

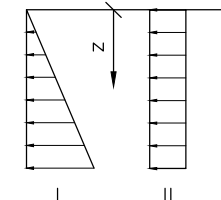
GENERAL NOTES:

- ANY DEVIATION FROM THE CONDITIONS SHOWN ON THESE DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
 - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCING WORK. REPORT ANY INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK. ALL DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS NOTED OTHERWISE. DO NOT SCALE THESE DRAWINGS.
 - STRUCTURAL DESIGN HAS BEEN PERFORMED IN ACCORDANCE WITH: ONTARIO BUILDING CODE 2012 (OBC) [JAN. 2020 AMD.]; CANADIAN FOUNDATION ENGINEERING MANUAL (CFEM), FOURTH EDITION; O.REG. 213/91: OCCUPATIONAL HEALTH AND SAFETY ACT FOR CONSTRUCTION PROJECTS; SOIL PARAMETERS HAVE BEEN OBTAINED FROM THE GEOTECHNICAL INVESTIGATION REPORT (PG3780), PREPARED BY PATERSON GROUP, DATED NOVEMBER 21, 2019; CONTRACT DOCUMENTS.
- THESE DRAWINGS HAVE BEEN REVIEWED WITH RESPECT TO STRUCTURAL REQUIREMENTS ONLY. NON-STRUCTURAL DETAILS SHALL BE VERIFIED BY OTHERS.
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER DESIGN DOCUMENTS INCLUDING THE ARCHITECTURAL, STRUCTURAL, AND GEOTECHNICAL DOCUMENTS, AS APPLICABLE.
 - ALL WORK TO BE COMPLETED IN ACCORDANCE WITH THE ONTARIO HEALTH AND SAFETY ACT (OHS) AND ITS REGULATIONS.
 - ALL MATERIAL SPECIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCUREMENT.
 - ALL SHOP DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE PROFESSIONAL ENGINEERING FOR CONFORMANCE WITH THESE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO ART ENGINEERING INC. (AEI) FOR REVIEW AND APPROVAL.
 - A PRE-CONDITION SURVEY OF ADJACENT STRUCTURES AND ELEMENTS IS RECOMMENDED TO BE CARRIED OUT PRIOR TO INSTALLATION OF EXCAVATION SHORING OR COMMENCING EXCAVATION.

DESIGN LOADS:

- DESIGN LOADS ARE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE 2012 (OBC) [JAN. 2020 AMD.] AND THE CANADIAN FOUNDATION ENGINEERING MANUAL (CFEM), FOURTH EDITION.

- ACTIVE EARTH PRESSURE = $\gamma \cdot z \cdot K_a$
 $K_a = 0.33$;
 $\gamma = 20 \text{ kN/m}^3$;
- SURCHARGE (PEDESTRIAN) = $q \cdot K_a$;
 $q = 2.4 \text{ kPa}$;
 $K_a = 0.33$;



THE ABOVE LOADING IS BASED ON DRAINED SOIL CONDITIONS. THE GROUND WATER TABLE IS ASSUMED TO BE LOWERED BELOW THE BASE OF EXCAVATION.

- EXCAVATION SHORING HAS BEEN DESIGNED FOR TEMPORARY CONDITIONS. SEISMIC LOADING NOT APPLICABLE FOR TEMPORARY APPLICATIONS.

EXCAVATION SHORING & EARTHWORKS:

- MATERIALS:**
 STRUCTURAL STEEL:
 ROLLED SHAPES - CSA G40.20/G40.21, GRADE 350W;
 PLATES - CSA G40.20/G40.21, GRADE 300W;
 HOLLOW STRUCTURAL SECTION (HSS) - ASTM A500 GRADE 'C';
 3" LAGGING - ROUGH CUT CONSTRUCTION GRADE;
 E49XX WELDING ELECTRODE, CSA W59;
 0.6" Ø STRAND ANCHORS - 7-WIRE, 1860 MPa MIN., ASTM A416, c/w ACCESSORIES;
 CONCRETE, 35 MPa MIN. 28-DAY COMPRESSIVE STRENGTH, CSA A23.1 EXPOSURE CLASS 'N';
 REINFORCING STEEL, CSA G30.18, GRADE 400W, PLAIN BLACK STEEL;
 35 MPa MIN. NON-SHRINK GROUT.
- ALL DESIGN AND MATERIAL STANDARDS LISTED ABOVE MEET OR EXCEED THE REQUIREMENTS OF THE DESIGN AND MATERIAL STANDARDS REFERENCED IN THE 2012 ONTARIO BUILDING CODE [JAN. 2020 AMD.].
- LOCATE ALL PUBLIC AND PRIVATE UTILITIES AND BURIED STRUCTURES PRIOR TO PILING. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND REINSTATEMENT OF ANY SERVICES AND UTILITIES ENCOUNTERED. REPORT ANY CONFLICTS TO AEI.
- THE EXCAVATION SHORING HAS BEEN DESIGNED TO MEET A MAXIMUM HORIZONTAL DEFLECTION LIMIT OF 25 mm (OPSS/MUNI 539 PERFORMANCE LEVEL 2).
- INSTALL SOLDIER PILES PLUMB TO WITHIN A VERTICAL TOLERANCE OF 1%. INSTALL STRUTS, RAKERS AND WALERS TO WITHIN 20 mm OF THE LOCATION SPECIFIED. INSTALL WALERS LEVEL TO WITHIN A TOLERANCE OF 1%.
- LUMBER LAGGING SHALL BE CHECKED FOR DEFECTS PRIOR TO INSTALLATION. DEFECTIVE LUMBER SHALL BE DISCARDED.
- WELDING SHALL BE PERFORMED IN ACCORDANCE WITH CSA W59 BY WELDERS CERTIFIED UNDER CSA W47.1.
- THE EXCAVATION SHORING SHALL BE PROTECTED FROM FREEZING TEMPERATURES DURING WINTER MONTHS USING SUITABLE CONSTRUCTION TECHNIQUES (HEAT INSULATED TARPS, ETC.), AS DIRECTED BY A GEOTECHNICAL ENGINEER.
- A GUARDRAIL SHALL BE PROVIDED AROUND THE PERIMETER OF THE EXCAVATION IN ACCORDANCE WITH OBC 2012 [2020 AMD.] OR O.REG. 219/91.
- THE EXCAVATION SHORING SHALL BE INSTALLED IN A MANNER TO LIMIT VIBRATIONS ON THE GROUND, AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER.
- STORING OR STACKING OF MATERIALS OR EQUIPMENT SHALL NOT BE PERMITTED WITHIN 6.1 m [20'] OF THE FACE OF THE EXCAVATION SHORING AT ANY TIME.
- OBTAIN EASEMENT (RIGHT-OF-WAY) AGREEMENT WITH ADJACENT PROPERTY OWNERS PRIOR TO INSTALLATION OF EXCAVATION SHORING TIEBACKS TO THE ADJACENT PROPERTY.
- EXCAVATION SHORING SHALL BE INSPECTED BY AN ENGINEER, IN ACCORDANCE WITH OBC 2012 [JAN. 2020 AMD.] DIVISION 'B', CLAUSE 4.2.2.2.(2).(a).(ii).

- PERMISSION TO PROCEED LETTERS WILL BE ISSUED UPON THE SUCCESSFUL COMPLETION OF THE FOLLOWING MILESTONES:
- INSTALLATION OF SOLDIER PILES;
 - INSTALLATION OF UPPER LEVEL OF SUPPORTS;
 - PRE-LOADED RAKER FOOTING REINFORCING STEEL;
 - INSTALLATION OF LOWER LEVEL OF SUPPORTS;
 - EXCAVATION TO DREDGE LINE & INSTALLATION OF LAGGING;
 - CUTTING OF SOLDIER PILES BELOW GRADE;
- A SIGNED AND SEALED FINAL SIGN-OFF LETTER WILL BE ISSUED AT COMPLETION OF INSTALLATION, SHORING REMOVAL AND COMPLETION OF RELATED BACKFILLING OPERATIONS.

CONCRETE

- REINFORCED CONCRETE DESIGN DONE IN CONFORMANCE WITH CSA A23.3-19.
- CONCRETE REINFORCING, PLACEMENT AND TOLERANCES SHALL BE IN ACCORDANCE WITH CSA A23.1-19 & A23.2-19.
- ALL REINFORCING STEEL SHALL BE CLEAN AND FREE OF RUST, OIL OR ANY OTHER DELETERIOUS MATERIAL.
- SECURE AND SUPPORT REINFORCING STEEL TO PREVENT MOVEMENT DURING THE POURING OF CONCRETE.
- REINFORCING BAR SPLICES SHALL BE 1300 mm LONG MINIMUM FOR 25M TOP BARS AND 1000 mm LONG MINIMUM FOR 25M BOTTOM BARS. LAP SPLICES SHALL BE OFFSET OR STAGGERED.
- CONCRETE SHALL BE MIXED, PLACED, AND CURED IN ACCORDANCE WITH CSA A23.1-19 AND CSA A23.2-19. MAINTAIN RECORDS OF POURED CONCRETE ITEMS. RECORD DATE, LOCATION OF POUR, QUANTITY, AIR TEMPERATURE AND ANY TEST SAMPLES TAKEN.
- DO NOT POUR CONCRETE OVER A FROZEN SUBGRADE. ENSURE A MINIMUM TEMPERATURE OF 10°C DURING PLACEMENT OF CONCRETE AND FOR A MINIMUM OF 3 DAYS AFTER PLACEMENT.
- CONSOLIDATE CONCRETE WITH EXTERNAL/INTERNAL VIBRATORS TO THE REQUIREMENTS OF CSA A23.1-19.
- THE LOCATION AND ORIENTATION OF ALL CONCRETE CONSTRUCTION/COLD JOINTS SHALL BE AS SHOWN ON THESE DRAWINGS. ANY ADDITIONAL PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED TO AEI FOR APPROVAL, PRIOR TO CONSTRUCTION.
- REINFORCING STEEL BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS, USING MINIMUM BEND DIAMETERS, U.N.O.
- THE CONTRACTOR SHALL ENSURE THAT ALL REINFORCING STEEL IS INSPECTED AND APPROVED BY THE ENGINEER UPON COMPLETION AND PRIOR TO PLACING CONCRETE.

INSTALLATION & REMOVAL PROCEDURE:

- COMPLETE UTILITY LOCATES. IF ANY CONFLICTS EXIST, CONTACT AEI PRIOR TO PROCEEDING.
- INSTALL SOLDIER PILES TO THE EXTENT AND DEPTH AS SHOWN ON THESE DRAWINGS. DEPTH OF INSTALLED SOLDIER PILES SHALL BE SUBMITTED TO AEI FOR REVIEW AND APPROVAL. ALL SOLDIER PILES WITH TIEBACKS SHALL BE DRIVEN TO REFUSAL. GEOTECHNICAL ENGINEER TO VERIFY THAT THE MINIMUM SPECIFIED TOE BEARING CAPACITY IS ACHIEVED.
- PLACE MONITORING TARGETS ON THE TOPS OF EVERY OTHER SOLDIER PILE. RECORD INITIAL POSITION.
- LOWER GROUND WATER TABLE TO BELOW BEDROCK SURFACE, AS REQUIRED, IN ACCORDANCE WITH ALL PERMITS, OPERATIONAL CONSTRAINTS AND REGULATIONS RELATING TO WITHDRAWAL OF GROUND WATER.

- EXCAVATE OVERBURDEN SOILS TO THE UNDERSIDE OF THE FIRST LEVEL OF WALER, AS SHOWN ON THESE DRAWINGS. INSTALL LAGGING AS EXCAVATION PROGRESSES.
- INSTALL TOP WALERS, TIEBACKS, STRUTS, AND/OR RAKERS AT EACH PILE. TEST AND LOCK-IN TIEBACKS IN ACCORDANCE WITH THE ANCHOR TESTING PROCEDURE. PRE-LOAD STRUTS AND RAKERS AS PER THE PLANS. RESULTS SHALL BE RECORDED AND SUBMITTED TO AEI PRIOR TO PROCEEDING WITH THE REMAINDER OF THE EXCAVATION. REFER TO TABLE 1/SE-1 FOR DETAILS.
- PLACE MONITORING TARGETS ON EVERY OTHER SOLDIER/PIPE PILE AT THE TOP WALER ELEVATION. RECORD INITIAL POSITION.
- ONCE TOP SUPPORT IS INSTALLED, REPEAT STEPS 5-7 FOR THE SECOND LEVEL OF SUPPORT (WHERE APPLICABLE).
- ONCE ALL WALERS, TIEBACKS, STRUTS, AND RAKERS ARE INSTALLED, EXCAVATE TO THE BASE OF EXCAVATION. IF THE BASE OF EXCAVATION IS LOWER THAN THAT SHOWN ON THESE DRAWINGS, REPORT THE DISCREPANCY TO AEI PRIOR TO PROCEEDING.
- FOR REMOVAL:** COMPLETE OPERATIONS IN REVERSE OF INSTALLATION: BACKFILL AND COMPACT TO UNDERSIDE OF WALER. DE-STRESS TIEBACKS (WHERE ACCESSIBLE), STRUTS, RAKERS, REMOVE WALERS. REPEAT AS NECESSARY UNTIL BACKFILL REACHES FINISHED GRADE. SAW-CUT SOLDIER PILES 1.2 m CLEAR OF FINISHED GRADE.

MONITORING PROCEDURE:

- EXCAVATION SHORING SHALL NOT BE LEFT WITHOUT VISUAL INSPECTION DURING AN EXTENDED PERIOD OF TIME (I.E. HOLIDAYS, WEEKENDS, ETC.).
- MONITORING READING INTERVALS SHALL BE DAILY STARTING FROM THE START OF THE EXCAVATION AND DURING THE INSTALLATION AND REMOVAL OF THE EXCAVATION SHORING. MONITORING FREQUENCY MAY BE DECREASED TO WEEKLY, 30 DAYS AFTER THE EXCAVATION SHORING HAS BEEN COMPLETELY INSTALLED.
- IF HORIZONTAL WALL DISPLACEMENT EXCEEDS 25 mm, NOTIFY AEI.
- DAILY VISUAL MONITORING OF THE GROUND BEHIND THE SHORING WALL SHALL BE PERFORMED. IF ANY CRACKS OR DISTURBANCE IS OBSERVED, NOTIFY AEI.
- MONITORING REPORT SHALL CLEARLY SHOW: THE DATE, TARGET #, PILE #, NORTHING, EASTING, ELEVATION, VERTICAL AND LATERAL MOVEMENTS.

TIEBACK ANCHOR TESTING PROCEDURE:

- PROOF TEST INSTALLED TIEBACK ANCHORS. PROOF TESTING SHALL BE INCREMENTALLY LOADED TO THE FOLLOWING SCHEDULE:
 AL, 0.25DL, 0.50DL, 0.75DL, 1.00DL, 1.20DL, 1.33DL, AL, LO
 WHERE: AL = ALIGNMENT LOAD, DL = DESIGN LOAD, LO = LOCK-OFF LOAD (REFER TO TABLE 1/SE-1);
- 1.33DL (ie: TL) SHALL BE MAINTAINED FOR 10 MINUTES. TOTAL MOVEMENT SHALL BE RECORDED AT 1, 2, 3, 4, 5, 6 AND 10 MINUTES.
- ACCEPTANCE FOR PROOF TESTING: 1) ANCHOR DOES NOT PULL OUT OF DRILLED HOLE, 2) CREEP DISPLACEMENT MEASURED FOR STEP #2 DOES NOT EXCEED 1 mm.
- RECORDED RESULTS OF ANCHOR TESTING SHALL BE SUBMITTED TO AEI FOR REVIEW AND APPROVAL.

TABLE 1/SE-1: TIEBACK ANCHOR INFORMATION TABLE:

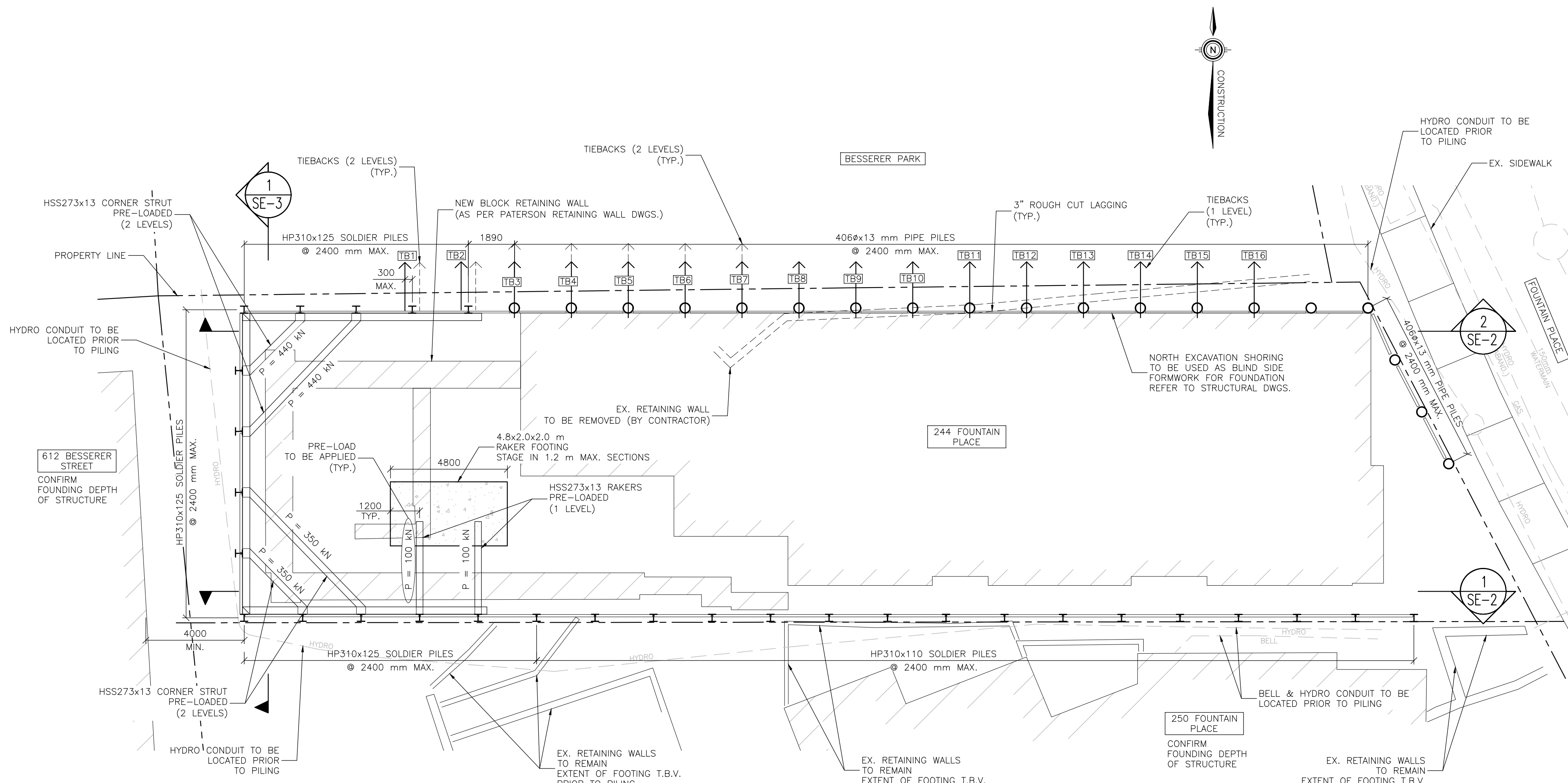
TIEBACK No.	EL. (m)	# STRANDS	DESIGN LOAD, DL (kN)	TEST LOAD, TL (kN)	LOCK-OFF LOAD, LO (kN)	BOND LENGTH (mm)
TB1 UPPER	67.6	4	480	640	530	3900
TB1 LOWER	64.1	5	710	940	780	5700
TB2 UPPER	67.6	3	380	510	420	3100
TB2 LOWER	64.1	5	670	890	730	5300
TB3 & TB4 UPPER	66.2	4	570	760	620	4500
TB3 & TB4 LOWER	62.7	4	620	830	690	5000
TB5 UPPER	65.0	4	520	700	580	4200
TB5 LOWER	61.5	4	580	770	640	4600
TB6 UPPER	65.0	3	410	550	450	3300
TB6 LOWER	61.5	4	540	720	590	4300
TB7 UPPER	65.0	2	300	400	330	2500
TB7 LOWER	61.5	4	480	640	530	3900
TB8	63.9	2	260	350	280	2500
TB9 & TB10	63.9	2	200	270	220	2500
TB11 TO TB14	63.2	2	170	230	190	2500
TB15 & TB16	62.7	2	170	230	190	2500

NOTE: ROCK BOND LENGTH BASED ON SHALE BEDROCK WITH A MINIMUM ALLOWABLE GROUT-TO-ROCK BOND STRENGTH OF 0.4 MPa. BOND LENGTH MAY BE ALTERED BASED ON THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

NOTE: UTILITY LOCATIONS SHOWN ARE BASED ON THE INFORMATION PROVIDED TO AEI AND ARE NOT GUARANTEED. CONTRACTOR TO LOCATE ALL UTILITIES AND SERVICES PRIOR TO PILING.

NOTE: OBTAIN EASEMENT AGREEMENTS WITH ADJACENT PROPERTY OWNERS FOR TIEBACK ANCHORS.

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS STAMPED AND SIGNED BY THE ENGINEER AND ISSUED "FOR CONSTRUCTION". DO NOT SCALE THESE DRAWINGS.



1 SHORING PLAN
SE-1 1:125

Client
TCU DEVELOPMENT CORPORATION

Project
FOUNTAIN APARTMENT CONDOMINIUMS
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OTTAWA, ON

art engineering inc.
171 Walgreen Road
Carp - Ontario - K0A 1L0 - Canada
(613) 836-0632 - Fax: (613) 836-1226
www.artengineering.ca

A detail no. no. de détail
B location drawing no. sur dessin no.

Scale: 1:125

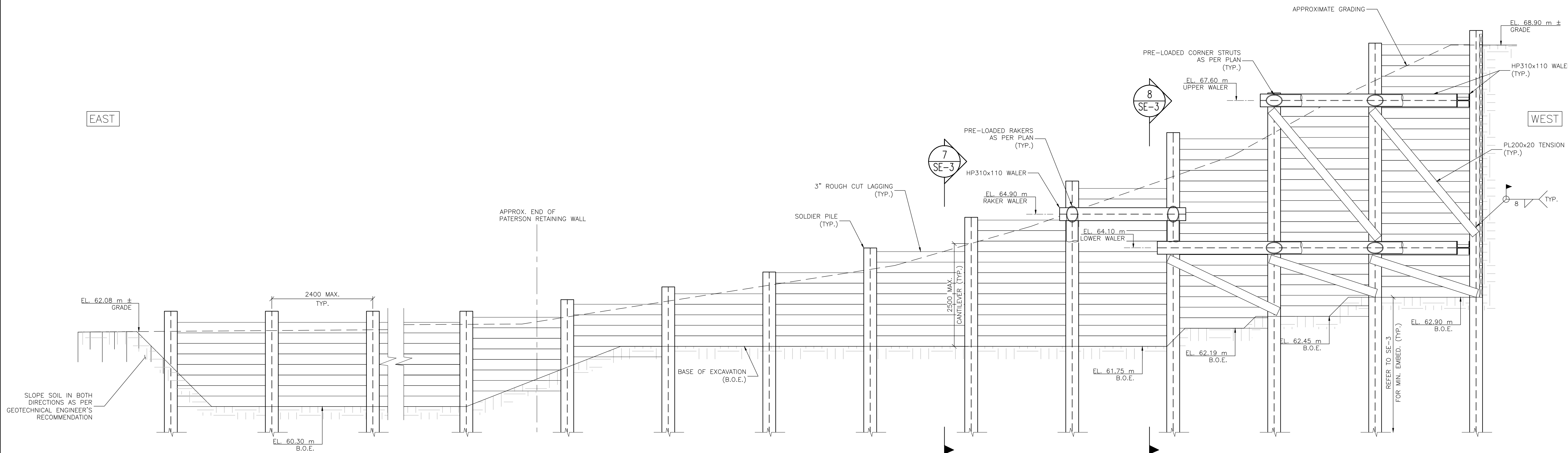
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EXCAVATION SHORING: GENERAL NOTES & PLAN

stamp
LICENSED PROFESSIONAL ENGINEER
T. W. BERG
100525094
06.10.21
PROVINCE OF ONTARIO

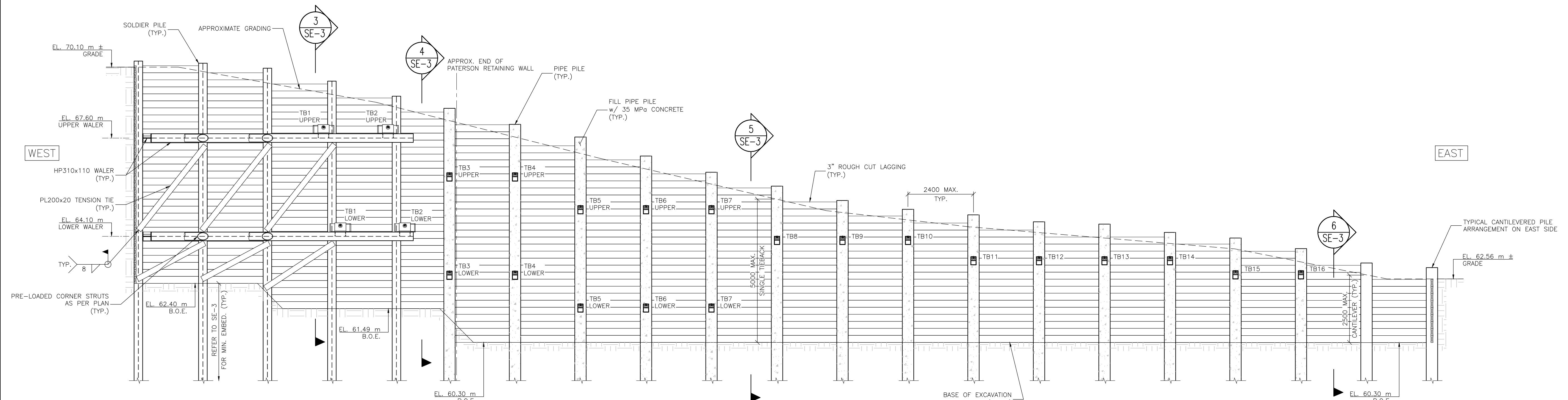
designed T.B.	drawn T.B.	reviewed B.H.	approved T.B.
date October 6, 2021	project number 4831	drawing number SE-1	

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS STAMPED AND SIGNED BY THE ENGINEER AND ISSUED "FOR CONSTRUCTION". DO NOT SCALE THESE DRAWINGS.



1 SOUTH SHORING ELEVATION
SE-2 1:50

NOTE: STRUCTURAL ENGINEER, ARCHITECT AND GEOTECHNICAL ENGINEER TO CONFIRM UNDERSIDE OF FOOTING FOR THE PROPOSED BUILDING PRIOR TO COMMENCING PILING (TYP.)

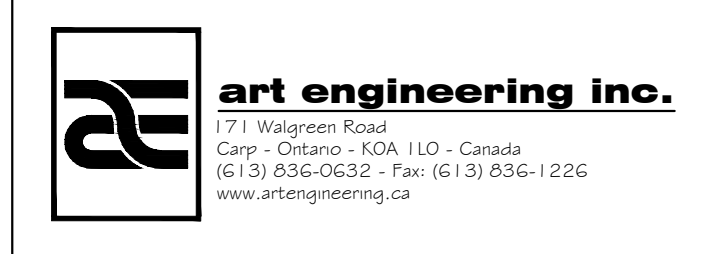


2 NORTH SHORING ELEVATION
SE-2 1:75

NOTE: STRUCTURAL ENGINEER, ARCHITECT AND GEOTECHNICAL ENGINEER TO CONFIRM UNDERSIDE OF FOOTING FOR THE PROPOSED BUILDING PRIOR TO COMMENCING PILING (TYP.)

Client
TCU DEVELOPMENT CORPORATION

Project
FOUNTAIN APARTMENT CONDOMINIUMS
244 FOUNTAIN PLACE
OTTAWA, ON



A detail no. no. de détail
B location drawing no. sur dessin no.

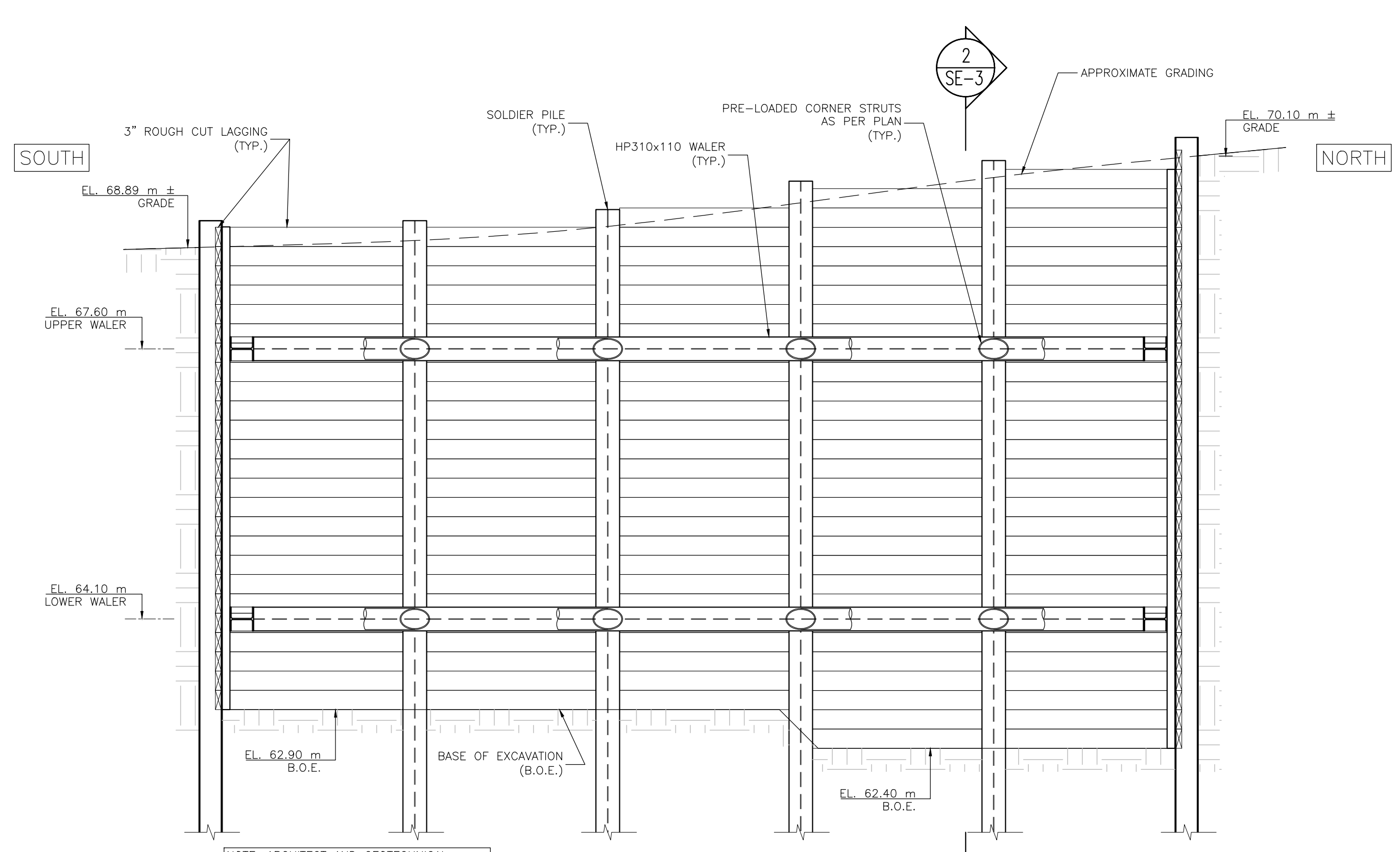
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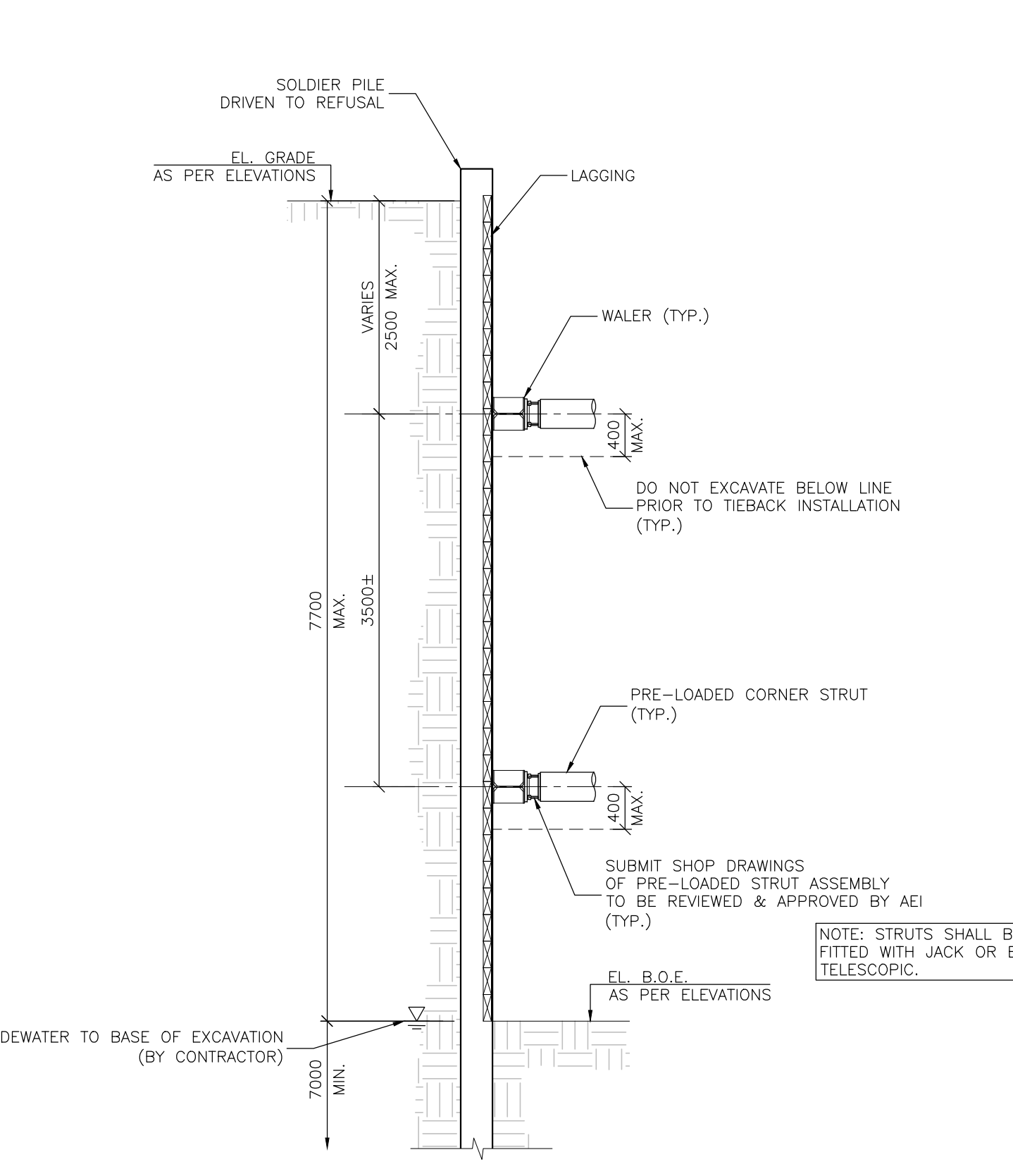
EXCAVATION SHORING:
NORTH & SOUTH ELEVATIONS



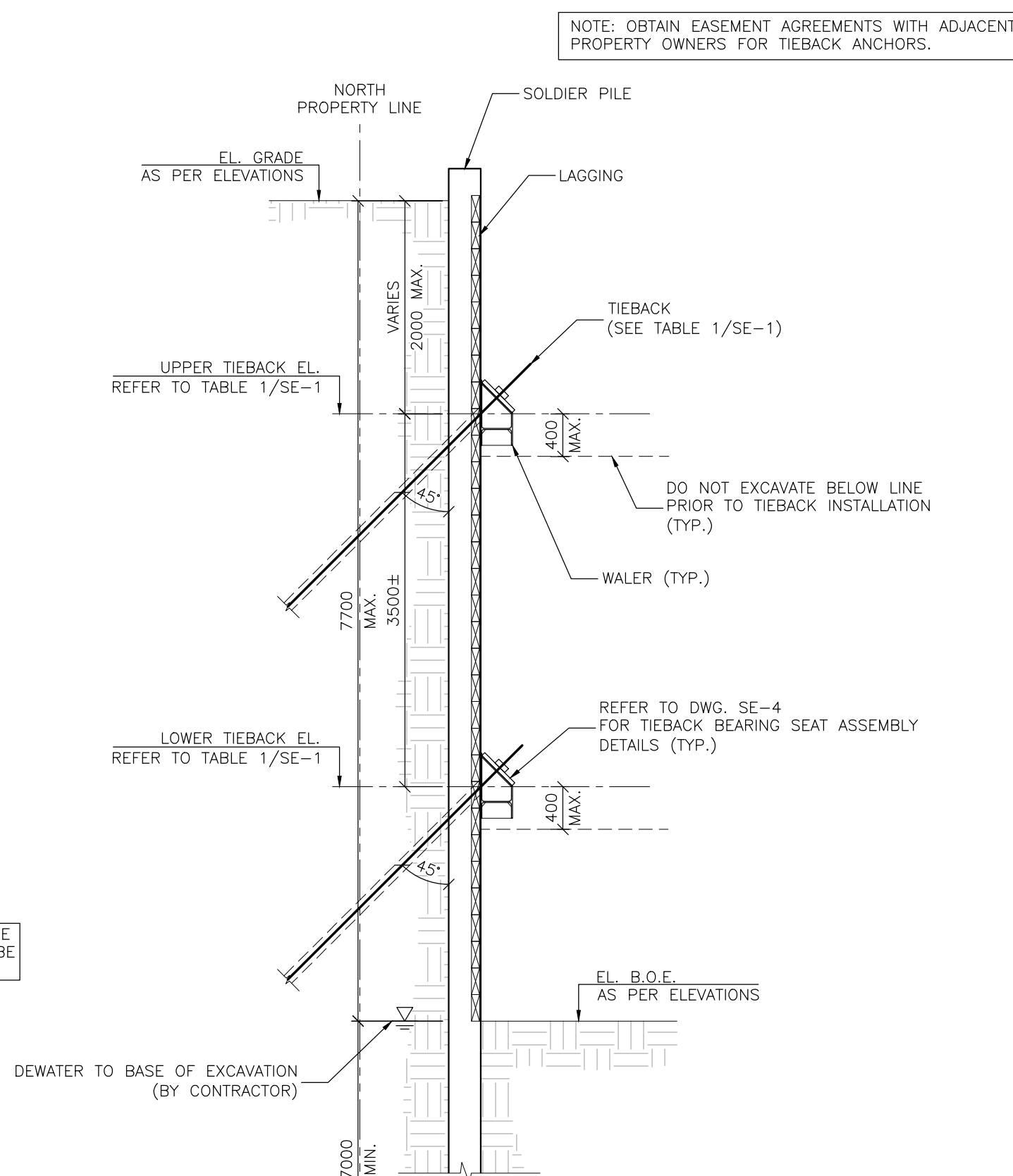
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date October 6, 2021	project number 4831	drawing number SE-2	



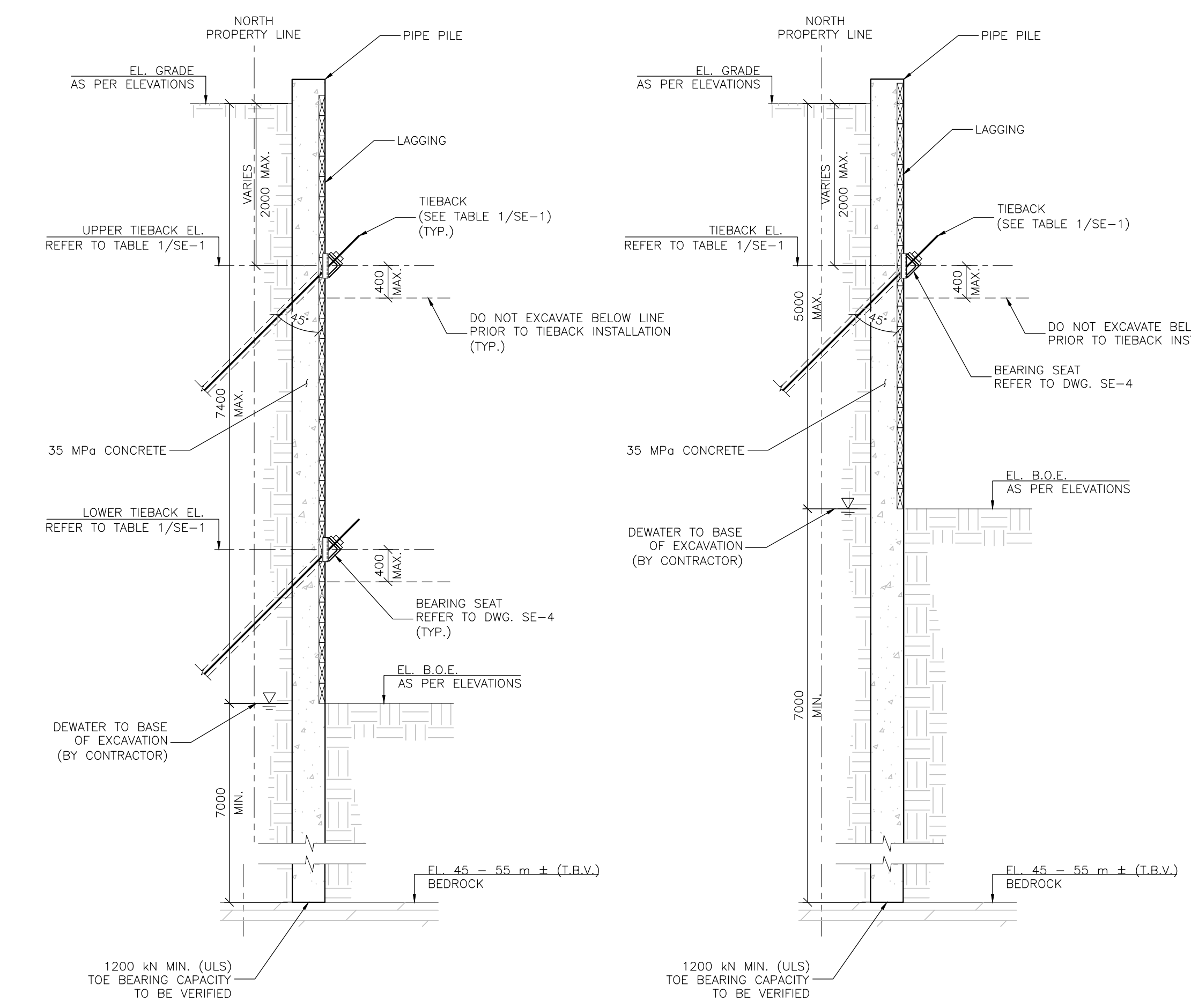
1 WEST SHORING ELEVATION
SE-3 1:50



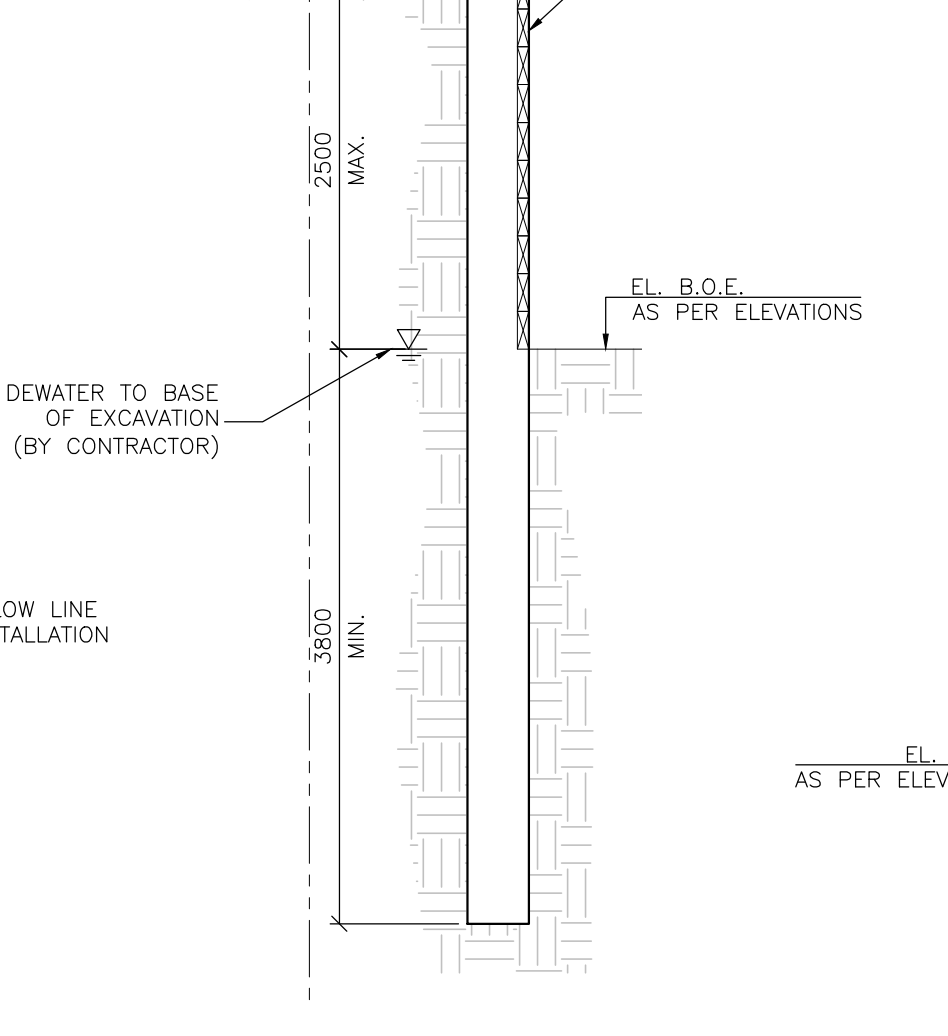
2 WEST SECTION
SE-3 1:50



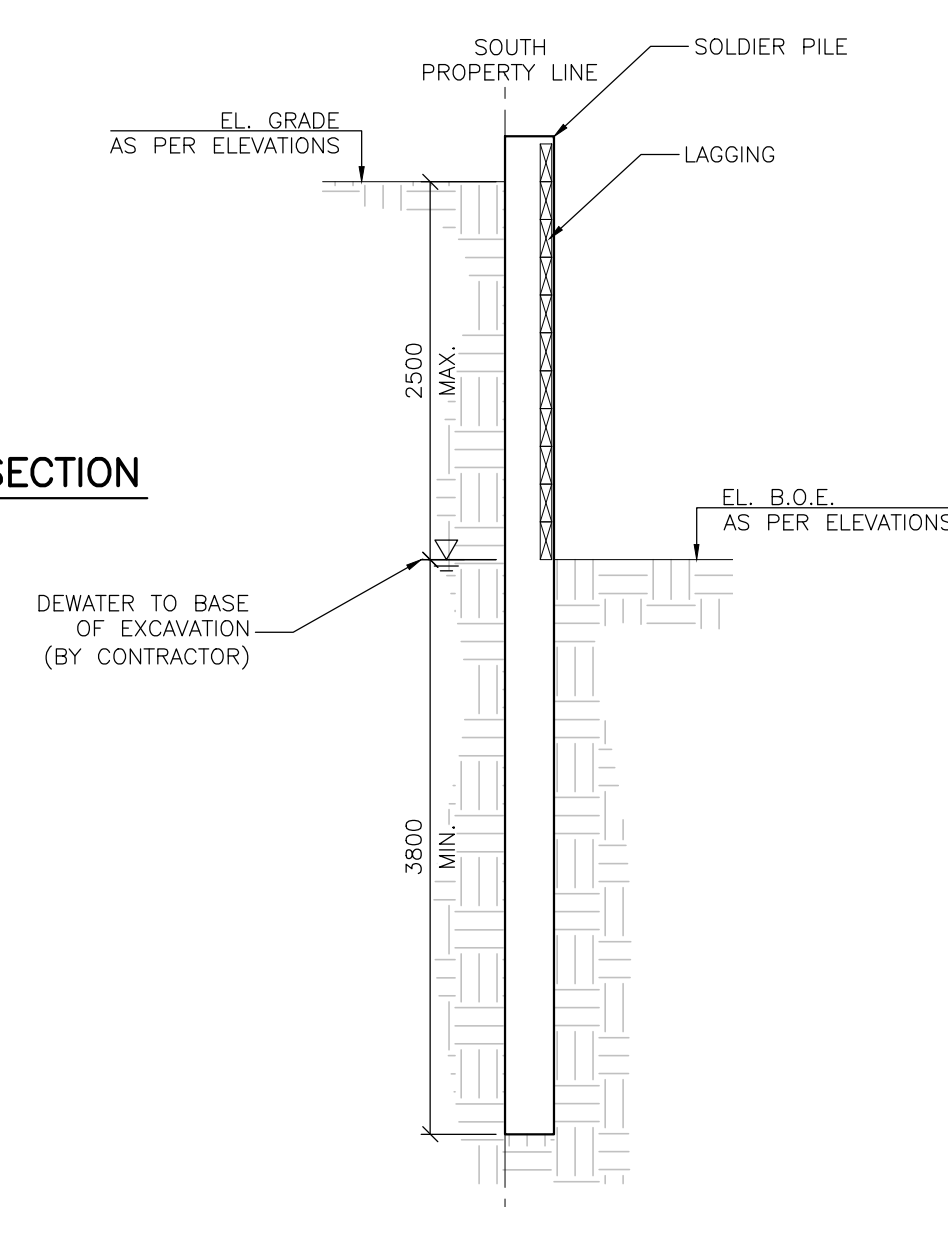
3 NORTH SECTION
SE-3 1:50



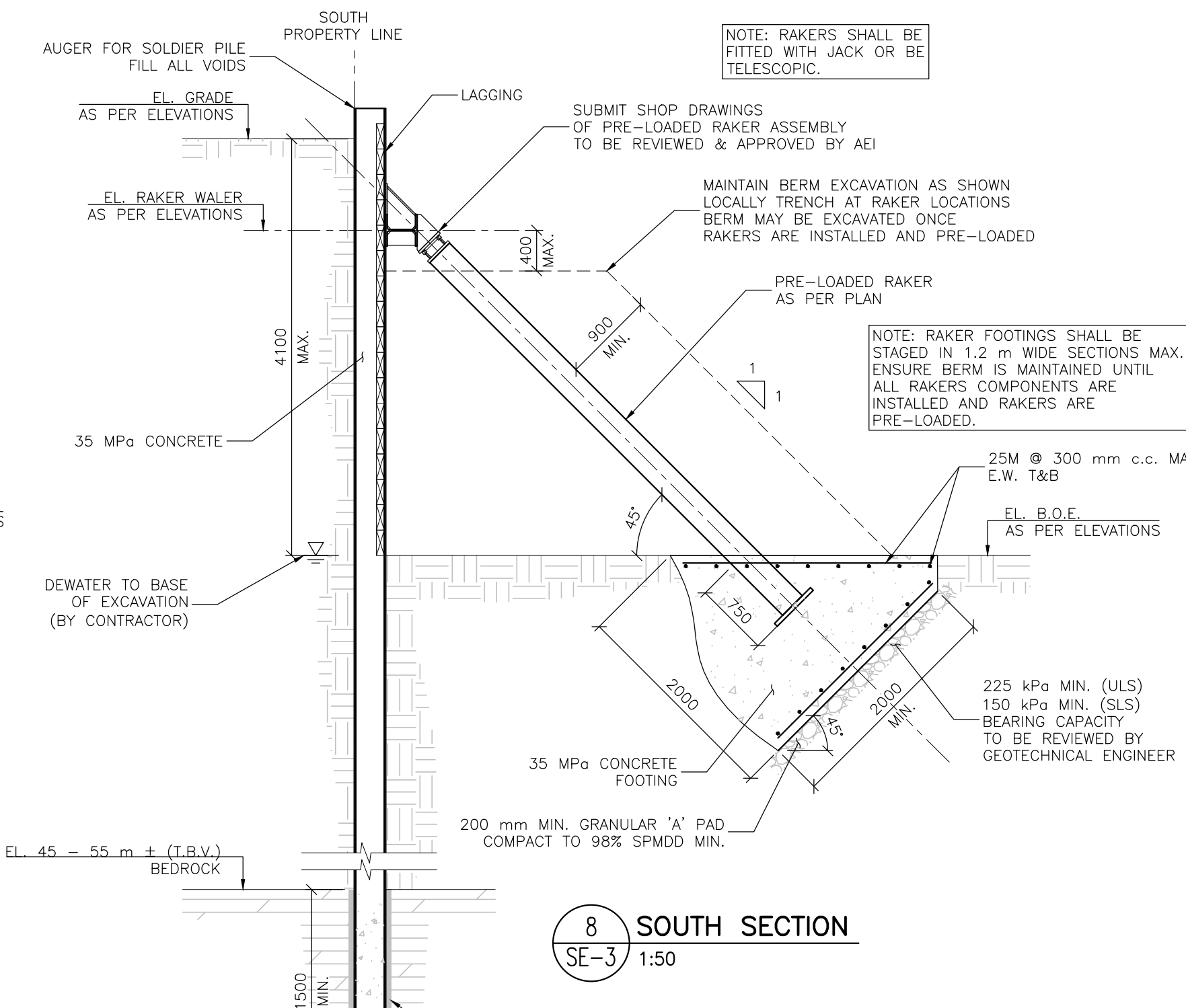
4 NORTH SECTION
SE-3 1:50



6 NORTHEAST CANTILEVER SECTION
SE-3 1:50



7 SOUTH CANTILEVER SECTION
SE-3 1:50



8 SOUTH SECTION
SE-3 1:50

NOTE: OBTAIN EASEMENT AGREEMENTS WITH ADJACENT PROPERTY OWNERS FOR TIEBACK ANCHORS.

NOTE: STRUTS SHALL BE FITTED WITH JACK OR BE TELESCOPIC.

NOTE: RAKERS SHALL BE FITTED WITH JACK OR BE TELESCOPIC.

NOTE: RAKER FOOTINGS SHALL BE STAGED IN 1.2 m WIDE SECTIONS MAX. ENSURE BERM IS MAINTAINED UNTIL ALL RAKERS COMPONENTS ARE INSTALLED AND RAKERS ARE PRE-LOADED.

NOTE: MINIMUM ALLOWABLE ROCK BOND ASSUMED TO BE 0.4 MPa. BOND LENGTH MAY BE ALTERED BASED ON THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS STAMPED AND SIGNED BY THE ENGINEER AND ISSUED "FOR CONSTRUCTION". DO NOT SCALE THESE DRAWINGS.

Client
TCU DEVELOPMENT CORPORATION

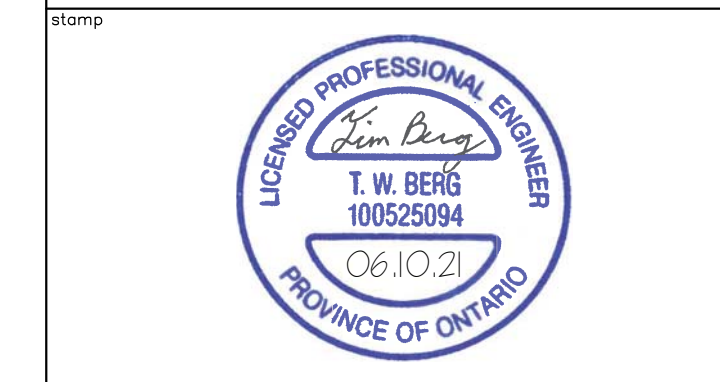
Project
FOUNTAIN APARTMENT CONDOMINIUMS
244 FOUNTAIN PLACE OTTAWA, ON



A detail no. no. de détail
B location drawing no. sur dessin no.

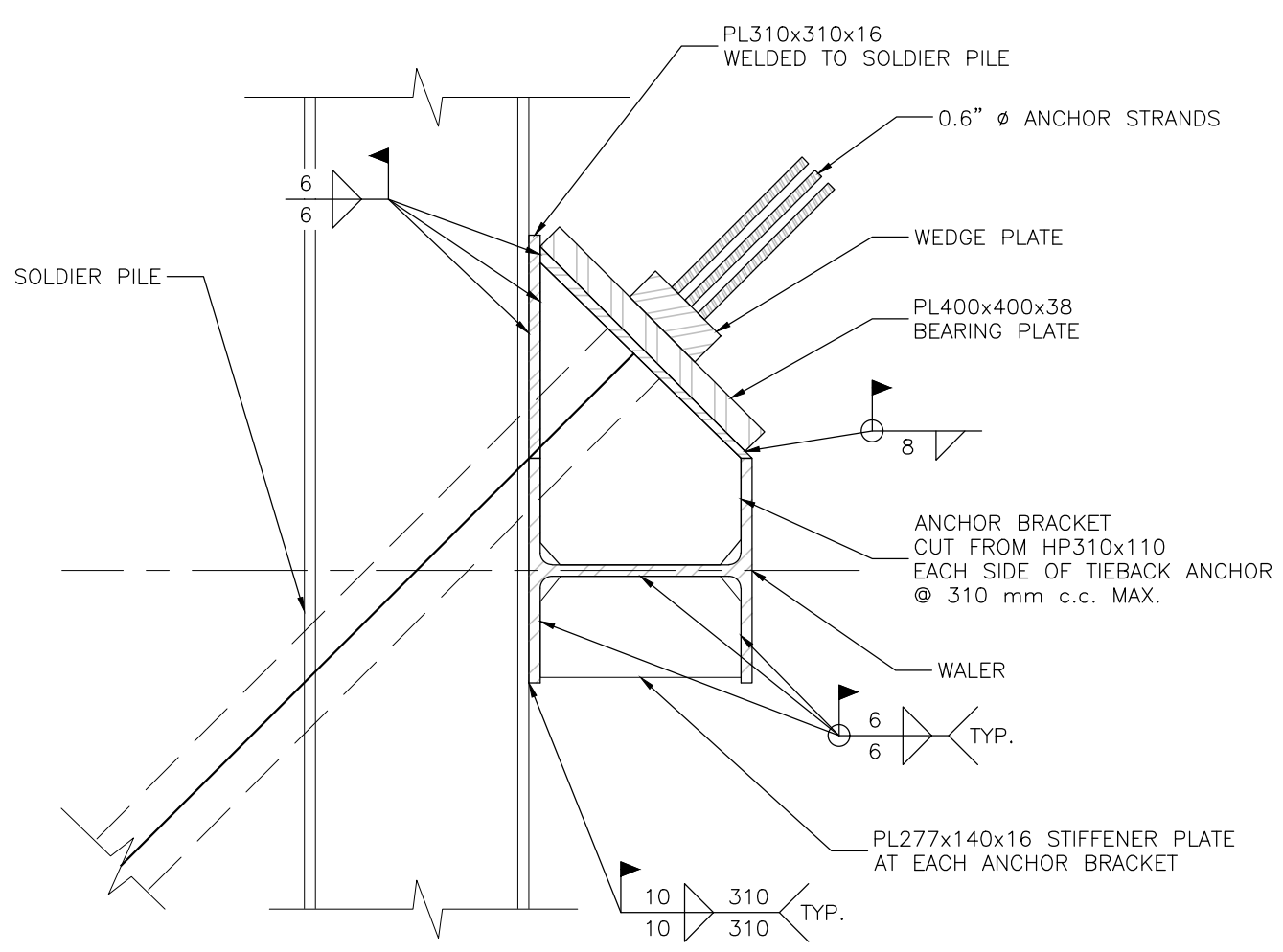
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drawing		

EXCAVATION SHORING: ELEVATIONS & SECTIONS

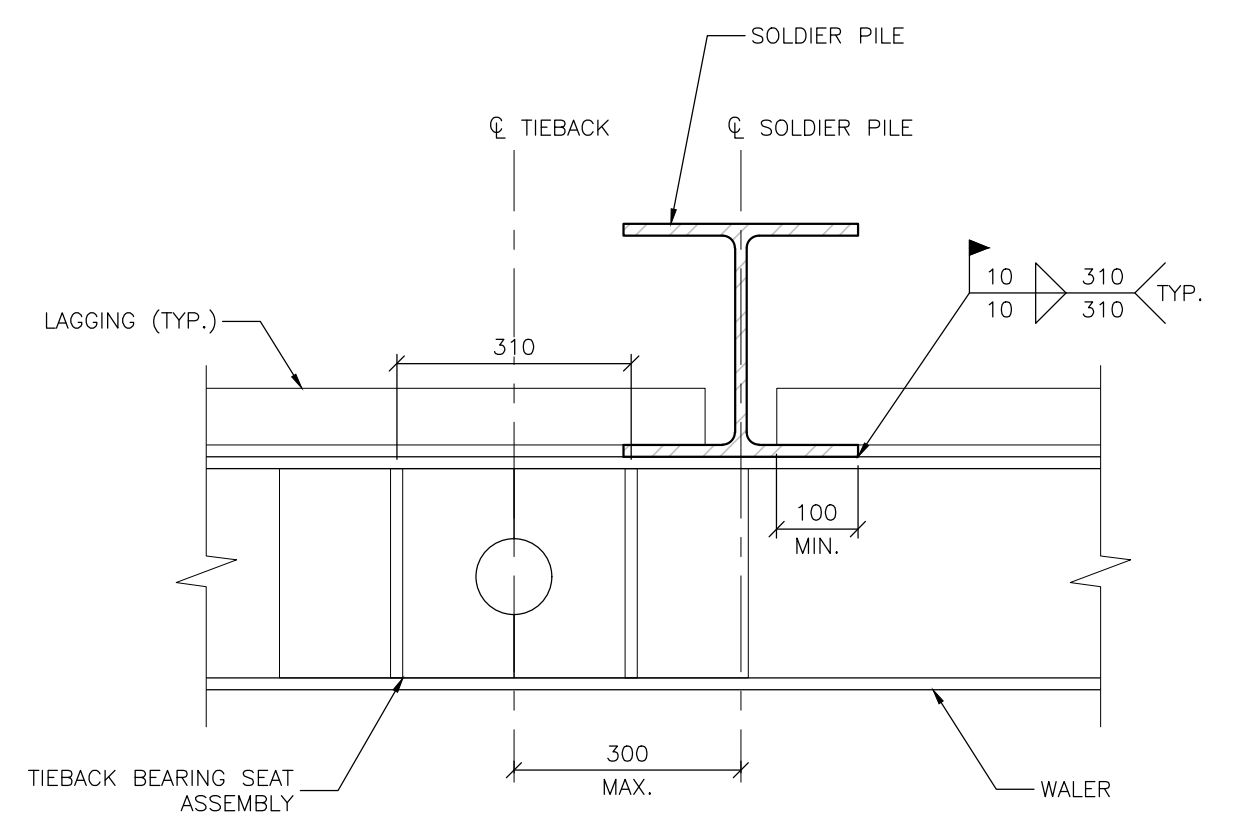


designed	drawn	reviewed	approved
T.B.	T.B.	B.H.	T.B.
date	project number	drawing number	
October 6, 2021	4831	SE-3	

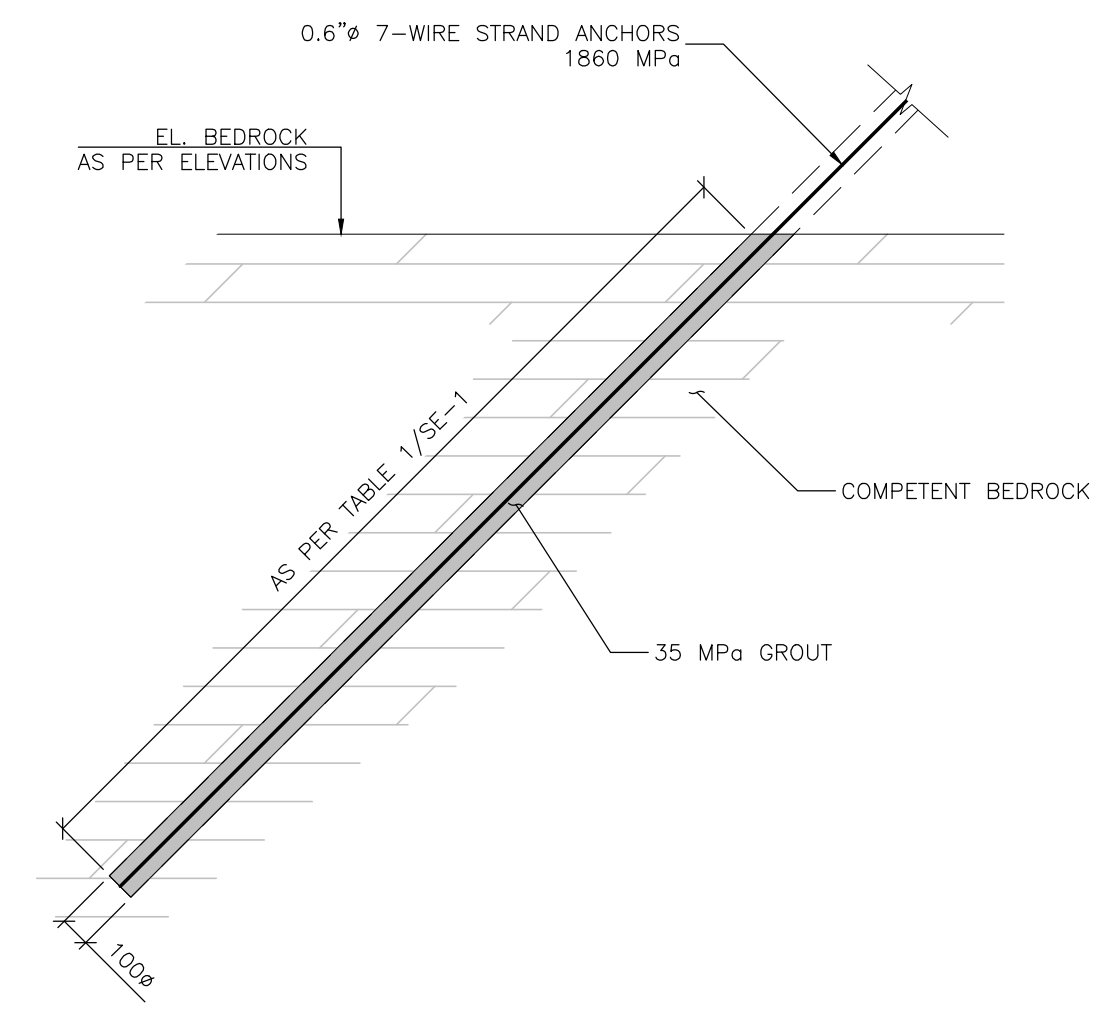
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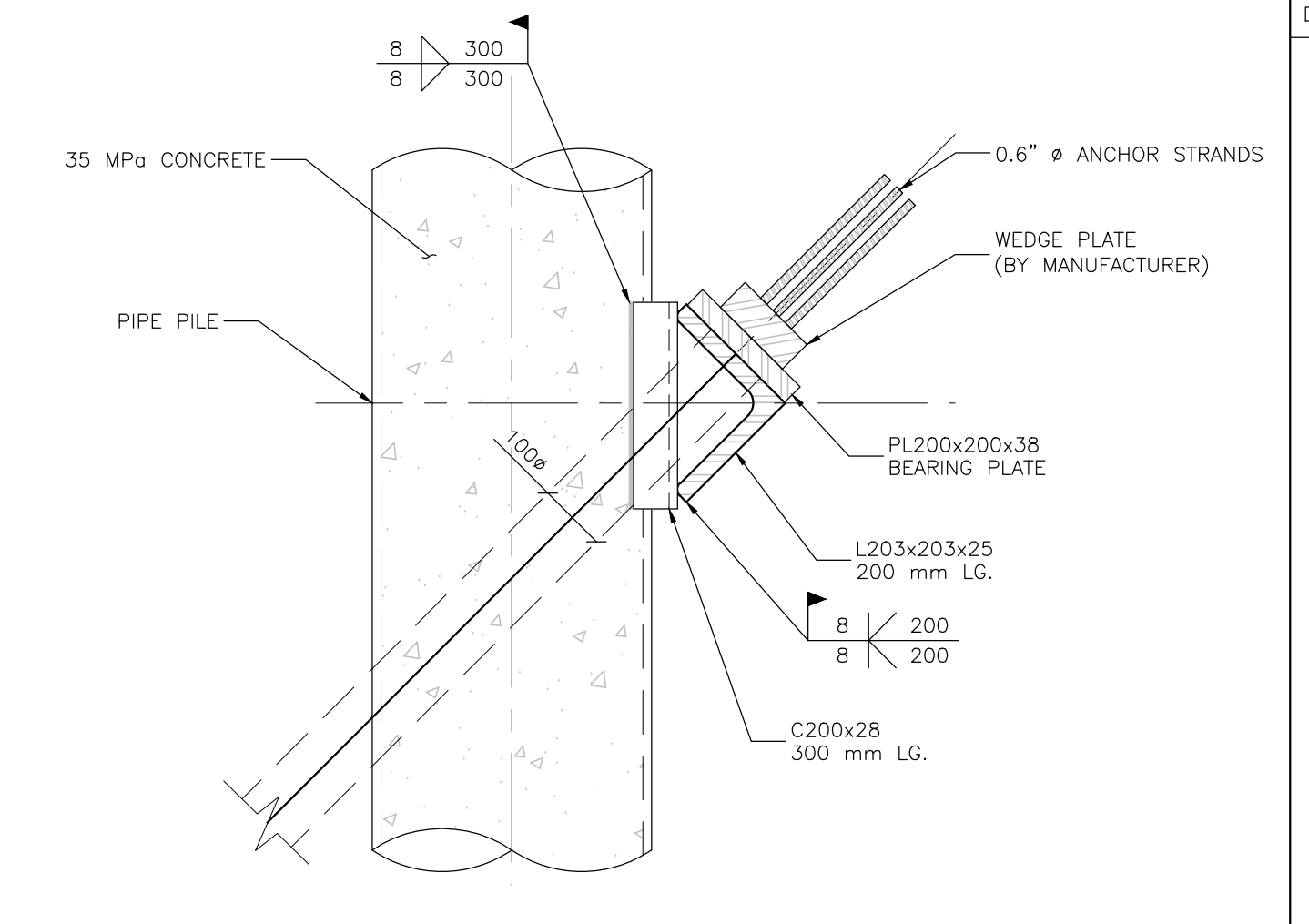
1 BEARING SEAT ASSEMBLY DETAIL
SE-4 1:10
HP310x110 PILE



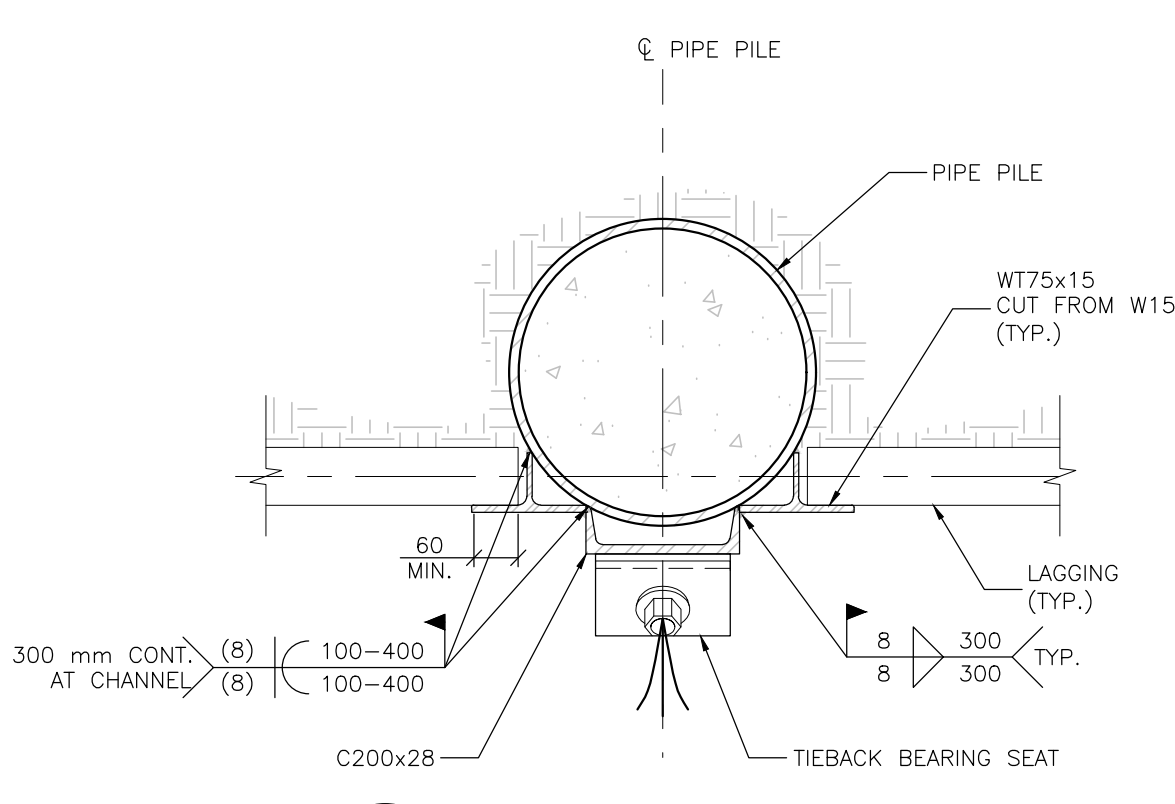
2 WALER ASSEMBLY LAYOUT
SE-4 1:10



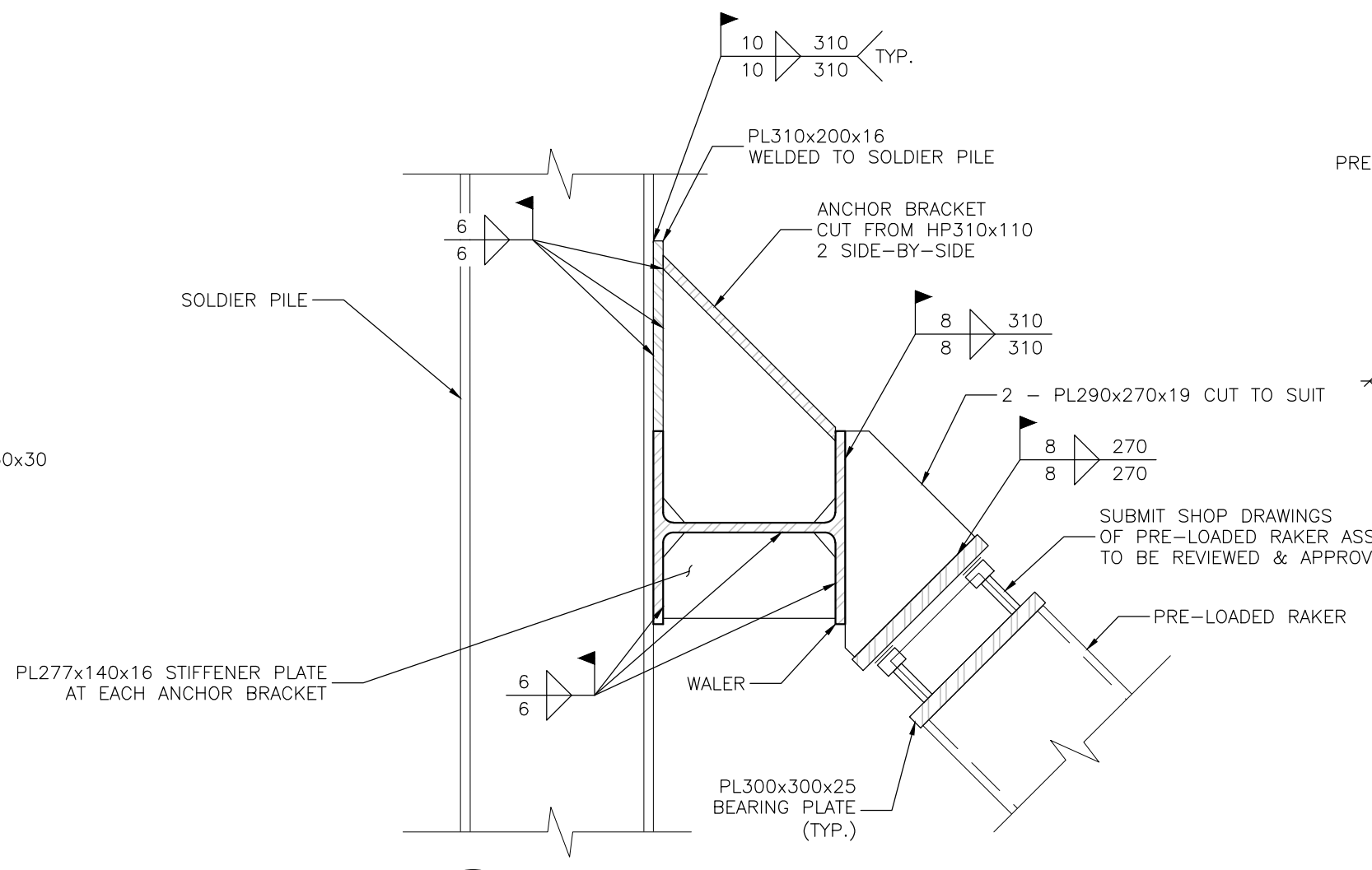
3 TIEBACK ANCHORAGE DETAIL
SE-4 1:25



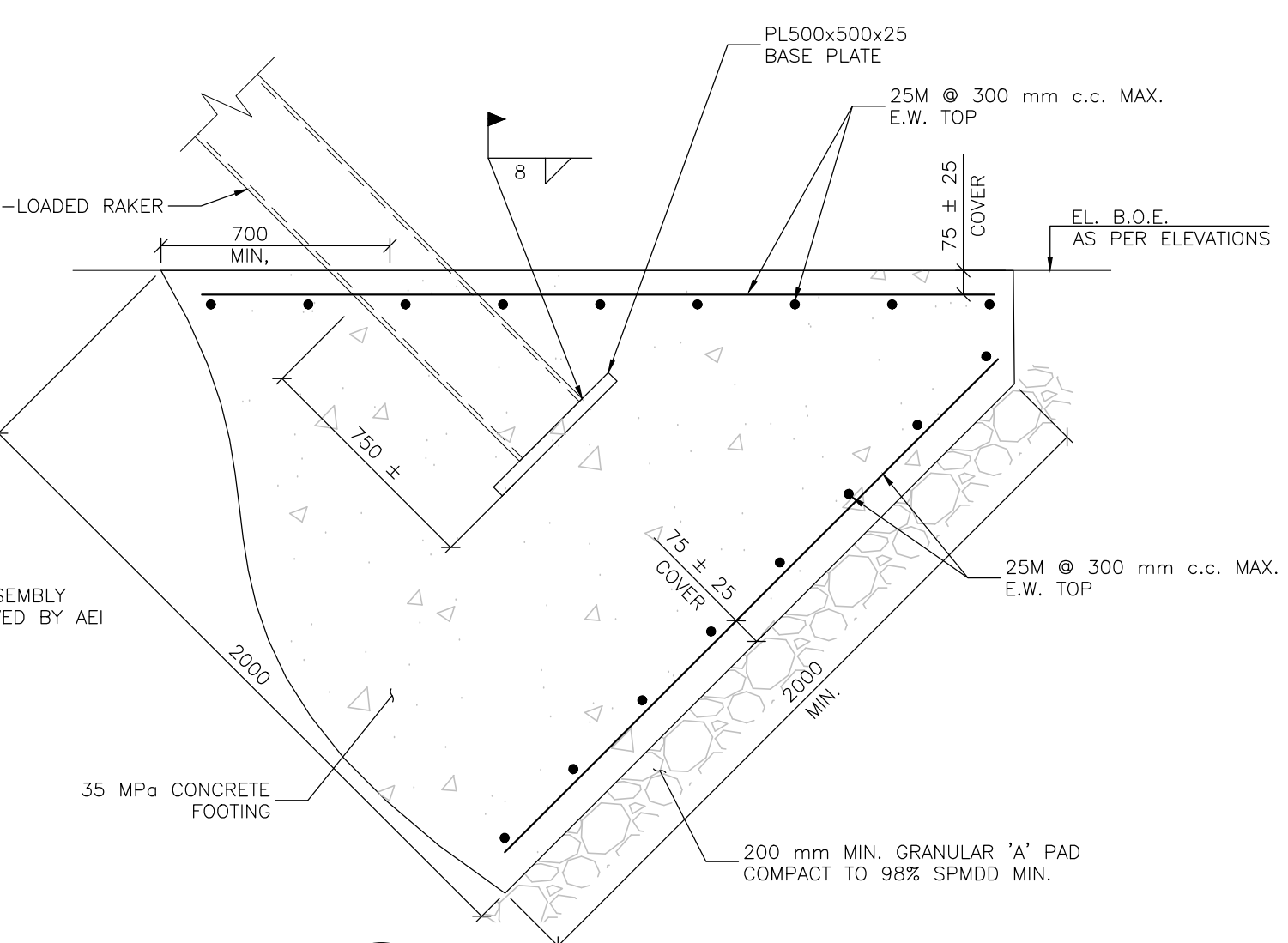
4 BEARING SEAT ASSEMBLY DETAIL
SE-4 1:10
406x13 PIPE PILE



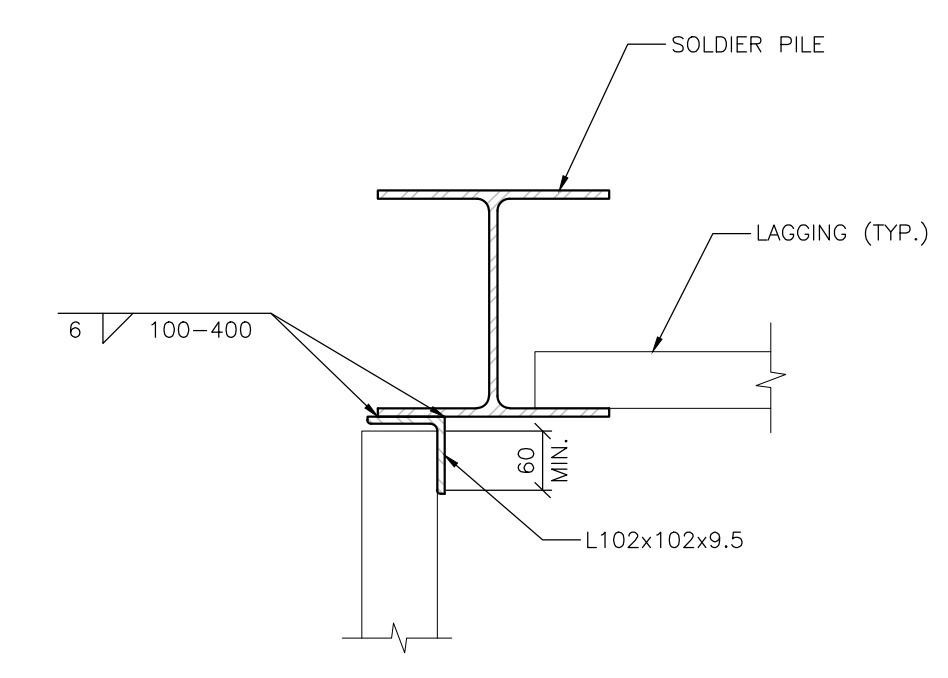
5 TYPICAL PIPE PILE LAYOUT
SE-4 1:10



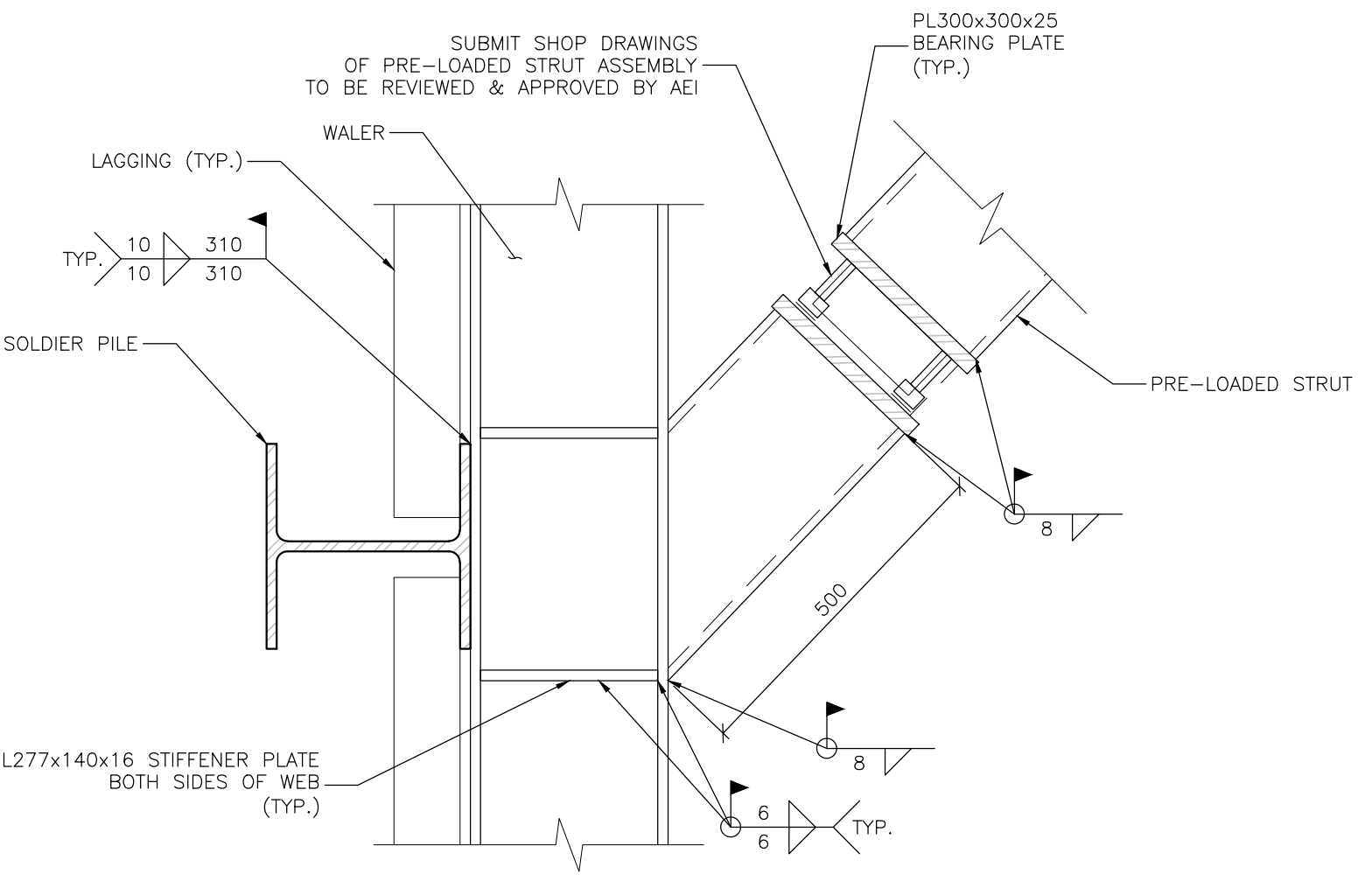
6 RAKER TOP CONNECTION DETAIL
SE-4 1:10



7 RAKER FOOTING DETAIL
SE-4 1:20



8 CORNER PILE DETAIL
SE-4 1:10



9 TYPICAL CORNER STRUT CONNECTION DETAIL
SE-4 1:10

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A detail no. no. of detail
B location drawing no. sur. design no.

scale	VARIES	
revisions	ISSUED FOR BUILDING PERMIT	06-10-2021
drawing		

EXCAVATION SHORING: DETAILS

stamp

designed	drawn	reviewed	approved
T.B.	T.B.	B.H.	T.B.
date	project number	drawing number	
October 6, 2021	4831	SE-4	