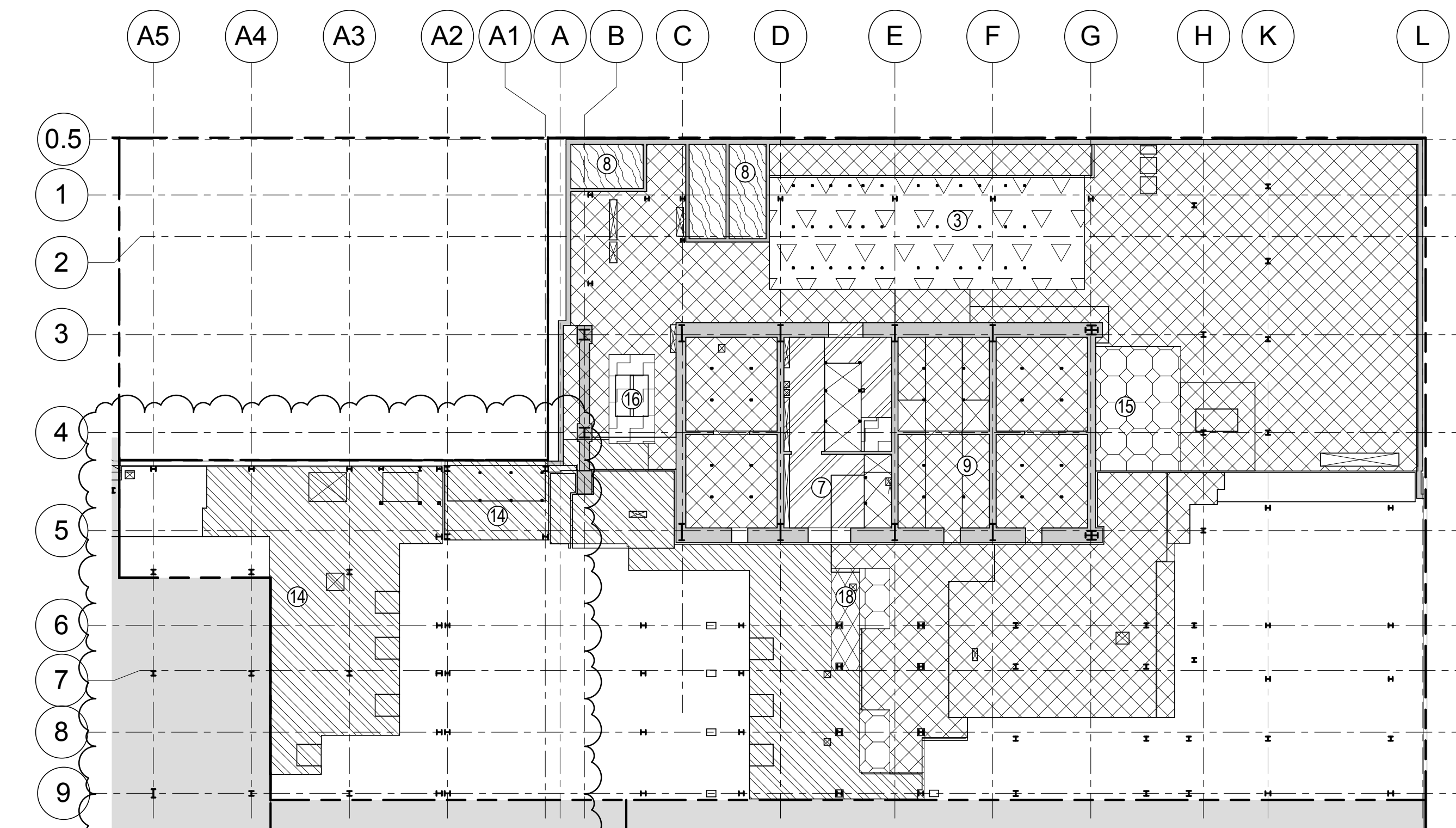


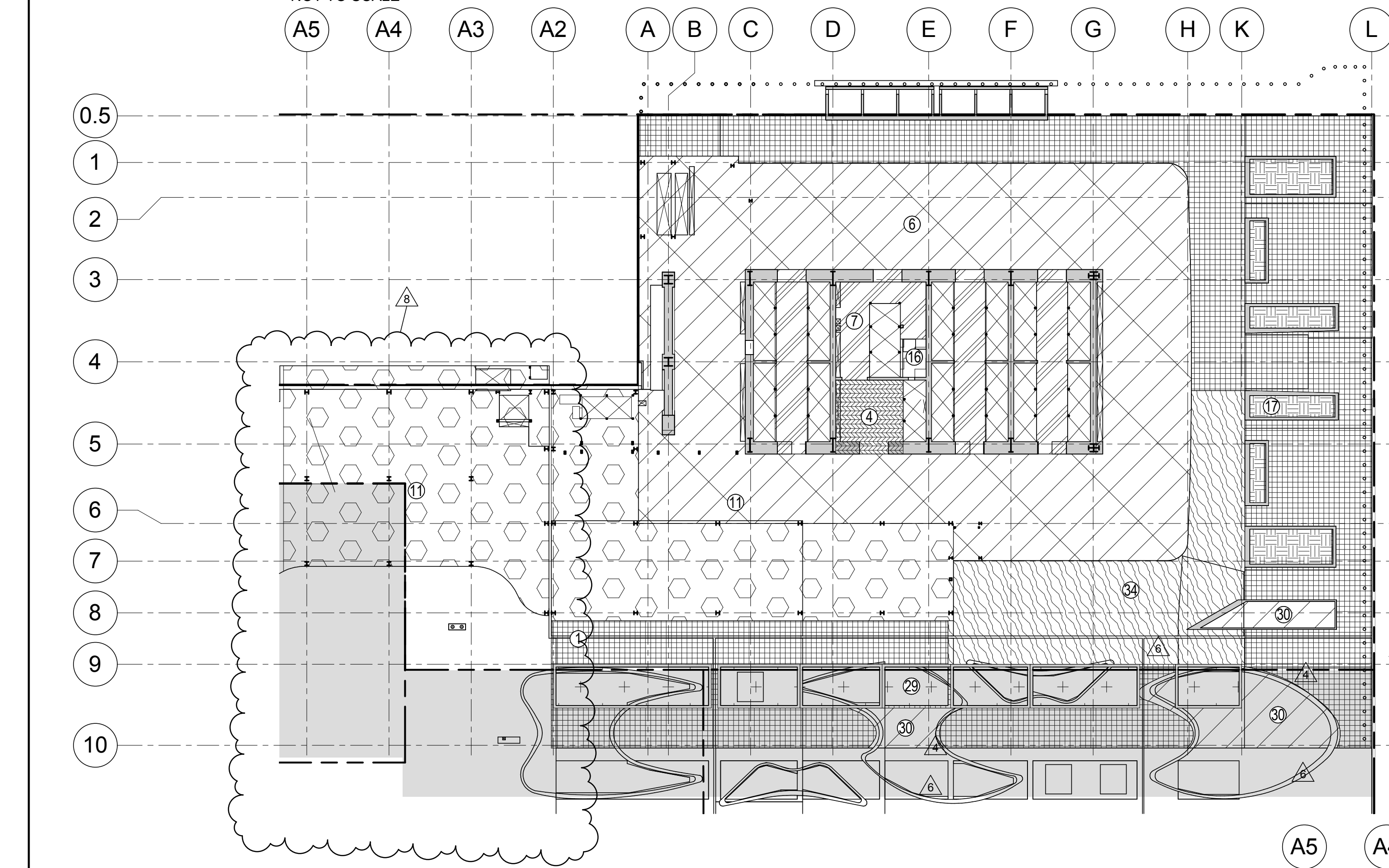
1 LEVEL B1 LOADING DIAGRAM

NOT TO SCALE



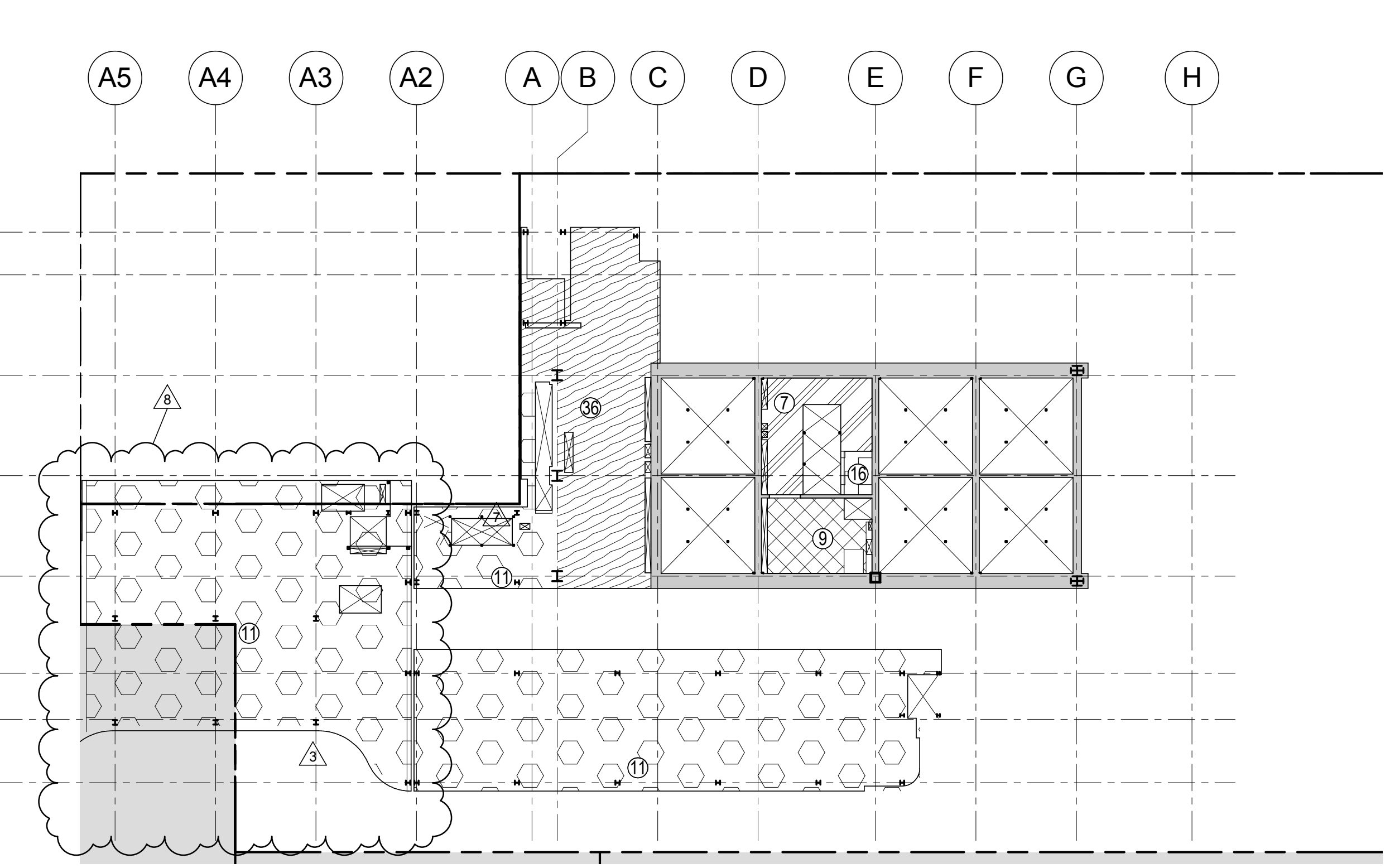
2 CELLAR B LOADING DIAGRAM

1/32" = 1'-0"



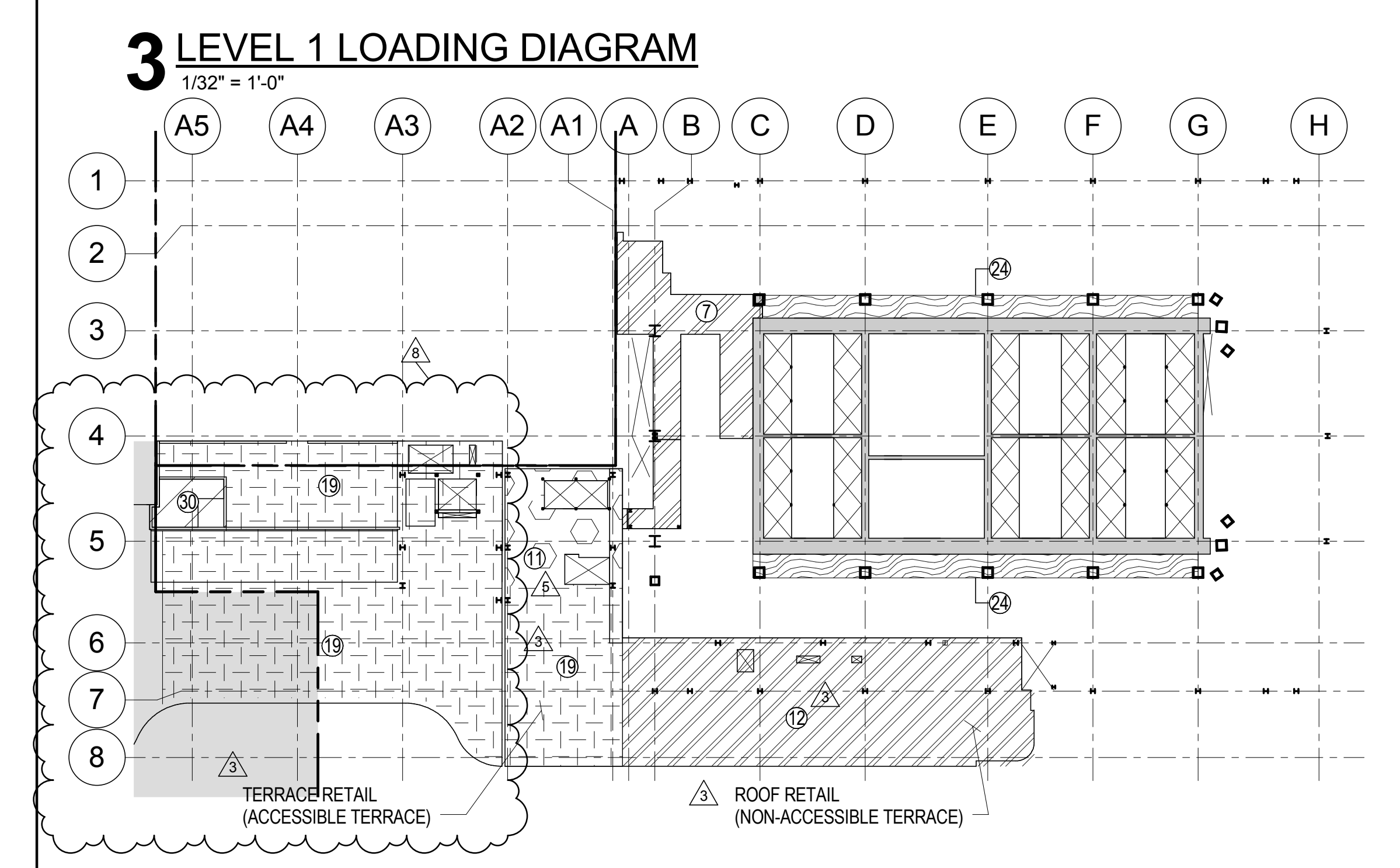
3 LEVEL 1 LOADING DIAGRAM

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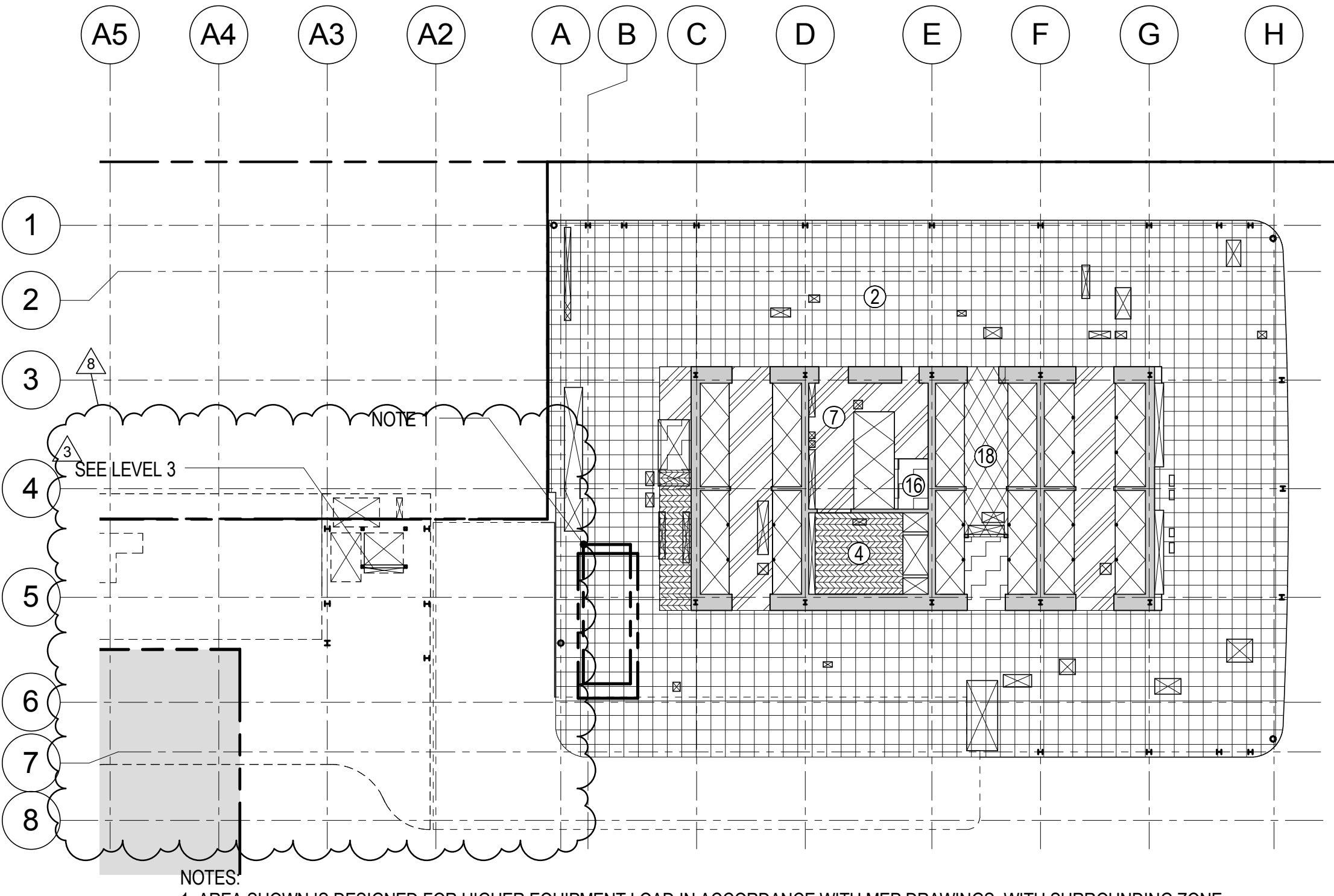
4 LEVEL 2 LOADING DIAGRAM

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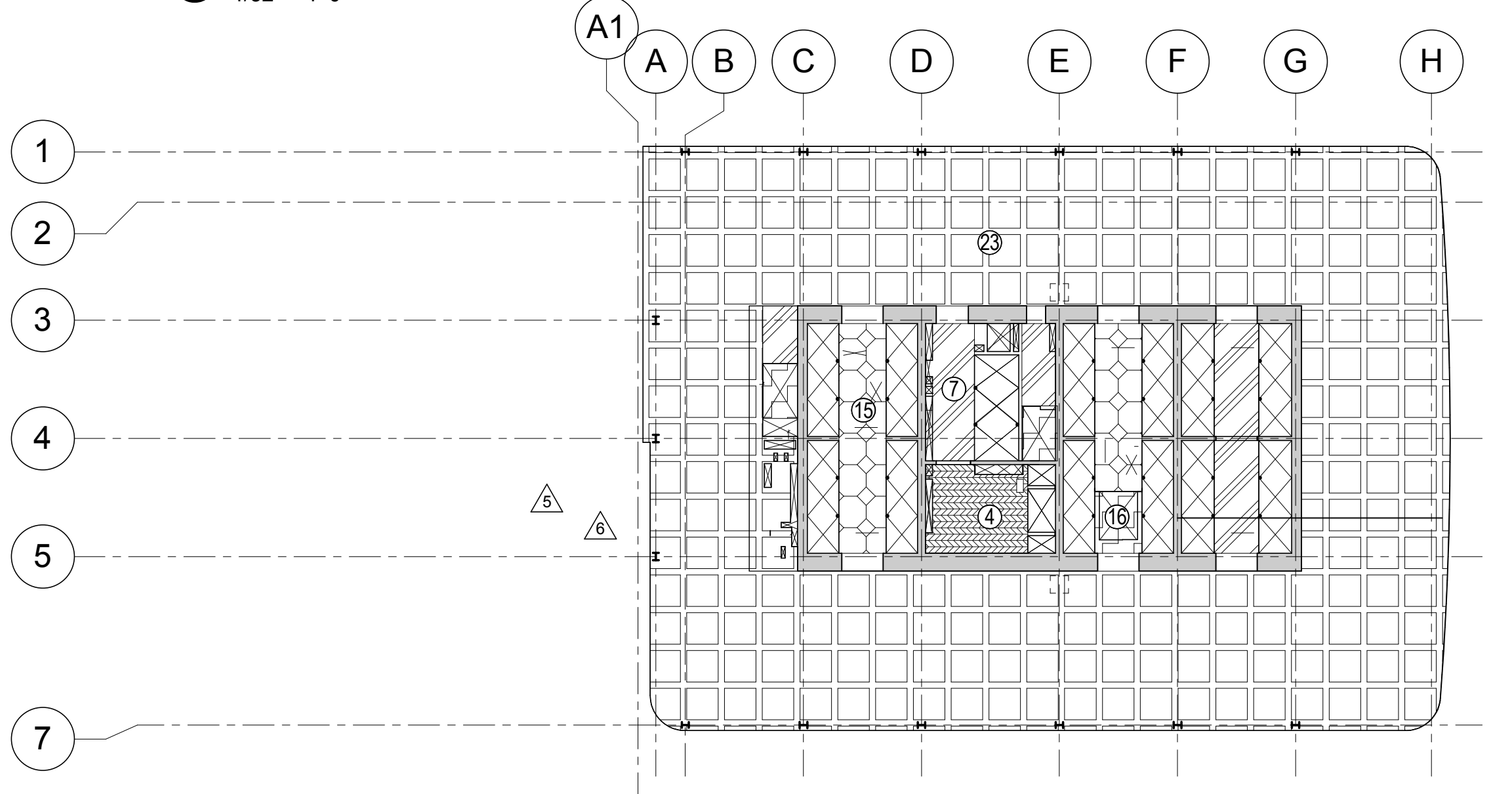
6 LEVEL 3 PART A LOADING DIAGRAM

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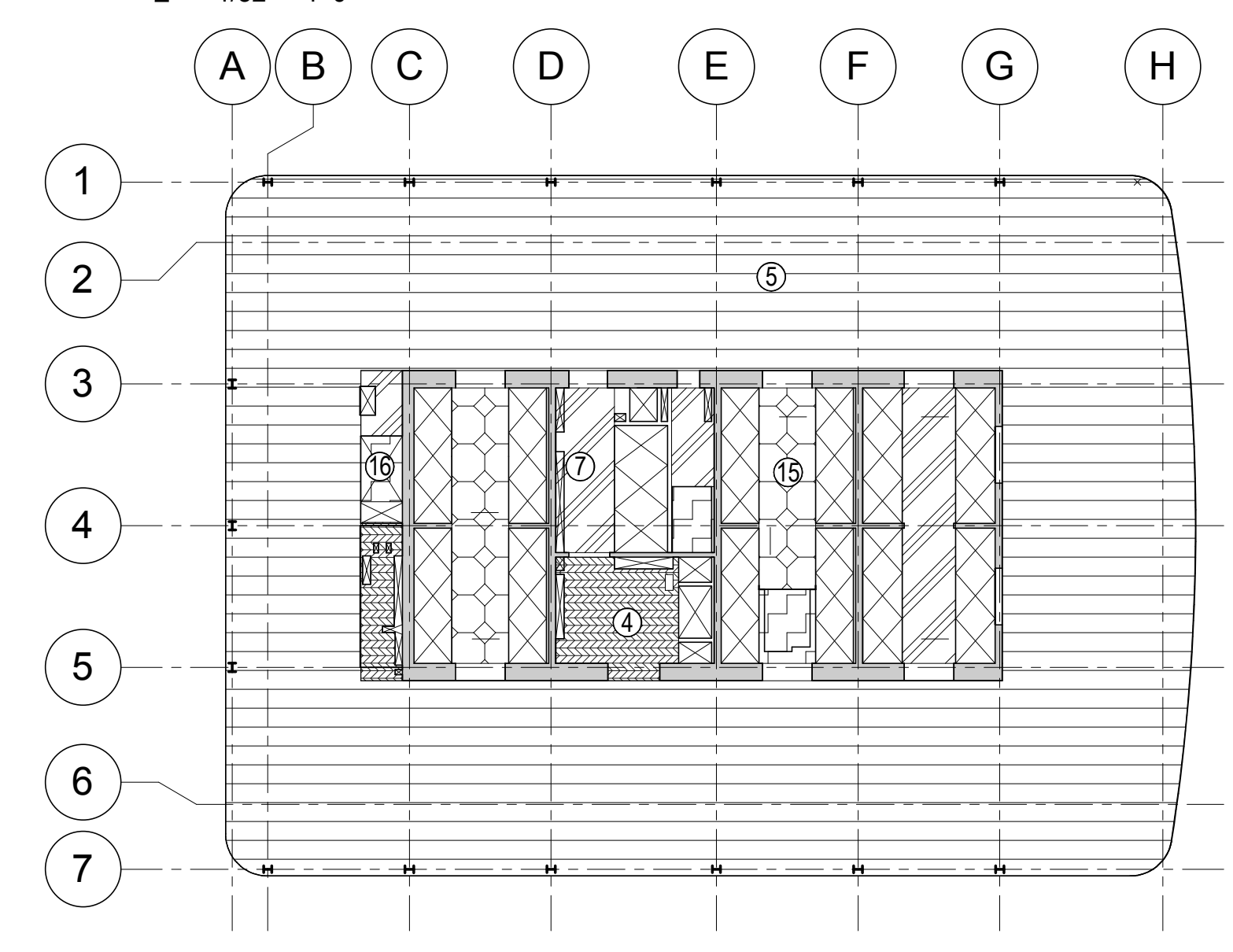
7 LEVEL 4 LOADING DIAGRAM

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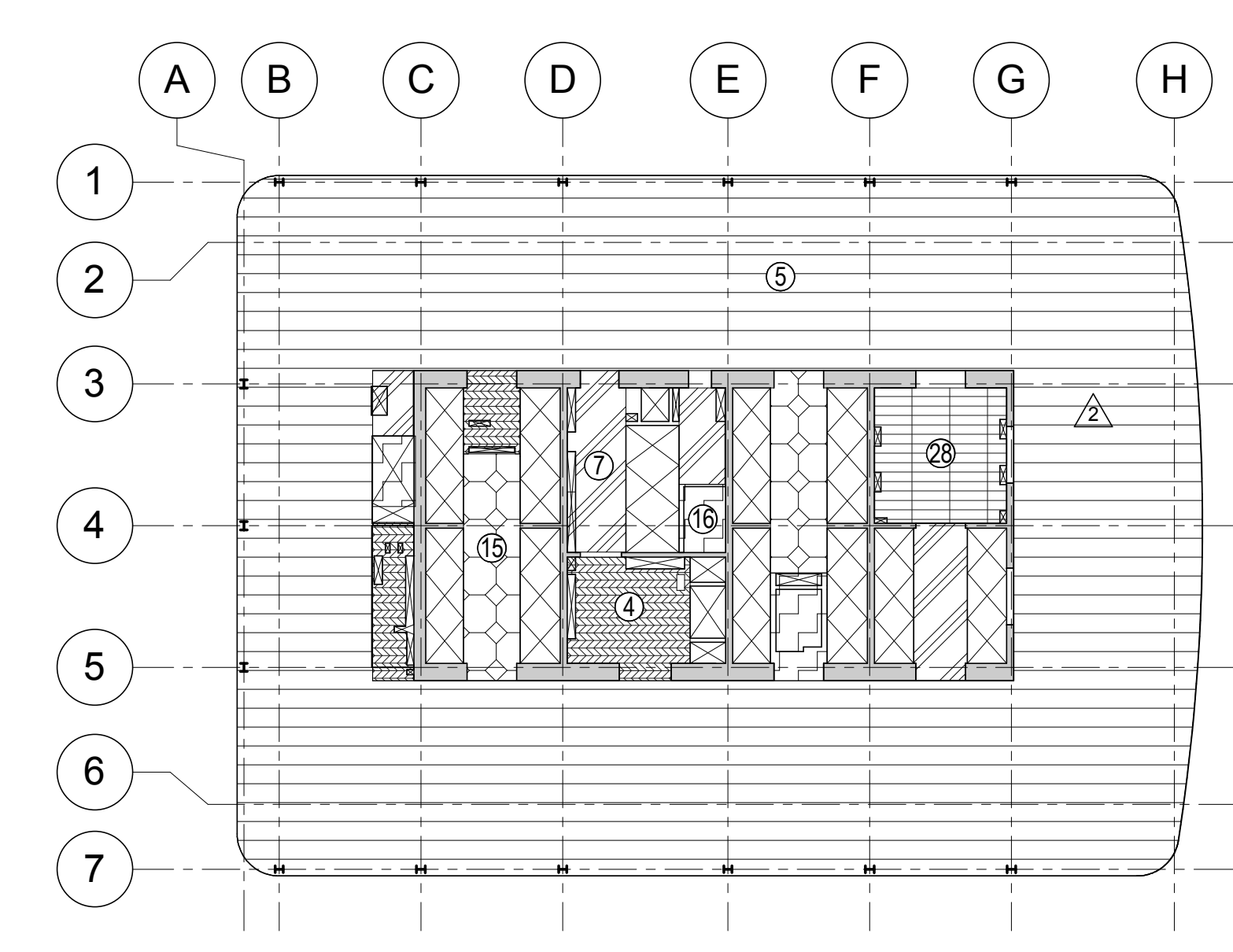
10 LEVEL 6 LOADING DIAGRAM

1/32" = 1'-0"



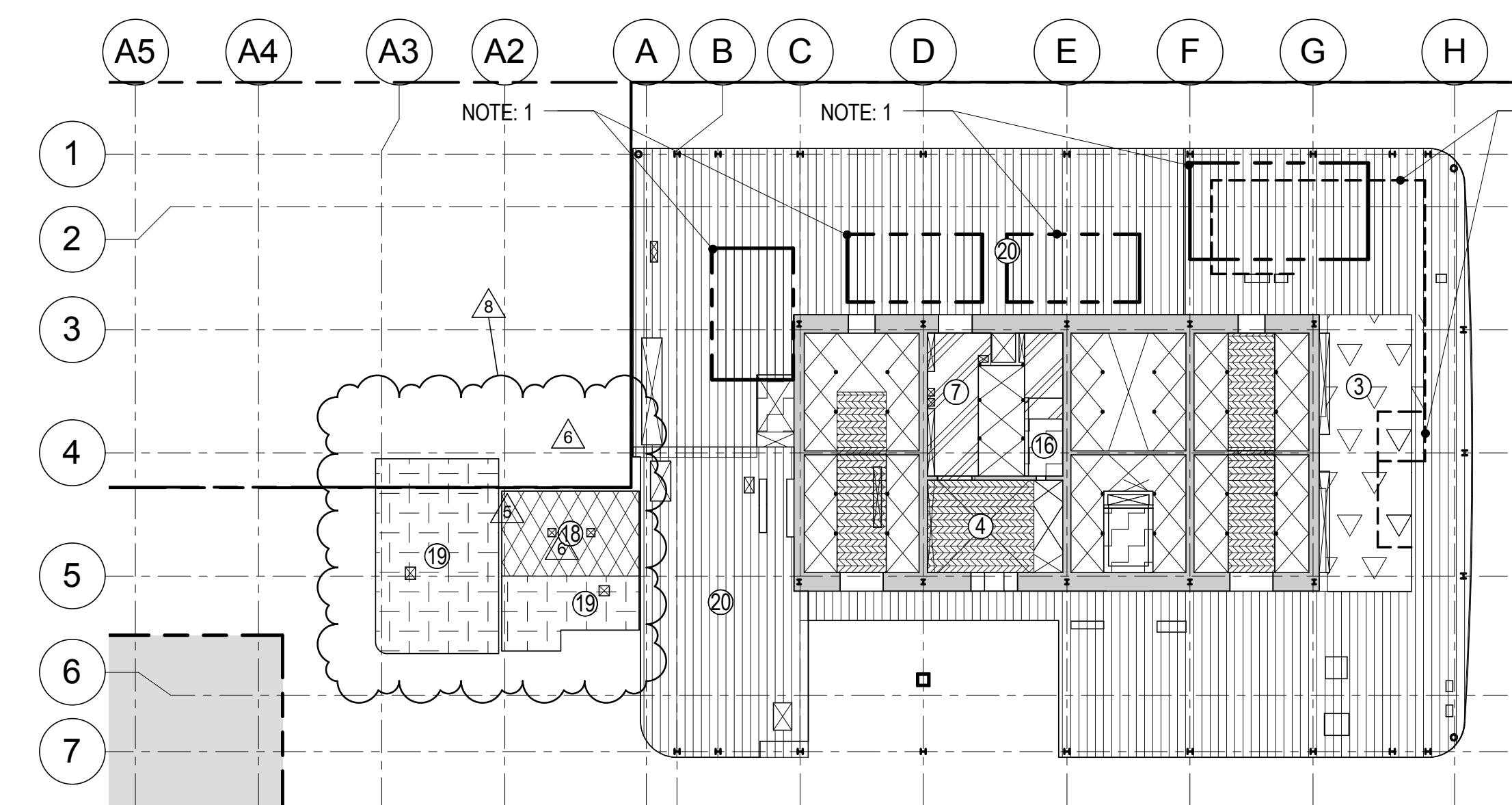
11 LEVEL 7 - 18 LOADING DIAGRAM

1/32" = 1'-0"



12 LEVEL 19-20 LOADING DIAGRAM

1/32" = 1'-0"



9 LEVEL 5 LOADING DIAGRAM

1/32" = 1'-0"

LOADING SCHEDULE				
KEY	FUNCTION	SOL PSF	LL PSF	
1	PLAZA	110	110	
2	MECHANICAL	40	150	
3	HEAVY MECHANICAL	40	225	
4	LIGHT MECHANICAL	40	120	
5	OFFICE	35	50	
6	LOBBY	60	100	
7	CORRIDOR/LOBBY	50	100	
8	FUEL TANK	40	880	
9	BACK OF HOUSE	50	50	
10	ROOF MECH	10	250	
11	RETAIL - PLAZA LEVEL	60	100	
12	RETAIL - 2ND FLOOR AND ABOVE	60	75	
13	ROOF RETAIL WITH LANDSCAPE	145	20	
14	ROOF	60	20	
15	LOADING DOCK	50	125	
16	TOILETS	50	50	
17	STAIR	10	100	
18	TREE PITS	525*	50	
19	STORAGE	10	125	
20	TERRACE RETAIL	145	100	
21	MECHANICAL AT LEVELS 5 & 68	60	150	
22	CONSTRUCTION LOADS - HEAVY	10	600	
23	CONSTRUCTION LOADS - TYP.	10	250	
24	OFFICE ABOVE MECHANICAL	150	50	
25	MAINTANCE ACCESS	25	40	
26	FIRE TANK LEVEL 32 & 54	860	0	
27	FIRE TANK LEVEL 51	1050	0	
28	FIRE TANK ACCESS	25	40	
29	ELEVATOR MECH. ROOM	40	150**	
30	HEAVY TREE PIT***	660*	30	
31	LANDSCAPE (NO TREE)	370	50	
32	STORAGE AT TENNANT FLOOR	10	150	
33	ASSEMBLY AREA AT TENNANT FLOOR	35	150	
34	ASSEMBLY AREA AT LEVEL 38 AND 39	35	100	
35	ASSEMBLY AREA AT TENNANT FLOOR	35	150	
36	ASSEMBLY AREA AT LEVEL 38 AND 39	35	100	
37	RETAIL PEDESTRIAN PLAZA AREA	110	150	
38	ROOF RETAIL	55	30	
39	LEVEL 2 MEZZANINE	60	150	

NOTE:
 * TREE WEIGHT NOT INCLUDED, EACH TREE ASSUMED 5K.
 ** ADDITIONAL IMPACT LOAD FROM ELEVATOR REPORT.
 *** MAXIMUM SOIL DEPTHS TO BE 5 FEET, PROVIDE GEOPOLYMER AS REQUIRED.

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Project No.: 211157
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B-SCAN Sheet No.:
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Sheet No.:
S-010
Page No.:
S-010

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 7 28 OCT 2016 ISSUED FOR BULLETIN NO. 12
 6 13 MAY 2016 ISSUED FOR BULLETIN NO. 4
 5 11 DEC 2015 ISSUED FOR BULLETIN NO. 2
 4 30 OCT 2015 ISSUED FOR BULLETIN NO. 3
 3 19 OCT 2015 ISSUED FOR BULLETIN NO. 2
 2 14 AUG 2015 ISSUED FOR FOUNDATION BULLETIN NO. 1
 1 26 JUN 2015 ISSUED FOR FOUNDATION BULLETIN NO. 1

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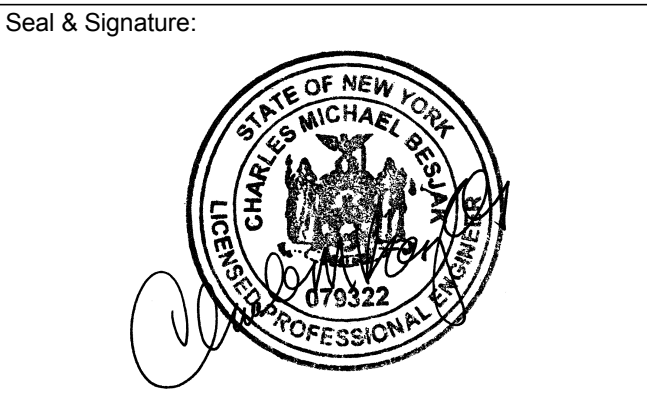
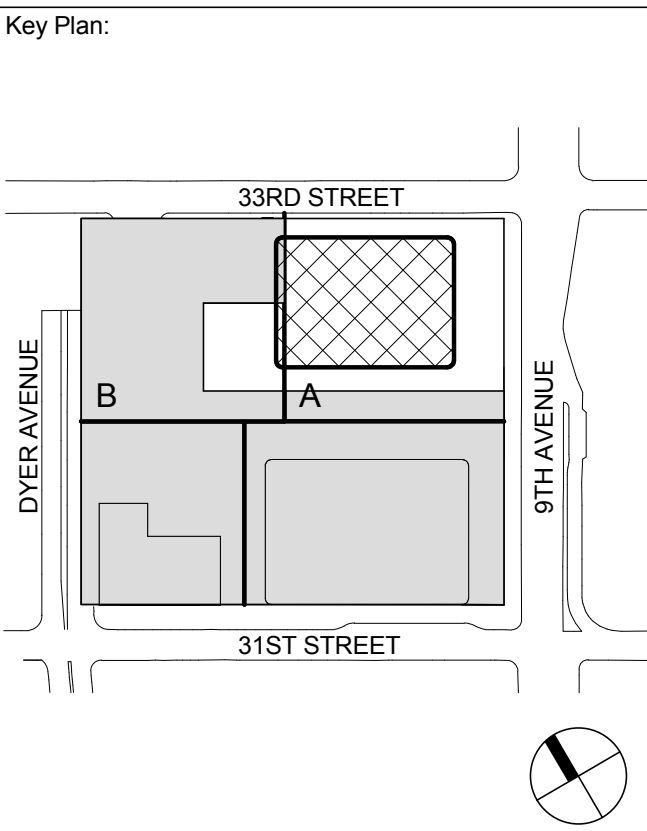
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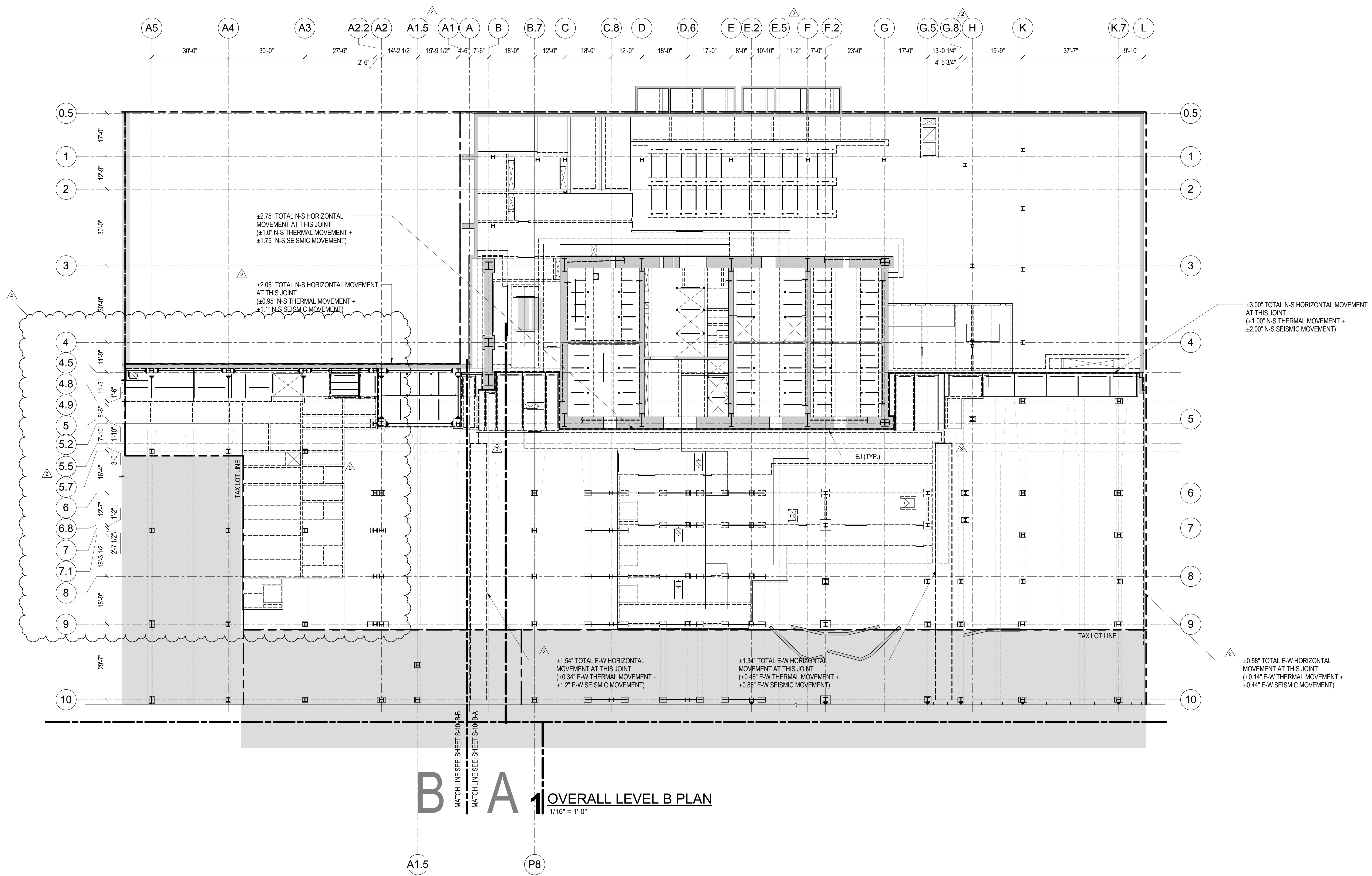
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2	11 DEC 2015	ISSUED FOR BULLETIN NO. 4
1	14 AUG 2015	ISSUED FOR CONSTRUCTION

OVERALL LEVEL
B PLAN AND E.J.
LOCATIONS

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B A 1 OVERALL LEVEL B PLAN
1/16" = 1'-0"



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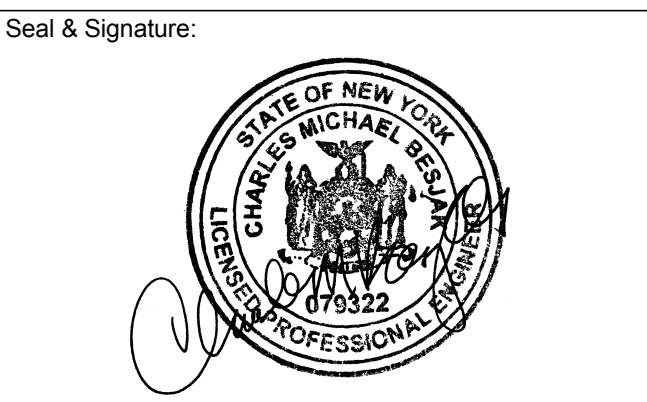
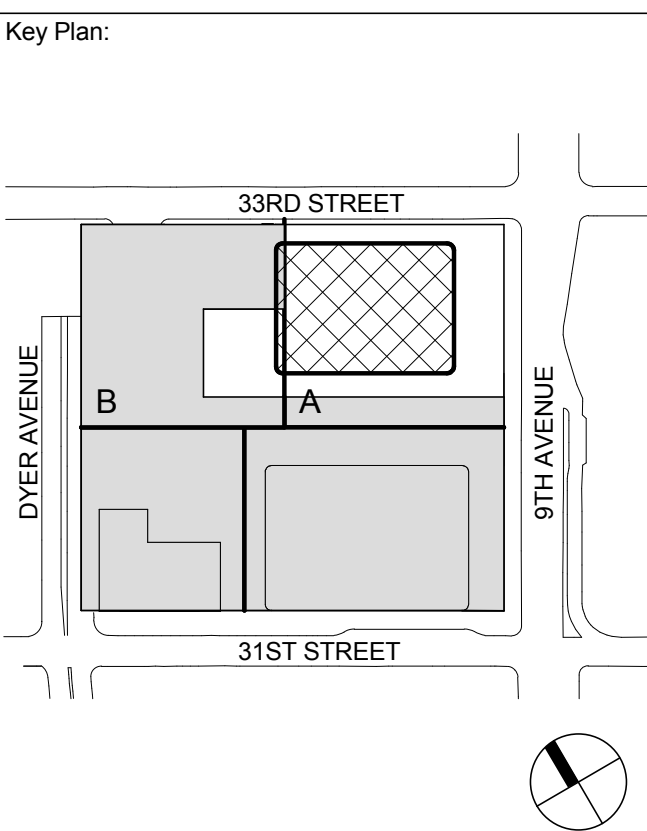
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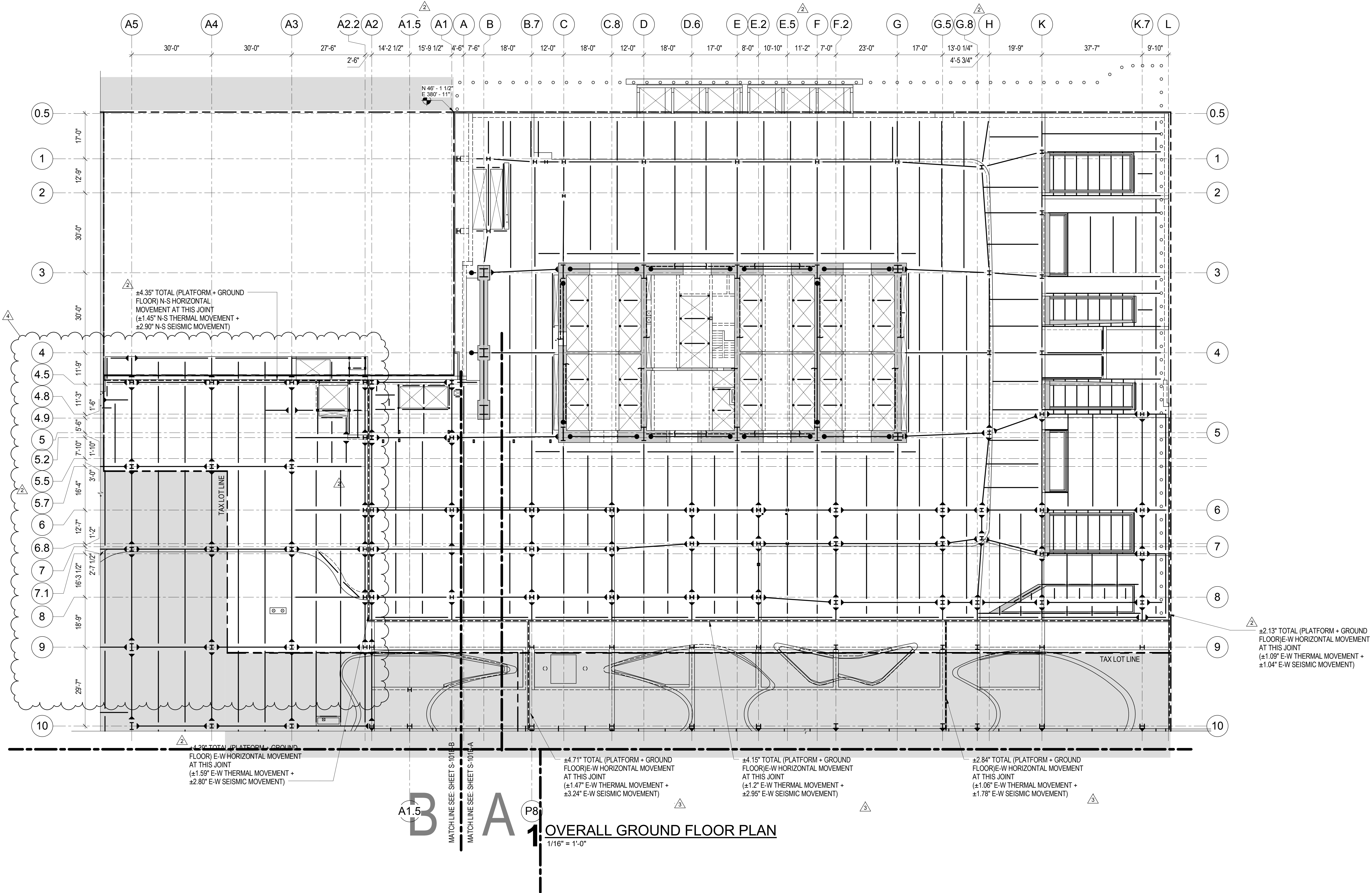
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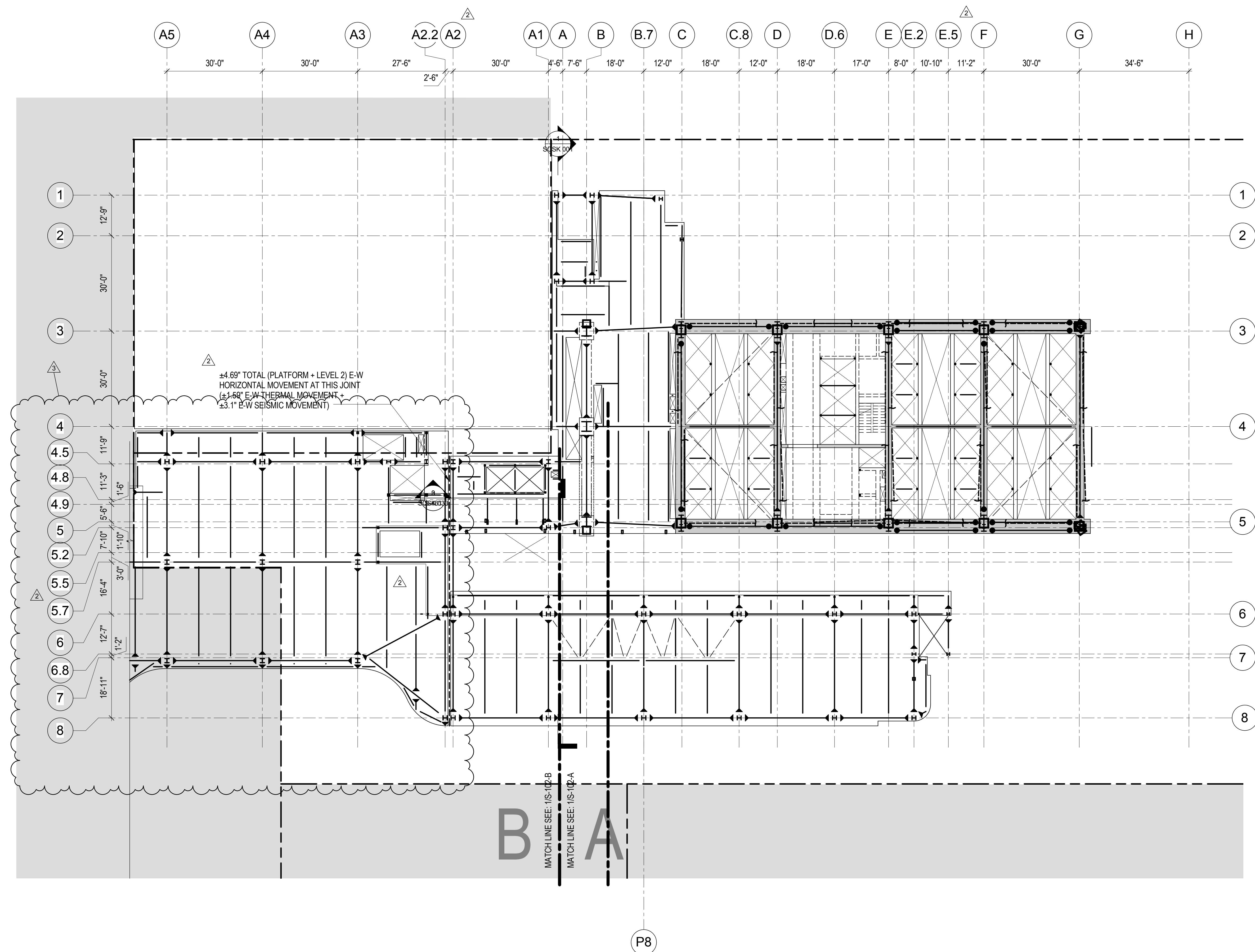
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2	11 DEC 2016	ISSUED FOR BULLETIN NO. 4
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OVERALL
GROUND FLOOR
FRAMING PLAN
AND E.J.
LOCATIONS

Project No.: 211151	B-SCAN Sheet No.: S-051.01
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1 OVERALL 2ND FLOOR PLAN
1/16" = 1'-0"

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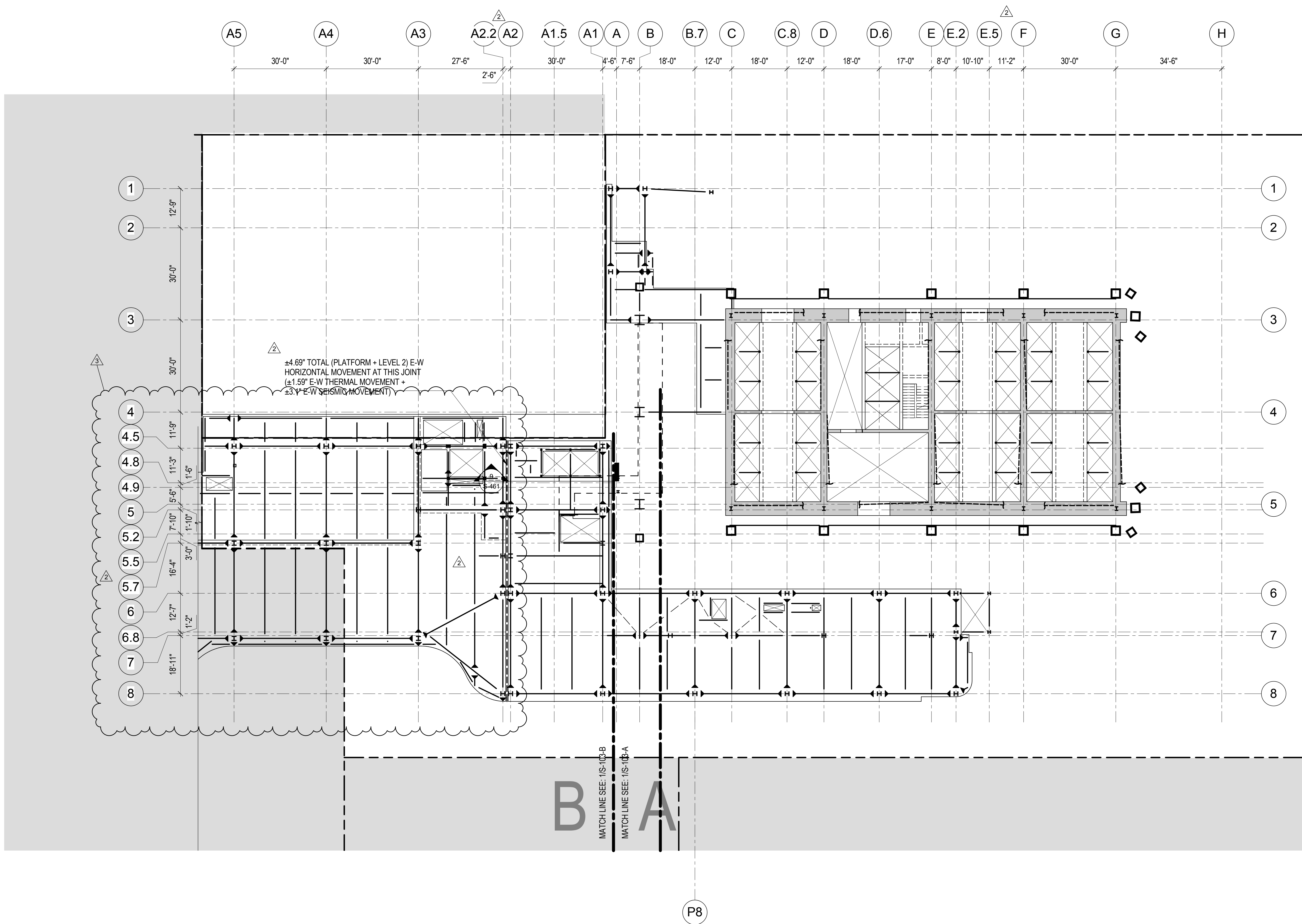
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1	14 AUG 2015	ISSUED FOR CONSTRUCTION

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OVERALL 2ND FLOOR PLAN AND E.J. LOCATIONS

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1 OVERALL 3RD FLOOR PLAN
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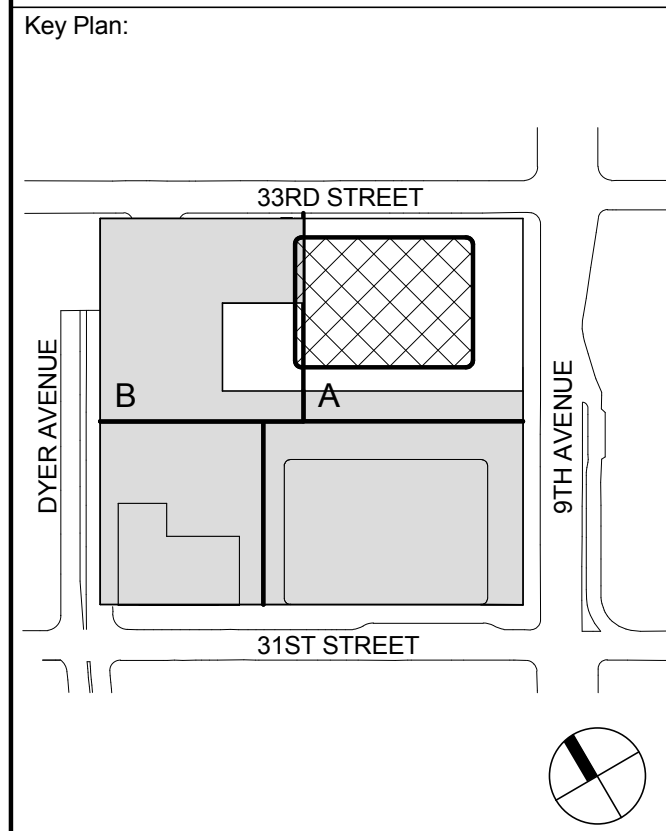
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**OVERALL 3RD
FLOOR PLAN AND
E.J. LOCATIONS**

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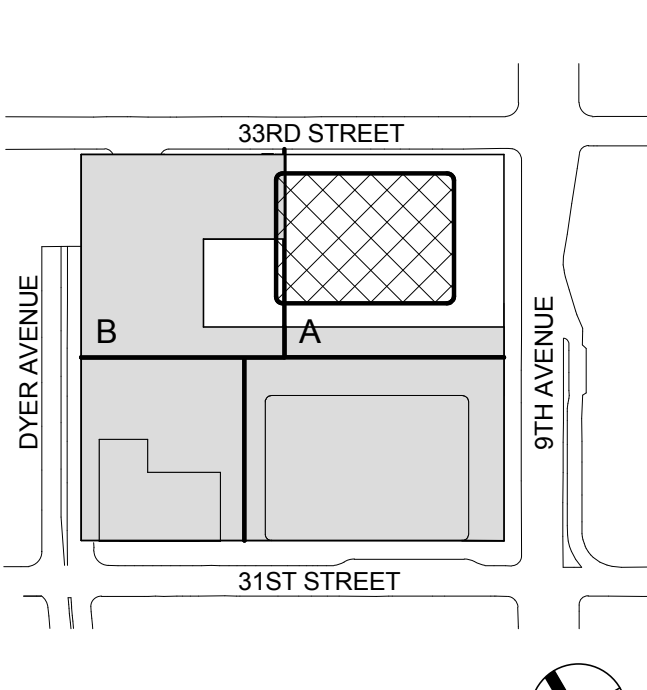
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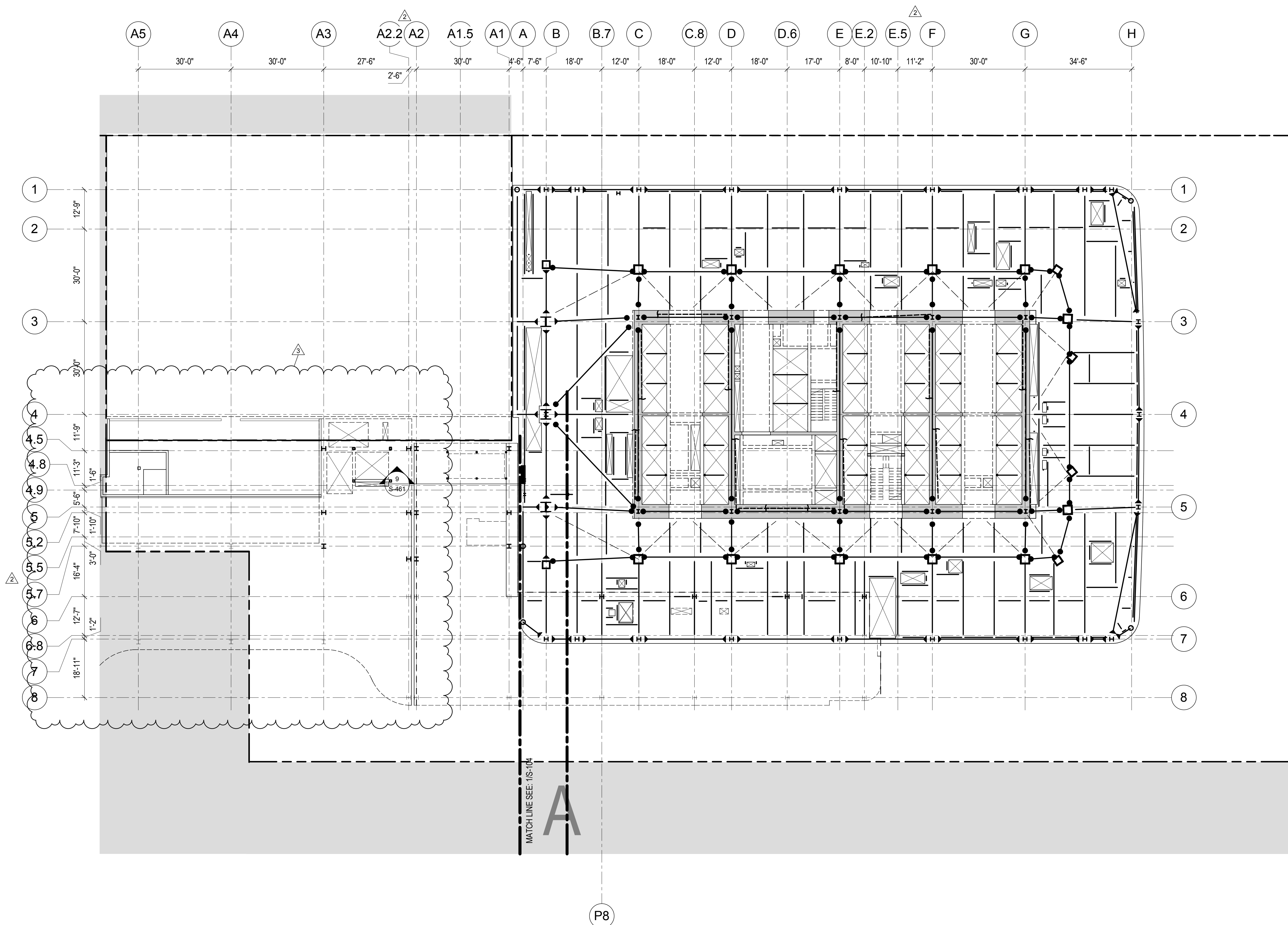


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**OVERALL 4TH FLOOR PLAN AND
E.J. LOCATIONS**

Project No.: 211151
Date: 21 AUG 2017
Scale: 1/16" = 1'-0"
File No.: S-054
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S-054.00
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S-054
Page No.:



P8

1 OVERALL 4TH FLOOR PLAN
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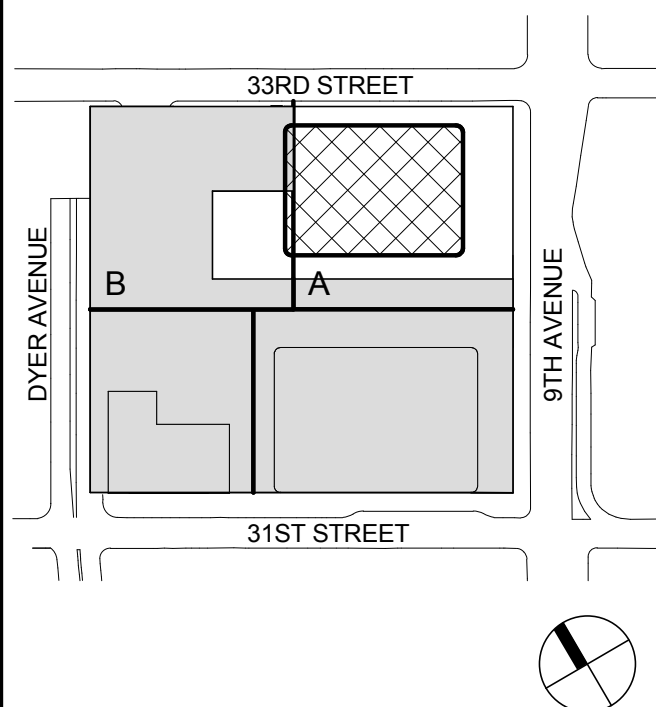
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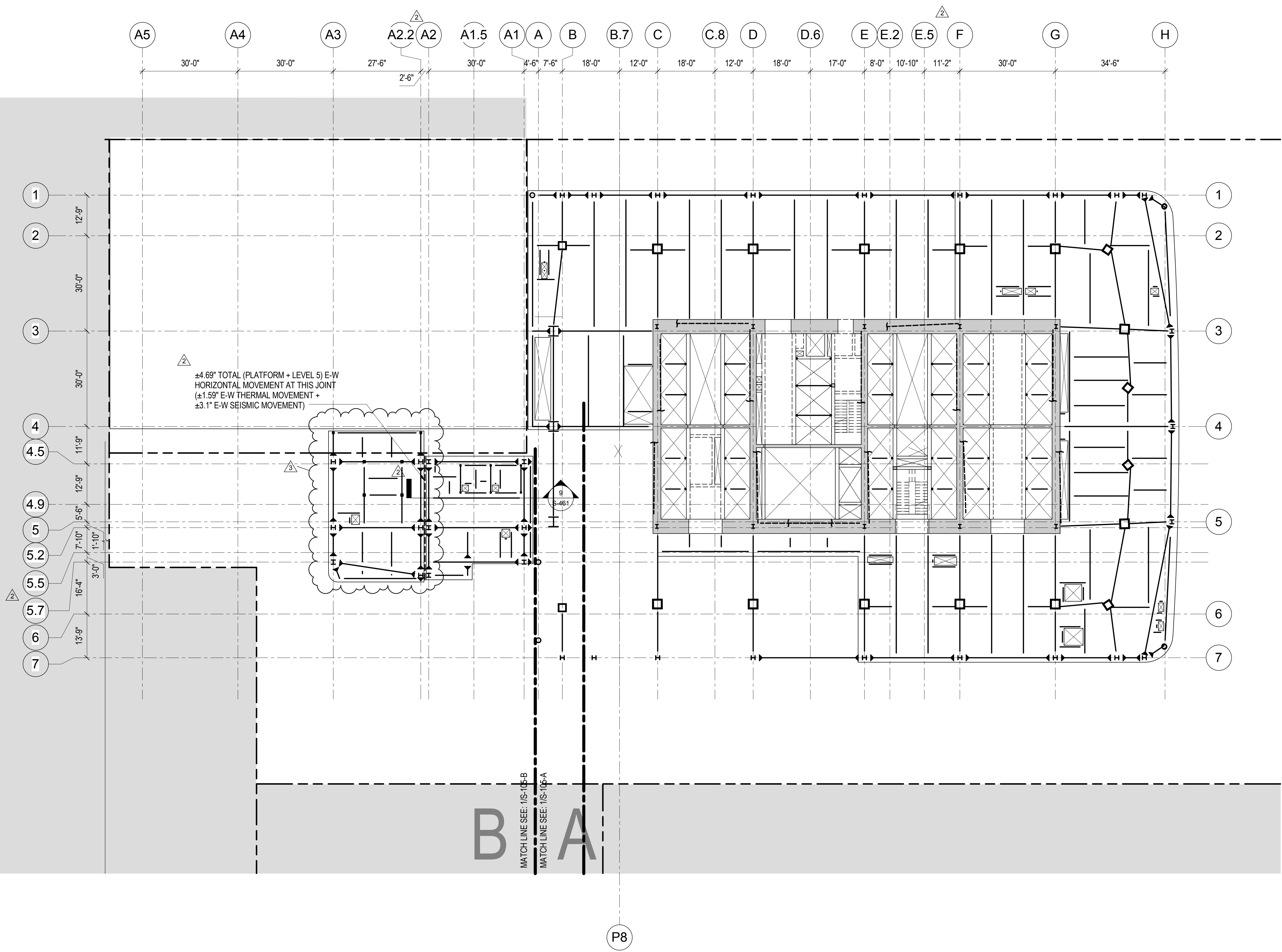
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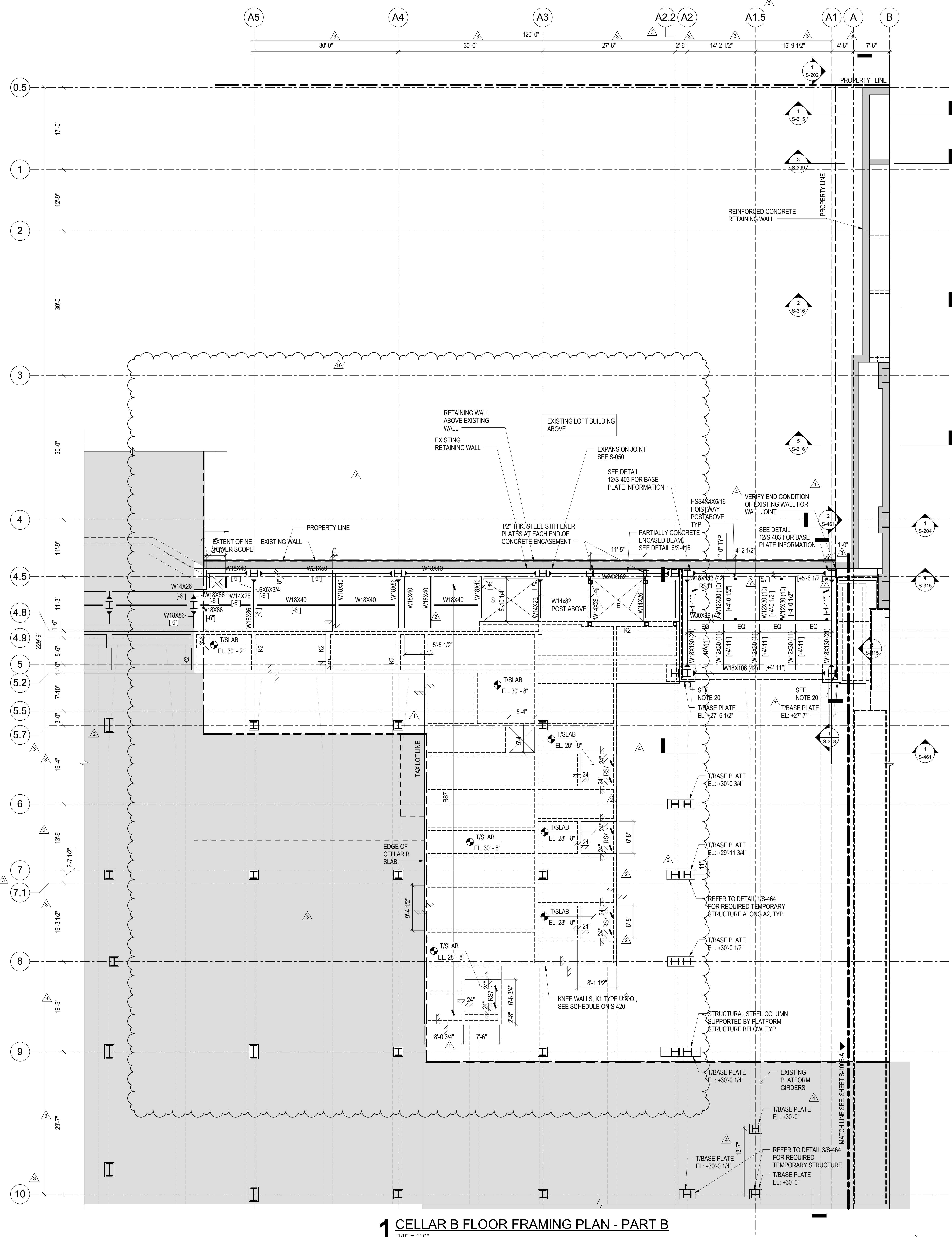
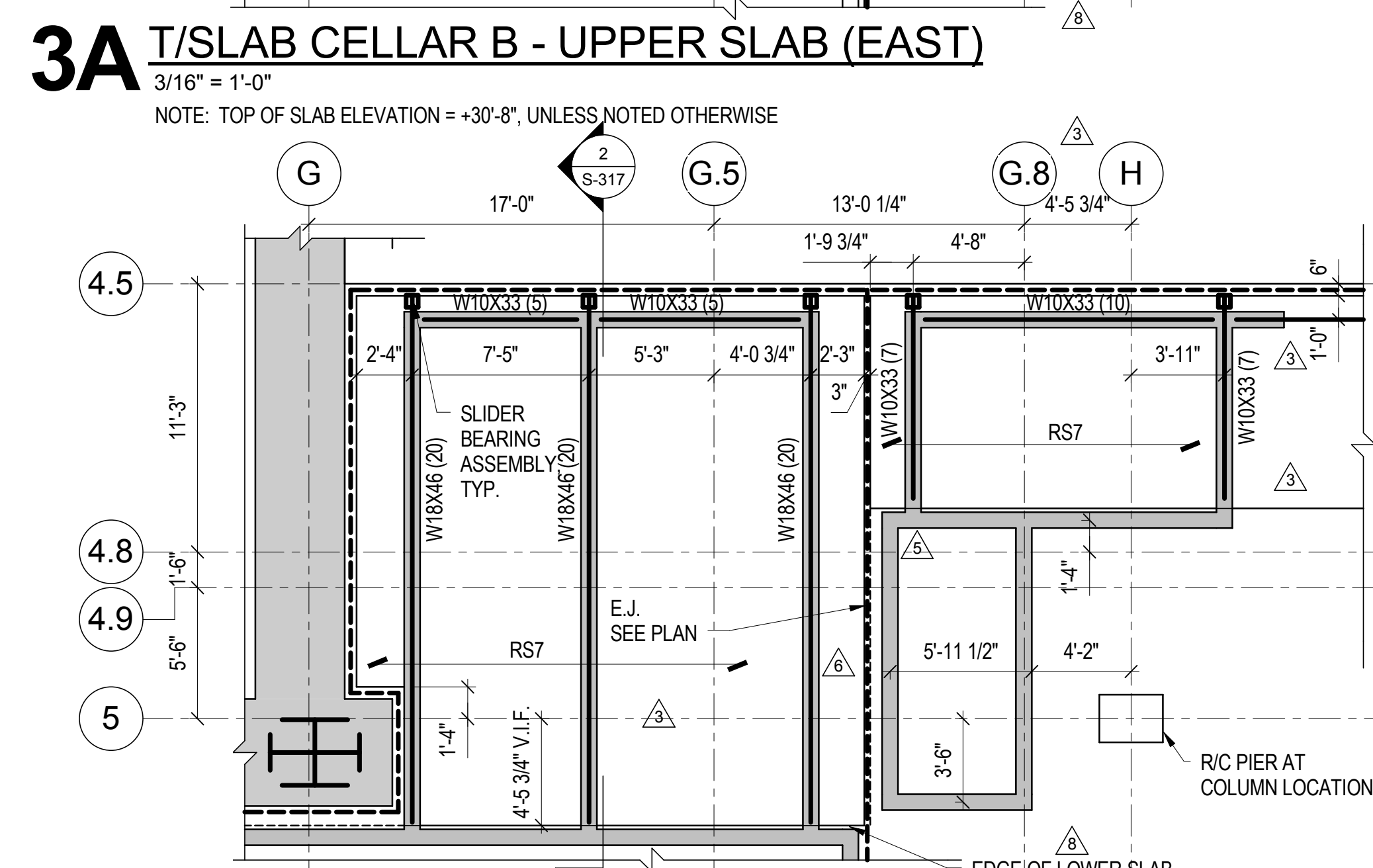
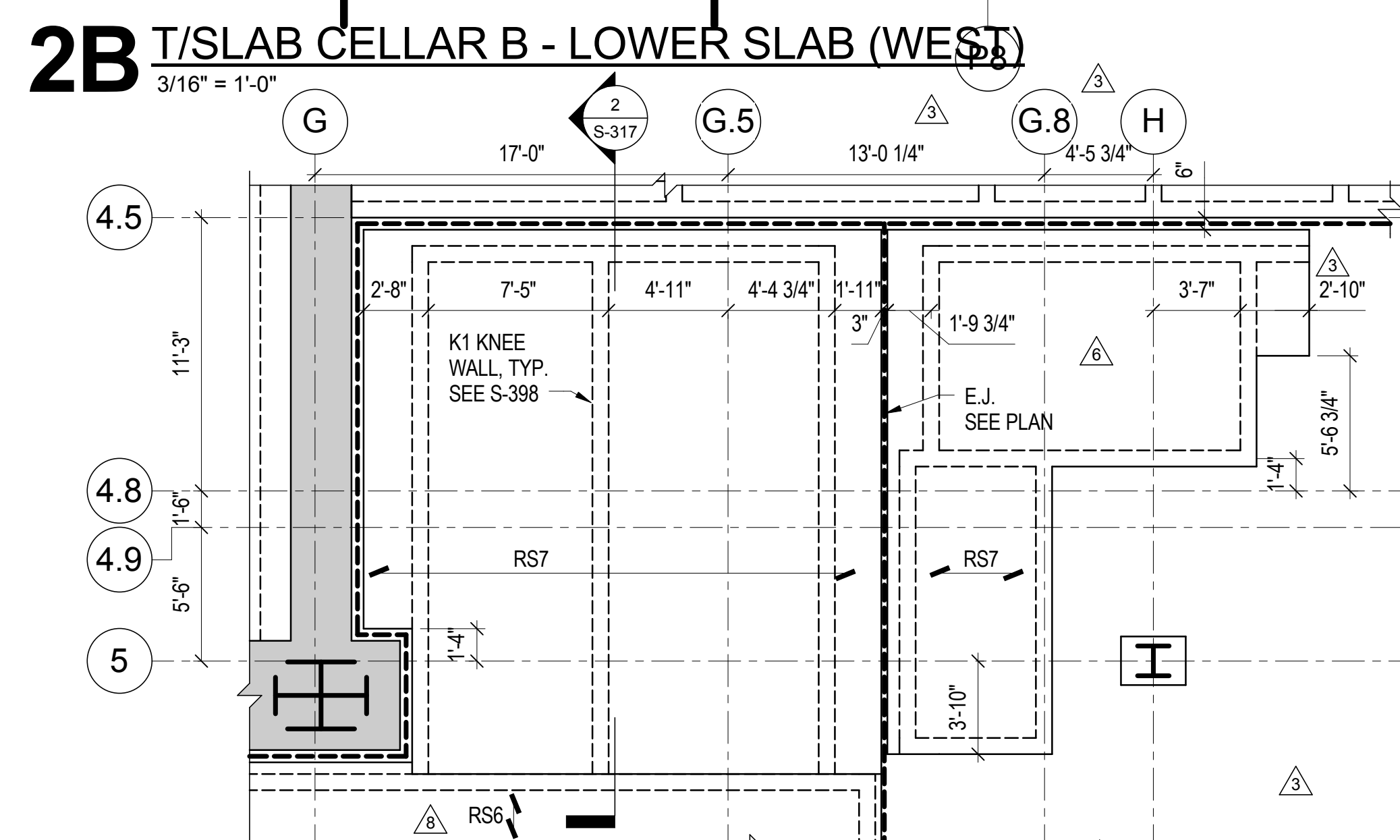
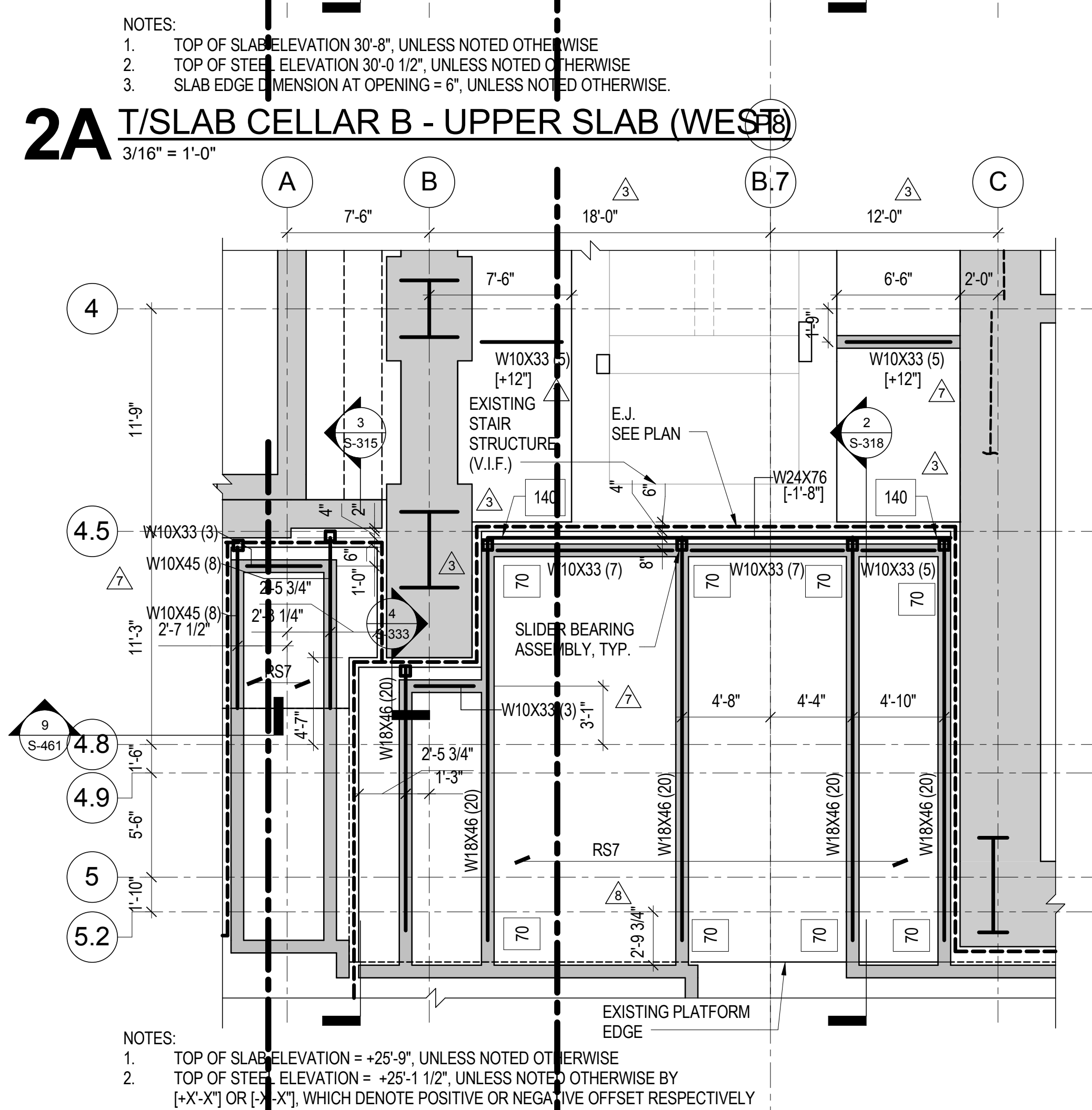
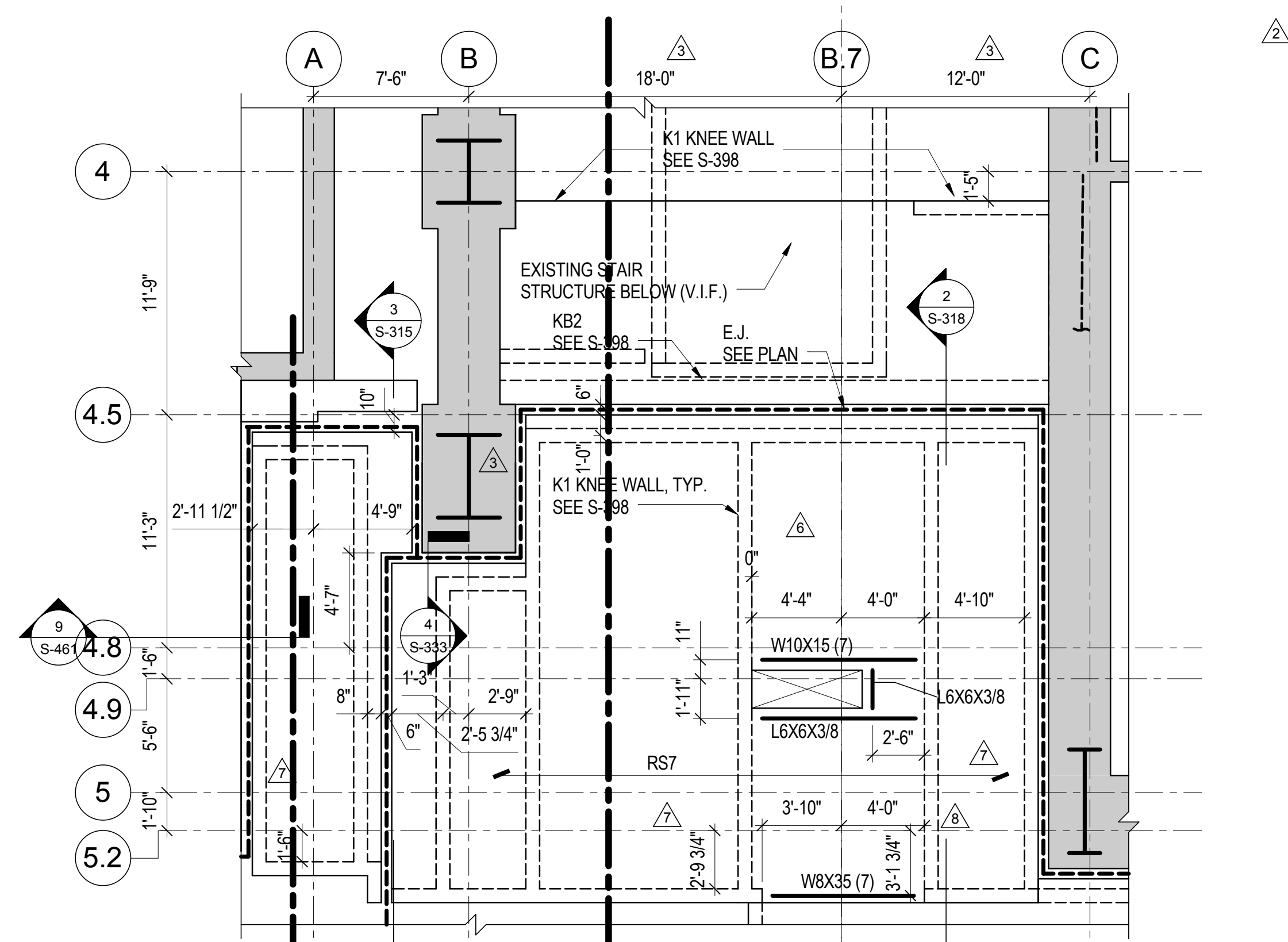
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**OVERALL 5TH
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Date: 23 AUG 2017	Sheet No.: S-055
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1 OVERALL 5TH FLOOR PLAN
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Wind Tunnel Consultant
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Key Plan:

Seal & Signature:

Project No.: 211159
Date: 27 AUG 2017
Scale: As indicated
File No.: S-1008-B

B-SCAN Sheet No.: **S-098.03**
Sheet No.: S-1008-B
Page No.: 6

CELLAR B FLOOR FRAMING PLAN - PART B



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680 Woodlawn Road West, Guelph, Ontario, Canada N1K 1B8

Key Plan:
33RD STREET
DYER AVENUE
9TH AVENUE
31ST STREET

Seal & Signature:
STATE OF NEW YORK
JULY 2017
S-101-03

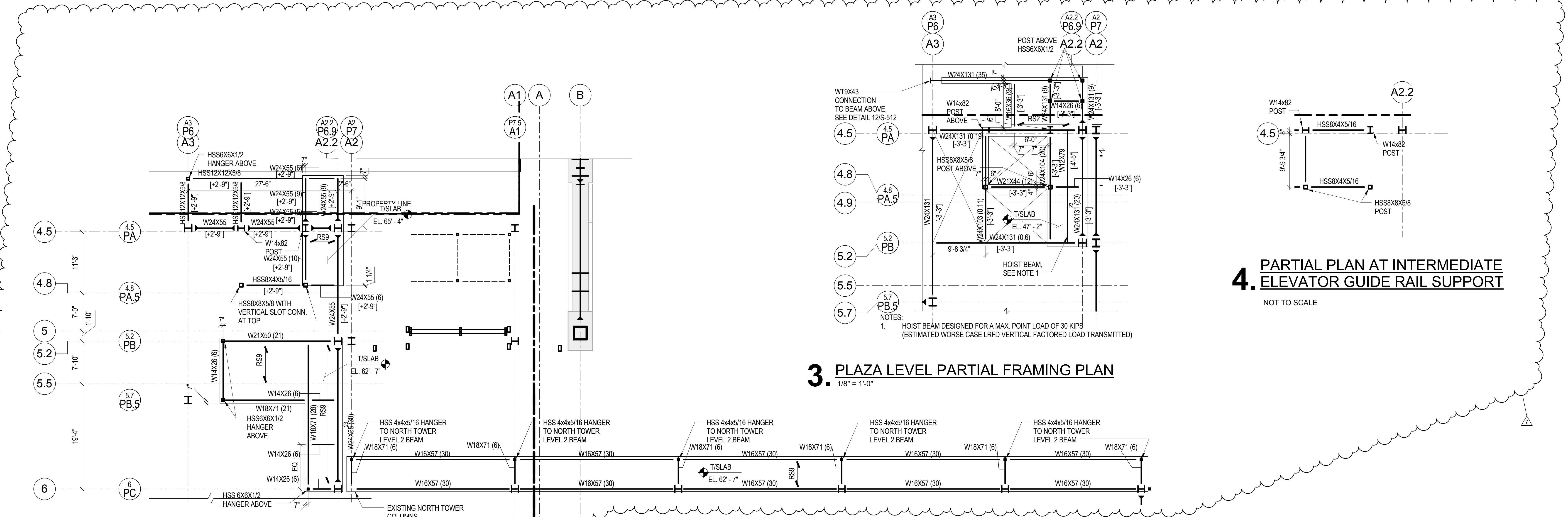
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1 14 AUG 2015 ISSUED FOR CONSTRUCTION

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**GROUND FLOOR
FRAMING PLAN -
LOBBY - PART B**

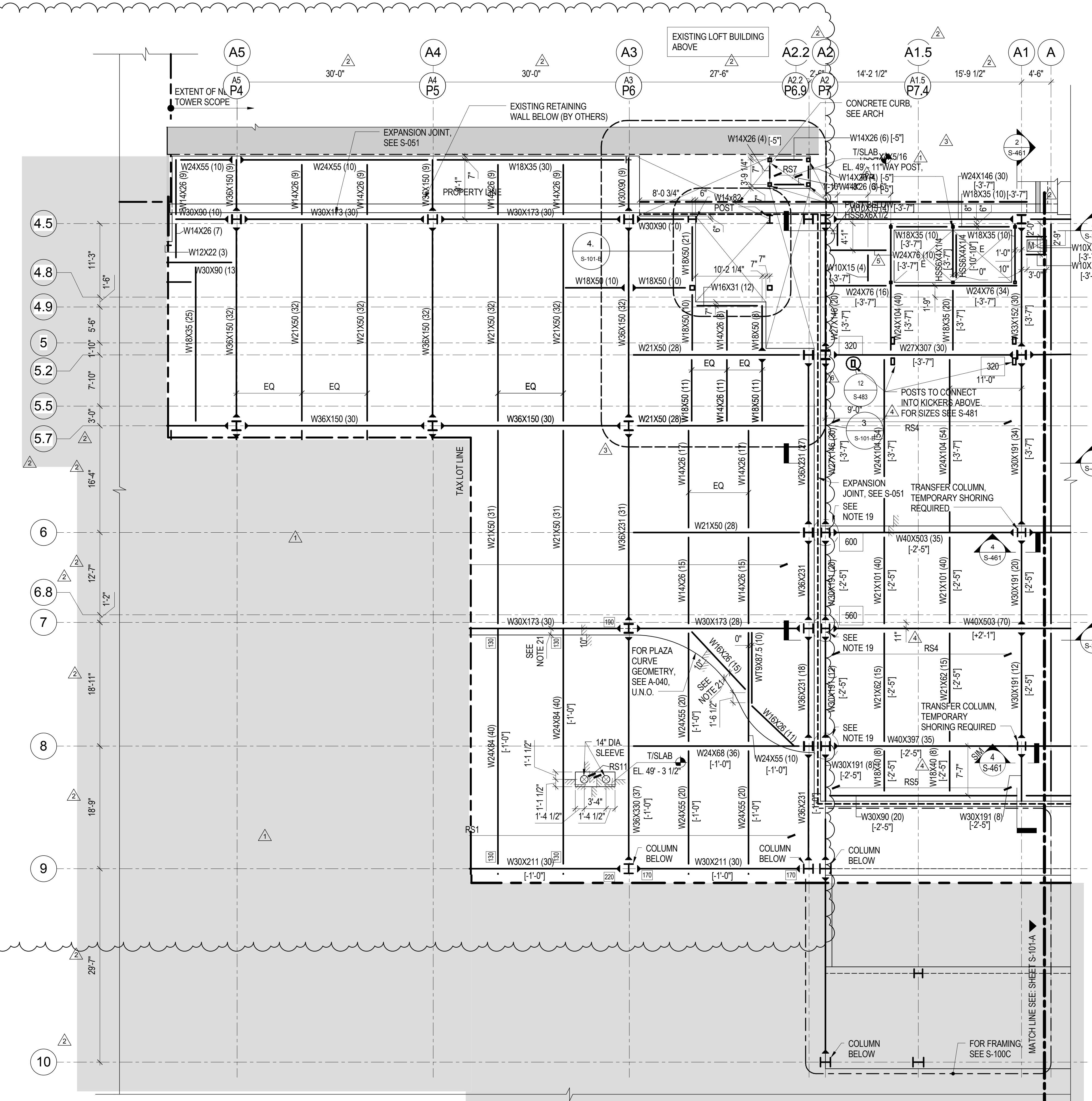
Project No.: 211159
Date: 27 AUG 2017
Scale: 1/8" = 1'-0"
File No.: S-101-B

B-SCAN Sheet No.:
Sheet No.:
Page No.:
S-101-03



2. 1ST FLOOR MEZZANINE FRAMING PLAN
1/8" = 1'-0"

NOTE:
1. AT LEVEL 1M, ALL TOP OF STEEL ELEVATION = +61'-8 1/2"



1. GROUND FLOOR FRAMING PLAN - LOBBY - PART B
1/8" = 1'-0"

- NOTES:
1. TOP OF SLAB ELEVATION = +50'-5", UNLESS NOTED OTHERWISE.
 2. TOP OF STEEL ELEVATION = +49'-5" FOR TYPICAL SLAB ELEVATION.
 3. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
 4. BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
 5. SLAB EDGE DIMENSION AT OPENING = 6", UNLESS NOTED OTHERWISE.
 6. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
 7. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
 8. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
 9. REFER TO SHEETS S-005 FOR STRUCTURAL STEEL AND METAL DECK NOTES.
 10. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
 11. REFER TO SHEETS S-315 THROUGH S-319 FOR FOUNDATION WALL ELEVATIONS, SECTIONS AND DETAILS.
 12. REFER TO SHEET S-331 FOR REINFORCED CONCRETE CORE WALL SCHEDULE, SECTIONS AND DETAILS.
 13. REFER TO SHEET S-332 FOR TYPICAL REINFORCED CONCRETE WALL DETAILS.
 14. REFER TO SHEET S-391 FOR LINK BEAM SCHEDULES, SECTIONS AND DETAILS.
 15. REFER TO SHEETS S-361 THROUGH S-369 FOR CORE WALL ELEVATIONS.
 16. REFER TO SHEET S-395 FOR REINFORCED CONCRETE BEAM SCHEDULE, SECTIONS AND DETAILS.
 17. REFER TO SHEET S-371 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS AND DETAILS.
 18. REFER TO SHEET S-401 AND S-402 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
 19. PROVIDE SLIDING BEARING SUPPORT AT COLUMN BELOW. SEE S-462 AND S-463 FOR DETAILS AND SCHEDULE.
 20. REFER TO SHEETS S-501 & S-502 FOR METAL DECK SLAB SCHEDULES, SECTION AND DETAILS.



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Key Plan:
33RD STREET
DYER AVENUE
31ST STREET
9TH AVENUE

Seal & Signature:
Professional Engineer Seal for S-102-B

Project No.: 211159
Date: 27 AUG 2017
Scale: As indicated
File No.: S-102-B

B-SCAN Sheet No.: S-173.01
Sheet No.: S-102-B
Page No.:

2ND FLOOR
FRAMING PLAN -
PART B

Project No.: 211159
Date: 27 AUG 2017
Scale: As indicated
File No.: S-102-B

B-SCAN Sheet No.: S-173.01
Sheet No.: S-102-B
Page No.:

2ND FLOOR
FRAMING PLAN -
PART B

Project No.: 211159
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Scale: As indicated
File No.: S-102-B

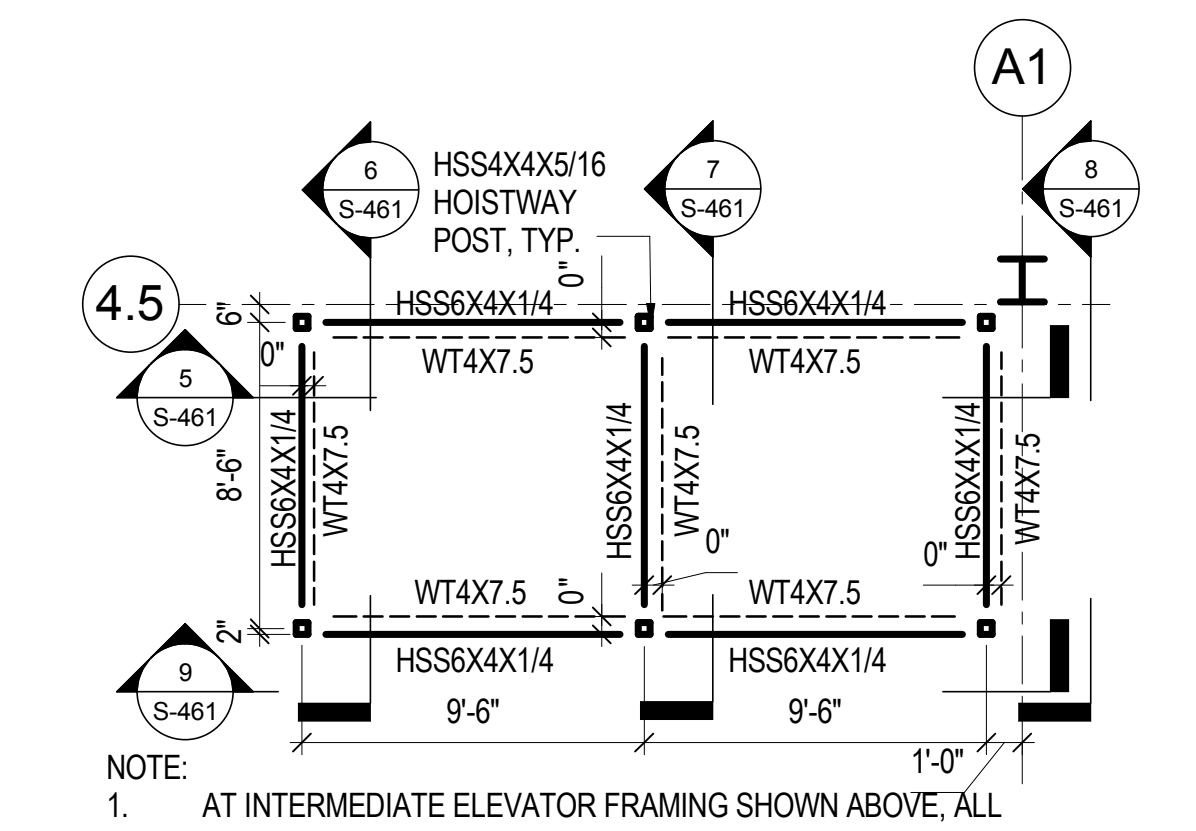
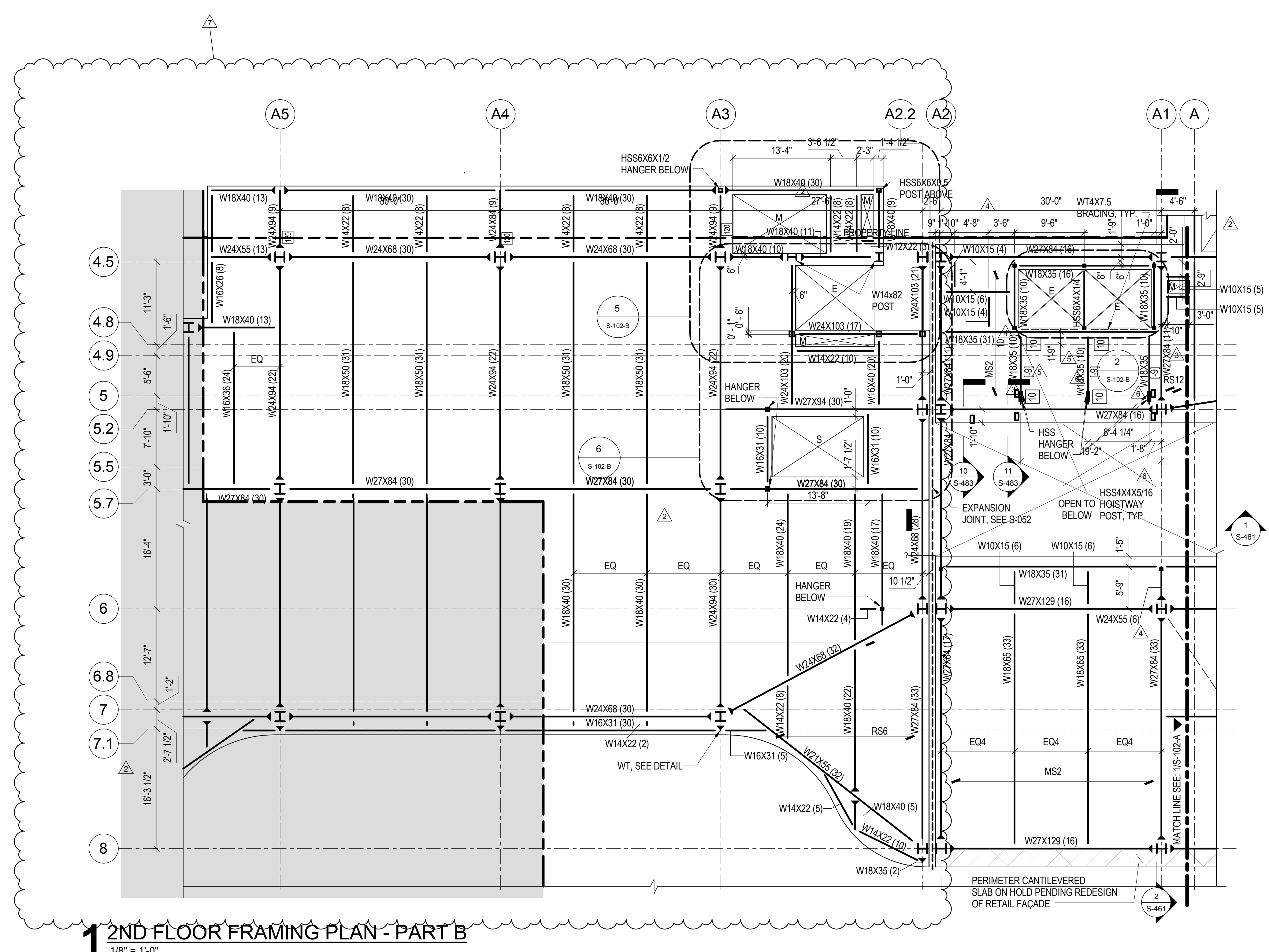
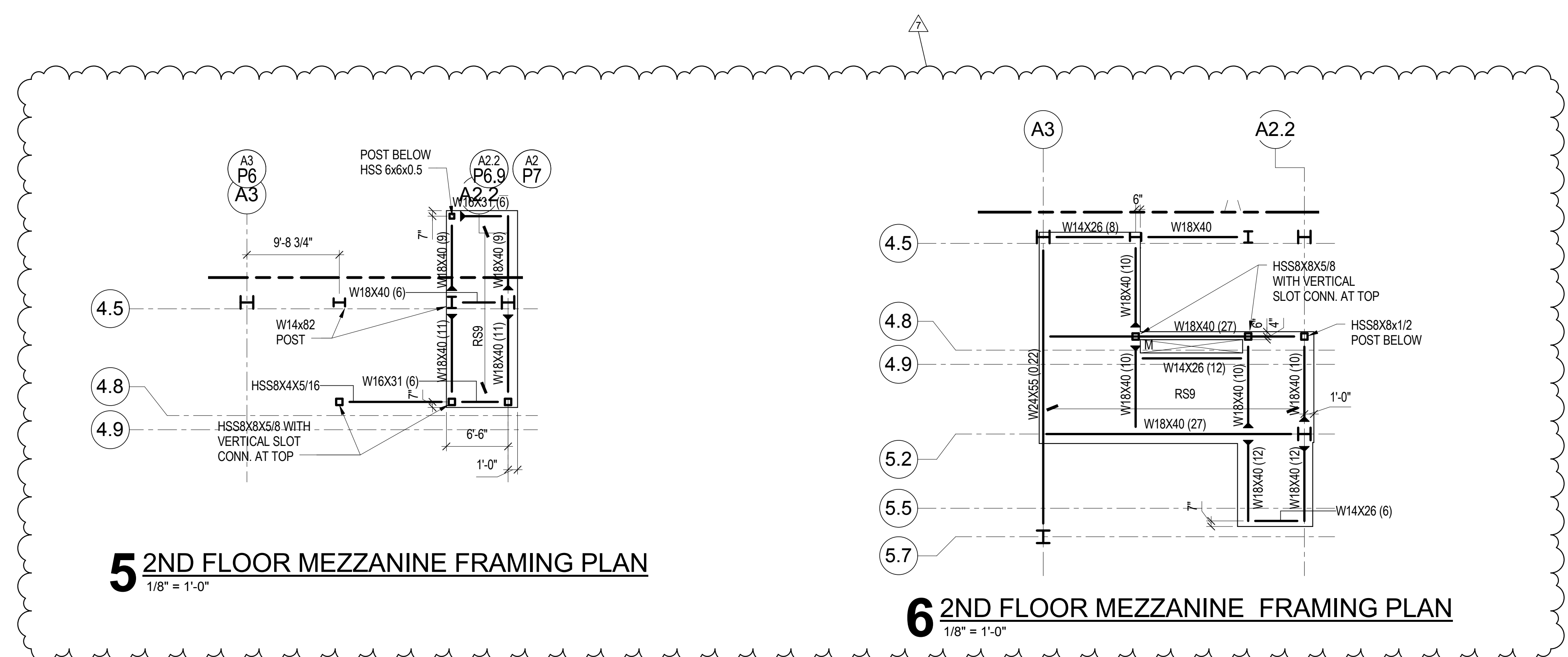
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Sheet No.: S-102-B
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2ND FLOOR
FRAMING PLAN -
PART B

Project No.: 211159
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Scale: As indicated
File No.: S-102-B

B-SCAN Sheet No.: S-173.01
Sheet No.: S-102-B
Page No.:

2ND FLOOR
FRAMING PLAN -
PART B



- NOTES:
1. TOP OF SLAB ELEVATION = 72'-7", UNLESS NOTED OTHERWISE.
 2. TOP OF STEEL ELEVATION = 72'-1 1/2", UNLESS NOTED OTHERWISE BY [X-X'] OR [X-X''], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
 3. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
 4. BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
 5. SLAB EDGE DIMENSION AT OPENING = 6", UNLESS NOTED OTHERWISE.
 6. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
 7. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
 8. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
 9. REFER TO SHEETS S-005 FOR STRUCTURAL STEEL AND METAL DECK NOTES.
 10. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
 11. REFER TO SHEET S-401 AND S-402 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
 12. REFER TO SHEET S-501 AND S-502 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.



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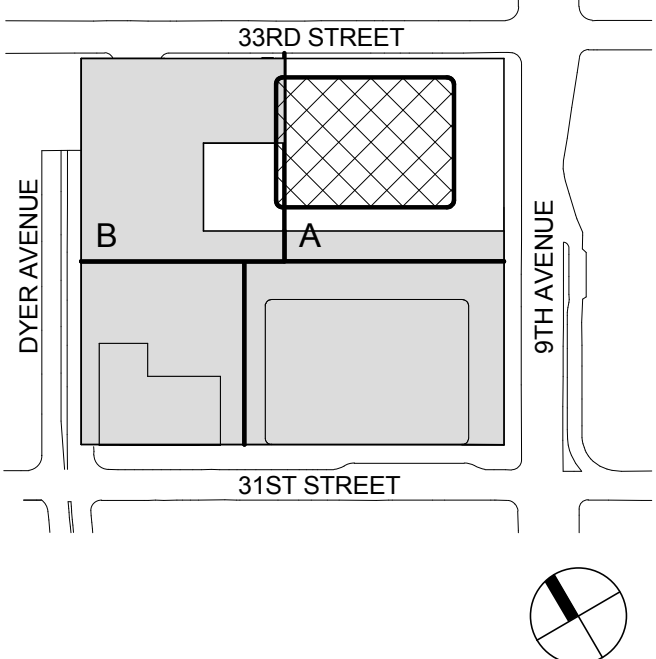
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Key Plan:



Seal & Signature:



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5TH FLOOR
FRAMING PLAN -
MECHANICAL
MEZZANINE -
PART B

Project No.:

211157

Date:

27 AUG 2017

Scale:

As Indicated

File No.:

S-105-B

B-SCAN Sheet No.:

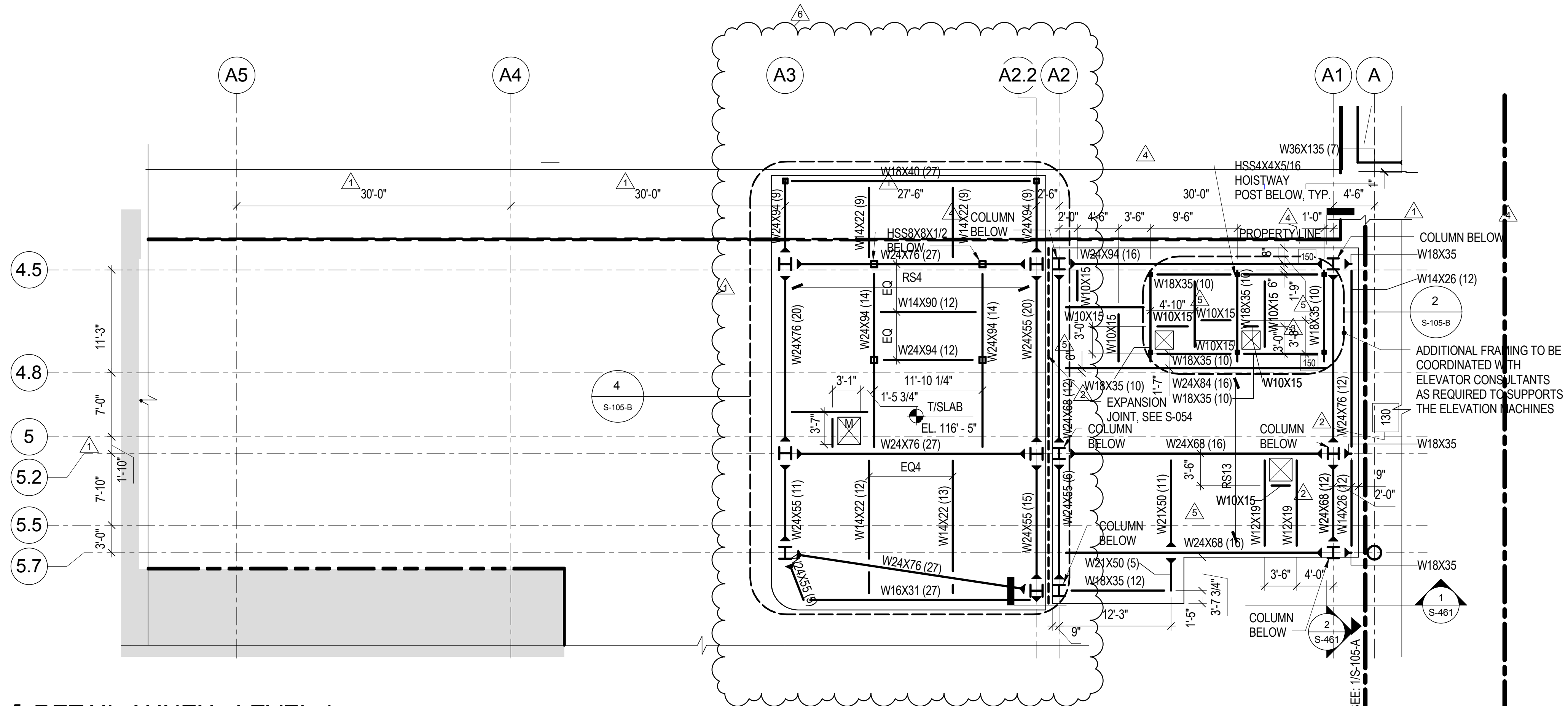
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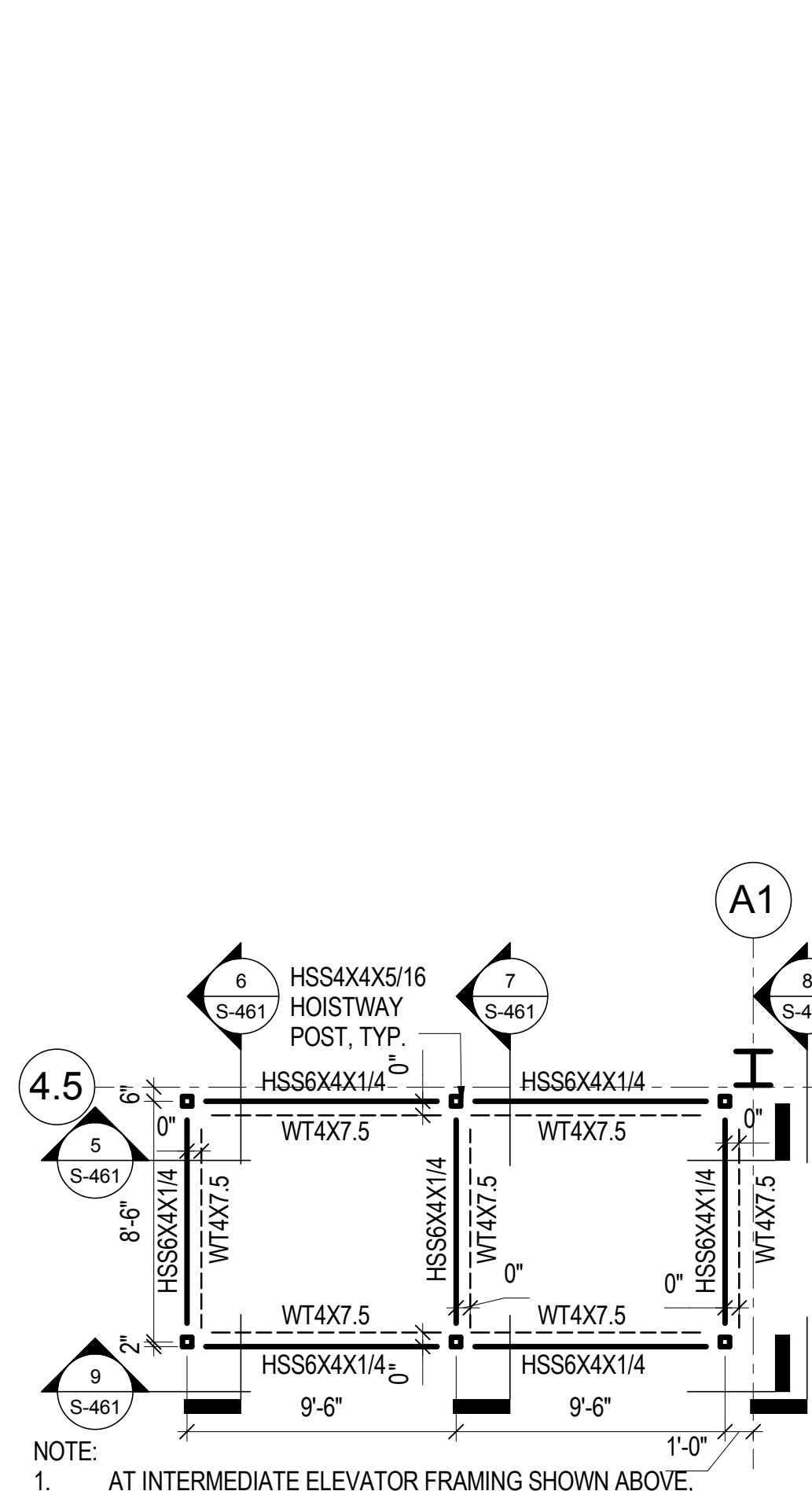
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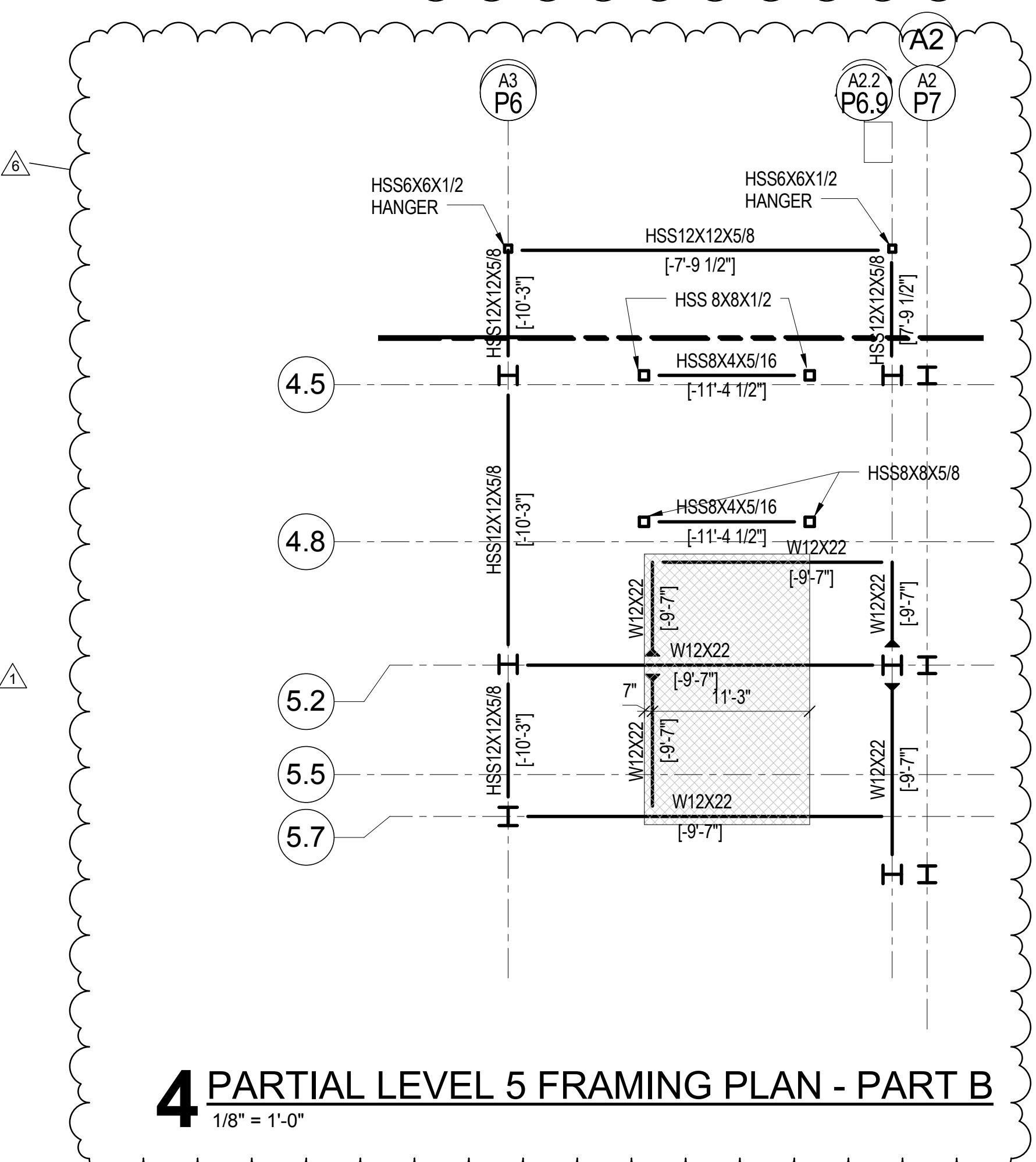
S-105-B



1 RETAIL ANNEX - LEVEL 4
1/8" = 1'-0"



2 RETAIL ELEVATOR FRAMING PLAN
3/16" = 1'-0"



4 PARTIAL LEVEL 5 FRAMING PLAN - PART B
1/8" = 1'-0"

NOTES:

1. TOP OF SLAB ELEVATION = 116'-6" UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 115'-10 1/2" UNLESS NOTED OTHERWISE BY [-X'-X"] OR [-X'-X"] WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
3. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
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8. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
9. REFER TO SHEETS S-005 FOR STRUCTURAL STEEL AND METAL DECK NOTES.
10. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
11. REFER TO SHEET S-401 AND S-402 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
12. REFER TO SHEET S-501 AND S-502 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.



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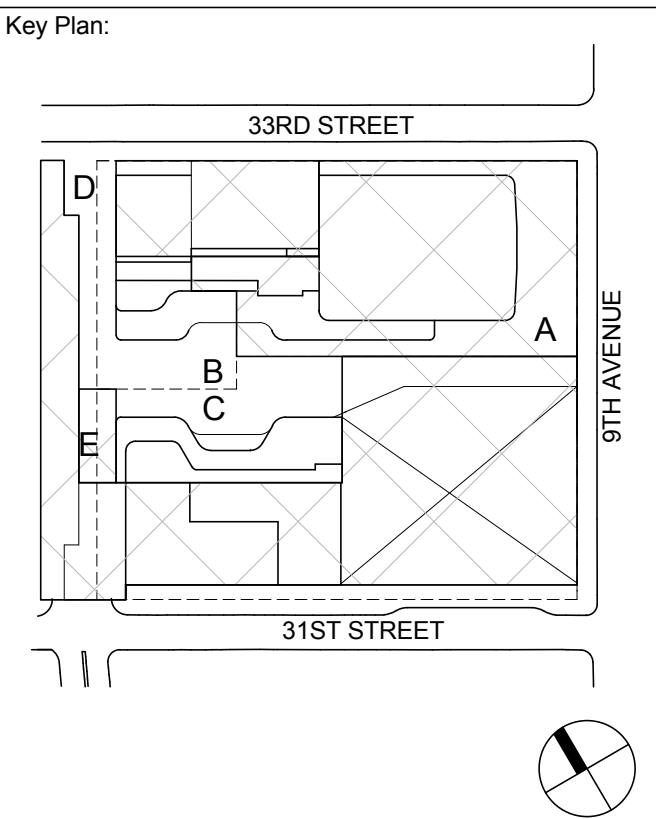
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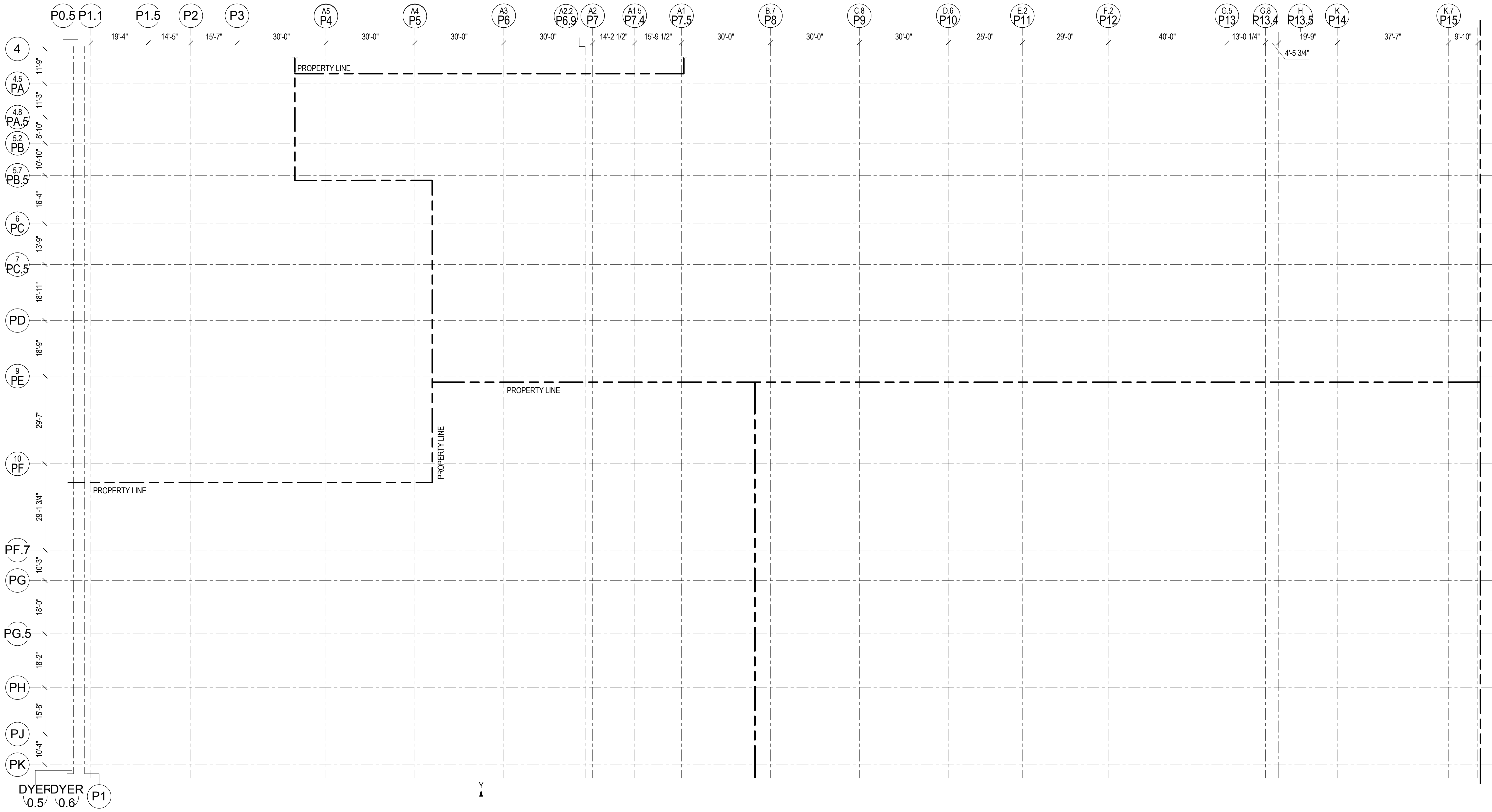


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Sheet Name:		

**STRUCTURAL
GRID SET-OUT
PLAN**

Project No.: 211157	B-SCAN Sheet No.: S-003.00
Date: 02/16/2018	Sheet No.: S-003
Scale: 1/16" = 1'-0"	Page No.: 3-003
File No.: S-003	



1 GRID LINE AND PROPERTY LINE KEY PLAN
1/16" = 1'-0"



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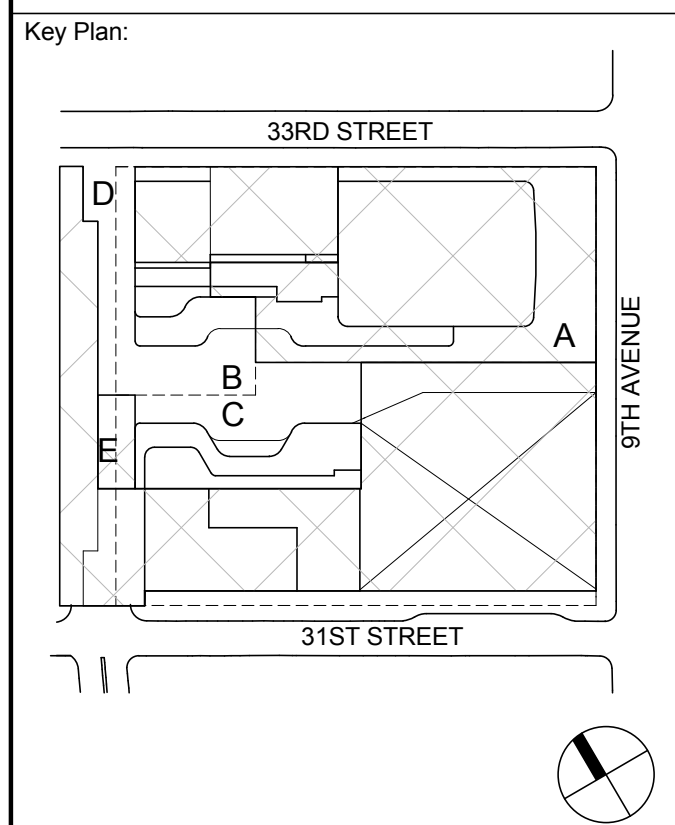
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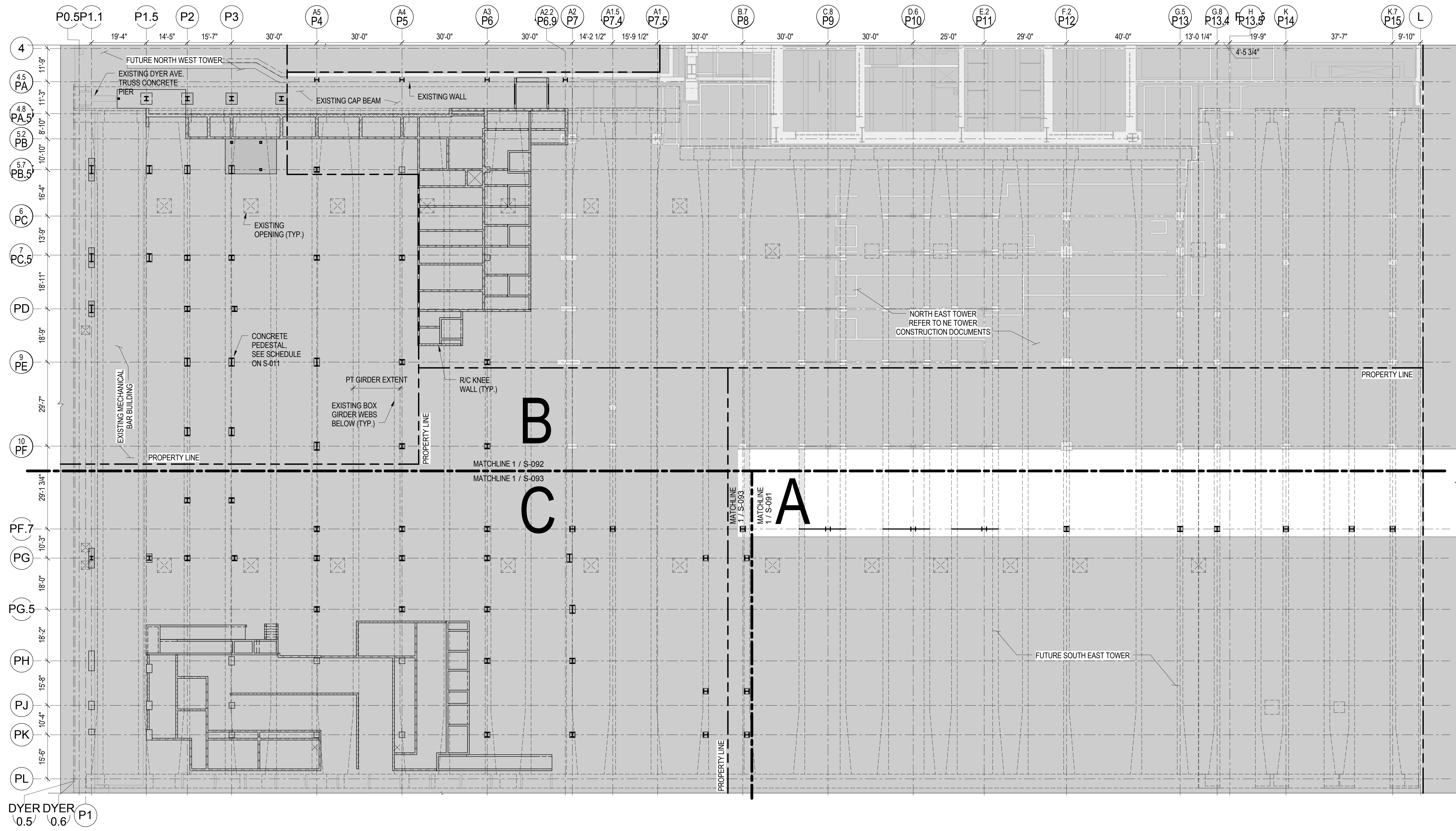


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**KEY PLAN -
PLATFORM PLAN**

Project No.: 211157	B-SCAN Sheet No.: S-004.00
Date: 02/16/2018	Sheet No.: S-004
Scale: As Indicated	Page No.:
File No.: S-004	



1 PLATFORM KEY PLAN
1/16" = 1'-0"

SHADING KEY PLAN	
[Pattern]	NOT IN SCOPE
[Pattern]	GIRDER WEB BELOW
[Pattern]	NEW CONCRETE STRUCTURE

- GENERAL NOTES:
- REFER TO SHEET S-001 FOR TYPICAL STRUCTURAL SYMBOLS AND ABBREVIATIONS.
 - REFER TO SHEET S-002 FOR STRUCTURAL CONCRETE NOTES.
 - REFER TO SHEET S-003 FOR STRUCTURAL STEEL AND METAL DECK NOTES.
 - REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
 - REFER TO SHEET S-300 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS, & DETAILS.
 - REFER TO SHEETS S-401, S-405 AND S-406 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
 - REFER TO SHEET S-410 FOR BEARING SUPPORT ASSEMBLY SCHEDULE AND DETAILS.
 - REFER TO SHEET S-415 AND S-416 FOR FOUNDATION SCHEDULE AND DETAILS.
 - REFER TO SHEETS S-500 AND S-501 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.
 - REFER TO SHEETS S-510 AND S-511 FOR STRUCTURAL STEEL SECTIONS AND DETAILS.



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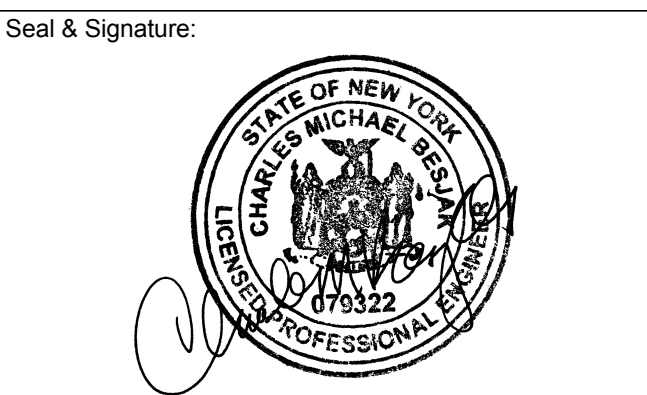
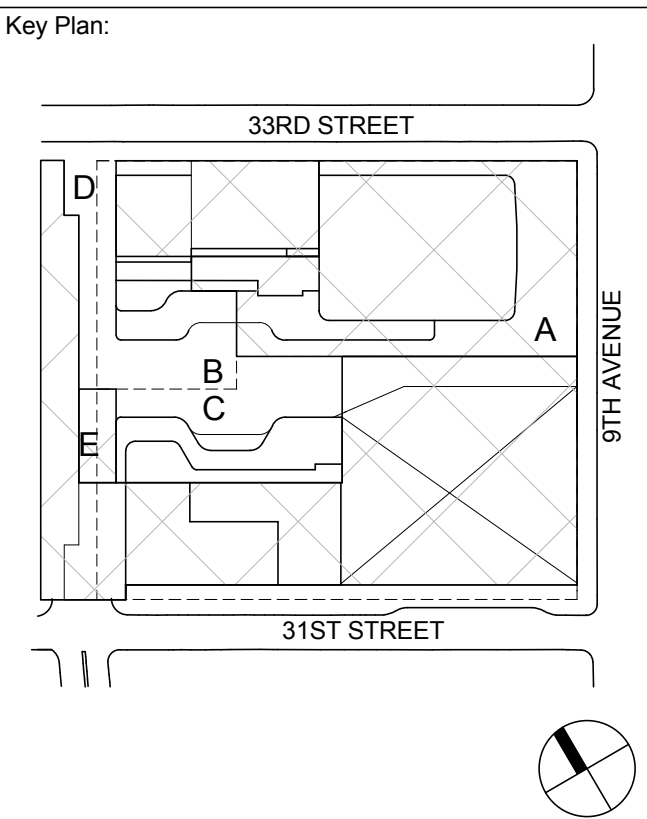
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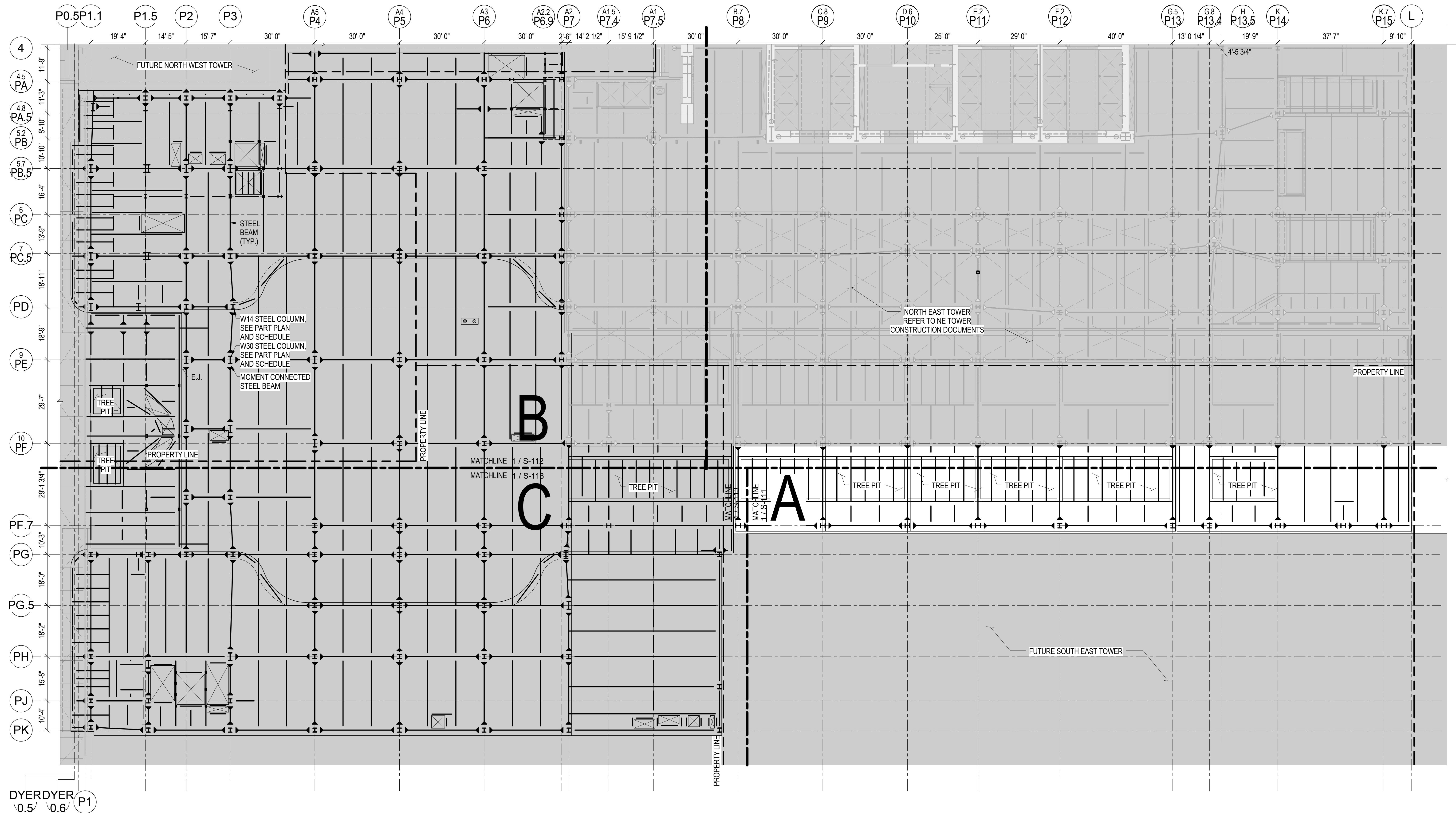
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680 Woodlawn Road West, Guelph, Ontario, Canada N1K 1B8



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**KEY PLAN -
PLAZA LEVEL
PLAN**

Project No.: 211157	B-SCAN Sheet No.: S-006.00
Date: 02/16/2018	Sheet No.: S-006
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File No.: S-006	



1 RETAIL PLAZA KEY PLAN
1/16" = 1'-0"

- SHADING KEY PLAN
- NOT IN SCOPE
 - GIRDER WEB BELOW
 - NEW CONCRETE STRUCTURE

- GENERAL NOTES:
- REFER TO SHEET S-000 FOR STRUCTURAL SYSTEM DESCRIPTION.
 - REFER TO SHEET S-001 FOR TYPICAL STRUCTURAL SYMBOLS AND ABBREVIATIONS.
 - REFER TO SHEET S-002 FOR STRUCTURAL CONCRETE NOTES.
 - REFER TO SHEET S-003 FOR STRUCTURAL STEEL AND METAL DECK NOTES.
 - REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
 - REFER TO SHEET S-210 FOR ESTIMATED HORIZONTAL MOVEMENT AT PLAZA LEVEL.
 - REFER TO SHEET S-300 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS, & DETAILS.
 - REFER TO SHEET S-400 FOR ESTIMATED LOADS ONTO PLATFORM.
 - REFER TO SHEETS S-401, S-405 AND S-406 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
 - REFER TO SHEET S-415 AND S-416 FOR FOUNDATION SCHEDULE AND DETAILS.
 - REFER TO SHEETS S-500 AND S-501 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.
 - REFER TO SHEETS S-510 AND S-511 FOR STRUCTURAL STEEL SECTIONS AND DETAILS.

STAGE-WISE CONSTRUCTION OF DIFFERENT AREAS OF PLAZA

STAGE	AREA 1	AREA 2	AREA 3
STAGE 1 SELF-WEIGHT + DEAD LOAD	X		
STAGE 2 SELF-WEIGHT + DEAD LOAD		X	
STAGE 3 SUPER-IMPOSED DEAD LOAD @ PLAZA + RETAIL + LOADING DOCKS	X	X	
STAGE 4 LANDSCAPE LOADS	X	X	
STAGE 5 SUPER-IMPOSED DEAD LOAD (WEARING SLAB) @ PLATFORM	X	X	
STAGE 6 SELF-WEIGHT + DEAD LOAD			X
STAGE 7 SUPER-IMPOSED DEAD LOAD @ PLAZA + RETAIL			X
STAGE 8 LANDSCAPE LOADS			X
STAGE 9 SUPER-IMPOSED DEAD LOAD @ PLATFORM			X

STAGE 5 - CUMULATIVE DEAD LOAD DEFLECTION (IN FT)

	UNIT 1												UNIT 2										UNIT 3						
Column	P1.1	P1.5	P1.5/P2	P2	P3	P4	P5	P6	P6.9	P7	P7.4	P7.5	P7.5/P8	P8	P8/P9	P9W	P9E	P10W	P10E	P11W	P11E	P12	P13	P13.4	P13.4/P14	P13.5	P14	P14/P15	P15
A.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A.5/B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.021	-	-	-0.002
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B.5	-0.078	-0.080	-	-0.081	-0.083	-0.081	-0.082	-0.084	-	-0.153	-0.153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.099	-0.089	-0.083	-0.079	-0.078	-0.119	-0.117	-0.115	-0.114	-0.115	-0.102	-	-0.103	-	-0.105	-0.112
C.5	-0.186	-0.190	-	-0.194	-0.197	-0.193	-0.195	-0.199	-0.205	-0.206	-	-	-	-0.156	-	-0.139	-0.132	-	-	-	-	-	-	-	-0.129	-	-	-	-
C.5/D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	-0.233	-	-	-0.245	-0.248	-	-	-	-0.258	-0.258	-	-	-	-0.214	-	-0.192	-0.182	-0.173	-0.169	-0.167	-0.165	-	-	-	-	-	-	-	-
DE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	-	-	-	-0.284	-0.333	-0.281	-0.282	-0.288	-0.297	-0.297	-	-	-	-0.258	-	-0.232	-0.221	-0.209	-0.204	-0.201	-0.199	-0.201	-0.180	-0.199	-	-	-0.180	-	-0.189
EF	-	-	-	-0.309	-0.312	-	-	-	-	-	-0.302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.212
F	-	-	-	-	-	-0.306	-0.307	-0.313	-	-0.321	-0.307	-	-	-0.289	-	-0.259	-0.247	-0.233	-0.228	-0.224	-0.230	-0.223	-0.201	-0.212	-	-0.214	-	-0.224	-
F/F.7	-	-	-	-0.302	-0.306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F.7	-	-	-	-	-	-0.287	-0.287	-0.292	-	-0.300	-0.284	-	-	-0.272	-	-0.242	-0.230	-0.216	-0.211	-0.208	-0.206	-0.206	-0.187	-0.192	-	-	-0.193	-0.196	-0.203
F.7/G	-	-0.278	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G	-0.257	-0.266	-	-0.273	-0.277	-0.270	-0.270	-0.274	-	-0.281	-	-	-0.257	-	-0.255	-	-	-	-	-	-	-	-	-	-	-	-0.189	-0.192	-0.198
G.5	-	-	-	-	-	-0.228	-0.227	-0.231	-	-0.236	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	-0.167	-0.162	-	-	-0.177	-0.172	-0.171	-0.173	-	-0.178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J	-0.109	-0.114	-	-	-0.117	-	-	-	-	-	-	-	-	-0.125	-	-0.122	-	-	-	-	-	-	-	-	-	-	-	-	-
K	-0.070	-0.072	-0.072	-	-0.075	-0.072	-0.072	-0.073	-	-0.074	-	-	-0.067	-0.065	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.078
K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

STAGE 5 - CUMULATIVE LIVE LOAD DEFLECTION (IN FT)

Column	UNIT 1												UNIT 2												UNIT 3				
	P1.1	P1.5	P1.5/P2	P2	P3	P4	P5	P6	P6.9	P7	P7.4	P7.5	P7.5/P8	P8	P8/P9	P9W	P9E	P10W	P10E	P11W	P11E	P12	P13	P13.4	P13.4/P13.5	P13.5	P14	P14/P15	P15
A.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.001	-	-0.001
A.5/B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-0.023	-0.023	-	-0.023	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.014	-	-	-
B.5	-0.031	-0.033	-	-0.033	-0.034	-0.036	-0.040	-0.044	-	-0.086	-0.087	-	-	-	-	-0.052	-0.047	-0.043	-0.040	-0.038	-0.037	-0.037	-0.039	-0.039	-	-0.066	-	-0.066	-0.068
CC.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
C.5	-0.074	-0.077	-	-0.079	-0.081	-0.086	-0.094	-0.104	-0.115	-0.116	-	-	-	-	-	-0.082	-	-0.073	-0.068	-0.059	-0.057	-0.056	-0.059	-0.059	-	-0.082	-	-	-
C.5/D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	-0.093	-	-	-0.100	-0.102	-	-	-	-	-0.144	-0.145	-	-	-	-	-0.114	-	-0.100	-0.094	-0.086	-0.083	-0.081	-0.082	-	-	-	-	-	-
D/E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	-	-	-	-0.115	-0.137	-0.125	-0.137	-0.150	-0.165	-0.166	-	-	-	-	-	-0.138	-	-0.121	-0.114	-0.104	-0.100	-0.099	-0.099	-0.103	-0.104	-0.125	-	-0.125	-0.130
E/F	-	-	-	-0.124	-0.127	-	-	-	-	-	-	-0.182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F	-	-	-	-	-	-0.136	-0.149	-0.163	-	-	-	-0.180	-0.185	-	-	-0.156	-	-0.136	-0.127	-0.116	-0.112	-0.110	-0.114	-0.115	-0.116	-0.132	-	-0.132	-0.137
F.F.7	-	-	-	-0.121	-0.124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F.7	-	-	-	-	-	-0.127	-0.139	-0.152	-	-0.168	-0.172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F.7/G	-	-0.109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G	-0.100	-0.104	-	-0.109	-0.112	-0.120	-0.130	-0.143	-	-0.157	-	-	-	-0.144	-	-0.139	-	-	-	-	-	-	-	-	-	-	-0.116	-0.118	-0.121
G.5	-	-	-	-	-	-0.101	-0.110	-0.120	-	-0.133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.091	-0.093	-0.095
H	-0.064	-0.062	-	-	-0.071	-0.075	-0.082	-0.090	-	-0.100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H/U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J	-0.042	-0.044	-	-	-0.047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	-0.027	-0.028	-0.028	-	-0.030	-0.032	-0.034	-0.038	-	-0.042	-	-	-	-0.039	-0.036	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.047
L	-	-	-	-	-	-0.010	-0.010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

STAGE 9 - CUMULATIVE DEAD LOAD DEFLECTION (IN FT)

Column	UNIT 1													UNIT 2								UNIT 3							
	P1.1	P1.5	P1.5/P2	P2	P3	P4	P5	P6	P6.9	P7	P7.4	P7.5	P7.5/P8	P8	P8/P9	P9W	P9E	P10W	P10E	P11W	P11E	P12	P13	P13.4	P13.4/P...	P13.5	P14	P14/P15	P15
A.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A.5/B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.027	-0.001	-	-0.002
B	-	-	-	-	-	-	-	-	-0.040	-0.041	-	-0.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B.5	-0.078	-0.080	-	-0.081	-0.083	-0.081	-0.082	-0.084	-	-0.153	-0.153	-	-	-0.103	-	-0.094	-0.089	-0.085	-0.084	-0.083	-0.083	-0.084	-0.075	-	-0.133	-	-0.138	-	-0.150
C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C.5	-0.186	-0.190	-	-0.194	-0.197	-0.193	-0.195	-0.199	-0.205	-0.206	-	-	-	-0.163	-	-0.147	-0.141	-	-0.128	-0.126	-0.124	-0.124	-0.125	-0.113	-	-0.168	-	-	-
C.5/D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	-0.233	-	-	-0.245	-0.248	-	-	-	-0.258	-0.258	-	-	-	-0.224	-	-0.203	-0.195	-0.186	-0.183	-0.181	-0.180	-	-	-	-	-	-	-0.192	-0.208
DE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	-	-	-	-0.284	-0.333	-0.281	-0.282	-0.288	-0.297	-0.297	-	-	-0.271	-	-0.247	-0.237	-0.226	-0.222	-0.219	-0.218	-0.221	-0.201	-0.263	-	-0.240	-	-0.261		
EF	-	-	-	-0.309	-0.312	-	-	-	-	-	-0.302	-	-	-	-	-0.247	-0.237	-0.226	-0.222	-0.219	-0.218	-0.221	-0.201	-0.263	-	-0.272	-	-0.295	
F	-	-	-	-	-	-0.306	-0.307	-0.313	-	-0.321	-0.307	-	-0.304	-	-0.277	-0.266	-0.254	-0.249	-0.246	-0.254	-0.248	-0.227	-0.285	-	-0.296	-	-0.322		
F.7	-	-	-	-0.302	-0.306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F.7/G	-	-	-	-	-	-0.287	-0.287	-0.292	-	-0.300	-0.284	-	-0.287	-	-0.261	-0.250	-0.238	-0.233	-0.231	-0.229	-0.232	-0.213	-0.262	-	-0.275	-0.289	-0.304		
G	-0.257	-0.266	-	-0.273	-0.277	-0.270	-0.274	-	-0.281	-	-0.271	-	-0.269	-	-	-	-	-	-	-	-	-	-	-	-0.269	-0.284	-0.298		
G.5	-	-	-	-	-	-0.228	-0.227	-0.231	-	-0.236	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	-0.167	-0.162	-	-	-0.177	-0.172	-0.171	-0.173	-	-0.178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I	-0.109	-0.114	-	-	-	-0.117	-	-	-	-	-	-	-0.132	-	-0.130	-	-	-	-	-	-	-	-	-	-	-	-	-	-
J	-0.070	-0.072	-0.072	-	-0.075	-0.072	-0.072	-0.073	-	-0.074	-	-	-0.071	-	-0.070	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.131
K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L	-	-	-0.023	-	-0.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CONCRETE NOTES

A. GENERAL

- SHOP DRAWINGS FOR FORMWORK AND REINFORCING SHALL BE APPROVED BY THE ENGINEER PRIOR TO FORMWORK CONSTRUCTION OR REINFORCING FABRICATION AND PLACEMENT.
- IN ADDITION TO CAMBERS SHOWN, CAMBER FORMWORK TO COMPENSATE FOR DEFLECTION OF FORMS UNDER THE WET WEIGHT OF CONCRETE IS REQUIRED TO ACHIEVE THE SPECIFIED TOLERANCES.
- CONCRETE BEAMS AND SLABS SHALL NOT BE SLEEVED, BOXED-OUT OR HAVE THEIR REINFORCING INTERRUPTED EXCEPT AS SHOWN ON THE STRUCTURAL DRAWINGS.
- EXPOSED CONCRETE CORNERS SHALL HAVE 3/4 INCH CHAMFERS UNLESS NOTED OTHERWISE.
- REFER TO ARCHITECTURAL DRAWINGS FOR THE TYPE, SIZE AND LOCATION OF FLOOR FINISHES, FLOOR DEPRESSIONS AND CURBS.
- REFER TO ARCHITECTURAL DRAWINGS FOR WATERPROOFING AND DAMP PROOFING REQUIREMENTS.
- PROVIDE SLEEVES AND BLOCKOUTS AS SHOWN ON THE APPROVED HVAC, ELECTRICAL, FIRE PROTECTION AND PLUMBING SHOP DRAWINGS IN ACCORDANCE WITH THE STRUCTURAL DETAILS.
- INSERTS AND EMBEDMENTS SHALL BE ANCHORED SECURELY AND POSITIONED SO THAT THEY WILL BE FLUSH WITH THE FINISHED CONCRETE SURFACE TO A TOLERANCE OF 1/8 INCH, UNLESS NOTED OTHERWISE.
- PERFORM AND SUBMIT INSTRUMENT SURVEYS OF ALL FINISHED REINFORCED CONCRETE AND STEEL DECK CONCRETE SLAB SURFACES.
- REFER TO SPECIFICATION SECTION 031000, "CONCRETE FORMWORK," SECTION 032000, "CONCRETE REINFORCEMENT," AND SECTION 033000, "CAST-IN-PLACE CONCRETE" FOR ADDITIONAL REQUIREMENTS.
- REFER TO "STATEMENT OF SPECIAL INSPECTIONS" FOR SPECIAL INSPECTION REQUIREMENTS AND THE SPECIFICATIONS FOR THE REQUIRED PROGRAM OF TESTING AND INSPECTIONS. PROVIDE MATERIAL TESTS, DATA AND ACCESS AS REQUIRED TO FACILITATE SPECIAL INSPECTIONS AND OWNER MONITORING.

B. CONCRETE

- CAST-IN-PLACE CONCRETE SHALL BE OF THE TYPES AND MINIMUM 28-DAY COMPRESSIVE STRENGTHS AND MAXIMUM WATER CEMENT RATIOS AS SHOWN IN THE CONCRETE MATERIAL SCHEDULE.
- ALL CONCRETE SHALL CONTAIN A WATER REDUCING OR HIGH-RANGE WATER REDUCING, PLASTICIZING ADMIXTURE. CONCRETE PERMANENTLY EXPOSED TO WEATHER SHALL CONTAIN AN APPROVED AIR-ENTRAINING ADMIXTURE. CONCRETE ELEMENTS WITH A LEAST CROSS SECTIONAL DIMENSION GREATER THAN 48 INCHES SHALL BE CONSIDERED TO BE "MASS CONCRETE."

C. REINFORCING

- MATERIALS:
 - REINFORCING BARS: ASTM A615, GRADE 60
 - WELDED WIRE FABRIC (WWF): ASTM A185
 - STRUCTURAL MACRO FIBERS: ASTM C1116, MIN. 2 INCH LENGTH
- CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, SPACED IN FORMS, AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITIONS OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315.
- REINFORCING SPLICES SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, BUT NOT LESS THAN 36 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
- WELDED WIRE FABRIC SPLICES SHALL BE LAPPED EIGHT (8) INCHES AND TIED SECURELY.
- MECHANICAL COUPLERS SHALL BE USED WHERE NOTED AND OTHERWISE AT THE CONTRACTOR'S OPTION. COUPLERS SHALL DEVELOP IN TENSION 125% OF THE BAR STRENGTH UNLESS NOTED OTHERWISE.
- DOWELS SHALL MATCH THE SIZE AND NUMBER OF MAIN REINFORCING, UNLESS NOTED OTHERWISE.
- FIELD WELDING OR BENDING OF REINFORCING IS NOT PERMITTED EXCEPT WHERE SHOWN ON THE DRAWINGS OR OTHERWISE APPROVED.
- MINIMUM REINFORCING, UNLESS NOTED OTHERWISE:
 - WALLS AND STRUCTURAL SLABS: #4 AT 12 EACH WAY, EACH FACE
 - SLABS ON GRADE: 1 LAYER 6X6 - W2.9XW2.9 WWF
 - FILLSWEAR SLABS: 1 LAYER 6X6 - W1.4XW1.4 WWF
 - MEP EQUIPMENT PADS: 1 LAYER 6X6 - W4.0XW4.0 WWF
- MINIMUM REINFORCING FOR EXTERIOR AND VEHICLE TRAFFIC SLABS-ON-GRADE, GALVANIZED OR EPOXY COATED UNLESS NOTED OTHERWISE:
 - SIDEWALKS, PLAZAS: 1 LAYER 4X4 - W2.9XW2.9 WWF
 - AUTO TRAFFIC AREAS: 1 LAYER 4X4 - W6.0XW6.0 WWF
 - TRUCK TRAFFIC AREAS: 1 LAYER 4X4 - W7.0XW7.0 WWF
- BAR SUPPORTS SHALL BE GALVANIZED OR EPOXY COATED. BAR SUPPORTS IN CONTACT WITH EXPOSED SURFACES SHALL ALSO BE PLASTIC TIPPED.

D. CONSTRUCTION JOINTS

- CONSTRUCTION JOINTS IN ALL WALLS, SLABS AND BEAMS SHALL NOT BE FURTHER APART THAN 90 FEET IN ANY DIRECTION.
- CONSTRUCTION JOINTS SHALL BE WIRE BRUSHED, CLEANED AND MOISTENED IMMEDIATELY PRIOR TO PLACING NEW CONCRETE.
- PLACE SLABS-ON-GRADE IN STRIP POURS OF A MAXIMUM WIDTH OF 15 FEET WITH A MINIMUM OF 24 HOURS BETWEEN ADJACENT POURS.
- CONSTRUCTION JOINTS IN STEEL DECK SLABS SHALL BE LOCATED A MINIMUM OF 18 INCHES FROM ANY BEAM LINE.
- PROVIDE SHEAR KEYS AT ALL BEAM, REINFORCED SUSPENDED SLAB, GRADE BEAM, MAT AND FOUNDATION WALL CONSTRUCTION JOINTS. REFER TO DETAILS FOR SLAB-ON-GRADE AND SLAB ON METAL DECK CONSTRUCTION JOINT REQUIREMENTS.
- CONSTRUCTION JOINTS SHALL BE LOCATED ONLY IN ACCORDANCE WITH APPROVED SHOP DRAWINGS.
- ALLOW A MINIMUM OF THREE (3) HOURS BETWEEN PLACEMENT OF CONCRETE FOR COLUMNS, WALLS OR PIERS AND PLACEMENT OF CONCRETE ON THE ADJACENT FLOOR.

E. ELECTRICAL CONDUIT

- CONDUIT SHALL BE STEEL OR RIGID PLASTIC ONLY.
- MAXIMUM CONDUIT DIAMETER IS 1/6 THE SLAB DEPTH.
- CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 3 TIMES THE CONDUIT DIAMETER.
- CONDUIT SHALL NOT BE LOCATED CLOSER TO POST-TENSIONING TENDONS THAN 12 INCHES HORIZONTALLY OR 1 1/2 INCHES VERTICALLY.
- CONDUIT SHALL BE SECURELY TIED TO REINFORCING TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT.
- CONDUIT SHALL BE PLACED ONLY IN ACCORDANCE WITH SHOP DRAWINGS APPROVED BY THE STRUCTURAL ENGINEER.

F. CURING AND SEALING

- PROVIDE APPROVED CURING COMPOUND AND SEALER FOR THE TOP SURFACE OF ALL SLAB WORK, UNLESS NOTED OTHERWISE.
- PROVIDE APPROVED CURING COMPOUND, SEALER, AND HARDENER FOR ALL SLABS IN M.E.P. AND STORAGE AREAS, UNLESS NOTED OTHERWISE.
- MOIST CURE PARKING SLABS FOR A MINIMUM OF 7 DAYS.
- MOIST CURE CONCRETE FILLS AND TOPPINGS PLACED OVER STRUCTURAL SLABS.
- CURE FORMED CONCRETE IN FORMS OR PROVIDE APPROVED CURING COMPOUND.

G. DRILLED IN ANCHORS AND REINFORCING BARS

- DRILLED IN EXPANSION ANCHORS, ADHESIVE ANCHORS AND GROUTED BARS MAY BE USED ONLY WHERE SHOWN ON THE DRAWINGS.
- DRILLED IN BARS SHALL BE ADHESIVE ANCHORED UNLESS NOTED OTHERWISE.
- CONDUCT A PRECONSTRUCTION CONFERENCE AT LEAST 14 DAYS PRIOR TO INSTALLATION OF ANCHORS TO VERIFY MATERIALS AND PROCEDURES.
- ADHESIVE ANCHORED BARS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

H. FLOWABLE CONCRETE

- AFTER THE REQUIRED POWER TROWELING OF ALL FLOOR SLAB SURFACES, AND IN ORDER TO ACHIEVE THE APPROPRIATE FLOOR LEVELNESS, THE CONTRACTOR SHALL INSTALL AN ACCEPTABLE LATEX BASED, CEMENTITIOUS FLOWABLE FILL MATERIAL SYSTEM IN ALL INTERIOR FLOOR SLAB AREAS WHICH WILL RECEIVE APPLIED, NON-CEMENTITIOUS, ARCHITECTURAL FLOOR FINISH INTERIOR SYSTEMS (CARPET, WOOD, THIN SET STONE) AS THE FINAL FINISH SYSTEM. THE LOCATIONS, EXTENT, AND THICKNESS OF THE FLOWABLE FILL WILL BE ESTABLISHED FROM THE REVIEW OF THE CONTRACTOR'S UNSHORED HARDENED CONCRETE FLOOR SLAB SURVEYS. THESE THIN FLOWABLE CONCRETE FILL MATERIALS SHALL BE PROTECTED FROM DETEIORATION PRIOR TO THE PLACEMENT OF THE FINAL...

- THE CONTRACTOR SHALL ALLOW FOR PROVIDING 1/2 INCH AVERAGE DEPTH OF AN ACCEPTABLE LATEX BASED, CEMENTITIOUS FLOWABLE FILL.

LENTON MECHANICAL SPLICES

BUTT SPLICE

TERMINATOR

WALL DOWELS

NOTE: USE LENTON MECHANICAL SPLICES OR MECHANICAL SPLICES THAT MEET OR EXCEED STRENGTH OF EQUIVALENT LENTON SPLICE.

CONCRETE MATERIALS SCHEDULE

LOCATION	COMPRESSIVE STRENGTH (28 DAY U.N.O.)	MAX. SIZE AGGREGATE	SUPPLEMENTARY MATERIALS	MAXIMUM W/C RATIO	AIR CONTENT
FOUNDATIONS / FOOTINGS	8,000 PSI	3/4"	-	0.45	3% MAXIMUM
BASEMENT / KNEEWALLS	5,000 PSI	3/4"	-	0.45	3% MAXIMUM
SLABS AND BEAMS	4,000 PSI	3/4"	-	0.50	3% MAXIMUM
EXPOSED TO FREEZING	4,000 PSI @ 28 DAYS	3/4"	-	0.45	4.5% TO 7.5%
SLABS ON STEEL DECK	4,000 PSI @ 28 DAYS	3/4"	MACRO FIBERS	0.50	3% MAXIMUM
TIGHT POURS	COORDINATE W/ ELEMENTS	3/4"	COORDINATE W/ ELEMENTS	COORDINATE W/ ELEMENTS	3% MAXIMUM
TOPPING/FILL SLABS	4,000 PSI @ 28 DAYS	3/4"	MACRO FIBERS FLY ASH AND/ OR SLAG	0.40	3% INTERIOR, 3% TO 7% EXTERIOR

NOTES:

- ALL CONCRETE NORMAL WEIGHT UNLESS NOTED OTHERWISE.

MINIMUM CONCRETE COVER

CONCRETE SURFACE EXPOSURE	MINIMUM CONCRETE CLEAR COVER
SLAB - ON - GRADE	2"
SLABS	3/4"
BEAMS	1-1/2"
COLUMNS	1-1/2"
SLAB ON COMPOSITE DECK	3/4"
FOUNDATION WALLS	2" O.F./1" I.F.

COMPRESSION LAP SPLICE LENGTH AND COMPRESSION DEVELOPMENT LENGTH

BAR SIZE	COMPRESSION LAP SPLICE	COMPRESSION DEVELOPMENT LENGTH	
		f _c = 4000 psi	f _c = 5000 psi
#3	12	8	8
#4	15	10	9
#5	19	12	12
#6	23	15	14
#7	27	17	16
#8	30	19	18
#9	34	22	21
#10	39	25	23
#11	43	27	26
#14	SEE NOTE 2	33	31
#18	SEE NOTE 2	44	41

NOTES:

- TABULATED COMPRESSION DEVELOPMENT LENGTHS AND COMPRESSION LAP SPLICES ARE GIVEN IN INCHES, AND ARE CALCULATED FOR REINFORCEMENT CONFORMING TO ASTM A615 GRADE 60 FOR BARS #3 TO #9 AND GRADE 80 FOR BARS #9 TO #14, AS PER THE REQUIREMENTS OF ACI 318.

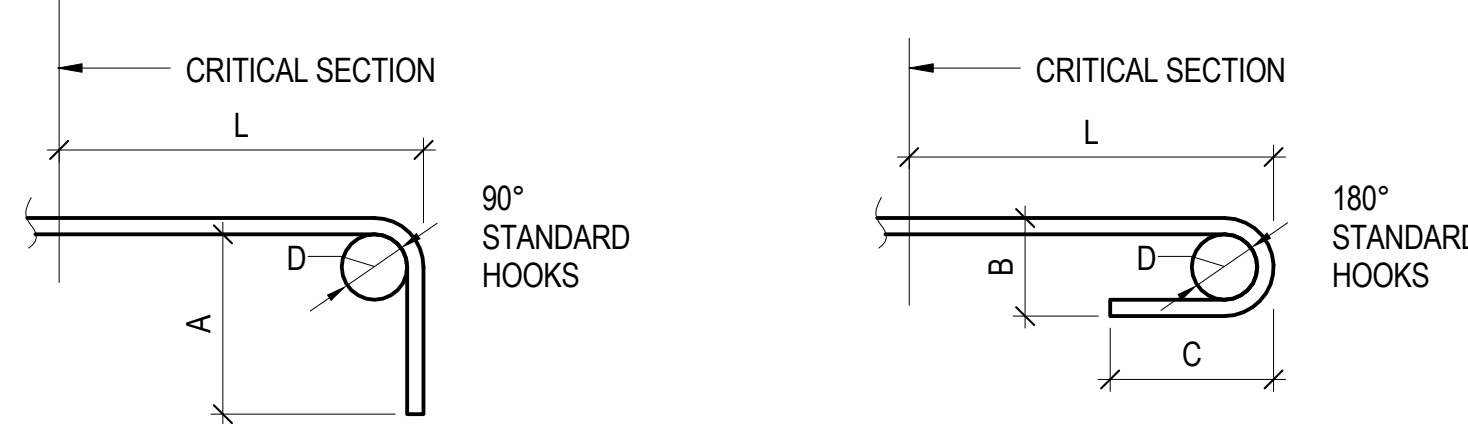
- USE MECHANICAL SPLICE FOR #14 AND #18 BAR SIZE.

TENSION DEVELOPMENT LENGTH AND CLASS 'A' TENSION LAP SPLICE LENGTH

BAR SIZE	f _c = 4000 psi				f _c = 5000 psi			
	TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2
#3	19	28	15	22	17	25	13	19
#4	25	37	19	29	22	33	17	26
#5	31	47	24	36	28	42	22	32
#6	37	56	29	43	33	50	26	38
#7	54	81	42	63	49	73	37	56
#8	62	93	48	71	55	83	43	64
#9	70	105	54	81	61	94	48	72
#10	79	118	61	91	70	105	54	81
#11	87	131	67	101	78	117	60	90
#14	105	157	81	121	94	140	72	108
#18	139	209	107	161	125	187	96	144

NOTES:

- TABULATED TENSION DEVELOPMENT LENGTHS ARE GIVEN IN INCHES, AND ARE CALCULATED FOR REINFORCEMENT CONFORMING TO ASTM A615 GRADE 60 AS PER THE REQUIREMENTS OF ACI 318.
- CASES 1 AND 2 DEPEND UPON CONCRETE COVER AND THE CENTER-TO-CENTER SPACING OF THE BARS, DEFINED AS FOLLOWS:
 - CLEAR SPACING AT LEAST ONE (1) BAR DIAMETER
CLEAR COVER AT LEAST ONE (1) BAR DIAMETER
STIRRUPS OR TIES THROUGHOUT THE DEVELOPMENT LENGTH NOT LESS THAN THE CODE MINIMUM
OR
CASE 2: ALL OTHER CASES
- TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
- TABULATED TENSION DEVELOPMENT LENGTHS HAVE BEEN CALCULATED WITH RESPECT TO NORMAL WEIGHT CONCRETE. FOR LIGHTWEIGHT CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
- FOR EPOXY COATED BARS, MULTIPLY THE TABULATED VALUES BY ONE OF THE FOLLOWING FACTORS:
 - 1.5 FOR EPOXY COATED BARS WITH COVER LESS THAN 3 BAR DIAMETERS, OR CLEAR SPACING LESS THAN 6 BAR DIAMETERS
 - 1.2 FOR ALL OTHER EPOXY COATED BARS
- LAP SPLICE LENGTHS (ACI 12.15.1) ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS:
 - CLASS A: 1.0 LD, WHERE 50% OR LESS BARS ARE LAP SPICED AT A SECTION FOR A DISTANCE EQUAL TO THE REQUIRED LAP SPLICE LENGTH OR
 - CLASS B: 1.3 LD, AT ALL OTHER LOCATIONS
- ALL ADJACENT LAP SPLICES IN SLAB-ON-GRADE SHALL BE STAGGERED BY A MINIMUM DISTANCE EQUAL TO THE REQUIRED LAP SPLICE LENGTH.
- USE MECHANICAL SPLICE FOR #14 AND #18 BAR SIZES.



STANDARD HOOK DETAILING GEOMETRY AND TENSION DEVELOPMENT LENGTH

BAR SIZE	D	90° HOOKS		180° HOOKS		TENSION DEVELOPMENT LENGTH	
		A	B	C	f _c = 4000 psi	f _c = 5000 psi	
#3	2 1/4	6	3	5	7	7	
#4	3	8	4	6	10	9	
#5	3 3/4	10	5	7	12	11	
#6	4 1/2	12	6	8	15	13	
#7	5 1/4	14	7	10	17	15	
#8	6	16	8	11	19	17	
#9	9 1/2	119	11 3/4	15	22	19	
#10	10 3/4	22	13 1/4	17	24	22	
#11	12	24	14 3/4	19	27	24	
#14	18 1/4	31	21 3/4	27	32	29	
#18	24	41	28 1/2	36	43	39	

NOTES:

- TABULATED TENSION DEVELOPMENT LENGTHS AND STANDARD HOOK DETAILING GEOMETRY DIMENSIONS ARE GIVEN IN INCH, AND ARE CALCULATED FOR ASTM A615 GRADE 60 AS PER THE REQUIREMENTS OF ACI 318 (2009).

- 'D' REPRESENTS THE STANDARD HOOK FINISHED INSIDE BEND DIAMETER.

'A', 'B', AND 'C' REPRESENT DETAILING DIMENSIONS AS DEFINED IN THE KEY DETAILS.
TABULATED TENSION DEVELOPMENT LENGTHS HAVE BEEN CALCULATED WITH RESPECT TO NORMAL WEIGHT CONCRETE.
FOR LIGHTWEIGHT CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3
FOR EPOXY-COATED BARS, MULTIPLY THE TABULATED VALUES BY 1.2



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STRUCTURAL STEEL NOTES

A. GENERAL

1. ALL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO AISC (LRFD) SPECIFICATIONS AND CODES, LATEST EDITION AND CHAPTER 16, 17 AND 22 OF NEW YORK CITY BUILDING CODE REQUIREMENT. STEEL CONTRACTOR'S CONNECTION ENGINEER SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMISSION AND ISSUE A STAMPED LETTER STATING THAT CONNECTIONS ON SHOP DRAWINGS COMPLY WITH APPROVED CONNECTION DESIGN.
2. ALL WELDING WORK SHALL CONFORM TO THE AWS D1.1 "STRUCTURAL WELDING CODE - STEEL," LATEST EDITION, AND SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
3. ALL STEEL BEAM SIZES FOLLOWED BY A NUMBER IN PARENTHESES, (XX), ARE COMPOSITE BEAMS WITH SHEAR STUDS. SEE "STRUCTURAL METAL DECK NOTES" FOR ADDITIONAL INFORMATION.
4. COMPOSITE BEAMS ARE NOT REQUIRED TO BE SHORED, UNLESS NOTED OTHERWISE.
5. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR REVIEW BY THE ARCHITECT.
6. ALL STRUCTURAL STEEL SHALL BE FIREPROOFED TO ATTAIN THE APPLICABLE FIRE RATING REQUIRED BY CODE WITH UL APPROVED SPRAYED-ON CEMENTITIOUS FIREPROOFING MATERIALS. SEE THE ARCHITECTURAL DRAWINGS FOR SPECIFIC FIREPROOFING REQUIREMENTS. ALL STEEL SURFACES ENCASED IN CONCRETE, ELEVATOR GUIDE BEAMS, AND PENTHOUSE ROOF FRAMING DO NOT REQUIRE SPRAY FIREPROOFING.
7. AFTER FABRICATION, ALL STEEL SHALL BE CLEANED OF ALL RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS TO SSPC-SP2. PRIMING AND PAINTING OF THE STRUCTURAL STEEL WILL NOT BE REQUIRED EXCEPT FOR STEEL WHICH IS PERMANENTLY EXPOSED REQUIREMENTS. ALL STEEL SURFACES ENCASED IN CONCRETE, ELEVATOR GUIDE BEAMS, AND PENTHOUSE ROOF FRAMING DO NOT REQUIRE SPRAY FIREPROOFING.
8. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88) FOR REFERENCE 0.0 NAV88 = 298.325 PENN RAIL ROAD TUNNELS DATUM EXCEPT FOR STEEL WHICH IS PERMANENTLY EXPOSED REQUIREMENTS. ALL STEEL SURFACES ENCASED IN CONCRETE, ELEVATOR GUIDE BEAMS, AND PENTHOUSE ROOF FRAMING DO NOT REQUIRE SPRAY FIREPROOFING.
9. SEE SPECIFICATION SECTION 05120, "STRUCTURAL STEEL," FOR ADDITIONAL REQUIREMENTS NOT NOTED HEREIN.

B. MATERIALS

1. STRUCTURAL STEEL GRADES SHALL BE AS FOLLOWS: (INSERT TABLE)
BUILT-UP STEEL COLUMNS: ASTM A572 Gr. 50
FLOOR BEAMS: ASTM A992 - GRADE 50
W14 COLUMNS, HANGERS & BRACED FRAME DIAGONALS: ASTM A913 - GRADE 50
W12, W24, W30, W36 COLUMNS: ASTM A992 - GRADE 50
WT DIAGONALS: ASTM A992 - GRADE 50
CONNECTIONS, PLATES: ASTM A572 - GRADE 50 OR ASTM A709 Gr. 70
ANGLES: ASTM A36 - GRADE 36
WELDING: E70XX ELECTRODES
2. ALL STRUCTURAL STEEL TUBING SHALL BE ASTM A500, GRADE B, UNLESS NOTED OTHERWISE.
3. ALL STRUCTURAL STEEL PIPE SHALL BE ASTM A53, TYPE E, GRADE B, UNLESS NOTED OTHERWISE.
4. ALL BOLTS, NUT AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 OR A490 OR AS INDICATED IN THE DRAWINGS AND DETAILS.

C. CONNECTIONS

1. ALL CONNECTIONS, EXCEPT FOR THOSE CONNECTIONS COMPLETELY DESIGNED ON THE DRAWINGS, SHALL BE DESIGNED AND DETAILLED BY THE FABRICATOR. DETAILING SHALL BE PERFORMED USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE GENERAL DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES, UNLESS SPECIFICALLY NOTED. THE CONTRACTOR SHALL SUBMIT ENGINEERING CALCULATIONS AND CONNECTION DETAIL DRAWINGS FOR EACH CONNECTION TYPE, MEMBER SIZE, AND REACTION INDICATED ON THE DRAWINGS FOR REVIEW BY THE ARCHITECT PRIOR TO THE SUBMITTAL OF THE STRUCTURAL STEEL SHOP DRAWINGS. AFTER REVIEW BY THE ARCHITECT, THESE DETAIL DRAWINGS SHALL BE UTILIZED AS THE STANDARD FOR FABRICATION AND SHOP DRAWING DETAILING. THE DESIGN CALCULATIONS SHALL BE PREPARED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.
2. ALL CONNECTIONS, UNLESS NOTED OTHERWISE, SHALL BE SIMPLE SHEAR CONNECTIONS UTILIZING "SHORT- SLOTTED" HOLES AND HIGH-STRENGTH BOLTS IN BEARING-TYPE CONNECTIONS WITH THREADS EXCLUDED FROM THE SHEAR PLANE. THE CONNECTION CAPACITIES SHALL BE AS SHOWN IN NOTE C5 BELOW, OR AS NOTED ON THE STRUCTURAL FRAMING PLANS.
3. BEAM-TO-COLUMN CONNECTIONS SHALL BE MOMENT CONNECTED WHERE SHOWN ON THE DRAWINGS. THE WEB SHEAR CONNECTION FOR THESE MEMBERS SHALL UTILIZE SINGLE SHEAR PLATE SLIP-CRITICAL TYPE CONNECTIONS WITH HIGH-STRENGTH BOLTS WITH THREADS EXCLUDED FROM THE SHEAR PLANE FOR THE CAPACITIES SHOWN IN NOTE C5 BELOW.
4. ALL BOLTS SHALL BE FULLY TORQUED FOR BOTH SLIP CRITICAL AND BEARING TYPE CONNECTIONS.
5. MINIMUM FACTORED END REACTIONS (LRFD) FOR STANDARD ROLLED SHAPES:

W44	300 kips	W18	70 kips	C18	50 kips	HSS 16	55 kips
W40	280 kips	W16	55 kips	C15	30 kips	HSS 14	55 kips
W36	210 kips	W14	45 kips	C12	20 kips	HSS 12	55 kips
W33	180 kips	W12	40 kips	C10	12 kips	HSS 10	55 kips
W30	135 kips	W10	20 kips	C8/C8	10 kips	HSS 8	55 kips
W27	100 kips	WB31 & Heavier	45 kips	C7/C6	10 kips	HSS 6	55 kips
W24	95 kips	W8	15 kips				
W21	85 kips	W6	15 kips				
		W5	10 kips				
6. DETAIL TO MEET THE NYC BUILDING CODE STRUCTURAL INTEGRITY REQUIREMENTS.
7. THE MINIMUM NUMBER OF BOLTS PER CONNECTION SHALL BE TWO (2) - 3/4 INCH DIAMETER, A325 BOLTS.
8. MINIMUM FILLET WELD SIZES SHALL COMPLY WITH THE AISC SPECIFICATION REQUIREMENTS, BUT SHALL NOT BE LESS..

D. DETAILING

1. THE CONTRACTOR SHALL SUBMIT DETAILED, ENGINEERED, COORDINATED AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE ARCHITECT FOR REVIEW PRIOR TO THE START OF FABRICATION AND/OR ERECTION.
2. ALL BEAMS SHALL BE FABRICATED WITH THE NATURAL CAMBER UP. PROVIDE ADDITIONAL CAMBERS AS INDICED IN BRACKETS <XX> ON THE STRUCTURAL DRAWINGS. FOR CANTILEVERS, CAMBER SHALL BE MEASURED AT THE FREE END.
3. ALL SIMPLE SHEAR CONNECTIONS SHALL BE CAPABLE OF END ROTATION AS PER THE REQUIREMENTS OF AISC SPECIFICATION, CHAPTER J1.2, "SIMPLE CONNECTIONS".
4. ALL BEAMS FRAMING INTO NEW CONCRETE WALLS SHALL BE DETAILED TO SUIT THE HORIZONTAL FIELD TOLERANCES. MACHINE END PLATES OF COMPRESSION MEMBERS AFTER FABRICATION TO A TOLERANCE OF +/- 0.02 INCHES RELATIVE TO A PLANE PERPENDICULAR TO THE AS-FABRICATED CENTERLINE OF THE MEMBER.
6. ALL DOUBLE ANGLE MEMBERS TO HAVE MINIMUM OF 2 INTERMEDIATE CONNECTORS PER AISC SPECIFICATIONS

E. ERECTION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES, ESPECIALLY WITH RELATION TO TEMPERATURE DIFFERENTIALS, ERECTION TOLERANCES, AND WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO REINFORCED CONCRETE WALLS AND REQUIRED COMPENSATION FOR DEFLECTION OF PT BOX GIRDERS DUE TO RETAIL AND PLAZA WEIGHT.
2. SURVEY THE TOPS OF ALL COLUMNS AT EACH LEVEL. RECORD X, Y & Z - COORDINATES MEASURED CONSISTENTLY FROM AN ESTABLISHED BENCHMARK. PROVIDE A COPY OF THE SURVEY DATA TO THE ARCHITECT AND STRUCTURAL ENGINEER WITHIN TWO DAYS OF THE COMPLETION OF EACH SURVEY.
3. ALL ERECTION PROCEDURES, DESIGNS AND CALCULATIONS SHALL BE PERFORMED BY THE CONTRACTOR'S QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK. ANY REVIEW OF SUCH CALCULATIONS AND/OR DRAWINGS BY THE ARCHITECT WILL BE SOLELY LIMITED TO ANY EFFECTS ON THE INTEGRITY OF THE PERMANENT PRIMARY STRUCTURE.
4. ALL ADDITIONAL STEEL REQUIRED BY THE CONTRACTOR FOR ERECTION PURPOSES AND SITE ACCESS OF STOCKPILED MATERIALS SHALL BE PROVIDED AT NO COST TO THE OWNER. ALL SUCH ADDITIONAL STEEL SHALL BE REMOVED BY THE CONTRACTOR UNLESS APPROVED BY THE OWNER IN WRITING.
5. THE CONTRACTOR SHALL SUBMIT A METHODS STATEMENT FOR ALL STRUCTURAL STEEL/METAL DECK ERECTION PROGRAMS.

F. NON-SELF SUPPORTING STEEL FRAMES

1. THE STEEL STRUCTURE (COMPRISED OF GRAVITY COLUMNS, FLOOR BEAMS, FLOOR BRACING, BRACED FRAMES AND MOMENT FRAMES) IS A NON-SELF-SUPPORTING FRAME. THE FLOOR DIAPHRAGM (METAL DECK AND HARDENED CONCRETE SLAB TOPPING) AND R/C CONCRETE WALLS ARE REQUIRED TO PROVIDE STABILITY AND STRENGTH TO RESIST THE LOADS FOR WHICH THE FRAME IS DESIGNED. THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY SUPPORT AS NECESSARY UNTIL THE COMPLETE STRUCTURE IS ERECTED.

G. TESTING AND INSPECTING

- TESTING AND INSPECTION OF BOTH SHOP AND FIELD STRUCTURAL STEEL FABRICATION AND ERECTION WORK, INCLUDING WELDED AND BOLTED CONNECTIONS, SHALL BE AS FOLLOWS:
1. ALL STRUCTURAL STEEL FABRICATION AND ERECTION SHALL BE VISUALLY INSPECTED.
 2. ALL WELDERS SHALL BE AWS CERTIFIED.
 3. ALL WELDS SHALL BE AWS/AISC PREQUALIFIED.
 4. ALL WELDS SHALL BE VISUALLY INSPECTED PER AWS D1.1. WELD MEASUREMENTS SHALL BE PERFORMED FOR 15% OF ALL WELDS ON A RANDOM BASIS.
 5. MAGNETIC PARTICLE TESTING IN ACCORDANCE WITH ASTM E709 SHALL BE PERFORMED FOR A MINIMUM OF:
 - A. 10% OF ALL FILLET WELDS CHOSEN AT RANDOM, FINAL PHASE ONLY.
 - B. 100% OF TENSION MEMBER CONNECTION WELDS (I.E., HANGER CONNECTION PLATES, ETC.) FOR ROOT AND FINAL PASSES.
 6. ULTRASONIC TESTING IN ACCORDANCE WITH AWS D1.1 SHALL BE PERFORMED FOR A MINIMUM OF:
 - A. 100% OF ALL FULL PENETRATION WELDS.
 - B. 20% OF ALL COLUMN SPLICE WELDS, CHOSEN AT RANDOM.
 7. ULTRASONIC TESTING AND VISUAL INSPECTION IN ACCORDANCE WITH ASTM A435 SHALL BE UTILIZED TO VERIFY BASE MATERIALS FOR LAMINATIONS, INCLUSIONS, AND OTHER DISCONTINUITIES AS FOLLOWS:
 - A. ALL COLUMN FLANGES AND WEBS WITHIN STRUCTURAL SHAPE GROUPS 4 AND 5 AS DEFINED BY AISC LOCATED AT MOMENT CONNECTIONS. TEST AREA IS DEFINED AS 8" ABOVE AND BELOW BEAM FLANGE CONNECTION.
 - B. ALL GUSSET PLATES USED IN X-BRACED FRAMES GREATER THAN 1/2" THICK.
 - C. ALL COLUMN FLANGES IN COLUMNS WITH GUSSET PLATES ATTACHED TO BOTH FLANGES. TEST AREA IS DEFINED AS 6" AT 2'-0" INTERVALS.
 8. ALL BOLTED CONNECTIONS SHALL BE VISUALLY INSPECTED AND TESTED WITH A CALIBRATED TORQUE WRENCH TO VERIFY A MINIMUM OF 25% OF BOLTS IN EACH CONNECTION (2 BOLTS PER CONNECTION MINIMUM).
 9. THE REQUIRED CONTACT SURFACE CONDITIONS OF ALL SHEAR CONNECTIONS SHALL BE VISUALLY INSPECTED IMMEDIATELY PRIOR TO BEAM ERECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REMEDIAL WORK REQUIRED TO CONTACT SURFACES.
 10. THE OWNER'S STRUCTURAL STEEL TESTING SHALL PERFORM ALL FIELD INSPECTION AND TESTING AS OUTLINED ABOVE, AND MONITOR THE CONTRACTOR'S INSPECTION AND TESTING OUTLINED ABOVE FOR ALL SHOP WORK. IF THE CONTRACTOR'S QUALITY CONTROL PROGRAM IS NOT AISC CERTIFIED, THE CONTRACTOR SHALL ENGAGE AN APPROVED STRUCTURAL STEEL TESTING LABORATORY, ACCEPTABLE TO THE OWNER, WHO SHALL PERFORM ALL SHOP TESTING...
 11. THE STRUCTURAL STEEL FABRICATOR AND ERECTOR SHALL SCHEDULE ALL WORK TO ALLOW THE ABOVE INSPECTION AND TESTING REQUIREMENTS TO BE COMPLETED.
 12. TEST AND PROVIDE CHARPY V-NOTCH TESTING FOR STRUCTURAL STEEL AS INDICATED BELOW
 - A. ALL ROLLED SECTIONS WITH FLANGES 2" AND THICKER: TYPE A
 - B. PLATE MATERIAL FOR BOLTED MOMENT CONNECTION FLANGE PLATES OF 2" OR THICKER: TYPE BTYPE A: MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB AT 70 DEGREES F TESTED IN THE ALTERNATE CORE LOCATION AS DESCRIBED IN ASTM A6 SUPPLEMENTARY REQUIREMENT S30.
TYPE B: MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB AT 70 DEGREES F MEASURED AT ANY LOCATION PERMITTED BY ASTM A673.

H. STRUCTURAL STEEL PAINTING

1. ALL STRUCTURAL STEEL SHALL BE CLEANED AND PAINTED AS REQUIRED BY THE TECHNICAL SPECIFICATIONS.
2. ALL STRUCTURAL STEEL TO RECEIVE SPRAYED-ON FIREPROOFING AND/OR TO BE ENCASED IN CONCRETE DOES NOT REQUIRE PAINTING UNLESS NOTED OTHERWISE.
3. ALL EXTERIOR STRUCTURAL STEEL EXPOSED TO WEATHER TO RECEIVE SPRAYED-ON FIREPROOFING SHALL REQUIRE CLEANING AND PAINTING SYSTEMS. SEE SPECIFICATION 09 91 00 FOR REQUIREMENT. REQUIRED FOR THE FOLLOWING STRUCTURE INDICATED ON PLAN
 - A. STEEL FRAMING BETWEEN GRID P0.5/P2 AND GRID P0/P6
4. THE FOLLOWING STRUCTURAL STEEL ELEMENTS REQUIRE CLEANING AND PAINTING SYSTEMS:
 - A. ELEVATOR SEPARATOR BEAMS: CLEANED, PRIMED
 - B. NON-FIREPROOFED, INTERIOR STRUCTURAL STEEL: CLEANED, PRIMED, FIELD PAINTED (I COAT).
5. THE FOLLOWING STRUCTURAL STEEL ELEMENTS REQUIRE HOT-DIP GALVANIZING PER ASTM A123 AS REQUIRED BY THE TECHNICAL SPECIFICATIONS. ALL BOLTS, NUTS, WASHERS FOR CONNECTION OF HOT-DIP GALVANIZED STEEL SHALL BE GALVANIZED PER ASTM A153. HIGH-STRENGTH BOLTS FOR CONNECTION OF HOT-DIP GALVANIZED STEEL SHALL BE GALVANIZED A325 BOLTS. ALL GALVANIZED A325 BOLTS SHALL REQUIRE LUBRICATION PRIOR TO INSTALLING NUTS, ALL WASHERS, NUTS, BASE PLATES, GUSSET PLATES, STIFFENER PLATES, ANCHOR BOLTS FOR CONNECTION OF HOT-DIP GALVANIZED STEEL SHALL BE GALVANIZED:
 - A. SCREEN WALL SUPPORTING STRUCTURE
 - B. EXTERIOR STAIR

I. FIREPROOFING

1. STEEL STRUCTURE AND METAL DECK FOR DYER AVE OVERBRIDGE SHALL RECEIVE APPLIED (SPRAY-ON) FIREPROOFING TO COMPLY WITH REQUIREMENTS OF NFPA 902.
2. STEEL STRUCTURE AND METAL DECK SHALL RECEIVE APPLIED (SPRAY-ON) FIREPROOFING. SEE ARCHITECTURAL DRAWING AND SPECIFICATION FOR REQUIREMENT.

J. STEEL ALLOWANCES

STRUCTURAL STEEL

REFER TO THE DRAWINGS AND SPECIFICATIONS FOR ALL STEELWORK SIZES, GRADES, AND CONNECTION TYPES. THE FOLLOWING COMPLETION ALLOWANCES ARE IN ADDITION TO THE STEELWORK SHOWN ON THE DRAWINGS AND SHOULD BE INCLUDED IN THE BIDDING STRUCTURE BID. THE MATERIAL LISTED WILL BE REQUIRED TO COMPLETE THE DETAILED COORDINATION OF BUILDING SERVICES AND ARCHITECTURAL OPENINGS AS THEY BECOME AVAILABLE.

1. WEB PENETRATION REINFORCEMENT 5 TONS
2. W SECTION 25 TONS
3. ANGLE 5 TONS
4. HSS SECTION 5 TONS

STRUCTURAL METAL DECK NOTES

1. ALL METAL DECK SHALL BE FABRICATED FROM STEEL TYPE ASTM A446, GRADE A, HAVING A MINIMUM YIELD STRENGTH OF 40,000 PSI. ALL FLOOR DECKING SHALL BE HOT-DIPPED GALVANIZED, OR PHOSPHATIZED AND PAINTED. ALL DECKING AT ROOF LEVELS, PARKING/VEHICULAR LEVELS, LOADING DOCK/FREIGHT AREAS, AND SIDEWALK AREAS SHALL BE HOT-DIPPED GALVANIZED. ALL INSULATED METAL ROOF DECKING SHALL BE FORMED WITH TELESKOPED ENDS TO ALLOW ENDS OF SHEETS TO BE LAPPED A MINIMUM OF 2 INCHES.
2. ALL METAL DECK SHALL BE DESIGNED AND SELECTED BY CONTRACTOR FOR THE SPAN AND LOADING CONDITIONS SHOWN ON THE STRUCTURAL DRAWINGS AND IN THE METAL DECK SCHEDULE. NONCELLULAR METAL DECK SHALL BE PROVIDED IN ALL AREAS, UNLESS NOTED OTHERWISE.
3. METAL DECK SECTION PROPERTIES SHALL BE COMPUTED IN ACCORDANCE WITH THE AISI SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS, LATEST EDITION, UNLESS NOTED OTHERWISE.
4. THE MINIMUM GAUGE OF ALL METAL DECK SHALL BE 20 GAUGE WHEN THE CONCRETE TOPPING SLAB THICKNESS IS LESS THAN OR EQUAL TO 4 1/2" AND 18 GAUGE WHEN CONCRETE TOPPING SLAB THICKNESS IS GREATER THAN 4 1/2" AND 16 GAUGE WHEN CONCRETE TOPPING SLAB THICKNESS IS GREATER THAN 7". SLABS THICKER THAN 6" SHOULD BE PLACED IN TWO FOURS.
5. THE METAL DECK CONTRACTOR SHALL SUBMIT, TO THE ARCHITECT FOR REVIEW, STRUCTURAL ENGINEERING CALCULATIONS, PREPARED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK, PROVIDE PUBLISHED MANUFACTURER'S DATA, VERIFYING THAT THE METAL DECK AND RELATED DECK ACCESSORIES SATISFY THE SPECIFIED LOADING AND DEFLECTION REQUIREMENTS FOR THE SPANS INDICATED ON THE DRAWINGS.
6. THE CONTRACTOR SHALL PROVIDE DETAILED, COORDINATED, AND CHECKED SHOP DRAWINGS INDICATING LOCATION, GAGE AND SIZE OF EACH PIECE OF DECKING AND RELATED ACCESSORIES. THE DRAWINGS SHALL CLEARLY SHOW WELDING DETAILS TO STRUCTURAL FRAMING ELEMENTS, SIDE LAP CONNECTION DETAILS, DECK OPENING/EDGE CLOSURES, AND WHERE REQUIRED, SUPPLEMENTARY DECK AND/OR CLOSURE REINFORCING.
7. ALL NON-CELLULAR COMPOSITE METAL DECK SHALL HAVE WIDE RIBS SUITABLE FOR SHEAR STUD PLACEMENT WHERE STUDS ARE REQUIRED. THE CONFIGURATION OF THE METAL DECK SHALL BE SUCH AS TO DEVELOP THE FULL HORIZONTAL SHEAR VALUE OF THE STUD. FOR THE PARTICULAR METAL DECK-SLAB CONFIGURATION PER THE AISC SPECIFICATIONS, LATEST EDITION, AND AS REQUIRED BY NOTE 17C HEREIN.
8. ALL DECKING SHALL BE WELDED TO STRUCTURAL STEEL BY QUALIFIED WELDERS USING PRE-QUALIFIED PROCEDURES. THE TECHNICAL SPECIFICATIONS ESTABLISH A PROCEDURE FOR PRE-QUALIFICATION OF THE PLUG WELDING OF THE STEEL DECKING TO THE STRUCTURAL STEEL FOR THE PARTICULAR GAGES USED. PRIOR TO THE START OF ERECTION OF THE STEEL DECK, EACH WELDER SHALL BE QUALIFIED USING THIS PROCEDURE AS WITNESSED BY THE OWNER'S TESTING LABORATORY.
9. ALL METAL DECK SHALL BE WELDED AT 12 INCHES MAXIMUM ON CENTER TO THE SUPPORTING STEEL WITH A 3/4 INCH DIAMETER PLUG WELD. SIDE LAPS SHALL BE FASTENED AT 30 INCHES MAXIMUM ON CENTER.
10. THE METAL DECK SHALL BE DESIGNED TO BE UNSHORED AND CONTINUOUS OVER A MINIMUM OF THREE (3) SPANS IN THE DIRECTION INDICATED. METAL DECKING FOR SINGLE AND DOUBLE SPANS, IF REQUIRED, SHALL ALSO SATISFY THE SPECIFIED LOAD AND DEFLECTION REQUIREMENTS NOTED HEREIN.
11. THE METAL DECK SHALL BE DESIGNED FOR AN ASSUMED SUITABLE CONSTRUCTION LIVE LOAD. TAKING INTO CONSIDERATION THE PARTICULAR METHOD OF CONCRETE PLACEMENT TO BE USED ON THE PROJECT, SPAN AND LOAD CONDITIONS INDICATED BY THE SUPPORTING FRAMEWORK, OPENINGS, AND ACTUAL DECK PIECE SIZES UTILIZED, THE ASSUMED CONSTRUCTION LIVE LOAD SHALL NOT BE LESS THAN 20 PSF. THE CONTRACTOR SHALL NOT EXCEED THE ASSUMED CONSTRUCTION LIVE LOAD WITHOUT FIRST TAKING ALL NECESSARY SAFETY PRECAUTIONS SUCH AS SHORING, ETC. ADDITIONALLY, FOLLOW ALL APPLICABLE CITY, LOCAL AND AISI REQUIREMENTS FOR TEMPORARY CONSTRUCTION LOADINGS, IF MORE STRINGENT.
12. COMPOSITE METAL DECK DESIGN CRITERIA: (CELLULAR AND NON-CELLULAR DECKS)
 - A. METAL DECK (CONSTRUCTION LOADS ONLY)
 - 1A. MAXIMUM DECK DEFLECTION FOR CONCRETE WET WEIGHT SHALL BE LESS THAN OR EQUAL TO L/240, BUT NOT TO EXCEED 1/2", COMPUTED EITHER ON A SINGLE SPAN BASIS, OR ON LOADING ONLY ONE (1) SPAN FOR MULTIPLE SPAN CONDITIONS.
 - 2A. MAXIMUM STRESS IN DECK FOR CONCRETE WET WEIGHT AND CONSTRUCTION LOADS SHALL BE LESS THAN OR EQUAL TO 0.6 Fy (Fy = YIELD STRESS) COMPUTED ON A SINGLE SPAN BASIS, OR ON LOADING TWO ADJACENT SPANS FOR MULTIPLE SPAN CONDITIONS.
 - 3A. ALLOW FOR AN AVERAGE OF 5 PSF WET CONCRETE WEIGHT FOR CONCRETE LEVELING (AS PER SPECIFICATIONS) IN ADDITION TO THE SPECIFIED SLAB THICKNESS, FOR STRESS AND DEFLECTION CALCULATIONS.
 - 4A. PROVIDE DECK SHORING, IF REQUIRED, TO MEET THE CONDITIONS OF ITEMS NO. 1, 2, AND 3 ABOVE.
 - 5A. ALL FORM DECKS, FOR REINFORCED CONCRETE SLABS, SHALL BE DESIGNED FOR THE SAME CRITERIA STATED IN ITEMS NOS. 1, 2, 3, AND 4 ABOVE.
 - B. COMPOSITE METAL DECK SLAB, (FINAL DESIGN LOAD)
 - 1B. THE DECK SHALL DEVELOP FULL COMPOSITE ACTION FOR IMPOSED LOADS AS SHOWN IN THE DECK SCHEDULE.
 - 2B. MAXIMUM DEFLECTION UNDER SUPERIMPOSED LOAD SHALL BE LESS THAN OR EQUAL TO L/360.
 - 3B. MAXIMUM STRESS IN DECK FOR TOTAL LOAD USING APPROPRIATE NON-COMPOSITE AND COMPOSITE PROPERTIES SHALL BE LESS THAN OR EQUAL TO 0.75 Fy.
 - 4B. MAXIMUM ALLOWABLE STRESS IN CONCRETE SHALL BE AS PER ACI 318, LATEST EDITION.
 - 5B. THE COMPOSITE DECK SHALL BE DESIGNED ON THE BASIS OF OBTAINING A MINIMUM FACTOR OF SAFETY OF 2 FOR THE TOTAL SUPERIMPOSED LOAD ON A SINGLE SPAN BASIS. TEST RESULTS SHALL BE FURNISHED TO SUBSTANTIATE THE FACTOR OF SAFETY.
13. SHEAR STUDS
 - A. ALL SHEAR STUD PLACEMENT DIAGRAMS SHOWN REPRESENT IDEALIZED CONDITIONS, AND ACTUAL FRAMING CONFIGURATIONS MAY REQUIRE ADDITIONAL MODIFICATIONS AND INTERPRETATIONS.
 - B. THE CONTRACTOR SHALL SUBMIT CHECKED SHOP DRAWINGS INDICATING THE SHEAR STUD LAYOUT, INCLUDING SIZE, SPACING AND GROUPING, FOR EACH BEAM.
 - C. THE NUMBER OF STUDS PER BEAM AS SHOWN ON THE DRAWINGS INCLUDES REDUCTIONS BASED ON RIB WIDTH, NUMBER OF STUDS PER CELL, DECK-RIB ORIENTATION, AND SLAB THICKNESS AS PER AISC SPECIFICATIONS FOR COMPOSITE CONSTRUCTION, LATEST EDITION. THE ASSUMED ALLOWABLE HORIZONTAL SHEAR DESIGN VALUE (ASD) FOR A NOMINAL 3/4"-DIA X 6" LONG STUD IS 10.5 KIPS PER STUD FOR NON-CELLULAR DECK WITH LIGHTWEIGHT CONCRETE AND 12.5 KIPS PER STUD FOR NON-CELLULAR DECK WITH NORMAL WEIGHT CONCRETE. THE ASSUMED DECK NOMINAL RIB HEIGHT IS 3", AND THE ASSUMED AVERAGE CONCRETE RIB WIDTH IS 6". THE METAL DECK CONTRACTOR SHALL SUBMIT LOAD TEST DATA VERIFYING THE HORIZONTAL SHEAR CAPACITY OF SHEAR STUDS FOR DIFFERENT DECK TYPES AND CELL CONFIGURATIONS, AS DETAILED ON THE SHOP DRAWINGS. IF ANY OF THE ASSUMPTIONS LISTED ABOVE ARE VIOLATED, THE METAL DECK CONTRACTOR SHALL SUBMIT STRUCTURAL DESIGN CALCULATIONS, PREPARED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK, BASED ON THE DETAILED SHOP DRAWINGS, PROVIDE ALL EXTRA STUDS AS MAY BE REQUIRED TO ACHIEVE THE TOTAL HORIZONTAL SHEAR CAPACITY.
 - D. MAXIMUM SPACING OF STUDS SHALL BE 12" ON CENTER.
 - E. SHEAR STUDS SHALL BE EITHER WELDED DIRECTLY TO STRUCTURAL STEEL ELEMENTS AT LOCATIONS WITHOUT DECK OR WELDED TYPE THROUGH THE METAL DECK BY PREQUALIFIED METHODS. IF THROUGH DECK WELDING IS UNFEASIBLE, THE STUDS SHALL BE INSTALLED IN PRE-PUNCHED HOLES IN THE METAL DECK. THE CONTRACTOR SHALL ESTABLISH SPECIFIC WELDING REQUIREMENTS FOR EACH THICKNESS OF FRAMING ELEMENT AND/OR GAGE OF METAL DECK.
14. THE OWNER'S TESTING LABORATORY SHALL INSPECT AND TEST ALL METAL DECK AND SHEAR STUD INSTALLATION WORK. SEE TECHNICAL SPECIFICATION SECTION 05310, "STEEL DECK" FOR ADDITIONAL TESTING AND INSPECTION REQUIREMENTS. PERFORM STANDARD BEND TEST ON 10% OF STUDS AND THAT IF AND WHEN DEFICIENT STUDS ARE FOUND, ALL STUDS ON THAT BEAM ARE TO BE TESTED. AT LEAST TWO STUDS PER BEAM ARE TO GET STANDARD BEND TEST.
15. CONDUIT SHALL NOT BE PLACED IN STRUCTURAL SLABS.
16. SEE SPECIFICATION SECTION 05310, "STEEL DECK", FOR ADDITIONAL REQUIREMENTS.



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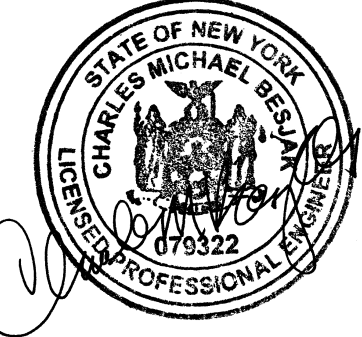
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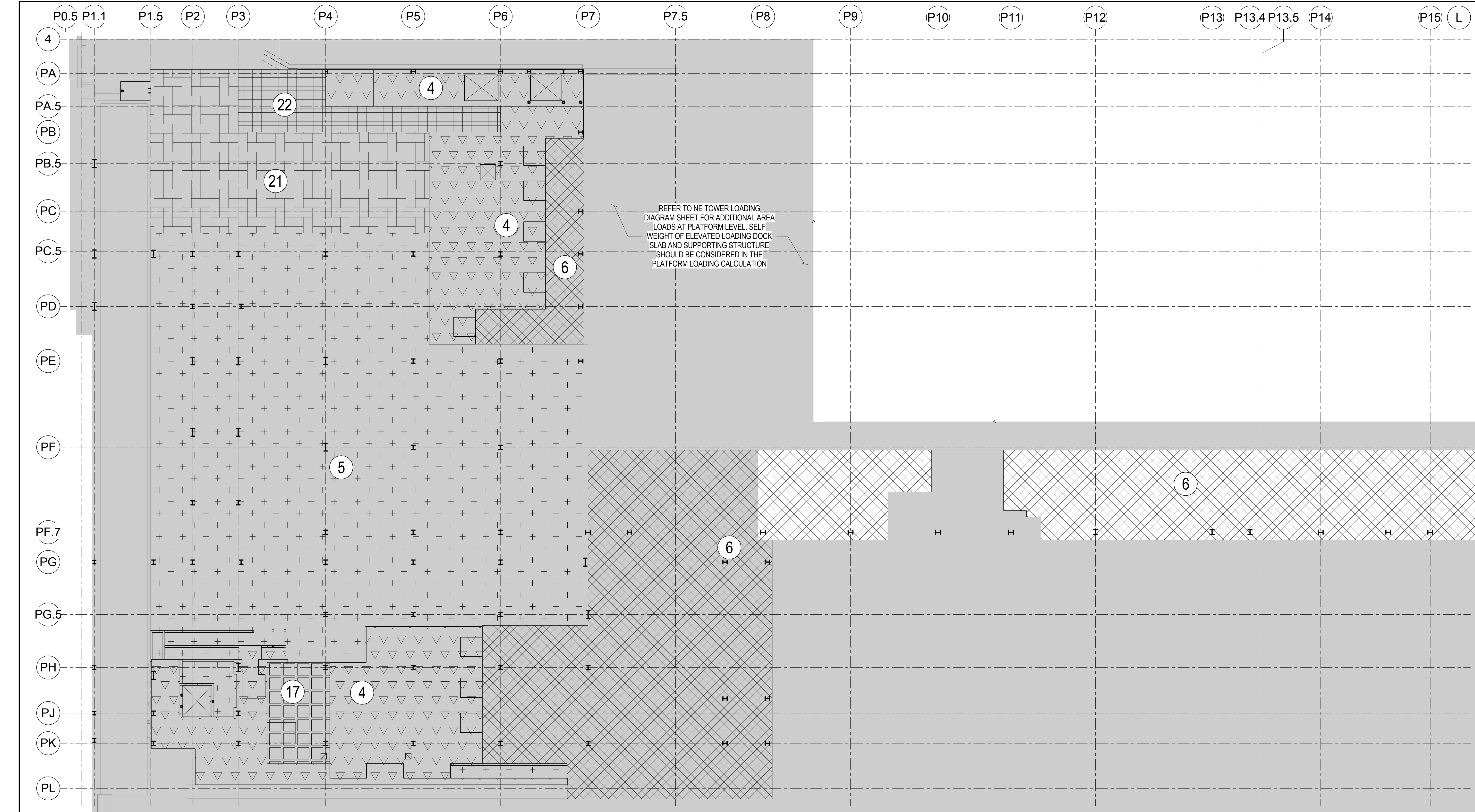
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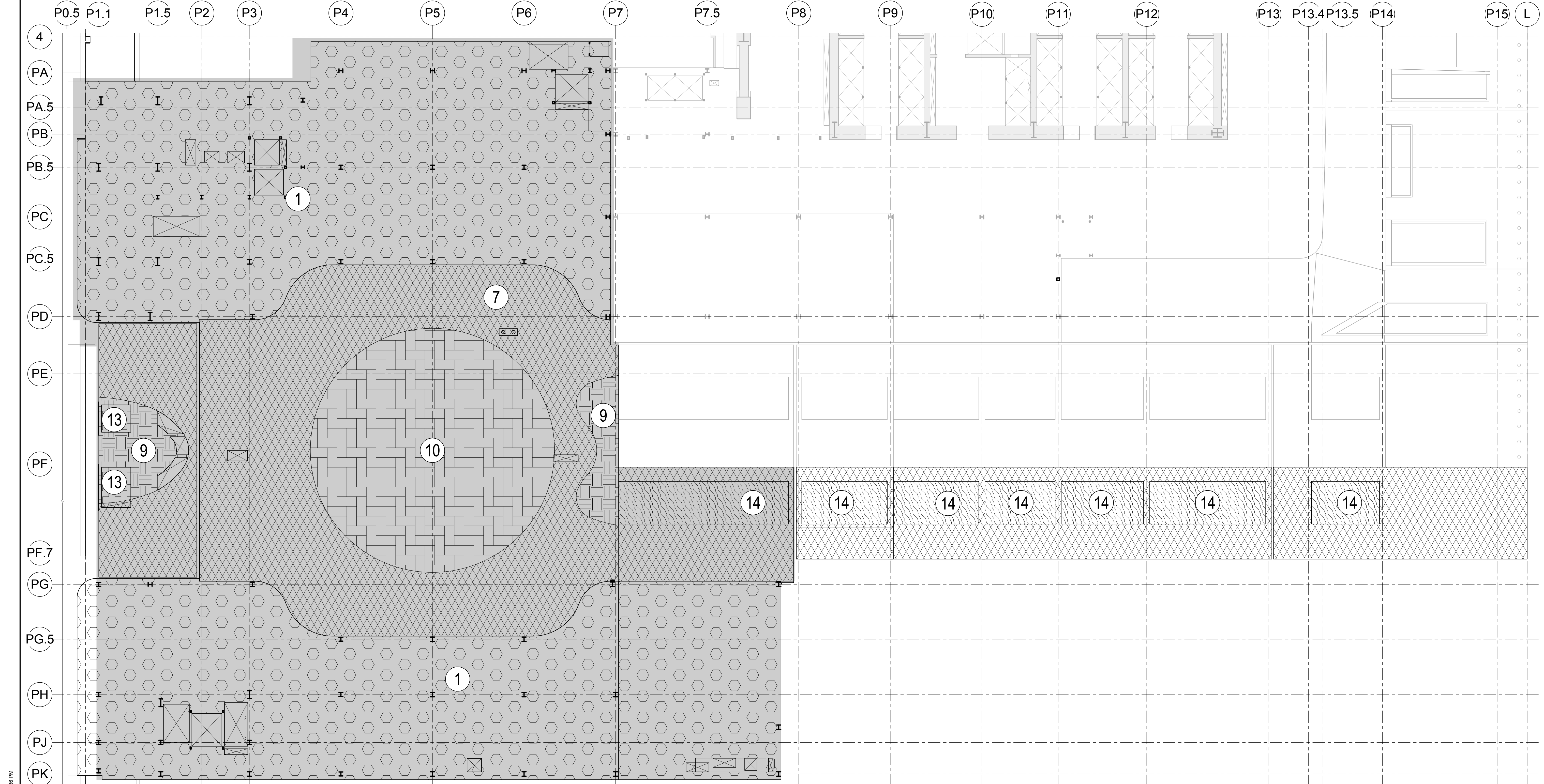
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STRUCTURAL
STEEL AND
METAL DECK
NOTES

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File No.: S-021 Page No.:



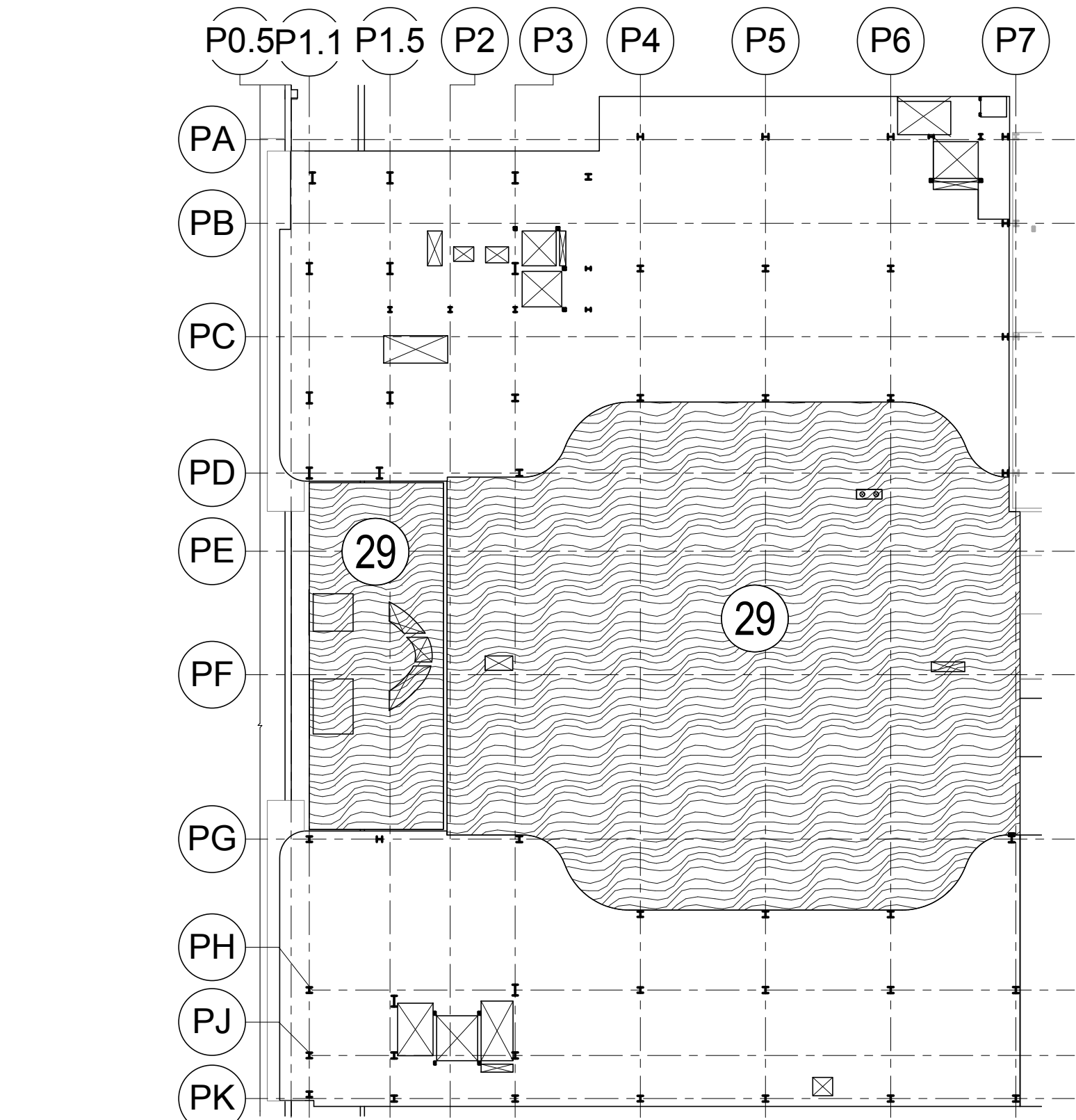
1 CELLAR B LOADING DIAGRAM
NOT TO SCALE



2 PLAZA LOADING DIAGRAM
NOT TO SCALE

LOADING SCHEDULE					
KEY	FUNCTION	SELF-WEIGHT PSF	SDL PSF	LL PSF	SL PSF
1	RETAIL	60	60	100	0
2	TERRACE	145	145	100	25
3	ROOF	55	55	30	10
4	ELEVATED SLAB AT LOADING DOCK	120	20	125	-
5	PARKING	0	0	40	-
6	PARKING/DRIVEWAY WITH TRUCKS	0	0	250	-
7	PLAZA	110	110	100	25
8	AMENITY SPACE	145	145	100	-
9	LANDSCAPE (NO TREES)	370	370	50	25
10	CENTRAL PLAZA ASSEMBLY	140	140	150	25
11	MECHANICAL	20	20	100	-
12	TERRACE-WITHOUT PLANTERS	75	75	100	25
13	TREE PITS	525	525	50	25
14	HEAVY TREE PITS	660	660	50	25
15	EGRESS	20	20	100	-
16	PLENUM	0	0	20	-
17	OFFICE	120	35	50	-
18	TERRACE PAVERS	50	50	100	25
19	TERRACE PLANTERS	220	220	50	25
20	LIGHT MECHANICAL	120	45	120	-
21	ELEVATED AREA - AMENITIES	100	20	50	-
22	ELEVATED AREA - CORRIDORS	100	20	100	-
23	3'-6" TERRACE PLANTERS	315	315	50	25
24	METAL TRELLIS	100	100	100	25
25	TREE PIT AT TERRACE	250	250	50	25
26	BACK OF HOUSE - KITCHEN	50	50	50	-
27	TERRACE BAR	50	50	50	-
28	TERRACE BAR ROOF	60	60	100	25
29	EMR	50	50	150	-

NOTE:
1. THE SLAB FOR OPEN PLAZA (MARKED AS #7) IS DESIGNED TO CARRY AXLE LOADS FROM THE STAGE SL100 AND TRUCK EQUIVALENT TO FORD F-250. MAX. AXLE LOAD SUPPORTED BY SLAB IS 14 KIPS (7 KIPS PER TIRE). POSTS SUPPORTING SL100 IN DEPLOYED FORM SHALL HAVE A MINIMUM BEARING AREA OF 36 IN2 (6'x6'). MAXIMUM LOAD ALLOWED FOR POSTS 1.5 KIPS. COORDINATE FINAL LOADING WITH NORTH WEST TOWER PROJECT.
2. REFER TO LANDSCAPE DRAWINGS FOR FINAL LOCATION OF PLANTERS AND TRELLIS LOCATION AT NORTH RETAIL TERRACE.



LOADING SCHEDULE			
KEY	FUNCTION	SDL PSF	LL PSF
29	CONSTRUCTION LOADS - TYP.	10	200

3 PLAZA LEVEL CONSTRUCTION LOADING DIAGRAM
1/32" = 1'-0"

SHADING KEY PLAN
NOT IN SCOPE
GIRDER WEB BELOW
NEW CONCRETE STRUCTURE

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Key Plan:
33RD STREET
31ST STREET
9TH AVENUE

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LOADING
DIAGRAMS -
CELLAR AND
PLAZA LEVEL

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File No.: S-050

B-SCAN Sheet No.: S-060.00
Sheet No.: S-050
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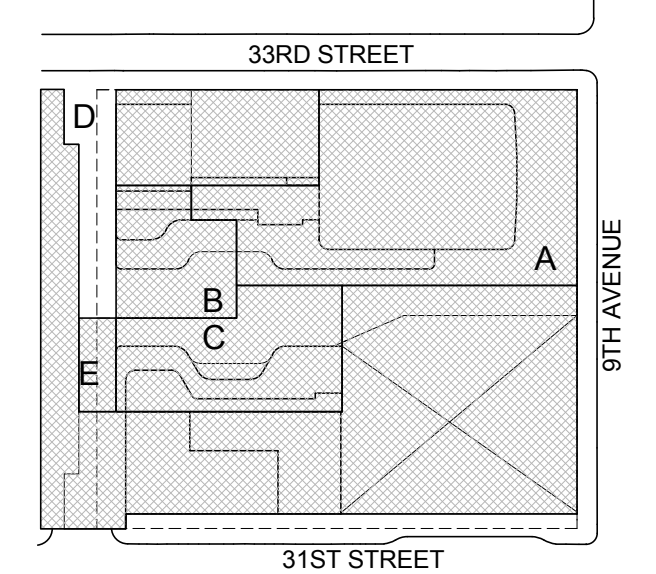
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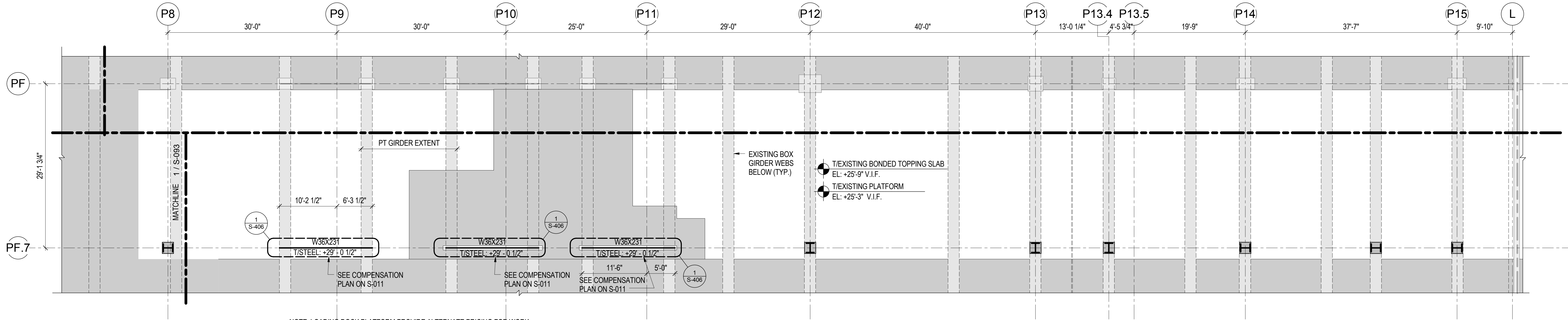
**PLATFORM PLAN
- PART A**

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NOTE: LOADING DOCK PLATFORM PROVIDE ALTERNATE PRICING FOR WORK

1 PLATFORM PLAN - PART A

1/8" = 1'-0"

GENERAL NOTES:

- BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
- BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
- SLAB EDGE DIMENSION AT OPENING = 7", UNLESS NOTED OTHERWISE.
- REFER TO SHEET S-000 FOR STRUCTURAL SYSTEM DESCRIPTION.
- REFER TO SHEET S-001 FOR TYPICAL STRUCTURAL SYMBOLS AND ABBREVIATIONS.
- REFER TO SHEET S-002 FOR STRUCTURAL CONCRETE NOTES.
- REFER TO SHEET S-003 FOR STRUCTURAL STEEL AND METAL DECK NOTES.
- REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
- REFER TO SHEET S-300 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS, & DETAILS.
- REFER TO SHEETS S-401, S-405 AND S-406 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
- REFER TO SHEETS S-500 AND S-501 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.
- REFER TO SHEETS S-510 AND S-511 FOR STRUCTURAL STEEL SECTIONS AND DETAILS.
- ALL FOOTINGS CENTERED ON COLUMNS U.N.O.

SHADING KEY PLAN

- NOT IN SCOPE
- GIRDER WEB BELOW
- NEW CONCRETE STRUCTURE



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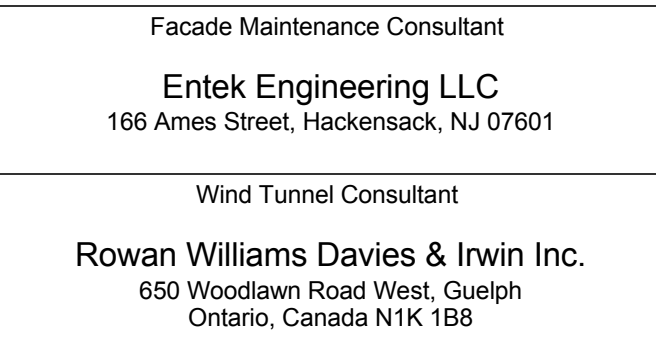
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Key Plan:



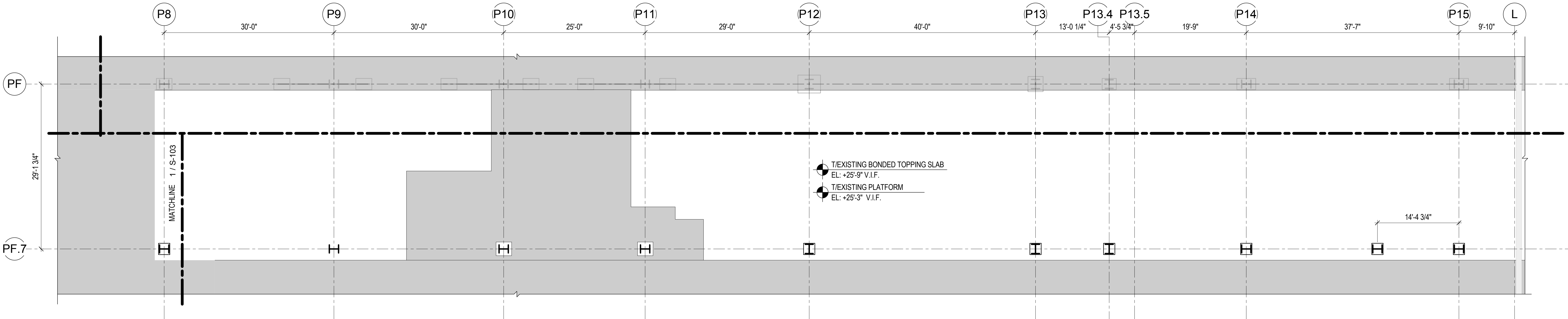
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Date: 02/16/2018
Scale: As Indicated
File No: S-101

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Sheet No.: S-101
Page No.:

CELLAR B
FRAMING PLAN -
PART A



NOTE: LOADING DOCK PLATFORM PROVIDE ALTERNATE PRICING FOR WORK

1 CELLAR B FRAMING PLAN - PART A
1/8" = 1'-0"

GENERAL NOTES:

- BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
- BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
- SLAB EDGE DIMENSION AT OPENING = 7", UNLESS NOTED OTHERWISE.
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- REFER TO SHEET S-300 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS, & DETAILS.
- REFER TO SHEETS S-401 THROUGH S-407 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
- REFER TO SHEETS S-500 THROUGH S-502 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.
- REFER TO SHEETS S-510 THROUGH S-515 FOR STRUCTURAL STEEL SECTIONS AND DETAILS.
- FOR EXTERIOR EDGE OF SLAB DIMENSION, SEE A-040 THROUGH A-042, U.N.O.

SHADING KEY PLAN

- NOT IN SCOPE
- GIRDER WEB BELOW
- NEW CONCRETE STRUCTURE



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Code Consultants Professional Engineers PC
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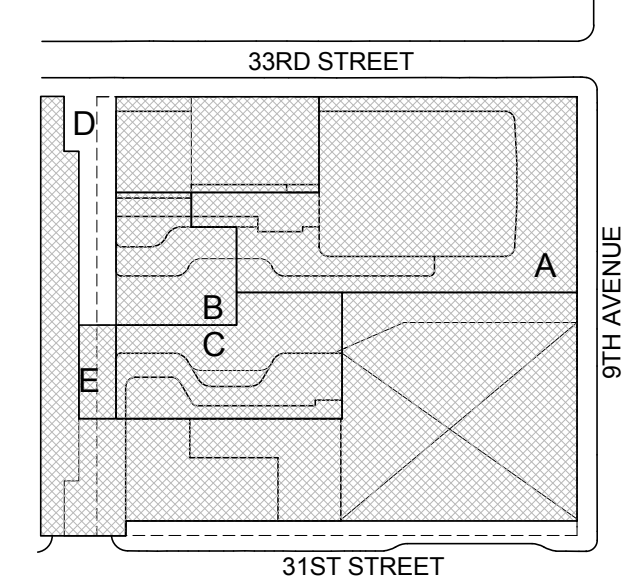
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
680 Woodlawn Road West, Guelph, Ontario, Canada N1K 1B8

Key Plan:



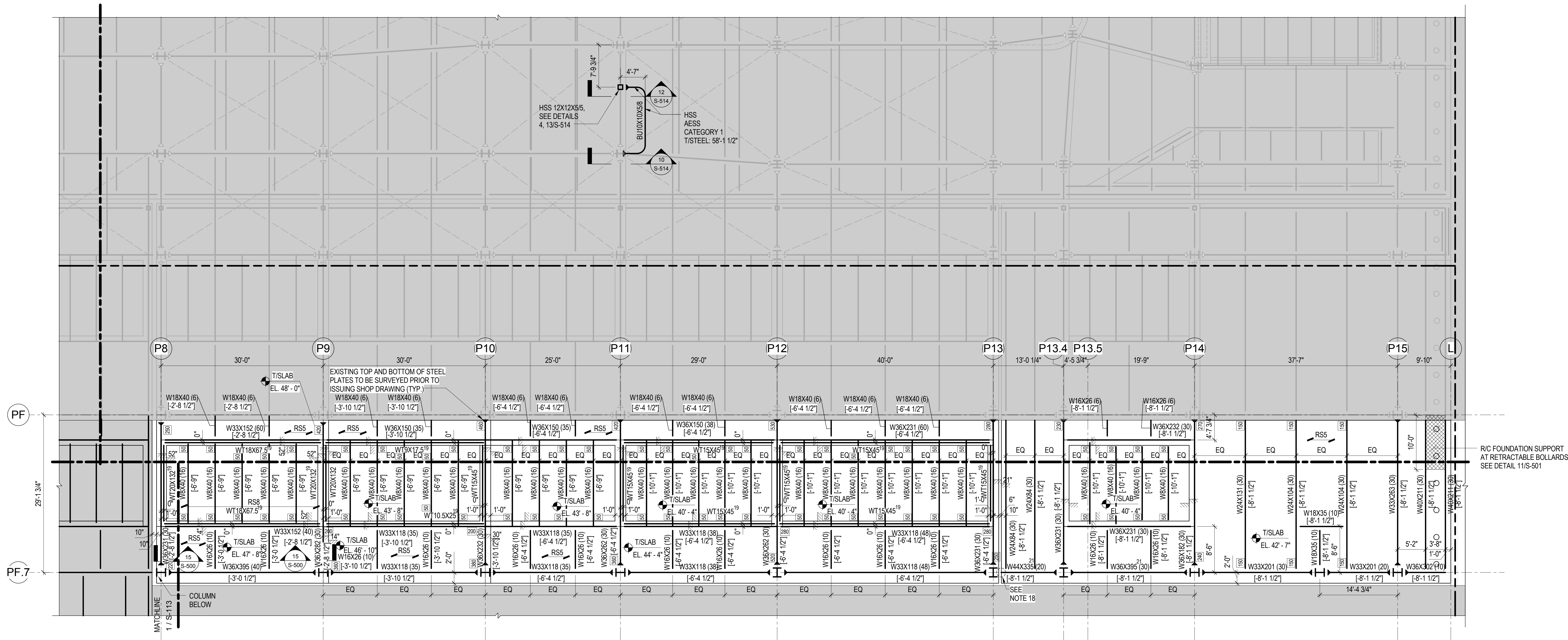
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Project No.: 211100
B-SCAN Sheet No.: S-111.00
Date: 02/16/2018
Scale: As Indicated
File No.: S-111

PLAZA LEVEL
FRAMING PLAN -
PART A

Project No.: 211100
B-SCAN Sheet No.: S-111.00
Date: 02/16/2018
Scale: As Indicated
File No.: S-111



1 PLAZA LEVEL PLAN - PART A
1/8" = 1'-0"

GENERAL NOTES:

- NOTES:
- TOP OF SLAB ELEVATION = 50' - 5", UNLESS NOTED OTHERWISE.
- TOP OF STEEL ELEVATION = 49' - 9 1/2" UNLESS NOTED OTHERWISE BY [X-X] OR [Y-Y].
- WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
- BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
- BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
- SLAB EDGE DIMENSION AT OPENING = 7", UNLESS NOTED OTHERWISE.
- REFER TO SHEET S-000 FOR STRUCTURAL SYSTEM DESCRIPTION.
- REFER TO SHEET S-001 FOR TYPICAL STRUCTURAL SYMBOLS AND ABBREVIATIONS.
- REFER TO SHEET S-002 FOR STRUCTURAL CONCRETE NOTES.
- REFER TO SHEET S-003 FOR STRUCTURAL STEEL AND METAL DECK NOTES.
- REFER TO SHEETS S-201 THROUGH S-205 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
- REFER TO SHEET S-210 FOR ESTIMATED HORIZONTAL MOVEMENT AT PLAZA LEVEL.
- REFER TO SHEET S-300 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS, & DETAILS.
- REFER TO SHEET S-400 FOR ESTIMATED LOADS ONTO PLATFORM.
- REFER TO SHEETS S-401, THROUGH S-407 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
- REFER TO SHEET S-415 AND S-416 FOR FOUNDATION SCHEDULE AND DETAILS.
- REFER TO SHEETS S-500 THROUGH S-502 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.
- REFER TO SHEETS S-510 THROUGH S-515 FOR STRUCTURAL STEEL SECTIONS AND DETAILS.
- PROVIDE SLIDING BEARING SUPPORT AT TOP OF COLUMN. SEE S-410 FOR DETAILS AND SCHEDULE.
- WT SHAPE TO BE WELDED TO THE UNDERSIDE OF BEAM SECTION ABOVE.
- ALL STEEL MEMBERS EXPOSED TO EXTERIOR WEATHER TO BE PAINTED AS PER ARCH SPECIFICATIONS, SEE NOTE ON S-021.
- REFER TO MOMENT CONNECTION SCHEDULE ON S-510.

SHADING KEY PLAN

- NOT IN SCOPE
- GRID WEB BELOW
- NEW CONCRETE STRUCTURE

1 ESTIMATED HORIZONTAL MOVEMENT AT PLAZA LEVEL

1/16" = 1'-0"

NOTES:

- "E-W MOVEMENT" CORRESPONDS TO A TRANSLATION IN THE LEFT-TO-RIGHT DIRECTION ON THE PLAN (I.E. PARALLEL TO THE GRID "P5").
- "N-S MOVEMENT" CORRESPONDS TO A TRANSLATION IN THE UP-AND-DOWN DIRECTION ON THE PLAN (I.E. PARALLEL TO GRID "P5").
- INDICATED MOVEMENTS SHOW THE EXPECTED PLATFORM MOVEMENT (PROVIDED BY PLATFORM ENGINEER) FOR SEISMIC AND THERMAL MOVEMENTS FIRST, THEN THE EXPECTED PLAZA MOVEMENTS (CALCULATED BY SOM). TOTAL MOVEMENT OF THE JOINT WOULD BE THE SUM OF THE TWO VALUES.
- THE ACTUAL SPACE REQUIRED BETWEEN ADJACENT STRUCTURES TO ACCOMMODATE THE INDICATED MOVEMENTS MUST INCLUDE THE COMPRESSIBILITY RATIO OF THE EXPANSION JOINT ASSEMBLY. THIS WILL LIKELY REQUIRE 2X THE GAP INDICATED HERE.

SHADING KEY PLAN

- NOT IN SCOPE
- GIRDER WEB BELOW
- NEW CONCRETE STRUCTURE

EXISTING 450 W. 33RD ST BUILDING

FUTURE NW TOWER

EXISTING LOFT BUILDING

NE TOWER

FUTURE SE TOWER

EXISTING SW TOWER

±5.75' TOTAL E-W HORIZ.
MOVEMENT AT THIS JOINT
(±4.25' E-W SEISMIC MOVEMENT +
±1.5' E-W THERMAL MOVEMENT)

±3.75' TOTAL N-S HORIZ.
MOVEMENT AT THIS JOINT
(±2.0' N-S SEISMIC MOVEMENT +
±1.75' N-S THERMAL MOVEMENT)

±6.5' TOTAL N-S HORIZ.
MOVEMENT AT THIS JOINT
(±2.1' N-S SEISMIC MOVEMENT +
±4.4' N-S THERMAL MOVEMENT)

±7.25' TOTAL E-W HORIZ.
MOVEMENT AT THIS JOINT
(±5.5' E-W SEISMIC MOVEMENT +
±1.75' E-W THERMAL MOVEMENT)

±5.5' TOTAL E-W HORIZ.
MOVEMENT AT THIS JOINT
(±4.0' E-W SEISMIC MOVEMENT +
±1.5' E-W THERMAL MOVEMENT)

±5.5' TOTAL E-W HORIZ.
MOVEMENT AT THIS JOINT
(±4.0' E-W SEISMIC MOVEMENT +
±1.5' E-W THERMAL MOVEMENT)

±2.3' TOTAL N-S HORIZ.
MOVEMENT AT THIS JOINT
(±1.15' N-S SEISMIC MOVEMENT +
±1.2' N-S THERMAL MOVEMENT)

±3.75' TOTAL N-S HORIZ.
MOVEMENT AT THIS JOINT
(±2.0' N-S SEISMIC MOVEMENT +
±1.75' N-S THERMAL MOVEMENT)

±5.5' TOTAL N-S HORIZ.
MOVEMENT AT THIS JOINT
(±4.0' N-S SEISMIC MOVEMENT +
±1.5' N-S THERMAL MOVEMENT)

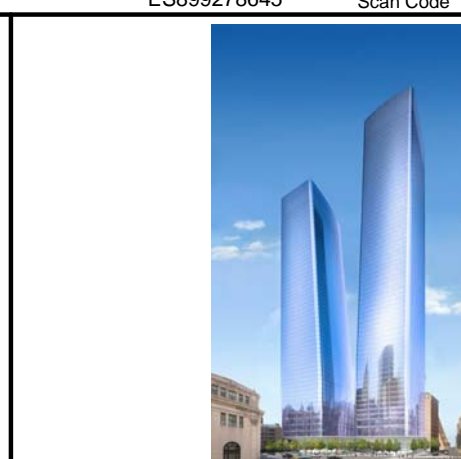
±5.0' TOTAL E-W HORIZ.
MOVEMENT AT THIS JOINT
(±3.5' E-W SEISMIC MOVEMENT +
±1.5' E-W THERMAL MOVEMENT)

±5.0' TOTAL N-S HORIZ.
MOVEMENT AT THIS JOINT
(±3.0' N-S SEISMIC MOVEMENT +
±2.0' N-S THERMAL MOVEMENT)

±4.5' TOTAL N-S HORIZ.
MOVEMENT AT THIS JOINT
(±3.5' N-S SEISMIC MOVEMENT +
±1.0' N-S THERMAL MOVEMENT)

±2.75' TOTAL E-W HORIZ.
MOVEMENT AT THIS JOINT
(±1.75' E-W SEISMIC MOVEMENT +
±1.0' E-W THERMAL MOVEMENT)

±1.5' TOTAL E-W HORIZ.
MOVEMENT AT THIS JOINT
(±1.0' E-W SEISMIC MOVEMENT +
±0.5' E-W THERMAL MOVEMENT)



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680 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

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1 02/16/2018 ISSUED FOR BUILDING PERMIT

No. Date Description

Sheet Name:

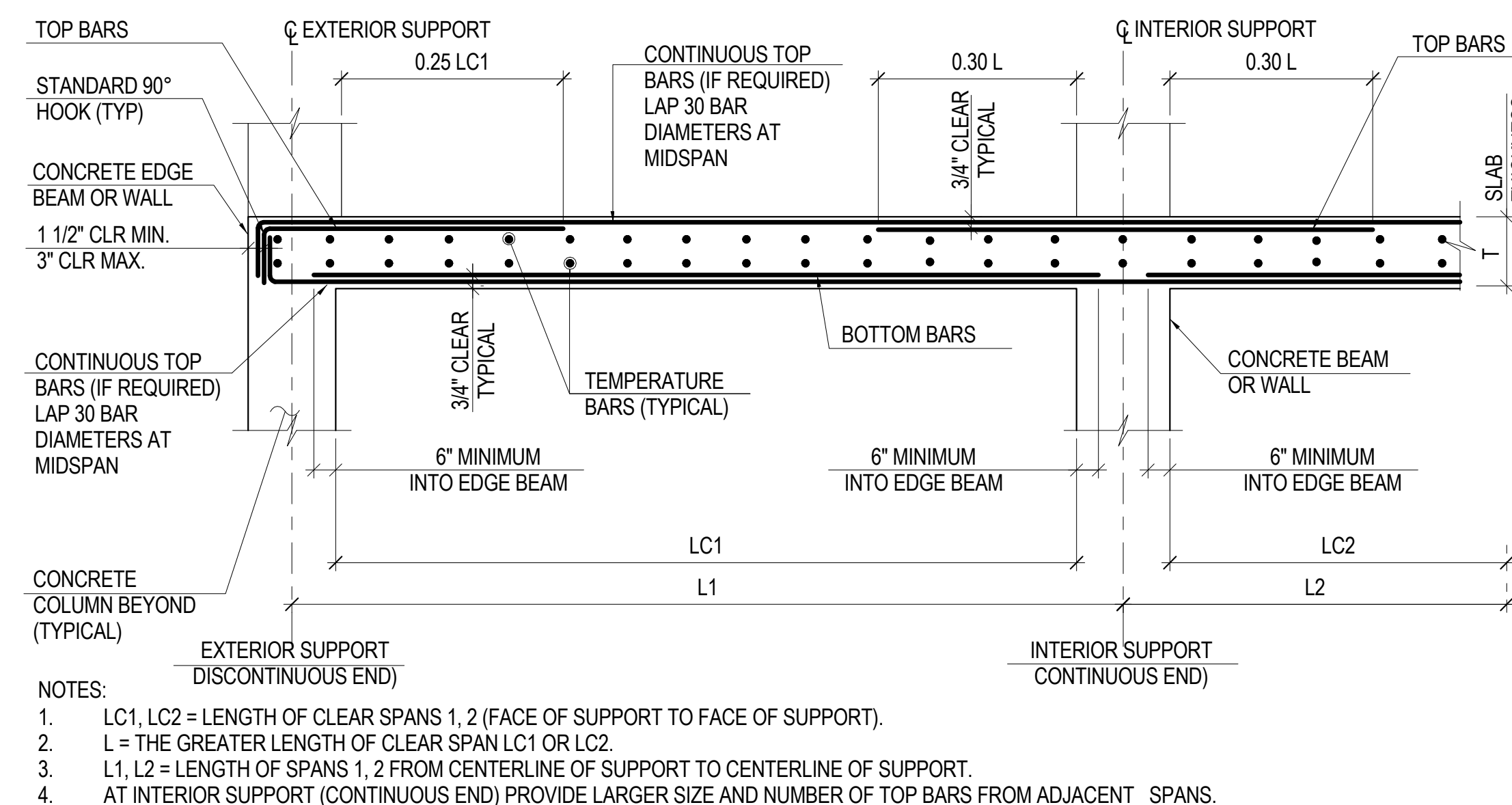
ESTIMATED
HORIZONTAL
MOVEMENT AT
PLAZA LEVEL

Project No.: 211157 B-SCAN Sheet No.: S-210.00

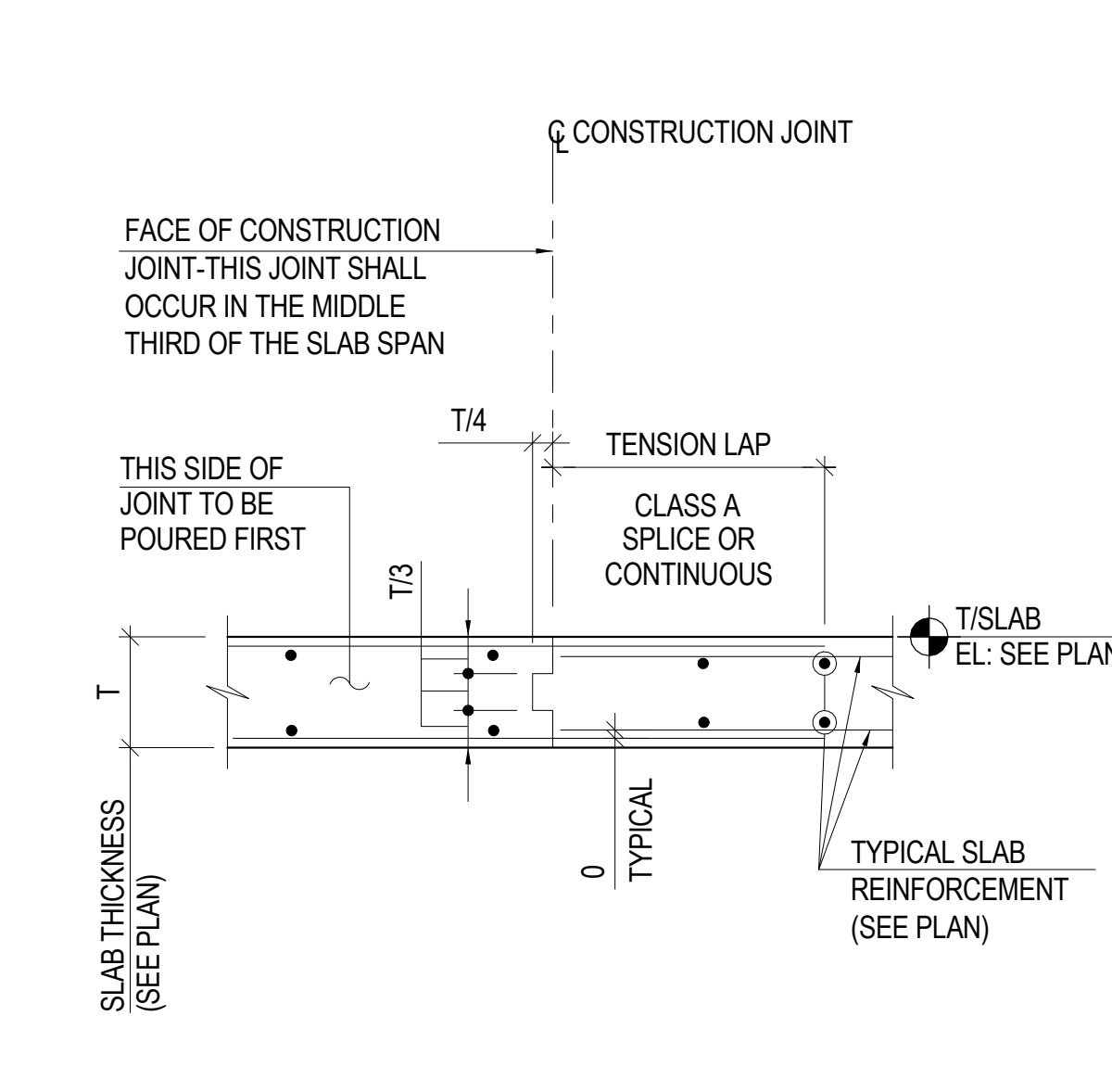
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Scale: As Indicated Page No.: S-210

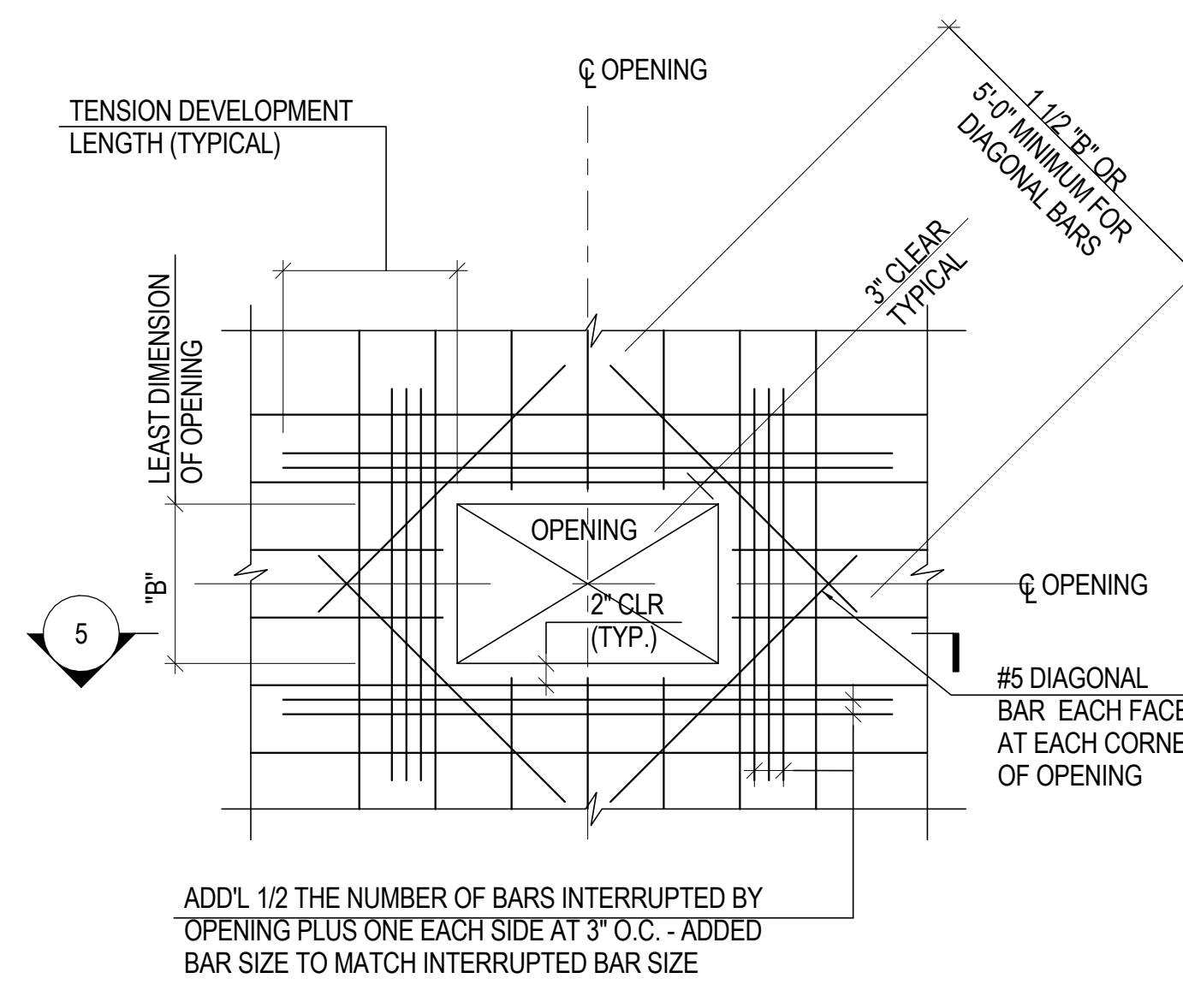
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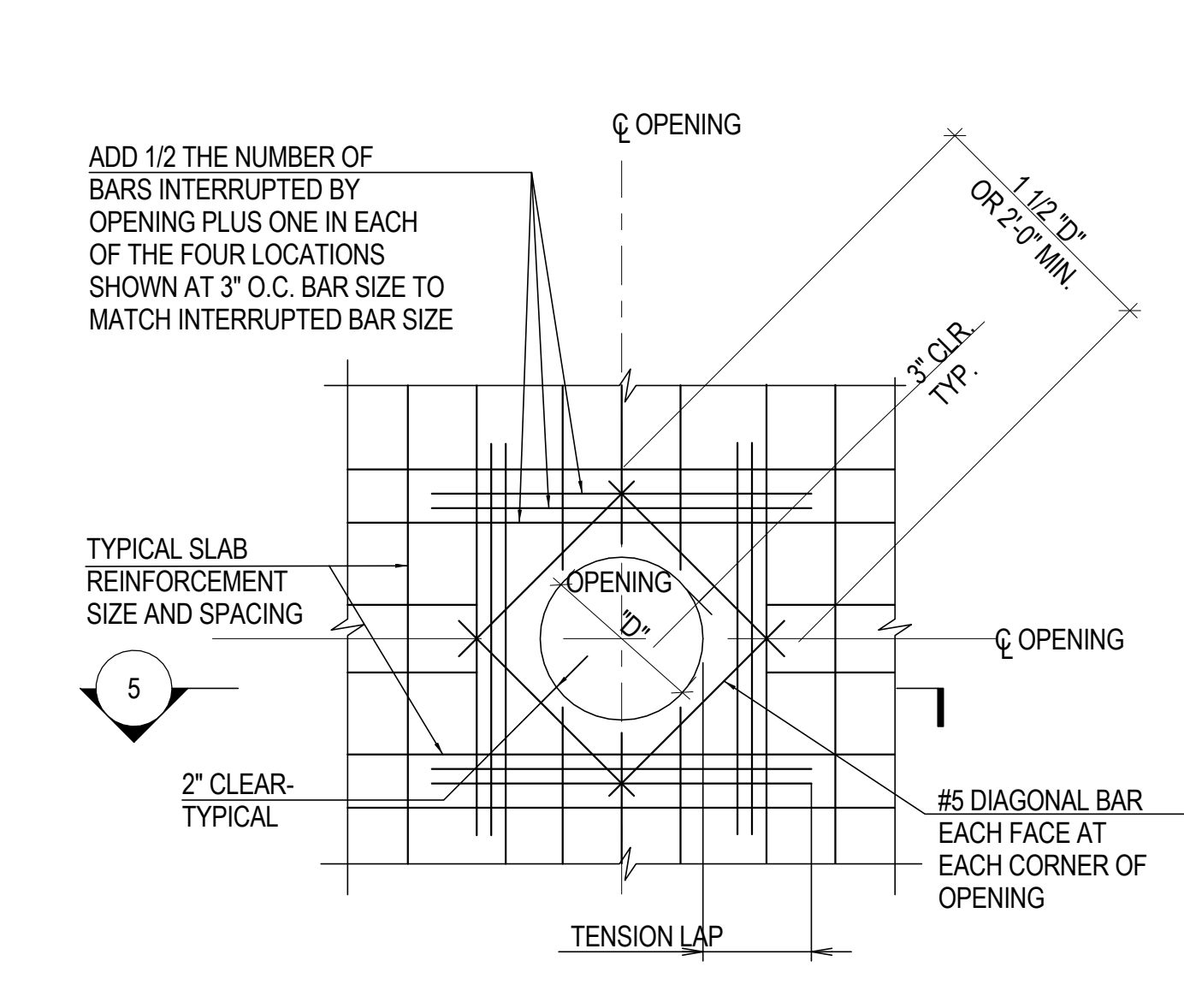
1 TYPICAL ONE WAY SLAB
NOT TO SCALE



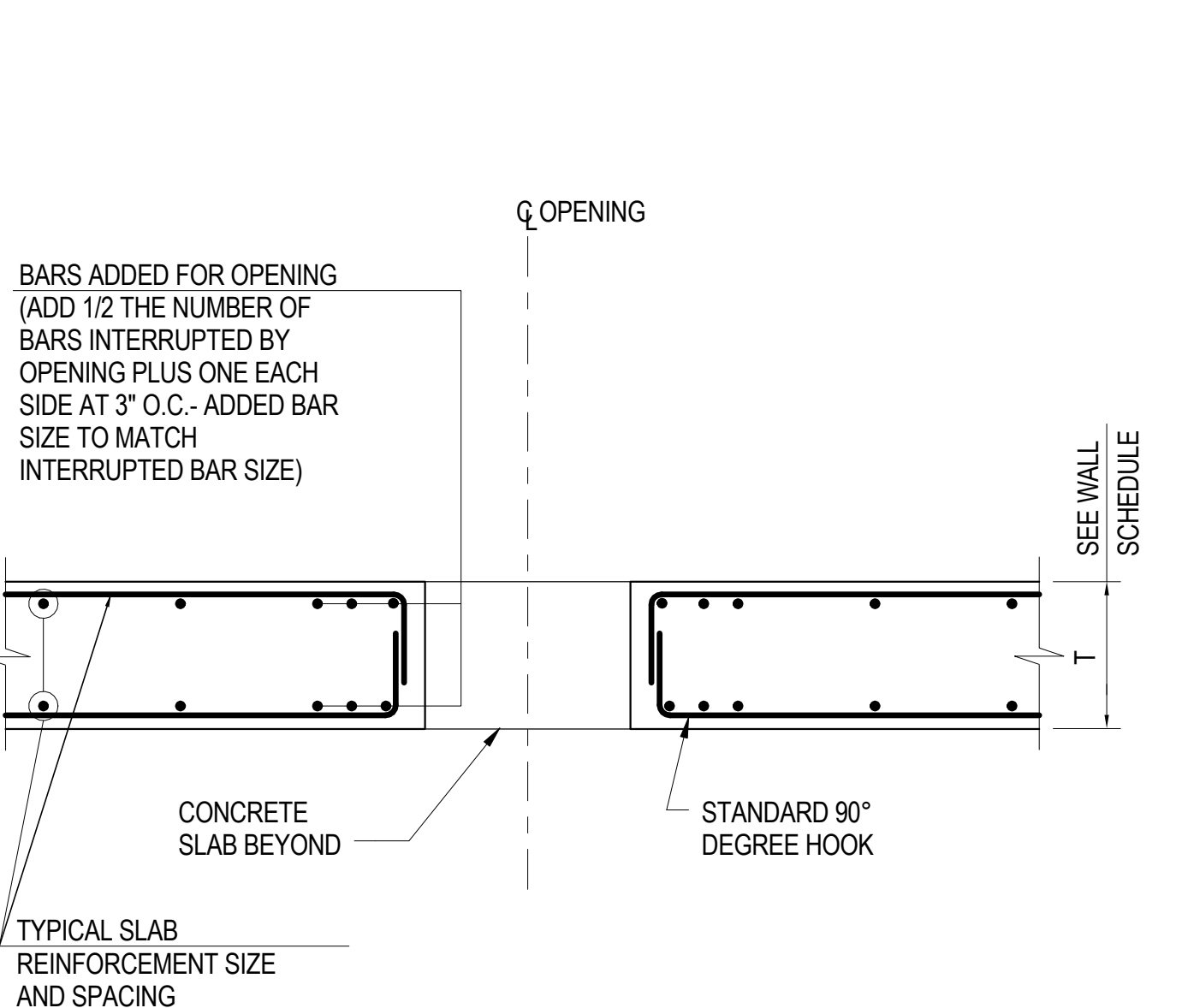
2 TYPICAL CONCRETE SLAB CONSTRUCTION JOINT
NOT TO SCALE



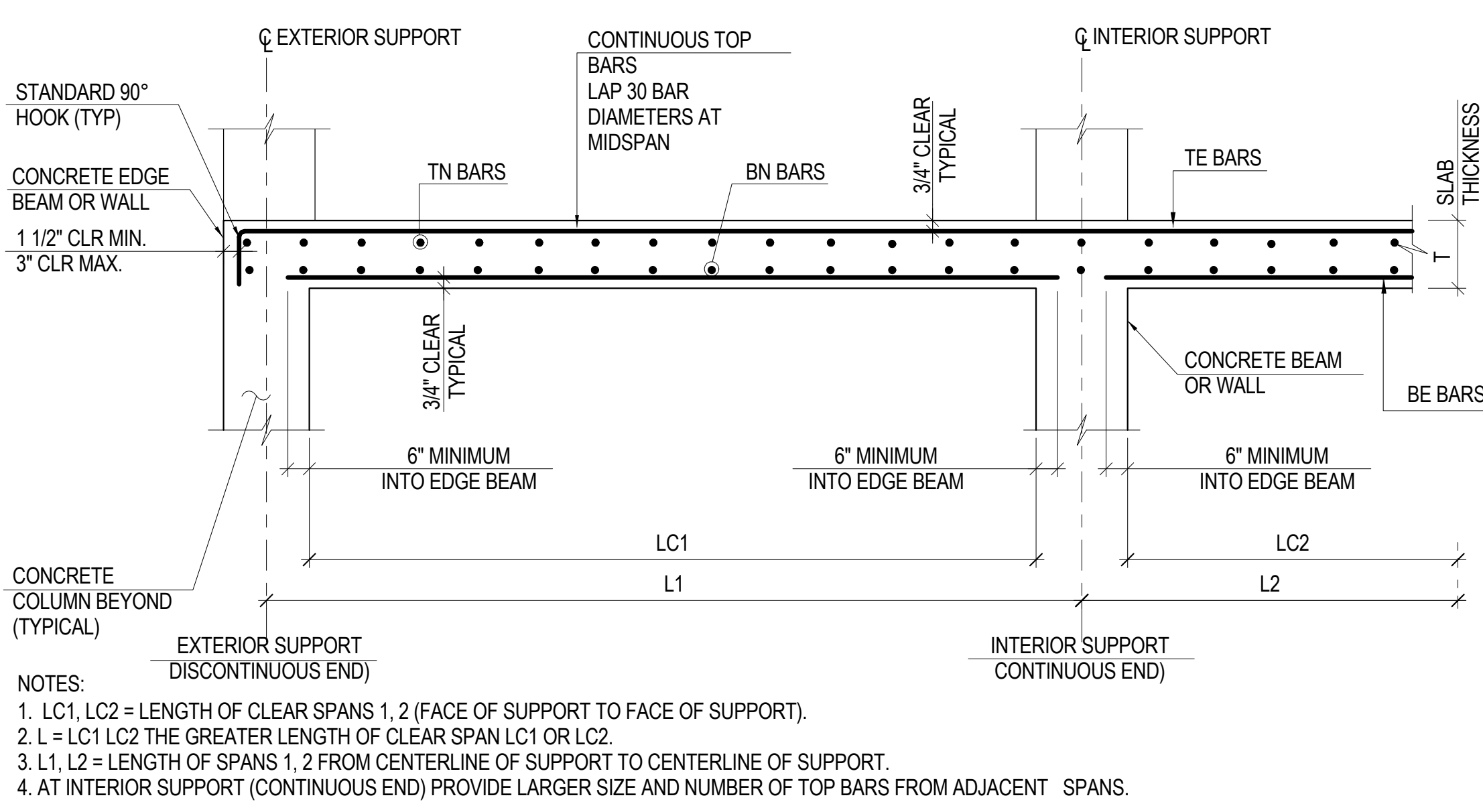
3 TYPICAL MEP RECTANGULAR SLAB OPENING DETAIL
NOT TO SCALE



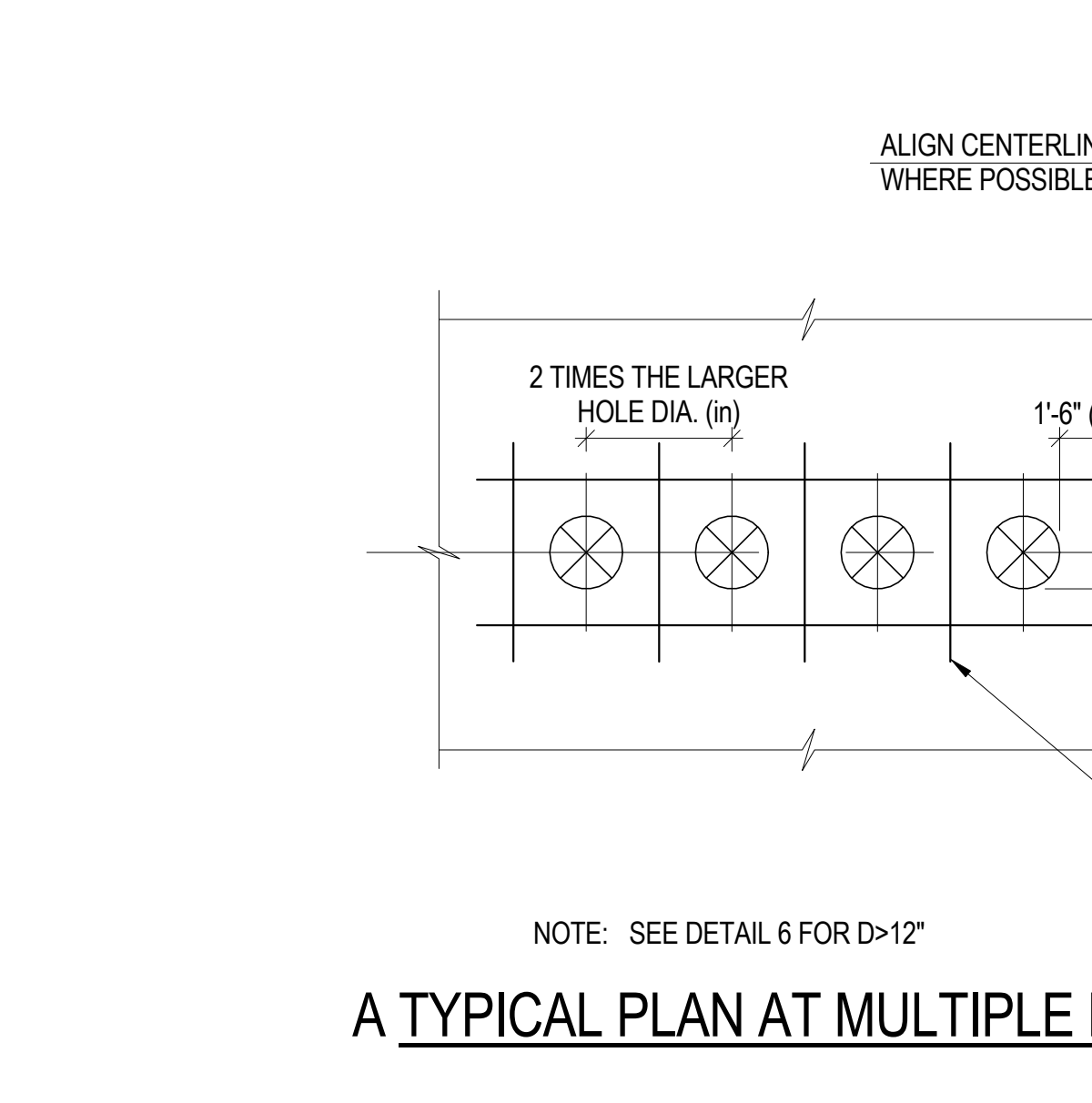
4 TYPICAL MEP CIRCULAR SLAB OPENING DETAIL D > 12"
NOT TO SCALE



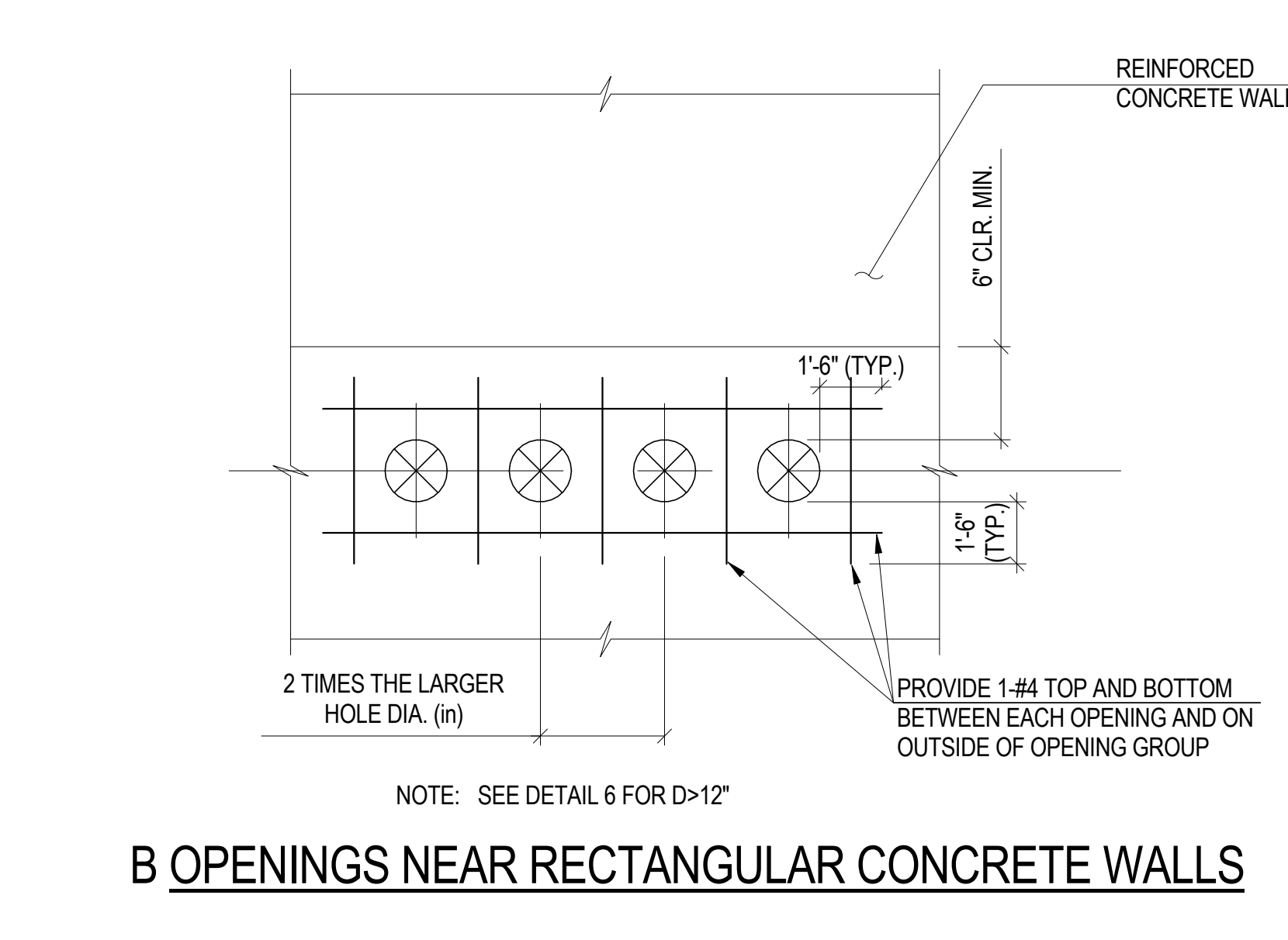
5 TYPICAL SECTION AT MEP SLAB OPENING
NOT TO SCALE



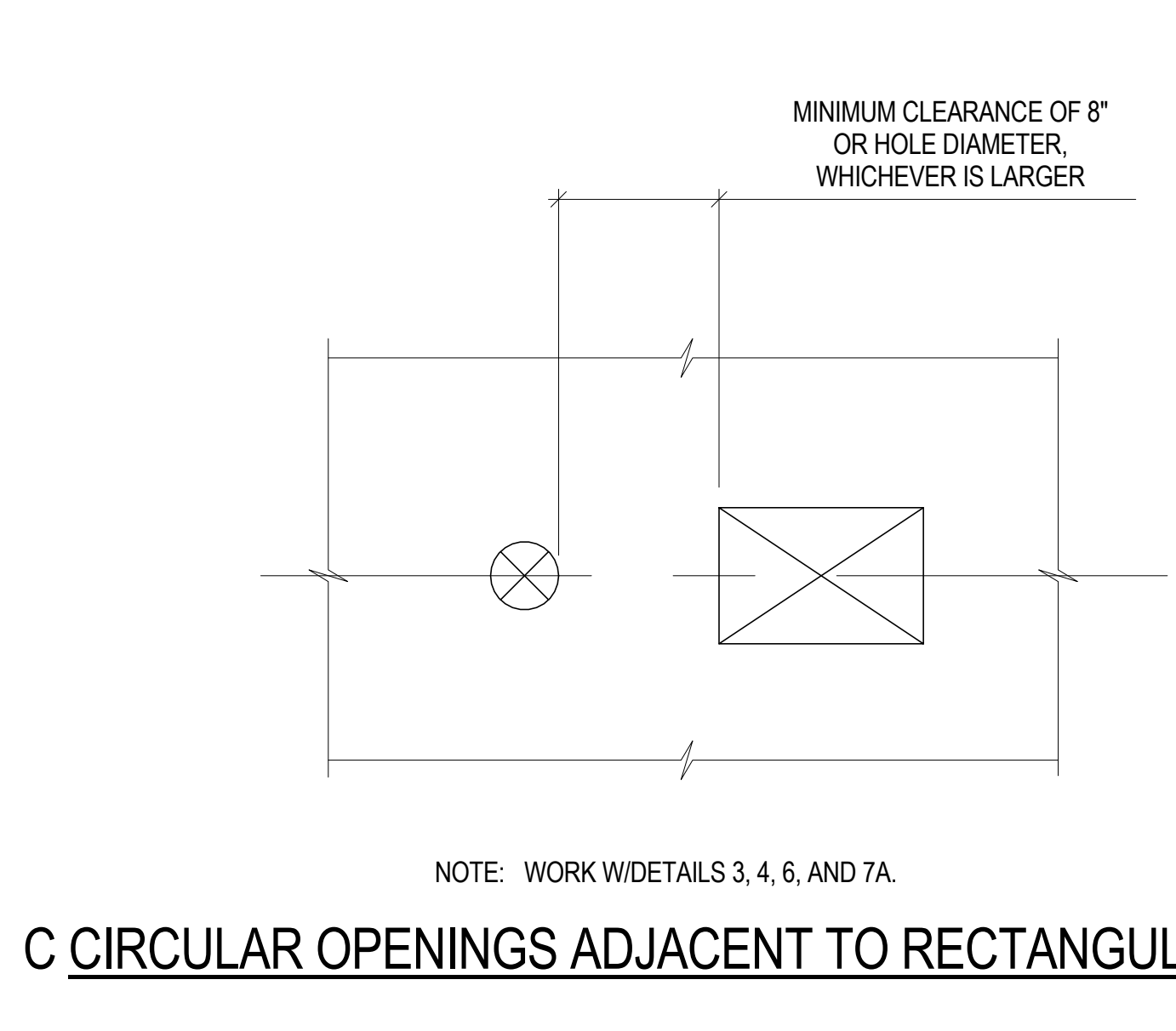
6 TYPICAL TWO WAY SLAB
NOT TO SCALE



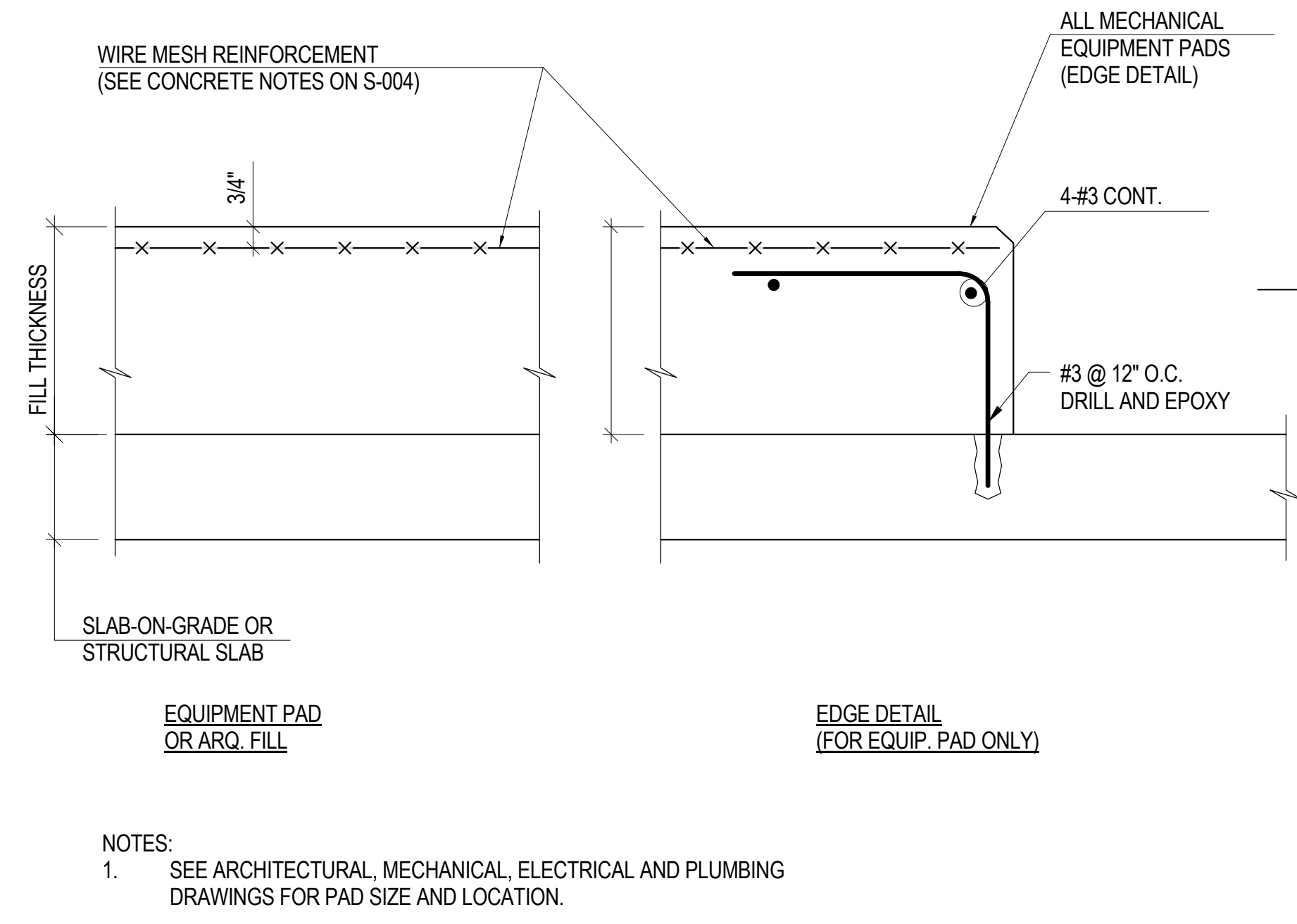
7 SLAB OPENING SYSTEM DIAGRAMS
NOT TO SCALE



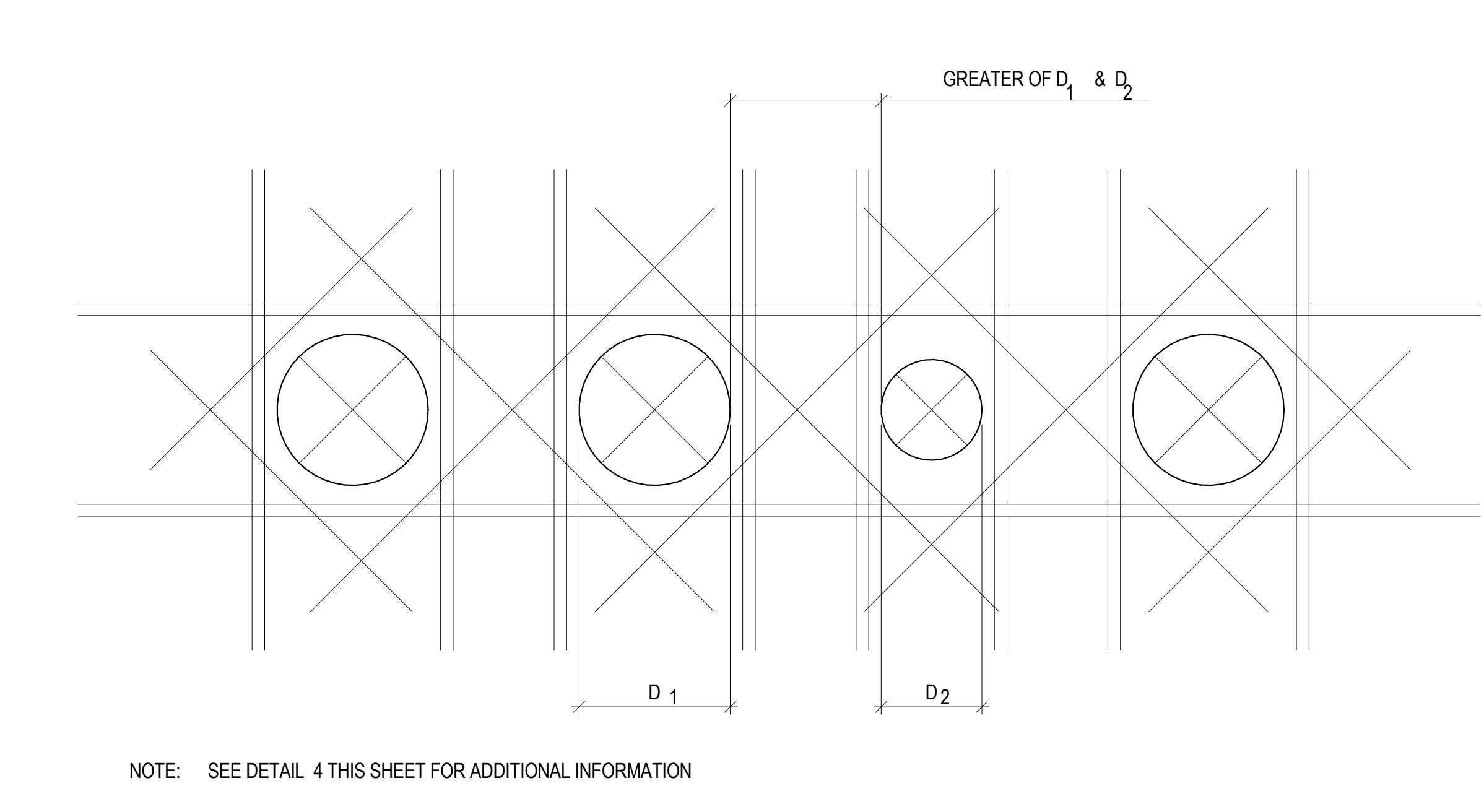
8 TYPICAL CONCRETE CURB OR PARAPET AT REINFORCED CONCRETE SLAB (H < 1'-6\"/>



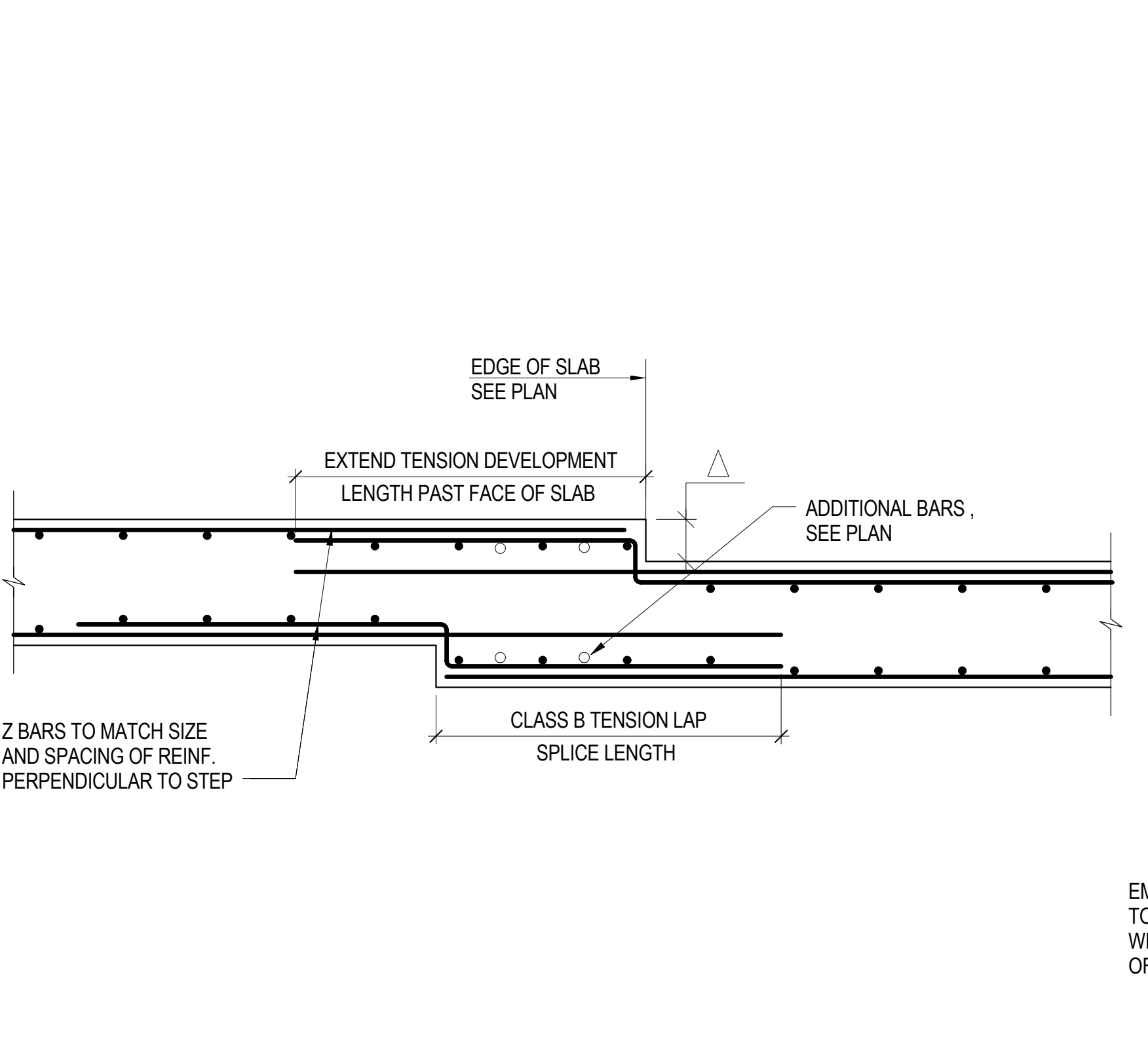
9 TYPICAL CONCRETE CURB OR PARAPET AT REINFORCED CONCRETE SLAB (H ≥ 1'-6\"/>



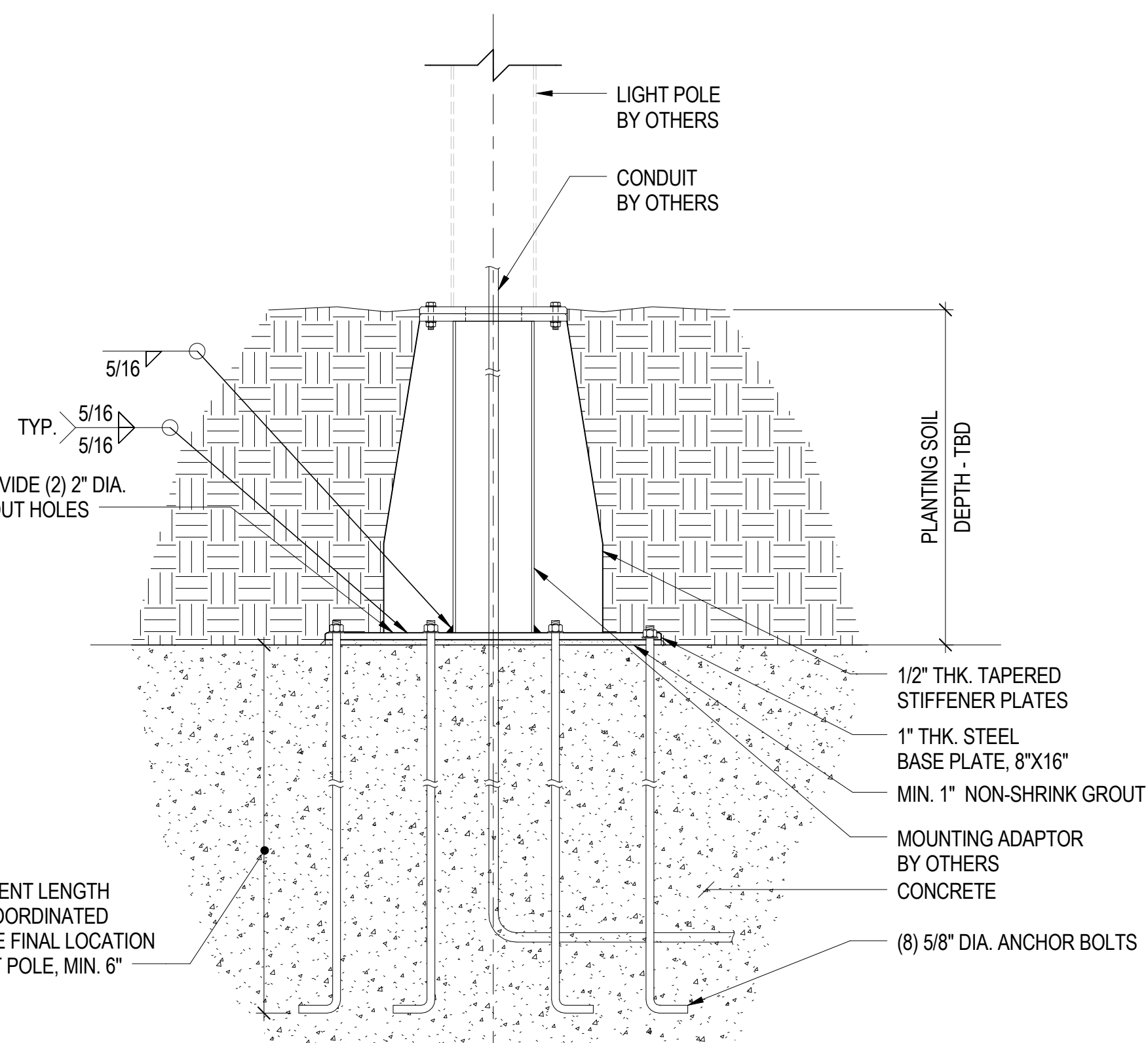
10 TYPICAL SECTION AT CONCRETE PAD OR FILL
NOT TO SCALE



11 TYPICAL DETAIL AT ALIGNED SLAB OPENING (D GREATER THAN 12\"/>



12 SLAB STEP DETAIL
NOT TO SCALE



13 PLANTER LIGHT POLE DETAIL
NOT TO SCALE

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No.	Date	Description
1	02/16/2018	ISSUED FOR BUILDING PERMIT

REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS, & DETAILS

Project No.: 211157	B-SCAN Sheet No.: S-300.00
Date: 02/16/2018	Sheet No.: S-300
Scale: As indicated	Page No.: 3-300

PLATFORM COLUMN REACTIONS										
UNIT	GRID X	GRID Y	DEAD (KIPS)	SDL (KIPS)	LANDSCAPE (KIPS)	LIVE (KIPS)	LANDSCAPE LIVE (KIPS)	SNOW (KIPS)	SHEAR X (KIPS)	SHEAR Y (KIPS)
UNIT 1	P1.1	PB.5	203	149	0	147	0	14	2	12
	P1.1	PC.5	173	115	0	122	0	11	5	14
	P1.1	PD	116	66	-1	64	0	7	4	9
	P1.1	PG	143	54	0	85	0	9	2	2
	P1.1	PH	210	98	0	137	0	12	1	-3
	P1.1	PJ	90	52	0	52	0	4	1	2
	P1.1	PK	48	35	-1	18	0	1	3	2
	P1.5	PB.5	222	258	-1	204	0	26	6	0
	P1.5	PC.5	149	142	0	148	0	17	6	0
	P1.5	PD	172	95	0	125	0	14	7	6
	P1.5	PH	172	225	1	140	0	9	0	10
	P1.5	PJ	87	127	0	49	0	10	1	1
	P1.5	PK	67	186	-1	35	0	3	3	3
	P2	PB.5	65	47	0	52	0	2	6	17
	P2	PC.5	54	23	0	39	0	1	6	8
	P2	PD	108	65	7	67	1	9	9	9
	P2	PE	56	52	58	38	8	13	5	13
	P2	PE/PF	135	58	168	23	22	16	5	13
	P2	PF/PF.7	116	64	90	39	12	15	10	6
	P2	PG	64	36	4	42	0	4	6	5
	P3	PB.5	323	517	3	316	0	37	5	18
	P3	PC.5	220	229	1	213	0	21	8	8
	P3	PD	114	69	2	64	0	9	7	9
	P3	PE	79	58	12	53	2	14	5	15
	P3	PE/PF	72	41	57	35	8	13	5	15
	P3	PF/PF.7	62	46	14	41	2	12	10	7
	P3	PG	247	129	0	167	0	23	6	6
	P3	PH	227	264	7	187	1	16	5	18
	P3	PJ	106	143	6	51	1	12	2	6
	P3	PK	92	222	0	54	0	4	6	5
	P4	PB.5	291	224	97	270	0	25	8	8
	P4	PC.5	253	204	0	210	0	26	6	8
	P4	PD	132	125	7	124	1	26	3	15
	P4	PE	103	99	19	99	3	20	3	15
	P4	PF.7	74	66	6	64	1	14	6	8
	P4	PG	63	46	-1	42	0	10	6	8
	P4	PG.5	122	68	20	93	0	12	6	7
	P4	PK	220	120	30	176	5	17	6	7
	P4	PK	155	170	20	102	4	10	6	5
	P5	PB.5	263	180	96	254	0	22	6	8
P5	PC.5	235	195	0	198	0	27	6	8	
P5	PD	134	142	1	152	0	26	6	9	
P5	PE	122	138	3	153	0	24	6	9	
P5	PF.7	85	88	-3	95	0	16	6	9	
P5	PG	58	44	1	40	0	10	6	9	
P5	PG.5	121	62	34	89	0	16	6	7	
P5	PH	188	100	29	154	3	14	6	8	
P5	PK	148	154	25	102	6	9	6	6	
P6	PB.5	280	166	102	212	5	23	5	8	
P6	PC.5	238	207	27	210	5	28	6	9	
P6	PD	128	122	-8	105	0	25	7	10	
P6	PE	115	108	16	73	2	22	6	10	
P6	PF.7	84	73	11	48	1	16	6	9	
P6	PG	70	48	1	46	0	11	6	10	
P6	PG.5	134	72	21	102	0	12	6	8	
P6	PH	225	112	31	176	5	17	6	9	
P6	PK	165	159	23	107	5	10	6	7	
P6.9	PB	125	56	26	80	1	10	2	12	
P6.9	PC	115	87	20	97	3	10	1	10	
P6.9	PC.5	31	12	4	18	0	1	2	11	
P6.9	PD	83	56	10	54	1	8	1	9	
P6.9	PE	27	19	43	2	0	5	14	4	
P7	PB	159	65	35	108	0	1	0	0	
P7	PC	214	136	64	165	0	14	1	4	
P7	PC.5	85	37	10	50	0	2	4	5	
P7	PD	208	125	37	116	0	16	4	7	
P7	PE	156	39	301	34	24	18	30	10	
P7	PF	150	37	326	12	32	16	38	7	
P7	PF.7	126	51	180	30	14	17	17	4	
P7	PG	279	120	37	180	-3	22	5	37	
P7	PG.5	99	46	3	80	0	2	4	33	
P7	PH	414	221	12	326	3	33	6	14	
P7	PK	200	271	6	109	1	14	5	9	
P7.4	PE/PF	81	19	189	10	17	8	2	6	
P7.4	PF	80	25	63	26	8	5	40	8	
P7.4	PF.7	45	28	2	28	0	6	18	0	
P7.5	PB	275	112	41	177	0	3	0	0	
P7.5/P8	PG	179	75	0	115	0	13	0	0	
P7.5/P8	PH/PJ	178	89	1	109	0	11	0	0	
P7.5/P8	PK	77	84	-1	32	0	3	0	0	
P8	PC	411	272	93	279	0	22	0	3	
P8	PC.5	188	82	20	107	0	4	0	3	
P8	PD	407	260	79	203	0	34	0	3	
P8	PE	171	55	278	44	21	20	1	3	
P8	PF	221	77	409	59	32	29	3	4	
P8	PF.7	131	48	198	41	16	17	2	3	
P8/P9	PG	145	61	0	94	0	10	0	0	
P8/P9	PH/PJ	150	73	1	90	0	9	0	0	
P8/P9	PK	63	68	-1	26	0	3	0	0	
P9 (W)	PC	71	46	14	43	0	3	1	1	
P9 (W)	PC.5	32	10	1	13	0	0	1	1	
P9 (W)	PD	74	47	16	30	0	6	1	1	
P9 (W)	PE	56	19	92	15	7	7	3	1	
P9 (W)	PF	78	29	142	23	11	11	6	2	
P9 (W)	PF.7	35	11	49	9	4	4	3	1	
P9 (E)	PC	90	59	17	54	0	4	1	1	
P9 (E)	PC.5	39	12	1	16	0	0	1	1	
P9 (E)	PD	93	59	19	39	0	8	1	1	
P9 (E)	PE	68	23	116	18	9	9	4	2	
P9 (E)	PF	98	37	178	30	14	14	7	2	
P9 (E)	PF.7	44	14	61	11	5	5	4	2	
P10 (W)	PC	70	45	14	43	0	3	1	1	
P10 (W)	PCPC.5	32	12	2	16	0	0	1	1	
P10 (W)	PD	73	47	14	34	0	6	1	1	
P10 (W)	PE	40	12	70	9	6	5	2	1	
P10 (W)	PF	57	11	139	4	13	7	5	1	
P10 (W)	PF.7	24	8	37	6	3	3	2	1	
P10 (E)	PC	141	93	29	89	0	7	1	1	
P10 (E)	PCPC.5	61	24	4	33	0	0	1	1	
P10 (E)	PD	150	97	29	70	0	13	2	2	
P10 (E)	PE	81	24	150	17	12	10	4	2	
P10 (E)	PF	116	23	287	10	27	16	10	2	
P10 (E)	PF.7	48	16	79	13	6	6	5	2	

NORTH RETAIL - STRUCTURAL STEEL COLUMN SCHEDULE CONT.																								
LOCATION		P4					P5					P6						P6.9						
LEVEL		PA	PB.5	PC.5	PE	PF	PA	PB.5	PC.5	PE	PF	PA	PB	PB.5	PC.5	PE	PF	PA	PB	PB.5/PC	PC	PC.5	PD	PE
LEVEL 5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LEVEL 4		-	-	-	-	-	-	-	-	-	-	W14X211	W14X211 (100) 1.5" BASE PLATE SEE DETAIL 2/S-407	W14X211	-	-	-	W14X211	W14X211	W14X211 (100) 1.5" BASE PLATE SEE DETAIL 2/S-407	-	-	-	-
LEVEL 2		W14X145	W14X211	W14X211	-	-	W14X311	W14X211	W14X176	-	-	W14X233	-	W14X211	W14X176	-	-	W14X211	W14X211	-	W14X176	-	W14X176	-
LEVEL 1		W14X176	W14X211	W14X211	-	-	W14X311	W14X211	W14X176	-	-	W14X233	-	W14X211	W14X176	-	-	W14X211	W14X211	-	W14X176	-	W14X176	-
PLATFORM		W14X311	W14X370	W14X311	W30X191	W30X191	W14X311	W14X311	W14X311	W14X311	W14X311	W14X311	-	W14X311	W14X311	W14X311	W14X311	W14X311	W14X311	-	W14X311	W14X311	W14X311	W14X311
		SLIDER					SLIDER					SLIDER						SLIDER						
BASE PLATE		SEE DETAIL 1/S-416	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 2/S-405	SEE DETAIL 2/S-405	SEE DETAIL 1/S-416	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 1/S-416	-	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 1/S-416	SEE DETAIL 2/S-515	-	SEE DETAIL 2/S-515	SEE DETAIL 2/S-515	SEE DETAIL 2/S-515	SEE DETAIL 2/S-515
NOTES: * BASE PLATES SHOULD BE CENTERED ABOUT THE COLUMN CENTER, UNLESS NOTED OTHERWISE																								
1	NOMENCLATURE FOR BASE PLATE DIMENSIONS: WHERE: L = LENGTH ALONG MAJOR AXIS OF THE COLUMN SECTION W = LENGTH ALONG MINOR AXIS OF THE COLUMN SECTION T = THICKNESS OF BASE PLATE																							
2	TRANSFER COLUMN LOADS INDICATED IN SCHEDULE ARE FACTORED LRFD LOADS IN KIPS.																							

SOUTH RETAIL - STRUCTURAL STEEL COLUMN SCHEDULE CONT.																																					
LOCATION	P7							P7.4	P7/P7.5						P7.5			P7.5/P8			P8							P9	P10	P11	P12	P13	P13.4	P14	P14/P15	P15	
	PF.7	PG	PG.5	PG.5/PH	PH	PJ	PK	PF.7	PK/PL ⁽⁴⁾	PK/PL ⁽⁴⁾	PL ⁽⁴⁾	PL ⁽⁴⁾	PK ⁽⁵⁾	PL ⁽⁵⁾	PG.5/PH	PJ	PK	PG	PH/PJ	PK	PF.7	PG	PH	PH/PJ	PK	PK	PL	PF.7	PF.7	PF.7	PF.7	PF.7	PF.7	PF.7	PF.7	PF.7	
ROOF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LEVEL 3	-	-	-	NO LONGER APPLICABLE	-	W14X311 (100) 1.5" BASE PLATE SEE DETAIL 1/S-407	W14X311 (100) 1.5" BASE PLATE SEE DETAIL 2/S-407	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W14X90 SEE NOTE 2	W14X90 SEE NOTE 2	-	-	-	-	-	-	-	-	-	-
LEVEL 2	-	W14X370	-	-	W14X311	-	W14X311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W14X370	-	W14X311	W14X311	-	-	-	-	-	-	-	-	-	-	-	-
LEVEL 1	-	W14X370	-	-	W14X311	-	W14X311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W14X370	-	W14X311	W14X311	-	-	-	-	-	-	-	-	-	-	-	-
PLATFORM	W14X311	W30X357	W30X292	-	W14X398	-	W14X311	W14X311	-	-	-	-	-	-	-	-	-	W14X311	W14X311	W14X311	W14X500	W14X311	-	W14X311	W14X311	-	-	-	W14X500	W14X500	W14X500	W14X500	W14X500	W14X500	W14X500	W14X500	W14X500
BASE PLATE	SEE DETAIL 3/S-405	SEE DETAIL 2/S-405	SEE DETAIL 2/S-405	-	23" X 23" X 2" SEE DETAIL 3/S-405	-	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	-	-	-	-	-	-	-	-	-	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	20x18.5x2	-	19.5x18.5x2	19.5x18.5x2	-	-	-	SEE DETAIL 1/S-406	SEE DETAIL 1/S-406	SEE DETAIL 1/S-406	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405	SEE DETAIL 3/S-405
NOTES: * BASE PLATES SHOULD BE CENTERED ABOUT THE COLUMN CENTER, UNLESS NOTED OTHERWISE																																					
1	NOMENCLATURE FOR BASE PLATE DIMENSIONS: WHERE: L = LENGTH ALONG MAJOR AXIS OF THE COLUMN SECTION W = LENGTH ALONG MINOR AXIS OF THE COLUMN SECTION T = THICKNESS OF BASE PLATE							2	COLUMN TO BE CONNECTED TO EXISTING GIRDER BELOW, VERIFY EXISTING GIRDER LOCATION AND ELEVATION IN FIELD							3	TRANSFER COLUMN LOADS INDICATED IN SCHEDULE ARE FACTORED LRFD LOADS IN KIIPS.																				

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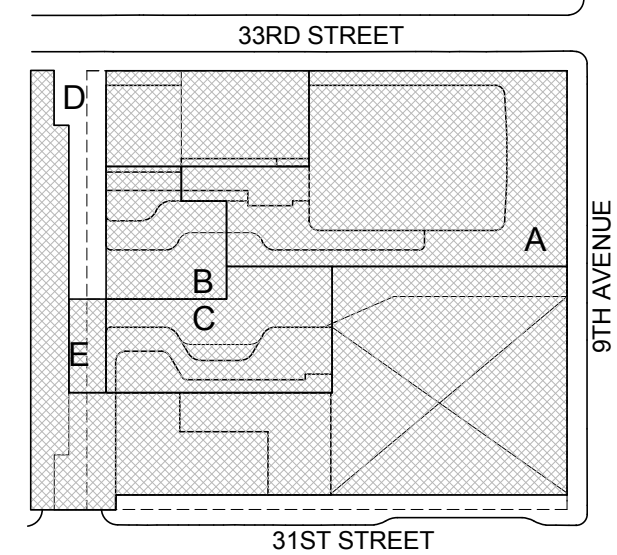
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650 Woodlawn Road West, Guelph
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STRUCTURAL
STEEL COLUMN
SCHEDULE,
SECTIONS &
DETAILS

Project No.:

211157

Date:

02/16/2018

Scale:

1" = 1'-0"

File No.:

S-402

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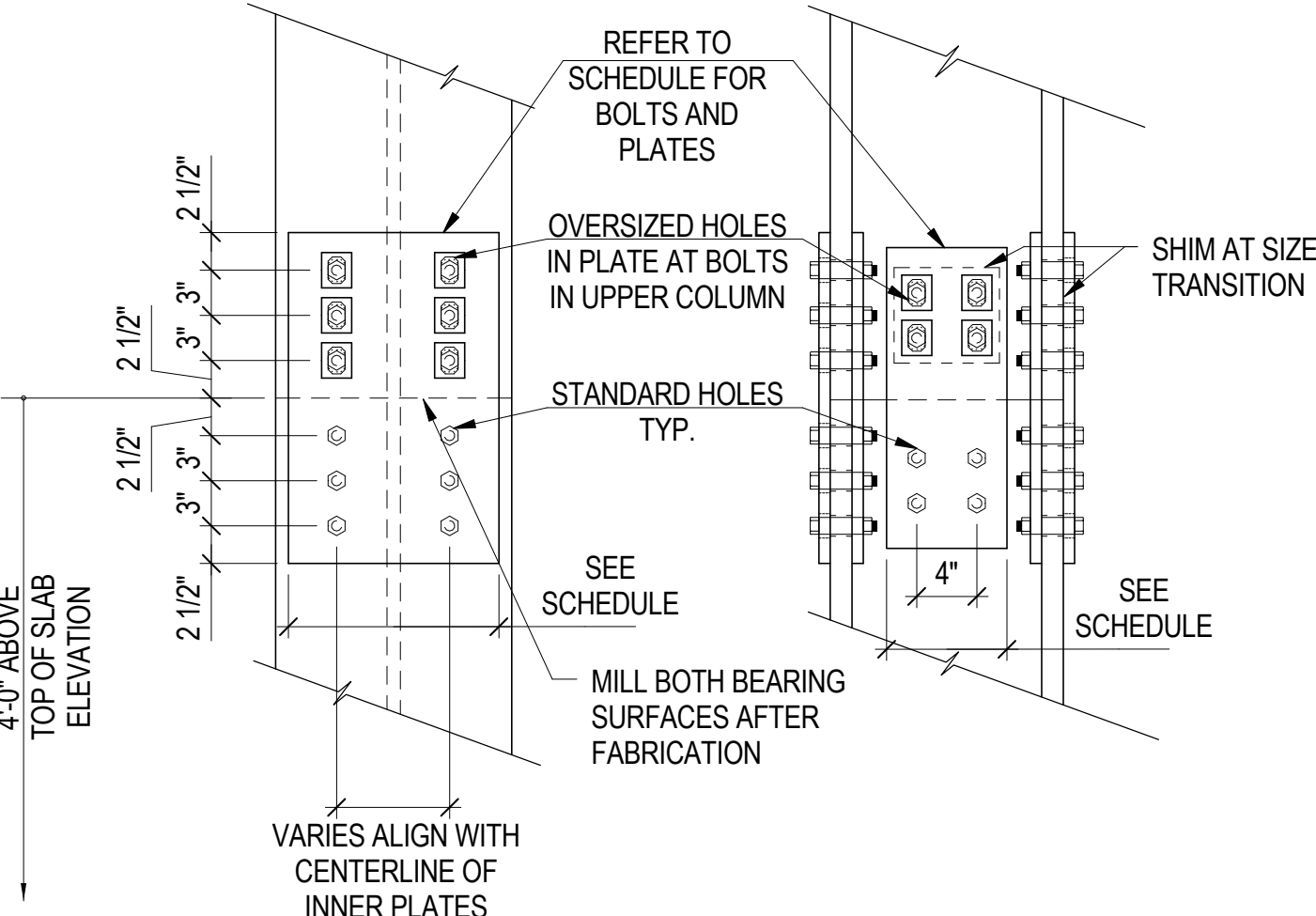
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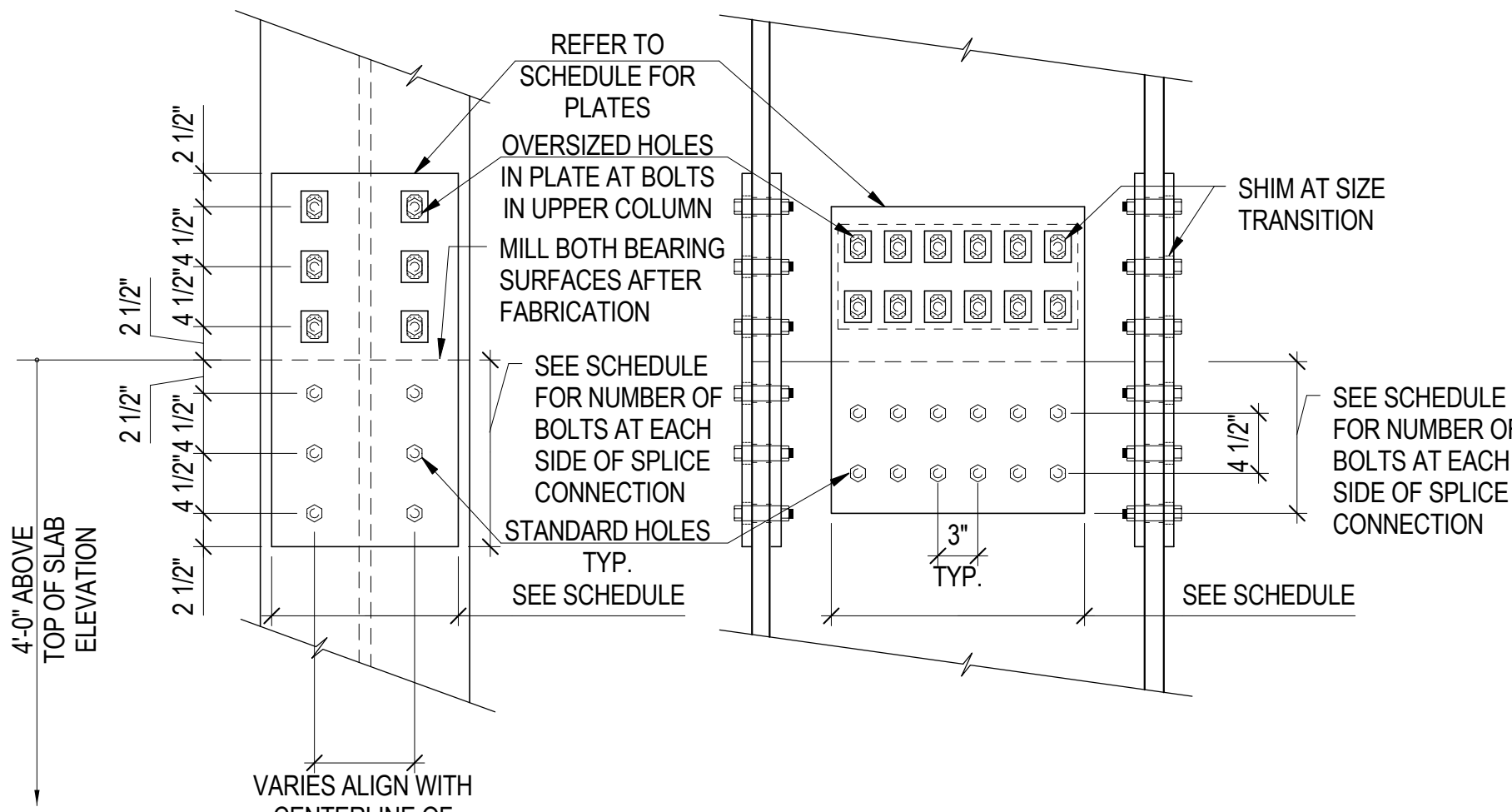
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1 TYPICAL COLUMN SPLICE
NOT TO SCALE



2 TYPICAL W30 COLUMN SPLICE
NOT TO SCALE

STEEL COLUMN SPLICE SCHEDULE

COLUMN SIZE	BOLTS	WEB (BOTH SIDES)	FLANGE		# OF BOLTS - WEB (ROW X COLUMN)	# OF BOLTS - FLANGE (ROW X COLUMN)
			INNER PLATE	OUTER PLATE		
W12X65	1-1/8 A490-X	9/16 X 8	9/16 X 4	7/16 X 12	3 X 2 = 6	3 X 2 = 6
W12X79	1-1/8 A490-X	9/16 X 8	9/16 X 4	7/16 X 12	3 X 2 = 6	4 X 2 = 8
W12X96	1-1/8 A490-X	9/16 X 8	9/16 X 4	7/16 X 12	3 X 2 = 6	4 X 2 = 8
W12X170	1-1/8 A490-X	5/8 X 8	3/4 X 4	1/2 X 12	4 X 2 = 8	5 X 2 = 10
W12X210	1-1/8 A490-X	3/4 X 8	3/4 X 4	1/2 X 12	4 X 2 = 8	6 X 2 = 12
W14X61	1-1/8 A490-X	9/16 X 8	9/16 X 3-1/2	7/16 X 10	3 X 2 = 6	3 X 2 = 6
W14X82	1-1/8 A490-X	9/16 X 8	9/16 X 3-1/2	7/16 X 10	3 X 2 = 6	3 X 2 = 6
W14X90	1-1/8 A490-X	9/16 X 8	9/16 X 5	7/16 X 14	4 X 2 = 8	4 X 2 = 8
W14X145	1-1/8 A490-X	9/16 X 8	9/16 X 5	7/16 X 15	4 X 2 = 8	6 X 2 = 12
W14X176	1-1/8 A490-X	9/16 X 8	3/4 X 5	1/2 X 15	4 X 2 = 8	6 X 2 = 12
W14X193	1-1/8 A490-X	3/4 X 8	3/4 X 5	1/2 X 15	4 X 2 = 8	6 X 2 = 12
W14X211	1-1/8 A490-X	3/4 X 8	7/8 X 5	5/8 X 15	4 X 2 = 8	6 X 2 = 12
W14X233	1-1/8 A490-X	5/8 X 8	7/8 X 5	5/8 X 15	4 X 2 = 8	6 X 2 = 12
W14X257	1-1/8 A490-X	5/8 X 8	7/8 X 5-1/2	5/8 X 16	4 X 2 = 8	7 X 2 = 14
W14X311	1-1/8 A490-X	1 X 8	7/8 X 5-1/2	5/8 X 16	4 X 2 = 8	7 X 2 = 14
W14X370	1-1/8 A490-X	1-1/4 X 8	7/8 X 5-1/2	5/8 X 16	4 X 2 = 8	9 X 2 = 18
W14X398	1-1/8 A490-X	1-1/4 X 8	1-1/4 X 5-1/2	7/8 X 16	4 X 2 = 8	9 X 2 = 18
W14X500	1-1/8 A490-X	1-1/2 X 8	1-1/4 X 5-1/2	7/8 X 16	4 X 2 = 8	9 X 2 = 18
W30X145	1-1/8 A490-X	9/16 X 19	3/4 X 5-1/2	1/2 X 10	6 X 2 = 12	5 X 2 = 10
W30X191	1-1/8 A490-X	9/16 X 19	3/4 X 5-1/2	1/2 X 15	6 X 2 = 12	6 X 2 = 12
W30X211	1-1/8 A490-X	9/16 X 19	3/4 X 5-1/2	1/2 X 15	6 X 2 = 12	7 X 2 = 14
W30X292	1-1/8 A490-X	3/4 X 19	1 X 5-1/2	3/4 X 15	6 X 2 = 12	7 X 2 = 14
W30X357	1-1/8 A490-X	3/4 X 19	1 X 5-1/2	3/4 X 15	6 X 2 = 12	7 X 2 = 14

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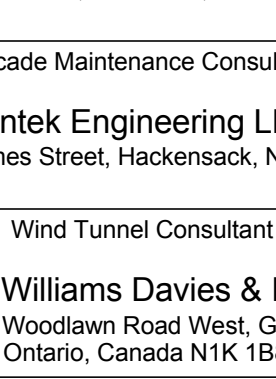
Vibration Consultant
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Code Consultants Professional Engineers PC
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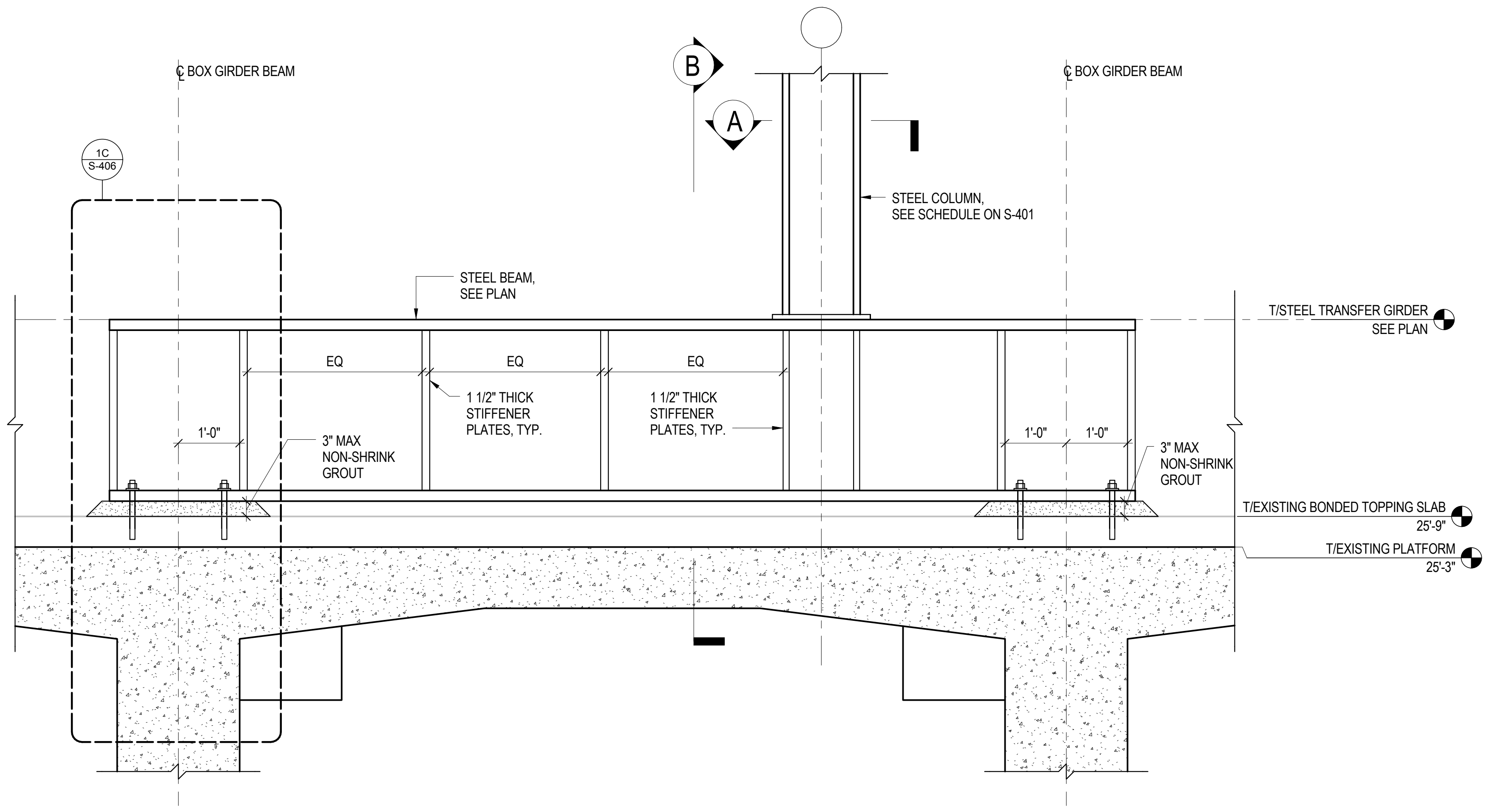


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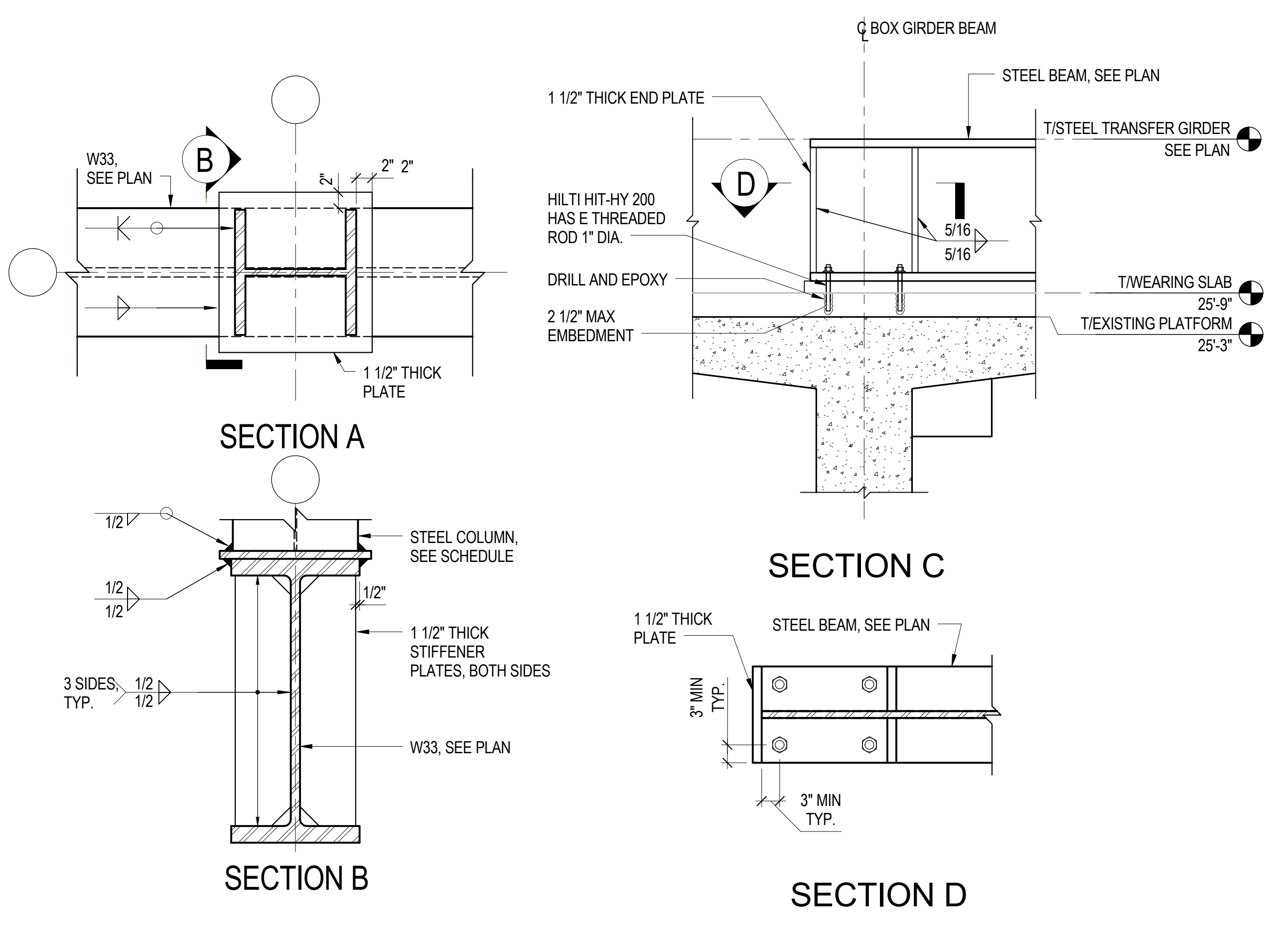
STRUCTURAL
STEEL COLUMN
BASE PLATE
DETAILS

Project No.: 211157
Date: 02/16/2018
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File No.: S-406

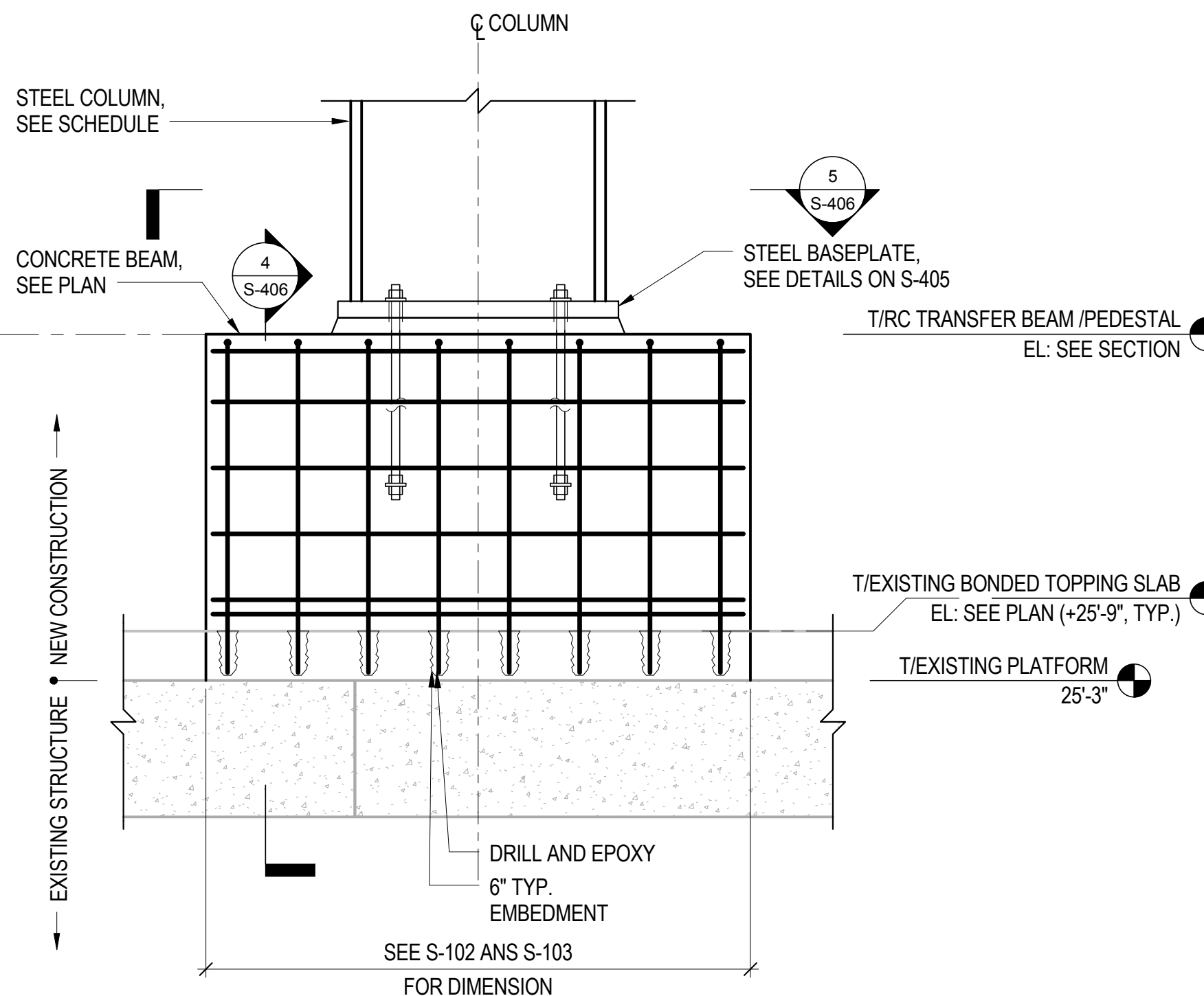
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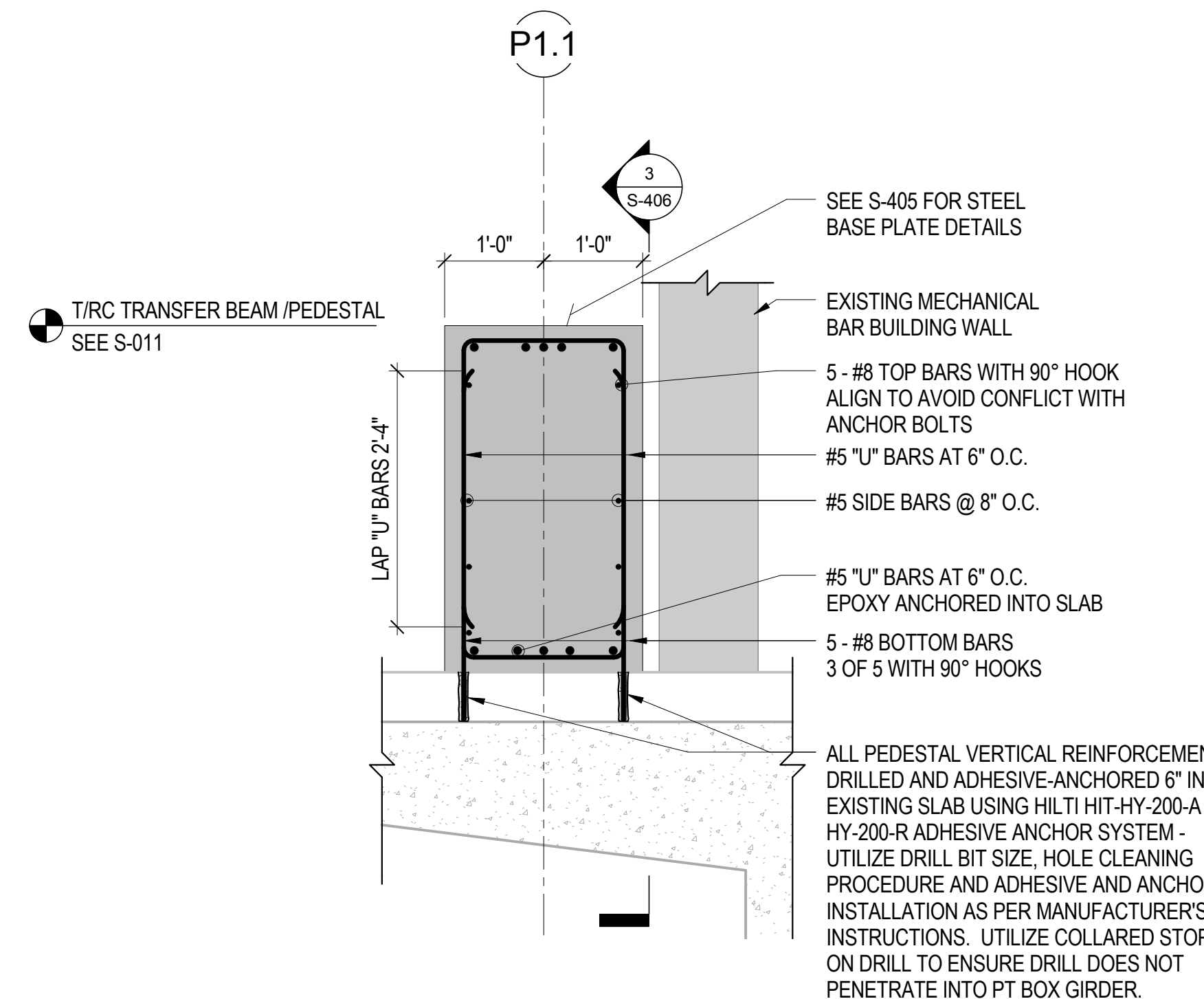
1 TYPICAL TRANSFER COLUMN AT PRECAST BOX GIRDERS
NOT TO SCALE



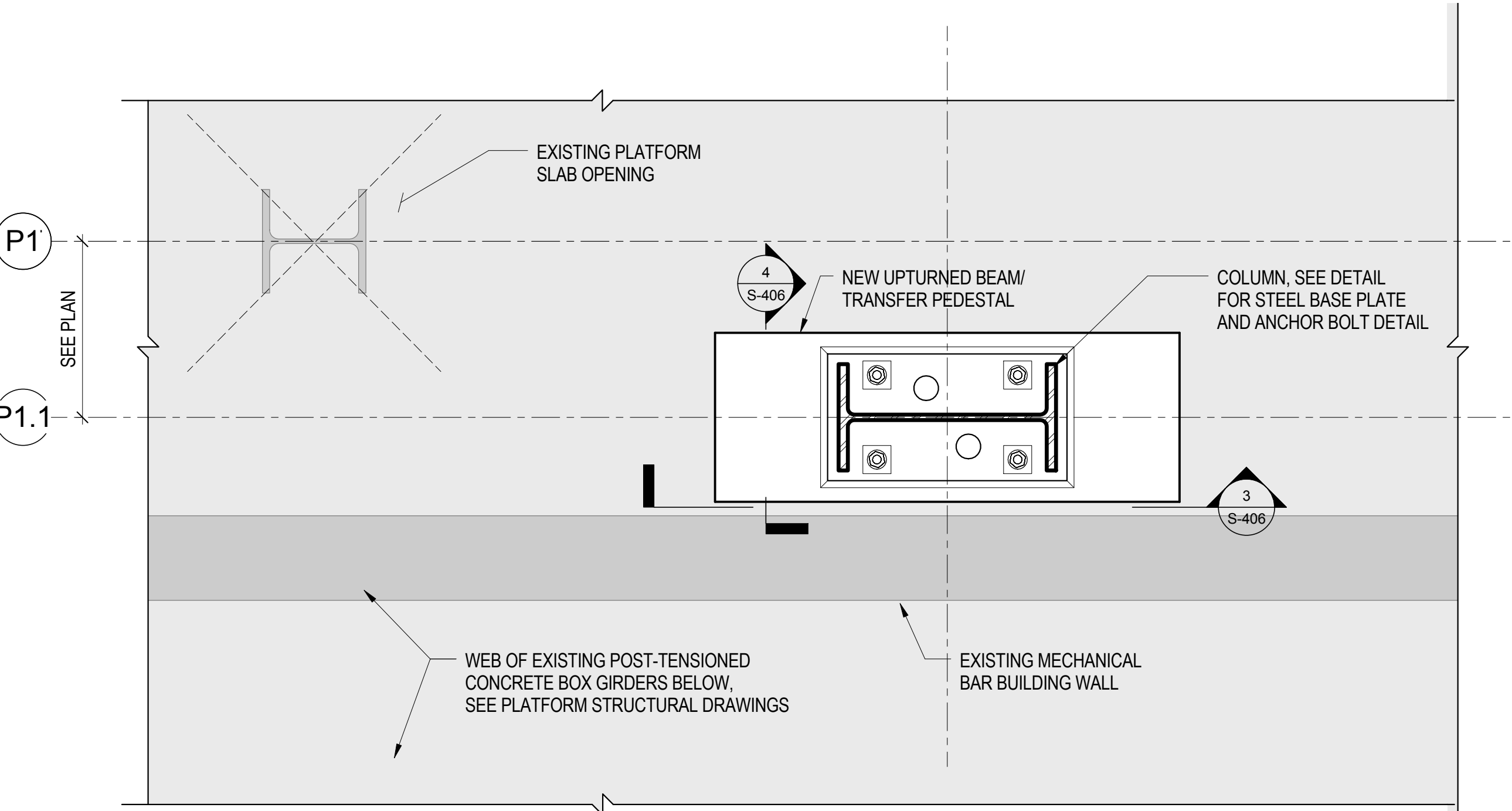
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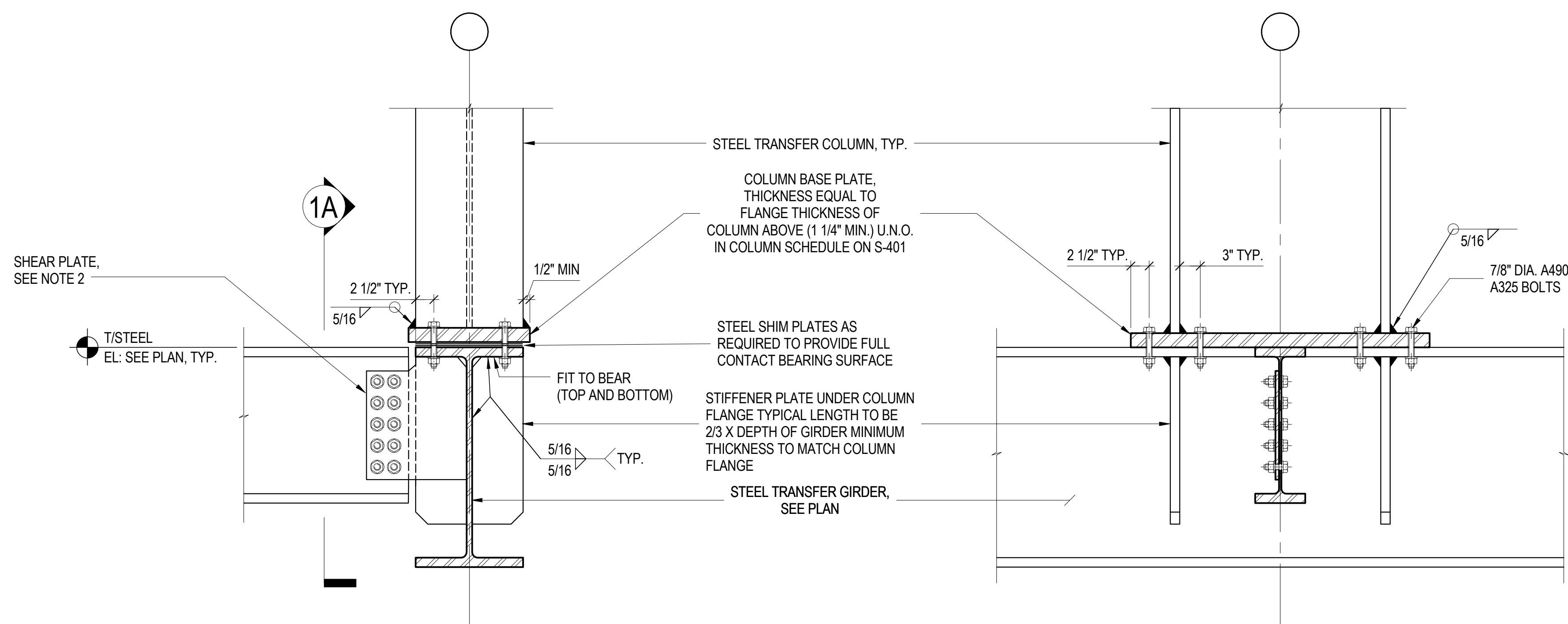
3 STEEL AND CONCRETE COLUMN-TO-PEDESTAL &
CONCRETE PEDESTAL-TO-PLATFORM DETAIL AT GL. P1.1
NOT TO SCALE



4 SECTION
NOT TO SCALE



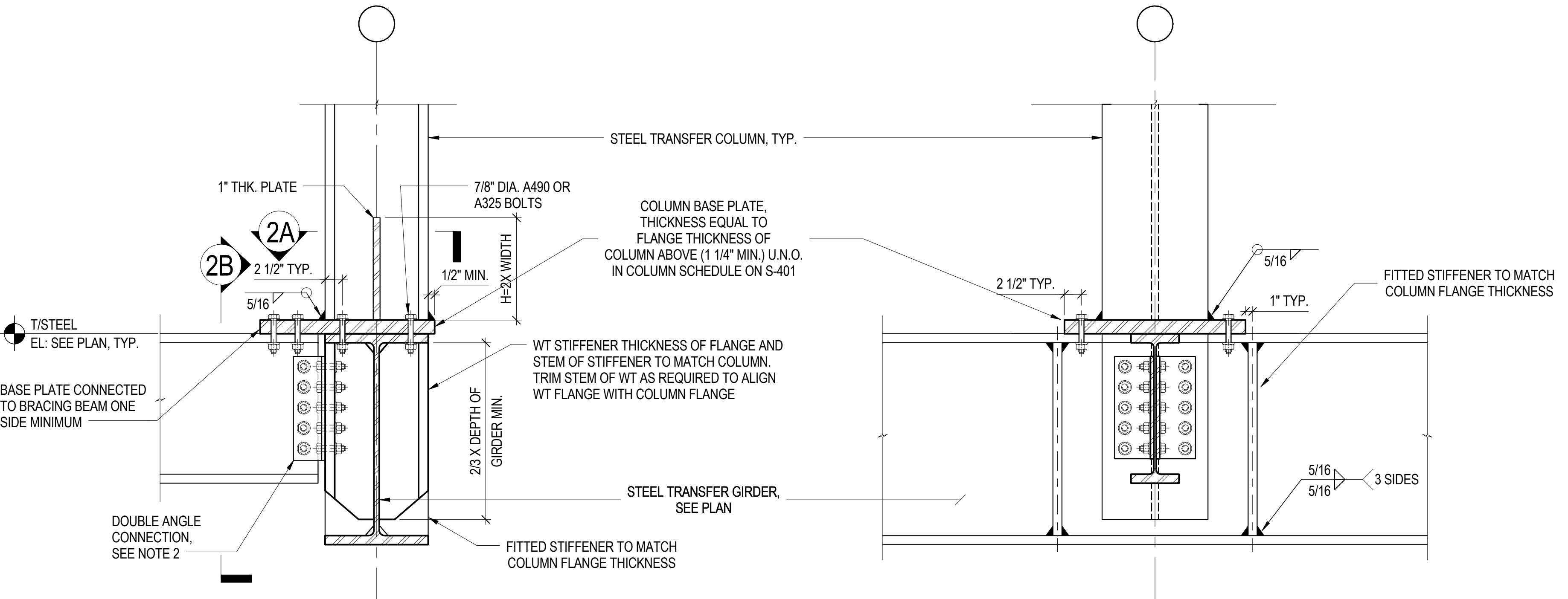
5 SECTION
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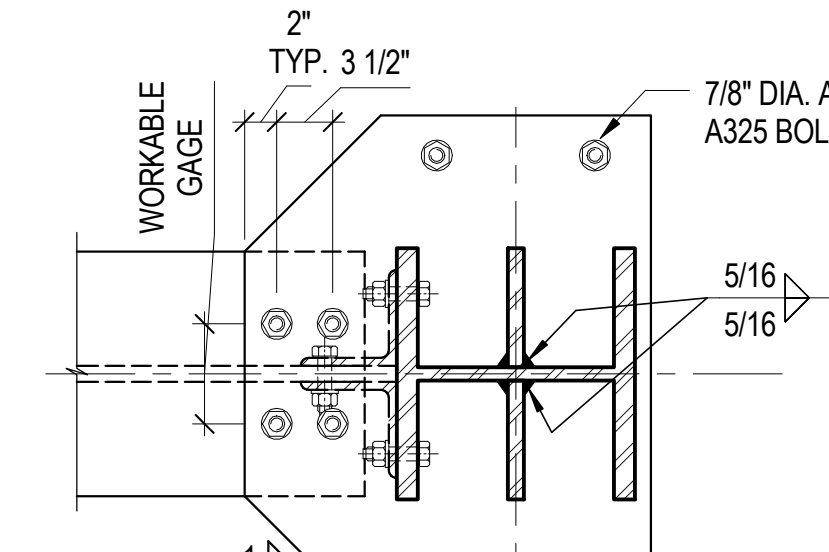
NOTE:
1. FIELD SURVEY AND SET FILLER PLATES TO CORRECT ELEVATION PRIOR TO ERECTING COLUMN.
2. CONNECTION TO DEVELOP THE BEAM REACTION SCHEDULED ON S-021.

1 TRANSFER CONNECTION DETAIL
NOT TO SCALE

1A TRANSFER CONNECTION DETAIL



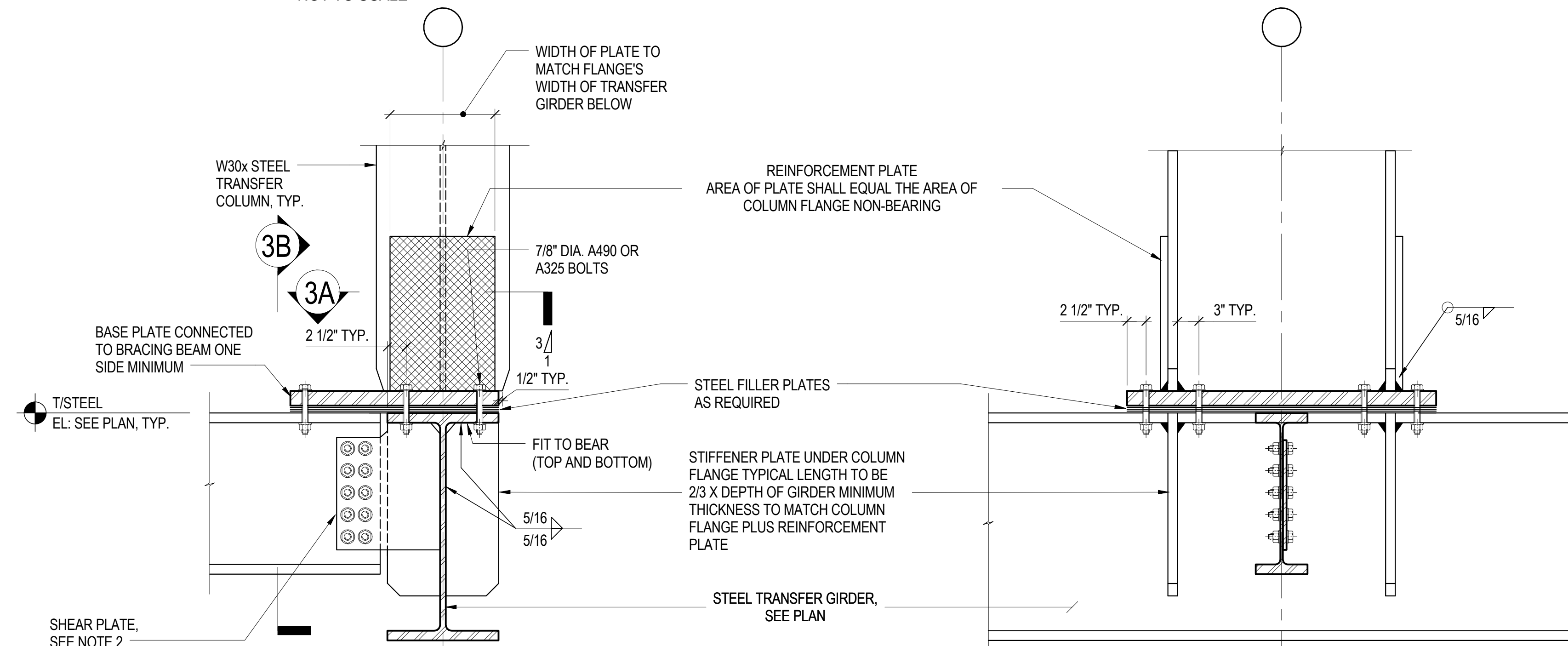
2B TRANSFER CONNECTION DETAIL



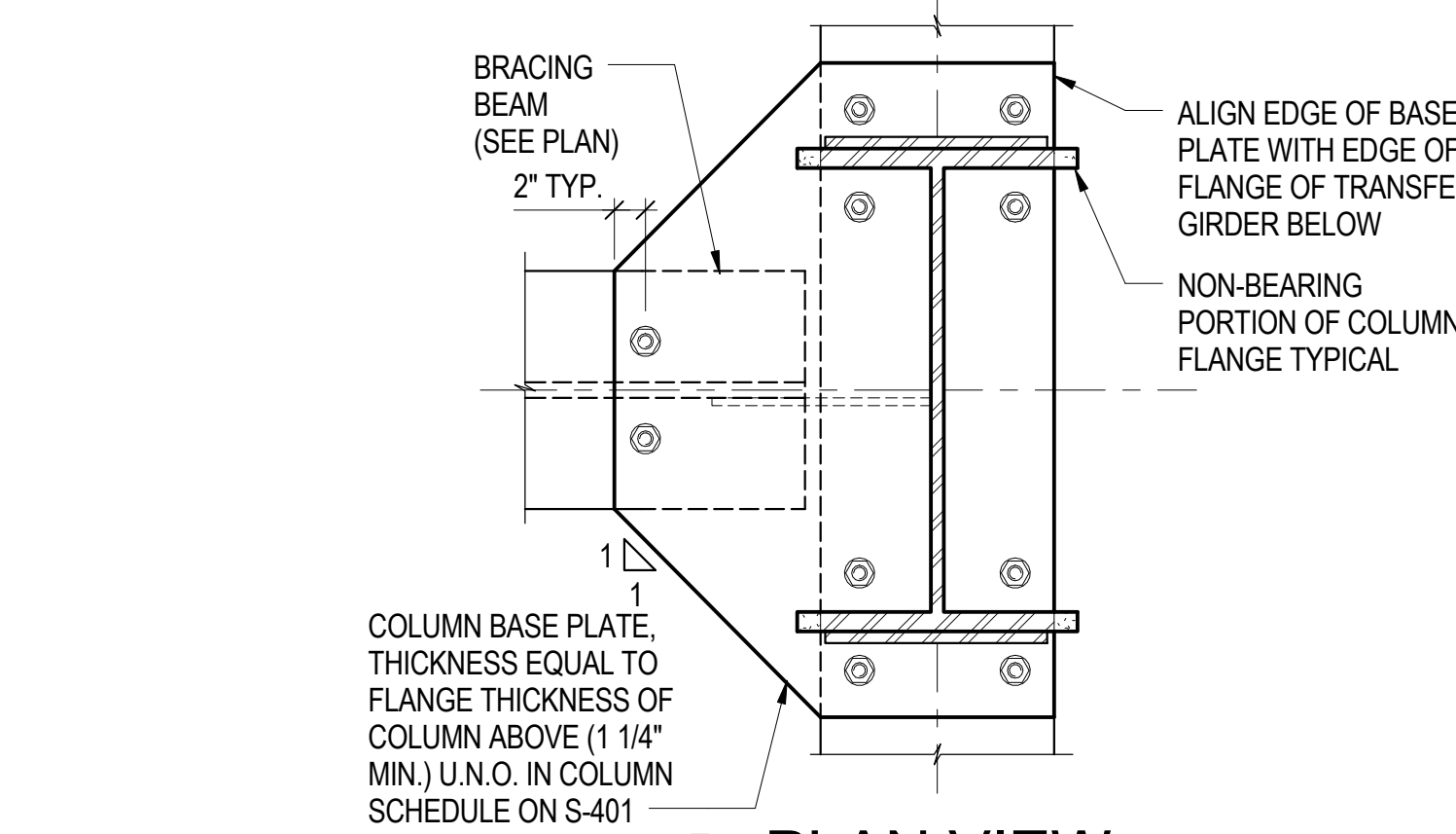
2A PLAN VIEW

NOTE:
1. FIELD SURVEY AND SET FILLER PLATES TO CORRECT ELEVATION PRIOR TO ERECTING COLUMN.
2. CONNECTION TO DEVELOP THE BEAM REACTION SCHEDULED ON S-021.

2 TRANSFER CONNECTION DETAIL AT PERPENDICULAR TRANSFER GIRDER
NOT TO SCALE



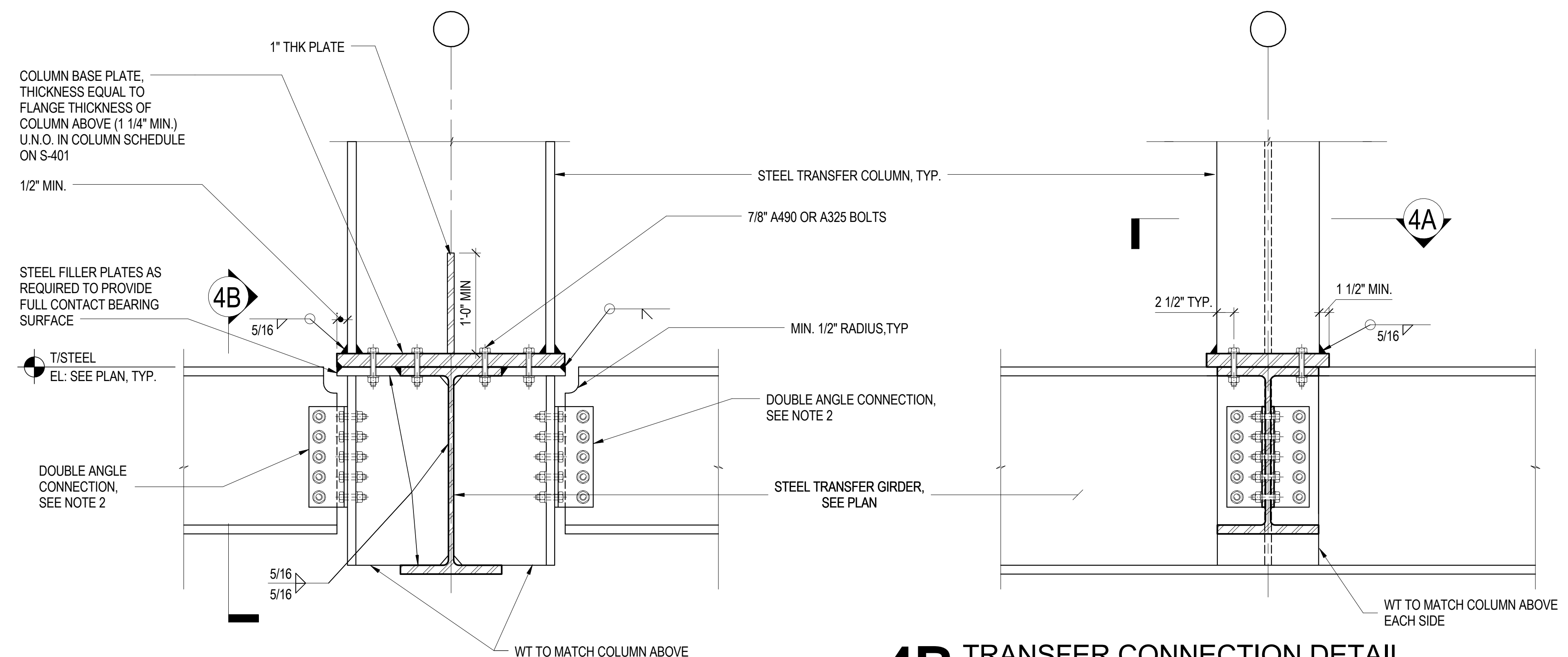
3B TRANSFER CONNECTION DETAIL



3A PLAN VIEW

NOTE:
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2. CONNECTION TO DEVELOP THE BEAM REACTION SCHEDULED ON S-021.

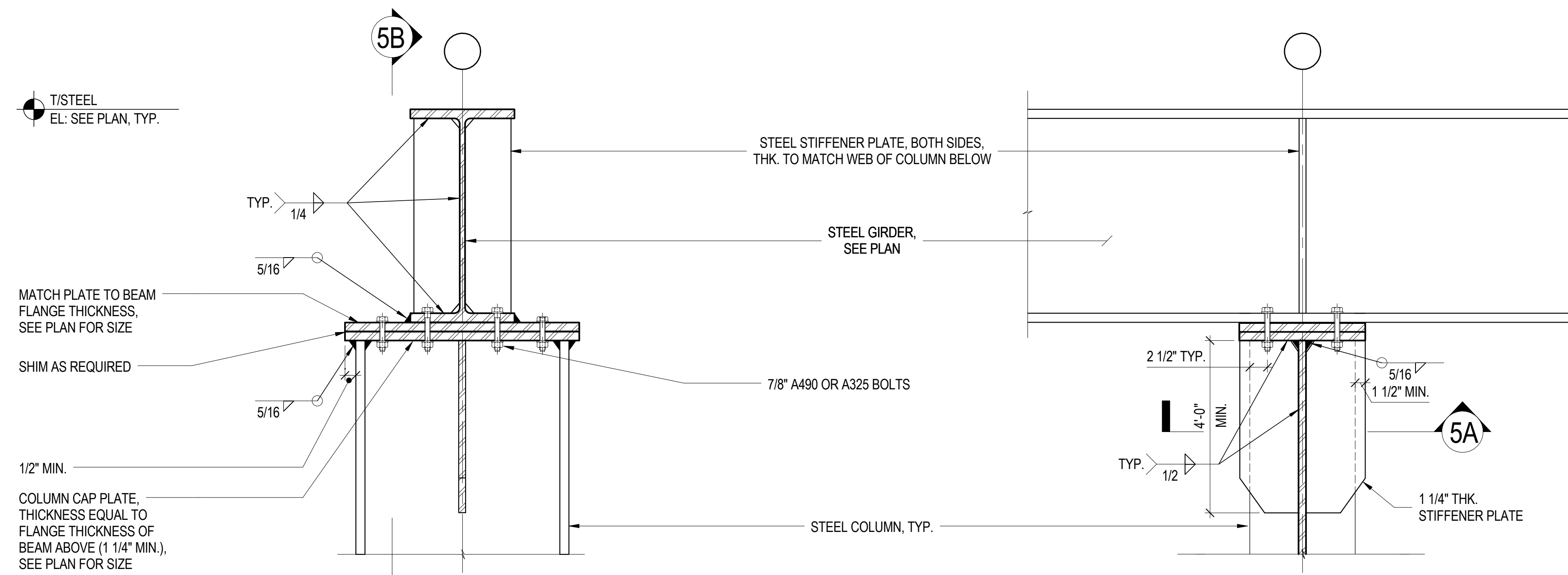
3 TRANSFER CONNECTION DETAIL
NOT TO SCALE



4B TRANSFER CONNECTION DETAIL

NOTE:
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2. CONNECTION TO DEVELOP THE BEAM REACTION SCHEDULED ON S-021.

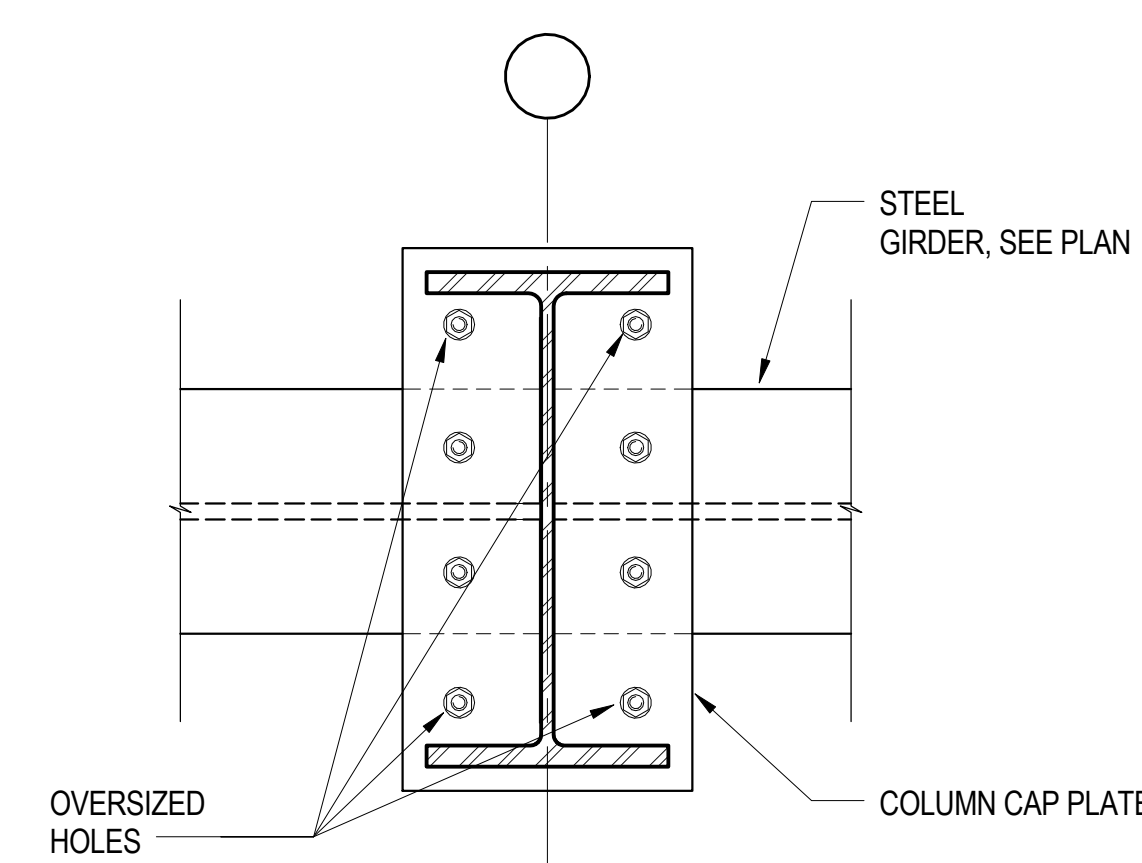
4 TRANSFER CONNECTION DETAIL AT PERPENDICULAR TRANSFER GIRDER
NOT TO SCALE



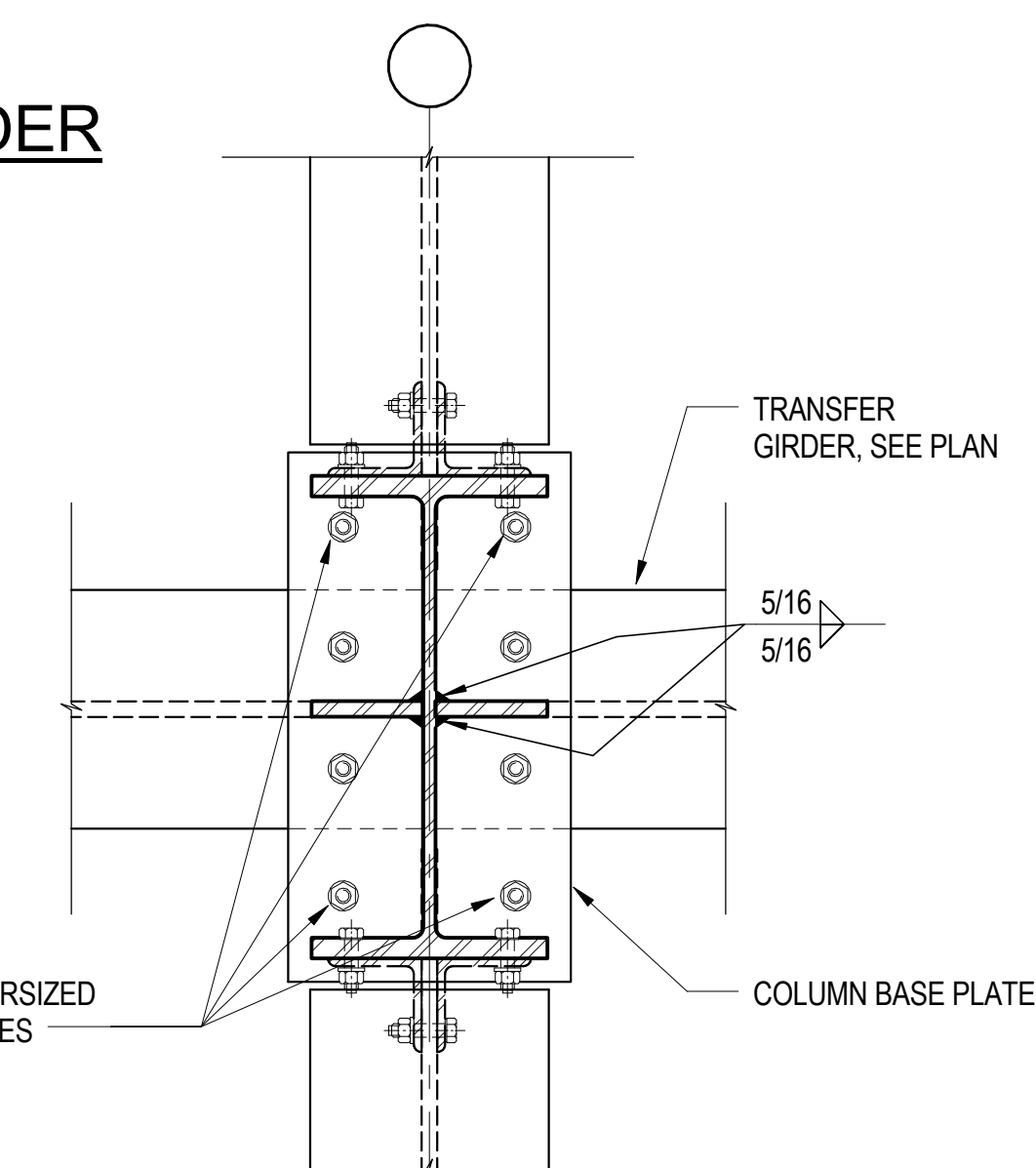
5B TRANSFER CONNECTION DETAIL

NOTE:
1. FIELD SURVEY AND SET FILLER PLATES TO CORRECT ELEVATION PRIOR TO ERECTING COLUMN.

5 CONNECTION DETAIL AT PERPENDICULAR GIRDER
NOT TO SCALE



5A TRANSFER CONNECTION DETAIL



4A DETAIL 4A
NOT TO SCALE



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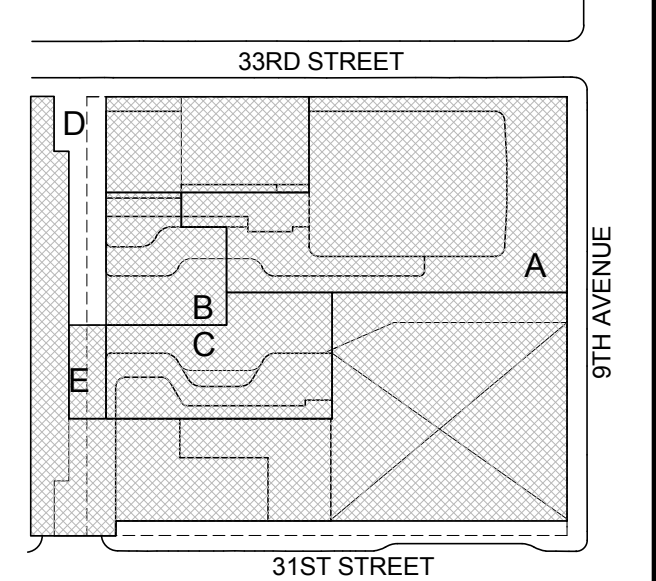
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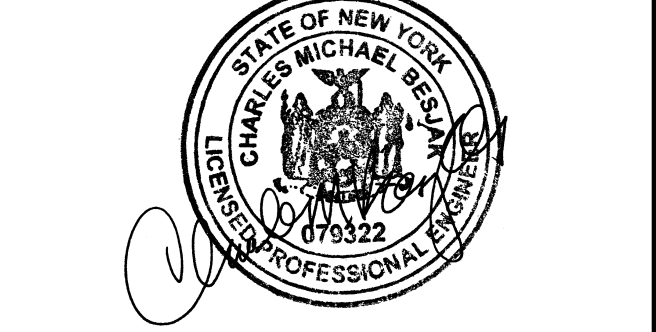
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680 Woodlawn Road West, Guelph, Ontario, Canada N1K 1B8

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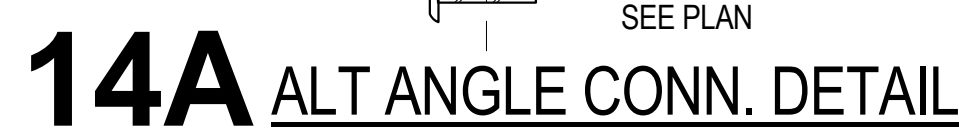
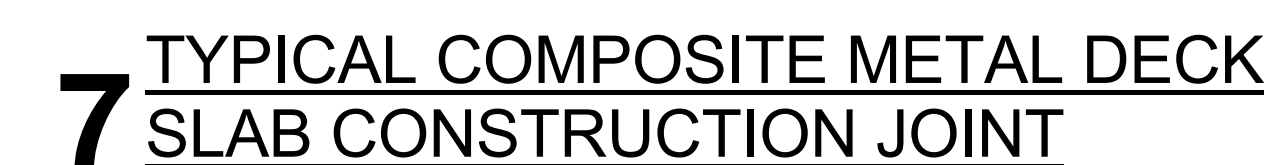
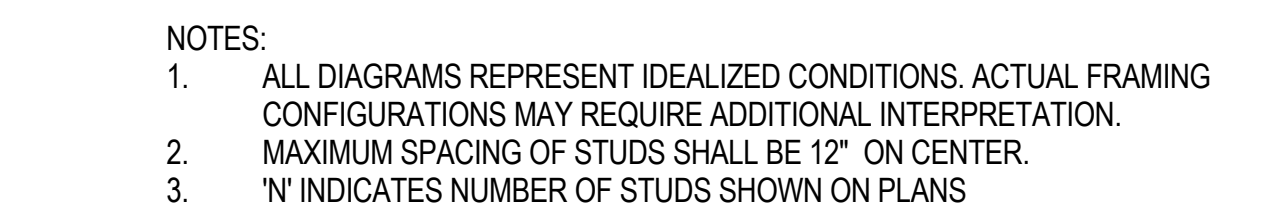
**STRUCTURAL
STEEL TRANSFER
COLUMN DETAIL**

Project No.: 211157 B-SCAN Sheet No.: S-407.00

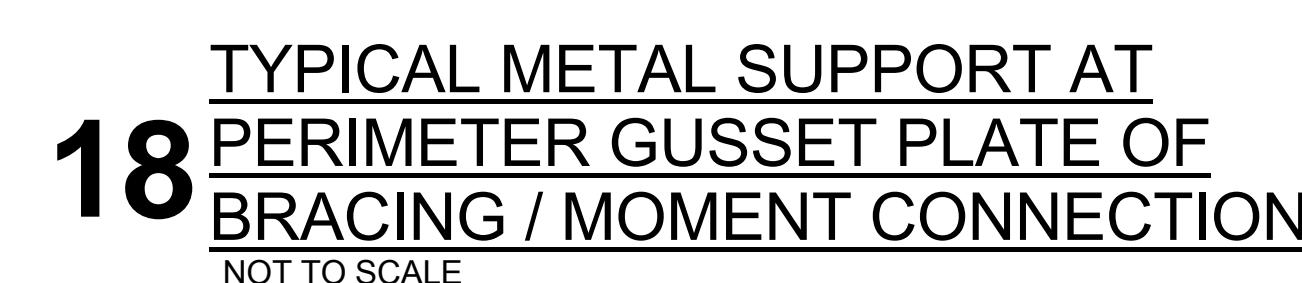
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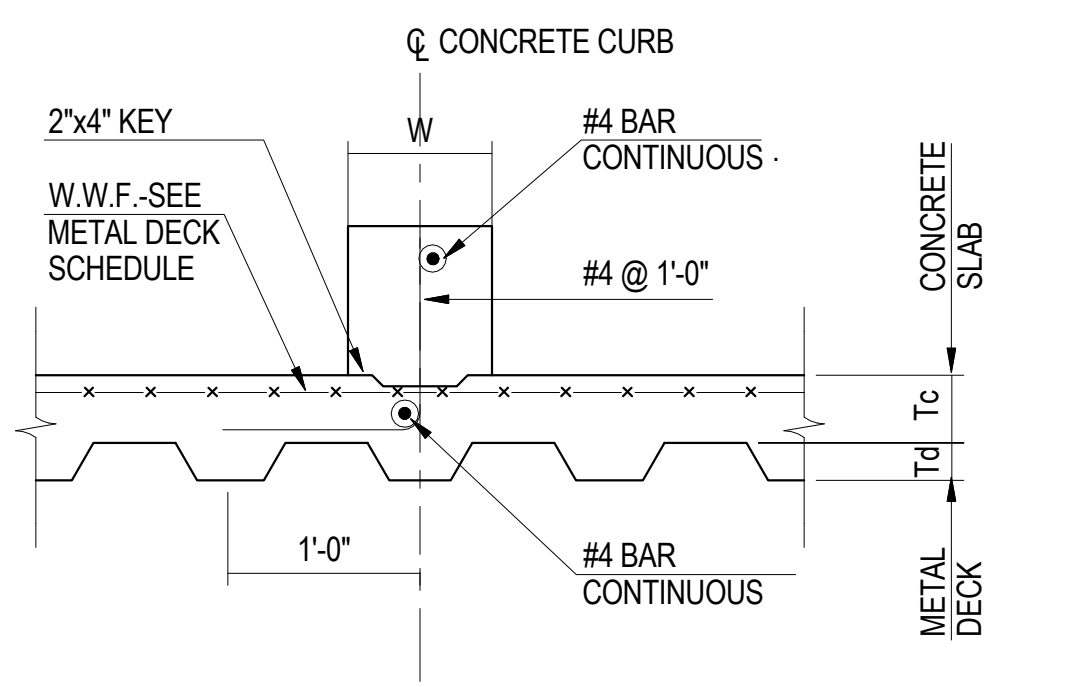
Scale: 1" = 1'-0" Page No.: S-407

File No.: S-407



NOTES:
1. SEE DETAIL 6 FOR TYPICAL COMPOSITE METAL DECK SLAB DETAIL.
2. PROVIDE FIRE PROOFING UNDER SLAB.
3. PROVIDE 3/4" DIA. SHEAR STUD. U.N.O.

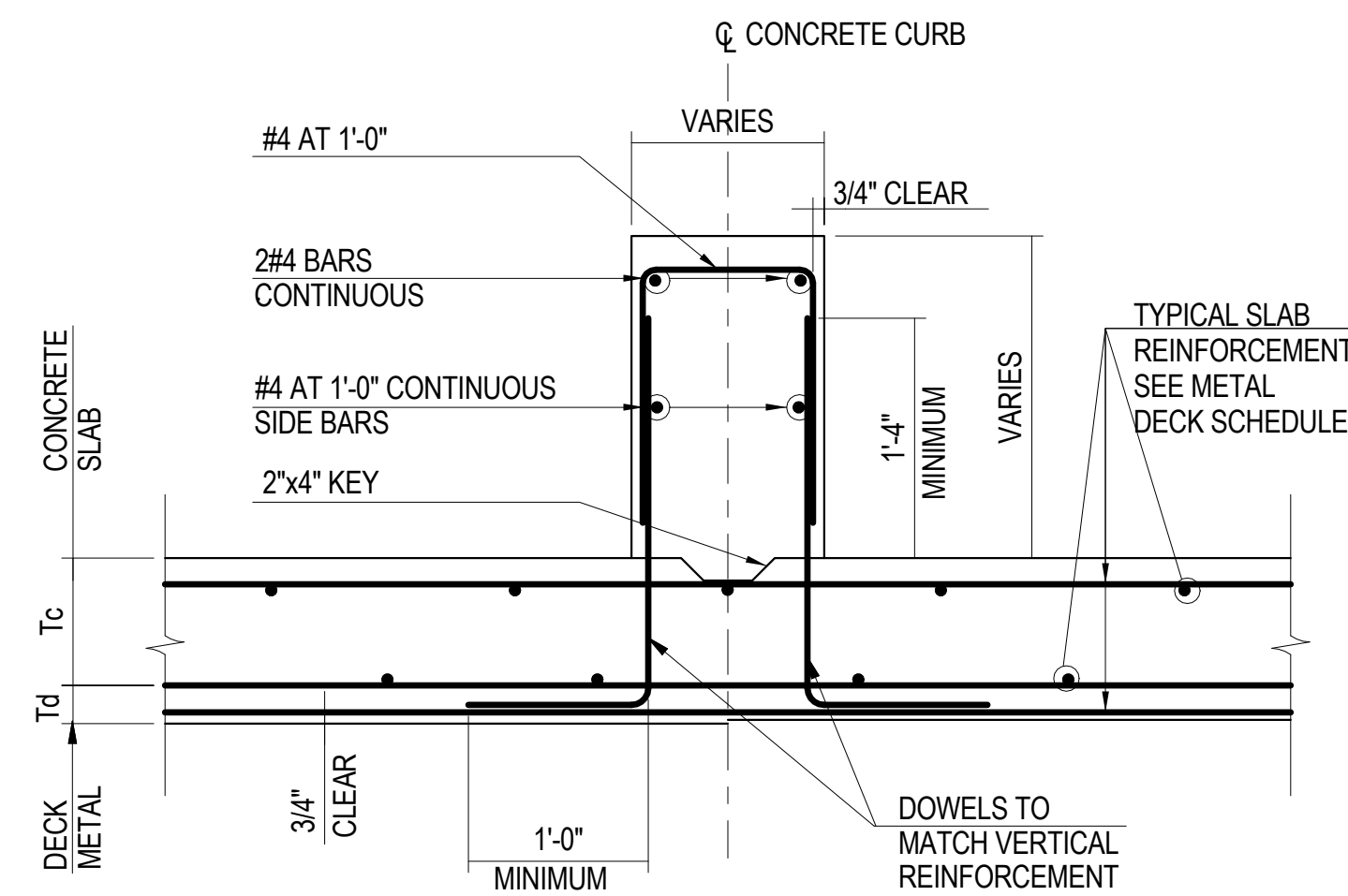




NOTES: 1. THIS DETAIL APPLIES WHEN W=6".
2. FOR CURB SIZE AND LOCATION, SEE ARCHITECTURAL DRAWINGS.
3. PROVIDE 3/4" CLEAR COVER TO BARS UNLESS NOTED OTHERWISE.

1 TYPICAL DETAILS FOR CONCRETE CURBS

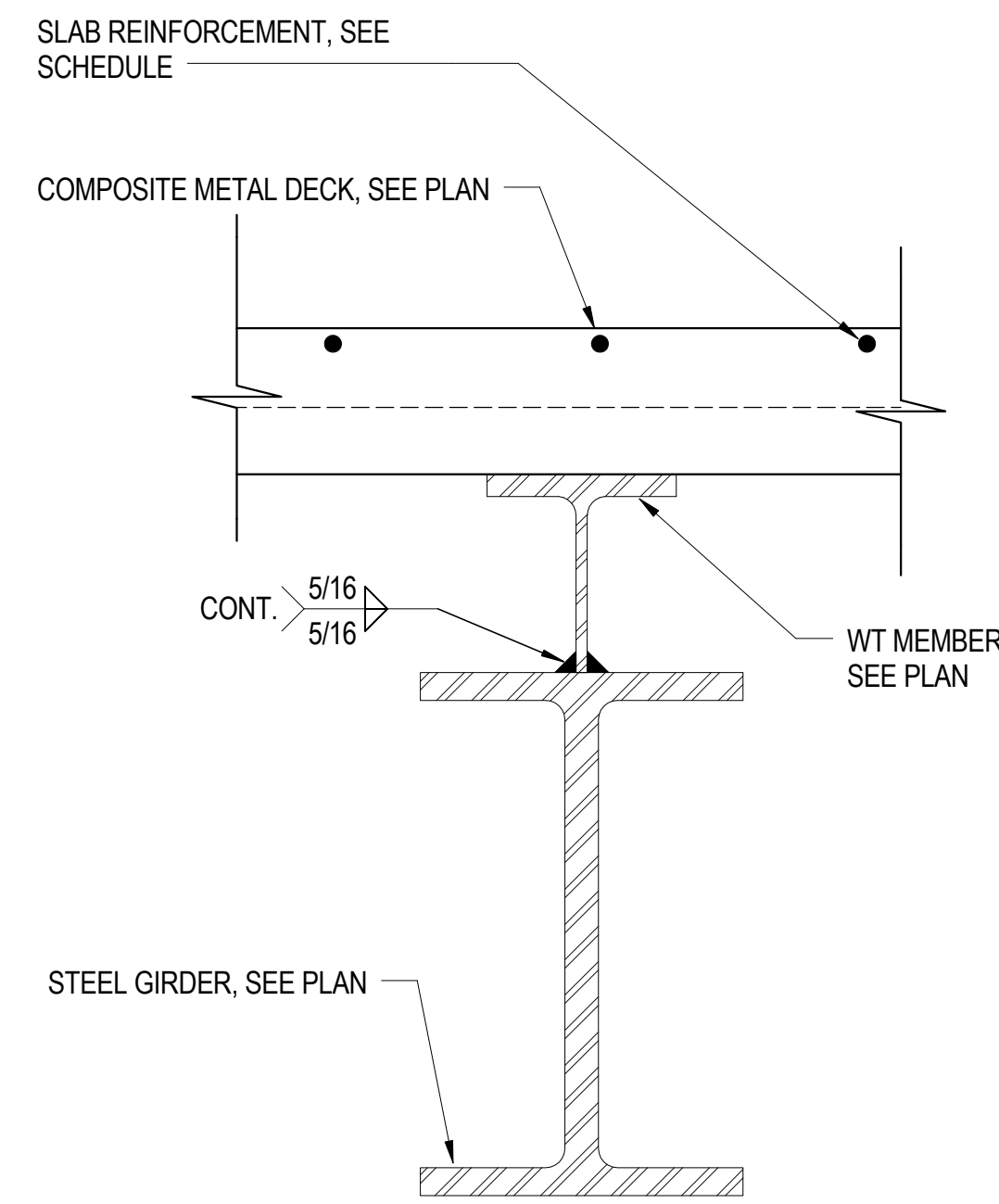
NOT TO SCALE



NOTES: 1. THIS DETAIL APPLIES WHEN W=6".
2. FOR CURB SIZE AND LOCATION, SEE ARCHITECTURAL DRAWINGS.
3. PROVIDE 3/4" CLEAR COVER TO BARS UNLESS NOTED OTHERWISE.

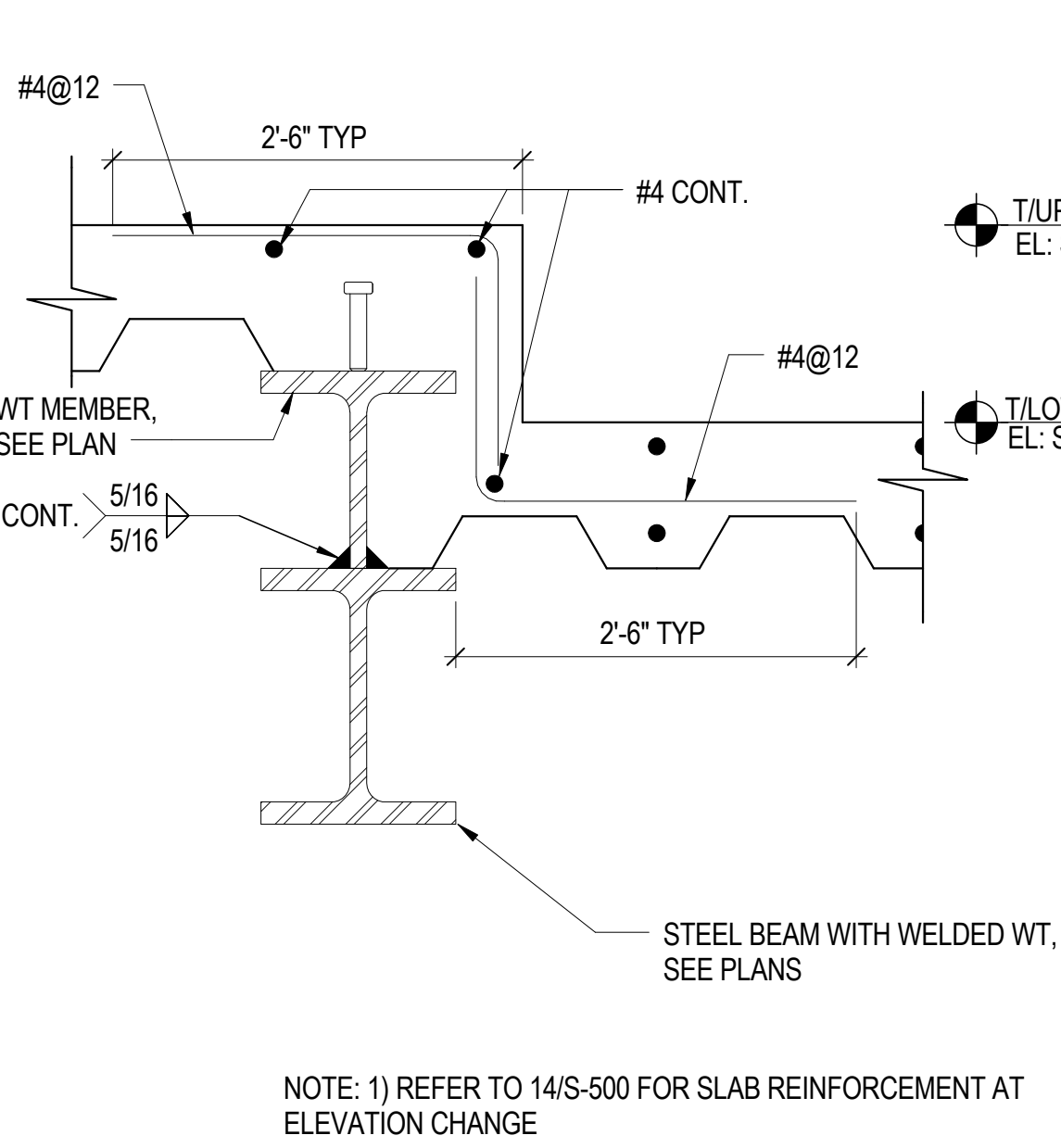
2 TYPICAL DETAILS FOR CONCRETE CURBS ON METAL DECK SLAB

NOT TO SCALE



3 TYPICAL STEEL BEAM WITH WT SLAB SUPPORT DETAIL

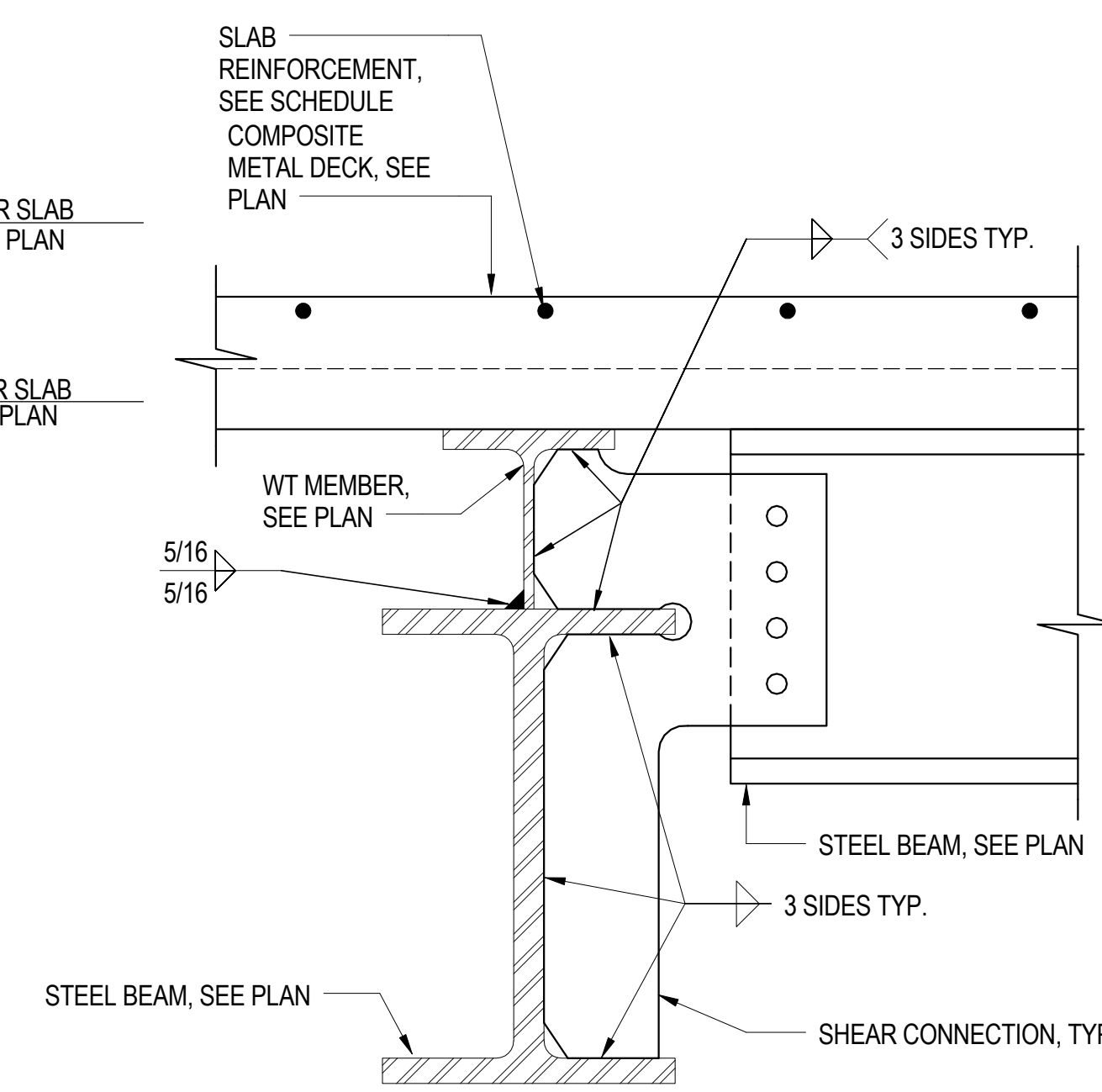
NOT TO SCALE



NOTE: 1) REFER TO 14/S-500 FOR SLAB REINFORCEMENT AT ELEVATION CHANGE

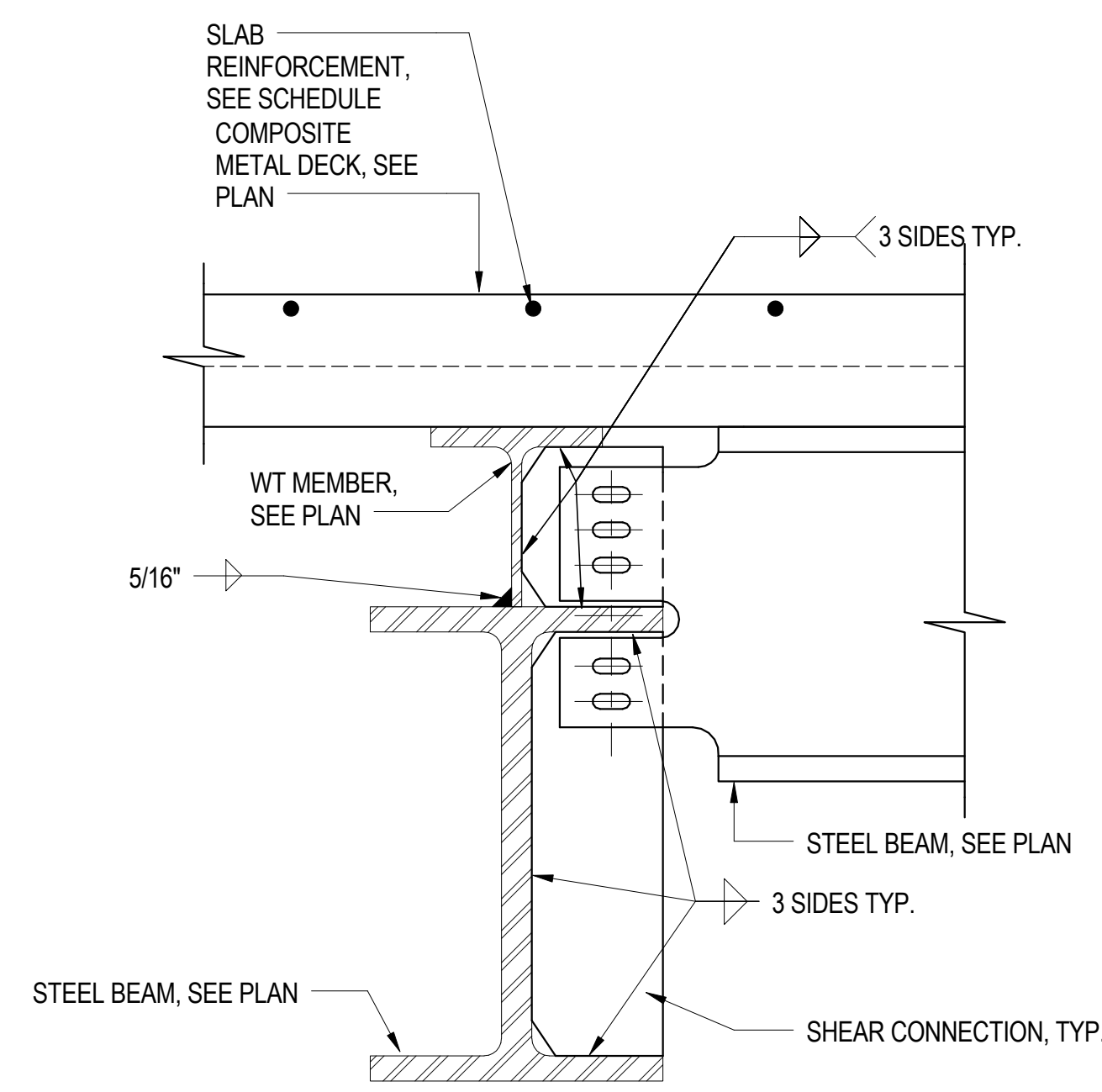
4 TYPICAL STEEL BEAM WITH WT SLAB SUPPORT DETAIL AT ELEVATION CHANGE

NOT TO SCALE



5 STEEL BEAM FRAMING INTO BEAM WITH WT SLAB SUPPORT DETAIL

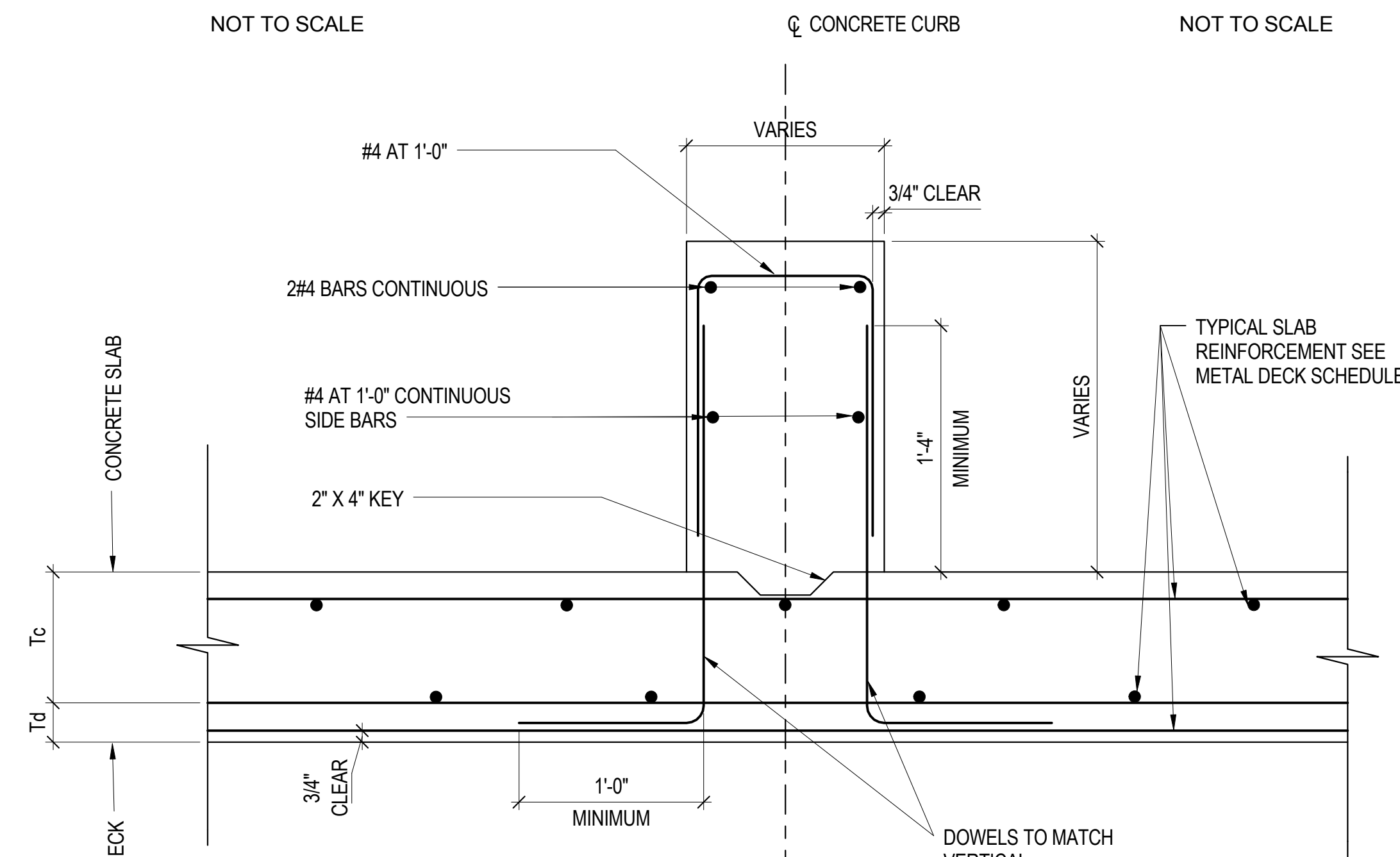
NOT TO SCALE



5A STEEL BEAM FRAMING INTO BEAM WITH WT SLAB SUPPORT DETAIL - ALTERNATE

NOT TO SCALE

DETAIL REMOVED,
NO LONGER APPLICABLE



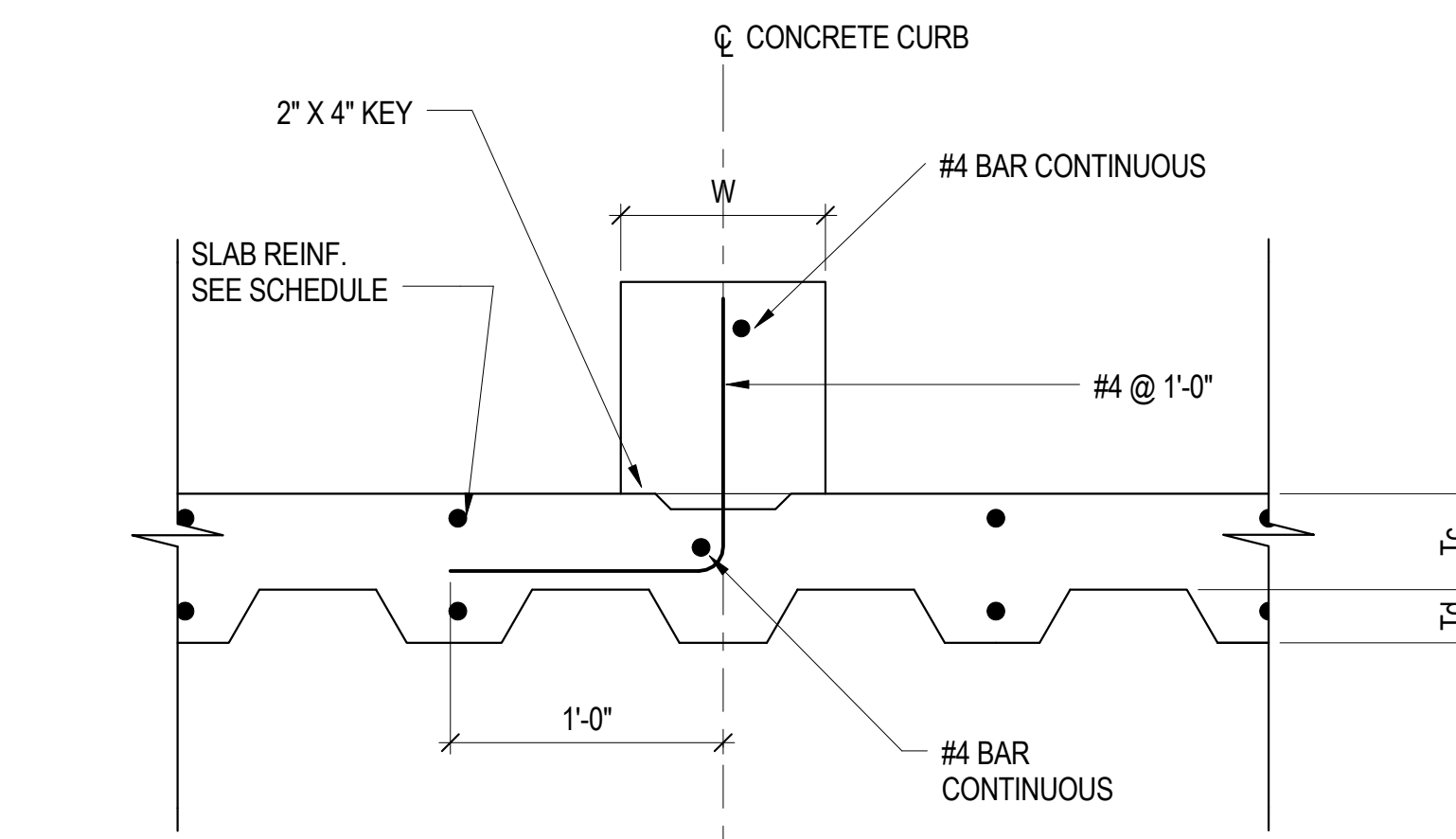
NOTES: 1. THIS DETAIL APPLIES WHEN W=6".
2. FOR CURB SIZE AND LOCATION, SEE ARCHITECTURAL DRAWINGS.
3. PROVIDE 3/4" CLEAR COVER TO BARS UNLESS NOTED OTHERWISE.
4. PROVIDE HORIZONTAL REBARS FROM CURB INTO FILL SLAB AS REQUIRED. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.

6 CMU DUCT CONNECTION DETAIL

NOT TO SCALE

7 TYPICAL DETAILS FOR CONCRETE CURBS

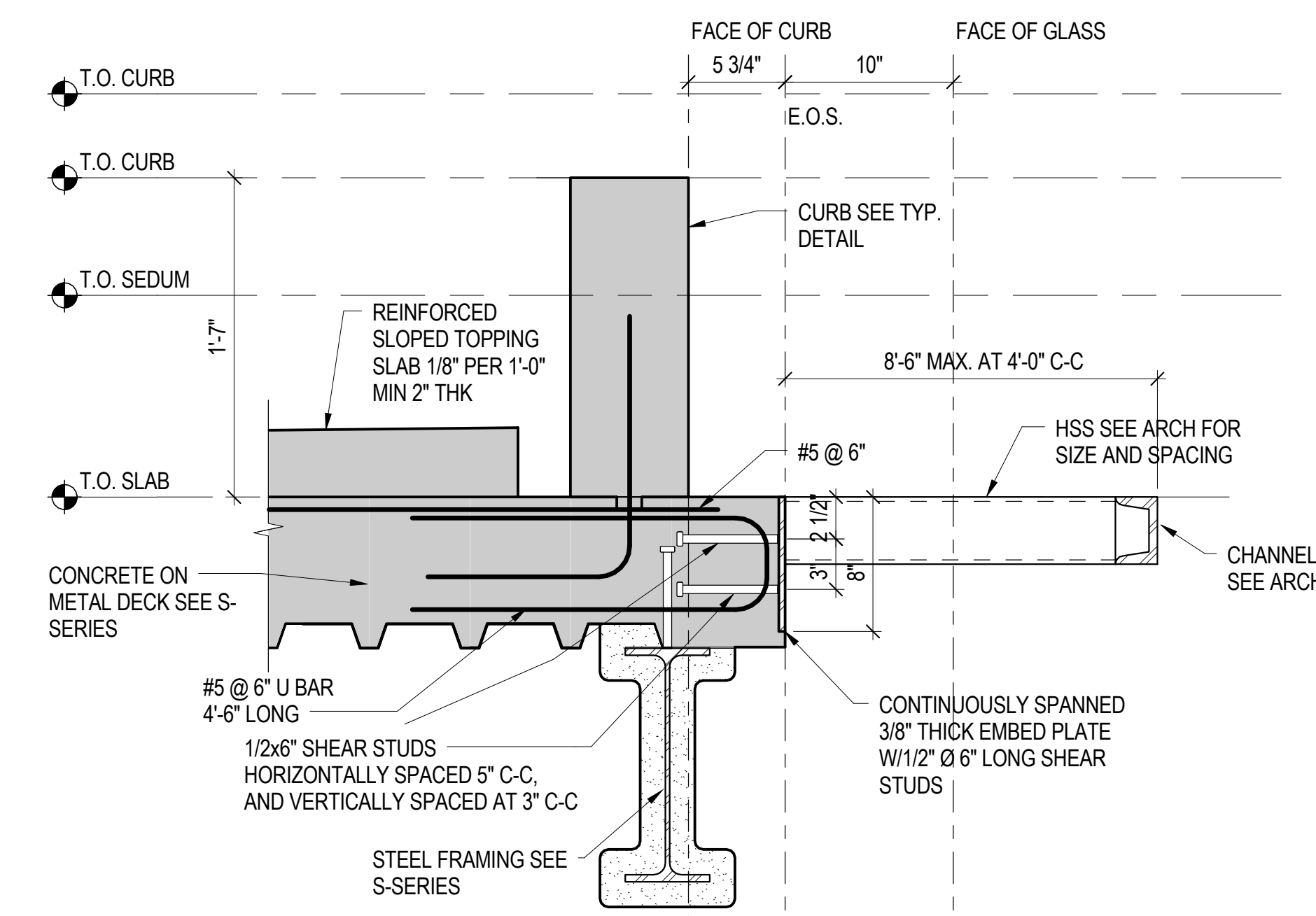
NOT TO SCALE



NOTE: 1. THIS DETAIL APPLIES WHEN W=6".
2. FOR CURB SIZE AND LOCATION, SEE ARCHITECTURAL DRAWINGS.
3. PROVIDE 3/4" CLEAR COVER TO BARS UNLESS NOTED OTHERWISE.
4. FIRE PROOFING NOT SHOWN FOR CLARITY.
5. PROVIDE HORIZONTAL REBARS FROM CURB INTO FILL SLAB AS REQUIRED. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.

8 TYPICAL DETAIL FOR CONCRETE CURB ON METAL DECK SLAB

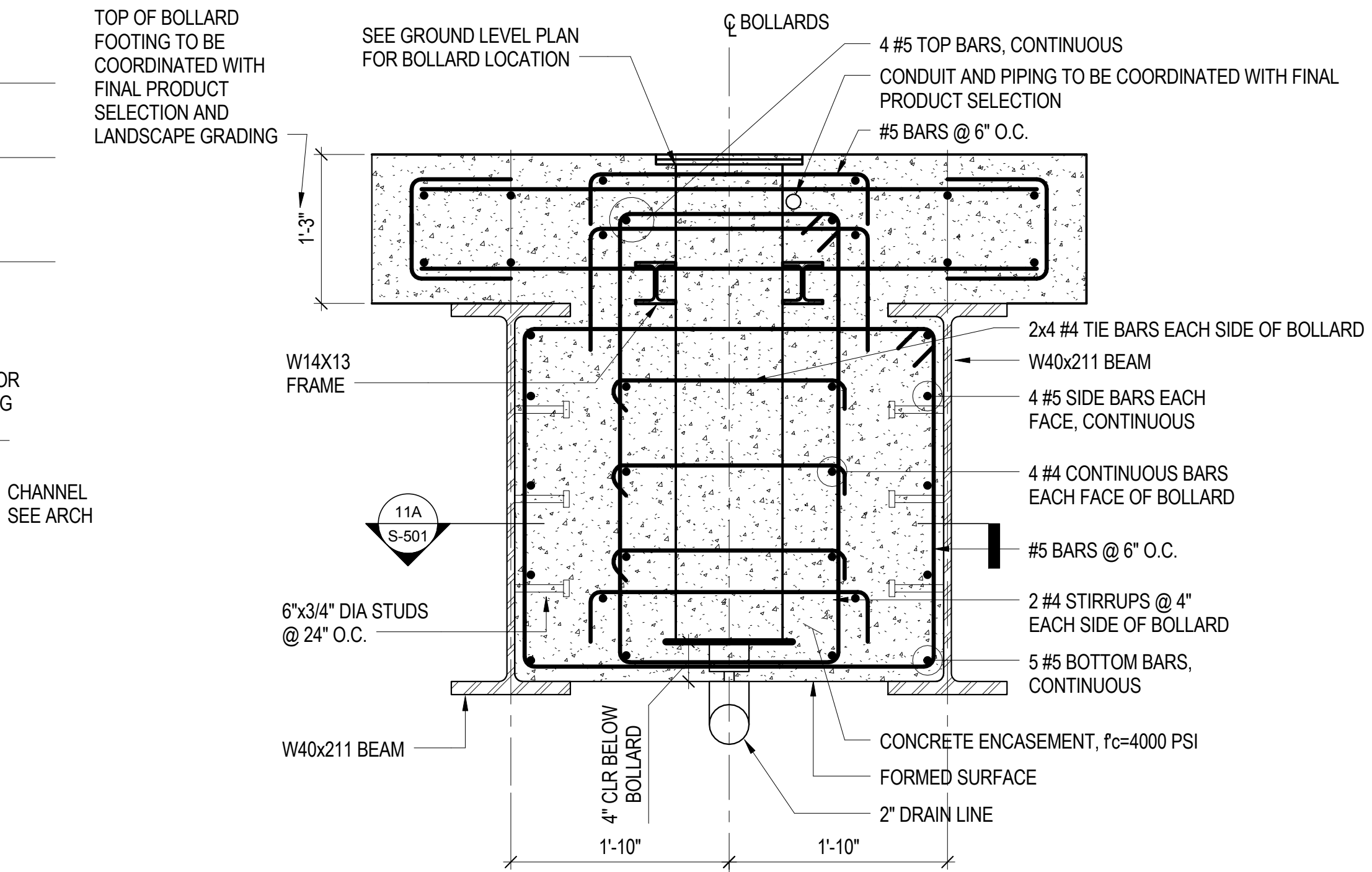
NOT TO SCALE



NOTES: 1. FOR ADDITIONAL INFORMATION SEE ARCHITECTURAL DRAWING A-577.

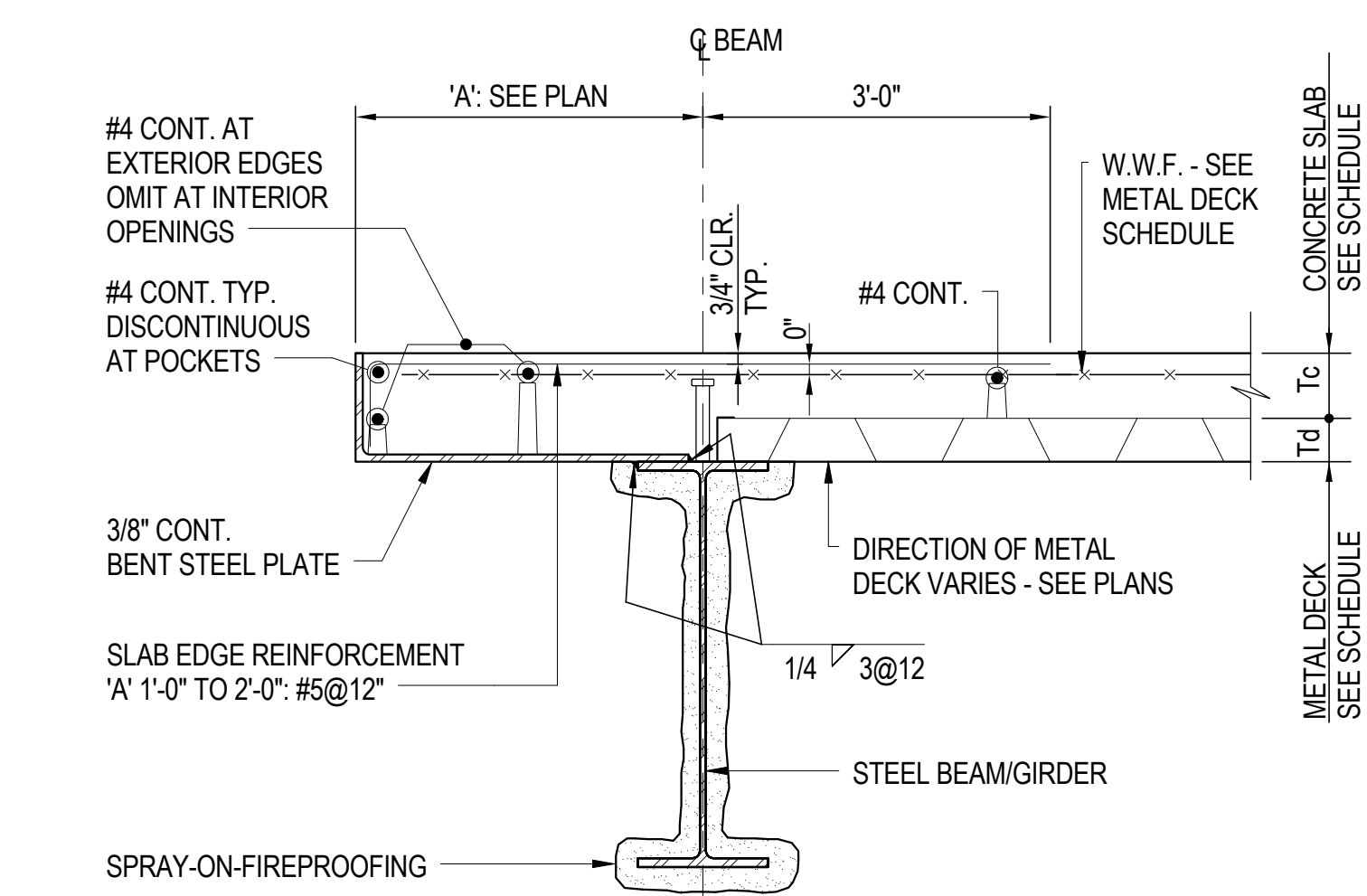
10 TYPICAL SLAB EDGE DETAIL AT 3RD FLOOR

NOT TO SCALE



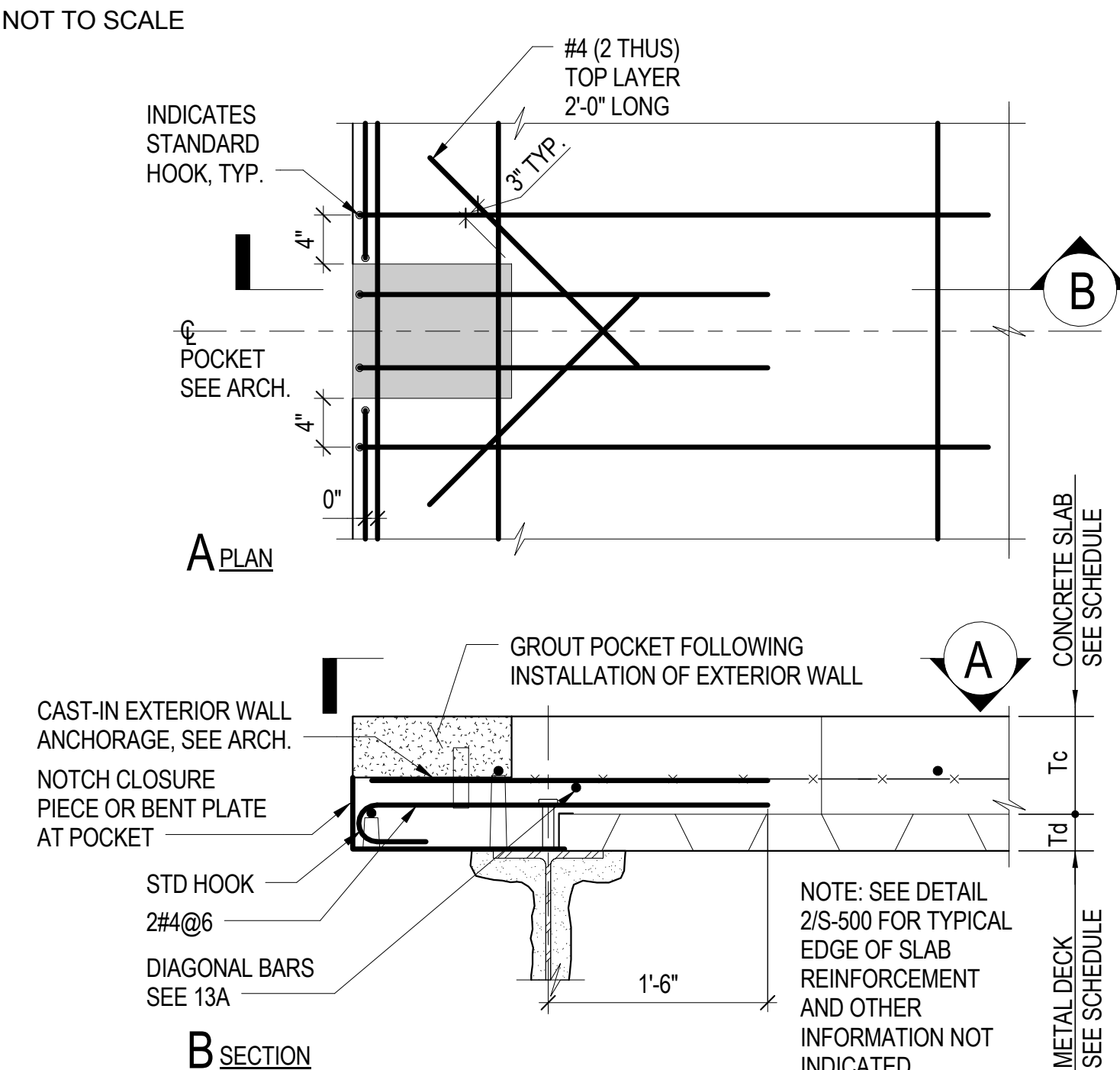
11 FOUNDATION SUPPORT DETAIL AT RETRACTABLE BOLLARD

NOT TO SCALE



12 TYPICAL METAL DECK SLAB EDGE DETAIL FOR 1'-0" <= A' <= 2'-0"

NOT TO SCALE

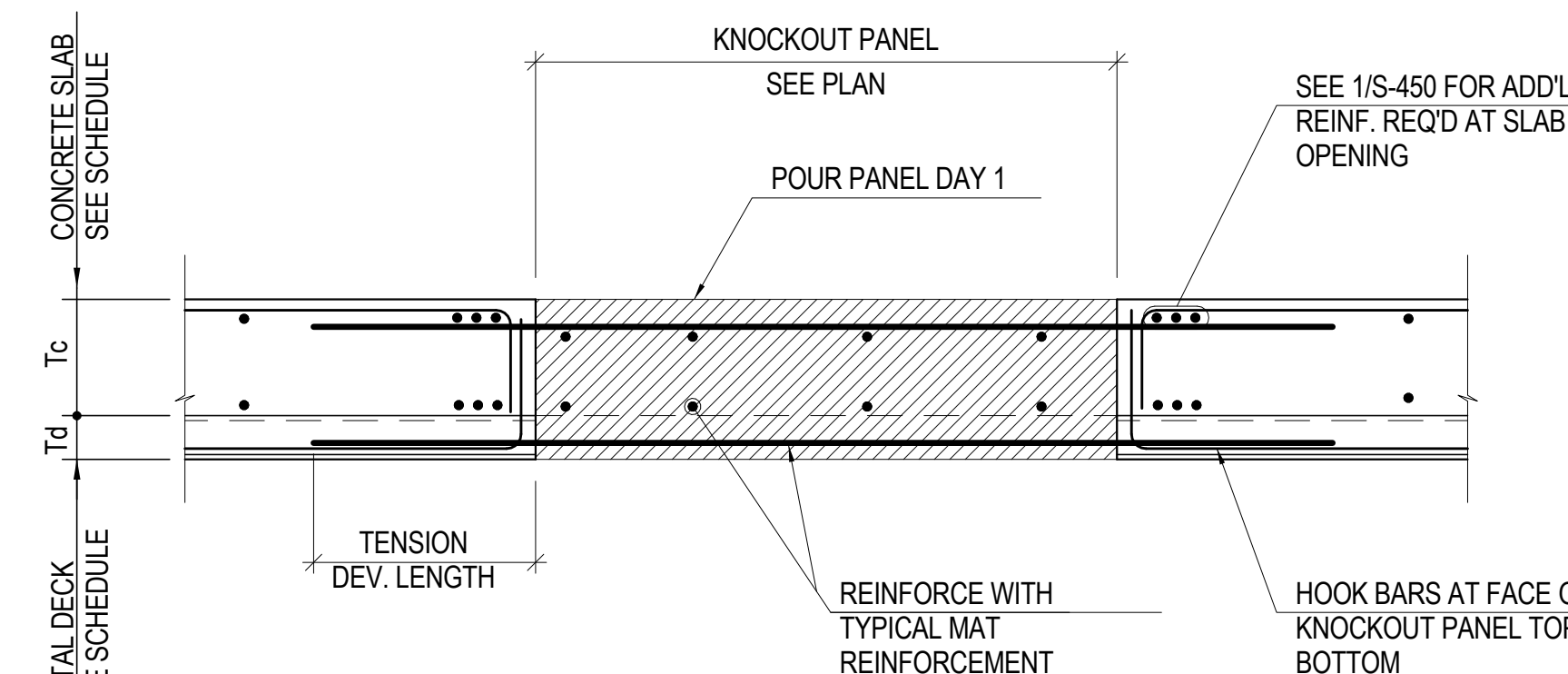


13 TYPICAL METAL DECK SLAB POCKET DETAIL

NOT TO SCALE

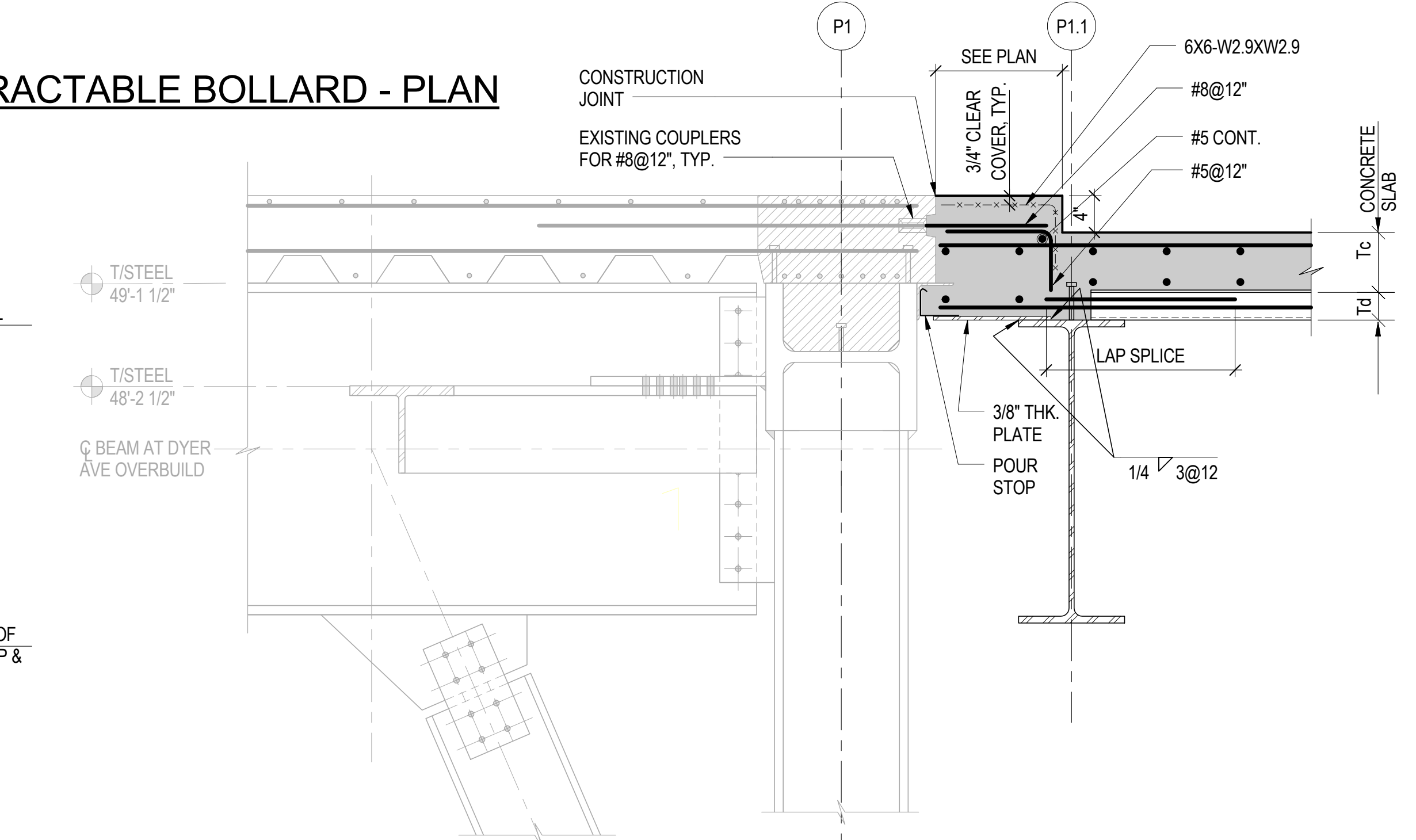
11A FOUNDATION SUPPORT DETAIL AT RETRACTABLE BOLLARD - PLAN

NOT TO SCALE



14 KNOCKOUT SLAB DETAIL

NOT TO SCALE

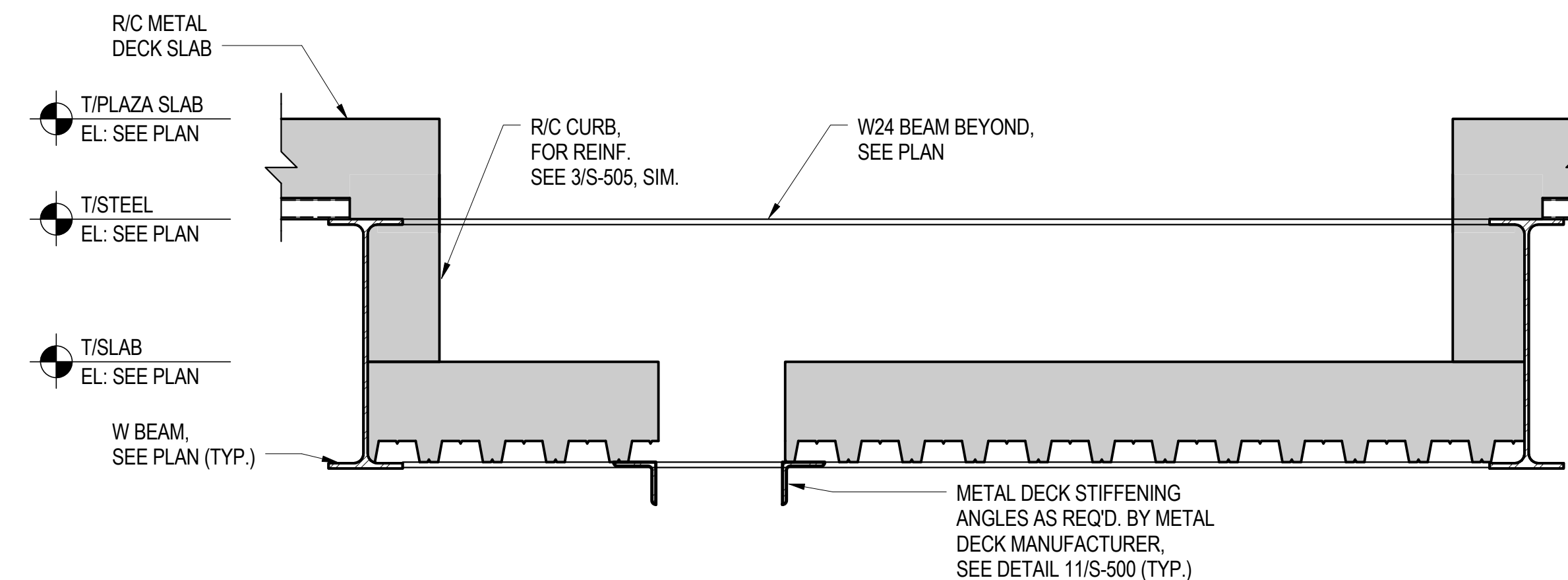


15 METAL DECK SLAB EDGE DETAIL AT DYER AVE OVERBUILD TRUSS

NOT TO SCALE

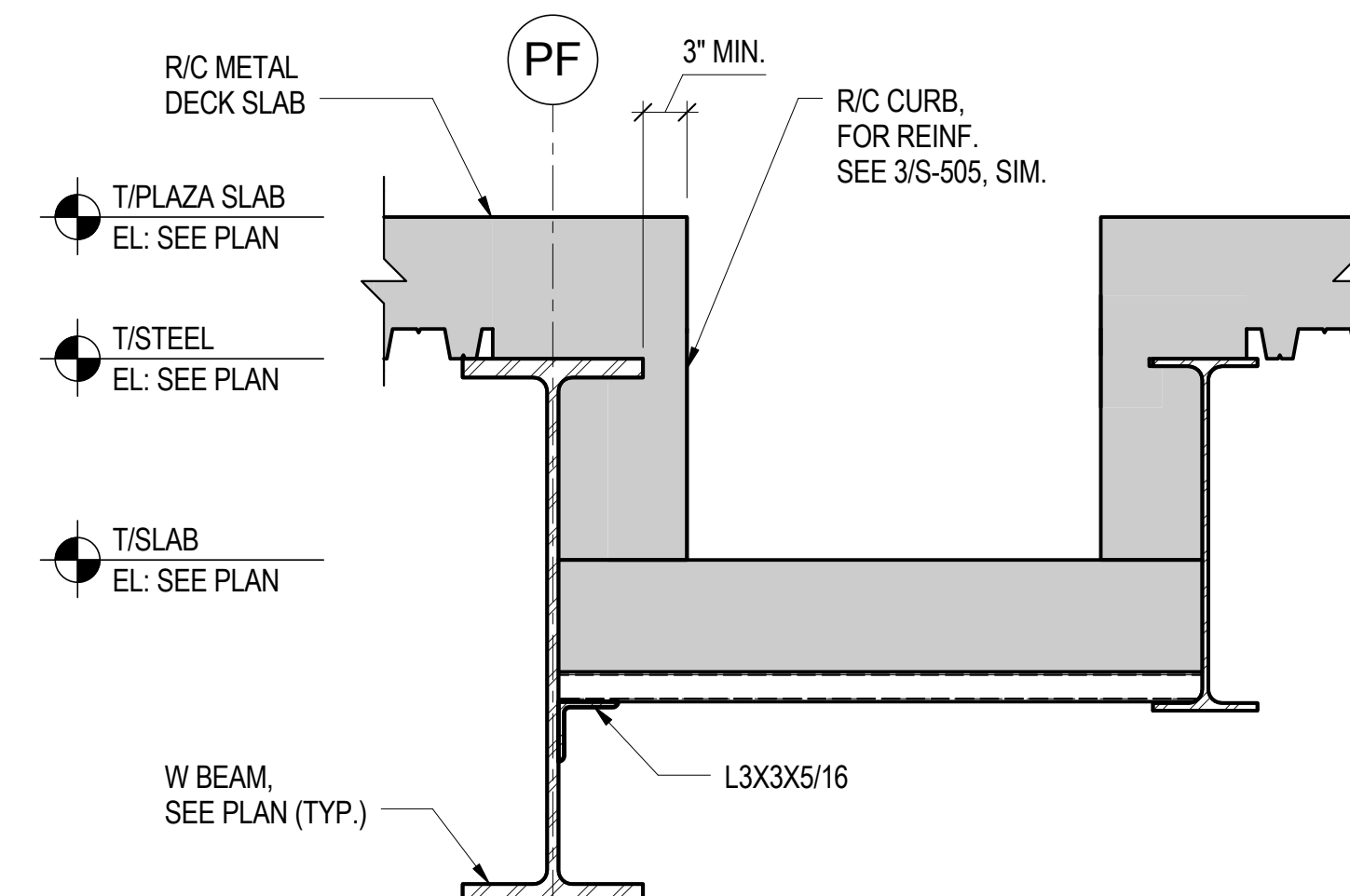
9 TYPICAL METAL DECK AT DEPTH CHANGE

NOT TO SCALE



16 PLAZA LEVEL - ELECTRICAL ACCESS HATCH DETAIL

NOT TO SCALE



17 PLAZA LEVEL - ELECTRICAL ACCESS HATCH DETAIL

NOT TO SCALE

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Project No.: 211157
Date: 02/16/2018
Scale: As Indicated
File No.: S-501

B-SCAN Sheet No.:
S-501.00
Sheet No.:
S-501
Page No.:

**METAL DECK
SLAB SECTIONS
AND DETAILS**



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 650 Woodlawn Road West, Guelph, Ontario, Canada N1K 1B6

Seal & Signature

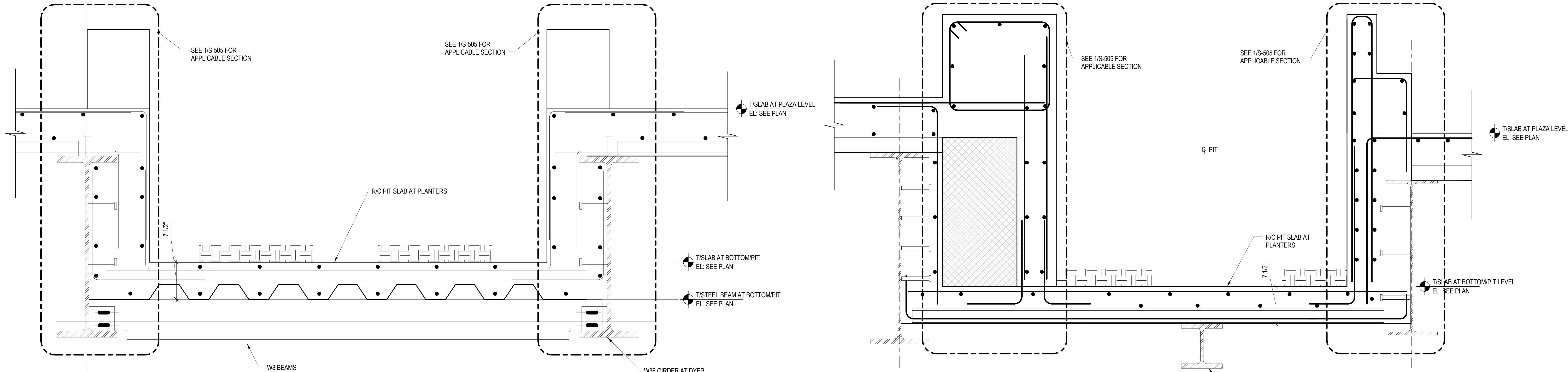


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 SLAB SECTIONS &
 DETAILS**

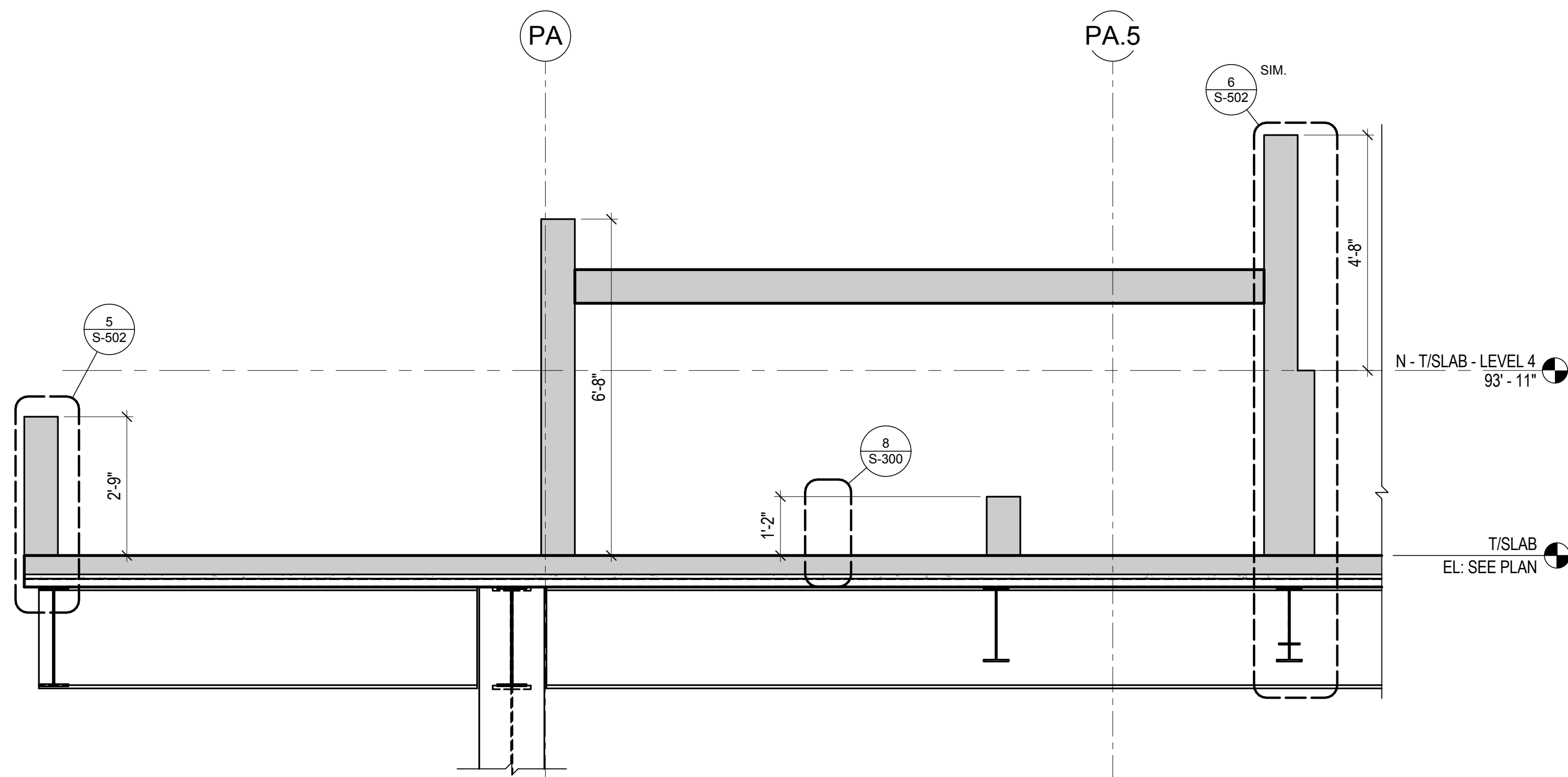
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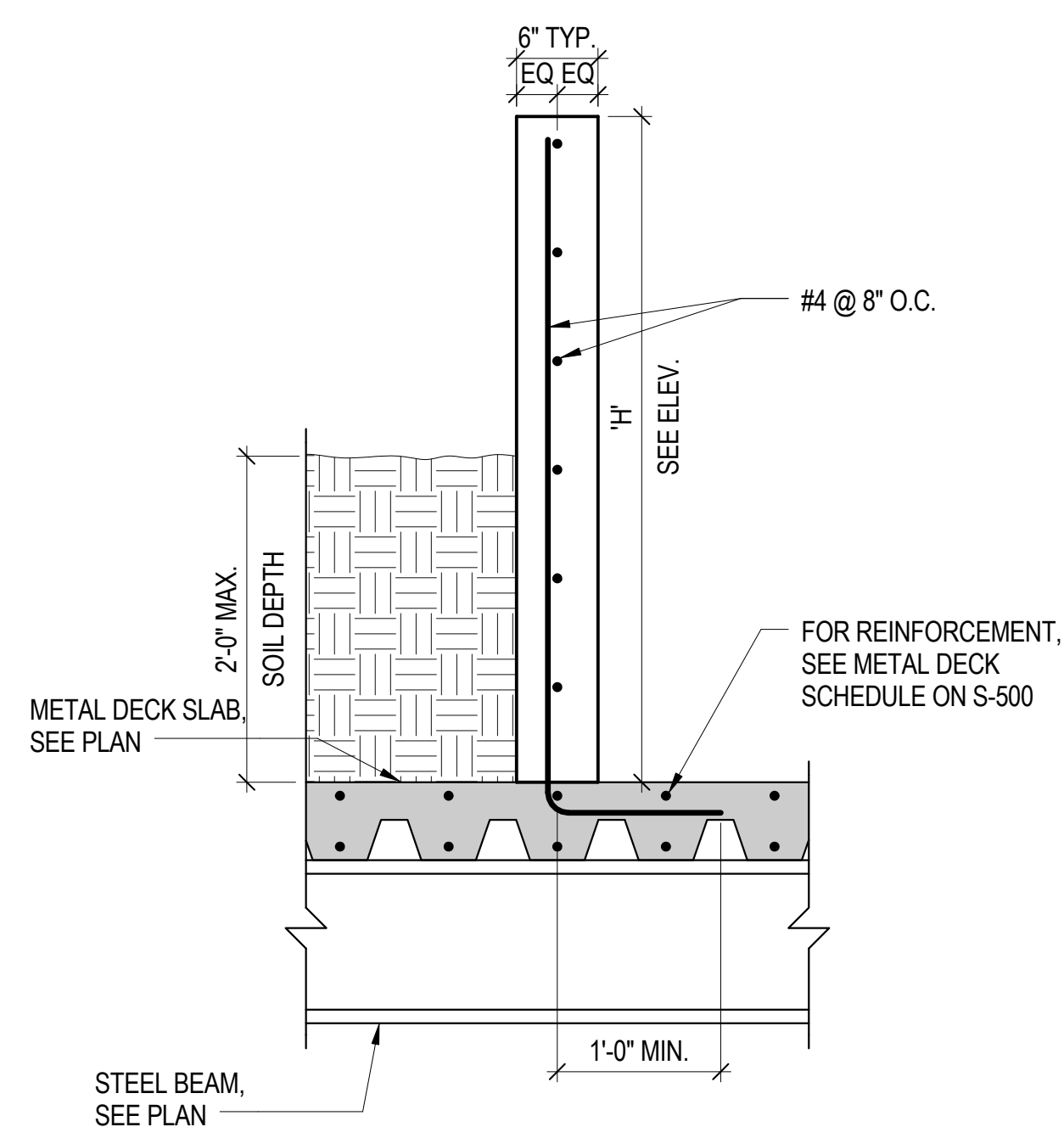


1 TYPICAL SECTION AT PLANTER LOOKING WEST
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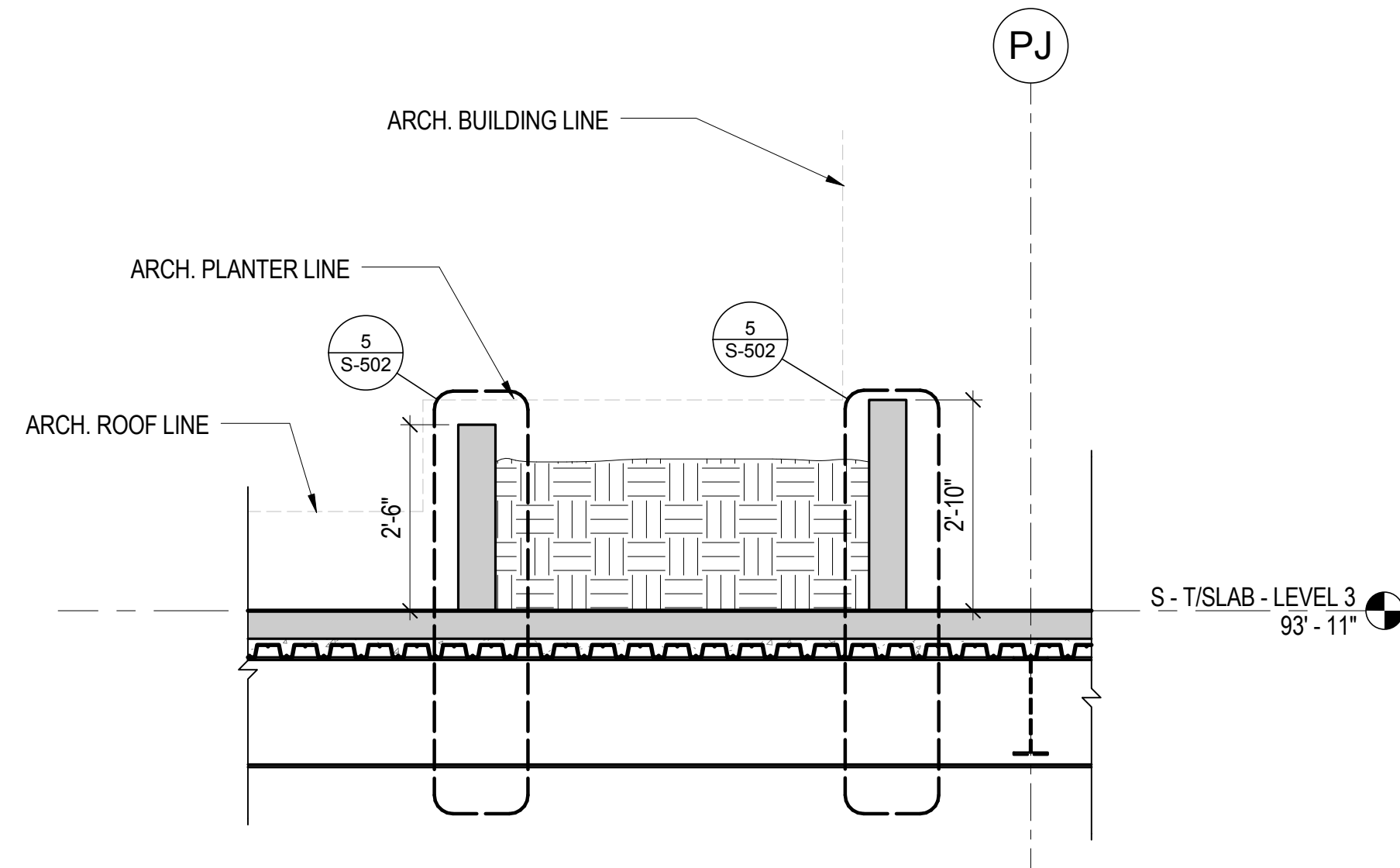
2 TYPICAL SECTION AT PLANTERS LOOKING NORTH
 NOT TO SCALE



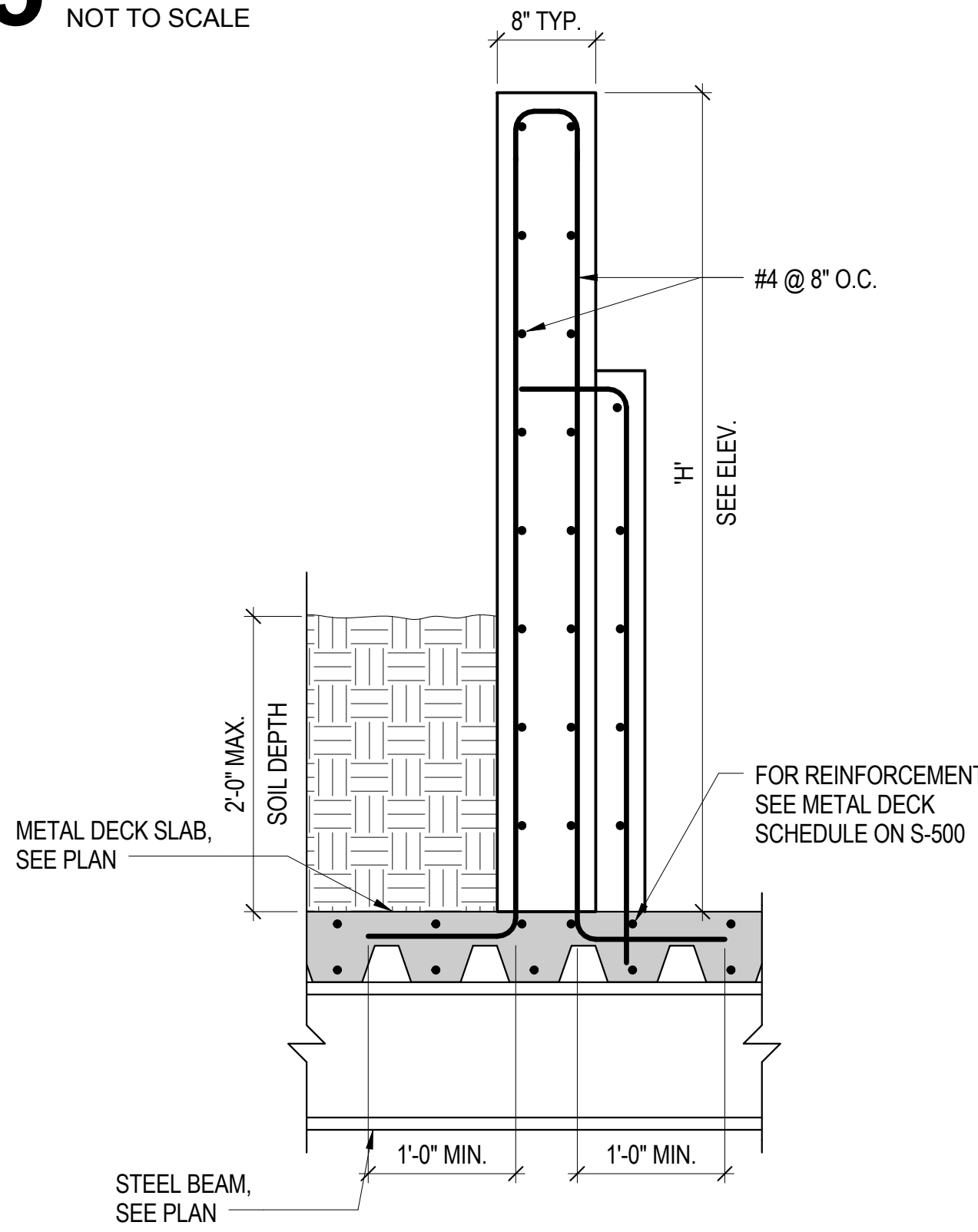
3 BUILDING SECTION ALONG GRIDLINE P5 - LOOKING EAST
 1/2" = 1'-0"



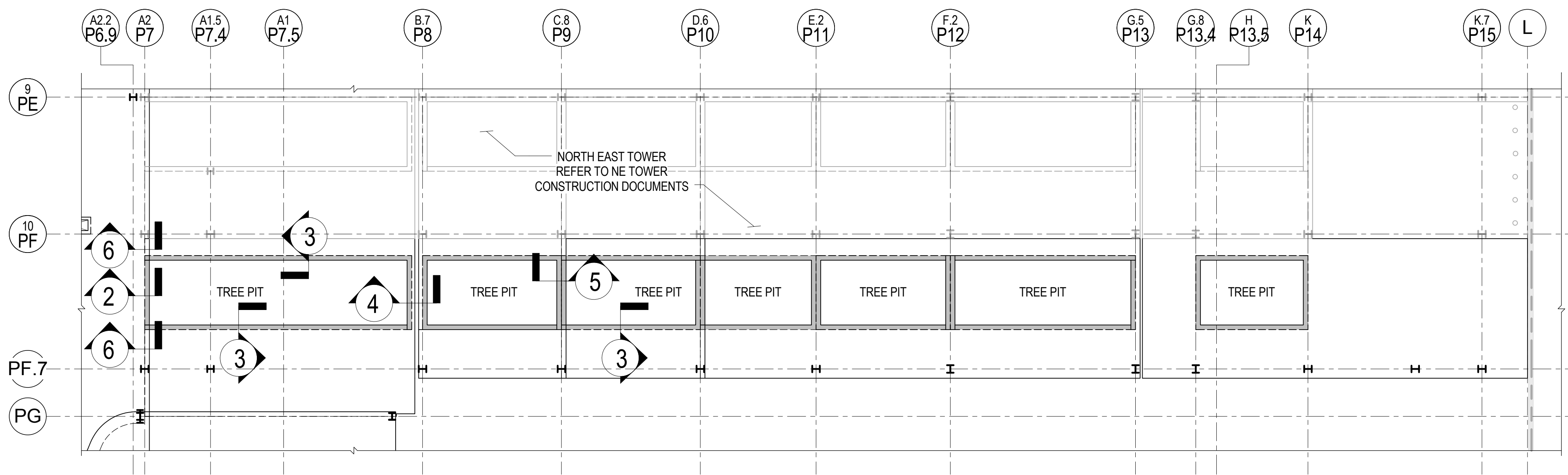
5 PLANTER WALL REINFORCEMENT DETAIL
 NOT TO SCALE



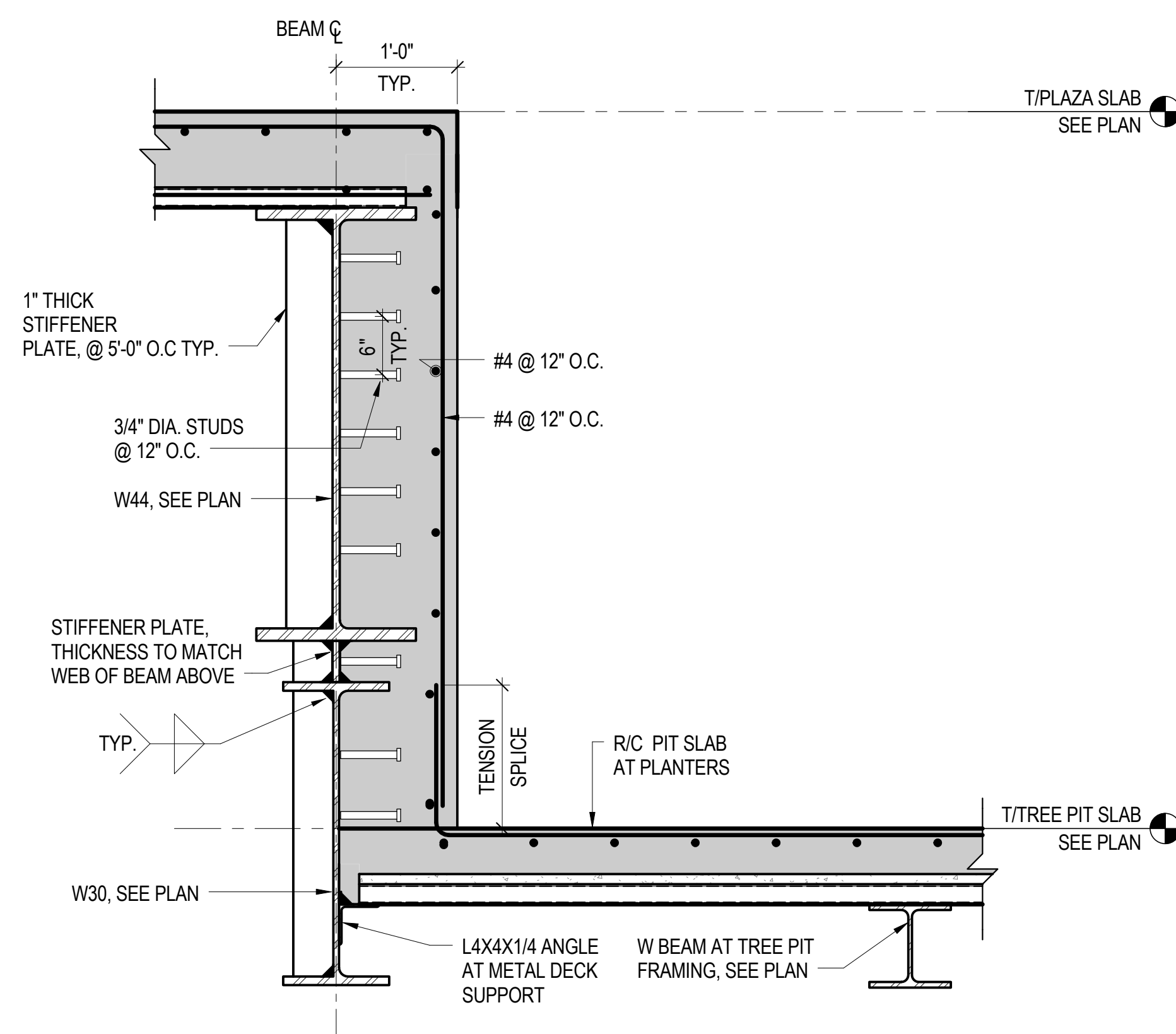
4 BUILDING SECTION ALONG GRIDLINE P5 - LOOKING EAST
 1/2" = 1'-0"



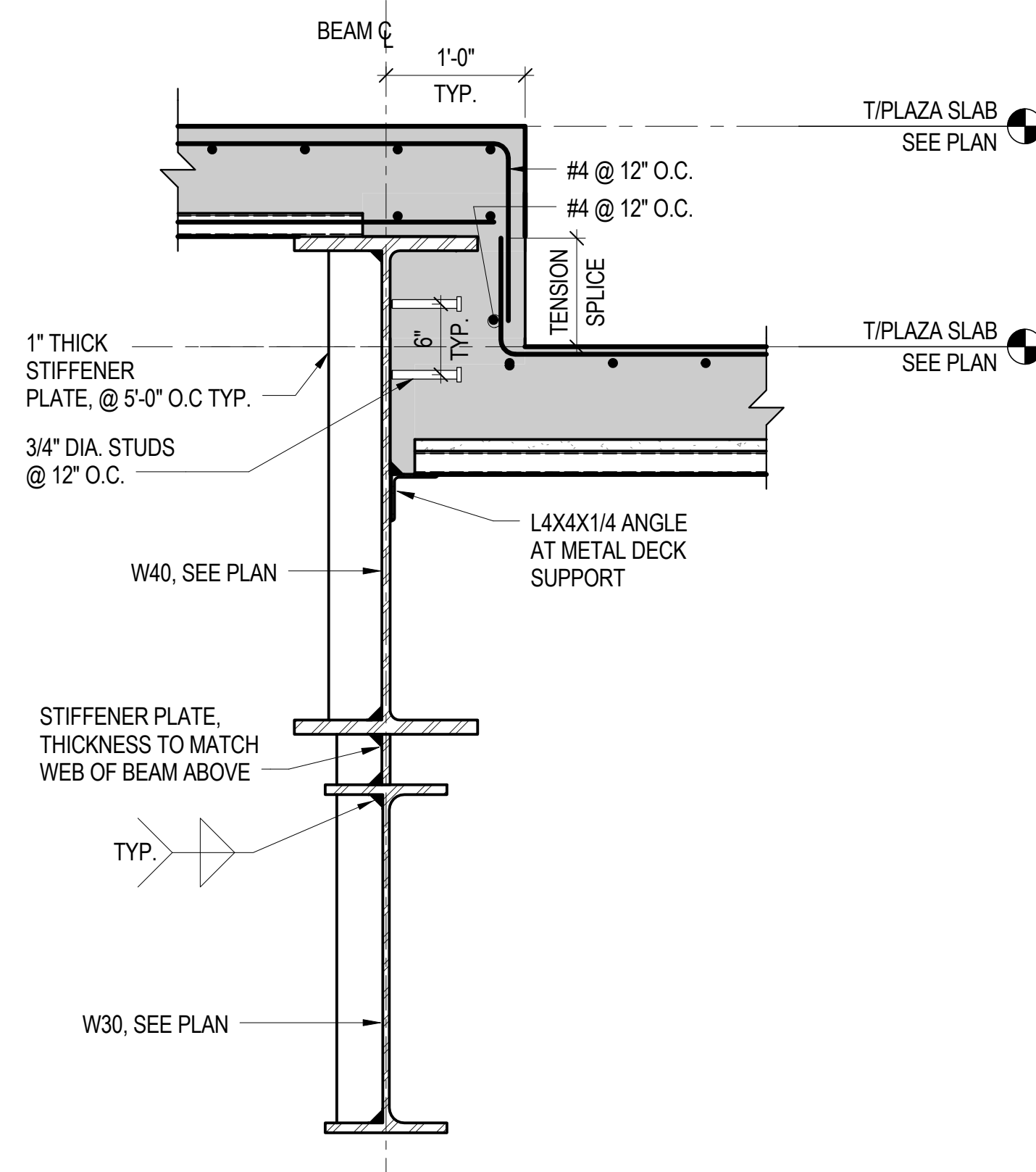
6 PLANTER WALL REINFORCEMENT DETAIL
 NOT TO SCALE



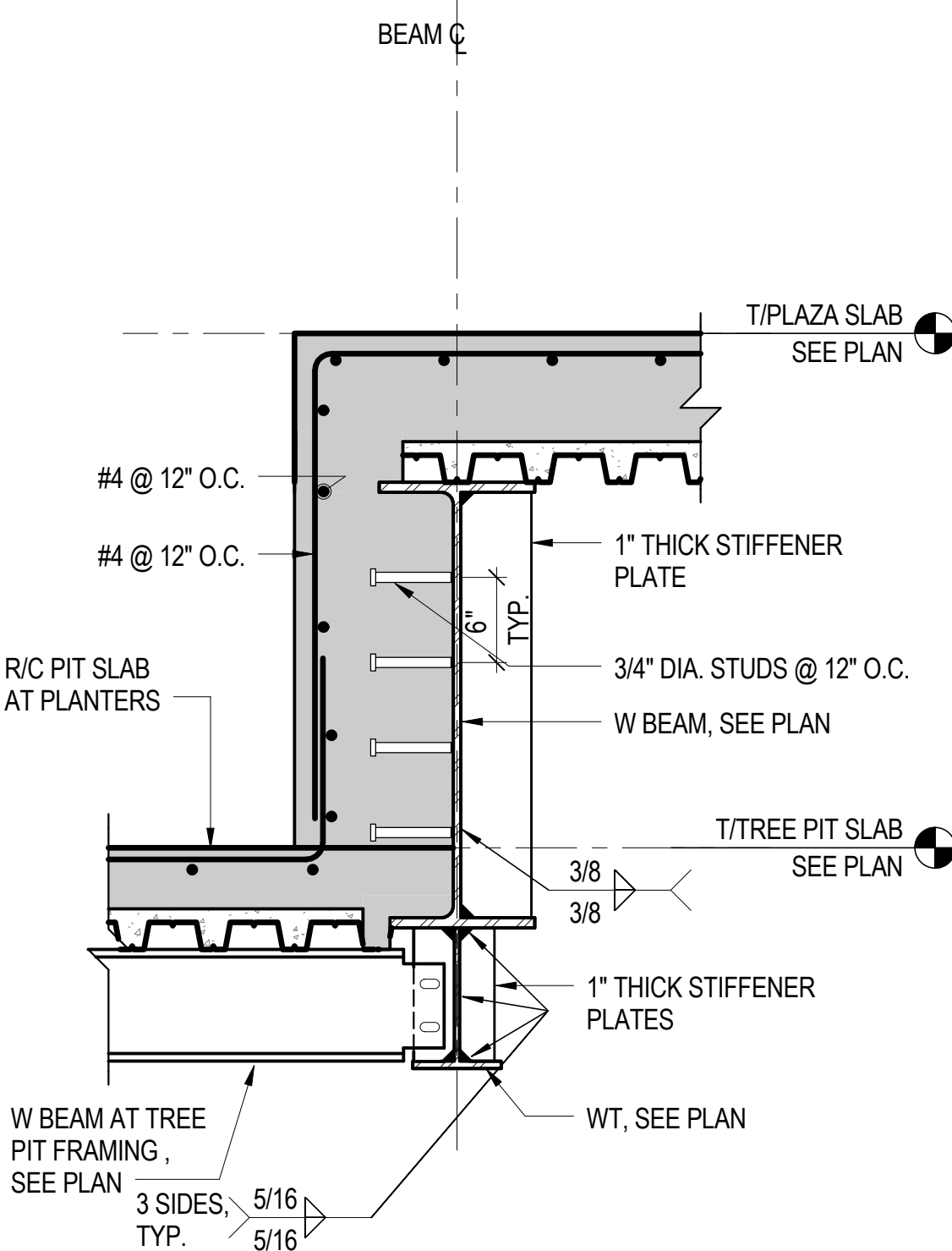
1 PLAZA PLANTERS - KEY PLAN
NOT TO SCALE



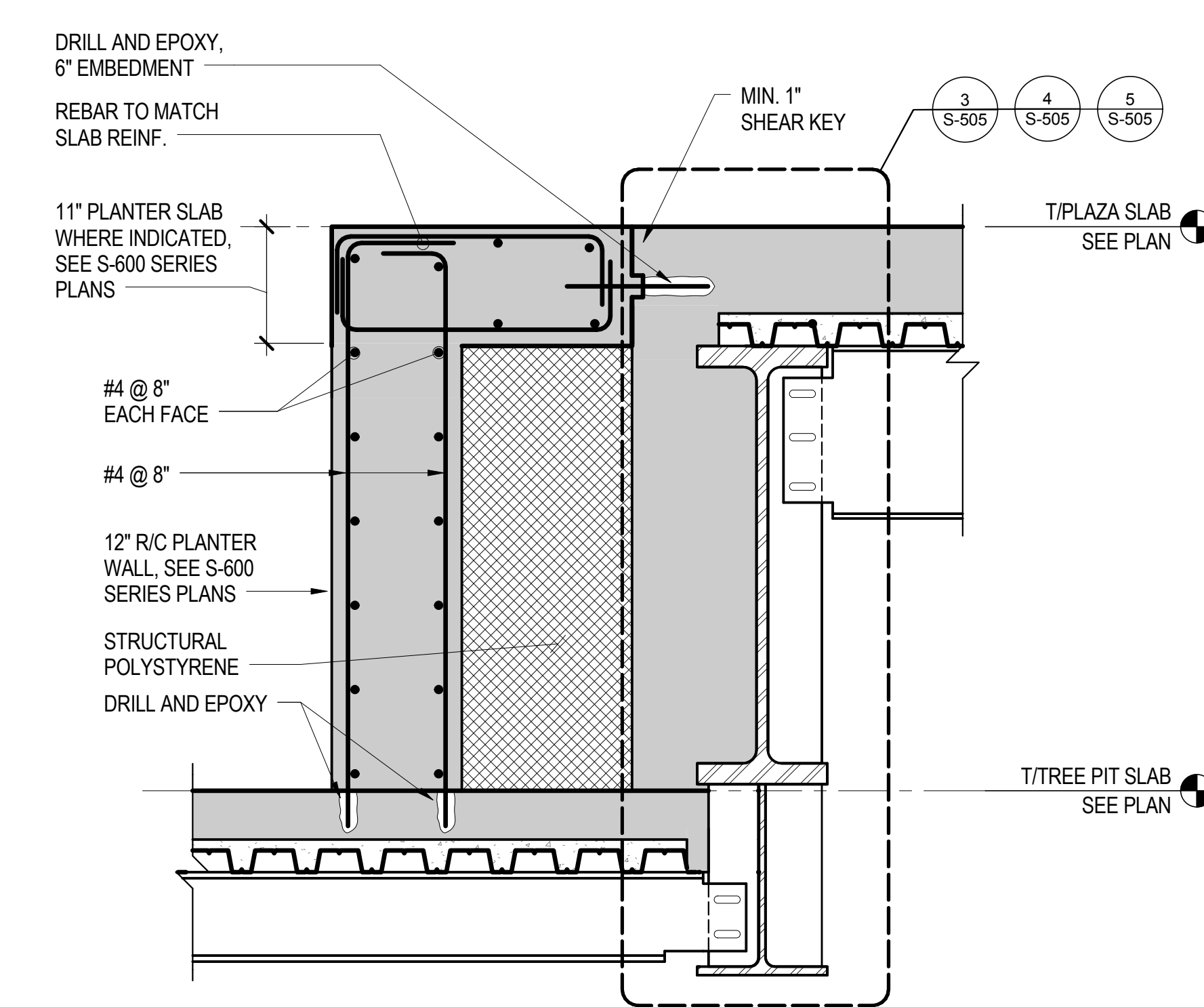
2 PLANTER SECTION
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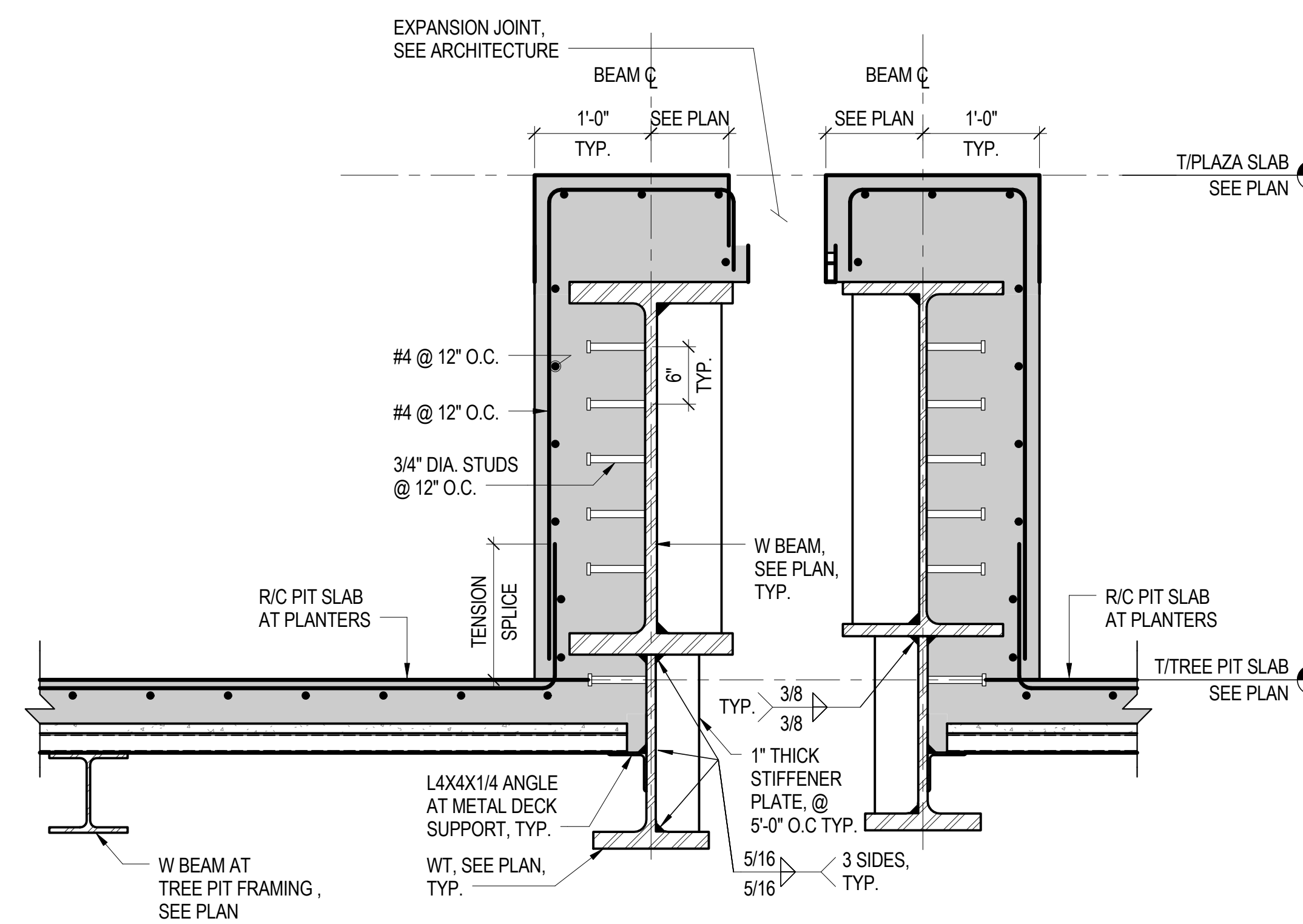
6 PLANTER SECTION
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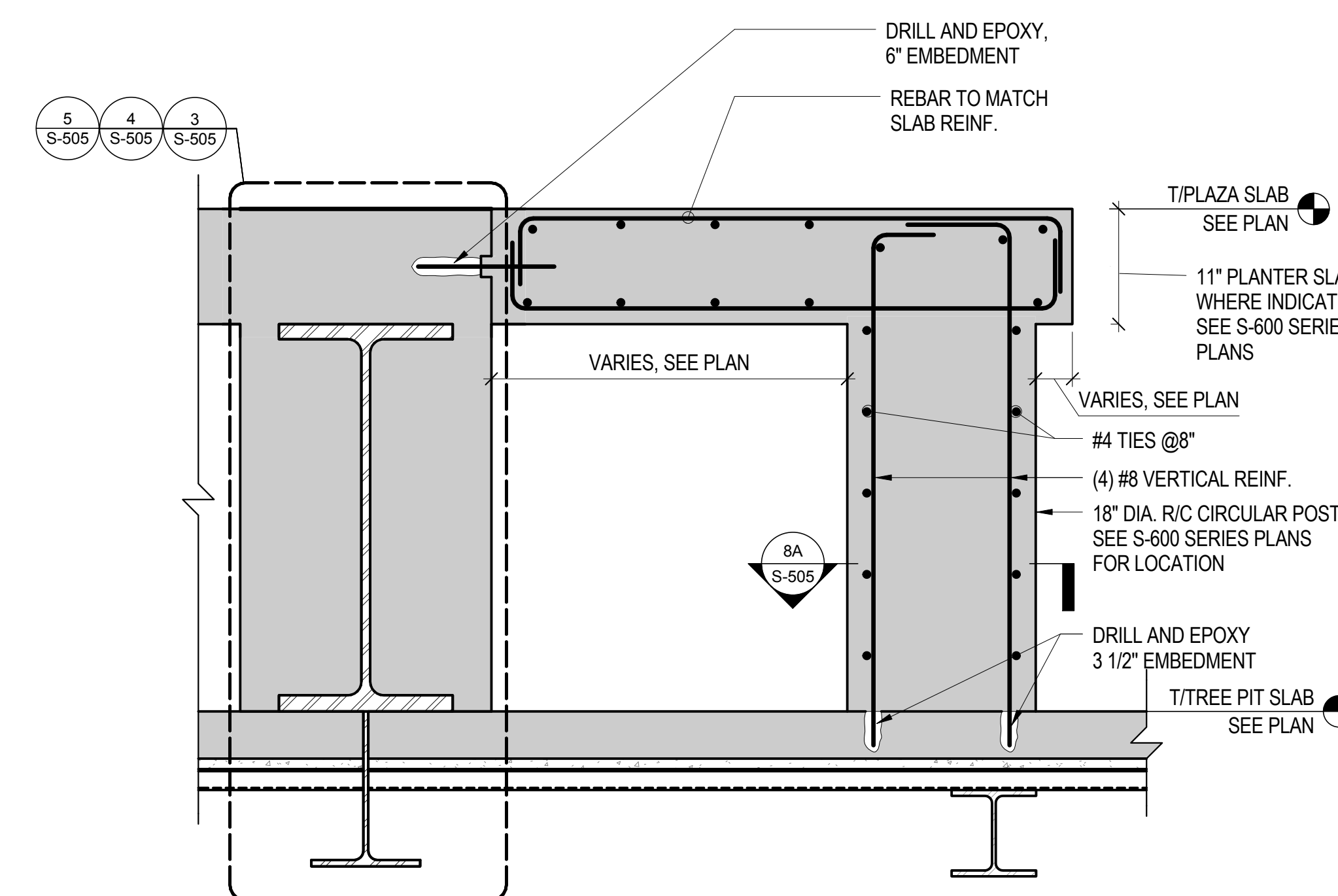
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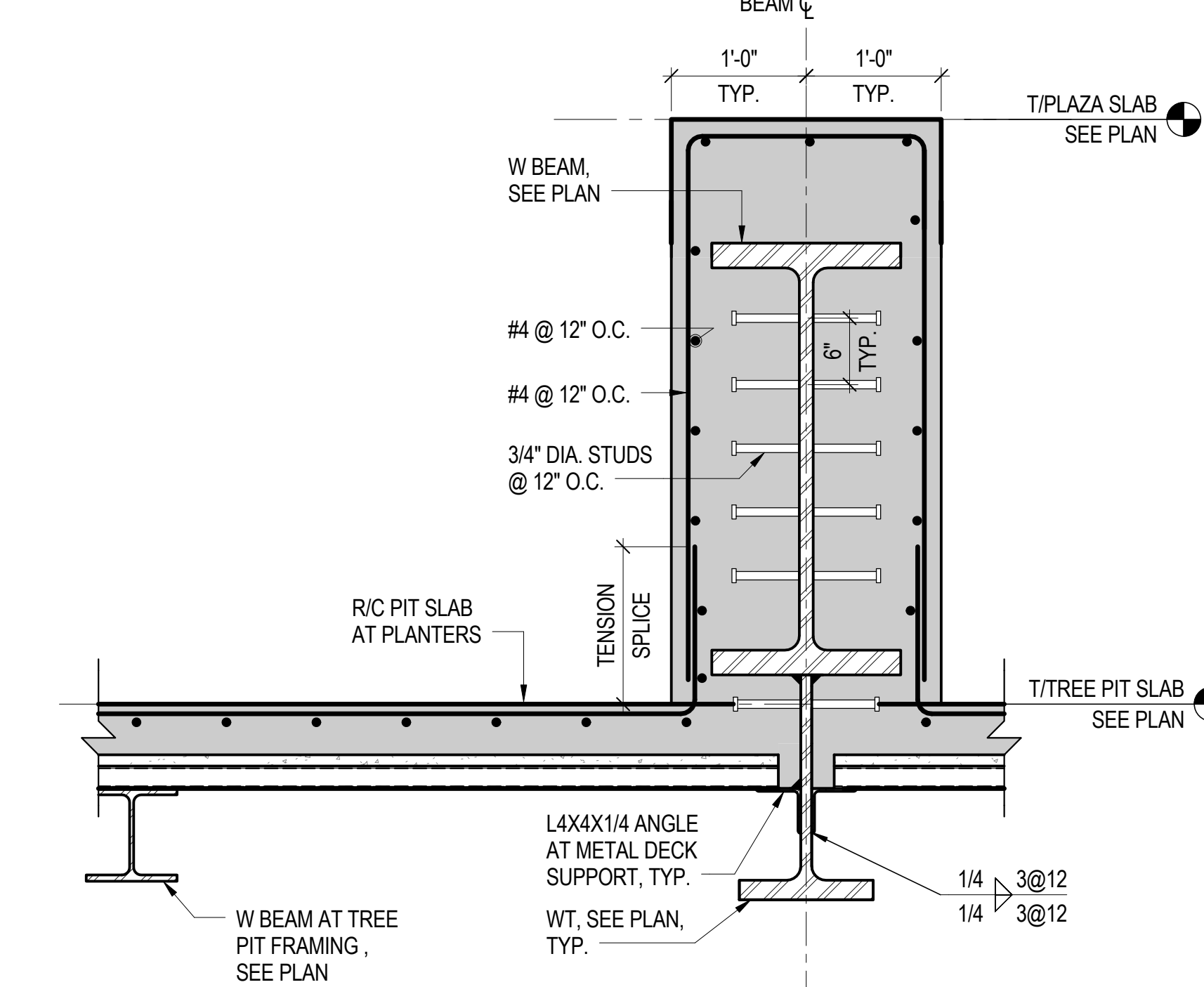
7 PLANTER SECTION
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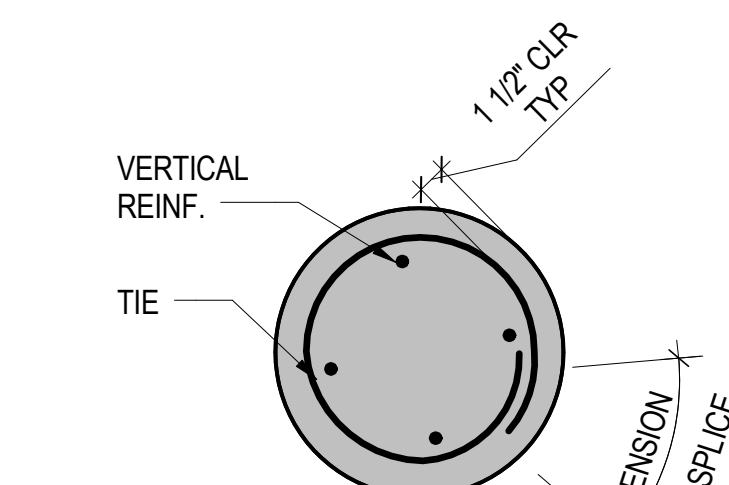
4 PLANTER SECTION
NOT TO SCALE




8 PLANTER SECTION
NOT TO SCALE



5 PLANTER SECTION
NOT TO SCALE



8A CIRCULAR POST REINF. DETAIL
NOT TO SCALE



**MANHATTAN WEST:
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680 Woodlawn Road West, Guelph, Ontario, Canada N1K 1B8

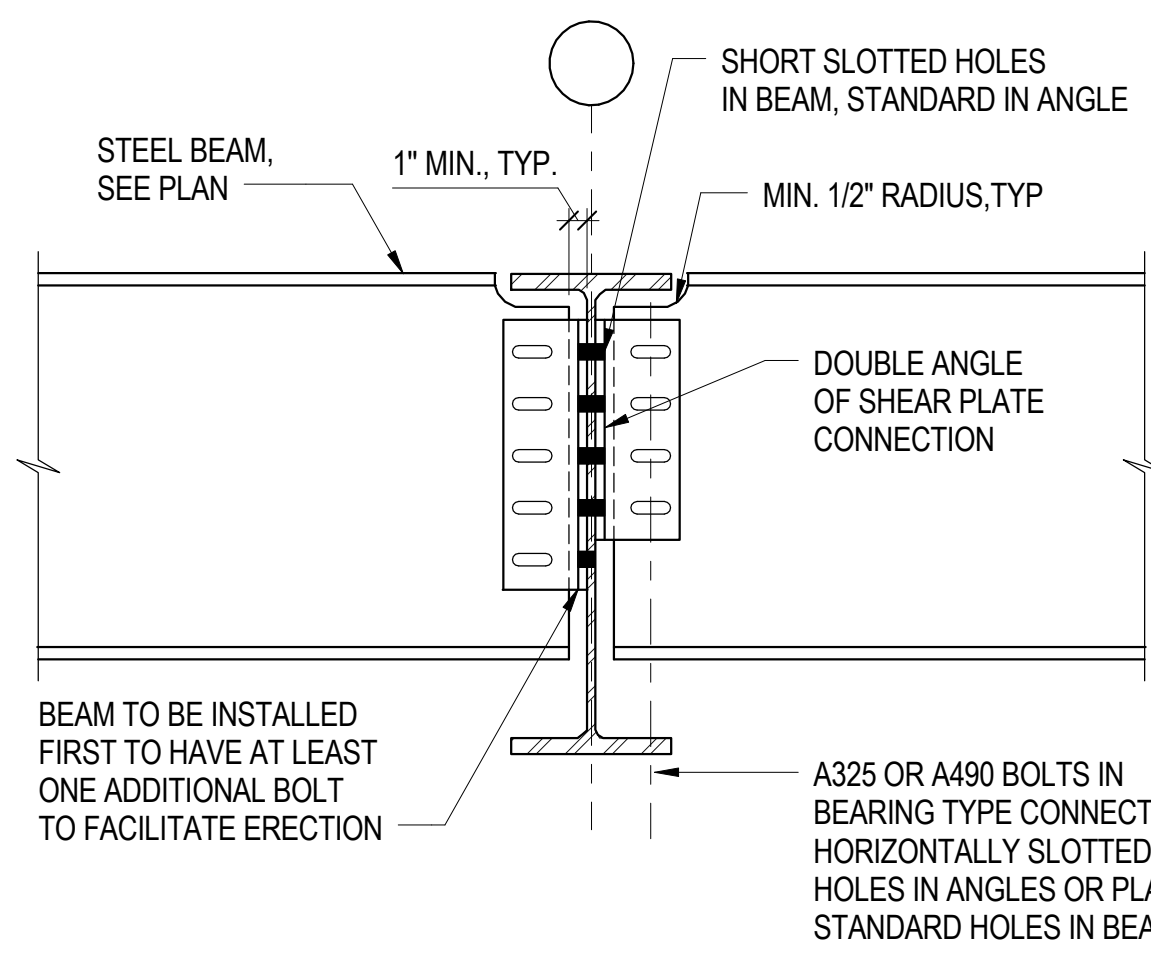
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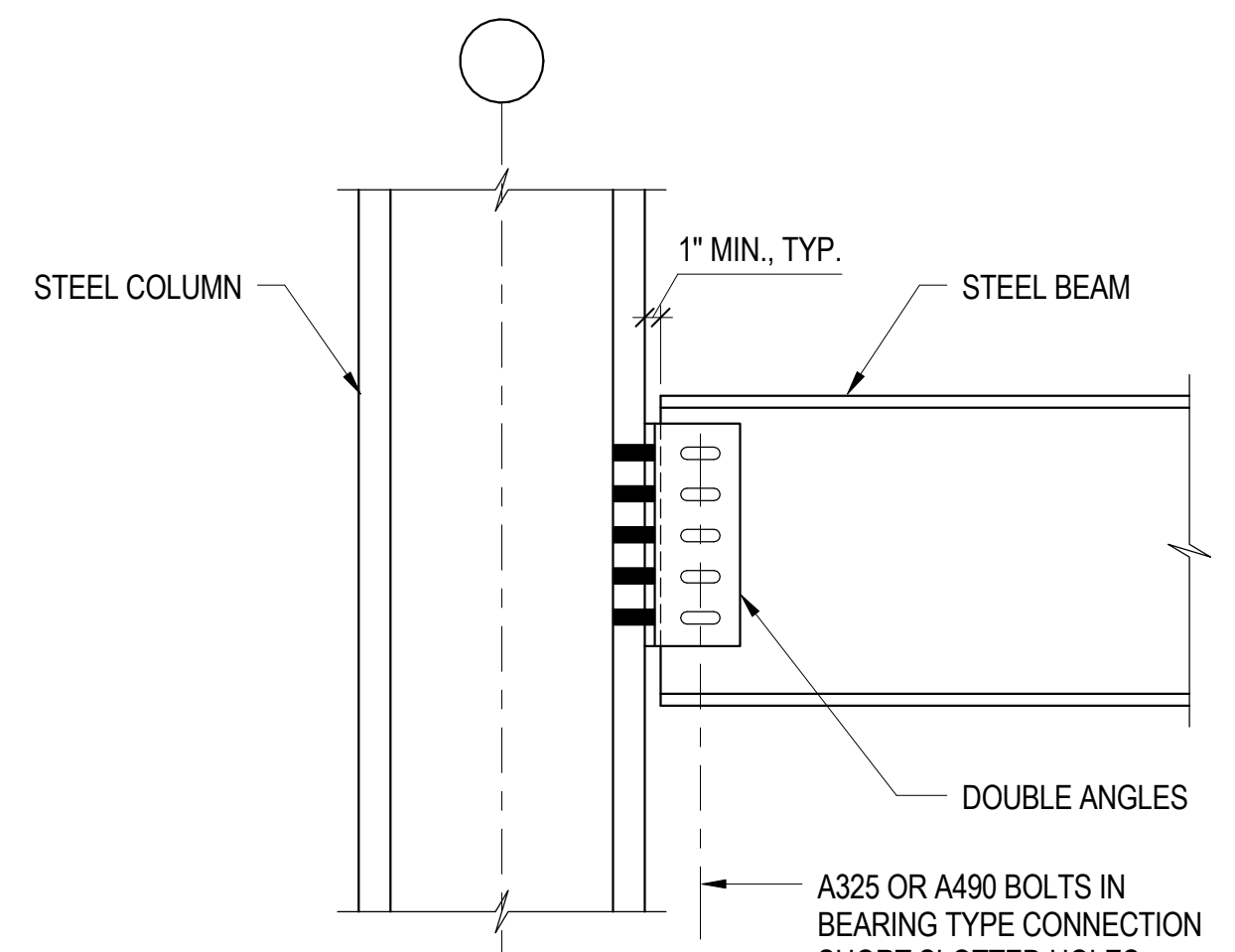
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**PLAZA LEVEL
SECTIONS AND
DETAILS**

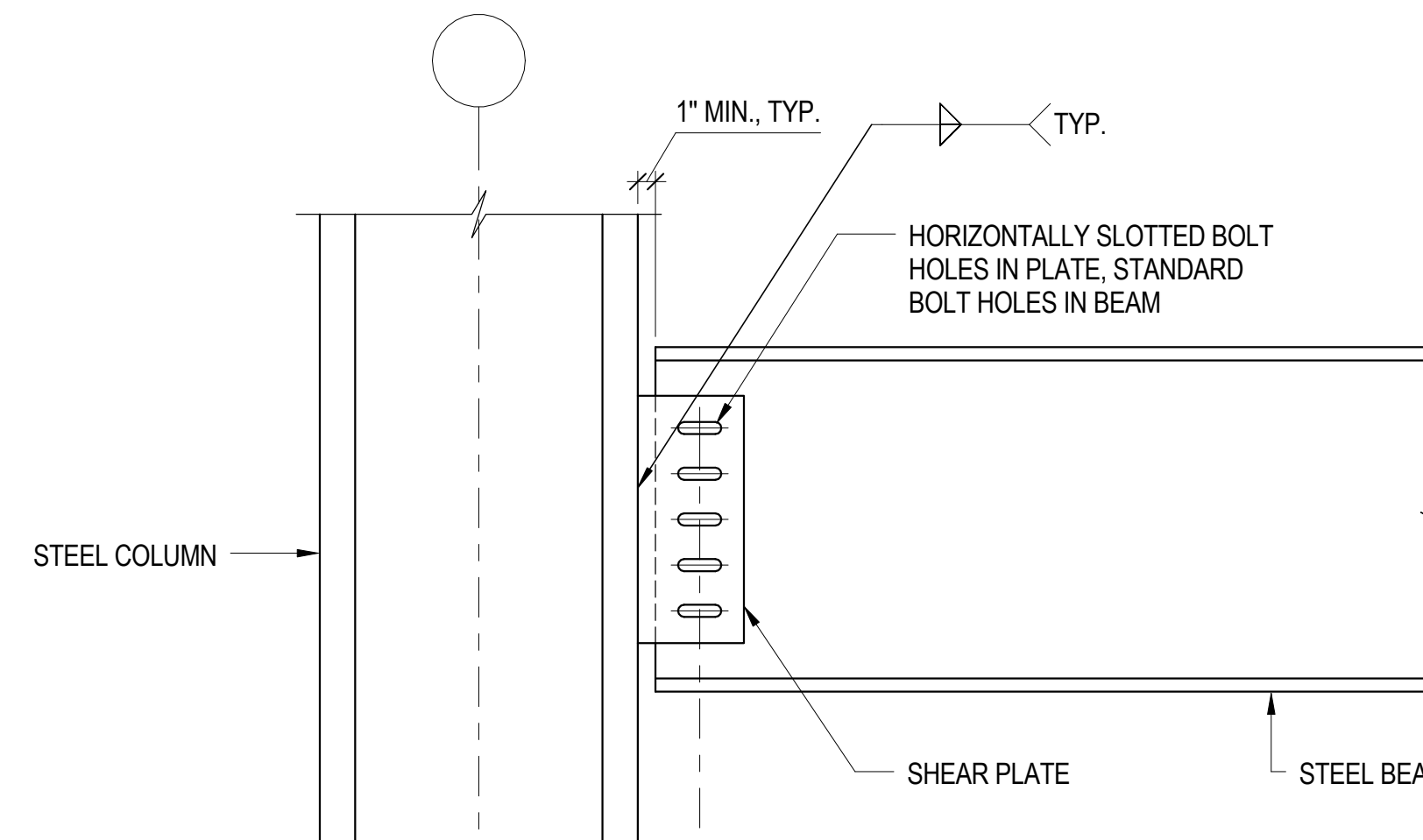
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Date: 02/16/2018	Sheet No.: S-505
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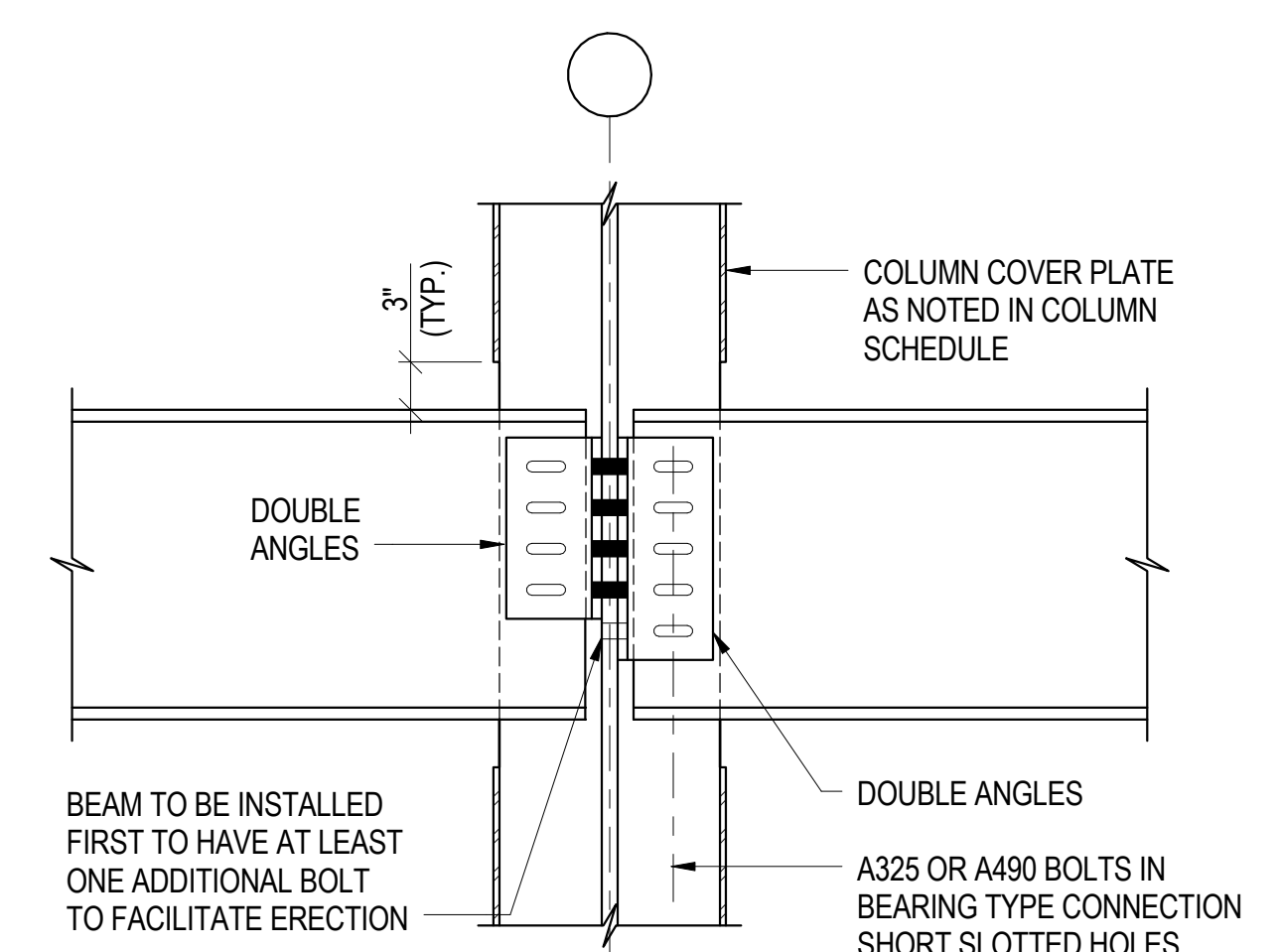
NOTE: CONNECTION TO DEVELOP THE BEAM REACTION SCHEDULED ON S-021



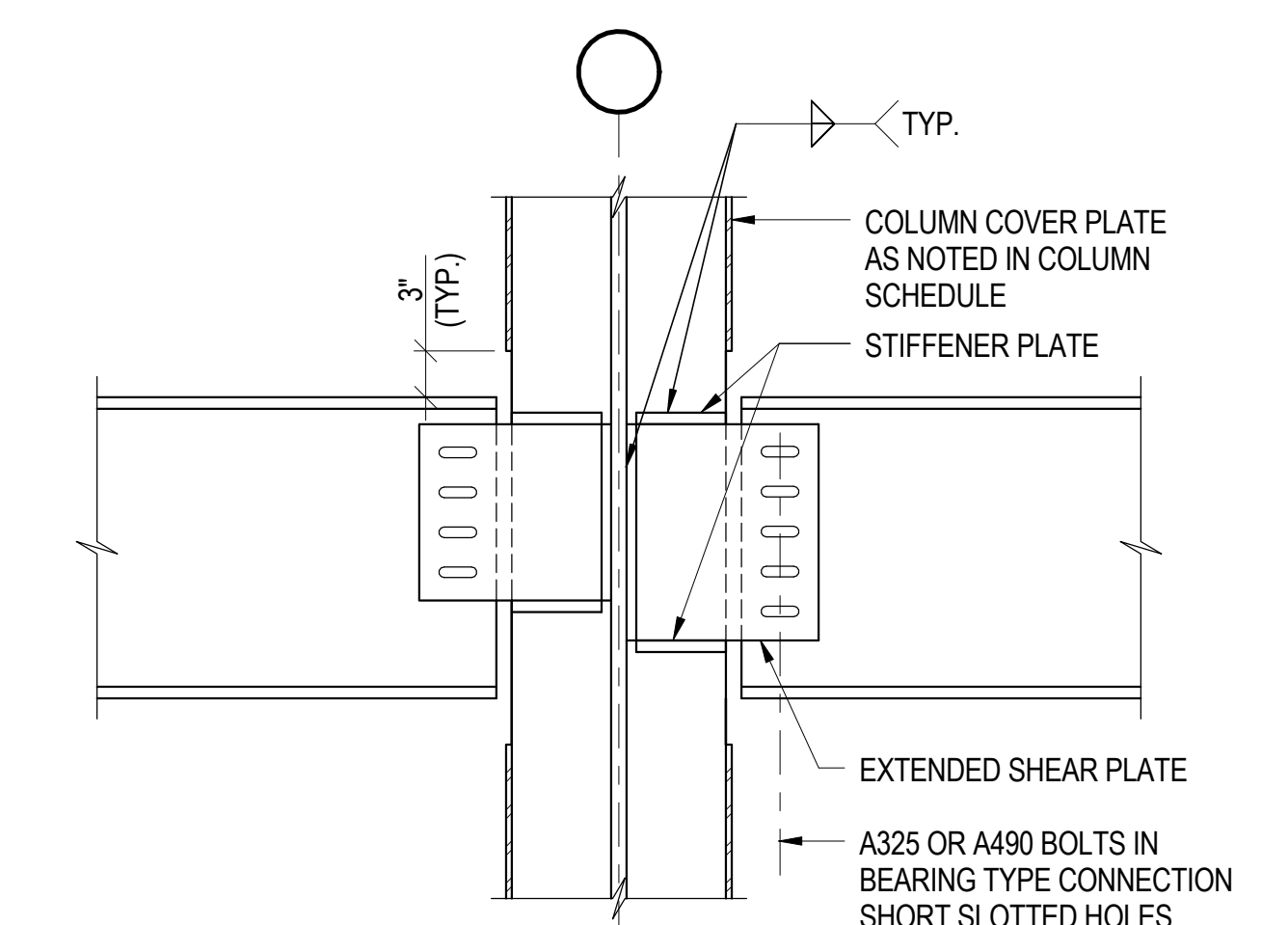
NOTE: CONNECTION TO DEVELOP THE BEAM REACTION SCHEDULED ON S-021



NOTE: CONNECTION TO DEVELOP THE BEAM REACTION SCHEDULED ON S-021



NOTE: CONNECTION TO DEVELOP THE BEAM REACTIONS SCHEDULED ON S-021



NOTE: CONNECTION TO DEVELOP THE BEAM REACTIONS SCHEDULED ON S-021

1 TYPICAL BEAM-TO-BEAM SHEAR CONNECTION

NOT TO SCALE

2 TYPICAL BEAM-TO-COLUMN FLANGE SHEAR CONNECTION OPTION #1

NOT TO SCALE

3 TYPICAL BEAM-TO-COLUMN FLANGE SHEAR CONNECTION OPTION #2

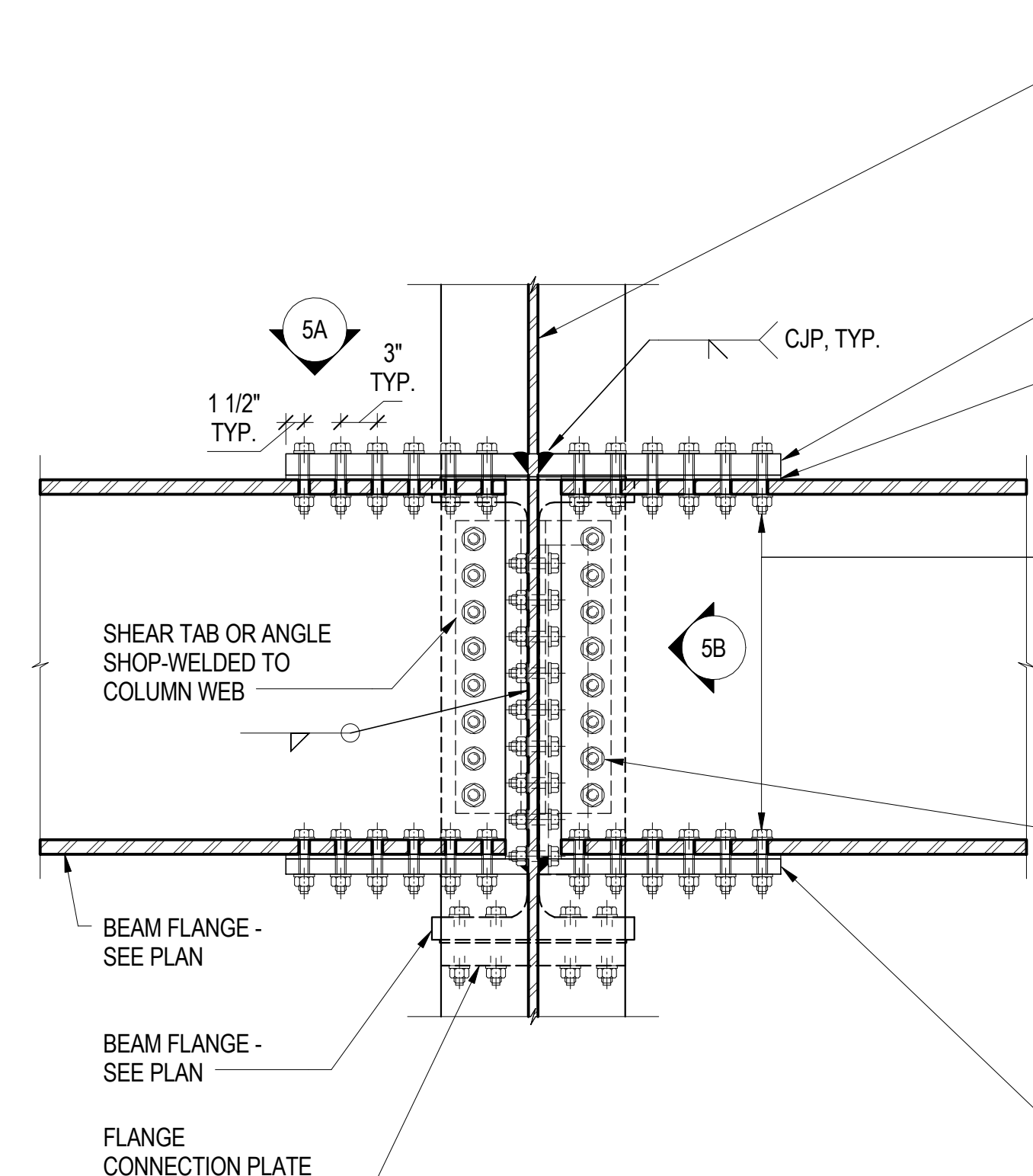
NOT TO SCALE

4A TYPICAL BEAM-TO-COLUMN WEB SHEAR CONNECTION

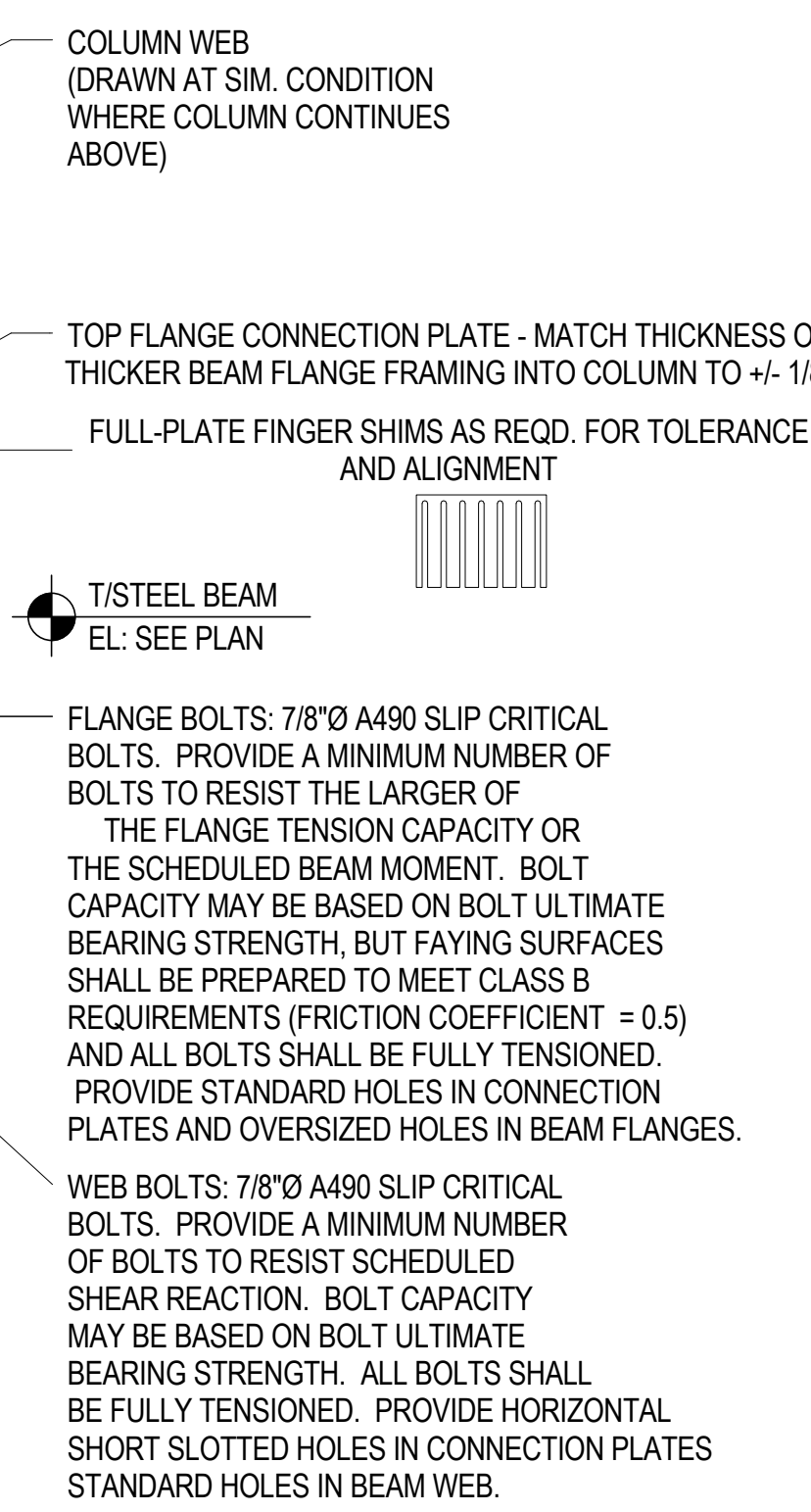
NOT TO SCALE

4B ALTERNATIVE BEAM-TO-COLUMN WEB SHEAR CONNECTION

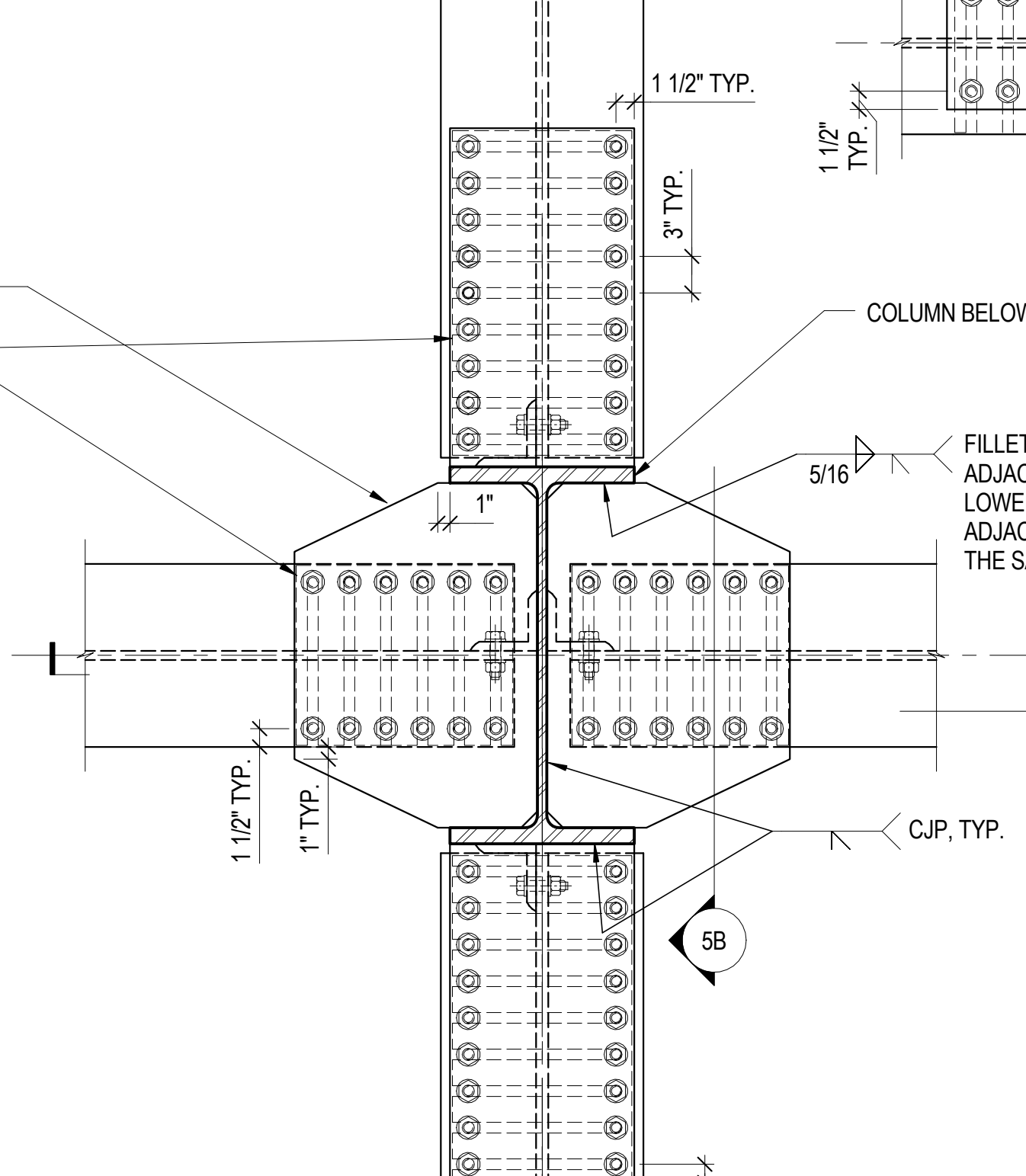
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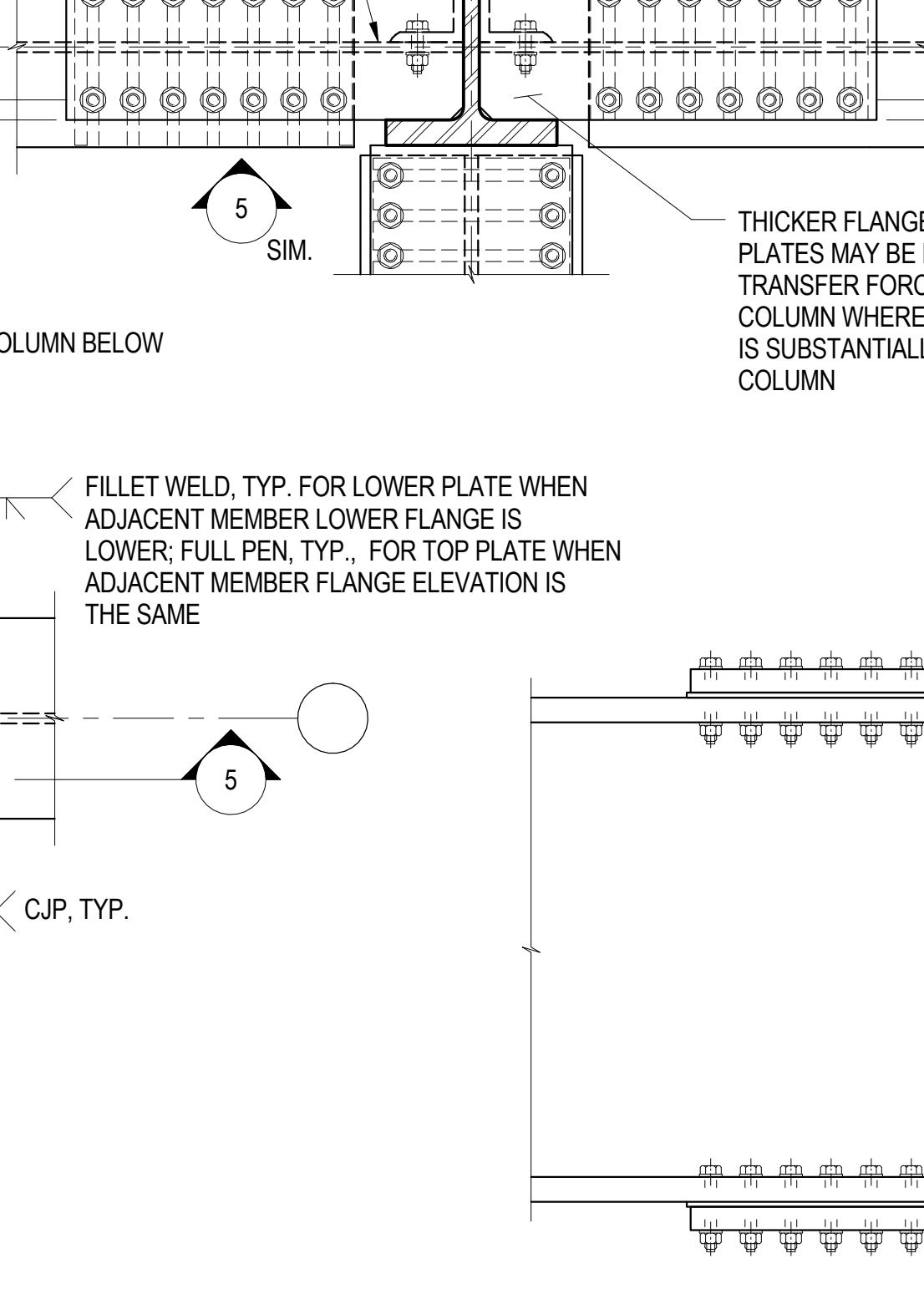
- NOTES:
1. SHEAR CONNECTION TO DEVELOP THE REACTION SCHEDULED ON S-021
 2. DETAIL WITH BEARING TYPE BOLTS TO PROVIDE MOMENT CAPACITY AS NOTED BELOW:
CANTILEVER BEAMS - 80% OF MEMBER CAPACITY
TYPICAL BEAMS - 70% OF MEMBER CAPACITY
U.N.O. IN SCHEDULE
 3. BOLTS SHALL BE FULLY PRE-TENSIONED.



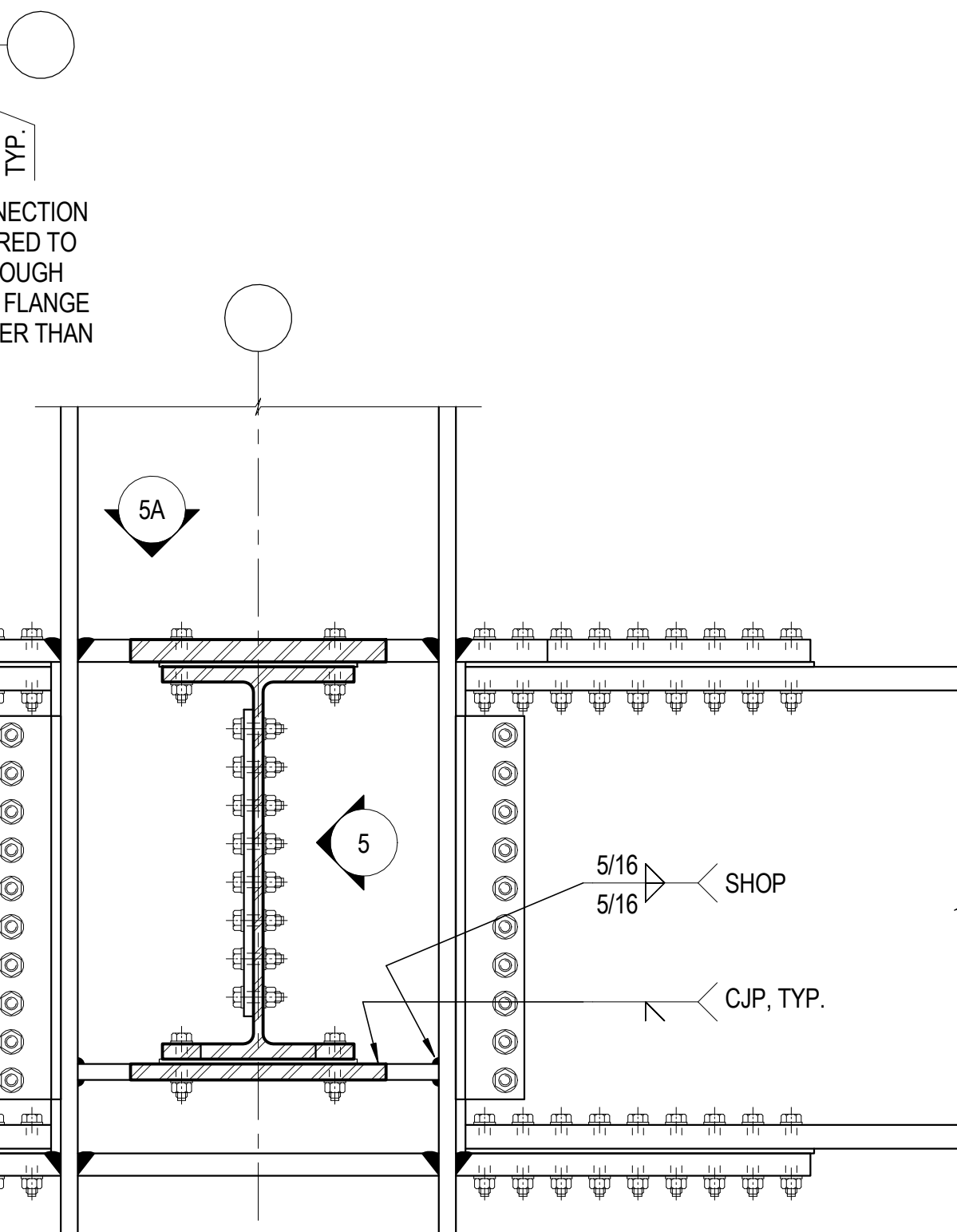
- NOTE: TYPICAL MOMENT CONNECTION DETAIL PROVIDED HEREWITH ASSUMES CONTRACTOR PREFERENCE FOR MINIMIZING FIELD WELDING. CONTRACTOR MAY PROPOSE ALTERNATE DETAILS TO ENGINEER FOR CONSIDERATION.



A PLAN



- NOTE: TYPICAL MOMENT CONNECTION DETAIL PROVIDED HEREWITH ASSUMES CONTRACTOR PREFERENCE FOR MINIMIZING FIELD WELDING. CONTRACTOR MAY PROPOSE ALTERNATE DETAILS TO ENGINEER FOR CONSIDERATION.

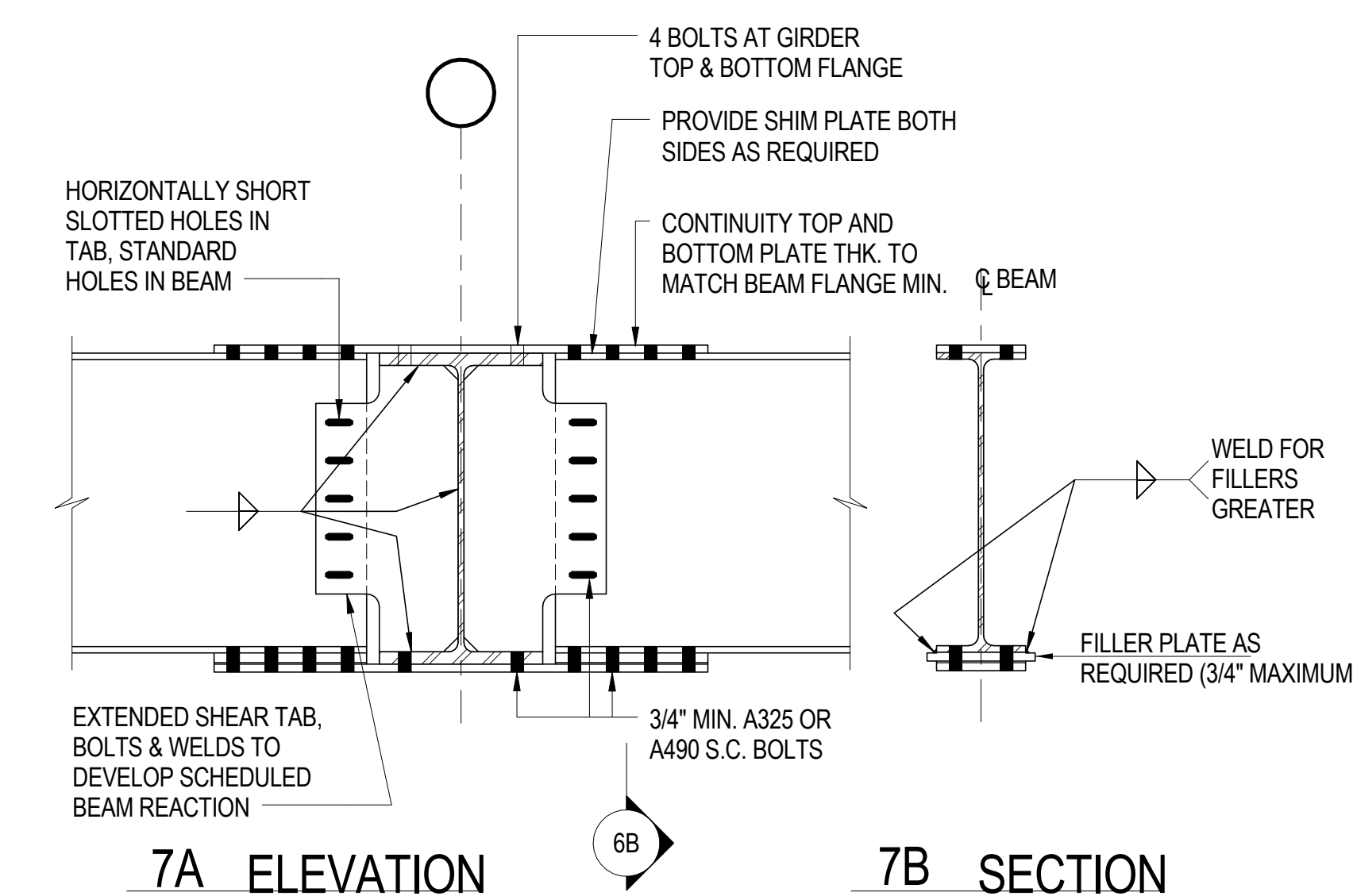


B SECTION

MOMENT CONNECTION DESIGN FORCES				
BEAM SIZE	V (kips)	M (kip-ft)	NOTES	
W24X55	95	405	GL PC & P6.9 @ 1ST FLOOR MEZZANINE	
W24X131	95	1115	GL PB & P6.9 @ PLAZA LEVEL	
W36X395	210	5200	GL PF.7 & P13.4 @ PLAZA LEVEL	
W44X335	300	5865	GL PF.7 & P13.4 @ PLAZA LEVEL	

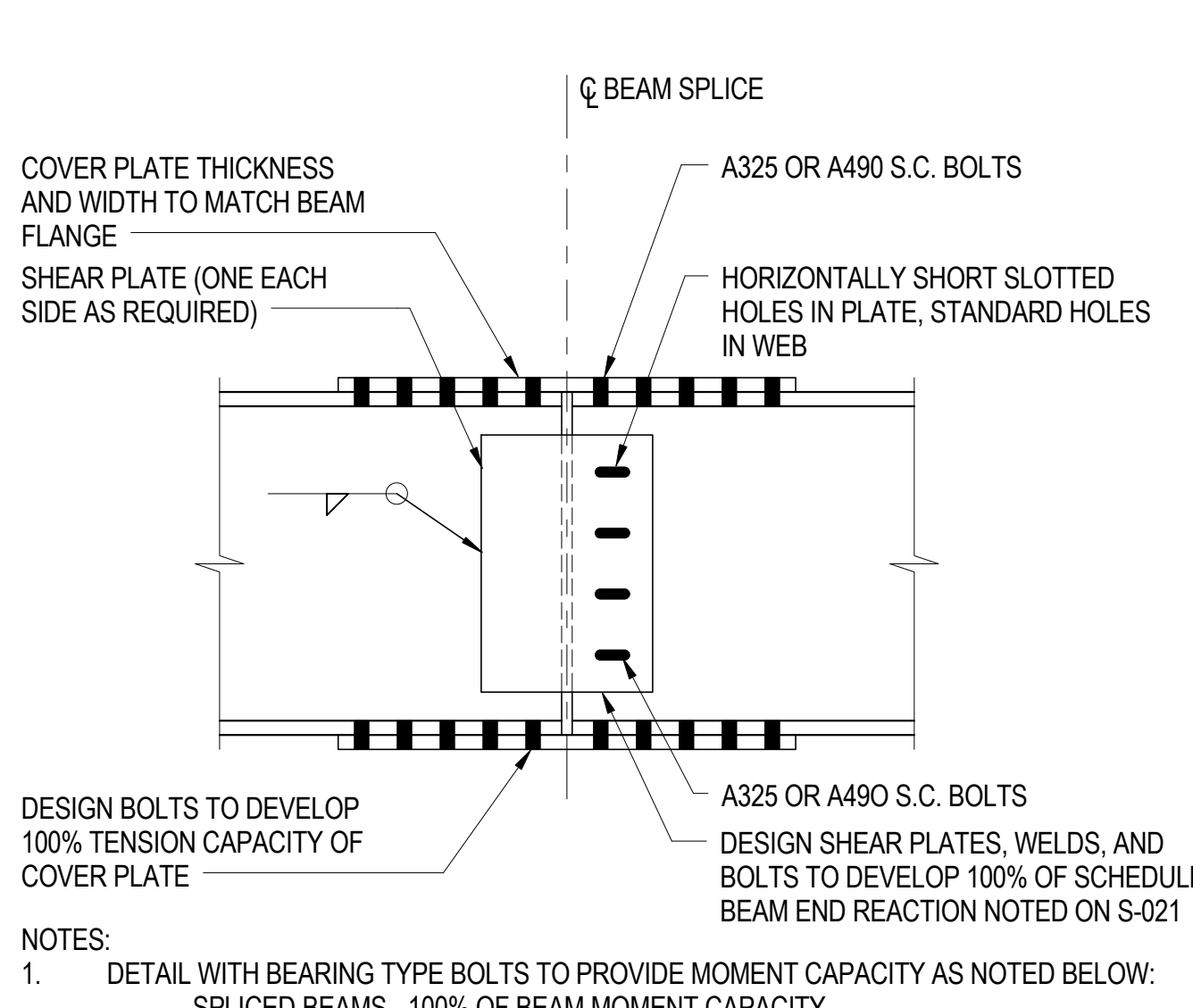
5 TYPICAL STEEL MOMENT FRAME CONNECTION DETAIL

NOT TO SCALE



7A ELEVATION

7B SECTION



7 TYPICAL BEAM-TO-BEAM MOMENT SPLICE: BOLTED

NOT TO SCALE

8 TYPICAL BEAM-TO-BEAM MOMENT SPLICE: FIELD-WELDED

NOT TO SCALE

9 BEAM TO GIRDER MOMENT CONNECTION

NOT TO SCALE

10 BEAM OVER TOP OF COLUMN

NOT TO SCALE

6 TYPICAL BEAM-TO-GIRDER MOMENT CONNECTION

NOT TO SCALE

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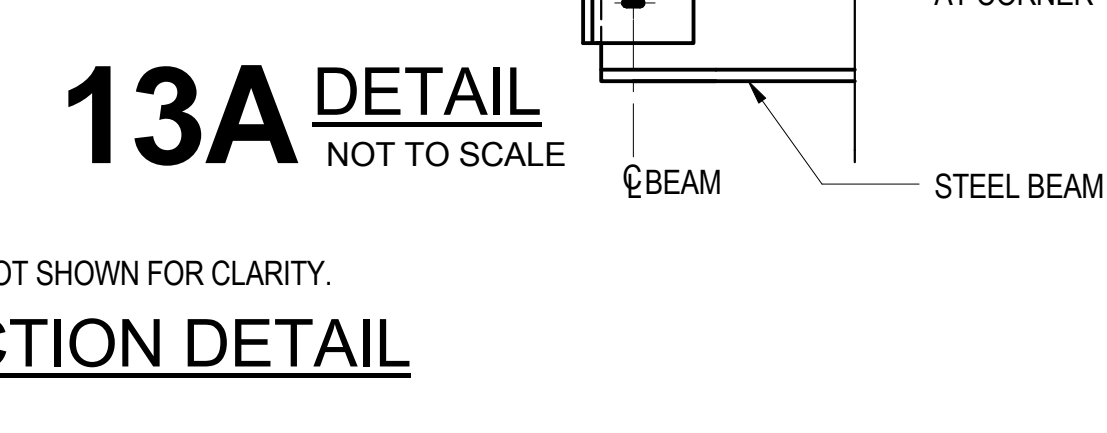
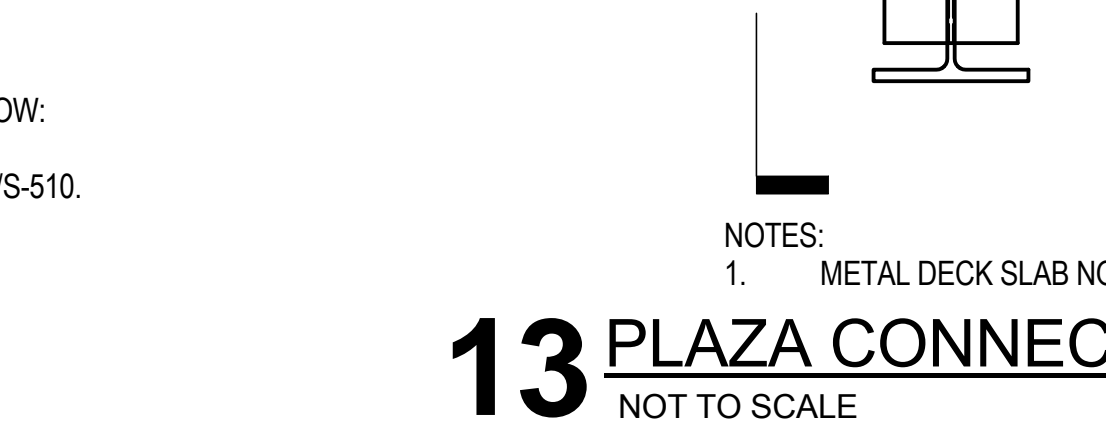
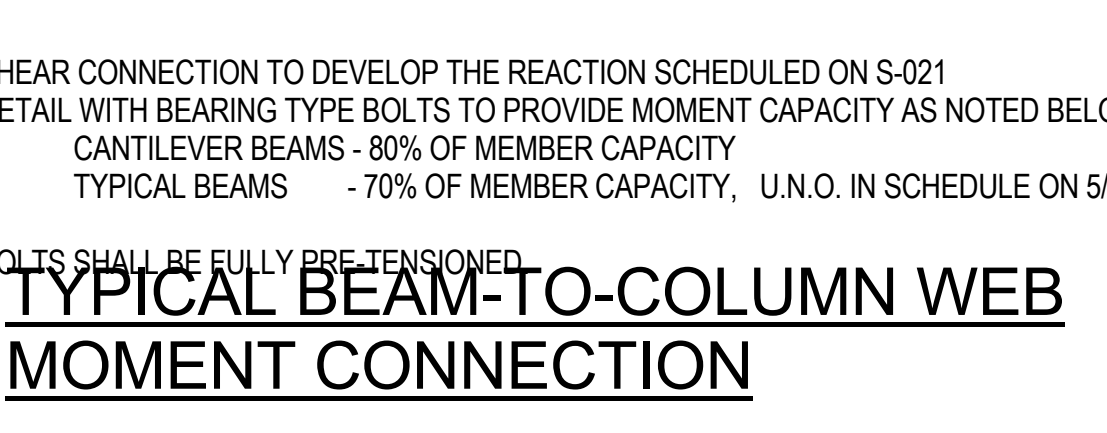
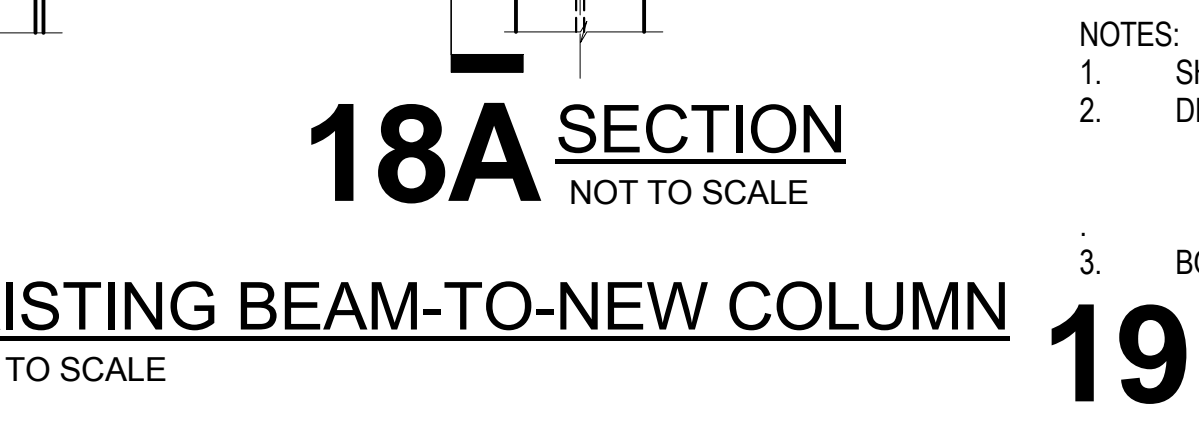
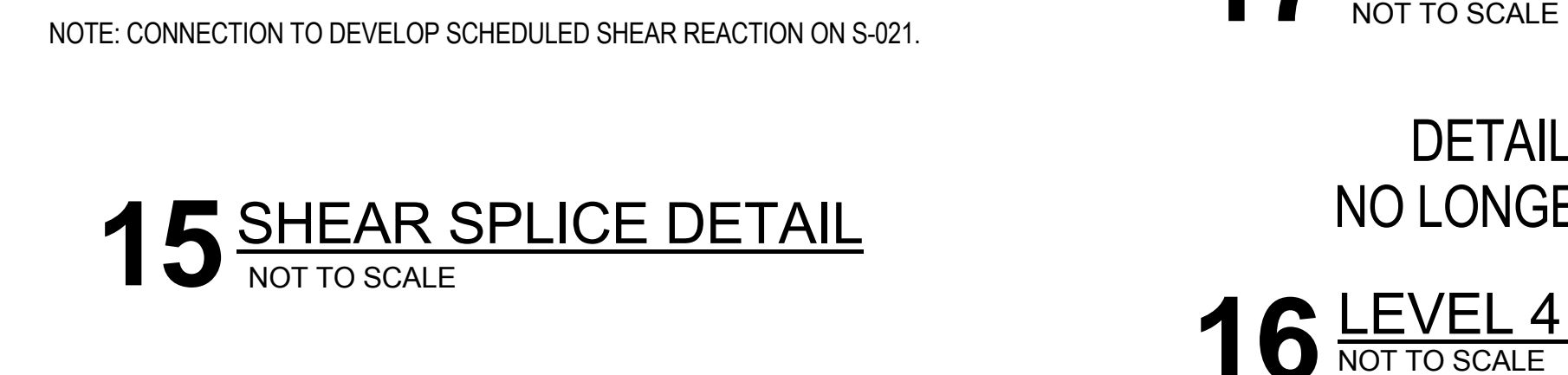
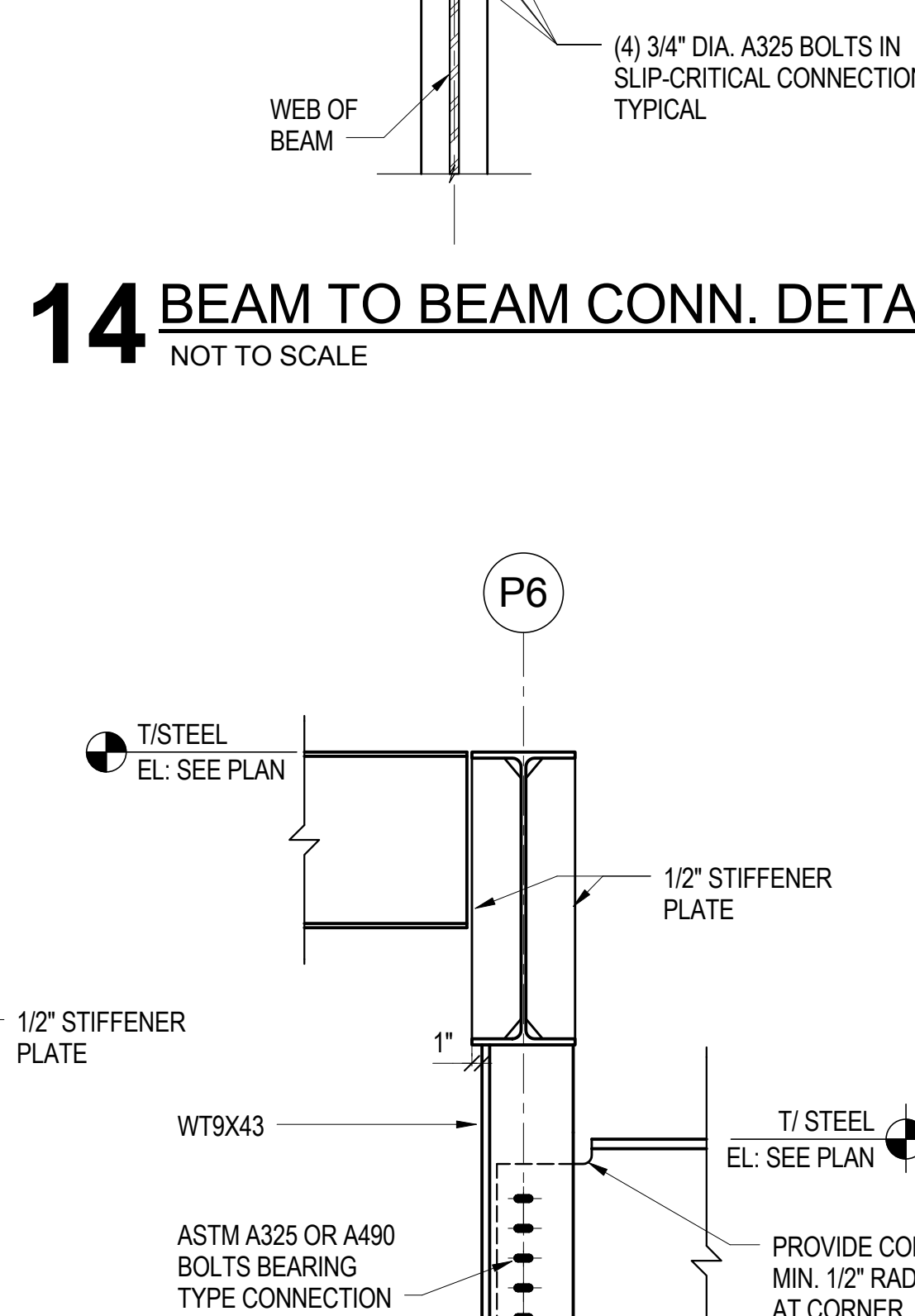
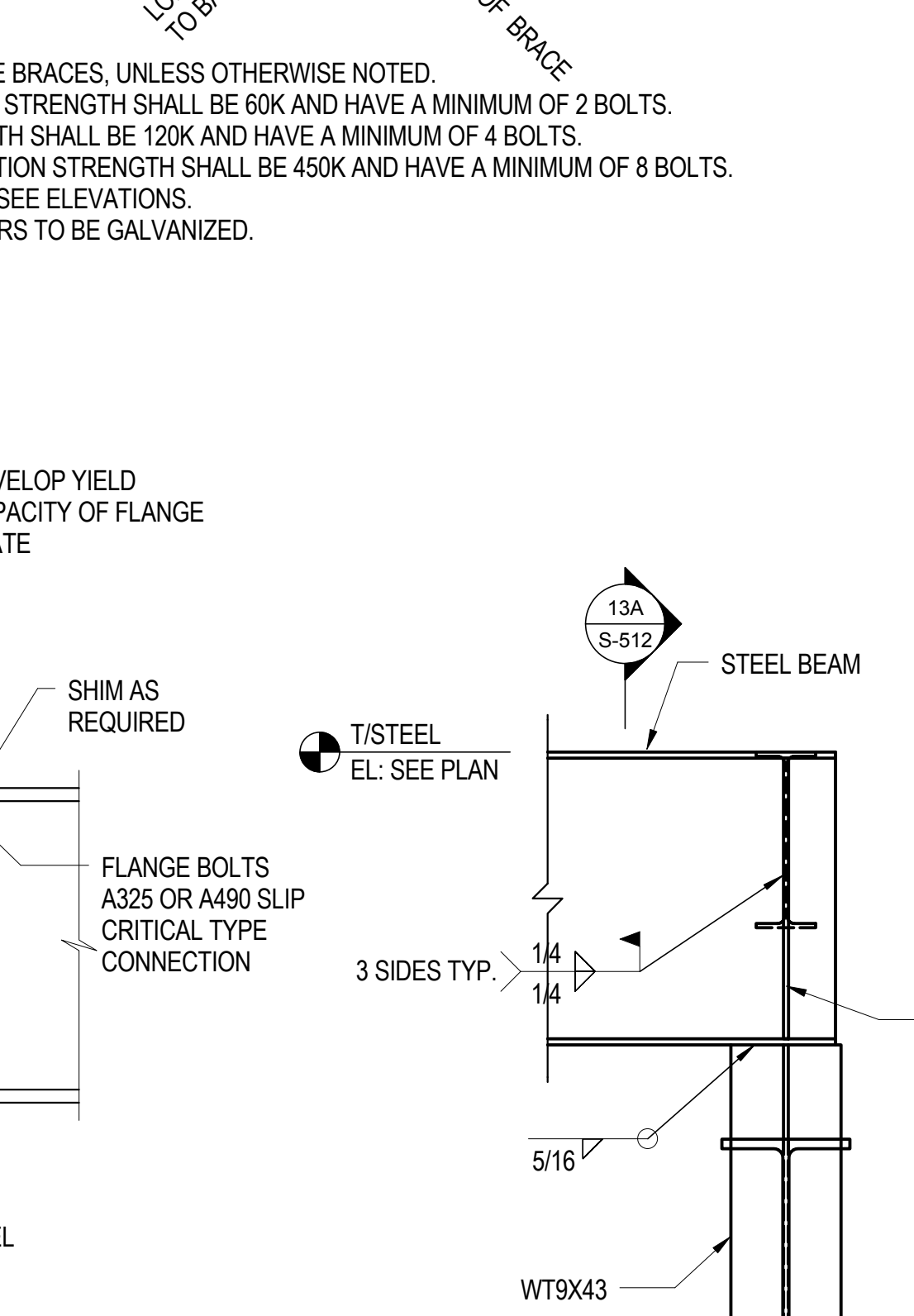
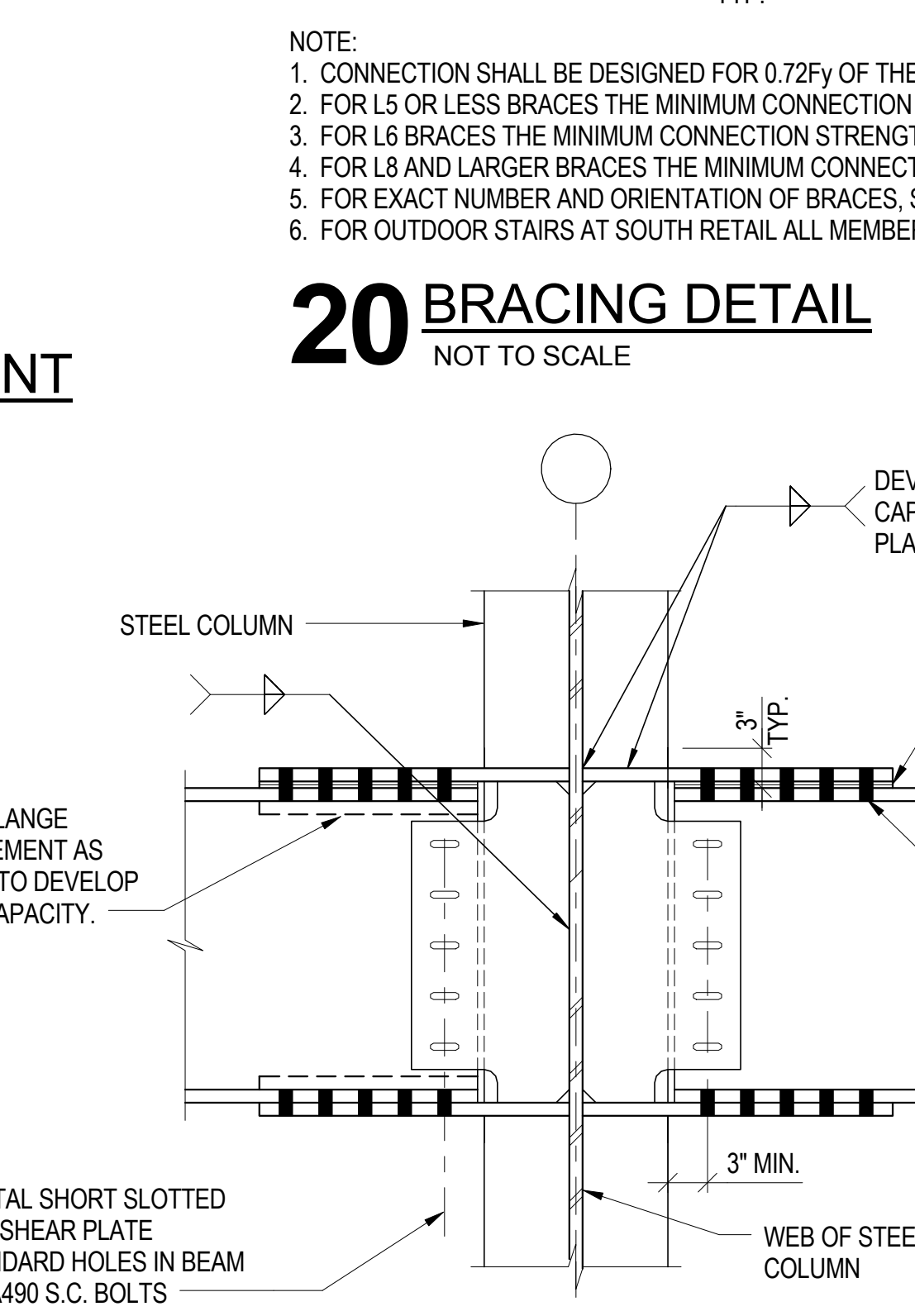
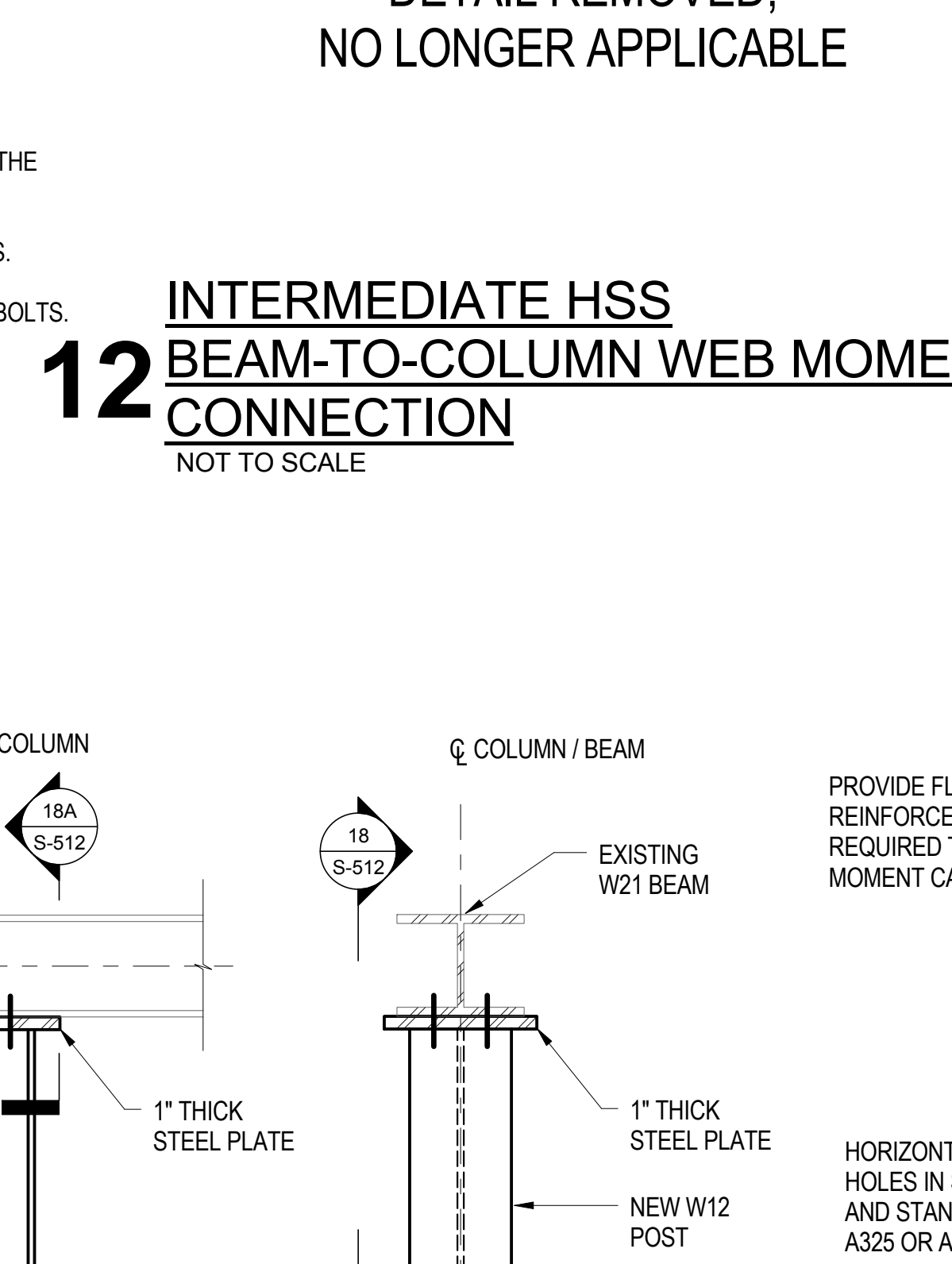
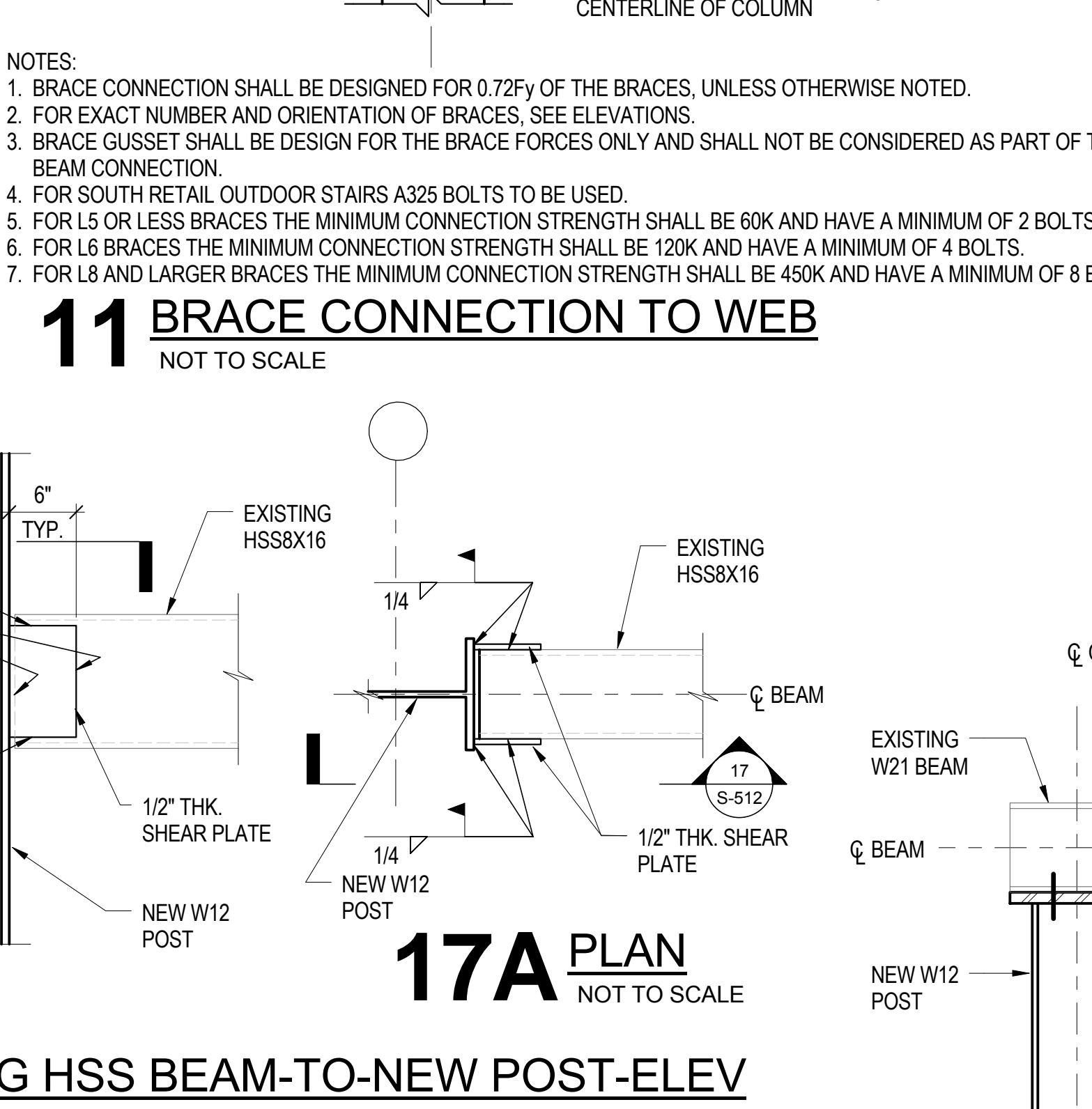
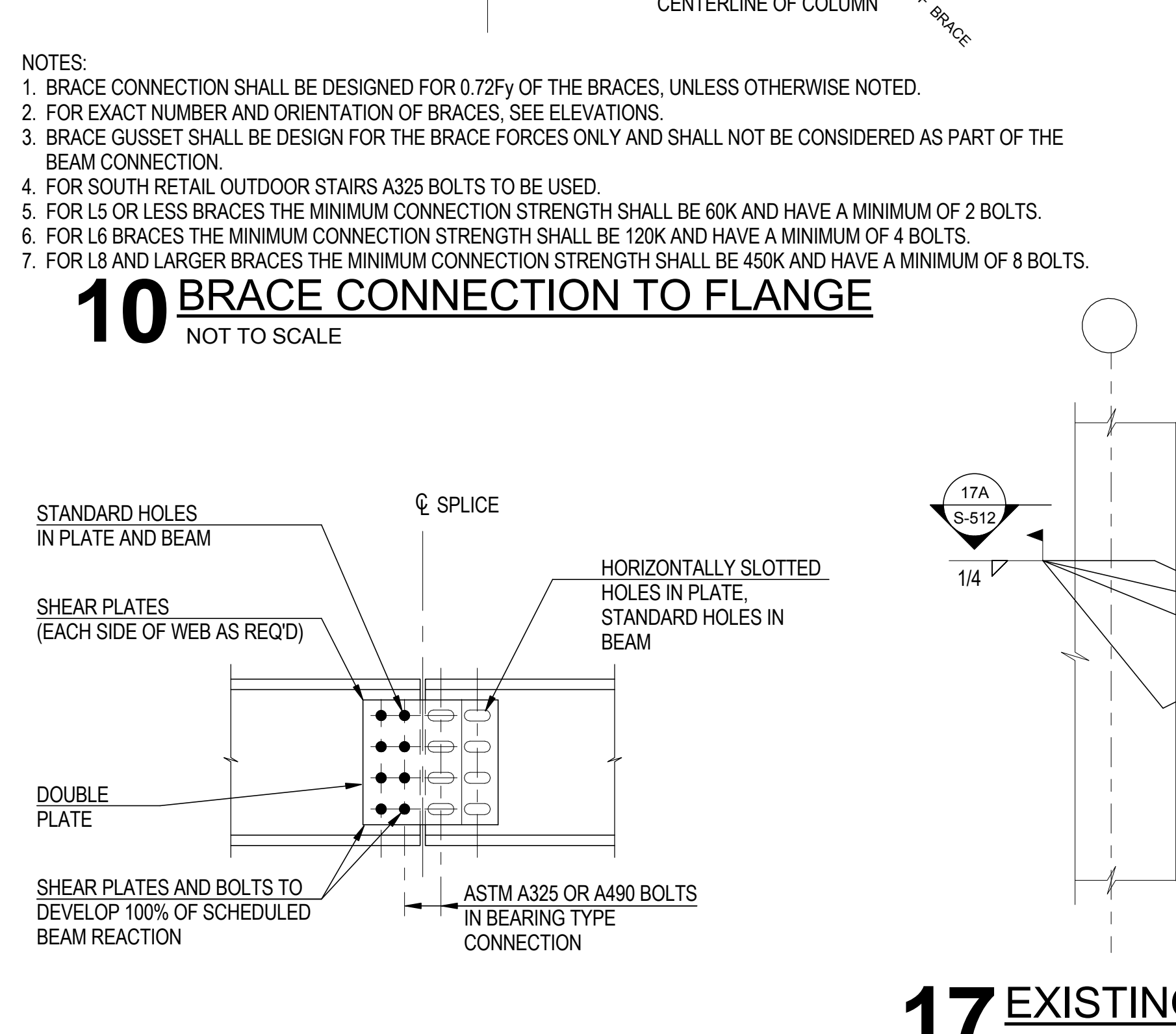
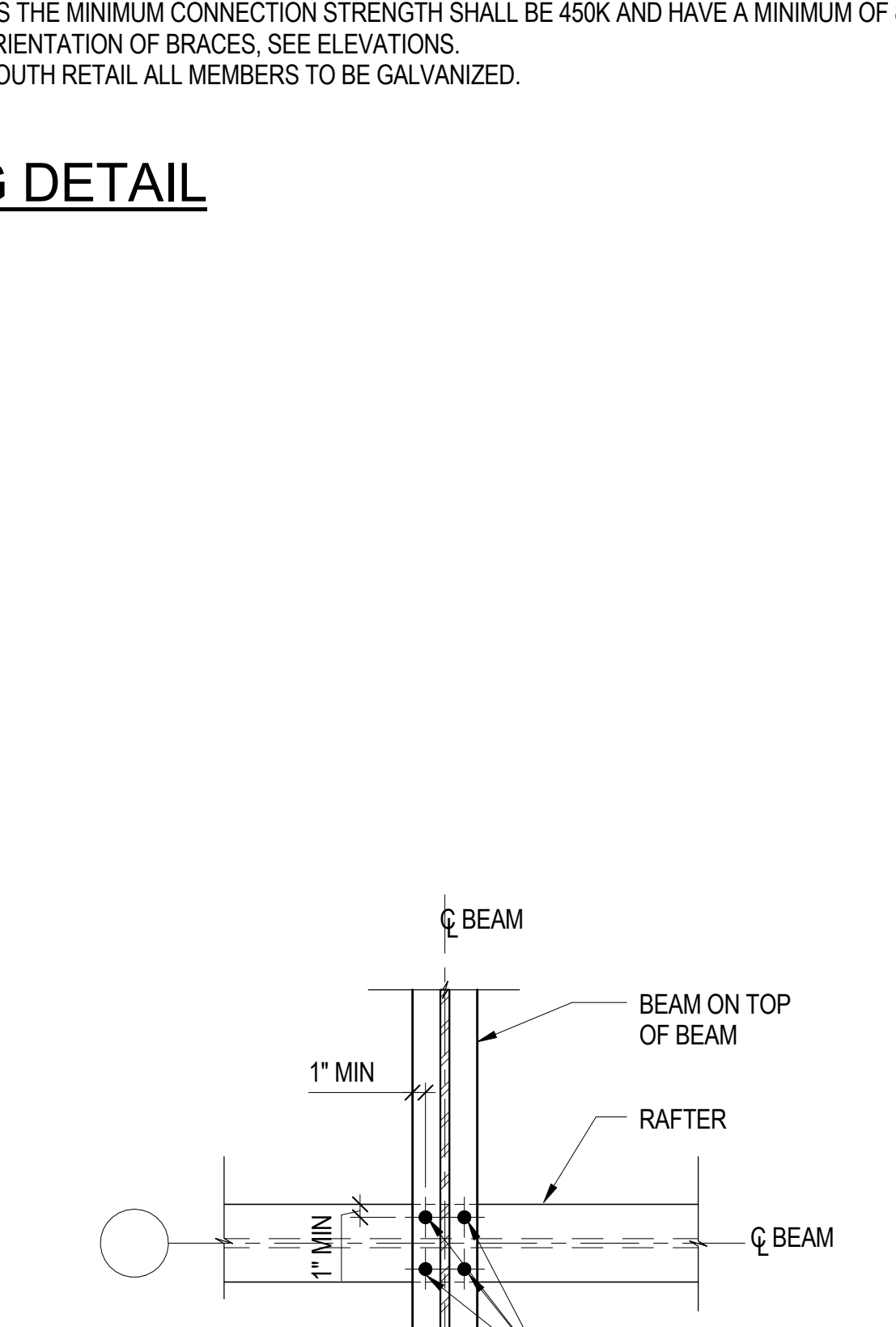
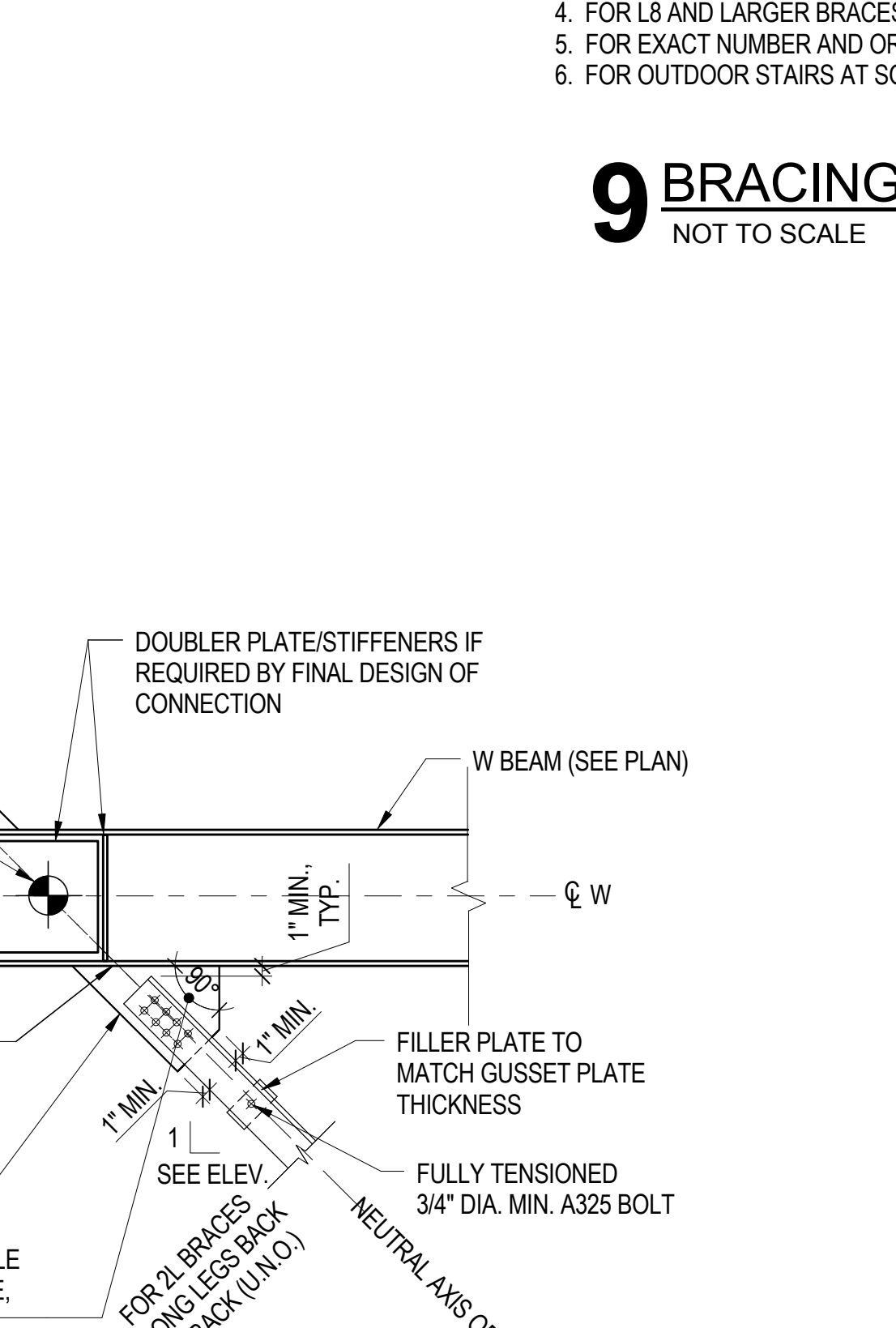
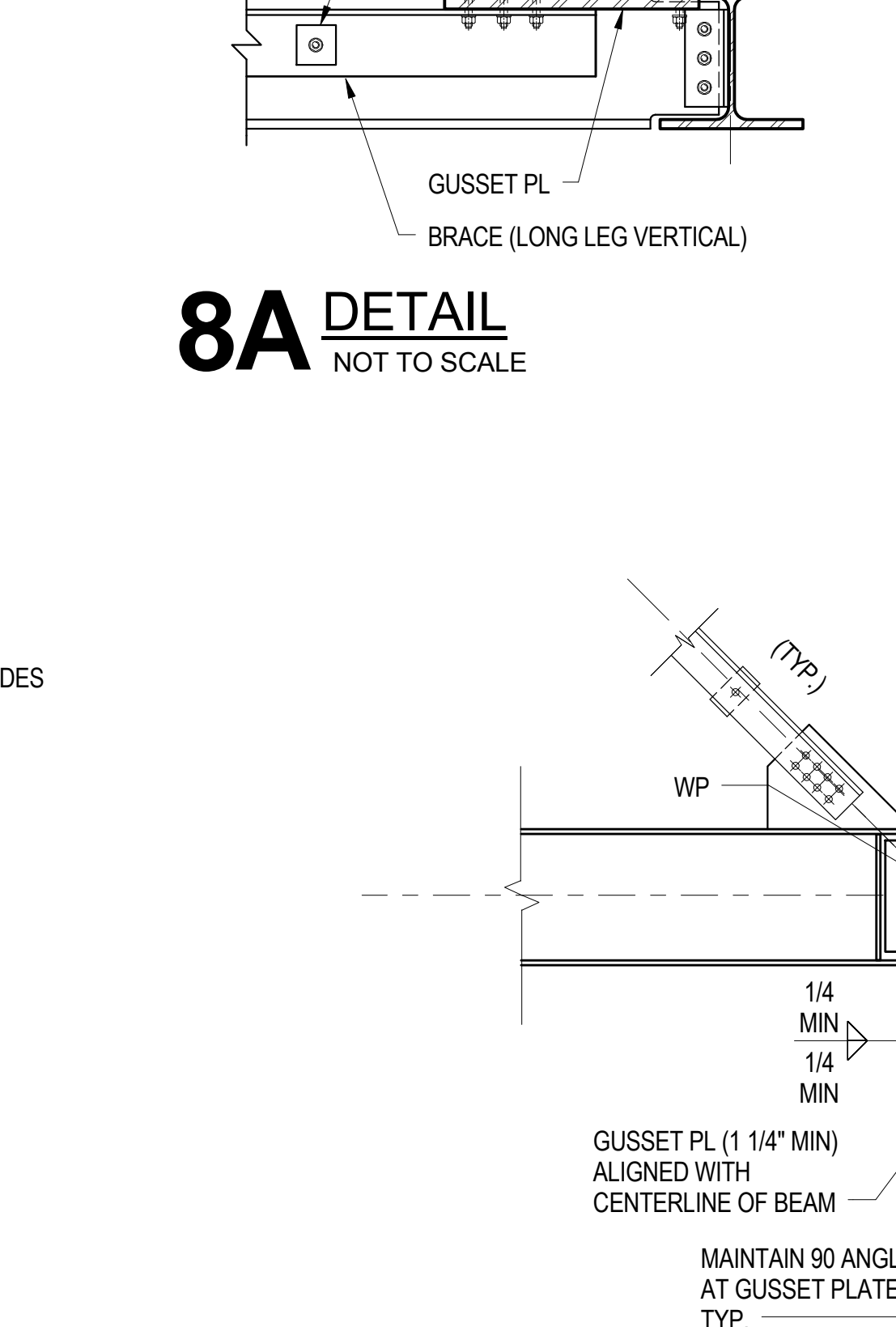
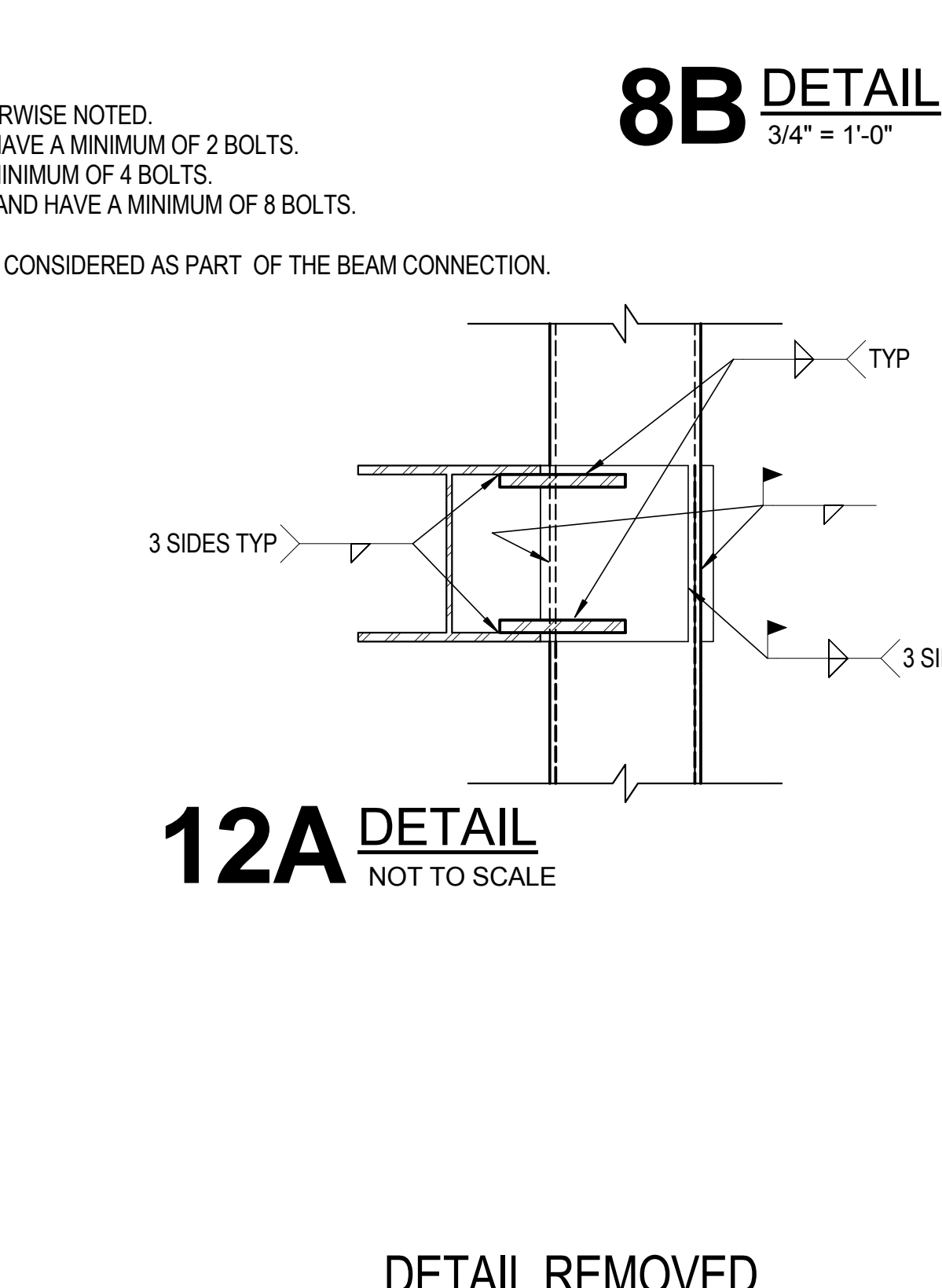
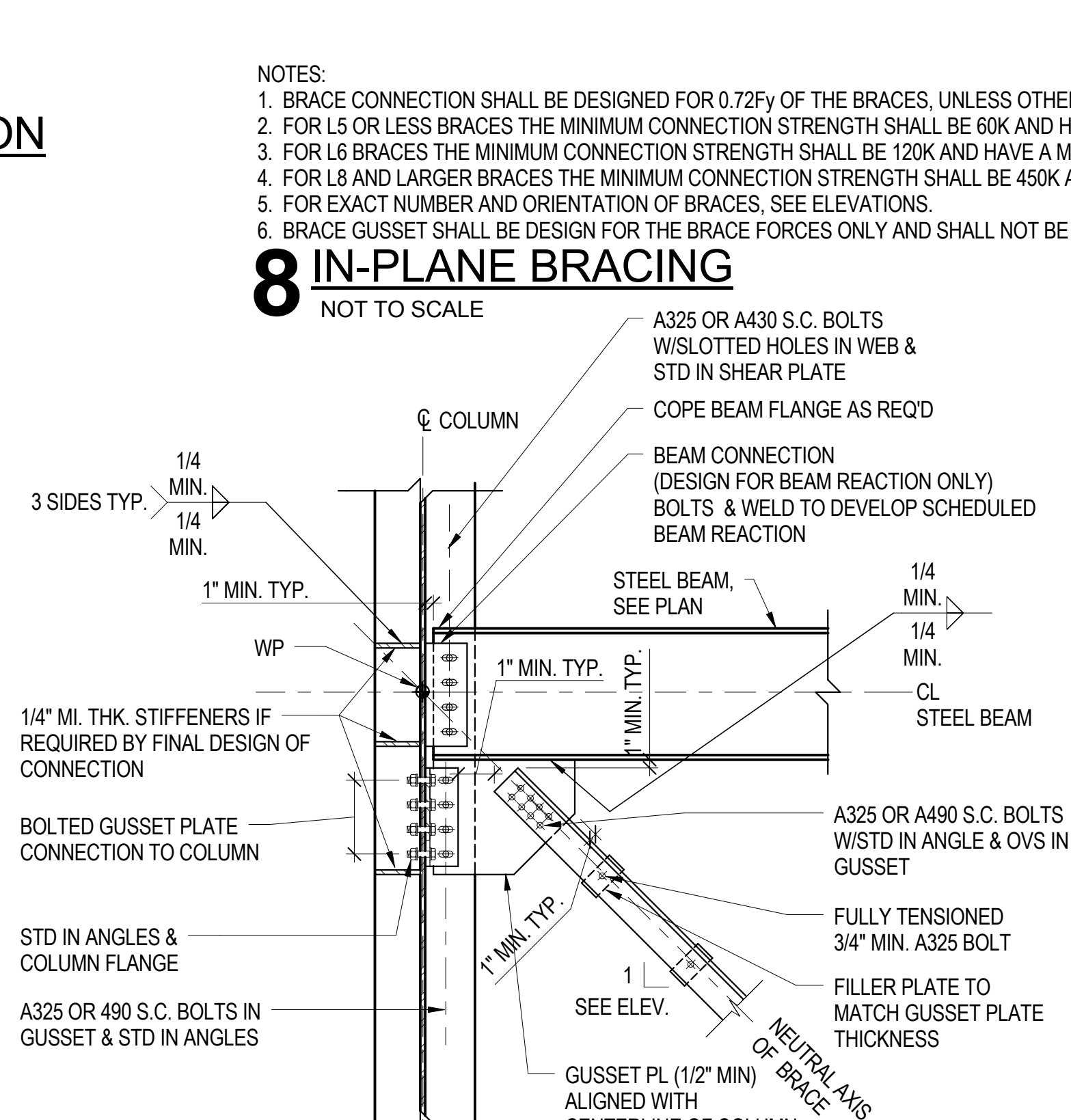
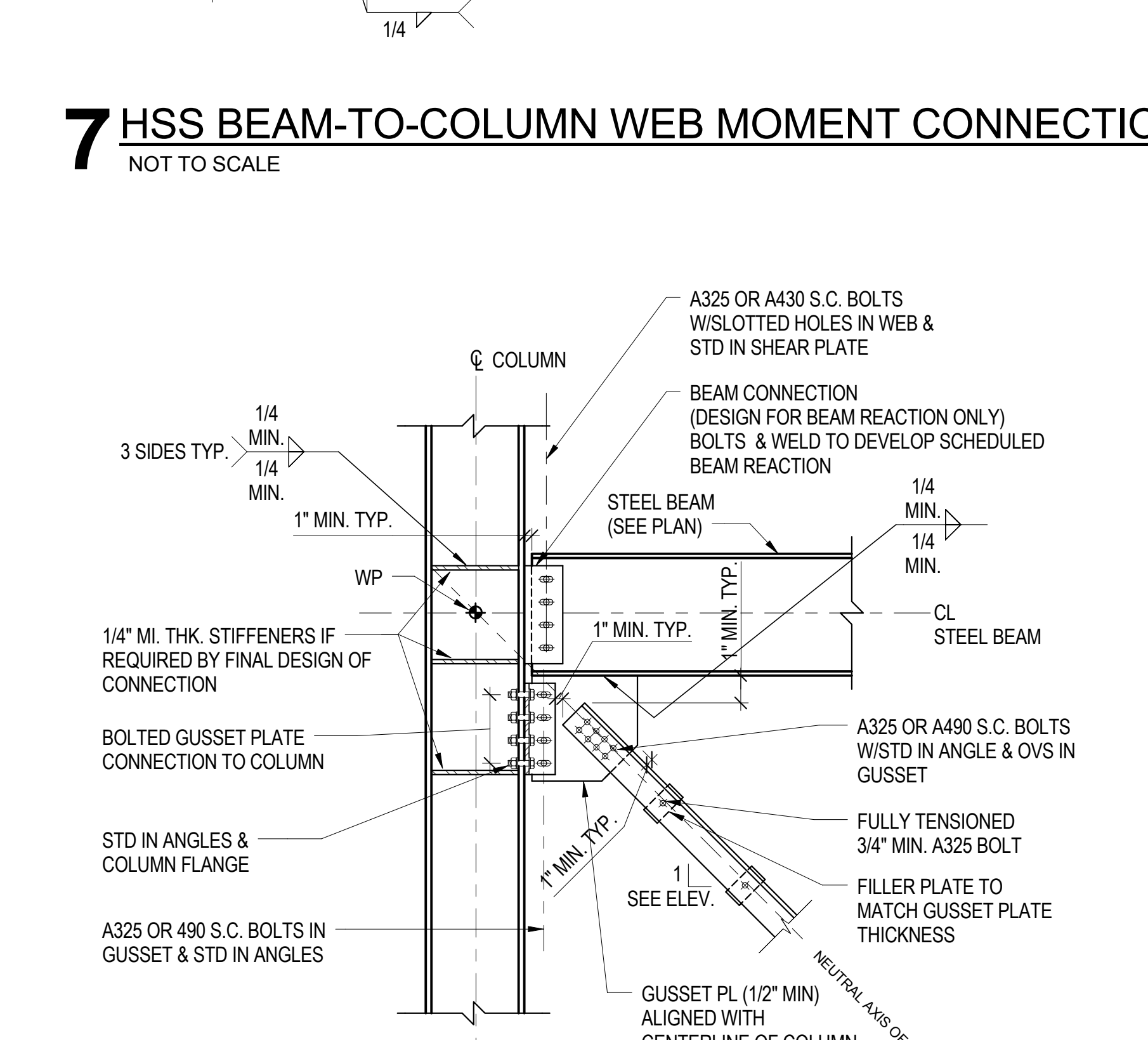
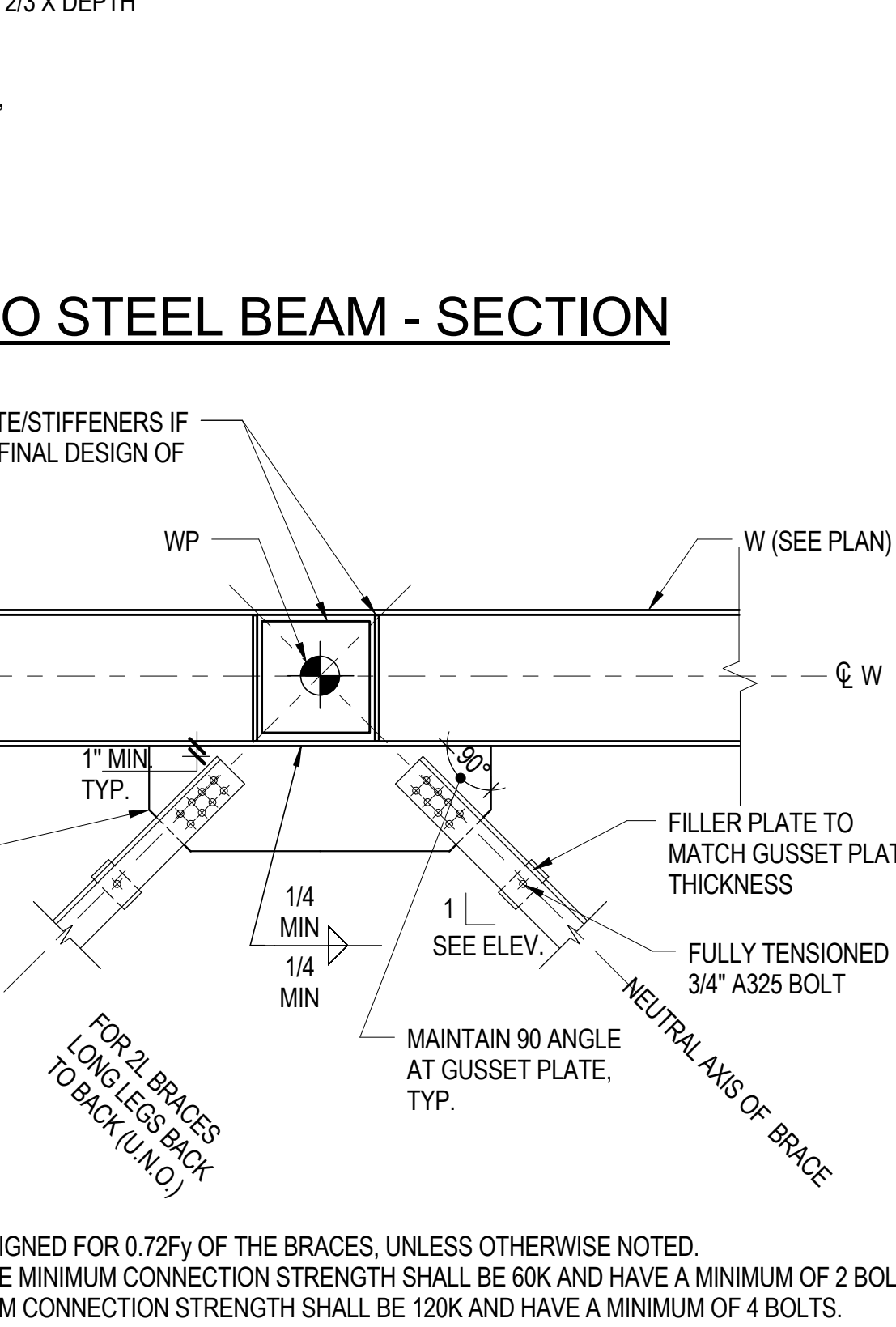
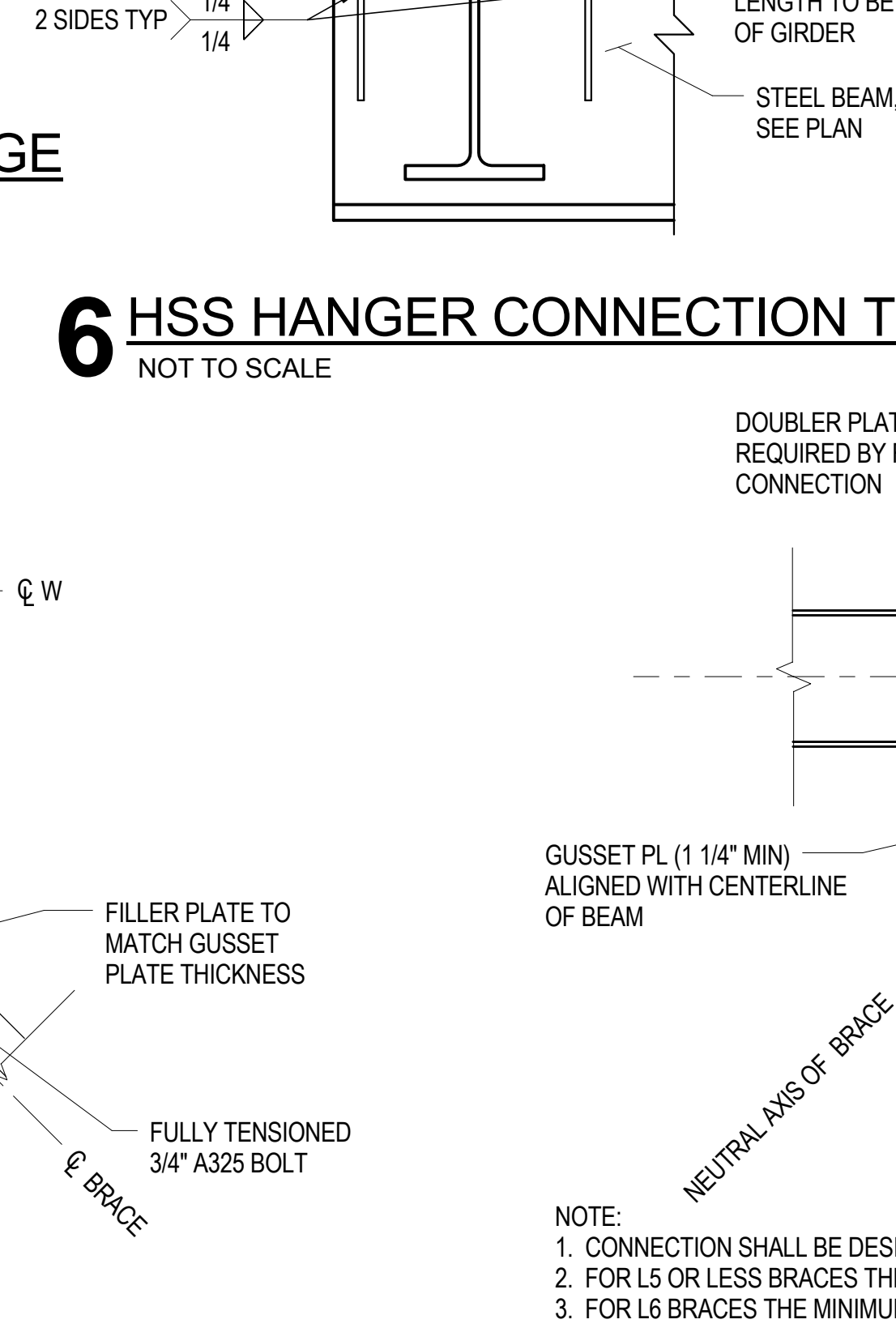
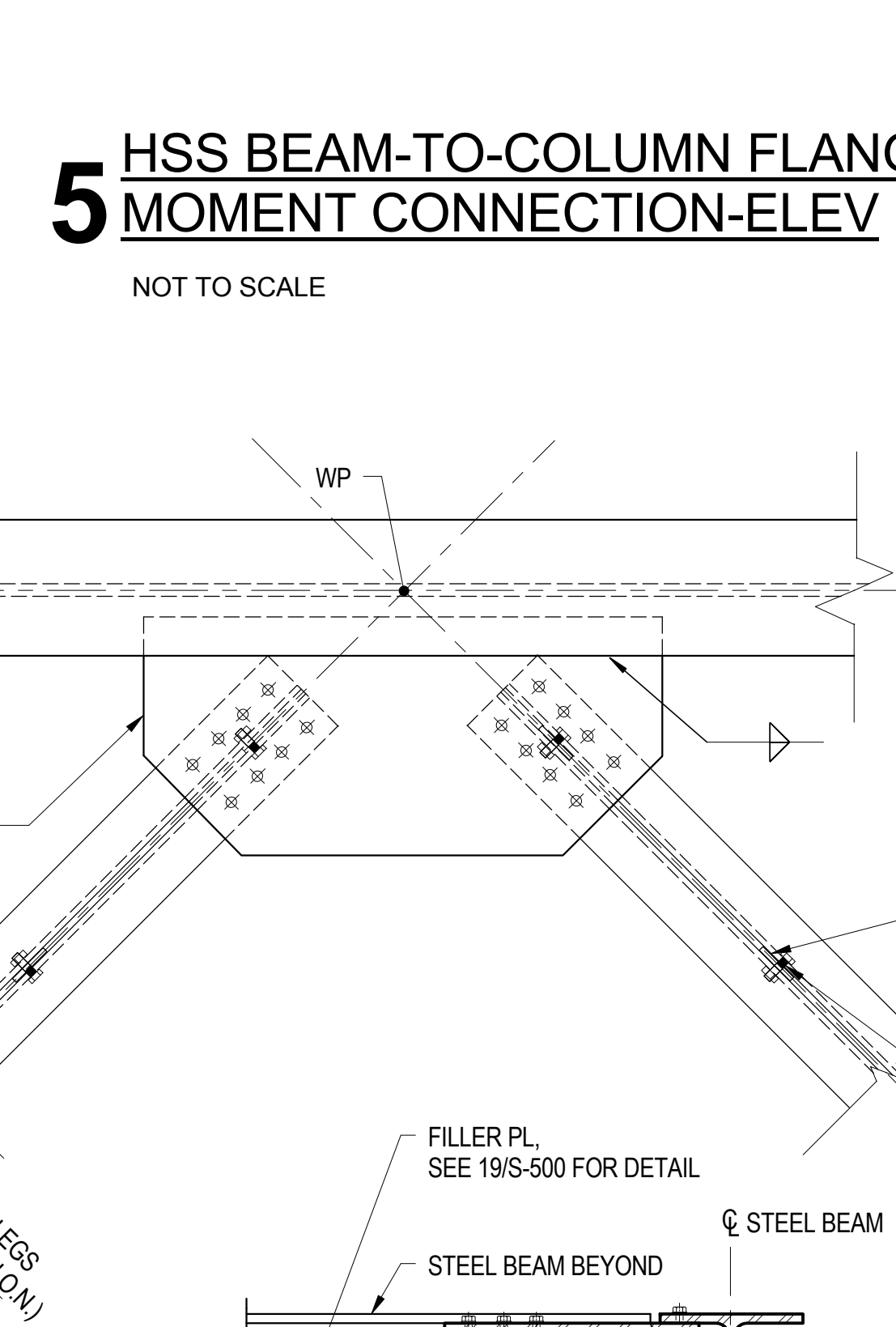
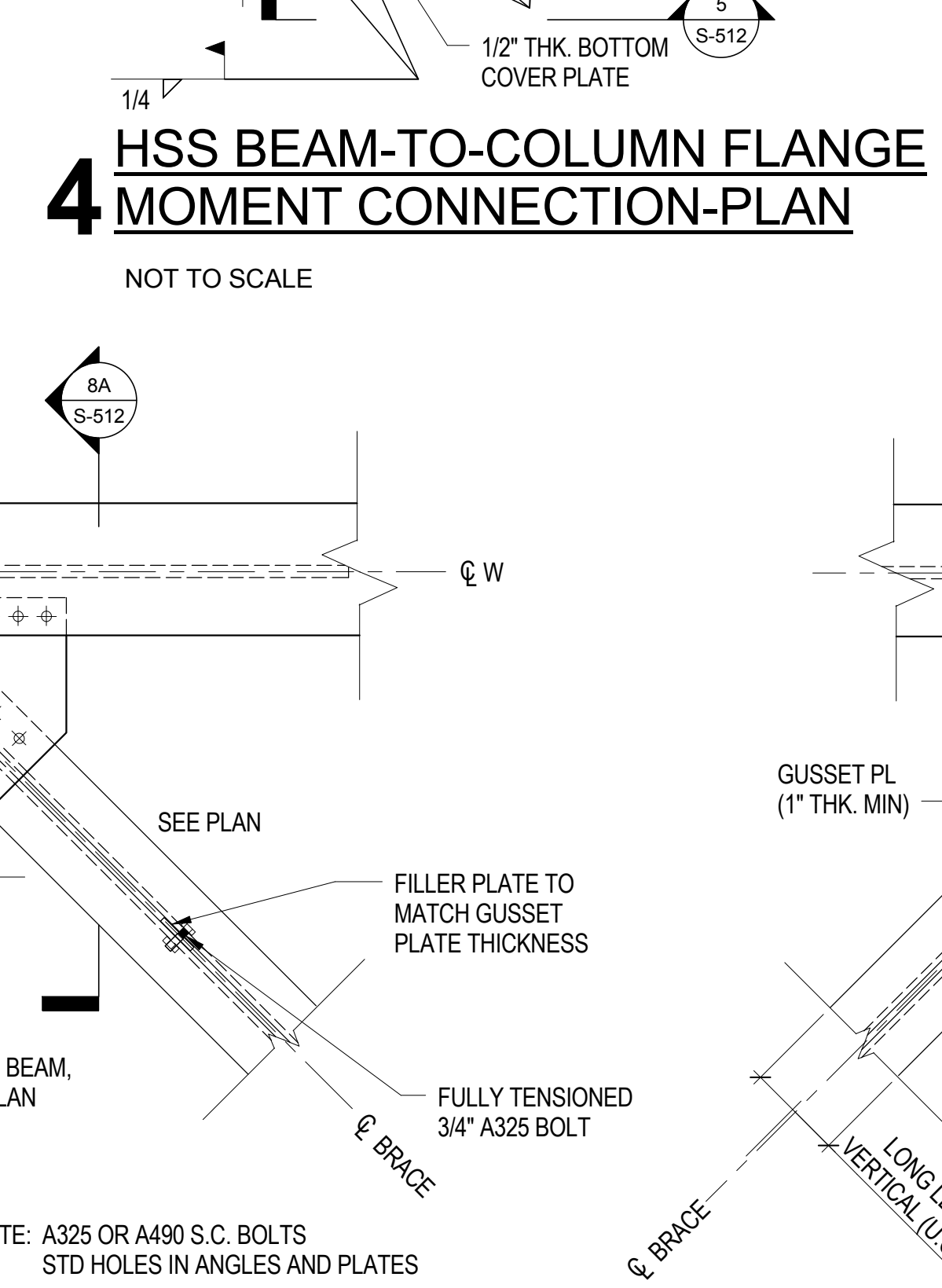
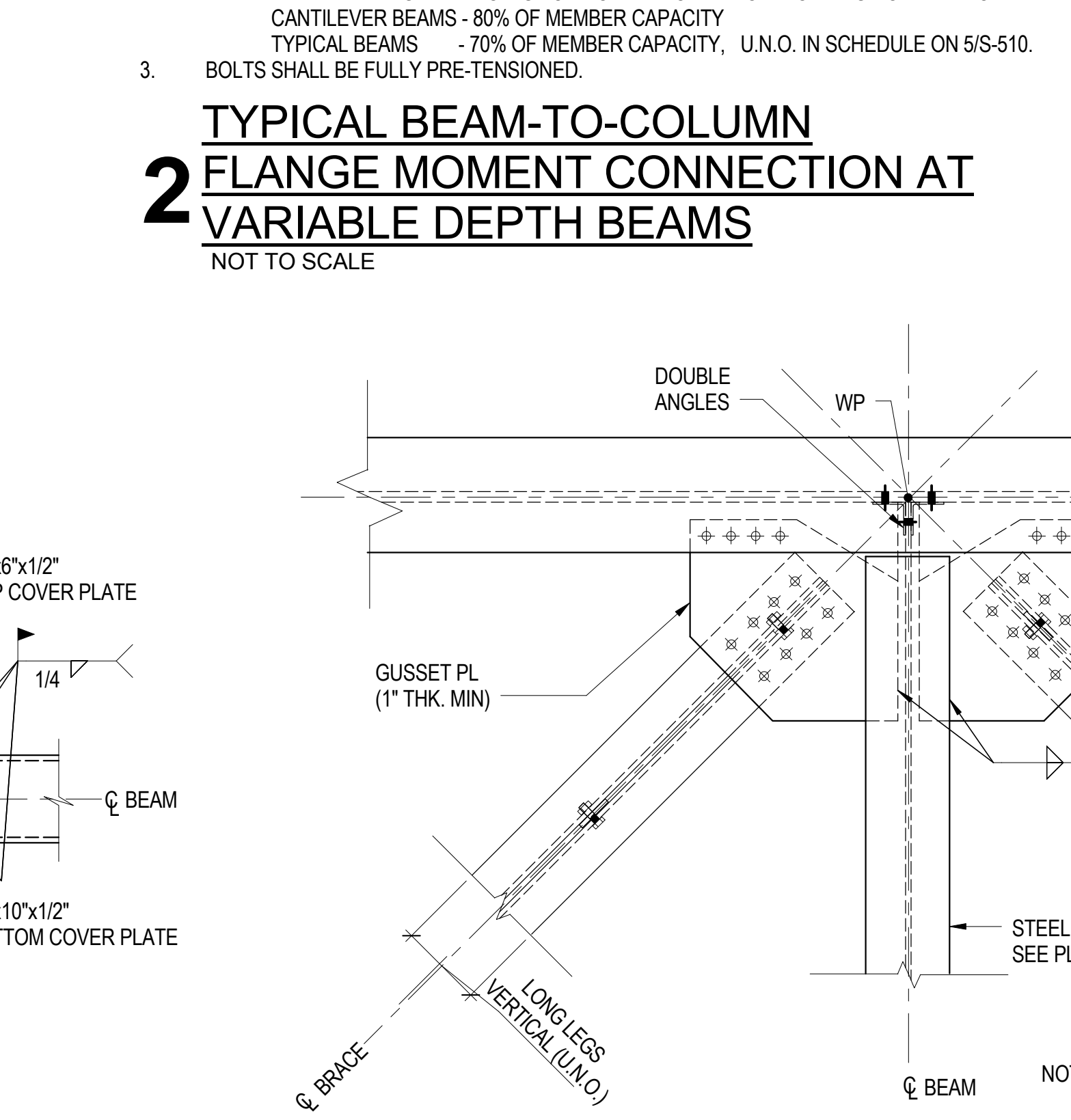
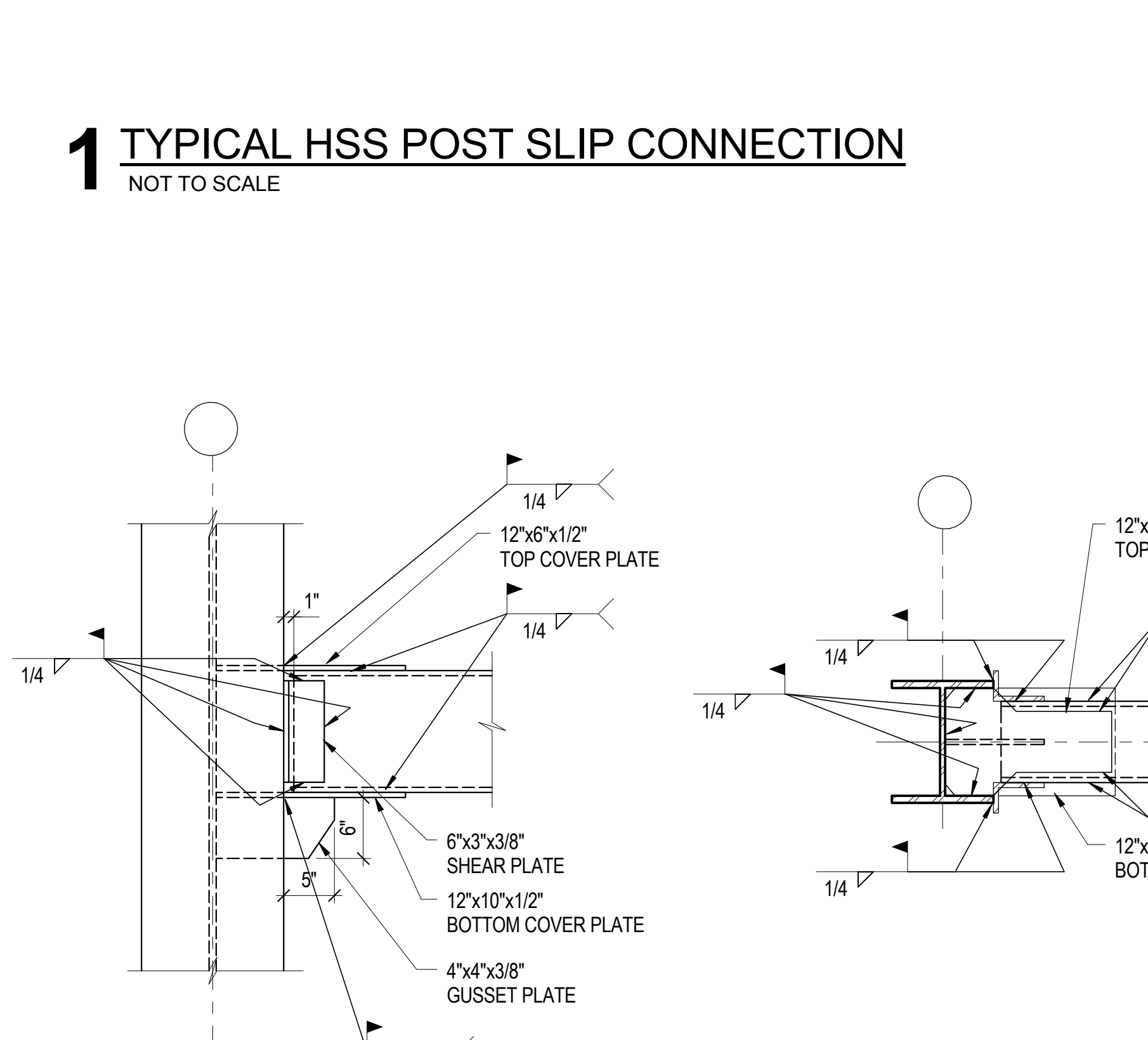
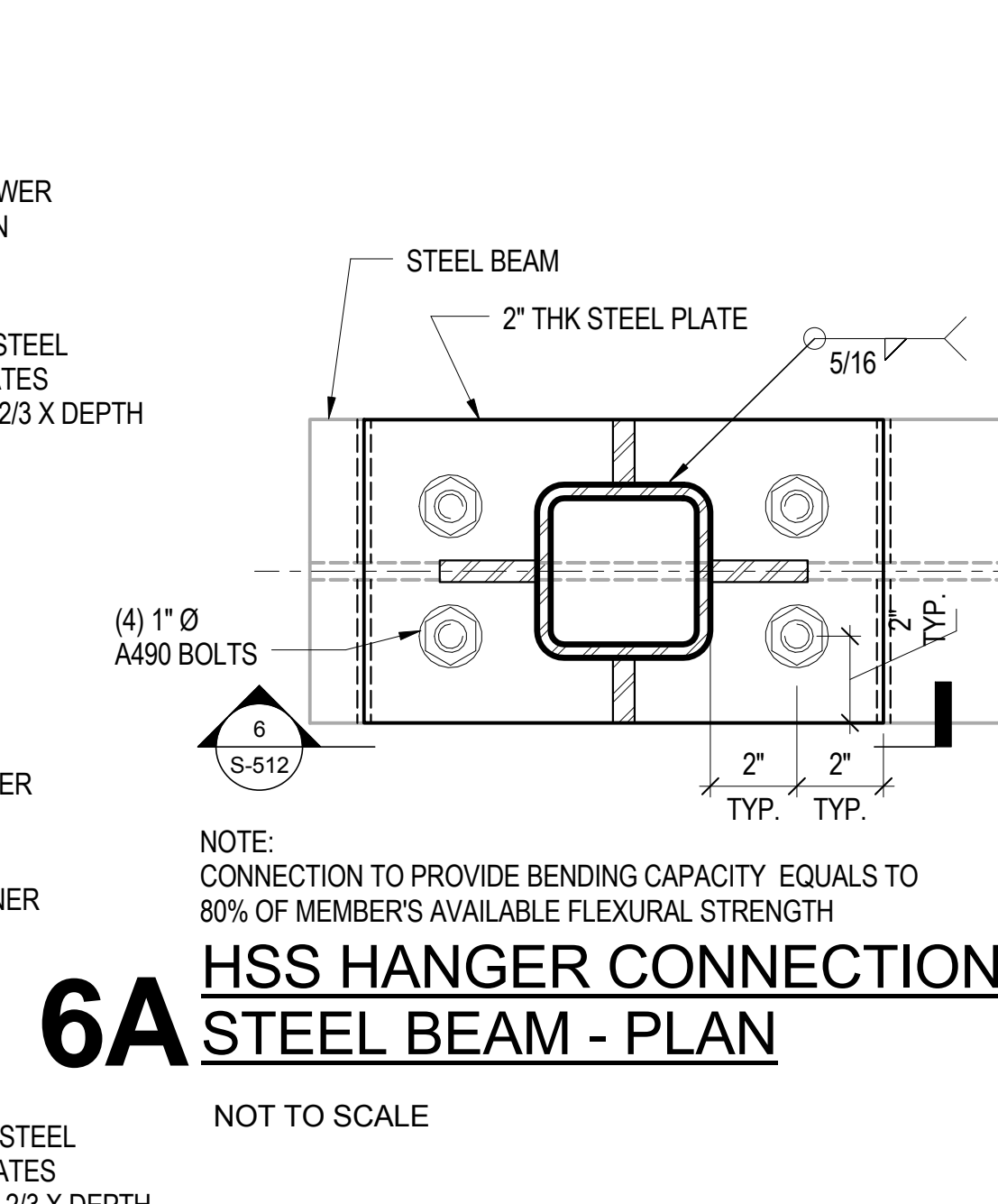
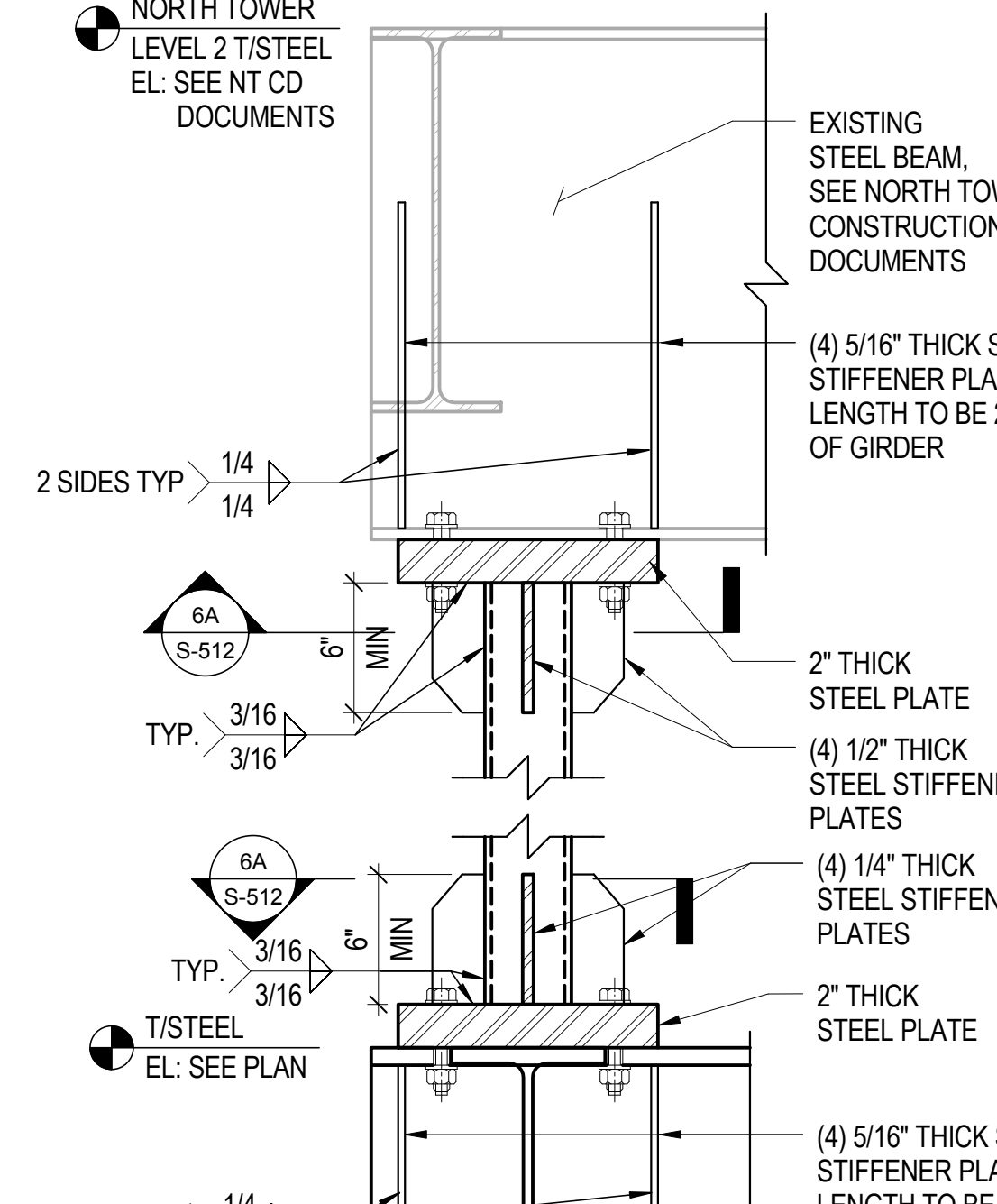
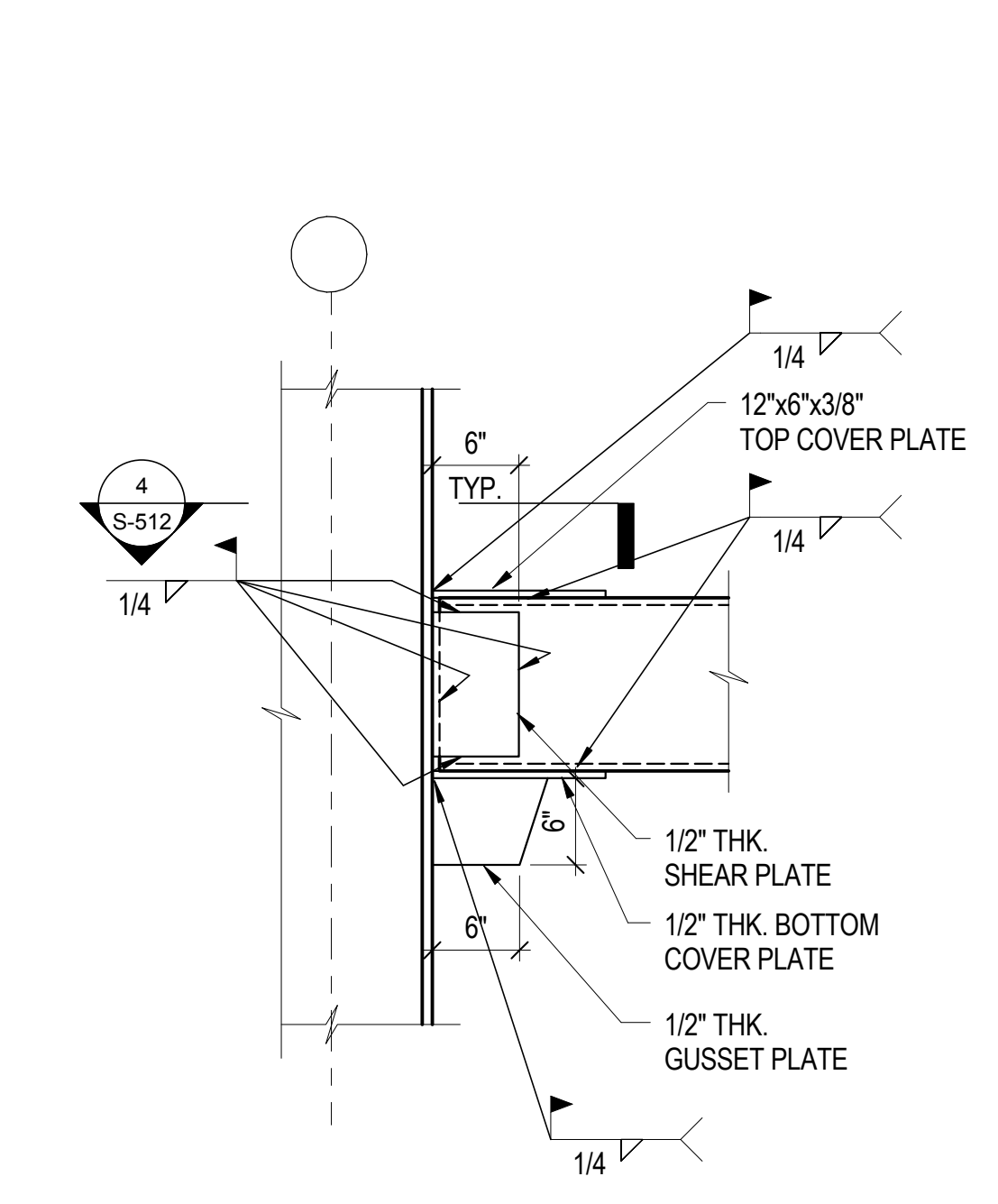
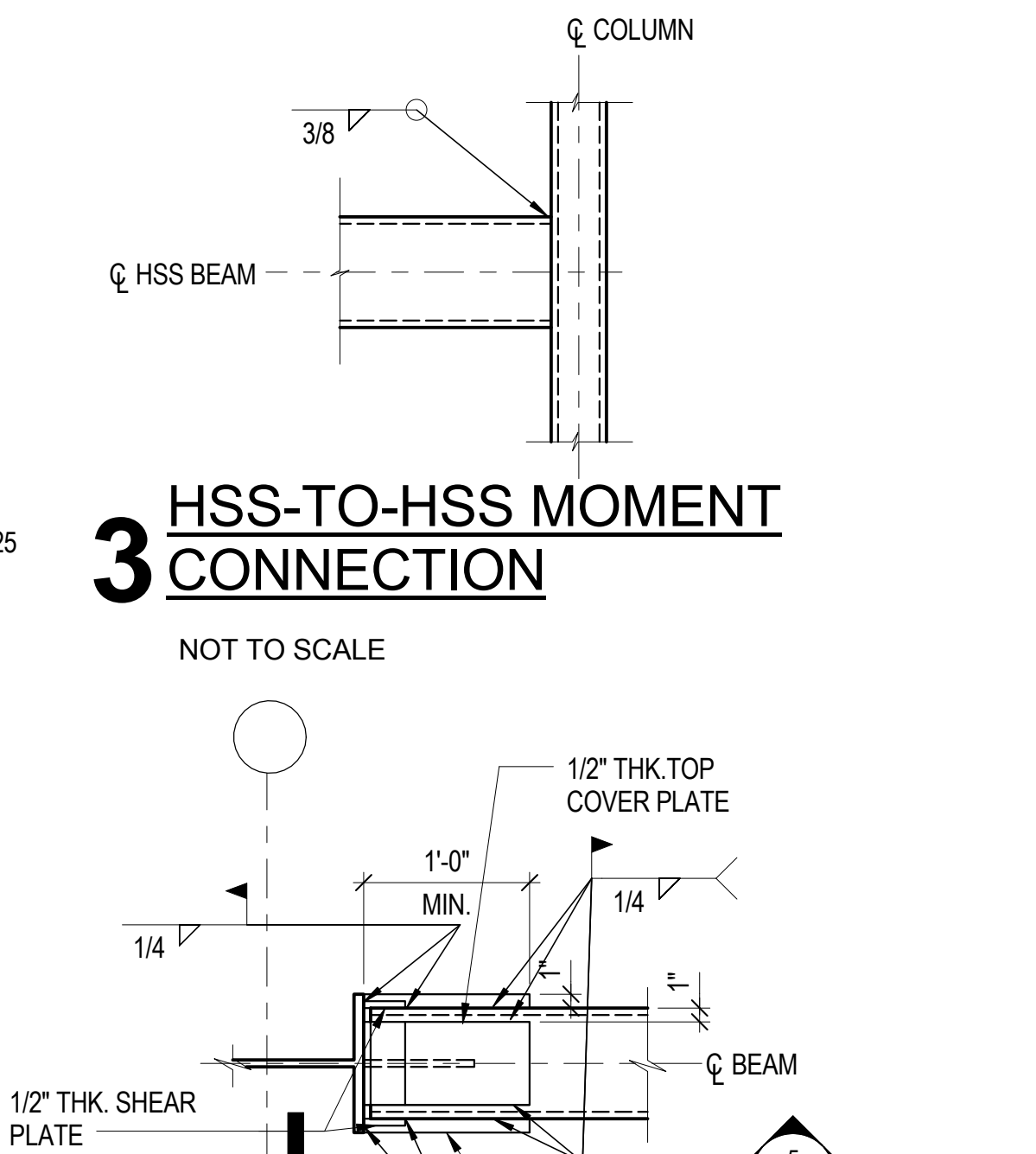
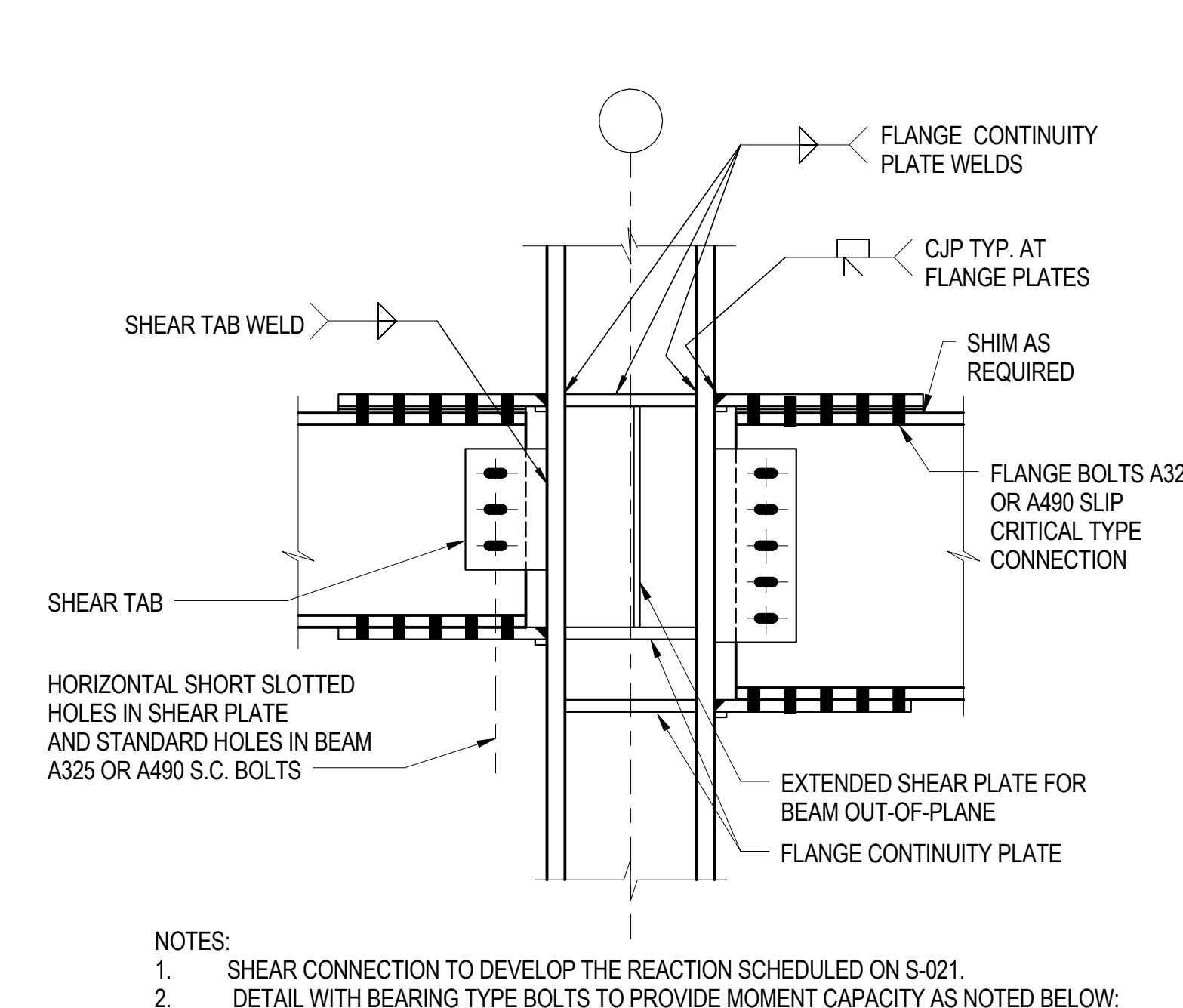
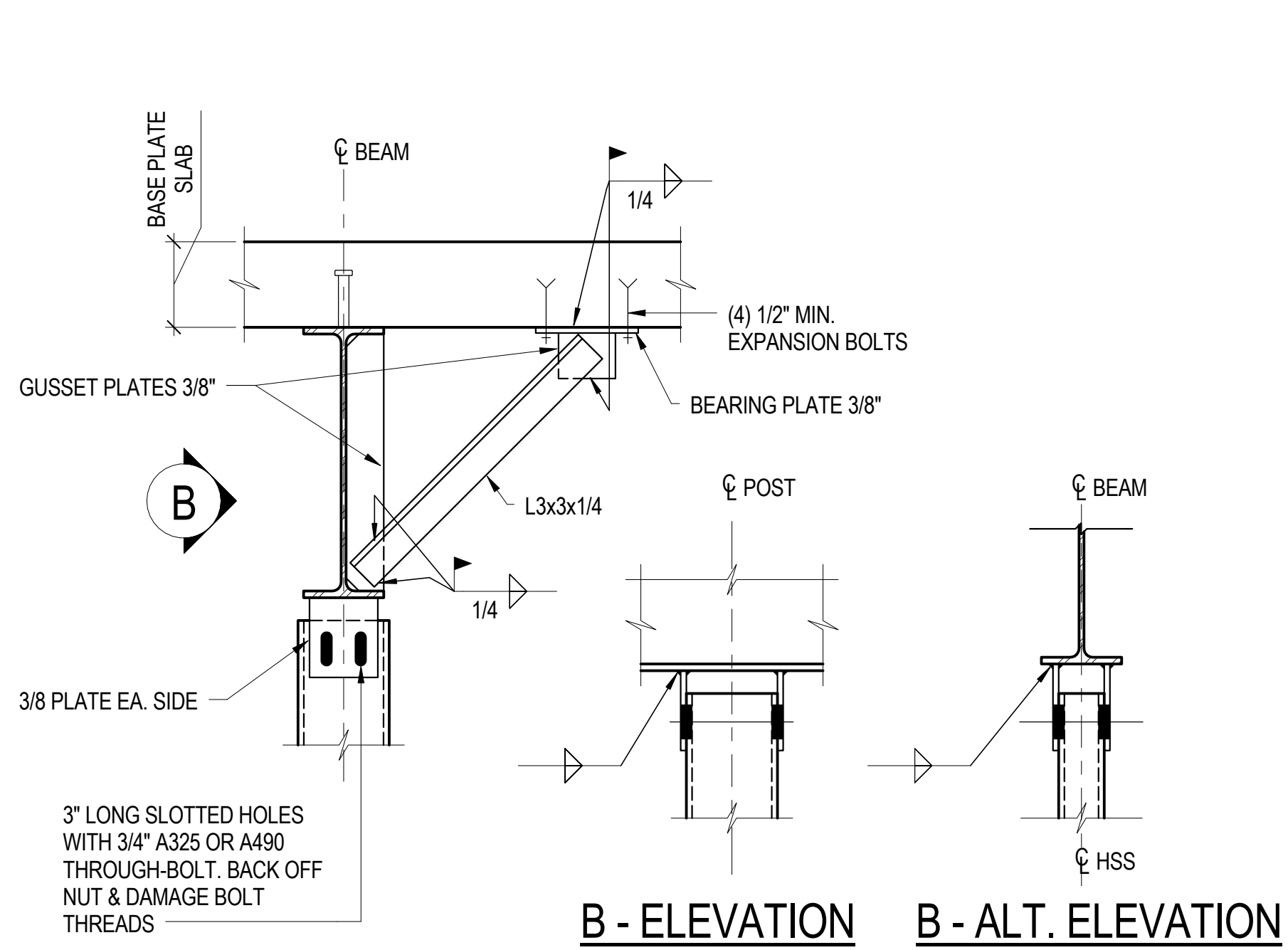
**TYPICAL
STRUCTURAL
STEEL SECTIONS
AND DETAILS**

Project No.: 211157 B-SCAN Sheet No.: S-510.00

Date: 02/16/2018 Sheet No.: S-510

Scale: 1" = 1'-0" Page No.: 5-510

File No.: 5-510



MANHATTAN WEST: RETAIL & CENTRAL PLAZA
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186 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
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680 Woodlawn Road West, Guelph, Ontario, Canada N1K 1B8

Key Plan:

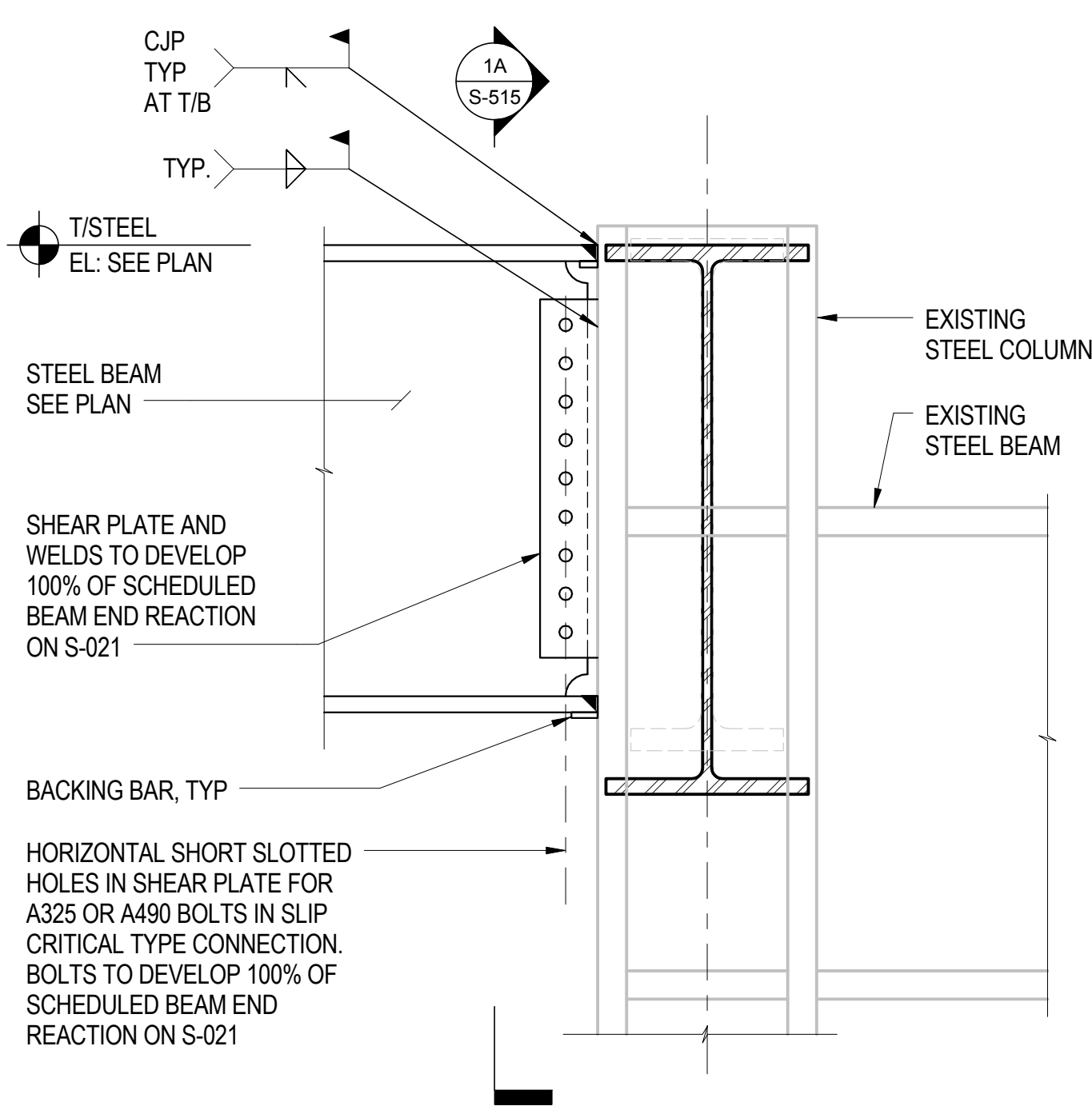
33RD STREET
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9TH AVENUE

Seal & Signature

Project No.: 211157
Date: 02/16/2018
Scale: As indicated
File No.: S-512

B-SCAN Sheet No.:
S-512.00
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S-512
Page No.:

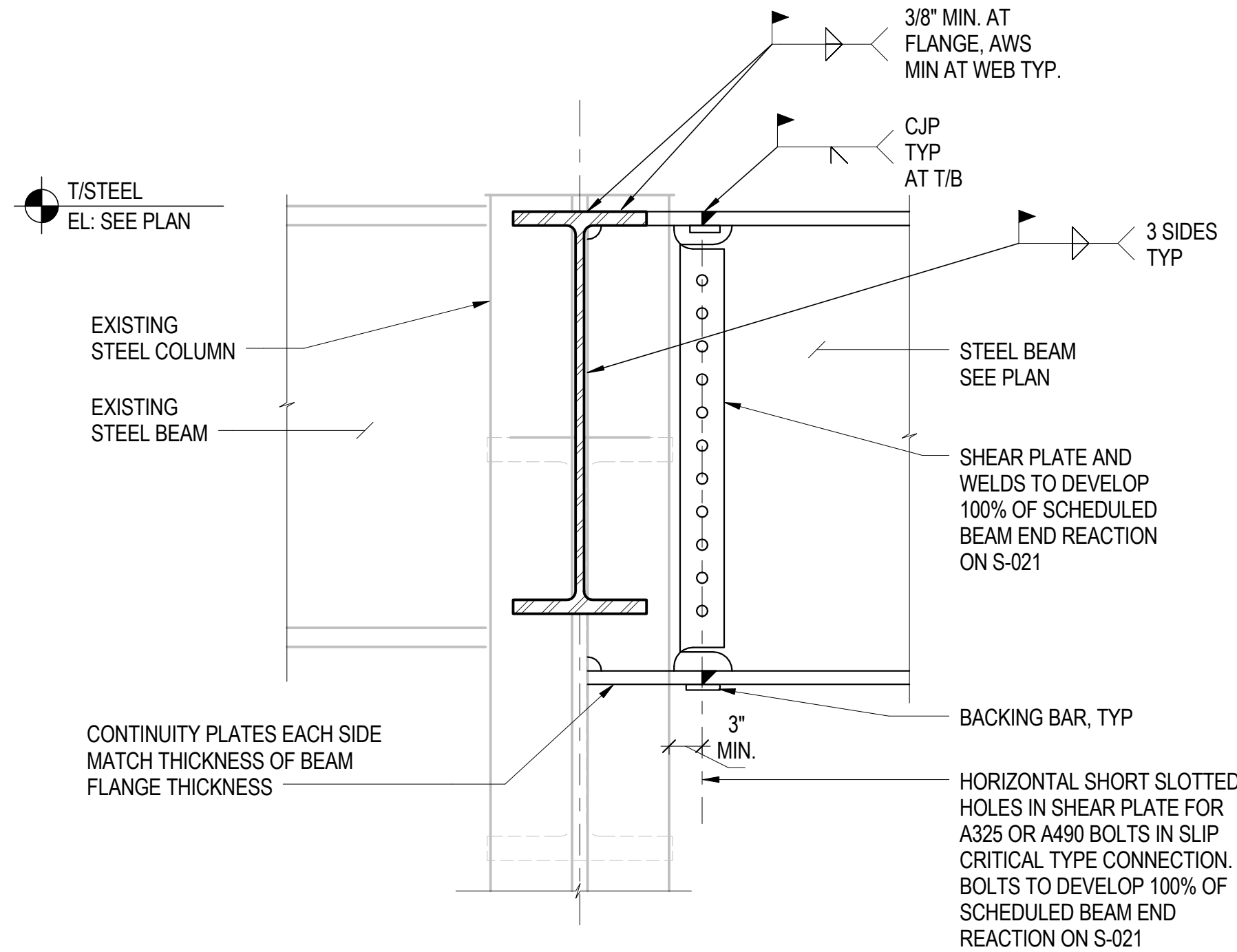
TYPICAL STRUCTURAL STEEL SECTIONS AND DETAILS



- NOTES:
1. VERIFY FACE OF EXISTING COLUMN IN FIELD PRIOR TO PREPARING SHOP DRAWING OF NEW TOP COLUMN.
 2. REMOVE RUST, MILL SCALE, DIRT, OIL/GREASE AND CLEAN SURFACE OF STEEL TO PREPARE WELDING.

1 BEAM TO COLUMN MOMENT CONNECTION - FIELD WELDED

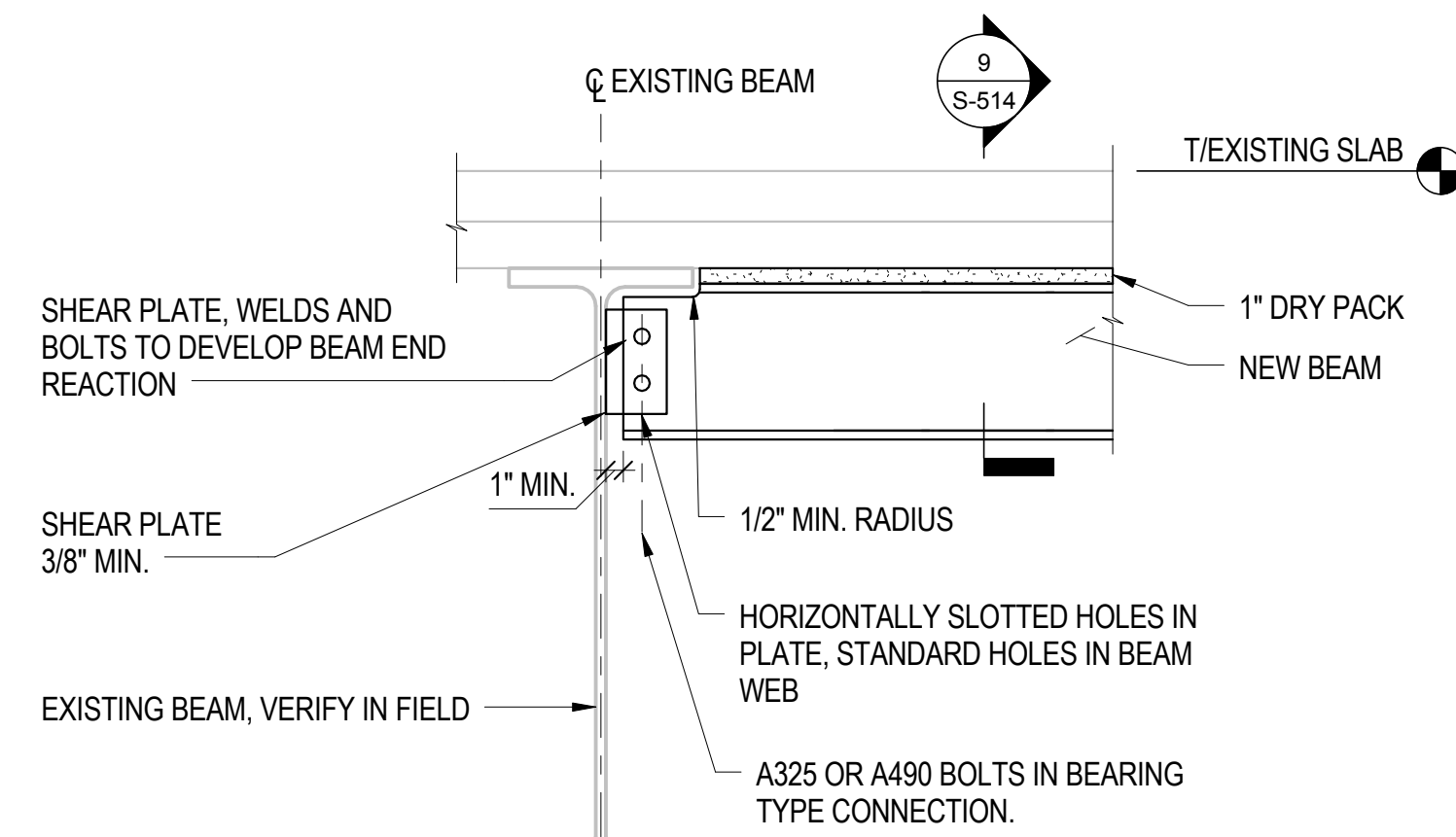
NOT TO SCALE



- NOTES:
1. VERIFY FACE OF EXISTING COLUMN IN FIELD PRIOR TO PREPARING SHOP DRAWING OF NEW TOP COLUMN.
 2. REMOVE RUST, MILL SCALE, DIRT, OIL/GREASE AND CLEAN SURFACE OF STEEL TO PREPARE WELDING.

1A BEAM TO COLUMN MOMENT CONNECTION - FIELD WELDED TO WEAK AXIS OF COLUMN

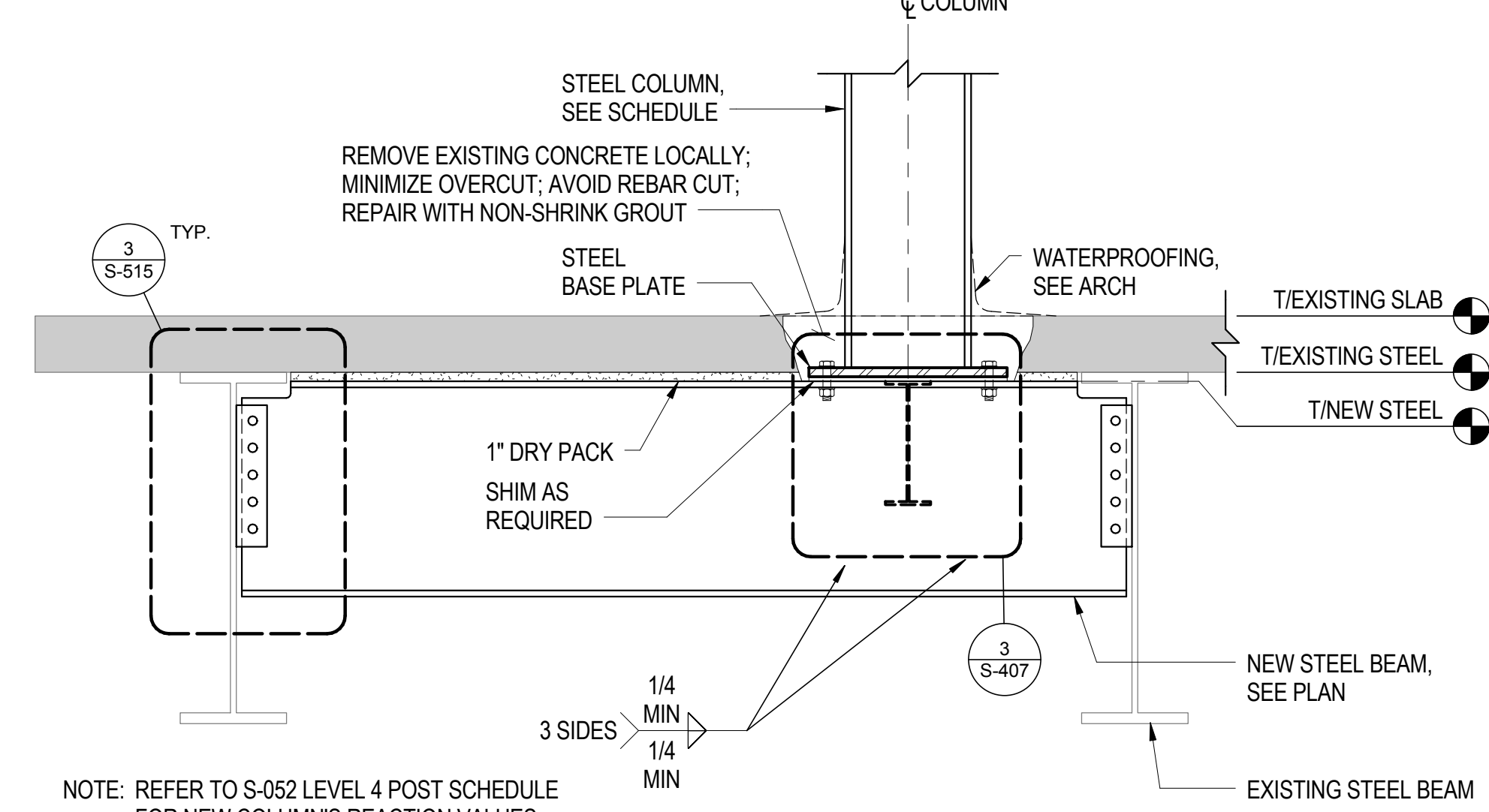
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- NOTES:
1. STEEL REQUIRES HOT-DIP GALVANIZING; ALL BOLTS, WASHER, NUTS, BASE PLATES, GUSSET PLATES, STIFFENER PLATES, ANCHOR BOLTS FOR CONNECTION OF HOT-DIP GALVANIZED STEEL SHALL BE GALVANIZED.
 2. SHEAR CONNECTION TO DEVELOP REACTIONS SCHEDULED ON S-021 OR AS SHOWN ON PLAN.

3 TYP. CONNECTION NEW BEAM TO EXISTING BEAM

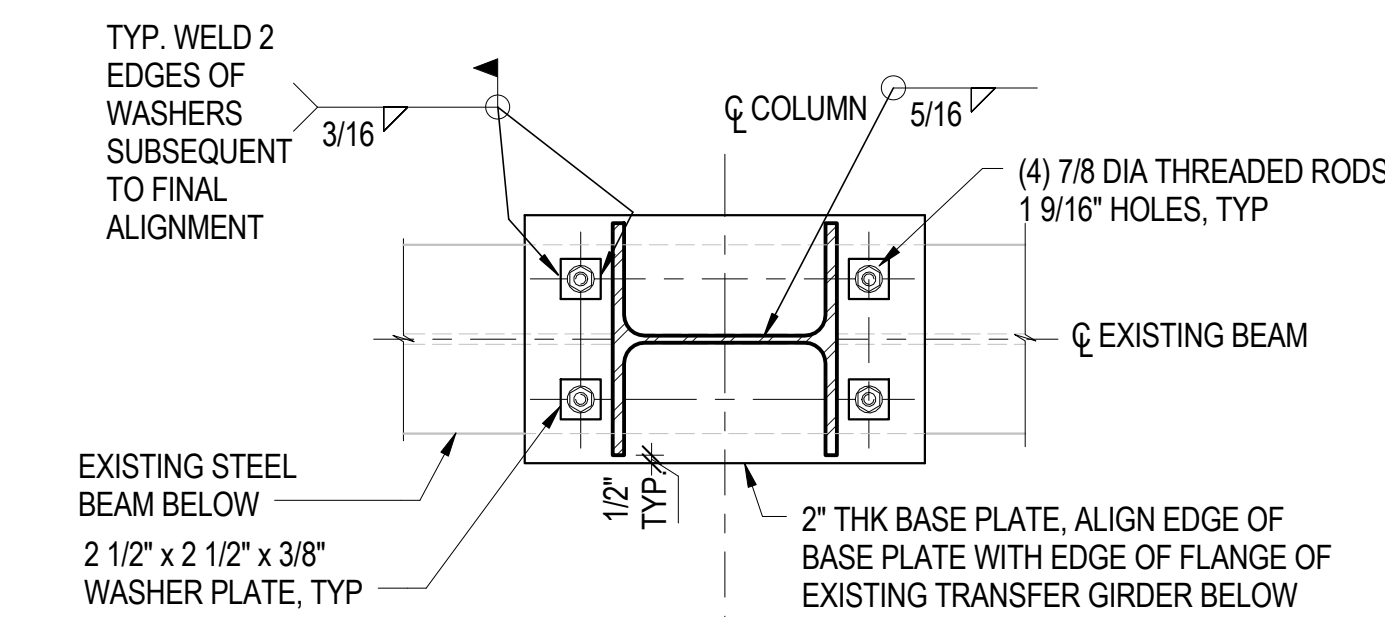
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NOTE: REFER TO S-062 LEVEL 4 POST SCHEDULE FOR NEW COLUMN'S REACTION VALUES

4 NEW STEEL COLUMN AND BEAM CONNECTION AT EXISTING SW TOWER

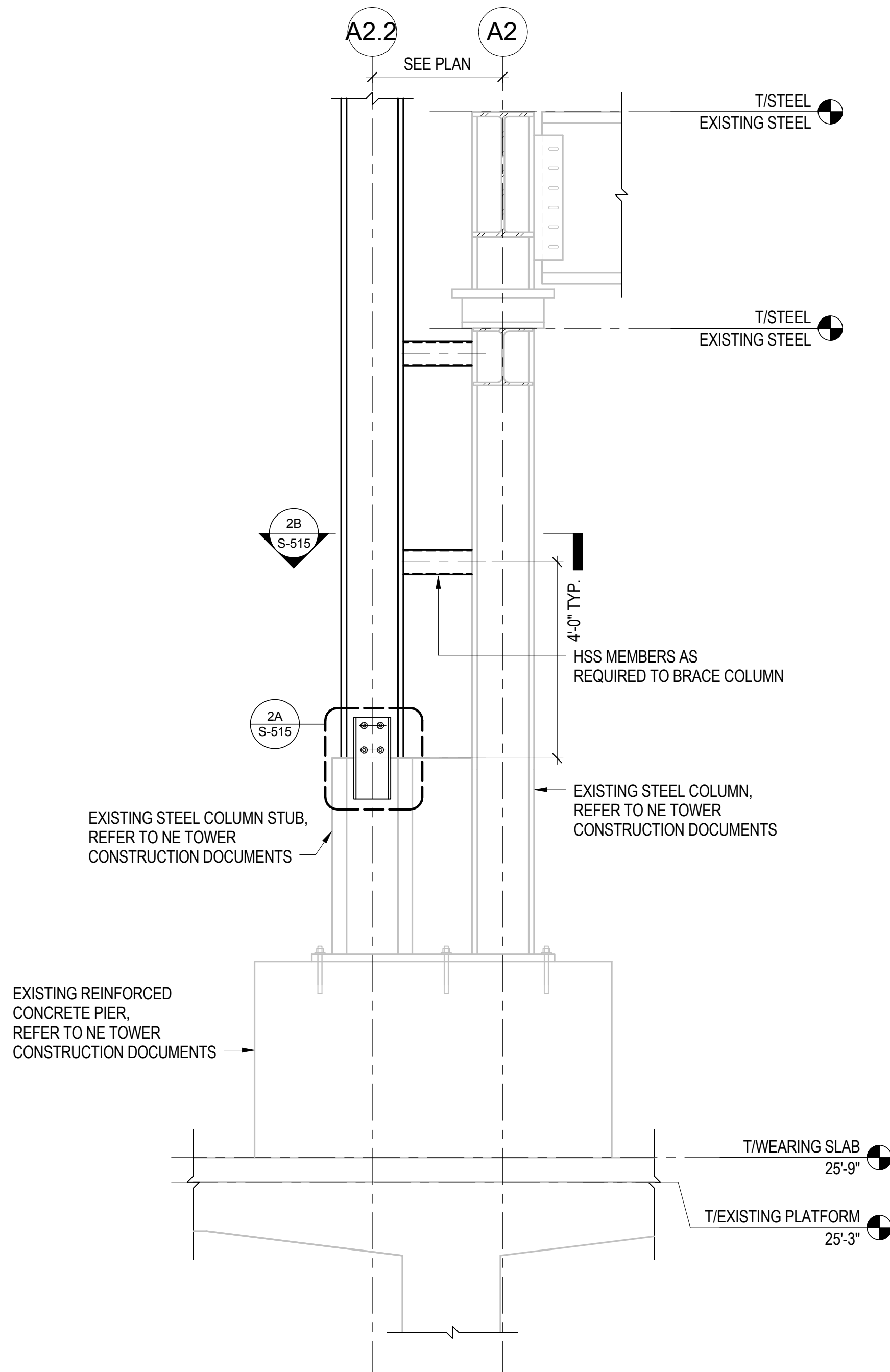
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- NOTES:
1. SCREEN WALL SUPPORTING STEEL REQUIRES HOT-DIP GALVANIZING; ALL BOLTS, WASHER, NUTS, BASE PLATES, GUSSET PLATES, STIFFENER PLATES, ANCHOR BOLTS FOR CONNECTION OF HOT-DIP GALVANIZED STEEL SHALL BE GALVANIZED.
 2. NOTE: REFER TO S-062 LEVEL 4 POST SCHEDULE FOR NEW COLUMN'S REACTION VALUES.

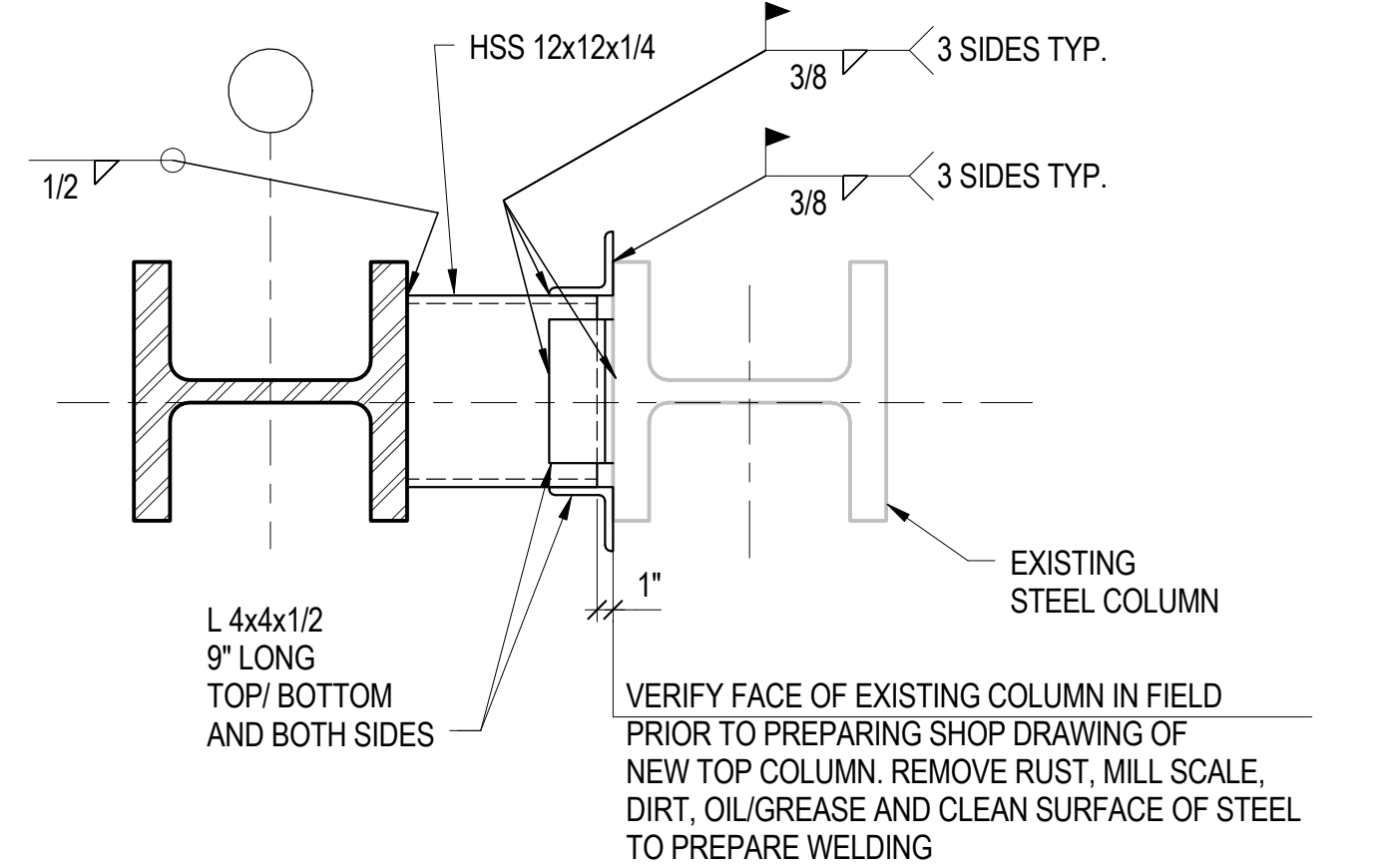
5 TYPICAL SOUTH BULKHEAD COLUMN CONNECTION TO EXISTING STRUCTURE

NOT TO SCALE



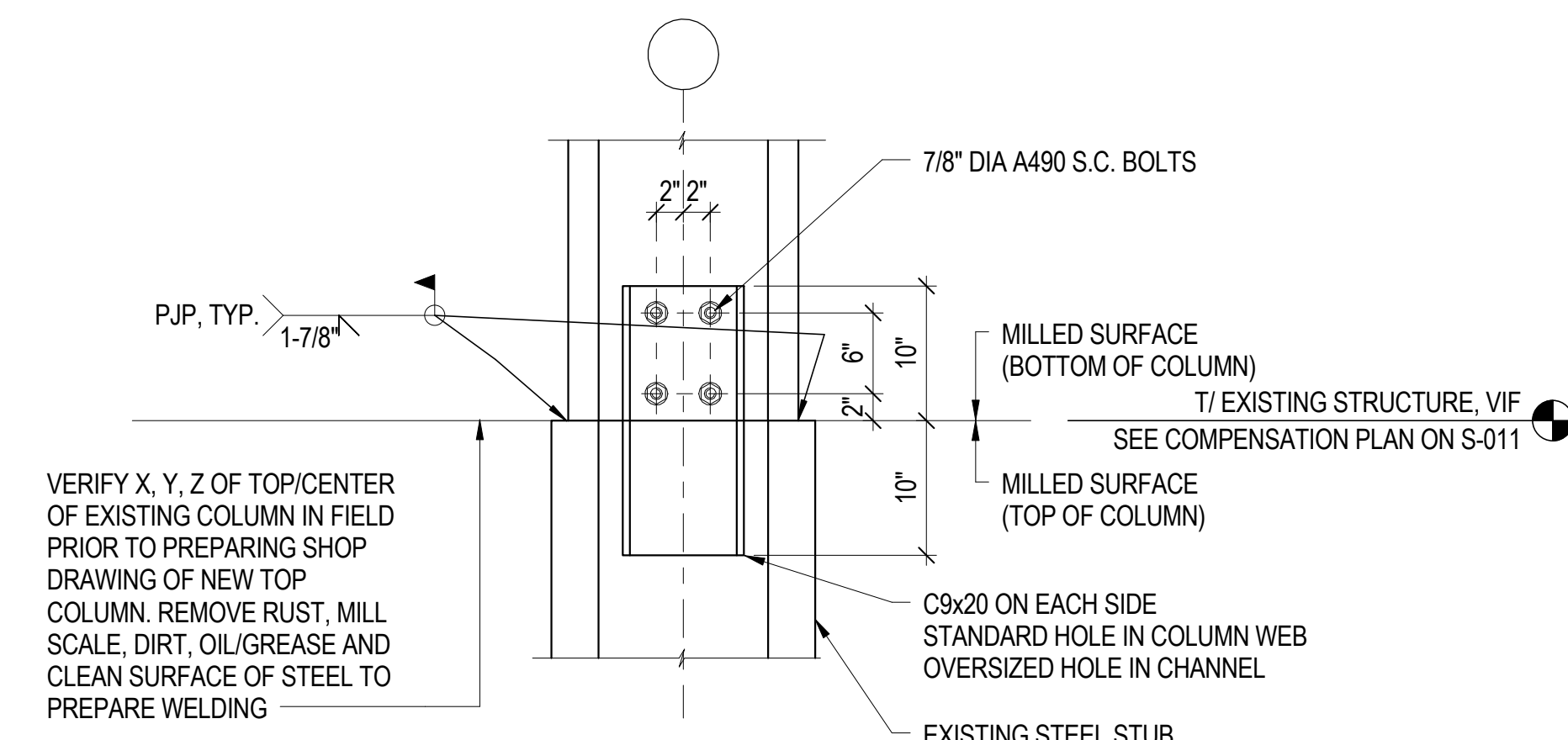
2 ADJACENT COLUMNS ALONG GRIDLINE A2 - LOOKING NORTH

NOT TO SCALE



2B HSS BRACE DETAIL AT EXISTING STEEL COLUMN

NOT TO SCALE



- NOTE:
1. TT = FLANGE THICKNESS OF TOP COLUMN

2A COLUMN SPLICE DETAIL AT EXISTING STEEL STUB COLUMN

NOT TO SCALE

**MANHATTAN WEST:
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650 Woodlawn Road West, Guelph, Ontario, Canada N1K 1B8

Key Plan:

Seal & Signature:

No.	Date	Description
1	02/16/2018	ISSUED FOR BUILDING PERMIT

Sheet Name: TYPICAL STRUCTURAL STEEL SECTIONS AND DETAILS

Project No.:	B-SCAN Sheet No.:
211157	S-515.00

Date:	Sheet No.:
02/16/2018	S-515

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As indicated	S-515

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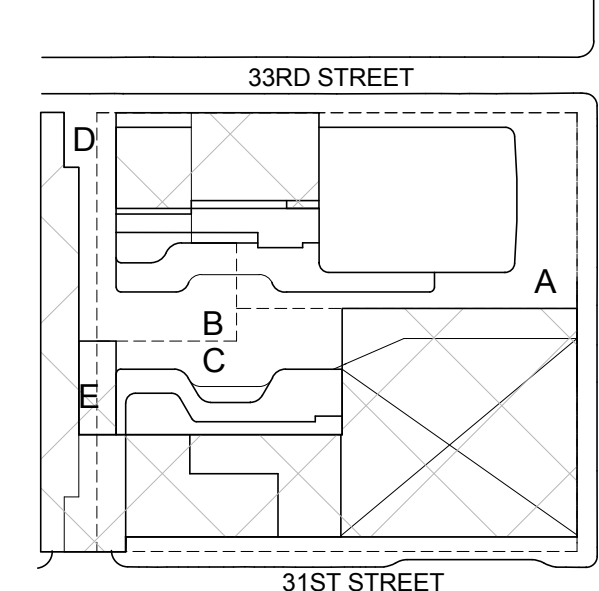
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

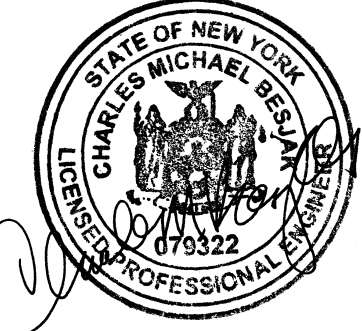
Wind Tunnel Consultant

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680 Woodlawn Road West, Guelph, Ontario, Canada N1K 1B6

Key Plan:



Seal & Signature:



1 02/16/2018 ISSUED FOR BUILDING PERMIT

No. Date Description
Sheet Name:

PLAZA LEVEL
(PLANTER
WALL/LIGHT FILL)
PLAN - PART A

Project No.:

211157

B-SCAN Sheet No.:

S-611.00

Date:

02/16/2018

Scale:

As indicated

File No.:

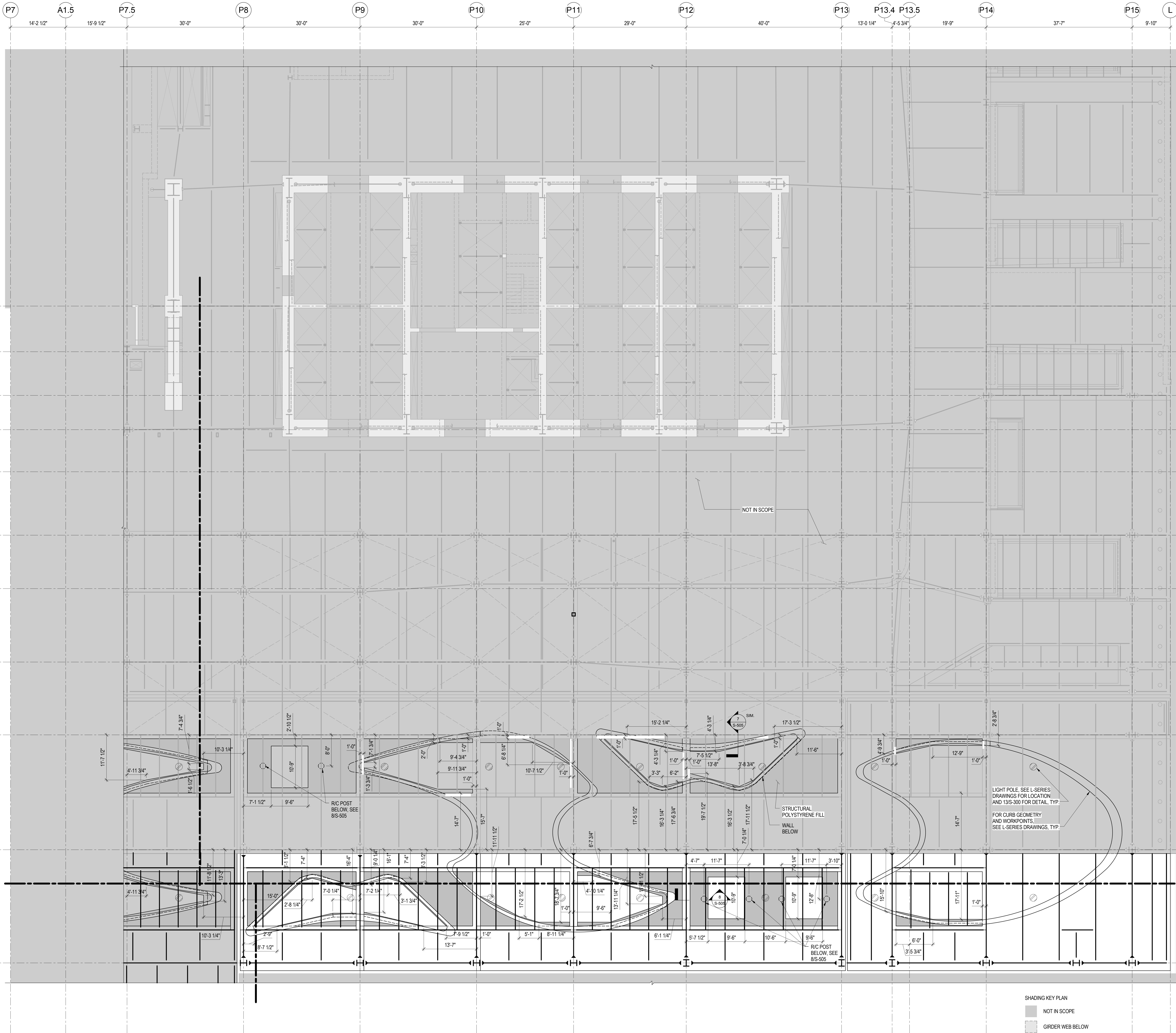
S-611

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SHADING KEY PLAN
NOT IN SCOPE
GIRDER WEB BELOW
NEW CONCRETE STRUCTURE

1 PLAZA LEVEL (PLANTER WALL/LIGHT FILL) PLAN - PART A
1/8" = 1'-0"