

MUST REMAIN ON JOB SITE



NOTICE
HOURS OF WORK: 7AM TO 8PM MON-FRI
9AM TO 6PM SAT. NO WORK SUNDAYS &
HOLIDAYS (PER KZC SEC. 115.25)
 Exceptions must be approved in writing by Planning Official

PCD APPROVED SITE PLAN
 Any proposed changes to the approved site plan, such as but not limited to added hard surfaces, HVAC units, tree removals and accessory structures, must be submitted to the Building Department as a revision to the building permit for review and approval by all departments prior to implementation.

DONALD B. MURPHY CONTRACTORS

KIRKLAND URBAN

321 PARKPLACE CENTER, KIRKLAND, WASHINGTON

TEMPORARY AND PERMANENT SHORING WALL PLANS

TITLE
KIRKLAND URBAN
 321 PARKPLACE CENTER
 KIRKLAND, WA 98033

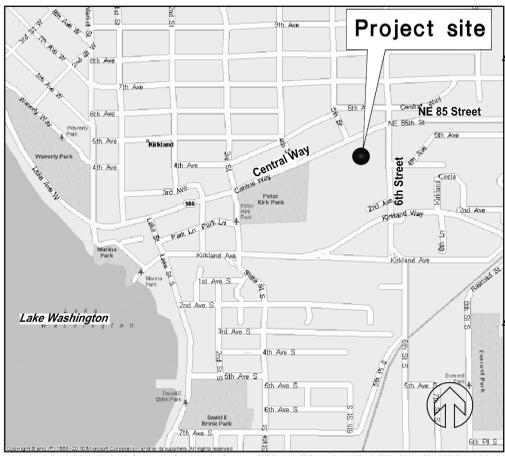
CONSULTANT

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ISSUED:

MARK	DATE	DESCRIPTION
0	01.29.16	PERMIT SUBMITTAL
1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

SHEET NUMBER	SHEET TITLE
SH1.0-1.1	COVER & SHORING NOTES SHORING PLANS SHORING ELEVATIONS PILE AND ANCHOR SCHEDULES CROSS-SECTIONS AND DESIGN DIAGRAMS DETAILS
SH2.0-2.9	
SH3.0-3.17	
SH3.A-3.D	
SH4.0-4.4	
SH5.0-5.5	



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SHORING WALL NOTES:

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

THE GENERAL CONTRACTOR AND SUBCONTRACTORS ARE 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 SINGLE-SIDED FORMWORK, TEMPORARY SHORING OF EXCAVATIONS, AND STABILITY OF ALL TEMPORARY CUT SLOPES.

PRE-CONSTRUCTION REVIEW:
 SIX WEEKS PRIOR TO ORDERING SHORING SYSTEM MATERIALS, NOTIFY GROUND SUPPORT PLLC SO THAT THE EXCAVATION PLAN CAN BE CHECKED FOR CHANGES.

POST-CONSTRUCTION ACTIONS: **Contact the Public Works Construction Inspector prior to starting any of these post construction items.**
 1. **AFTER THE CONSTRUCTION IS COMPLETE VIDEO ALL STORM AND SEWER LINES WITHIN THE BUILDING FOOTPRINT TO VERIFY THAT THE UTILITIES WERE NOT IMPACTED.**
 2. **REMOVE THE SOLDIER PILE BEAM TOPS TO A DEPTH OF 8 FEET WITHIN THE CURRENT AND FUTURE RIGHTS-OF-WAY AND IN PETER KIRK PARK.**
 3. **ALL GROUND ANCHORS WITHIN THE CURRENT AND FUTURE RIGHTS-OF-WAY AND IN PRIVATE PROPERTY SHALL BE DE-STRESSED PRIOR TO THE COMPLETION OF THE PROJECT.**

REFERENCE DATA:
 ALL EXISTING SITE DATA, EXISTING AND PROPOSED TOPOGRAPHICAL DATA, AND EXISTING AND PROPOSED UTILITY DATA, AND PROPOSED SHORING WALL LOCATIONS ARE BASED ON:
 • THE PLAN SET TITLED "KIRKLAND URBAN, 321 PARKPLACE CENTER, KIRKLAND, WA 98033", DATED DECEMBER 4, 2015, PREPARED BY COUGHLIN PORTER LUNDEEN.
 • THE ELECTRONIC DRAWING FILE NAMED "EXPORT_CSD_MODEL_EXPORT.DWG", FILE DATED DECEMBER 23, 2015, PREPARED BY COUGHLIN PORTER LUNDEEN.
 • THE DRAWING TITLED "TOPOGRAPHIC & BOUNDARY SURVEY, 5/4 1/4 SEC 5, T25N, R5E, 14M, KIRKLAND PLACE, EXT CENTRAL WAY, KIRKLAND, KING COUNTY, WA", DATED JUNE, 2015, PREPARED BY GEODIMENSIONS.
 • THE PLAN SET TITLED "KIRKLAND URBAN, 321 PARKPLACE CENTER, KIRKLAND WA 98033", DATED DECEMBER 4, 2015, PREPARED BY COUGHLIN PORTER LUNDEEN.
 • THE BUILDING INFORMATION MODEL FILE NAMED "KIRKLAND PARK PLACE-STRUCTURAL-P2.RVT", FILE DATED APRIL 1, 2016, PREPARED BY COUGHLIN PORTER LUNDEEN.

BUILDING CODES, DESIGN MANUALS, AND SPECIFICATIONS:
 2012 INTERNATIONAL BUILDING CODE
 1998 FHWA SUMMARY REPORT OF RESEARCH ON PERMANENT GROUND ANCHOR WALLS
 GEOTECHNICAL ENGINEERING CIRCULAR NO. 4, "GROUND ANCHORS AND ANCHORED SYSTEMS", FHWA, DATED JUNE 1994

DESIGN LIVE LOADS:
 TRAFFIC/CONSTRUCTION SURCHARGE = SEE SHEET SH4.4

DESIGN CALCULATIONS:
 THE SOLDIER PILE SHORING WALL DESIGN CALCULATIONS ARE CONTAINED IN THE REPORT TITLED, "KIRKLAND PARK PLACE (PROJECT NO. 15-68)", PREPARED BY GROUND SUPPORT PLLC FOR DBM CONTRACTORS, INC., DATED JANUARY 20, 2016.

SUBSURFACE DESIGN:
 ALL SUBSURFACE DESIGN PARAMETERS USED IN THE SHORING DESIGN ARE BASED ON THE SUBSURFACE CHARACTERIZATION PRESENTED IN THE REPORT "SUBSURFACE EXPLORATION, GEOLOGIC HAZARD, AND GEOTECHNICAL ENGINEERING REPORT PARKPLACE MIXED USE, CENTRAL WAY AND 6TH STREET, KIRKLAND, WASHINGTON", PREPARED BY ASSOCIATED EARTH SCIENCES, INC., DATED JANUARY 20, 2016 (REVISED APRIL 5, 2016). THE SHORING DESIGN PARAMETERS AND EARTH PRESSURE DIAGRAMS ARE PRESENTED ON THE PLANS.

SEISMIC DESIGN PARAMETERS:
 SEISMIC COEFFICIENT FOR PERMANENT WALLS = 0.25g.

CONCRETE:
 ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI. STRUCTURAL CONCRETE SHALL BE USED BELOW THE BOTTOM OF THE EXCAVATION IN DRILLHOLES SHOWN ON THE SHORING ELEVATIONS.
 ALL CONTROLLED-DENSITY-FILL (CDF) SHALL HAVE A MINIMUM OF 1.5 SACKS (141 LB) OF CEMENT PER CUBIC YARD OF CONCRETE.
 TYPE I, II, OR III PORTLAND CEMENT CONFORMING TO ASTM C150 / AASHTO M85 SHALL BE USED FOR CONCRETE.
 SLUMP FOR ALL 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 C88 / AASHTO M6 FOR FINE AGGREGATES AND AASHTO M80, CLASS B FOR COARSE AGGREGATES.

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 (4-INCH LAGGING) (WHICH INCLUDES ALL APPLICABLE FLAT-USE AND SIZE FACTORS).
 ALL LAGGING BOARDS SHALL BE PRESSURE-TREATED IN ACCORDANCE WITH ANFA STANDARD U-05 (FOR END USE CLASSIFICATION U64), 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.

STRUCTURAL STEEL:
 ALL STRUCTURAL STEEL SHAPES SHALL CONFORM TO ASTM A992 (Fy=50 KSI (MIN)), AND PLATES SHALL CONFORM TO ASTM A572, UNLESS SHOWN OTHERWISE ON THE PLANS, OR APPROVED OTHERWISE BY THE ENGINEER.

STRUCTURAL WELDING:
 MINIMUM WELD SIZE 1/4 INCH CONTINUOUS FILLET. MINIMUM WELD LENGTH 2 INCHES. ALL WELDING TO CONFORM TO AWS D11. USE E70XX ELECTRODES.

SHORING ELEMENT LAYOUT:
 LAYOUT OF SHORING ELEMENTS PERPENDICULAR TO THE BUILDING WALLS SHALL BE BASED ON THE ARCHITECTURAL PLANS TAKING INTO ACCOUNT PERTINENT BUILDING ELEMENTS (E.G. WATERPROOFING) NOT SHOWN ON THESE PLANS.

SHORING WALL COVER & SHORING NOTES

SH1.0

PROJECT NUMBER 15-68
 DRAWN BY JSS
 ISSUE DATE 1.29.2016



SHEET TITLE / NUMBER
COVER AND SHORING NOTES

SH1.0



WATERPROOFING:
THE SHORING SYSTEM IS TEMPORARY IN NATURE, IS CONSTRUCTED EXTERNAL TO THE BUILDING ENVELOPE OF THE PERMANENT STRUCTURE, AND SHOULD NOT BE CONSIDERED AS CONTRIBUTING ANY LONG-TERM UTILITY TO THE PERMANENT STRUCTURE. THIS INCLUDES ISSUES RELATING TO DRAINAGE/WATER-PROOFING OF THE PERMANENT BASEMENT WALLS. IF THE STRUCTURAL ENGINEER INTENDS TO INCORPORATE ANY ELEMENTS OF THE SHORING SYSTEM INTO THE PERMANENT BUILDING DESIGN (INCLUDING DRAINAGE/WATER-PROOFING COMPONENTS), HE SHOULD INDEPENDENTLY EVALUATE THEIR UTILITY FOR INCLUSION AS PART OF THE PERMANENT DESIGN.

DRILLED SOLDIER PILES:
THE MINIMUM REQUIRED STRUCTURAL STEEL SHAPES FOR THE SOLDIER PILES ARE INDICATED IN THE SCHEDULES. ALTERNATIVE STEEL SECTIONS MAY BE USED PROVIDED THAT THE CROSS-SECTIONAL AREA AND 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.

SHAFTS SHALL BE CONSTRUCTED SO THAT THE CENTER AT THE TOP OF THE SHAFT IS WITHIN +/- 3 INCHES OF THE PLAN LOCATION. SHAFT PLUMBNESS MAY VARY UP TO 1 PERCENT OF PILE LENGTH.

THE STEEL SOLDIER PILES SHALL BE PLACED SO THAT THE CENTER LINE OF THE PILE IS WITHIN +/- 1 INCH OF THE PLAN LOCATION. THE STEEL SOLDIER PILE SHALL BE PLUMB CONSISTENT WITH MAXIMUM DEVIATION INTO/OUT-OF THE EXCAVATION AS DEFINED BY THE STRUCTURAL ENGINEER AND GENERAL CONTRACTOR. THE TOP ELEVATION OF THE STEEL SOLDIER PILE SHALL BE WITHIN +/- 3 INCHES OF THE PLAN ELEVATION.

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, THE CONTRACTOR SHALL SELECT A METHOD TO PREVENT GROUND MOVEMENT. THE CONTRACTOR MAY ELECT TO PLACE A TEMPORARY CASING.

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.

UNLESS SHOWN OTHERWISE ON THE PLANS, EXCAVATION OF SHAFTS SHALL NOT COMMENCE UNTIL A MINIMUM OF 12 HOURS AFTER THE CONCRETE FOR THE ADJACENT SHAFTS HAS BEEN PLACED.

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. 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.

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

EXCAVATION LAGGING, BACKFILL, AND ANCHOR STRESSING:
THE CONTRACTOR SHALL EXCAVATE THE WALL FACE AND INSTALL LAGGING IN SUCH A MANNER AS TO MAINTAIN A SAFE WORK PLACE AND AVOID EXCESSIVE SLOUGHING AND OVERBREAK. 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. IF FACE STABILITY CONDITIONS REQUIRE, THIS HEIGHT MUST BE REDUCED.

DO NOT EXCAVATE TO A DEPTH GREATER THAN 9 FEET BELOW A LEVEL OF ANCHORS PRIOR TO INSTALLATION, TESTING, AND LOCKOFF OF THOSE ANCHORS.

LAGGING SHALL BE INSTALLED FROM THE TOP OF THE PILE PROCEEDING DOWNWARD. THE TIMBER LAGGING SHALL MAKE DIRECT CONTACT WITH THE SOIL. VOIDS BEHIND THE LAGGING SHALL BE FILLED WITH FREE-DRAINING BACKFILL.

TEMPORARY GROUND ANCHORS:

1. GENERAL:

1A. THE CONTRACTOR SHALL SELECT THE INSTALLATION METHOD, THE ANCHOR DIAMETER AND THE METHOD OF GROUTING, IN ORDER TO DEVELOP THE DESIGN LOADS INDICATED ON THE PLANS, AS VERIFIED IN ACCORDANCE WITH THE ANCHOR TESTING PROGRAM.

1B. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL WORKING DRAWINGS AND A DESIGN SUBMISSION DESCRIBING THE GROUND ANCHOR SYSTEM OR SYSTEMS INTENDED FOR USE. THE WORKING DRAWINGS AND DESIGN SUBMISSION SHALL BE SUBMITTED 5 DAYS PRIOR TO THE COMMENCEMENT OF THE GROUND ANCHOR WORK. THE WORKING DRAWINGS AND DESIGN SUBMISSION SHALL INCLUDE THE FOLLOWING:

- CERTIFIED MILL TEST RESULTS AND TYPICAL STRESS-STRAIN CURVES FOR THE PRESTRESSING STEEL. THE TYPICAL STRESS-STRAIN CURVE SHALL BE OBTAINED BY APPROVED STANDARD PRACTICES. THE GUARANTEED ULTIMATE STRENGTH, YIELD STRENGTH, ELONGATION, AND COMPOSITION SHALL BE SPECIFIED.
- GROUT MIX DESIGN AND THE PROCEDURES FOR GROUT PLACEMENT.
- CALIBRATION DATA FOR EACH TEST JACK, PRESSURE GAUGE AND REFERENCE PRESSURE GAUGE TO BE USED. THE CALIBRATION TESTS SHALL HAVE BEEN PERFORMED BY AN INDEPENDENT TESTING LABORATORY AND TESTS SHALL HAVE BEEN PERFORMED WITHIN 60 DAYS OF THE DATE SUBMITTED.

2. GROUND ANCHOR INSTALLATION:

2A. AT THE GROUND SURFACE, THE DRILLHOLE SHALL BE LOCATED WITHIN 4 INCHES OF THE LOCATION SHOWN ON THE PLANS. THE DRILLHOLE SHALL BE LOCATED SO THE LONGITUDINAL AXIS OF THE DRILLHOLE AND THE LONGITUDINAL AXIS OF THE TENDON ARE PARALLEL.

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2B. AT THE POINT OF ENTRY, THE GROUND ANCHOR SHALL BE INSTALLED WITHIN +/- 3 DEGREES OF THE INCLINATION FROM HORIZONTAL SHOWN IN THE PLANS. AT THE POINT OF ENTRY, THE HORIZONTAL ANGLE MADE BY THE GROUND ANCHOR AND THE STRUCTURE SHALL BE WITHIN +/- 3 DEGREES OF A LINE DRAWN PERPENDICULAR TO THE PLANE OF THE STRUCTURE UNLESS SHOWN OTHERWISE ON THE PLANS. AT ALL ANCHOR LOCATIONS WHERE TIEBACKS CROSS, THE INCLINATION AND ORIENTATION OF THE ANCHORS SHALL BE +/- 1 DEGREE. ADDITIONALLY, FOR ANCHORS ON PILES EI-86 TO EI-42 THAT LIE ADJACENT TO EXISTING BUILDING SUPPORT PILES THE HORIZONTAL ANGLE MADE BY THE GROUND ANCHOR AND THE STRUCTURE SHALL BE WITHIN +/- 1 DEGREE OF A LINE DRAWN PERPENDICULAR TO THE PLANE OF THE EXISTING PILES.

2C. WHEN CAVING CONDITIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL SELECT A METHOD TO PREVENT GROUND MOVEMENT. THE CONTRACTOR MAY USE TEMPORARY CASING.

2D. THE TENDON SHALL BE INSERTED INTO THE DRILLHOLE TO THE DESIRED DEPTH WITHOUT DIFFICULTY. WHEN THE TENDON CANNOT BE COMPLETELY INSERTED, THE CONTRACTOR SHALL REMOVE THE TENDON FROM THE DRILLHOLE AND CLEAN OR REDRILL THE HOLE TO PERMIT INSERTION. PARTIALLY INSERTED TENDONS SHALL NOT BE DRIVEN OR FORCED INTO THE HOLE.

2E. THE CONTRACTOR SHALL USE A NEAT-CEMENT OR A SAND-CEMENT GROUT. THE CEMENT SHALL NOT CONTAIN LUMPS OR OTHER INDICATIONS OF HYDRATION. ADMIXTURES, IF USED, SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

2F. THE GROUT EQUIPMENT SHALL PRODUCE A GROUT FREE OF LUMPS AND UNDISPERSED CEMENT. A POSITIVE DISPLACEMENT GROUT PUMP SHALL BE USED. THE PUMP SHALL BE EQUIPPED WITH A PRESSURE GAUGE TO MONITOR GROUT PRESSURES AND A STROKE COUNTER. THE PRESSURE GAUGE SHALL BE CAPABLE OF MEASURING PRESSURES OF AT LEAST 150 PSI OR TWICE THE ACTUAL GROUT PRESSURES USED BY THE CONTRACTOR, WHICHEVER IS GREATER. THE GROUTING EQUIPMENT SHALL BE SIZED TO ENABLE THE GROUT TO BE PUMPED IN ONE CONTINUOUS OPERATION. THE MIXER SHALL BE CAPABLE OF CONTINUOUSLY AGITATING THE GROUT.

2G. THE GROUT SHALL BE INJECTED FROM THE LOWEST POINT OF THE DRILLHOLE. THE GROUT MAY BE PUMPED THROUGH GROUT TUBES, CASING, OR DRILL RODS. THE GROUT CAN BE PLACED BEFORE OR AFTER INSERTION OF THE TENDON. THE QUANTITY OF THE GROUT AND THE GROUT PRESSURES SHALL BE RECORDED. THE GROUT PRESSURES AND GROUT TAKES SHALL BE CONTROLLED TO PREVENT EXCESSIVE HEAVE IN SOILS OR FRACTURING OF ROCK FORMATIONS.

2H. NO GROUT SHALL BE PLACED UNDER PRESSURE ABOVE THE BOND LENGTH DURING INITIAL GROUTING OF THE ANCHOR BOND LENGTH. THE GROUT AT THE TOP OF THE DRILLHOLE SHALL NOT CONTACT THE BACK OF THE STRUCTURE.

2I. AFTER GROUTING, THE TENDON SHALL NOT BE LOADED UNTIL THE GROUT HAS ATTAINED SUFFICIENT STRENGTH TO CARRY THE TEST LOAD.

2J. ALL TEMPORARY GROUND ANCHORS SHALL BE DE-STRESSED AFTER SHORING IS NO LONGER NEEDED.

3. ANCHOR GROUT:

3A. THE GROUT SHALL BE A NEAT OR SAND/CEMENT MIXTURE WITH A MINIMUM 3-DAY COMPRESSIVE STRENGTH OF 1500 PSI AND A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI PER ASTM C109 / AASHTO T106.

3B. TYPE II CEMENT CONFORMING TO THE REQUIREMENTS OF ASTM C150 / AASHTO M85 SHALL BE USED.

3C. FINE AGGREGATES SHALL CONSIST OF CLEAN, NATURAL SAND, CONFORMING TO THE REQUIREMENTS OF ASTM C88 / AASHTO M6. MANUFACTURED SAND IS ACCEPTABLE PROVIDED IT IS SUITABLE FOR PUMPING IN ACCORDANCE WITH ACI 304, SECTION 4-2.2.

3D. ADMIXTURES SHALL BE IN ACCORDANCE WITH ASTM C494 / AASHTO M194. ADMIXTURES WHICH CONTROL BLEED, IMPROVE FLOW, REDUCE WATER CONTENT, AND RETARD SET MAY BE USED IN THE GROUT SUBJECT TO THE APPROVAL OF THE ENGINEER. EXPANSIVE ADMIXTURES SHALL ONLY BE ADDED TO THE GROUT USED FOR FILLING SEALED ENCAPSULATIONS, TRUMPETS AND ANCHORAGE COVERS. ACCELERATORS WILL NOT BE PERMITTED. ADMIXTURES SHALL BE COMPATIBLE WITH PRESTRESSING STEELS AND MIXED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

4. ANCHOR TENDONS:

4A. THE GROUND ANCHORS TENDONS SHALL CONSIST OF THE FOLLOWING:

- SEVEN-WIRE, LOW-RELAXATION STRANDS WITH AN ULTIMATE TENSILE STRENGTH OF 270 KSI CONFORMING TO ASTM A416 / AASHTO M203.

4B. STRAND COUPLERS SHALL NOT BE ALLOWED.

5. BONDBREAKER:

5A. A BONDBREAKER MUST BE PROVIDED TO PREVENT THE TENDON FROM BONDING TO THE ANCHOR GROUT SURROUNDING THE UNBONDED LENGTH.

5B. THE BONDBREAKER SHALL BE FABRICATED FROM A SMOOTH PLASTIC TUBE OR PIPE HAVING THE FOLLOWING PROPERTIES:

- RESISTANCE TO CHEMICAL ATTACK FROM AGGRESSIVE ENVIRONMENTS, GROUT OR GREASE.
- RESISTANCE TO AGING BY ULTRAVIOLET LIGHT.
- FABRICATED FROM MATERIAL NON-DETRIMENTAL TO THE TENDON.
- CAPABLE OF WITHSTANDING ABRASION, IMPACT, AND BENDING DURING HANDLING AND INSTALLATION.
- ENABLE THE TENDON TO ELONGATE DURING TESTING AND STRESSING.
- ALLOW THE TENDON TO REMAIN UNBONDED AFTER LOCKOFF.

6. SPACERS AND CENTRALIZERS:

6A. SPACERS SHALL BE USED ALONG THE TENDON BOND LENGTH OF MULTI-ELEMENT TENDONS TO SEPARATE EACH OF THE INDIVIDUAL ELEMENTS OF THE TENDON SO THE PRESTRESSING STEEL WILL BOND TO THE GROUT. SPACERS SHALL BE POSITIONED SO THEIR CENTER-TO-CENTER SPACING DOES NOT EXCEED 10 FEET. IN ADDITION, THE UPPER SPACER SHALL BE LOCATED A MAXIMUM OF 5 FEET FROM THE TOP OF THE TENDON BOND LENGTH AND THE LOWER SPACER SHALL BE PLACED A MAXIMUM OF 5 FEET FROM THE BOTTOM OF THE TENDON BOND LENGTH. SPACERS SHALL PERMIT GROUT TO FREELY FLOW UP THE DRILLHOLE. SPACERS SHALL BE FABRICATED FROM PLASTIC.

6B. CENTRALIZERS SHALL PERMIT FREE GROUT FLOW AND SHALL PROVIDE A MINIMUM OF 1 INCH OF COVER OVER THE TENDON BOND LENGTH. CENTRALIZERS SHALL BE SECURELY ATTACHED TO THE TENDON AND THE CENTER TO CENTER SPACING SHALL NOT EXCEED 10 FEET. THE UPPER CENTRALIZER SHALL BE LOCATED A MAXIMUM OF 5 FEET FROM THE TOP OF THE TENDON BOND LENGTH AND THE LOWER CENTRALIZER SHALL BE LOCATED A MAXIMUM OF 1 FOOT FROM THE BOTTOM OF THE TENDON BOND LENGTH. CENTRALIZERS SHALL BE FABRICATED FROM PLASTIC.

7. ANCHORAGE DEVICES:

7A. ANCHORAGE DEVICES SHALL BE CAPABLE OF DEVELOPING 95% OF THE MINIMUM SPECIFIED ULTIMATE TENSILE STRENGTH OF THE PRESTRESSING STEEL TENDON. THE ANCHORAGE DEVICES SHALL CONFORM TO THE STATIC STRENGTH REQUIREMENTS OF SECTION 3.1.6(1) AND SECTION 3.1.6(1) OF THE PTI GUIDE SPECIFICATION FOR POST TENSIONING MATERIALS.

7B. THE BEARING PLATES SHALL BE STRUCTURAL STEEL CONFORMING TO ASTM A36/AASHTO M103. THE BEARING PLATES SHALL BE SIZED SO THE ALLOWABLE BENDING STRESSES IN THE PLATE PER AISI-ASD ARE NOT EXCEEDED WHEN THE DESIGN LOAD OF THE GROUND ANCHOR IS APPLIED.

8. ANCHOR TESTING:

8A. EACH GROUND ANCHOR SHALL BE TESTED. THE MAXIMUM TEST LOAD SHALL NOT EXCEED 80% OF THE MINIMUM GUARANTEED ULTIMATE TENSILE STRENGTH (GUTS) OF THE TENDON. THE TEST LOAD SHALL BE SIMULTANEOUSLY APPLIED TO THE ENTIRE TENDON. STRESSING OF SINGLE ELEMENTS OF MULTI-ELEMENT TENDONS WILL NOT BE PERMITTED.

8B. THE TESTING EQUIPMENT SHALL CONSIST OF:

- A DIAL GAUGE OR VERNIER SCALE CAPABLE OF MEASURING TO 0.001 INCHES SHALL BE USED TO MEASURE THE GROUND ANCHOR MOVEMENT. THE MOVEMENT-MEASURING DEVICE SHALL HAVE A MINIMUM TRAVEL EQUAL TO THE THEORETICAL ELASTIC ELONGATION OF THE TOTAL ANCHOR LENGTH AT THE MAXIMUM TEST LOAD PLUS 1 INCH. THE DIAL GAUGE OR VERNIER SCALE SHALL BE SUPPORTED INDEPENDENT OF THE JACKING SYSTEM AND RETAINED STRUCTURE AND SHALL BE ALIGNED SO THAT ITS AXIS IS WITHIN 5 DEGREES FROM THE AXIS OF THE GROUND ANCHOR.
- A HYDRAULIC JACK AND PUMP SHALL BE USED TO APPLY THE TEST LOAD. THE JACK AND PRESSURE GAUGE SHALL BE CALIBRATED BY AN INDEPENDENT TESTING LABORATORY AS A UNIT. THE PRESSURE GAUGE SHALL BE GRADUATED IN 100 PSI INCREMENTS OR LESS. THE PRESSURE GAUGE WILL BE USED TO MEASURE THE APPLIED LOAD. THE RANK TRAVEL OF THE JACK SHALL NOT BE LESS THAN THE THEORETICAL ELASTIC ELONGATION OF THE TOTAL ANCHOR LENGTH AT THE MAXIMUM TEST LOAD PLUS ONE INCH. THE JACK SHALL BE INDEPENDENTLY SUPPORTED AND CENTERED OVER THE TENDON SO THAT THE TENDON DOES NOT CARRY THE WEIGHT OF THE JACK.

8C. VERIFICATION TESTS SHALL BE PERFORMED ON 2 ANCHORS PER ANCHORAGE SOIL TYPE ENCOUNTERED AND PER ANCHOR INSTALLATION METHOD USED. THE VERIFICATION TEST SHALL BE MADE BY INCREMENTALLY LOADING THE GROUND ANCHOR IN ACCORDANCE WITH THE FOLLOWING SCHEDULE.

LOAD	HOLD TIME	LOAD	HOLD TIME
AL	1 MINUTE	1.75DL	UNTIL STABLE
0.25DL	10 MINUTES	1.50DL	UNTIL STABLE
0.50DL	10 MINUTES	1.25DL	UNTIL STABLE
0.75DL	10 MINUTES	1.00DL	UNTIL STABLE
1.00DL	10 MINUTES	0.75DL	UNTIL STABLE
1.25DL	10 MINUTES	0.50DL	UNTIL STABLE
1.50DL	60 MINUTES	0.25DL	UNTIL STABLE
1.75DL	10 MINUTES	AL	UNTIL STABLE
2.00DL	10 MINUTES		

AL = ALIGNMENT LOAD
DL = DESIGN LOAD

THE ALIGNMENT LOAD (AL) SHOULD BE THE MINIMUM LOAD REQUIRED TO ALIGN THE TESTING APPARATUS AND SHOULD NOT EXCEED 0.05DL. DIAL GAUGES SHOULD BE SET AT "ZERO" AFTER THE ALIGNMENT LOAD HAS BEEN APPLIED.

A CREEP TEST SHALL BE PERFORMED AT THE 1.50 DL INCREMENT. ANCHOR MOVEMENT DURING THE CREEP TEST SHALL BE MEASURED AND RECORDED AT 1, 2, 3, 5, 6, 10, 20, 30, 50 AND 60 MINUTES OF ELAPSED TIME FROM WHEN THE LOAD INCREMENT IS APPLIED. IF AN ANCHOR FAILS IN CREEP, RETESTING WILL NOT BE ALLOWED.

8D. PROOF TESTS SHALL BE PERFORMED ON ALL PRODUCTION ANCHORS BY INCREMENTALLY LOADING THE GROUND ANCHOR IN ACCORDANCE WITH THE FOLLOWING SCHEDULE. AT LOAD INCREMENTS OTHER THAN MAXIMUM TEST LOAD, THE LOAD SHALL BE HELD LONG ENOUGH TO OBTAIN A STABLE READING.

LOAD	HOLD TIME
AL	100DL
0.25DL	125DL
0.50DL	150DL
0.75DL	

THE ALIGNMENT LOAD (AL) SHOULD BE THE MINIMUM LOAD REQUIRED TO ALIGN THE TESTING APPARATUS AND SHOULD NOT EXCEED 0.05DL. DIAL GAUGES SHOULD BE SET AT "ZERO" AFTER THE ALIGNMENT LOAD HAS BEEN APPLIED.

THE MAXIMUM TEST LOAD SHALL BE HELD FOR 10 MINUTES. THE LOAD-HOLD PERIOD SHALL START AS SOON AS THE MAXIMUM TEST LOAD IS APPLIED AND THE ANCHOR MOVEMENT SHALL BE MEASURED AND RECORDED AT 1, 2, 3, 5, 6, AND 10 MINUTES. IF THE ANCHOR MOVEMENT BETWEEN 1 AND 10 MINUTES EXCEEDS 0.04 INCHES, THE MAXIMUM TEST LOAD SHALL BE HELD FOR AN ADDITIONAL 30 MINUTES. IF THE LOAD HOLD IS EXTENDED, THE ANCHOR MOVEMENTS SHALL BE RECORDED AT 20, 30, 50, AND 60 MINUTES. IF AN ANCHOR FAILS IN CREEP, RETESTING WILL NOT BE ALLOWED.

8E. A VERIFICATION OR PROOF TESTED GROUND ANCHOR WITH A 10 MINUTE LOAD HOLD CREEP TEST IS CONSIDERED ACCEPTABLE WHEN:

- THE GROUND ANCHOR CARRIES THE MAXIMUM TEST LOAD WITH LESS THAN 0.04 INCHES OF MOVEMENT BETWEEN THE 1 AND 10 MINUTE READINGS.
- THE TOTAL MOVEMENT AT THE MAXIMUM TEST LOAD EXCEEDS 80% OF THE THEORETICAL ELASTIC ELONGATION OF THE UNBONDED LENGTH.

8F. A VERIFICATION OR PROOF TESTED GROUND ANCHOR WITH A 60 MINUTE LOAD HOLD CREEP TEST IS CONSIDERED ACCEPTABLE WHEN:

- THE GROUND ANCHOR CARRIES THE MAXIMUM TEST LOAD WITH LESS THAN 0.28 INCHES OF MOVEMENT PER LOG CYCLE OF TIME AND THE CREEP RATE IS LINEAR OR DECREASING.
- THE TOTAL MOVEMENT AT THE MAXIMUM TEST LOAD EXCEEDS 80% OF THE THEORETICAL ELASTIC ELONGATION OF THE UNBONDED LENGTH.

IN ADDITION TO THE ABOVE, A VERIFICATION TESTED GROUND ANCHOR MUST NOT EXPERIENCE A PULLOUT FAILURE AT THE MAXIMUM TEST LOAD. A PULLOUT FAILURE IS DEFINED AS THE LOAD AT WHICH ATTEMPTS TO INCREASE THE TEST LOAD RESULT IN CONTINUED PULLOUT MOVEMENT OF THE TEST ANCHOR.

8G. GROUND ANCHORS THAT HAVE A CREEP RATE GREATER THAN SPECIFIED CAN BE INCORPORATED IN THE FINISHED WORK AT A LOAD EQUAL TO ONE-HALF OF THE FAILURE LOAD. THE FAILURE LOAD IS THE MAXIMUM LOAD CARRIED BY THE ANCHOR AFTER THE LOAD HAS BEEN ALLOWED TO STABILIZE FOR TEN MINUTES.

8H. WHEN A GROUND ANCHOR FAILS, THE CONTRACTOR SHALL MODIFY THE ANCHOR DESIGN, THE CONSTRUCTION PROCEDURES, OR BOTH. THESE MODIFICATIONS MAY INCLUDE, BUT ARE NOT LIMITED TO, INSTALLING REPLACEMENT GROUND ANCHORS, MODIFYING THE INSTALLATION METHODS, INCREASING THE BOND LENGTH, OR CHANGING THE GROUND ANCHOR TYPE. ANY MODIFICATION WHICH REQUIRES CHANGES TO THE STRUCTURE SHALL HAVE PRIOR APPROVAL OF THE ENGINEER.

MONITORING:
PER THE REQUIREMENTS OF THE GEOTECHNICAL SPECIAL INSPECTOR, THE SHORING MONITORING PROGRAM SHALL CONSIST OF THE FOLLOWING:

- PRE-CONSTRUCTION SURVEY (VIDEO OR PHOTOGRAPHIC SURVEY) OF ADJACENT STREETS, UTILITIES, BUILDINGS, AND OTHER STRUCTURES.
- OPTICAL SURVEY POINTS SHOULD BE COMPLETED TWICE WEEKLY DURING CONSTRUCTION, AND TWICE PER MONTH (OR AS DETERMINED BY THE GEOTECHNICAL SPECIAL INSPECTOR) FOLLOWING COMPLETION OF THE EXCAVATION AND BEFORE THE INTERIOR BUILDING FLOORS REACH THE GROUND SURFACE. MONITORING SHALL INCLUDE VERTICAL AND HORIZONTAL SURVEY MEASUREMENTS TO AN ACCURACY OF 0.01 FEET. BASELINE READINGS ARE TO BE TAKEN PRIOR TO THE START OF CONSTRUCTION. ALL RESULTS ARE TO BE SENT TO THE GEOTECHNICAL SPECIAL INSPECTOR WITHIN 24 HOURS. A LICENSED SURVEYOR (NOT THE CONTRACTOR) SHOULD PERFORM THE MONITORING AT LEAST ONCE PER WEEK.
- OPTICAL SURVEY POINTS SHOULD BE ESTABLISHED AT THE TOP OF THE SHORING WALL AROUND THE PERIMETER OF THE EXCAVATION AND SPACED AT 25 FEET ALONG THE LENGTH OF THE WALL.
- ADDITIONAL SURVEY POINTS SHOULD BE ESTABLISHED ALONG THE CURVILINEAR AND CENTERLINES OF ADJACENT ROADWAYS, AND ON SETTLEMENT-SENSITIVE STRUCTURES, AND AT DISTANCES UP TO AT LEAST THE WALL HEIGHT ON PRIVATE PROPERTY ADJACENT TO THE EXCAVATION AND SPACED AT 20 FEET HORIZONTALLY. THESE POINTS NEED BE MONITORED IF SHORING WALL MOVEMENTS EXCEED 0.5-INCH.
- SURVEY FREQUENCY CAN BE DECREASED AFTER THE SHORING SYSTEM HAS BEEN INSTALLED AND EXCAVATION IS COMPLETE IF THE DATA INDICATES LITTLE OR NO ADDITIONAL MOVEMENT. SURVEYING MUST CONTINUE UNTIL THE PERMANENT STRUCTURE (INCLUDING FLOOR SLABS AS BRACES) IS COMPLETE UP TO FINAL AND STREET GRADES. THE SURVEY FREQUENCY WILL BE DETERMINED BY THE GEOTECHNICAL ENGINEER.
- THE GEOTECHNICAL ENGINEER SHALL REVIEW SURVEY DATA AND PROVIDE AN EVALUATION OF WALL PERFORMANCE ALONG WITH SURVEY DATA TO THE SHORING ENGINEER ON AT LEAST A WEEKLY BASIS. IMMEDIATELY AND DIRECTLY NOTIFY THE SHORING ENGINEER IF ANY UNUSUAL OR SIGNIFICANTLY INCREASED MOVEMENT OCCURS.
- IMMEDIATELY AND DIRECTLY NOTIFY THE GEOTECHNICAL AND STRUCTURAL ENGINEERS, AND WALL DESIGNER IF 0.5 INCHES OF MOVEMENT OCCURS BETWEEN TWO CONSECUTIVE READINGS AND WHEN TOTAL MOVEMENTS REACH 0.5 INCH. AT THAT AMOUNT OF MOVEMENT, THE ENGINEERS AND DESIGNERS SHALL DETERMINE THE CAUSE OF DISPLACEMENT AND DEVELOP REMEDIAL MEASURES SUFFICIENT TO LIMIT TOTAL WALL MOVEMENTS TO 1 INCH. ALL EARTHWORK AND CONSTRUCTION ACTIVITIES MUST BE DIRECTED TOWARDS IMMEDIATE IMPLEMENTATION OF REMEDIAL MEASURES NECESSARY TO LIMIT TOTAL WALL MOVEMENTS TO WHAT HAS BEEN DEFINED AS ACCEPTABLE BY THE DESIGN TEAM.

SHORING WALL
SHORING NOTES

SH1.1

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT

Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
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2	4/5/2016	COMMENT RESPONSE

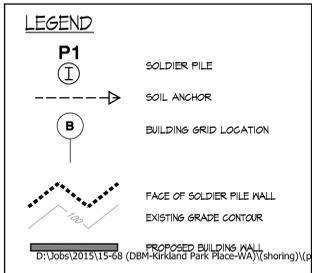
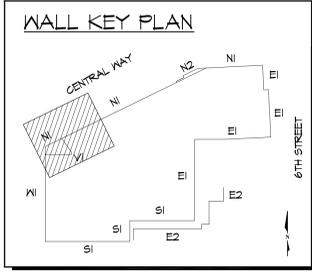
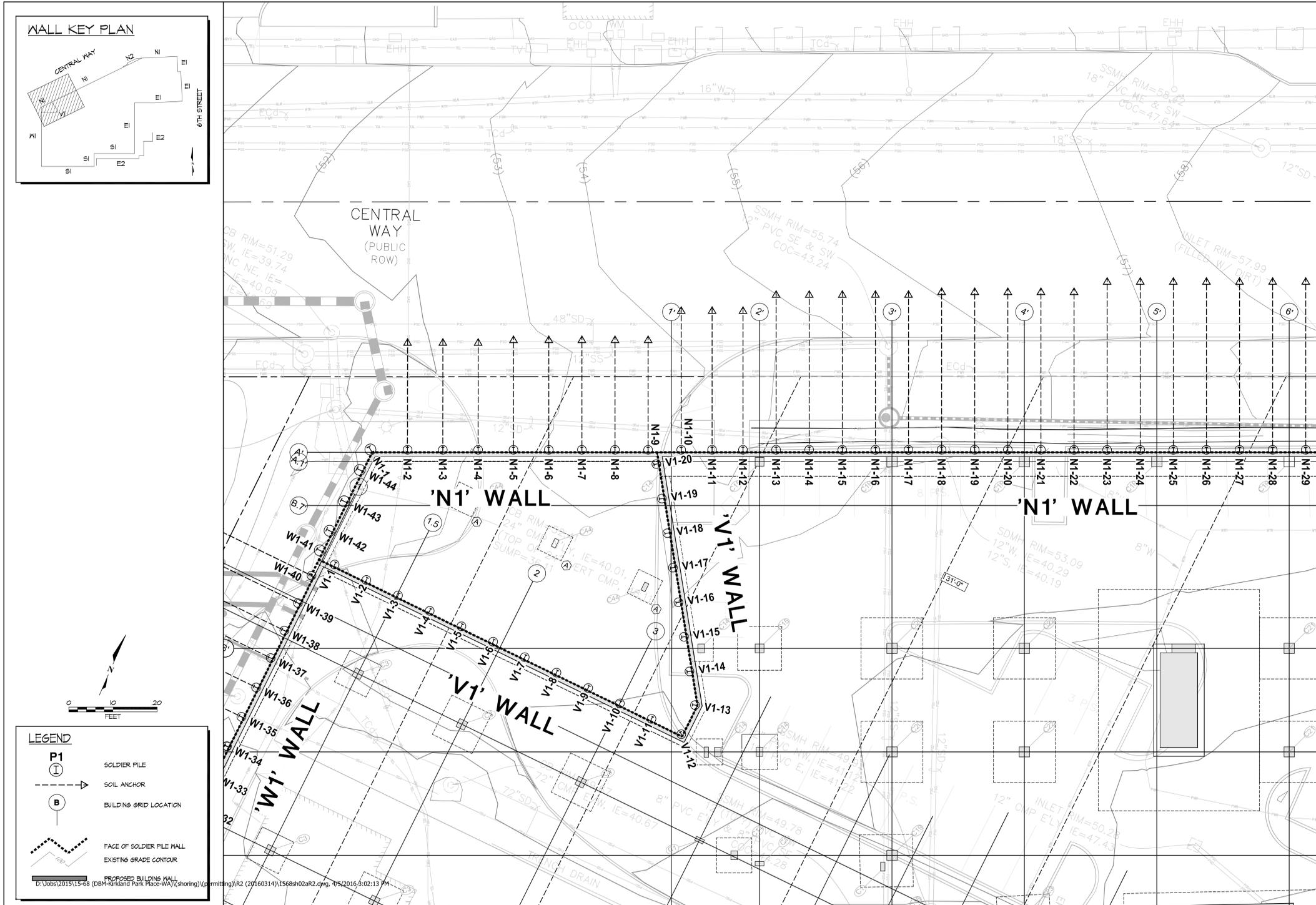
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SEAL

SHEET TITLE / NUMBER
SHORING NOTES

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SHORING WALL PLAN

SH2.0

TITLE

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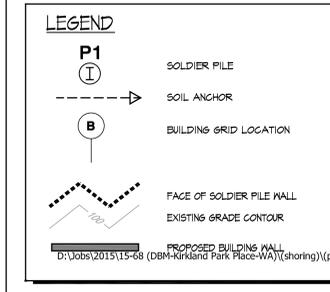
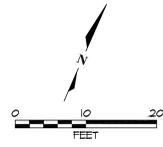
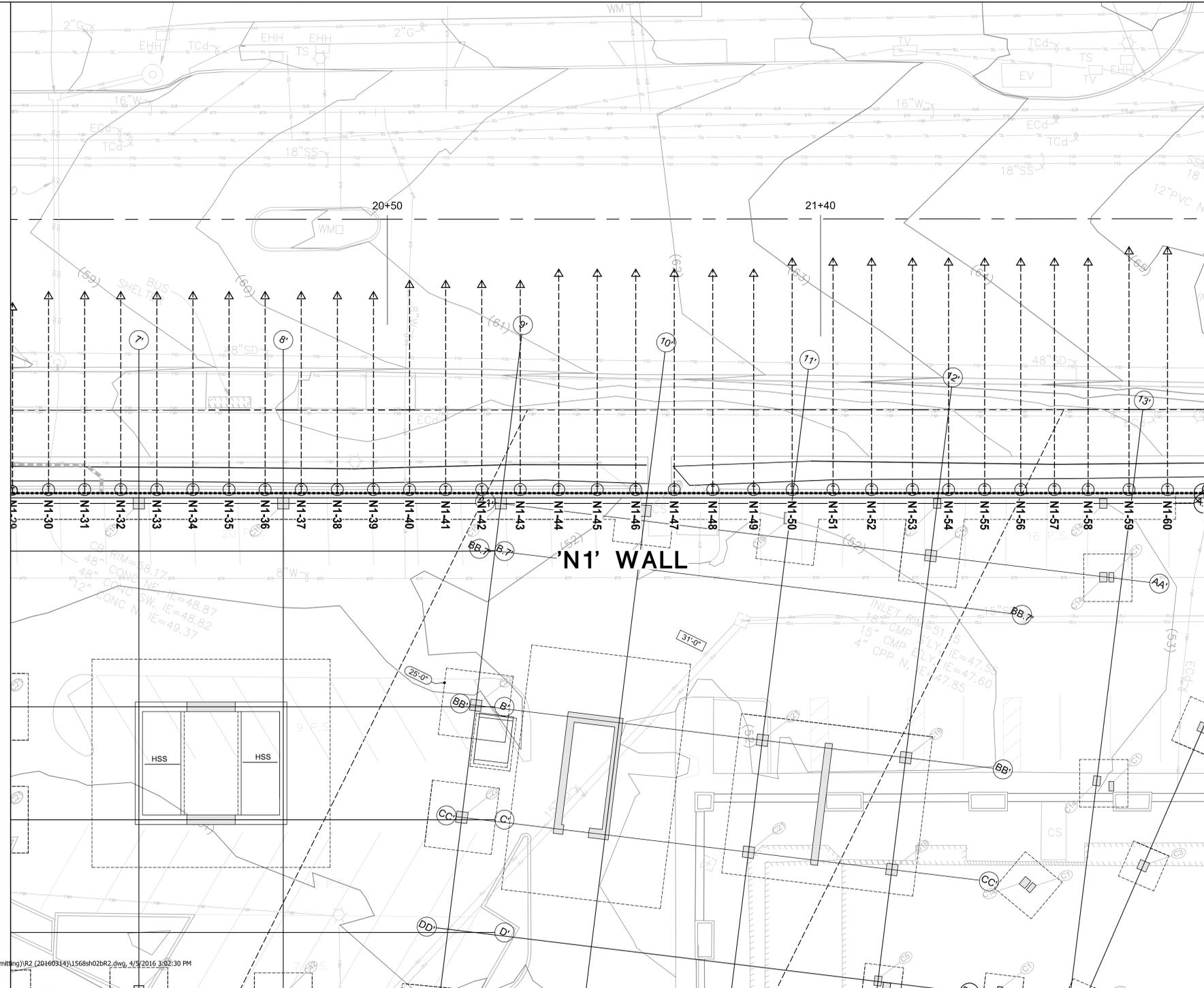
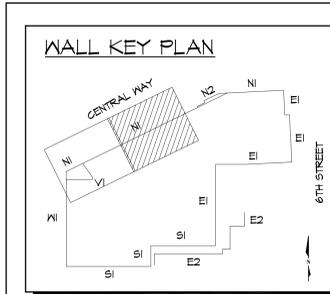
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Reviewed by A Haupt
05/10/2016



SHORING WALL
PLAN

SH2.1

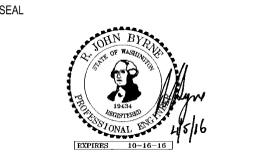
TITLE
**KIRKLAND
URBAN**
321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT
GS
Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
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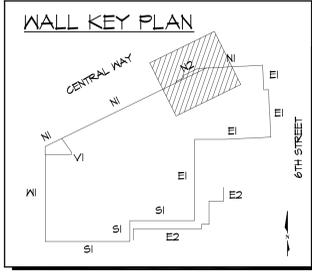
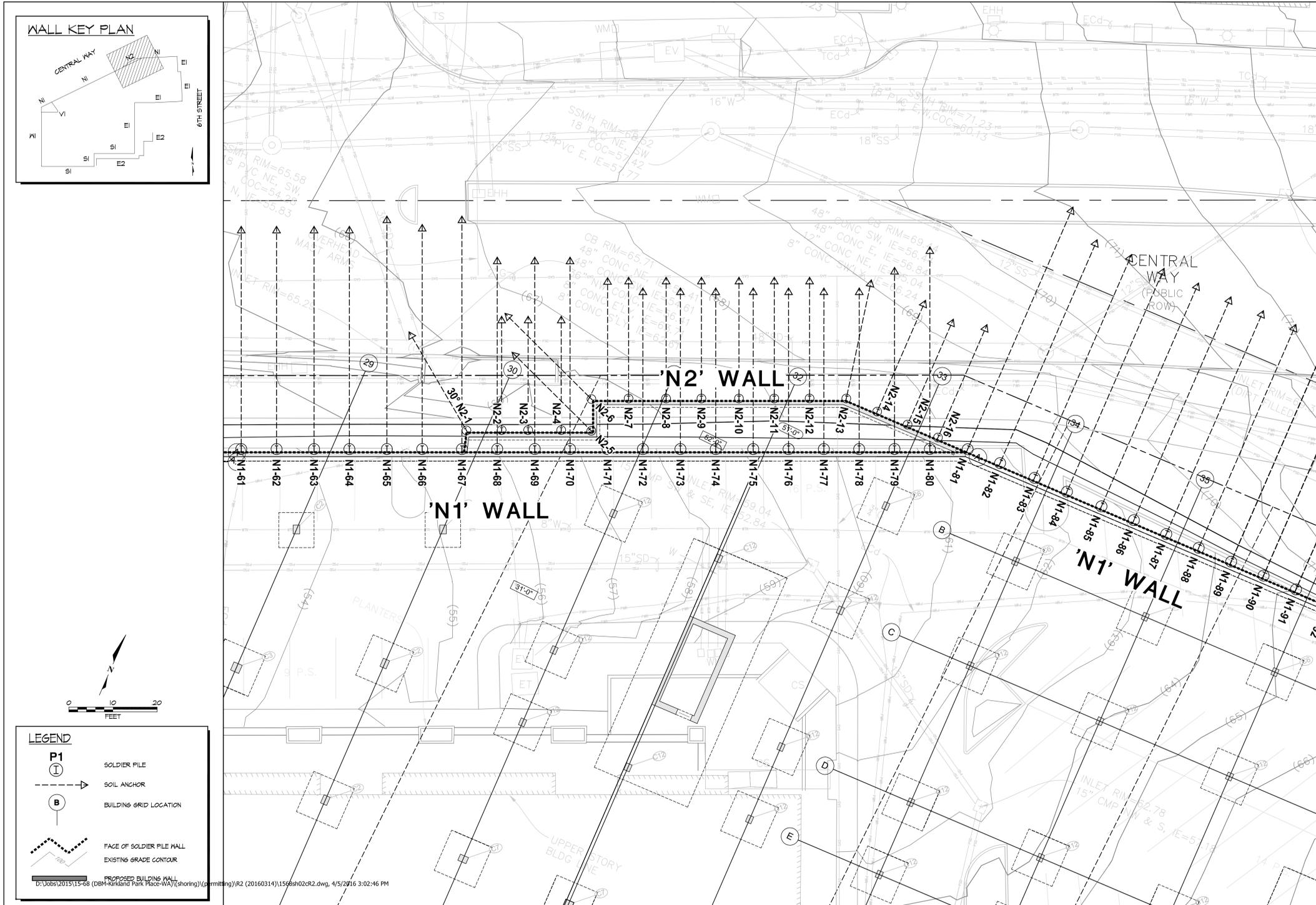
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SHEET TITLE / NUMBER
SHORING PLAN

SH2.1



LEGEND

- P1 (I) SOLDIER PILE
- (I) SOIL ANCHOR
- (B) BUILDING GRID LOCATION
- (---) FACE OF SOLDIER PILE WALL
- (---) EXISTING GRADE CONTOUR
- (---) PROPOSED BUILDING WALL

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SHORING WALL PLAN

SH2.2

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
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16932 Woodinville Redmond Rd NE, #210
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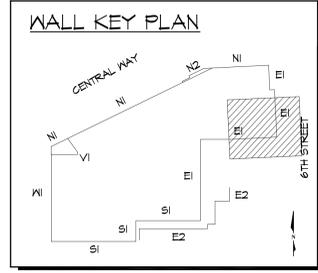
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P.E.
15-68

SHEET TITLE / NUMBER

SHORING PLAN

SH2.2

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LEGEND

- P1** SOLDIER PILE
- ⊖** SOIL ANCHOR
- ⊙** BUILDING GRID LOCATION
- FACE OF SOLDIER PILE WALL
- EXISTING GRADE CONTOUR
- PROPOSED BUILDING WALL

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SHORING WALL PLAN

SH2.4

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
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CONSULTANT

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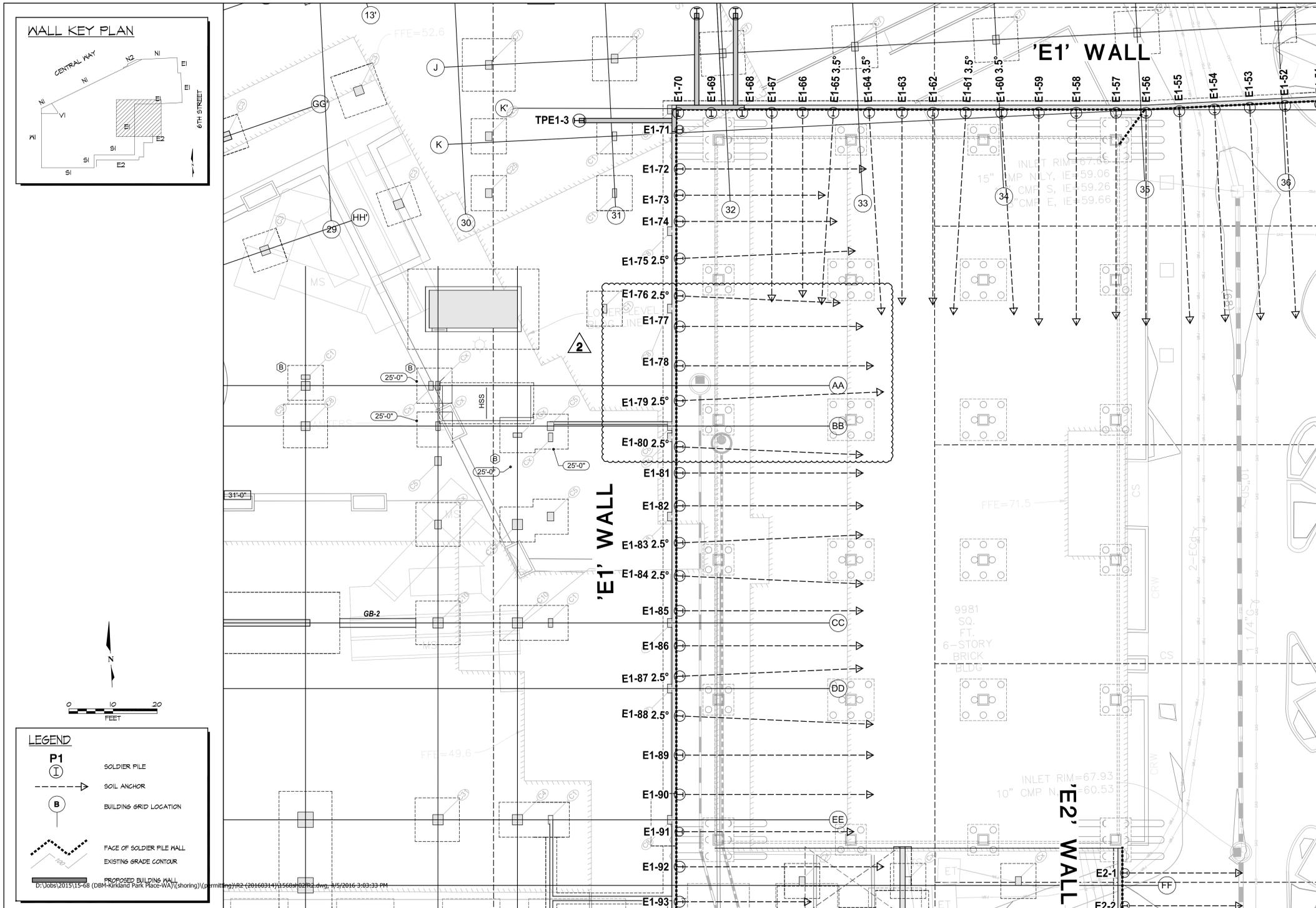
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SHEET TITLE / NUMBER

SHORING PLAN

SH2.4

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SHORING WALL
 PLAN

SH2.5

TITLE
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 URBAN**
 321 PARKPLACE CENTER
 KIRKLAND, WA 98033

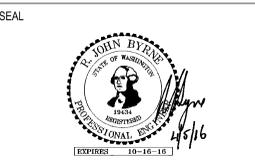
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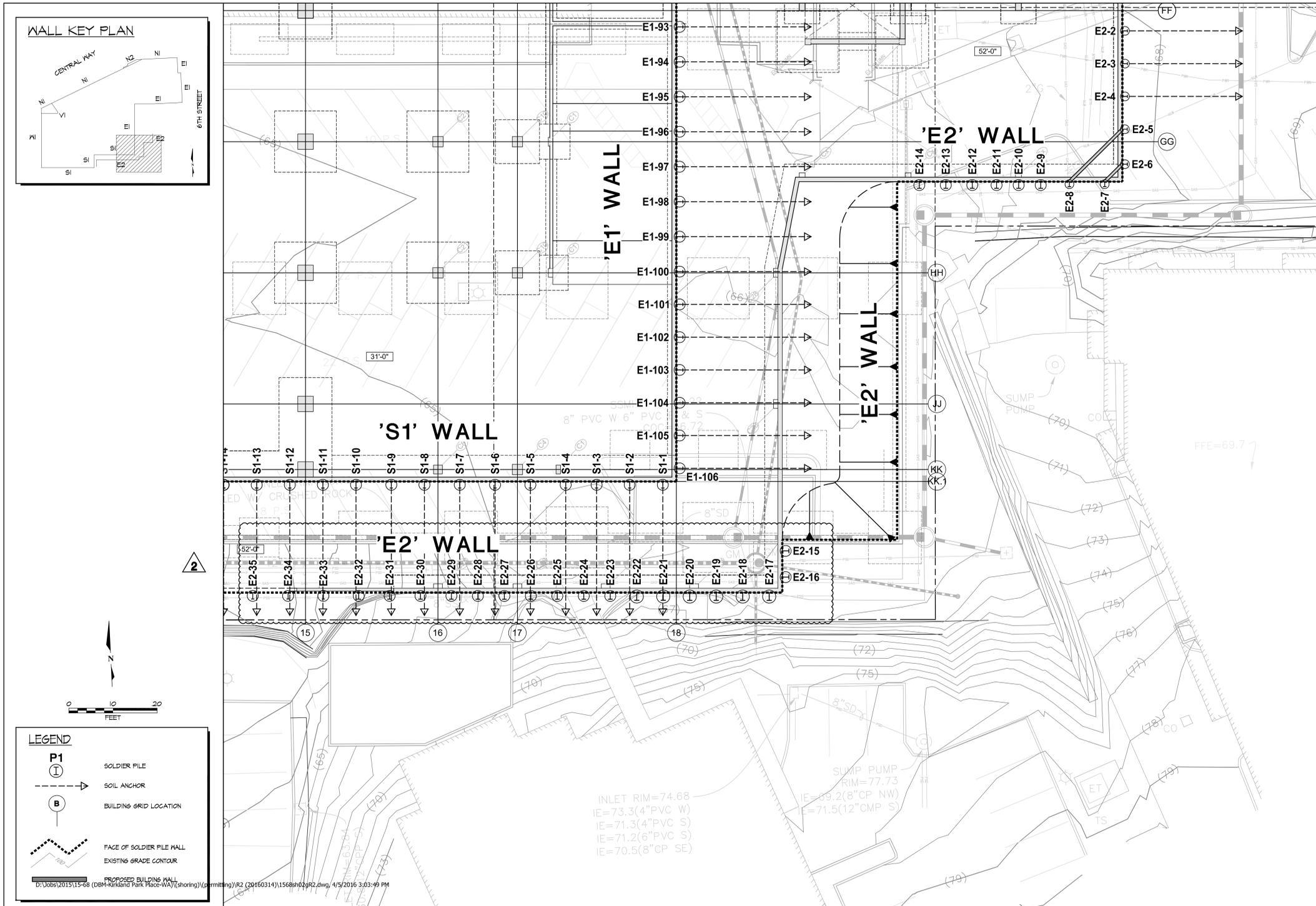
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PROJECT NUMBER 15-08
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 ISSUE DATE 1.29.2016



SHEET TITLE / NUMBER
 SHORING PLAN

SH2.5



SHORING WALL
 PLAN

SH2.6

TITLE
**KIRKLAND
 URBAN**
 321 PARKPLACE CENTER
 KIRKLAND, WA 98033

CONSULTANT



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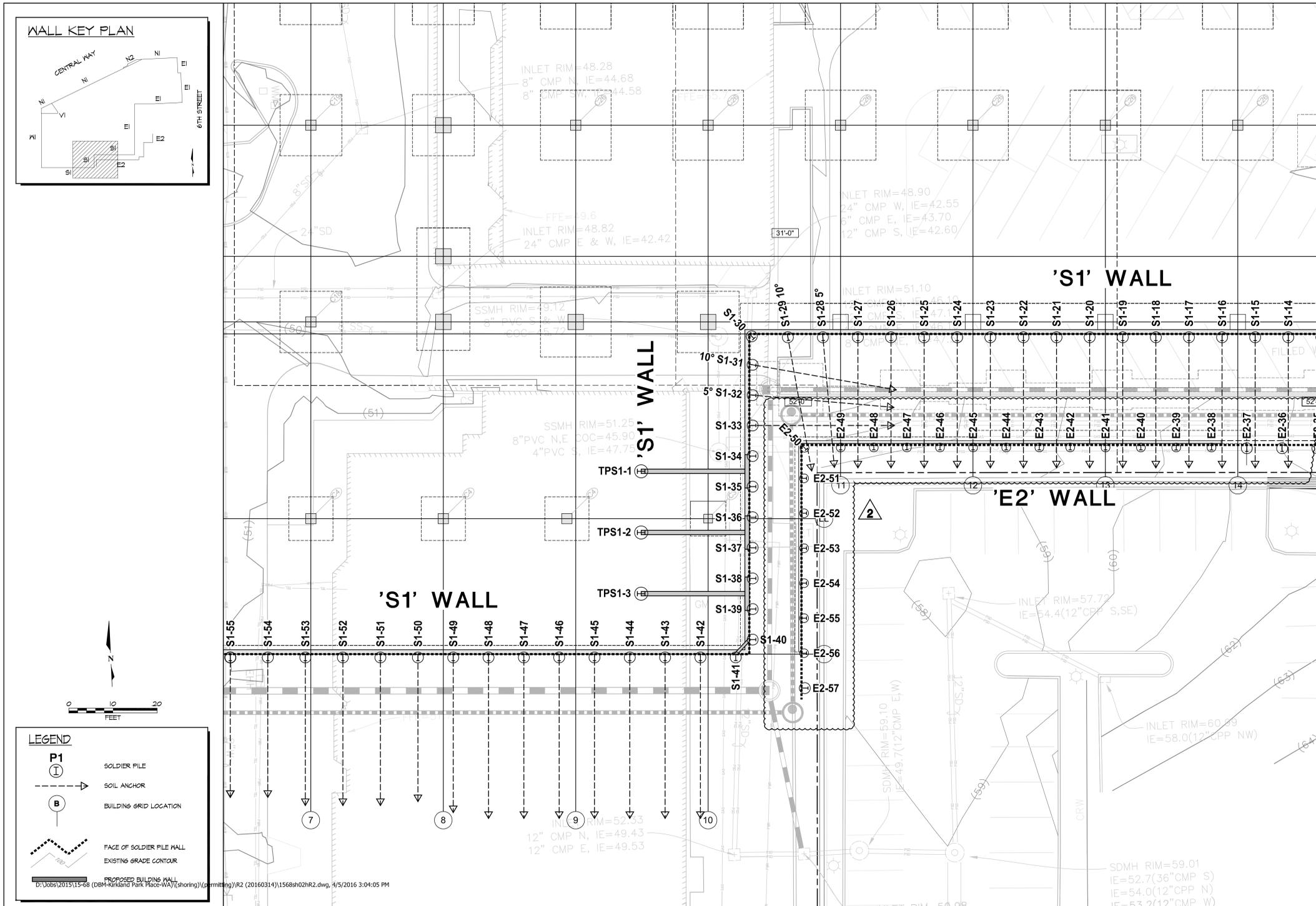
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SHEET TITLE / NUMBER
 SHORING PLAN

SH2.6



SHORING WALL
PLAN

SH2.7

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
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16932 Woodinville Redmond Rd NE, #210
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ISSUE DATE 1.29.2016

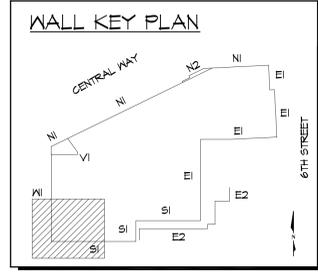
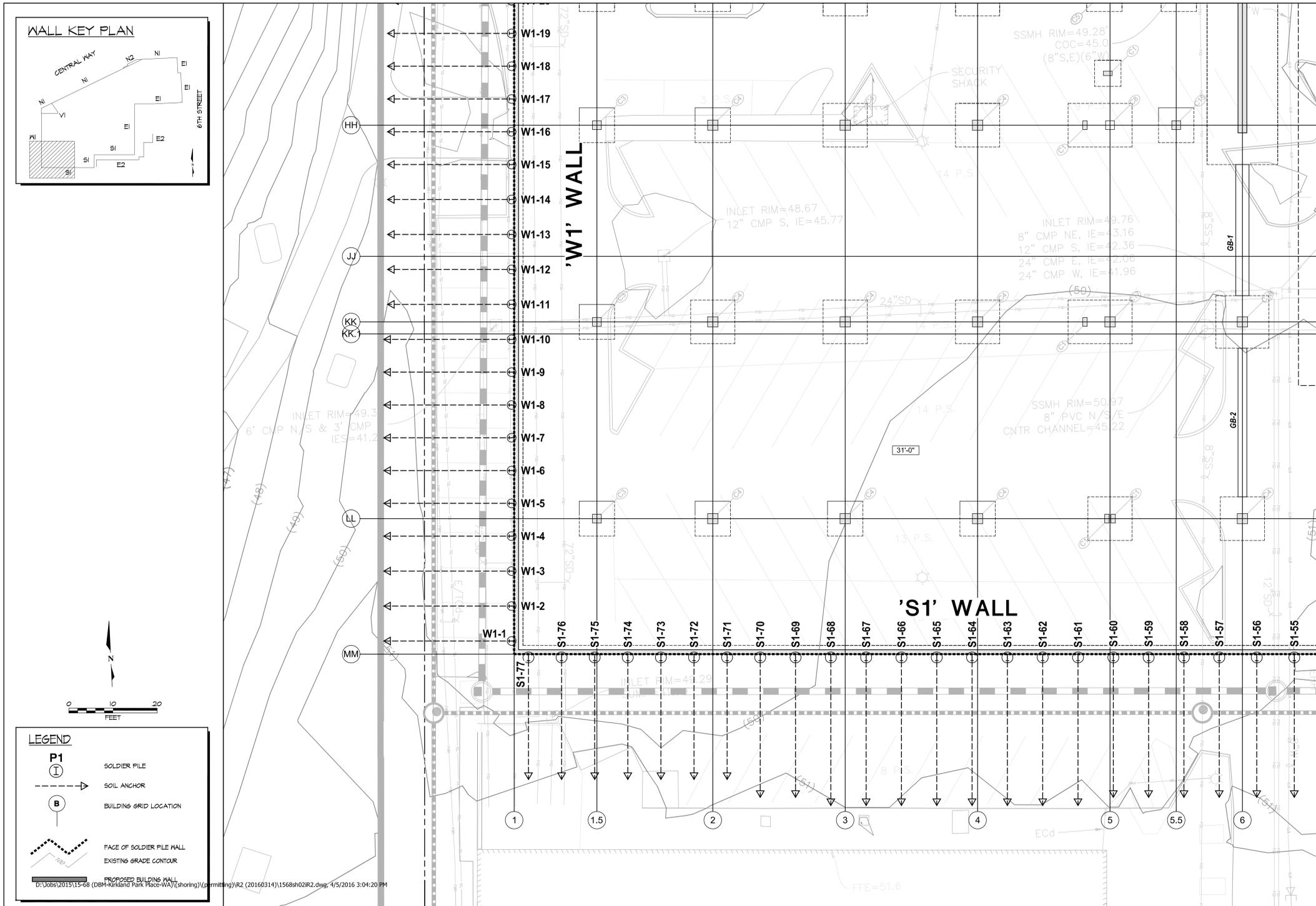
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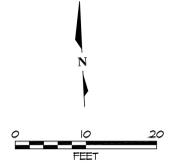
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LEGEND

- P1** SOLDIER PILE
- (I)** SOIL ANCHOR
- (B)** BUILDING GRID LOCATION
- - -** FACE OF SOLDIER PILE WALL
- - -** EXISTING GRADE CONTOUR
- - -** PROPOSED BUILDING WALL

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SHORING WALL PLAN

SH2.8

TITLE

KIRKLAND URBAN
 321 PARKPLACE CENTER
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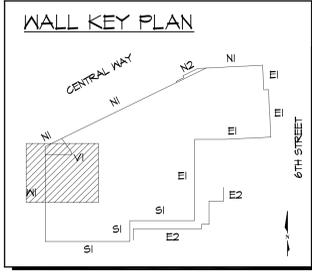
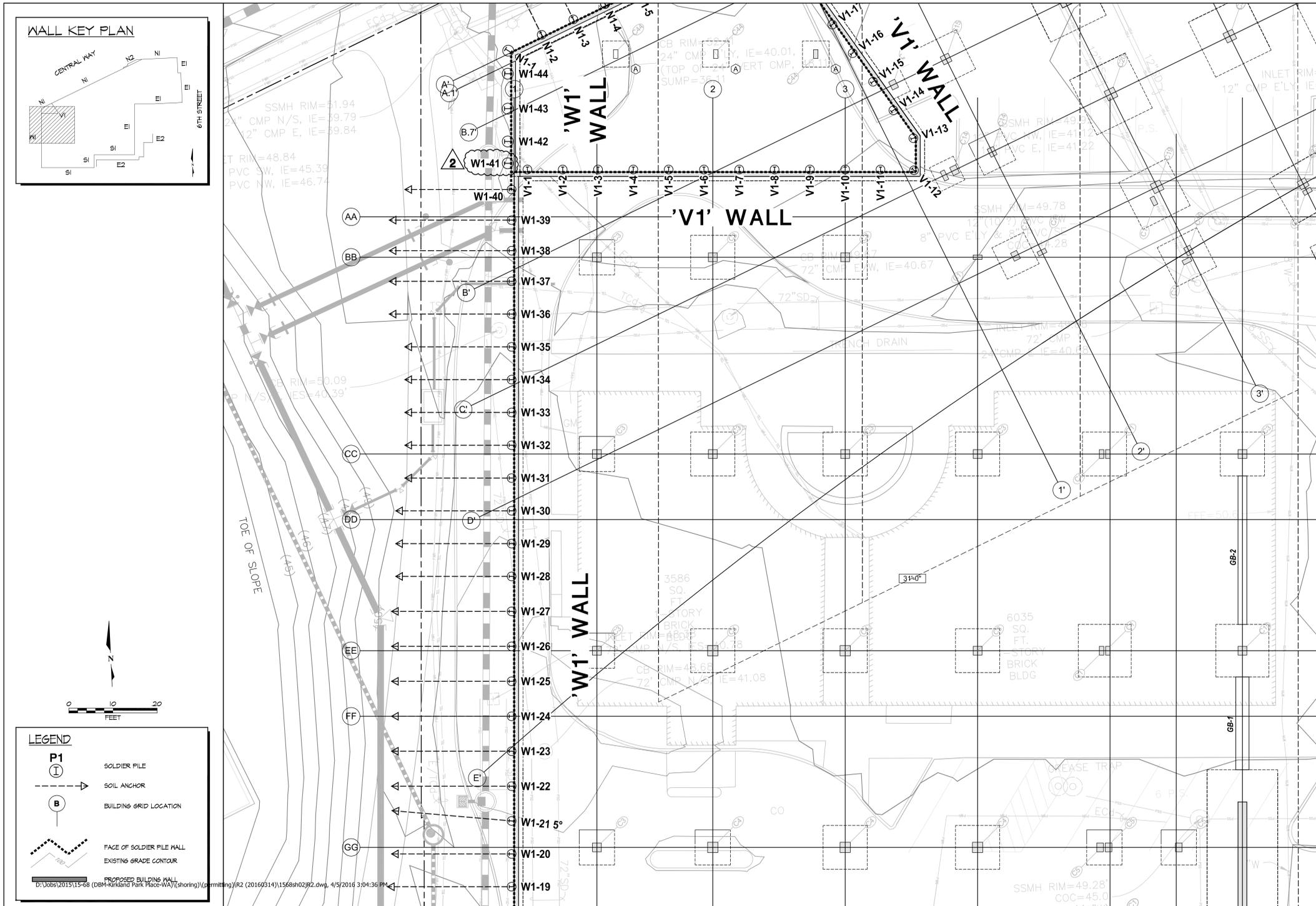
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SHEET TITLE / NUMBER
SHORING PLAN

SH2.8

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LEGEND

- P1 SOLDIER PILE
- I SOIL ANCHOR
- B BUILDING GRID LOCATION
- FACE OF SOLDIER PILE WALL
- EXISTING GRADE CONTOUR
- PROPOSED BUILDING WALL

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SHORING WALL PLAN

SH2.9

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

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16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

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PROJECT NUMBER 15-68
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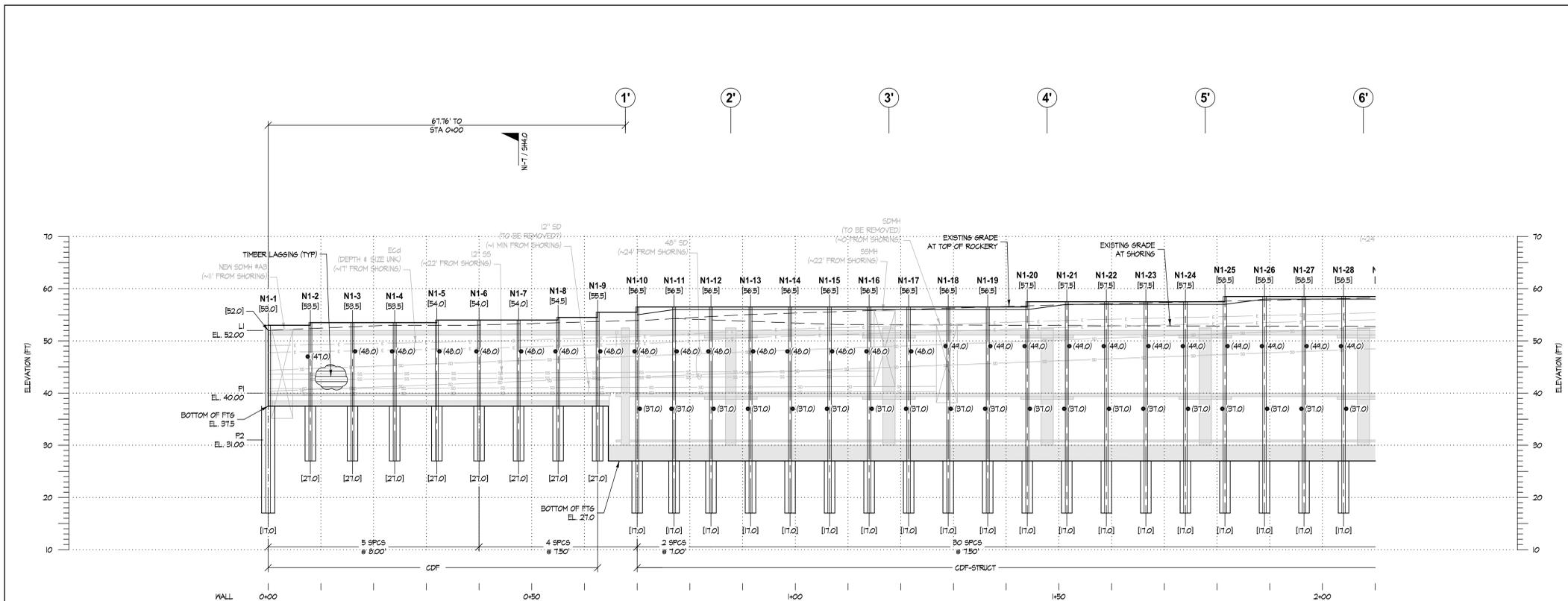
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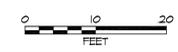
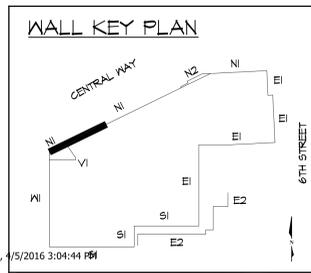
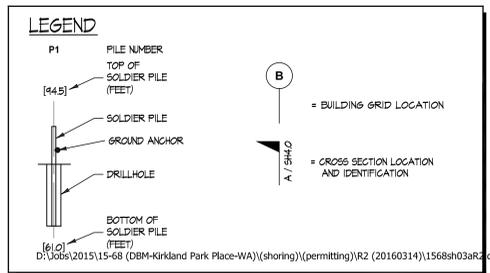
SH2.9

City of Kirkland
Reviewed by AHaupt
05/10/2016



NOTES:
 CDF = DRILLHOLES BACKFILLED WITH CDF.
 CDF-STRUCT = DRILLHOLES BACKFILLED WITH CDF ABOVE BASE OF EXCAVATION AND STRUCTURAL CONCRETE BELOW BASE OF EXCAVATION.

NOTE: INFORMATION SUPPLIED TO GROUND SUPPORT PLLC AT TIME OF SHORING DESIGN INSUFFICIENT TO CHECK FOR ALL POTENTIAL CONFLICTS BETWEEN SHORING ELEMENTS AND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES WITHIN ZONE OF SHORING ELEMENTS AND FOR CHECKING THAT NO SUCH CONFLICTS EXIST.



SHORING WALL
'N1' WALL ELEVATION

SH3.0

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

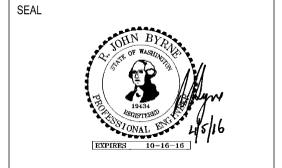
CONSULTANT

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 16932 Woodinville Redmond Rd NE, #210
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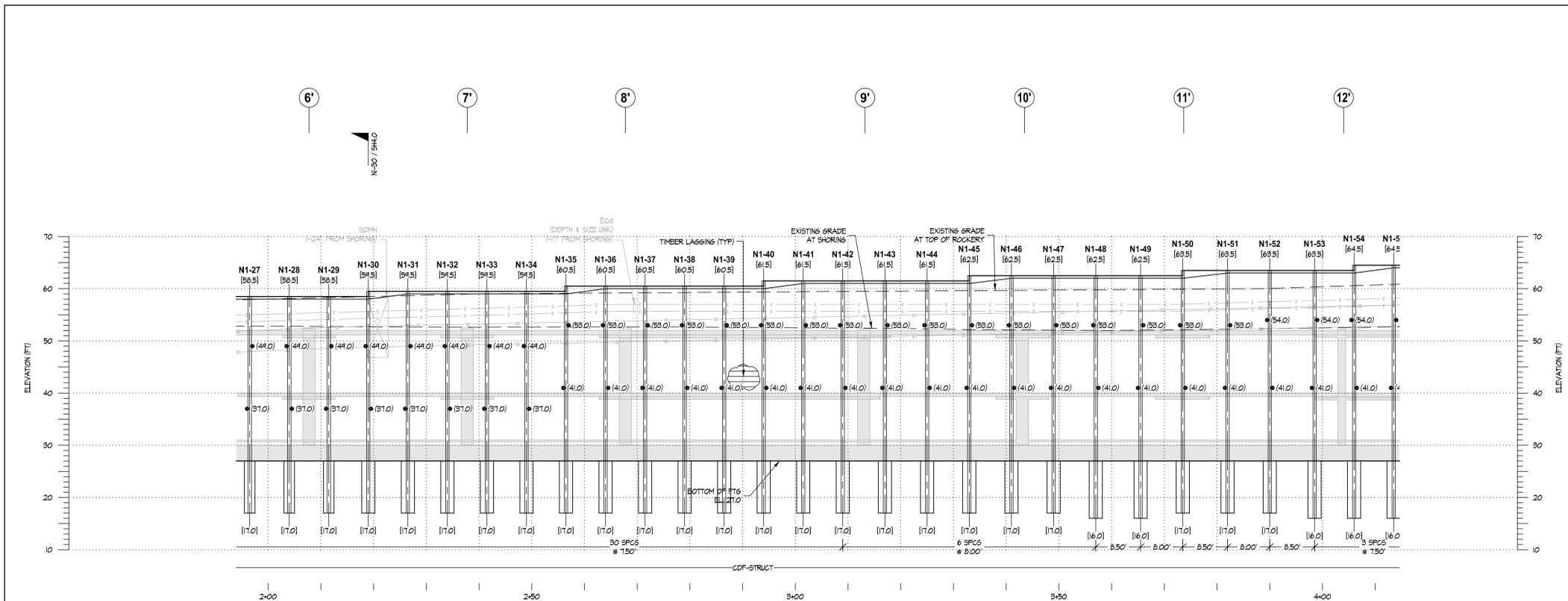


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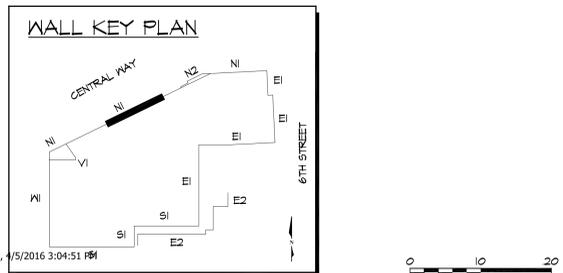
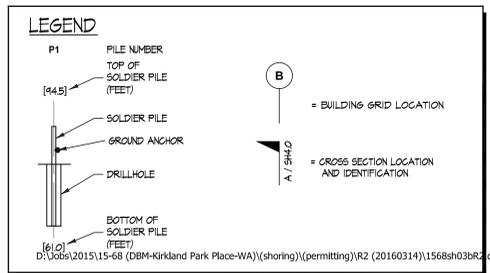
SH3.0

City of Kirkland
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05/10/2016



NOTES:
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CDF-STRUCT = DRILLHOLES BACKFILLED WITH GDF ABOVE BASE OF EXCAVATION AND STRUCTURAL CONCRETE BELOW BASE OF EXCAVATION.

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SHORING WALL
'N1' WALL ELEVATION

SH3.1

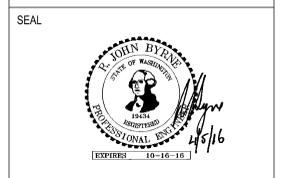
TITLE
KIRKLAND URBAN
321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT
GS
Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

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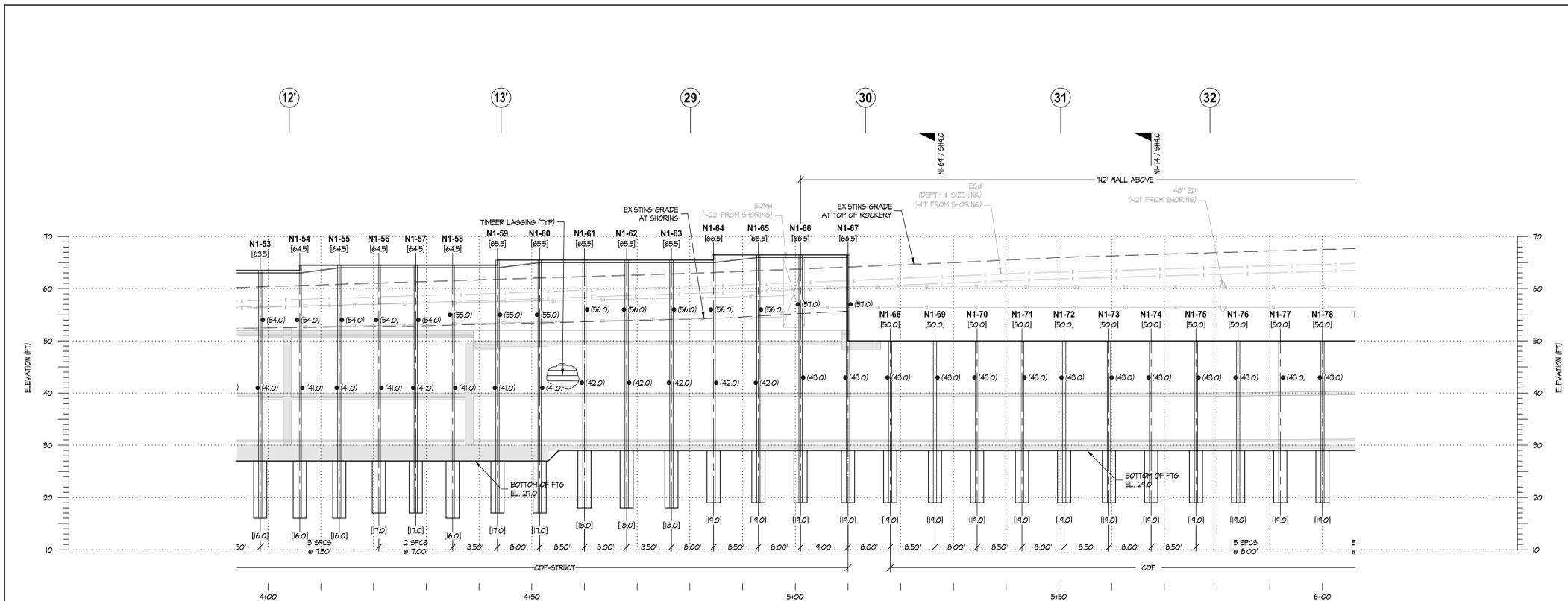
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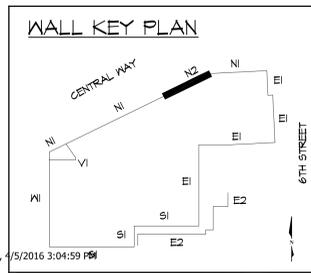
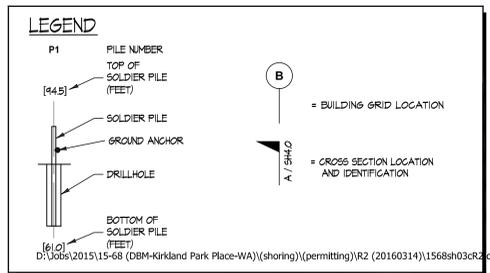
SH3.1

City of Kirkland
Reviewed by AHaupt
05/10/2016



NOTES:
 "CDF" = DRILLHOLES BACKFILLED WITH CDF.
 "CDF-STRUCT" = DRILLHOLES BACKFILLED WITH CDF ABOVE BASE OF EXCAVATION AND STRUCTURAL CONCRETE BELOW BASE OF EXCAVATION.

NOTE: INFORMATION SUPPLIED TO GROUND SUPPORT PLLC AT TIME OF SHORING DESIGN INSUFFICIENT TO CHECK FOR ALL POTENTIAL CONFLICTS BETWEEN SHORING ELEMENTS AND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES WITHIN ZONE OF SHORING ELEMENTS AND FOR CHECKING THAT NO SUCH CONFLICTS EXIST.



SHORING WALL
'N1' WALL ELEVATION

SH3.2

TITLE
KIRKLAND URBAN
 321 PARKPLACE CENTER
 KIRKLAND, WA 98033

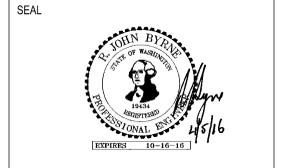
CONSULTANT

Ground Support PLLC
 16932 Woodinville Redmond Rd NE, #210
 Woodinville, WA 98072
 Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
0	01/29/16	PERMIT SUBMITTAL
1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

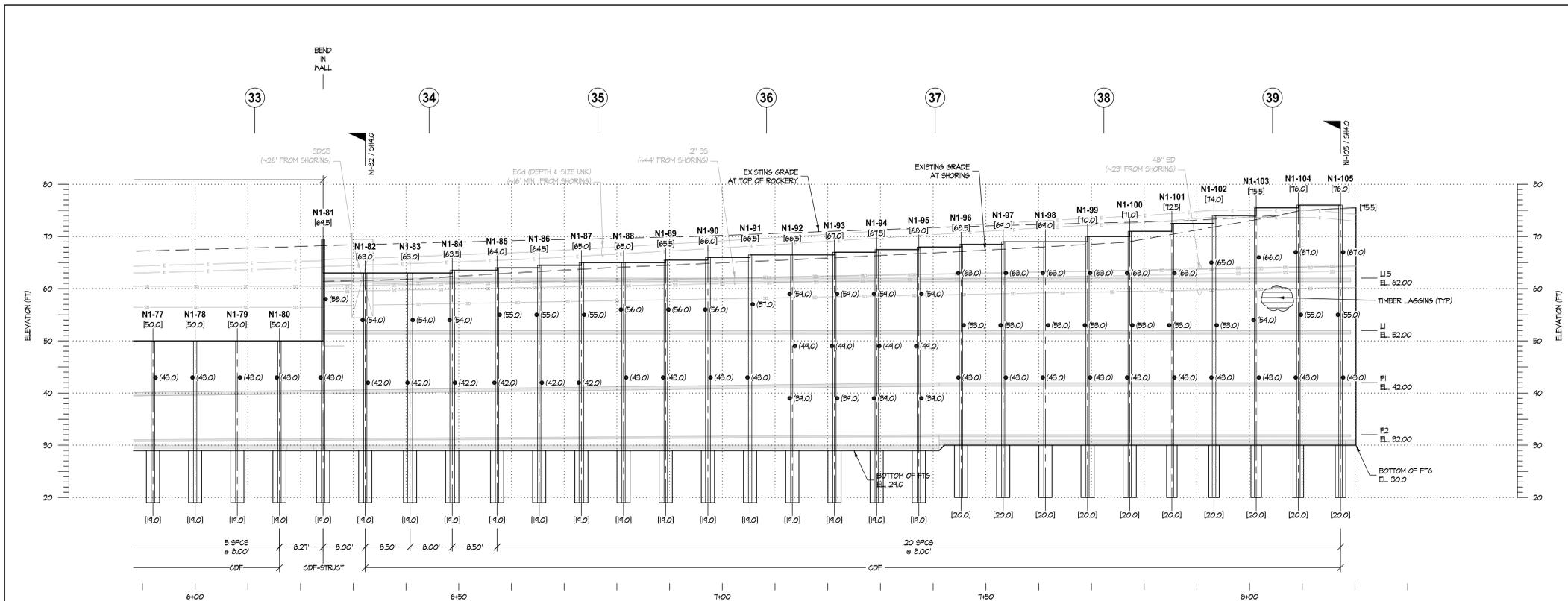
PROJECT NUMBER 15-08
 DRAWN BY JSS
 ISSUE DATE 1.29.2016



SHEET TITLE / NUMBER
 'N1' WALL ELEVATION

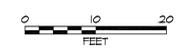
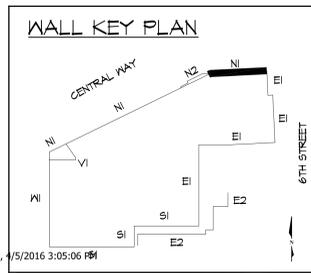
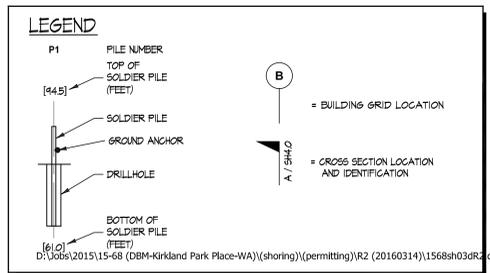
SH3.2

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NOTES:
 CDF = DRILLHOLES BACKFILLED WITH CDF.
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SHORING WALL
'N1' WALL ELEVATION

SH3.3

TITLE
KIRKLAND URBAN
 321 PARKPLACE CENTER
 KIRKLAND, WA 98033

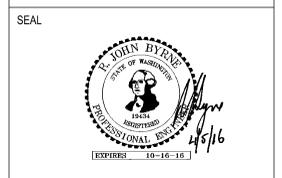
CONSULTANT

Ground Support PLLC
 16932 Woodinville Redmond Rd NE, #210
 Woodinville, WA 98072
 Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

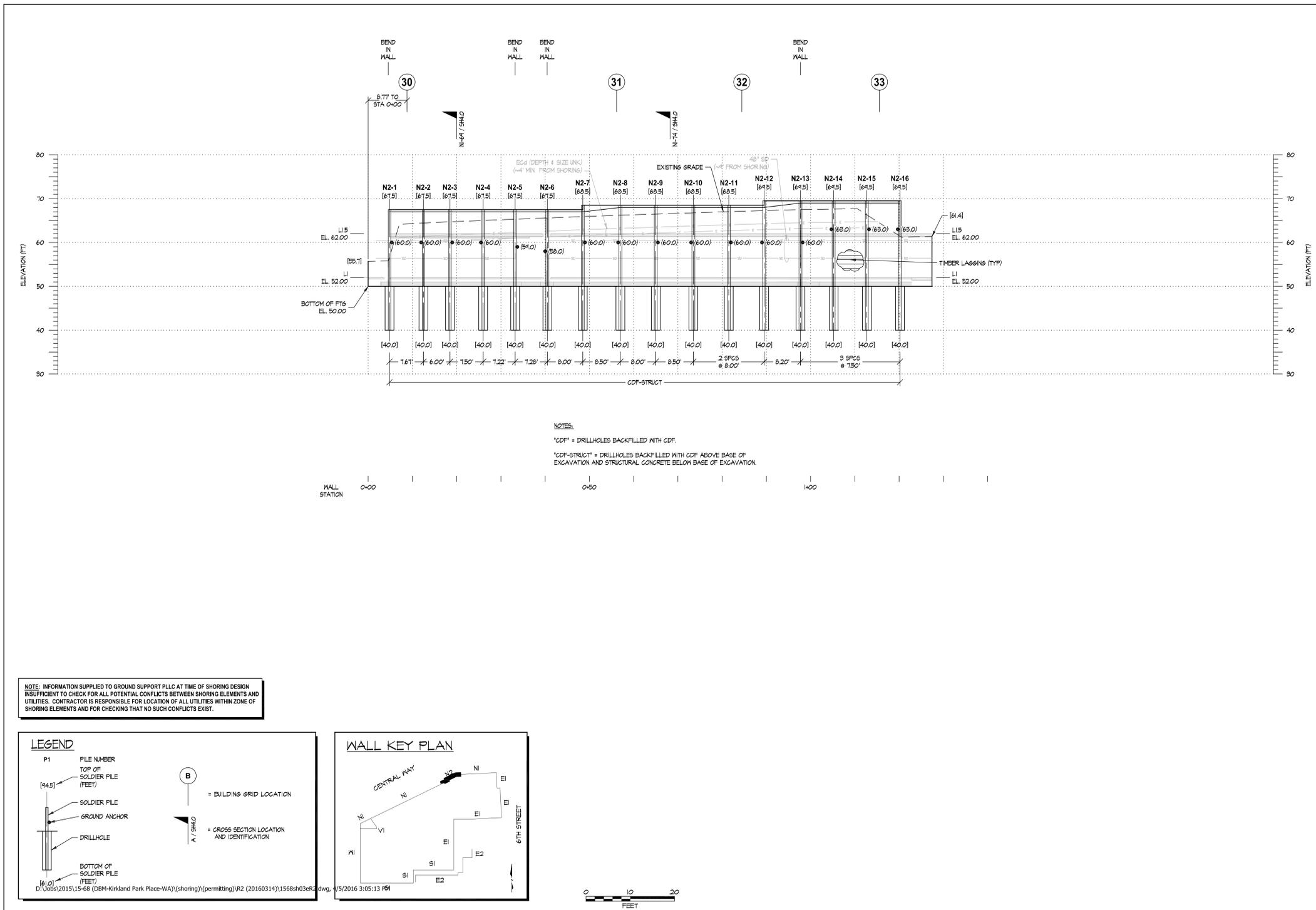
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 DRAWN BY JSS
 ISSUE DATE 1.29.2016



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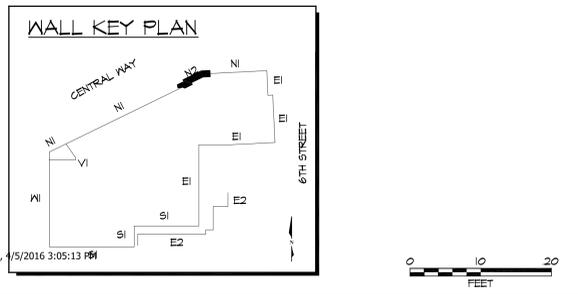
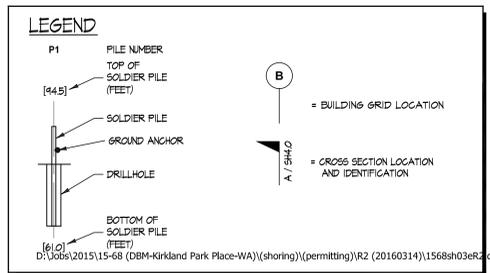
SH3.3

City of Kirkland
Reviewed by AHaupt
05/10/2016



NOTES:
 *CDP = DRILLHOLES BACKFILLED WITH CDP.
 *CDP-STRUCT = DRILLHOLES BACKFILLED WITH CDP ABOVE BASE OF EXCAVATION AND STRUCTURAL CONCRETE BELOW BASE OF EXCAVATION.

NOTE: INFORMATION SUPPLIED TO GROUND SUPPORT PLLC AT TIME OF SHORING DESIGN INSUFFICIENT TO CHECK FOR ALL POTENTIAL CONFLICTS BETWEEN SHORING ELEMENTS AND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES WITHIN ZONE OF SHORING ELEMENTS AND FOR CHECKING THAT NO SUCH CONFLICTS EXIST.



SHORING WALL
'N2' WALL ELEVATION

SH3.4

TITLE
KIRKLAND URBAN
 321 PARKPLACE CENTER
 KIRKLAND, WA 98033

CONSULTANT

Ground Support PLLC
 16932 Woodinville Redmond Rd NE, #210
 Woodinville, WA 98072
 Ph: (425) 488-1143 Fax: (425) 605-4057

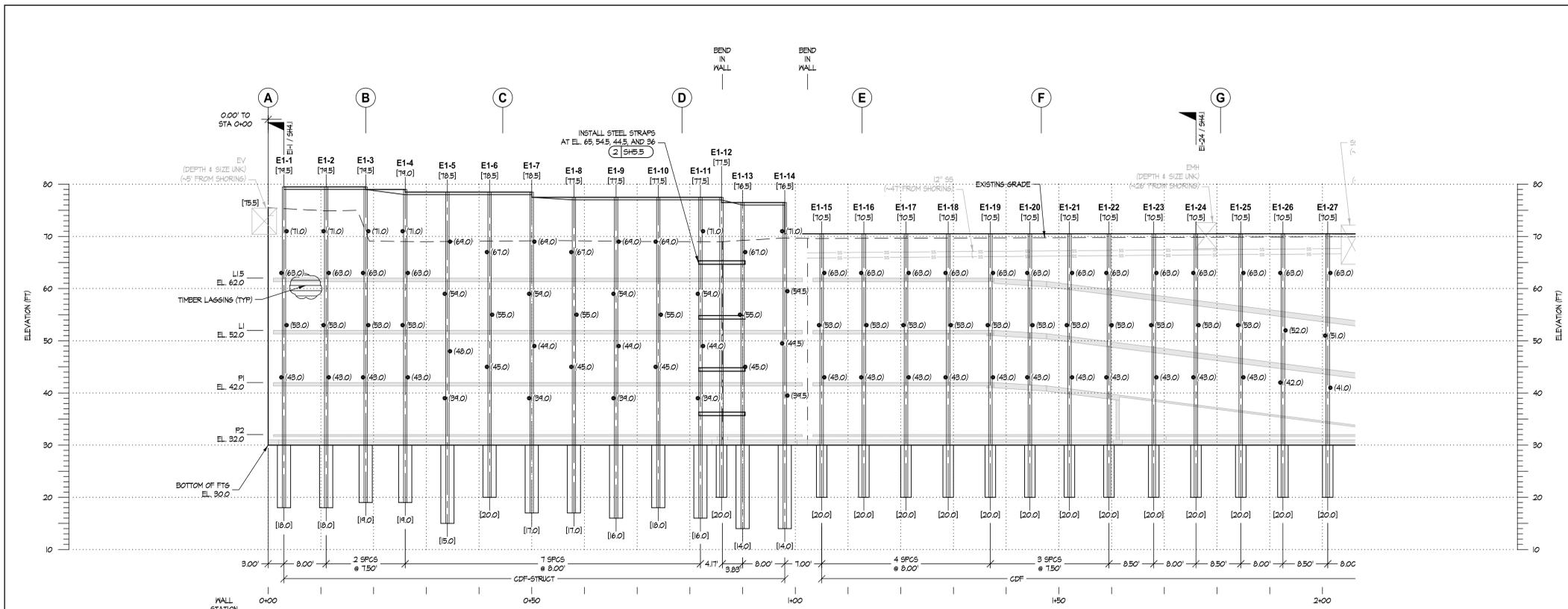
ISSUED:

MARK	DATE	DESCRIPTION
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-68
 DRAWN BY JSS
 ISSUE DATE 1.29.2016

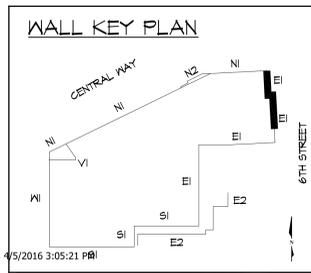
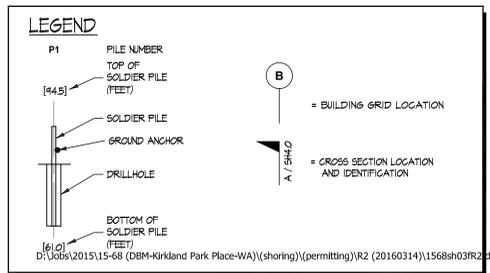


SHEET TITLE / NUMBER
 'N2' WALL ELEVATION
SH3.4
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SHORING WALL
'E1' WALL ELEVATION

SH3.5

TITLE
KIRKLAND URBAN
 321 PARKPLACE CENTER
 KIRKLAND, WA 98033

CONSULTANT

Ground Support PLLC
 16932 Woodinville Redmond Rd NE, #210
 Woodinville, WA 98072
 Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

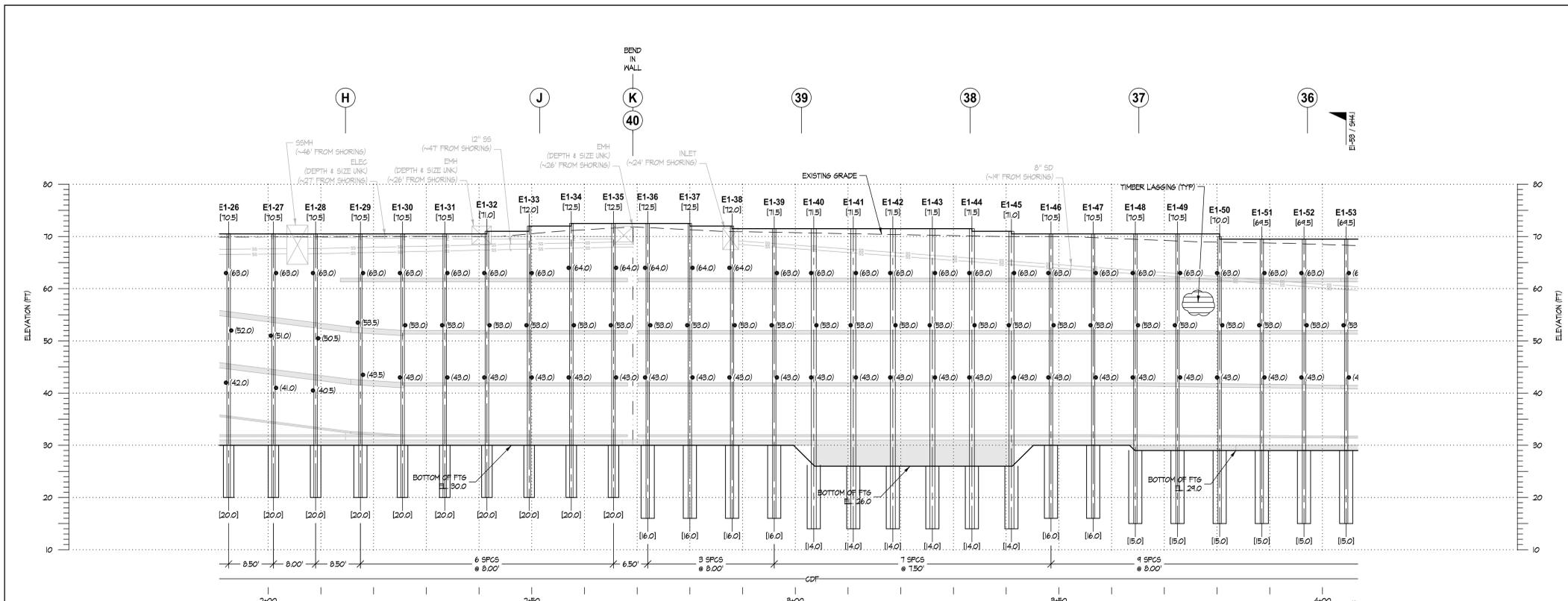
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-68
 DRAWN BY JSS
 ISSUE DATE 1.29.2016

SEAL

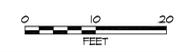
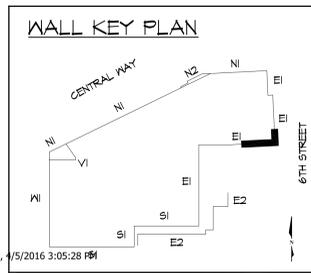
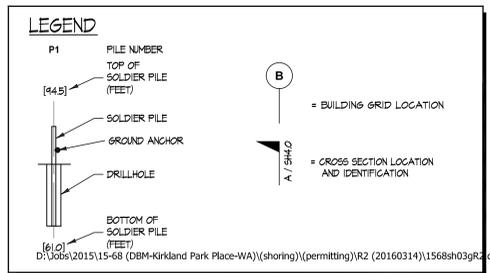

SHEET TITLE / NUMBER
 'E1' WALL ELEVATION

SH3.5



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SHORING WALL
'E1' WALL ELEVATION

SH3.6

TITLE
KIRKLAND URBAN
 321 PARKPLACE CENTER
 KIRKLAND, WA 98033

CONSULTANT

Ground Support PLLC
 16932 Woodinville Redmond Rd NE, #210
 Woodinville, WA 98072
 Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
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2	4/5/2016	COMMENT RESPONSE

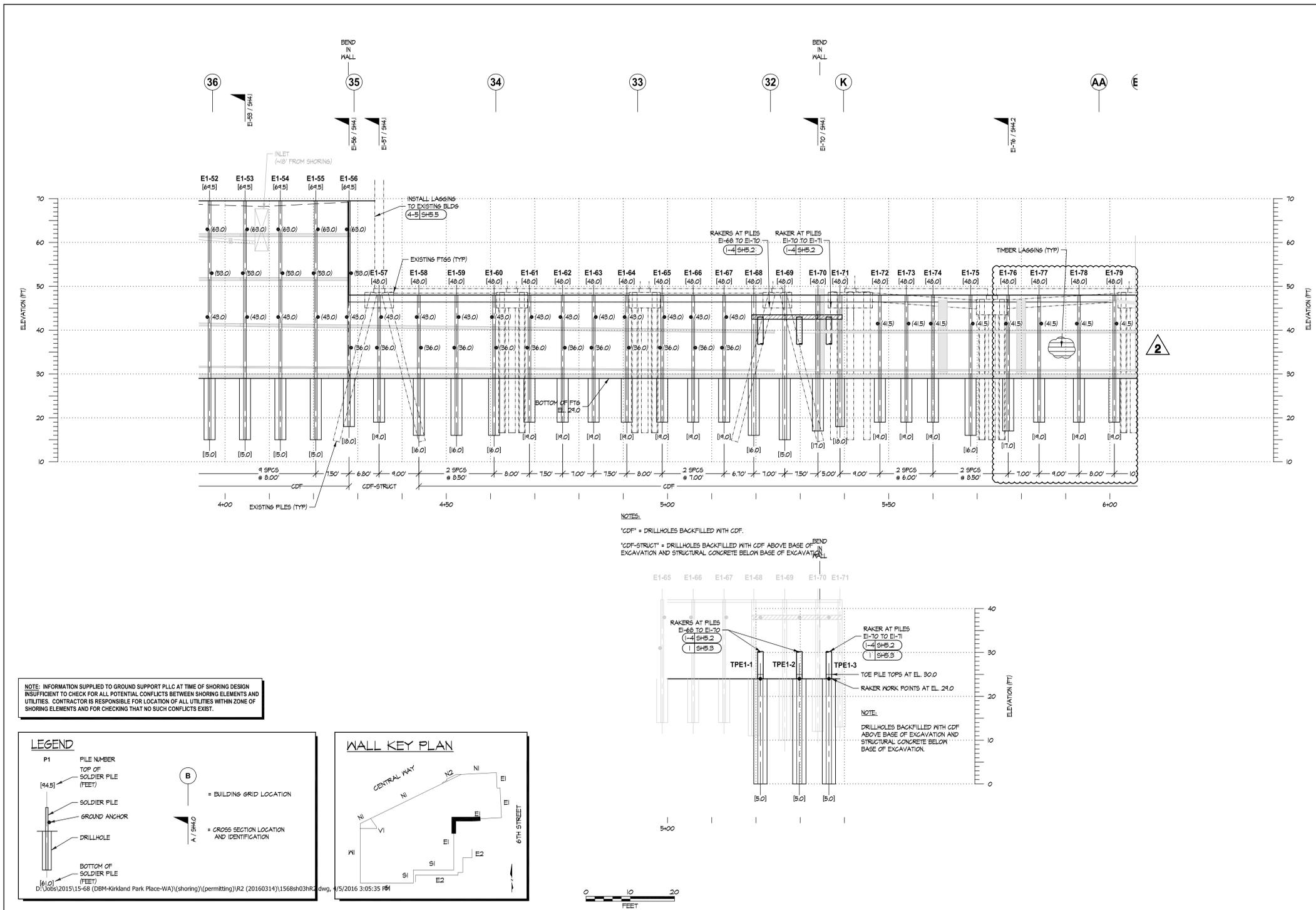
PROJECT NUMBER 15-08
 DRAWN BY JSS
 ISSUE DATE 1.29.2016

SEAL

 JOHN BYRNE
 STATE OF WASHINGTON
 LICENSED PROFESSIONAL ENGINEER
 EXPIRES 10-16-16

SHEET TITLE / NUMBER
 'E1' WALL ELEVATION

SH3.6



SHORING WALL
'E1' WALL ELEVATION

SH3.7

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT



Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-68
DRAWN BY JSS
ISSUE DATE 1.29.2016

SEAL



JOHN D. BYRNE
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
EXPIRES 10-16-16

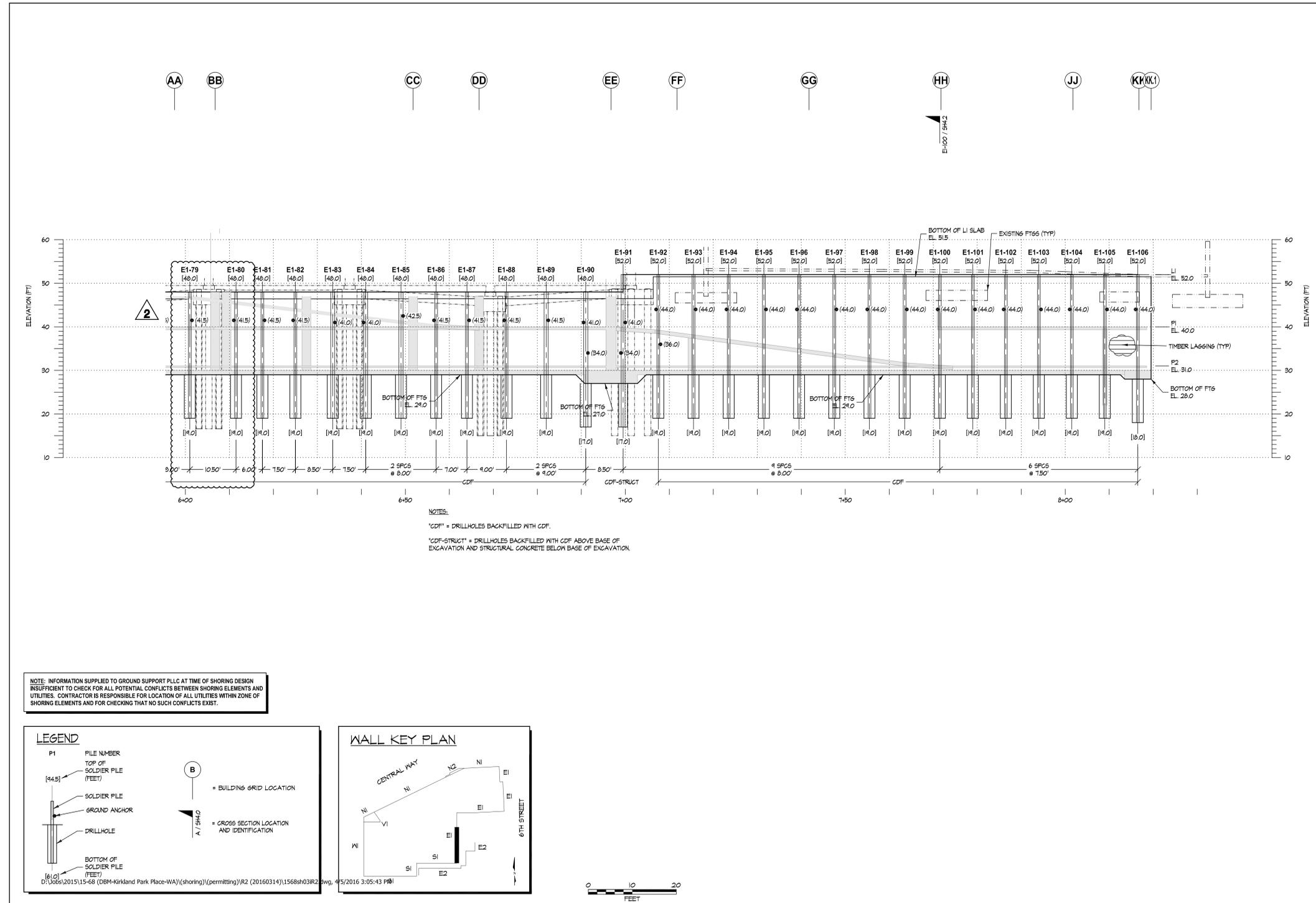
SHEET TITLE / NUMBER

'E1' WALL ELEVATION

SH3.7

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City of Kirkland
Reviewed by AHaupt
05/10/2016



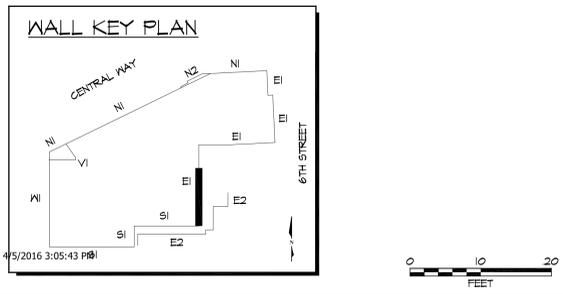
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LEGEND

- P1 FILE NUMBER
- TOP OF SOLDIER PILE (FEET)
- SOLDIER PILE
- GROUND ANCHOR
- DRILLHOLE
- BOTTOM OF SOLDIER PILE (FEET)

D:\Jobs\2015\15-68 (DBM-Kirkland Park Place-WA)\(shoring)\(permitting)\R2 (20160314)\1568sh03R2.dwg, 4/5/2016 3:05:43 PM



SHORING WALL
'E1' WALL ELEVATION

SH3.8

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT

Ground Support PLLC
 16932 Woodinville Redmond Rd NE, #210
 Woodinville, WA 98072
 Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

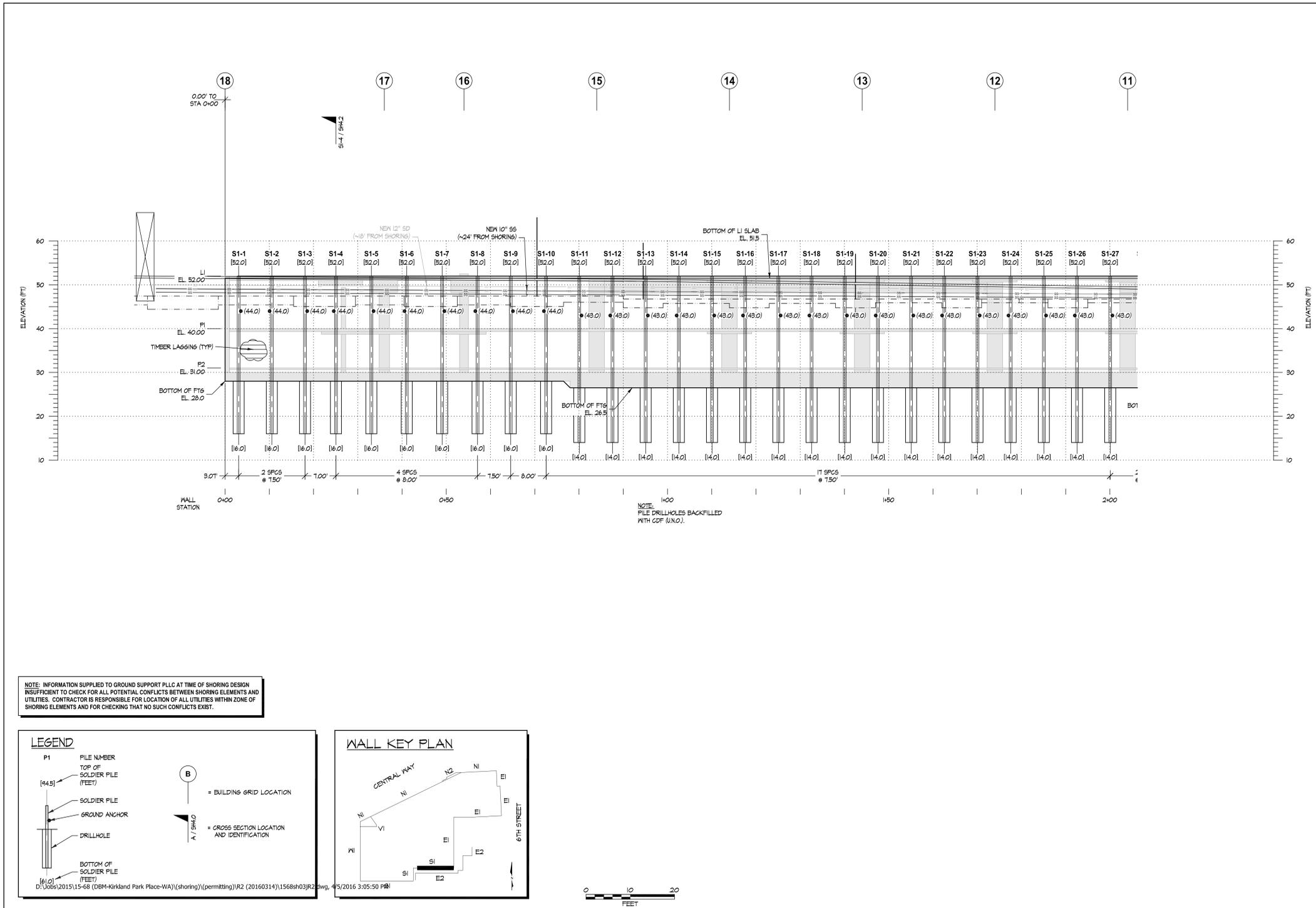
PROJECT NUMBER 15-68
 DRAWN BY JSS
 ISSUE DATE 1.29.2016

SEAL

SHEET TITLE / NUMBER
'E1' WALL ELEVATION

SH3.8

City of Kirkland
 Reviewed by AHaupt
 05/10/2016



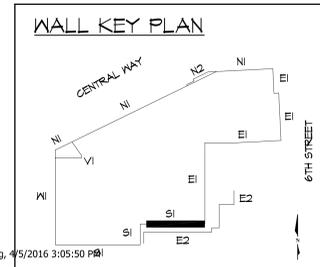
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LEGEND

P1 FILE NUMBER
 TOP OF SOLDIER PILE (FEET)
 [44.5]
 SOLDIER PILE
 GROUND ANCHOR
 DRILLHOLE
 BOTTOM OF SOLDIER PILE (FEET)
 [6.0]

(B) = BUILDING GRID LOCATION
 A / SH42 = CROSS SECTION LOCATION AND IDENTIFICATION

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SHORING WALL
 'S1' WALL ELEVATION

SH3.9

TITLE
KIRKLAND URBAN
 321 PARKPLACE CENTER
 KIRKLAND, WA 98033

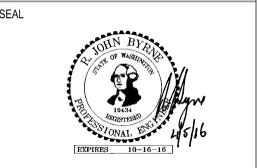
CONSULTANT

Ground Support PLLC
 16932 Woodinville Redmond Rd NE, #210
 Woodinville, WA 98072
 Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
0	01/29/16	PERMIT SUBMITTAL
1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

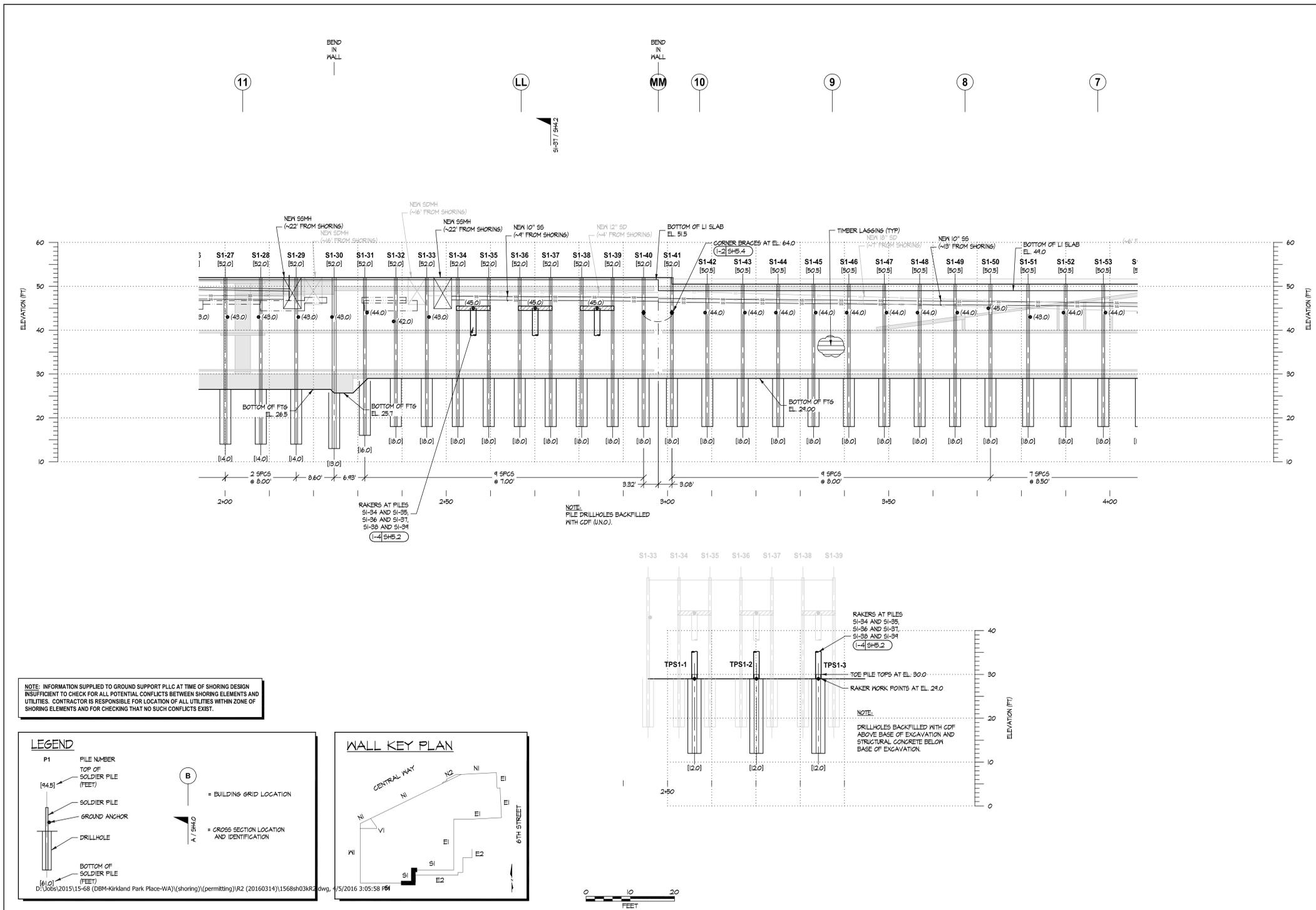
PROJECT NUMBER 15-68
 DRAWN BY JSS
 ISSUE DATE 1.29.2016



SHEET TITLE / NUMBER
 'S1' WALL ELEVATION

SH3.9

City of Kirkland
Reviewed by AHaupt
05/10/2016



SHORING WALL
'S1' WALL ELEVATION

SH3.10

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT

GS

Ground Support PLLC

16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

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2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-68
DRAWN BY JSS
ISSUE DATE 1.29.2016

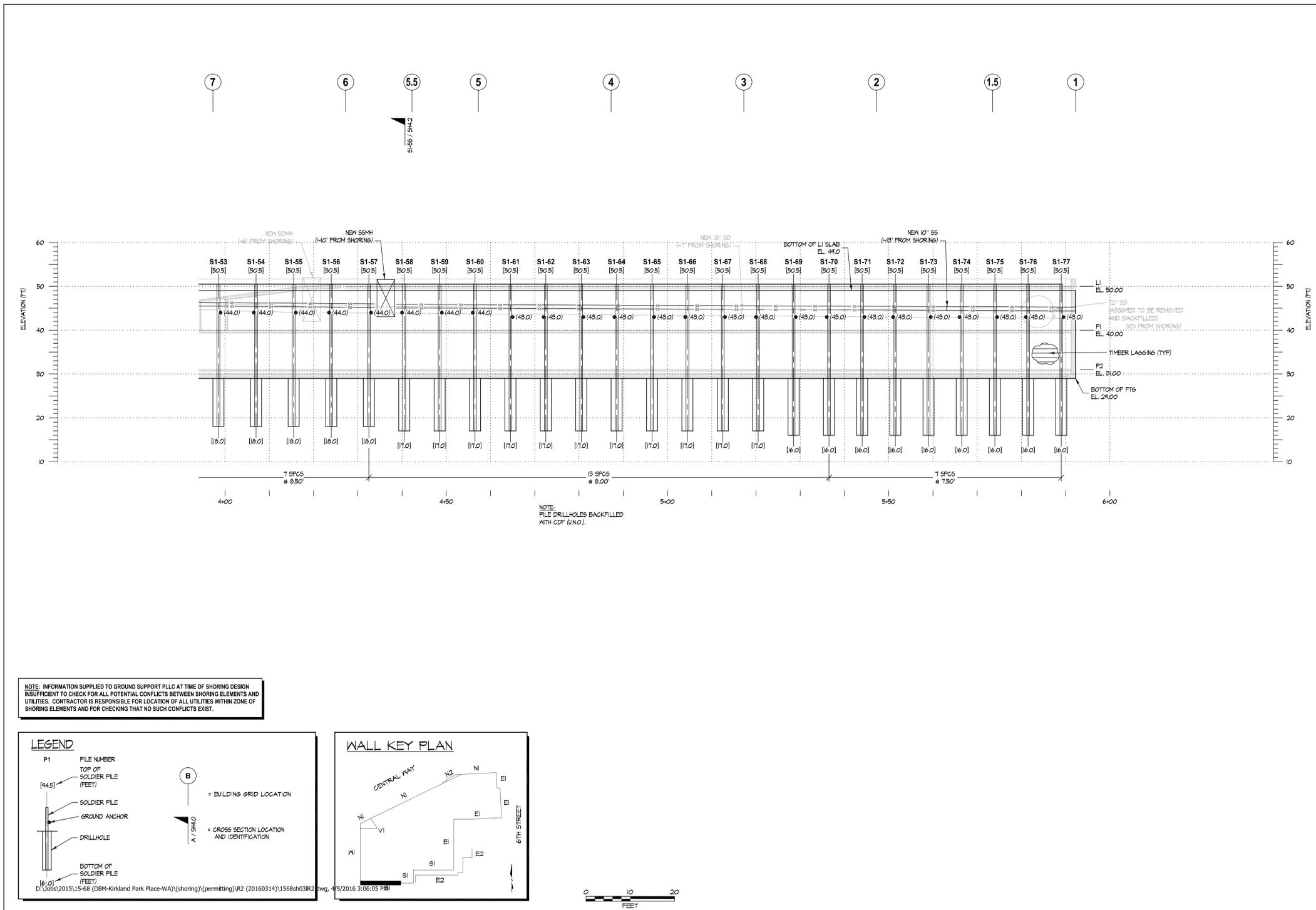


SHEET TITLE / NUMBER

'S1' WALL ELEVATION

SH3.10

City of Kirkland
Reviewed by AHaupt
05/10/2016

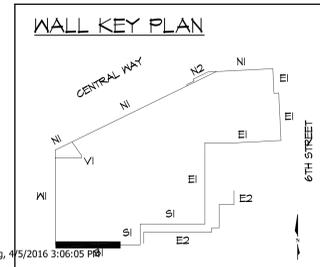


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LEGEND

P1 FILE NUMBER
TOP OF SOLDIER PILE (FEET)
[44.5]
SOLDIER PILE
GROUND ANCHOR
DRILLHOLE
BOTTOM OF SOLDIER PILE (FEET)
[6.2]
D:\Jobs\2015\15-68 (DBM-Kirkland Park Place-WA)\(shoring)\(permitting)\R2 (20160314)\1568sh03R2.dwg, 4/5/2016 3:06:05 PM

(B) = BUILDING GRID LOCATION
A / SH42 = CROSS SECTION LOCATION AND IDENTIFICATION



SHORING WALL
'S1' WALL ELEVATION

SH3.11

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT

Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

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PROJECT NUMBER 15-68
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ISSUE DATE 1.29.2016

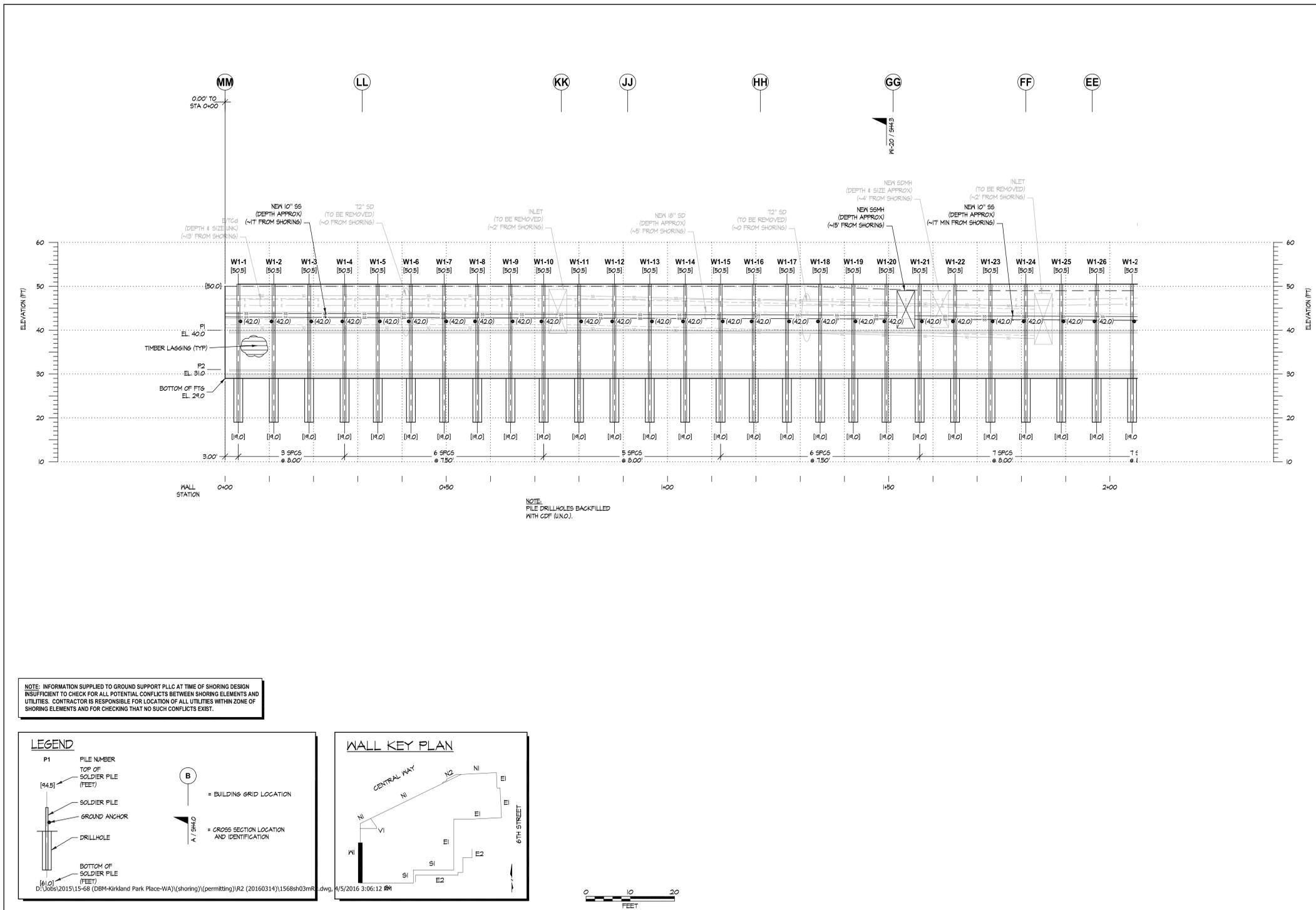
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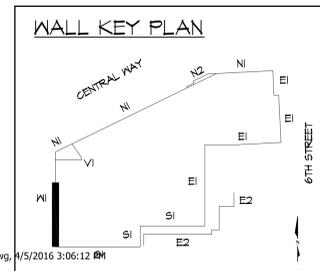
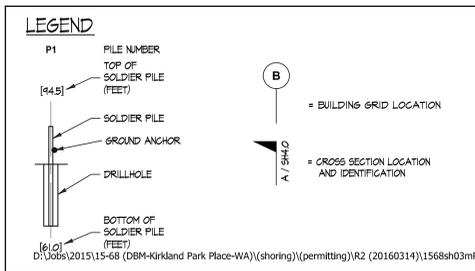
'S1' WALL ELEVATION

SH3.11

City of Kirkland
Reviewed by AHaupt
05/10/2016



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SHORING WALL
'W1' WALL ELEVATION

SH3.12

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

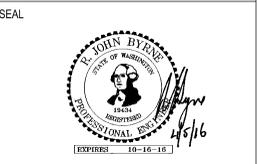
CONSULTANT

Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

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2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-68
DRAWN BY JSS
ISSUE DATE 1.29.2016

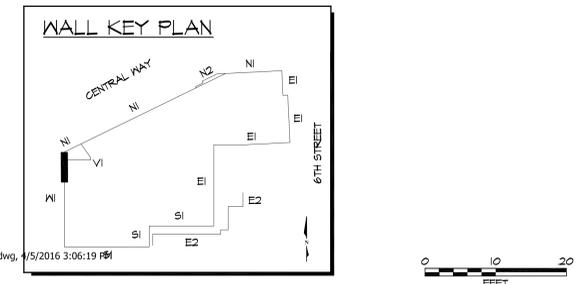
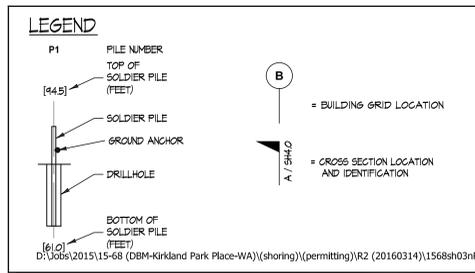
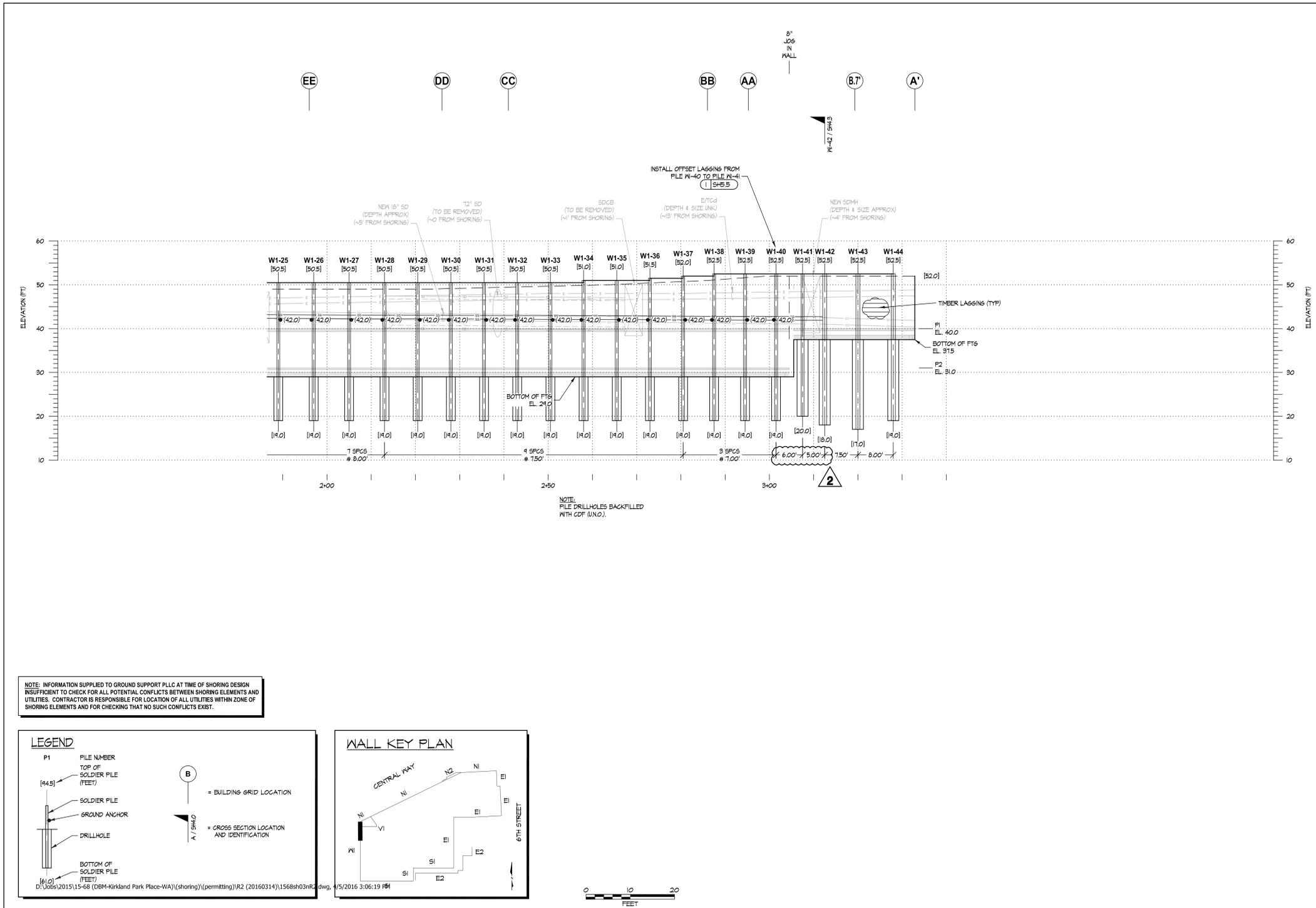


SHEET TITLE / NUMBER

'W1' WALL ELEVATION

SH3.12

City of Kirkland
Reviewed by AHaupt
05/10/2016



SHORING WALL
'W1' WALL ELEVATION

SH3.13

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

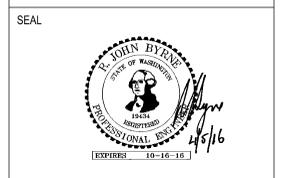
CONSULTANT

Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

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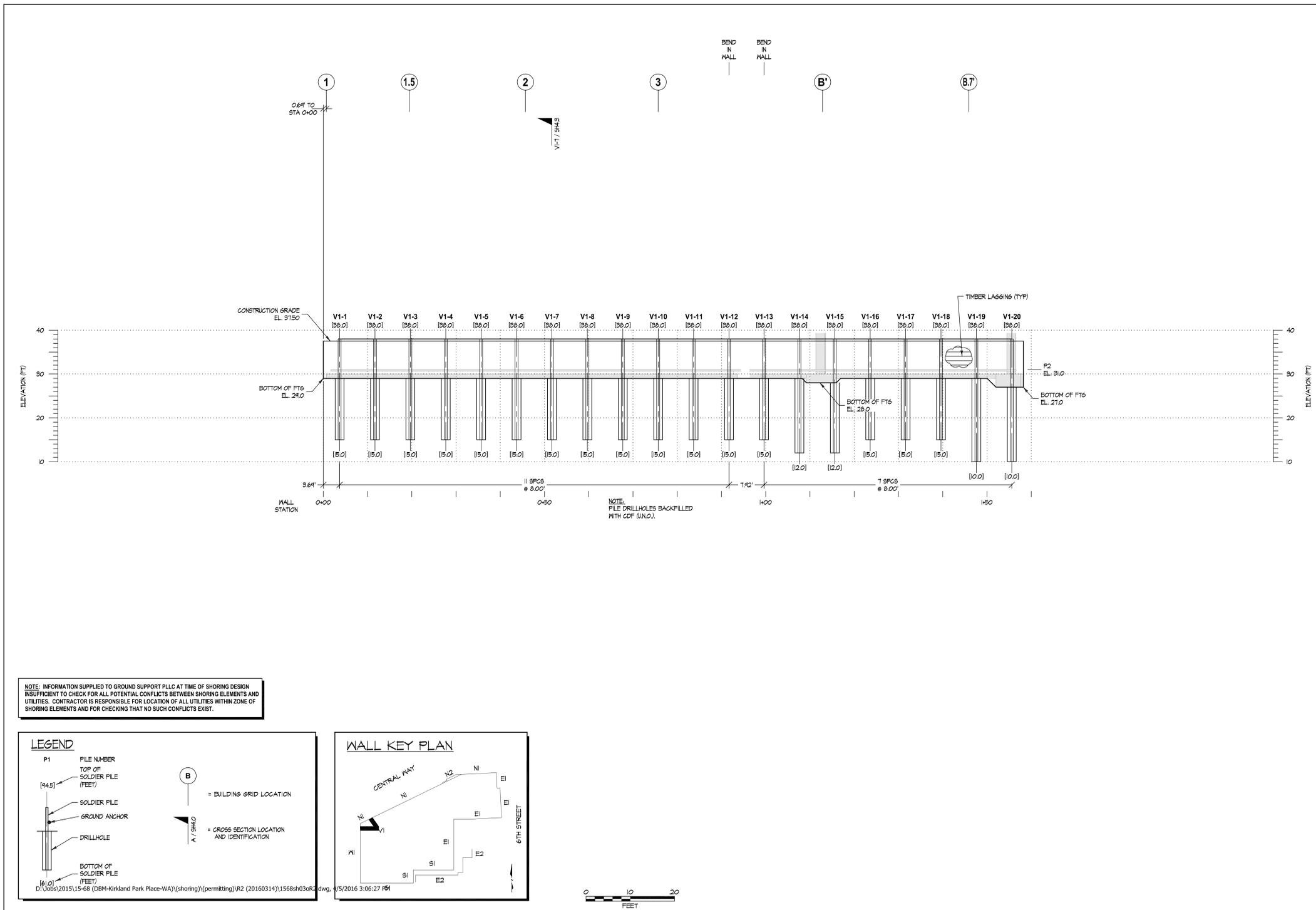
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'W1' WALL ELEVATION

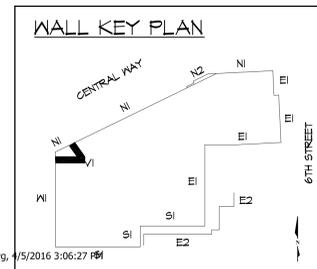
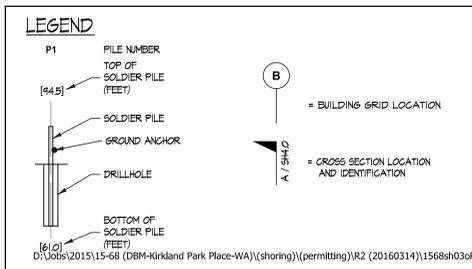
SH3.13

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City of Kirkland
Reviewed by AHaupt
05/10/2016



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SHORING WALL
'V1' WALL ELEVATION

SH3.14

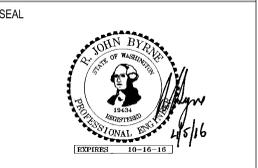
TITLE
KIRKLAND URBAN
321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT
GS
Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

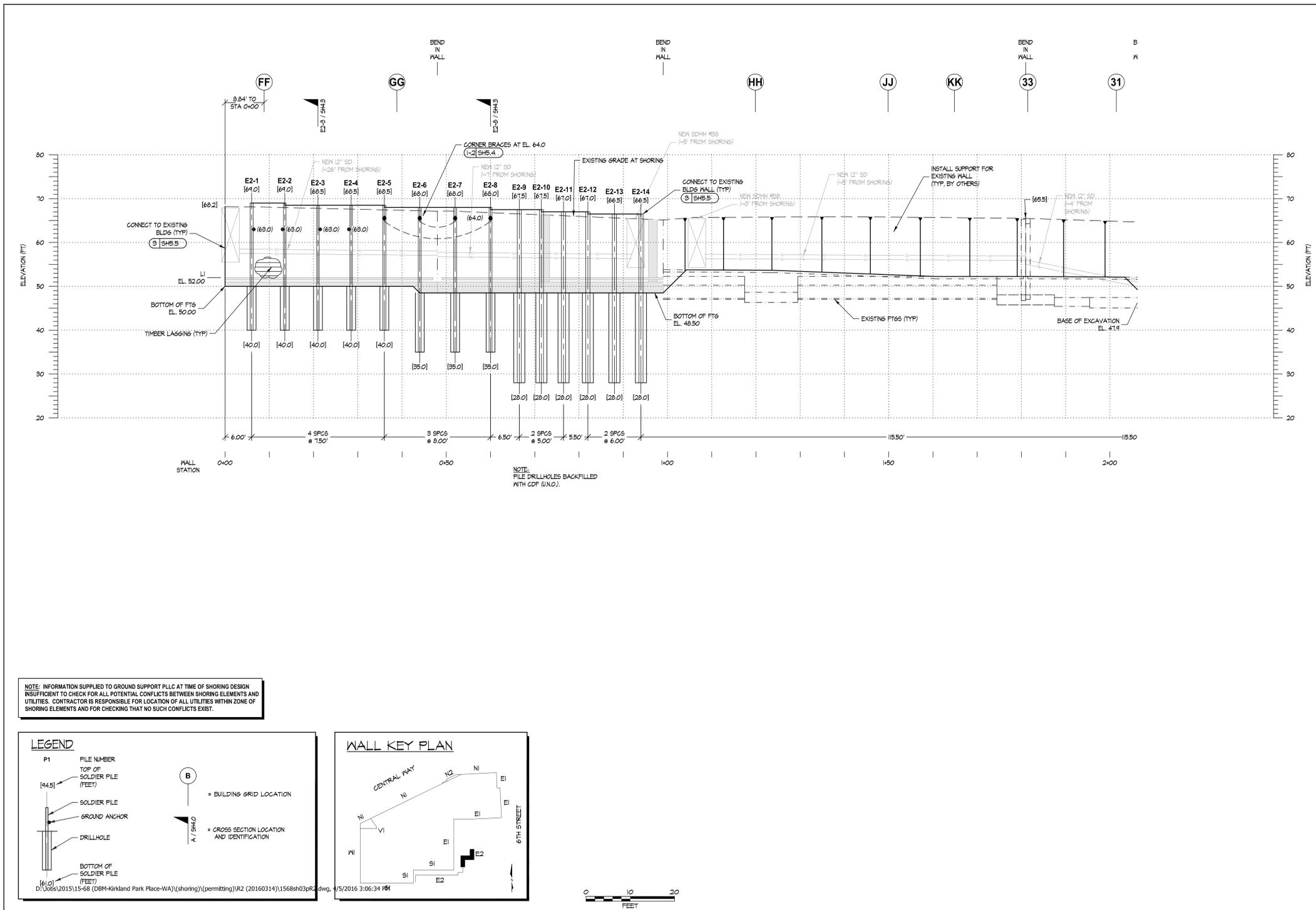
PROJECT NUMBER 15-68
DRAWN BY JSS
ISSUE DATE 1.29.2016



SHEET TITLE / NUMBER
'V1' WALL ELEVATION

SH3.14

City of Kirkland
Reviewed by AHaupt
05/10/2016



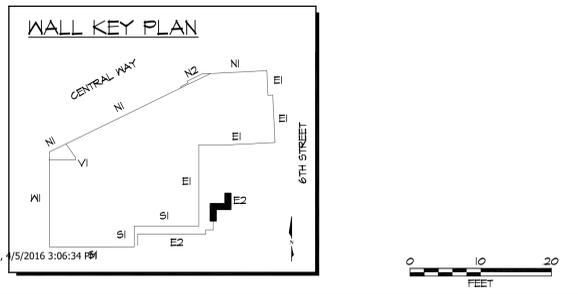
NOTE: INFORMATION SUPPLIED TO GROUND SUPPORT PLLC AT TIME OF SHORING DESIGN INSUFFICIENT TO CHECK FOR ALL POTENTIAL CONFLICTS BETWEEN SHORING ELEMENTS AND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES WITHIN ZONE OF SHORING ELEMENTS AND FOR CHECKING THAT NO SUCH CONFLICTS EXIST.

LEGEND

P1 FILE NUMBER
TOP OF SOLDIER PILE (FEET)
[64.5]
SOLDIER PILE
GROUND ANCHOR
DRILLHOLE
BOTTOM OF SOLDIER PILE (FEET)
[61.2]

(B) = BUILDING GRID LOCATION
A / SH3.0 = CROSS SECTION LOCATION AND IDENTIFICATION

D:\Jobs\2015\15-68 (DBM-Kirkland Park Place-WA)\(shoring)\(permitting)\R2 (20160314)\1568sh03pr.dwg, 4/5/2016 3:06:34 PM



SHORING WALL
'E2' WALL ELEVATION

SH3.15

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT

Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

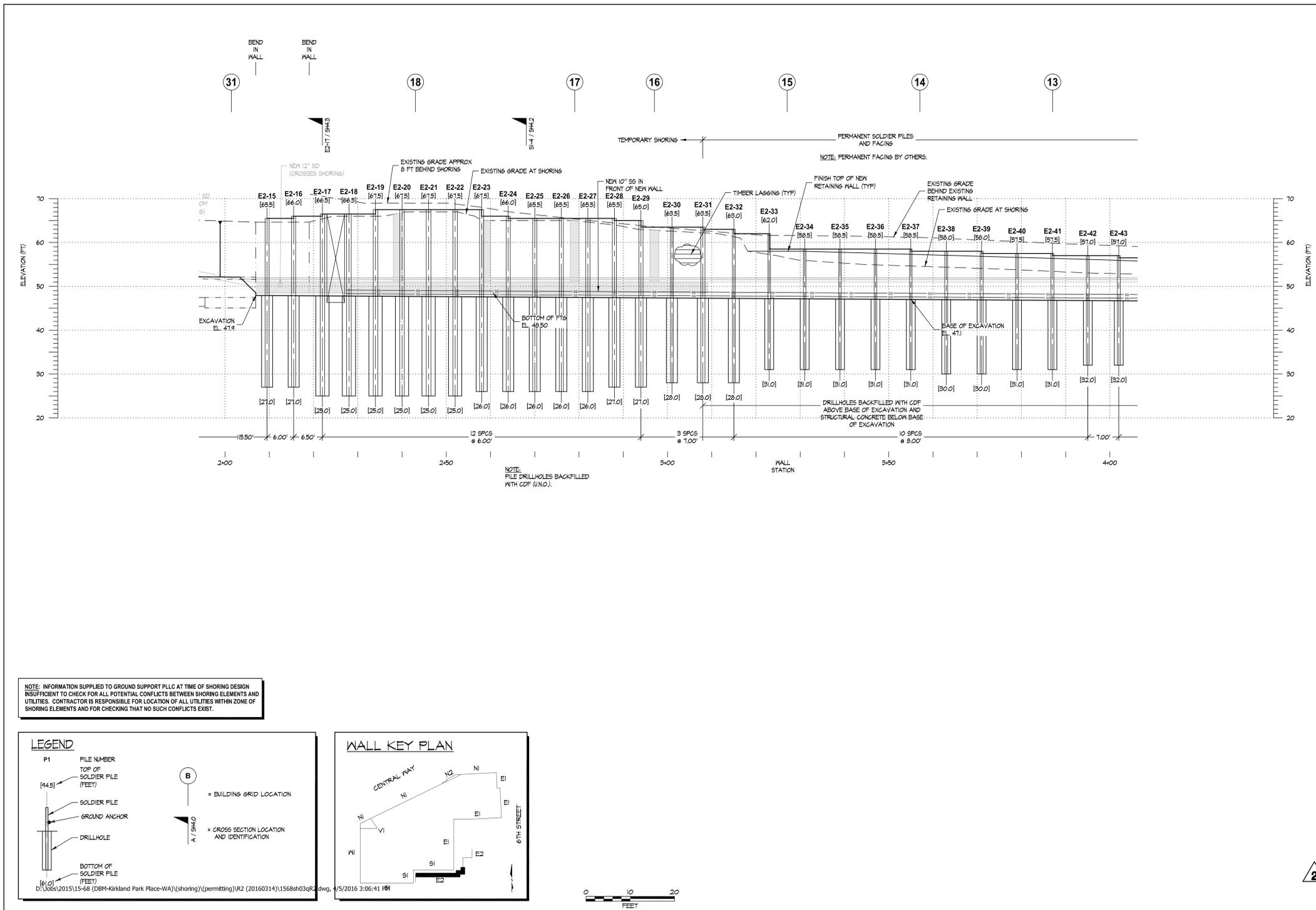
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-68
DRAWN BY JSS
ISSUE DATE 1.29.2016

SEAL

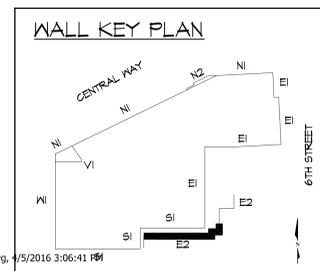
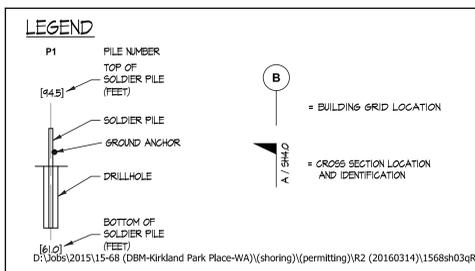
SHEET TITLE / NUMBER
'E2' WALL ELEVATION

SH3.15



SHORING WALL
'E2' WALL ELEVATION

NOTE: INFORMATION SUPPLIED TO GROUND SUPPORT PLLC AT TIME OF SHORING DESIGN INSUFFICIENT TO CHECK FOR ALL POTENTIAL CONFLICTS BETWEEN SHORING ELEMENTS AND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES WITHIN ZONE OF SHORING ELEMENTS AND FOR CHECKING THAT NO SUCH CONFLICTS EXIST.



TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

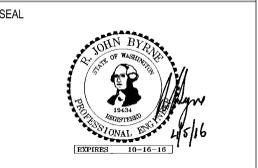
CONSULTANT

Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
0	01/29/16	PERMIT SUBMITTAL
1	2/22/2016	COMMENT RESPONSE
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PROJECT NUMBER 15-68
DRAWN BY JSS
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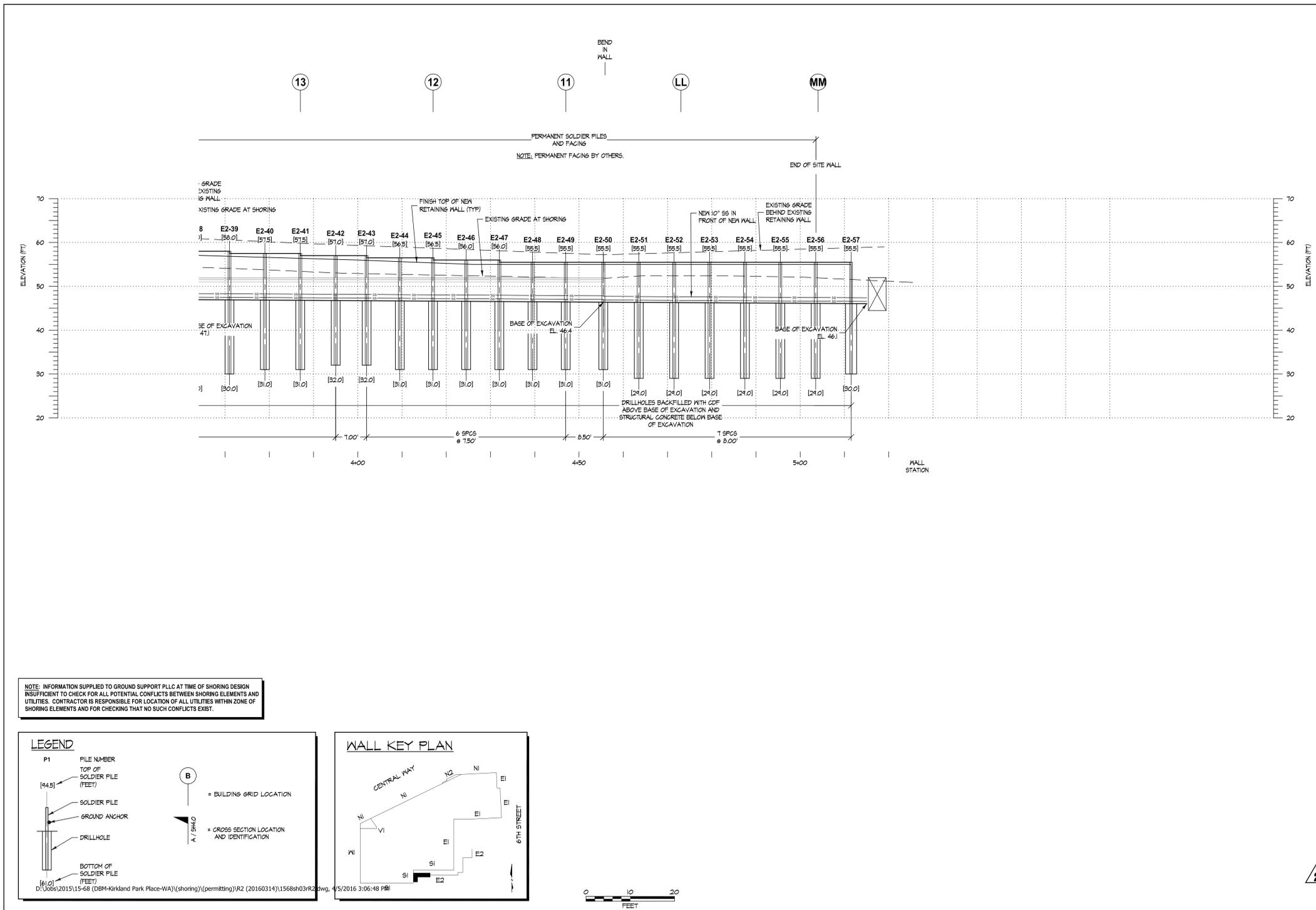


SHEET TITLE / NUMBER

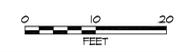
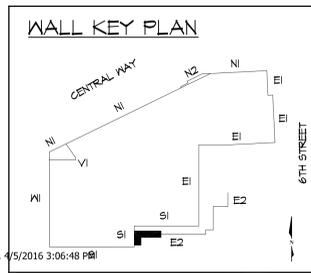
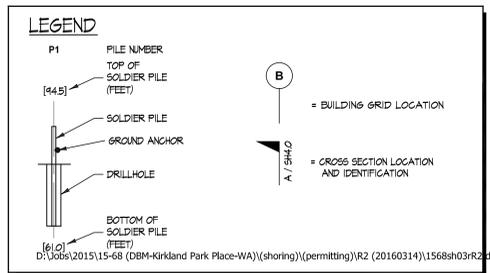
'E2' WALL ELEVATION

SH3.16

City of Kirkland
Reviewed by AHaupt
05/10/2016



NOTE: INFORMATION SUPPLIED TO GROUND SUPPORT PLLC AT TIME OF SHORING DESIGN INSUFFICIENT TO CHECK FOR ALL POTENTIAL CONFLICTS BETWEEN SHORING ELEMENTS AND UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL UTILITIES WITHIN ZONE OF SHORING ELEMENTS AND FOR CHECKING THAT NO SUCH CONFLICTS EXIST.



SHORING WALL
'E2' WALL ELEVATION

2 SH3.17

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

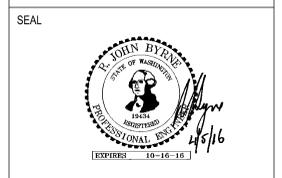
CONSULTANT

Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
0	01/29/16	PERMIT SUBMITTAL
1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-68
DRAWN BY JSS
ISSUE DATE 1.29.2016



SHEET TITLE / NUMBER

'E2' WALL ELEVATION

2 SH3.17



PILE AND ANCHOR SCHEDULE - 'E1' WALL																																						
PILE NUMBER	WALL STA	STEEL SECTION	PILE TOP ELEV (FT)	PILE BOT ELEV (FT)	PILE LENGTH (FT)	MIN. DRILL- HOLE DIA (IN)	ANCHOR 1					ANCHOR 2					ANCHOR 3					ANCHOR 4																
							ANCHOR ELEV (FT)	DECLINATION (DEG)	TOTAL LENGTH (FT)	UNBOND LENGTH (FT)	BOND LENGTH (FT)	NUMBER 0.6-INCH DIA STRANDS	DESIGN LOAD (K)	LOCKOFF LOAD (K)	ANCHOR ELEV (FT)	DECLINATION (DEG)	TOTAL LENGTH (FT)	UNBOND LENGTH (FT)	BOND LENGTH (FT)	NUMBER 0.6-INCH DIA STRANDS	DESIGN LOAD (K)	LOCKOFF LOAD (K)	ANCHOR ELEV (FT)	DECLINATION (DEG)	TOTAL LENGTH (FT)	UNBOND LENGTH (FT)	BOND LENGTH (FT)	NUMBER 0.6-INCH DIA STRANDS	DESIGN LOAD (K)	LOCKOFF LOAD (K)								
E-1	0+02.0	N14X35	74.5	18.0	61.5	2.5	71.0	20.0	57.5	32.5	25.0	3	80.0	80.0	68.0	20.0	57.5	27.5	30.0	3	100.0	100.0	58.0	20.0	58.0	22.5	32.5	4	110.0	110.0	48.0	20.0	58.0	17.5	37.5	4	130.0	130.0
E-2	0+11.0	N14X35	74.5	18.0	61.5	2.5	71.0	20.0	57.5	32.5	25.0	3	80.0	80.0	68.0	20.0	57.5	27.5	30.0	3	100.0	100.0	58.0	20.0	58.0	22.5	32.5	4	110.0	110.0	48.0	20.0	58.0	17.5	37.5	4	130.0	130.0
E-3	0+18.5	N14X35	74.5	18.0	60.5	2.5	71.0	20.0	52.5	32.5	20.0	2	70.0	70.0	68.0	20.0	57.5	27.5	30.0	3	100.0	100.0	58.0	20.0	58.0	22.5	32.5	4	110.0	110.0	48.0	20.0	58.0	17.5	37.5	4	130.0	130.0
E-4	0+26.0	N14X35	74.0	18.0	60.0	2.5	71.0	20.0	52.5	32.5	20.0	2	70.0	70.0	68.0	20.0	57.5	27.5	30.0	3	100.0	100.0	58.0	20.0	58.0	22.5	32.5	4	110.0	110.0	48.0	20.0	58.0	17.5	37.5	4	130.0	130.0
E-5	0+34.0	N14X35	73.5	15.0	63.5	2.5	69.0	20.0	62.5	30.0	32.5	4	110.0	110.0	59.0	20.0	62.5	22.5	30.0	3	100.0	100.0	48.0	20.0	52.5	20.0	38.0	4	120.0	120.0	34.0	20.0	52.5	15.0	30.0	3	100.0	100.0
E-6	0+42.0	N14X35	73.5	20.0	58.5	2.5	67.0	15.0	61.5	30.0	31.0	4	130.0	130.0	58.0	10.0	60.0	25.0	36.0	4	120.0	120.0	45.0	20.0	68.0	20.0	48.0	5	160.0	160.0	-	-	-	-	-	-	-	-
E-7	0+50.0	N14X35	73.5	17.0	61.5	2.5	69.0	20.0	60.0	30.0	30.0	3	100.0	100.0	54.0	15.0	60.0	21.5	32.5	4	110.0	110.0	44.0	20.0	58.0	20.0	38.0	4	120.0	120.0	34.0	20.0	47.5	15.0	32.5	4	110.0	110.0
E-8	0+58.0	N14X35	73.5	17.0	60.5	2.5	67.0	20.0	61.5	30.0	31.5	4	130.0	130.0	58.0	20.0	62.5	25.0	37.5	4	120.0	120.0	45.0	20.0	68.0	20.0	48.0	5	160.0	160.0	-	-	-	-	-	-	-	-
E-9	0+66.0	N14X35	73.5	16.0	61.5	2.5	69.0	20.0	60.0	30.0	30.0	3	100.0	100.0	58.0	20.0	62.5	22.5	30.0	3	100.0	100.0	44.0	20.0	58.0	20.0	38.0	4	120.0	120.0	34.0	20.0	47.5	15.0	32.5	4	110.0	110.0
E-10	0+74.0	N14X35	73.5	16.0	61.5	2.5	69.0	20.0	62.5	32.5	30.0	3	100.0	100.0	58.0	20.0	62.5	22.5	30.0	3	100.0	100.0	45.0	20.0	58.0	20.0	38.0	4	120.0	120.0	34.0	20.0	47.5	15.0	32.5	4	110.0	110.0
E-11	0+82.0	N14X35	73.5	16.0	61.5	2.5	69.0	20.0	62.5	32.5	30.0	3	100.0	100.0	58.0	20.0	62.5	22.5	30.0	3	100.0	100.0	45.0	20.0	58.0	20.0	38.0	4	120.0	120.0	34.0	20.0	47.5	15.0	32.5	4	110.0	110.0
E-12	0+90.0	N14X35	73.5	20.0	57.5	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E-13	0+98.0	N14X35	73.5	14.0	62.5	2.5	67.0	22.5	65.0	30.0	35.0	4	120.0	120.0	58.0	35.0	60.0	22.5	37.5	4	130.0	130.0	45.0	35.0	62.5	17.5	45.0	5	160.0	160.0	-	-	-	-	-	-	-	-
E-14	0+106.0	N14X35	73.5	14.0	62.5	2.5	67.0	22.5	65.0	30.0	35.0	4	120.0	120.0	58.0	35.0	60.0	22.5	37.5	4	130.0	130.0	45.0	35.0	62.5	17.5	45.0	5	160.0	160.0	-	-	-	-	-	-	-	-
E-15	1+04.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-16	1+12.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-17	1+20.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-18	1+28.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-19	1+36.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-20	1+44.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-21	1+52.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-22	1+60.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-23	1+68.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-24	1+76.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-25	1+84.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-26	1+92.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	80.0	80.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-27	2+00.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-28	2+08.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-29	2+16.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-30	2+24.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-31	2+32.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-32	2+40.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-33	2+48.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-34	2+56.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-35	3+04.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-36	3+12.0	N14X48	70.5	20.0	50.5	2.0	68.0	20.0	52.5	27.5	25.0	3	100.0	100.0	58.0	20.0	52.5	22.5	30.0	3	100.0	100.0	48.0	20.0	50.0	17.5	32.5	4	110.0	110.0	-	-	-	-	-	-	-	-
E-37	3+20.0	N14X48																																				



PILE SCHEDULE - 'V1' WALL

PILE NUMBER	WALL STA	STEEL SECTION	PILE TOP ELEV (FT)	PILE BOT ELEV (FT)	PILE LENGTH (FT)	MIN. DRILL-HOLE DIA (FT)
V1-1	0+08.7	W4X34	38.0	15.0	23.0	2.0
V1-2	0+11.7	W4X34	38.0	15.0	23.0	2.0
V1-3	0+14.7	W4X34	38.0	15.0	23.0	2.0
V1-4	0+21.7	W4X34	38.0	15.0	23.0	2.0
V1-5	0+35.7	W4X34	38.0	15.0	23.0	2.0
V1-6	0+43.7	W4X34	38.0	15.0	23.0	2.0
V1-7	0+51.7	W4X34	38.0	15.0	23.0	2.0
V1-8	0+54.7	W4X34	38.0	15.0	23.0	2.0
V1-9	0+61.7	W4X34	38.0	15.0	23.0	2.0
V1-10	0+75.7	W4X34	38.0	15.0	23.0	2.0
V1-11	0+83.7	W4X34	38.0	15.0	23.0	2.0
V1-12	0+81.7	W4X34	38.0	15.0	23.0	2.0
V1-13	0+94.6	W4X34	38.0	15.0	23.0	2.0
V1-14	H07.6	W4X34	38.0	12.0	26.0	2.0
V1-15	H5.6	W4X34	38.0	12.0	26.0	2.0
V1-16	H23.6	W4X34	38.0	15.0	23.0	2.0
V1-17	H31.6	W4X34	38.0	15.0	23.0	2.0
V1-18	H39.6	W4X34	38.0	15.0	23.0	2.0
V1-19	H47.6	W4X34	38.0	10.0	28.0	2.0
V1-20	H55.6	W4X34	38.0	10.0	28.0	2.0

PILE SCHEDULE - TOE PILES

PILE NUMBER	WALL STA	STEEL SECTION	PILE TOP ELEV (FT)	PILE BOT ELEV (FT)	PILE LENGTH (FT)	MIN. DRILL-HOLE DIA (FT)
TP1-1	5+21.0	W27X27	30.0	5.0	25.0	3.0
TP1-2	5+24.5	W27X27	30.0	5.0	25.0	3.0
TP1-3	5+36.5	W27X27	30.0	5.0	25.0	3.0
TP1-1	2+56.1	W21X21	30.0	12.0	18.0	3.0
TP1-2	2+70.1	W21X21	30.0	12.0	18.0	3.0
TP1-3	2+84.1	W21X21	30.0	12.0	18.0	3.0

PILE AND ANCHOR SCHEDULE - 'E2' WALL

PILE NUMBER	WALL STA	STEEL SECTION	PILE TOP ELEV (FT)	PILE BOT ELEV (FT)	PILE LENGTH (FT)	MIN. DRILL-HOLE DIA (FT)	ANCHOR 1							
							ANCHOR ELEV (FT)	DECLINATION (DEG)	TOTAL LENGTH (FT)	UNBOND LENGTH (FT)	BOND LENGTH (FT)	NUMBER OF 6-INCH DIA STRANDS	DESIGN LOAD (K)	LOCKOFF LOAD (K)
E2-1	0+06.0	W4X48	64.0	40.0	24.0	2.0	63.0	25.0	30.0	15.0	15.0	2	40.0	40.0
E2-2	0+13.5	W4X36	64.0	40.0	24.0	2.0	63.0	25.0	30.0	15.0	15.0	2	40.0	40.0
E2-3	0+21.0	W4X36	68.5	40.0	28.5	2.0	63.0	25.0	30.0	15.0	15.0	2	40.0	40.0
E2-4	0+28.5	W4X36	68.5	40.0	28.5	2.0	63.0	25.0	30.0	15.0	15.0	2	40.0	40.0
E2-5	0+36.0	W4X48	68.5	40.0	28.5	2.0	-	-	-	-	-	-	-	-
E2-6	0+44.0	W4X36	68.0	38.0	30.0	2.0	-	-	-	-	-	-	-	-
E2-7	0+52.0	W4X36	68.0	38.0	30.0	2.0	-	-	-	-	-	-	-	-
E2-8	0+60.0	W4X36	68.0	38.0	30.0	2.0	-	-	-	-	-	-	-	-
E2-9	0+68.5	W8X41	67.5	28.0	39.5	2.5	-	-	-	-	-	-	-	-
E2-10	0+76.5	W8X41	67.5	28.0	39.5	2.5	-	-	-	-	-	-	-	-
E2-11	0+84.5	W8X41	67.5	28.0	39.5	2.5	-	-	-	-	-	-	-	-
E2-12	0+92.0	W8X41	67.5	28.0	39.5	2.5	-	-	-	-	-	-	-	-
E2-13	0+98.0	W8X41	66.5	28.0	38.5	2.5	-	-	-	-	-	-	-	-
E2-14	0+44.0	W8X41	66.5	28.0	38.5	2.5	-	-	-	-	-	-	-	-
E2-15	2+01.5	W8X41	65.5	27.0	38.5	2.5	-	-	-	-	-	-	-	-
E2-16	2+15.5	W8X41	66.0	27.0	39.0	2.5	-	-	-	-	-	-	-	-
E2-17	2+22.0	W21X35	66.5	25.0	41.5	3.0	-	-	-	-	-	-	-	-
E2-18	2+30.0	W21X35	66.5	25.0	41.5	3.0	-	-	-	-	-	-	-	-
E2-19	2+42.0	W21X35	67.5	25.0	42.5	3.0	-	-	-	-	-	-	-	-
E2-20	2+40.0	W21X35	67.5	25.0	42.5	3.0	-	-	-	-	-	-	-	-
E2-21	2+46.0	W21X35	67.5	25.0	42.5	3.0	-	-	-	-	-	-	-	-
E2-22	2+32.0	W21X35	67.5	25.0	42.5	3.0	-	-	-	-	-	-	-	-
E2-23	2+58.0	W8X106	67.5	26.0	41.5	2.5	-	-	-	-	-	-	-	-
E2-24	2+64.0	W8X106	66.0	26.0	40.0	2.5	-	-	-	-	-	-	-	-
E2-25	2+70.0	W8X106	65.5	26.0	39.5	2.5	-	-	-	-	-	-	-	-
E2-26	2+78.0	W8X106	65.5	26.0	39.5	2.5	-	-	-	-	-	-	-	-
E2-27	2+82.0	W8X106	65.5	26.0	39.5	2.5	-	-	-	-	-	-	-	-
E2-28	2+88.0	W8X41	65.5	27.0	38.5	2.5	-	-	-	-	-	-	-	-
E2-29	2+44.0	W8X41	65.0	27.0	38.0	2.5	-	-	-	-	-	-	-	-
E2-30	3+01.0	W8X41	65.5	28.0	37.5	2.5	-	-	-	-	-	-	-	-
E2-31	3+08.0	W8X41	65.5	28.0	37.5	2.5	-	-	-	-	-	-	-	-
E2-32	3+15.0	W8X41	65.0	28.0	37.0	2.5	-	-	-	-	-	-	-	-
E2-33	3+23.0	W8X41	65.0	28.0	37.0	2.5	-	-	-	-	-	-	-	-
E2-34	3+31.0	W8X41	59.5	31.0	28.5	2.5	-	-	-	-	-	-	-	-
E2-35	3+39.0	W8X41	59.5	31.0	28.5	2.5	-	-	-	-	-	-	-	-
E2-36	3+47.0	W8X41	59.5	31.0	28.5	2.5	-	-	-	-	-	-	-	-
E2-37	3+55.0	W8X41	59.5	31.0	28.5	2.5	-	-	-	-	-	-	-	-
E2-38	3+63.0	W4X36	58.0	30.0	28.0	2.0	-	-	-	-	-	-	-	-
E2-39	3+71.0	W4X36	58.0	30.0	28.0	2.0	-	-	-	-	-	-	-	-
E2-40	3+79.0	W4X48	57.5	31.0	26.5	2.0	-	-	-	-	-	-	-	-
E2-41	3+87.0	W4X48	57.5	31.0	26.5	2.0	-	-	-	-	-	-	-	-
E2-42	3+95.0	W4X48	57.0	32.0	25.0	2.0	-	-	-	-	-	-	-	-
E2-43	4+03.0	W4X48	57.0	32.0	25.0	2.0	-	-	-	-	-	-	-	-
E2-44	4+04.5	W4X48	56.5	31.0	25.5	2.0	-	-	-	-	-	-	-	-
E2-45	4+17.0	W4X48	56.5	31.0	25.5	2.0	-	-	-	-	-	-	-	-
E2-46	4+24.5	W4X48	56.0	31.0	25.0	2.0	-	-	-	-	-	-	-	-
E2-47	4+32.0	W4X48	56.0	31.0	25.0	2.0	-	-	-	-	-	-	-	-
E2-48	4+34.5	W4X48	55.5	31.0	24.5	2.0	-	-	-	-	-	-	-	-
E2-49	4+47.0	W4X48	55.5	31.0	24.5	2.0	-	-	-	-	-	-	-	-
E2-50	4+55.5	W4X48	55.5	31.0	24.5	2.0	-	-	-	-	-	-	-	-
E2-51	4+63.5	W4X36	55.5	24.0	26.5	2.0	-	-	-	-	-	-	-	-
E2-52	4+71.5	W4X36	55.5	24.0	26.5	2.0	-	-	-	-	-	-	-	-
E2-53	4+79.5	W4X36	55.5	24.0	26.5	2.0	-	-	-	-	-	-	-	-
E2-54	4+87.5	W4X36	55.5	24.0	26.5	2.0	-	-	-	-	-	-	-	-
E2-55	4+95.5	W4X36	55.5	24.0	26.5	2.0	-	-	-	-	-	-	-	-
E2-56	5+03.5	W4X36	55.5	24.0	26.5	2.0	-	-	-	-	-	-	-	-
E2-57	5+11.5	W8X50	55.5	30.0	25.5	2.5	-	-	-	-	-	-	-	-

PILE AND ANCHOR SCHEDULE - 'N2' WALL

PILE NUMBER	WALL STA	STEEL SECTION	PILE TOP ELEV (FT)	PILE BOT ELEV (FT)	PILE LENGTH (FT)	MIN. DRILL-HOLE DIA (FT)	ANCHOR 1							
							ANCHOR ELEV (FT)	DECLINATION (DEG)	TOTAL LENGTH (FT)	UNBOND LENGTH (FT)	BOND LENGTH (FT)	NUMBER OF 6-INCH DIA STRANDS	DESIGN LOAD (K)	LOCKOFF LOAD (K)
N2-1	0+04.8	W4X34	67.5	40.0	27.5	2.0	60.0	27.5	30.0	15.0	15.0	2	40.0	40.0
N2-2	0+12.5	W4X34	67.5	40.0	27.5	2.0	60.0	27.5	30.0	15.0	15.0	2	40.0	40.0
N2-3	0+20.5	W4X34	67.5	40.0	27.5	2.0	60.0	27.5	30.0	15.0	15.0	2	40.0	40.0
N2-4	0+28.0	W4X34	67.5	40.0	27.5	2.0	60.0	27.5	30.0	15.0	15.0	2	40.0	40.0
N2-5	0+35.2	W4X48	67.5	40.0	27.5	2.0	54.0	30.0	30.0	15.0	15.0	2	40.0	40.0
N2-6	0+42.5	W4X48	67.5	40.0	27.5	2.0	58.0	45.0	40.0	15.0	25.0	2	60.0	60.0
N2-7	0+49.5	W4X48	68.5	40.0	28.5	2.0	60.0	45.0	40.0	15.0	25.0	2	60.0	60.0
N2-8	0+57.0	W4X48	68.5	40.0	28.5	2.0	60.0	45.0	40.0	15.0	25.0	2	60.0	60.0
N2-9	0+64.0	W4X48	68.5	40.0	28.5	2.0	60.0	45.0	40.0	15.0	25.0	2	60.0	60.0
N2-10	0+71.5	W4X48	68.5	40.0	28.5	2.0	60.0	45.0	40.0	15.0	25.0	2	70.0	70.0
N2-11	0+79.5	W4X48	68.5	40.0	28.5	2.0	60.0	45.0	40.0	15.0	25.0	2	70.0	70.0
N2-12	0+84.5	W4X36	64.5	40.0	24.5	2.0	60.0	45.0	40.0	15.0	25.0	2	70.0	70.0
N2-13	0+91.7	W4X36	64.5	40.0	24.5	2.0	60.0	45.0	40.0	15.0	25.0	2	70.0	70.0
N2-14	H05.2	W4X36	64.5	40.0	24.5	2.0	63.0	45.0	40.0	15.0	25.0	2	60.0	60.0
N2-15	H2.7	W4X48	64.5	40.0	24.5	2.0	63.0	40.0	35.0	15.0	20.0	2	30.0	30.0
N2-16	H20.2	W4X48	64.5	40.0	24.5	2.0	63.0	35.0	35.0	15.0	20.0	2	50.0	50.0

2 NOTE: ALL REVISION CLOUDS ON THIS SHEET REFER TO REVISION NUMBERS.

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SHORING WALL
PILE AND ANCHOR SCHEDULE

SH3.D

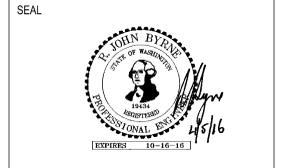
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KIRKLAND URBAN
321 PARKPLACE CENTER
KIRKLAND, WA 98033



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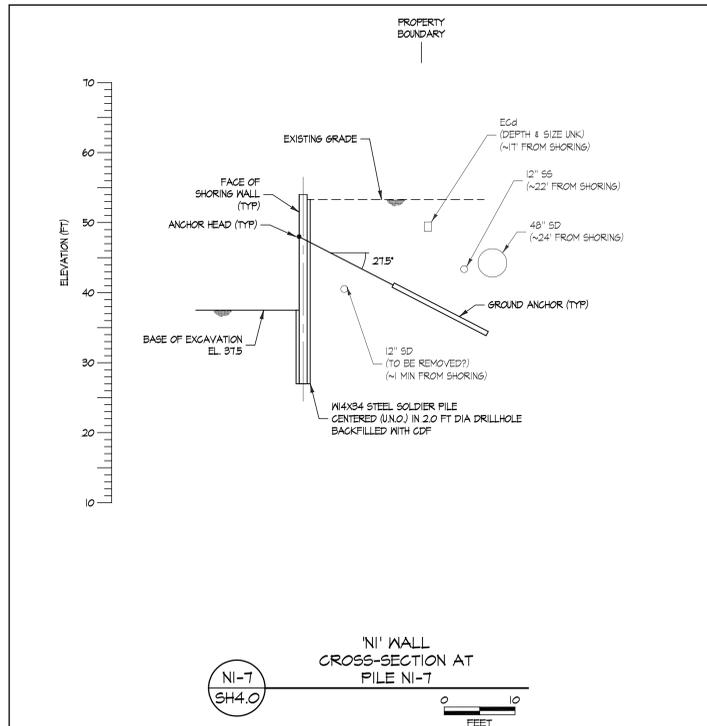
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-68
DRAWN BY JSS
ISSUE DATE 1.29.2016

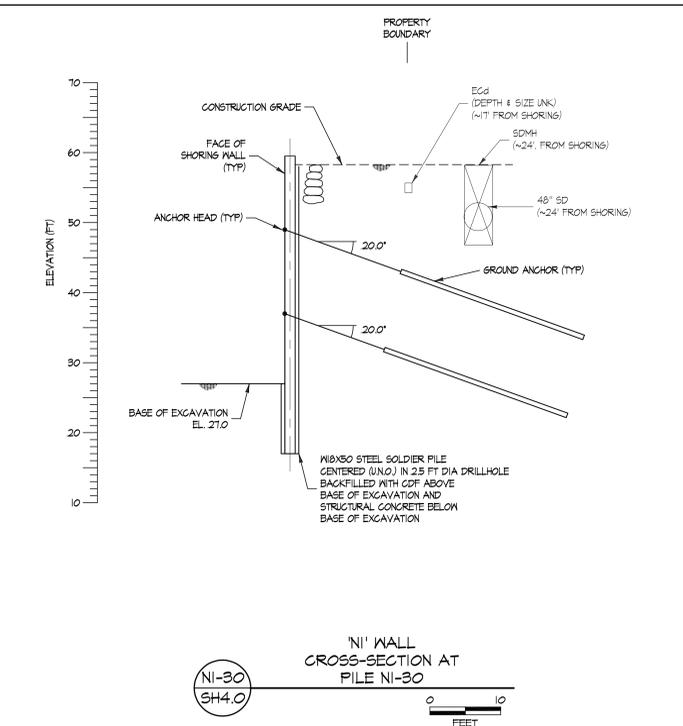


SHEET TITLE / NUMBER
PILE AND ANCHOR SCHEDULES

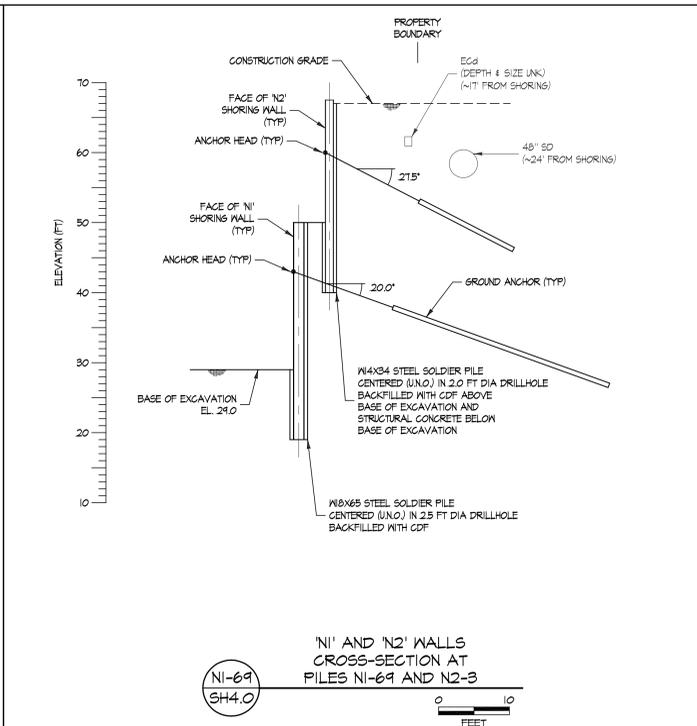
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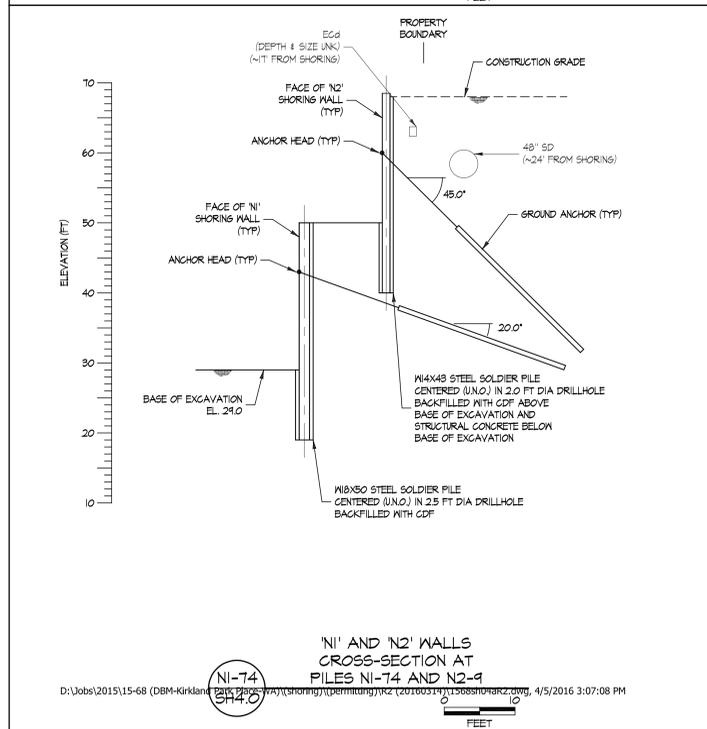
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SH4.0
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CROSS-SECTION AT
PILE NI-7



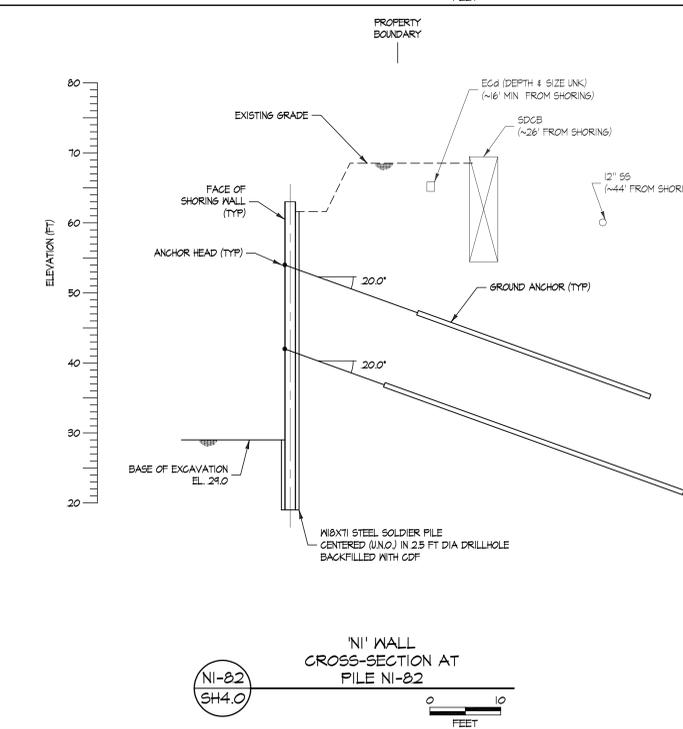
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SH4.0
'N1' WALL
CROSS-SECTION AT
PILE NI-30



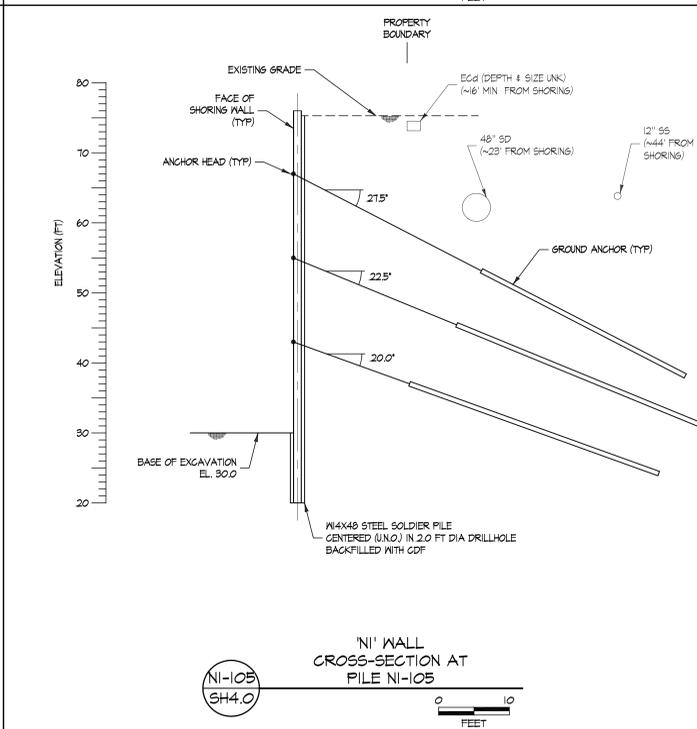
NI-69
SH4.0
'N1' AND 'N2' WALLS
CROSS-SECTION AT
PILES NI-69 AND NI-23



NI-74
SH4.0
'N1' AND 'N2' WALLS
CROSS-SECTION AT
PILES NI-74 AND NI-4



NI-82
SH4.0
'N1' WALL
CROSS-SECTION AT
PILE NI-82



NI-105
SH4.0
'N1' WALL
CROSS-SECTION AT
PILE NI-105

SHORING WALL
CROSS-SECTIONS

SH4.0

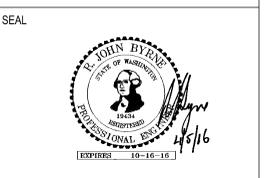
TITLE
**KIRKLAND
URBAN**
321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT
GS
Ground Support PLLC
16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

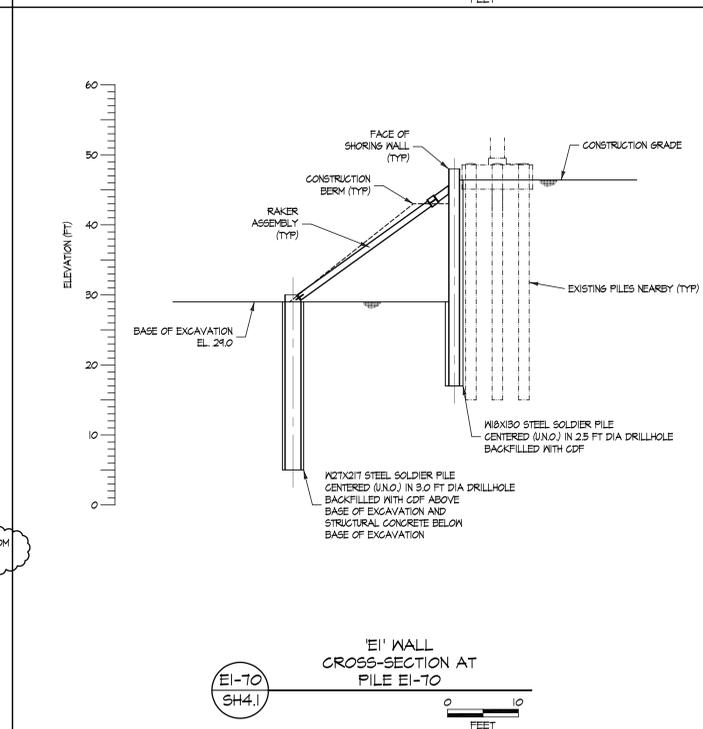
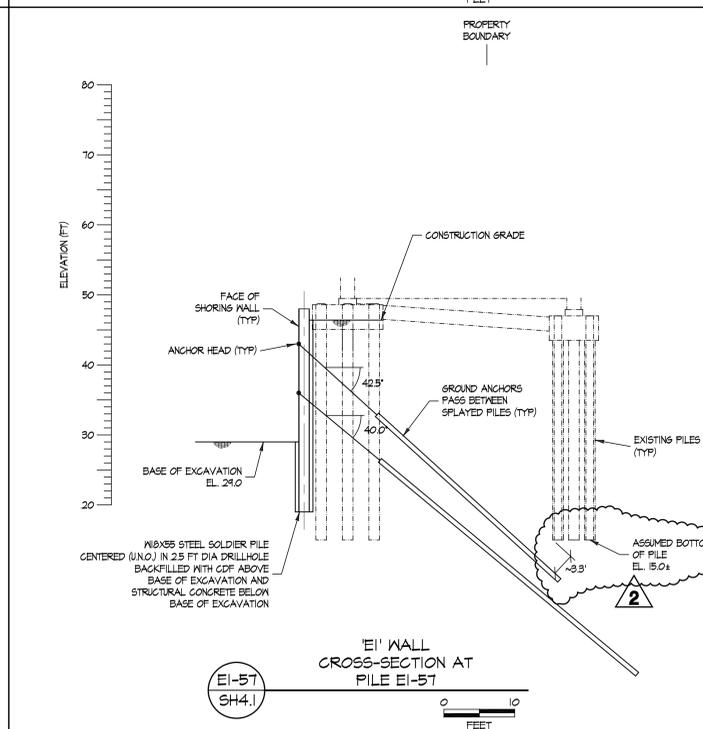
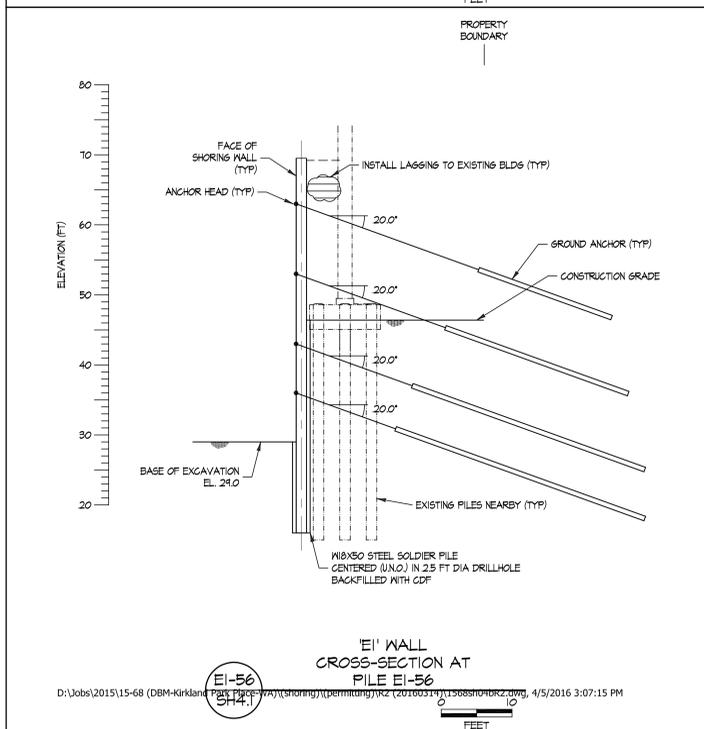
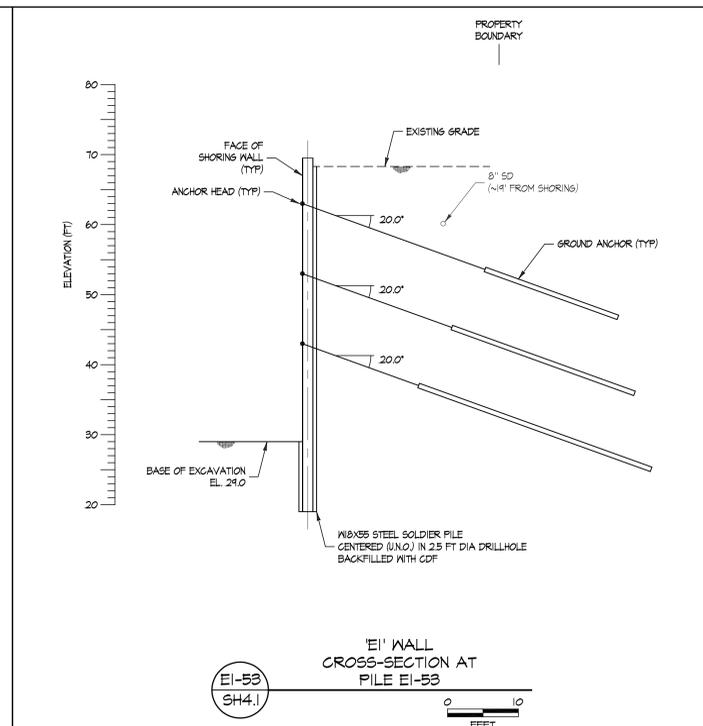
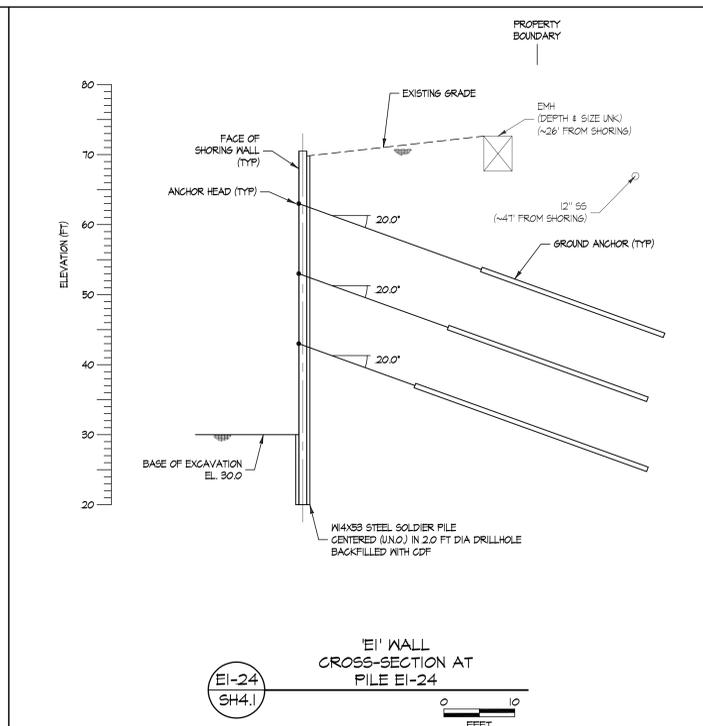
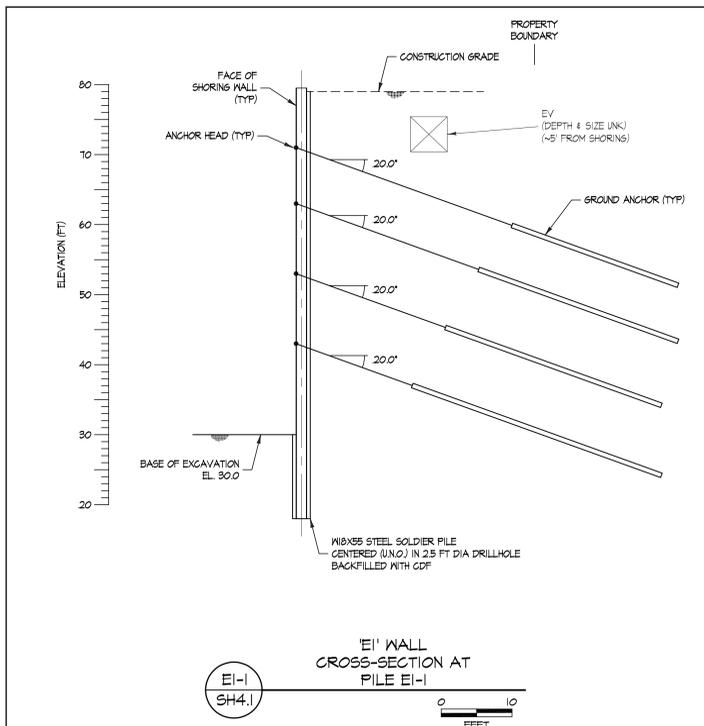
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

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SHEET TITLE / NUMBER
CROSS-SECTIONS

SH4.0



SHORING WALL
CROSS-SECTIONS

SH4.1

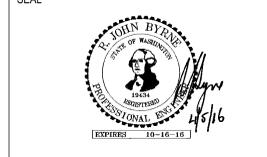
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**KIRKLAND
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321 PARKPLACE CENTER
KIRKLAND, WA 98033

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ISSUED:

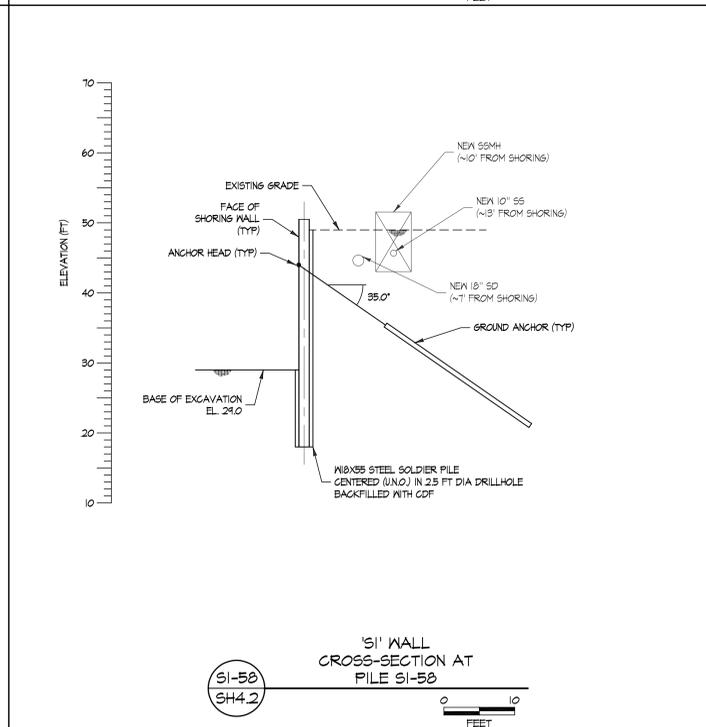
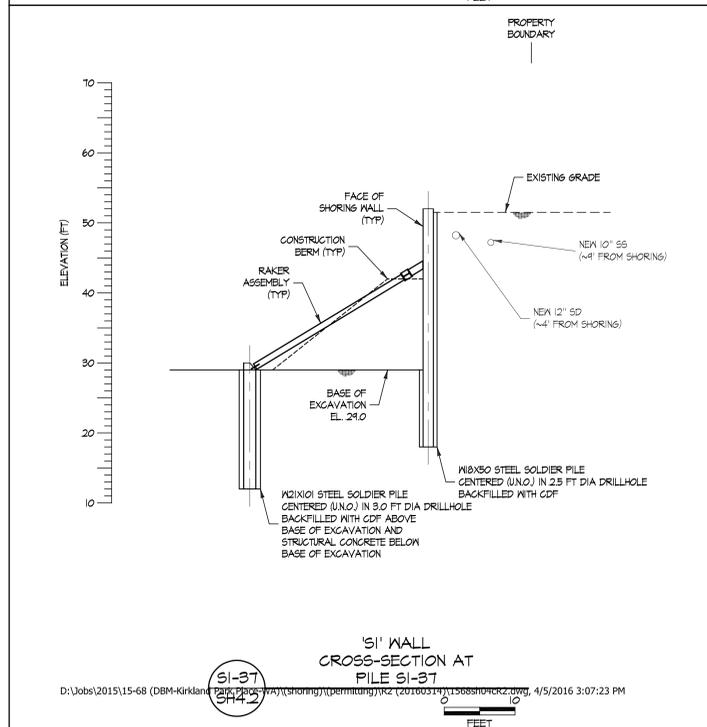
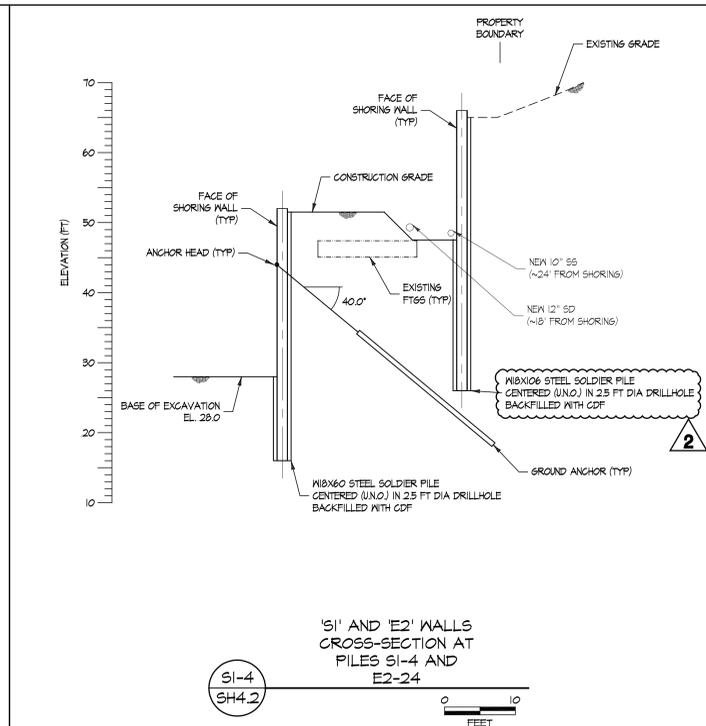
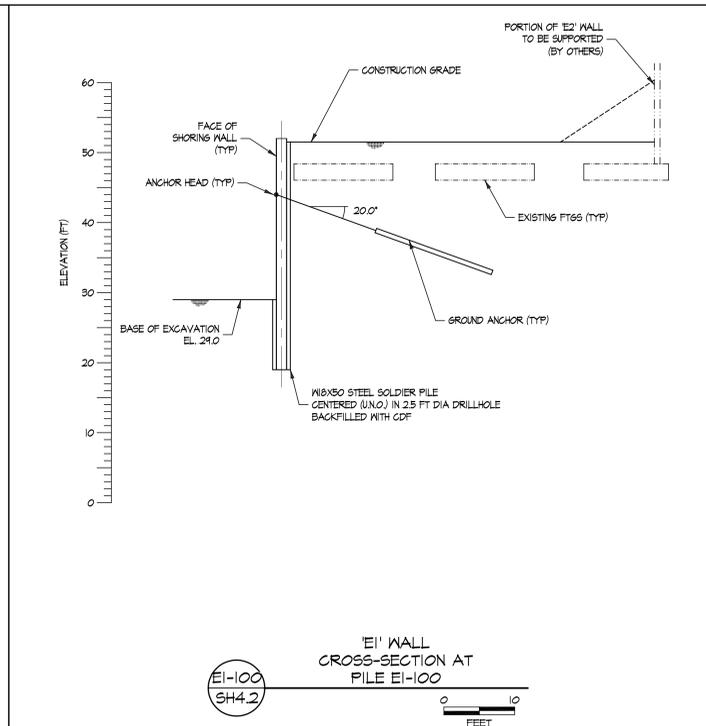
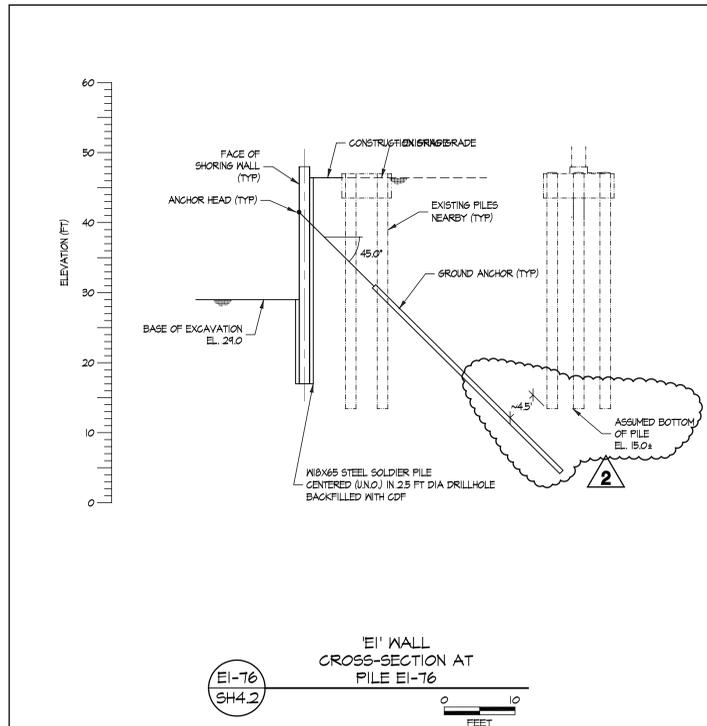
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2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-08
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ISSUE DATE 1.29.2016



SHEET TITLE / NUMBER
CROSS-SECTIONS

SH4.1



SHORING WALL
CROSS-SECTIONS

SH4.2

TITLE

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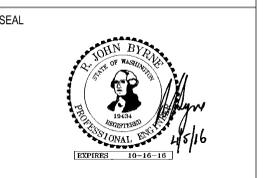
Ground Support PLLC

16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
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1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

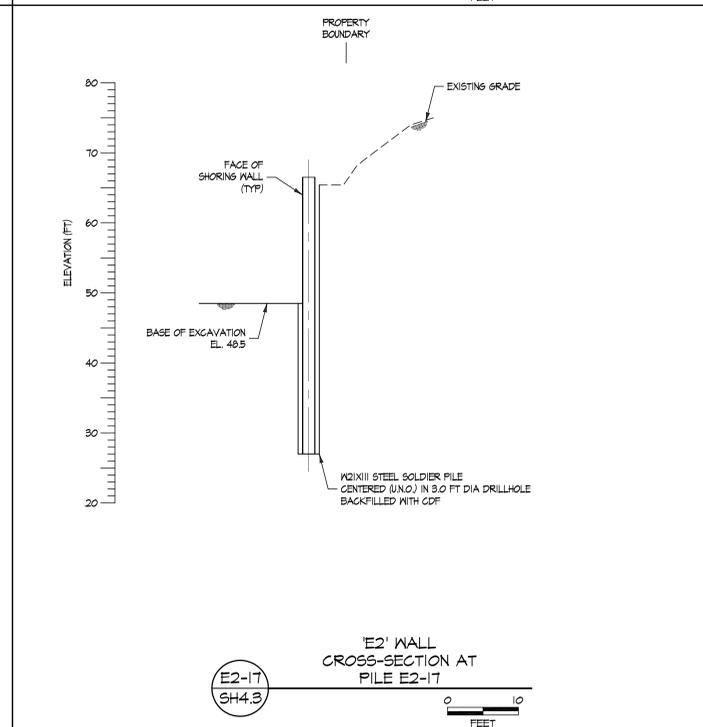
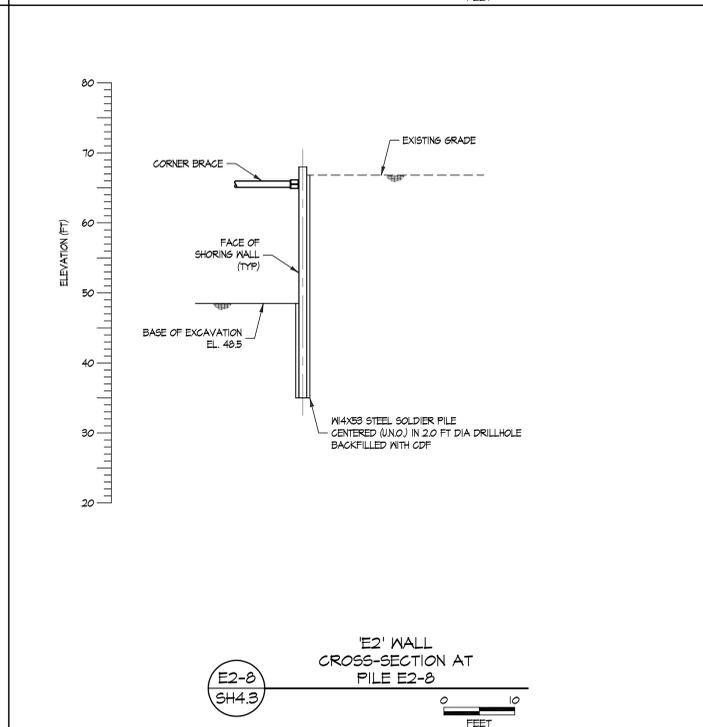
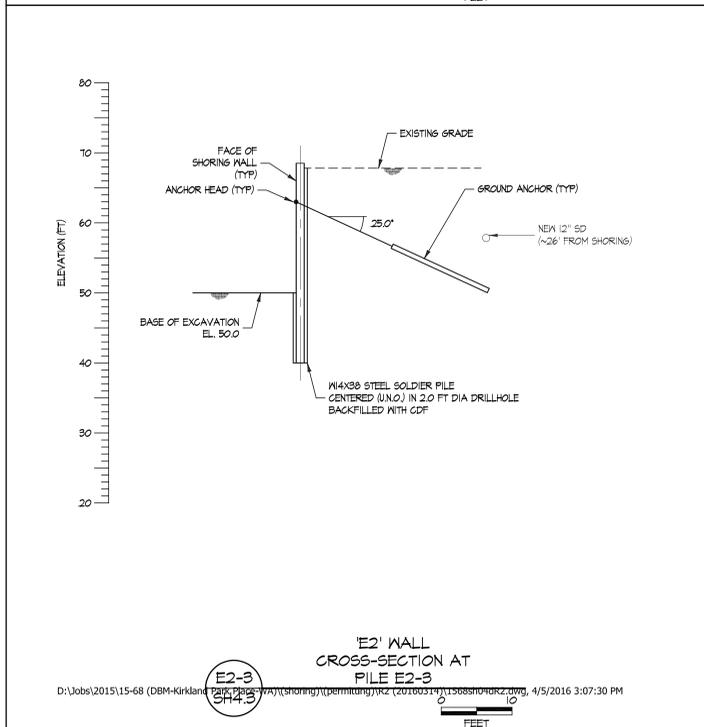
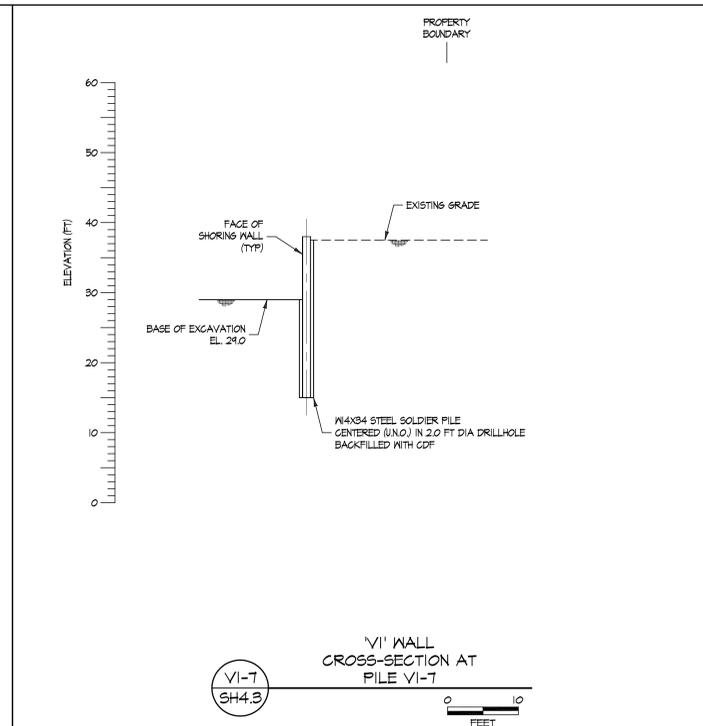
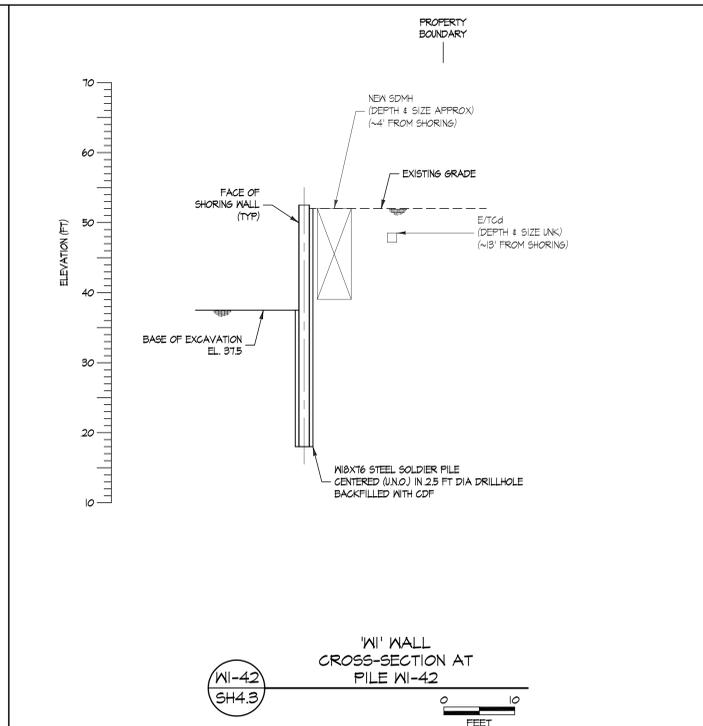
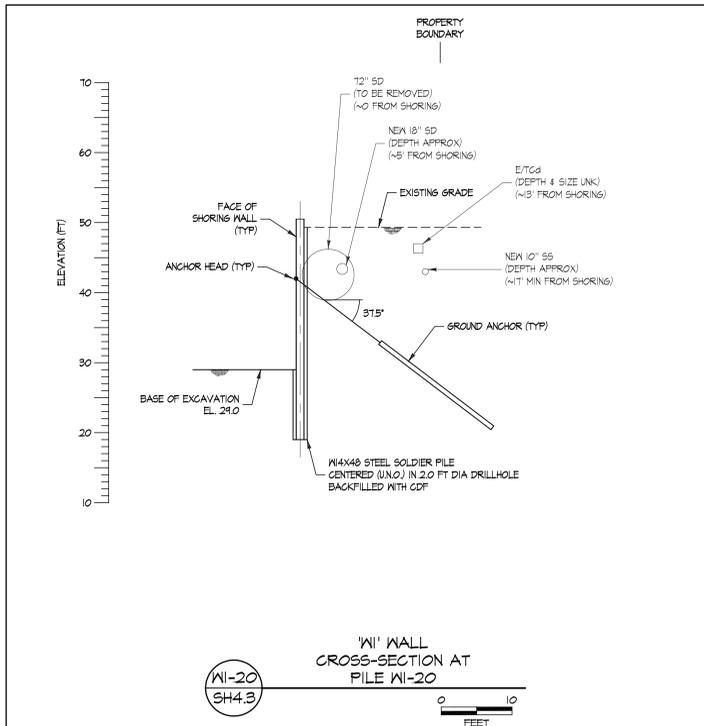
PROJECT NUMBER 15-68
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ISSUE DATE 1.29.2016



SHEET TITLE / NUMBER
CROSS-SECTIONS

SH4.2

City of Kirkland
 Reviewed by AHaupt
 05/10/2016



SHORING WALL
 CROSS-SECTIONS

SH4.3

TITLE

**KIRKLAND
 URBAN**

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 KIRKLAND, WA 98033

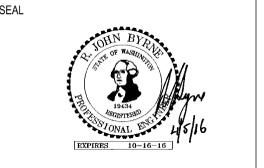
CONSULTANT

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 16932 Woodinville Redmond Rd NE, #210
 Woodinville, WA 98072
 Ph: (425) 488-1143 Fax: (425) 605-4057

ISSUED:

MARK	DATE	DESCRIPTION
0	01/29/16	PERMIT SUBMITTAL
1	2/22/2016	COMMENT RESPONSE
2	4/5/2016	COMMENT RESPONSE

PROJECT NUMBER 15-08
 DRAWN BY JSS
 ISSUE DATE 1.29.2016

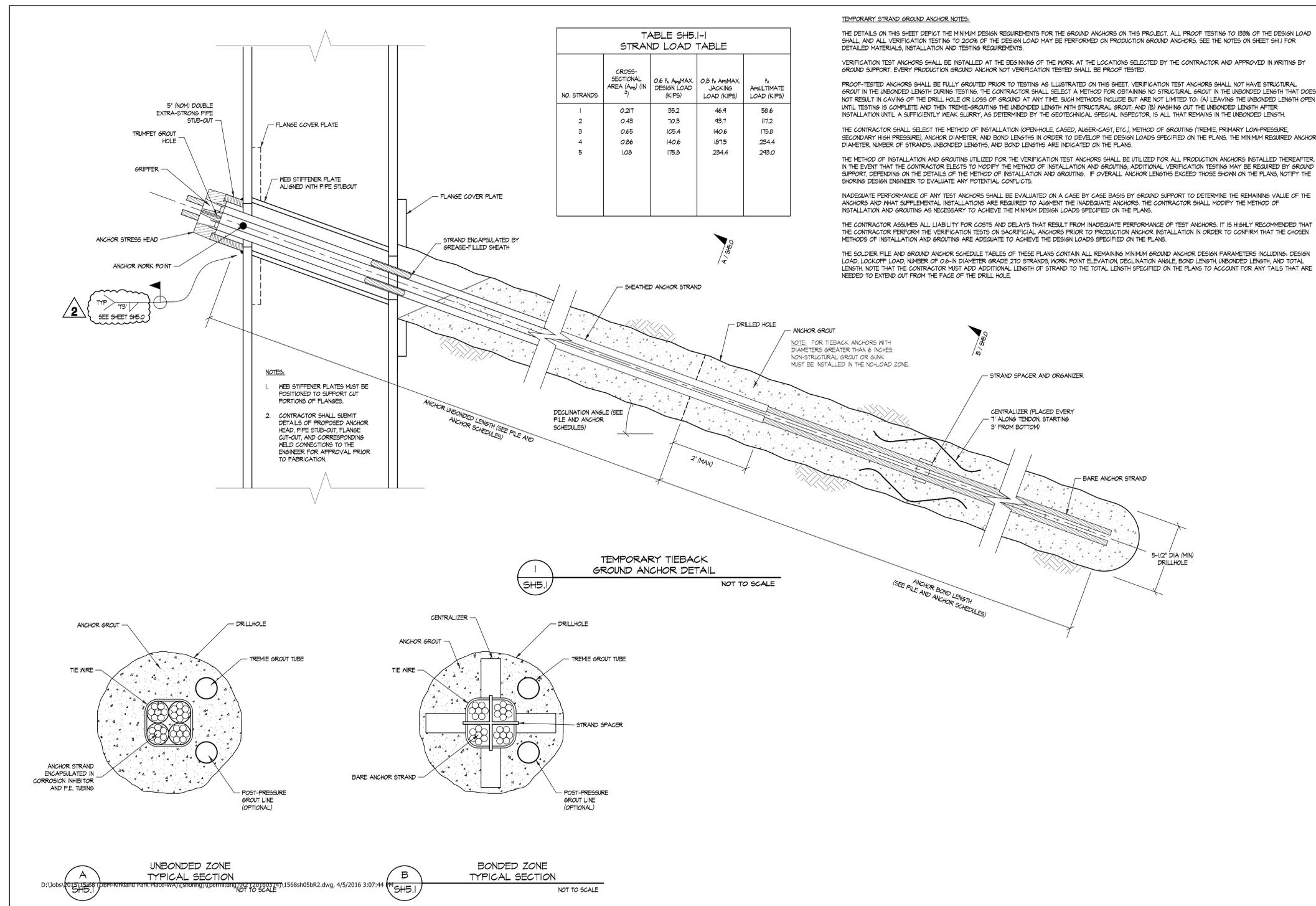


SHEET TITLE / NUMBER

CROSS-SECTIONS

SH4.3

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SHORING WALL DETAILS

SH5.1

TITLE

KIRKLAND URBAN

321 PARKPLACE CENTER
KIRKLAND, WA 98033

CONSULTANT

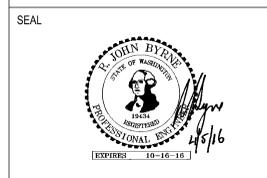
GS
Ground Support PLLC

16932 Woodinville Redmond Rd NE, #210
Woodinville, WA 98072
Ph: (425) 488-1143 Fax: (425) 605-4057

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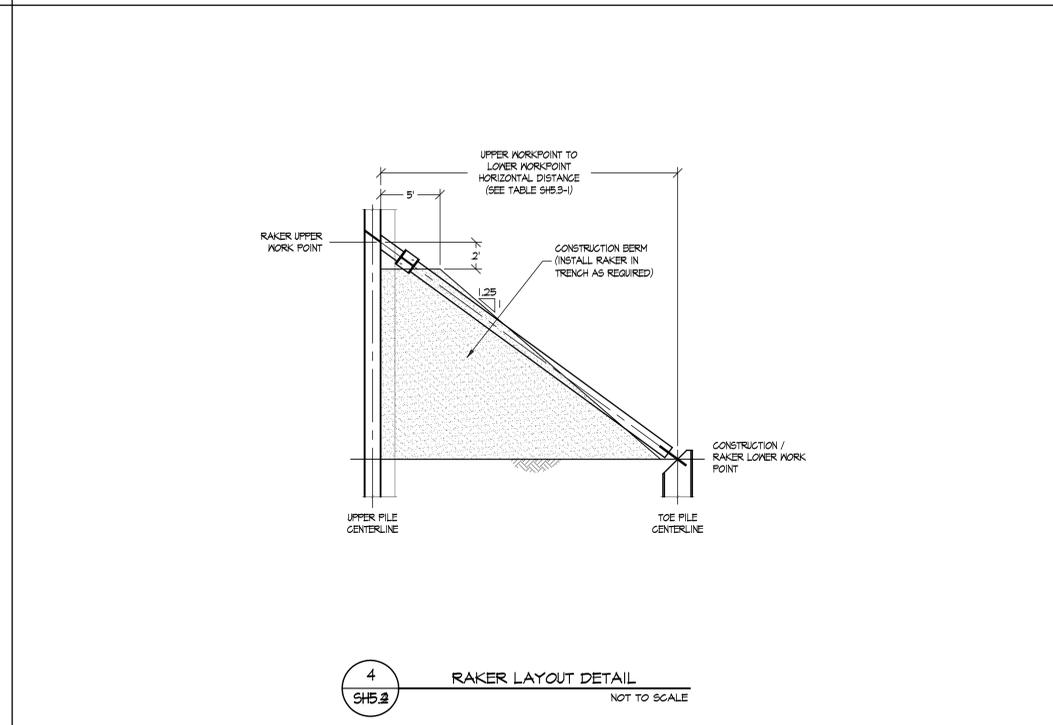
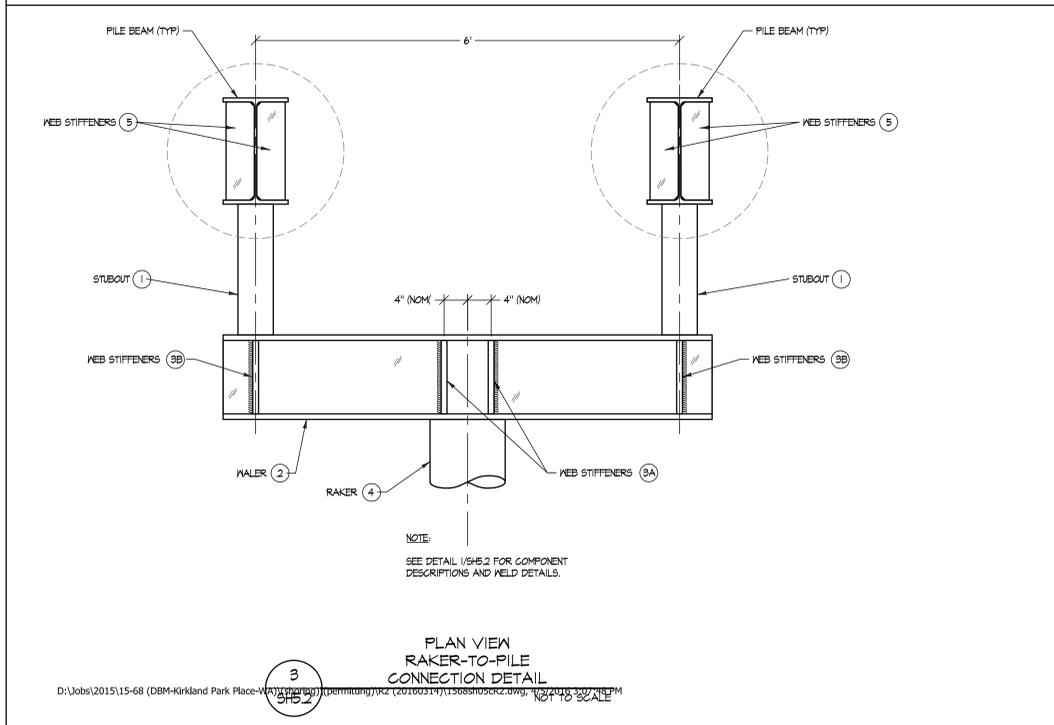
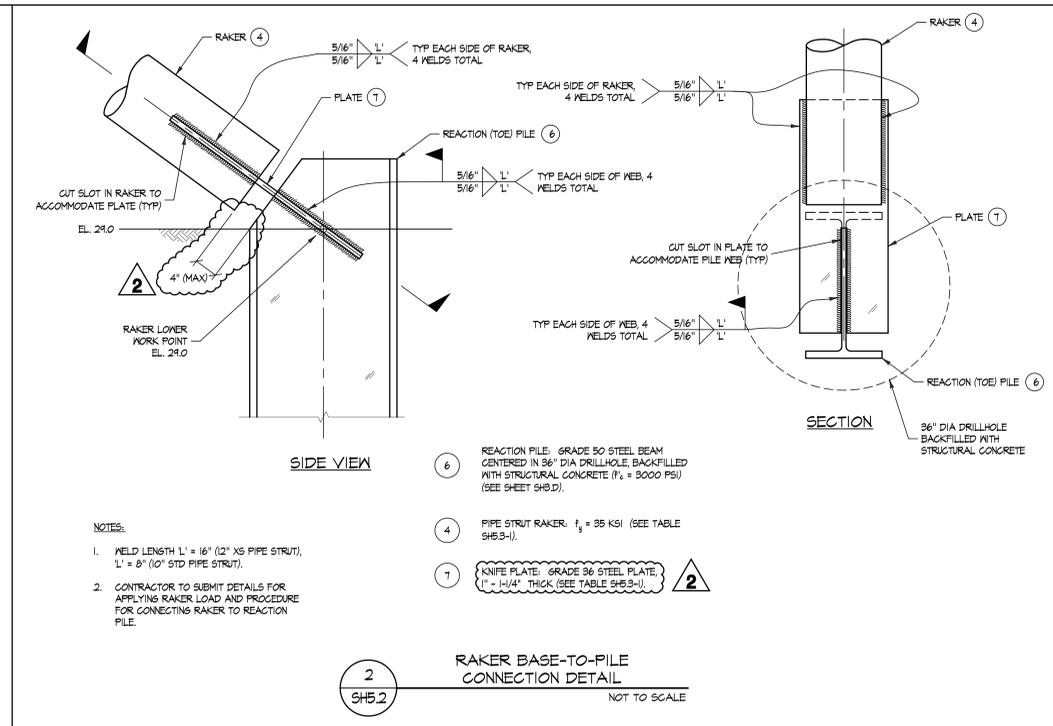
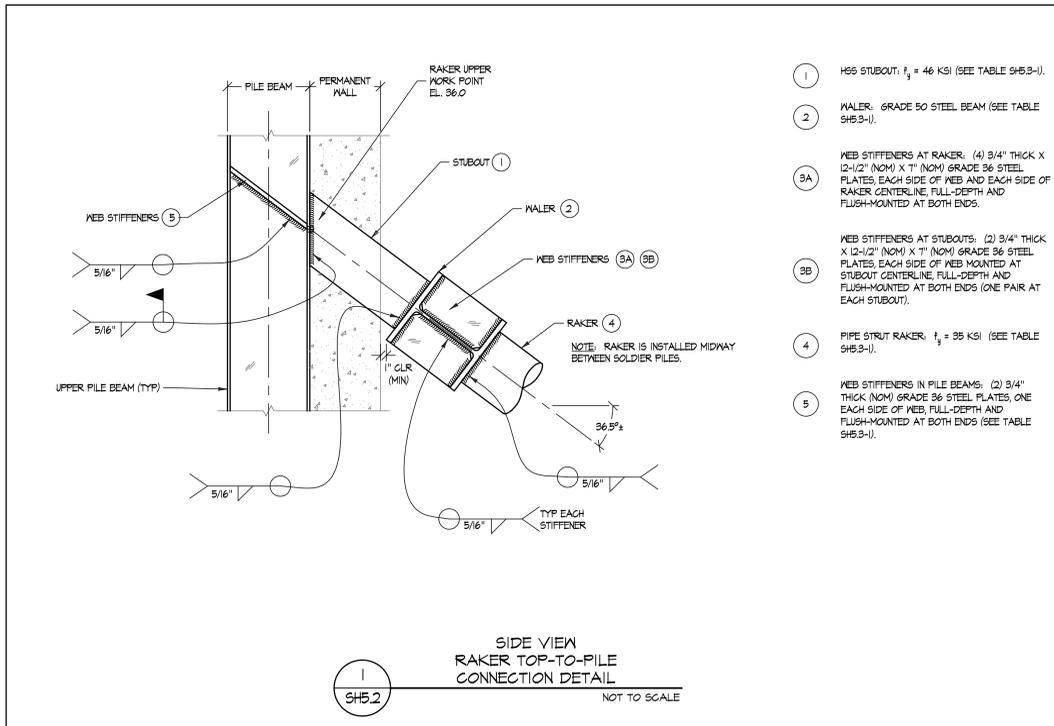


SHEET TITLE / NUMBER

DETAILS

SH5.1

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SHORING WALL
DETAILS

SH5.2

TITLE

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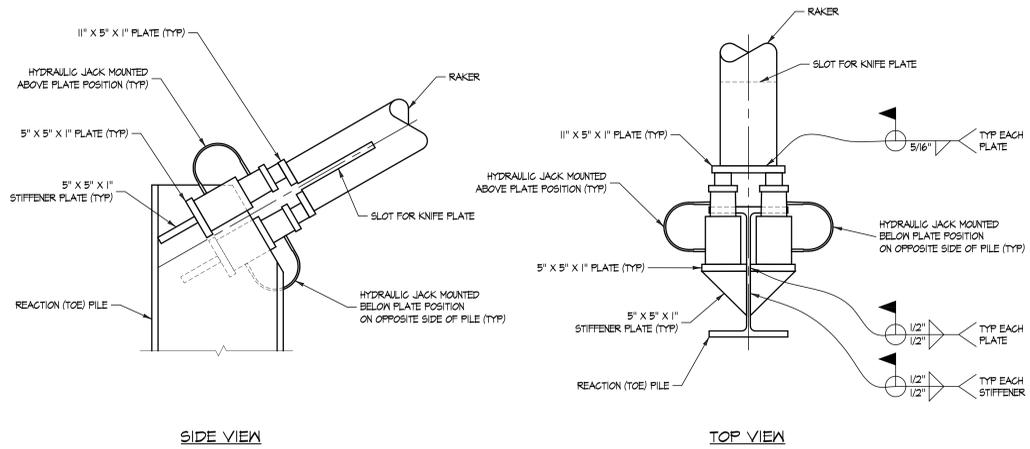
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SHEET TITLE / NUMBER
DETAILS

SH5.2

**TABLE SH5.3-1
WALER / RAKER ASSEMBLY SCHEDULE**

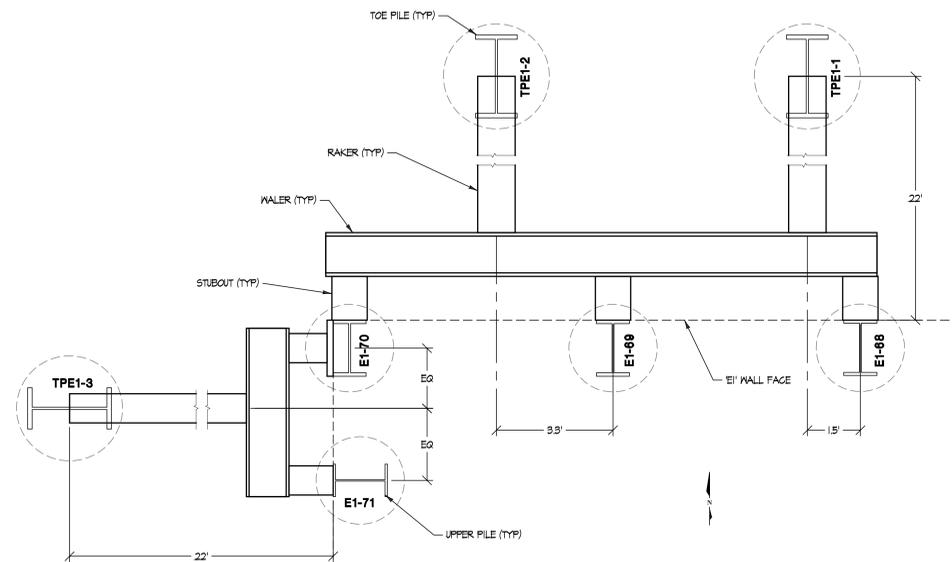
RAKER NUMBER	UPPER WORK-POINT ELEV (FT)	LOWER WORK-POINT ELEV (FT)	WORK-POINT HORIZ. DISTANCE (FT)	WALER TYPE	NOMINAL WALER LENGTH (FT)	PIPE STRUT SIZE	NOMINAL PIPE STRUT LENGTH (FT)	STUBOUT SIZE	NOMINAL STUBOUT LENGTH (IN)	DESIGN LOAD (KIPS)	JACKING LOAD (KIPS)	KNIFE PLATE THICKNESS (IN)	NOMINAL KNIFE PLATE WIDTH (IN)	NOMINAL PILE WEB STIFFENER DIMENSIONS (IN)
TPEI-1	43.0	29.0	22.0	N14X191	15.4 (SHARED)	12" XS	22	H56 12" X 6" X 3/8"	24-1/4"	240	180	1-1/4"	14"	20" X 5"
TPEI-2	43.0	29.0	22.0	N14X191 (SHARED)	15.4 (SHARED)	12" XS	22	H56 12" X 6" X 3/8"	24-1/4"	240	180	1-1/4"	14"	20" X 5"
TPEI-3	43.0	29.0	22.0	N14X191	6.5	12" XS	22	H56 10" X 4" X 5/16"	23-1/4"	240	180	1-1/4"	14"	20" X 5"
TPSI-1	45.0	29.0	24.5	N14X190	7.1	10" STD	26	H56 10" X 4" X 5/16"	23-1/2"	120	90	1"	12"	12-5/8" X 1"
TPSI-2	45.0	29.0	24.5	N14X190	7.1	10" STD	26	H56 10" X 4" X 5/16"	23-1/2"	120	90	1"	12"	12-5/8" X 1"
TPSI-2	45.0	29.0	24.5	N14X190	7.1	10" STD	26	H56 10" X 4" X 5/16"	23-1/2"	120	90	1"	12"	12-5/8" X 1"



NOTE:
DETAIL SHOWN IS TYPICAL. CONTRACTOR MAY
SUBMIT ALTERNATE DETAIL FOR APPROVAL.

- JACKING SEQUENCE:**
1. INSTALL JACKING HARDWARE (JACKING WINGS, STIFFENERS, JACKS, ETC.).
 2. JACK LOAD INTO RAKER.
 3. WELD KNIFE PLATE TO RAKER.

3
SH5.3
TYPICAL RAKER JACKING DETAILS
NOT TO SCALE



1
SH5.3
**PLAN VIEW
'E' WALL
RAKER LAYOUT DETAIL**
NOT TO SCALE

**SHORING WALL
DETAILS**

SH5.3

TITLE
**KIRKLAND
URBAN**
321 PARKPLACE CENTER
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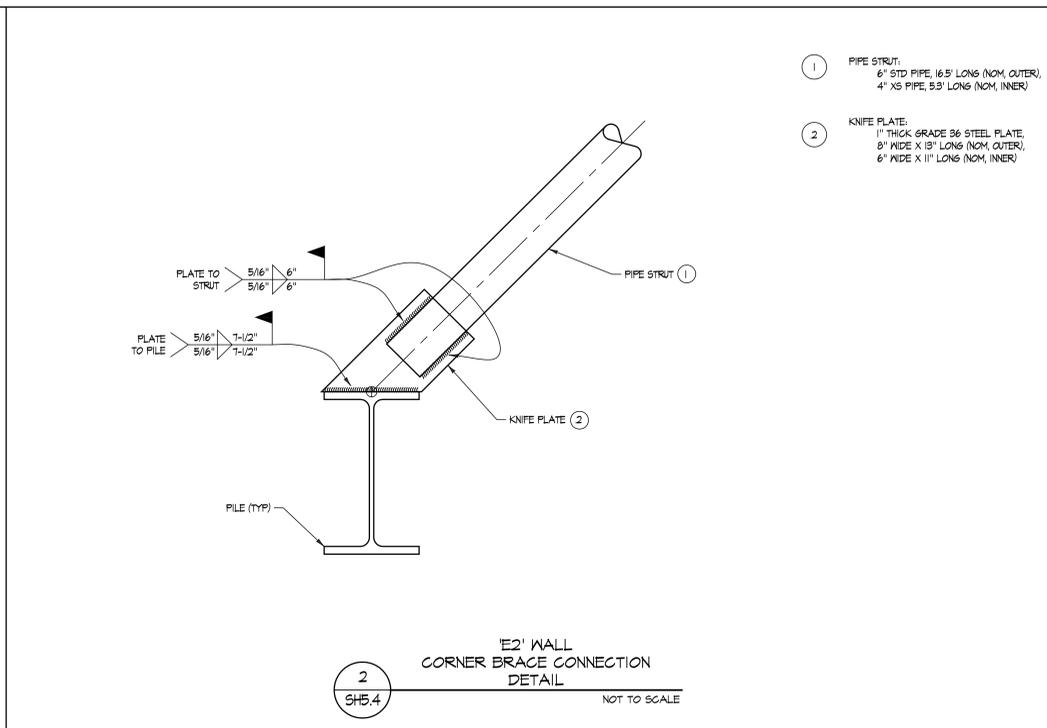
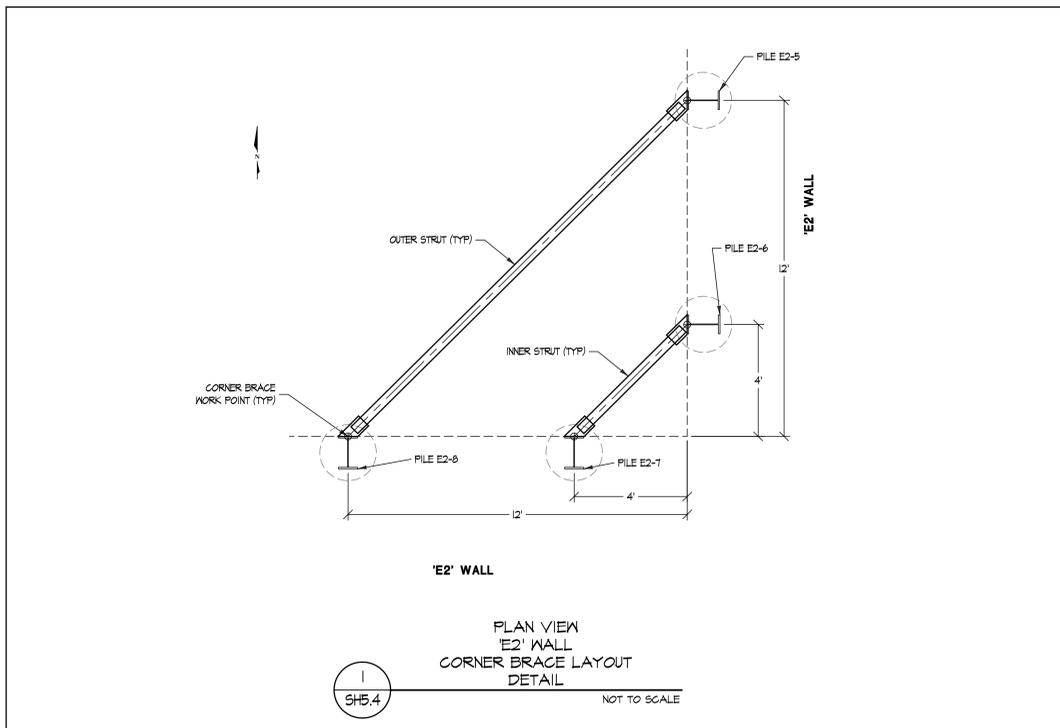
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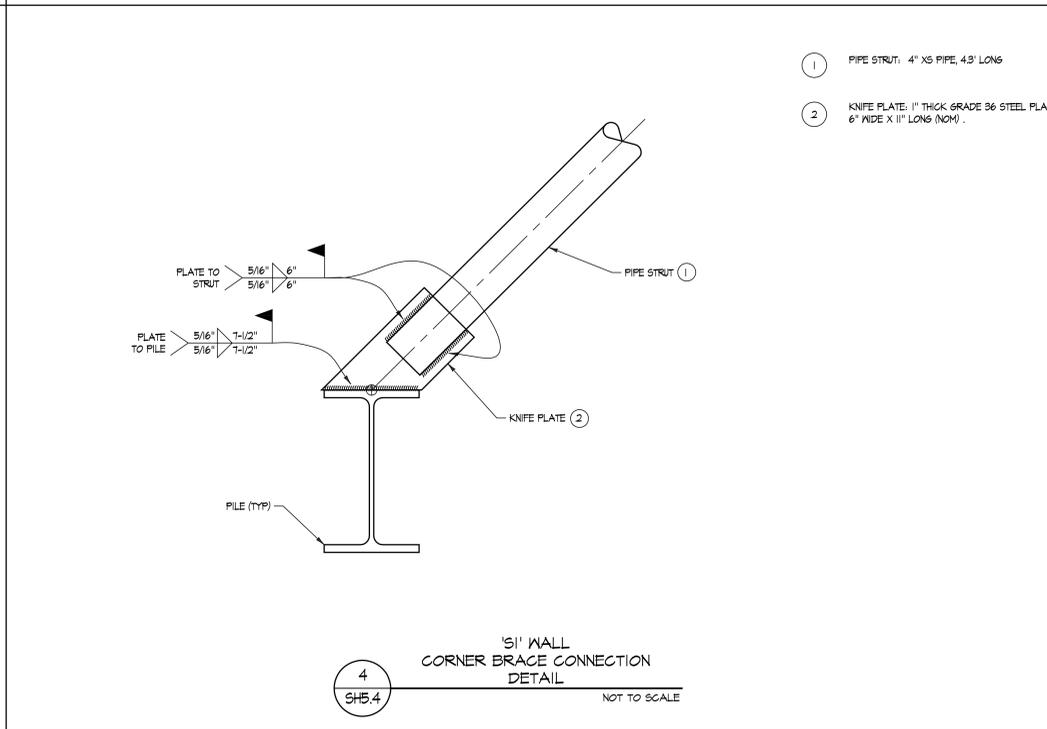
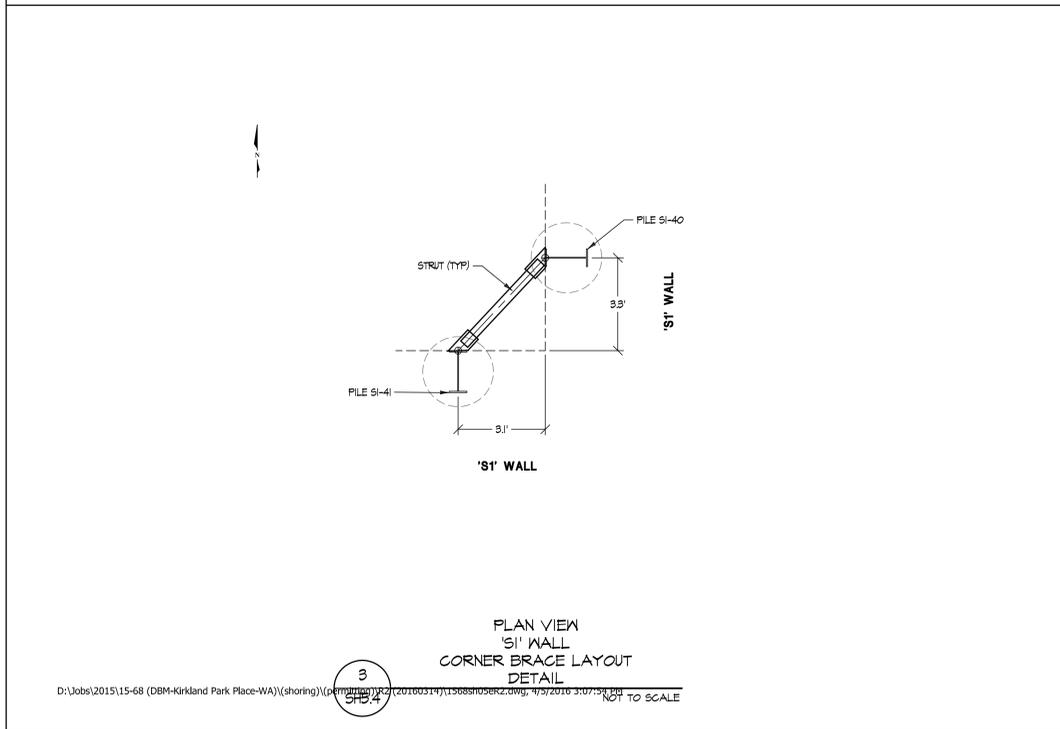
SHEET TITLE / NUMBER
DETAILS

SH5.3

City of Kirkland
 Reviewed by AHaupt
 05/10/2016



- ① PIPE STRUT:
 6" STD PIPE, 16.5' LONG (NOM, OUTER),
 4" XS PIPE, 5.3' LONG (NOM, INNER)
- ② KNIFE PLATE:
 1" THICK GRADE 36 STEEL PLATE,
 8" WIDE X 13" LONG (NOM, OUTER),
 6" WIDE X 11" LONG (NOM, INNER)



- ① PIPE STRUT: 4" XS PIPE, 4.3' LONG
- ② KNIFE PLATE: 1" THICK GRADE 36 STEEL PLATE,
 6" WIDE X 11" LONG (NOM)

SHORING WALL
 TYPICAL DETAILS

SH5.4

TITLE

**KIRKLAND
 URBAN**

321 PARKPLACE CENTER
 KIRKLAND, WA 98033

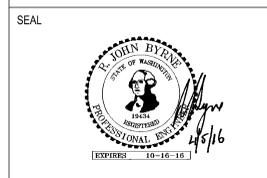
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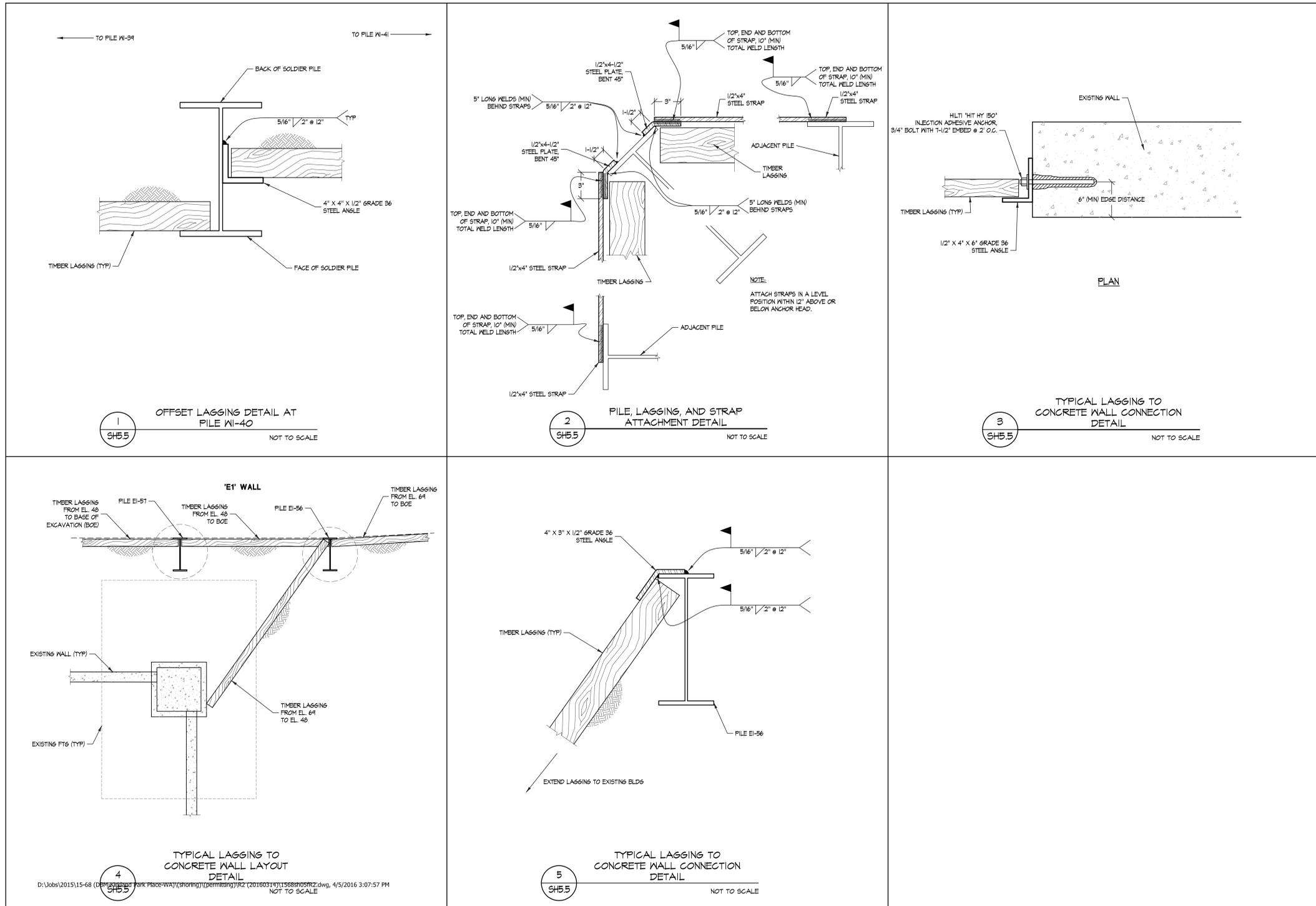
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DETAILS

SH5.4



SHORING WALL DETAILS

SH5.5

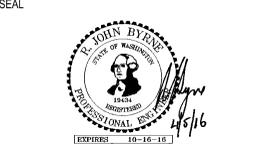
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SHEET TITLE / NUMBER
DETAILS

SH5.5