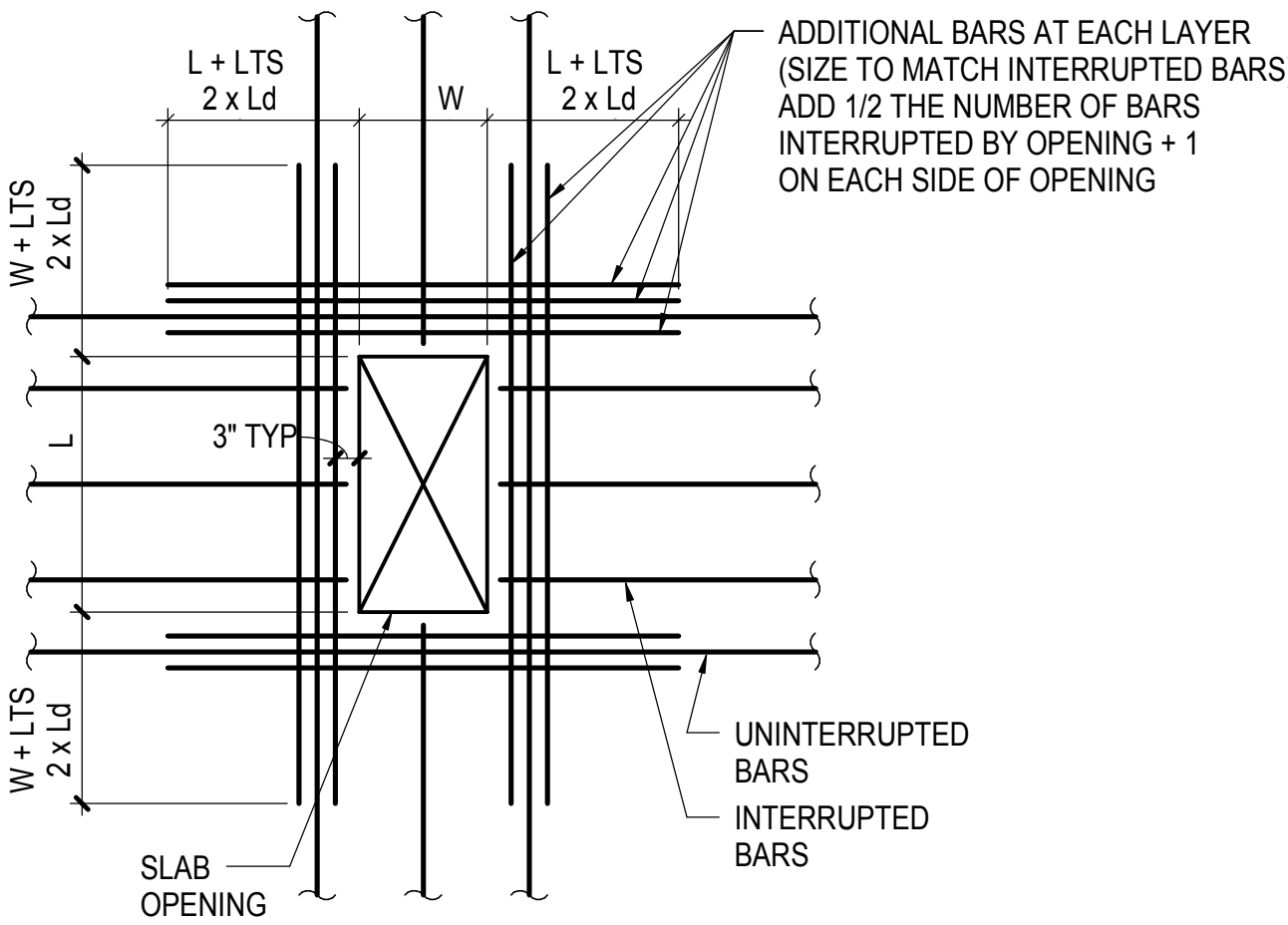
1. REFER TO PLANS FOR ADDITIONAL BARS AROUND OPENINGS
2. SEE STRUCTURAL DRAWINGS FOR QUANTITY AND LOCATIONS OF OPENINGS. CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH MEP DRAWINGS NOTIFY STRUCTURAL ENGINEER IN WRITING OF ANY DISCREPANCIES FOR REVIEW AND APPROVAL
3. FOR TWO-WAY SLAB SEE TYPICAL TWO-WAY SLAB OPENING LIMITATIONS. FOR OPENING NOT MEETING LIMITATIONS OR GREATER THAN 3 FEET, SUBMIT OPENINGS TO SER FOR APPROVAL
4. FOR ONE-WAY SLABS WHERE THE OPENING DIMENSION PERPENDICULAR TO THE DIRECTION OF THE SPAN IS GREATER THAN 2 FEET, SUBMIT OPENINGS TO SER FOR APPROVAL
5. WHERE ADJACENT OPENINGS ARE NOT SEPARATED BY 2X THE LARGEST OPENING DIMENSION OR WOULD INTERRUPT THE ADDITIONAL REINFORCEMENT FROM THE ADJACENT OPENING, SUBMIT OPENINGS TO SER FOR APPROVAL



**D LESS THAN T MINUS 2 INCHES  
BOTTOM BARS INTERRUPTED BY STEP**



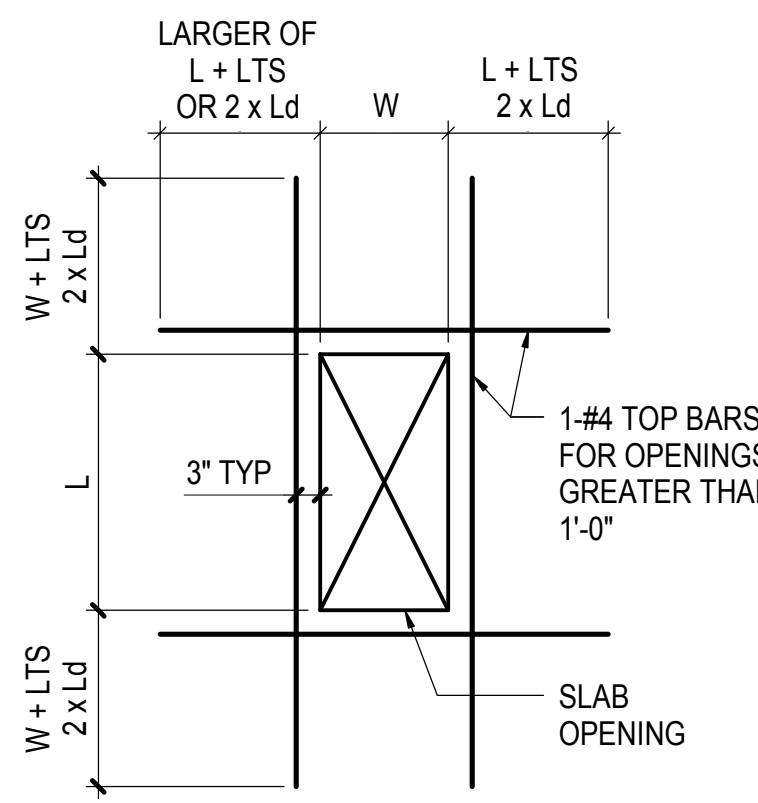
**D LESS THAN T MINUS 2 INCHES  
TOP AND BOTTOM BARS INTERRUPTED BY STEP**



**ADDITIONAL BARS WHERE BARS ARE INTERRUPTED**

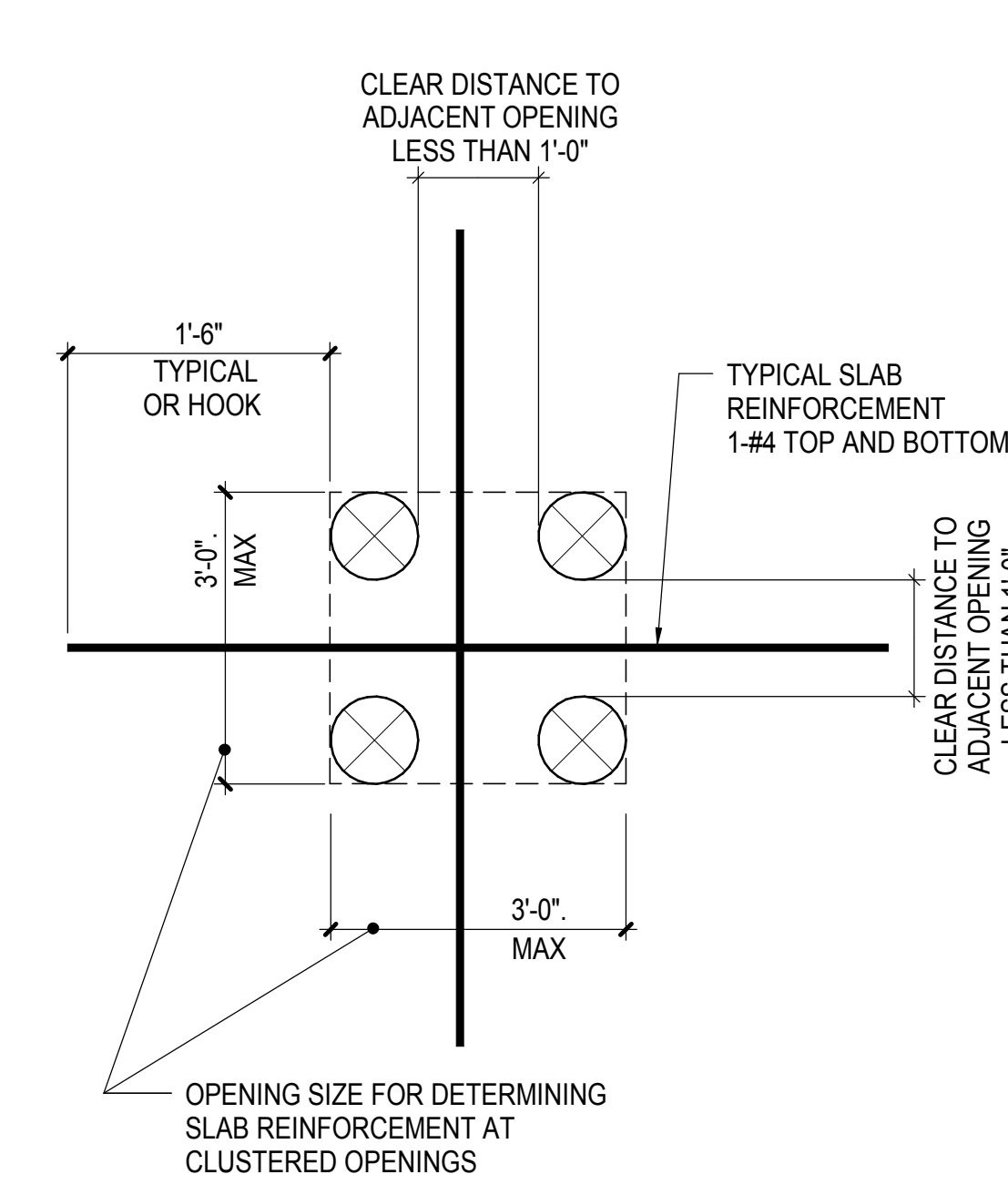
**NOTES: ADDITIONAL BARS**

1. PROVIDE ADDITIONAL BARS ON EACH SIDE OF OPENING FOR TOP AND BOTTOM BARS THAT ARE INTERRUPTED BY OPENINGS. DISTRIBUTE REPLACEMENT BARS EQUALLY TO BOTH SIDES OF OPENING AT 3" SPACING
2. PROVIDE A MINIMUM OF 2 BARS EACH SIDE OF OPENING TOP AND BOTTOM WHERE NO TOP BARS ARE PRESENT, PROVIDE ADDITIONAL TOP BARS SHOWN ABOVE
3. AT CLUSTERED OPENINGS, PROVIDE THESE ADDITIONAL BARS AROUND THE CLUSTER PLUS THE ADDITIONAL BARS SHOWN IN THE CLUSTERED OPENING DETAIL

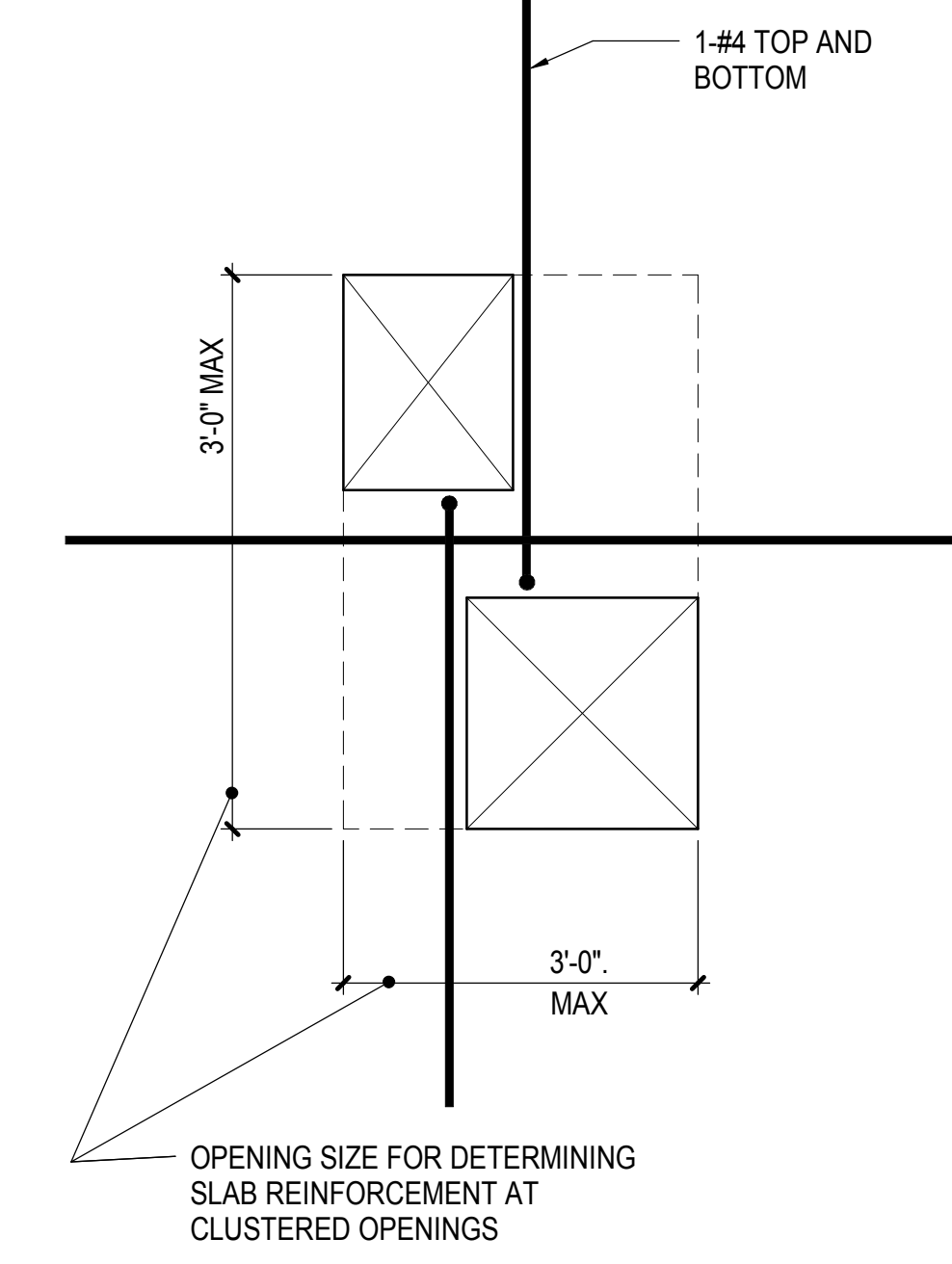


**ADDITIONAL TOP BARS WHERE NO TOP BARS ARE PRESENT**

ADDITIONAL TOP BARS	
OPENING SIZE (LARGER DIMENSION OF OPENING)	TOP BARS ALL SIDE
0 - 12"	NONE
12" - 36"	1 - #4

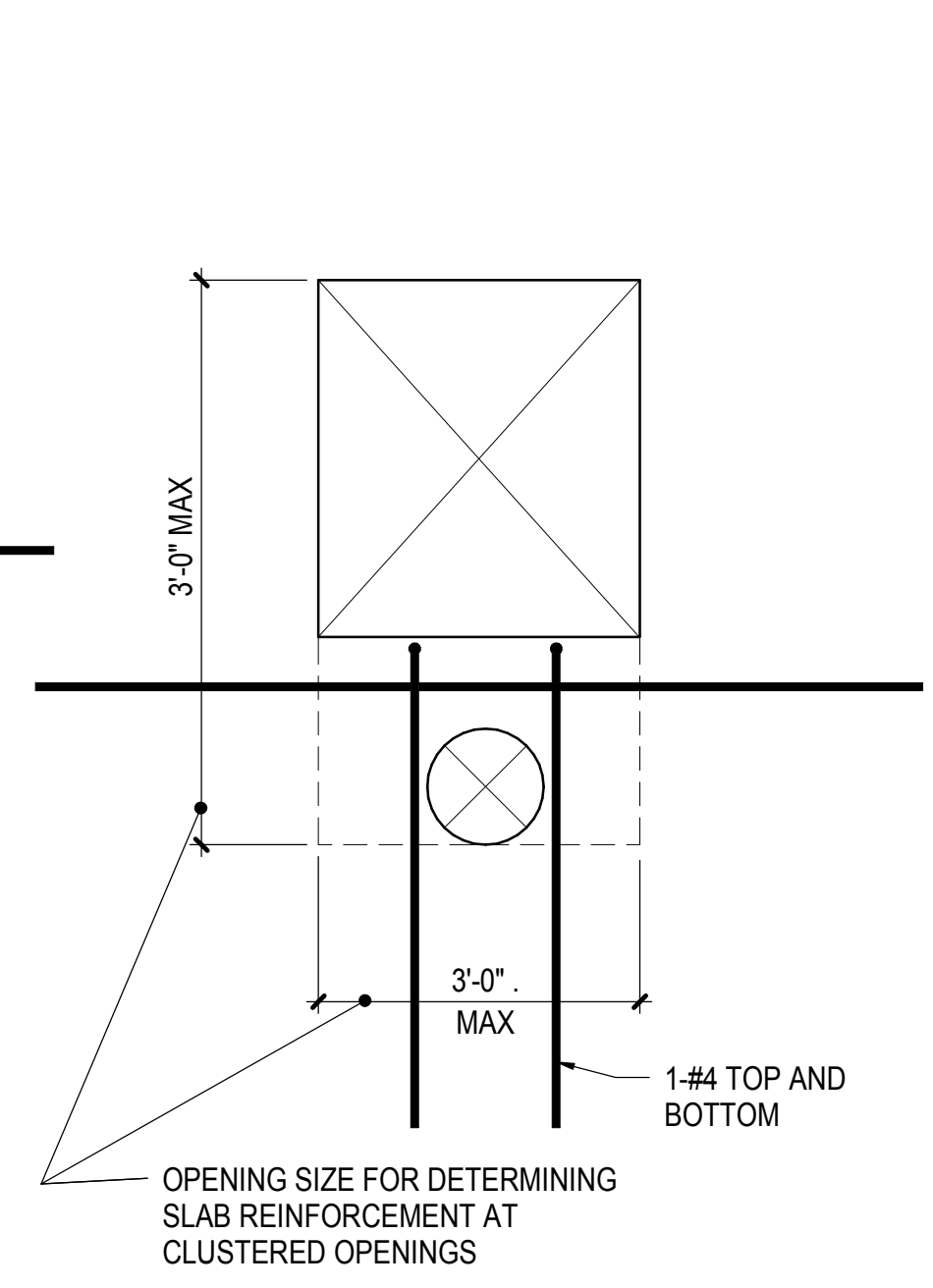


**TYPE 1**



**TYPE 2**

SEE TYPE 1 FOR INFORMATION NOT SHOWN



**TYPE 3**

SEE TYPE 1 FOR INFORMATION NOT SHOWN

**CLUSTERED OPENING ADDITIONAL REINFORCEMENT**

**NOTES: CLUSTERED OPENINGS**

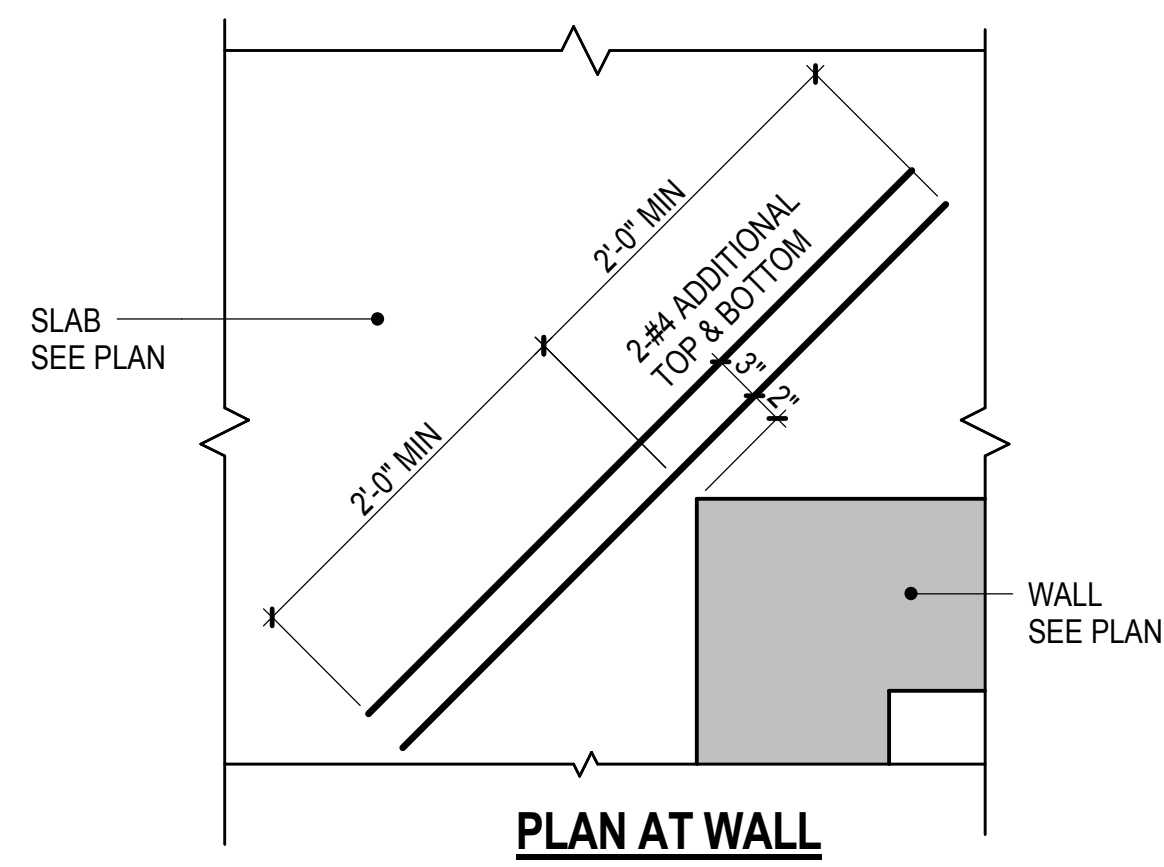
1. THE REINFORCEMENT REQUIREMENTS AT CLUSTERED OPENING ARE IN ADDITION TO THE TYPICAL SLAB OPENING DETAIL REQUIREMENTS AROUND THE ENTIRE CLUSTER
2. FOR ONE-WAY SLABS, WHEN CLUSTERED OPENING IS GREATER THAN 2 FEET, SUBMIT TO SER FOR APPROVAL
3. FOR TWO-WAY SLABS, WHEN CLUSTERED OPENING DOES NOT MEET TWO-WAY SLAB OPENING LIMITATIONS OR IS GREATER THAN 3 FEET, SUBMIT TO SER FOR APPROVAL

**1 TYPICAL STEP IN SLAB DETAILS**

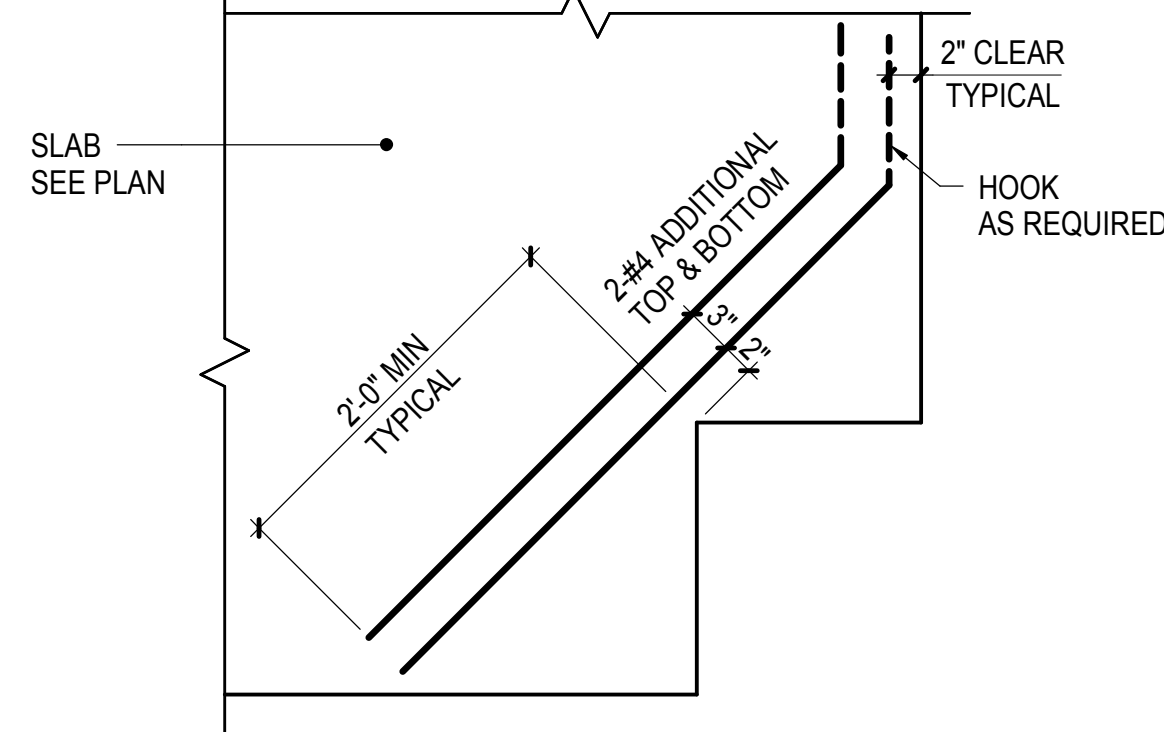
NOT TO SCALE

**2 TYPICAL SLAB OPENING DETAILS**

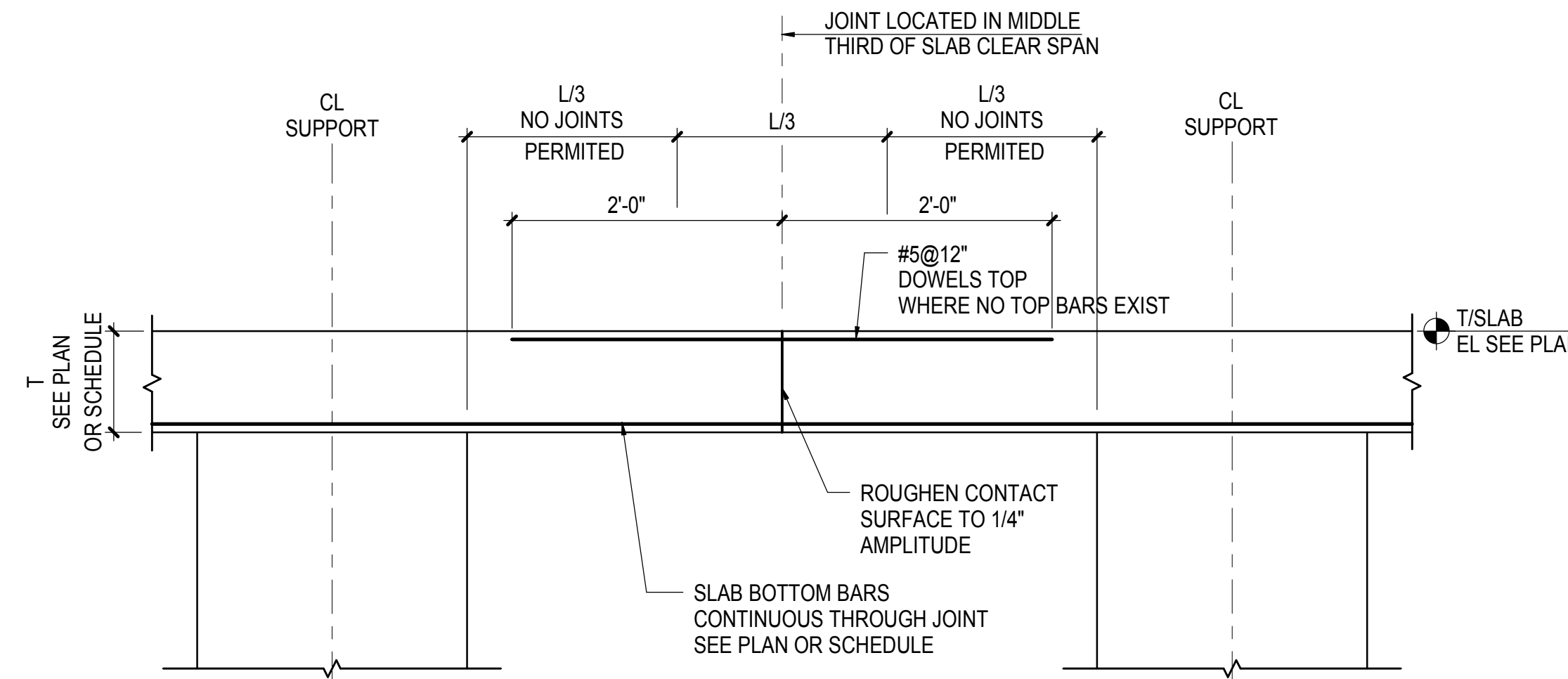
NOT TO SCALE



**PLAN AT WALL**



**PLAN AT RE-ENTRANT CORNER**



**NOTES:**

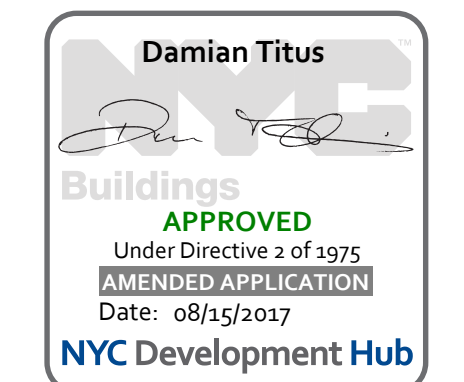
1. CONTRACTOR SHALL SUBMIT CONSTRUCTION JOINT LAYOUT PLAN FOR SER APPROVAL
2. FOR SLAB REINFORCEMENT NOT SHOWN, SEE PLAN OR SCHEDULE

**4 TYPICAL SLAB CONSTRUCTION JOINT**

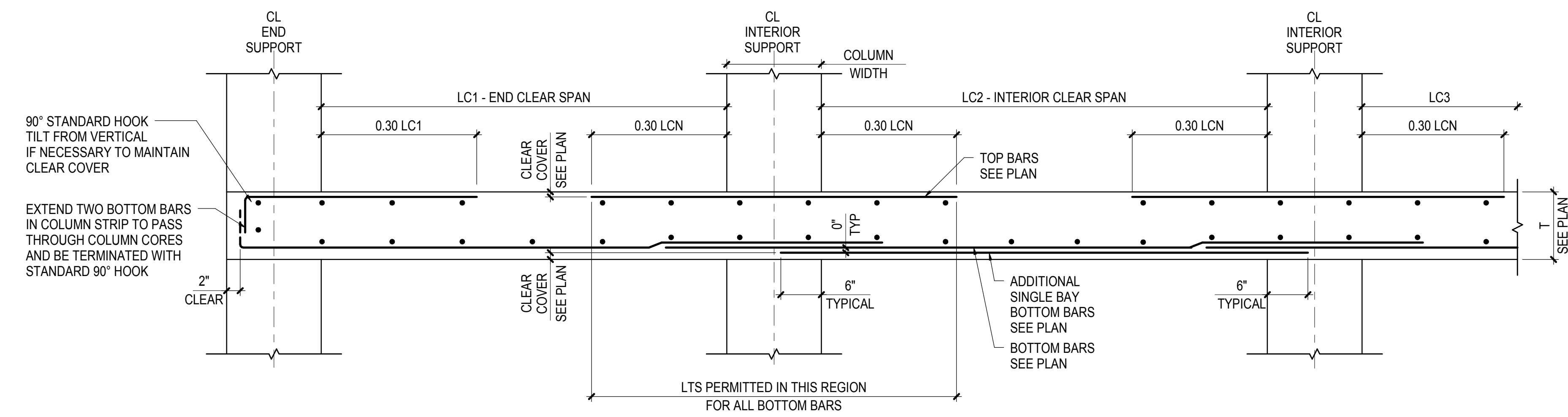
NOT TO SCALE

**3 TYPICAL CORNER SLAB DETAILS**

NOT TO SCALE

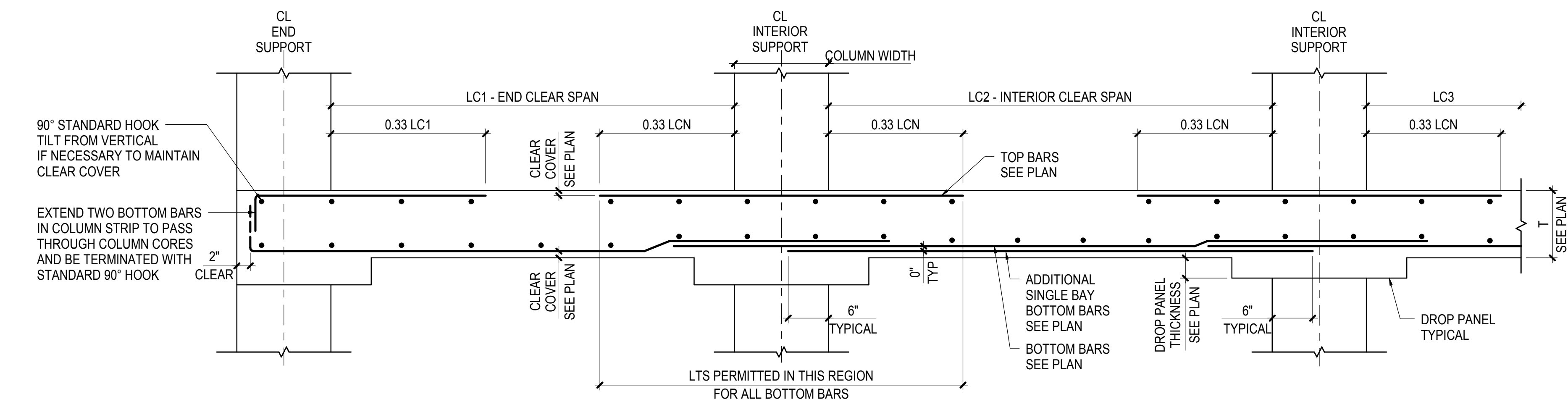


Damian Titus  
Buildings  
APPROVED  
Under Directive 3 of 1975  
Professional Registration  
Date: 08/15/2017  
NYC Development Hub



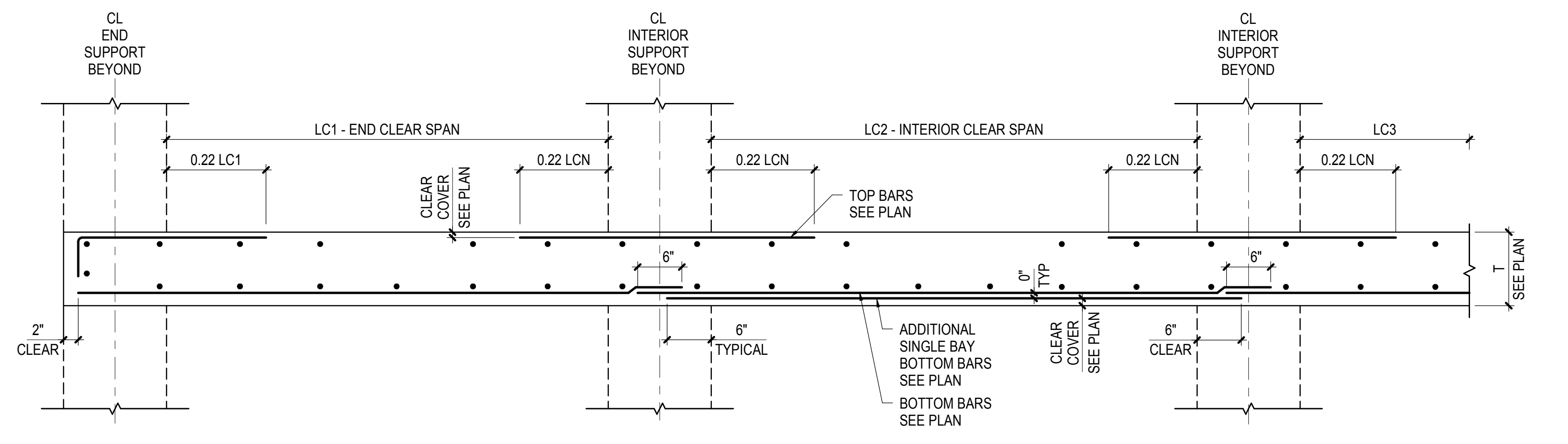
- NOTES:**
1. LCN DENOTES LARGER OF ADJACENT CLEAR SPANS
  2. ADDITIONAL MULTI-BAY BOTTOM BARS TO BE SPLICED AS SHOWN ABOVE AND EXTEND 6\"/>

**1A TYPICAL TWO-WAY FLAT PLATE - COLUMN STRIP**  
NOT TO SCALE



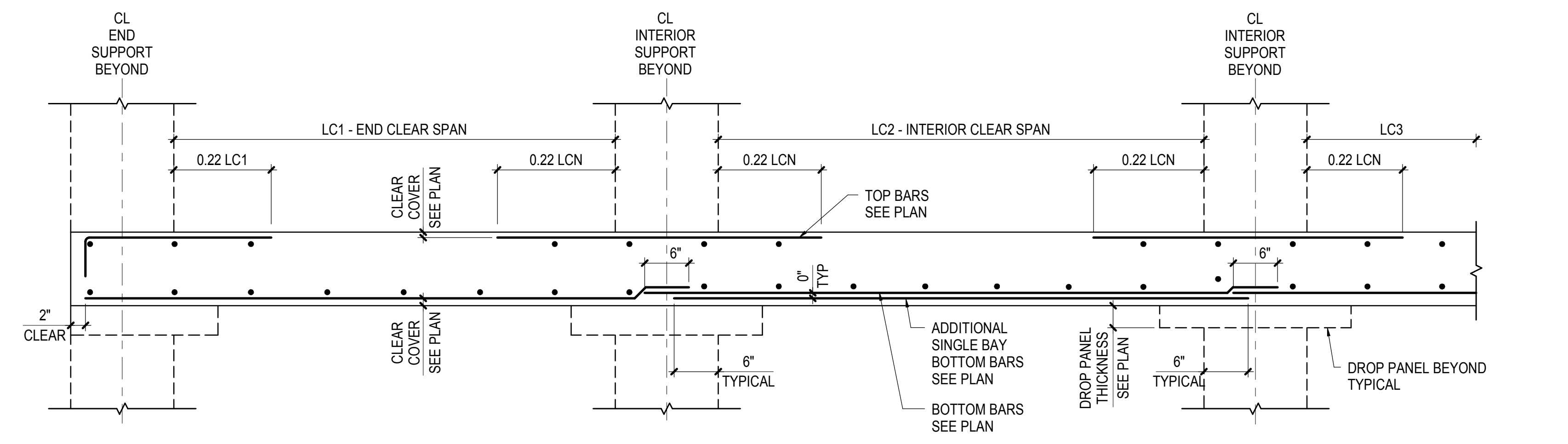
- NOTES:**
1. LCN DENOTES LARGER OF ADJACENT CLEAR SPANS
  2. ADDITIONAL MULTI-BAY BOTTOM BARS TO BE SPLICED AS SHOWN ABOVE AND EXTEND 6\"/>

**2A TYPICAL TWO-WAY FLAT SLAB - COLUMN STRIP**  
NOT TO SCALE



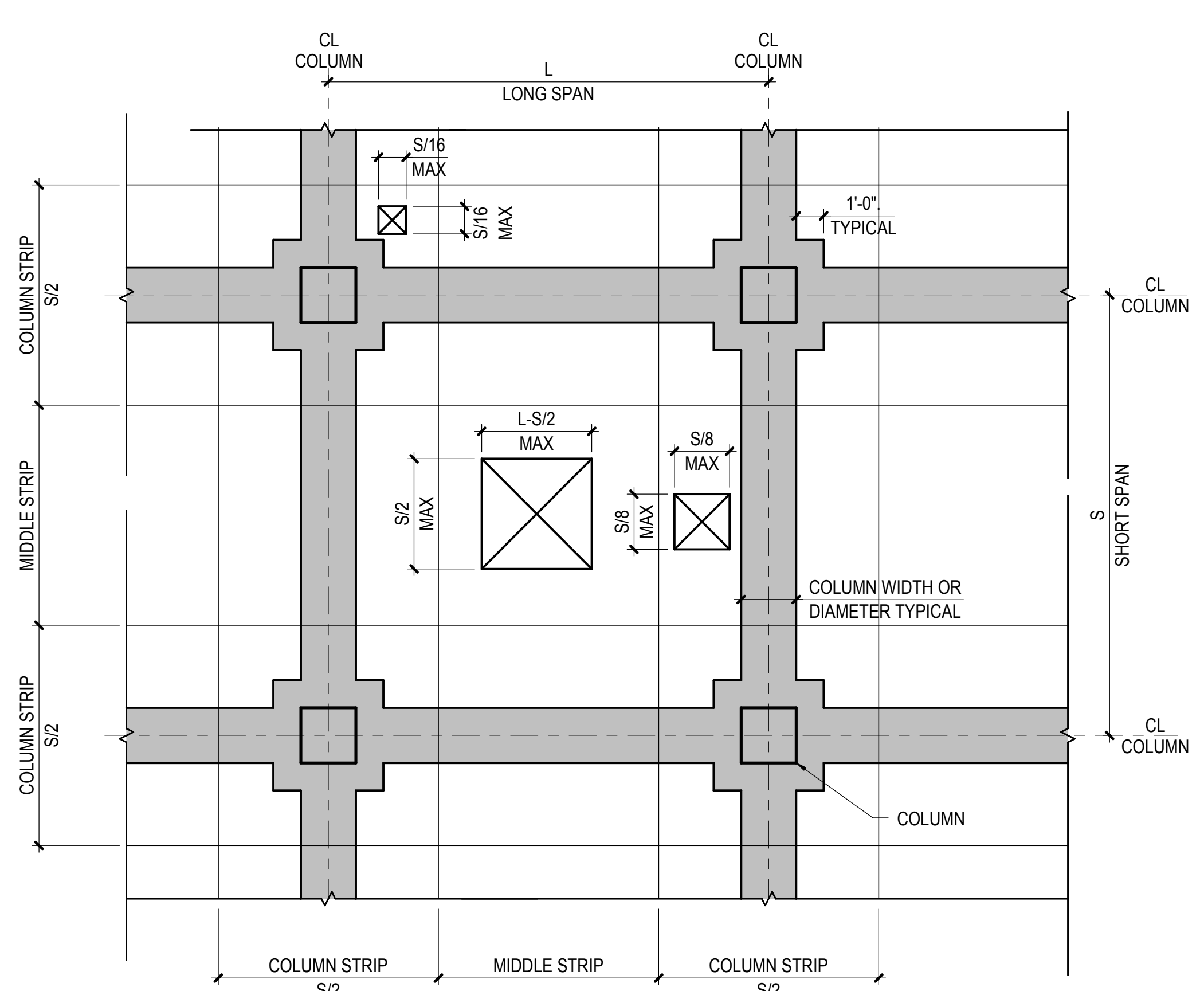
- NOTES:**
1. LCN DENOTES LARGER OF ADJACENT CLEAR SPANS
  2. ADDITIONAL MULTI-BAY BOTTOM BARS TO BE SPLICED AS SHOWN ABOVE AND EXTEND 6\"/>

**1B TYPICAL TWO-WAY FLAT PLATE - MIDDLE STRIP**  
NOT TO SCALE



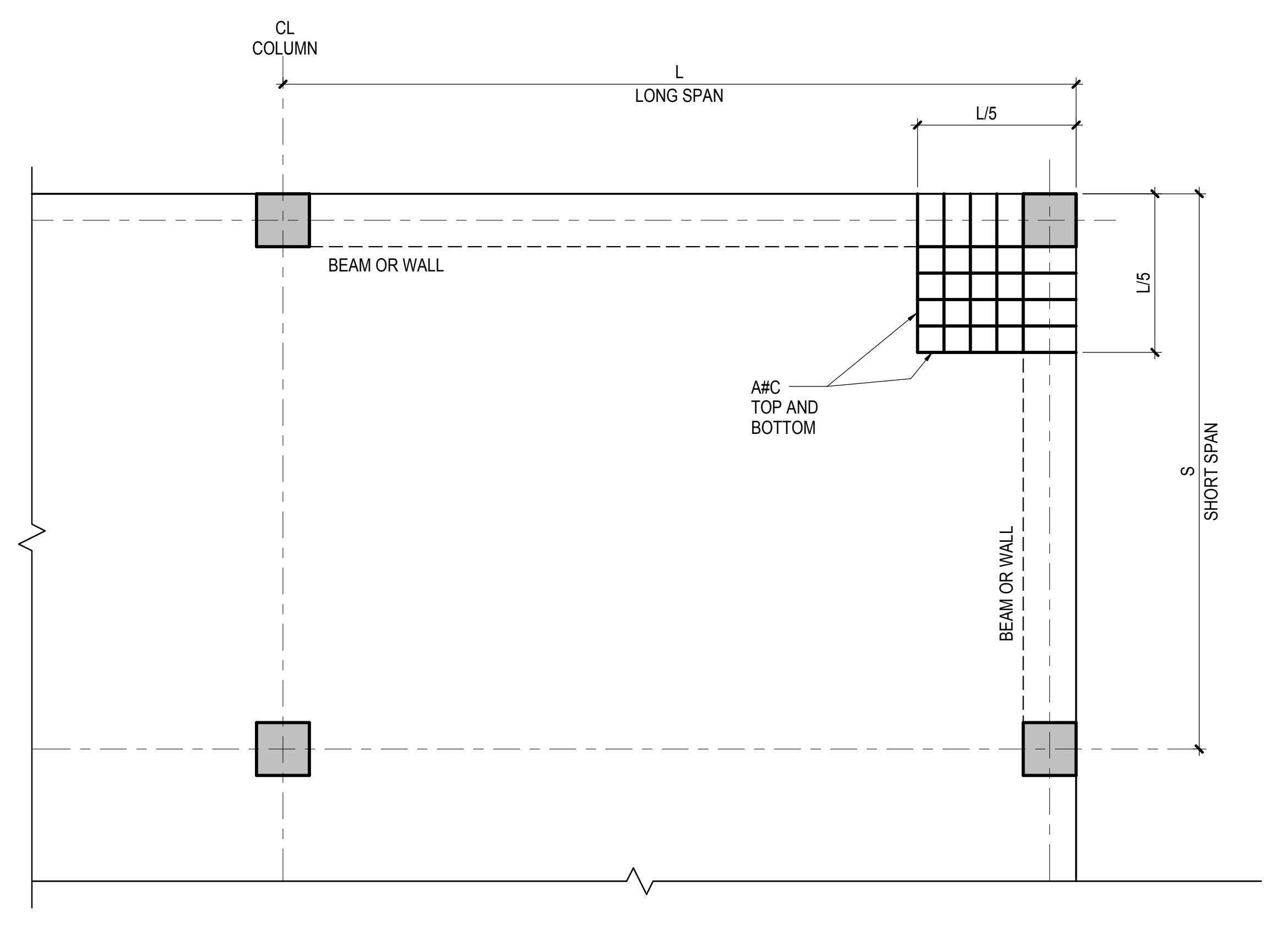
- NOTES:**
1. LCN DENOTES LARGER OF ADJACENT CLEAR SPANS
  2. ADDITIONAL MULTI-BAY BOTTOM BARS TO BE SPLICED AS SHOWN ABOVE AND EXTEND 6\"/>

**2B TYPICAL TWO-WAY FLAT SLAB - MIDDLE STRIP**  
NOT TO SCALE



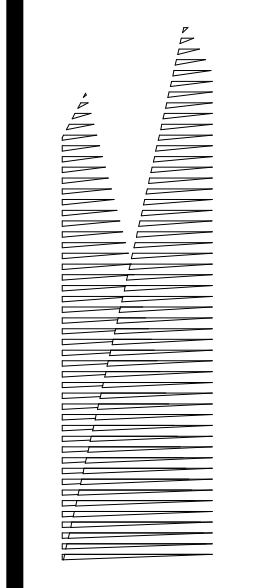
- NOTES:**
1. [Shaded Area] INDICATES ZONE WHERE OPENINGS ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL BY SER. OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS MUST BE COORDINATED AND APPROVED BY SER.
  2. OPENINGS MEETING THE LIMITATIONS ABOVE SHALL BE PROVIDED WITH REINFORCEMENT AS SHOWN ON PLAN AND FOLLOWING TYPICAL SLAB OPENING DETAILS INCLUDING ADDITIONAL BARS FOR INTERRUPTED REINFORCEMENT.
  3. OPENINGS SHALL BE SHOWN ON COORDINATED PENETRATION DRAWINGS AND REINFORCEMENT SHOP DRAWINGS FOR SER REVIEW.
  4. OPENINGS NOT MEETING THESE LIMITATIONS MUST BE SUBMITTED TO THE SER FOR COORDINATION, DESIGN, AND APPROVAL PRIOR TO SUBMITTING SHOP DRAWINGS.

**3 TYPICAL TWO-WAY SLAB OPENING LIMITATIONS**  
NOT TO SCALE



- NOTES:**
1. SEE PLAN FOR SLAB REINFORCEMENT. BARS SHOWN ABOVE ARE ADDITIONAL TO THOSE SHOWN ON PLAN. BARS SHALL BE LOCATED IN SAME LAYERS AS SLAB REINFORCEMENT. BEAM TOP BARS TO BE LOCATED BELOW SLAB TOP BARS.
  2. ADDITIONAL BARS TO BE EQUALLY SPACED WITHIN EXTENT SHOWN ABOVE.
  3. ADDITIONAL TOP BARS TO BE HOOKED INTO SUPPORT. ADDITIONAL BOTTOM BARS TO EXTEND 6\"/>

**4 TYPICAL BEAM OR WALL SUPPORTED SLAB EXTERIOR CORNER DETAIL**  
NOT TO SCALE



Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023

**NOTE TO ENGINEER:**<sup>1048</sup>

Related Properties Group  
DETAILS CN-2SL-01A, 01B, 02A, AND 02B ARE NOT COMPATIBLE WITH BAR LEGEND DETAILS CN-PL-05 AND CN-PL-06<sup>1048</sup>

REFER TO NOTES TO ENGINEER PDF DOCUMENT "CN-2SL", GENERAL NOTE 4 FOR MORE INFORMATION  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
A ASH0049	10/14/2014
Rev	Description

Rev

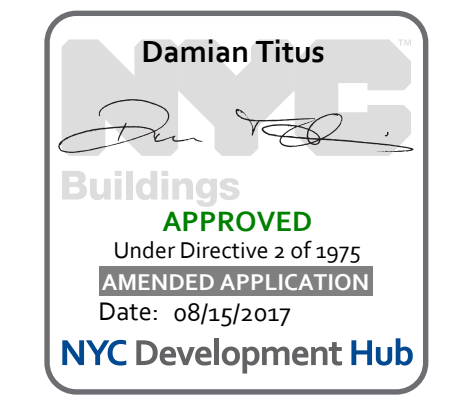
Date	02/28/2014
Project No.	N11330.00
Drawn By	Author
Sheet Number	

**HYE -PL -S-737.00**

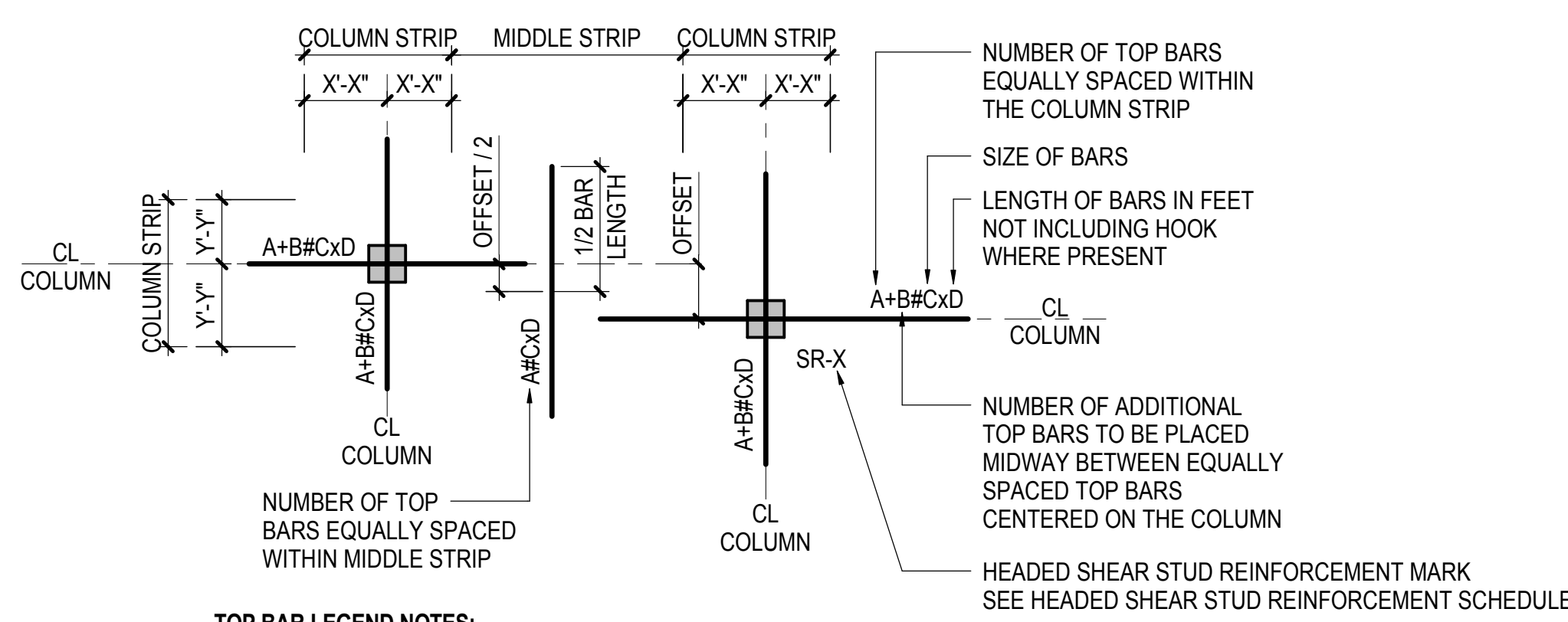
**TYPICAL CONCRETE TWO-WAY SLAB DETAILS**

Drawing Number / B/CAN Drawing Number

**S-737.00**



Damian Titus  
Buildings  
APPROVED  
Under Directive 3 of 1975  
Date: 08/15/2017  
NYC Development Hub

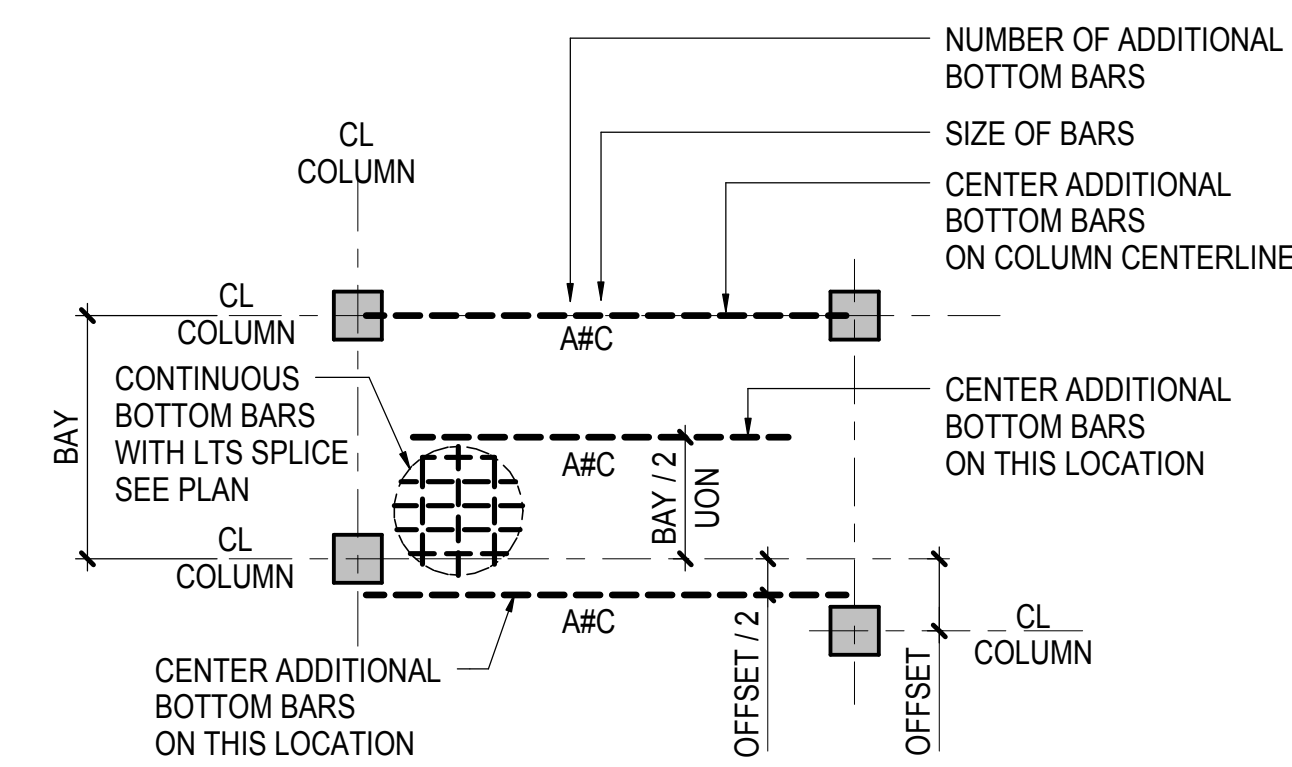


**TOP BAR LEGEND NOTES:**

1. NUMBER/SIZE/LENGTH OF MIDDLE STRIP BARS SHOWN IN ONE DIRECTION ONLY SAME NOTATION APPLIES IN PERPENDICULAR DIRECTION
2. CENTERLINE OF COLUMN MAY NOT COINCIDE W/ GRIDLINES SEE DRAWINGS FOR OFFSET DIMENSION
3. HOOK ALL TOP BARS THAT PASS THROUGH COLUMN AT EXTERIOR SUPPORT WITH 90° STANDARD HOOK OR IF NECESSARY USE 180° STANDARD HOOK

**1 TOP BAR REINFORCEMENT LEGEND**

NOT TO SCALE

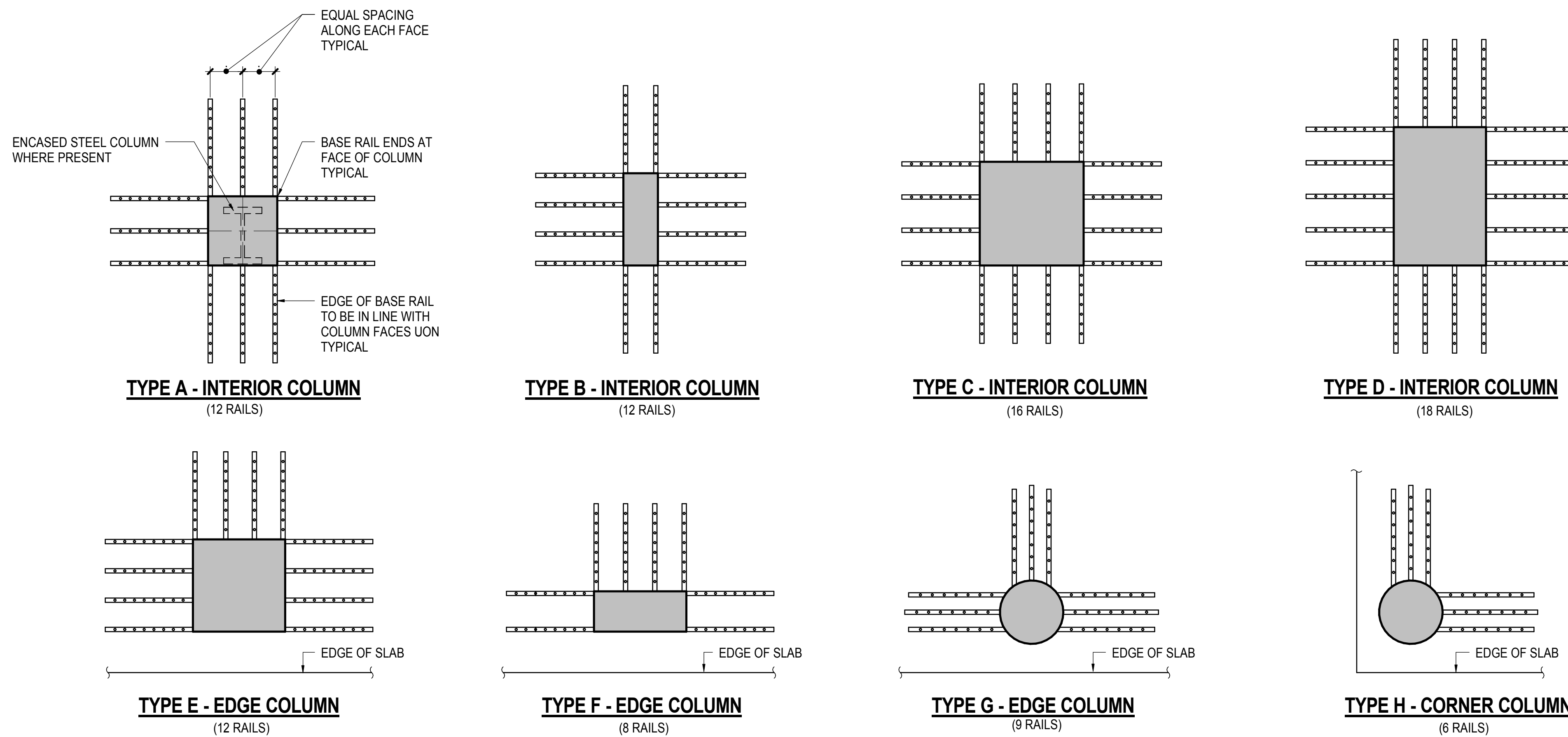


**BOTTOM BAR LEGEND NOTES:**

1. NUMBER / SIZE / LENGTH OF BARS SHOWN IN ONE DIRECTION ONLY SAME NOTATIONS APPLY IN PERPENDICULAR DIRECTION
2. CENTERLINE OF COLUMN MAY NOT COINCIDE W/ GRIDLINES SEE DRAWINGS FOR OFFSET DIMENSION
3. PLACE ADDITIONAL BARS AT SAME SPACING OF CONTINUOUS BARS AND MIDWAY BETWEEN CONTINUOUS BARS UON
4. ALL CONTINUOUS BOTTOM BARS TO EXTEND WITHIN 2 INCHES OF SLAB EDGE
5. A MINIMUM OF 2 BOTTOM BARS MUST EXTEND THROUGH THE COLUMN JOINT IN EACH DIRECTION
6. AT EXTERIOR SUPPORT HOOK 2 BOTTOM BARS THAT PASS THROUGH COLUMN WITH 90° STANDARD HOOK OR IF NECESSARY USE 180° STANDARD HOOK

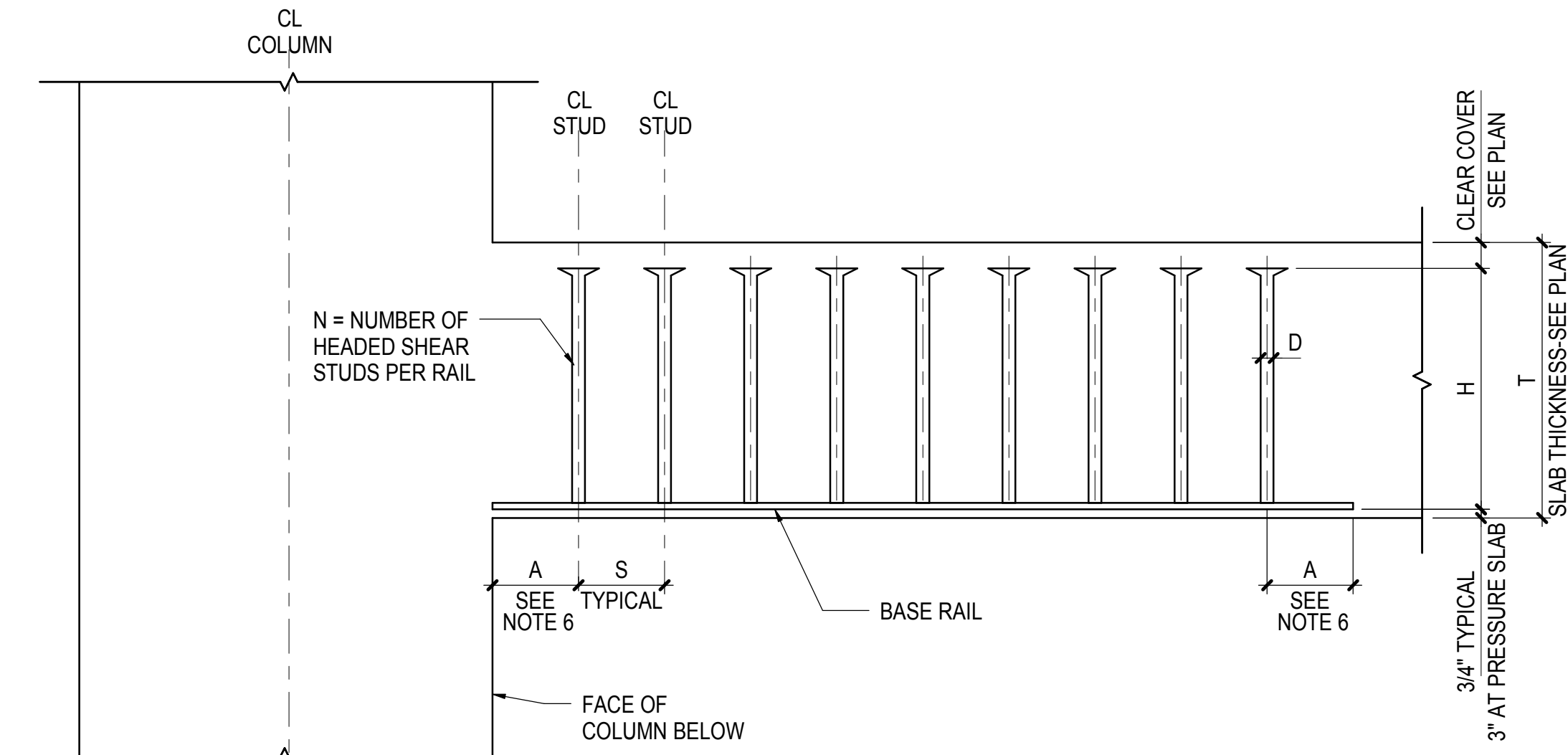
**2 BOTTOM BAR REINFORCEMENT LEGEND**

NOT TO SCALE



**3 HEADED SHEAR STUD REINFORCEMENT TYPE - PLAN ARRANGEMENT**

NOT TO SCALE



**HEADED SHEAR STUD REINFORCEMENT ELEVATION**

**NOTES:**

1. HEADED SHEAR STUD REINFORCEMENT BY DECON OR APPROVED EQUAL
2. SEE PLANS FOR HEADED SHEAR STUD REINFORCEMENT LOCATIONS
3. HEADED STUDS AND RAIL ASSEMBLY SHALL CONFORM TO ASTM 1044 WITH STUD Fy=50 KSI MINIMUM
4. ALL DIMENSIONS ARE IN INCHES
5. BASE RAILS TO BE PLACED PERPENDICULAR TO COLUMN FACES
6. DIMENSION A TO BE LESSER OF 3" OR H/2
7. TYPE REFERS TO HEADED SHEAR STUD REINFORCEMENT TYPE - PLAN ARRANGEMENT

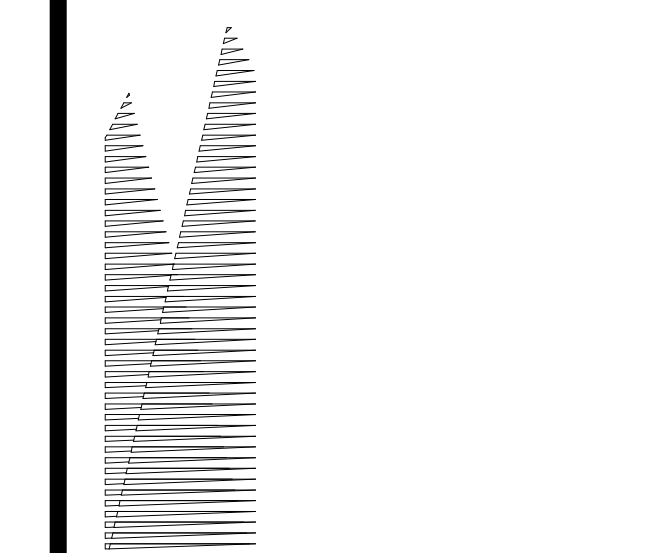
**4 HEADED SHEAR STUD REINFORCEMENT ELEVATION AND SCHEDULE**

NOT TO SCALE

STUDRAIL SCHEDULE						
STUDRAIL MARK	TYPE SEE NOTE 7	A	H	D	N	S
SR-1	A	4"	7.34"	3/4"	9	4"

**HUDSON YARDS PLATFORM**

Address  
530 WEST 33RD STREET  
NEW YORK, NY



**Client**  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

**Owner/Properties Group**  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

**Construction Manager**  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

**Architect**  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

**Structural Engineer**  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

**Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

**LIRR Ventilation**  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

**LIRR Substation**  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172

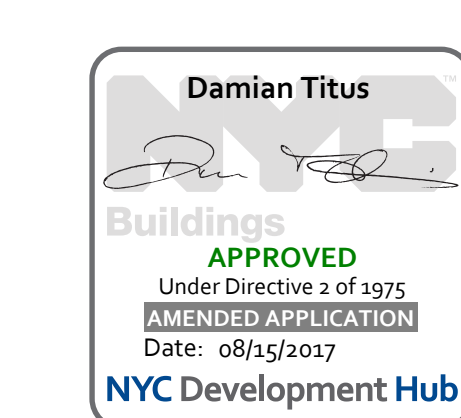
No.	Description	Date
DOB POST-APPROVAL AMENDMENT		10/28/2016
L.I.R.R. - M.O.F. FINAL 100% DESIGN SUBMISSION FOR RECORDS		5/3/2015
L.I.R.R. - FINAL 100% DESIGN SUBMISSION FOR RECORDS		10/14/2014
ASHRAH		10/14/2014
ASH-M-008 - PRESSURE SLAB MODIFICATION		9/16/2014

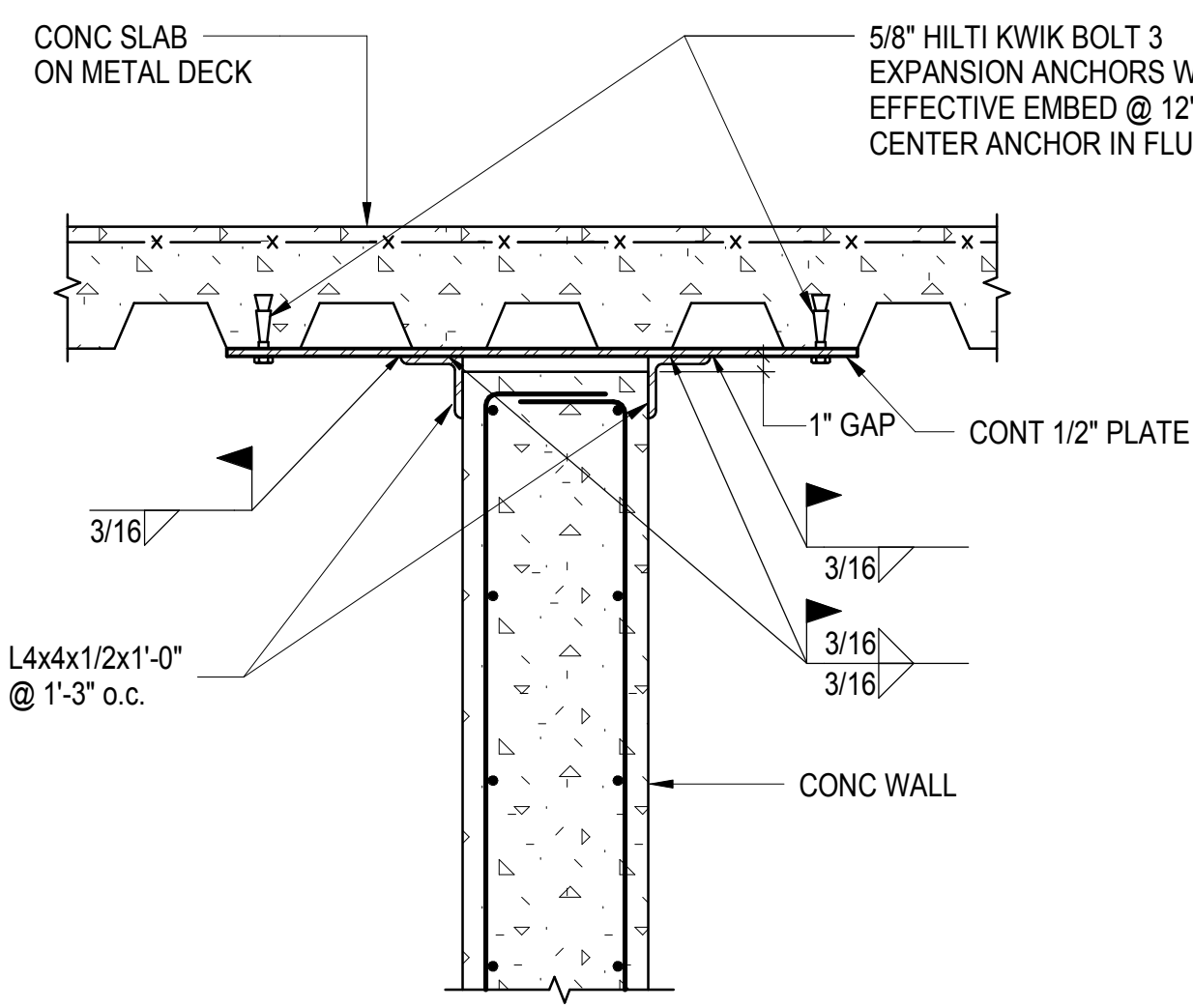
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Project No: **N11330.00**  
Checked By: **Author**  
Sheet Number: **HYE -PL -S-738.00**

**HYE -PL -S-738.00**

**TYPICAL CONCRETE TWO-WAY SLAB DETAILS**

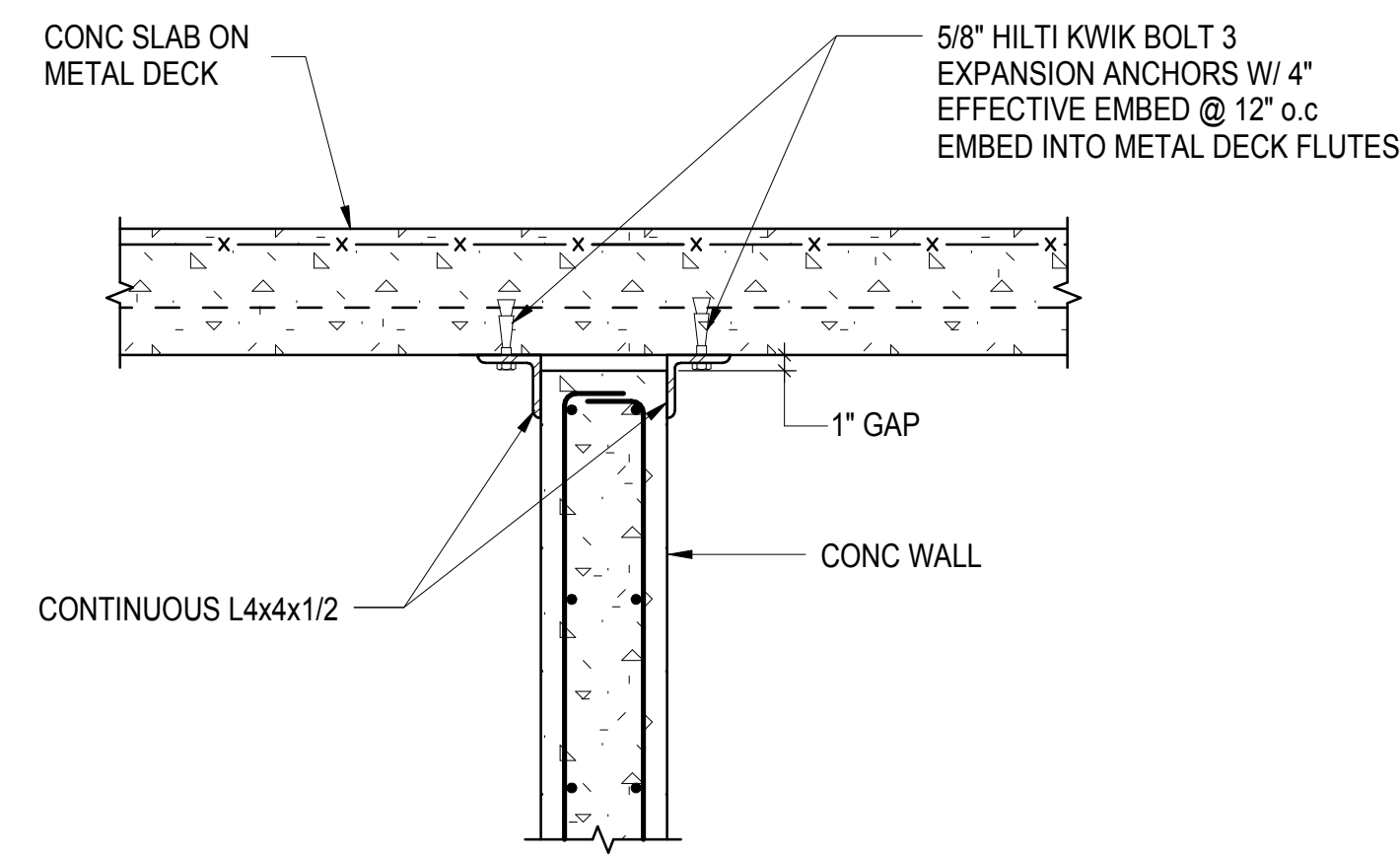
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**S-738.00**



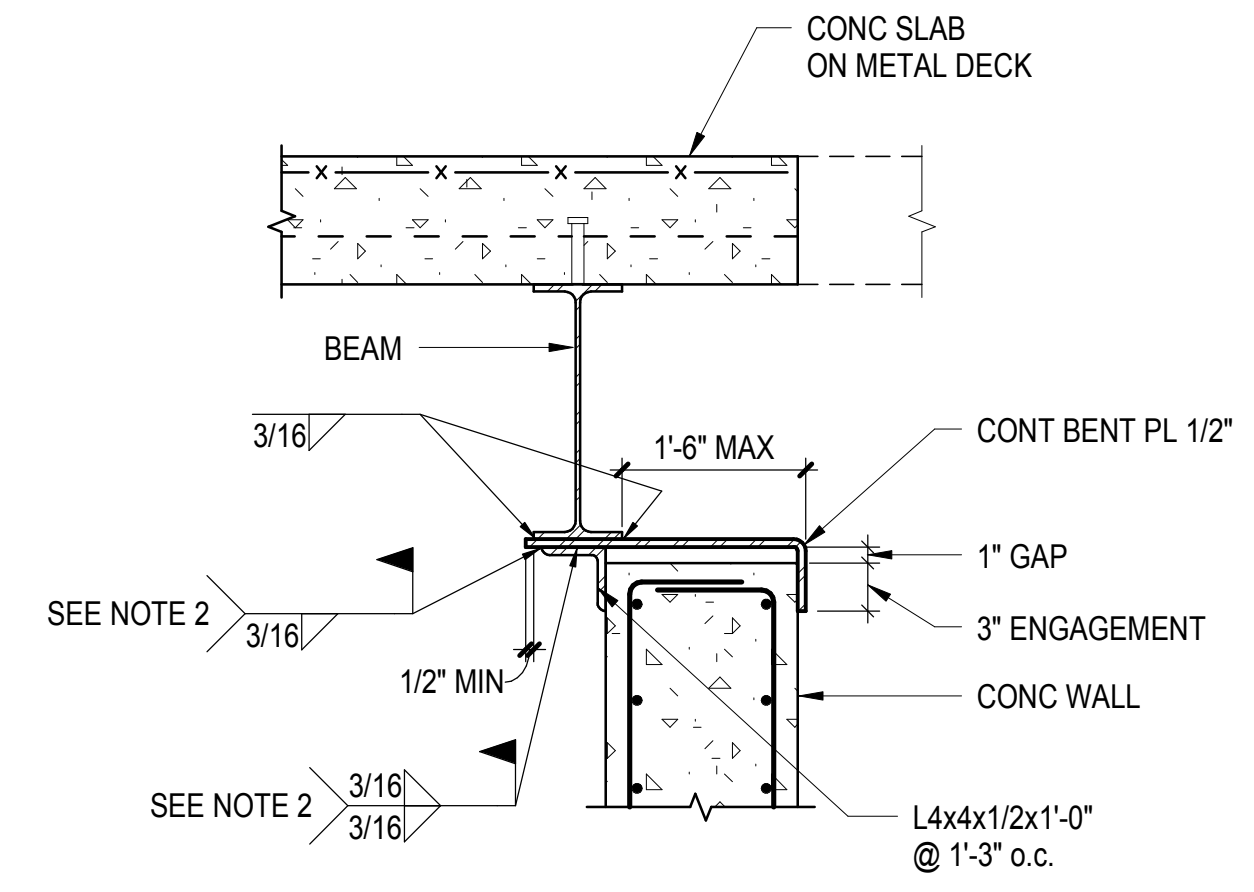


NOTE: SEE DETAIL 5/S-739 FOR ALTERNATE DETAIL

1 TYPICAL CONCRETE WALL TOP BRACE DETAIL AT SLAB ON METAL DECK - FLUTES PARALLEL  
1" = 1'-0"

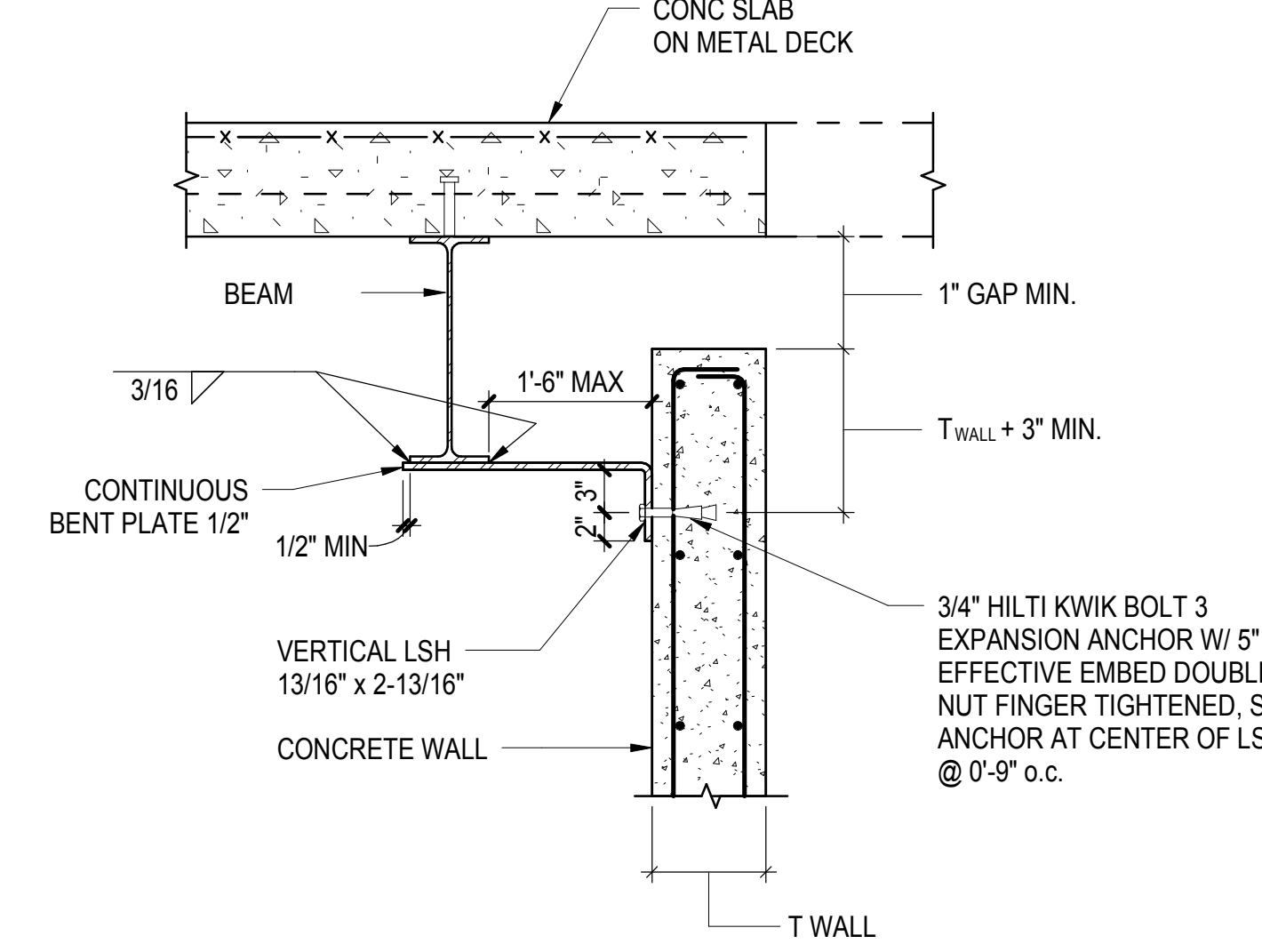


2 TYPICAL CONCRETE WALL TOP BRACE DETAIL AT SLAB ON METAL DECK - FLUTES PERPENDICULAR  
1" = 1'-0"



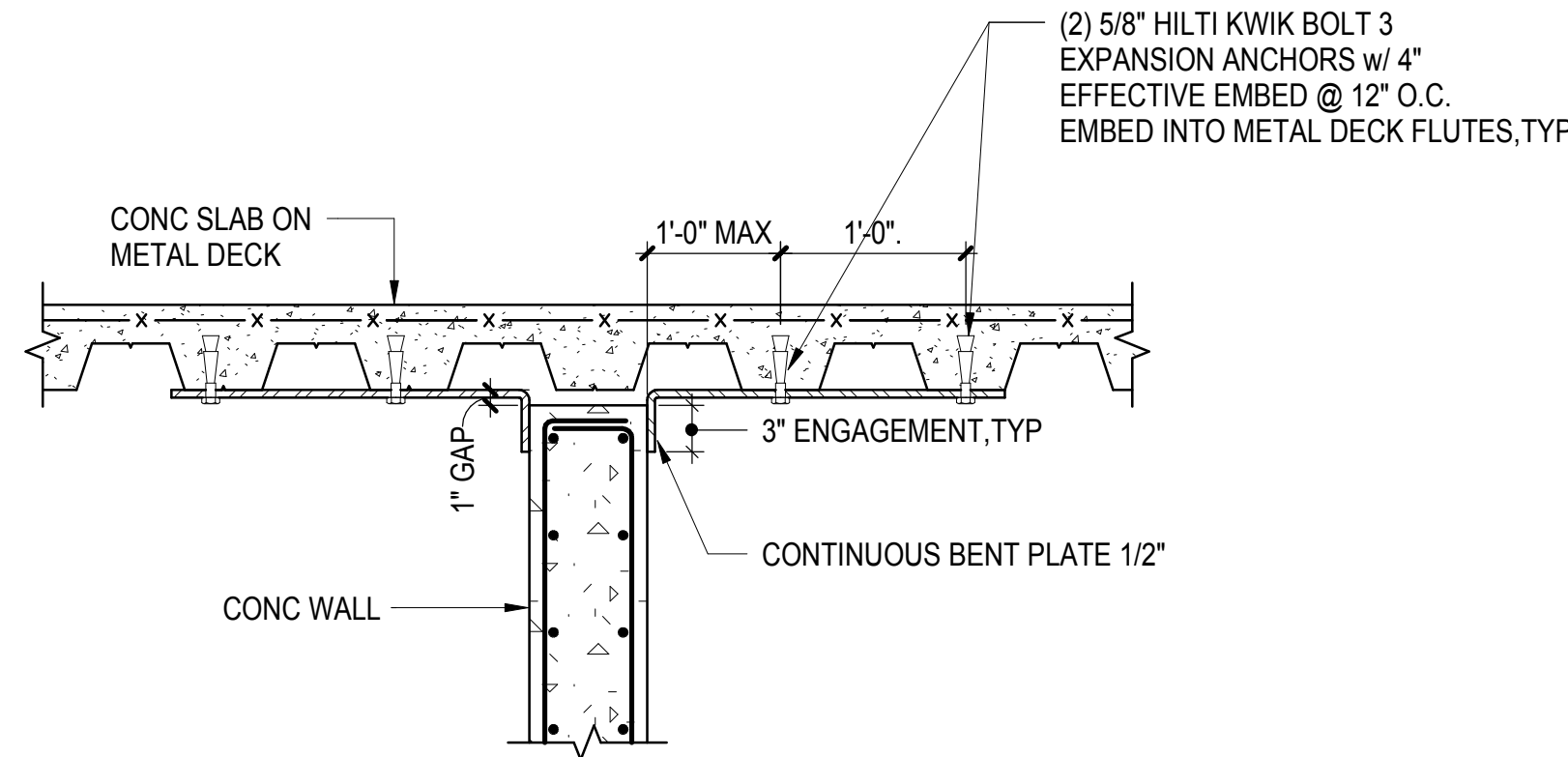
NOTES:  
1. SEE DETAIL 6/S-739 FOR WALL OFFSET CONDITION AT BENT PLATE IF ANGLE IS ALTERNATIVELY SHOP WELDED TO BENT PLATE OR FIELD WELDED PRIOR TO WALL CONSTRUCTION. SEE DETAIL 6/S-739 FOR MODIFIED ANGLE SIZE AND SPACING TO ACCOMMODATE CONCRETE POUR AND FOR WALL CONDITION AT ANGLE.  
2.

3 TYPICAL CONCRETE WALL BRACE DETAIL AT STEEL BEAM  
1" = 1'-0"



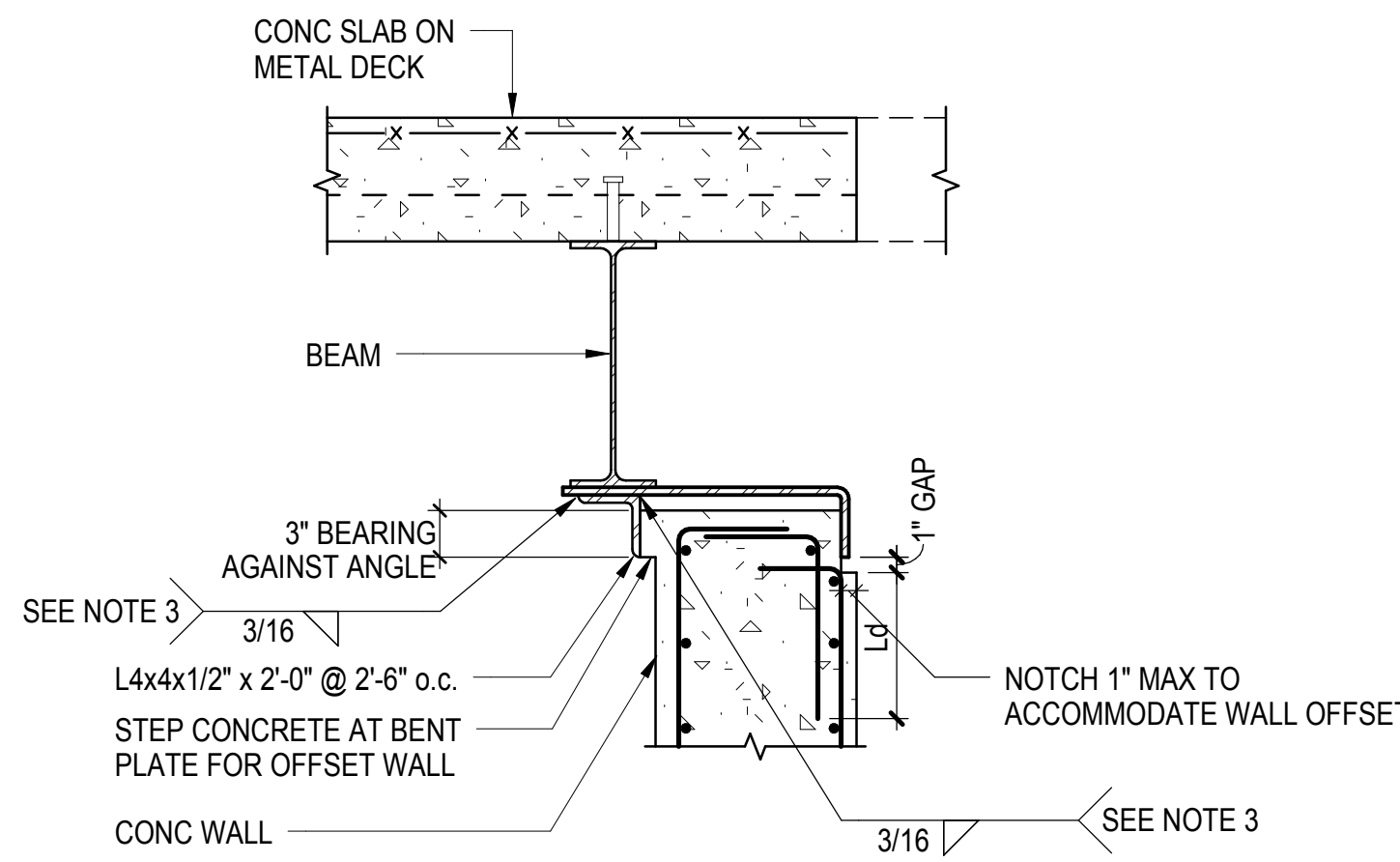
NOTE: SEE DETAILS 7 AND 8/S-739 FOR WALL OFFSET CONDITIONS

4 TYPICAL CONCRETE WALL TOP BRACE DETAIL AT STEEL BEAM - OFFSET CONDITION  
1" = 1'-0"



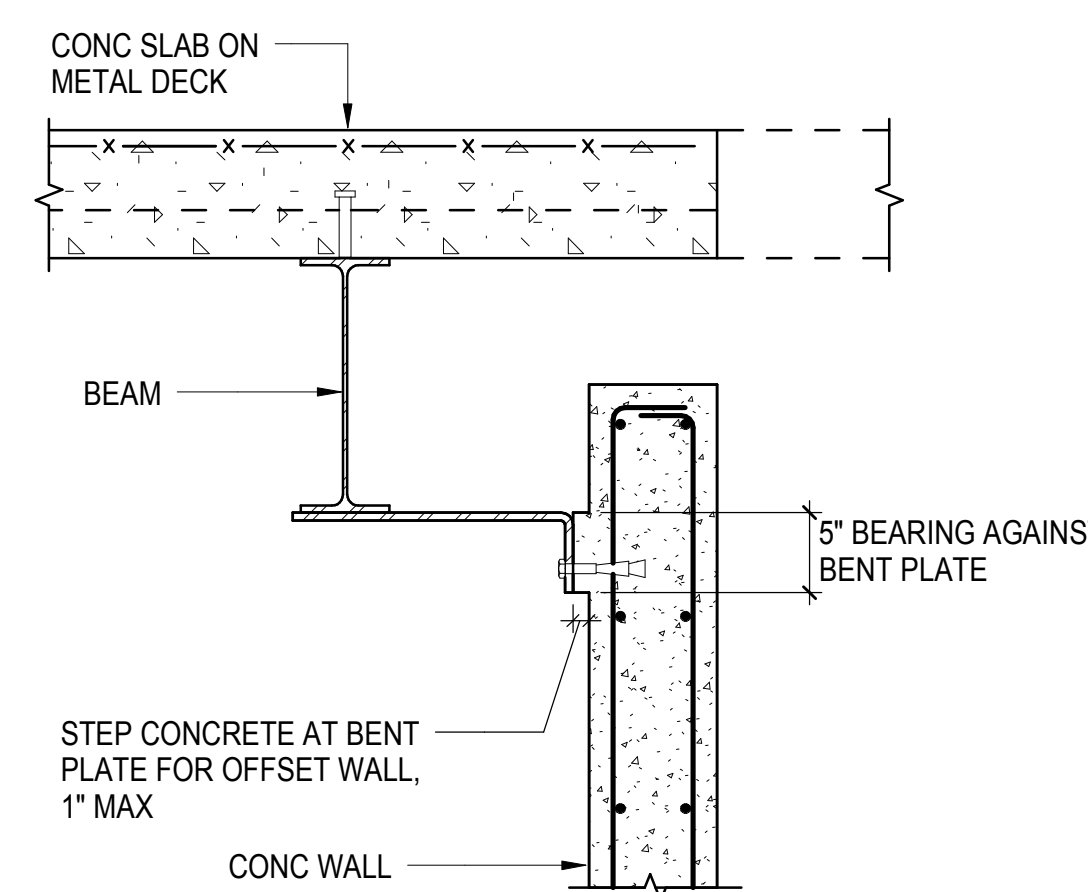
NOTE: SEE DETAIL 1/S-739 FOR INFORMATION NOT SHOWN

5 ALTERNATE CONCRETE WALL TOP BRACE DETAIL AT SLAB ON METAL DECK - FLUTES PARALLEL  
1" = 1'-0"



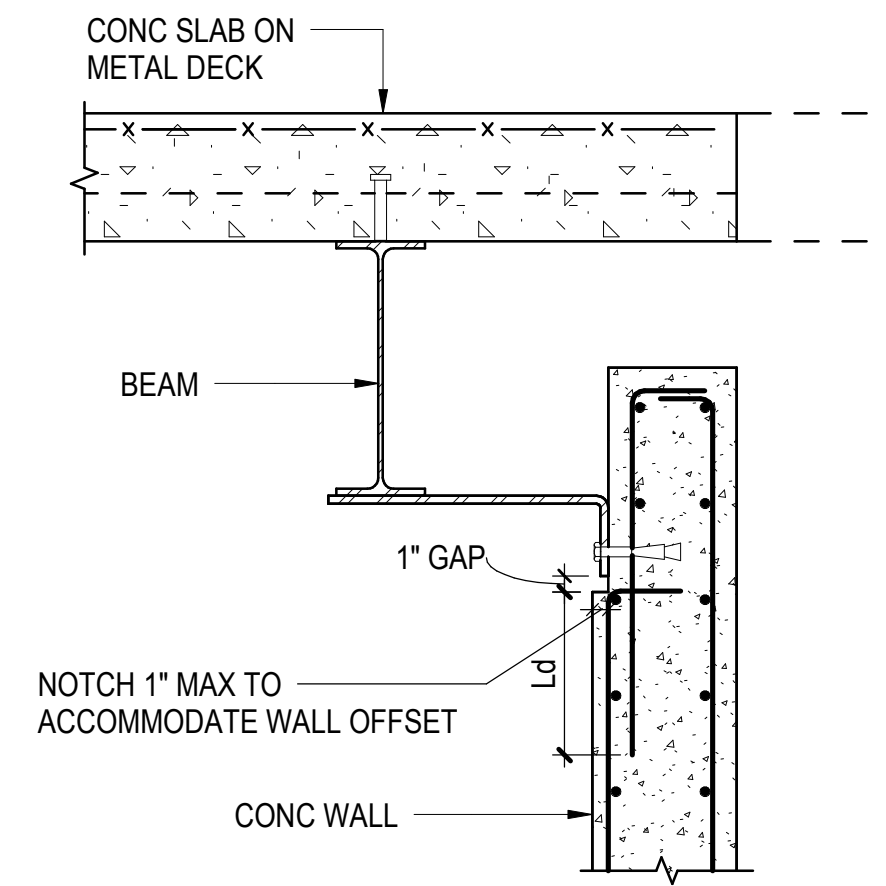
NOTES:  
1. SEE DETAIL 8/S8-2001 FOR INFORMATION NOT SHOWN  
2. USE SIMILAR APPROACH WHEN WALL IS OFFSET TOWARDS ANGLE.  
3. PROVIDE MODIFIED WELD CONFIGURATION SHOWN HERE AND MODIFIED ANGLE SIZE/SPACING INSTEAD OF THAT ON 3/S-739 WHEN ANGLES ARE WELDED TO BENT PLATE PRIOR TO WALL CONSTRUCTION.

6 ALTERNATE CONCRETE WALL BRACE DETAIL AT STEEL BEAM - WALL OFFSET CONDITION  
1" = 1'-0"



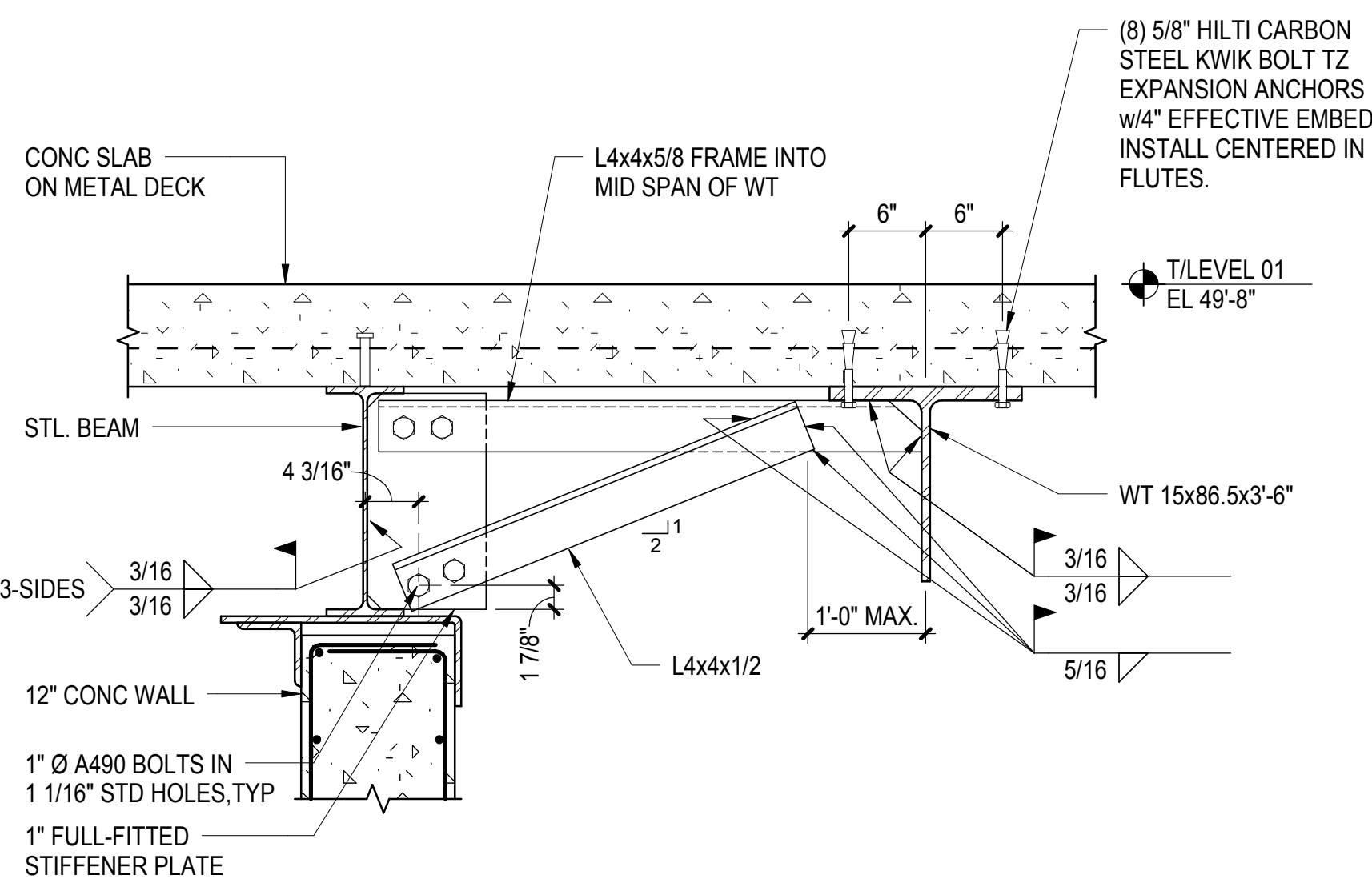
NOTE: SEE DETAIL 4/S-739 FOR INFORMATION NOT SHOWN

7 ALTERNATE CONCRETE WALL TOP BRACE DETAIL AT STEEL BEAM - OFFSET CONDITION W/ WALL OFFSET  
1" = 1'-0"



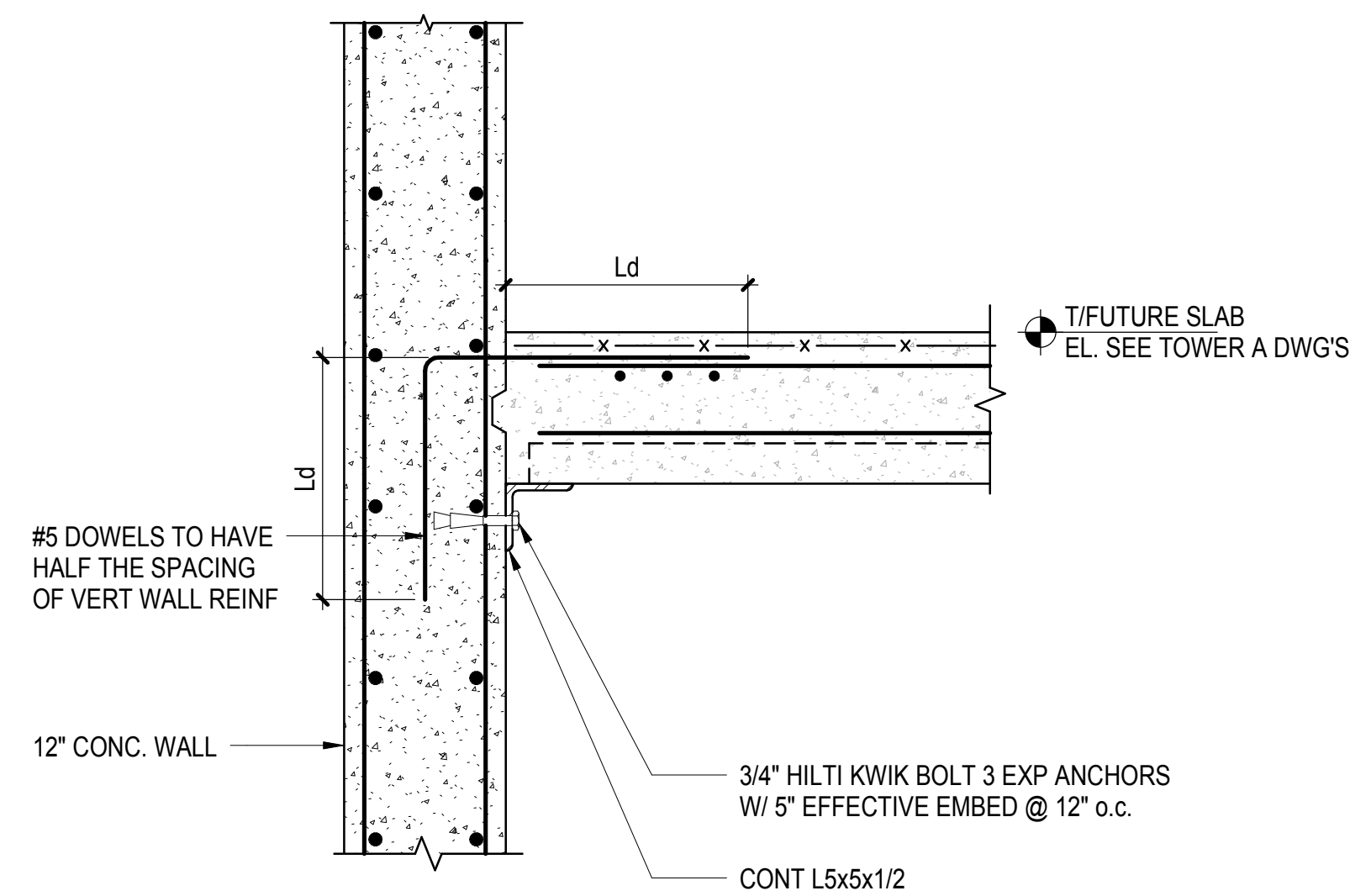
NOTE: SEE DETAIL 4/S-739 FOR INFORMATION NOT SHOWN

8 ALTERNATE CONCRETE WALL TOP BRACE DETAIL AT STEEL BEAM - OFFSET CONDITION W/ WALL OFFSET  
1" = 1'-0"

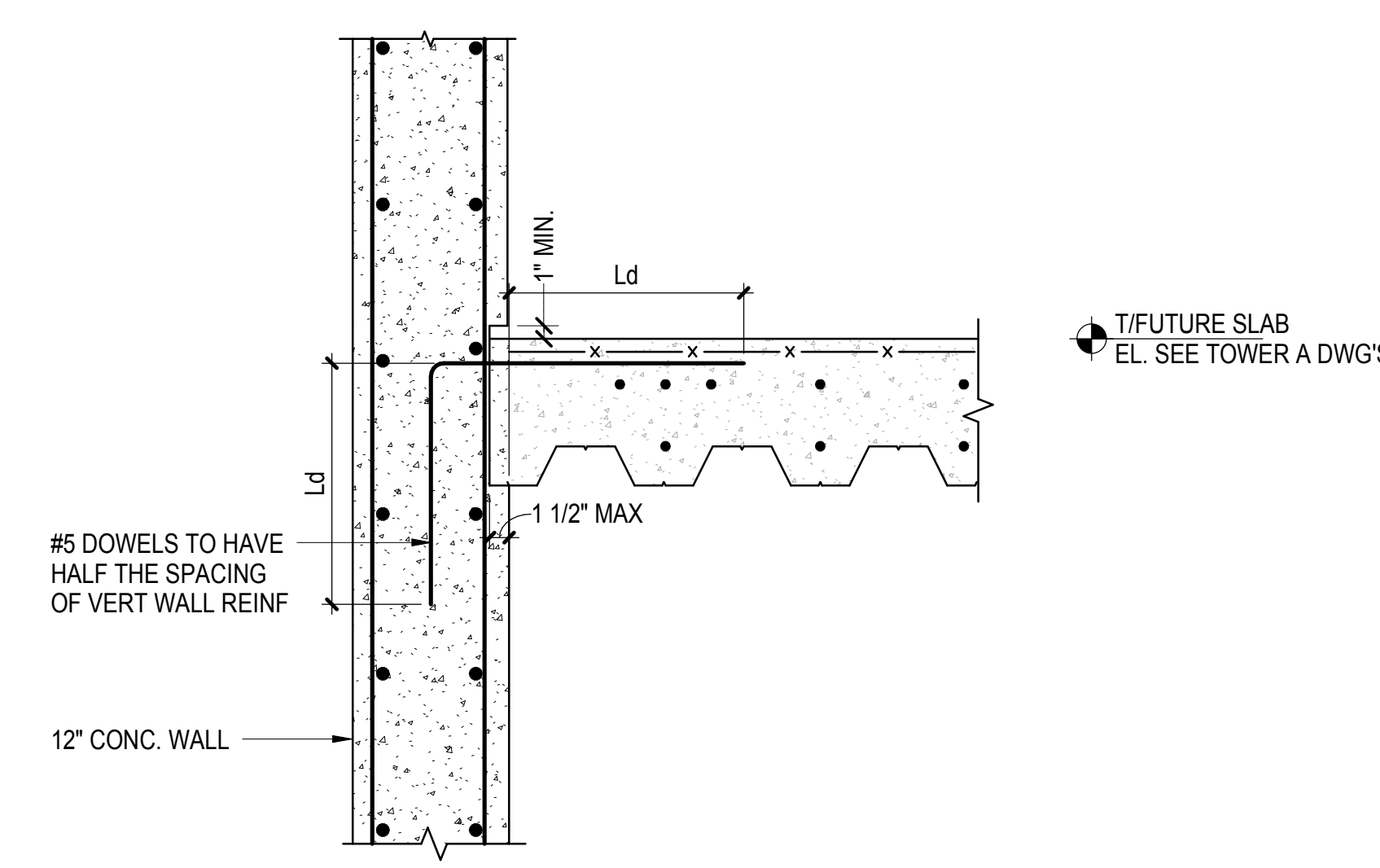


NOTE: SEE TYPICAL CONCRETE WALL DETAILS FOR INFORMATION NOT SHOWN

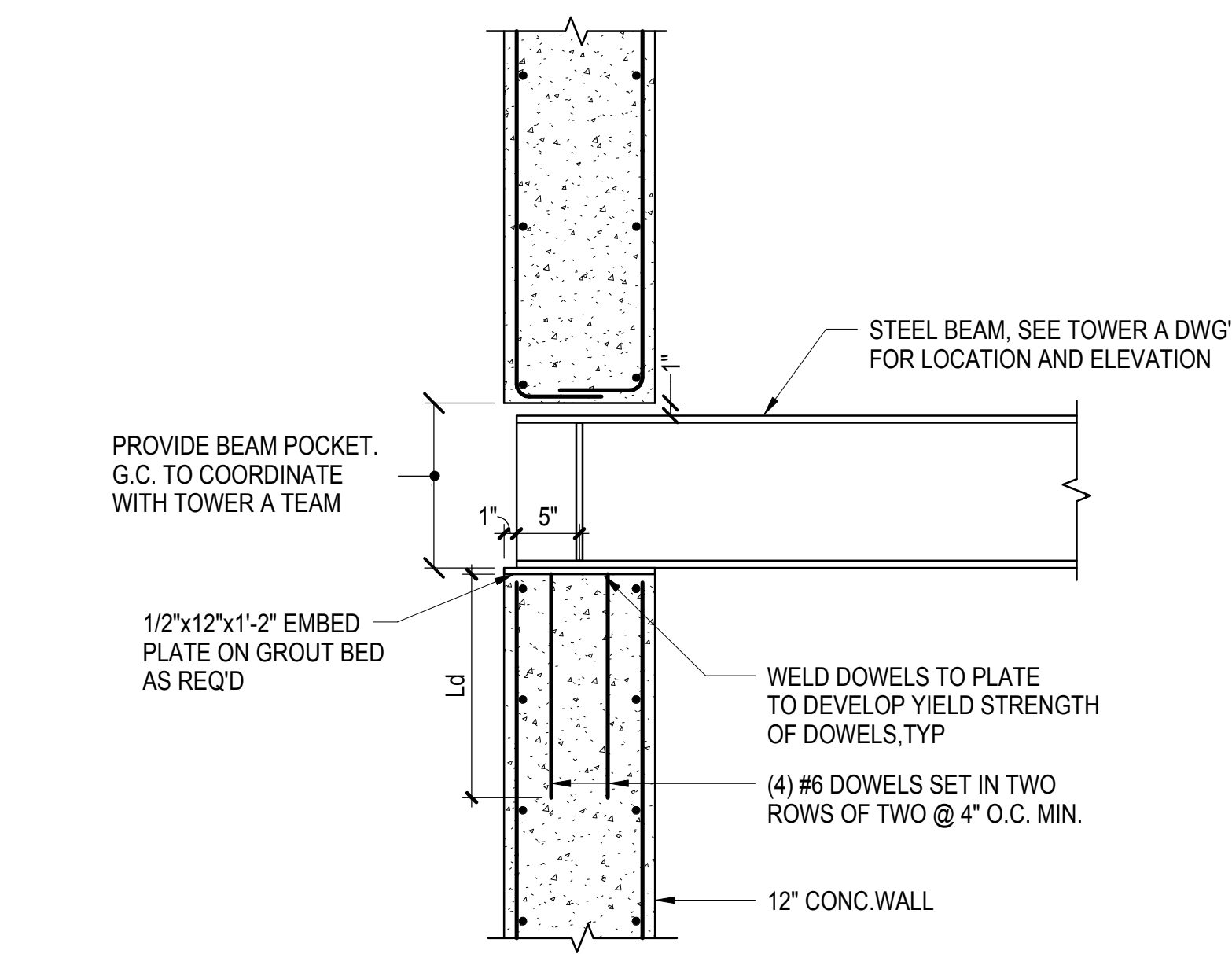
9 KICKER DETAIL  
1" = 1'-0"



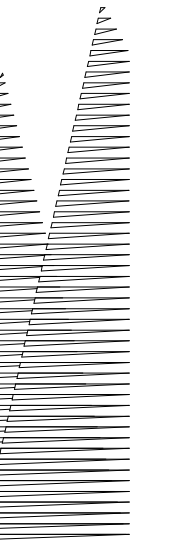
10 SECTION  
1" = 1'-0"



11 SECTION  
1" = 1'-0"



12 SECTION  
1" = 1'-0"



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60 Columbus Circle  
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Fire Alarm, Fire Protection, Security  
Easements: Transportation Group  
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LJRR Substation  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
ASH0073	4/30/2015

Exp Plan

Date: 04/20/15  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

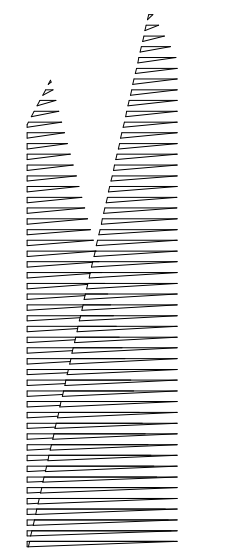
HYE -PL -S-739.00

INTERIOR SPECIALTY  
PARTITION BRACING  
DETAIL

Under Directive 3 of 1975  
Professional Seal  
Date: 08/15/2017  
NYC Development Hub

Drawing Number / B/CAN Drawing Number  
S-739.00





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*Structural Engineer*  
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51 Madison Avenue  
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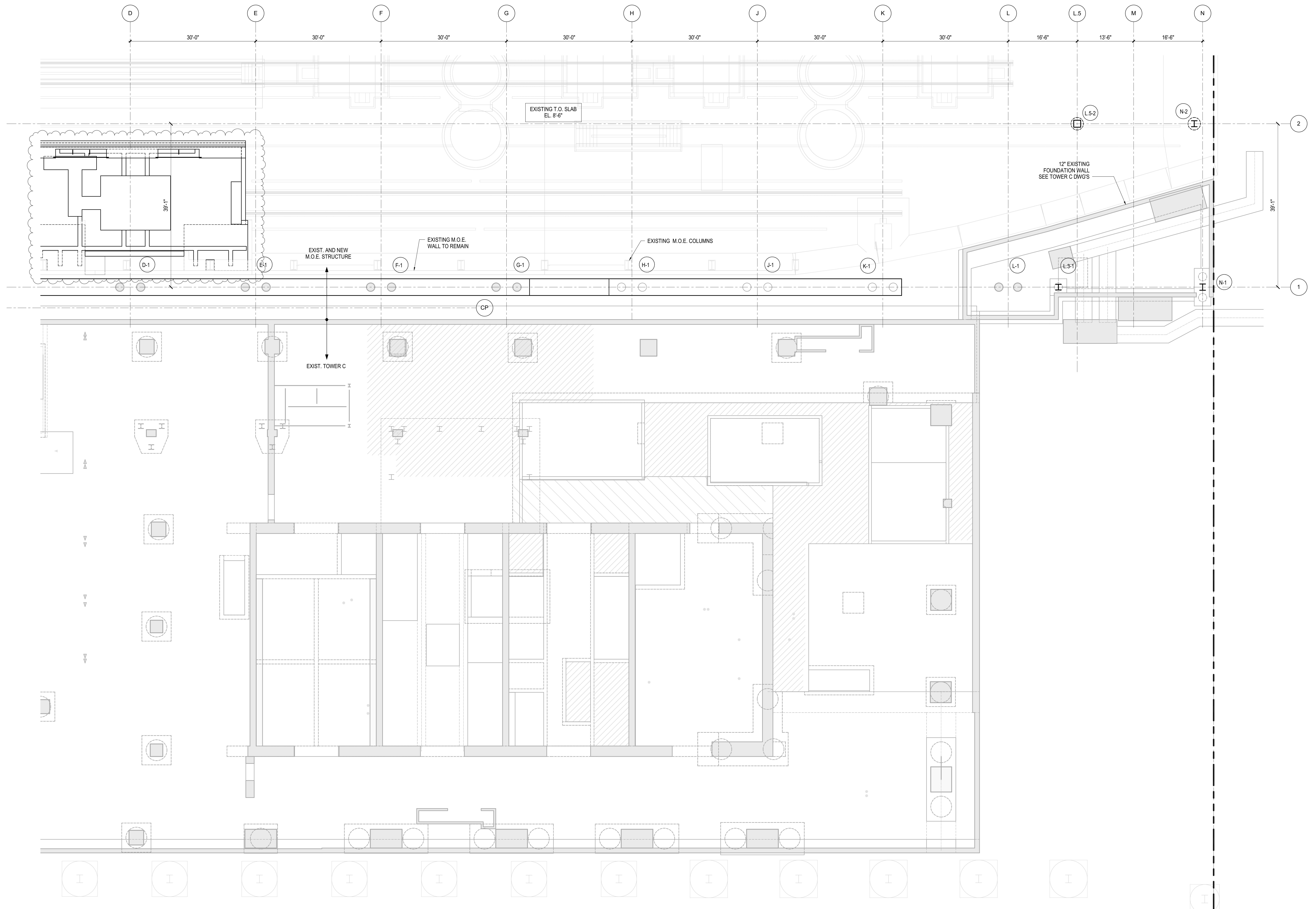
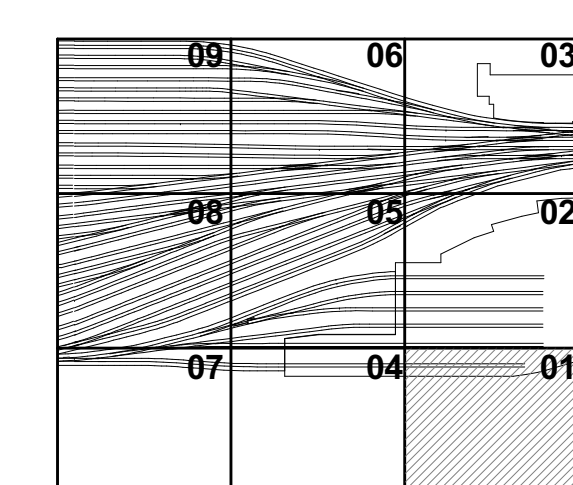
*Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - M.o.E FINAL 100% DESIGN SUBMISSION FOR RECORDS	5/5/2015
L.I.R.R. - FINAL 100% DESIGN SUBMISSION FOR RECORDS	10/14/2014
ASH0049	10/14/2014
LIRR M.o.E. PERMIT SET	8/1/2014
ASH0021	5/7/2014
M.o.E. REBUILD - BID SET	4/4/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100% M.O.E. PLATFORM SUBMISSION	11/22/2013
DE02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
LIRR - 90% M.O.E. SUBMISSION	10/4/2013
NYC DOB FILING	10/4/2013
DE01 PHASE 1 STRUCTURAL UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
LIRR - 90% M.O.E. SUBMISSION	7/12/2013
NYC DOB FILING	6/17/2013
LIRR - 30% M.O.E. SUBMISSION	6/14/2013
NYC DOB FILING	6/14/2013

Key Plan



- SHEET NOTES:**
- SEE GENERAL NOTES FOR CONCRETE COMPRESSIVE STRENGTH
  - T/FOOTING = EL. 'YY'-" AS SHOWN ON PLAN
  - FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:  
DRAWING LISTS, GENERAL NOTES, AND LOADING DIAGRAMS S0 SERIES DRAWINGS  
TYPICAL FOUNDATION DETAILS S3 SERIES DRAWINGS  
STEEL COLUMN SCHEDULES S4 SERIES DRAWINGS  
STEEL AND CONCRETE TYPICAL DETAILS S7 SERIES DRAWINGS
  - MAXIMUM TOP OF ROCK SOCKET SHOWN ON S-310.00 TO S-313.00 IS THE HIGHEST ELEVATION AT WHICH ROCK SOCKET BEGINS.
  - ROCK COUNTOURS ARE BY LANGAN GEOTECHNICAL ENGINEERS. ACTUAL TOP OF ROCK AND SOCKET TO BE FIELD VERIFIED BY THE CONTRACTOR AND GEOTECHNICAL ENGINEER.
  - EXISTING UTILITIES, BUILDINGS AND TUNNELS ARE SHOWN FOR REFERENCE ONLY. LOCATIONS AND DIMENSIONS OF ALL EXISTING CONDITIONS ARE TO BE FIELD VERIFIED. SEE GENERAL NOTES SHEET S-003.00 FOR REFERENCES TO EXISTING DRAWINGS.

- DIMENSIONS ON SHEETS S-310.00 TO S-313.00 NOTED AS CLEARANCE TO TRACK IS THE DISTANCE BETWEEN CENTERLINE OF TRACK TO FACE OF COLUMN.
- DIMENSIONS SHOWN ON S-121.00 TO S-129.00 SHOW THE DISTANCE BETWEEN THE FACE OF EXISTING TUNNEL (V.I.F.) AND THE FACE OF PERMANENT STEEL CASING.
- IF THE PLANS ARE MODIFIED OR ADDITIONAL FOUNDATIONS ARE ADDED, THE ANALYSIS MUST BE RESUBMITTED OR THE FOUNDATIONS MUST COMPLY WITH THE MTA NYC TRANSIT GENERAL NOTE #11, #12, AND #13 ON S-006.00.

**LEGEND:**

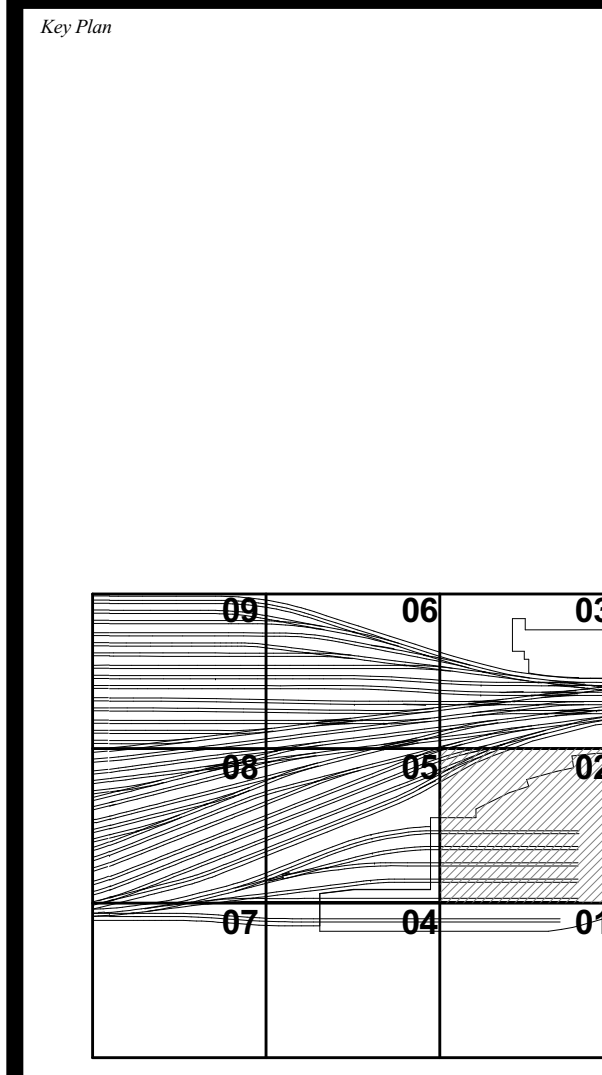
	EXC	INDICATES EXISTING CAISSON.
	EXF	INDICATES EXISTING FOOTING
	CX-Y	INDICATES NEW CAISSON
	PCX-Y	INDICATES NEW PILECAP
		INDICATES NEW CONCRETE FILLED STEEL COLUMN
		INDICATES NEW CONCRETE FILLED STEEL COLUMN
		INDICATES NEW STEEL WIDE-FLANGE COLUMN
	TB	INDICATES NEW TIE BEAM
		INDICATES NEW ROCK ANCHOR
		INDICATES ADD'L TOP REBAR IN NEW SLAB
		INDICATES ADD'L BOTTOM REBAR IN NEW SLAB
	SR-X	INDICATES STUDRAIL IN NEW SLAB

Damian Titus  
APPROVED  
Under Directive 1 of 1975  
Date: 08/15/2017  
NYC Development Hub

Date: 06/14/13  
Project No: N11330.00  
Drawn By: Author  
Sheet Number: Author

**HYE -PL -S-801.01  
SLAB PLAN M.O.E.  
TRACK LEVEL SECTOR  
01**

DESCRIPTION	DATE
DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - M.O.E. FINAL 100% DESIGN	5/5/2015
SUBMISSION FOR RECORDS	
ASL-M0023	5/4/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0009	10/14/2014
ASL-M-08 - PRESSURE SLAB	9/16/2014
MODIFICATION	
LIRR M.O.E. PERMIT SET	8/1/2014
M.O.E. REBUILD - BID SET	4/4/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M.O.E. PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
LIRR - 90% M.O.E. SUBMISSION	10/4/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/9/2013
LIRR - 60% M.O.E. SUBMISSION	7/12/2013
NYC DOB FILING	6/17/2013
LIRR - 30% M.O.E. SUBMISSION	6/14/2013
NYC DOB FILING	6/14/2013



Date: 06/14/13  
Project No: N11330.00  
Drawing No: Author  
Sheet Number

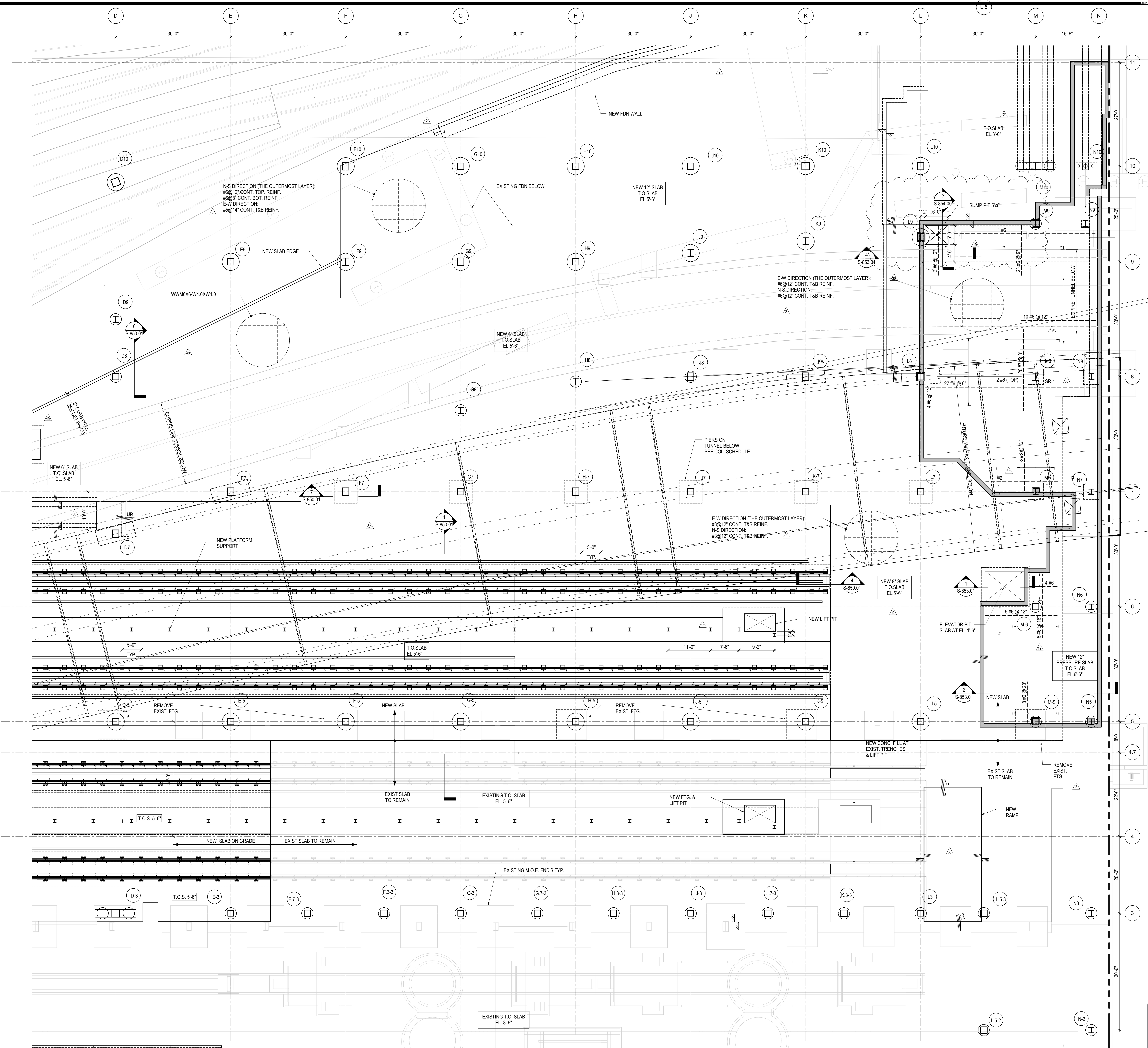
**HYE -PL -S-802.01**

**SLAB PLAN M.O.E. TRACK LEVEL SECTOR 02**

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Drawing Number / B.C.A.N. Drawing Number

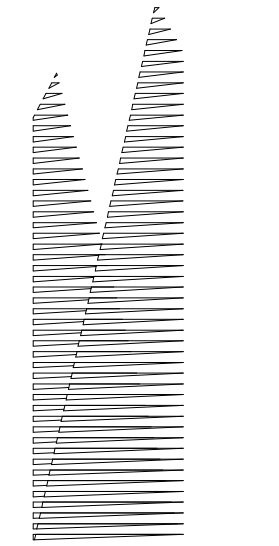
**S-802.01**

SHEET 153 OF 163



Damian Titus  
APPROVED  
UNDESIGNED BY 1975  
DATE 08/15/2017  
NYC Development Hub

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60 Columbus Circle  
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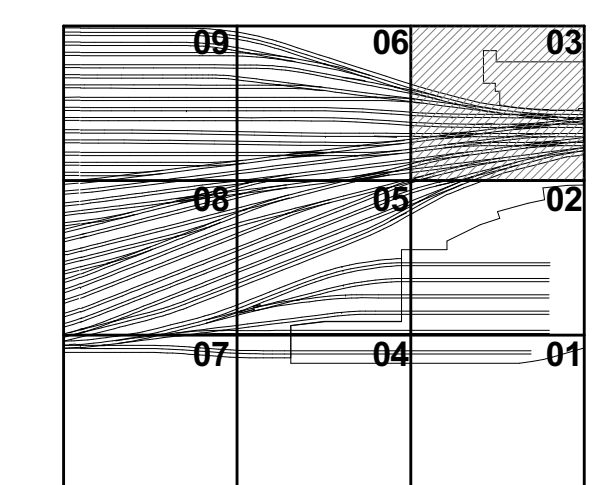
**Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security**  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - M.O.E FINAL 100% DESIGN	5/5/2015
SUBMISSION FOR RECORDS	
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASUSH009	10/14/2014
L.I.R.R. M.O.E. PERMIT SET	8/1/2014
M.O.E. REBUILD - BID SET	4/4/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M.O.E. PLATFORM SUBMISSION	
Δ DLO2 PHASE I STRUCTURAL UPDATE	11/1/2013
L.I.R.R. - 90% M.O.E. SUBMISSION	10/4/2013
NYC DOB FILING	10/4/2013
Δ DLO1 PHASE I STRUCTURAL UPDATE	9/20/2013
L.I.R.R. - 90% SUBMISSION	8/09/2013
L.I.R.R. - 60% M.O.E. SUBMISSION	7/12/2013
NYC DOB FILING	6/17/2013
L.I.R.R. - 30% M.O.E. SUBMISSION	6/14/2013
NYC DOB FILING	6/14/2013

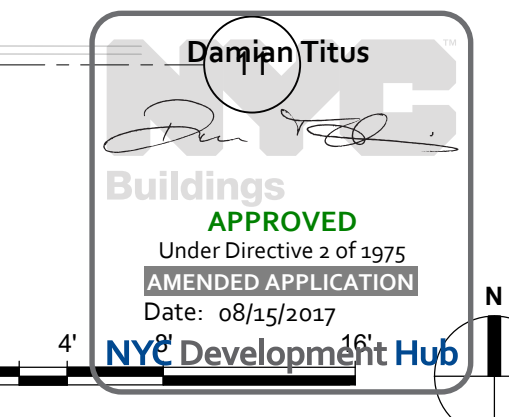
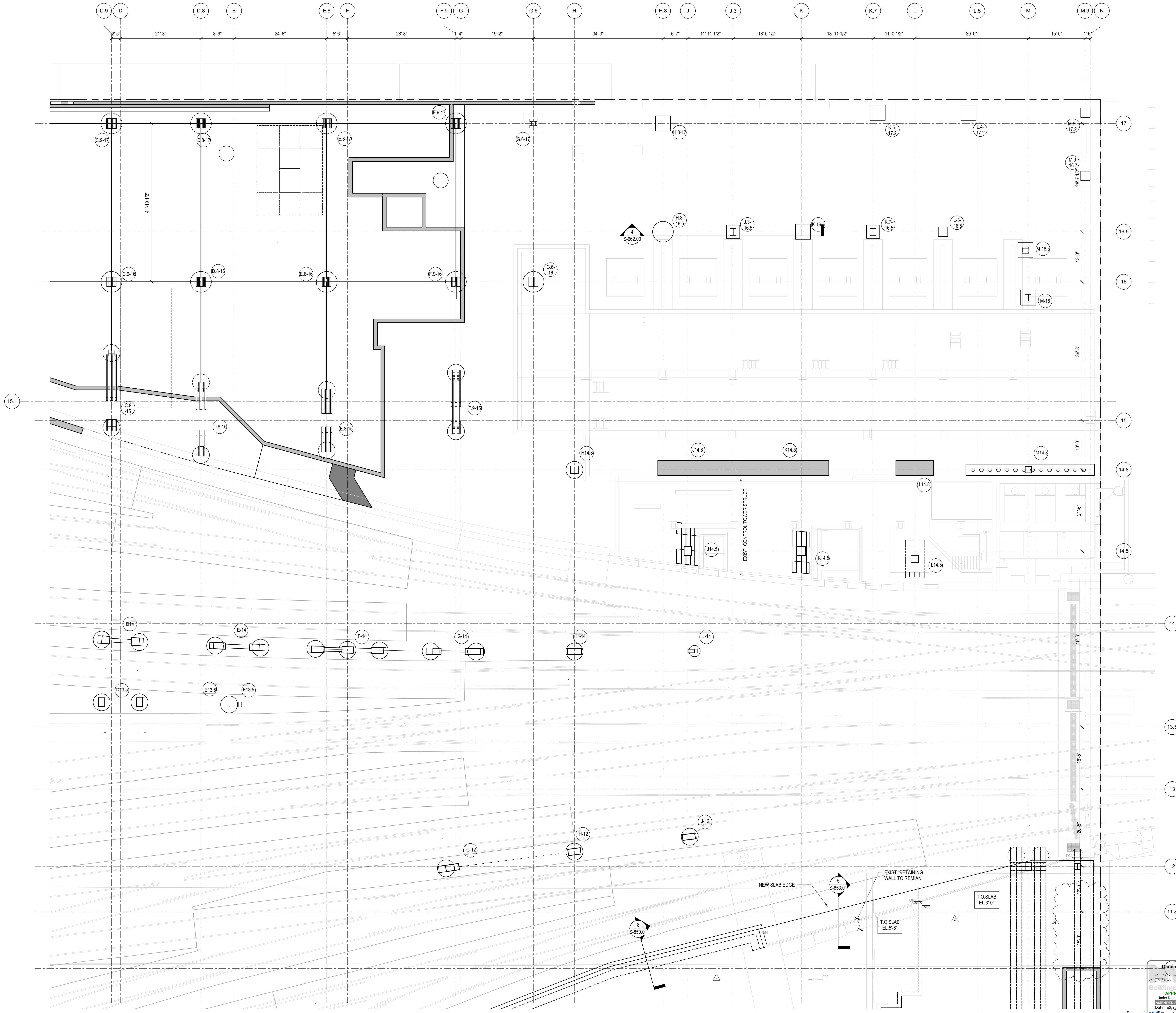
Key Plan



Date: 06/14/13  
Project No: N11330.00  
Revision By: Author  
Sheet Number:

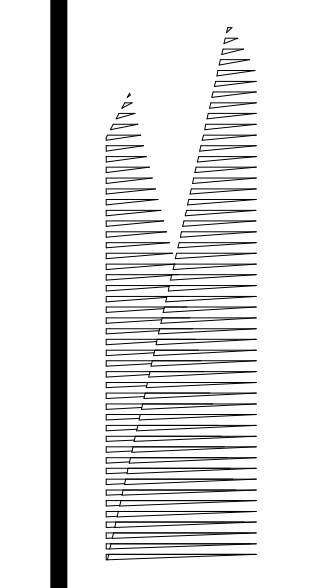
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SLAB PLAN M.O.E.  
TRACK LEVEL SECTOR  
03

Drawing Number / B/CAN Drawing Number  
**S-803.01**



S-803.01  
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*Construction Manager*  
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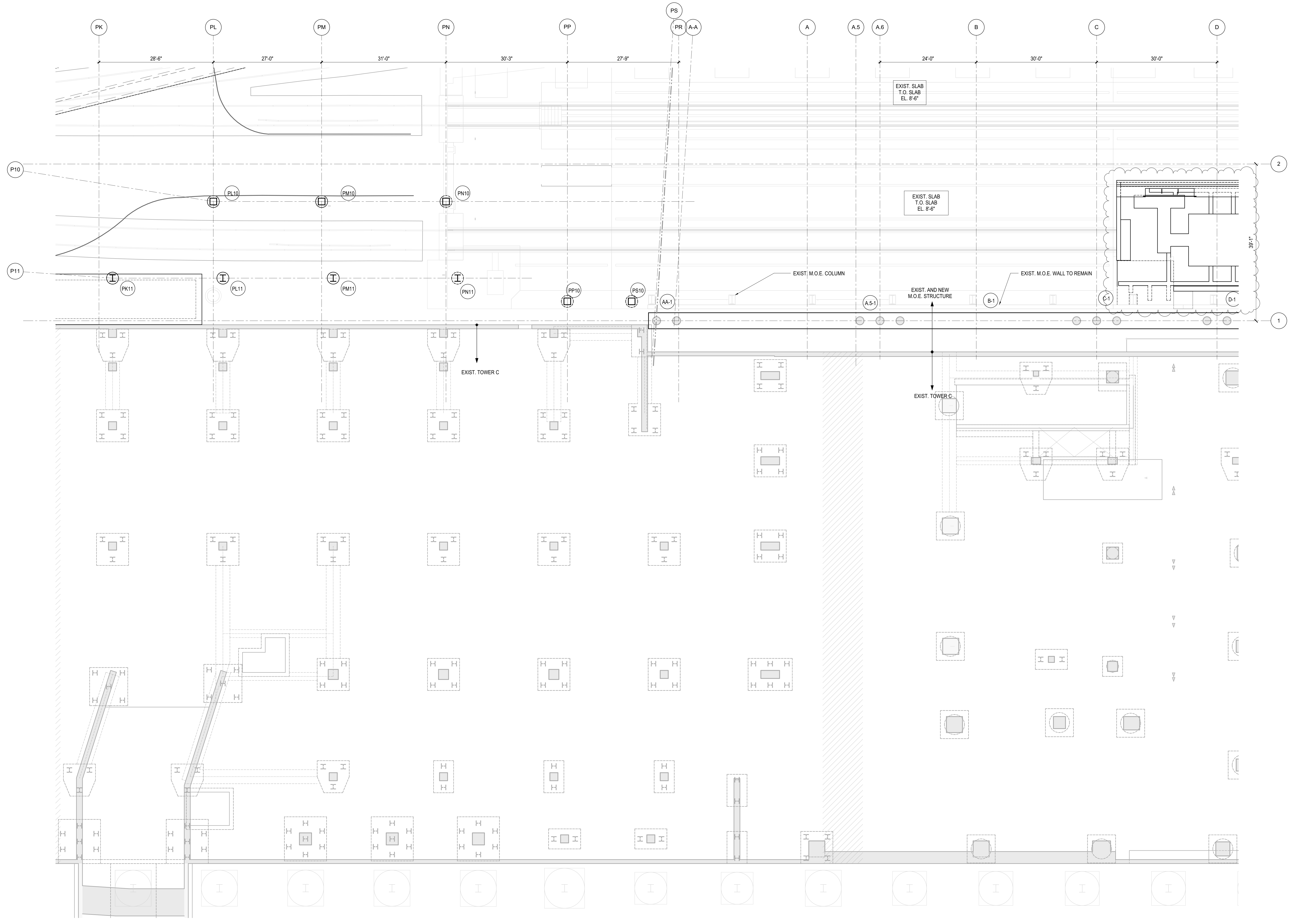
*Architect*  
Kohn Pedersen Fox Associates PC  
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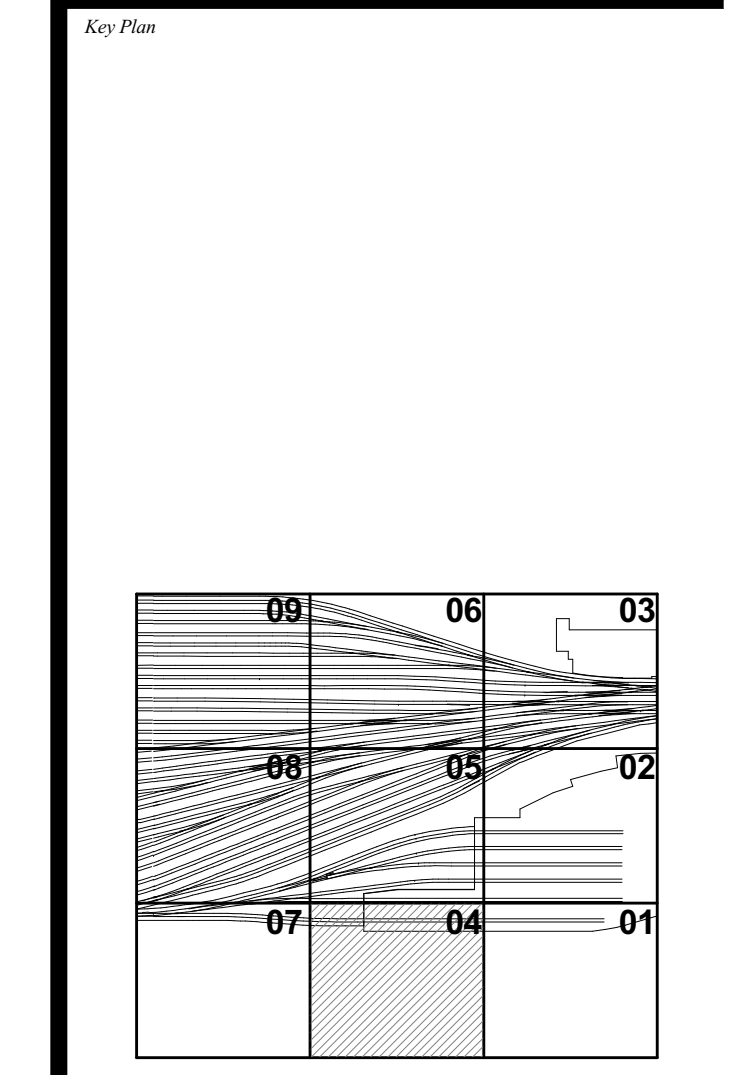
*Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
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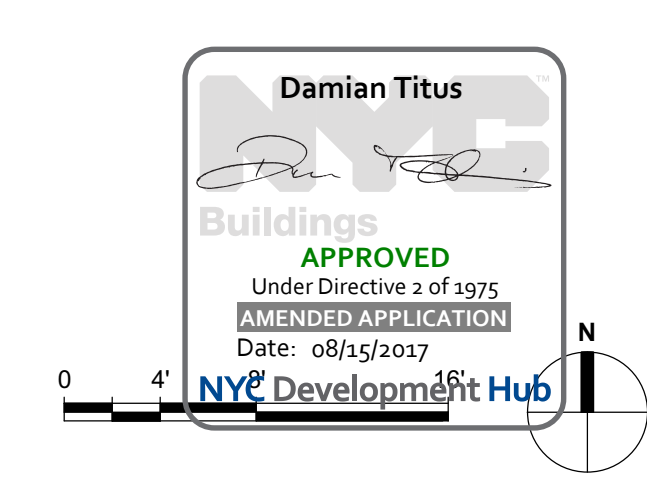
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SUBMISSION FOR RECORDS	
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DESIGN SUBMISSION FOR RECORDS	
AS100049	10/14/2014
LJRR M.O.E. PERMIT SET	8/1/2014
M.O.E. REBUILD - BID SET	4/4/2014
NYC DOB FILING	12/4/2013
LJRR - PRE-FINAL 100%	10/4/2013
M.O.E. PLATFORM SUBMISSION	11/22/2013
Δ DLO2 PHASE 1 STRUCTURAL UPDATE	11/1/2013
LJRR - 90% M.O.E. SUBMISSION	10/4/2013
NYC DOB FILING	10/4/2013
Δ DLO1 PHASE 1 STRUCTURE UPDATE	9/20/2013
LJRR - 90% SUBMISSION	8/9/2013
LJRR - 60% M.O.E. SUBMISSION	7/12/2013
NYC DOB FILING	6/17/2013
LJRR - 30% M.O.E. SUBMISSION	6/14/2013
NYC DOB FILING	6/14/2013

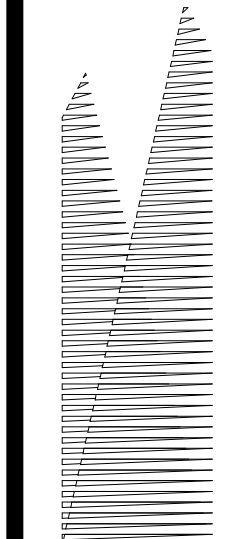


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**SLAB PLAN M.O.E.**  
**TRACK LEVEL SECTOR**  
**04**

Drawing Number / B/CAN Drawing Number  
**S-804.01**





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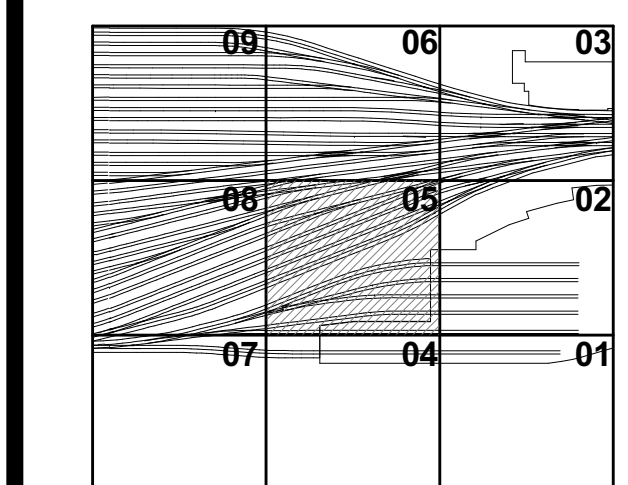
*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - M.O.E. FINAL 100% DESIGN SUBMISSION FOR RECORDS	5/5/2015
ASL-M0023	5/4/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASL-M08	10/14/2014
ASL-M-08 - PRESSURE SLAB MODIFICATION	9/16/2014
LIRR M.O.E. PERMIT SET	8/1/2014
M.O.E. REBUILD - BID SET	4/4/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M.O.E. PLATFORM SUBMISSION	
DL02 PHASE I STRUCTURAL UPDATE	11/1/2013
LIRR - 90% M.O.E. SUBMISSION	10/4/2013
NYC DOB FILING	10/4/2013
DL01 PHASE I STRUCTURAL UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
LIRR - 60% M.O.E. SUBMISSION	7/12/2013
NYC DOB FILING	6/17/2013
LIRR - 30% M.O.E. SUBMISSION	6/14/2013
NYC DOB FILING	6/14/2013

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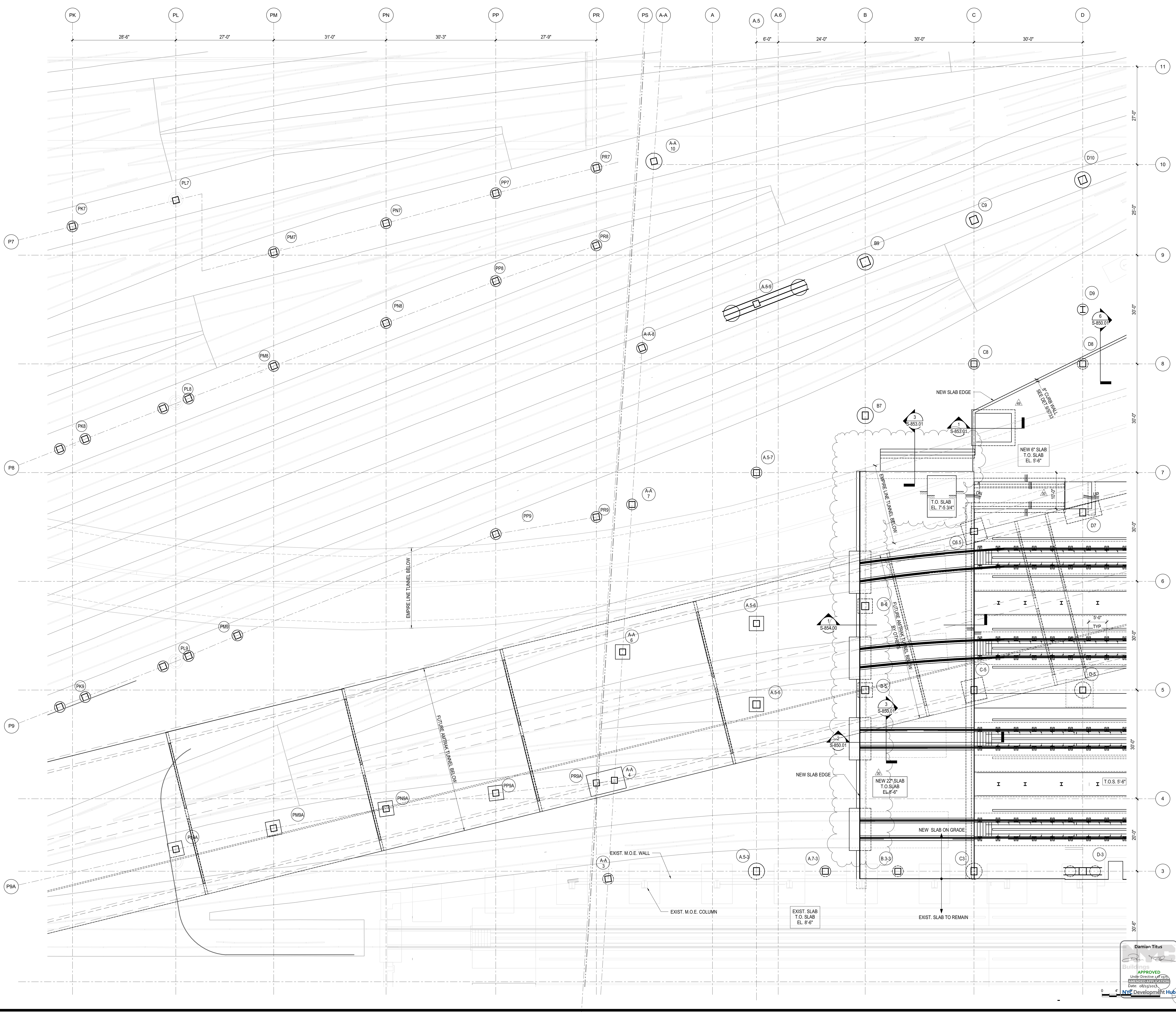
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Sheet Number: Author

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**SLAB PLAN M.O.E. TRACK LEVEL SECTOR 05**

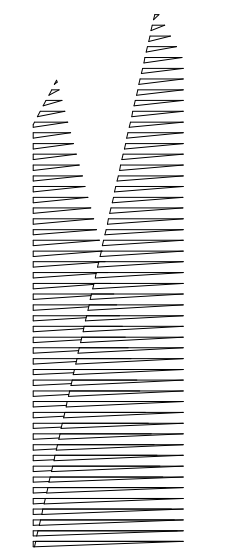
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**S-805.01**

**SHEET 156 of 163**



Damian Titus  
APPROVED  
Under Directive 2 of 197  
Date: 08/15/2013  
NYC Development Hub

S-805.01  
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Construction Manager  
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New York, NY 10017  
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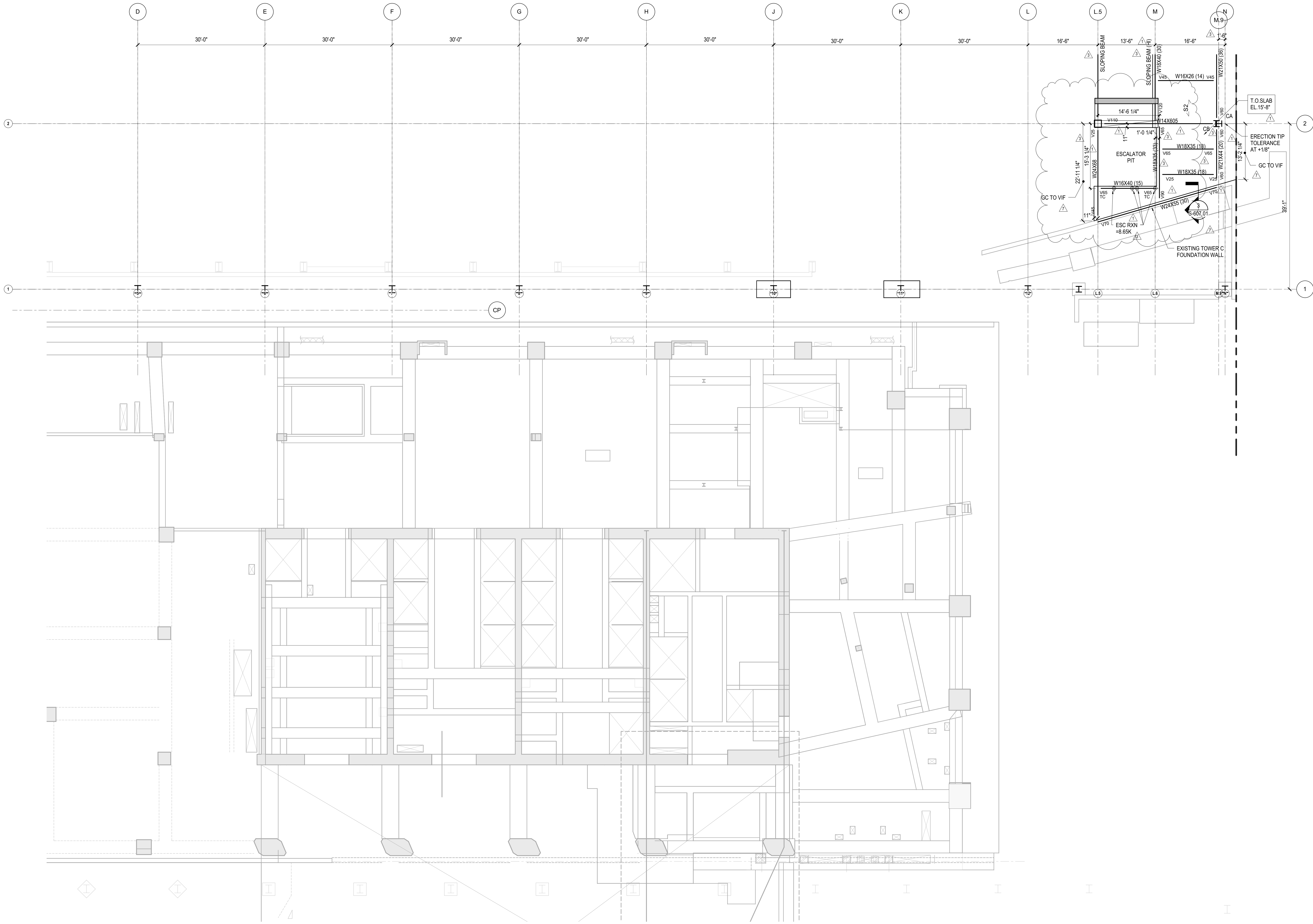
Architect  
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New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

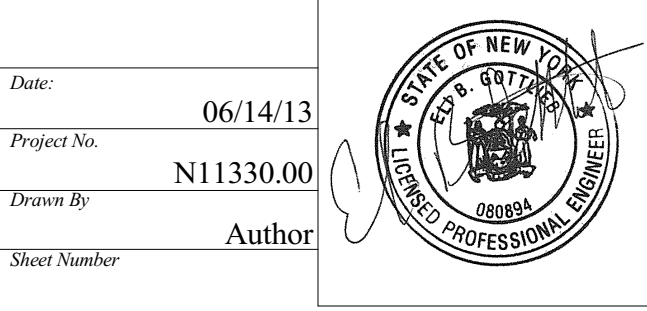
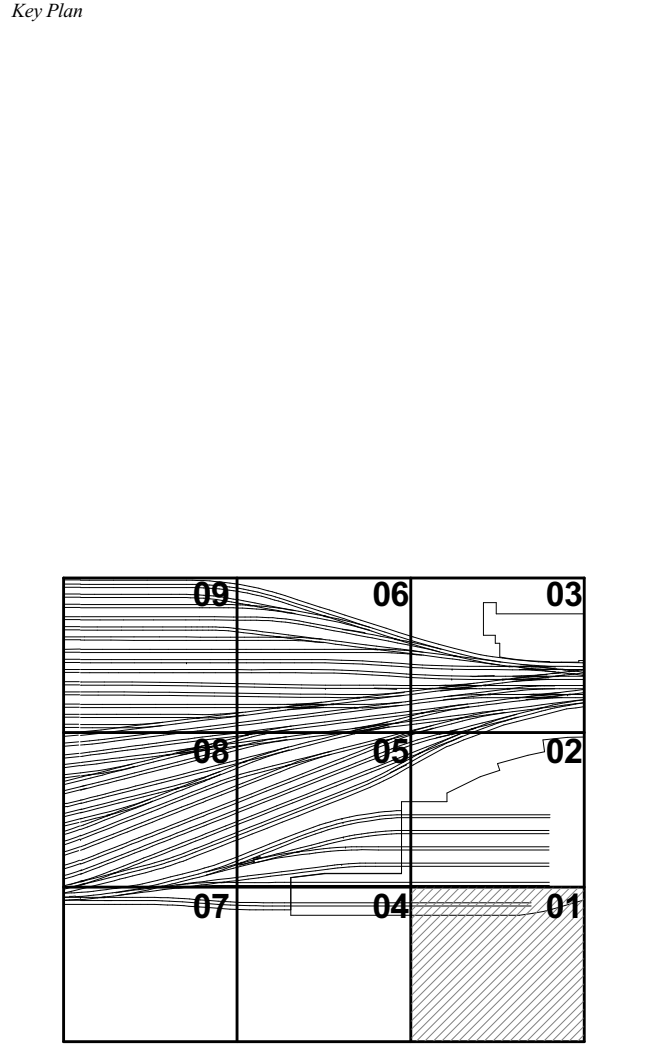
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LJRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

LJRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



DOB POST-APPROVAL AMENDMENT	10/28/2016
LJRR - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00049	10/14/2014
ASH0037 - RETAIL FIELD MOD.	8/19/2014
LJRR M.O.E. PERMIT SET	8/1/2014
ASH00005	2/18/2014
NYC DOB FILING	12/4/2013
ASH00001	12/20/2013
LJRR - PRE-FINAL 100%	11/22/2013
Mod. - PLATFORM SUBMISSION	
DL02 PHASE 1 STRUCTURAL UPDATE	11/1/2013
LJRR - 90% M.O.E. SUBMISSION	10/4/2013
NYC DOB FILING	10/4/2013
DL01 PHASE 1 STRUCTURAL UPDATE	9/20/2013
LJRR - 90% SUBMISSION	8/9/2013
LJRR - 60% M.O.E. SUBMISSION	7/12/2013
NYC DOB FILING	6/17/2013
LJRR - 30% M.O.E. SUBMISSION	6/14/2013
Rev. Description	Date



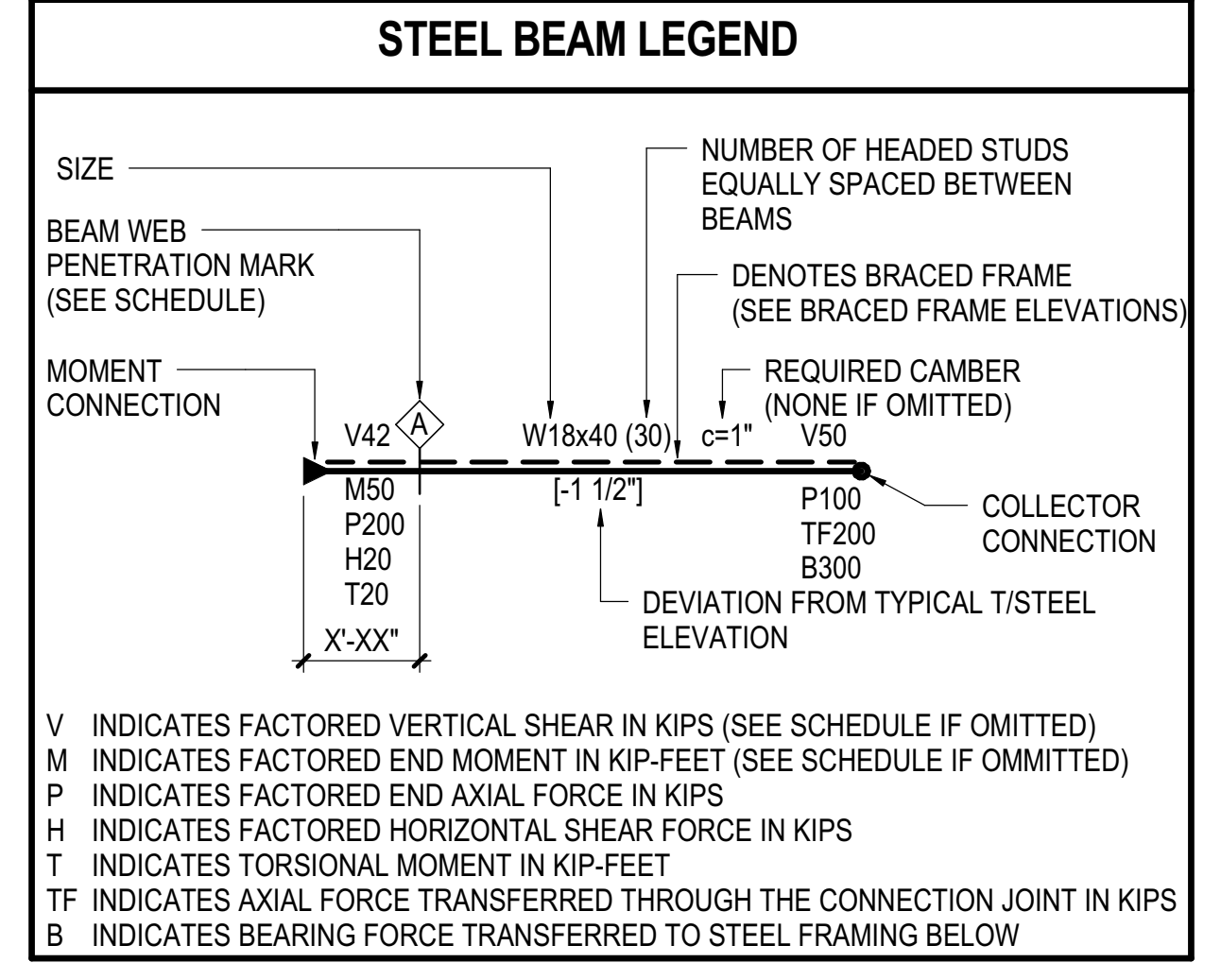
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Drawing Title  
**FRAMING PLAN M.O.E. CONTROL TOWER LEVEL SECTOR 01**

Drawing Number / B.C.A.N. Drawing Number  
**S-811.01**  
SHEET 157 of 163

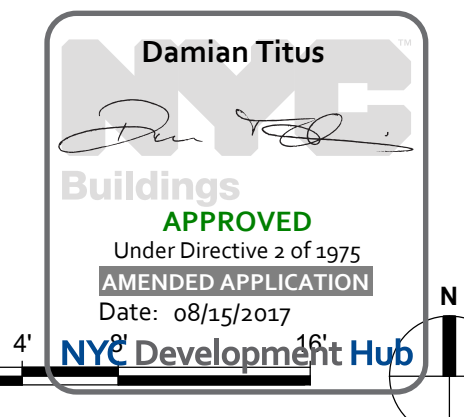
- SHEET NOTES:**
- T/STRUCTURAL SLAB EL+ UON THUS:  
X - INDICATES CHANGE IN T/STRUCTURAL SLAB ELEVATION.
  - T/STEEL EL UON
  - ← INDICATES DECK SPAN DIRECTION. SEE SCHEDULE ON S-003.00
  - FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:  
DRAWING LISTS, GENERAL NOTES, AND LOADING DIAGRAMS S0 SERIES DRAWINGS  
TYPICAL FOUNDATION DETAILS S3 SERIES DRAWINGS  
STEEL COLUMN SCHEDULES S4 SERIES DRAWINGS  
STEEL TYPICAL DETAILS S7 SERIES DRAWINGS

- 5. SYMBOLS:**
- INDICATES MOMENT CONNECTION
  - INDICATES LATERAL BRACINGS.
  - INDICATES FULL HEIGHT FITTED STIFFENER CONNECTION.
  - UP INDICATES SLOPE IN TOP OF SLAB
  - INDICATES SPLICE LOCATIONS. SEE S-512.00 FOR DETAILS
  - INDICATES LOCATION OF SLAB TRENCHES. SEE S-341.00 FOR DETAILS
  - INDICATES SLAB OPENING FOR DRAINAGE. TYPICALLY 2'-0". FINAL POSITION BETWEEN BEAMS TO BE COORDINATED WITH ARCHITECT.
  - INDICATES BEAM PENETRATION. SEE S-714.00 & S-715 FOR BEAM PENETRATION SCHEDULE & DETAILS
  - INDICATES BEAM REINFORCEMENT

- 6. NOTATIONS:**
- CA/CB INDICATES COLUMN ABOVE/BELOW. COMPRESSION AXIAL FORCE IN COLUMN INDICATED WHERE APPLICABLE.
  - PA/PB INDICATES POST ABOVE / BELOW
  - DB INDICATES HSS8X4X3/8 ELEVATOR DIVIDER BEAM (NOT FIREPROOFED)
  - HAI/HB INDICATES HANGER ABOVE/BELOW. TENSION AXIAL FORCE IN HANGER BELOW INDICATED WHERE APPLICABLE
  - MF INDICATES LATERAL MOMENT FRAME. SEE MOMENT FRAME ELEVATIONS FOR BEAM INFORMATION AND CONNECTION FORCES
  - PG INDICATES PLATE GIRDER TYPE. SEE S-511.00 FOR SCHEDULE AND DETAILS
  - TC INDICATES TORSION CONNECTION FOR STAIR
  - TR INDICATES COLUMN FROM ABOVE TRANSFERS. COMPRESSION AXIAL FORCE IN COLUMN INDICATED WHERE APPLICABLE
  - BF INDICATES BRACED FRAME. SEE ELEVATIONS
  - FCA INDICATES FUTURE COLUMN ABOVE
  - FHA INDICATES FUTURE HANGER ABOVE

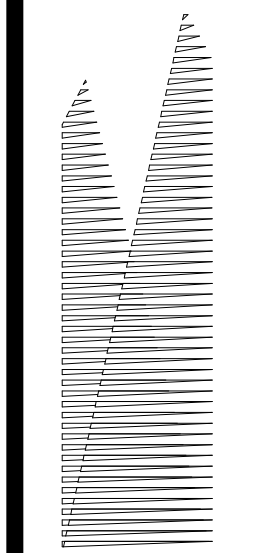


V INDICATES FACTORED VERTICAL SHEAR IN KIPS (SEE SCHEDULE IF OMITTED)  
M INDICATES FACTORED END MOMENT IN KIP-FEET (SEE SCHEDULE IF OMITTED)  
P INDICATES FACTORED END AXIAL FORCE IN KIPS  
H INDICATES FACTORED HORIZONTAL SHEAR FORCE IN KIPS  
T INDICATES TORSIONAL MOMENT IN KIP-FEET  
TF INDICATES AXIAL FORCE TRANSFERRED THROUGH THE CONNECTION JOINT IN KIPS  
B INDICATES BEARING FORCE TRANSFERRED TO STEEL FRAMING BELOW



APPROVED  
Under Directive 3 of 1975  
Professional Engineer  
Date: 08/15/2017  
NYC Development Hub





*Client*  
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60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

*Owner*  
Oxford Properties Group  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

*Construction Manager*  
Fishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

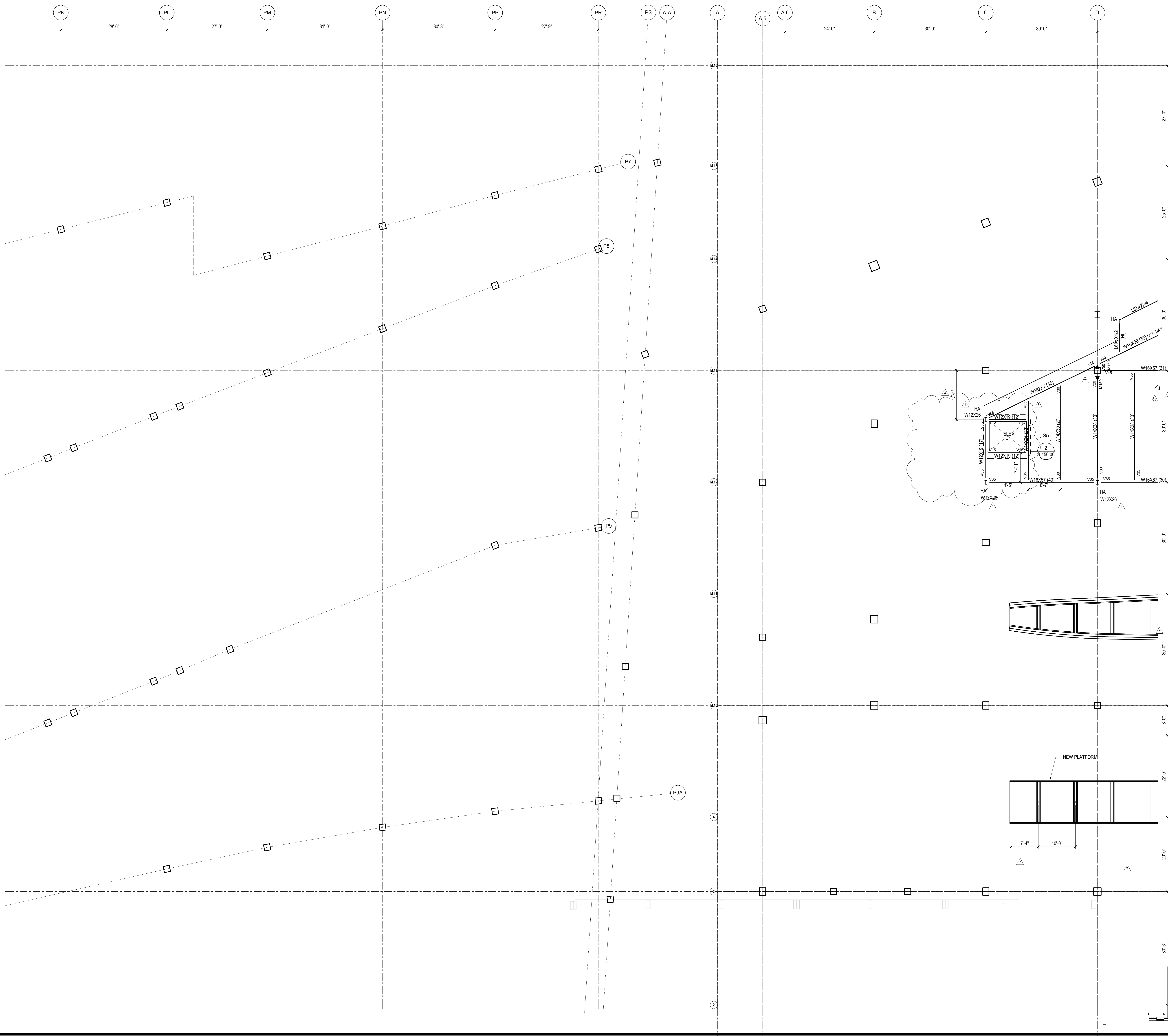
*Architect*  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

*Structural Engineer*  
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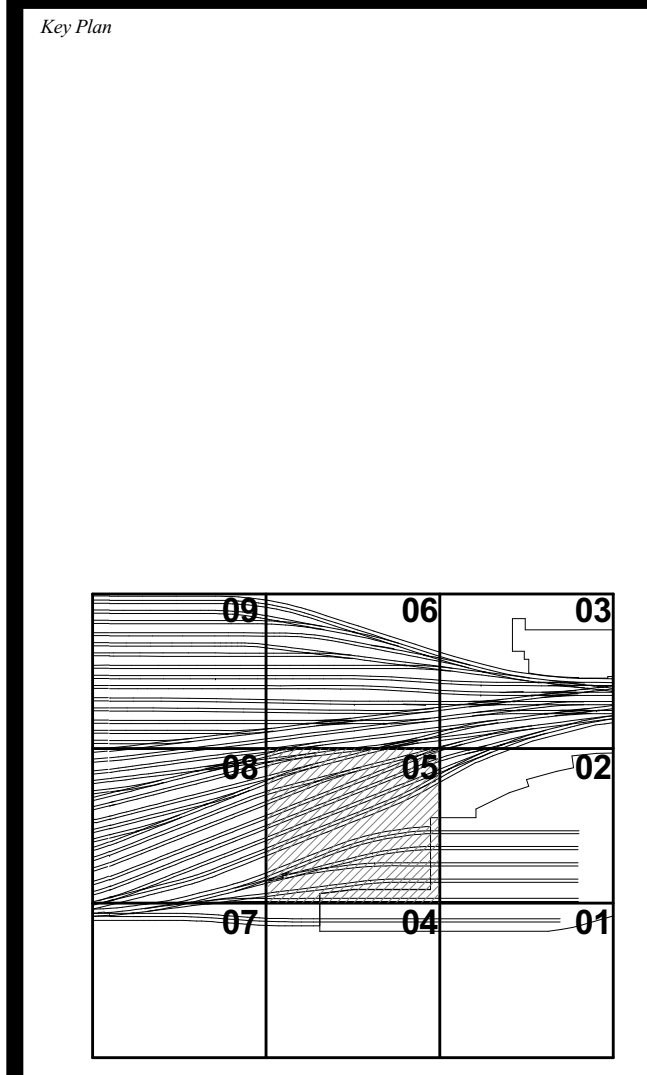
*Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security*  
Parsons Transportation Group  
100 Broadway  
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Tel: 212.266.8300 Fax: 212.571.6825

*LIRR Ventilation*  
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*LIRR Substation*  
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DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - M.O.E. FINAL 100% DESIGN SUBMISSION FOR RECORDS	5/5/2015
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH00009	10/14/2014
LIRR M.O.E. PERMIT SET	8/1/2014
M.O.E. REBUILD - BID SET	4/4/2014
ASH00005	2/18/2014
ASH00003	1/14/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M.O.E. - PLATFORM SUBMISSION	
DELPHI PHASE 1 STRUCTURAL UPDATE	11/1/2013
LIRR - 90% M.O.E. SUBMISSION	10/4/2013
NYC DOB FILING	10/4/2013
DELPHI PHASE 1 STRUCTURAL UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
LIRR - 60% M.O.E. SUBMISSION	7/12/2013
NYC DOB FILING	6/17/2013
LIRR - 30% M.O.E. SUBMISSION	6/14/2013
NYC DOB FILING	6/14/2013

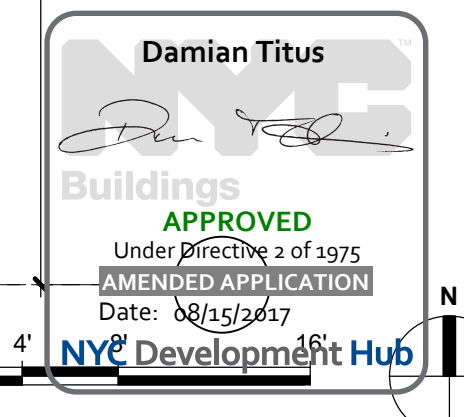


Date: 06/14/13  
Project No: N11330.00  
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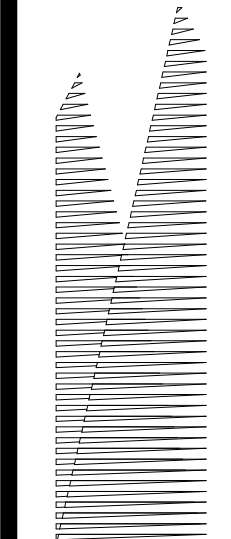
**HYE-PL-S-815.01**

**FRAMING PLAN  
M.O.E. CONTROL  
TOWER LEVEL  
SECTOR 05**

Drawing Number / B.S.C.N. Drawing Number  
**S-815.01**







Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group  
230 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.5600

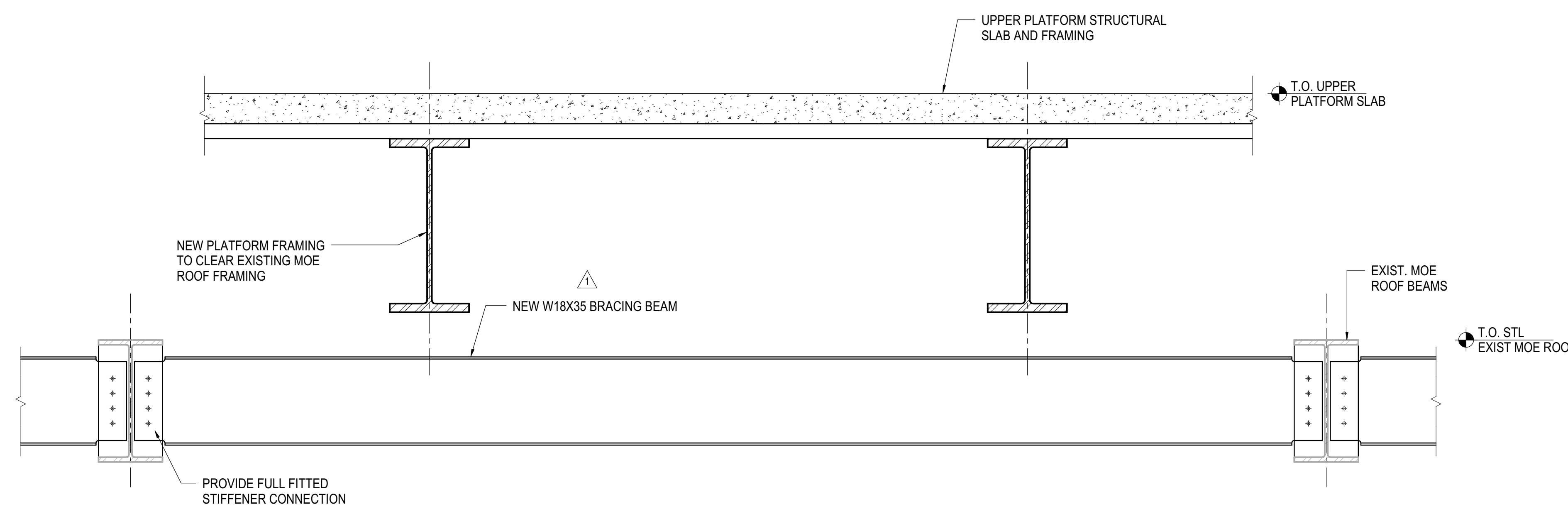
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

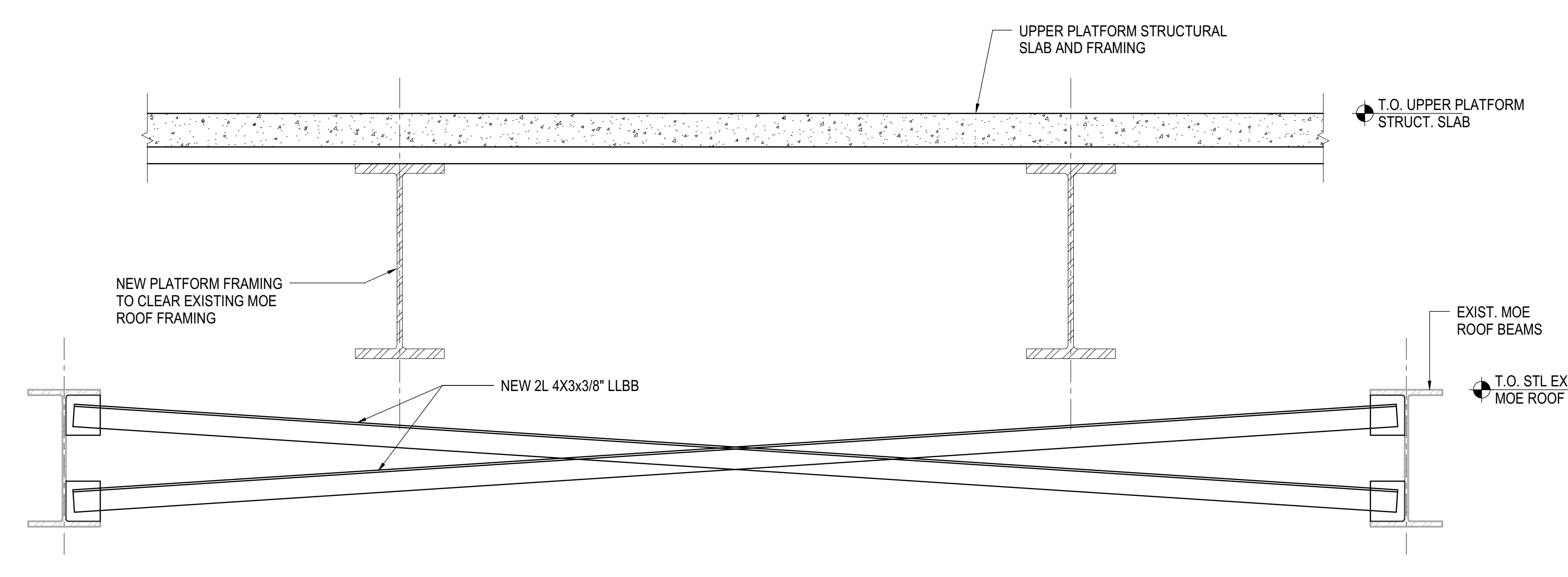
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Purses, Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

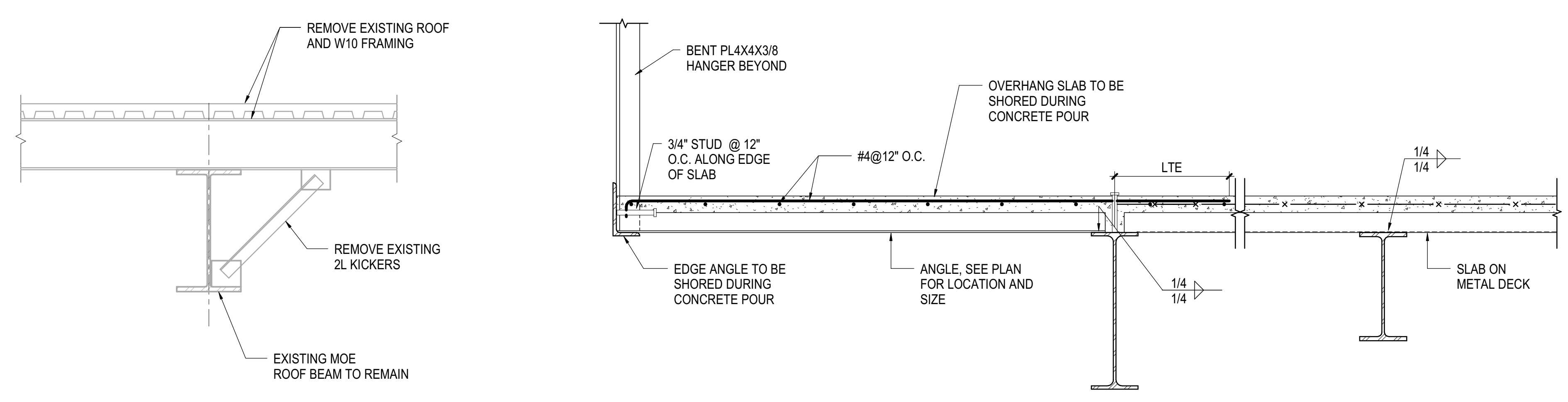
LIRR Substation  
AECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



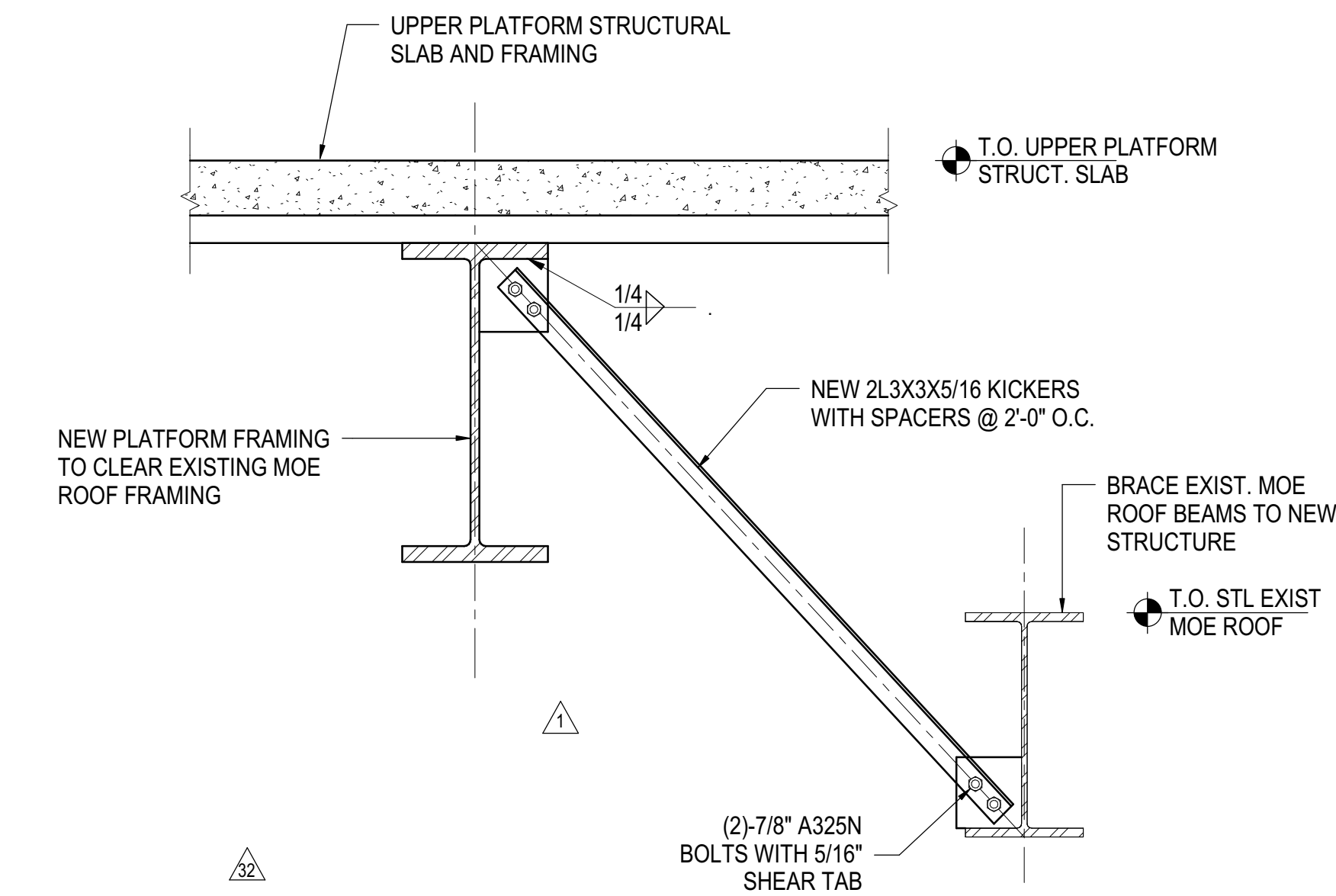
**1 BRACING DETAIL AT EXISTING MOE HIGH ROOF**  
3/4" = 1'-0"



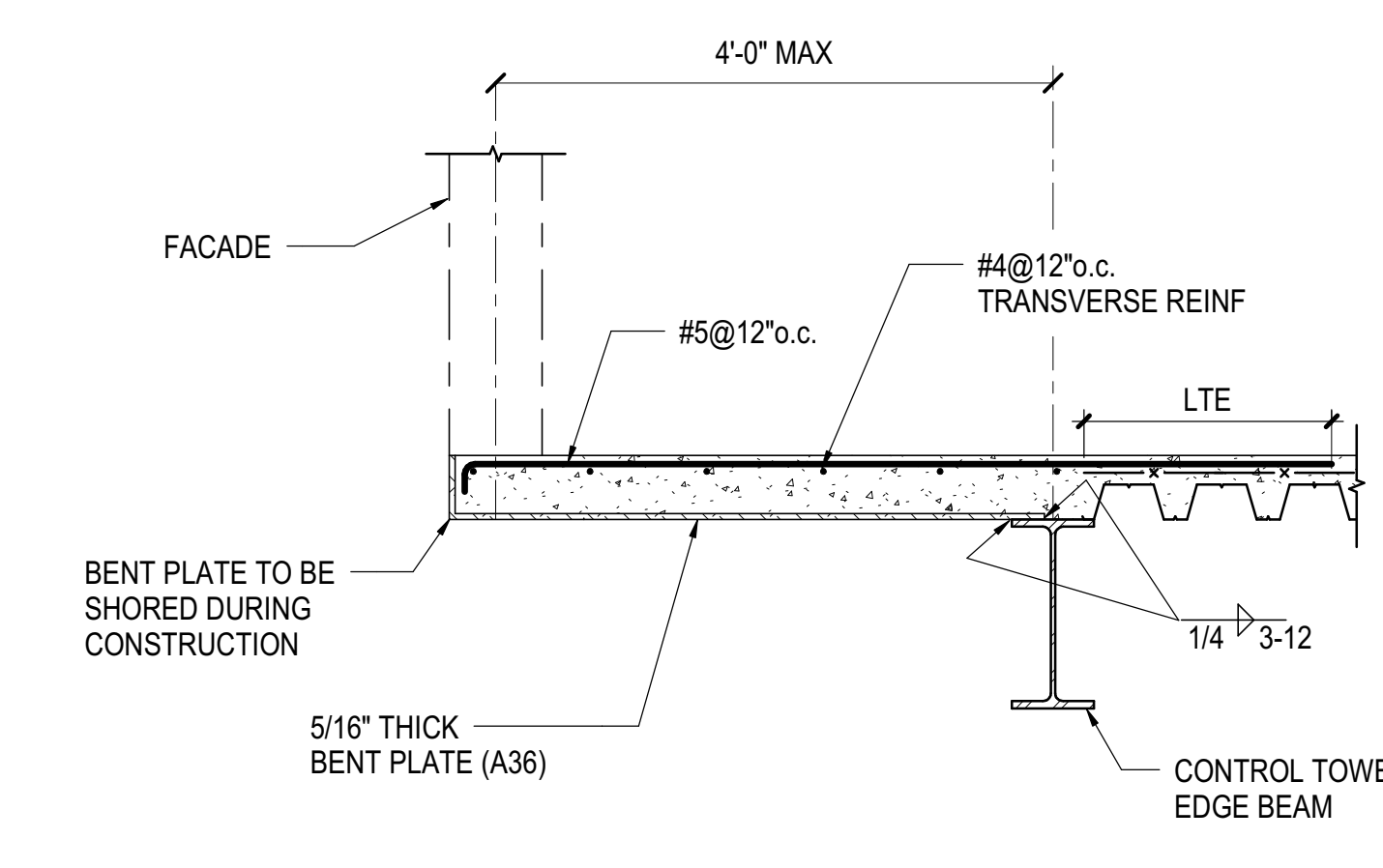
**2 ALTERNATE BRACING DETAIL AT EXISTING MOE HIGH ROOF**  
3/4" = 1'-0"



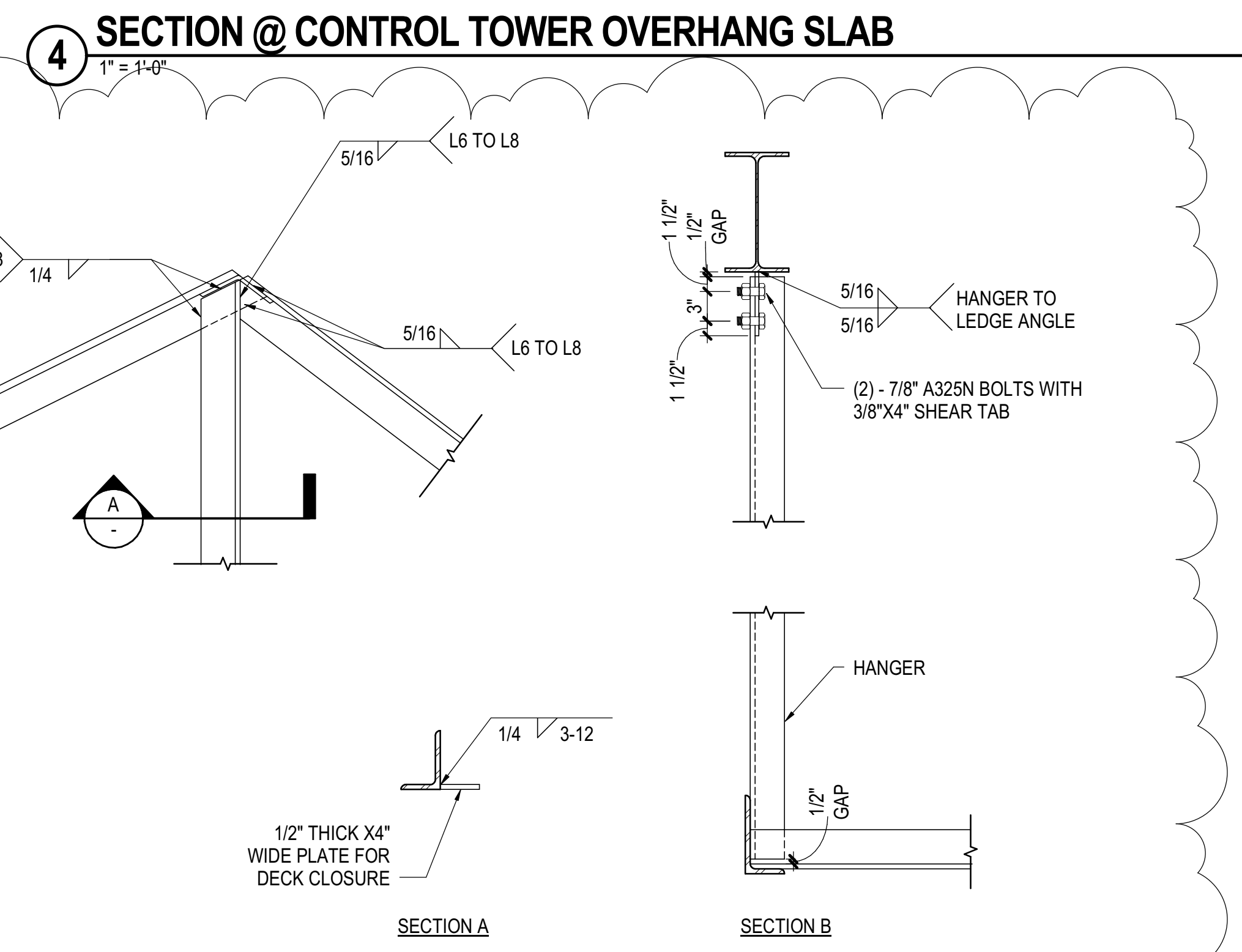
**3 SECTION AT EXISTING MOE HIGH ROOF**  
3/4" = 1'-0"



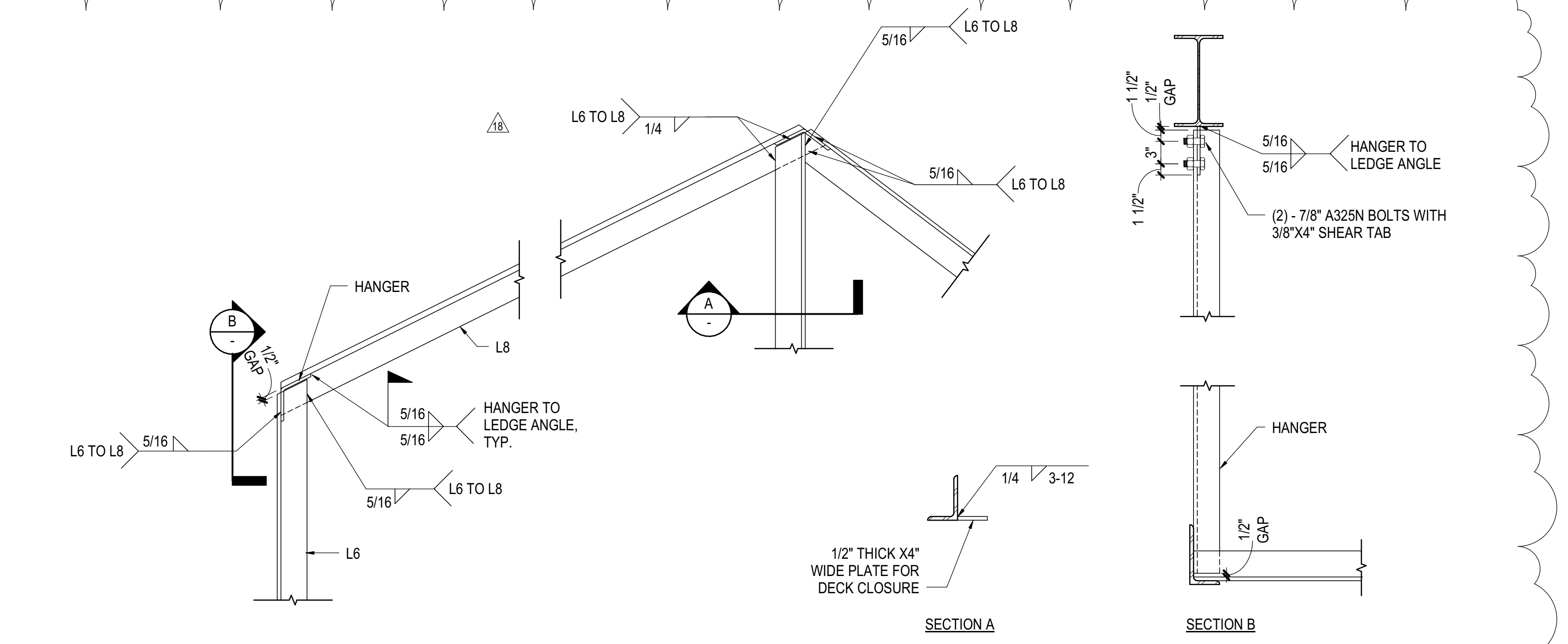
**5 NEW KICKERS AT EXISTING MOE HIGH ROOF**  
3/4" = 1'-0"



**6 TYPICAL EDGE OF SLAB AT CONTROL TOWER**  
3/4" = 1'-0"



**4 SECTION @ CONTROL TOWER OVERHANG SLAB**  
1" = 1'-0"



**7 CONTROL TOWER OVERHANG SLAB DETAILS**  
1" = 1'-0"

DOB POST-APPROVAL AMENDMENT	10/26/2016
L.I.R.R. - M.O.E. FINAL 100% DESIGN	5/5/2017
SUBMISSION FOR RECORDS	
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASH0099	10/14/2014
LIRR M.O.E. PERMIT SET	8/1/2014
ASH0021	8/7/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M.O.E. - PLATFORM SUBMISSION	
DEIG PHASE 1 STRUCTURAL UPDATE	11/1/2013
LIRR - 90% M.O.E. SUBMISSION	10/4/2013
NYC DOB FILING	10/4/2013
DEIG PHASE 1 STRUCTURE UPDATE	9/20/2013
LIRR - 90% SUBMISSION	8/09/2013
LIRR - 60% M.O.E. SUBMISSION	7/12/2013
Rev.	Rev.

Key Plan

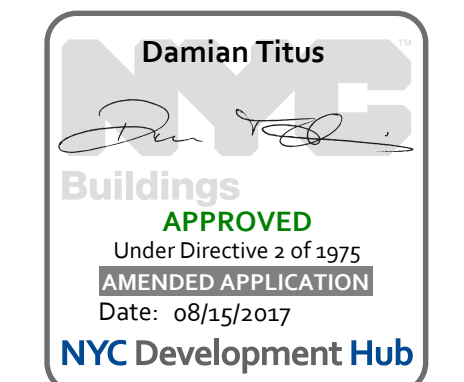
Date: 07/12/13  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE-PL-S-852.01**

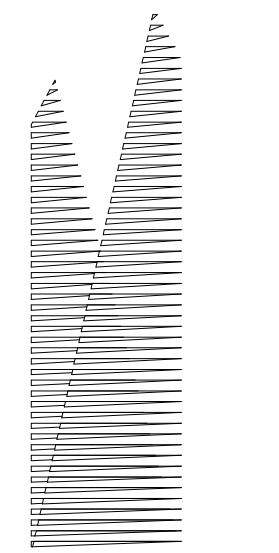
**MOE BUILDBACK  
SECTIONS AND  
DETAILS**

Drawing Number: /034/ Drawing Number  
**S-852.01**

SHEET 161 of 163



S-852.01  
10/20/2016 12:23:35 AM  
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Client  
Related Companies  
60 Columbus Circle  
New York, NY 10023  
Tel: 212.801.1000 Fax: 212.801.1048

Owner  
Oxford Properties Group  
320 Park Avenue, 17th Floor  
New York, NY 10022  
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager  
Tishman Construction Corporation  
100 Park Avenue, 5th Floor  
New York, NY 10017  
Tel: 212.708.3600

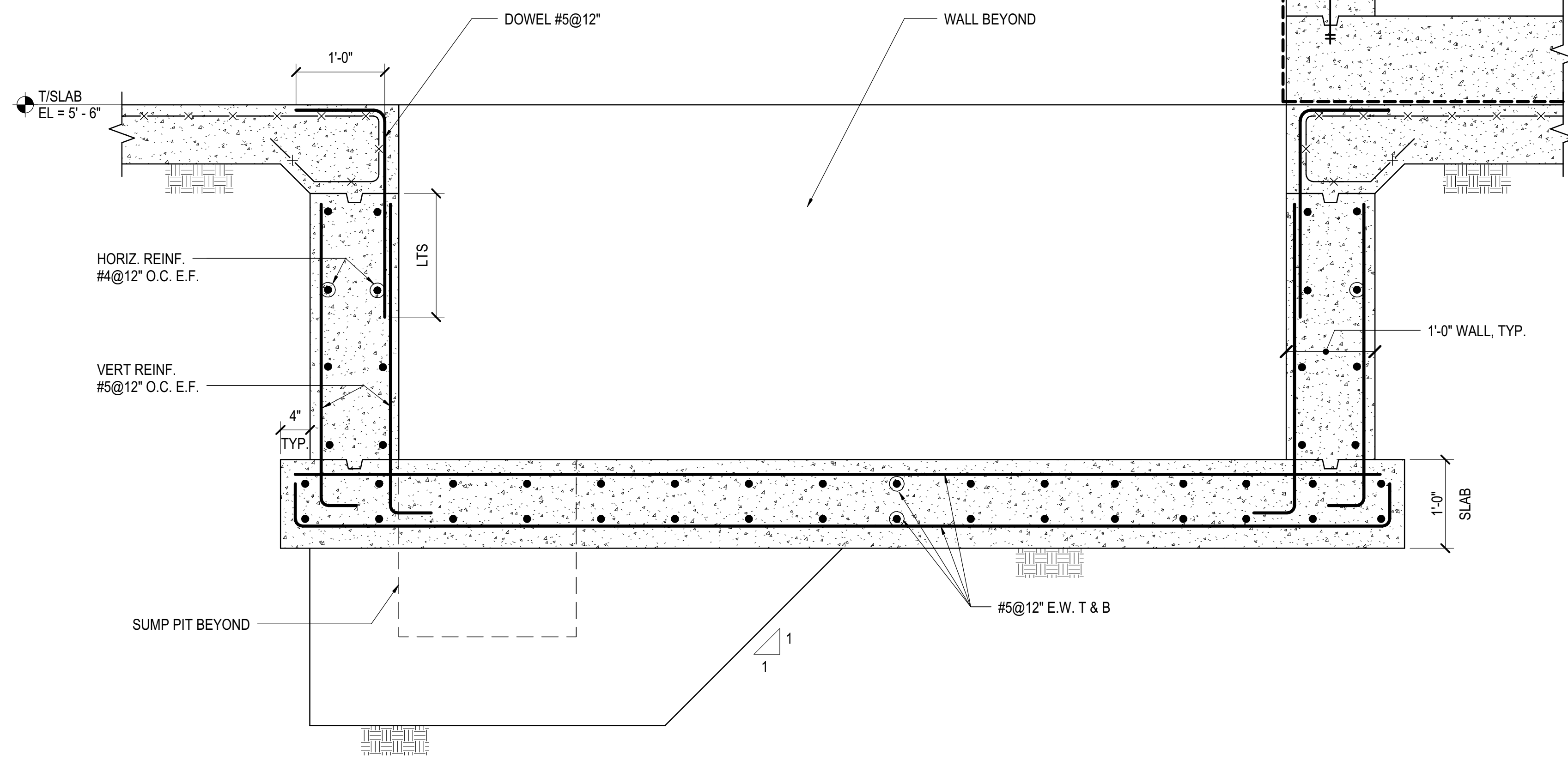
Architect  
Kohn Pedersen Fox Associates PC  
PC Architects & Planning Consultants  
11 West 42nd Street  
New York, New York 10036  
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer  
Thornton Tomasetti, Inc.  
51 Madison Avenue  
New York, NY 10010  
Tel: 917.661.7800 Fax: 718.661.7801

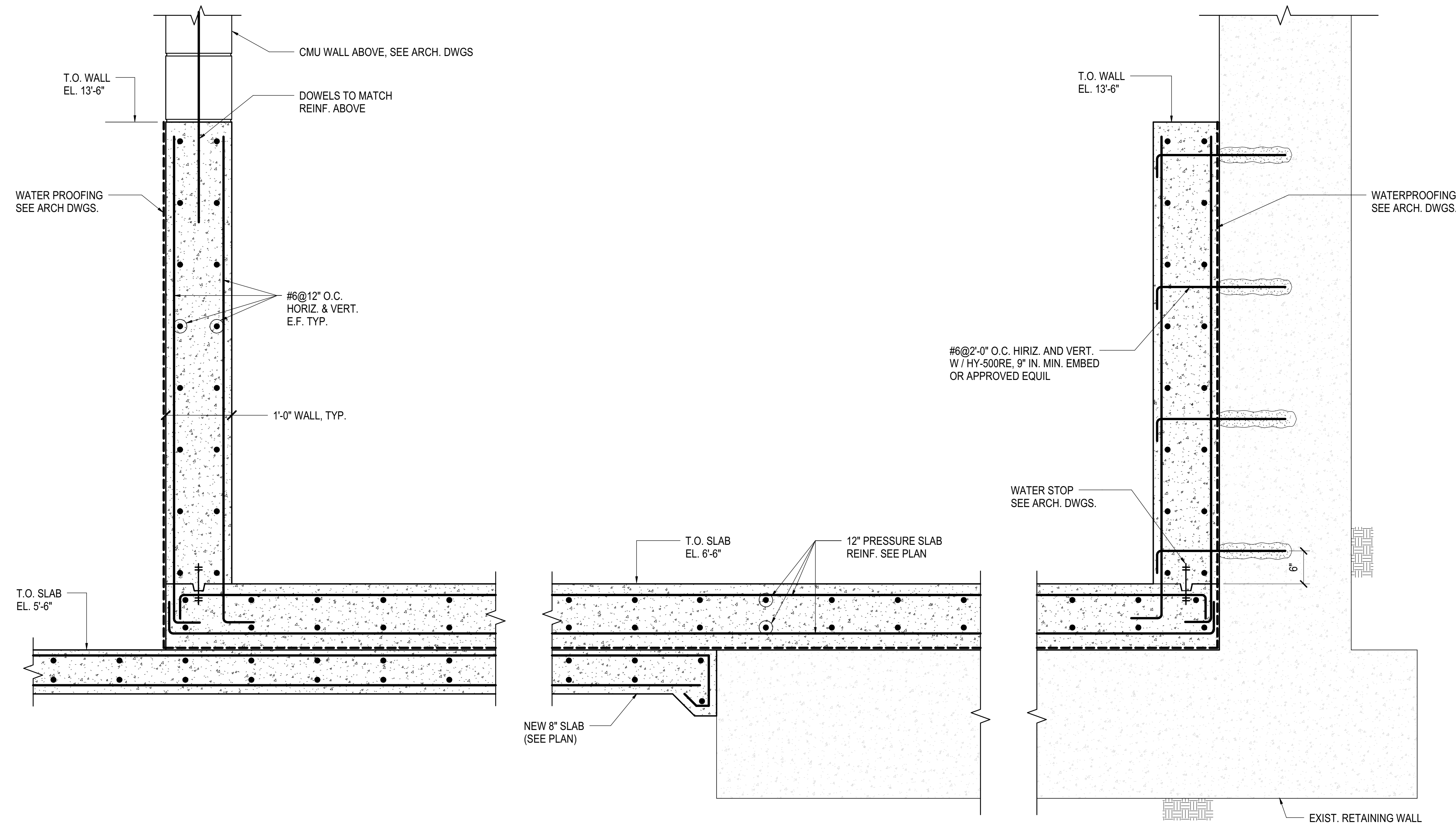
Civil, Mechanical, Electrical, Plumbing,  
Fire Alarm, Fire Protection, Security  
Parsons Transportation Group  
100 Broadway  
New York, NY 10005  
Tel: 212.266.8300 Fax: 212.571.6825

LIRR Ventilation  
Ove Arup & Partners P.C.  
77 Water Street  
New York, NY 10005  
Tel: 212.896.3000

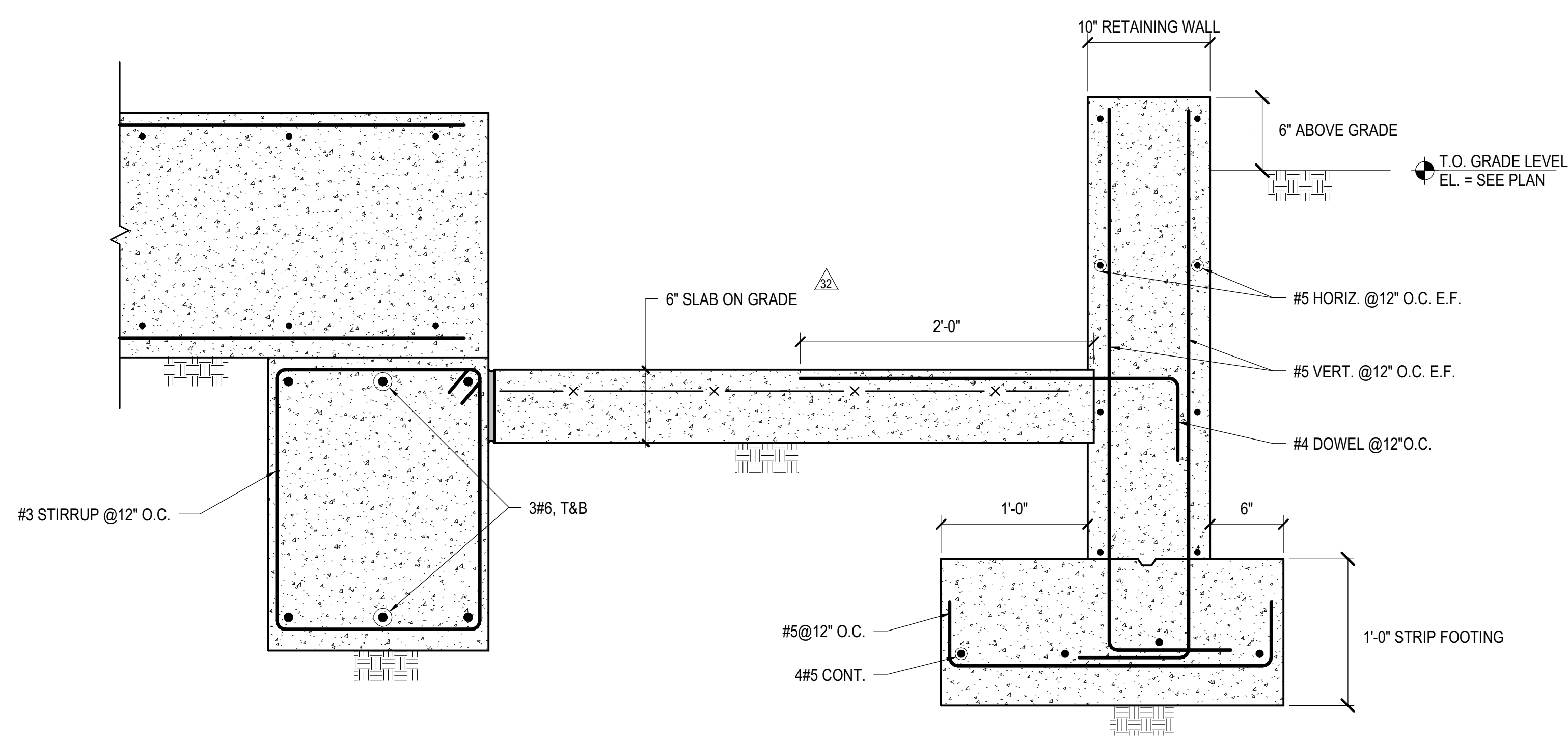
LIRR Substation  
ALECOM  
605 Third Avenue  
New York, NY 10158  
Tel: 212.973.9200 Fax: 212.682.6172



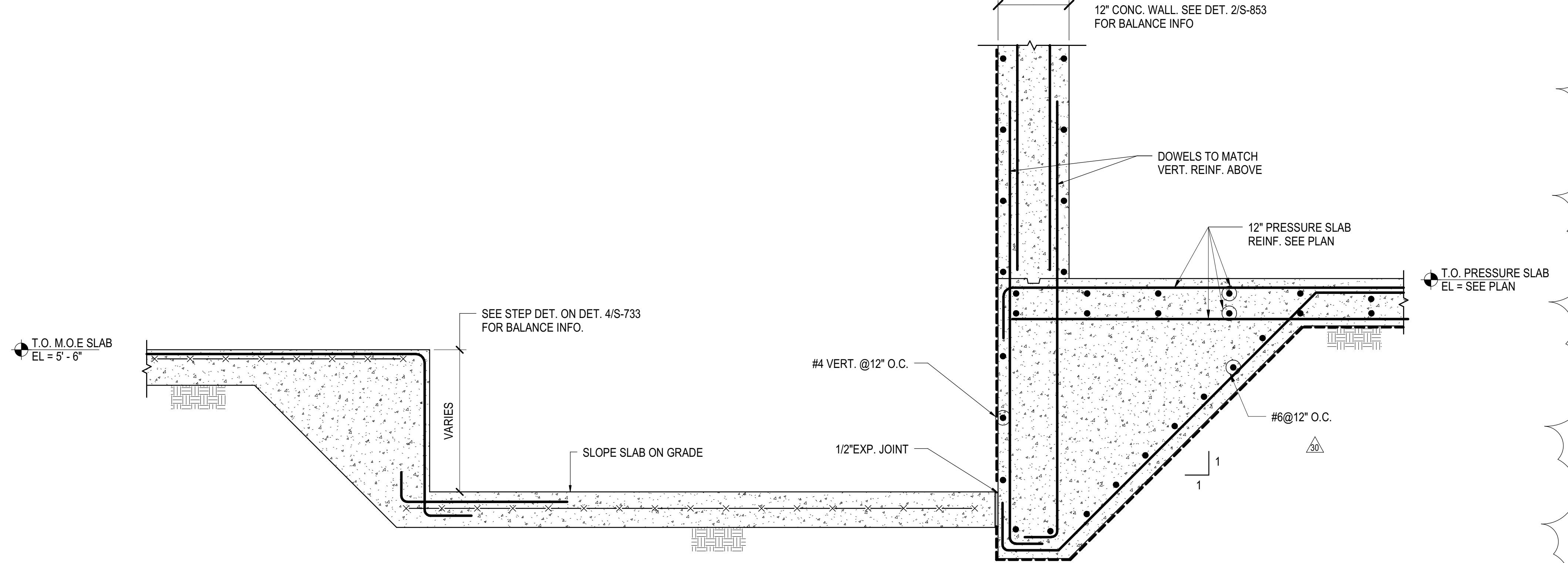
**1 ELEVATOR PIT AT M.O.E.**  
1" = 1'-10"



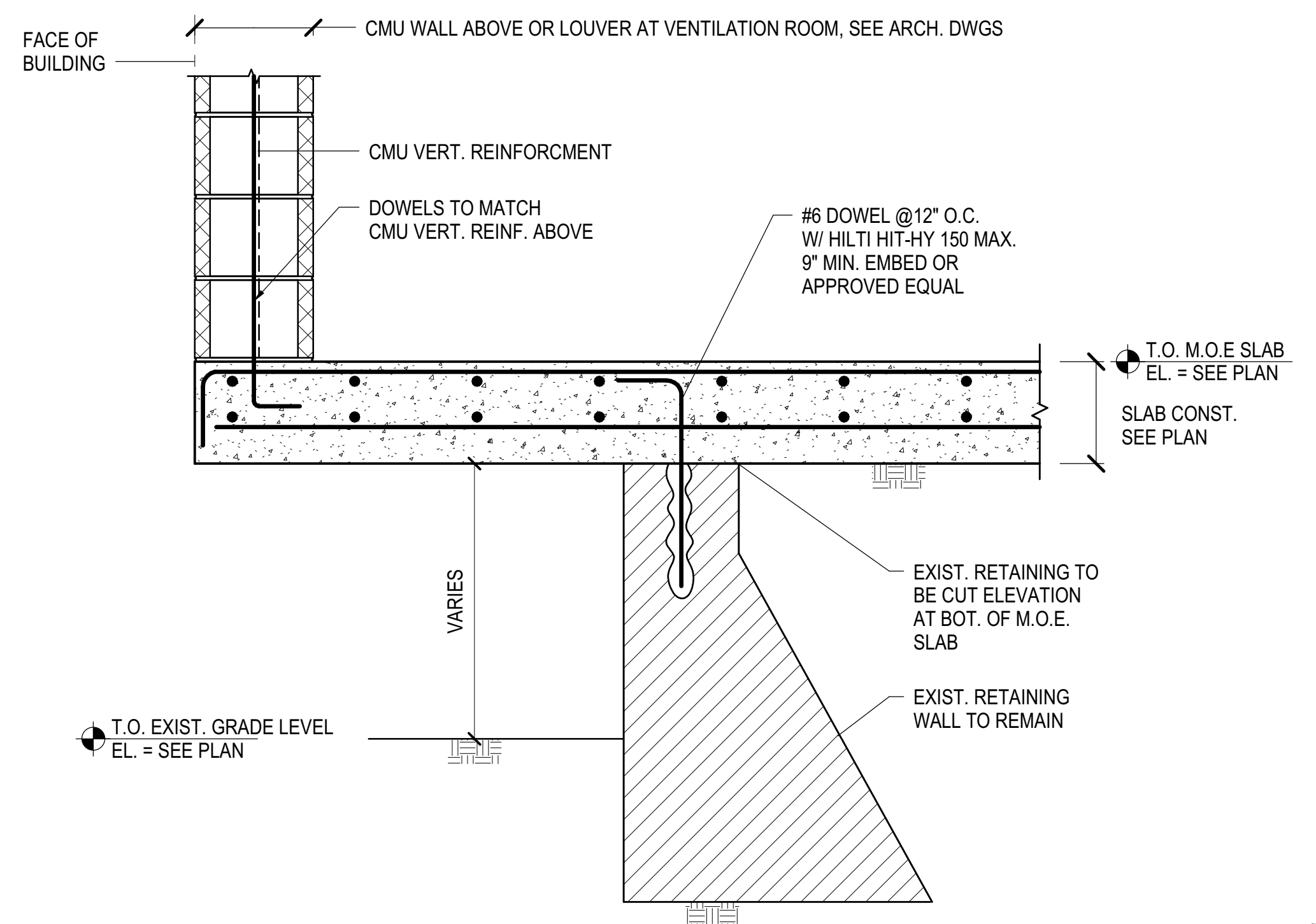
**2 PRESSURE SLAB DETAIL**  
1" = 1'-10"



**3 SECTION AT EXTERIOR RAMP**  
1 1/2" = 1'-0"



**4 SECTION AT INTERIOR RAMP**  
1" = 1'-10"



**5 SECTION AT EXISTING RETAINING WALL**  
1" = 1'-10"

DOB POST-APPROVAL AMENDMENT	10/28/2016
L.I.R.R. - M.O.E FINAL 100% DESIGN	5/2/2015
SUBMISSION FOR RECORDS	
L.I.R.R. - FINAL 100%	10/14/2014
DESIGN SUBMISSION FOR RECORDS	
ASB004	10/14/2014
ASI-MOOR - PRESSURE SLAB MODIFICATION	9/16/2014
LIRR M.O.E. PERMIT SET	8/1/2014
M.O.E. REBUILD - BID SET	4/4/2014
NYC DOB FILING	12/4/2013
L.I.R.R. - PRE-FINAL 100%	11/22/2013
M.O.E. - PLATFORM SUBMISSION	
DL40 PHASE 1 STRUCTURAL UPDATE	11/1/2013
Rev	Description
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Date: 11/01/13  
Project No: N11330.00  
Drawn By: Author  
Sheet Number

**HYE - PL - S-853.01**

**MOE BUILDBACK SECTIONS AND DETAILS**

Under Directive 3 of 1975  
Date: 08/15/2017  
NYC Development Hub

S-853.01  
SHEET 162 of 163





