

FOOTING SCHEDULE						
MARK	LENGTH	WIDTH	DEPTH (IN)	BOTTOM REINFORCEMENT		REMARKS
				PARALLEL TO LENGTH	PARALLEL TO WIDTH	
F3.0	3'-0"	3'-0"	24	6-#8	6-#8	HOOK BARS
F5.0	5'-0"	5'-0"	27	10-#8	10-#8	HOOK BARS
F6.0	6'-0"	6'-0"	33	14-#8	14-#8	HOOK BARS
F6.5	6'-6"	6'-6"	36	14-#9	14-#8	HOOK BARS
F7.0	7'-0"	7'-0"	39	18-#9	18-#9	HOOK BARS
F7.5	7'-6"	7'-6"	45	20-#9	20-#9	HOOK BARS
F8.0	8'-0"	8'-0"	45	22-#9	22-#9	HOOK BARS
F8.5	8'-6"	8'-6"	48	24-#9	24-#9	HOOK BARS
F9.0	9'-0"	9'-0"	54	26-#9	26-#9	HOOK BARS
F41.33	41'-4"	12'-8"	48	25-#9	32-#9	HOOK BARS

Manhattan West

Southwest Residential

Tower

PART OF THE MANHATTAN WEST MASTER PLAN

West 31st Street & Dyer Avenue

New York, NY

OWNER/DEVELOPER:

Brownfield

BCP West 31st Street LLC

Brookfield Properties W 33rd CO.,LP.

Brookfield Place, 250 Vesey Street

New York, NY 10281

ARCHITECT:

SLICEArchitects,LLP

1359 BROADWAY

NEW YORK, NY 10018

TEL: (212) 979-8400

FAX: (212) 979-8387

DESIGN ARCHITECT / MASTER PLAN ARCHITECT:

SOM

Stosson, Owring & Merrill LLP

14 Wall Street New York, NY 10005

TEL: (212) 298-9300

INTERIOR DESIGN:

RW STUDIO

324 LAFAYETTE STREET, 4TH FLOOR

NEW YORK, NY 10012

TEL: (212) 625-3808

FAX: (212) 625-3807

LANDSCAPE ARCHITECT:

JAMES CORNER OPERATIONS

475 TENTH AVENUE

NEW YORK, NY 10018

TEL: (212) 433-1450

STRUCTURAL ENGINEER:

DeSIMONE CONSULTING ENGINEERS, P.L.L.C.

18 WEST 18TH STREET

NEW YORK, NY 10011

TEL: (212) 532-2211

FAX: (212) 481-6108

MECHANICAL ENGINEER:

COSENTINI ASSOCIATES

TWO FIFTH FLAQA

NEW YORK, NY 10121

TEL: (212) 615-3600

FAX: (212) 615-3700

BUILDING ENVELOPE CONSULTANT:

VIDARIS INC. / ISRAEL BERGER & ASSOCIATES, INC.

232 MADISON AVENUE

NEW YORK, NY

TEL: (212) 689-5389

FAX: (212) 689-6449

ENERGY & ENVIRONMENTAL CONSULTANT:

VIDARIS INC. / CONSULTING GROUP

50 WASHINGTON STREET

NORWALK, CT 06854

TEL: (203) 299-1656

VERTICAL TRANSPORTATION CONSULTANT:

VAN DUITE SUITE & ASSOCIATES

5 REGENT STREET, SEVEN 524

LIVINGTON, NJ 07039

TEL: (732) 994-9220

ACOUSTICAL CONSULTANT:

CERAMI ASSOCIATES

414 FIFTH AVENUE

NEW YORK, NY 10018

TEL: (212) 370-1776

FAX: (212) 370-1736

CIVIL ENGINEER:

HAIDIS HABIB & ASSOCIATES

102 MADISON AVENUE, 11TH FL.

NEW YORK, NY 10016

TEL: (212) 329-5656

FAX: (212) 329-5603

GEOTECHNICAL ENGINEER:

MUESER RUTLEDGE CONSULTING ENGINEERS

225 WEST 34TH STREET

NEW YORK, NY 10122

TEL: (917) 339-9300

FAX: (917) 339-9400

CONSTRUCTION MANAGER:

HUNTER ROBERTS CONSTRUCTION GROUP

225 LIBERTY STREET, 6TH FLOOR

NEW YORK, NY 10281

12 - 11-07-2014

ISSUED FOR DOB FILING

11 - 10-23-2014

BULLETIN #2

09 - 08-20-2014

STRUCTURAL REVISIONS

08 - 08-20-2014

ISSUED FOR CONSTRUCTION

07 - 03-09-2014

90% CONSTRUCTION DOCUMENTS

05 - 16-20-2014

IDB SET

05 - 05-09-2014

DOB FILING

04 - 03-14-2014

DESIGN DEVELOPMENT

03 - 02-14-2014

FOUNDATION FILING

DRAW NUMBER:

REVISION:

NB#

NORTH:

5/32"=1'-0"

KEY PLAN:

PROJECT:

MANHATTAN WEST

NEW YORK / NEW YORK

DRAWING TITLE:

FOUNDATION

PLAN

SEAL & SIGNATURE:

DATE: 02/21/2014

PROJECT NO.: 13168-00

DRAWN BY: IWB

CHECKED BY: JS

DWG. NO.:

FO-101.00

SHEET NO.: 02 of 70

FILE NO.:

171848-002-FD-101.dwg

Manhattan West  
Southwest Residential  
Tower

PART OF THE MANHATTAN WEST MASTER PLAN  
West 31st Street & Dyer Avenue  
New York, NY

OWNER/DEVELOPER:

**Brookfield**  
80P West 31st Street LLC  
Brookfield Properties W 33rd CO L.P.  
Brookfield Place, 250 Vesey Street  
New York, NY 10281

ARCHITECT:

**SLCE Architects, LLP**  
1359 BROADWAY  
NEW YORK, NY 10018  
TEL: (212) 979-8400  
FAX: (212) 979-8387

DESIGN ARCHITECT / MASTER PLAN ARCHITECT:

**SOM**

SOMWORKS, CORP. & MEMIL LP  
14 WALL STREET NEW YORK, NY 10005  
(212) 278-9300

INTERIOR DESIGN:

**RW STUDIO**  
324 LAFAYETTE STREET, 6TH FLOOR  
NEW YORK, NY 10012  
TEL: (212) 625-3808  
FAX: (212) 625-3807

LANDSCAPE ARCHITECT:

**JAMES CORNER**  
FIELD OPERATIONS  
475 TENTH AVENUE  
NEW YORK, NY 10018  
TEL: (212) 433-1430

STRUCTURAL ENGINEER:

**DeSIMONE CONSULTING**  
ENGINEERS, P.L.L.C.  
18 WEST 18TH STREET  
NEW YORK, NY 10011  
TEL: (212) 532-2211  
FAX: (212) 481-6108

MECHANICAL ENGINEER:

**COSENTINI ASSOCIATES**  
TWO PENN PLAZA  
NEW YORK, NY 10011  
TEL: (212) 615-3600  
FAX: (212) 615-3700

BUILDING ENVELOPE CONSULTANT:

**VIDARIS INC. /**  
**ISRAEL BERGER & ASSOCIATES, INC.**  
232 MADISON AVENUE  
NEW YORK, NY 10017  
TEL: (212) 689-3389  
FAX: (212) 689-4449

ENERGY / ENVIRONMENTAL CONSULTANT:

**VIDARIS INC. /**  
**VRIDIAN ENERGY & ENVIRONMENTAL**  
50 WASHINGTON STREET  
NORWALK, CT 06854  
TEL: (203) 299-1411  
FAX: (203) 299-1456

VERTICAL TRANSPORTATION CONSULTANT:

**VAN DEUSEN & ASSOCIATES**  
5 REGENT STREET, SUITE 524  
LIVINGSTON, NJ 07039  
TEL: (732) 994-9220

ACOUSTICAL CONSULTANT:

**CERAMI ASSOCIATES**  
404 FIFTH AVENUE  
NEW YORK, NY 10018  
TEL: (212) 370-1776  
FAX: (212) 370-1756

CIVIL ENGINEER:

**PHILIP HABIB & ASSOCIATES**  
102 MADISON AVENUE, 11TH FL.  
NEW YORK, NY 10016  
TEL: (212) 929-5655  
FAX: (212) 929-5605

GEOTECHNICAL ENGINEER:

**MUESER RUTLEDGE**  
CONSULTING ENGINEERS  
225 WEST 34TH STREET  
NEW YORK, NY 10012  
TEL: (212) 339-9300  
FAX: (212) 339-9400

CONSTRUCTION MANAGER:

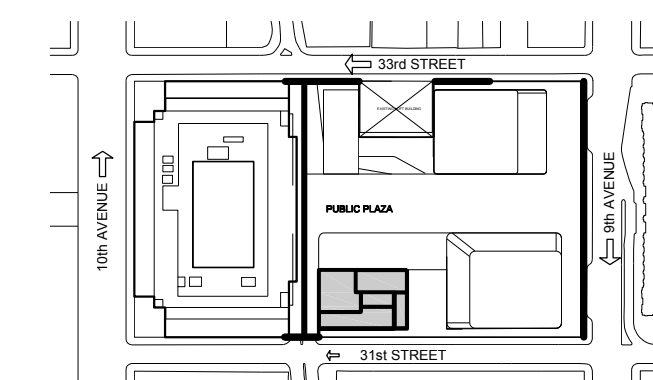
**HUNTER ROBERTS**  
**CONSTRUCTION GROUP**  
225 LIBERTY STREET, 6TH FLOOR  
NEW YORK, NY 10281  
TEL: (212) 321-6800

12	11-07-2014	ISSUED FOR DOB FILING
11	10-23-2014	BULLETIN #2
10	09-26-2014	STRUCTURAL REVISIONS
9	09-09-2014	ISSUED FOR CONSTRUCTION
8	08-01-2014	90% CONSTRUCTION DOCUMENTS
7	06-03-2014	90% CONSTRUCTION DOCUMENTS
6	05-16-2014	BID SET
5	05-09-2014	DOB FILING
4	03-14-2014	DESIGN DEVELOPMENT
3	02-14-2014	FOUNDATION FILING

DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
NB# \_\_\_\_\_

NORTH: 5/32°-1-0°

KEY PLAN:



PROJECT:

MANHATTAN WEST  
NEW YORK, NEW YORK

DRAWING TITLE:

CELLAR  
PLAN

SEAL & SIGNATURE:

DATE: 07/31/2014  
PROJECT NO: 13166101  
DRAWN BY: IWS  
CHECKED BY: JS  
DATE: \_\_\_\_\_  
PROJECT NO: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_  
PROJECT NO: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_

FO-102.00  
SHEET No.: 03 of 70

FILE NO:

13166100-FO-102.00.dwg

SLAB THICKNESS U.O.N:	t = 6"
SLAB CONCRETE STRENGTH:	f <sub>c</sub> = 5 ksi
TOP OF SLAB ELEVATION U.O.N:	SEE PLAN
DRAWING NOTES:	
1. FOR GENERAL NOTES SEE S-601.	
2. FOR COLUMN SCHEDULE AND DETAILS SEE S-401 TO S-403.	
3. FOR SHEAR WALL PLANS AND DETAILS SEE S-410 TO S-432.	
4. 6" SLAB ON GRADE SHALL HAVE WWP 6x6 W2.0x 2.0 AT MIDHEIGHT.	
5. TOP OF FOOTING OR FOUNDATION MAT SHALL BE 1'-0" BELOW TOP OF SLAB ON GRADE WHERE UNDER SLAB GRAVEL IS USED. WHERE UNDER SLAB GRAVEL IS NOT USED, TOP OF FOOTING OR FOUNDATION MAT SHALL MATCH BOTTOM OF SLAB.	
6. FOR FOUNDATION DETAILS AND SECTIONS SEE FO-111 TO FO-115.	
7. FOR FOUNDATION MAT PART PLANS AND SECTIONS SEE FO-121 TO FO-122.	
8. FOR FOOTING SCHEDULE AND FOUNDATION WALL SCHEDULE SEE FO-101.	
9. CONCRETE STRENGTH OF SHEAR WALLS TO MATCH STRENGTH OF COLUMNS.	
10. CONTRACTOR TO LOCATE AND VERIFY ALL OPENINGS THROUGH SLAB FROM ARCHITECTURAL AND MEP DRAWINGS.	
11. FOR TYPICAL CONCRETE DETAILS SEE S-601 TO S-603.	
12. FOR TYPICAL STEEL DETAILS SEE DRAWINGS S-601 TO S-603.	
13. CONCRETE STRENGTH OF STRUCTURE SHOWN ON PLAN SHALL BE THE FOLLOWING.	
FOOTINGS 6 KSI	
FOUNDATION MATS 8 KSI	
FOUNDATION WALLS 5 KSI	
14. Φ INDICATES THE DOWN ROCK ANCHOR WITH 250 KIPS CAPACITY.	
15. REINFORCE 18" SLAB WITH #6 @ 12" EACH WAY, TOP AND BOTTOM.	
16. REINFORCE 12" SLAB WITH #6 @ 12" EACH WAY, TOP AND BOTTOM.	



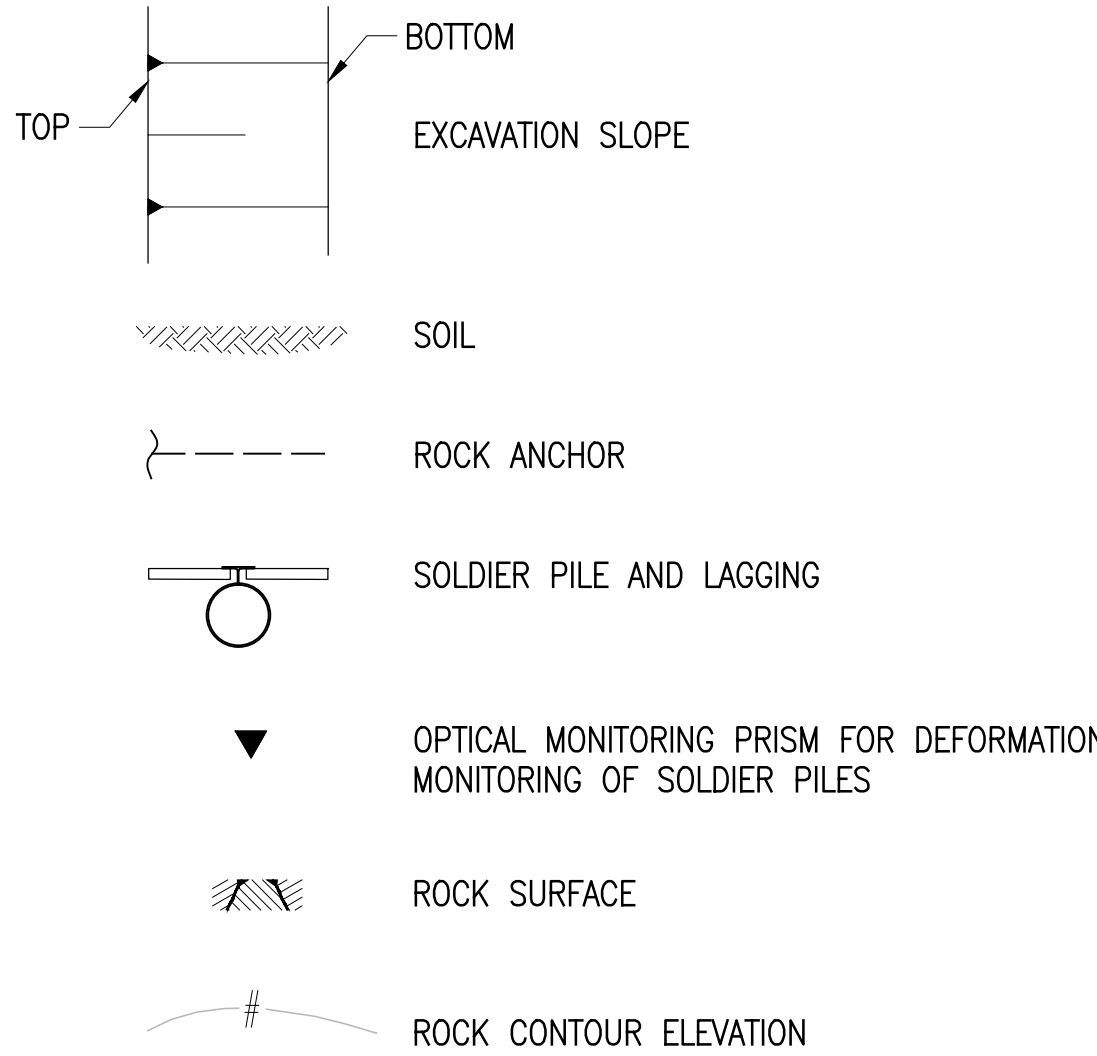
LIST OF DRAWINGS

- SOE-100.00 – SUPPORT OF EXCAVATION – GENERAL AND EXCAVATION NOTES  
SOE-101.00 – SUPPORT OF EXCAVATION – PLAN  
SOE-110.00 – SUPPORT OF EXCAVATION – SECTIONS 1 OF 2  
SOE-111.00 – SUPPORT OF EXCAVATION – SECTIONS 2 OF 2  
SOE-120.00 – SUPPORT OF EXCAVATION – DETAILS

LIST OF ABBREVIATIONS:

- ℄ – CENTERLINE  
DIA. – DIAMETER  
ELEC. – ELECTRICAL  
EL. – ELEVATION  
EXIST. – EXISTING  
FTG. – FOOTING  
NO. – NUMBER  
O.C. – ON CENTER  
℄ – PROPERTY LINE  
SCHED. – SCHEDULE  
SOE – SUPPORT OF EXCAVATION  
TYP. – TYPICAL  
W.P. – WORKING POINT

LIST OF SYMBOLS:



GENERAL NOTES:

- CONTRACTOR MAY ELECT TO SUBMIT VALUE ENGINEERING AND OWN DESIGN FOR SUPPORT OF EXCAVATION, INCLUDING ALL MEASURES REQUIRED TO SUPPORT ADJACENT STRUCTURES, STREETS, SIDEWALKS AND UTILITIES, PREPARED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NEW YORK FOR REVIEW BY THE ENGINEER-OF-RECORD.
- ELEVATIONS ON PLANS ARE GIVEN RELATIVE TO DATUM NAVD88.
- THE SUPPORT OF EXCAVATION SYSTEM HAS BEEN DESIGNED FOR 600 PSF AT EXISTING GRADE ALONG THE EXTERIOR OF THE SITE.
- MATERIALS:
  - A. ALL STEEL (U.O.N.): ASTM A572, GRADE 50
  - B. SOLDIER PIPE PILES: ASTM A 252, CLASS 3
  - C. TIMBER LAGGING: SOUTHERN PINE OR EQUAL  
FB = 1250 PSI (MIN)  
FV = 175 PSI (MIN)
  - D. STEEL THREAD BAR: ASTM A722, GRADE 150
  - E. ROCK BOLTS: ASTM A615 GRADE 75
  - F. ROCK PIN REINFORCING: ASTM A615, GRADE 60
  - G. GROUT: MIN. 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS
  - H. WELDING: AWS D1.1, E70XX ELECTRODES
- SOLDIER (DRILLED-IN) PIPE PILES:
  - A. ALL SOLDIER PILES SHALL BE INSTALLED PLUMB IN DRILLED HOLES. ANY DEVIATIONS OF THE PILE ALIGNMENT BEYOND THOSE SPECIFIED SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER PRIOR TO EXCAVATION.
  - B. ALL PILES SHALL BE FILLED WITH GROUT.
  - C. PILE SPLICES SHALL DEVELOP THE FULL MOMENT AND SHEAR CAPACITY OF THE PILES.
- ALL ANCHORS SHALL BE INSTALLED AND TESTED ACCORDING TO THE DETAILS AND PROCEDURES ON DRAWING SOE-120.00.
- ALL ROCK BOLTS SHALL BE INSTALLED ACCORDING TO THE DETAILS AND PROCEDURES SHOWN ON DRAWING SOE-120.00.
- FOUNDATION PLAN PREPARED BY DeSIMONE CONSULTING ENGINEERS P.L.L.C., DATED 2-28-2014.

GENERAL EXCAVATION NOTES:

- GENERAL EXCAVATION ACROSS THE SITE SHALL NOT EXTEND DEEPER THAN THE SLAB-ON-GRADE GRANULAR FILL SUBGRADE ELEVATION. DEEPER EXCAVATIONS SHALL BE EXCAVATED INDIVIDUALLY, ON A LOCALIZED BASIS DOWN FROM SUBGRADE. CONTRACTOR TO VERIFY ELEVATIONS PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL VERIFY AND RECORD ROCK ELEVATIONS DURING SOLDIER (DRILLED-IN) PIPE PILE INSTALLATION. ACTUAL TOP OF ROCK ELEVATIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO EXCAVATION.
- SOIL EXCAVATION SHALL NOT PROCEED DEEPER THAN 2 FEET BELOW THE LAST INSTALLED LAGGING. ALL LAGGING SHALL BE PLACED HORIZONTAL AND BACKPACKED PRIOR TO ADVANCING THE EXCAVATION. THE EXCAVATION SHALL BE SEQUENCED SO THAT STABILITY OF ADJACENT STRUCTURES WITHIN 10' OF THE LAGGING IS MAINTAINED AT ALL TIMES.
- ROCK EXCAVATION:
  - A. LINE DRILL AS REQUIRED.
  - B. PLUG ALL SEEMS AND LENSES IN ROCK WITH GROUT AS REQUIRED IF WATER BEARING.
  - C. INSTALL ROCK BOLTS AS REQUIRED AND AS DIRECTED BY THE ENGINEER.
  - D. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING TIMING AND EFFECTS OF BLASTING (IF USED) WITH EXISTING RAILROAD OPERATIONS PER THE RECOMMENDATIONS OF THE OWNER'S BLAST CONSULTANT.
  - E. NO BLASTING SHALL OCCUR WITHIN A 50'-FOOT RADIUS OF NEWLY PLACED CONCRETE STRUCTURES BEFORE 7 DAYS OF CURING, UNLESS WRITTEN PERMISSION IS OBTAINED FROM THE ENGINEER OF RECORD.
  - F. ALL BLASTING OPERATIONS SHALL COMPLY WITH ALL LOCAL AND STATE LAWS, RULES, AND REGULATIONS, AND AMTRAK AND LIRR BLASTING SPECIFICATIONS.
- CONTRACTOR SHALL LOCATE ALL UTILITIES AND EXISTING UNDERGROUND STRUCTURES PRIOR TO INSTALLING SOLDIER PILES, TIEBACKS OR ROCK BOLTS. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING, RELOCATING AND REINSTALLING EXISTING UTILITIES THAT INTERFERE WITH PROPOSED EXCAVATION AND SUPPORT OF EXCAVATION MEMBERS.
- THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT DAMAGE AND MINIMIZE SETTLEMENT OF EXISTING OR NEW CONSTRUCTION INSIDE OR OUTSIDE PROJECT LIMITS.
- MONITORING:
  - A. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING MONITORING POINTS ON THE SOE. THE CONTRACTOR SHALL FREQUENTLY READ AND RECORD ALL MOVEMENTS OR SETTLEMENTS DURING EXCAVATION AND REPORT MOVEMENTS TO CONSTRUCTION MANAGER.
  - B. CONTRACTOR SHALL SUBMIT AND CONDUCT A VIBRATION MONITORING PLAN AND PROGRAM AS PER AMTRAK/LIRR REQUIREMENTS AS APPROVED BY ENGINEER.
- THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT FOR THE DEWATERING SYSTEM IF REQUIRED. THE DEWATERING SYSTEM SHALL MAINTAIN THE WATER LEVEL TO A MINIMUM OF 3 FEET BELOW THE DEEPEST SUBGRADE AT ALL TIMES. THIS LEVEL SHALL BE MAINTAINED UNTIL ALL LOWER LEVEL AND GROUND FLOOR SLABS, PERIMETER WALLS AND WATERPROOFING ARE INSTALLED AND THE PERMANENT BUILDING DRAINAGE SYSTEM IS FULLY OPERATIONAL.
- PROPOSED WORK ON DRAWINGS ARE SUBJECT TO SPECIAL INSPECTION IN ACCORDANCE WITH THE NEW YORK CITY BUILDING CODE.
- NOTIFICATION TO BE PROVIDED TO THE D.O.B. 24-48 HOURS PRIOR TO COMMENCEMENT OF EARTHWORK AS PER BC 3304.3.1.

3

PROJECT:

Manhattan West  
Southwest Residential  
Tower

PART OF THE MANHATTAN WEST MASTER PLAN  
West 31st Street & Dyer Avenue  
New York, NY

OWNER/DEVELOPER:

Brookfield

BOP West 31st Street LLC  
Brookfield Properties W 33rd CO L.P.  
Brookfield Place, 250 Vesey Street  
New York, NY 10281

ARCHITECT:

SLCArchitects,LLP

1359 BROADWAY  
NEW YORK, NY 10018  
TEL.: (212) 979-8400  
FAX.: (212) 979-8387

DESIGN ARCHITECT / MASTER PLAN ARCHITECT:

SOM

Skidmore, Owings & Merrill LLP  
14 Wall Street New York, NY 10005  
(212) 298-9300

INTERIOR DESIGN:

ROMAN AND WILLIAMS

BUILDINGS AND INTERIORS  
324 LAFAYETTE STREET, 6TH FLOOR  
NEW YORK, NY 10012  
TEL.: (212) 625-3808  
FAX.: (212) 625-3807

LANDSCAPE ARCHITECT:

JAMES CORNER  
FIELD OPERATIONS

475 TENTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 433-1450

STRUCTURAL ENGINEER:

DeSIMONE CONSULTING  
ENGINEERS, P.L.L.C.

18 WEST 18TH STREET  
NEW YORK, NY 10011  
TEL.: (212) 532-2211  
FAX.: (212) 481-6108

MECHANICAL ENGINEER:

COSENTINI ASSOCIATES

TWO PENN PLAZA  
NEW YORK, NY 10121  
TEL.: (212) 615-3600  
FAX.: (212) 615-3700

BUILDING ENVELOPE CONSULTANT:

VIDARIS INC. /

ISRAEL BERGER & ASSOCIATES, INC.

232 MADISON AVENUE  
NEW YORK, NY  
TEL.: (212) 689-5389  
FAX.: (212) 689-6449

ENERGY / ENVIRONMENTAL CONSULTANT:

VIDARIS INC. /

VIRIDIAN ENERGY & ENVIRONMENTAL

50 WASHINGTON STREET  
NORWALK, CT 06854  
TEL.: (203) 299-1411  
FAX.: (203) 299-1456

VERTICAL TRANSPORTATION CONSULTANT:

VAN DEUSEN & ASSOCIATES

5 REGENT STREET, SUITE 524  
LIVINGSTON, NJ 07039  
TEL.: (973) 994-9220

ACOUSTICAL CONSULTANT:

CERAMI ASSOCIATES

404 FIFTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 370-1776  
FAX.: (212) 370-1736

CIVIL ENGINEER:

PHILIP HABIB & ASSOCIATES

102 MADISON AVENUE, 11TH FL.  
NEW YORK, NY 10016  
TEL.: (212) 929-5656  
FAX.: (212) 929-5605

GEOTECHNICAL ENGINEER:

MUESER RUTLEDGE  
CONSULTING ENGINEERS

225 WEST 34TH STREET  
NEW YORK, NY 10122  
TEL.: (917) 539-9800  
FAX.: (917) 339-9400

3 10-16-2014 REVISED PER DOB COMMENT

2 05-16-2014 ISSUED FOR BID

1 03-14-2014 DESIGN DEVELOPMENT

DATE: REVISION:

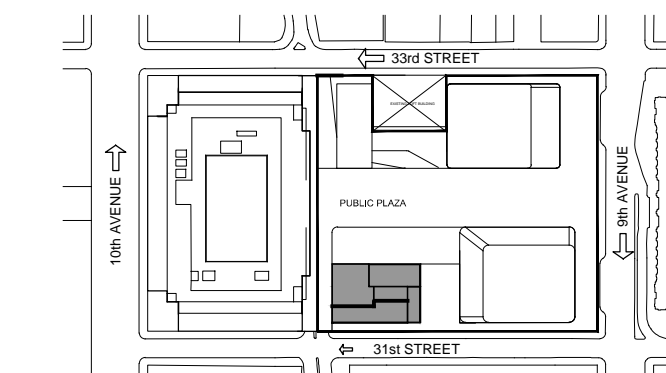
DOB NUMBER:

NB#

NORTH:

Scale: AS NOTED

KEY PLAN:



PROJECT:

DRAWING TITLE:

SUPPORT OF EXCAVATION  
GENERAL AND EXCAVATION  
NOTES

SEAL & SIGNATURE:

DATE: 12.18.2013

PROJECT NO.: 33148.00

DRAWN BY: KJ

CHECKED BY: EB

DATE: 12.18.2013

SHEET NO.: 00

FILE NO.: SOE-100.00.dwg

PROJECT:  
**Manhattan West  
Southwest Residential  
Tower**

PART OF THE MANHATTAN WEST MASTER PLAN  
West 31st Street & Dyer Avenue  
New York, NY

OWNER/DEVELOPER:

**Brookfield**

80P West 31st Street LLC  
Brookfield Properties W 31st CO.L.P.  
Brookfield Place, 250 Vesey Street  
New York, NY 10281

ARCHITECT:

**SLCEArchitects,LLP**

1359 BROADWAY  
NEW YORK, NY 10018  
TEL.: (212) 979-8400  
FAX.: (212) 979-8387

DESIGN ARCHITECT / MASTER PLAN ARCHITECT:

**SOM**

Skidmore, Owings & Merrill LLP  
14 Wall Street New York, NY 10005  
(212) 298-9300

INTERIOR DESIGN:

**ROMAN AND WILLIAMS  
BUILDINGS AND INTERIORS**

324 LAFAYETTE STREET, 4TH FLOOR  
NEW YORK, NY 10012  
TEL.: (212) 625-3838  
FAX.: (212) 625-3807

LANDSCAPE ARCHITECT:

**JAMES CORNER  
FIELD OPERATIONS**

475 TENTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 433-1450

STRUCTURAL ENGINEER:

**DeSIMONE CONSULTING  
ENGINEERS, P.L.L.C.**

18 WEST 18TH STREET  
NEW YORK, NY 10011  
TEL.: (212) 532-2211  
FAX.: (212) 481-6108

MECHANICAL ENGINEER:

**COSENTINI ASSOCIATES**

TWO PENN PLAZA  
NEW YORK, N.Y. 10121  
TEL.: (212) 615-3600  
FAX.: (212) 615-3700

BUILDING ENVELOPE CONSULTANT:

**VIDARIS INC. /  
ISRAEL BERGER & ASSOCIATES, INC.**

232 MADISON AVENUE  
NEW YORK, NY  
TEL.: (212) 489-5389  
FAX.: (212) 689-4449

ENERGY / ENVIRONMENTAL CONSULTANT:

**VIDARIS INC. /  
VIRIDIAN ENERGY & ENVIRONMENTAL**

50 WASHINGTON STREET  
NORWALK, CT 06854  
TEL.: (203) 299-1411  
FAX.: (203) 299-1656

VERTICAL TRANSPORTATION CONSULTANT:

**VAN DEUSEN & ASSOCIATES**

3 REGENT STREET, SUITE 524  
LIVINGSTON, NJ 07039  
TEL.: (973) 994-9220

ACOUSTICAL CONSULTANT:

**CERAMI ASSOCIATES**

404 FIFTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 370-1774  
FAX.: (212) 370-1736

CIVIL ENGINEER:

**PHILIP HABIB & ASSOCIATES**

102 MADISON AVENUE, 11TH FL.  
NEW YORK, NY 10016  
TEL.: (212) 929-5656  
FAX.: (212) 929-5605

GEOTECHNICAL ENGINEER:

**MUESER RUTLEDGE  
CONSULTING ENGINEERS**

225 WEST 34TH STREET  
NEW YORK, NY 10122  
TEL.: (917) 339-9300  
FAX.: (917) 339-9400

2 05-16-2014 ISSUED FOR BID

1 03-14-2014 DESIGN DEVELOPMENT

DATE: REVISION:

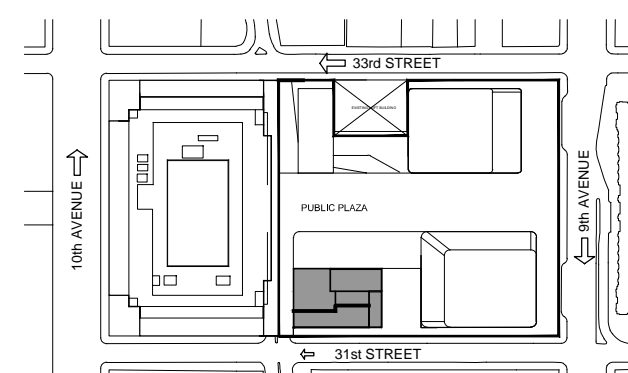
D.O.B. NUMBER:

**NB#**

NORTH:

Scale: AS NOTED

KEY PLAN:



PROJECT:

DRAWING TITLE:

**SUPPORT OF EXCAVATION  
PLAN**

SEAL & SIGNATURE:

DATE: 12.16.2013  
PROJECT NO.: 13146.00  
DRAWN BY: KJ  
CHECKED BY: EB  
DESIGN NO.:

**SOE-101.00**

SHEET NO.:

00

FILE NO.: SOE-011.08.dwg

AMTRAK / LIRR YARD

EXISTING RETAINING WALL

EXISTING ROCK FACE, TOP OF  
ROCK VISIBLE ON THIS EDGE BUT  
NOT REFLECTED IN CONTOURS

REINFORCE NORTH FACE  
OF CUT SLOPE AS NEEDED

EXISTING MSE WALL  
TO BE REMOVED

TOP OF ROCK  
BASED ON BORINGS  
ONLY

**PLAN**  
SCALE: 1/8"=1'-0"

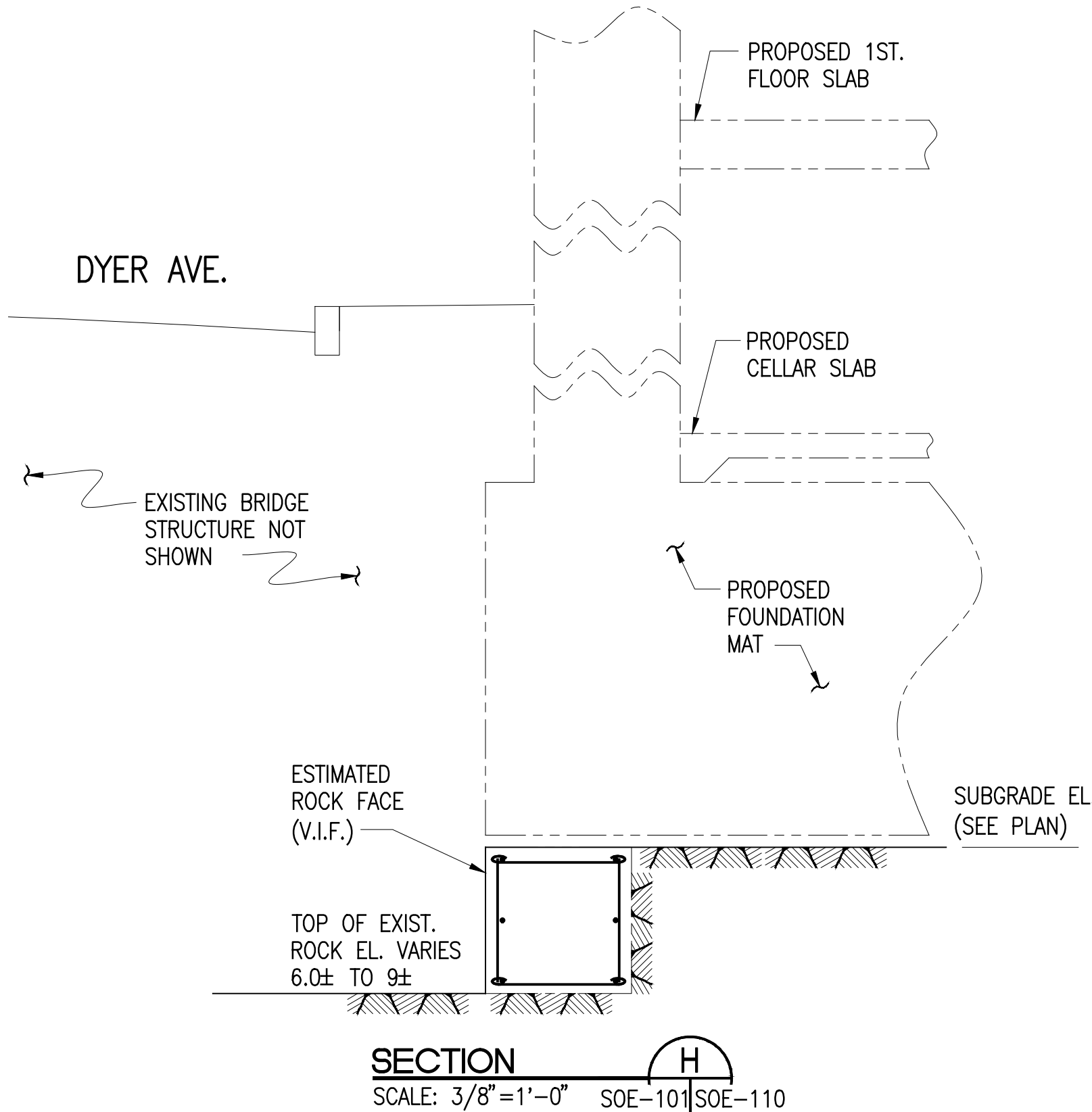
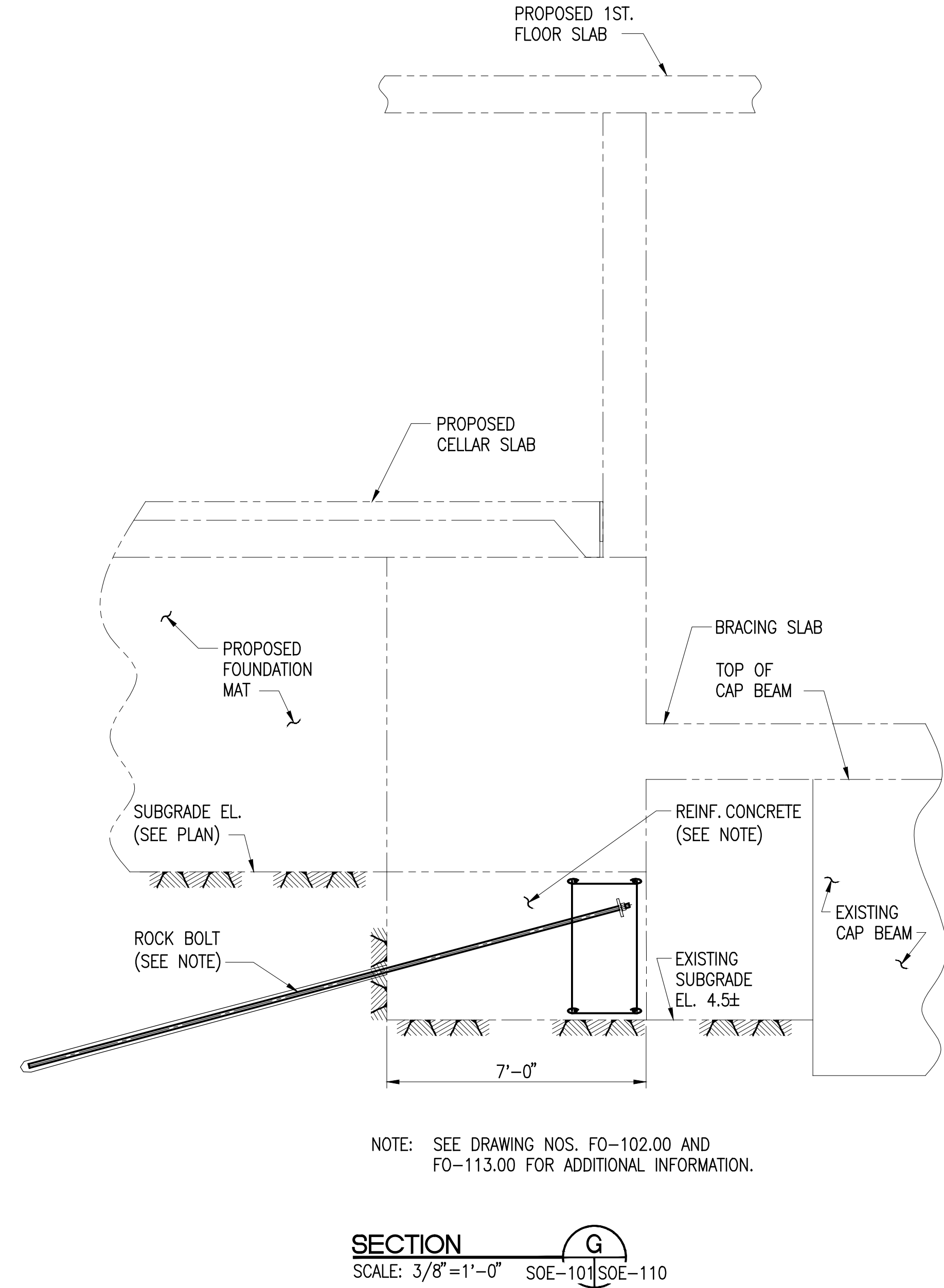
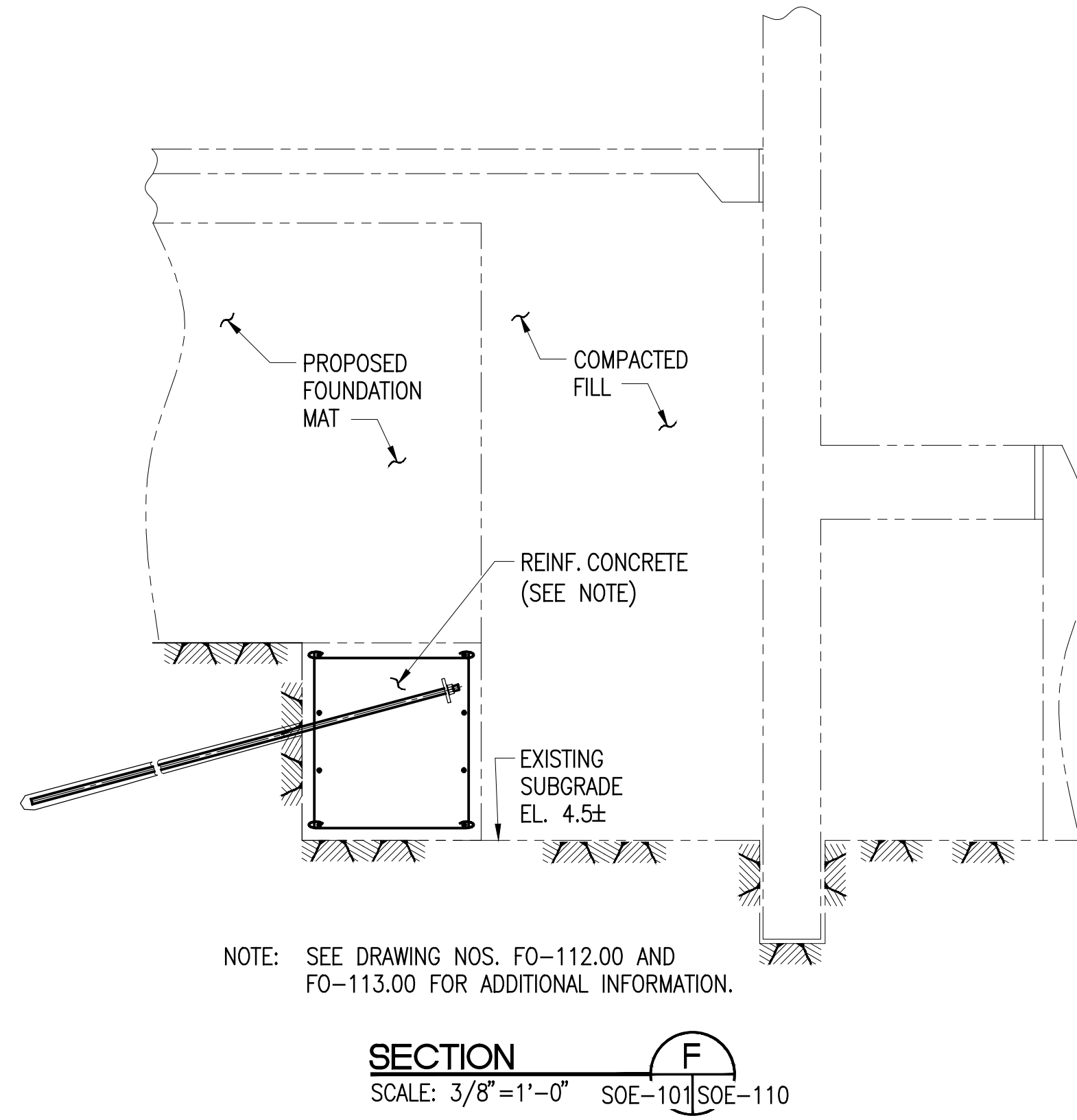
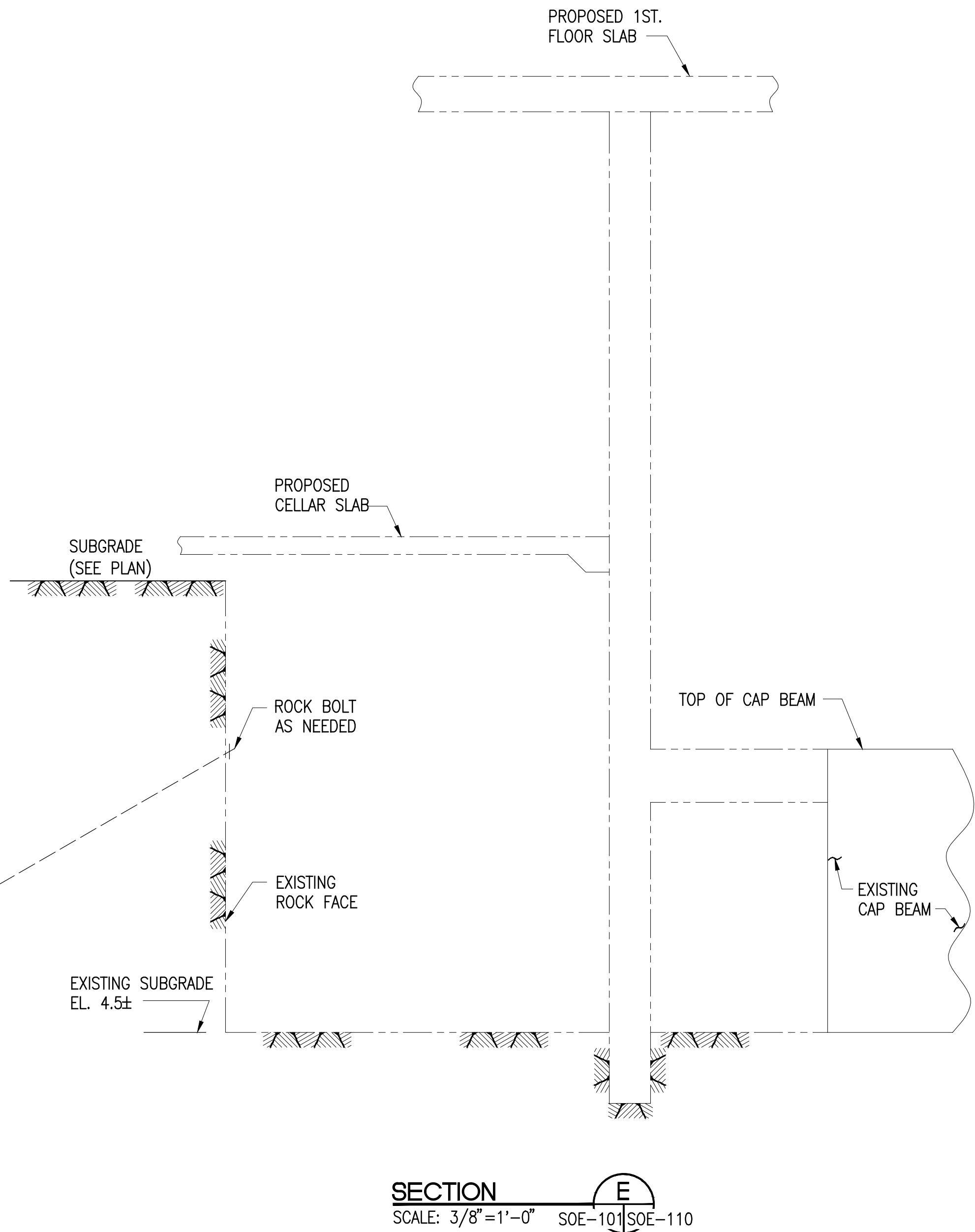
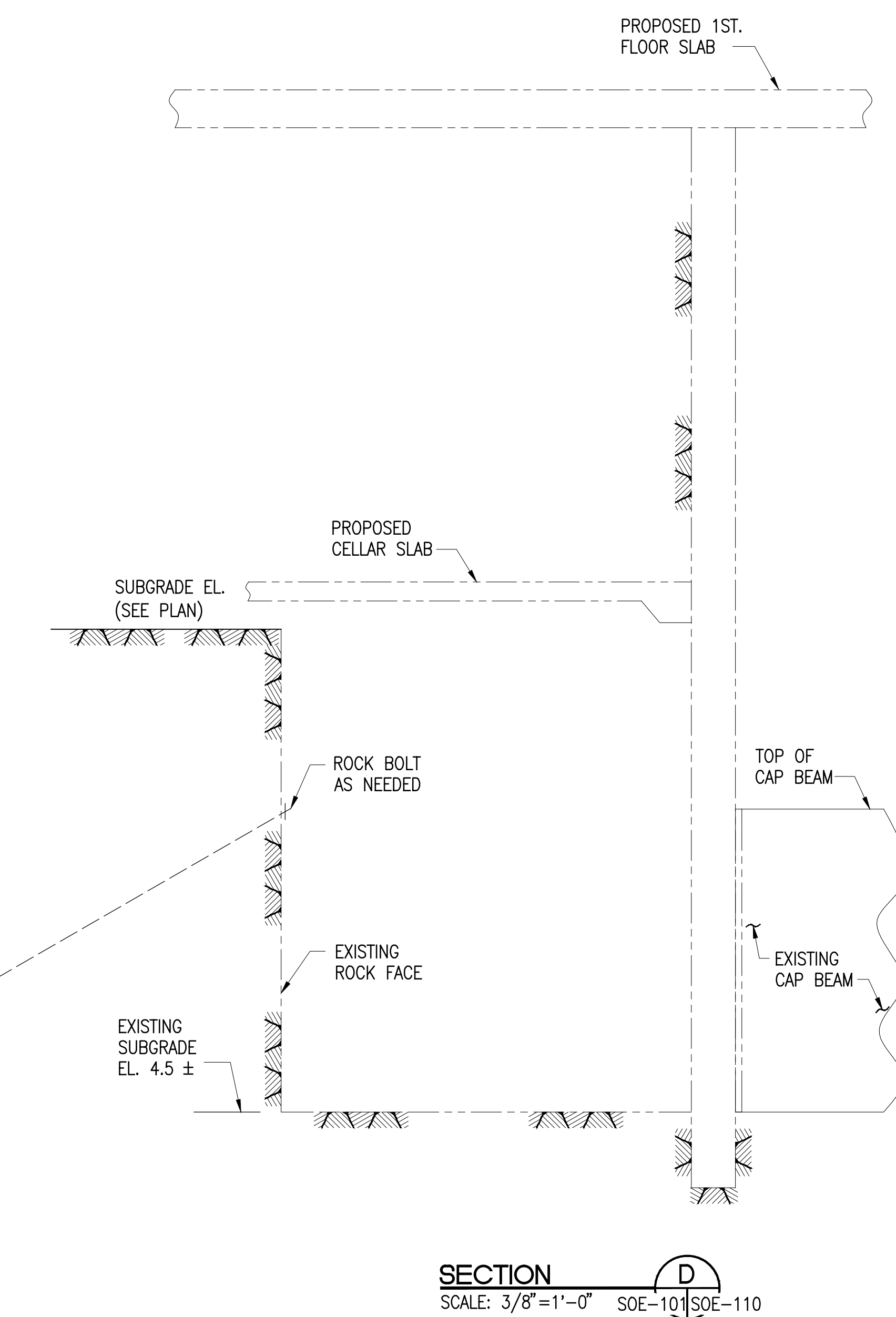
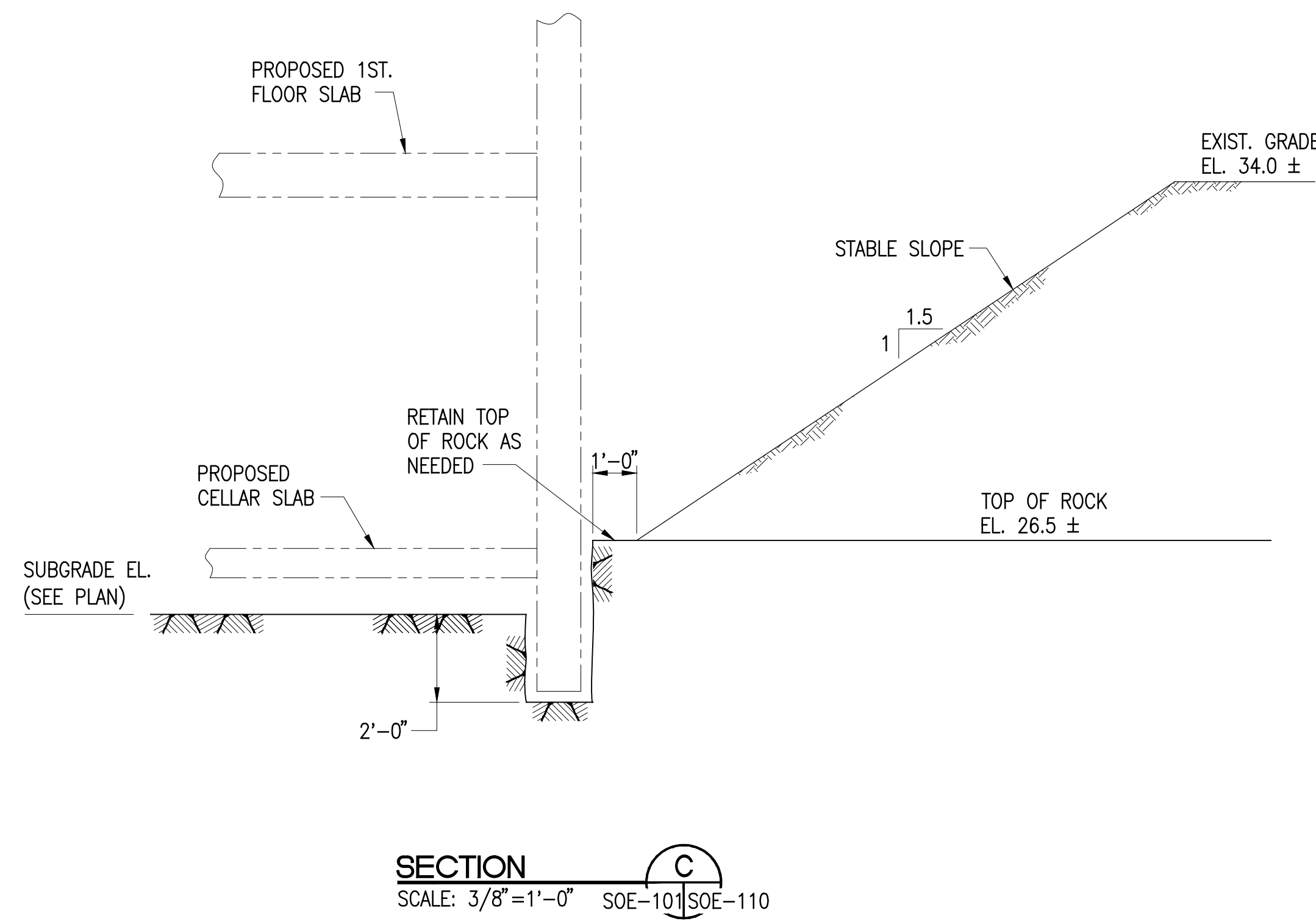
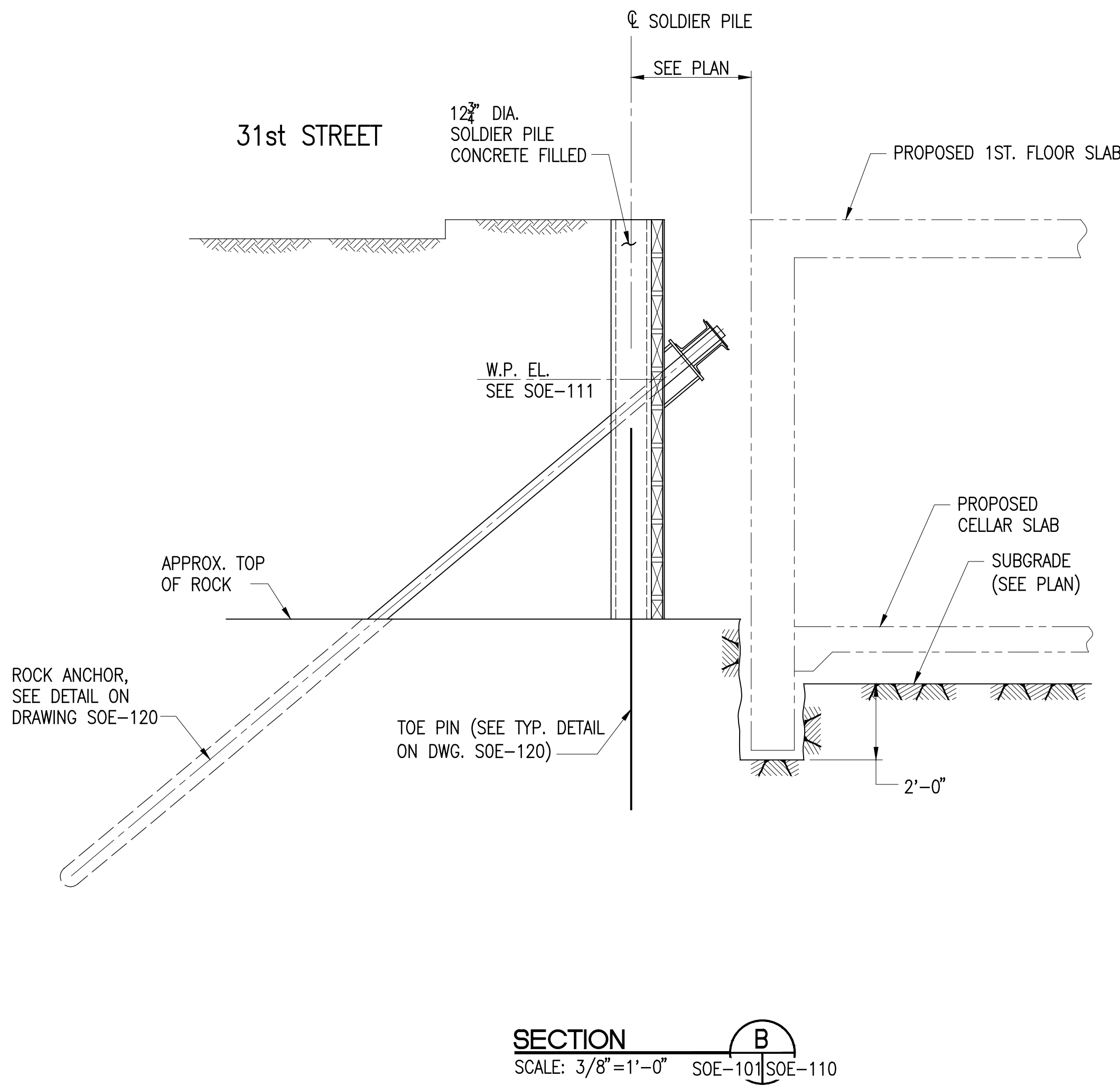
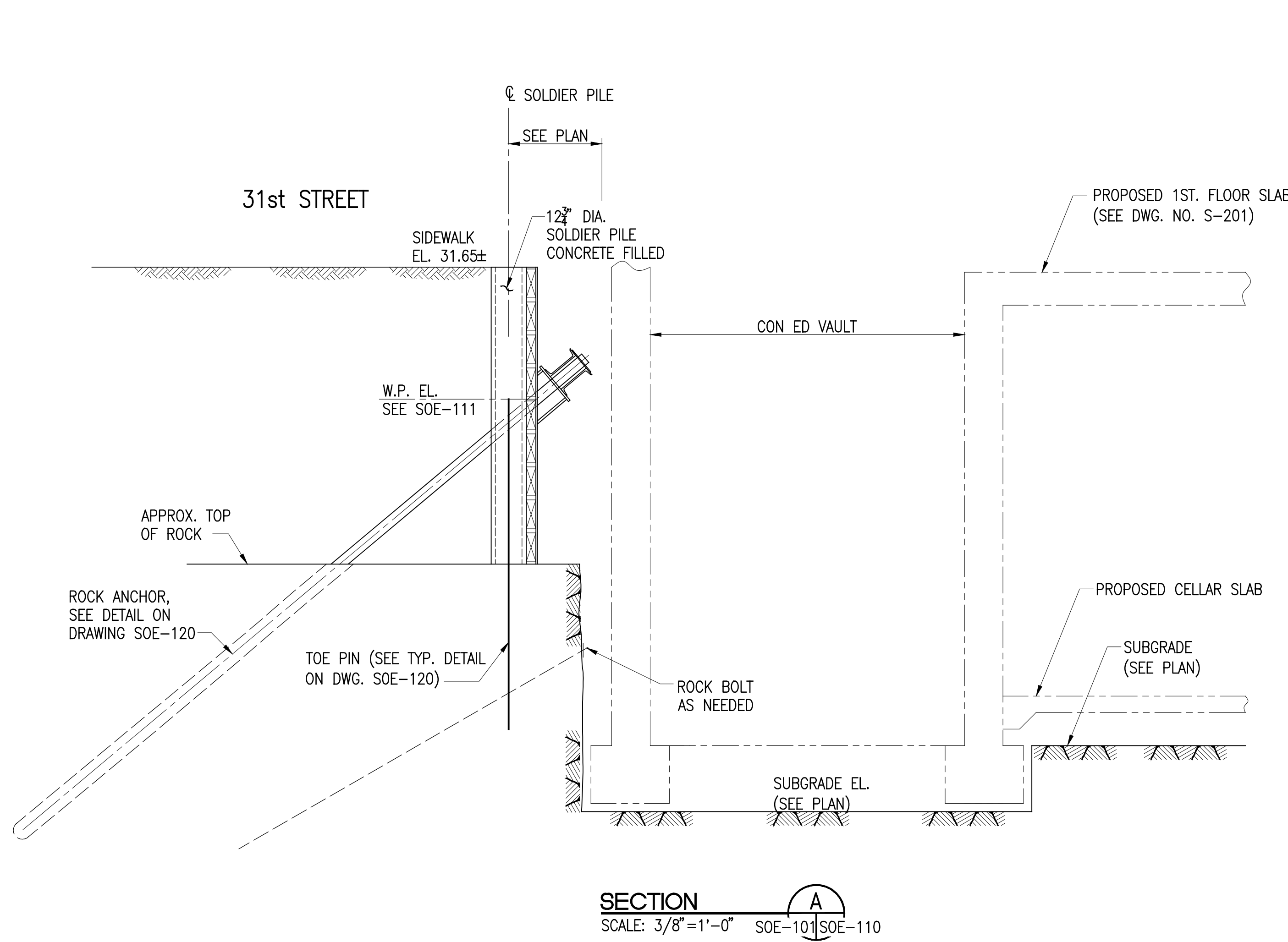
**FOOTING  
SUBGRADE  
SCHEDULE**

MARK	SUBGRADE ELEVATION
F3.0	15.2
F5.0	14.9
F6.0	14.4
F6.5	14.2
F6.5A	10.2
F6.5W	10.2
F7.0	13.9
F7.0A	9.9
F7.5	13.4

**NOTES:**

- SEE DRAWING SOE-100 FOR GENERAL NOTES, LIST OF ABBREVIATIONS AND LIST OF SYMBOLS.
- ELEVATIONS REFER TO NAVD88.
- SEE FO SERIES DRAWINGS FOR REINFORCED CONCRETE AT ROCK EDGES AT NORTH AND WEST SIDES.





PROJECT  
**Manhattan West  
Southwest Residential  
Tower**

PART OF THE MANHATTAN WEST MASTER PLAN  
West 31st Street & Dyer Avenue  
New York, NY

OWNER/DEVELOPER  
**Brookfield**

80P West 31st Street LLC  
Brookfield Properties W 31st CO L.P.  
Brookfield Place, 250 Vesey Street  
New York, NY 10281

ARCHITECT  
**SLCE Architects, LLP**

1359 BROADWAY  
NEW YORK, NY 10018  
TEL: (212) 979-8400  
FAX: (212) 979-8387

DESIGN ARCHITECT / MASTER PLAN ARCHITECT:

**SOM**

Skidmore, Cwrhig & Merrill LLP  
14 Wall Street New York, NY 10005  
(212) 298-9300

INTERIOR DESIGN:

ROMAN AND WILLIAMS

BUILDINGS AND INTERIORS  
324 LAFAYETTE STREET, 4TH FLOOR  
NEW YORK, NY 10012  
TEL: (212) 625-3808  
FAX: (212) 625-3807

LANDSCAPE ARCHITECT:

JAMES CORNER  
FIELD OPERATIONS

475 TENTH AVENUE  
NEW YORK, NY 10018  
TEL: (212) 433-1450

STRUCTURAL ENGINEER:

DeSIMONE CONSULTING  
ENGINEERS, P.L.L.C.

18 WEST 18TH STREET  
NEW YORK, NY 10011  
TEL: (212) 532-2211  
FAX: (212) 481-6108

MECHANICAL ENGINEER:

COSENTINI ASSOCIATES

TWO PENN PLAZA  
NEW YORK, NY 10121  
TEL: (212) 615-3600  
FAX: (212) 615-3700

BUILDING ENVELOPE CONSULTANT:

VIDARIS INC. /  
ISRAEL BERGER & ASSOCIATES, INC.

232 MADISON AVENUE  
NEW YORK, NY  
TEL: (212) 489-5389  
FAX: (212) 689-8449

ENERGY / ENVIRONMENTAL CONSULTANT:

VIDARIS INC. /  
VIRIDIAN ENERGY & ENVIRONMENTAL

50 WASHINGTON STREET  
NORWALK, CT 06854  
TEL: (203) 299-1411  
FAX: (203) 299-1456

VERTICAL TRANSPORTATION CONSULTANT:

VAN DEUSEN & ASSOCIATES

5 REGENT STREET, SUITE 524  
LIVINGSTON, NJ 07039  
TEL: (973) 994-9220

ACOUSTICAL CONSULTANT:

CERAMI ASSOCIATES

404 FIFTH AVENUE  
NEW YORK, NY 10018  
TEL: (212) 370-1776  
FAX: (212) 370-1736

CIVIL ENGINEER:

PHILIP HABIB & ASSOCIATES

102 MADISON AVENUE, 11TH FL.  
NEW YORK, NY 10016  
TEL: (212) 929-5656  
FAX: (212) 929-5605

GEOTECHNICAL ENGINEER:

MUESER RUTLEDGE  
CONSULTING ENGINEERS

225 WEST 34TH STREET  
NEW YORK, NY 10122  
TEL: (917) 339-9300  
FAX: (917) 339-9400

2	05-16-2014	ISSUED FOR BID
1	03-14-2014	DESIGN DEVELOPMENT

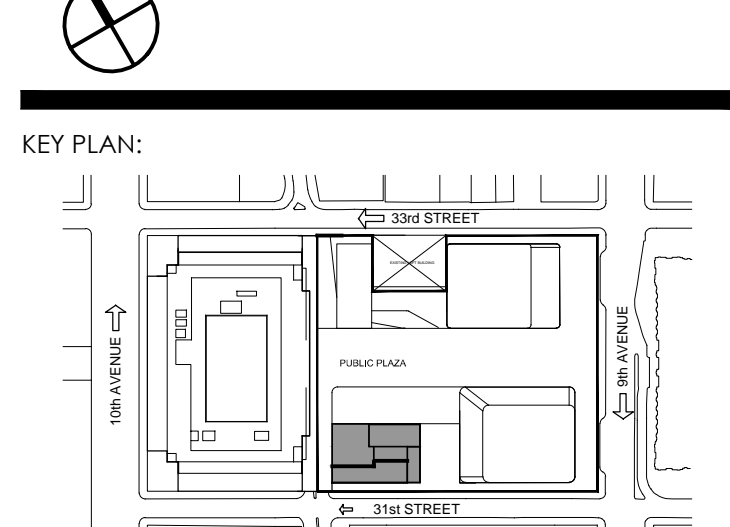
DATE:	REVISION:
-------	-----------

D.C.B. NUMBER:

NB#

NORTH: Scale: AS NOTED

KEY PLAN:



PROJECT:

MANHATTAN WEST  
NEW YORK, NEW YORK

DRAWING TITLE:

SUPPORT OF EXCAVATION  
SECTIONS

SEAL & SIGNATURE:

DATE: 12.18.2013

PROJECT NO: 13148.00

DRAWN BY: KJ

CHECKED BY: EB

DATE: 12.18.2013

PROJECT NO: 13148.00

DRAWN BY: KJ

CHECKED BY: EB

DATE: 12.18.2013

PROJECT NO: 13148.00

DRAWN BY: KJ

CHECKED BY: EB

DATE: 12.18.2013

PROJECT NO: 13148.00

DRAWN BY: KJ

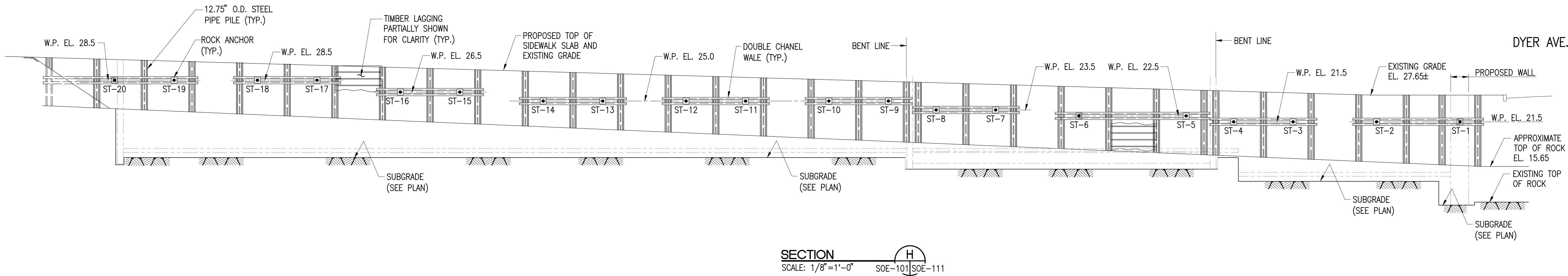
CHECKED BY: EB

DATE: 12.18.2013

PROJECT NO: 13148.00

DRAWN BY: KJ

CHECKED BY: EB



PROJECT:  
**Manhattan West  
Southwest Residential  
Tower**

PART OF THE MANHATTAN WEST MASTER PLAN  
West 31st Street & Dyer Avenue  
New York, NY

OWNER/DEVELOPER:

**Brookfield**

80P West 31st Street LLC  
Brookfield Properties W 31st CO L.P.  
Brookfield Place, 250 Vesey Street  
New York, NY 10281

ARCHITECT:

**SLCEArchitects, LLP**

1359 BROADWAY  
NEW YORK, NY 10018  
TEL.: (212) 979-8400  
FAX.: (212) 979-8387

DESIGN ARCHITECT / MASTER PLAN ARCHITECT:

**SOM**

Skidmore, Owings & Merrill LLP  
14 Wall Street New York, NY 10005  
(212) 298-9300

INTERIOR DESIGN:

**ROMAN AND WILLIAMS**

BUILDINGS AND INTERIORS  
324 LAFAYETTE STREET, 4TH FLOOR  
NEW YORK, NY 10012  
TEL.: (212) 625-3808  
FAX.: (212) 625-3807

LANDSCAPE ARCHITECT:

**JAMES CORNER  
FIELD OPERATIONS**

475 TENTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 433-1450

STRUCTURAL ENGINEER:

**DeSIMONE CONSULTING  
ENGINEERS, P.L.L.C.**

18 WEST 18TH STREET  
NEW YORK, NY 10011  
TEL.: (212) 532-2211  
FAX.: (212) 481-6108

MECHANICAL ENGINEER:

**COSENTINI ASSOCIATES**

TWO PENN PLAZA  
NEW YORK, NY 10121  
TEL.: (212) 615-3600  
FAX.: (212) 615-3700

BUILDING ENVELOPE CONSULTANT:

**VIDARIS INC. /  
ISRAEL BERGER & ASSOCIATES, INC.**

232 MADISON AVENUE  
NEW YORK, NY  
TEL.: (212) 489-5389  
FAX.: (212) 689-8449

ENERGY / ENVIRONMENTAL CONSULTANT:

**VIDARIS INC. /  
VIRIDIAN ENERGY & ENVIRONMENTAL**

50 WASHINGTON STREET  
NORWALK, CT 06854  
TEL.: (203) 299-1411  
FAX.: (203) 299-1456

VERTICAL TRANSPORTATION CONSULTANT:

**VAN DEUSEN & ASSOCIATES**

5 REGENT STREET, SUITE 524  
LIVINGSTON, NJ 07039  
TEL.: (973) 994-9220

ACOUSTICAL CONSULTANT:

**CERAMI ASSOCIATES**

404 FIFTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 370-1776  
FAX.: (212) 370-1736

CIVIL ENGINEER:

**PHILIP HABIB & ASSOCIATES**

102 MADISON AVENUE, 11TH FL.  
NEW YORK, NY 10016  
TEL.: (212) 929-5656  
FAX.: (212) 929-5605

GEOTECHNICAL ENGINEER:

**MUESER RUTLEDGE  
CONSULTING ENGINEERS**

225 WEST 34TH STREET  
NEW YORK, NY 10122  
TEL.: (917) 339-9300  
FAX.: (917) 339-9400

2 05-16-2014 ISSUED FOR BID

1 03-14-2014 DESIGN DEVELOPMENT

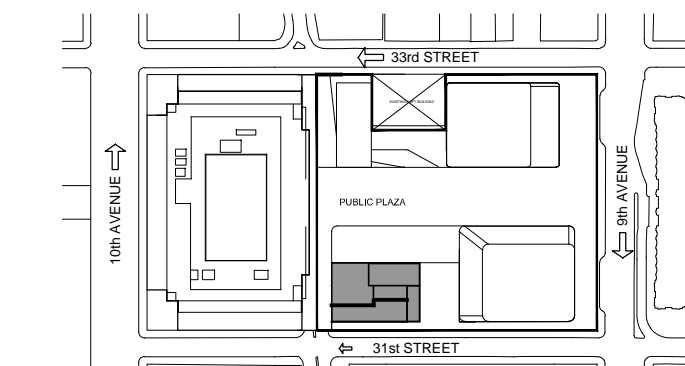
DATE: REVISION:

D.C.B. NUMBER:

NB#

NORTH: Scale: AS NOTED

KEY PLAN:



PROJECT:

MANHATTAN WEST  
NEW YORK, NEW YORK

DRAWING TITLE:

SUPPORT OF EXCAVATION  
SECTIONS  
2 OF 2

SEAL & SIGNATURE:

DATE: 12.16.2013

PROJECT NO: 31-08-00

DRAWN BY: KJ

CHECKED BY: EB

DESIGN NO:

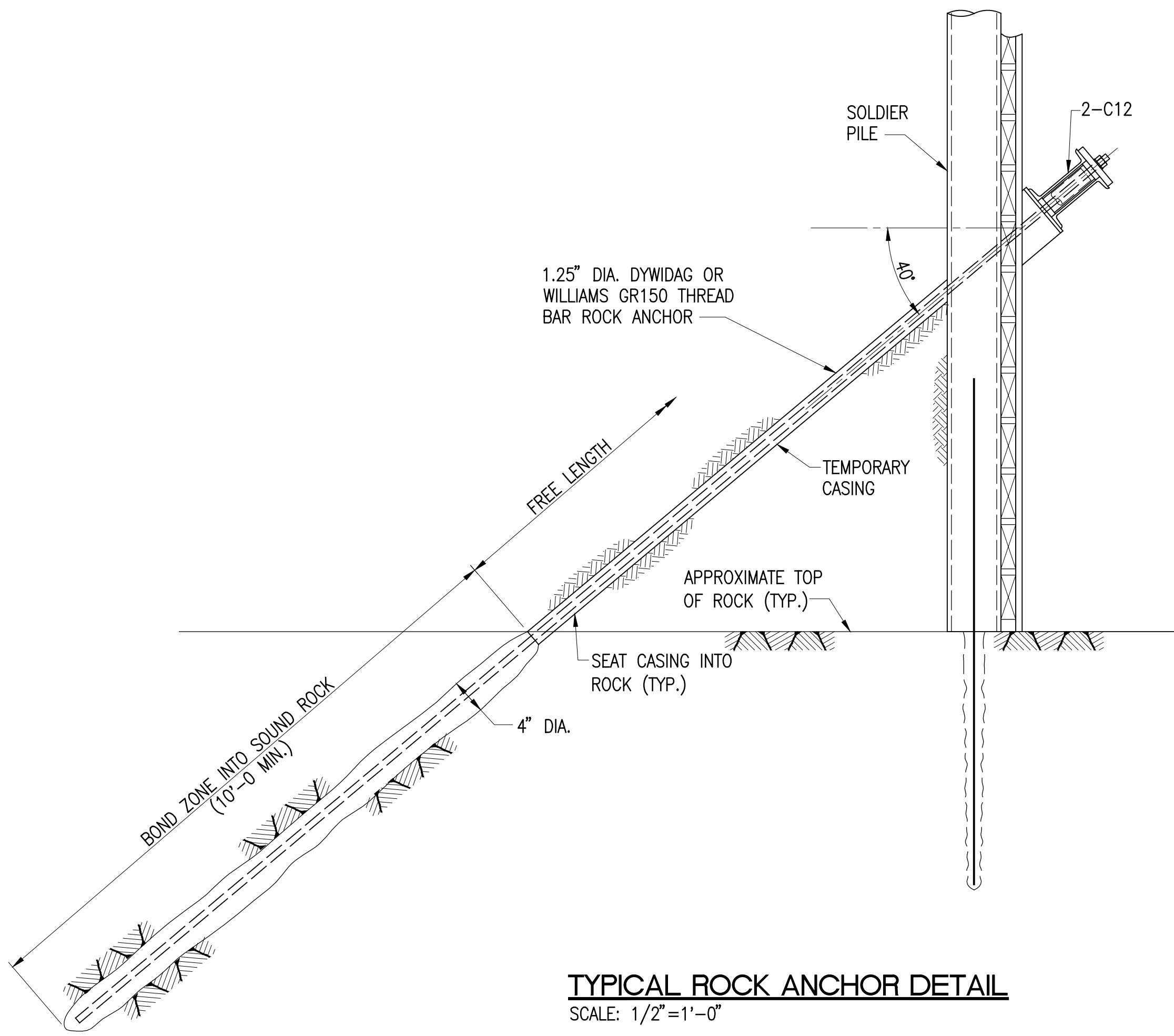
SOE-111.00

SHEET No.: 00

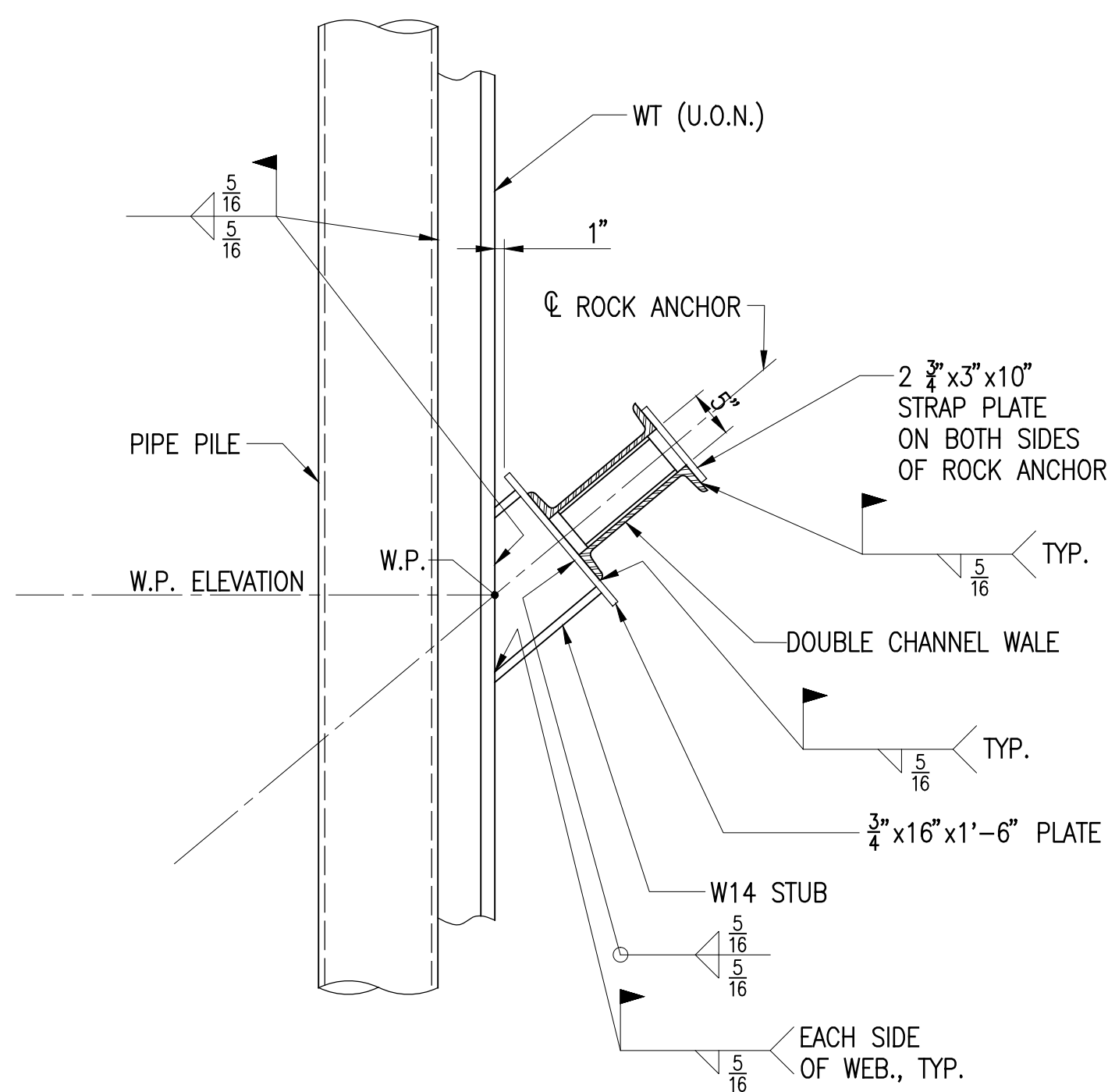
FILE NO:

SOE-111.00.dwg

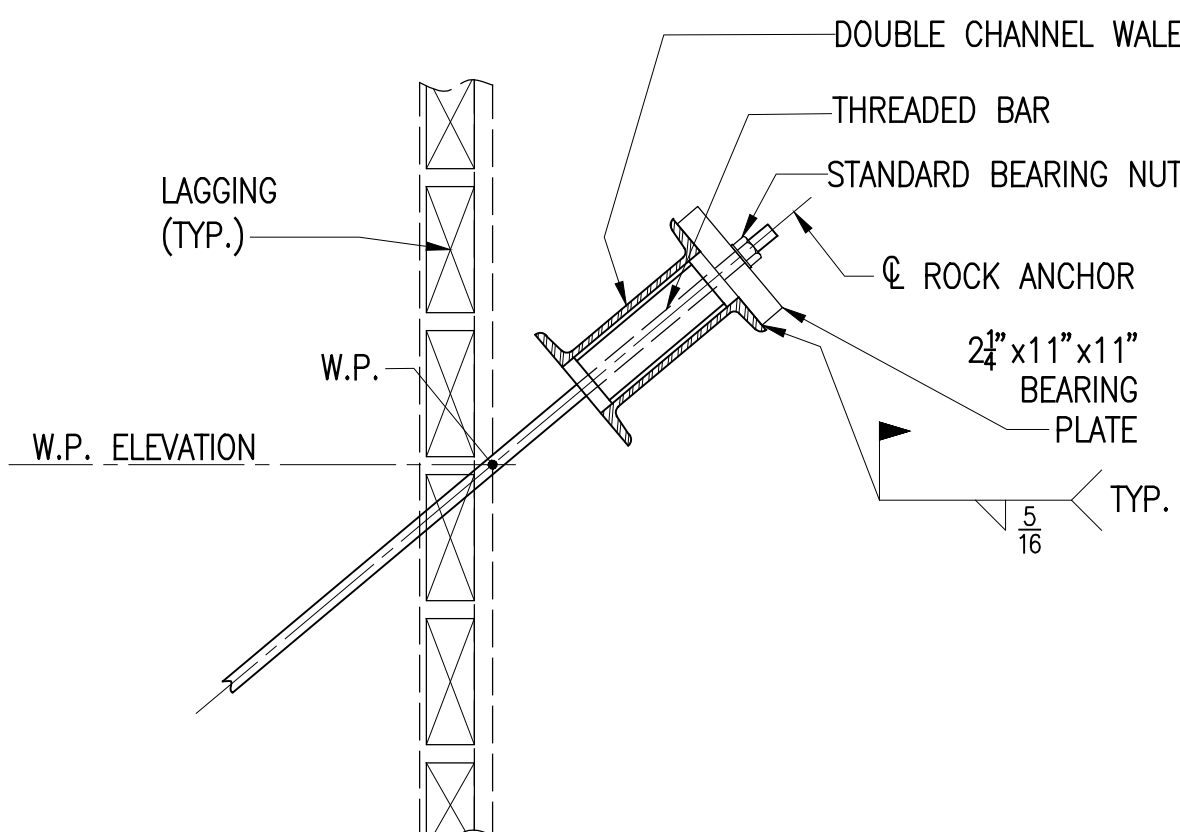




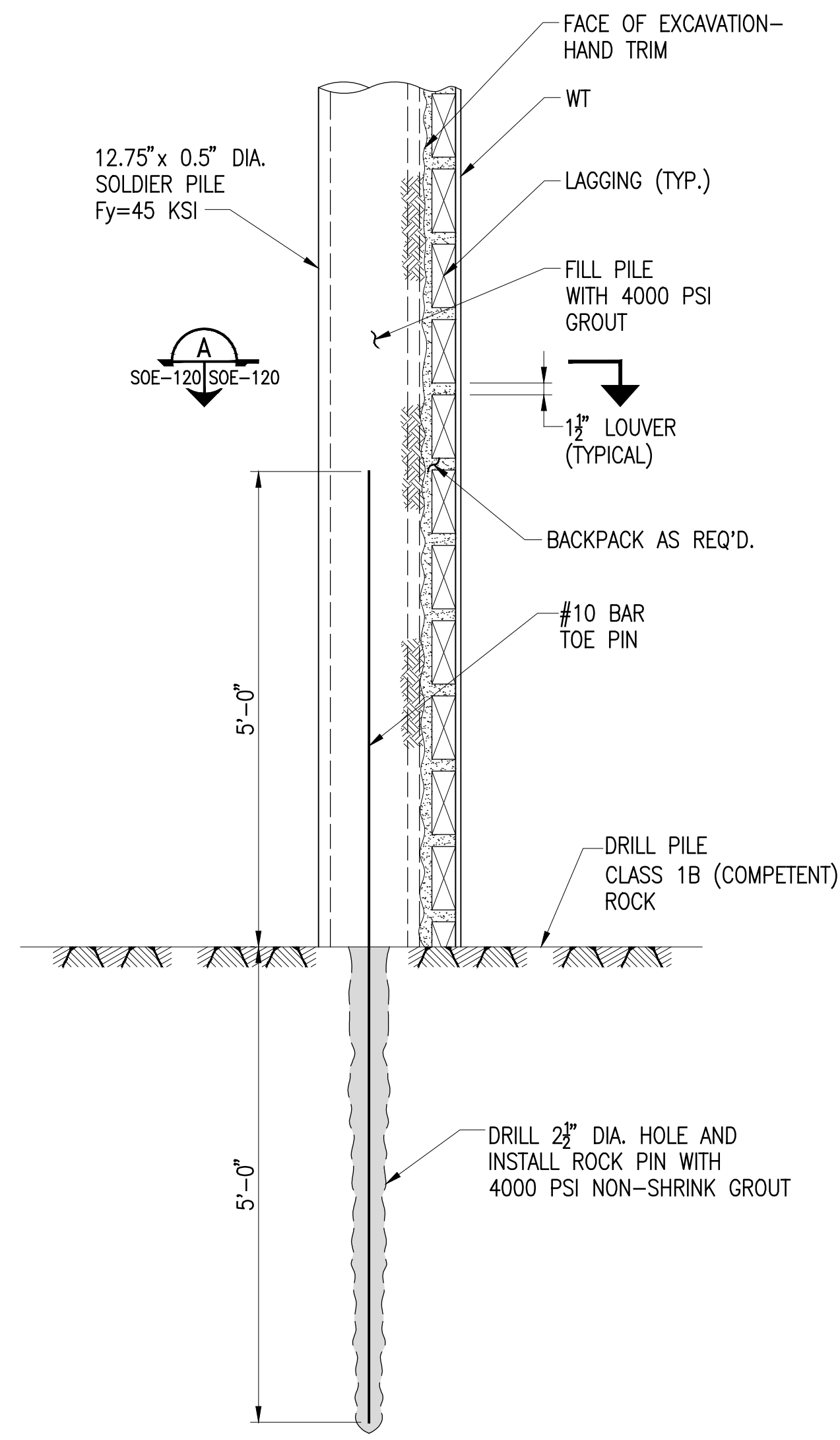
**TYPICAL ROCK ANCHOR DETAIL**  
SCALE: 1/2"=1'-0"



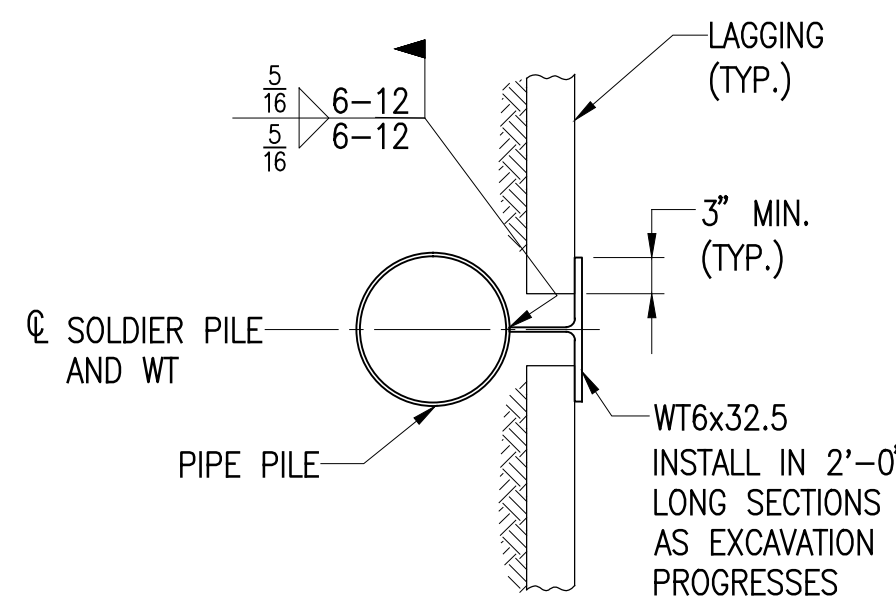
**TYPICAL WALE TO PILE CONNECTION**  
SCALE: 3/4"=1'-0"



**TYPICAL SECTION AT ROCK ANCHOR**  
SCALE: 3/4"=1'-0"



**TYPICAL PILE TO ROCK CONNECTION**  
SCALE: 3/4"=1'-0"



**SECTION**  
SCALE: 3/4"=1'-0" SOE-120 SOE-120

**ANCHOR PERFORMANCE TESTING PROCEDURE:**

1. A PERFORMANCE TEST SHALL BE EXECUTED ON A MINIMUM OF 2 ANCHORS. TEST LOADS FOR THESE ANCHORS SHALL BE 133 TIMES THE ROCK ANCHOR DESIGN LOAD (DL = 70 KIP).
2. LOAD AND UNLOAD ANCHORS IN THE FOLLOWING PATTERN, WHERE DL AND AL STANDS FOR DESIGN LOAD AND ALIGNMENT LOAD (0.1xDL), RESPECTIVELY:

CYCLE:	1	AL	0.25DL
	2	AL	0.25DL
		0.5DL	
	3	AL	0.25DL
		0.5DL	
	4	0.75DL	
		AL	0.25DL
	5	0.5DL	
		0.75DL	
	4	1.0DL	
		AL	0.25DL
	5	0.5DL	
		0.75DL	
4	1.0DL		
	1.20DL		
5	AL	1.33DL-TEST LOAD (HOLD FOR 10 MINUTES)	
	0.25DL	ADJUST TO LOCK OFF LOAD OF 1.0DL	
5	0.5DL		
	0.75DL		
5	1.0DL		
	1.2DL		
5	1.33DL-TEST LOAD (HOLD FOR 10 MINUTES)		
	ADJUST TO LOCK OFF LOAD OF 1.0DL		

3. HOLD EACH INCREMENT OF LOAD JUST LONG ENOUGH TO OBTAIN A MOVEMENT READING, RECORD MOVEMENT READING, JACKING PRESSURE, AND LOAD.
4. WHILE HOLDING THE TEST LOAD (1.33DL), RECORD TOTAL MOVEMENTS MEASURED AT MINUTES 1 THROUGH 6 AND MINUTE 10. IF TOTAL MOVEMENT EXCEEDS 1.0MM, HOLD THE TEST LOAD FOR AN ADDITIONAL 50 MINUTES AND RECORD ADDITIONAL MOVEMENT READINGS.
5. ONCE THE ANCHOR IS LOCKED OFF AT 1.0 DL, VERIFY THAT THE LOAD IS WITHIN 5 PERCENT OF THE SPECIFIED LOCK OFF LOAD.

**ANCHOR PROOF TESTING PROCEDURE:**

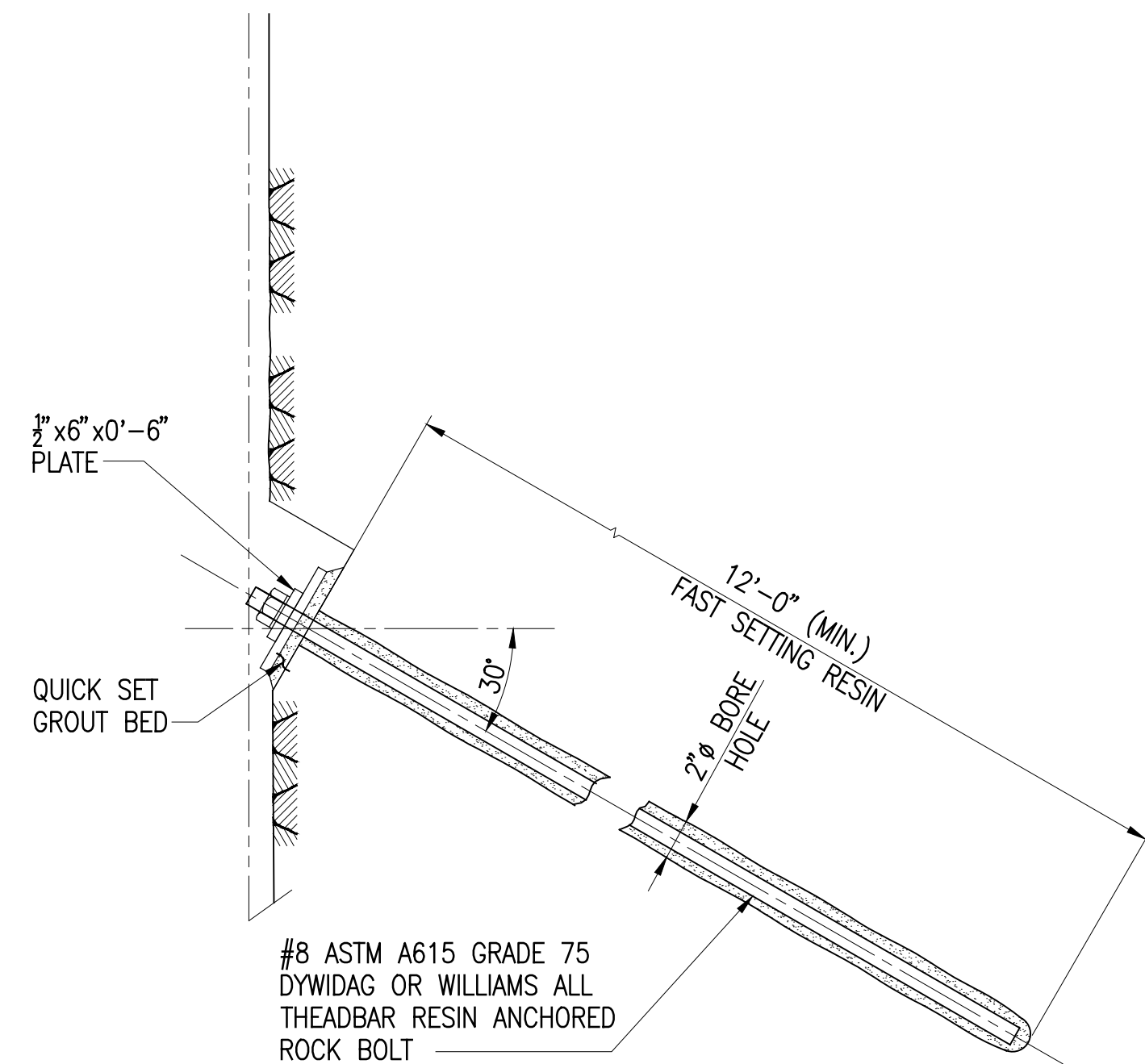
1. PROOF TEST ALL ANCHORS NOT PERFORMANCE TESTED.
2. LOAD EACH ANCHOR IN ACCORDANCE WITH THE FOLLOWING SCHEDULE, WHERE DL AND AL STANDS FOR DESIGN LOAD AND ALIGNMENT LOAD (0.1xDL), RESPECTIVELY:

LOAD	A	0.25DL
		0.50DL
1.00DL	TEST LOAD (HOLD ANCHOR FOR 10 MINUTES)	1.33DL
		ADJUST LOAD TO 1.0DL AND LOCK OFF ANCHOR

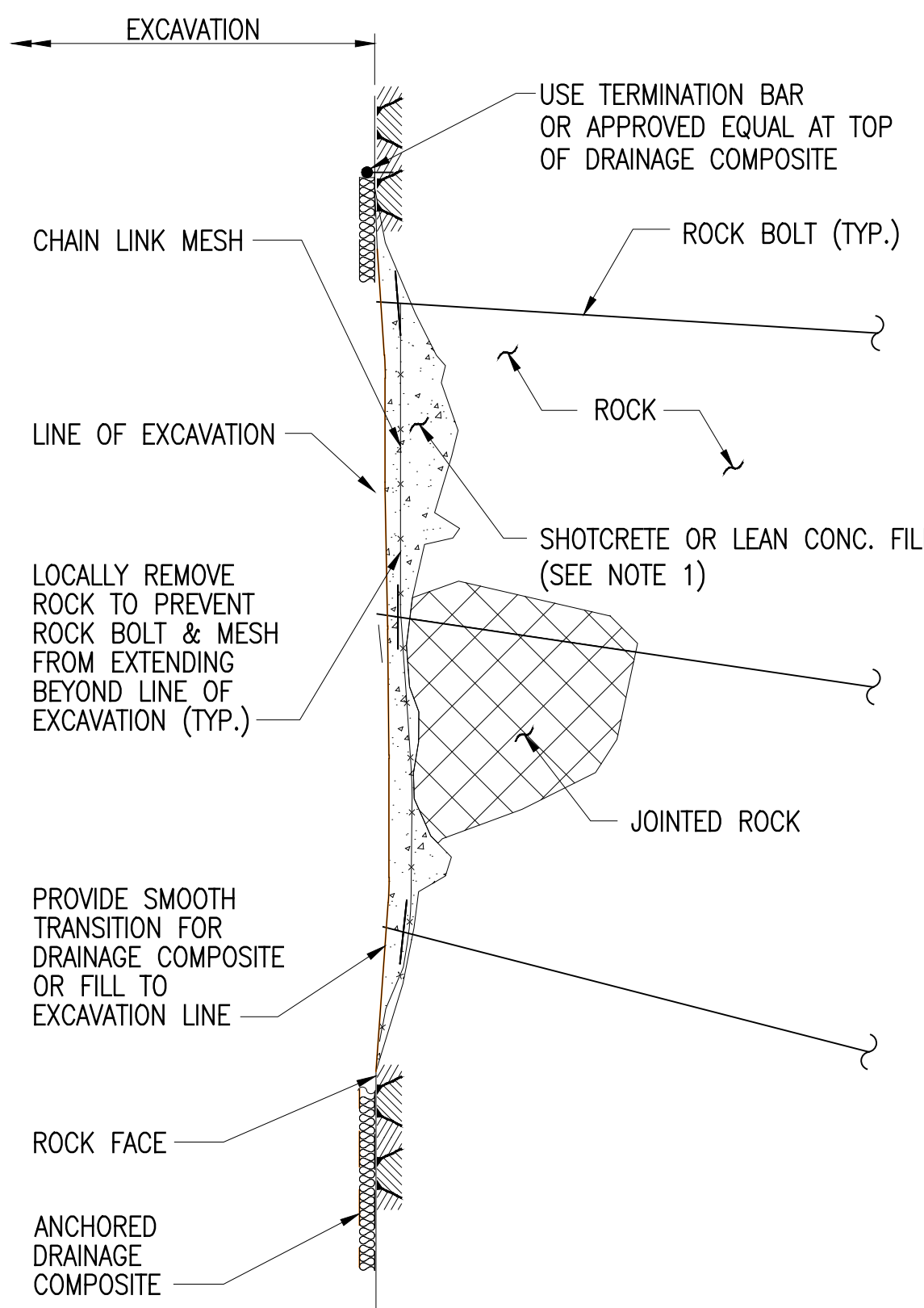
3. HOLD EACH INCREMENT OF LOAD JUST LONG ENOUGH TO OBTAIN A MOVEMENT READING, RECORD MOVEMENT READING, JACKING PRESSURE, AND LOAD.
4. WHILE HOLDING THE TEST LOAD (1.33DL), RECORD TOTAL MOVEMENTS MEASURED AT MINUTES 1 THROUGH 6 AND MINUTE 10. IF TOTAL MOVEMENT EXCEEDS 1.0MM, HOLD THE TEST LOAD FOR AN ADDITIONAL 50 MINUTES AND RECORD ADDITIONAL MOVEMENT READINGS.
5. AFTER THE ANCHOR IS LOCKED OFF AT 1.0DL, PERFORM A LIFT OFF TEST TO VERIFY THAT THE LOAD IS WITHIN 5 PERCENT OF THE SPECIFIED LOCK OF LOAD.

**ANCHOR ACCEPTANCE CRITERIA:**

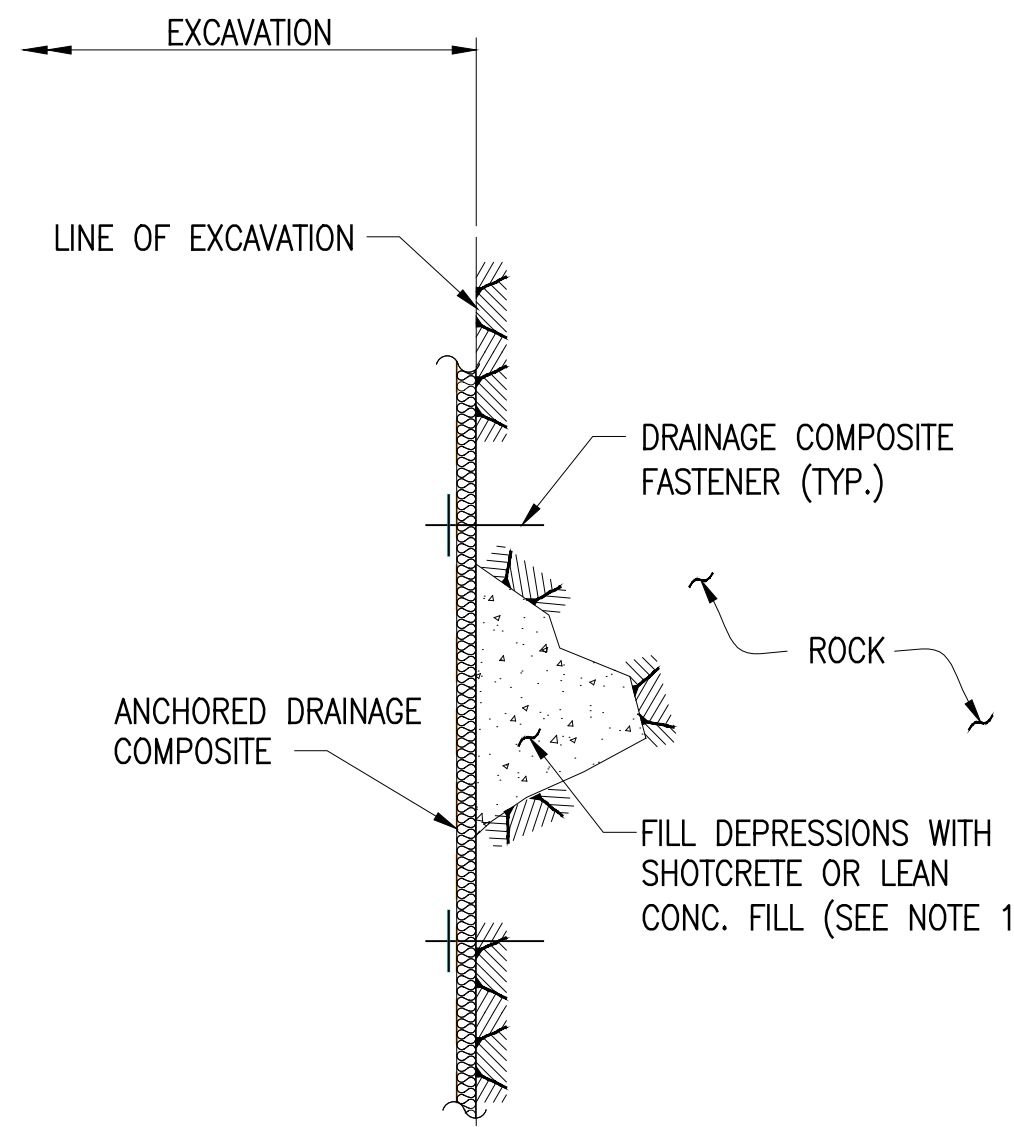
1. ACCEPT ANCHORS IF:
  - A. THE TOTAL ELASTIC MOVEMENT OBTAINED AT THE TEST LOAD WITH A 10 MINUTE LOAD HOLD EXCEEDS 80% OF THE THEORETICAL ELASTIC ELONGATION OF THE STRESSING LENGTH, BUT LESS THAN THE STRESSING LENGTH PLUS HALF OF THE BOND LENGTH.
  - B. THE CREEP RATE WITH A 60 MINUTE LOAD HOLD DOES NOT EXCEED 2.0 MM PER LOG CYCLE DURING THE FINAL LOG CYCLE OF THE PERFORMANCE TEST OR PROOF TEST REGARDLESS OF THE TENDON LENGTH AND LOAD.



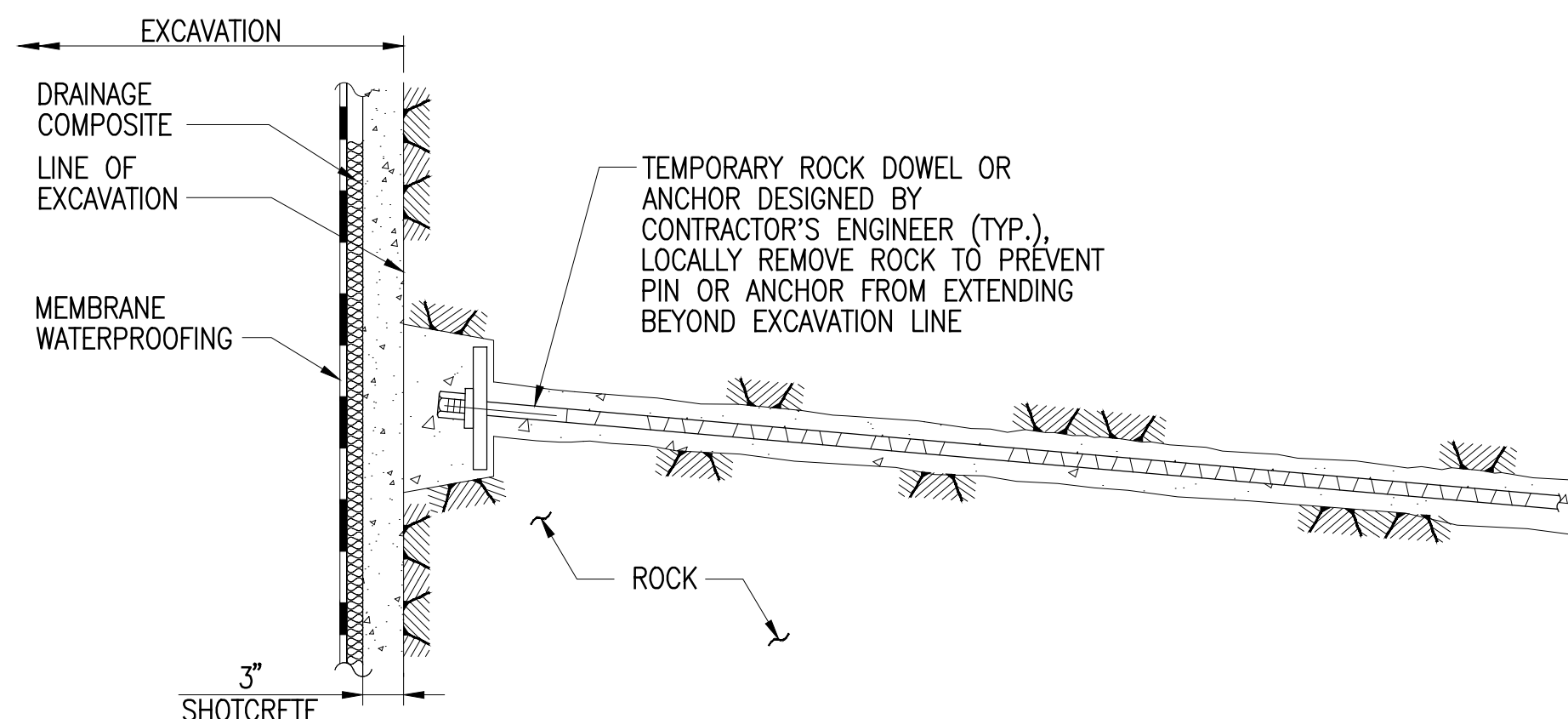
**TYPICAL ROCK BOLT DETAIL**  
SCALE: 1 1/2"=1'-0"



**ROCK FACE SUPPORT WITH CHAIN LINK MESH (WEAK ROCK)**  
NO SCALE



**ROCK SURFACE PREPARATION (FOR WATERPROOFING)**  
NO SCALE



NOTE: INTERFACE BETWEEN DRAINAGE COMPOSITE AND PERMANENT PIPING NOT SHOWN. SEE CONTRACT DOCUMENTS

**ROCK FACE SUPPORT IN AREA WITH MEMBRANE WATERPROOFING**  
NO SCALE

**PROJECT:**  
**Manhattan West Southwest Residential Tower**

PART OF THE MANHATTAN WEST MASTER PLAN  
West 31st Street & Dyer Avenue  
New York, NY

**OWNER/DEVELOPER:**

**Brookfield**

80P West 31st Street LLC  
Brookfield Properties W 31st CO.L.P.  
Brookfield Place, 250 Vesey Street  
New York, NY 10281

**ARCHITECT:**

**SLCEArchitects,LLP**

1359 BROADWAY  
NEW YORK, NY 10018  
TEL.: (212) 979-8400  
FAX.: (212) 979-8387

**DESIGN ARCHITECT / MASTER PLAN ARCHITECT:**

**SOM**

Sutton, Czwig & Merrill LLP  
14 Wall Street New York, NY 10005  
(212) 298-9300

**INTERIOR DESIGN:**

**ROMAN AND WILLIAMS**

BUILDINGS AND INTERIORS  
324 LAFAYETTE STREET, 4TH FLOOR  
NEW YORK, NY 10012  
TEL.: (212) 625-3808  
FAX.: (212) 625-3807

**LANDSCAPE ARCHITECT:**

**JAMES CORNER FIELD OPERATIONS**

475 TENTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 433-1450

**STRUCTURAL ENGINEER:**

**DeSIMONE CONSULTING ENGINEERS, P.L.L.C.**

18 WEST 18TH STREET  
NEW YORK, NY 10011  
TEL.: (212) 532-2211  
FAX.: (212) 481-6108

**MECHANICAL ENGINEER:**

**COSENTINI ASSOCIATES**

TWO PENN PLAZA  
NEW YORK, NY 10121  
TEL.: (212) 615-3600  
FAX.: (212) 615-3700

**BUILDING ENVELOPE CONSULTANT:**

**VIDARIS INC. / ISRAEL BERGER & ASSOCIATES, INC.**

232 MADISON AVENUE  
NEW YORK, NY  
TEL.: (212) 689-5389  
FAX.: (212) 689-4449

**ENERGY / ENVIRONMENTAL CONSULTANT:**

**VIDARIS INC. / VIRIDIAN ENERGY & ENVIRONMENTAL**

50 WASHINGTON STREET  
NORWALK, CT 06854  
TEL.: (203) 299-1411  
FAX.: (203) 299-1456

**VERTICAL TRANSPORTATION CONSULTANT:**

**VAN DEUSEN & ASSOCIATES**

5 REGENT STREET, SUITE 524  
LIVINGSTON, NJ 07039  
TEL.: (973) 994-9220

**ACOUSTICAL CONSULTANT:**

**CERAMI ASSOCIATES**

404 FIFTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 370-1774  
FAX.: (212) 370-1736

**CIVIL ENGINEER:**

**PHILIP HABIB & ASSOCIATES**

102 MADISON AVENUE, 11TH FL.  
NEW YORK, NY 10016  
TEL.: (212) 929-5656  
FAX.: (212) 929-5605

**GEOTECHNICAL ENGINEER:**

**MUESER RUTLEDGE CONSULTING ENGINEERS**

225 WEST 34TH STREET  
NEW YORK, NY 10122  
TEL.: (917) 339-9300  
FAX.: (917) 339-9400

2 05-16-2014 ISSUED FOR BID

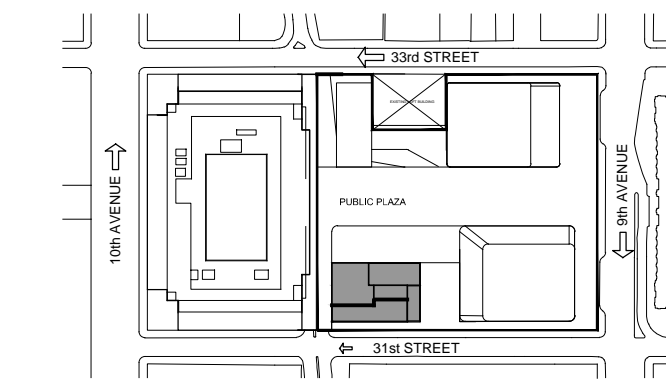
1 03-14-2014 DESIGN DEVELOPMENT

D.C.B. HANSEN DATE: REVISION:

**NB#**

NORTH: Scale: AS NOTED

**KEY PLAN:**



PROJECT:

DRAWING TITLE:

**SUPPORT OF EXCAVATION SECTIONS AND DETAILS**

SEAL & SIGNATURE:

DATE: 12.16.2013  
PROJECT NO: 3168.00  
DRAWN BY: KJ  
CHECKED BY: EB  
DESIGNER: EB

SHEET No.: 00

FILE No: SOE-120.06.dwg



PROJECT:  
**Manhattan West  
Southwest Residential  
Tower**  
PART OF THE MANHATTAN WEST MASTER PLAN  
West 31st Street & Dyer Avenue  
New York, NY

OWNER/DEVELOPER:  
**Brookfield**  
BOP West 31st Street LLC  
Brookfield Properties W 31st CO L.P.  
Brookfield Place, 250 Vesey Street  
New York, NY 10281

ARCHITECT:  
**SLCEArchitects, LLP**  
1359 BROADWAY  
NEW YORK, NY 10018  
TEL.: (212) 979-8400  
FAX.: (212) 979-8387

DESIGN ARCHITECT / MASTER PLAN ARCHITECT:  
**SOM**  
Skidmore, Owings & Merrill LLP  
14 Wall Street New York, NY 10005  
(212) 298-9300

INTERIOR DESIGN:  
**ROMAN AND WILLIAMS  
BUILDINGS AND INTERIORS**  
324 LAFAYETTE STREET, 4TH FLOOR  
NEW YORK, NY 10012  
TEL.: (212) 625-3638  
FAX.: (212) 625-3807

LANDSCAPE ARCHITECT:  
**JAMES CORNER  
FIELD OPERATIONS**  
475 TENTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 433-1450

STRUCTURAL ENGINEER:  
**DeSIMONE CONSULTING  
ENGINEERS, P.L.L.C.**  
18 WEST 18TH STREET  
NEW YORK, NY 10011  
TEL.: (212) 532-2211  
FAX.: (212) 481-6108

MECHANICAL ENGINEER:  
**COSENTINI ASSOCIATES**  
TWO PENN PLAZA  
NEW YORK, NY 10121  
TEL.: (212) 615-3600  
FAX.: (212) 615-3700

BUILDING ENVELOPE CONSULTANT:  
**VIDARIS INC. /  
ISRAEL BERGER & ASSOCIATES, INC.**  
232 MADISON AVENUE  
NEW YORK, NY  
TEL.: (212) 489-5389  
FAX.: (212) 689-4449

ENERGY / ENVIRONMENTAL CONSULTANT:  
**VIDARIS INC. /  
VIRIDIAN ENERGY & ENVIRONMENTAL**  
50 WASHINGTON STREET  
NORWALK, CT 06854  
TEL.: (203) 299-1411  
FAX.: (203) 299-1656

VERTICAL TRANSPORTATION CONSULTANT:  
**VAN DEUSEN & ASSOCIATES**  
5 WEGENT STREET, SUITE 524  
LIVINGSTON, NJ 07039  
TEL.: (973) 994-9220

ACOUSTICAL CONSULTANT:  
**CERAMI ASSOCIATES**  
404 FIFTH AVENUE  
NEW YORK, NY 10018  
TEL.: (212) 370-1776  
FAX.: (212) 370-1736

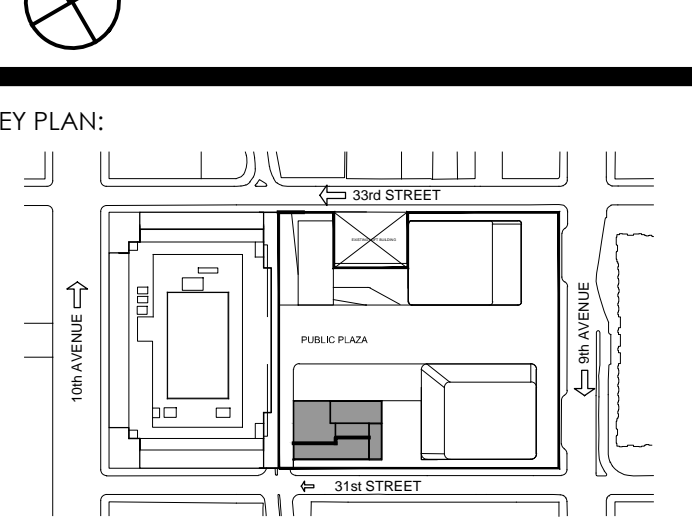
CIVIL ENGINEER:  
**PHILIP HABIB & ASSOCIATES**  
102 MADISON AVENUE, 11TH FL.  
NEW YORK, NY 10016  
TEL.: (212) 929-5656  
FAX.: (212) 929-5605

GEOTECHNICAL ENGINEER:  
**MUESER RUTLEDGE  
CONSULTING ENGINEERS**  
225 WEST 34TH STREET  
NEW YORK, NY 10122  
TEL.: (917) 539-9300  
FAX.: (917) 539-9400

2 05-16-2014 ISSUED FOR BID  
1 03-14-2014 DESIGN DEVELOPMENT

D.O.B. NUMBER: NB#

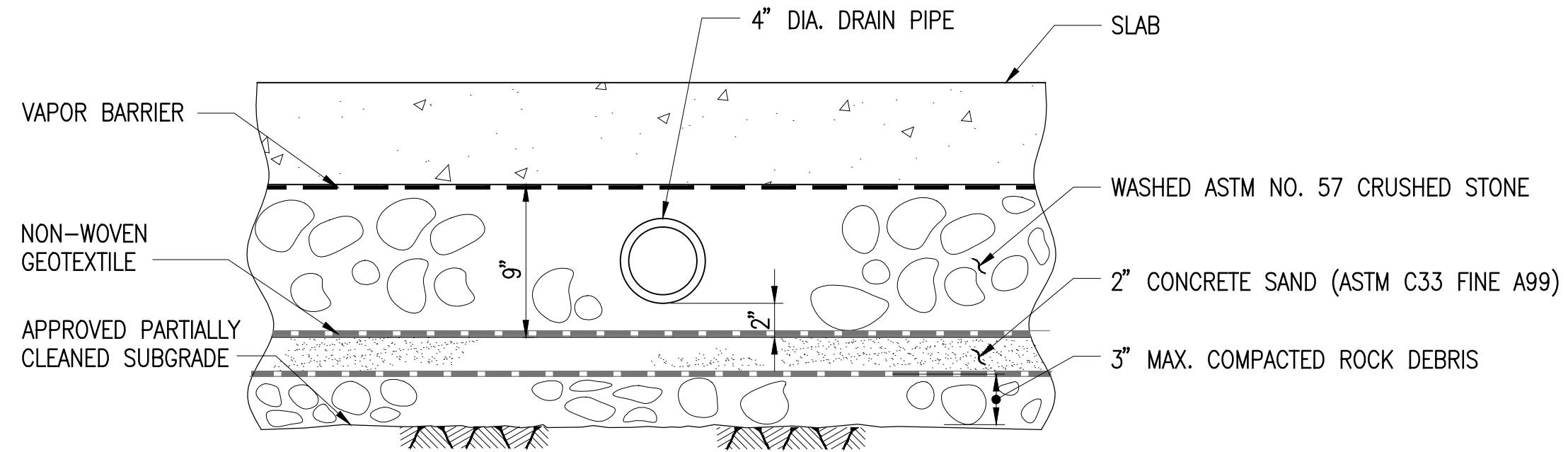
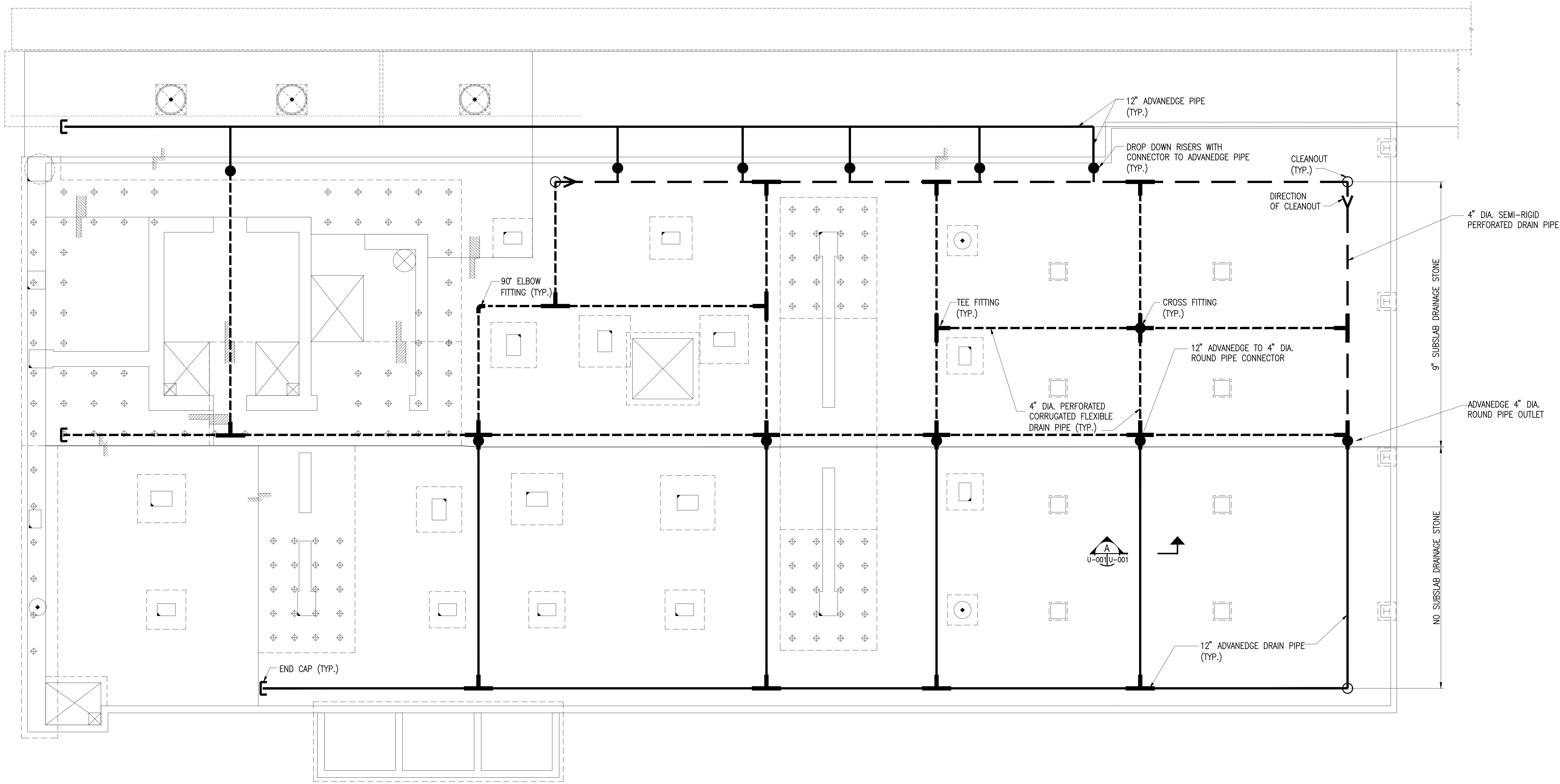
NORTH: Scale: GRAPHIC



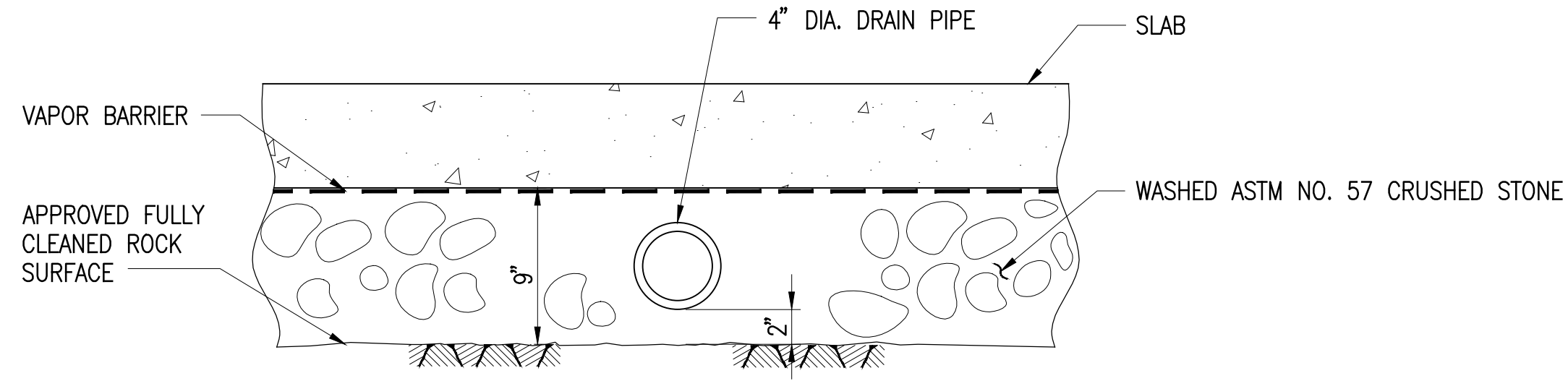
PROJECT:  
**MANHATTAN WEST  
NEW YORK, NEW YORK**

DRAWING TITLE:  
**UNDERSLAB DRAINAGE  
PLAN AND DETAILS**

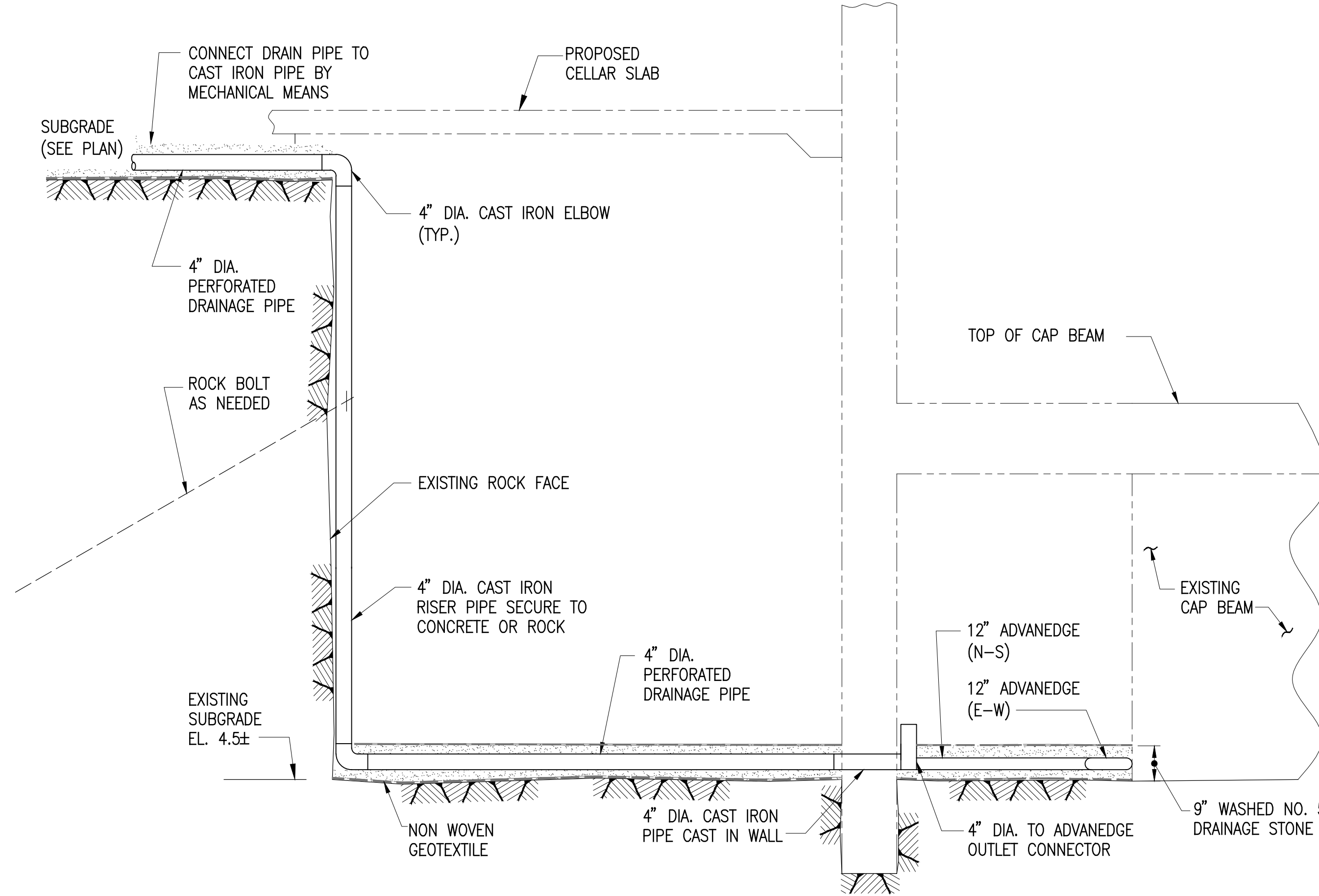
SEAL & SIGNATURE: DATE: 12.16.2013  
PROJECT NO.: 13168.00  
DRAWN BY: LR  
CHECKED BY: SRL  
DATE: 05/16/2014  
SHEET NO.: 00 of 00  
FILE NO.: U001.06.dwg



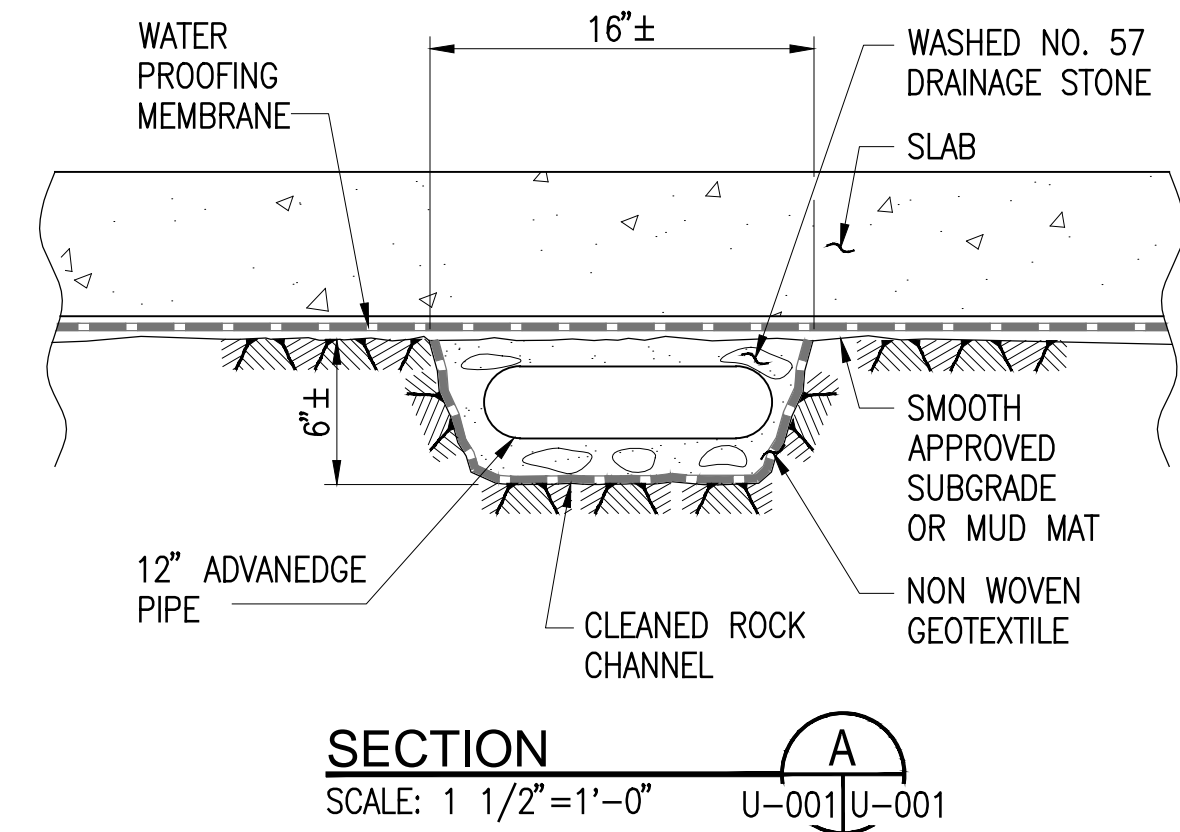
**SLAB DETAIL "GRAVEL UNDER S.O.G." - ROCK SURFACE NOT FULLY CLEANED**  
SCALE: 1/2"=1'-0"



**SLAB DETAIL "GRAVEL UNDER S.O.G." - ROCK SURFACE FULLY CLEANED**  
SCALE: 1/2"=1'-0"



**DROP DOWN RISER DETAIL**  
SCALE: 1/2"=1'-0"



- NOTES:**
- FOR SLAB, WALLS AND WATERPROOFING DESIGN, SEE STRUCTURAL DRAWINGS.
  - FOUNDATION BASE PLAN FROM DRAWING NO. FO-102.00.

GRAPHIC SCALE  
8' 4' 0' 8' 16'