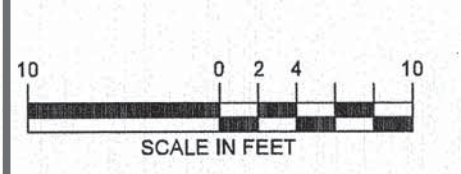


- GENERAL NOTES:**
- BASE DRAWING REPRODUCED FROM THE STRUCTURAL PLAN PREPARED BY WSP CANTOR SENKUTZKY TITLED "FOUNDATION GENERAL ARRANGEMENT PLAN DATED 19 JUNE 2012. ALL LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO VERIFICATION IN THE FIELD.
 - ALL ELEVATIONS ARE APPROXIMATE AND REFER TO THE MANHATTAN BOROUGH PRESIDENT DATUM, WHICH IS 2.75 FEET ABOVE MEAN SEA LEVEL MEASURED AT SANDY HOOK, NJ.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING HIS WORK SUCH THAT NO DAMAGE OR ADVERSE IMPACT TO THE NEIGHBORING BUILDINGS AND STRUCTURES RESULT, AND FOR PERFORMING NEIGHBORING BUILDING AND STRUCTURE MONITORING DURING SOIL EXCAVATION AND EXCAVATION SUPPORT CONSTRUCTION TO KEEP HIMSELF CONTINUOUSLY INFORMED OF THEIR CONDITIONS.
 - A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK AND RETAINED DIRECTLY BY THE OWNER SHALL PERFORM SPECIAL INSPECTION OF THE EXCAVATION SUPPORT WORK IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 1704.19 OF THE NYC BUILDING CODE.
 - CONTRACTOR SHALL NOTIFY NYCDOB AND NEIGHBORING BUILDING OWNERS PER THE REQUIREMENTS OF THE LATEST NYC BUILDING CODE PRIOR TO COMMENCEMENT OF EXCAVATION WORK.
 - CONTRACTOR SITE SAFETY AND SITE LOGISTICS ARE BEYOND THE SCOPE OF THESE DRAWINGS AND ARE NOT ADDRESSED HEREIN.
 - ON-SITE TOP OF ROCK ELEVATIONS INDICATED ON THE DRAWINGS ARE INFERRED BASED ON TOP OF ROCK OBSERVED IN DRILLED BORINGS. THE ACTUAL TOP OF ROCK MAY VARY IN THE FIELD.
 - THE SUPPORT OF EXCAVATION DESIGN IS BASED ON A 300 PSF UNIFORM SURCHARGE AT THEIR FINAL STAGE. INTERMEDIATE STAGES OF CONSTRUCTION ARE BASED ON A 150 PSF UNIFORM SURCHARGE. HORIZONTAL PRESSURES FROM THESE LOADS ARE ASSUMED TO HAVE A TRIANGULAR LOAD DISTRIBUTION EXTENDING 15 FT IN DEPTH FROM THE SURFACE. HIGHER SURCHARGE LOADS CAN BE APPLIED ONLY AFTER REVIEW AND APPROVAL BY THE DESIGN ENGINEER.
 - THE MOST RECENT PROVISIONS OF THE NEW YORK CITY BUILDING CODE SHALL GOVERN THIS WORK.
 - THE WORK SHOWN IN THESE DRAWINGS SHALL BE EXECUTED IN CONJUNCTION WITH THOSE OF THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, STEELWORK, ELECTRICAL AND PLUMBING DISCIPLINES. DISCREPANCIES BETWEEN THESE DRAWINGS AND THOSE OF OTHER DISCIPLINES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION PRIOR TO COMMENCING WORK.
 - SHOULD FIELD CONDITIONS CONFLICT WITH THOSE INDICATED ON THESE DRAWINGS, THE DESIGNER SHALL BE IMMEDIATELY NOTIFIED TO DETERMINE IMPACTS TO THE DESIGN AND TO PROVIDE ANY REQUIRED DESIGN CHANGES.
 - THE FOLLOWING DRAWINGS ARE INCLUDED IN THIS SET:
DWG NO. TITLE
SOE-001 EXCAVATION SUPPORT KEY & INDEX PLAN
SOE-002 SHEETED EXCAVATIONS PART PLANS, CROSS-SECTIONS & SEQUENCE
SOE-003 EXCAVATION SUPPORT ELEVATIONS, CROSS-SECTIONS & SEQUENCE
SOE-004 EXCAVATION SUPPORT ELEVATIONS, CROSS-SECTIONS & SEQUENCE
SOE-005 EXCAVATION SUPPORT ELEVATIONS, CROSS-SECTIONS & SEQUENCE
SOE-006 EXCAVATION SUPPORT DETAILS
- STRUCTURAL STEEL NOTES:**
- STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A992, GRADE 50, U.O.N.
 - STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, U.O.N.
 - FIELD WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1-08.
 - WELDING ELECTRODES SHALL BE E70XX, UNLESS NOTED OTHERWISE. FILLET WELDS SHALL NOT BE LESS THAN 3/16-INCH.
 - REFER TO DRAWING FO-001.00 AND THE PROJECT SPECIFICATIONS FOR STRUCTURAL STEEL REQUIREMENTS RELATED TO ALL OTHER WORK.
- CONCRETE NOTES:**
- CAST-IN-PLACE CONCRETE SHALL BE CONTROLLED CONCRETE AND SHALL HAVE A MINIMUM UNCONFINED COMPRESSIVE STRENGTH AT 28 DAYS (FC) OF 4,000 PSI U.O.N.
 - CONCRETE REINFORCEMENT BARS SHALL CONSIST OF DEFORMED BILLET STEEL MEETING ASTM A615, GRADE 60.
 - MECHANICAL SPLICES SHALL DEVELOP THE FULL TENSILE CAPACITY OF THE PARENT REINFORCING BAR.
 - MINIMUM CONCRETE COVER SHALL BE IN ACCORDANCE WITH ACI 318.
 - TOLERANCES FOR CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 117.
 - ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED A MINIMUM OF 3/4 INCHES.
 - REFER TO DRAWING FO-001.00 AND ASSOCIATED SPECIFICATIONS FOR CONCRETE REQUIREMENTS RELATED TO ALL OTHER WORK.
- SOLDIER PILE AND LAGGING AND SHEET PILE NOTES:**
- STEEL H-PILES, C-CHANNELS AND SHEET PILING SHALL CONFORM TO ASTM A-572 GRADE 50.
 - SHEET PILING AND SOLDIER PILES SHALL BE INSTALLED TO WITHIN 3/4 INCHES OF THEORETICAL LOCATION. SHEETS AND SOLDIER PILES SHALL NOT DEVIATE MORE THAN 1 PERCENT FROM PLUMB. SHEETS AND SOLDIER PILES DRIVEN OUTSIDE OF THE ABOVE TOLERANCES SHALL BE EXTRACTED AND REDRIVEN.
 - TIMBER SHALL BE CONSTRUCTION GRADE, ROUGH CUT FULL SIZE, SOUTHERN PINE WITH A MINIMUM ALLOWABLE BENDING STRESS OF 1800 PSI. 3 INCH TIMBER LAGGING SHALL BE INSTALLED FROM GROUND SURFACE TO EXTENT OF EXCAVATION (TOP-DOWN).
- INSTALLATION AND EXCAVATION SEQUENCE NOTES:**
- CONTRACTOR SHALL FIELD LOCATE EXISTING STRUCTURES AND UTILITIES TO ENSURE NECESSARY CLEARANCES.
 - PRE-TRENCH AS NECESSARY TO CLEAR OBSTRUCTIONS AND REMAIN FOUNDATION ELEMENTS WHICH MAY EFFECT THE INSTALLATION OF SOLDIER PILES AND SHEET PILES.
 - GRADE SURFACE AS REQUIRED TO PROVIDE LEVEL WORKING PLATFORM.
 - SET PILING RIG AT DESIRED LOCATION AND PLUMB THE PILE PRIOR TO DRIVING.
 - DRIVE SOLDIER PILES AND SHEET PILES TO REQUIRED MINIMUM DEPTHS, VIBRATION AND SURVEY MONITORING SHALL BE PERFORMED CONTINUOUSLY DURING DRIVING.
 - THE TOP OF ALL PILES SHALL EXTEND A MINIMUM OF 6 INCHES ABOVE THE GROUND SURFACE.
 - INSTALL BRACING AS REQUIRED INCLUDING DRILLING OF TIEBACKS. REFER TO DRAWING SOE-005 FOR SCHEDULE AND INSTALLATION NOTES.
 - CONTINUE EXCAVATION AS REQUIRED TO ACHIEVE SURGRADE ELEVATION. DEWATER LOCALLY AS REQUIRED FOR INSTALLATION OF PERMANENT FOUNDATIONS.
 - INSTALL PERMANENT FOUNDATIONS AS REQUIRED.
 - BRACING SHALL REMAIN IN-PLACE UNTIL ADEQUATE SUPPORT IS PROVIDED BY PERMANENT STRUCTURAL ELEMENTS (I.E. FOUNDATION WALLS AND INTERMEDIATE FLOOR SLABS).
 - MONITORING OF WALL MOVEMENTS AND ADJACENT STRUCTURES SHALL BE PERFORMED CONTINUOUSLY DURING ALL OPERATIONS. REFER TO NOTES ON DRAWING SOE-005 FOR DETAILS.
- NEW YORK CITY BUILDING DEPARTMENT NOTES:**
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OUTLINED IN THE 2008 NEW YORK CITY BUILDING CODE.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF BUILDINGS AND ADJACENT PROPERTY OWNERS 24-48 HOURS PRIOR TO COMMENCING EXCAVATION AS PER SECTION 3304.3.1 AND 3304.3.2 OF THE NEW YORK CITY BUILDING CODE.
 - ALL WORK CONTAINED HEREIN SHALL BE SUBJECT TO SPECIAL INSPECTION IN ACCORDANCE WITH CHAPTER 17 OF THE NEW YORK CITY BUILDING CODE. SPECIAL INSPECTORS SHALL MEET THE QUALIFICATIONS OUTLINED IN THE RULES OF THE CITY OF NEW YORK, SECTION 101-05, DATED 6-30-08. REQUIRED SPECIAL INSPECTIONS INCLUDE:
A. SOILS AS PER SECTION 1704.7
a. SITE PREPARATION
b. FILL PLACEMENT
c. IN-PLACE SOIL DENSITY
B. CONCRETE CONSTRUCTION AS PER SECTION 1704.4
a. CONCRETE MIX DESIGN
b. CONCRETE CYLINDERS AND TESTING
c. CAST-IN-PLACE CONCRETE INCLUDING PLACEMENT OF FORM WORK AND REINFORCING STEEL
C. EXCAVATION - SHEETING, SHORING AND BRACING AS PER 1704.19 AND 3304.4.1
a. SHEET PILE INSTALLATION
b. EXCAVATION
c. STEEL CONSTRUCTION AS PER SECTION 1704.3
a. WELDING
D. IN CONFORMANCE WITH THE NEW YORK CITY BUILDING CODE, THE OWNER'S ENGINEER SHALL BE RETAINED TO CONDUCT THE NECESSARY SPECIAL INSPECTIONS FOR THE PROPOSED WORK AS APPROPRIATE.
E. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION ON SCOPE AND DETAILED REQUIREMENTS FOR INSPECTIONS AND TESTING.
F. REFER TO THE PROJECT SPECIFICATIONS AND DRAWINGS FOR INSPECTION AND TESTING REQUIREMENTS PERTAINING TO WORK OF OTHER TRADES.

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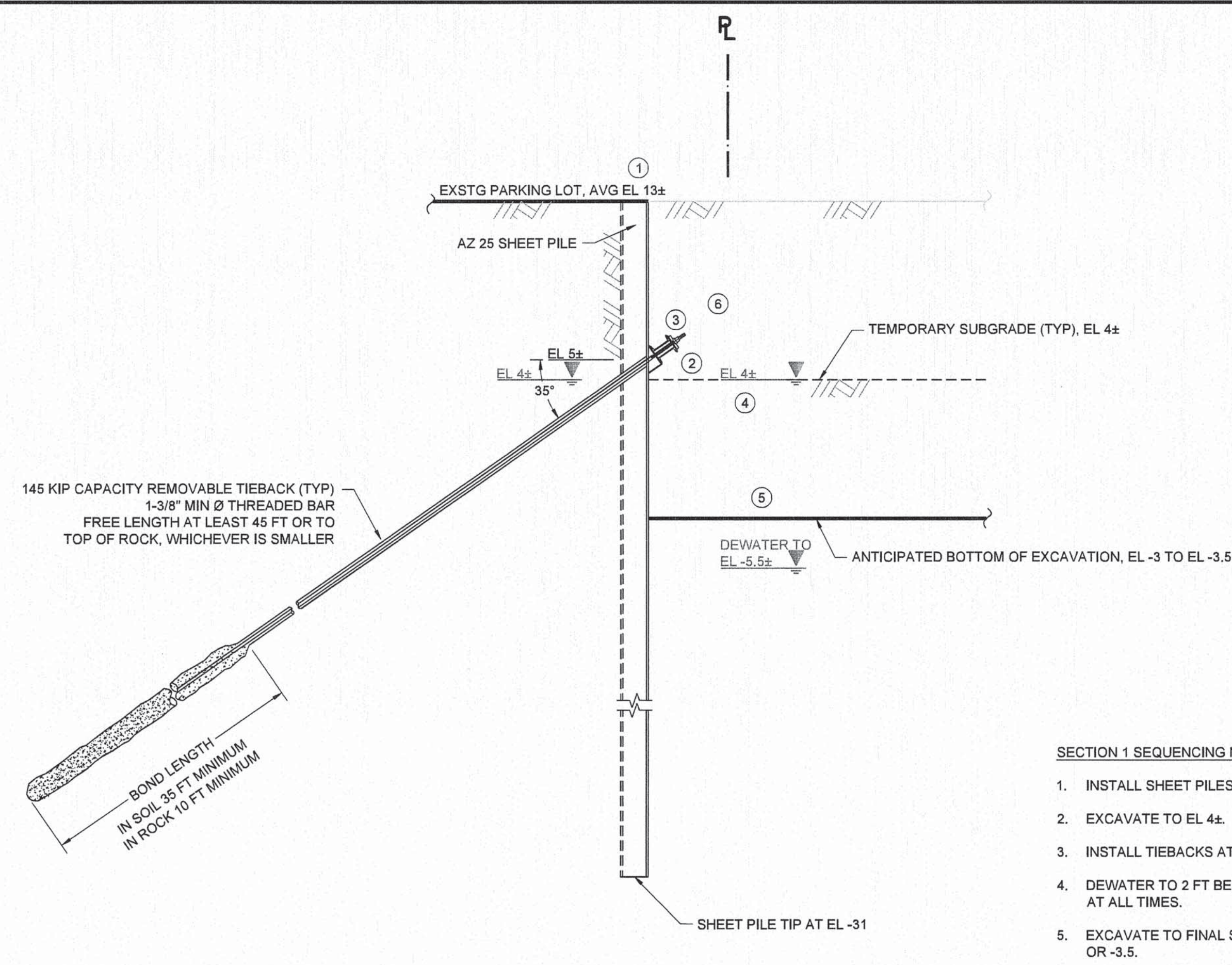
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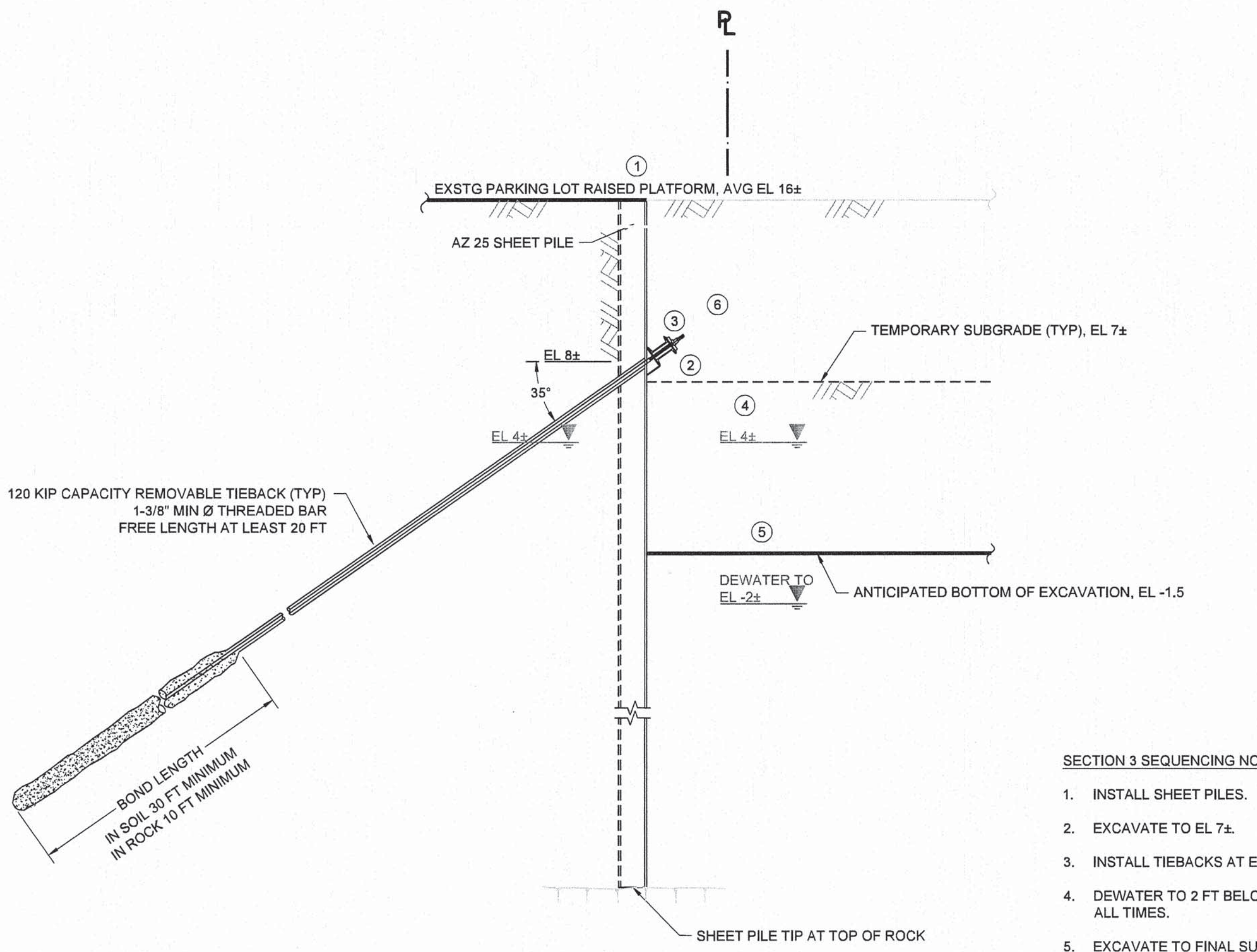
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17 - 29 WEST END AVENUE
RIVERSIDE CENTER,
BUILDING 2
NEW YORK

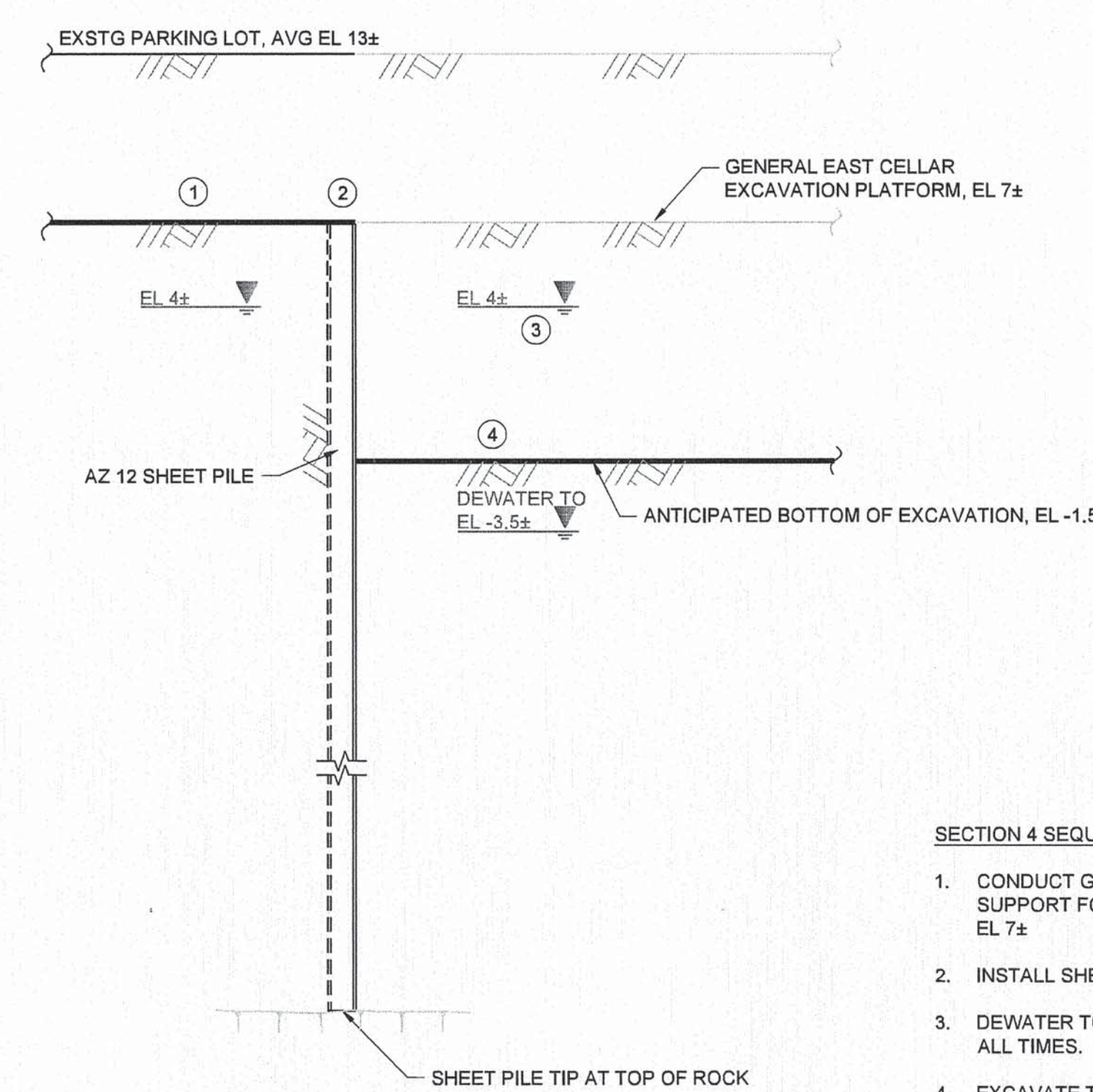
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EXCAVATION SUPPORT
KEY AND INDEX PLAN
Project No. 170201301
Date 08/21/2012
Scale AS SHOWN
Dwn. By LFP
Last Revised 08/21/2012
Drawing No. SOE-001
1 Of 6



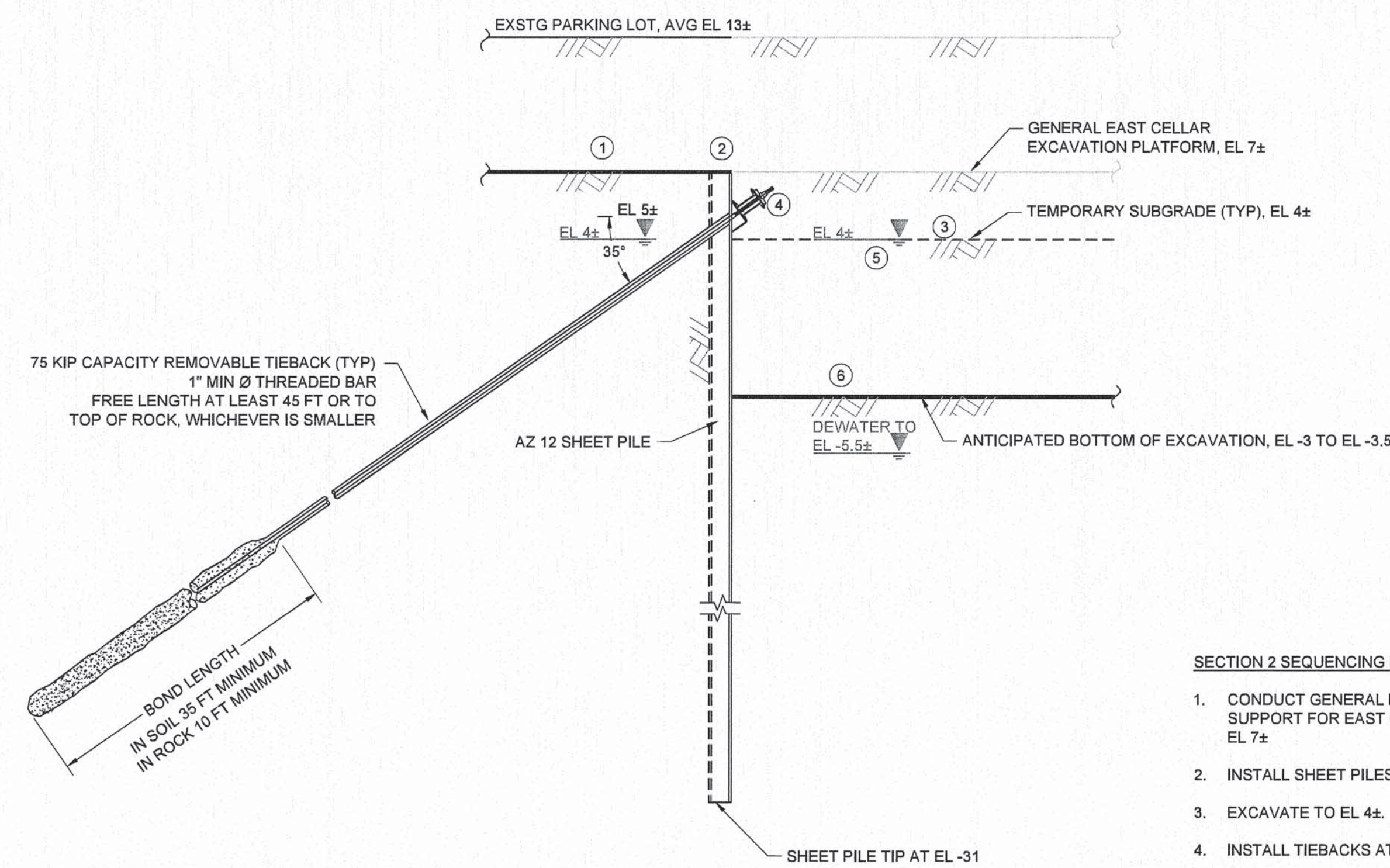
**SECTION 1-
SOE WALL P-1 PERIMETER TYPICAL SECTION**
SCALE: 1"=5'



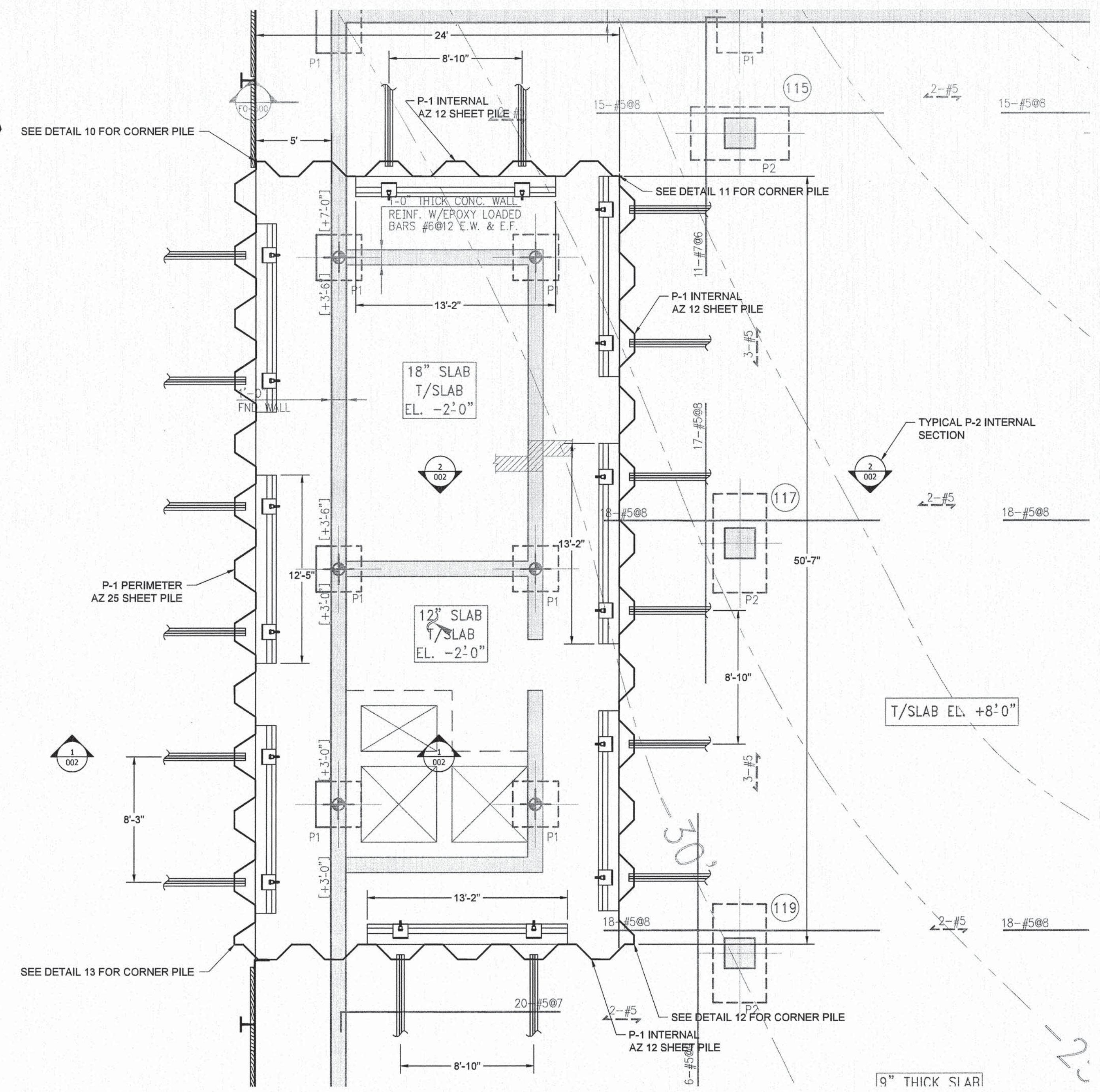
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SOE WALL P-2 PERIMETER TYPICAL SECTION**
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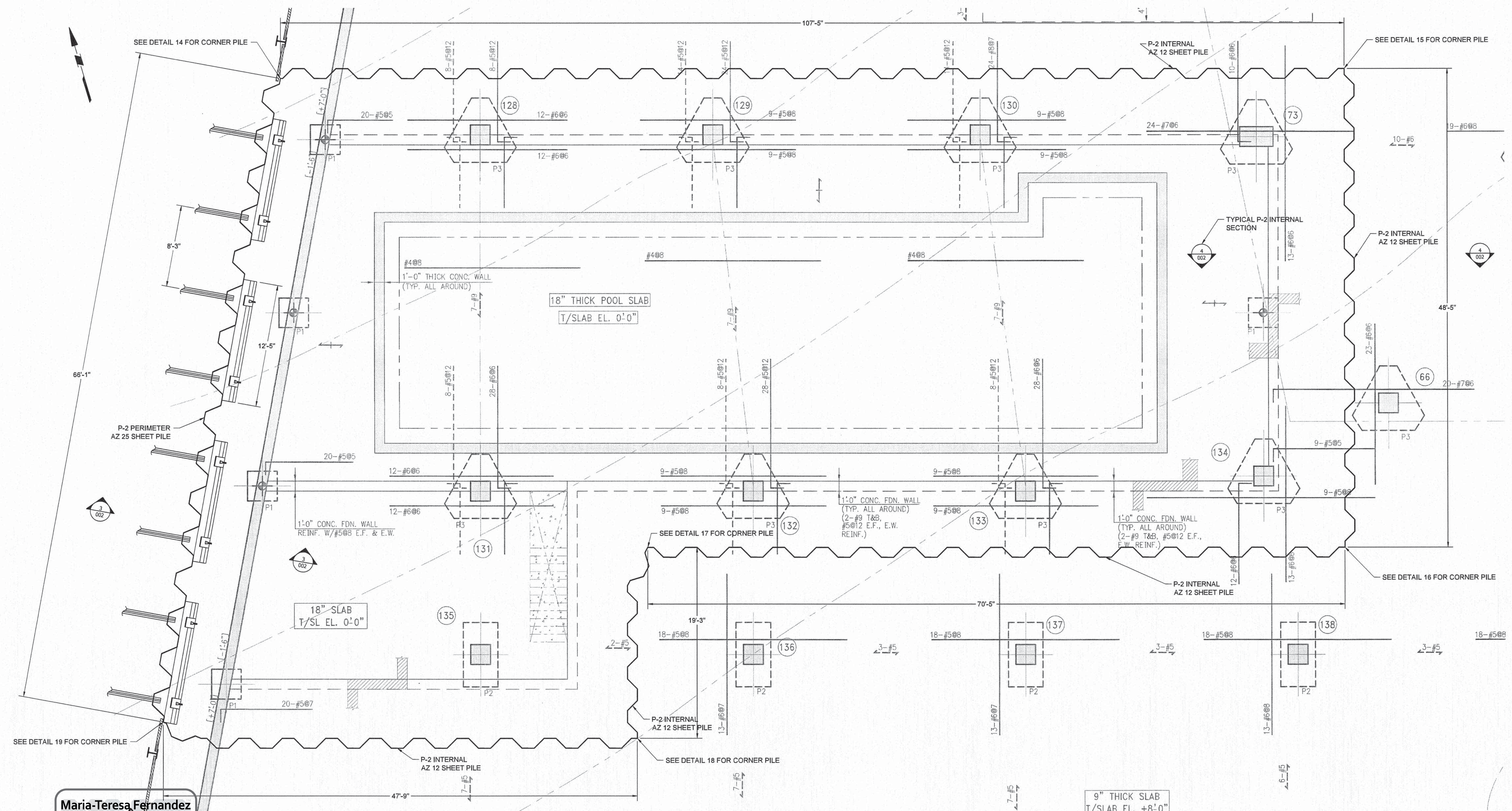
**SECTION 4-
SOE WALL P-2 INTERNAL TYPICAL SECTION**
SCALE: 1"=5'



**SECTION 2-
SOE WALL P-1 INTERNAL TYPICAL SECTION**
SCALE: 1"=5'



PART PLAN 1- SOE WALL P-1
SCALE: 1"=5'



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	Revisions	

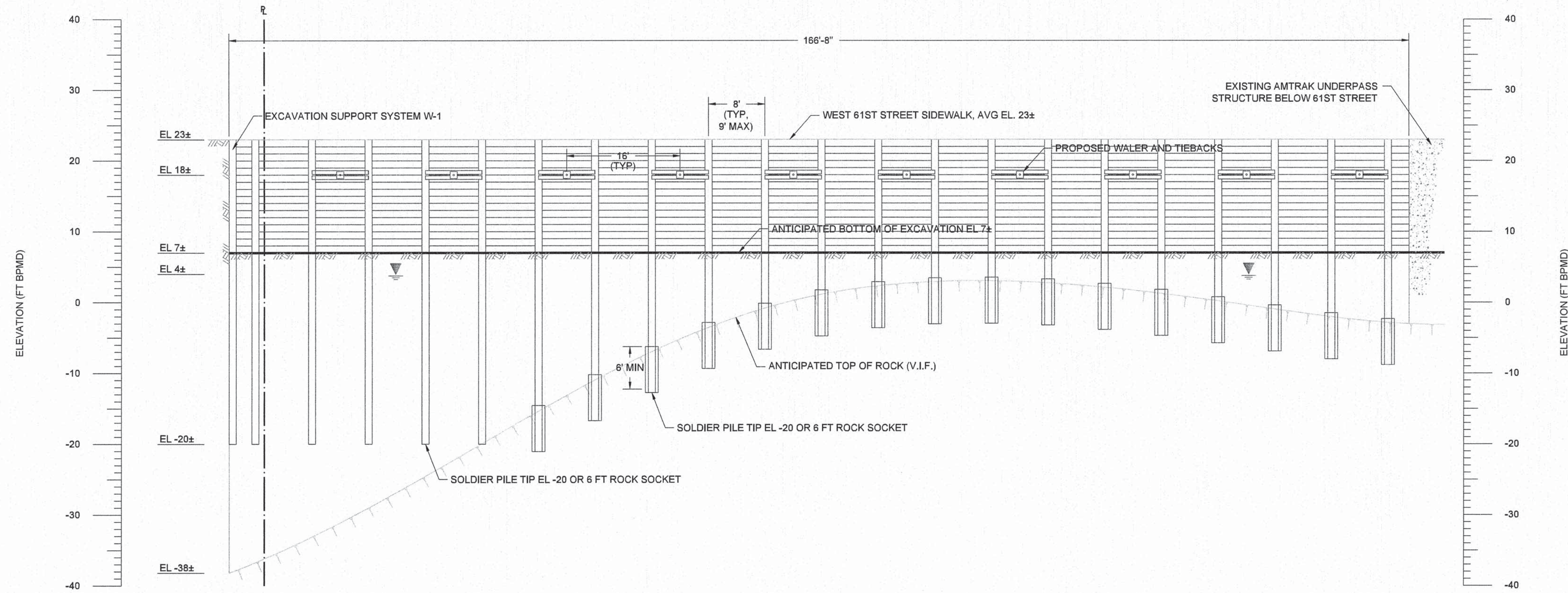
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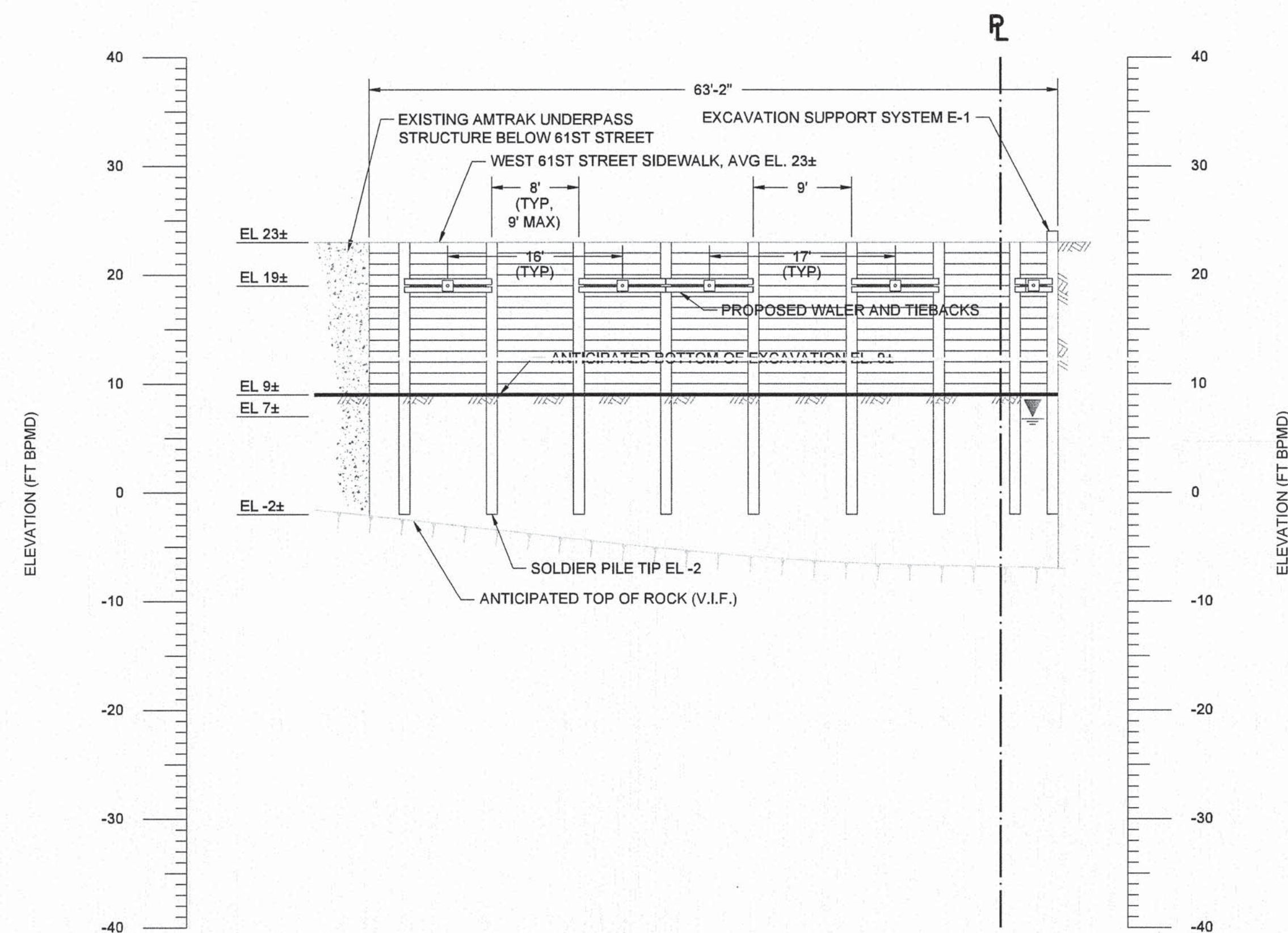
17 - 29 WEST END AVENUE
**RIVERSIDE CENTER,
BUILDING 2**
NEW YORK

Drawing Title
**SHEETED
EXCAVATIONS PART
PLANS,
CROSS-SECTIONS AND
SEQUENCE**

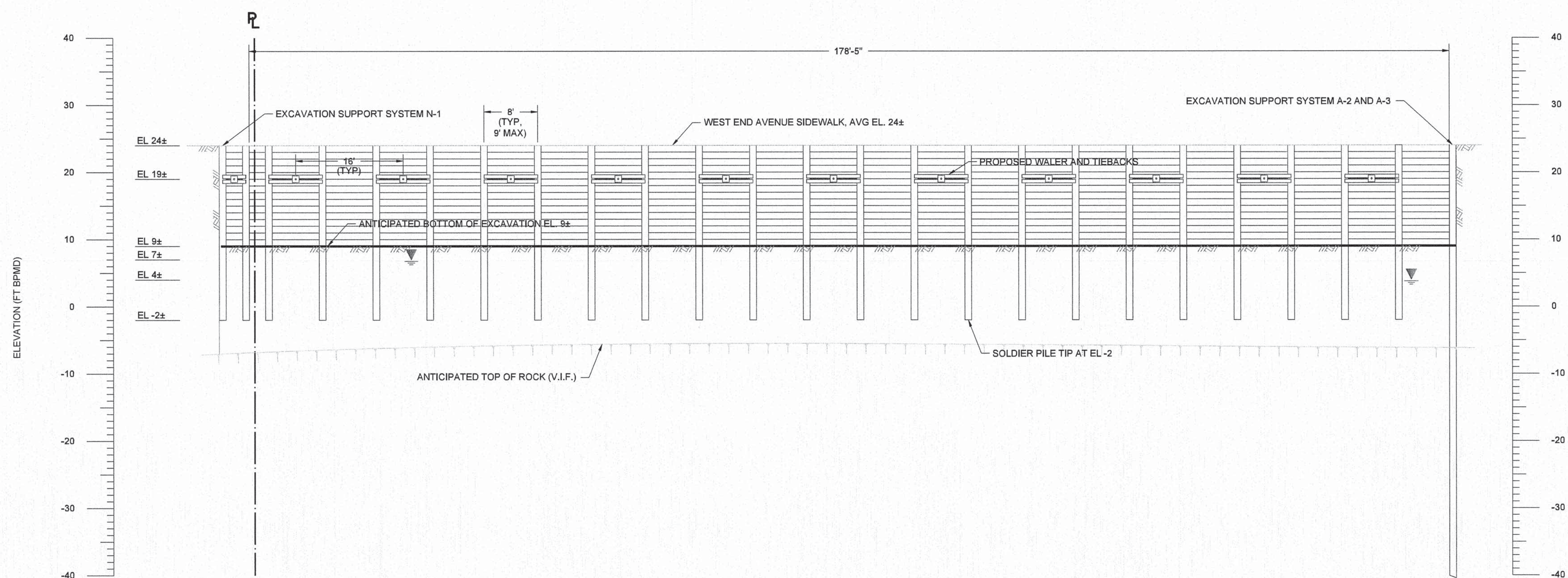
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Date	08/21/2012	Scale	AS SHOWN
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			2 OF 6



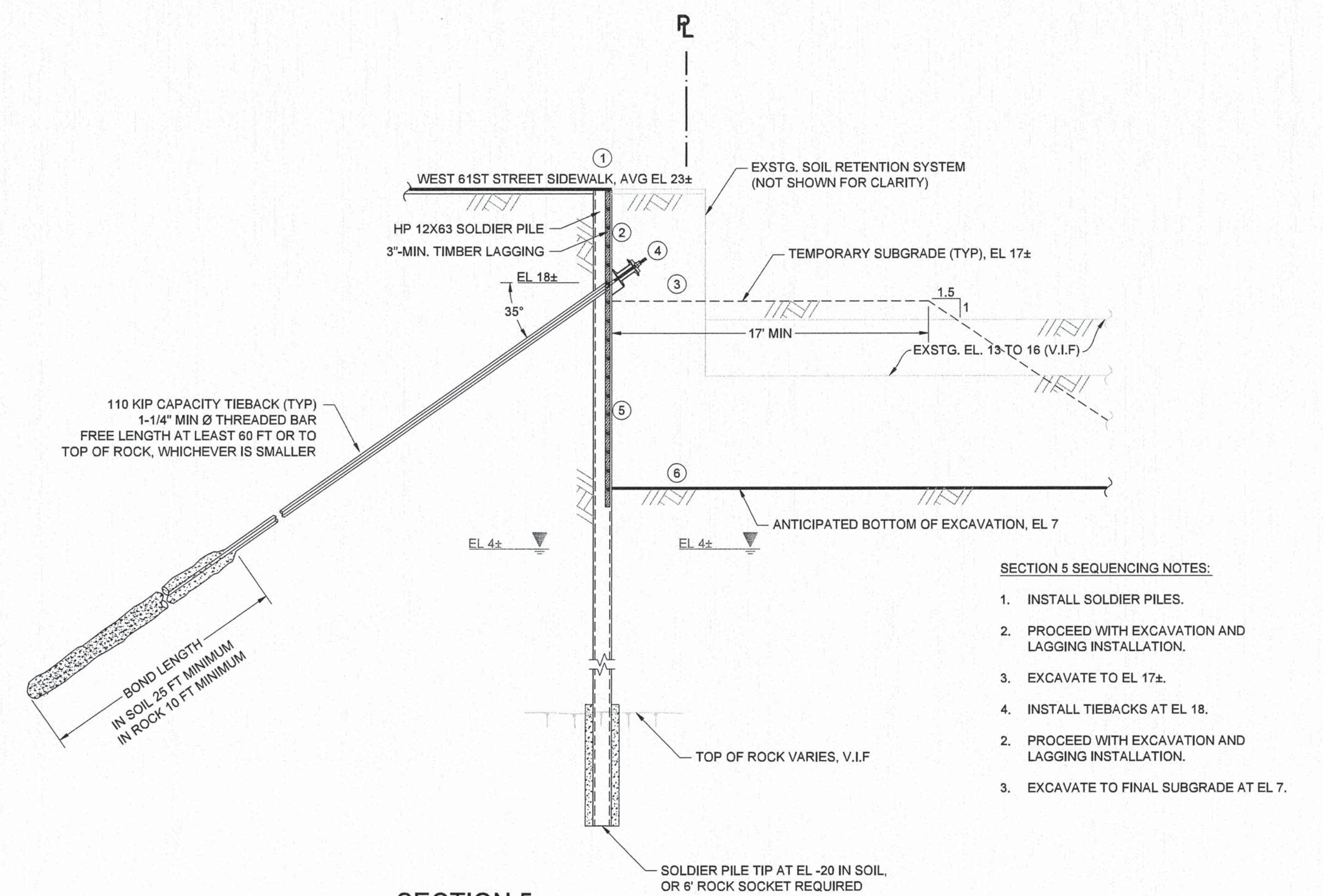
SOE WALL N-1 ELEVATION (FACING NORTH)
SCALE: 1"=10'



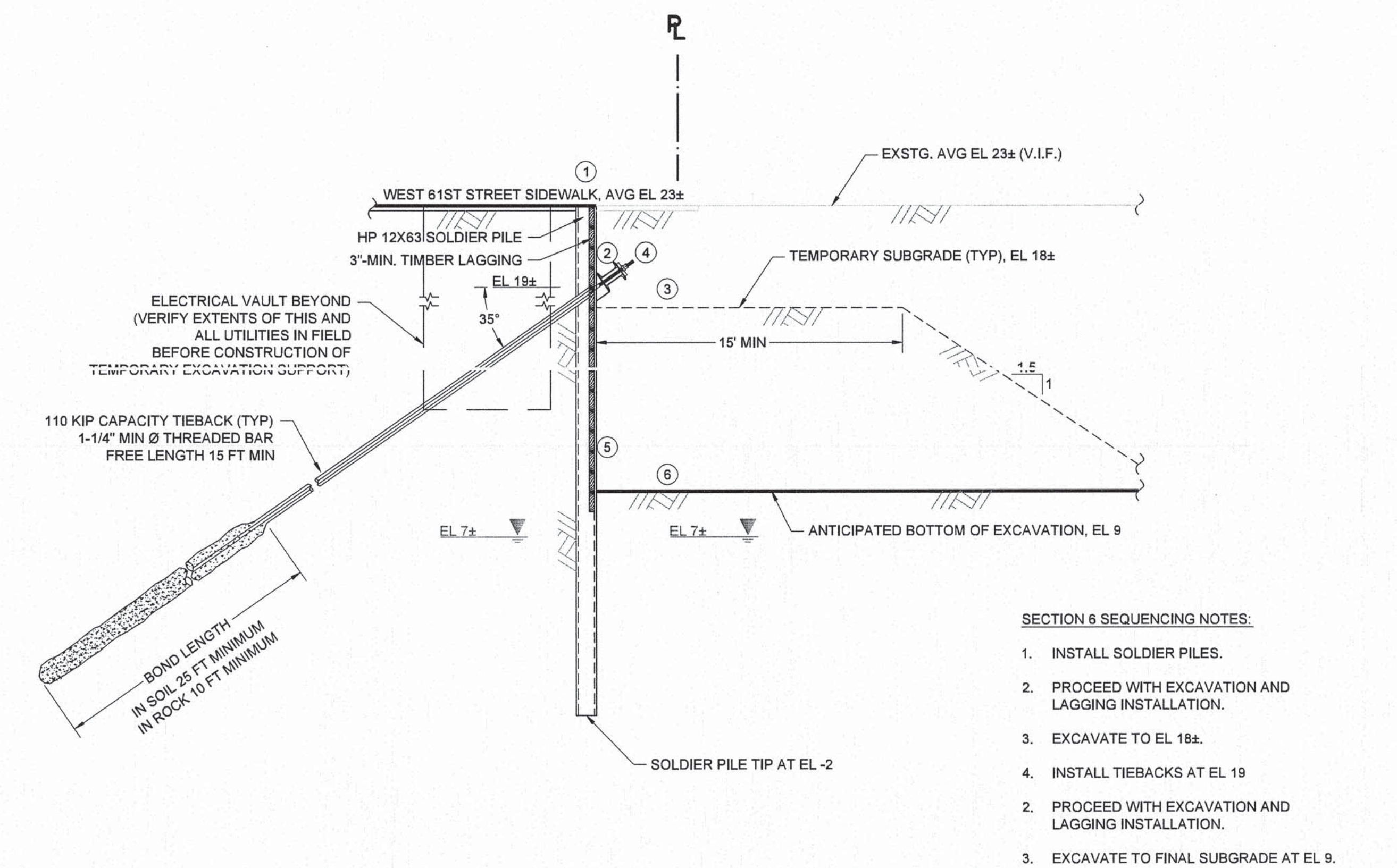
SOE WALL N-2 ELEVATION (FACING NORTH)
SCALE: 1"=10'



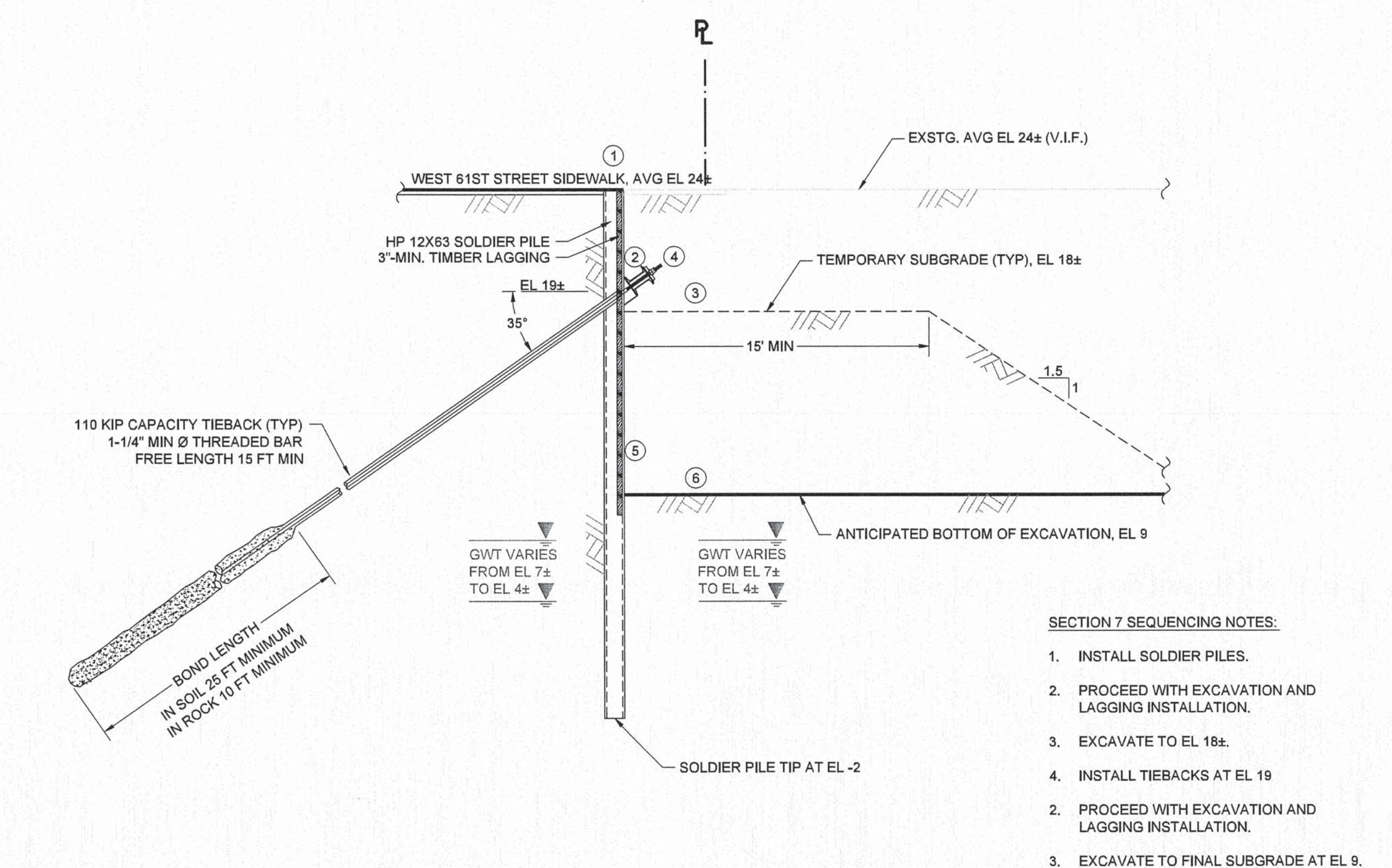
SOE WALL E-1 ELEVATION (FACING EAST)
SCALE: 1"=10'



SECTION 5-
SOE WALL N-1 TYPICAL SECTION
SCALE: 1"=5'



SECTION 6-
SOE WALL N-2 TYPICAL SECTION
SCALE: 1"=5'



SECTION 7-
SOE WALL E-1 TYPICAL SECTION
SCALE: 1"=5'

NOTES:

1. SURFACE ELEVATIONS WERE OBTAINED FROM A SURVEY PROVIDED BY EXTRELL TO MUESER RUTLEDGE CONSULTING ENGINEERS AND REPRODUCED IN THE "SUBSURFACE INVESTIGATION REPORT" BY MUESER RUTLEDGE CONSULTING ENGINEERS DATED 14 SEPTEMBER 2011. THIS INFORMATION IS SUBJECT TO VERIFICATION IN THE FIELD.
2. ON-SITE TOP OF ROCK ELEVATIONS INDICATED ON THE DRAWINGS ARE INFERRED BASED ON TOP OF ROCK OBSERVED IN DRILLED BORING LOCATIONS. THE ACTUAL TOP OF ROCK MAY VARY IN THE FIELD.
3. REFER TO SHEETS SOE-001 FOR PLAN VIEW AND SOE-006 FOR DETAILS.

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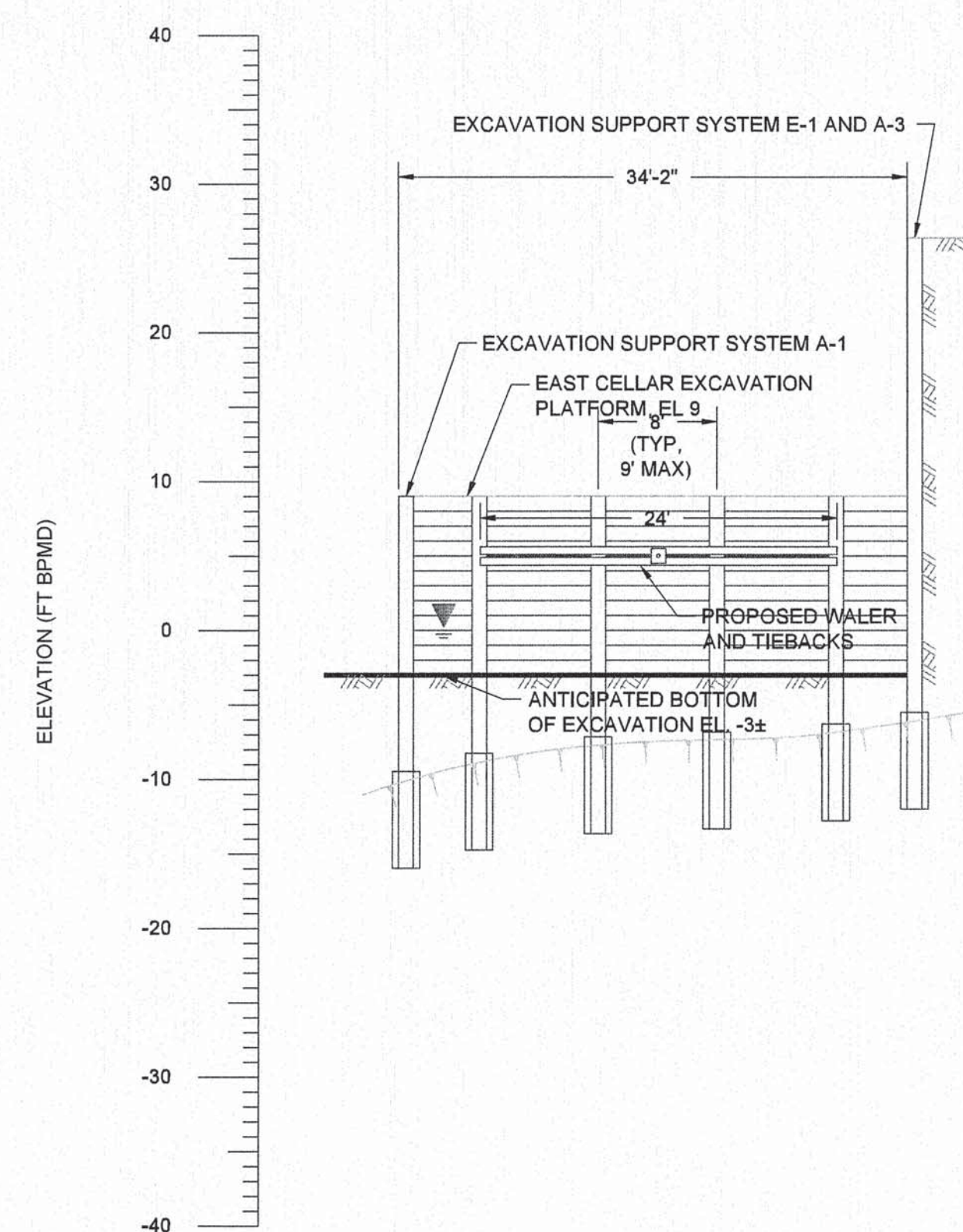
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	Revisions		

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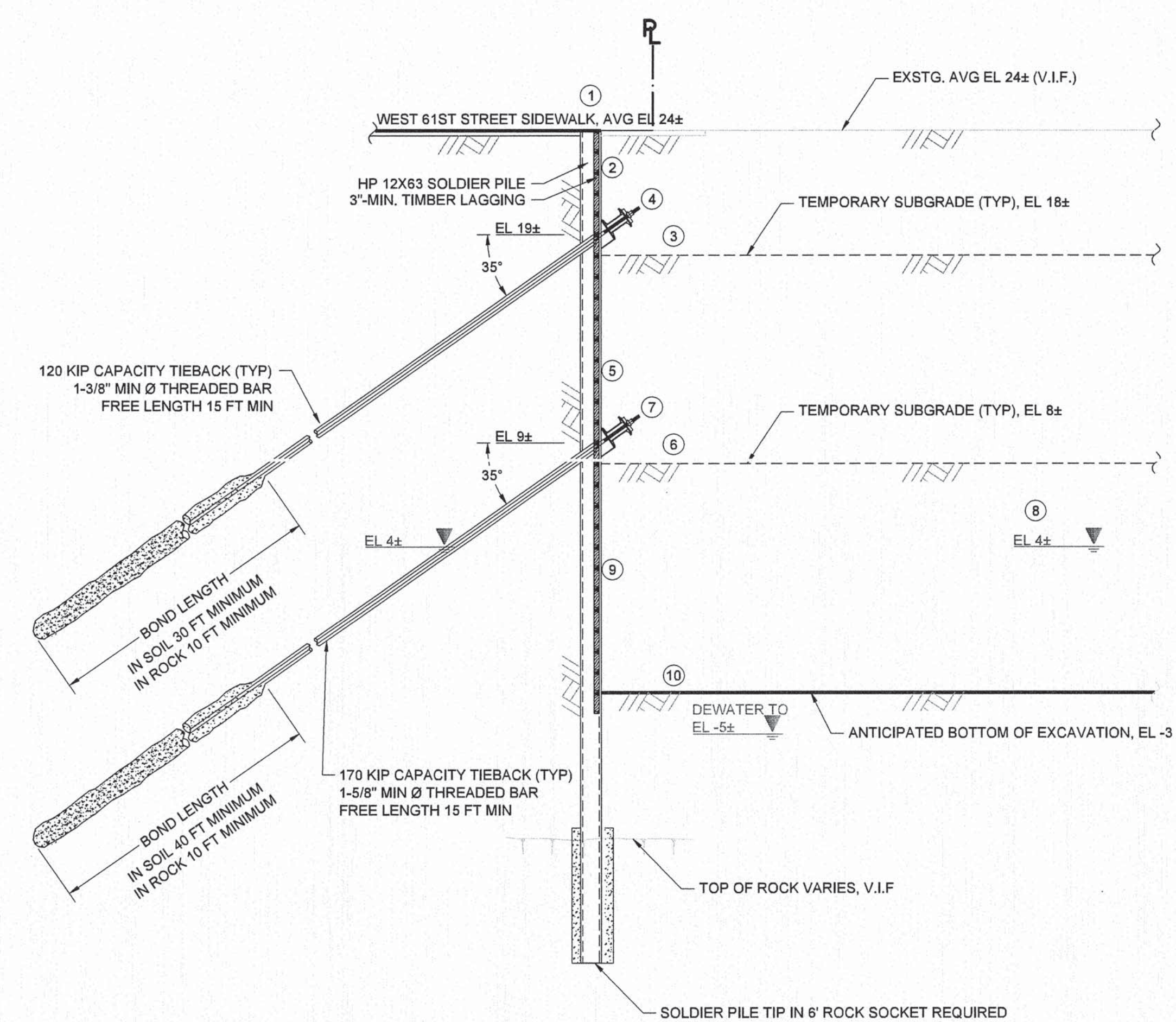
17 - 29 WEST END AVENUE RIVERSIDE CENTER, BUILDING 2 NEW YORK
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Drawing Title EXCAVATION SUPPORT ELEVATIONS, CROSS-SECTIONS AND SEQUENCE
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Project No. 170201301	Drawing No.
Date 08/21/2012	Scale AS SHOWN
Drn. By LFP	SOE-003
Last Revised 08/21/2012	2 Of 6

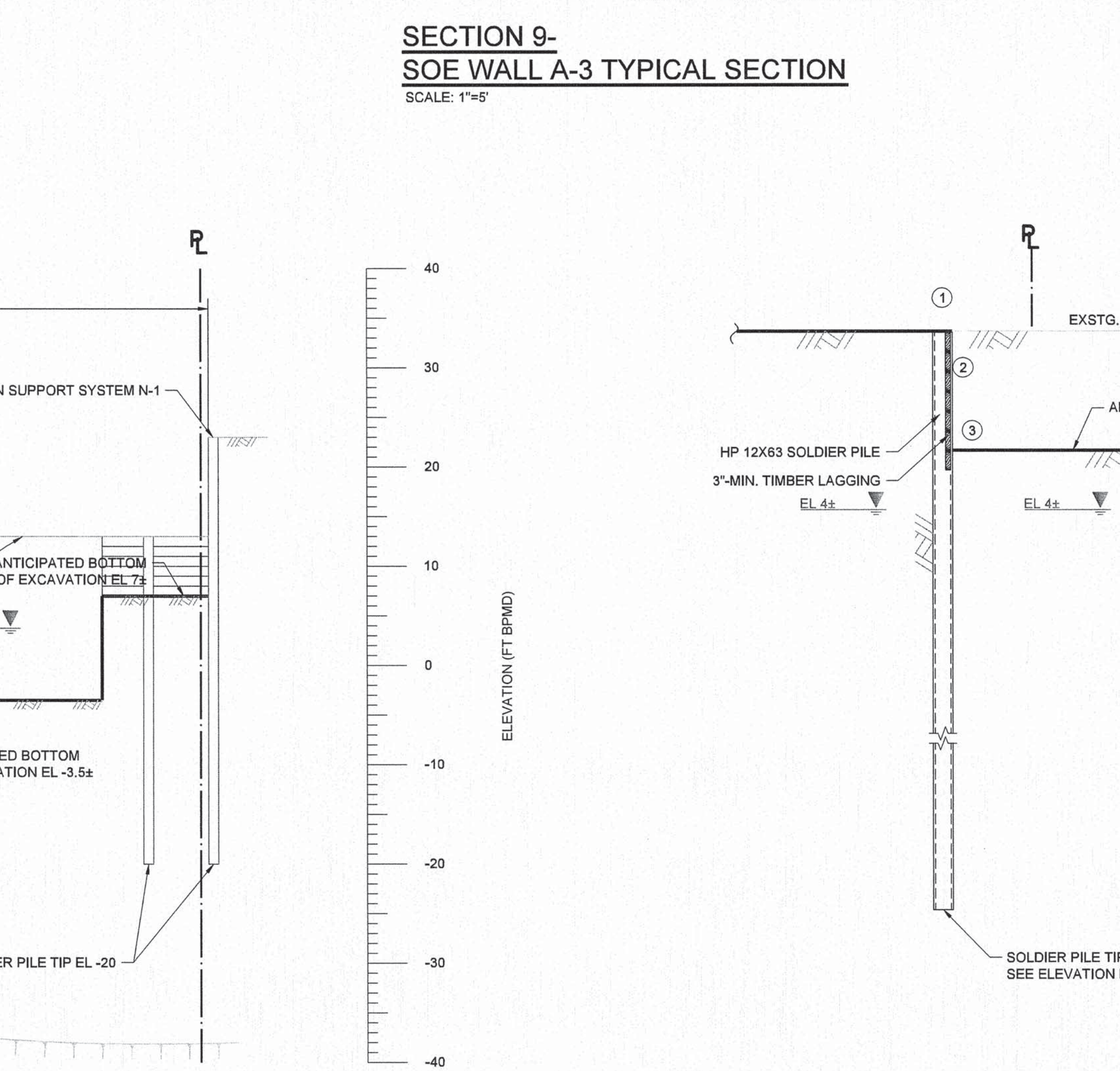


SOE WALL A-2 ELEVATION (FACING NORTH)
SCALE: 1"=10'



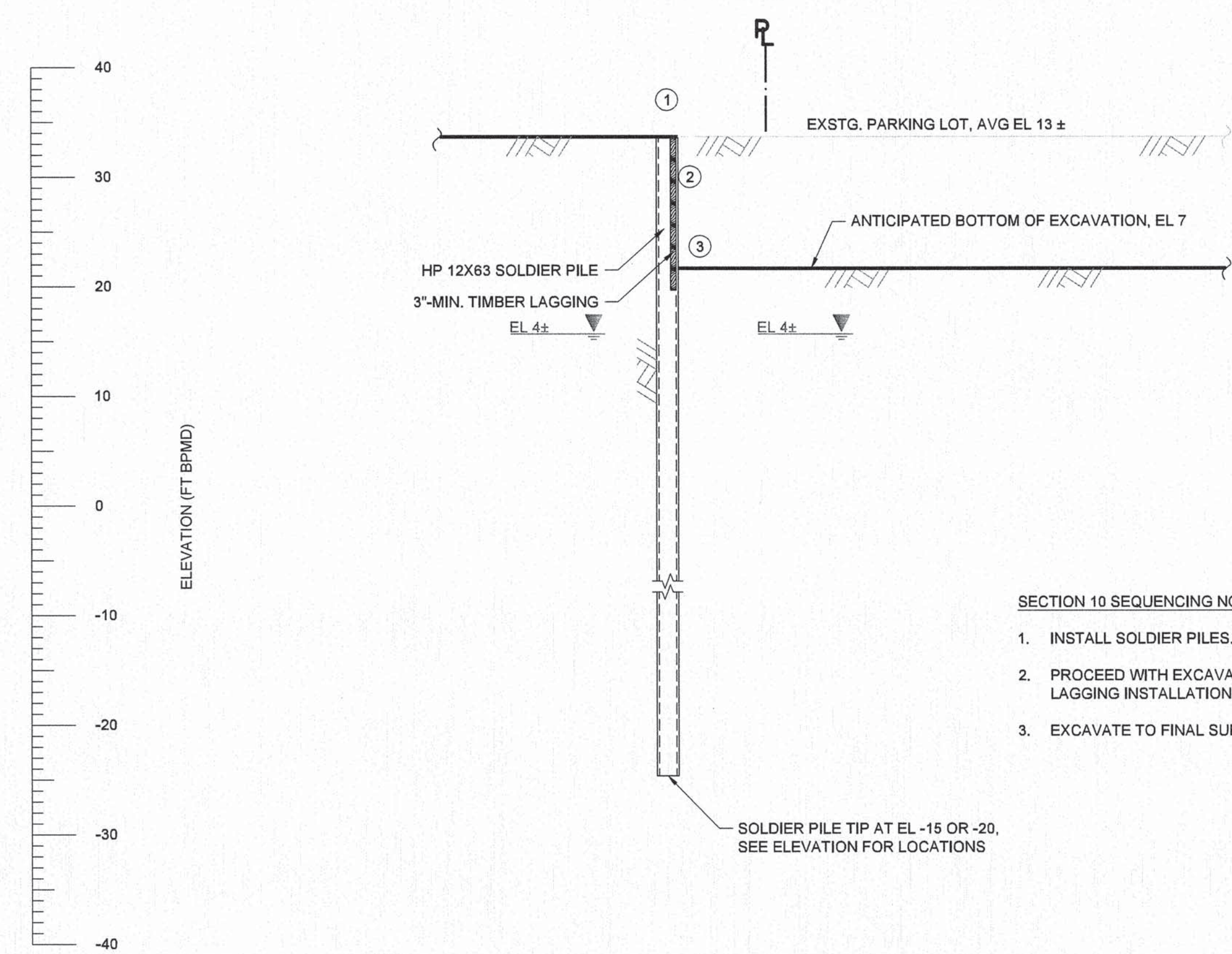
SECTION 9 SEQUENCING NOTES:

1. INSTALL SOLDIER PILES.
2. PROCEED WITH EXCAVATION AND LAGGING INSTALLATION.
3. EXCAVATE TO TEMPORARY SUBGRADE AT EL. 9.
4. INSTALL TIEBACKS AT EL. 19.
5. PROCEED WITH EXCAVATION AND LAGGING INSTALLATION.
6. EXCAVATE TO TEMPORARY SUBGRADE AT EL. 9.
7. INSTALL TIEBACKS AT EL. 9.
8. DEWATER TO 2 FEET BELOW ADVANCE OF EXCAVATION AT ALL TIMES.
9. PROCEED WITH EXCAVATION AND LAGGING INSTALLATION.
10. EXCAVATE TO FINAL SUBGRADE AT EL. -3.



SECTION 10 SEQUENCING NOTES:

1. INSTALL SOLDIER PILES.
2. PROCEED WITH EXCAVATION AND LAGGING INSTALLATION.
3. EXCAVATE TO FINAL SUBGRADE AT EL



SECTION 10 SEQUENCING NOTES:

1. INSTALL SOLDIER PILES.
2. PROCEED WITH EXCAVATION AND LAGGING INSTALLATION.
3. EXCAVATE TO FINAL SUBGRADE AT EL

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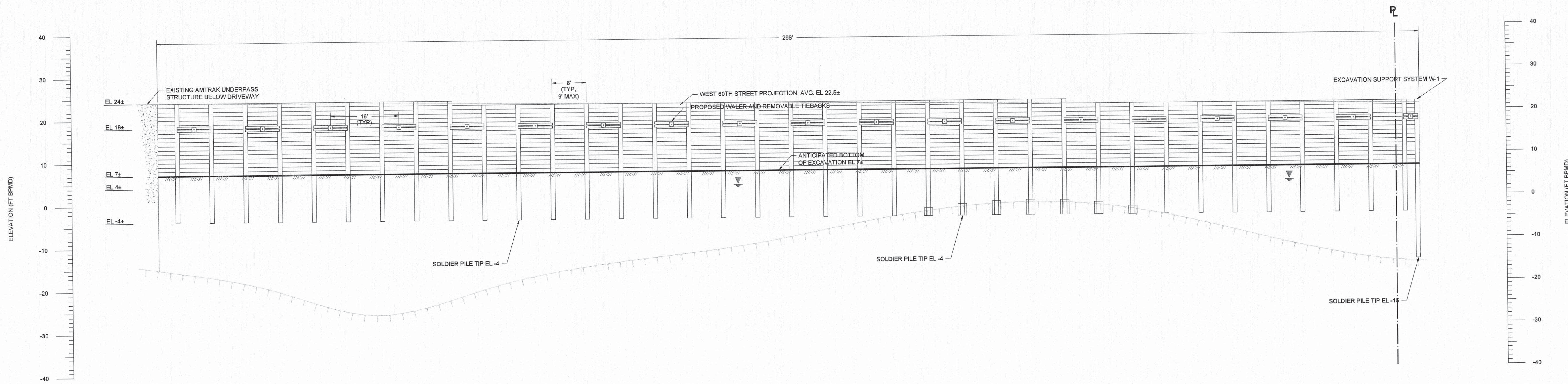
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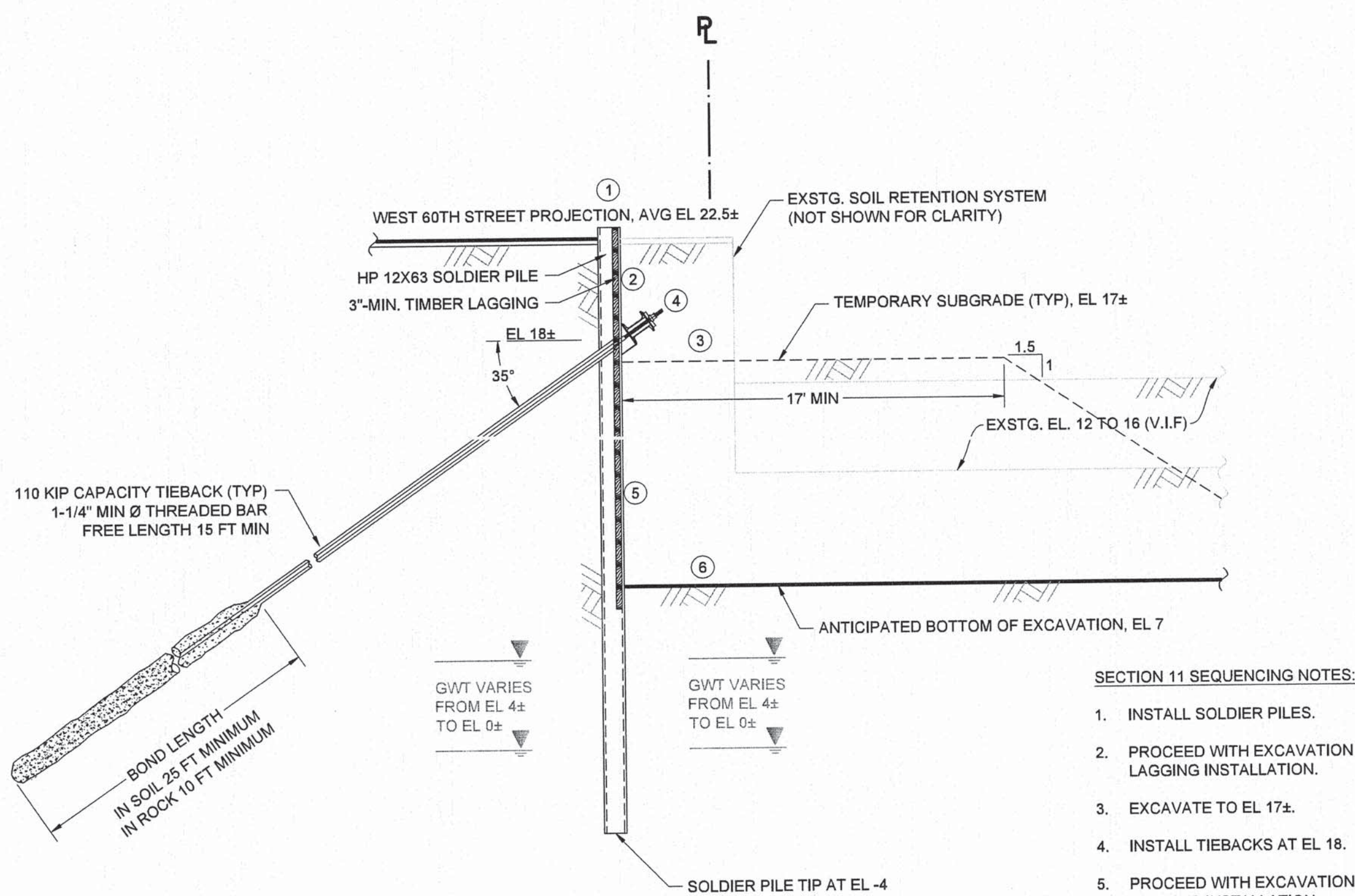
Drawing Title

**EXCAVATION SUPPORT
ELEVATIONS,
CROSS-SECTIONS AND
SEQUENCE**

Project No.	170201301	Drawing No.
Date	08/21/2012	
Scale	AS SHOWN	
Dwn. By	LFP	
Last Revised	08/21/2012	2 Of 6



SOE WALL S-1 ELEVATION (FACING SOUTH)
SCALE: 1"=10'



SECTION 11: SOE WALL S-1 TYPICAL SECTION
SCALE: 1"=8'

SOLDER PILE, GRADE				LAGGING		TIEBACK						WALER
DESIGN CASE	SPACING (FT)	PILE SIZE	MINIMUM TIP ELEVATION	THICKNESS (IN)	ELEVATION (FT, BPMVD)	DESIGN LOAD (KIPS)	SPACING (FT)	MINIMUM FREE LENGTH (FT)	MINIMUM BOND LENGTH (FT)	ANGLE	MINIMUM THREADBAR DIA. (IN)	WALER SIZE
N-1	8	HP12x63	EL -20 OR 6 FT ROCK SOCKET	3	+18	110	16	60	Soli: 25 Rock: 10	35	1-1/4"	2 C15x33.9
N-2	8	HP12x63	EL -2	3	+19	110	16	15	Soli: 25 Rock: 10	35	1-1/4"	2 C15x33.9
E-1	8	HP12x63	EL -2	3	+19	110	16	15	Soli: 25 Rock: 10	35	1-1/4"	2 C15x33.9
A-1	8	HP12x63	6 FT ROCK SOCKET	3	+5	170	16	15	Soli: 40 Rock: 10	35	1-5/8"	2 C15x33.9 (24 FT LONG)
A-2	8	HP12x63	6 FT ROCK SOCKET	3	+5	170	16	15	Soli: 40 Rock: 10	35	1-5/8"	2 C15x33.9 (24 FT LONG)
A-3	8	HP12x63	6 FT ROCK SOCKET	3	+19	120	16	15	Soli: 30 Rock: 10	35	1-3/8"	2 C15x33.9
		HP12x63	6 FT ROCK SOCKET	3	+9	170	16	15	Soli: 40 Rock: 10	35	1-5/8"	2 C15x33.9
S-1	8	HP12x63	EL -4	3	+18 R	110	16	15	Soli: 25 Rock: 10	35	1-1/4"	2 C15x33.9
W-1	8	HP12x63	EL -15, EL -20	3	--	--	--	--	--	--	--	--

R= REMOVABLE ANCHOR

SOLDIER PILE AND LAGGING WALL MEMBER SIZE SCHEDULE

	SHEET PILE, GRADE 50					TIEBACK				WALER	
DESIGN CASE	PILE SIZE	MINIMUM TIP ELEVATION	ELEVATION (FT, BPMVD)	DESIGN LOAD (KIPS)	SPACING (FT)	MINIMUM FREE LENGTH (FT)	MINIMUM BOND LENGTH (FT)	ANGLE	MINIMUM THREADBAR DIA. (IN)	WALER SIZE	MINIMUM WALER LENGTH (FT)
P-1 PERIMETER	AZ 25	El -31	+5 R	145	8.25	45	Soil: 35; Rock: 10	35	1-3/8"	2	C15x33.9
P-1 INTERNAL	AZ 12	El -31	+5	75	8.85	45	Soil: 30; Rock: 10	35	1"	3	C15x33.9
P-2 PERIMETER	AZ 25	TOP OF ROCK	+8 R	120	8.25	20	Soil: 30; Rock: 10	35	1-3/8"	2	C15x33.9
P-2 INTERNAL	AZ 12	TOP OF ROCK	--	--	--	--	--	--	--	--	--

R= REMOVABLE ANCHOR

SHEET PILE WALL MEMBER SIZE SCHEDULE

TIE-BACK ANCHOR NOTES:

- MATERIAL:**
 - ALL THREADBARS SHALL BE SAS STRESSTEEL (OR EQUIVALENT), CONFORMING TO ASTM A-722.
 - PLATES SHALL CONFORM TO ASTM A-36.
 - NUTS & COUPLERS SHALL BE CAPABLE OF DEVELOPING 100% OF THE ULTIMATE STRENGTH OF THREADBAR.
 - CARE SHALL BE TAKEN NOT TO DAMAGE THE THREADBARS. THE BARS SHALL BE KEPT FREE OF DIRT OR OTHER DELETERIOUS SUBSTANCES.
 - THREADBARS SHALL NOT BE WELDED OR USED AS A GROUND FOR WELDING.
- INSTALLATION PROCEDURE:**
 - DRILL TIE-BACK ANCHOR DRILL HOLES AT THE LOCATIONS INDICATED ON THESE DRAWINGS; REFER TO TABLE 1 ON SHEET SOE-009.00 FOR DRILL HOLE DIAMETER, DRILL HOLE ANGLE, AND MINIMUM REQUIRED DRILL HOLE LENGTH. DRILLING SHALL BE PERFORMED AS FOLLOWS:
 - NO LOSS OF GROUND DURING DRILLING SHALL BE ALLOWED. CASING SHALL BE INSTALLED TO TOP OF ROCK USING INTERNAL LIQUID FLUID FLUSH DUPLEX DRILLING TECHNIQUE. ALL DRILLING METHODS SHALL BE SUBMITTED FOR APPROVAL TO THE OWNER'S ENGINEER.
 - THE CONTRACTOR SHALL USE APPROPRIATE MEANS AND METHODS TO PREVENT SEEPAGE AND LOSS OF SOIL THROUGH THE ANNULAR SPACE BETWEEN THE STEEL SHEET PILES AND THE DRILL CASINGS. SUCH METHODS MAY INCLUDE DRILLING SOIL-CEMENT-BENTONITE COLUMNS BEHIND THE SHEET PILES, WELDING ANTI-SEEP COLLARS AT TIE-BACK ANCHOR LOCATIONS, PACKING HAY OR OTHER SUITABLE FILTER MATERIAL AROUND THE CASINGS, AND USE OF SACRIFICIAL CASINGS, ETC.
 - REJECTION OF HOLES: HOLES REJECTED BECAUSE OF NON-CONFORMANCE TO ALIGNMENT TOLERANCES OR BECAUSE THEY INTERCEPT OTHER HOLES SHALL BE FILLED WITH GROUT AND ANOTHER HOLE SHALL BE DRILLED AT THE CONTRACTOR'S EXPENSE.
 - GROUTING:
 - EACH HOLE SHALL BE CLEANED OF ALL DRILL CUTTINGS, SLUDGE, AND DEBRIS BEFORE THE DRILL HOLE IS GROUTED.
 - GROUT SHALL BE CEMENT GROUT HAVING A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI.
 - THE HOLES SHALL BE GROUTED FROM THE BOTTOM OF THE HOLE TO THE TOP WITH A TREMIE TUBE UNTIL UNCONTAMINATED GROUT RETURNS TO THE SURFACE.
 - GROUT SHALL BE PUMPED INTO THE DRILL HOLE PRIOR TO INSERTION OF THE THREADBAR.
- THREADBAR PLACEMENT:**
 - CENTRALIZERS, SPACERS OR OTHER SUITABLE CENTERING DEVICES SHALL BE PLACED AT MAXIMUM 16-FOOT INTERVALS OR IN A SUFFICIENT NUMBER TO ENSURE ADEQUATE GROUT COVER OVER THE THREADBAR ASSEMBLY THROUGHOUT THE ENTIRE THREADBAR LENGTH. CENTRALIZERS AND SPACERS MAY BE MADE OF ANY MATERIAL (EXCEPT WOOD) NOT DELETERIOUS TO THE THREADBARS OR PVC SHEATHINGS, AND SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - A SMOOTH PLASTIC TUBING, FITTING SNUGLY OVER THE THREADBAR, SHALL BE PROVIDED IN THE FREE STRESSING LENGTH OF THE TIE-BACK ANCHORS AND SHALL GUARANTEE UNOBSTRUCTED ELONGATION DURING STRESSING.
 - THREADBAR CENTERLINES SHALL BE NORMAL TO THE BEARING PLATES.
- CASING WITHDRAWAL:**
 - AFTER THREADBAR INSERTION, THE CASING SHALL BE WITHDRAWN WHILE SIMULTANEOUSLY PRESSURE GROUTING. THE MINIMUM GROUT PRESSURE SHALL BE 1 PSI PER FOOT OF EMBEDMENT BELOW GROUND SURFACE.
 - THE CONTRACTOR MAY CHOOSE TO LEAVE THE END SECTION OF THE CASING IN THE HOLE IN ORDER TO PREVENT SEEPAGE AND GROUND LOSS FROM AROUND THE THREADBAR.
- TIE-BACK ANCHOR TESTING:**
 - TEN PERCENT (10%) OF THE TIE-BACK ANCHORS SHALL BE PERFORMANCE TESTED. ALL OTHER ANCHORS SHALL BE PROOF TESTED USING A CALIBRATED CENTER HOLE JACK.
 - PERFORMANCE AND PROOF TESTING SHALL BE AS FOLLOWS:

PERFORMANCE TEST: AL, 25P, 50P, 75P, 100P, 120P, 133P

HOLD 1.33P FOR CREEP TEST. RECORD MOVEMENTS USING A DIAL INDICATOR CAPABLE OF READING INCREMENTS OF 0.001-INCH. RECORD READINGS AT 0, 1, 2, 3, 4, 5, 6 AND 10 MINUTES. IF THE INCREMENTAL MOVEMENT IS GREATER THAN 0.04-INCH, HOLD FOR AN ADDITIONAL 50 MINUTES AND TAKE READINGS IN 10 MINUTE INTERVALS. RELEASE TO ALIGNMENT LOAD, RE-STRESS TO TRANSFER LOAD, AND LOCK OFF ANCHOR NUT. PERFORM A LIFT-OFF TEST TO CONFIRM THE ACTUAL LOCK-OFF LOAD IS WITHIN 5% OF THE DESIGN LOCK-OFF LOAD.

PROOF TEST: AL, 25P, 50P, 75P, 100P, 120P, 133P. HOLD 1.33P FOR CREEP TEST. RECORD MOVEMENTS USING A DIAL INDICATOR CAPABLE OF READING INCREMENTS OF 0.001-INCH. RECORD READINGS AT 0, 1, 2, 3, 4, 5, 6 AND 10 MINUTES. IF THE INCREMENTAL MOVEMENT IS GREATER THAN 0.04-INCH, HOLD FOR AN ADDITIONAL 50 MINUTES AND TAKE READINGS IN 10 MINUTE INTERVALS. RELEASE TO ALIGNMENT LOAD, RE-STRESS TO TRANSFER LOAD, AND LOCK OFF ANCHOR NUT. PERFORM A LIFT-OFF TEST TO CONFIRM THE ACTUAL LOCK-OFF LOAD IS WITHIN 5% OF THE DESIGN LOCK-OFF LOAD.
 - ACCEPTANCE: IF THE INCREMENTAL MOVEMENT BETWEEN 0 AND 10 MINUTES IS LESS THAN 0.04-INCH OR THAT BETWEEN 10 AND 60 MINUTES IS LESS THAN 0.08-INCH, THE ANCHOR SHALL BE ACCEPTED.
 - REJECTED ANCHORS SHALL BE ABANDONED AND REPLACEMENT ANCHORS DRILLED AT CONTRACTOR'S EXPENSE.

MONITORING NOTES

- PROVIDE MONITORING OF S.O.E. WALL MOVEMENTS, GROUNDWATER LEVELS, AND PUMPING FLOW RATES AS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

THE MONITORING PROGRAM SHALL CONSIST OF:

 - OPTICAL SURVEY MONITORING POINTS.
 - SEISMOGRAPHS
 - WATER LEVEL READINGS DURING EXCAVATION AND DEWATERING OPERATIONS.
- PRIOR TO ANY SITE EXCAVATION BELOW EXISTING GRADE:
 - ESTABLISH SURVEY BASELINES FOR ADJACENT BUILDINGS AND INFRASTRUCTURE.
 - SUBMIT SAMPLE BASELINE LAYOUT AND SAMPLE DATA REPORT FORMS FOR APPROVAL.
- MONITORING FREQUENCY: CONTRACTOR SHALL TAKE AND RECORD ALL READINGS ON A DAILY BASIS. MONITORING SHALL CONTINUE UNTIL COMPLETION OF THE PERMANENT CELLAR AND GROUND FLOOR SLABS.
- ALERT LEVELS: SHOULD ANY OF THE FOLLOWING MAGNITUDES OF MOVEMENT BE DETECTED, THE CONTRACTOR SHALL IMMEDIATELY TAKE REMEDIAL ACTION AND ADVISE THE ENGINEER.
 - MONITORING POINTS: 0.25 INCHES TOTAL LATERAL MOVEMENT OR 0.0625 INCHES LATERAL MOVEMENT BETWEEN READINGS, 0.375 INCHES TOTAL VERTICAL MOVEMENT OR 0.0625 INCHES VERTICAL MOVEMENT BETWEEN READINGS.
 - VIBRATION: PEAK PARTICLE VELOCITIES EXCEEDING 2-INCHES PER SECOND.
 - WATER LEVEL: 2 FT INCREASE OR DECREASE IN ANY MEASUREMENT AFTER PUMPING HAS STABILIZED AT ANY TEMPORARY SUBGRADE DURING EXCAVATION.
- THE CONTRACTOR WILL DETERMINE IF CONTINGENCY PLANS ARE NECESSARY.
- IN THE EVENT THAT MONITORING INDICATES MOVEMENT EXCEEDS THE ABOVE DEFINED ALERT LEVELS (LATERAL OR VERTICAL), THE CONTRACTOR SHALL CEASE EXCAVATION AND PROVIDE STABILIZATION OF THE EXCAVATION SUPPORT SYSTEM VIA INSTALLATION OF TEMPORARY EARTHEN BERMIS AND/OR ADDITIONAL BRACING. ADDITIONAL EXCAVATION ACTIVITIES SHALL NOT PROCEED WITHOUT THE AUTHORIZATION OF THE OWNER'S ENGINEER.
- ALL SURVEY MONITORING POINTS SHALL BEAR A UNIQUE IDENTIFICATION. AS-BUILT PLANS SHALL BE PREPARED FOR ALL SURVEY MONITORING POINTS INSTALLED. PLANS SHALL BE AMENDED AS REQUIRED DURING CONSTRUCTION FOR THE ABANDONMENT, REPLACEMENT, OR ADDITION OF NEW SURVEY MONITORING LOCATIONS.
- THE CONTRACTOR SHALL PERFORM VIBRATION MONITORING DURING ALL OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE MAXIMUM PERMISSIBLE VIBRATION LEVEL (PPV) OF ALL CONSTRUCTION ACTIVITIES SHALL BE 0.5-INCHES PER SECOND AS MEASURED AT THE PROJECT SITE PERIMETER. THRESHOLD TRIGGER VALUES FOR GEOPHONES SHALL BE SET TO A MAXIMUM OF 0.125-INCHES PER SECOND.
- INSTALL SURVEY MONITORING POINTS AT LOCATIONS DETERMINED IN CONSULTATION WITH THE OWNER'S ENGINEER.
- INSTALL GROUNDWATER MONITORING WELLS AT LOCATIONS TO BE COORDINATED WITH THE OWNER'S ENGINEER.
- INSTALL SEISMOGRAPHS AT LOCATIONS DETERMINED IN CONSULTATION WITH THE OWNER'S ENGINEER.

NOTES:

- SURFACE ELEVATIONS WERE OBTAINED FROM A SURVEY PROVIDED BY EXTELL TO MUESER RUTLEDGE CONSULTING ENGINEERS AND REPRODUCED IN THE "SUBSURFACE INVESTIGATION REPORT" BY MUESER RUTLEDGE CONSULTING ENGINEERS DATED 14 SEPTEMBER 2011. THIS INFORMATION IS SUBJECT TO VERIFICATION IN THE FIELD.
- ON-SITE TOP OF ROCK ELEVATIONS INDICATED ON THE DRAWINGS ARE INFERRED BASED ON TOP OF ROCK OBSERVED IN DRILLED BORING LOCATIONS. THE ACTUAL TOP OF ROCK MAY VARY IN THE FIELD.
- REFER TO SHEETS SOE-001 FOR PLAN VIEW AND SOE-006 FOR DETAILS.

Maria-Teresa Fernandez
Building
APPROVED
Under Directive 2 of 1975
Date/Time: Dec 7, 2012 - 3:53 PM
NYC Development Hub

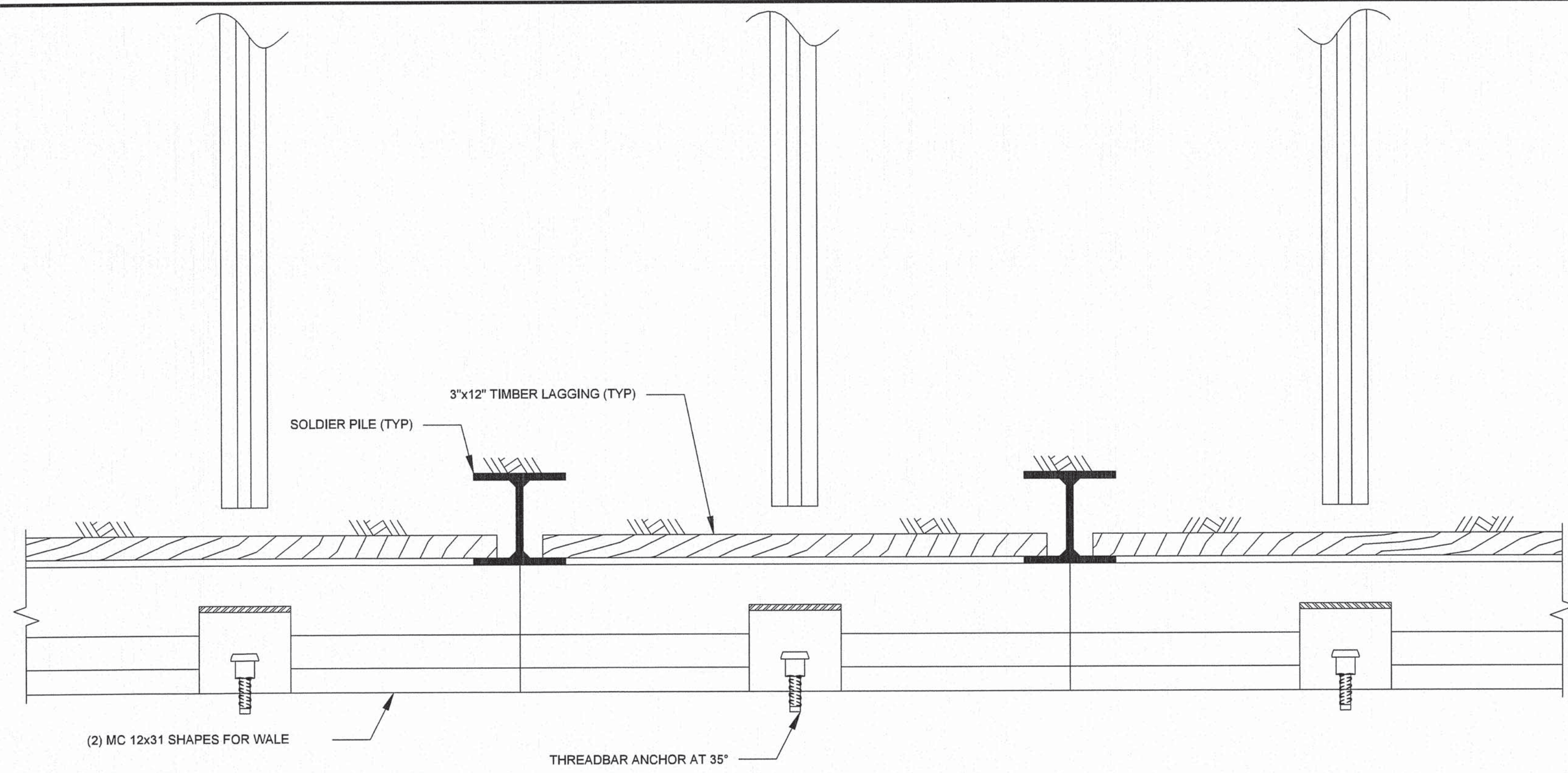
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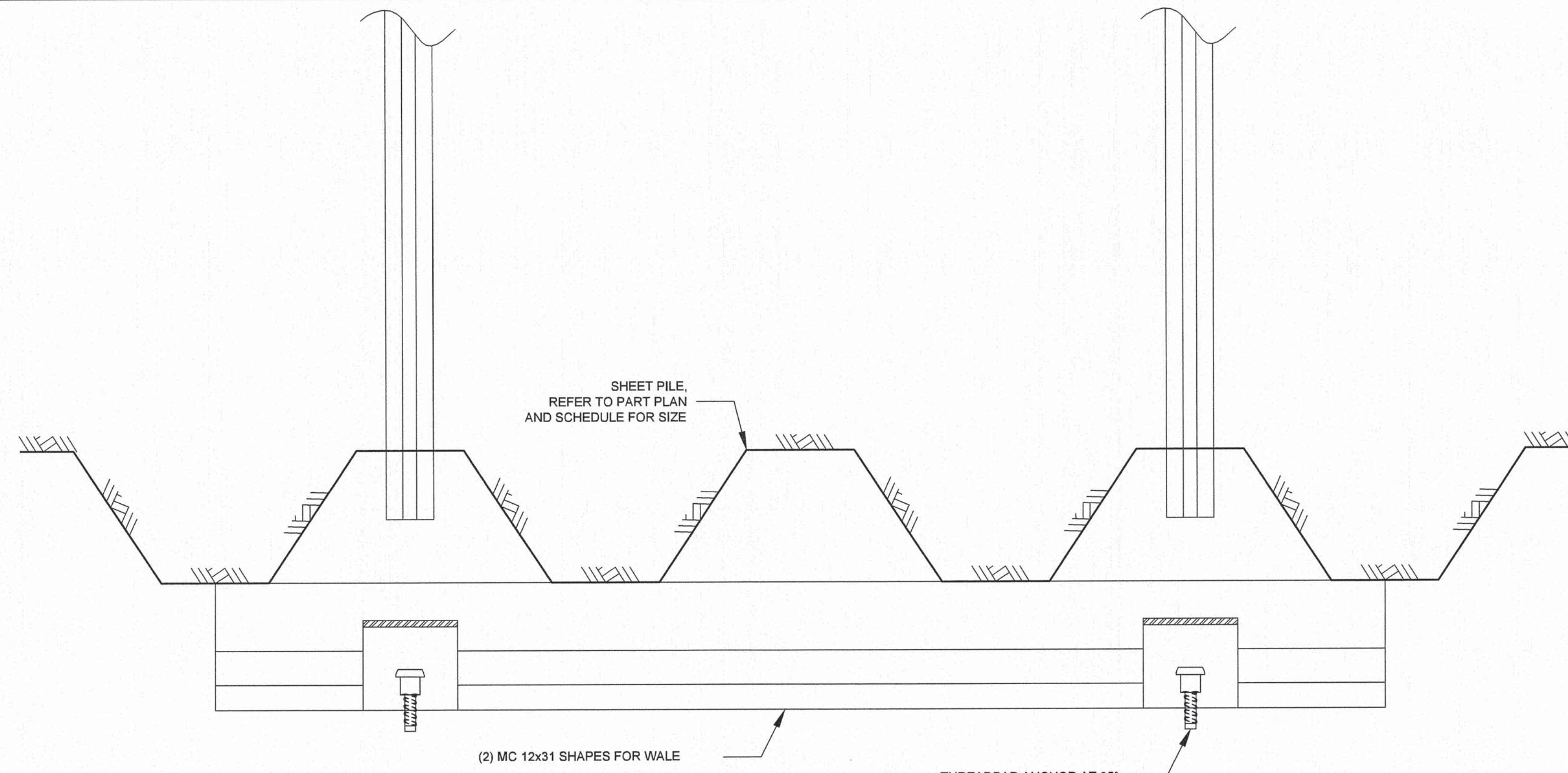
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RIVERSIDE CENTER, BUILDING 2
NEW YORK

Drawing Title
EXCAVATION SUPPORT ELEVATIONS, CROSS-SECTIONS AND SEQUENCE

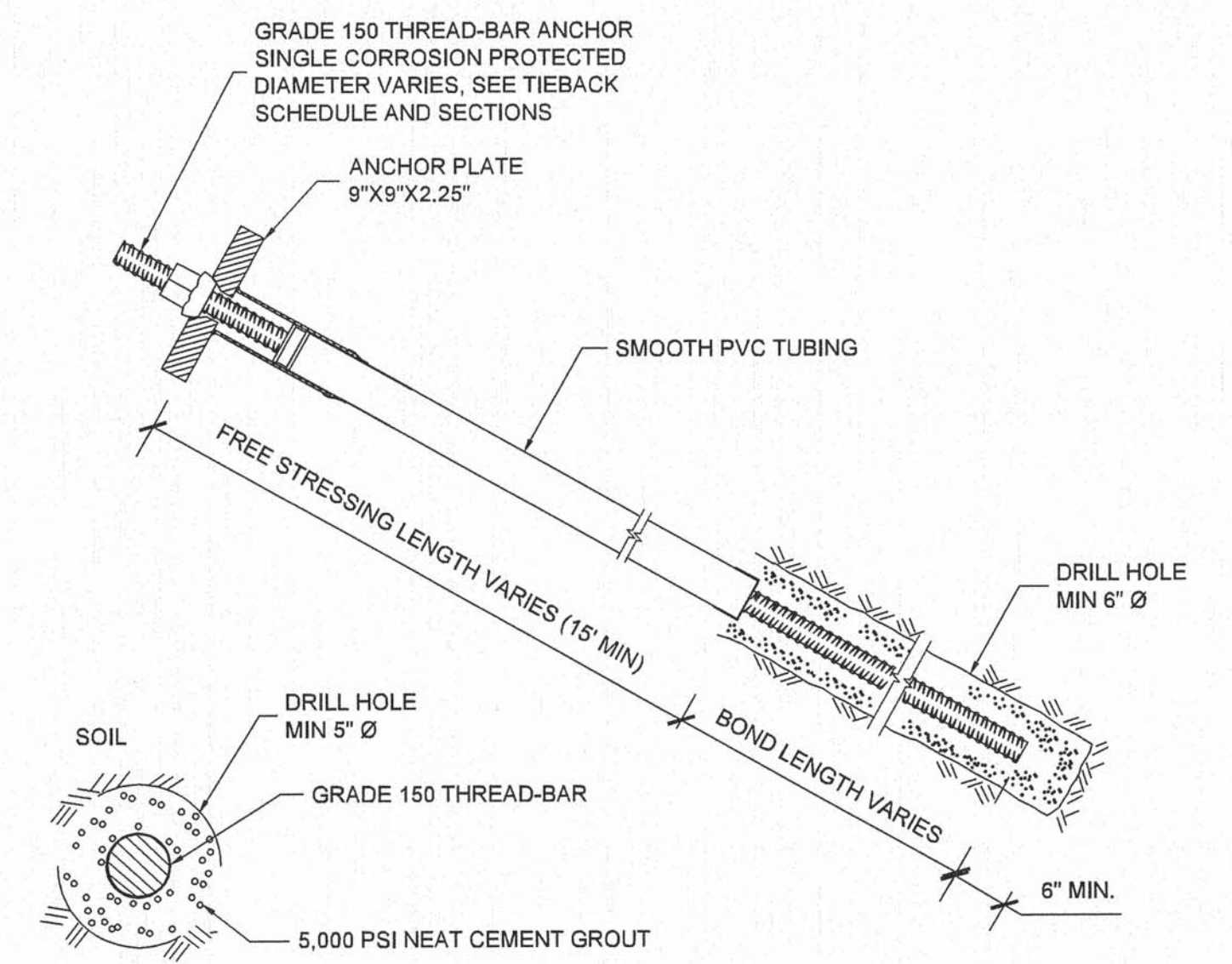
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Last Revised 08/21/2012
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2 OF 6



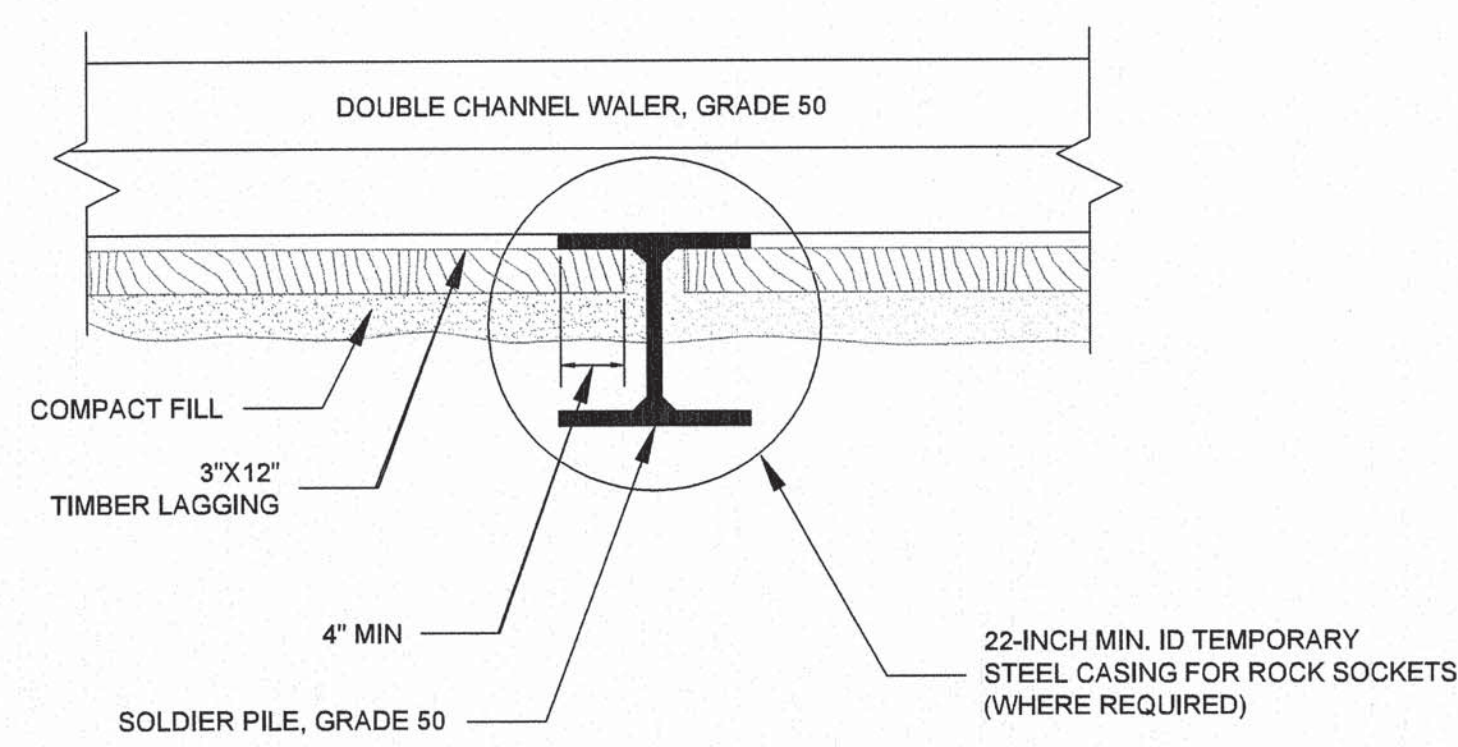
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NOT TO SCALE



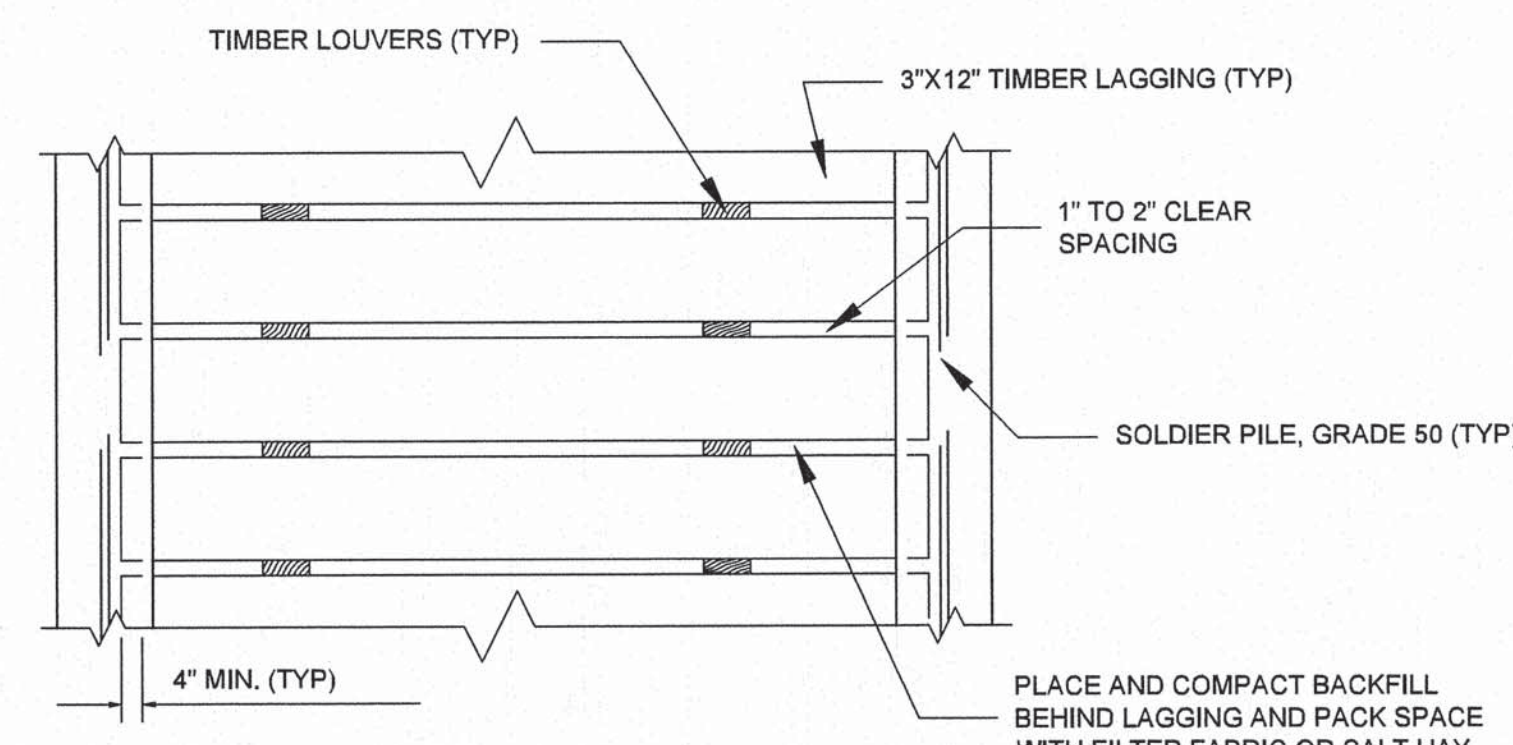
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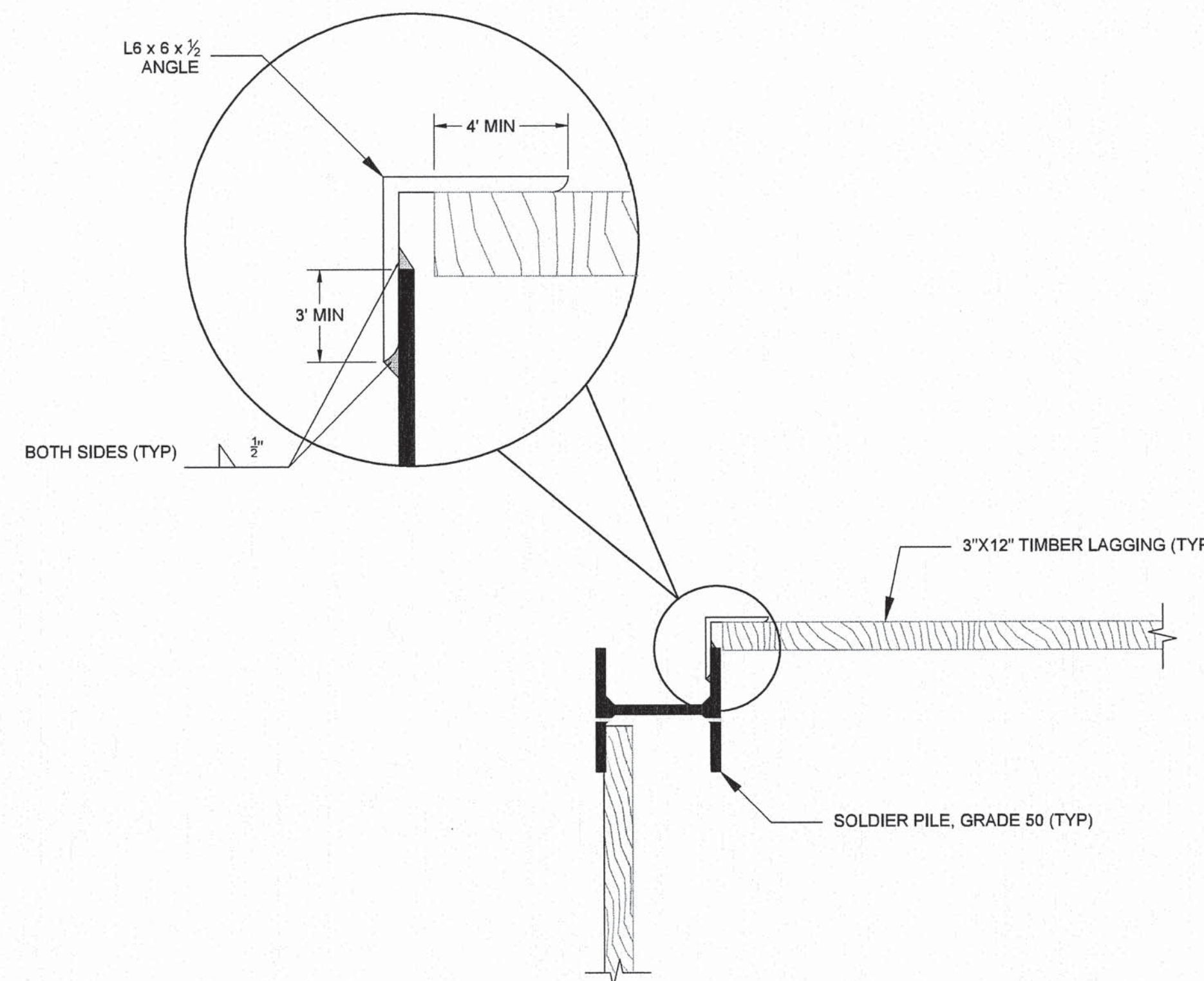
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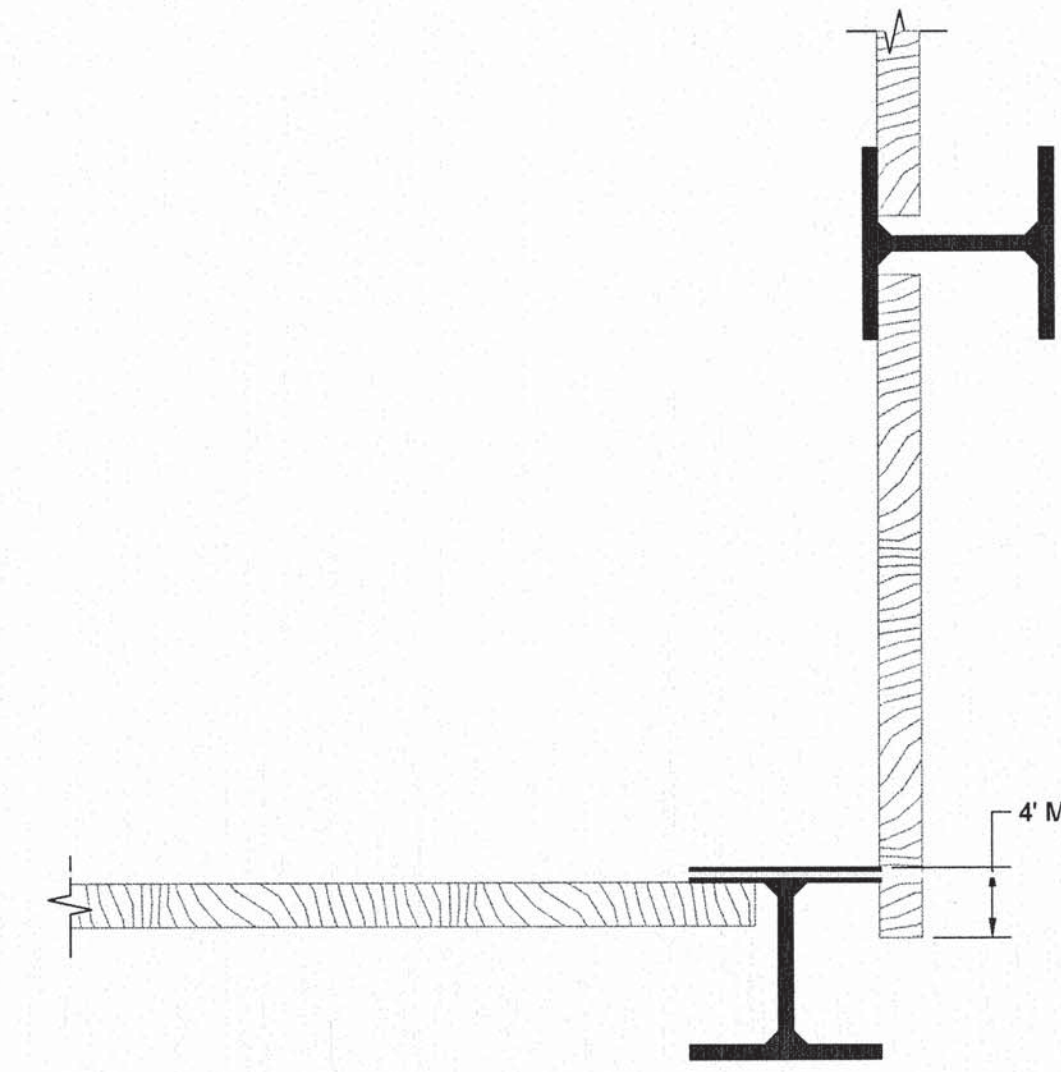
DETAIL 4: SOLDIER PILE CLOSE-UP
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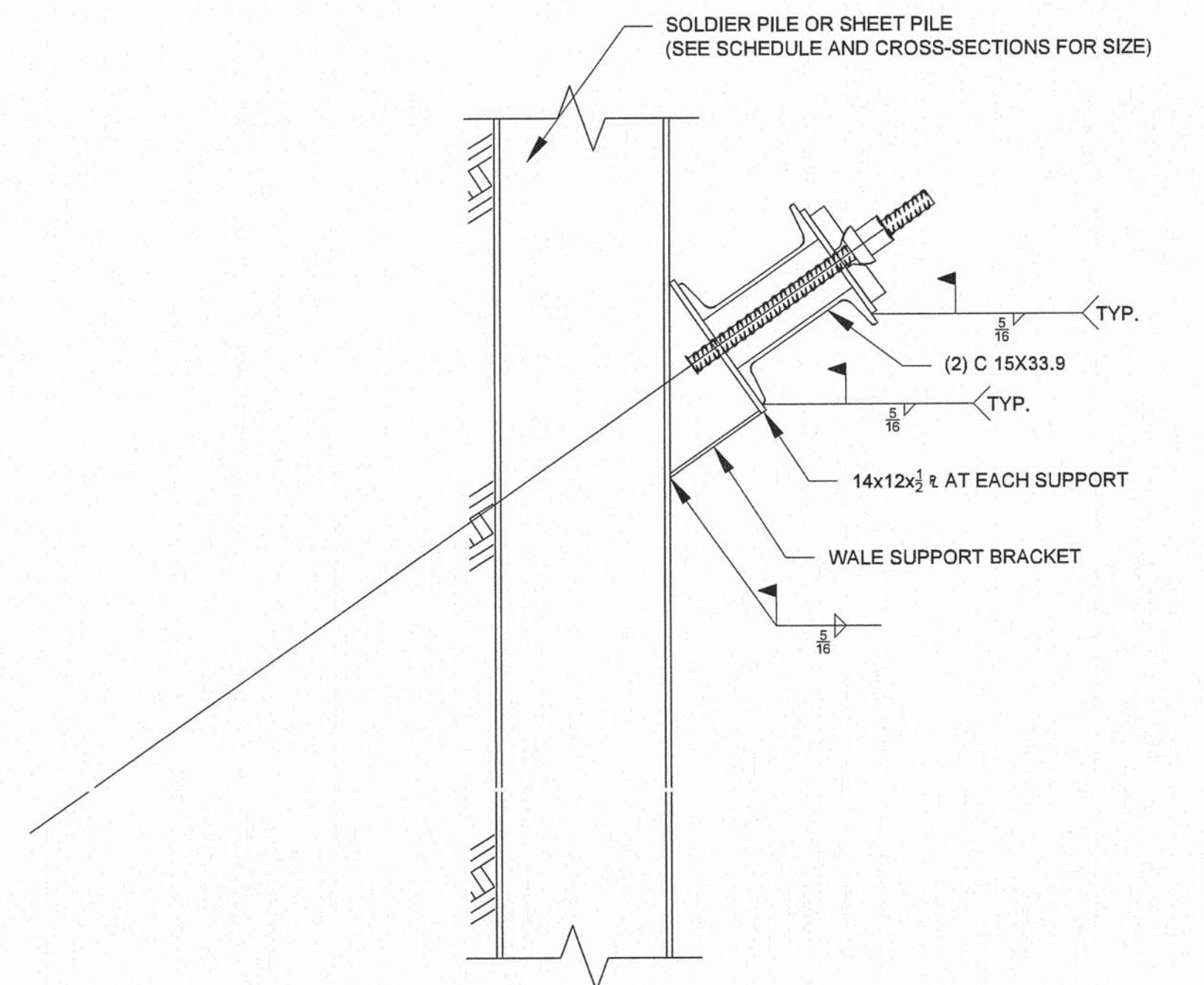
DETAIL 5: LAGGING INSTALLATION
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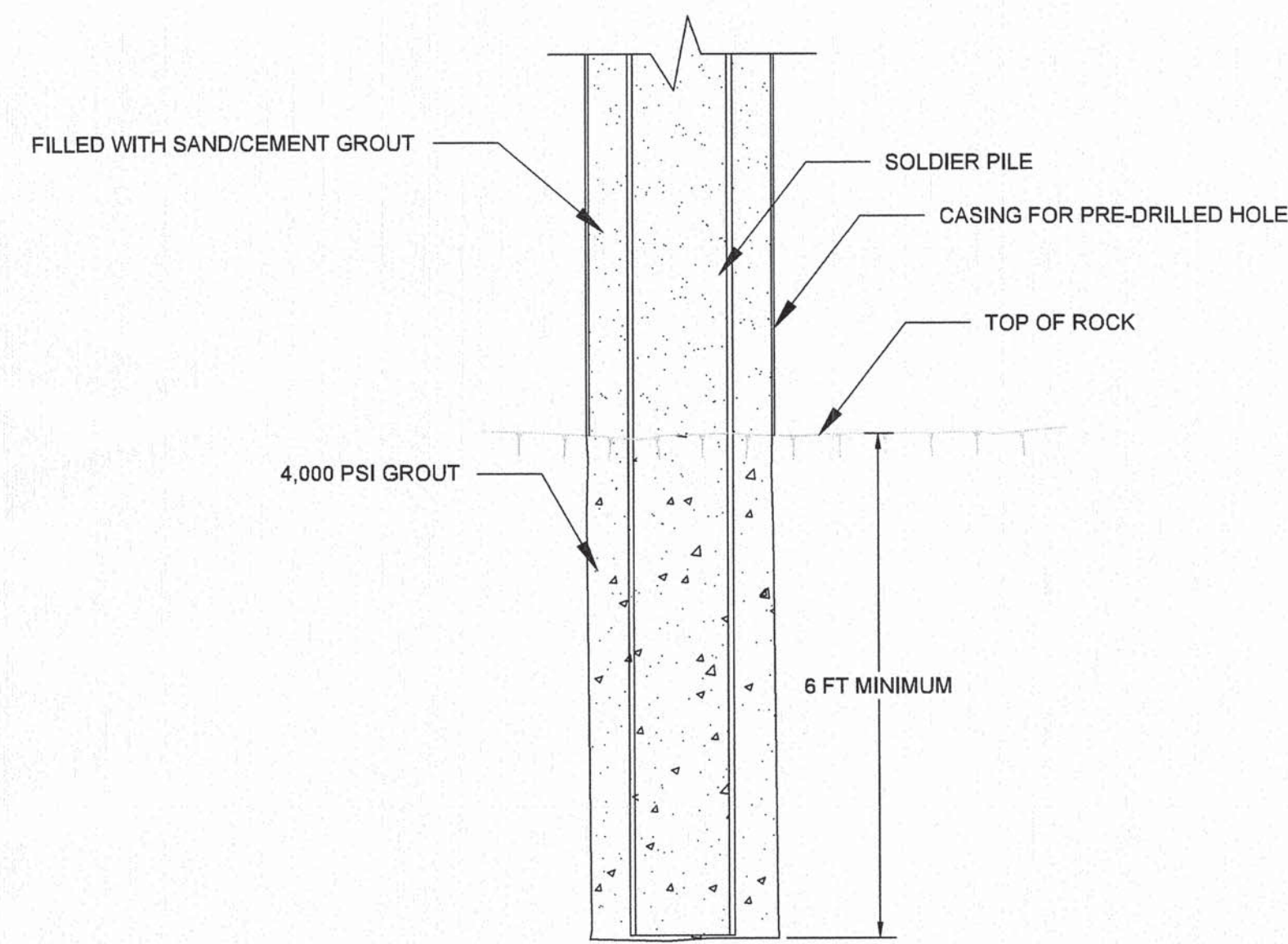
DETAIL 6: EXTERIOR CORNER DETAIL (TYP)
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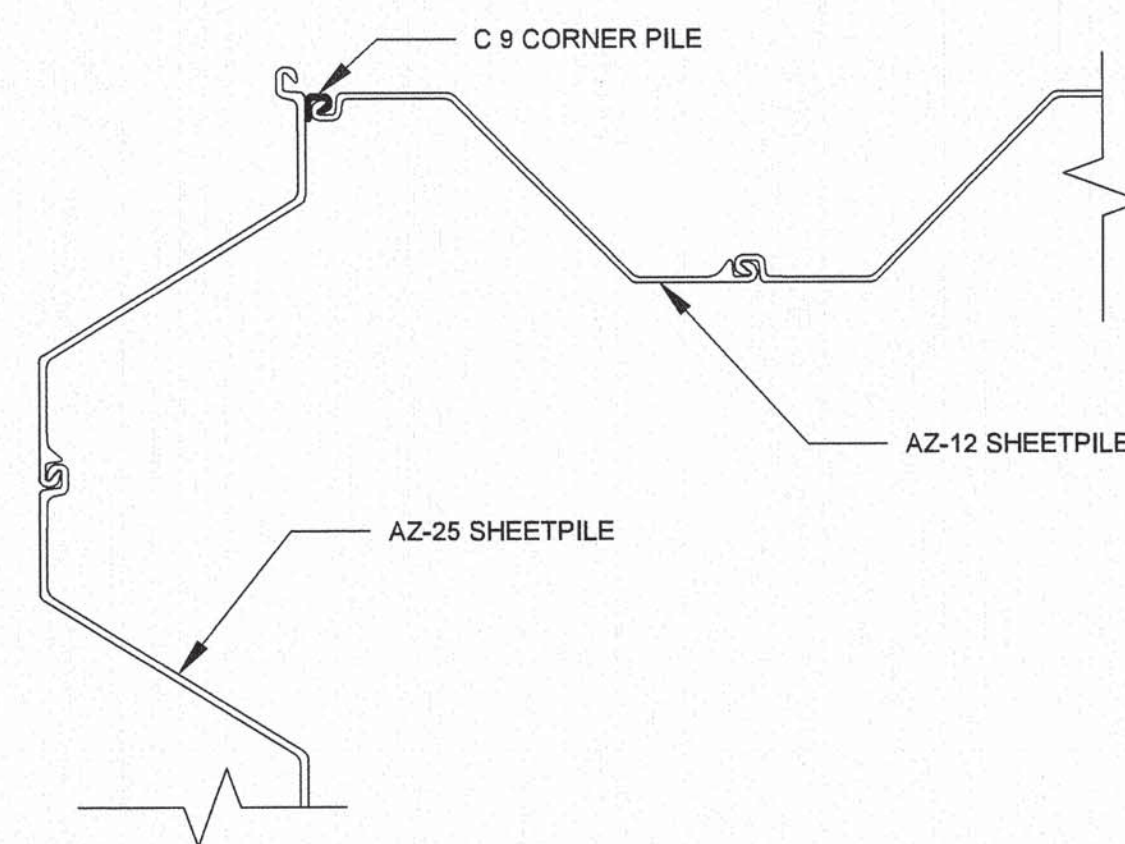
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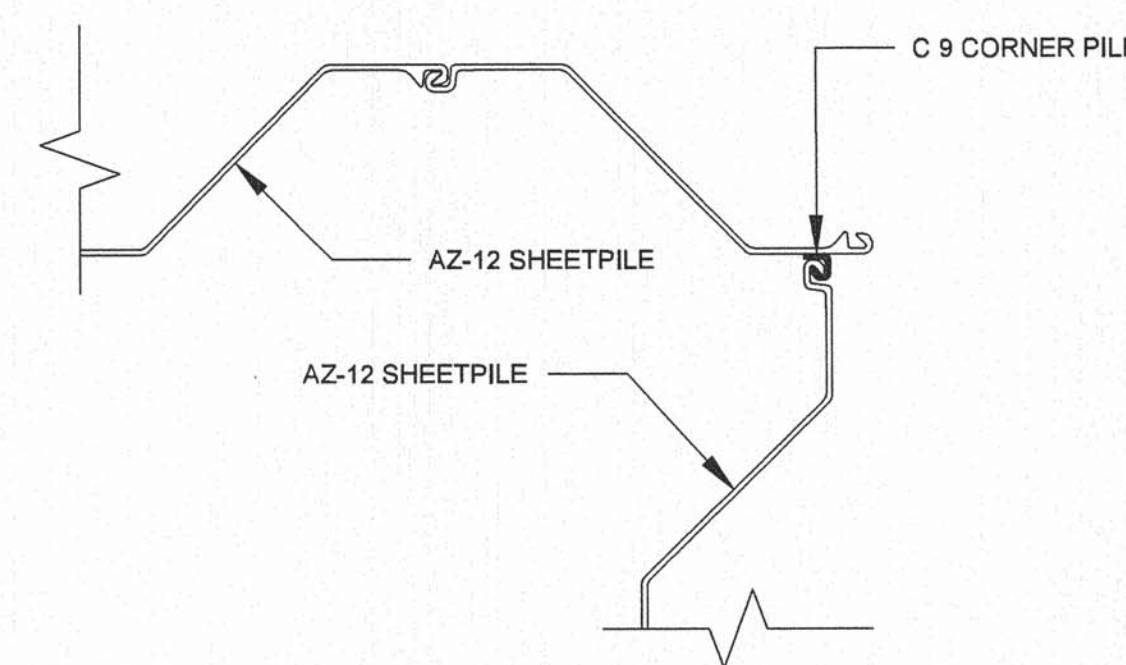
DETAIL 8: TIEBACK SUPPORT
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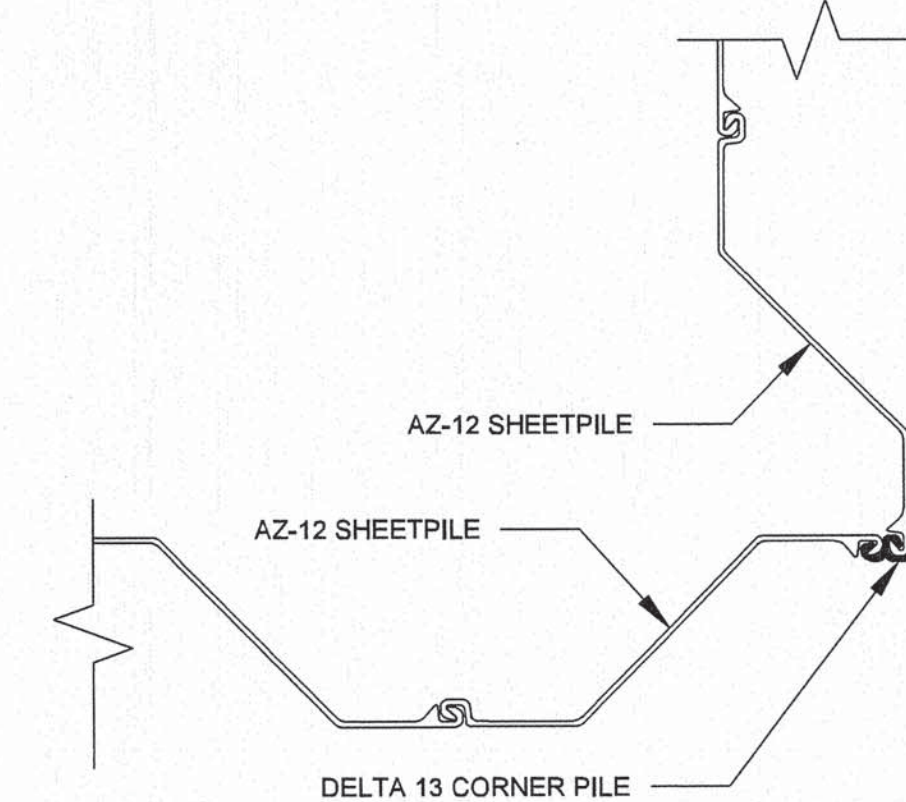
DETAIL 9: TYPICAL ROCK SOCKET
NOT TO SCALE



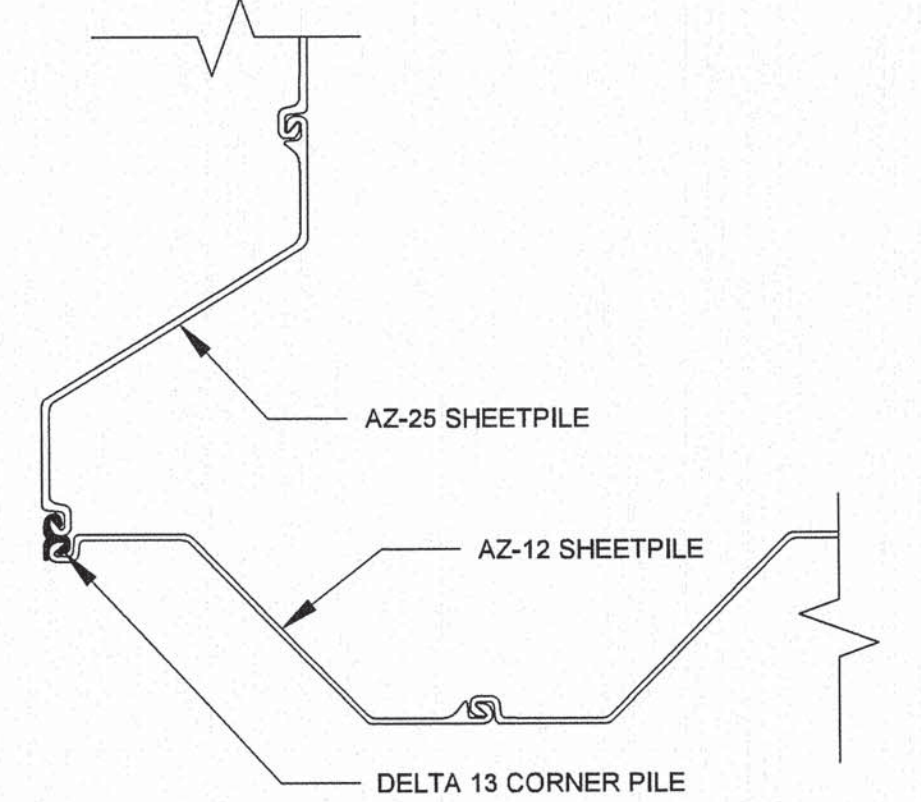
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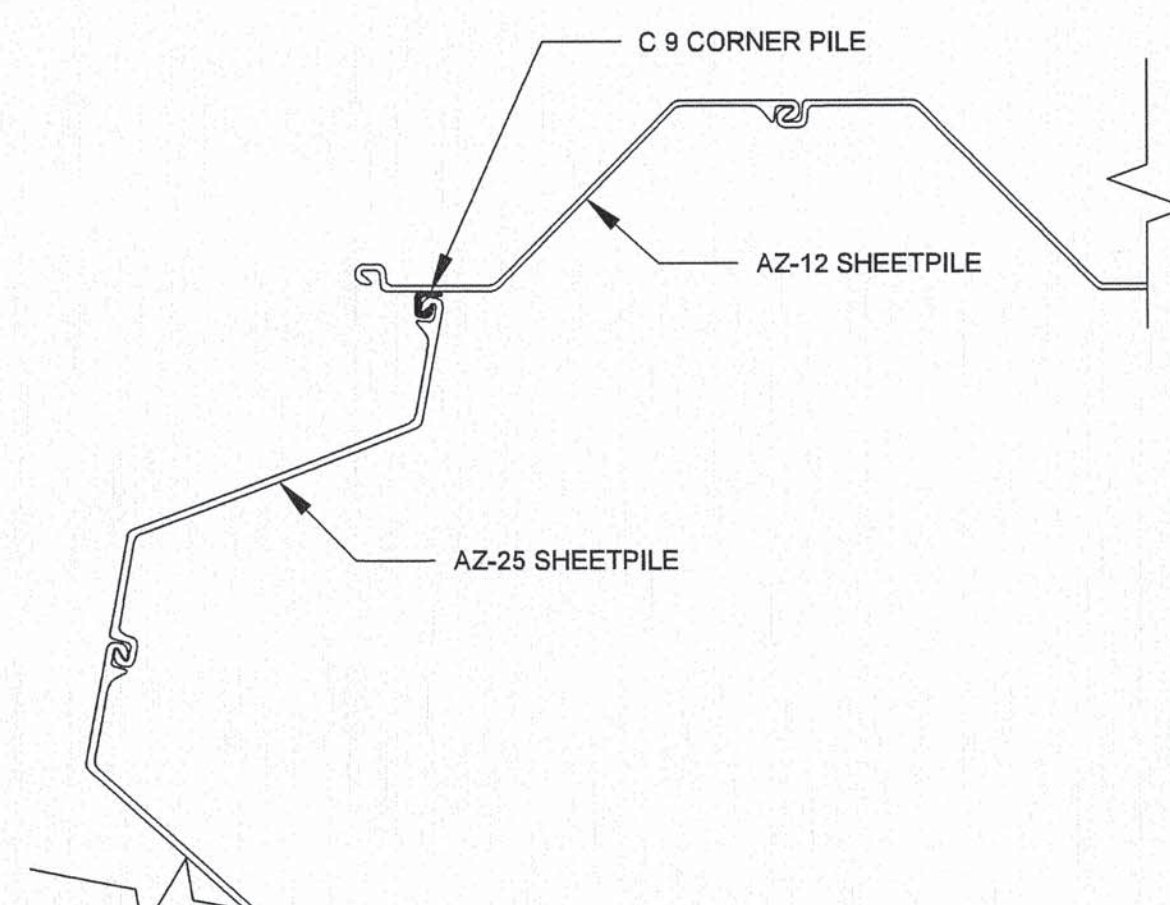
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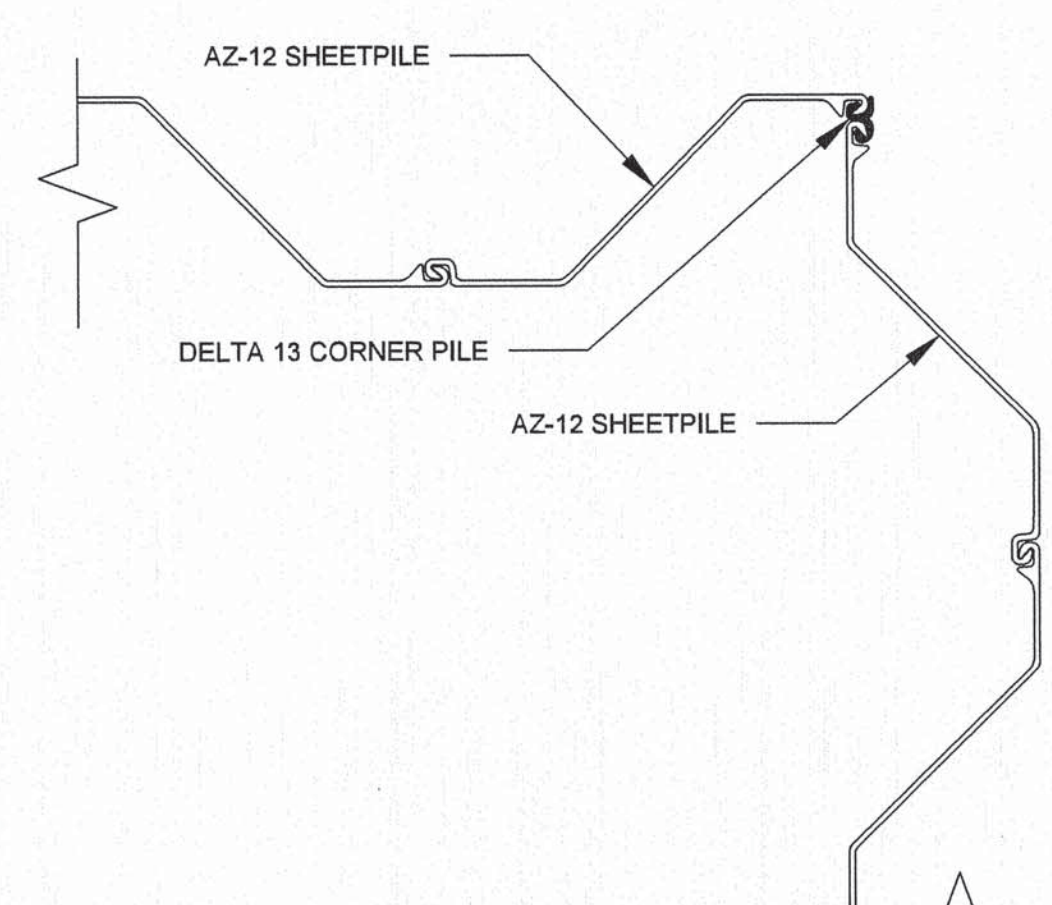
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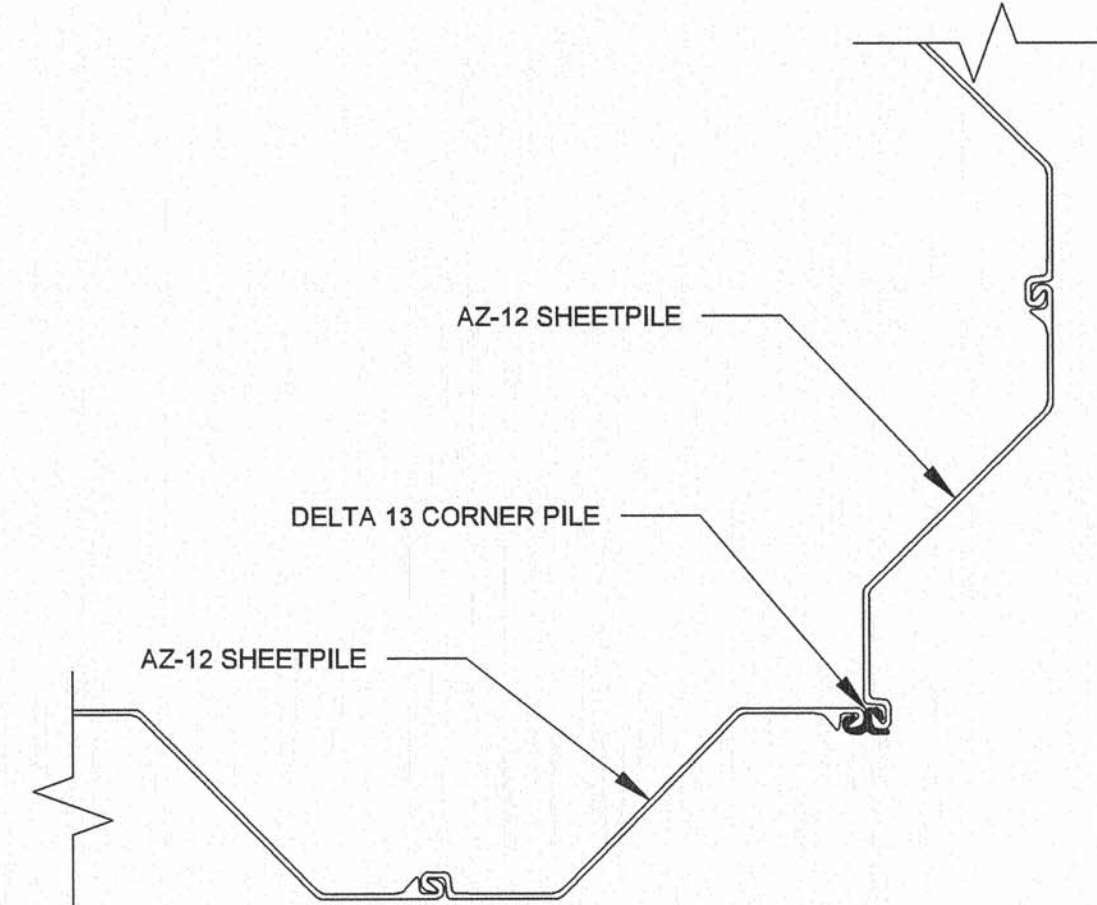
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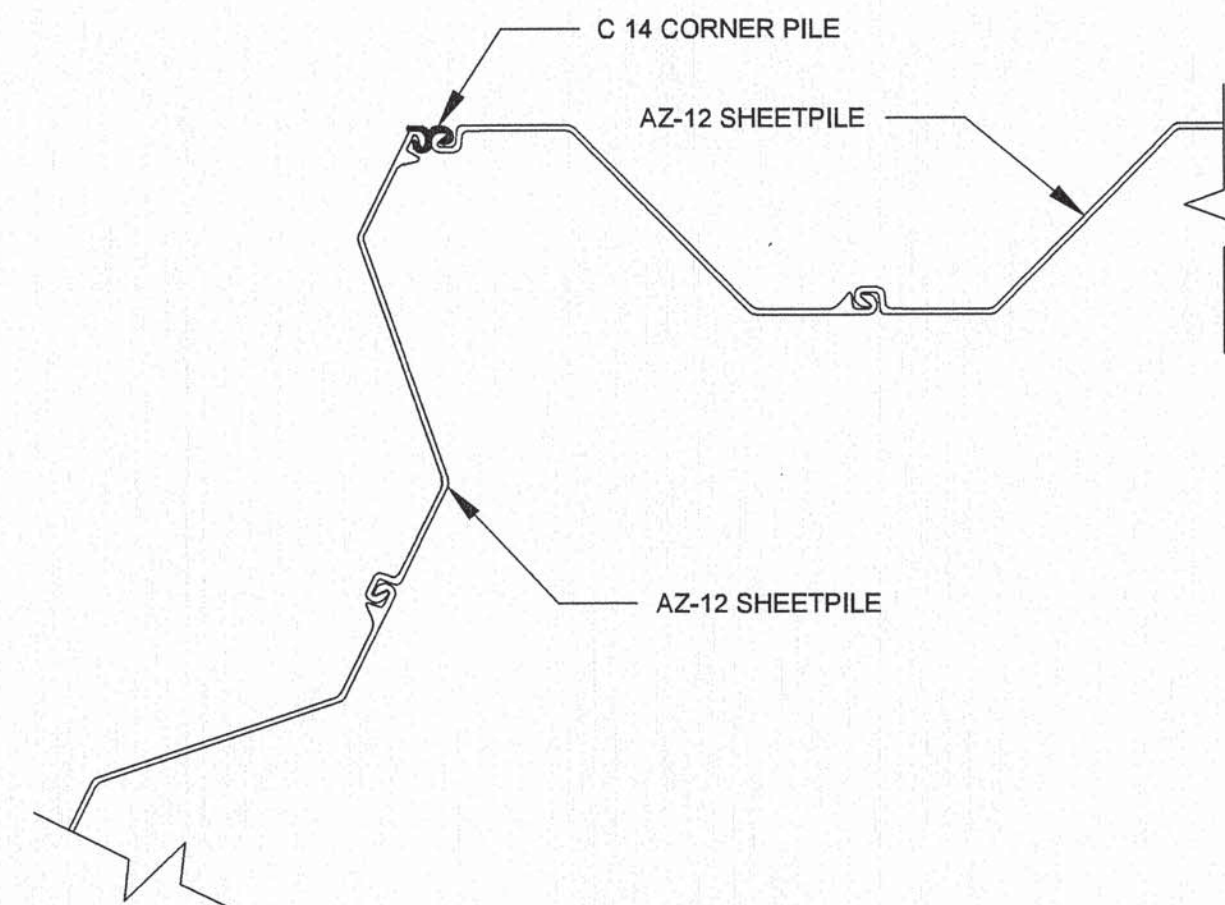
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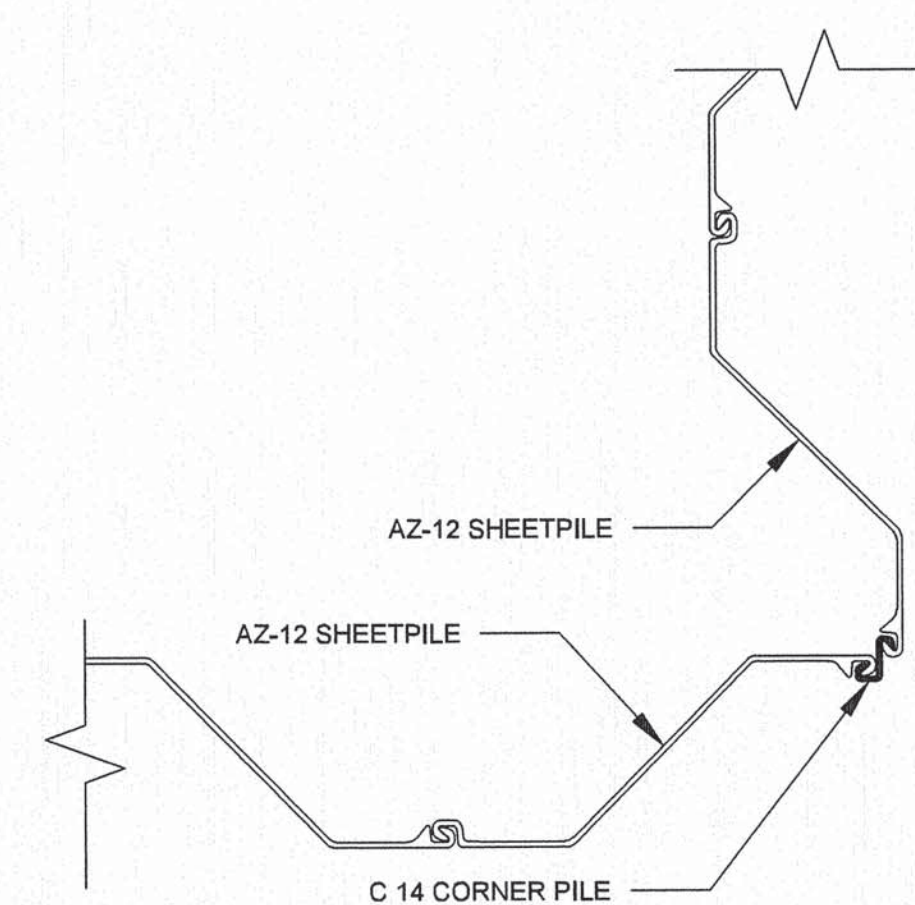
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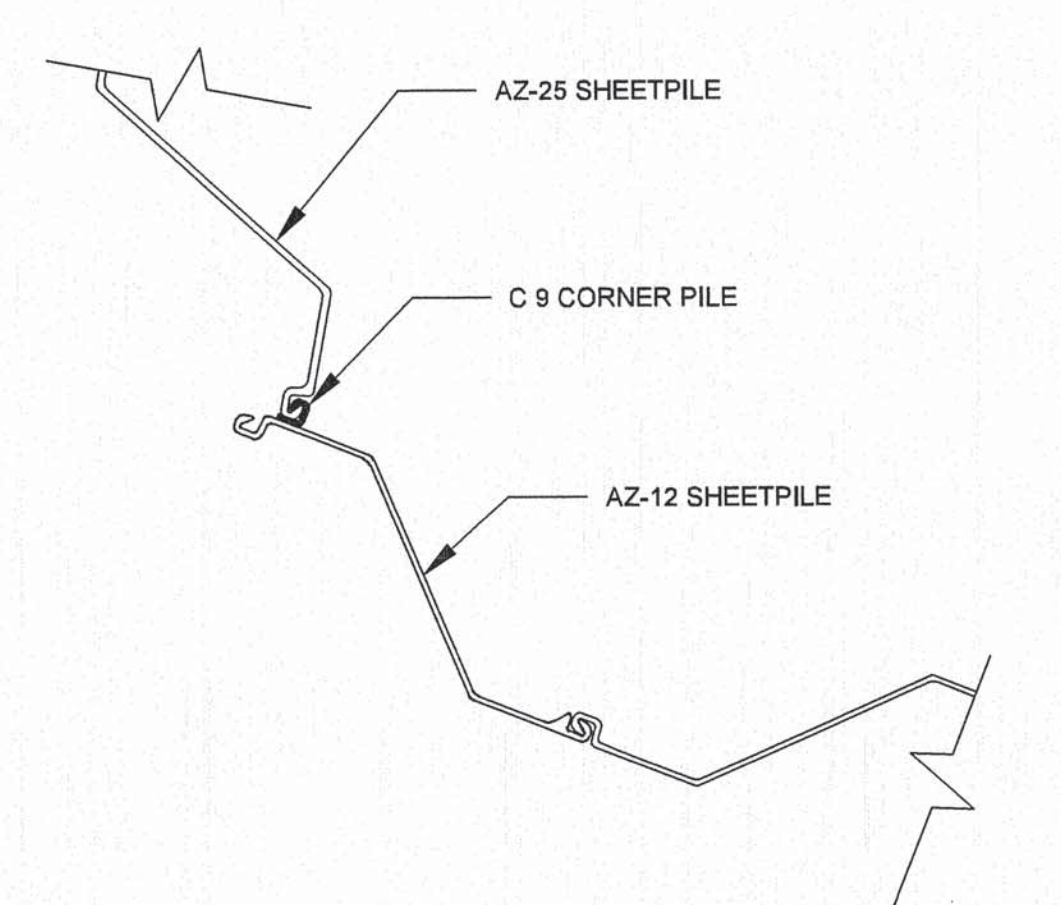
DETAIL 16: P-2 CORNER PILE DETAIL
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DETAIL 17: P-2 CORNER PILE DETAIL
NOT TO SCALE



DETAIL 18: P-2 CORNER PILE DETAIL
NOT TO SCALE



DETAIL 19: P-2 CORNER PILE DETAIL
NOT TO SCALE

DETAIL 16: P-2 CORNER PILE DETAIL
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Maria-Teresa Fernandez
APPROVED
Under Directive 2 of 3975
Date/Time: Dec 7, 2012 - 3:53 PM
NYC Development Hub

DETAIL 17: P-2 CORNER PILE DETAIL
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NEW YORK NEW YORK

Drawing Title
EXCAVATION SUPPORT DETAILS

Project No. 170201301
Date 08/21/2012
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6 OF 6