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By Alameda County Environmental Health 11:14 am, Jul 10, 2017

22 June 2017

Mr. Keith Nowell, PG
Alameda County Health Care Services Agency
Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

**Subject: Supplemental Demolition Information Memorandum
Cleanup Case No. RO03236
3000 Broadway SPE LLC
3000 and 3020 Broadway, 3007 and 3009 Brook Street,
250, 260 and 288 30th Street
Oakland, California
Langan Project: 731635603**

Dear Mr. Nowell:

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website.

Sincerely yours,



Alan Chamorro
3000 Broadway SPE LLC

501 14th Street, 3rd Floor Oakland, CA 94612 T: 510.874.7000 F: 510.874.7001

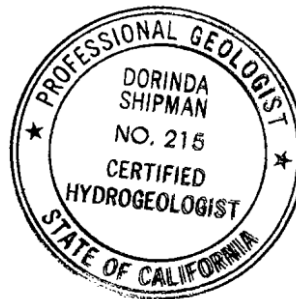
To: Ms. Dilan Roe and Mr. Keith Nowell
Alameda County Environmental Health (ACEH)

CC: Alan Chamorro, Paul Gryfakis, and Tom Clyman
3000 Broadway SPE LLC

From: Dorinda Shipman, Principal
Joshua Graber, Associate
Karianne Staehlin, Senior Staff Scientist

Date: 22 June 2017

Re: Supplemental Demolition Information
3000 Broadway Redevelopment
Oakland, California
Langan Project No.: 750635603



On behalf of 3000 Broadway SPE LLC, Langan Engineering and Environmental Services, Inc. (Langan) has prepared this memorandum presenting actions to be implemented during the demolition activities associated with the proposed 3000 Broadway Redevelopment project, as requested by the Alameda County Environmental Health (ACEH). The 3000 Broadway Redevelopment project includes Assessor Parcel Numbers (APN) 09-0704-011-01, 09-0704-012, 09-0704-010, and 09-0704-009 and the associated property addresses of 3000 and 3020 Broadway; 250, 260, and 288 30th Street; and 3007 and 3009 Brook Street (site) in Oakland, California (Figure 1).

Our recent *Soil and Groundwater Management Plan* (SGMP) dated 17 May 2017 was submitted to ACEH for review and approval. The SGMP describes site background and current conditions associated with past property use and specifically proposed excavation activities to mitigate soil and groundwater impacts currently present in the subsurface at the site. The SGMP also describes measures that will be implemented during development activities to mitigate potential risks to the environment and to protect on-site construction workers, pedestrians, site visitors, and off-site receptors from potential exposure to hazardous substances present at the site.

This memorandum presents actions to be implemented during the demolition activities associated with the proposed site development, as it relates to the following two areas of concern (AOC):

1. Portions of the 3020 Broadway and 3007/3009 Brook Street properties with State of California (non-Resource Conservation and Recovery Act (RCRA)) hazardous material detected in shallow soil; and
2. Soil beneath the 260 30th Street property with total petroleum hydrocarbon (TPH), volatile organic compound (VOC), and limited polycyclic aromatic hydrocarbon (PAH) contamination.

STATE OF CALIFORNIA (NON-RCRA) HAZARDOUS MATERIAL

As described in our SGMP, soil analytical results indicate the shallow soil material (upper four to six feet) underlying the north-central portion of the site (portions of the 3020 Broadway and 3007/3009 Brook Street properties) contains elevated total and soluble lead concentrations exceeding State of California hazardous waste levels. The approximate location and extent of site soil material, which has been identified as hazardous and proposed for excavation and off-site disposal during development activities, is shown on Figure 2.

Prior to excavation and off-site disposal activities, the site's existing structures and concrete building slabs must be demolished. Subsequent to the demolition and removal of the structures and concrete building slabs, the exposed soil surface identified as hazardous material will be covered, in an effort to minimize general exposure, including dust emissions. Langan recommends use of a 10-mil polyethylene sheeting (or equivalent), such as Visqueen, to cover exposed soil surfaces. The polyethylene sheeting will be sufficiently secured by the contractor to ensure the sheeting remains in place prior to excavation. The material identified as hazardous will remain covered until excavation and off-site disposal activities commence. Dust emissions will be minimized during excavation by implementing procedures detailed in the SGMP.

Additionally, based on current excavation and shoring design plans, the northern boundary of both the site and identified hazardous material is proposed for the installation of multiple soldier beams. The soldier beams are associated with the site development's shoring and overall structural design, and a copy of the current excavation and shoring design plans are included as Attachment A. During the installation of soldier beams within the identified hazardous area, all displaced material should either be disposed off-site with like material or stockpiled on-site, secured and covered, pending additional sampling and chemical analyses, as outlined in the SGMP.

TPH, VOC, AND LIMITED PAH CONTAMINATION PROCEDURES

TPH, VOC, and PAH contamination in soil and groundwater has also been identified within the southeast portion of the site, specifically the north and eastern portions of the 260 30th Street property. In general, the presence of clay appears to have limited the vertical migration of contaminants to the upper 18 feet at the 260 30th Street property, with only trace concentrations detected below 18 feet. The TPH contamination is predominantly limited to the eastern portion of the 260 30th Street property.

As detailed in our SGMP, we propose to over-excavate soil containing compounds exceeding their Tier 1 ESLs from the 260 30th Street property, during site development. Exposure to hazardous materials will be mitigated during excavation by following procedures outlined in the SGMP. Prior to over-excavation activities, the site's existing structures and concrete building slabs must be demolished. However, due to the extent of contamination beneath the 260 30th Street property, the concrete slab for the 260 30th Street property will be left in place and intact, during the demolition of all site structures, to minimize volatilization of the hazardous materials present in the subsurface in this area. Additionally, we recommend that during the

MEMO

demolition and removal of the site's multiple concrete slabs, the 260 30th Street concrete slab be removed last. The approximate location of the existing 260 30th Street concrete slab, to be left in place, is shown on Figure 2, in addition to active groundwater monitoring wells GW-1 through GW-5.

The 260 30th Street concrete slab should only be demolished and removed just prior to the proposed over-excavation activities in this area, in an effort to minimize general exposure, including dust emissions and odors from the volatilization of TPH and VOCs, when disturbed. Once the excavation plan is set to commence at the 260 30th Street property and the slab is removed, Langan recommends the use of a 10-mil polyethylene sheeting (or equivalent), such as Visqueen, to cover exposed soil surfaces not involved in active excavation activities.

Additionally, active groundwater monitoring wells GW-1 and GW-2, located within the 260 30th Street property, shall remain in place and in-tact until the slab is approved for removal. The groundwater monitoring wells will be removed entirely during over-excavation. Off-site groundwater wells GW-3, GW-4, and GW-5 are expected to remain protected and active throughout site development activities and will be monitored following the excavation and dewatering activities to assess changes to groundwater concentrations off-site.

The eastern boundary of the site is also proposed for the installation of multiple soldier beams, as previously discussed. During the installation of soldier beams within the contaminated area of the 260 30th Street property (also the eastern boundary of the site), all displaced material should either be disposed off-site with like material or stockpiled on-site, secured and covered, pending additional sampling and chemical analyses, as outlined in the SGMP.

NEXT STEPS

At present, abatement and demolition activities at the site are scheduled to commence in July 2017. The buildings will be abated of any asbestos-containing material and lead-based paint prior to building demolition. In addition to the actions to be implemented during demolition activities outlined in this memorandum, all other soil handling guidelines are provided in the SGMP.

Please do not hesitate to contact us with any questions, or if we can provide any additional information.

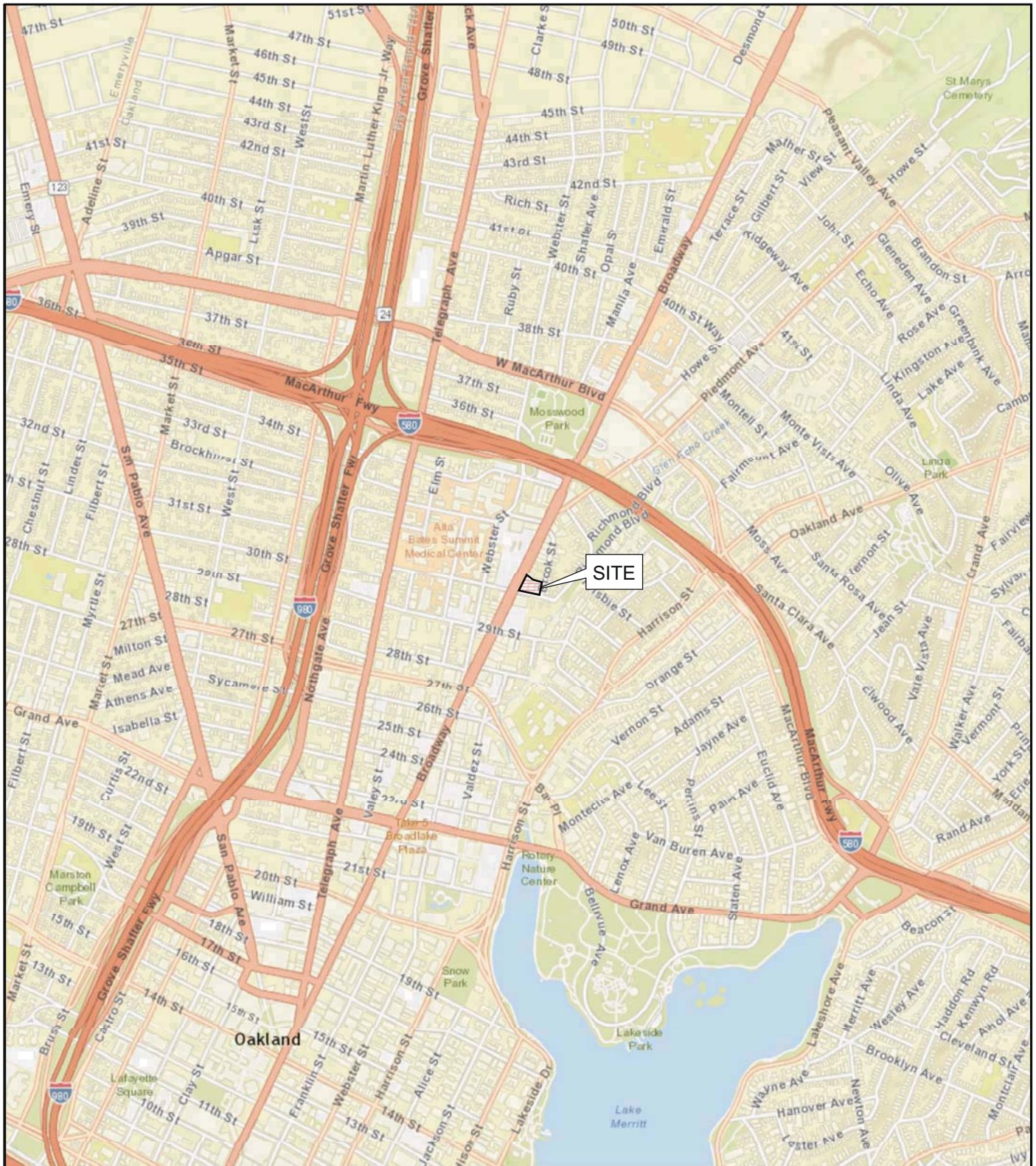
Attachments

Figure 1 – Site Location Map

Figure 2 – Site Plan for Proposed Demolition Activities

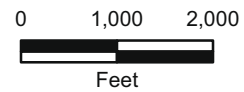
Attachment A - SPI Consulting Engineers, Inc., *Temporary Excavation Shoring Design*,
3000 Broadway, Oakland, California dated 8 March 2017

Figures



NOTES:

World street basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online.
Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN.



3000 BROADWAY REDEVELOPMENT
Oakland, California

SITE LOCATION MAP

LANGAN

Date 06/12/17





Project No. 750635603

Figure 1

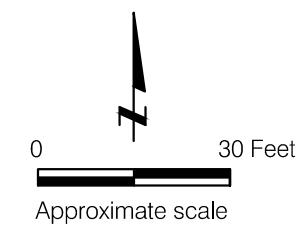
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EXPLANATION

- GW-1**  Approximate location of groundwater monitoring well
-  Approximate footprint of proposed 3000 Broadway Redevelopment
-  Approximate location and extent of State of California Class I Hazardous Material, with depth of material to be excavated (feet below ground surface)
-  Existing 260 30th Street concrete slab to be left in-place during initial demolition activities

Note: Current extents of hazardous soil are based on existing soil data and may be further refined based on additional data collection.



3000 BROADWAY REDEVELOPMENT Oakland, California		
SITE PLAN FOR PROPOSED DEMOLITION ACTIVITIES		
Date 06/21/17	Project No. 750635603	Figure 2
LANGAN		

Attachment A
SPI Consulting Engineers, Inc., *Temporary Excavation Shoring Design,*
***3000 Broadway, Oakland, California* dated 8 March 2017**

3000
BROADWAY

OAKLAND
CALIFORNIA

TEMPORARY
EXCAVATION
SHORING
DESIGN

Owner:

LOWE
ENTERPRISES

General Contractor:

JOHNSTONE
MOYER, INC.

SPI CONSULTING
ENGINEERS, INC.

971 DEWING AVENUE
SUITE 201
LAFAYETTE, CA. 94549

TEL: (925) 299-1341
FAX: (925) 299-1346



No	Date	Revision/Issue
Project Number	1990	Scale AS NOTED
Drawn by	AB	Checked by SI-KC

DATE: MAR. 8, 2017

NOTES,
SCHEDULE
LOCATION MAP
SCOPE OF WORK
AND INDEX

SH-1.0

SOLDIER BEAM SCHEDULE

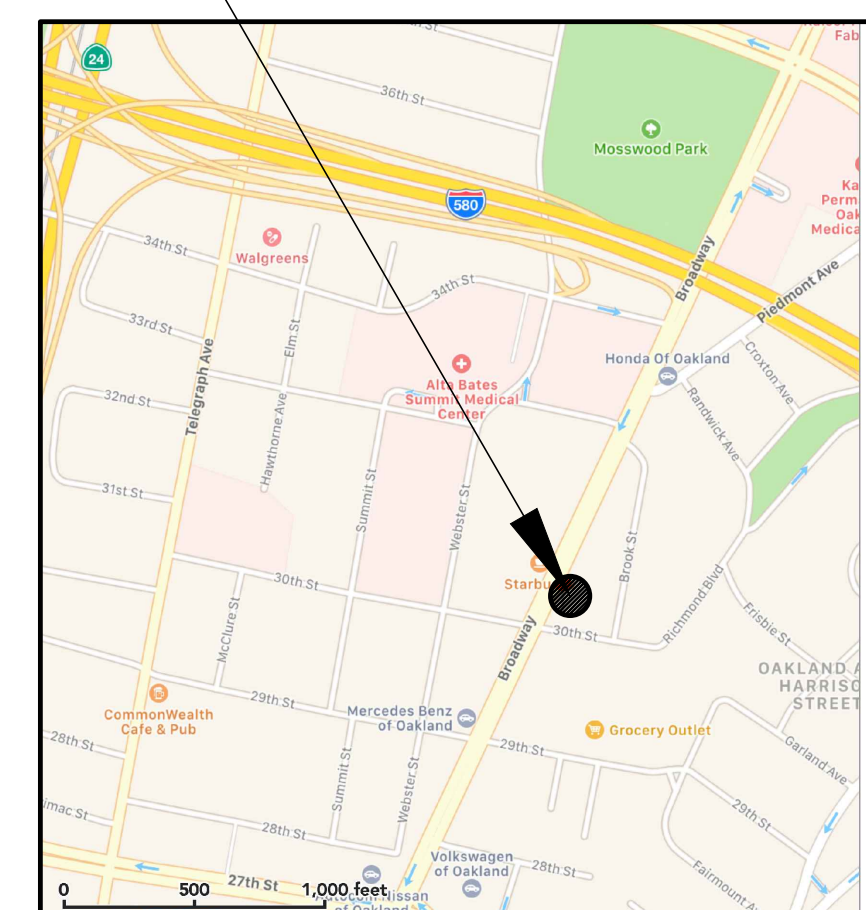
Beam Number	Qty. (each)	Type	Maximum "H" Above Subgrade (ft.)	Toe "D" (ft.)	Beam Length (ft.)	Size (Gr.50)
1 - 17	17	Slant Piles	21.0	8.0	29.0	W14 x 43
18 - 20	3	1-Level Tieback	15.0	8.0	23.0	W14 x 34
21 - 24	4	1-Level Tieback	13.0	8.0	21.0	W14 x 34
25 - 31	7	Cantilevered Beam	10.0	15.0	25.0	W14 x 34
32 - 39	8	Cantilevered Beam	7.0	10.5	17.5	W14 x 34
40 - 51	12	Cantilevered Beam	5.0	8.0	13.0	W14 x 34
52 - 54	3	Cantilevered Beam	7.0	10.5	17.5	W14 x 34
55 - 58	4	Cantilevered Beam	10.0	15.0	25.0	W14 x 34
59 - 62	4	1-Level Tieback	13.0	15.0	28.0	W14 x 34
63 - 65	3	1-Level Tieback	15.0	8.0	23.0	W14 x 34
66 - 69	4	1-Level Tieback	17.0	8.0	25.0	W14 x 34
70 - 73	4	1-Level Tieback	19.0	8.0	27.0	W14 x 34
74 - 79	6	1-Level Tieback	21.0	8.0	29.0	W14 x 43
80 - 104	25	1-Level Tieback	23.0	8.0	31.0	W14 x 43

TIEBACK SCHEDULE

Beam Number	Qty. (each)	Design Load (kips)	Test Load (kips)	Grade 270 Strands		
				Unbond Length (ft.)	Tendon # of 0.6" Strands (each)	Minimum Elongation (in.)
1 - 17	17	68	85	15.0	2	0.98
18 - 24	7	40	50	15.0	2	0.57
25 - 58	34			N/A		
59 - 65	7	40	50	15.0	2	0.57
66 - 69	4	50	62	15.0	2	0.71
70 - 73	4	61	76	15.0	2	0.87
74 - 77	4	74	92	15.0	3	0.70
78 - 104	27	105	131	15.0	3	1.00

Tieback shall be drilled at 15-degree angle to the horizontal. U.N.O.

LOCATION MAP



INDEX OF DRAWINGS

SH-1.0	NOTES, SCHEDULES, LOCATION MAP, SCOPE OF WORK AND INDEX
SH-2.0	SHORING PLAN-NORTH SIDE
SH-2.1	SHORING PLAN-SOUTH SIDE
SH-3.0	SHORING ELEVATIONS
SH-3.1	SHORING ELEVATIONS
SH-4.0	SHORING SECTIONS
SH-5.0	SHORING DETAILS

GENERAL REQUIREMENTS

- GENERAL CONTRACTOR SHALL COORDINATE GRADES, SLOPES, TEMPORARY DRAINAGE AND PROTECTION OF EXISTING TREES AND FACILITIES DURING CONSTRUCTION.
- CONSTRUCTION SHALL CONFORM TO 2018 CBC STANDARDS, 2010 CAL-OSHA SAFETY ORDERS, AND ALL LOCAL BUILDING CODES AND REGULATIONS OF ALL OTHER LOCAL AND STATE AGENCIES HAVING JURISDICTION OVER THIS PROJECT.
- DESIGN OF TEMPORARY SLOPES NOT EXPLICITLY SHOWN ON THESE DRAWINGS IS BY OTHERS AND SHALL CONFORM TO APPLICABLE CALIFORNIA CODE OF REGULATIONS TITLE 8 SUBCHAPTER 4 CONSTRUCTION SAFETY ORDERS (CAL-OSHA SAFETY ORDERS).
- GENERAL CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE, AND REPORT ANY DISCREPANCIES OR VARIANCES BETWEEN ACTUAL FIELD CONDITIONS AND THESE TEMPORARY SHORING DRAWINGS.
- SHORING DRAWINGS SHOW OSHA COMPLIANT FALL PROTECTION AT TOP OF SHORING WALL IS REQUIRED. FALL PROTECTION SHOWN SHALL SERVE AS MINIMUM OF REQUIRED PROTECTION. FURNISH AND INSTALL FALL PROTECTION BY SHORING SUBCONTRACTOR. GENERAL CONTRACTOR TO PROVIDE AND MAINTAIN ALL HANDRAILS, SAFETY RAILS AND BARRICADES. NO EXCAVATION ADJACENT TO SHORING IN EXCESS OF 5' SHALL OCCUR PRIOR TO INSTALLATION OF REQUIRED FALL PROTECTION.
- GENERAL CONTRACTOR TO PROVIDE ALL ELEVATIONS AND GRIDLINE LAYOUT AND TO PROVIDE FOR ALL RUNOFF CONTROLS AND DIKES ETC. TO ENSURE THAT RUNOFF WATER DOES NOT SATURATE THE SOILS BEHIND THE SHORING SYSTEM.
- SIZES SHOWN ON THE DRAWINGS ARE MINIMUM. EQUAL OR GREATER SIZES MAY BE SUBSTITUTED WITH THE PRIOR CONSENT OF THE ENGINEER.
- EXISTING UTILITIES AND OTHER IMPROVEMENTS SHOWN ON THE CIVIL DRAWINGS ARE BASED ON RECORD LOCATIONS. ADDITIONAL UTILITIES MAY BE PRESENT OR IN OTHER LOCATIONS. GENERAL CONTRACTOR TO LOCATE ALL UTILITIES IN THE VICINITY OF THE SHORING WORK AND ADVISE IF SYSTEM SHOWN ON THIS DRAWING REQUIRES ADJUSTMENTS. DRILLING SHALL CEASE IF EITHER OF THE FOLLOWING CONDITIONS ARE ENCOUNTERED:
 - ABNORMAL RESISTANCE TO DRILLING.
 - FOREIGN MATERIALS BEING PULLED FROM THE HOLE.
- CONSULT SPI CONSULTING ENGINEERS, INC. IF UTILITY LINES, PIPING, OR FOUNDATIONS ARE ENCOUNTERED DURING SHORING INSTALLATIONS.
- GENERAL CONTRACTOR SHALL POT HOLE AND MARK ALL UTILITIES THAT MAY POTENTIALLY CONFLICT WITH PLANNED TIEBACKS, UTILITIES RELOCATION SUPPORT, WORK-AROUND AND PROTECTION BY OTHERS. UTILITY MARKINGS SHALL BE COORDINATE WITH THE SHORING CONTRACTOR SUPERINTENDENT TO ENSURE PROPER TRANSFER OF INFORMATION.
- GENERAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND SHALL PROTECT THEM FROM HARM AS REQUIRED TO PREVENT DAMAGE AND MAINTAIN THEIR USE. CONSULT SPI CONSULTING ENGINEERS, INC. IF UTILITY LINES, PIPING, OR OTHER OBSTRUCTIONS REQUIRE RELOCATION OF SHORING SYSTEM.
- GENERAL CONTRACTOR SHALL VERIFY EXISTING GRADES AND PLANNED BOTTOM OF EXCAVATION SHOWN ON THESE DRAWINGS. EXCAVATION SHALL NOT EXTEND BELOW THE PLANNED BOTTOM OF EXCAVATION SHOWN ON THE ELEVATION WITHOUT APPROVAL OF SPI CONSULTING ENGINEERS, INC.
- DEMOLITION, GENERAL SITE EXCAVATION, SITE DEMATERING AND REMOVAL OF EXISTING OBSTRUCTIONS AND FOUNDATIONS SHALL BE BY OTHERS AND COORDINATED WITH INSTALLATION OF SHORING SYSTEM TO PREVENT LOSS OF GROUND AND CAVING OF BANKS.
- SEE CONTRACT DRAWINGS AND SPECIFICATIONS FOR ALL INFORMATION RELATIVE TO THE NEW AND EXISTING CONSTRUCTION. GENERAL CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND SHALL RESOLVE CONFLICTS BETWEEN THE SHORING DRAWINGS AND CONTRACT DRAWINGS PRIOR TO START OF CONSTRUCTION.
- ONLY SURCHARGE LOADS INDICATED IN THE GEOTECHNICAL DESIGN PARAMETERS SECTION OF THESE NOTES ARE CONSIDERED IN THIS DESIGN. CONTACT SPI CONSULTING ENGINEERS, INC FOR OTHER SURCHARGE REQUIREMENTS. DO NOT STORE EQUIPMENT OR BUILDING MATERIALS ABOVE THE SHORING.
- THE EARTH RETENTION SYSTEM IS DESIGNED AS A TEMPORARY SYSTEM AND SHALL REMAIN IN PLACE FOR ONE YEAR. CONTACT THE SHORING CONTRACTOR IF SYSTEM REMAINS ACTIVE BEYOND THIS TIME FRAME.
- THE SHORING SYSTEM IS NOT DESIGNED FOR WATER HEAD CONDITIONS. IF GROUNDWATER IS ENCOUNTERED IT SHALL BE PUMPED TO 3-FEET MINIMUM BELOW BOTTOM OF EXCAVATION. IF THIS CANNOT BE ASSURED THEN MODIFICATIONS TO THE DESIGN WILL BE REQUIRED.
- HYDRAULIC JACKS USED TO TEST TIEBACKS SHALL BE CERTIFIED WITHIN THE LAST 12 MONTHS. SHORING CONTRACTOR TO PROVIDE THE ENGINEER WITH A COPY OF THE CERTIFIED CALIBRATION CHARTS A MINIMUM OF TWO DAYS PRIOR TO ANY JACKING.
- TEST ALL TIEBACKS TO THE TEST LOAD INDICATED ON THE SCHEDULES IN 25% LOAD INCREMENTS. HOLD THE FINAL TEST LOAD FOR 10 MINUTES WHILE MONITORING CREEP WITH AN APPROPRIATE GAUGE. A SUCCESSFUL TIEBACK WILL HOLD THE TEST LOAD WHILE CREEPING LESS THAN 0.04 INCHES BETWEEN THE 1 AND 10 MINUTE INTERVALS OF THE TEST. ADDITIONAL TOTAL DISPLACEMENT BETWEEN THE ALIGNMENT LOAD AND THE TEST LOAD SHALL NOT EXCEED 80 PERCENT OF THE THEORETICAL ELASTIC ELONGATION OF THE UNBONDED.
- ALL EXCAVATION WORK SHALL BE COORDINATED BETWEEN THE GENERAL CONTRACTOR AND THE SHORING/GRADING SUBCONTRACTORS.
- ALL WELDING TO BE PERFORMED IN ACCORDANCE WITH LATEST AWS STANDARDS.
- THE OWNER SHALL PERFORM A PRE-CONSTRUCTION PHOTO SURVEY OF FACILITIES ADJACENT TO THE SHORING AND PERFORM SETTLEMENT/SURVEY MONITORING DURING CONSTRUCTION. READ SURVEY MONITORING POINTS SHOWN ON THE ELEVATIONS ONCE PER WEEK FOR VERTICAL AND HORIZONTAL MOVEMENT UNTIL COMPLETION OF CONSTRUCTION BACK TO ORIGINAL GRADE. MOVEMENTS OF 1 INCH IN EITHER THE HORIZONTAL OR VERTICAL DIRECTION ARE EXPECTED. IF MOVEMENTS EXCEED THESE LEVELS REMEDIAL MEASURES TBD BY SPI CONSULTING ENGINEERS WILL BE IMPLEMENTED. SURVEY RESULTS SHALL BE REPORTED WEEKLY TO BOTH THE GENERAL CONTRACTOR AND SPIE SO THAT MOVEMENT TRENDS CAN BE DETERMINED AND APPROPRIATE ACTION TAKEN. THE GC WILL NOT BE RESPONSIBLE PERFORMANCE OF SETTLEMENT/SURVEY MONITORING PROGRAM DURING THE COURSE OF CONSTRUCTION. DUE TO A CONFLICT OF INTEREST, THE OWNERS SHOULD CONTRACT (SEPARATELY) WITH THE CIVIL ENGINEER OF RECORD TO ENTER INTO A SHORING MONITORING PROGRAM DURING THE COURSE OF CONSTRUCTION.
- THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF LOWE ENTERPRISE AND SHALL NOT BE USED ON ANY OTHER WORK.
- WRITTEN DIMENSIONS SHALL TAKE PREFERENCE OVER SCALED DIMENSIONS. DIMENSIONS SHALL BE VERIFIED ON THE JOB SITE. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF SPI CONSULTING ENGINEERS, INC PRIOR TO COMMENCEMENT OF WORK.
- THE DESIGN IS BASED ON INFORMATION CONTAINED IN THE GEOTECHNICAL REPORT FOR THE 3000 BROADWAY STREET OAKLAND DATED DECEMBER 21, 2016 PREPARED BY LANGAN TREADWELL ROLLO.
- SPI CONSULTING ENGINEERS, INC. IS THE ENGINEER OF RECORD FOR THE SHORING DESIGN.
- THE GENERAL CONTRACTOR FOR THE PROJECT IS JOHNSTONE MOYER, INC.
- THE SHORING CONTRACTOR FOR THIS PROJECT HAS NOT YET BEEN SELECTED BUT WILL BE REQUIRED TO POSSESS A MINIMUM OF FIVE YEARS OF EXPERIENCE IN WORK SIMILAR TO THAT SHOWN ON THESE DOCUMENTS.
- SPI CONSULTING ENGINEERS SHALL PERFORM OBSERVATIONS REQUIRED BY THE BUILDING PERMIT UNDER A SEPARATE CONTRACT WITH THE OWNER/DEVELOPER.
- DO NOT REPLY ON THE SHORING DOCUMENTS FOR DETERMINING SUBGRADE ELEVATIONS OR BUILDING LAYOUT. COORDINATE ALL WORK SHOWN HEREIN WITH THE CONTRACT DRAWINGS. COORDINATE ALL LAYOUT REQUIREMENTS WITH THE GC PRIOR TO INSTALLING SOLDIER BEAMS.
- ALL LABOR, EQUIPMENT AND MATERIAL REQUIRED FOR THE WORK IN PUBLIC RIGHT-OF-WAY ARE THE RESPONSIBILITY OF THE OWNER.
- THE OWNER IS RESPONSIBLE FOR THE REPAIR OF ALL DAMAGE TO THE OFFSITE IMPROVEMENTS DURING THE CONSTRUCTION.
- NO WORK SHALL BE DONE WITHIN THE PUBLIC RIGHT-OF-WAY WITHOUT OBTAINING A PERMIT FROM THE PUBLIC WORKS DEPARTMENT.
- THE WORK IN THE PUBLIC RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS/PLANS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION AS AMENDED BY THE CITY.
- LOCATION OF ANY EXISTING BUILDINGS, STRUCTURES, WELLS, STREET IMPROVEMENTS OR UTILITIES (STORM, SEWER, GAS, WATER, ETC.) ON PROPERTY AND WITHIN THE PUBLIC RIGHT-OF-WAY OR ADJACENT PROPERTY(S) THAT CAN BE POTENTIALLY IMPACTED BY THE SHORING OPERATION; IS THE RESPONSIBILITY OF THE GC AND OWNER.

GEOTECHNICAL DESIGN PARAMETERS

- TEMPORARY WALLS
 - TRAPEZOIDAL ACTIVE PRESSURE OF 29H APPLIED TO THE FULL SOLDIER BEAM SPACING FROM TOP OF GROUND TO SUBGRADE, WHERE H IS THE OVERALL RETAINED HEIGHT.
 - FOR CANTILEVER BEAMS ACTIVE PRESSURE OF 40H APPLIED TO THE FULL SOLDIER BEAM SPACING WHERE H IS THE OVERALL CUT HEIGHT FROM EXISTING GRADES TO SUBGRADES.
 - PASSIVE RESISTANCE OF 2000 PSF AND INCREASING AT THE RATE OF 80 PCF APPLIED TO 3 TIMES THE SOLDIER PILE DIAMETER BELOW SUBGRADE.
 - SURCHARGE PRESSURE OF 100 PSF IS APPLIED TO THE FULL SOLDIER BEAM SPACING OVER THE TOP 10- FEET BELOW TOP OF SHORING.
 - NO BOOM PUMP, OUTRIGGER CRANE, EQUIPMENT OR MATERIAL SURCHARGE LOADS ARE APPLIED TO CANTILEVER BEAMS.
 - GROUNDWATER IS ASSUMED TO BE A MINIMUM OF 3- FEET BELOW THE LOWEST FOOTING EXCAVATION.

PERMANENT WALLS

- TRAPEZOIDAL AT REST PRESSURE OF 49.5H APPLIED TO THE FULL SOLDIER BEAM SPACING FROM TOP OF GROUND TO SUBGRADE, WHERE H IS THE OVERALL RETAINED HEIGHT. ALL OTHER PARAMETERS AND ASSUMPTIONS FROM THE TEMPORARY WALLS SECTION ARE APPLICABLE TO THE PERMANENT WALLS.

STEEL

- STRUCTURAL STEEL SHAPES -ASTM A992 GRADE 50. COAT ALL SLANT PILES WITH COAL TAR EPOXY MATERIAL SUITABLE FOR THE CONDITIONS AT THIS SITE. SUBMIT PROPOSED PRODUCT TO BOTH SPI CONSULTING ENGINEERS AND THE GEOTECHNICAL ENGINEER FOR APPROVAL.
- PLATES -A36
- WELDING ROD OR WIRE -GRADE 70 CONFORMING TO AWS E71T-8
- CENTRALIZERS -PVC TO SUIT HOLE DIAMETER
- TIEBACK TENDON -ASTM A416 GRADE 270 STRANDS

CONCRETE

- CANTILEVER SOLDIER BEAM TOES, SLANT PILE TOES, AND LINTEL BEAMS -2,500 PSI CONCRETE WITH 5 SACKS OF CEMENT PER CUBIC YARD.
- TIEBACK SOLDIER BEAM TOES AND FILL -LEAN CONCRETE WITH 1 SACK OF CEMENT PER CUBIC YARD.
- TIEBACK GROUT -NEAT CEMENT SLURRY USING APPROXIMATELY 5 GALLONS OF WATER PER 94 POUND SACK OF CEMENT. READY MIX CONCRETE WITH FC OF 4,000 PSI MAY BE SUBSTITUTED.
- CEMENT -TYPE II OR IV

LAGGING

- TIMBER LAGGING -PRESSURE TREATED #2 DOUGLAS FIR MEETING CALTRANS MINIMUM STANDARDS FOR THE PROPOSED APPLICATION.

SOLDIER BEAMS INSTALLATION PROCEDURE

- GC WILL PROVIDE CONSTRUCTION STAKING FOR GRIDLINES (ONLY) ALONG SHORING WALLS, WITH REQUIRED OFFSET. THE SHORING SUBCONTRACTOR SHALL USE THEIR LINES TO DO THEIR OWN LAYOUT AND LOCATE ALL EXISTING COLUMNS OF EXISTING STRUCTURES PRIOR TO LAYOUT SOLDIER BEAMS STARTING FROM THE CENTER LINE OF EACH COLUMN AS SHOWN ON PLANS.
- CONSTRUCT DRILL BENCH AS REQUIRED BY SHORING CONTRACTOR FOR THEIR EQUIPMENT.
- PRIOR TO ORDERING STEEL OR STARTING FABRICATION OF TIEPOCKETS VERIFY THE DEPTH OF EXISTING UTILITIES THAT MAY IMPACT THE INSTALLATION OF TIEBACKS AS SHOWN ON THESE DRAWINGS. NOTIFY SPI CONSULTING ENGINEERS OF ANY ADJUSTMENTS REQUIRED TO THE DESIGN AS INDICATED.
- PROCURE STEEL AND BEGIN TIEPOCKET FABRICATION.
- DRILL SOLDIER BEAMS TO DEPTHS INDICATED IN THE PLANS, PLACE STEEL AND FILL THE SOLDIER BEAM TOES AS INDICATED ON THESE DRAWINGS. BACKFILL THE REMAINDER OF THE DRILLED SHAFT WITH LEAN CONCRETE TO ORIGINAL SITE GRADE ON THE SAME WORK DAY THAT THE SHAFT IS DRILLED. CASE SOLDIER BEAM SHAFTS AS REQUIRED IF CAVING CONDITIONS ARE ENCOUNTERED.
- INSTALL PROTECTIVE BARRIER RAIL AT TOP OF SOLDIER BEAMS IN ACCORDANCE WITH OSHA GUIDELINES.
- INSTALL WOOD LAGGING IN INCREMENTS AS SOIL STABILITY ALLOWS BUT NO MORE THAN THREE (3) VERTICAL FEET AT A TIME. PLACE FILL AS REQUIRED TO ASSURE FULL CONTACT BETWEEN THE RETAINED SOIL AND LAGGING.
- DRILL TIEBACKS AT SOLDIER BEAMS ONCE WOOD LAGGING HAS BEEN INSTALLED TO 2-FOOT BELOW THE PROPOSED TIEBACK ELEVATIONS. TIEBACKS SHALL BE GROUTED ON THE SAME WORK DAY. CASE TIEBACK HOLES AS REQUIRED IF CAVING IS ENCOUNTERED. CONTRACTOR IS RESPONSIBLE FOR INSURING THAT TIEBACKS ARE DRILLED TO AN ADEQUATE DEPTH TO PASS TESTING REQUIREMENTS. CONSULT GEOTECHNICAL REPORT FOR SOIL PROFILE TO ASSIST IN DETERMINING BOND VALUES AND NECESSITY FOR POST GROUTING TO ACHIEVE DESIRED TIEBACK PERFORMANCE.
- WHEN TIEBACK GROUT HAS REACHED SUFFICIENT STRENGTH, TEST THE TIEBACKS TO THE LOADS INDICATED ON THESE DRAWINGS. IF BEAM TWISTING OCCURS DURING TIEBACK TESTING STOP THE TEST AND WELD TENSION STRAPS BETWEEN ADJACENT BEAMS.
- ONCE TIEBACKS HAVE BEEN TESTED, LOCKOFF TIEBACKS AT THE DESIGN LOADS SHOWN ON THESE DRAWINGS.
- CONTINUE LAGGING TO SUBGRADE IN INCREMENTS AS STABILITY ALLOWS. NOTE PROCEDURES IN NOTE 7 FOR VOIDS.
- COMMENCE WITH PERMANENT CONSTRUCTION IMMEDIATELY UPON REACHING SUBGRADE.
- SHORING SUBCONTRACTOR TO REMOVE THE SOLDIER BEAM TOPS IF REQUIRED BY CONTRACT AT THE COMPLETION OF NEW CONSTRUCTION TO GRADE.

SPECIAL PROCEDURE FOR SLANT PILES

- EXCAVATE TO 2-FOOT ABOVE BOTTOM OF EXISTING FOOTING, LEAVING A DRILL BENCH SUITABLE FOR SHORING SUBCONTRACTOR'S SLANT PILE INSTALLATION RIG.
- HAND-EXCAVATE AN APPROACH PIT. THE APPROACH PITS SHALL BE INSTALLED IN A 3 SEQUENCE OPERATION MEANING THAT ONLY EVERY 4TH PILE MAY BE INSTALLED CONCURRENTLY.
- ONLY REMOVE ANY REMNANT FOUNDATIONS ON THE 3000 BROADWAY PROPERTY THROUGH THE WIDTH OF THE APPROACH PIT.
- NOTIFY THE RESPECTIVE PROPERTY OWNERS AND THEIR RESPECTIVE CONSULTING ENGINEERS TWO DAYS PRIOR TO START OF DRILLING ALL SLANT PILES. BEGIN DRILLING THE SEQUENCE 1 SLANT PILES AT THE ANGLE REQUIRED TO STAND THE SOLDIER BEAM VERTICALLY BENEATH THE EDGE OF EXISTING FOUNDATION. MIX SOIL WITH SYNTHETIC DRILLING POLYMERS AS REQUIRED IF CAVING CONDITION ARE ENCOUNTERED.
- STAND THE PILES UP VERTICALLY AND SET TOP OF STEEL TO WITHIN TWO (2) INCHES OF THE BOTTOM OF EXISTING FOOTING.
- FILL SLANT PILE TOES WITH 2,500 PSI CONCRETE INDICATED ON THE DRAWINGS.
- BACKFILL THE REMAINDER OF THE SHAFT AND APPROACH PIT UP TO THE BOTTOM OF LINTEL BEAMS WITH LEAN CONCRETE ON THE SAME WORK DAY THAT THE SHAFT IS DRILLED.
- INSTALL LINTEL BEAMS AS INDICATED ON THE PLANS AND POUR WITH 2,500 PSI CONCRETE THROUGH WIDTH OF APPROACH PIT.
- GROUT ANY VOIDS LEFT BEHIND THE LINTEL BEAMS PRIOR TO STARTING PHASE 2 WORK.
- REPEAT STEPS 3 THROUGH 9 FOR THE SEQUENCE 2 SLANT PILES.
- REPEAT STEPS 3 THROUGH 9 FOR THE SEQUENCE 3 SLANT PILES.
- GROUT SOLID ANY VOIDS LEFT IN PRIOR STEPS BEFORE BEGINNING EXCAVATION TO TIEBACK LEVEL.
- BEGIN EXCAVATION AND LAGGING IN LIFTS NOT EXCEEDING 3- FEET OR LESS AS SITE CONDITIONS ALLOW TO A POINT 2-FOOT BELOW THE TIEBACK LEVEL. CEASE WORK IF FLOWING SAND OR OTHER LOSS OF GROUND OCCURS. NOTIFY THE ADJACENT PROPERTY OWNERS AND THEIR RESPECTIVE CONSULTING ENGINEERS TO IF GROUND LOSS OCCURS AND TO OBSERVE LAGGING OPERATIONS IF DESIRED.
- INSTALL TIEBACKS WHERE INDICATED USING DRILL CASING IF CAVING CONDITIONS ARE ENCOUNTERED. TIEBACKS SHALL BE GROUTED ON THE SAME WORK DAY AS THEY ARE DRILLED. CONTRACTOR IS RESPONSIBLE FOR INSURING THAT TIEBACKS ARE DRILLED TO AN ADEQUATE LENGTH AND POST GROUTED AS REQUIRED TO MEET TESTING REQUIREMENTS. IF POST GROUTING IS USED PRECAUTIONS SHALL BE TAKEN TO NOT UNDERTAKE EXCESSIVE PRESSURE UNDER EXISTING STRUCTURES. SHORING SUBCONTRACTOR SHALL MONITOR FF LEVEL OF ANY ADJACENT STRUCTURE WHERE POST GROUTING IS PERFORMED AND CEASE POST GROUTING IF ANY MEASURED UPWARD MOVEMENT OCCURS.
- WHEN TIEBACK GROUT HAS REACHED SUFFICIENT STRENGTH AT THE SOLE DISCRETION OF THE TIEBACK SUBCONTRACTOR TEST THE TIEBACKS TO THE LOADS INDICATED ON THESE DRAWINGS.
- ONCE TIEBACKS HAVE BEEN SUCCESSFULLY TESTED LOCK THEM OFF AT THE DESIGN LOADS SHOWN ON THESE DRAWINGS.
- CONTINUE LAGGING TO SUBGRADE.
- COMMENCE WITH PERMANENT CONSTRUCTION IMMEDIATELY UPON REACHING SUBGRADE.

MONITORING PROGRAM & ANTICIPATED MOVEMENTS

- CRACK MONITORS WILL BE PLACED ON ALL EXISTING CRACKS APPROXIMATELY 1/4-INCH TO 3/8 INCH WIDTH AND GREATER. LOCATIONS ARE TO BE ESTABLISHED DURING A PRE-CONSTRUCTION WALK WITH ADJACENT OWNERS AND THEIR RESPECTIVE ENGINEERING CONSULTANTS.
- SURVEY MONITORING WILL BE PERFORMED BY A LICENSED SURVEYOR PRIOR TO START OF CONSTRUCTION AND PER THE SCHEDULE INDICATED IN NOTE 22 OF THE GENERAL REQUIREMENTS.
- THE TOPS OF ALL SOLDIER BEAMS ALONG ALL ADJACENT PROPERTY LINES SHALL BE SURVEYED INITIALLY AFTER INSTALLATION OF BEAMS AND AT REGULAR INTERVALS DURING CONSTRUCTION.
- TRIGGER 1- IF ANY BUILDING SETTLEMENT EXCEEDS 1/2-INCH AND/OR DIFFERENTIAL SETTLEMENT EXCEEDS 1/4-INCH WITHIN 20- FEET, THE PROJECT TEAM AND ADJACENT PROPERTY OWNERS AND THEIR RESPECTIVE ENGINEERING CONSULTANTS SHALL CONVENE TO ASSESS THE CURRENT PERFORMANCE AND DISCUSS OPTIONS IF ADDITIONAL MOVEMENT OCCURS.
- TRIGGER 2- IF ANY BUILDING SETTLEMENT EXCEEDS 3/4-INCH AND/OR DIFFERENTIAL SETTLEMENT EXCEEDS 1/2-INCH WITHIN 20- FEET, EXCAVATION RELATED CONSTRUCTION ACTIVITIES ALONG THE PROPERTY INTERFACE SHALL BE SUSPENDED. BUILDING DAMAGE SHALL BE ASSESSED, AND REMEDIAL ACTIONS SHALL BE TAKEN TO PREVENT FURTHER DAMAGE.

SPECIAL INSPECTION & OBSERVATION

- INTERMITTENT OBSERVATION IS REQUIRED FOR:
 - SOLDIER BEAM INSTALLATION.
 - SLANT PILE INSTALLATION.
 - LINTEL BEAM INSTALLATIONS
 - LAGGING INSTALLATION
 - TIEBACK INSTALLATION
- FULL TIME INSPECTION IS REQUIRED FOR ALL TIEBACK TESTING.
- FULL TIME INSPECTION IS REQUIRED FOR LAGGING PLACED WITH SLANT PILE UNDERPINNING SYSTEMS.

SCOPE OF WORK

- THE WORK SHOWN ON THESE DRAWINGS IS REQUIRED FOR PROTECTION OF ADJACENT IMPROVEMENTS DURING CONSTRUCTION OF THE UNDERGROUND PARKING GARAGE FOR 3000 BROADWAY IN OAKLAND. THE SCOPE INCLUDES CONSTRUCTING SLANT PILES, TIEBACK SOLDIER BEAMS AND CANTILEVERED SOLDIER BEAMS WITH WOOD LAGGING TO TEMPORARILY RETAIN EXCAVATIONS UP TO 23- FEET IN DEPTH.

3000
BROADWAY

OAKLAND
CALIFORNIA

TEMPORARY
EXCAVATION
SHORING
DESIGN

Owner:

LOWE
ENTERPRISES

General Contractor:

JOHNSTONE
MOYER, INC.

SPI CONSULTING
ENGINEERS, INC.

971 DEWING AVENUE
SUITE 201
LAFAYETTE, CA. 94549
TEL: (925) 299-1341
FAX: (925) 299-1346

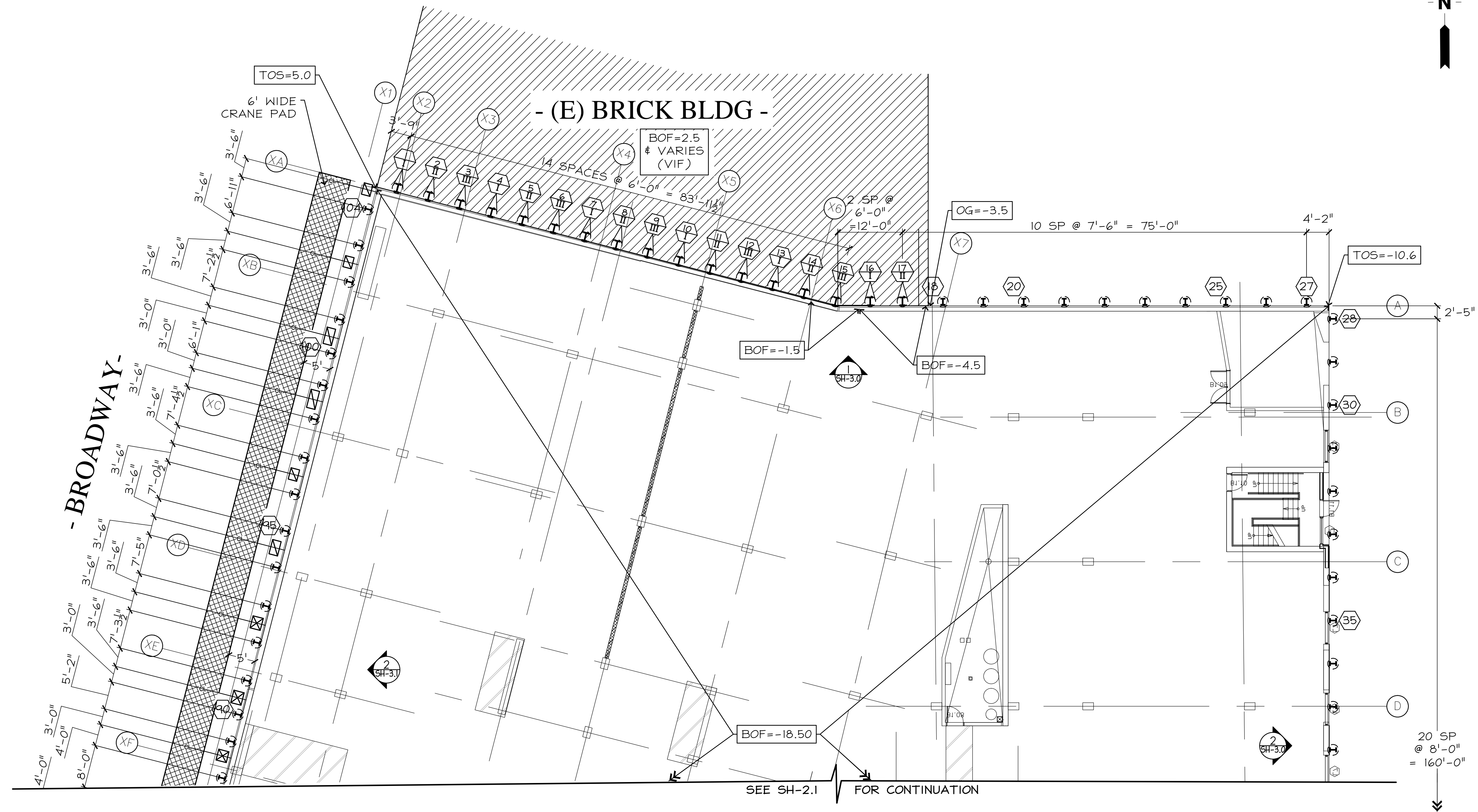


No	Date	Revision/Issue
Project Number	Scale	
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DATE: MAR. 8, 2017

SHORING
PLAN
NORTH
SIDE

SH-2.0



1 SHORING PLAN - NORTH SIDE
SCALE: 3/32" = 1'-0"

LEGEND

- SOLDIER BEAM # 5 1 DRIVEN SOLDIER BEAMS
SEE SCHEDULE ON SH-1
- 6 2 SLANT PILE WITH TIEBACK
- 7 3 SOLDIER BEAM #
INSTALLATION
SEQUENCE
- TOS: TOP OF STEEL
BOF: BOTTOM OF FOUNDATION
OG: ORIGINAL GRADE

3000
BROADWAY

OAKLAND
CALIFORNIA

TEMPORARY
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SHORING
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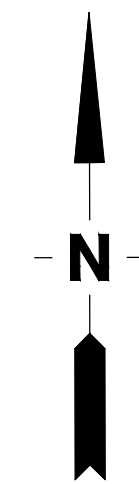


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3		Drawn by AB

DATE: MAR. 8, 2017

**SHORING
PLAN
SOUTH
SIDE**

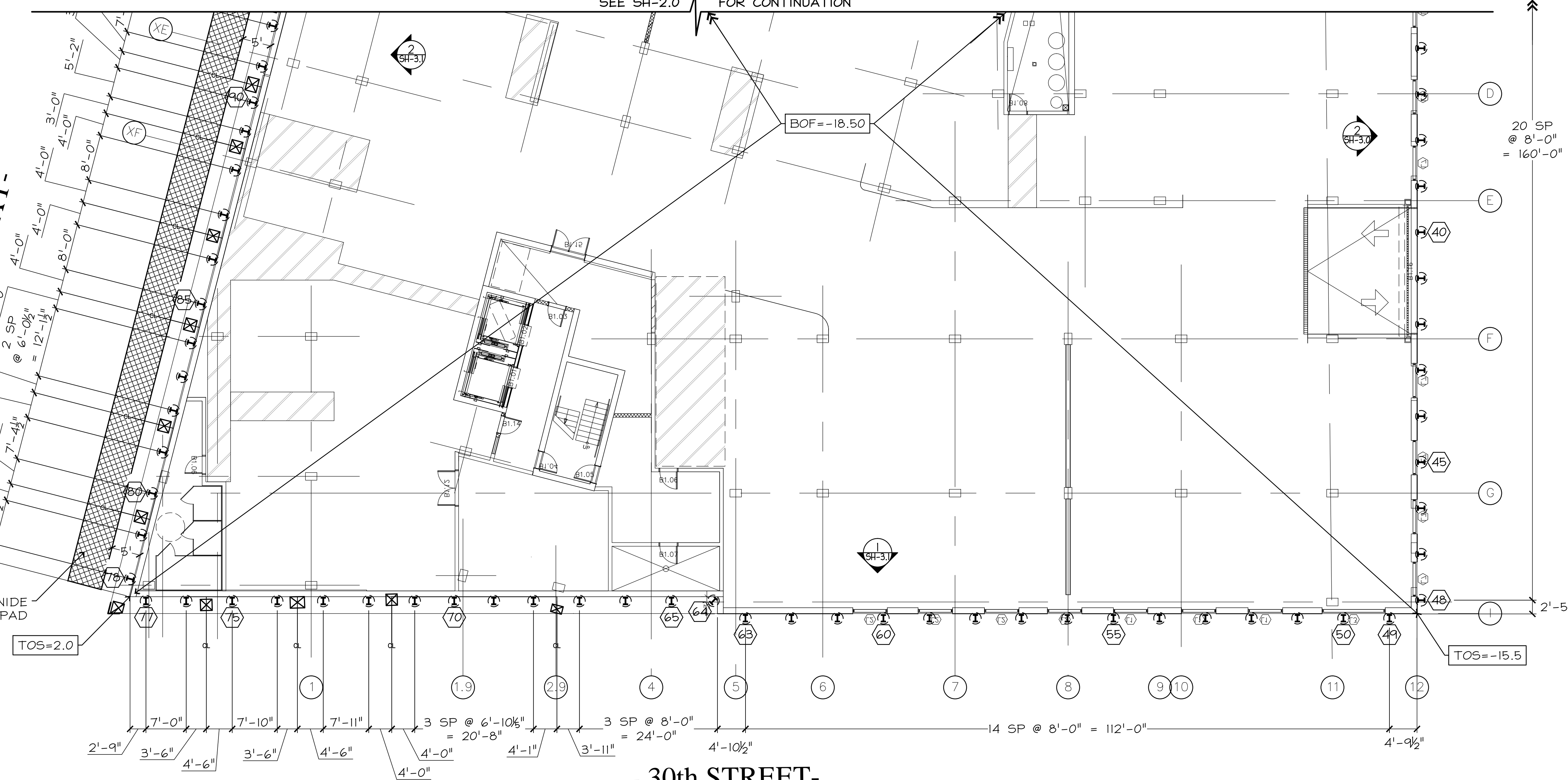
SH-2.1



SEE SH-2.0 FOR CONTINUATION

BOF=-18.50

20 SP
@ 8'-0"
= 160'-0"



- BROADWAY -

- 30th STREET -

SHORING PLAN-SOUTH SIDE
SCALE: 3/32" = 1'-0"

LEGEND

- SOLDIER BEAM # 5 DRIVEN SOLDIER BEAMS
SEE SCHEDULE ON SH-1
- SOLDIER BEAM # 6 SLANT PILE WITH TIEBACK
- SOLDIER BEAM # INSTALLATION SEQUENCE
- TOS: TOP OF STEEL
- BOF: BOTTOM OF FOUNDATION
- OG: ORIGINAL GRADE

17-03-08 @ 17:18, Alvaro Balleza

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3000
BROADWAY

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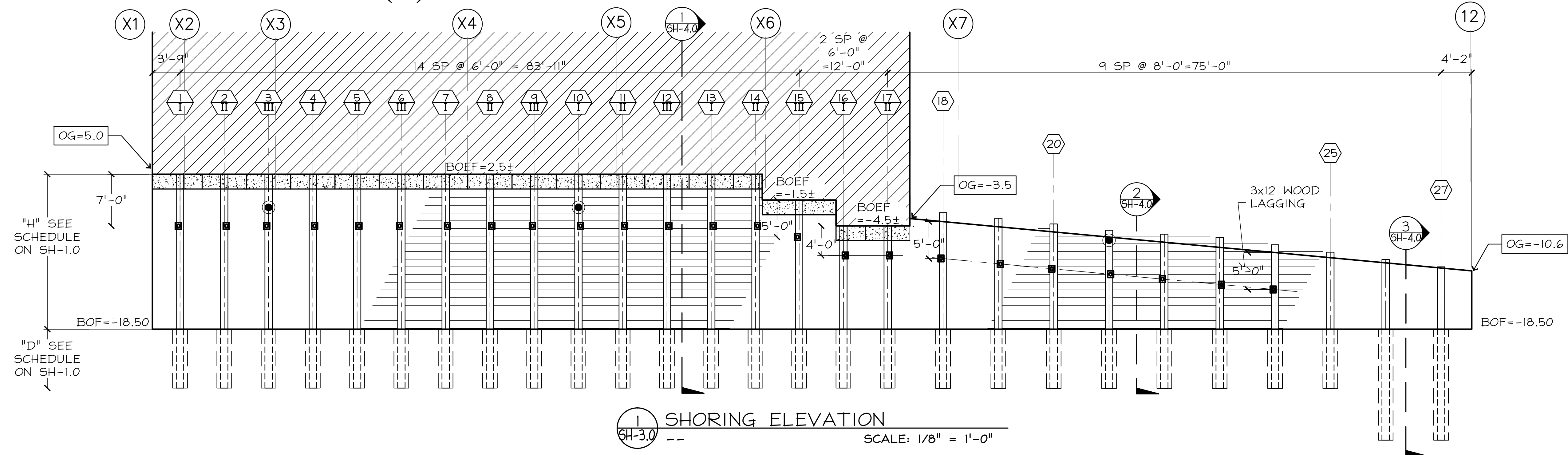
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SUITE 201
LAFAYETTE, CA. 94549

TEL: (925) 299-1341
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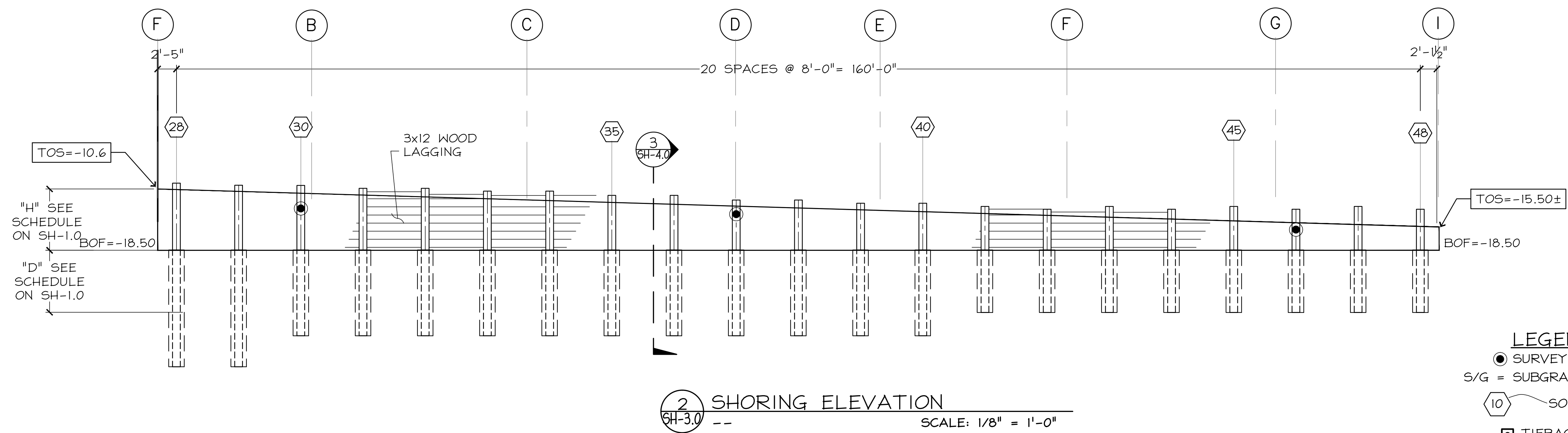


- (E) BRICK BLDG -



1 SHORING ELEVATION

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



2 SHORING ELEVATION

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

LEGEND

- SURVEY MONITORING POINT
- S/G = SUBGRADE
- ⑩ SOLDIER BEAM #
- TIEBACK
- ⑥①② SOLDIER BEAM # INSTALLATION SEQUENCE

TOS: TOP OF STEEL
BOF: BOTTOM OF FOUNDATION
OG: ORIGINAL GRADE

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SHORING
ELEVATIONS

SH-3.0

3000
BROADWAY

OAKLAND
CALIFORNIA

TEMPORARY
EXCAVATION
SHORING
DESIGN

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SUITE 201
LAFAYETTE, CA. 94549

TEL: (925) 299-1341
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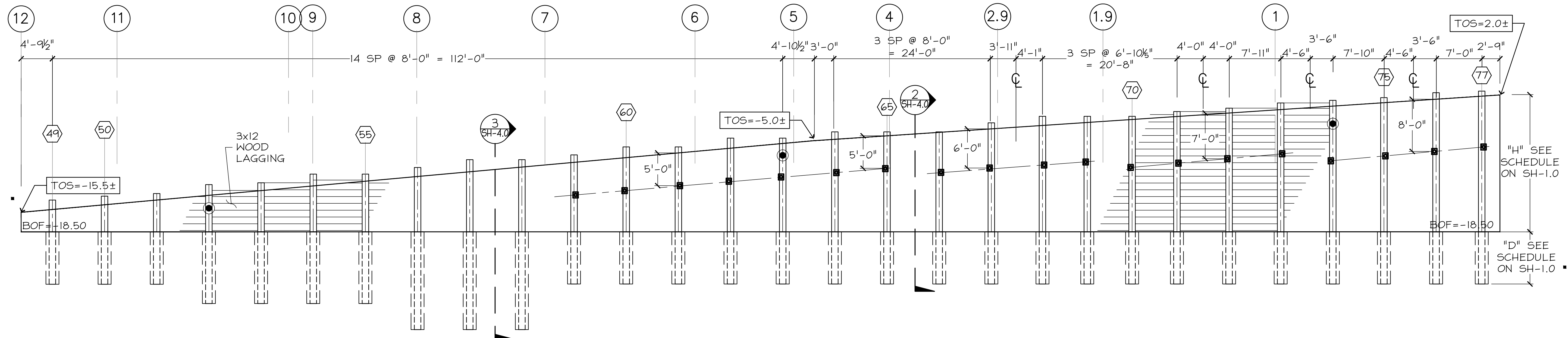


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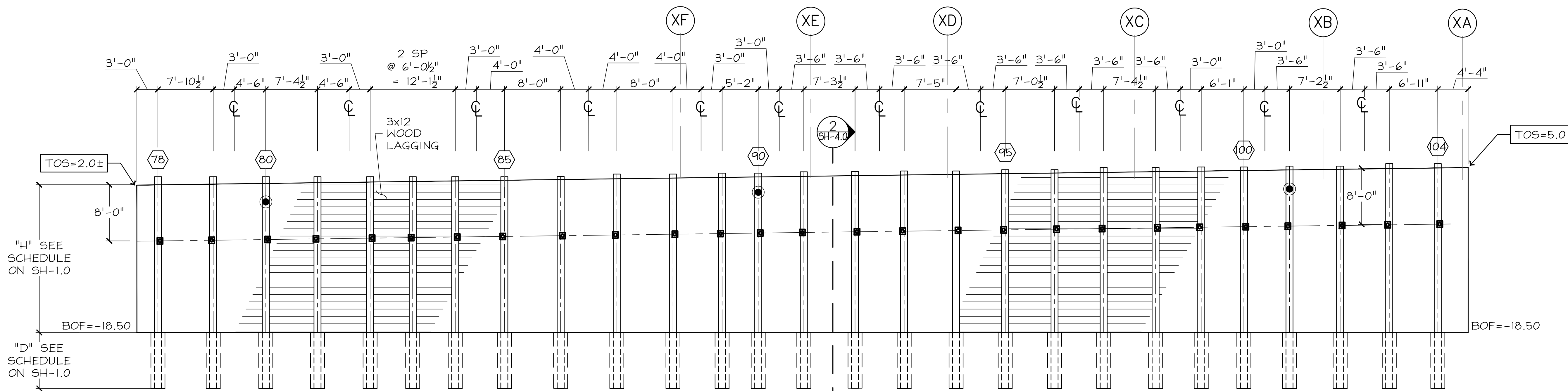
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SHORING
ELEVATIONS

SH-3.1



1 SHORING ELEVATION
SCALE: 1/8" = 1'-0"



2 SHORING ELEVATION
SCALE: 1/8" = 1'-0"

LEGEND

- SURVEY MONITORING POINT
- S/G = SUBGRADE
- 10 SOLDIER BEAM #
- TIEBACK
- 61 II SOLDIER BEAM # INSTALLATION SEQUENCE

TOS: TOP OF STEEL
BOF: BOTTOM OF FOUNDATION
OG: ORIGINAL GRADE

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BROADWAY

OAKLAND
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TEMPORARY
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Owner:

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SUITE 201
LAFAYETTE, CA. 94549

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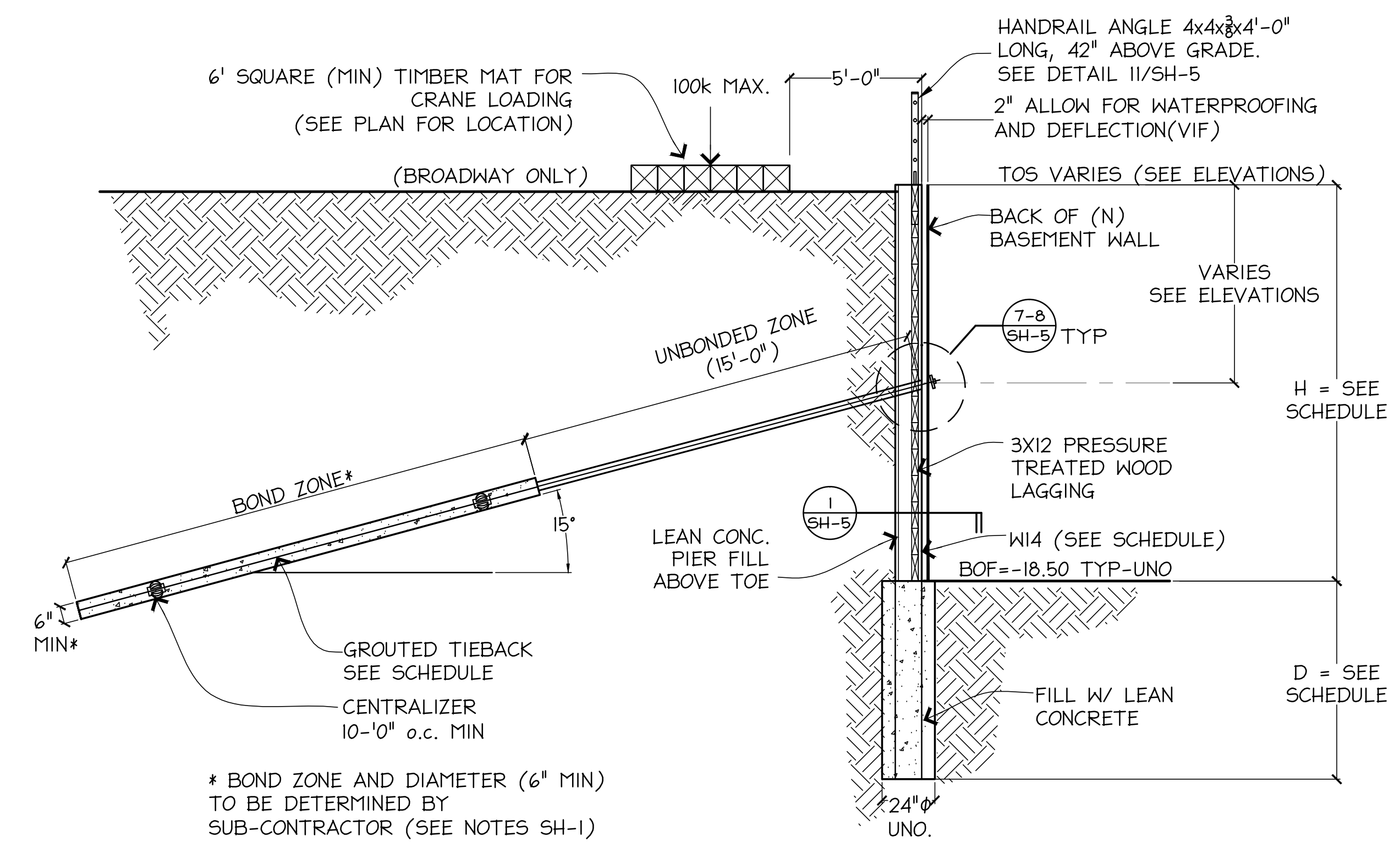


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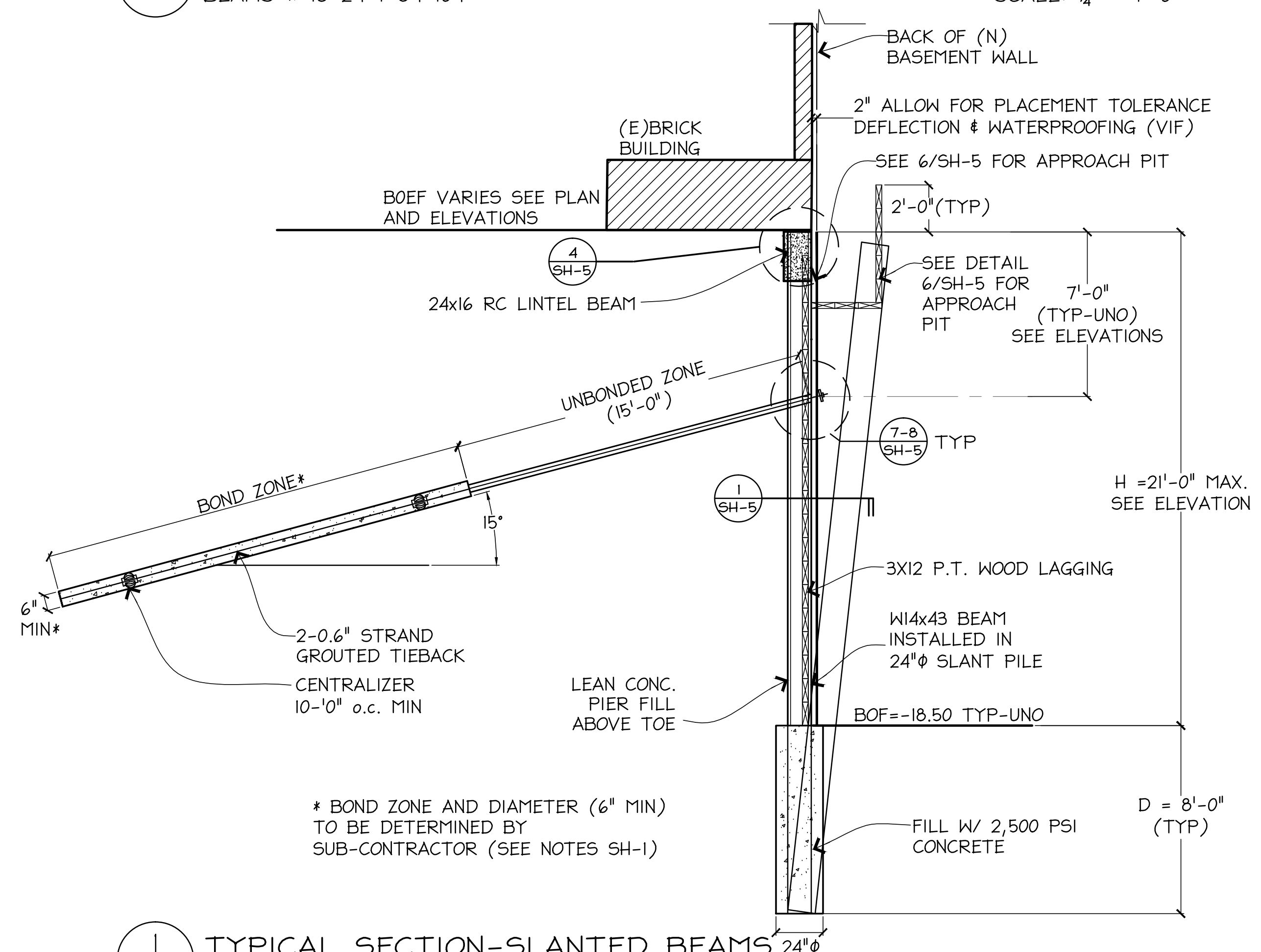
SECTIONS

SH-4



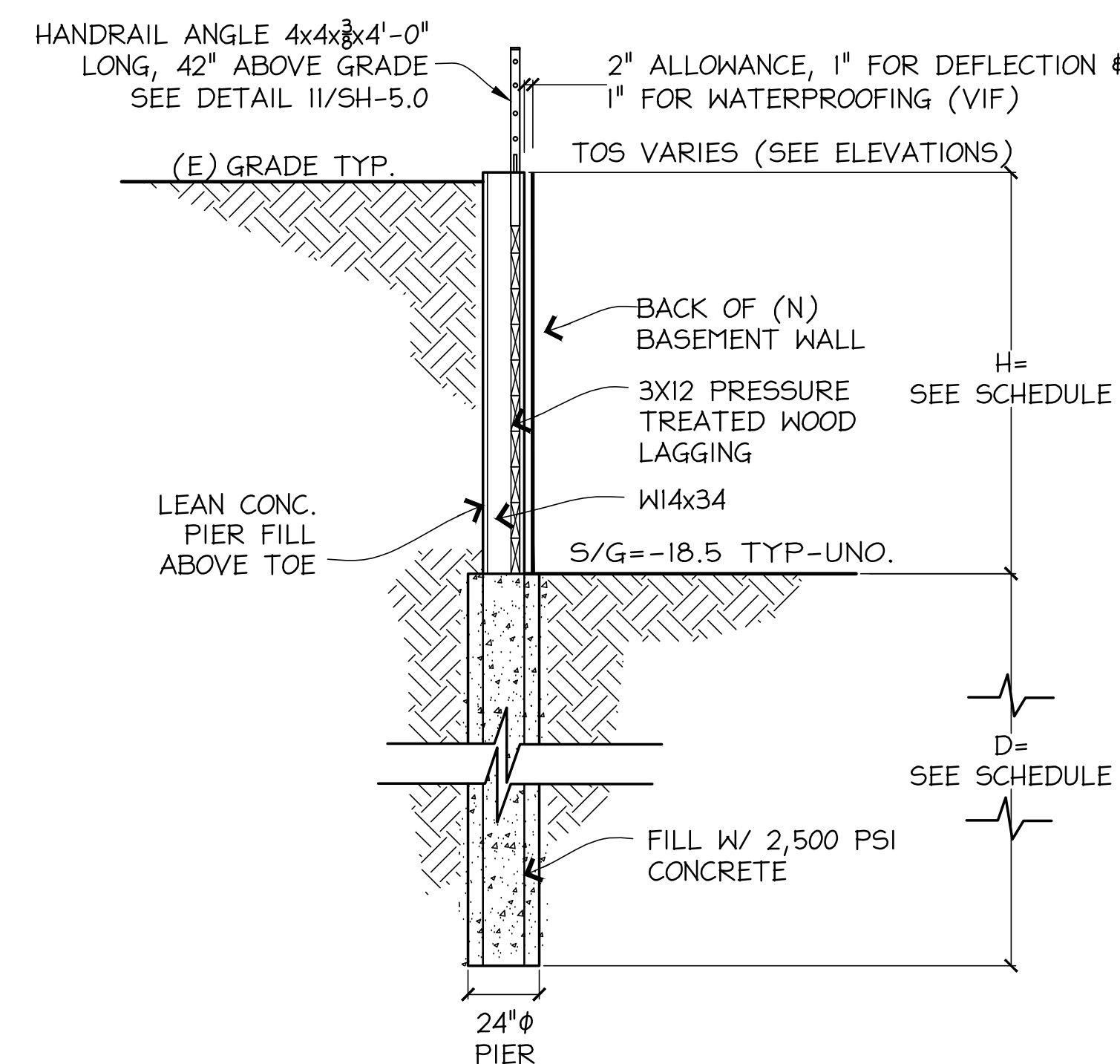
2 TYPICAL SECTION
SH-4 BEAMS # 18-24 & 59-104

SCALE: 1/4" = 1'-0"



1 TYPICAL SECTION-SLANTED BEAMS
SH-4 BEAMS # 1-17

SCALE: 1/4" = 1'-0"



3 SECTION CANTILEVERED BEAMS
SH-4 BEAMS # 25 to 58

SCALE: 1/4" = 1'-0"

3000 BROADWAY

OAKLAND CALIFORNIA

TEMPORARY EXCAVATION SHORING DESIGN

Owner:
LOWE ENTERPRISES

General Contractor:
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971 DEWING AVENUE SUITE 201
LAFAYETTE, CA. 94549
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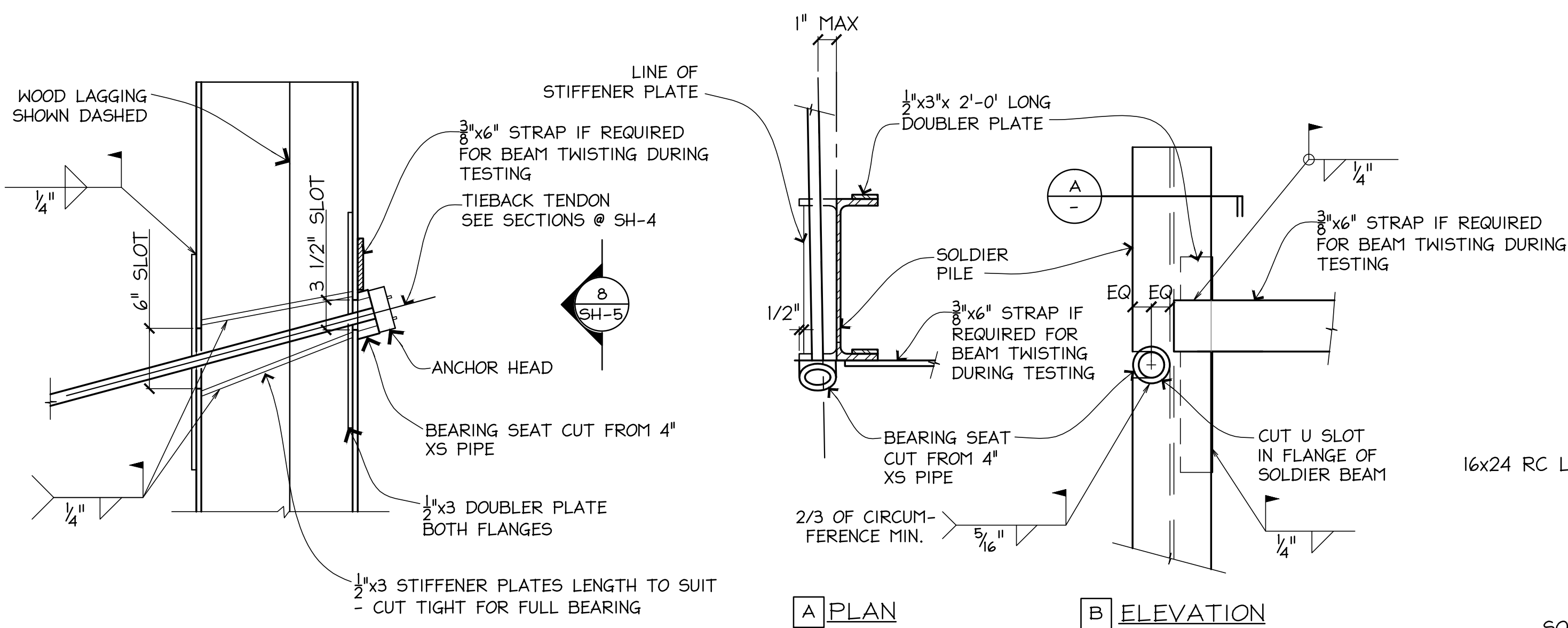


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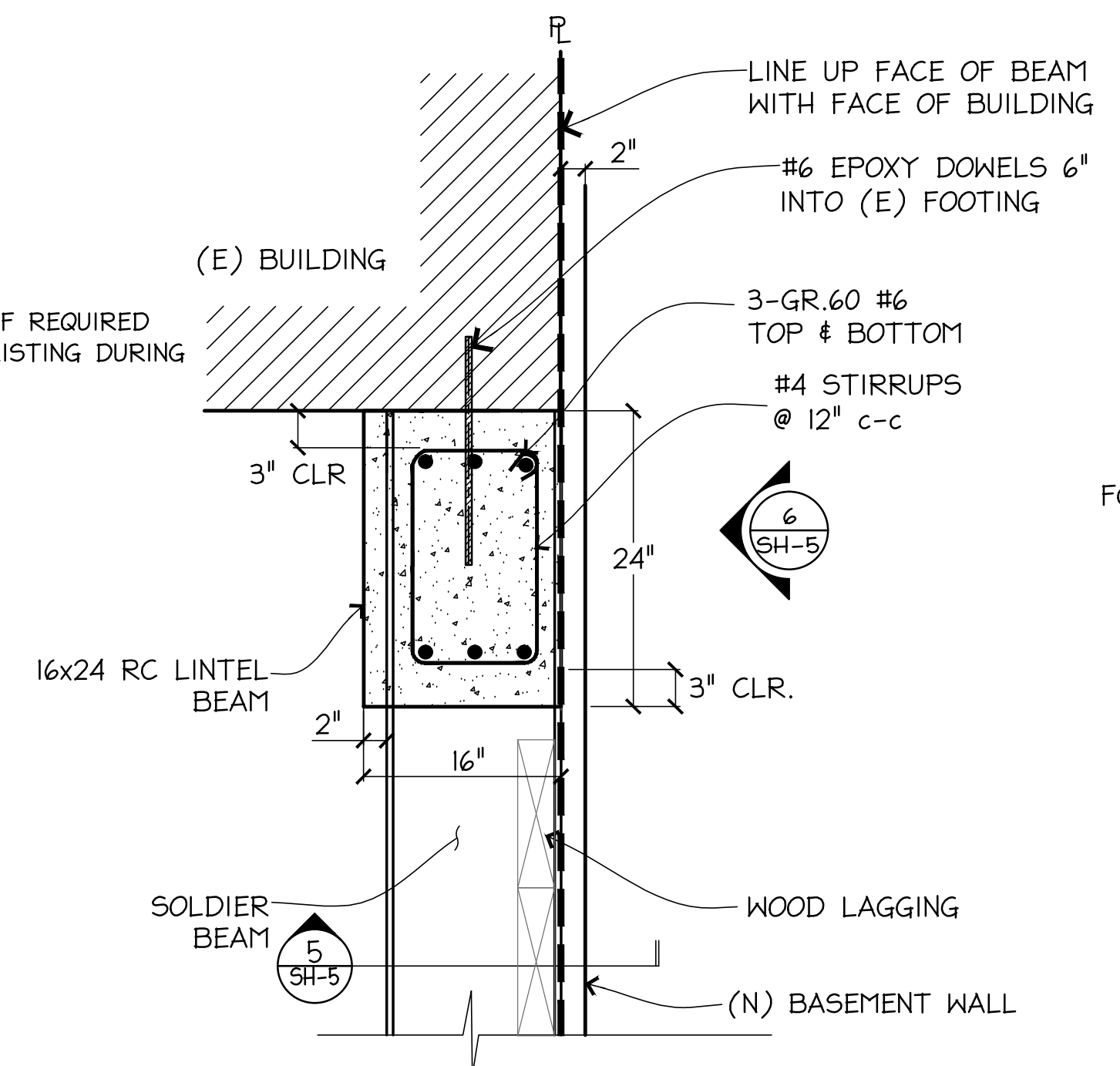
SHORING SECTIONS AND DETAILS

SH-5

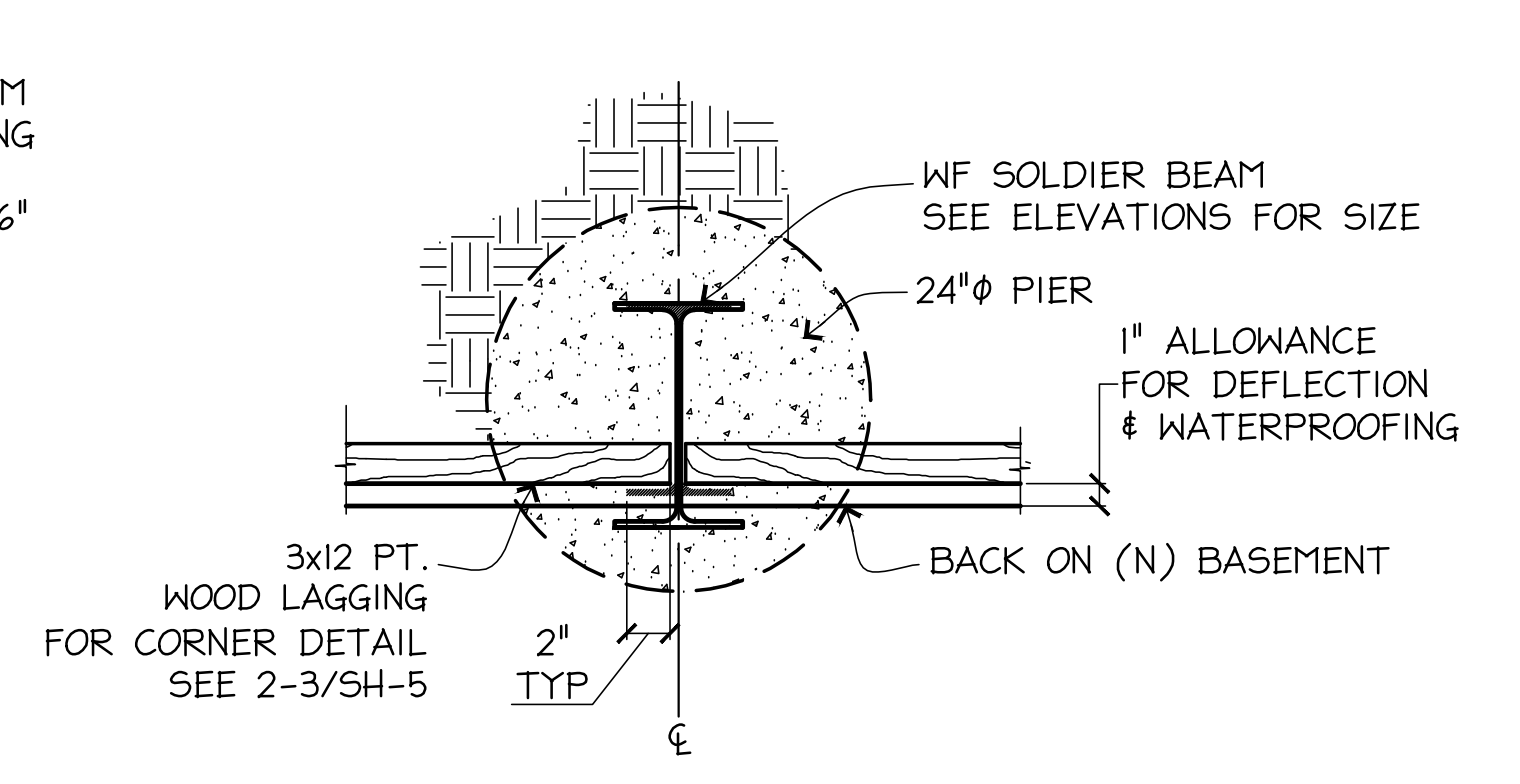


7 TIEBACK SECTION
SH-5 NTS

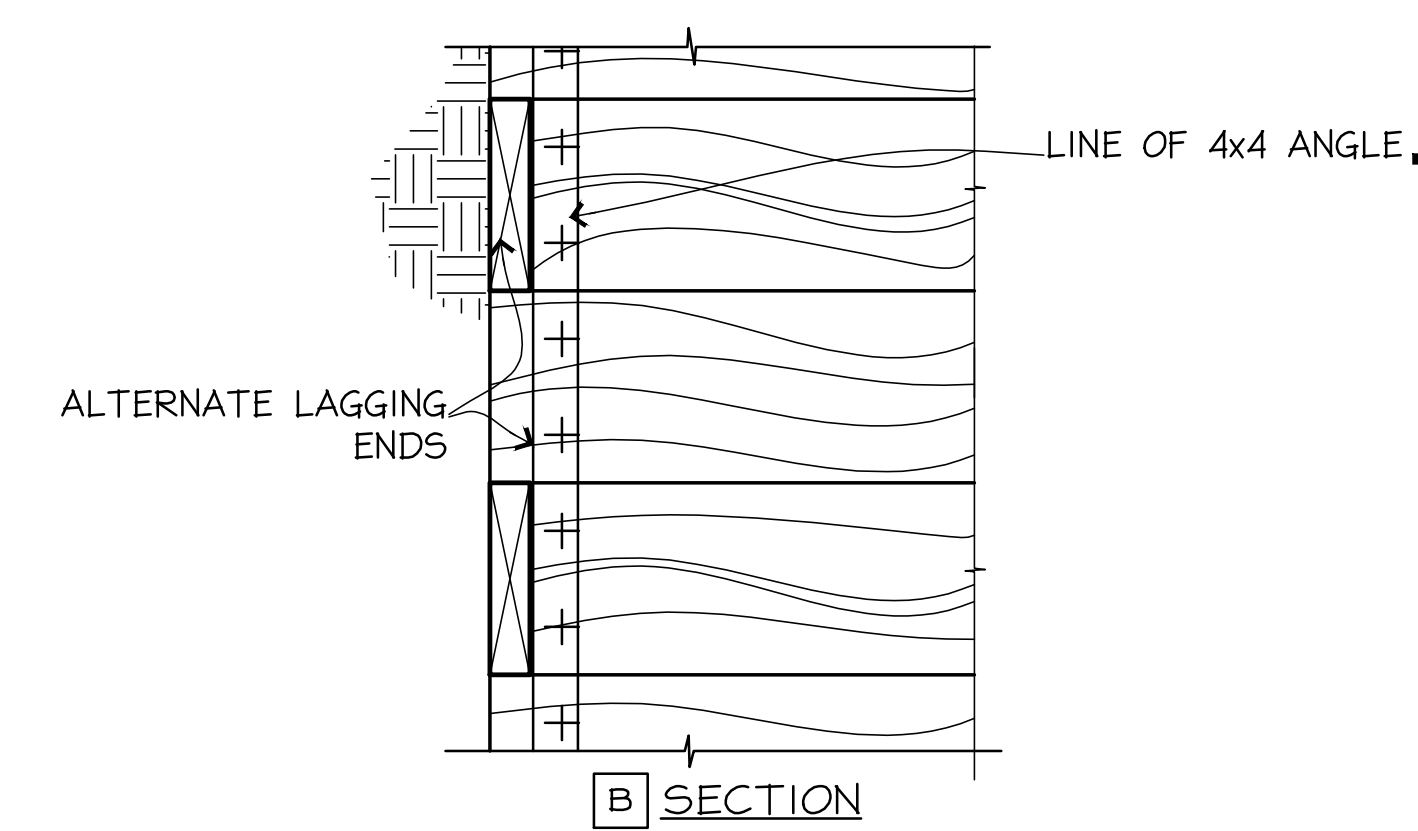
8 TIE POCKET DETAIL
SH-5 NTS



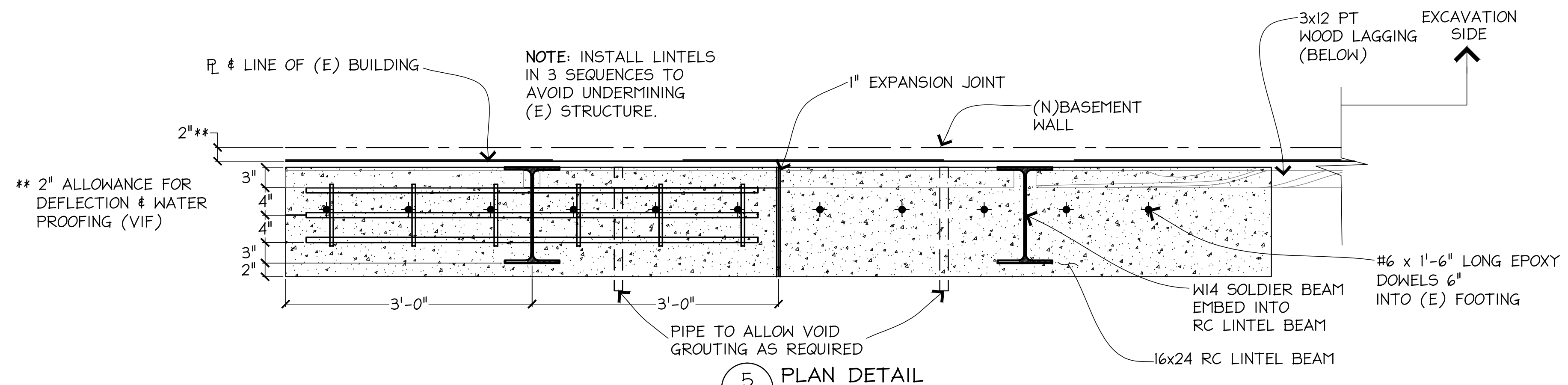
4 SLANT PILE SECTION
SH-5 1" = 1'-0"



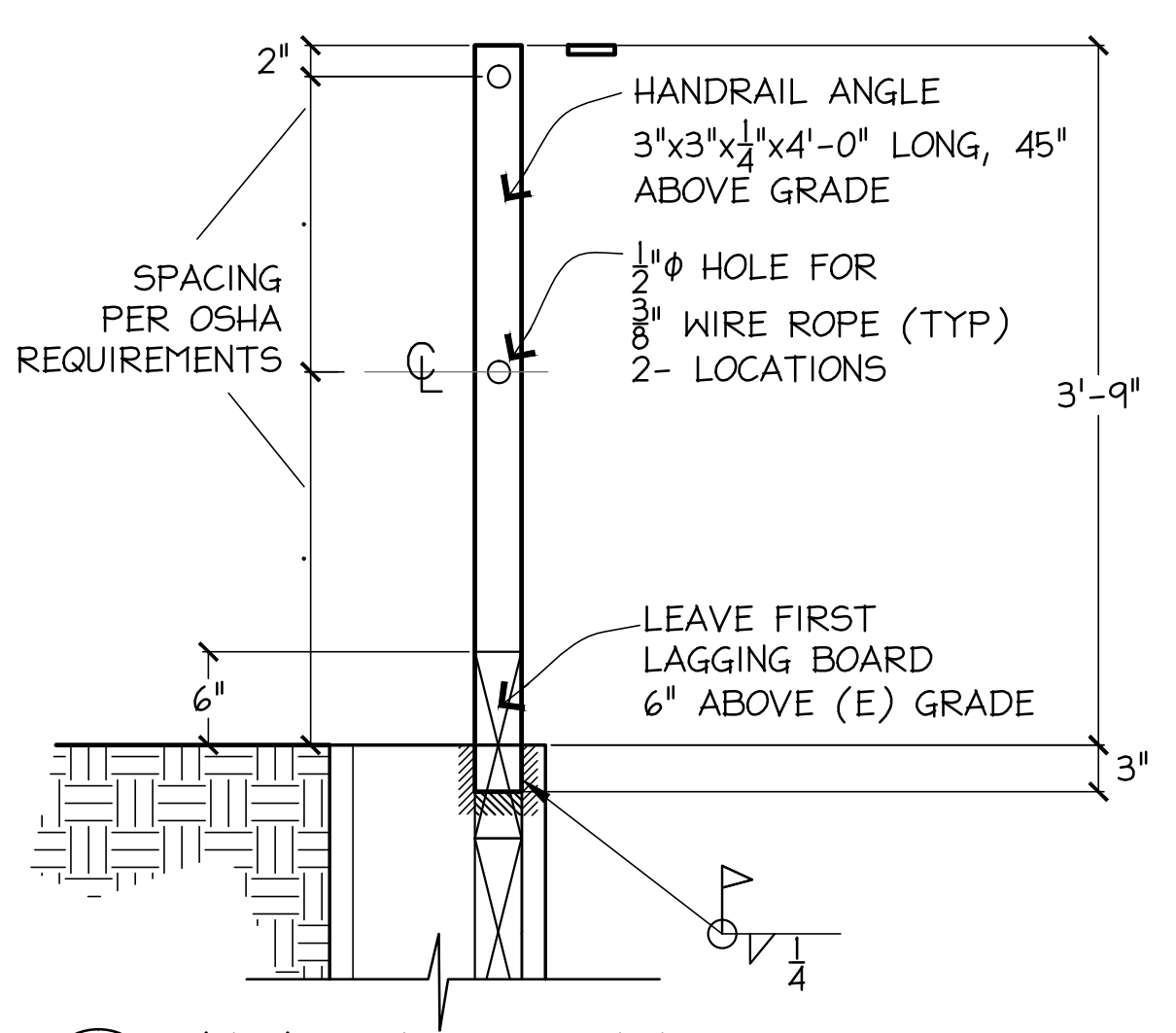
1 TYPICAL SOLDIER PILE PLAN
SH-5 SCALE 1" = 1'-0"



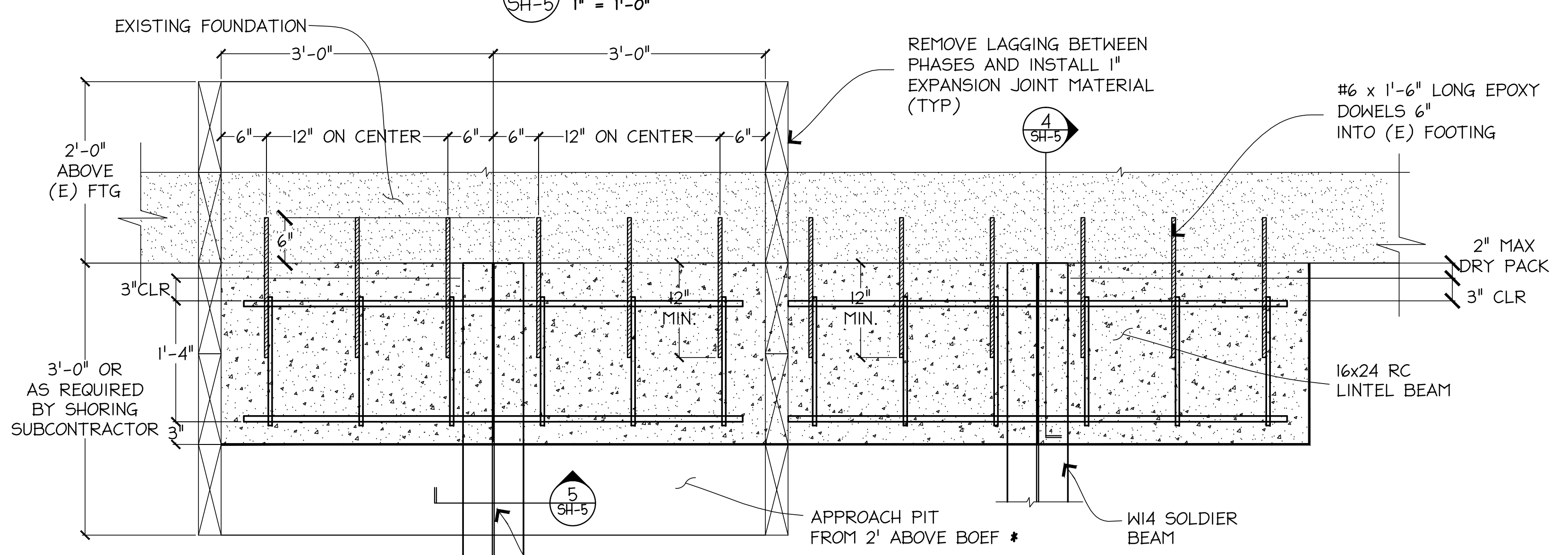
2 TYPICAL CORNER LAGGING DETAIL
SH-5 1" = 1'-0"



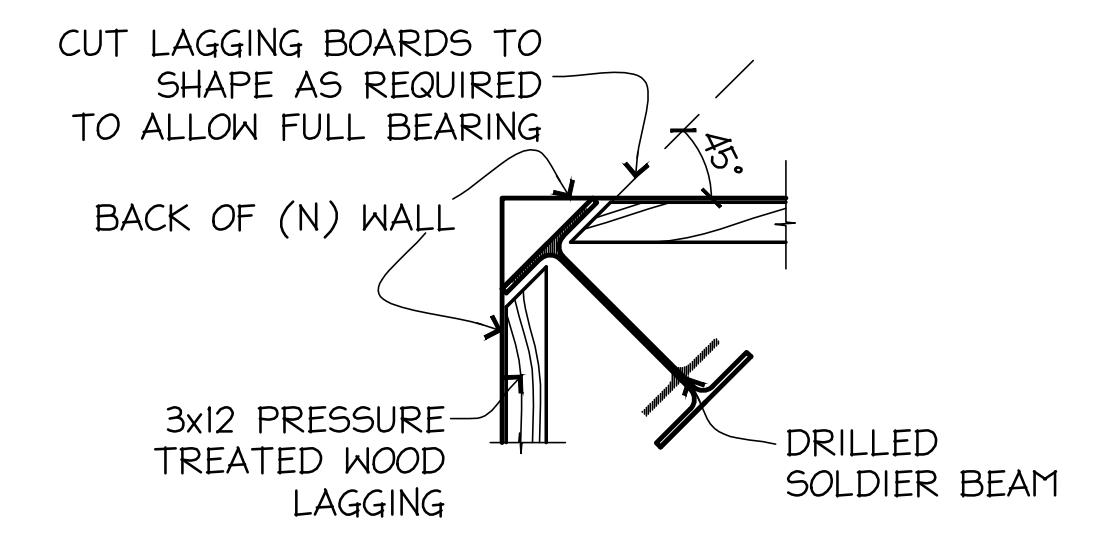
5 PLAN DETAIL
SH-5 1" = 1'-0"



11 HANDRAIL DETAIL
SH-5 SCALE: 1" = 1'-0"



6 SLANT PILE PARTIAL ELEVATION
SH-5 1" = 1'-0"



3 PLAN DETAIL
SH-5 SCALE: 1" = 1'-0"

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