

THE WARREN COMPANY

BARNABIE POINT PROJECT

3700 EAST MERCER WAY, MERCER ISLAND, WA

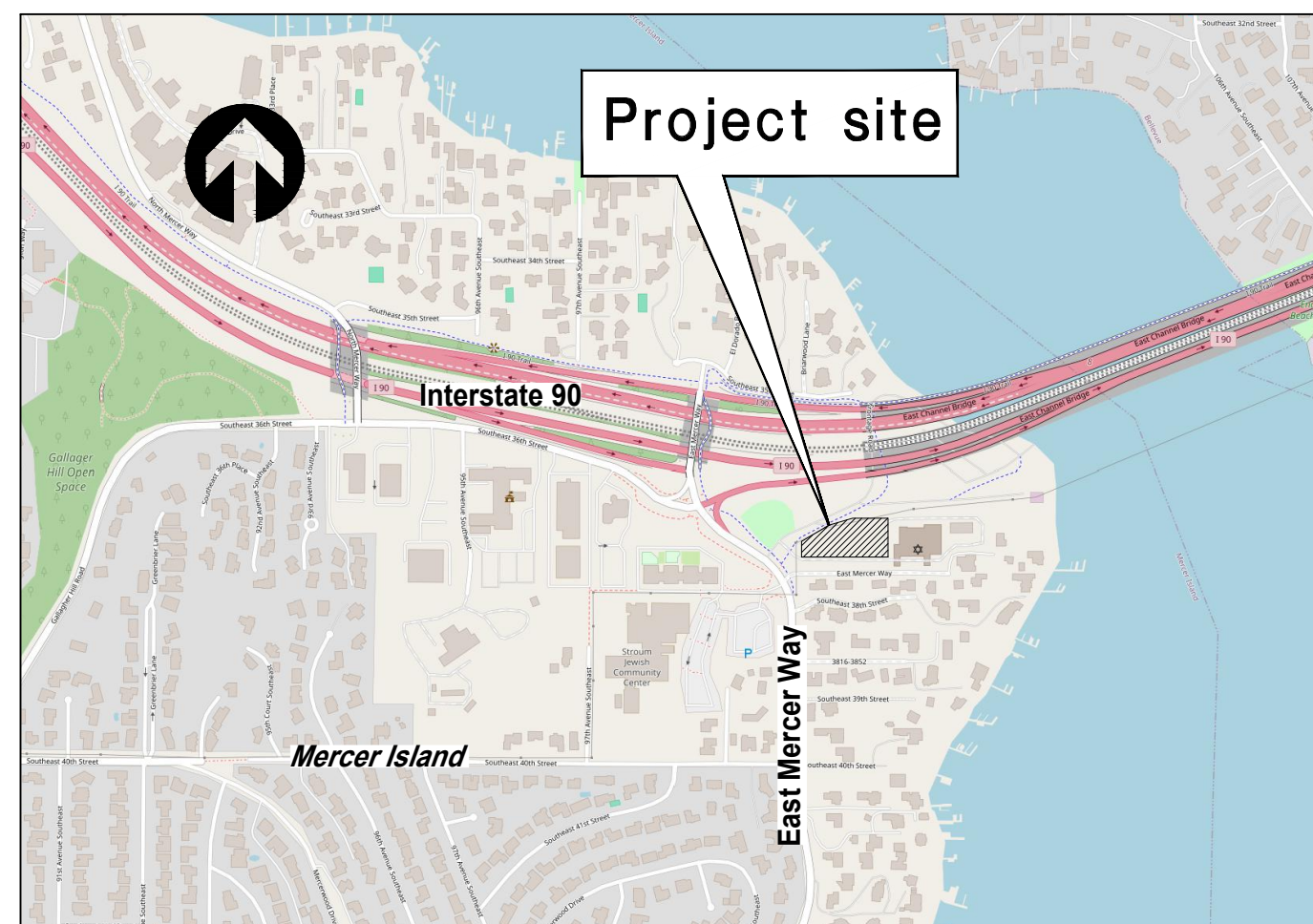
TEMPORARY SHORING WALL PLANS

SHEET NUMBER

SHEET TITLE

SH1.0
SH2.0
SH3.0
SH4.0

COVER SHEET AND NOTES
SHORING PLAN
WALL ELEVATION
DETAILS



VICINITY MAP

GENERAL:

THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING DIMENSIONS AND SITE CONDITIONS, DETERMINING ACTUAL LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLANS AND THOSE UTILITIES OR UNDERGROUND OBSTRUCTIONS NOT SHOWN ON THE PLANS, AND FOR REMOVAL OF ALL ABANDONED UTILITIES, OR OTHER UNDERGROUND OBSTRUCTIONS THAT INTERFERE WITH THE NEW CONSTRUCTION.

THE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION PROCESS AND THE SAFETY OF THE WORKERS. THIS INCLUDES BUT IS NOT LIMITED TO, THE CONSTRUCTION SEQUENCE, TEMPORARY HANDRAILS, EXCAVATION ACCESS, AND BARRIERS. IT ALSO INCLUDES LIFTING OF MATERIALS AND CONSTRUCTION EQUIPMENT INTO AND OUT OF THE EXCAVATION, TEMPORARY BRACING OF FORMWORK, TEMPORARY SHORING OF EXCAVATIONS, AND STABILITY OF ALL TEMPORARY CUT SLOPES.

REFERENCE DATA:

THE EXISTING SITE, TOPOGRAPHICAL, AND UTILITY DATA, THE PROPOSED GRADES AND UTILITIES, THE DIMENSIONS AND DEPTHS OF THE PROPOSED FOUNDATIONS, AND THE PROPOSED SHORING WALL LOCATIONS ARE BASED ON THE FOLLOWING:

- THE SITE SURVEY TITLED: "TOPOGRAPHIC SURVEY, 3700 EAST MERCER WAY, MERCER ISLAND, WASHINGTON", PREPARED BY CHADWICK & WINTERS, DATED DECEMBER 2, 2024.
- THE STRUCTURAL PLAN SHEETS TITLED: "3700 E MERCER, BARNABIE POINT PROJECT, SHEETS S-100, S-101, S-201, S-304, AND S-305", PREPARED BY PCS STRUCTURAL SOLUTIONS, DATED JUNE 4, 2025.

BUILDING CODES, DESIGN MANUALS, AND SPECIFICATIONS:

2018 INTERNATIONAL BUILDING CODE (AS AMENDED BY THE CITY OF MERCER ISLAND)

PUBLICATION NO. FHWA-IF-99-015, GEOTECHNICAL ENGINEERING CIRCULAR NO. 4, GROUND ANCHORS AND ANCHORED SYSTEMS

DESIGN SURCHARGE LOADS:

A BASIC TRAFFIC SURCHARGE OF 250 PSF VERTICAL AND 80 PSF LATERAL WAS CONSIDERED IN THE DESIGN.

DESIGN CALCULATIONS:

THE TEMPORARY SHORING WALL DESIGN CALCULATIONS ARE CONTAINED IN THE LETTER REPORT TITLED: "TEMPORARY SHORING WALL DESIGN CALCULATIONS AND PLANS, BARNABIE POINT PROJECT, 3700 EAST MERCER WAY, MERCER ISLAND, WA", PREPARED BY GROUND SUPPORT PLLC FOR WARREN COMPANY, DATED NOVEMBER 12, 2025.

SHORING DESIGN CRITERIA:

THE SUBSURFACE DESIGN PARAMETERS AND SHORING WALL DESIGN CRITERIA ARE BASED UPON THE FOLLOWING PROJECT GEOTECHNICAL REPORT: "SUBSURFACE EXPLORATION, GEOLOGIC HAZARD, AND GEOTECHNICAL ENGINEERING REPORT, HERZL-NEE TAMID CONSERVATIVE CONGREGATION K-8 EXPANSION, MERCER ISLAND, WASHINGTON", PREPARED BY ASSOCIATED EARTH SCIENCES INC., DATED DECEMBER 12, 2024. THE EARTH PRESSURE DIAGRAMS AND SHORING DESIGN CRITERIA ARE SHOWN ON THIS SET OF PLANS.

GROUNDWATER / DEWATERING:

GROUNDWATER WAS NOT ENCOUNTERED DURING THE SOILS INVESTIGATION. THEREFORE, FOR THE PURPOSES OF DESIGN OF THE SHORING WALL, THE WATER TABLE HAS BEEN ASSUMED TO OCCUR BENEATH THE BASE OF THE EXCAVATION. NEVERTHELESS, LOCALIZED WET ZONES AND/OR PERCHED POCKETS AND STRINGERS OF WATER-BEARING SOILS MAY BE ENCOUNTERED AT ANY TIME. THE WALL FACE EXCAVATION MUST PROCEED CAUTIOUSLY TO AVOID EXCESSIVE GROUND LOSS OR DISTURBANCE IN AREAS OF WATER BEARING SOILS. GAPS IN THE TIMBER LAGGING WILL PROVIDE A FREE-DRAINING FACE CONDITION, AND SUMP PUMPS AND TRENCHES MAY BE REQUIRED AT THE EXCAVATION BASE TO CONTROL WATER INSIDE THE SITE.

TIMBER LAGGING:

ALL LAGGING BOARDS SHALL BE PRESSURE-TREATED, IN GOOD CONDITION, AND SHALL BE HEM-FIR NO. 2 OR BETTER, WITH AN ALLOWABLE FLEXURAL STRESS FB=1020 PSI (WHICH INCLUDES ALL APPLICABLE FLAT-USE AND SIZE FACTORS). ALL LAGGING BOARDS SHALL BE PRESSURE-TREATED IN ACCORDANCE WITH ANPA STANDARD C14 (FOR END USE CLASSIFICATION 4A), TO A MINIMUM RETENTION OF 0.40 PCF, USING THE CCA PROCESS (COMMERCIAL PRODUCT NAME OSMOSE OR APPROVED EQUAL). ALTERNATIVE TREATMENT PROCESSES MAY BE SUBMITTED TO GROUND SUPPORT PLLC FOR APPROVAL.

THE CONTRACTOR SHALL EXCAVATE THE WALL FACE AND INSTALL THE LAGGING IN SUCH A MANNER AS TO MAINTAIN A SAFE WORK PLACE AND AVOID EXCESSIVE SLOUGHING AND OVERBREAK. BACKFILL BEHIND LAGGING BOARDS WITH A FREE-DRAINING GRANULAR MATERIAL, OR NATIVE SOILS IF APPROVED BY THE GEOTECHNICAL ENGINEER.

AS A MINIMUM, PRIOR TO PLACING THE SUBSEQUENT SET OF TIMBER LAGGING, DO NOT EXCAVATE MORE THAN 4 FEET BELOW THE CURRENT DEPTH OF LAGGED WALL FACE. ALONG ANCHORED WALLS, DO NOT EXCAVATE MORE THAN 2 FEET BELOW THE CURRENT LEVEL OF ANCHORS UNTIL THE THOSE ANCHORS ARE INSTALLED, CURED, TESTED, AND STRESSED.

LEAN-MIX CONCRETE:

ALL LEAN-MIX CONCRETE SHALL HAVE A MINIMUM OF 1 SACK (94 LBS) OF CEMENT AND 100 LBS OF FLY ASH PER CUBIC YARD OF CONCRETE. PORTLAND CEMENT SHALL BE TYPE I, II, OR III CONFORMING TO ASTM C150 / AASHTO M85. FLY ASH SHALL BE TYPE F CONFORMING TO ASTM C618.

SLUMP FOR ALL LEAN-MIX CONCRETE SHALL NOT BE LESS THAN 5 INCHES AND NO GREATER THAN 9 INCHES. ADMIXTURES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C494 / AASHTO M194. SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND SHALL BE APPROVED BY THE ENGINEER.

AGGREGATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C33 / AASHTO M6 FOR FINE AGGREGATES AND AASHTO M80, CLASS B FOR COARSE AGGREGATES.

STRUCTURAL STEEL:

ALL STRUCTURAL STEEL WIDE FLANGE AND OTHER ROLLED SHAPES SHALL CONFORM TO ASTM A572 / AASHTO M270, GRADE 50; ALL STRUCTURAL STEEL PLATES SHALL CONFORM TO ASTM A36 / AASHTO M270, GRADE 36; ALL RECTANGULAR STEEL TUBE WALLERS SHALL CONFORM TO ASTM A500, GRADE B; AND ALL PIPES SHALL CONFORM TO ASTM A53 GRADE B, UNLESS SHOWN OTHERWISE ON THE PLANS, OR APPROVED OTHERWISE BY THE ENGINEER.

STRUCTURAL WELDING:

MINIMUM WELD SIZE 1/4" CONTINUOUS FILLET. MINIMUM WELD LENGTH 2 INCHES. ALL WELDING TO BE PERFORMED BY WABO-CERTIFIED WELDERS PER AWS STANDARD SPECIFICATIONS. USE E70XX ELECTRODES.

DRILLED SOLDIER PILES:

THE MINIMUM REQUIRED STRUCTURAL STEEL W-SHAPES FOR THE SOLDIER PILES ARE INDICATED ON THE PLANS. ALTERNATIVE STEEL SECTIONS MAY BE USED PROVIDED THAT THE SECTION MODULUS OF EACH ALTERNATIVE STEEL SECTION ARE EQUAL TO OR GREATER THAN THE CROSS-SECTIONAL AREA AND SECTION MODULUS OF THE CORRESPONDING STEEL SECTION SHOWN ON THE PLANS, AND IS APPROVED BY THE SHORING DESIGNER.

SHAFTS SHALL BE CONSTRUCTED SO THAT THE CENTER AT THE TOP OF THE SHAFT IS WITHIN +/- 3 INCHES OF THE PLAN LOCATION. SHAFTS SHALL BE PLUMB. THE ELEVATION AT THE TOP OF SHAFT SHALL BE +/- 3 INCHES FROM THE PLAN LOCATION. DURING CONSTRUCTION FOR THE SHAFTS, THE CONTRACTOR SHALL MAKE FREQUENT CHECKS ON THE PLUMBNESS, ALIGNMENT, AND DIMENSIONS OF THE SHAFTS. ANY DEVIATION EXCEEDING THE ALLOWABLE TOLERANCES SHALL BE CORRECTED IMMEDIATELY.

THE STEEL SOLDIER PILES SHALL BE PLACED SO THAT THE CENTER OF THE PILE IS WITHIN +/- 1 INCH OF THE PLAN LOCATION AT THE TOP OF THE PILE, AND WITHIN 1% OF VERTICAL WITH DEPTH.

SHAFTS SHALL BE EXCAVATED TO THE REQUIRED DEPTH AS SHOWN ON THE PLANS. THE EXCAVATION SHALL BE COMPLETED IN A CONTINUOUS OPERATION USING EQUIPMENT CAPABLE OF EXCAVATING THROUGH THE TYPE OF MATERIAL EXPECTED TO BE ENCOUNTERED.

IF THE SHAFT EXCAVATION IS STOPPED WITH THE APPROVAL OF THE ENGINEER, THE SHAFT SHALL BE SECURED BY INSTALLATION OF A SAFETY COVER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE SAFETY OF THE SHAFT AND SURROUNDING SOIL AND THE STABILITY OF THE SIDE WALLS. A TEMPORARY CASING SHOULD BE USED IF NECESSARY TO ENSURE SUCH SAFETY AND STABILITY.

WHERE CAVING CONDITIONS ARE ENCOUNTERED, FURTHER EXCAVATION WILL NOT BE ALLOWED UNTIL THE CONTRACTOR SELECTS A METHOD TO PREVENT GROUND MOVEMENT. THE CONTRACTOR MAY ELECT TO PLACE A TEMPORARY CASING OR USE OTHER METHODS APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL USE APPROPRIATE MEANS (SUCH AS A CLEANOUT BUCKET), TO CLEAN THE BOTTOM OF THE EXCAVATION SUCH THAT NO MORE THAN 2 INCHES OF LOOSE OR DISTURBED MATERIAL IS PRESENT.

WHEN UNEXPECTED OBSTRUCTIONS, WHICH REQUIRE SPECIALIZED EQUIPMENT AND/OR LABOR ARE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PROMPTLY AND THE OBSTRUCTIONS SHALL BE REMOVED AND THE EXCAVATION CONTINUED IN A MANNER APPROVED BY THE ENGINEER.

TEMPORARY CASINGS FOR THE SHAFTS SHALL BE REMOVED. A MINIMUM 5 FOOT HEAD OF CONCRETE MUST BE MAINTAINED TO BALANCE THE SOIL AND WATER PRESSURE AT THE BOTTOM OF THE CASING DURING REMOVAL. THE CASING SHALL BE SMOOTH.

SHAFT CONCRETE SHALL BE PLACED AS SHOWN ON THE PLANS AND SHALL COMMENCE WITHIN 2 HOURS AFTER COMPLETION OF THE EXCAVATION. SHAFT CONCRETE SHALL BE PLACED IN ONE CONTINUOUS OPERATION TO THE TOP OF THE SHAFT.

IF WATER IS NOT PRESENT, THE CONCRETE SHALL BE DEPOSITED BY A METHOD WHICH PREVENTS AGGREGATE SEGREGATION. THE CONTRACTOR'S METHOD FOR DEPOSITING CONCRETE SHALL HAVE APPROVAL OF THE ENGINEER PRIOR TO CONCRETE PLACEMENT.

IF WATER IS PRESENT, THE CONCRETE SHALL BE DEPOSITED BY TREMIE PLACEMENT METHODS.

SPECIAL INSPECTION OF THE SHORING WALLS:

IN ACCORDANCE WITH SECTION 1704 OF IBC (2018), SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING SHORING ITEMS OR PROCESSES: SOLDIER PILE INSTALLATION.

SHORING MONITORING:

SURVEY MONITORING OF THE SHORING WALLS, SHALL BE PERFORMED TO DETERMINE THE VERTICAL AND HORIZONTAL MOVEMENT OF THE MONITORING POINTS. THE MEASURING SYSTEM SHALL HAVE AN ACCURACY OF AT LEAST 0.01 FEET.

THE MONITORING PROGRAM SHALL BE DETERMINED BY THE GEOTECHNICAL SPECIAL INSPECTOR BUT, AT A MINIMUM, SHALL INCLUDE THE FOLLOWING:

- MONITORING POINTS SHALL CONSIST OF RODS OR BOLTS EMBEDDED INTO THE OBJECT OF INTEREST OR CROSS-HAIRS INSCRIBED ONTO A PLATE THAT IS ATTACHED TO THE OBJECT OF INTEREST.

- MONITORING POINTS SHALL BE ESTABLISHED: (1) A MAXIMUM OF 25 FEET ON CENTER AT THE TOP OF THE WALLS, (2) A MAXIMUM OF 25 FEET ON CENTER A DISTANCE OF 5 FEET BEHIND THE SHORING WALLS WHERE THERE ARE NO ADJACENT BUILDINGS, (3) A MAXIMUM OF 25 FEET ON CENTER A DISTANCE BEHIND THE SHORING WALLS WHERE THERE ARE NO ADJACENT BUILDINGS NO GREATER THAN HALF THE EXCAVATION HEIGHT OF THE WALL, AND (4) ON ANY ADJACENT STRUCTURES THAT ARE LOCATED WITHIN A HORIZONTAL DISTANCE EQUAL TO THE WALL HEIGHT ALONG THE SHORING WALLS.

- READINGS SHALL BE TAKEN AND REPORTED AT LEAST TWICE A WEEK, ONE TIME OF WHICH MUST BE BY A LICENSED SURVEYOR.

MONITORING DATA SHALL BE DISTRIBUTED TO THE GEOTECHNICAL ENGINEER, THE SHORING DESIGN ENGINEER, AND THE GENERAL CONTRACTOR FOR REVIEW.

THE EXPECTED LATERAL SHORING WALL MOVEMENT IS ON THE ORDER OF 1/2" TO 3/4" FOR ALL WALLS UNLESS NOTED OTHERWISE. THE ANCHORED WALL ADJACENT TO THE AVALON TOWERS IS EXPECTED TO MOVE ABOUT 1/4" OR LESS, AND THE WALLS ADJACENT TO THE EXISTING BUILDINGS ALONG THE EAST AND WEST WALLS ARE EXPECTED TO MOVE LESS THAN 1/2".

IF MOVEMENTS ARE TRACKING TO EXCEED THESE FINAL VALUES, THE EXCAVATION SHALL BE HALTED UNTIL FURTHER REVIEW BY GROUND SUPPORT PLLC.

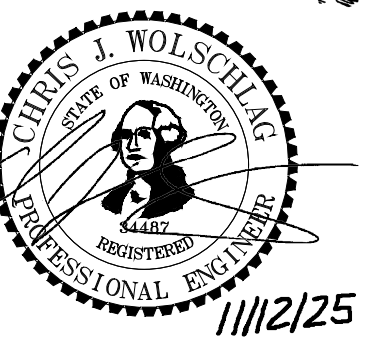
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4 JUNE 2025
BUILDING PERMIT

PROJECT:

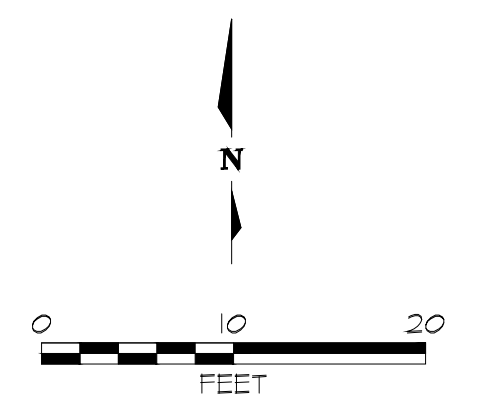
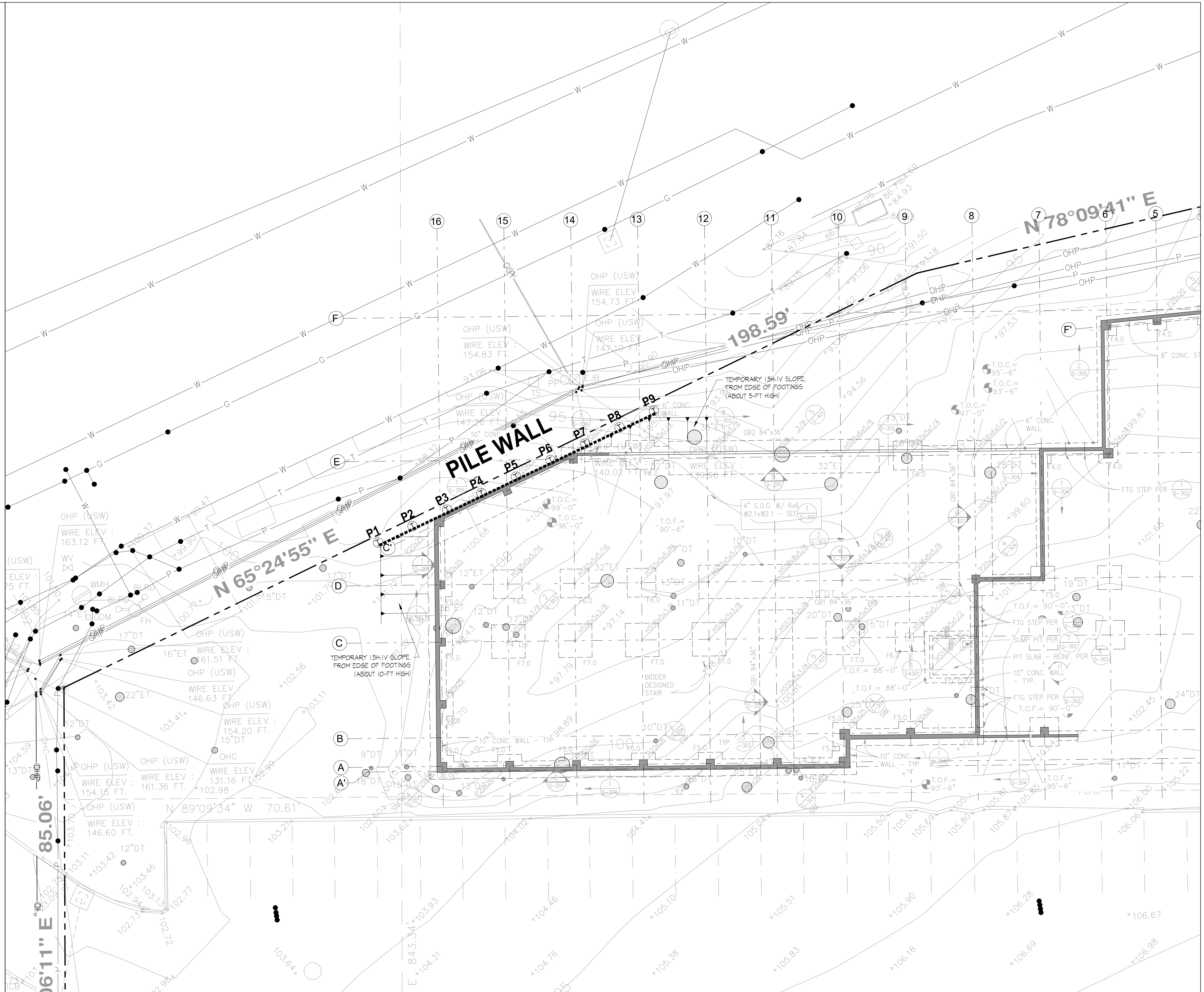
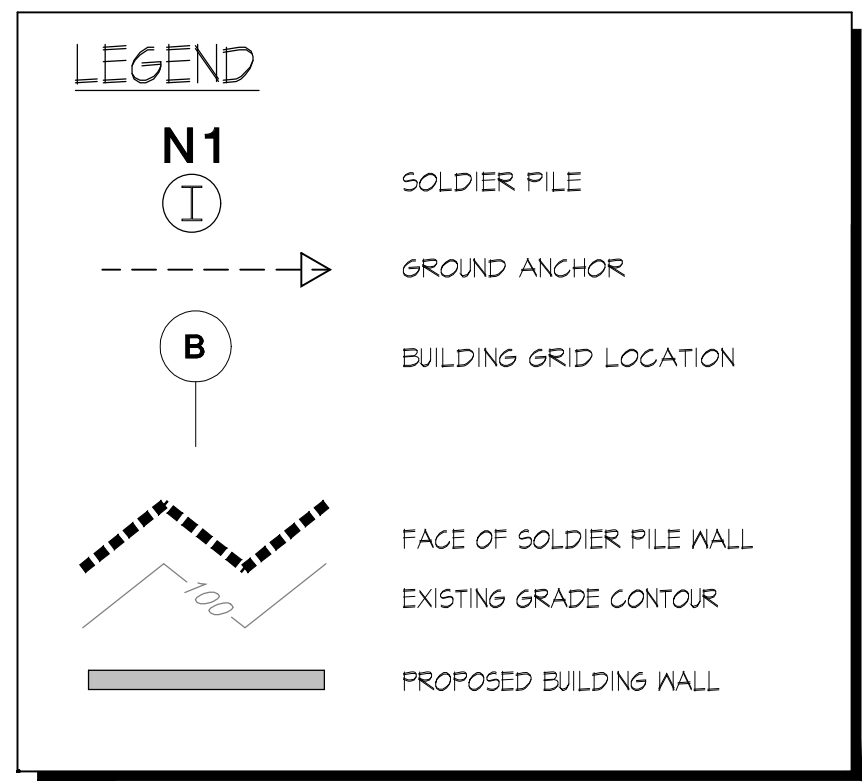
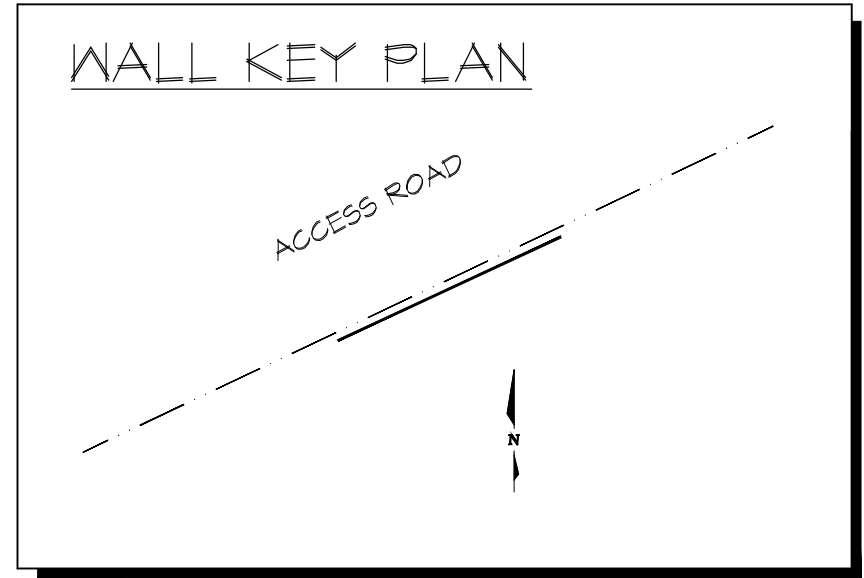
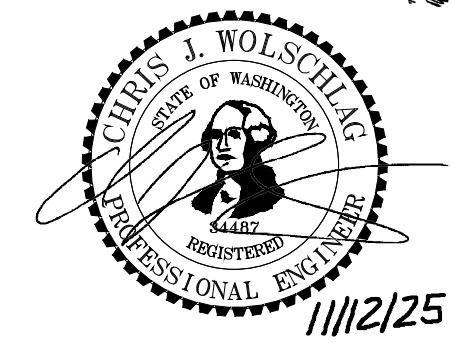
COVER SHEET & NOTES

SH1.0



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BARNABIE POINT PROJECT

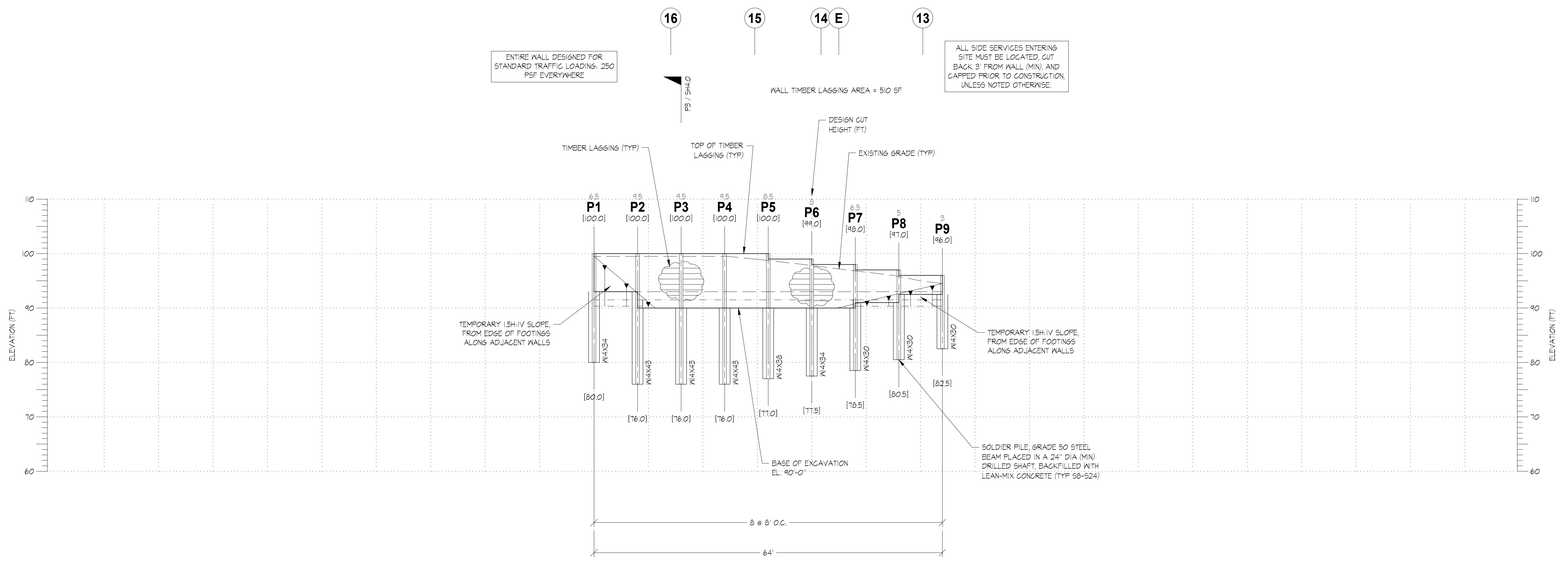
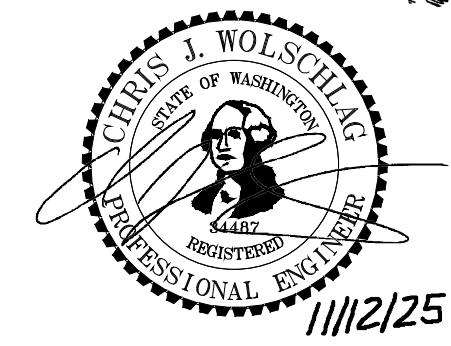


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PROJECT:		

SHORING PLAN

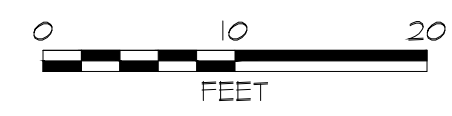
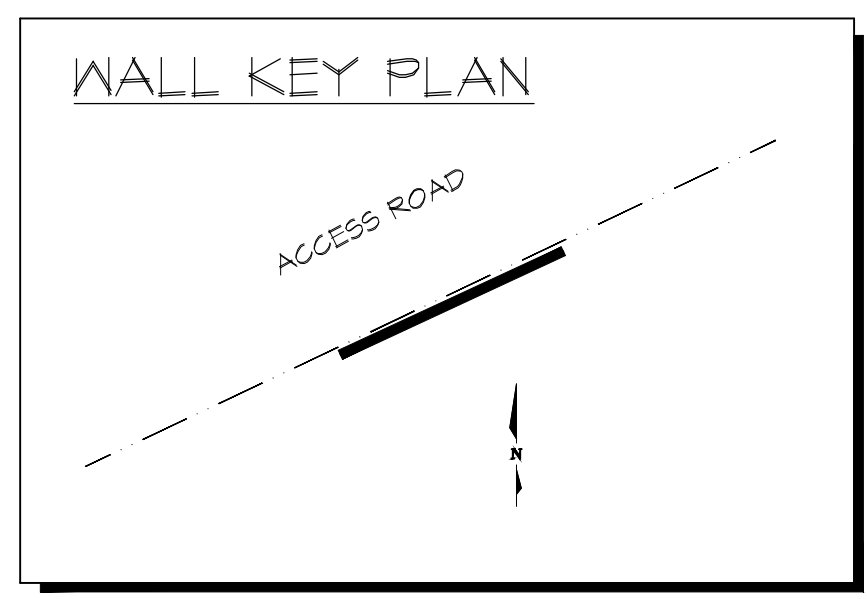
SH2.0

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LEGEND

- P1 PILE NUMBER
- [94.5] TOP OF SOLDIER PILE (FEET)
- SOLDIER PILE
- GROUND ANCHOR
- DRILLHOLE
- [61.0] BOTTOM OF SOLDIER PILE (FEET)
- (B) BUILDING GRID LOCATION
- A / SH3.0 CROSS SECTION LOCATION AND IDENTIFICATION



NO.	DATE	DESCRIPTION
	4 JUNE 2025	BUILDING PERMIT
PROJECT:		

WALL ELEVATION

SH3.0

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