

FNA

associates, inc.

CONSULTING ENGINEERS

670 BERGEN BOULEVARD | SECOND FLOOR
RIDGEFIELD, N.J. 07657
O: 201-241-2444

138 EAST 50TH STREET
NEW YORK | NEW YORK

GENERAL NOTES:

- ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) WHICH IS 1.652 FEET BELOW THE BOROUGH OF MANHATTAN VERTICAL DATUM. SEE NOTE 2.
- THE BOROUGH OF MANHATTAN VERTICAL DATUM IS 2.752 FEET ABOVE U.S.C. AND THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (NGVD29), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
- THE NYCTA ELEVATION IS 1.553 FEET ABOVE THE NAVD88 + 100.0' FOR NEW YORK CITY TRANSIT AUTHORITY COORDINATION (EXAMPLE, NAVD88 EL. 65.0' = NYCTA 163.447')
- PROPOSED FINISHED FIRST FLOOR ELEVATION IS NAVD88 46.07'. (PROJ. EL. 0.0').
- BASE PLANS AND SECTIONS ARE DEVELOPED FROM:
 - STRUCTURAL AND FOUNDATION DRAWINGS BY WSP OF NEW YORK CITY, NY, DATED 09.30.2015.
 - SURVEY DRAWING BY EARL B. LOVELL-S.P. BELCHER, INC OF NEW YORK CITY, NY, DATED 09.10.2013.
 - BORING LOCATION PLAN BY SOIL MECHANICS DRILLING CORP. OF SEAFORD, NY, DATED 02.12.14.
- SOIL DATA OBTAINED FROM:
 - GEOTECHNICAL REPORT BY SOIL MECHANICS DRILLING CORP. OF SEAFORD, NY, DATED 02.12.14.
 - INCLUDING BORINGS AND TEST PITS.
- LOCATION OF EXISTING AND PROPOSED CONDITIONS INCLUDING BUT NOT LIMITED TO FOUNDATION WALL, FOOTINGS AND SLAB LOCATIONS AND ELEVATIONS WERE TAKEN FROM DRAWINGS AND INFORMATION REFERENCE ABOVE.
- LOCATIONS AND ELEVATIONS OF ALL STRUCTURAL BUILDING ELEMENTS SHOWN ON THIS DRAWING MAY BE APPROXIMATE AND SHALL BE SUPERSEDED BY FINAL STRUCTURAL AND ARCHITECTURAL DRAWINGS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITIES AND BELOW GROUND STRUCTURES IN THE AREA OF PRIOR TO COMMENCEMENT OF WORK.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS IN THE FIELD. IF CONDITIONS OBSERVED IN THE FIELD DIFFER FROM THESE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO EVALUATE THE CONDITION. MODIFICATIONS TO THESE DRAWINGS MAY BE NECESSARY.
- THESE DRAWINGS DO NOT ADDRESS SAFETY ISSUES RELATED TO THE EXCAVATION AND SHORING WORK. OTHERS SHALL BE RESPONSIBLE FOR SITE SAFETY AND PROVIDE A SAFETY PLAN CONFORMING TO OSHA AND ALL APPLICABLE LAWS.
- BARRIERS AND FENCING AROUND SITE MUST BE PROVIDED BY CONTRACTOR IN ACCORDANCE WITH NEW YORK CITY DEPARTMENT OF BUILDINGS AND ALL APPLICABLE LAWS.
- IF THE CONDITIONS OBSERVED AS THE EXCAVATION ADVANCES ARE DIFFERENT THAN THE CONDITIONS SHOWN ON THE DESIGN DRAWINGS, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER TO ADDRESS FIELD CONDITIONS.
- OBSERVED MOVEMENTS OF THE SUPPORT OF EXCAVATION OR OTHER STRUCTURES SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER.
- LOOSE AREAS OF FOUNDATION WALL OR FOOTINGS THAT ARE DAMAGED OR LOOSE SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR EVALUATION AND REMEDIAL MEASURES BY THIS OFFICE OR AT DIRECTION OF FIELD PROFESSIONAL ENGINEER.
- PINS, WIRE MESH, AND PARGING MAY BE REQUIRED TO STABILIZE THE FOUNDATION WALL OR FOOTINGS NOT INDICATED IN THESE DRAWINGS.
- ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1 USING E-70 ELECTRODES.
- ALL STRUCTURAL STEEL SHALL BE GRADE 50, ASTM A-572.
- ALL PLATES OR MISCELLANEOUS STEEL SHALL BE GRADE 36, ASTM A36.
- 1-BAG MIX SHALL CONSIST OF 1-94 LB. BAG OF CEMENT TO 1 CY OF SAND. QUANTITY OF WATER SHALL BE ADEQUATE TO ALLOW THE MIX TO FLOW.
- THE DESIGNS ON THESE DRAWINGS ARE INTENDED FOR TEMPORARY SUPPORT OF EXCAVATION ONLY.
- NOTIFY DOB 24 TO 48 HOURS PRIOR TO EXCAVATION (RULE 52).

TIE BACKS AND STRESSED ANCHORAGES:

- CONTRACTOR IS FULLY RESPONSIBLE FOR THE VERIFICATION OF EXISTING UTILITIES AND OTHER EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF DRILLING OPERATIONS.
- STRESSED/LOADED TIE BACK ANCHORAGES SHALL BE GRADE 150KSI, ASTM A722 THREADED BARS SUPPLIED BY STRESSBAR SYSTEMS INTERNATIONAL (SSI), OR APPROVED EQUIVALENT. ALTERNATE HOLLOW CORE, SELF DRILLING ANCHORS ARE ALSO INDICATED IN THESE DRAWINGS, AS SUPPLIED BY SSI-BELLOU, OR APPROVED EQUIVALENT.
- BAR DIAMETERS INDICATED IN THESE DRAWINGS SHALL BE THE MINIMUM SIZE USED. LARGER DIAMETERS MAY BE SUBSTITUTED WITHOUT PRIOR APPROVAL OF ENGINEER.
- DRILL HOLES INDICATED IN THESE DRAWINGS SHALL BE THE MINIMUM PROVIDED. A CHANGE IN DRILL HOLE DIAMETER WILL EFFECT THE REQUIRED BOND LENGTHS INDICATED.
- BOND LENGTHS INDICATED IN THESE DRAWINGS SHALL BE MINIMUM, AND MAY BE SUBJECT TO CHANGE AND/OR VERIFICATION AT DIRECTION OF FIELD PROFESSIONAL ENGINEER.
- THE FIRST TIE-BACK INSTALLED, AND 1% REMAINING ANCHORS SHALL BE SUBJECT TO PERFORMANCE TESTING, UNDER LATEST POST TENSIONING INSTITUTE (PTI) RECOMMENDATIONS FOR SOIL AND ROCK ANCHORS.
- THE BALANCE OF INSTALLED TIE-BACKS SHALL BE PROOF-TESTED TO LOAD VALUES INDICATED ON THESE DRAWINGS.
- ANCHORAGES SUPPORTING THE EXISTING FOUNDATION WALL MAY BE EXEMPT FROM TESTING TO AVOID UNNECESSARY OVERSTRESSING OF THE EXISTING WALL CONSTRUCTION, AT DIRECTION OF FIELD ENGINEER. THESE ANCHORAGES SHALL BE INSTALLED, AND STRESSED TO LOCK-OFF LOADING INDICATED.
- ALL ANCHORAGE STRESSING SHALL BE CONDUCTED USING A CALIBRATED CENTER HOLE HYDRAULIC JACK CAPABLE OF EXCEEDING MAXIMUM TESTING LOADS INDICATED IN THESE DRAWINGS.
- CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING SAFE ENVIRONMENT DURING TESTING, AND ALSO PROVIDING REQUIRED EQUIPMENT (INCLUDING, BUT NOT LIMITED TO, HYDRAULIC JACK, STEEL JACK CHAIRS, DIAL INDICATORS, INDEPENDENT TRI PODS) AS REQUIRED FOR FIELD MEASUREMENTS/VERIFICATION DURING TESTING.
- IF IN THE EVENT A TIE-BACK ANCHOR DOES NOT PASS TESTING, AT THE OPINION OF THE FIELD ENGINEER, ADDITIONAL ANCHORAGES MAY BE REQUIRED TO BE INSTALLED AT LARGER DIAMETERS, LARGER DRILL DIAMETERS, AND/OR LONGER LENGTHS AS REQUIRED TO PROVIDE ADEQUATE CAPACITY TO COMPENSATE FOR THE LOST ANCHORS.
- CONTRACTOR SHALL PROVIDE BOND-BREAK MATERIAL ALONG THE "FREE STRESSING LENGTH" AS INDICATED IN THESE DRAWINGS, UNLESS OTHERWISE INDICATED FOR A "FULL LENGTH BOND" ANCHOR, WHICH CASE THE THREADED BAR SHALL BE CONTINUOUSLY GROUTED ALONG FULL LENGTH.
 - FOR SOLID, GRADE 150KSI THREADED BARS:
 - INSTALLATION SHALL BE VIA CASE DRILLING TO AVOID ANY LOSS OF SOILS.
 - DRILL FULL LENGTH AS INDICATED ON THESE DRAWINGS, MINIMALLY, UNLESS OTHERWISE DIRECTED BY FIELD ENGINEER.
 - INSERT BAR INTO PRE-DRILLED CASING.
 - PUMP CASING WITH GROUT. AS OF COMMON DRILLING PRACTICE, CONTINUE TO "PRESSURE GROUT" WHILE EXTRACTING CASING, AND CYCLE CASING REMOVAL IN-AND-OUT TO CREATE "GROUT BULBS". THIS WILL ENSURE BETTER ANCHOR PERFORMANCE (APPLICABLE TO SOIL BONDED ANCHORS, NEGLECT FOR ROCK BONDED ANCHORS)
 - ALLOW ADEQUATE GROUT CURE PRIOR TO TESTING. 5,000PSI GROUT MIX (TYPICAL, 28-DAY) FOR ANCHORS SHALL CONSIST OF:
 - 1 BAG CEMENT, TYPE 1, 2, OR 3
5 GALLONS POTABLE WATER
 - TESTING TYPICALLY CAN OCCUR WITHIN 3 DAYS OF INSTALLATION, OR AT DIRECTION OF FIELD ENGINEER.
- UPON TESTING OF ALL REQUIRED ANCHORS, A LIFT-OFF TEST MAY BE PERFORMED AT DIRECTION OF FIELD ENGINEER IN ORDER TO VERIFY PROPER LOAD TRANSFER AND TO COMPENSATE FOR ANY SEATING LOSSES. FINAL LOCK-OFF VALUE IS TO BE AT DIRECTION OF FIELD ENGINEER.

SUPPORT OF EXCAVATION NOTES:

- THE TEMPORARY SHEETING WALL (SUPPORT OF EXCAVATION) IS DESIGNED WITH AN ADDED ALLOWABLE SURCHARGE LOADING AT SIDEWALK GRADE AT A VALUE OF 600 POUNDS PER SQUARE FOOT (PSF). HEAVY EQUIPMENT OR MATERIAL STORAGE ANTICIPATED SHALL BE PLACED WITHIN A DISTANCE TO THE SHEETING WALL EQUAL TO THE EXCAVATION DEPTH, MUST BE EVALUATED BY THIS OFFICE FOR ACCEPTANCE PRIOR TO PLACING SAID HEAVY EQUIPMENT.
- STRUCTURAL CONCRETE FOR UNDERPINNING PIERS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000-PSI AT 28 DAYS.
- CONCRETE PIERS AND DRY PACK SHALL BE ALLOWED TO CURE PRIOR TO EXCAVATING ADJACENT PIT, OR ADVANCING THE EXCAVATION IN FRONT OF THE PIT.
- DRY PACK SHALL CONSIST OF ONE PART CEMENT TO TWO PARTS SAND BY VOLUME. WATER SHALL BE ADDED TO PRODUCE A MIXTURE WHICH HOLDS ITS SHAPE WHEN FORMED INTO A BALL BY HAND.
- GROUTING TO STABILIZE SOIL AT UNDERPINNING PITS SHALL BE PERFORMED USING SODIUM SILICATE OR MICROFINE CEMENT. GROUT MIX DESIGN, EQUIPMENT, DRILLING PROCEDURE, AND SEQUENCE SHALL BE PERFORMED BY THE CONTRACTOR AND SUBMITTED FOR REVIEW.
- TIMBER LAGGING SHALL BE ROUGH CUT, FULL SIZE CONSTRUCTION GRADE, WITH A MINIMUM ALLOWABLE BENDING STRESS OF 1900-PSI FOR 3" & 4", 1950-PSI FOR 5". TIMBER SIZES SHOWN ARE NOMINAL SIZES.
- DEPTH OF EXCAVATION BELOW FOOTING AND PREVIOUSLY INSTALLED LAGGING BOARDS SHALL NOT EXCEED 36 INCHES, OR AT DIRECTION FIELD PROFESSIONAL ENGINEER. MAINTAIN TIGHT CONTACT BETWEEN SOIL AND LAGGING BOARDS. IF MATERIAL IS CAVING INTO EXCAVATION, DECREASE THE UNBRACED EXCAVATION DEPTH AND/OR GROUT THE MATERIAL TO MINIMIZE LOSS.
- IF MATERIAL BEHIND LAGGING HAS BEEN LOST OR DISTURBED, LEAVE A 1 TO 1 1/2-INCH SPACE BETWEEN LAGGING BOARDS TO IMMEDIATELY BACKFILL OR GROUT.
- EXCAVATION FOR UNDERPINNING PIERS MUST BE PERFORMED IN DRY CONDITIONS. DEWATERING MAY BE NECESSARY PRIOR TO EXCAVATION TO MAINTAIN WATER LEVELS A MINIMUM OF 1 FOOT BELOW THE PROPOSED SUBGRADE LEVEL OF THE PIER. HAY OR FILTER FABRIC SHALL BE USED TO MINIMIZE MIGRATION OF FINES INTO THE EXCAVATION.
- UNDERPINNING PIER SUBGRADE BEARING MATERIAL SHALL BE EQUAL OR BETTER CLASS THAN THE ORIGINAL BEARING MATERIAL.
- MAXIMUM PIT WIDTH IS 4 FEET UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- APPROACH PITS FOR UNDERPINNING PITS SHOULD CAUSE MINIMAL DISTURBANCE TO SOIL SUBGRADE BELOW THE FOOTING. IT IS THE CONTRACTORS RESPONSIBILITY TO DESIGN THE APPROACH PITS AND EXCAVATE PITS FOLLOWING OSHA AND LOCAL LAWS.
- EXCAVATE PITS SUCH THAT A MINIMUM OF 12 FEET OF UNDISTURBED SOIL OR CURED UNDERPINNING PIER IS MAINTAINED BETWEEN OPEN PITS UNTIL ALL UNDERPINNING IS COMPLETE.
- DO NOT LEAVE PITS OPEN OVERNIGHT OR DURING WEEKENDS OR HOLIDAYS.
- DO NOT START UNDERPINNING WITH A CORNER OR END UNDERPINNING PIER.
- TOP OF UNDERPINNING PIER SHALL MATCH EXISTING FOOTING THICKNESS OR 3'-0" MAX., AND BASE OF UNDERPINNING PIER THICKNESS SHALL BE 3'-0" MIN. IF FIELD CONDITIONS DO NOT ALLOW TO MEET THESE DIMENSIONS CONTACT FNA OFFICE.
- UNDERPINNING SHALL BE CONSTRUCTED IN ONE VERTICAL LIFT, NO COLD JOINTS.
- ROCK BOLTS MAY BE REQUIRED BASED ON ROCK FACE OBSERVATIONS AT DIRECTION OF FIELD PROFESSIONAL ENGINEER.
- CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH NEW YORK CITY BUILDINGS BULLETIN #2009-11, AS APPLICABLE, FOR ONE FACE FORMS AND NEW FOUNDATION WALL POURS AGAINST ADJACENT FOUNDATION WALLS.

DRILLED PIPE SOLDIER PILES & LAGGING:

- SOLDIER PILE CASING SHALL BE INSTALLED USING INTERNAL FLUSH DUPLEX DRILLING METHOD. CONTRACTOR SHALL ADJUST DRILLING PROCEDURE AS REQUIRED TO PREVENT LOSS OF GROUND, SETTLEMENT AND/OR LATERAL MOVEMENT OF BUILDINGS, UTILITIES, AND OTHER STRUCTURES.
- NO LOSS OF MATERIAL FROM THE OUTSIDE OF THE SOLDIER PILE WILL BE PERMITTED. THE CONTRACTOR SHALL ADOPT THE NECESSARY DRILLING PROCEDURES TO PREVENT LOSS OF MATERIAL FROM AROUND THE OUTSIDE OF THE SOLDIER PILE.
- STEEL CASING SHALL HAVE A MINIMUM WALL THICKNESS OF 0.50-INCHES. SPLICES IN THE CASING SHALL BE THREADED AND FULLY WELDED (ADDITIONAL INTERNAL REINFORCEMENT MAY BE REQUIRED IF SEAMS ARE NOT WELDED.)
- THE BOTTOM OF EACH DRILLED SOLDIER PILE SHALL BE PROTECTED BY A HIGH-STRENGTH CUTTING SHOE WITH HARDENED CUTTING EDGE.
- NO CONCRETE OR GROUT SHALL BE PLACED AT ANY SOLDIER PILE LOCATION UNTIL TIP ELEVATION HAS BEEN CONFIRMED, CLEANED OF MUD AND ANY EXTRANEOUS MATERIAL, AND INSPECTED AND APPROVED BY THE FIELD ENGINEER.
- CONCRETE OR GROUT SHALL BE PLACED CONTINUOUSLY FOR THE FULL DEPTH OF THE SOLDIER PILE STARTING AT THE BOTTOM. NO COLD JOINT IS ALLOWED.
- FINAL DETERMINATION OF THE ELEVATION OF THE SOLDIER PILE TIP WILL BE DETERMINED BY THE FIELD ENGINEER.
- THE ENGINEER MAY DIRECT AN INCREASE IN SOLDIER PILE DEPTH FROM THAT SPECIFIED HEREIN OR AS SHOWN ON THE DRAWINGS IF INFERIOR SOIL IS ENCOUNTERED ABOVE THE ORIGINAL MINIMUM TIP ELEVATION.
- NO SOLDIER PILE SHALL BE OUT OF PLUMB MORE THAN ONE PERCENT (1%) OF ITS EMBEDDED LENGTH.
- BEFORE BRACING IS INSTALLED, MAXIMUM EXCAVATION BELOW BRACING LEVEL IS 2-FT FOR WALERS AND RAKERS UNLESS NOTED ON DRAWING OR AT DIRECTION OF FIELD ENGINEER.
- LAGGING SHALL BE INSTALLED AS THE EXCAVATION ADVANCES WITH A MAXIMUM DEPTH OF 2-FT PRIOR TO LAGGING INSTALLATION. THE MAXIMUM DEPTH EXPOSURE MAY BE ADJUSTED DEPENDENT ON OBSERVED SOIL CONDITIONS UNDER THE REVIEW OF THE SPECIAL INSPECTOR. NO PERSON SHALL ENTER ADJACENT TO AN UNSHORED VERTICAL SOIL CUT EXCEEDING 5'-0"
- IF MATERIAL BEHIND LAGGING HAS BEEN LOST OR DISTURBED, LEAVE A 1- TO 1-1/2 INCH SPACE BETWEEN LAGGING BOARDS TO IMMEDIATELY BACKFILL OR GROUT.
- HAY OR FILTER FABRIC SHALL BE USED TO MINIMIZE MIGRATION OF FINES INTO THE EXCAVATION.

MINIPILE INSTALLATION NOTES:

- ALL PILES SHALL BE INSTALLED AT LOCATIONS AS SHOWN ON CONTRACT DRAWINGS.
- LAYOUT OF PILE LOCATIONS BY G.C. (SURVEYED IN PLACE).
- UTILITY IDENTIFICATION AND EXPLORATION AS NECESSARY BY G.C.
- THE DIAMETER OF THE CUTTING SHOE OF THE CASING SHALL NOT EXCEED THE OUTER DIAMETER OF THE CASING BY 1/4-INCH.
- "GROUT" TO MIXTURE OF SAND AND CEMENT-GROUT TO ATTAIN SPECIFIED STRENGTH.
- A SET OF SIX 2-INCH BY 2-INCH CUBES OF GROUT SHALL BE TAKEN EACH DAY DURING WHICH MINIPILES ARE GROUTED. CUBES SHALL BE THEN TESTED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH THE CONTRACT SPECS.

NOTE: WHEN CLEANING THE INSIDE CASING, 2-DIAMETERS OR TWO FOOT SHOULD BE MAINTAINED BEHIND THE TIP OF THE OUTER CASING.
- CASING IS DRILLED-IN TO THE BOTTOM OF THE GROUT (BOND) ZONE AS INDICATED ON DRAWINGS.
- FLUSH HOLE CLEAN OF SPOILS. IF PILE TIP IS BELOW GWT, FLUID LEVEL INSIDE CASING, AND GROUT THE PILE FROM THE BOTTOM TO DISPLACE THE DRILLING FLUID. CONTINUE GROUTING UNTIL GOOD GROUT FLOWS OUT THE TOP OF THE PILE.
- INTRODUCE REINFORCING THREADED BAR WITH SPACERS, AND PUSH TO THE BOTTOM OF THE PILE.
- START PULLING THE CASING IN 5-FOOT INCREMENTS WHILE PUMPING GROUT AND MAINTAINING 75 PSI GROUT PRESSURE BUT NOT EXCEEDING 100 PSI.

NOTE: GROUTING OF THE BOND ZONE WILL CEASE IF OVER 150% OF ITS THEORETICAL VOLUME IS PUMPED IN. ACTUAL VOLUME TO BE SPECIFIED BY CONTRACTOR.
- WHEN CASING REACHES THE ELEVATION REQUIRED BY THE INFLUENCE LINE IT SHALL BE PUSHED BACK DOWN 5-FEET.
- CUT THREADED BAR TO PROPER ELEVATION AS SHOWN ON CONTRACT DRAWINGS.
- THE INSTALLATION OF ADDITIONAL PILES IN THE SAME CAP SHALL NOT BE INSTALLED UNTIL GROUT HAS CURED FOR AT LEAST 24 HOURS.

SURVEY AND MONITORING NOTES:

- A PRE-CONSTRUCTION (PRE-CONDITION) SURVEY OF THE ADJACENT STRUCTURES SHALL BE COMPLETED PRIOR TO CONSTRUCTION COMMENCEMENT. THE CONTRACTOR SHALL REVIEW AND FAMILIARIZE HIMSELF WITH THE RESULTS OF THE SURVEY. THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE ADJACENT STRUCTURES (INSIDE AND OUT) PRIOR TO STARTING THE WORK.
- MONITOR THE ADJACENT BUILDINGS AT 50-FT INTERVALS FOR VERTICAL AND LATERAL MOVEMENT.
- OBTAIN BASELINE READINGS OF THE MONITORING POINTS PRIOR TO AND DURING EXCAVATION AND NEW CONSTRUCTION. BASELINE SURVEY SHALL INCLUDE ESTABLISHING VERTICAL AND HORIZONTAL BENCHMARKS OF ALL ADJACENT BUILDINGS. IN ADDITION TO BENCHMARKS, "TELL-TALES" SHALL BE INSTALLED ON ANY OBSERVED EXISTING CRACKS AND OTHER CRITICAL/SENSITIVE AREAS.
- FREQUENCY OF MONITORING WILL VARY DURING PROGRESS OF WORK. PERFORM OPTICAL SURVEYS (BY OTHERS) AT LEAST ONCE PER DAY DURING INITIAL/CRITICAL EXCAVATIONS AND UNDERPINNING. DURING GENERAL EXCAVATIONS, FREQUENCY SHALL BE AT LEAST ONCE PER WEEK. IF MOVEMENTS OCCUR, INCREASE THE FREQUENCY OF THE READINGS AS DIRECTED BY THE ENGINEER. ALL SURVEY/MONITORING REPORTS SHALL BE PROVIDED TO THIS OFFICE DAILY OR UPON COMPLETION OF THAT DAY'S READINGS.
- VIBRATION MONITORS (SEISMOGRAPHS-BY OTHERS) SHALL BE PLACED ADJACENT TO AREAS WHERE WORK IS BEING PERFORMED. NOTE THAT SEISMOGRAPH LOCATIONS ARE NOT SHOWN ON THE SUPPORT OF EXCAVATION PLAN FOR CLARITY (NYCTA MONITORING BY OTHERS)
- BUILDING MOVEMENT AND VIBRATION CRITERIA: (NOTE: THE FOLLOWING DOES NOT APPLY TO LANDMARK STRUCTURES, REFER TO OTHER NOTES)
 - IF THE VERTICAL OR LATERAL BUILDING MOVEMENT REACHES 1/4-INCH IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER.
 - IF THE BUILDING EXCEEDS 1/4-INCH, IMMEDIATELY INFORM THE CONSTRUCTION MANAGER AND ENGINEER AND STOP WORK. THE WORK SHALL RESUME UPON APPROVAL BY THE CONSTRUCTION MANAGER AND APPROVED REMEDIAL MEASURES AND/OR MODIFIED CONSTRUCTION PROCEDURES BY THE ENGINEER.
 - IF THE VIBRATIONS REACH 1-INCHES PER SECOND (IPS) THE CONSTRUCTION MANAGER AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
 - IF THE VIBRATIONS EXCEED 2-IPS, IMMEDIATELY INFORM THE CONSTRUCTION MANAGER AND ENGINEER AND STOP WORK. THE WORK SHALL RESUME UPON APPROVAL BY THE CONSTRUCTION MANAGER AND APPROVED REMEDIAL MEASURES AND/OR MODIFIED CONSTRUCTION PROCEDURES BY THE ENGINEER.
- VIBRATION MONITORS SHALL TAKE REAL TIME READINGS UNDER DIRECTION OF VIBRATION CONTRACTOR/CONSULTANT.
- ALL MONITORING DATA SHALL BE PRESENTED TO THE CONSTRUCTION MANAGER AND ENGINEER AT THE END OF EACH DAY AS APPLICABLE.
- LOCATIONS OF ALL SURVEY POINTS AND VIBRATION STATIONS ARE NOT SPECIFIED UNDER THESE DRAWINGS AND SHALL BE BY SURVEYOR/MONITORING CONTRACTOR.

LANDMARK NOTES:

TO THE BEST OF OUR OFFICE'S KNOWLEDGE, THERE IS NO DESIGNATED LANDMARK STRUCTURE THAT IS WITHIN 90 FEET OF THE EXTENTS OF THE PROJECT SITE LIMITS.

SPECIAL INSPECTIONS REQUIRED UNDER THESE DRAWINGS:

- EXCAVATION: SHEETING, SHORING, BRACING (BC 1704.20.2)
- UNDERPINNING (BC 1704.20.3, BC 1814)
- CONCRETE TEST CYLINDERS (BC 1905.6, BC 1913.10)
- CONCRETE DESIGN MIX (BC 1905.3, BC 1913.5)

ENERGY CODE:

TO THE BEST OF THIS OFFICE'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, ALL WORK UNDER THIS APPLICATION IS IN COMPLIANCE WITH THE NYCECC 2010.

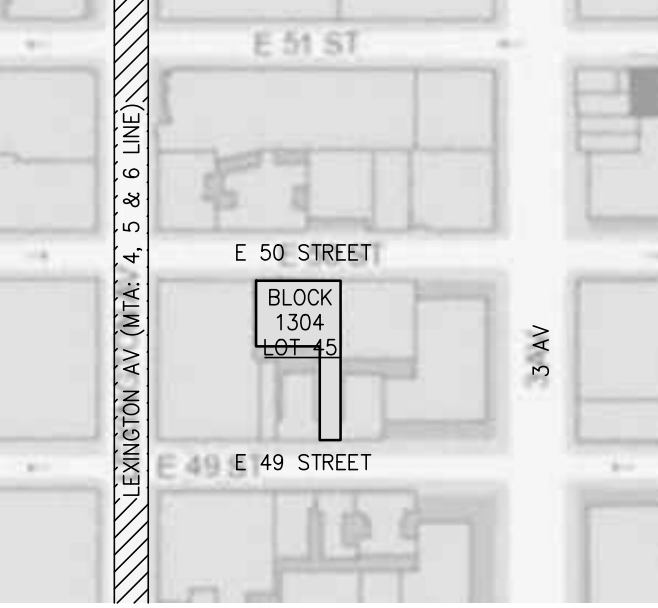
COORDINATION NOTE:

ALL WORK TO BE PERFORMED SHALL BE COORDINATED BETWEEN THE CONTRACTOR AND APPLICABLE UTILITY COMPANIES AND/OR CITY DEPARTMENTS AS REQUIRED.

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| 2 | DOB FILING | 10/21/15 |
| 1 | FND UPDATE | 09/30/15 |
| No: Revision: | | Date: |

SCALE:
AS NOTED

KEY PLAN:



DRAWING TITLE:

GENERAL NOTES

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| SEAL | Date: 05-23-14 |
| | PROJECT No: 14018 |
| | Drawn By: AB |
| | DWG. No: SOE-001.00 |
| | 1 OF 11 |

Shauqat Shaikh

Buildings

APPROVED

Under Directive 2 of 1975

AMENDED APPLICATION

Date: 11/24/2015

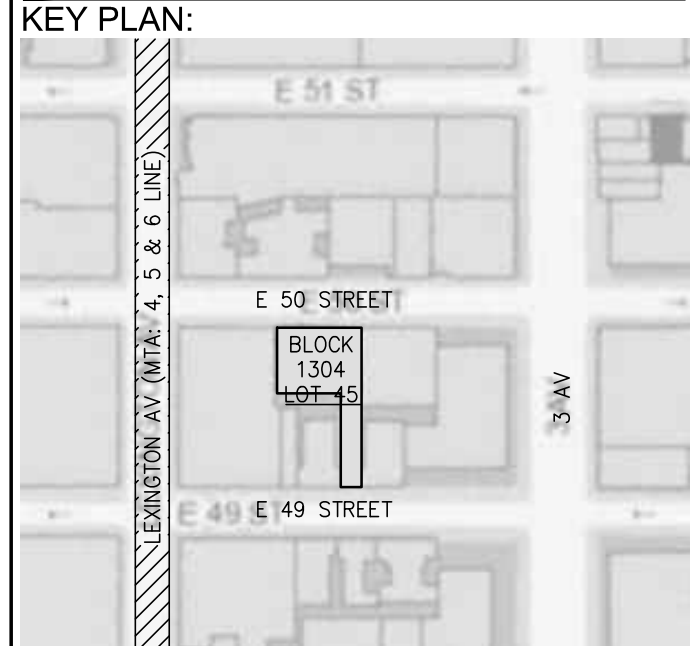
NYC Development Hub

FNA
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O: 201-241-2444

138 EAST 50TH STREET
NEW YORK | NEW YORK

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| 2 | DOB FILING | 10/21/15 |
| 1 | FND UPDATE | 09/30/15 |
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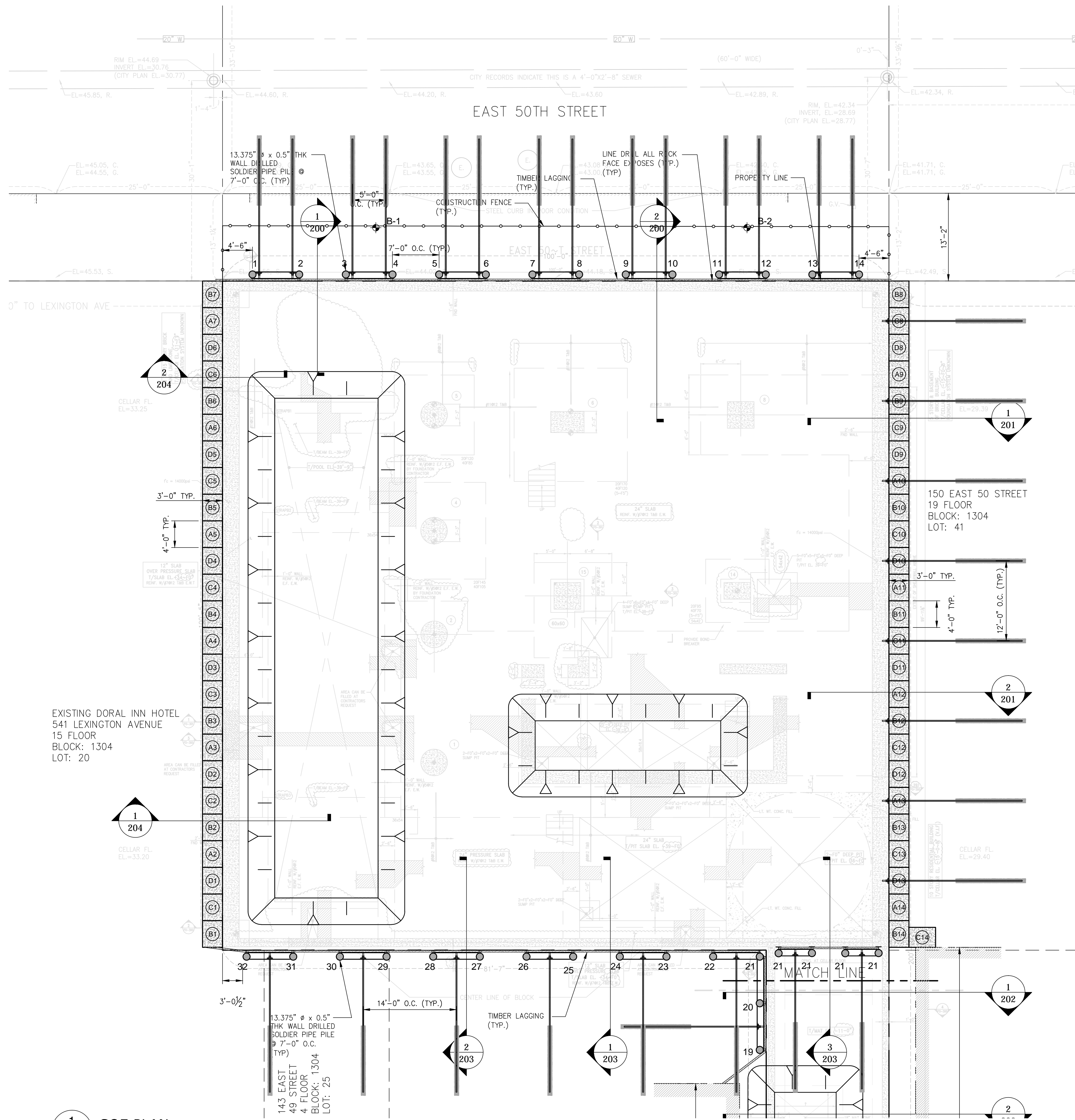
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AS NOTED



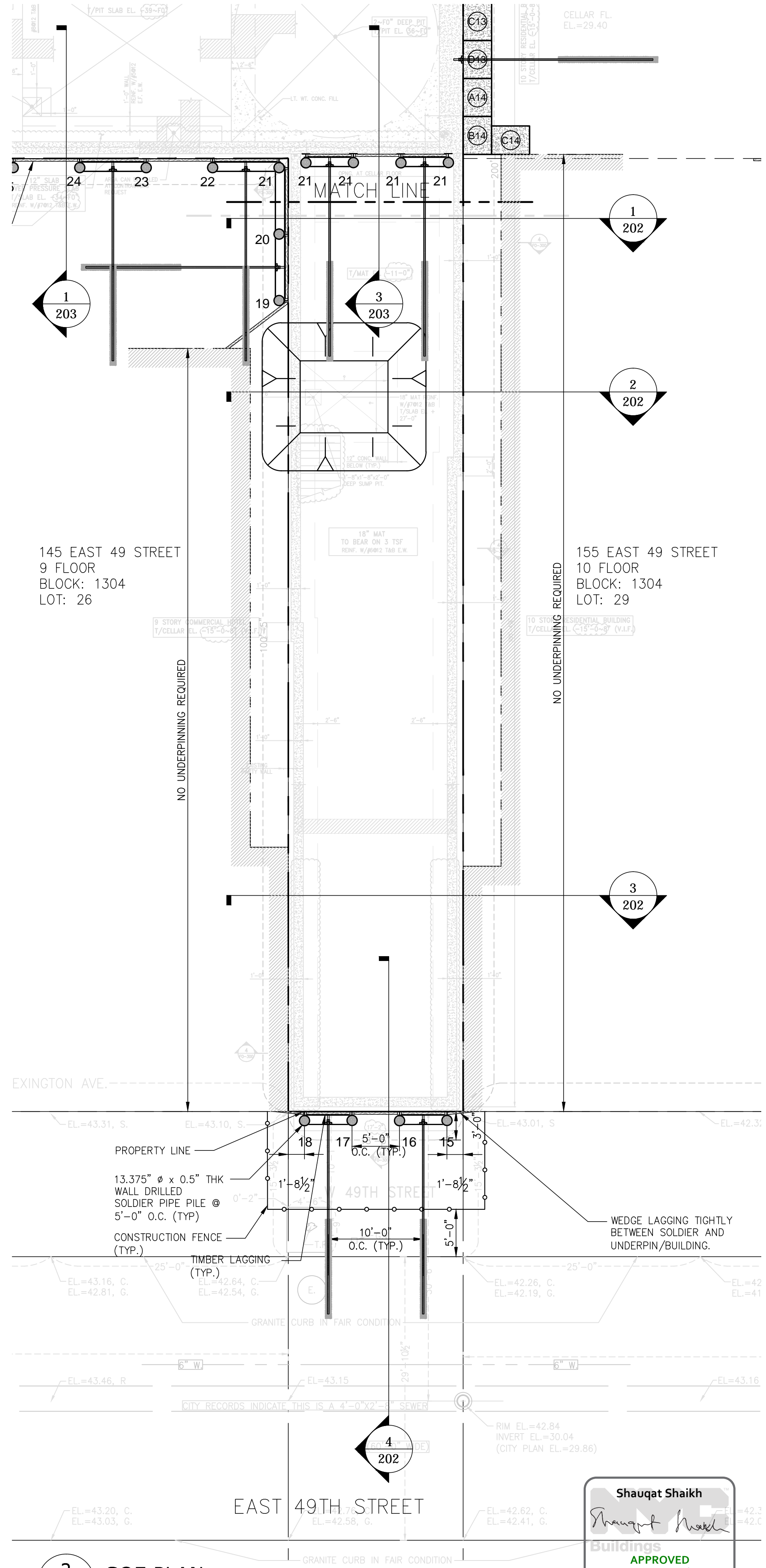
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SOE PLAN

SEAL:
Date: 05-23-14
PROJECT No: 14018
Drawn By: AB
DWG. No: SOE-110.00
2 OF 11



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



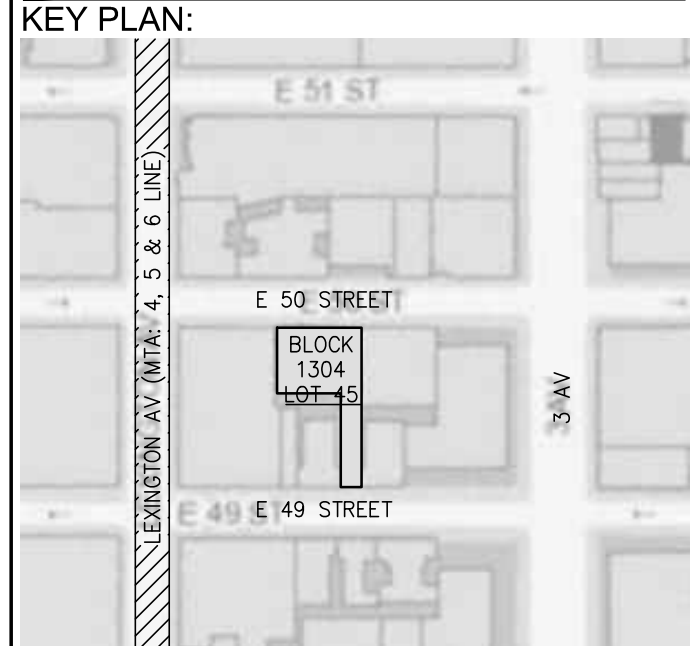
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SOE PLAN
SCALE: 1/8" = 1'-0"

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| 2 | DOB FILING | 10/21/15 |
| 1 | FND UNDATE | 09/30/15 |
| No: Revision: | | Date: |

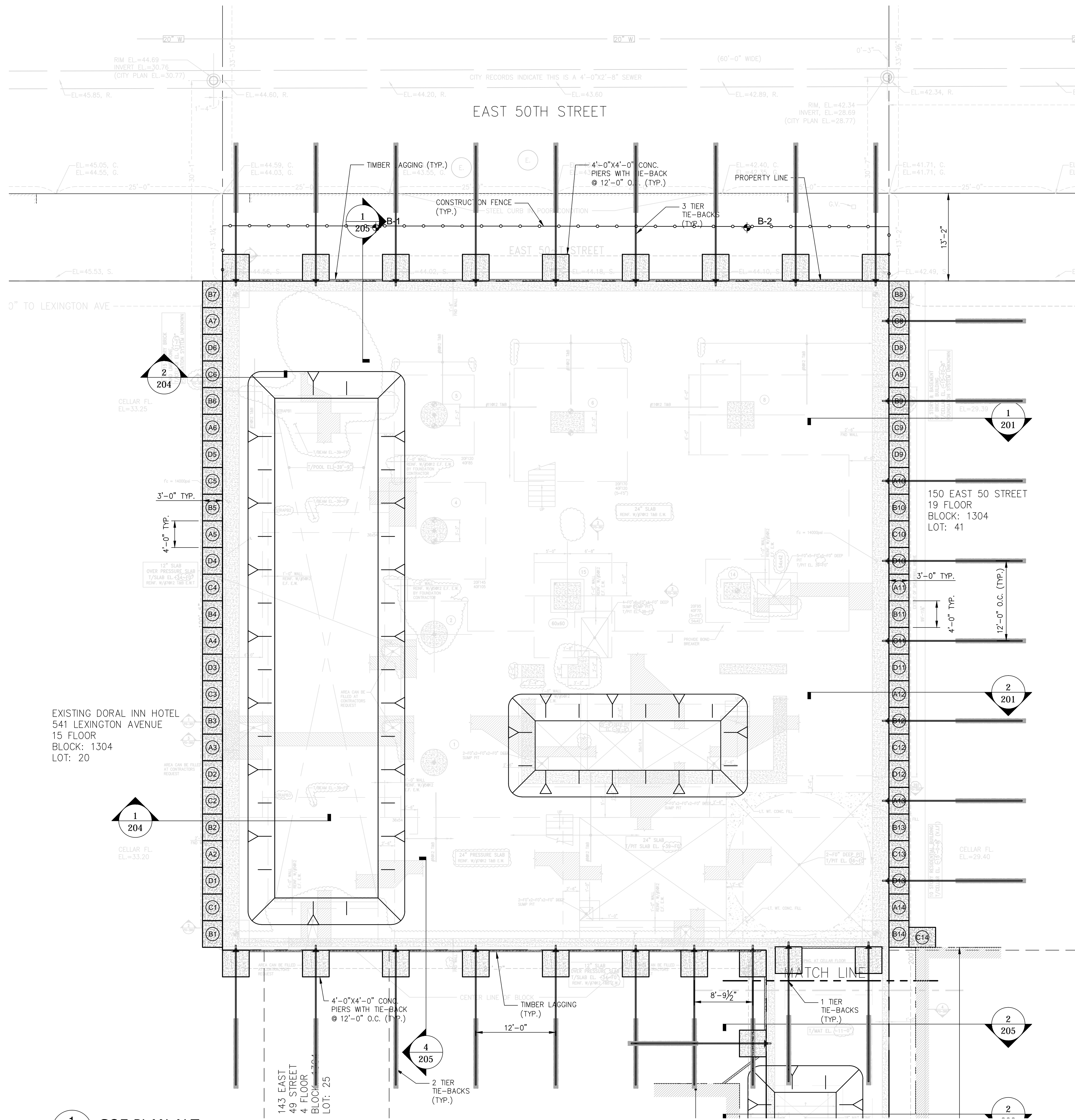
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AS NOTED



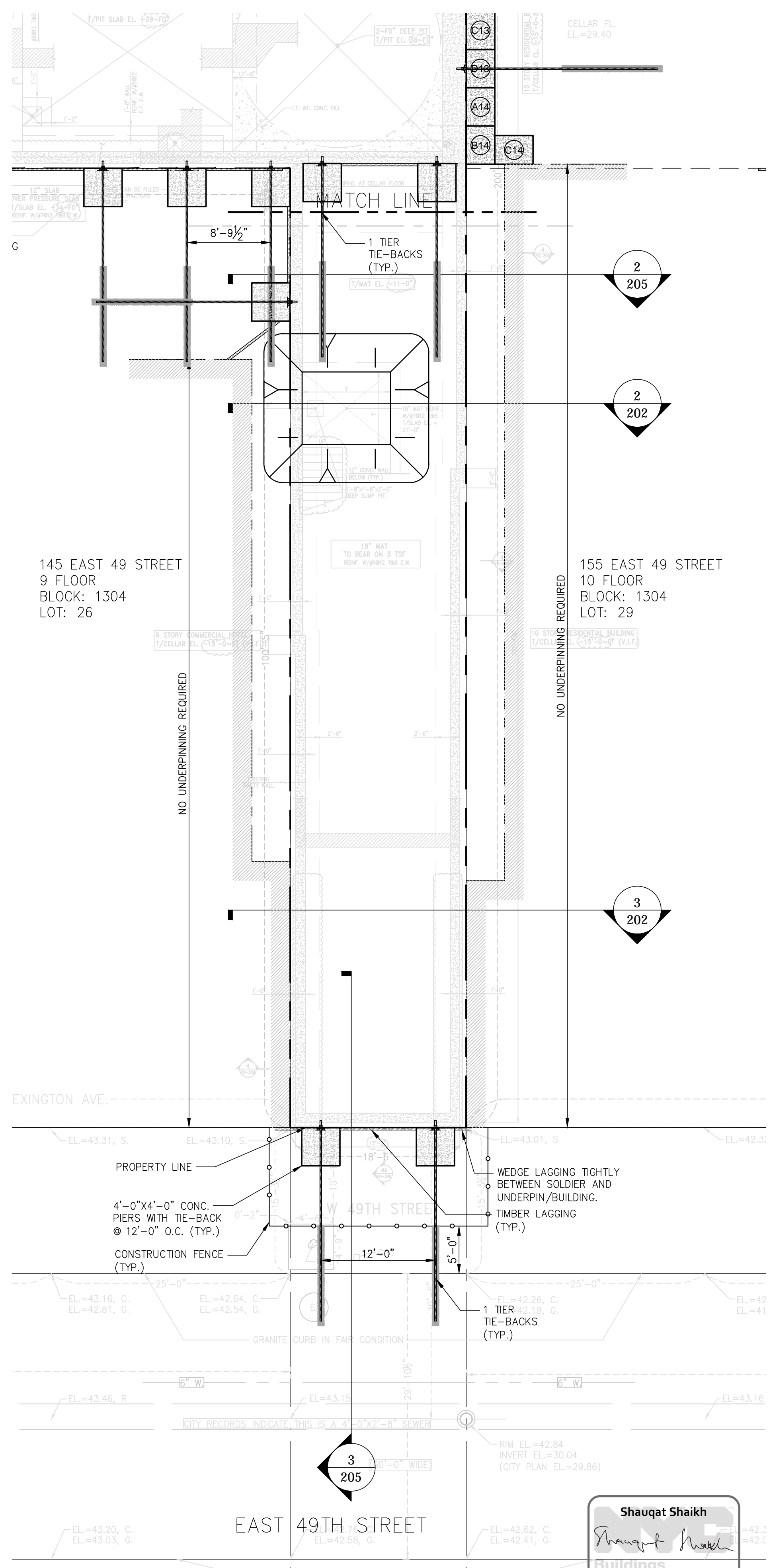
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SOE PLAN ALT.

SEAL

Date: 05-23-14
PROJECT No: 14018
Drawn By: AB
DWG. No: SOE-111.00
3 OF 11



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SOE PLAN ALT.
SCALE: 1/8" = 1'-0"

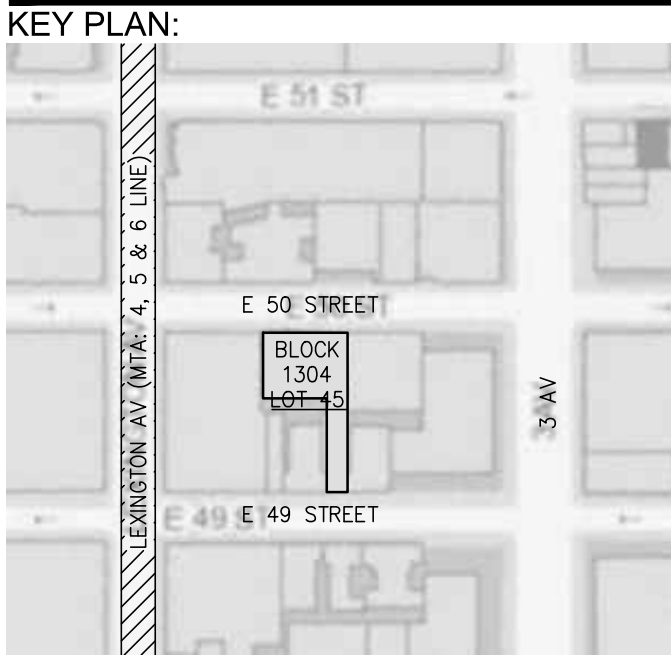


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SOE PLAN ALT.
SCALE: 1/8" = 1'-0"

138 EAST 50TH STREET
NEW YORK | NEW YORK

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| 2 | DOB FILING | 10/21/15 |
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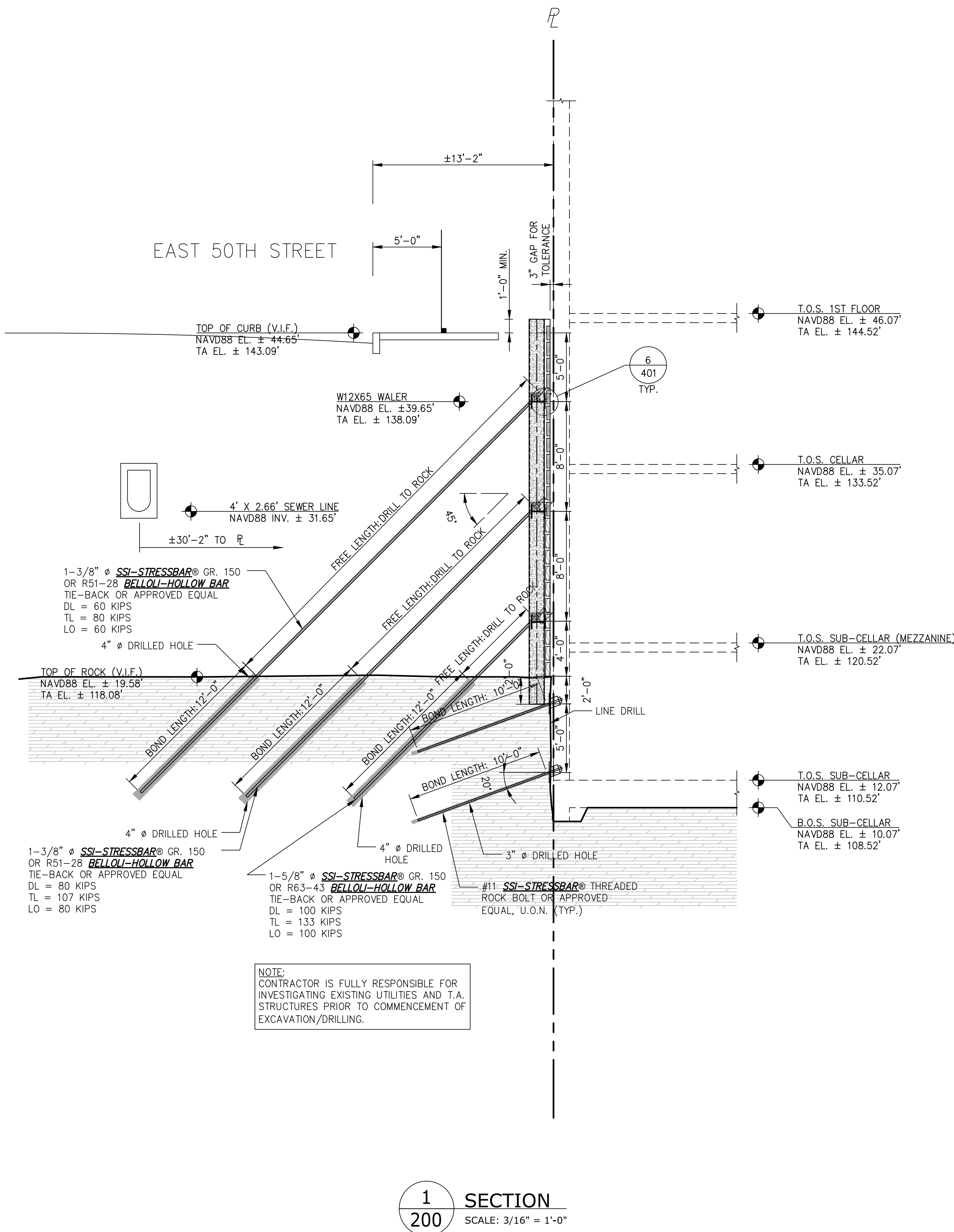
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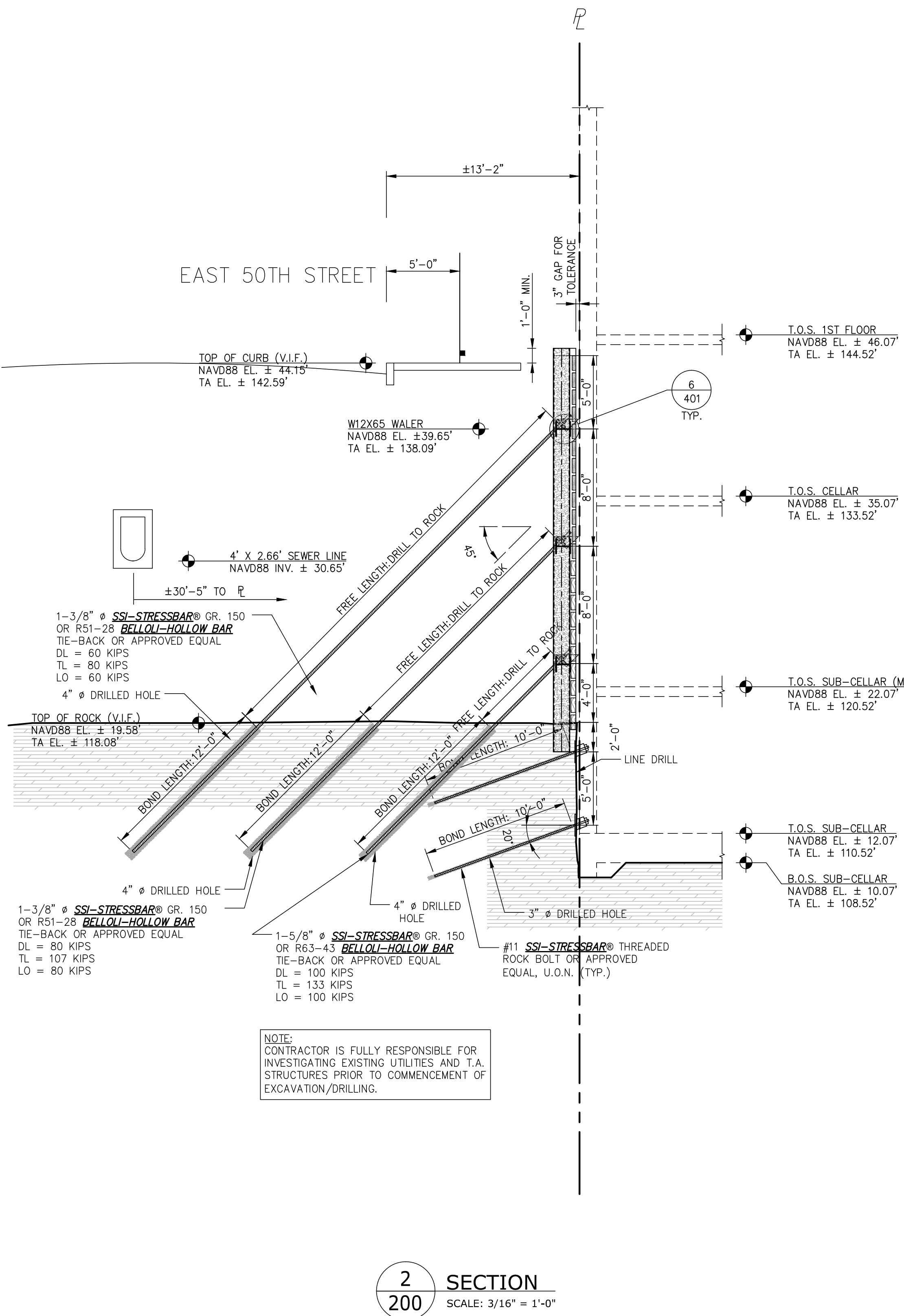
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SECTIONS

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| SEAL | Date: 05-23-14 |
| PROJECT No: 14018 | Drawn By: AB |
| DWG. No: SOE-200.00 | 4 OF 11 |



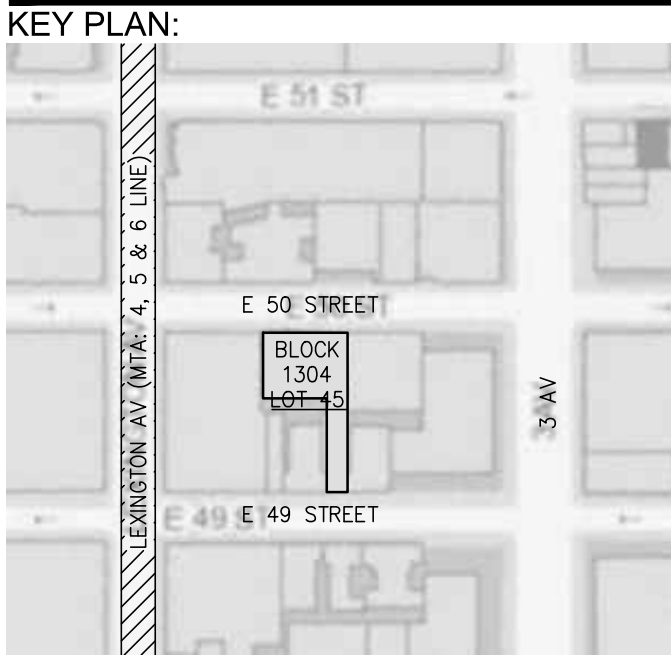
| EX. GROUND SURFACE | N-VALUE | |
|--|-------------|------------------------|
| CONCRETE 6" | | 0.00' T.A. EL. 143.05' |
| DK. GRAY BRN. W/ BRN. SAND, SILT, GRAVEL, CLAY (FILL) (HAND AUGERED) | | |
| BRN. SILTY SAND, TR. GRAVEL, ROCK FRAG., CLAY (SM)(FILL)(7) | 1/2 2/2 | 5.00' |
| BRN. W/ GRAY SILTY FINE SAND (SM)(3b) | 4/4 5/5 | 10.00' |
| DK. GRAY SILTY CLAY, TR. V.F.-F. SAND (CL)(4b) | 3/4 4/4 | 15.00' |
| GRAY/ GRAY BRN. SAND, TR. GRAVEL, ROCK FRAG., SILT (SP)(3b) | 8/8 9/10 | 20.00' |
| DECOMPOSED ROCK (1d) | 100/4 | 25.00' |
| 5' CORE RUN Bx CORE BARREL (SCHIST) (48%)(1c) | | 30.00' |
| END OF BORING | | 35.00' |
| | | 40.00' |
| | | 45.00' |
| | | 50.00' |
| | | 55.00' |
| | | 60.00' |



138 EAST 50TH STREET
NEW YORK | NEW YORK

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| 2 | DOB FILING | 10/21/15 |
| 1 | FND UPDATE | 09/30/15 |
| No: Revision: | | Date: |

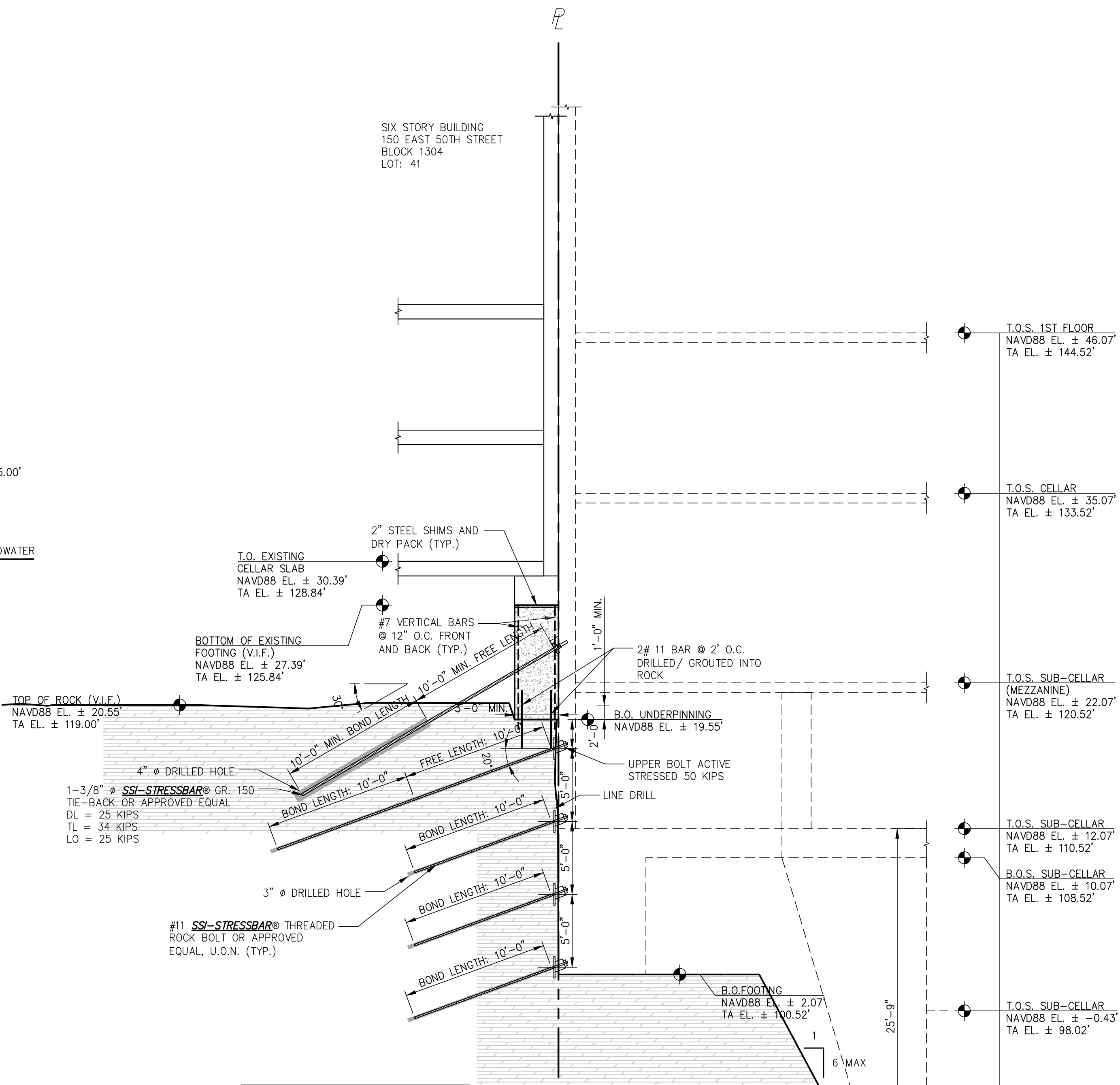
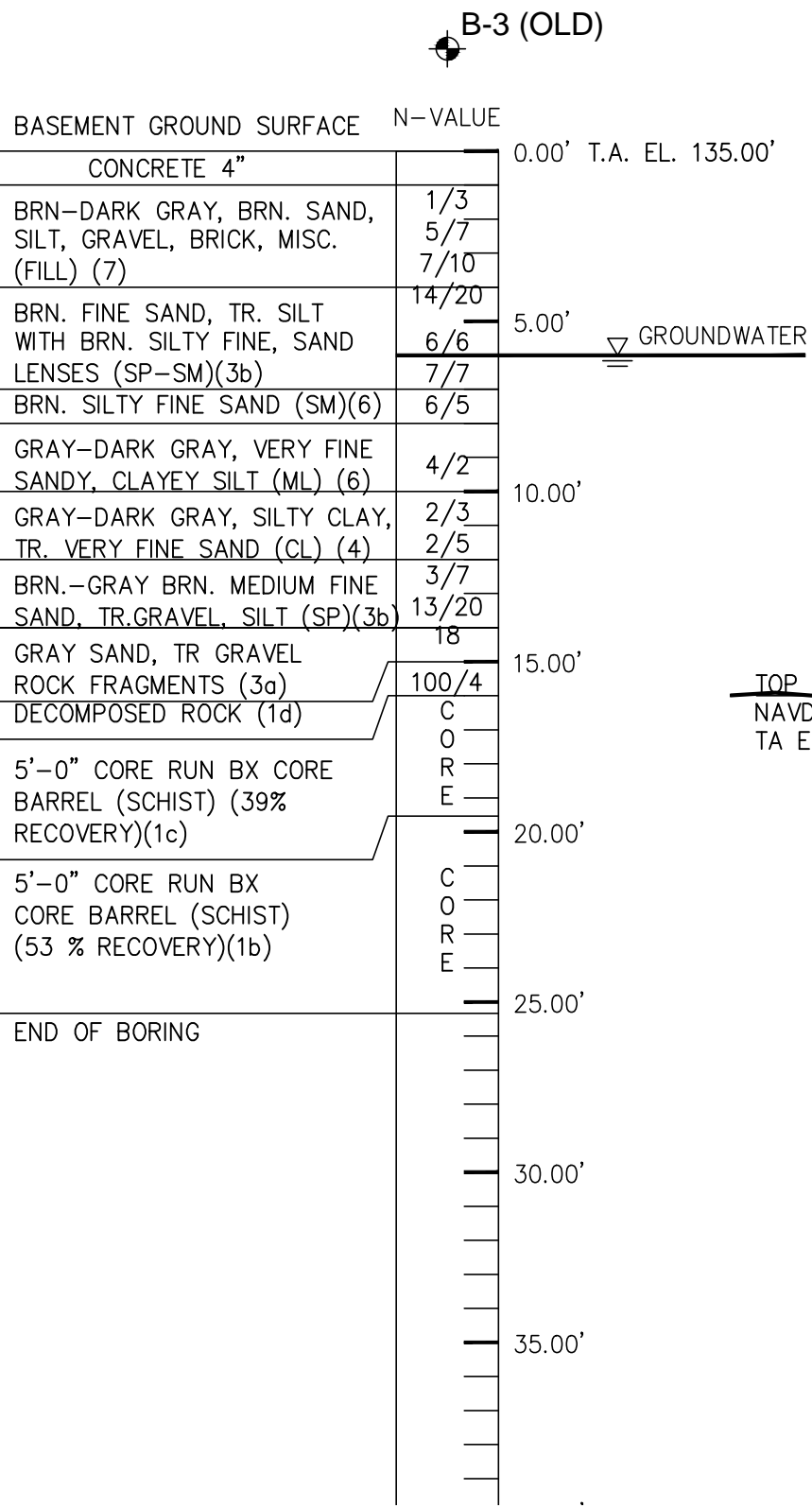
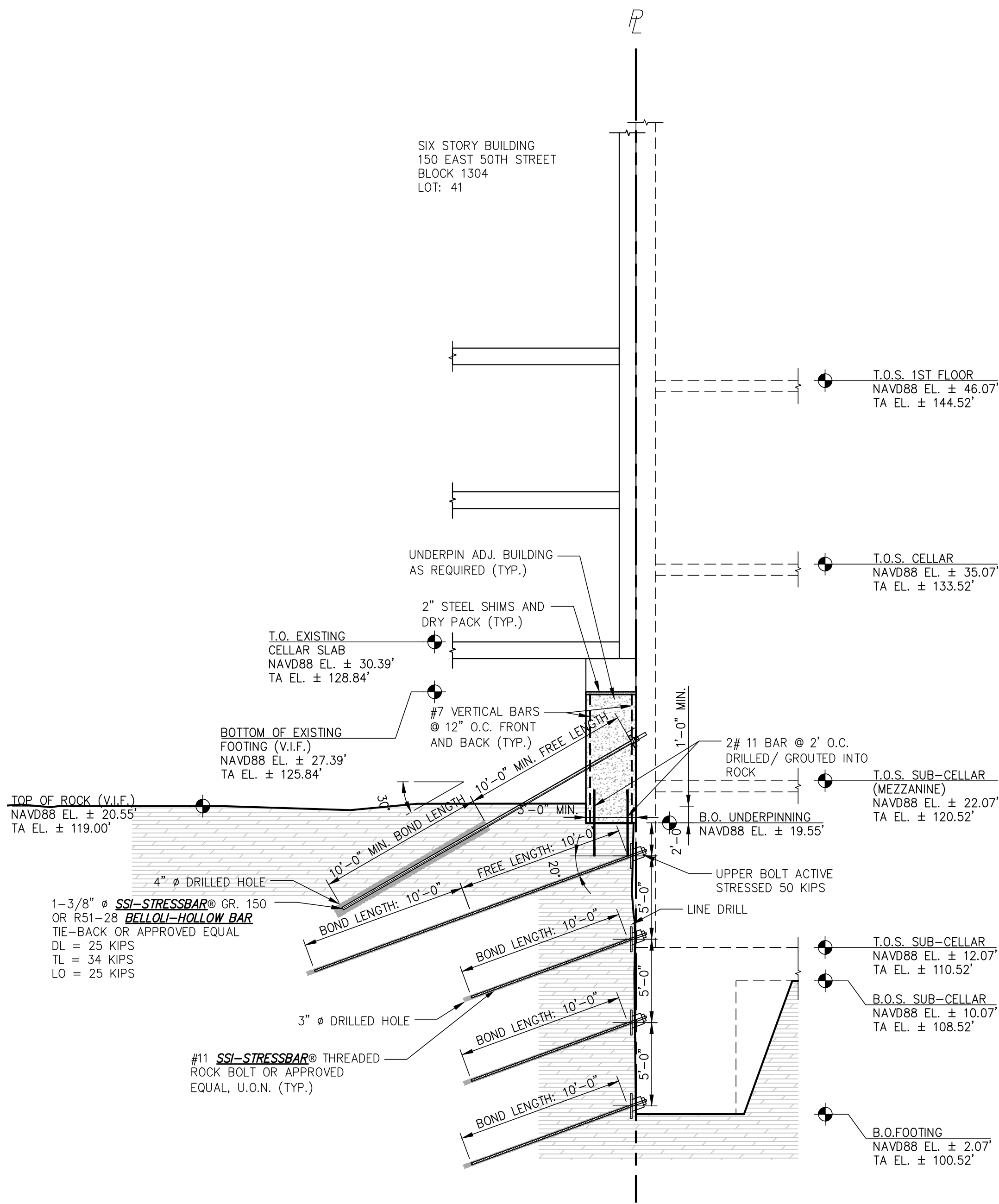
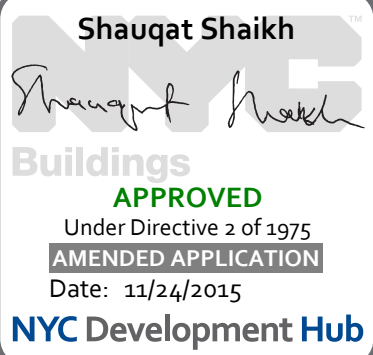
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| SCALE: | AS NOTED |
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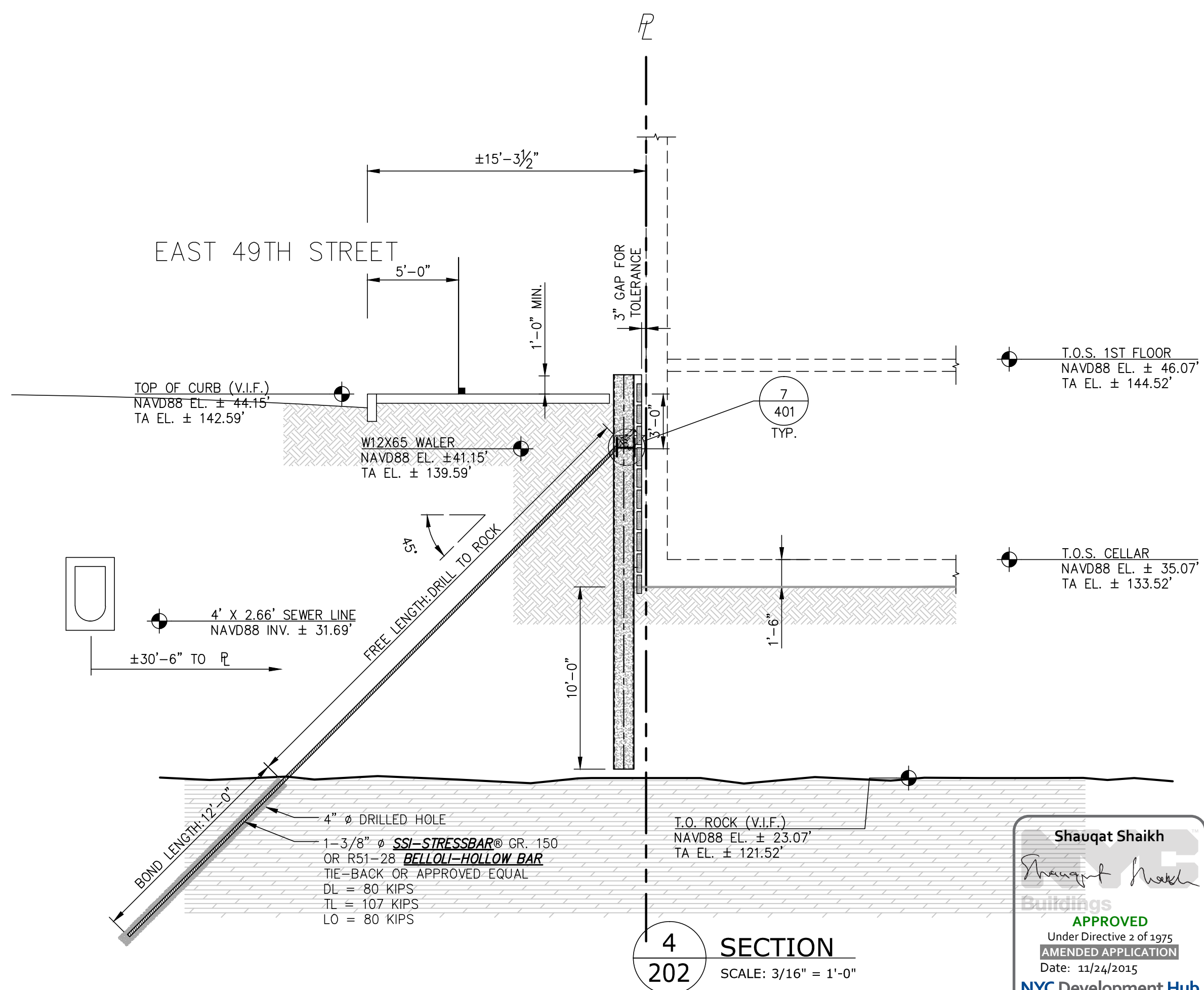
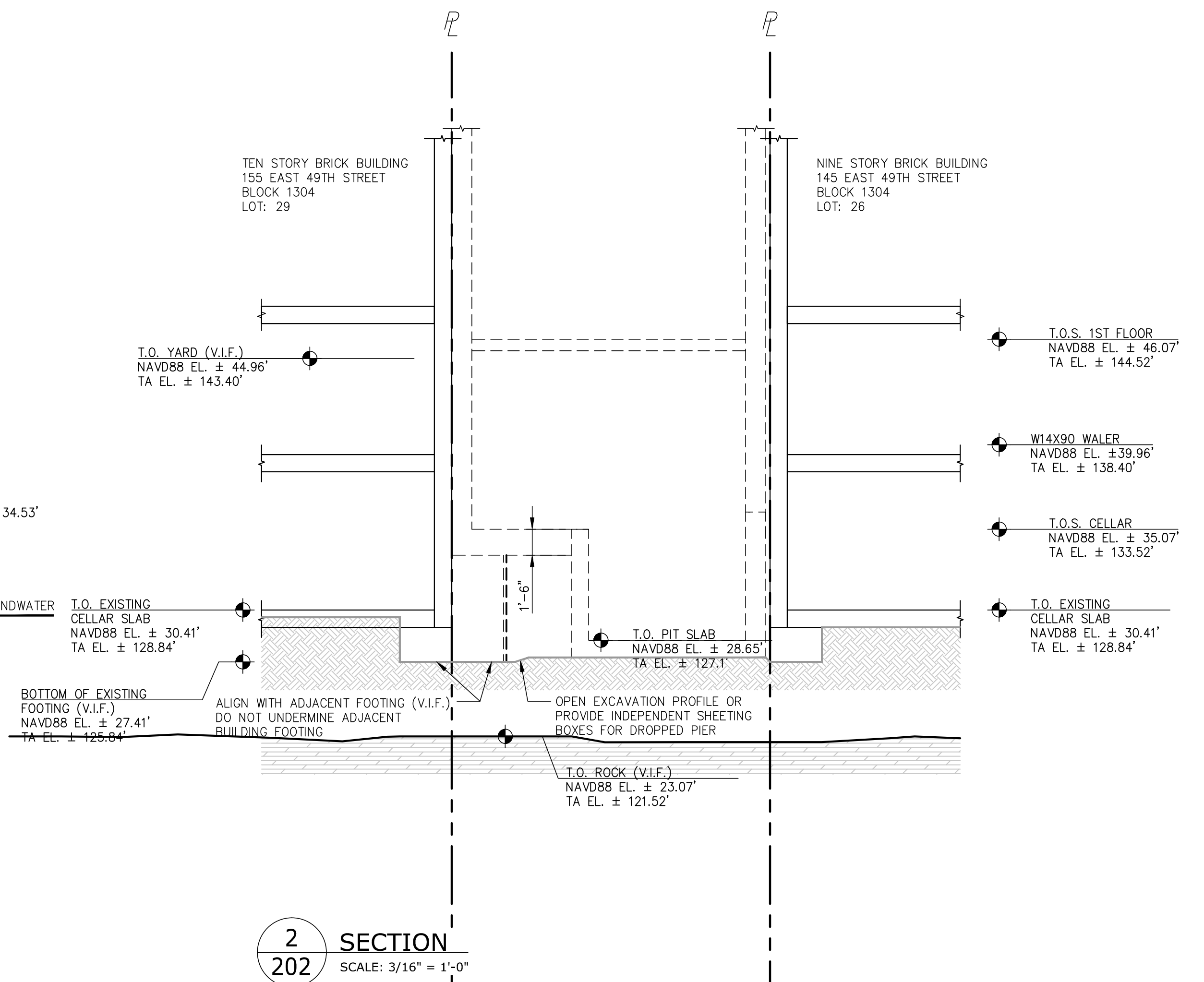
DRAWING TITLE:

SECTIONS

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| SEAL | Date: 05-23-14 |
| PROJECT No: 14018 | |
| Drawn By: AB | |
| DWG. No: SOE-201.00 | |
| 5 OF 11 | |



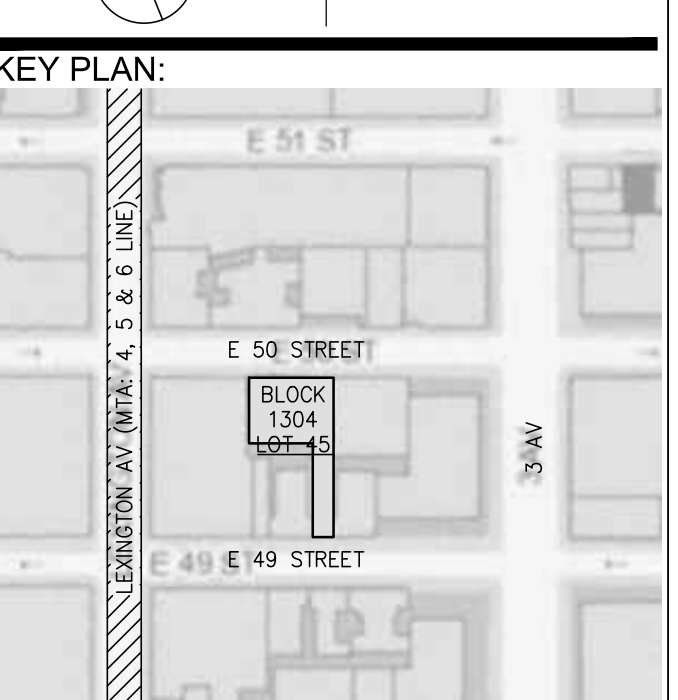
2 SECTION
201 SCALE: 3/16" = 1'-0"



N

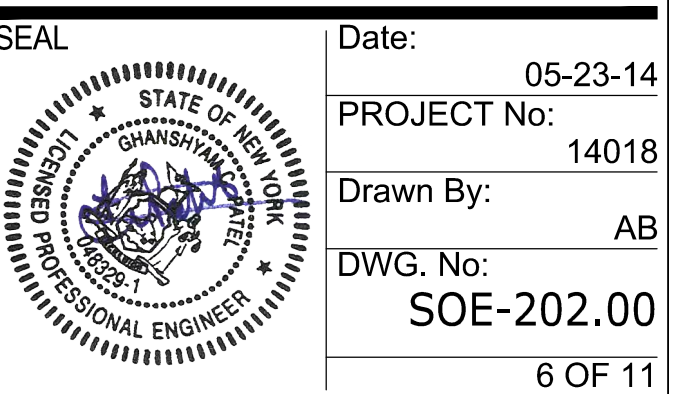
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AS NOTED

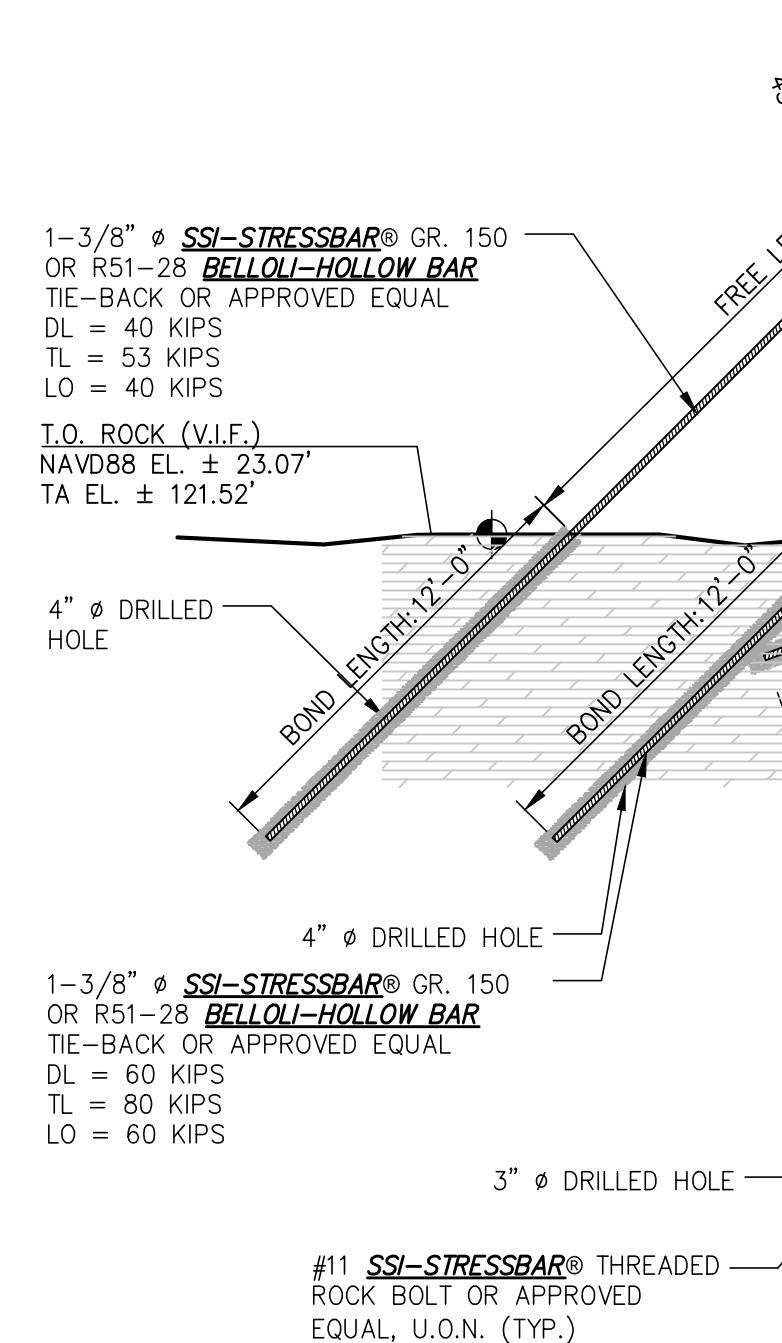


DRAWING TITLE:

SECTIONS



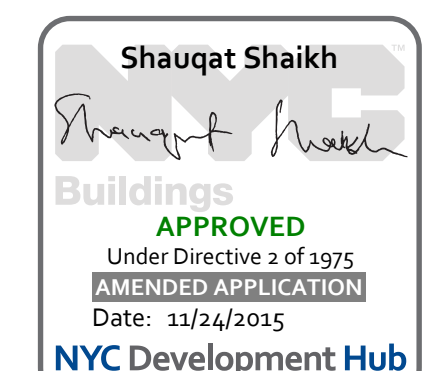
138 EAST 50TH STREET
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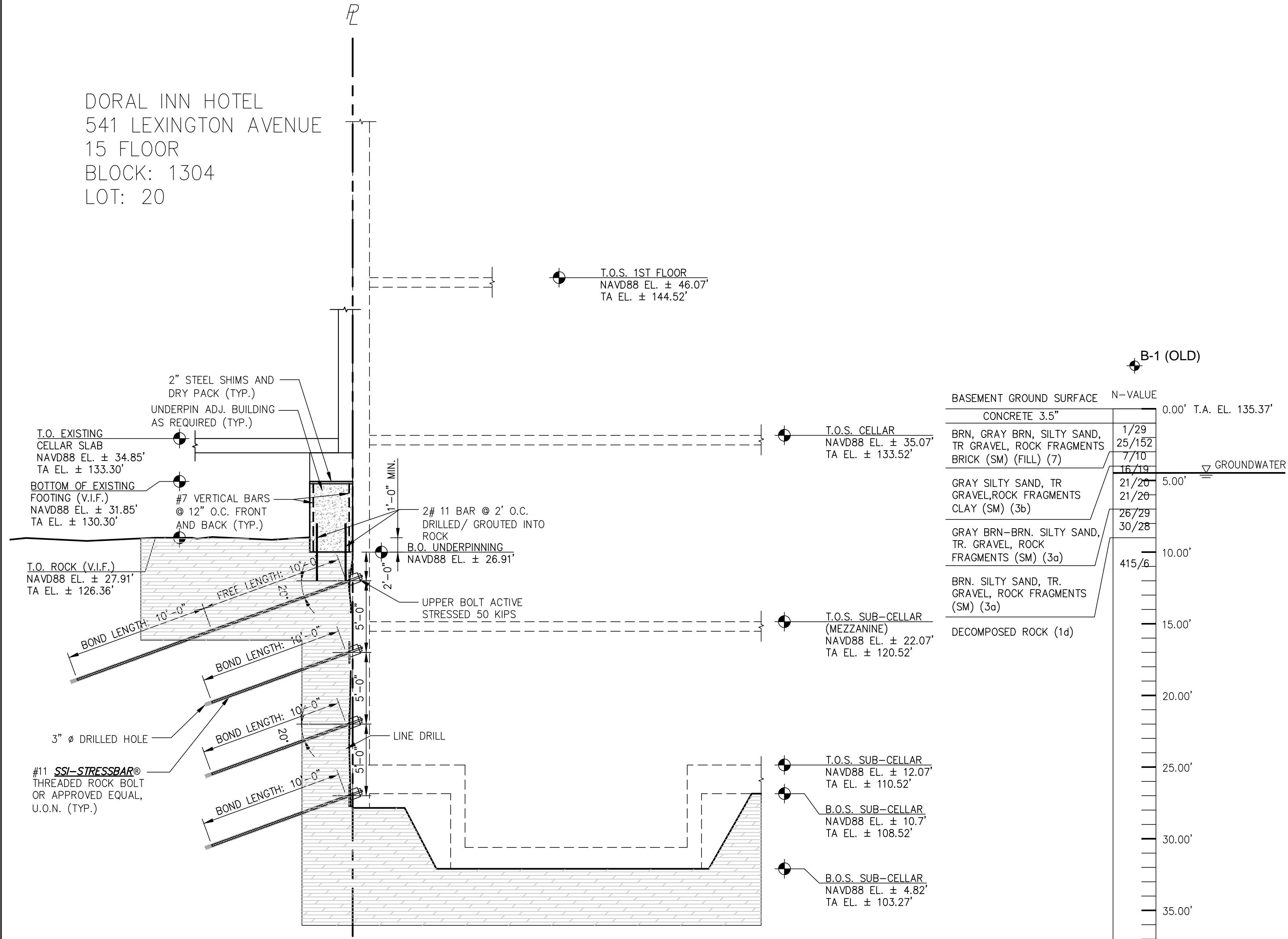
2 SECTION
303 SCALE: 3/16" = 1'-0"



Date: 05-23-14
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Drawn By: AB
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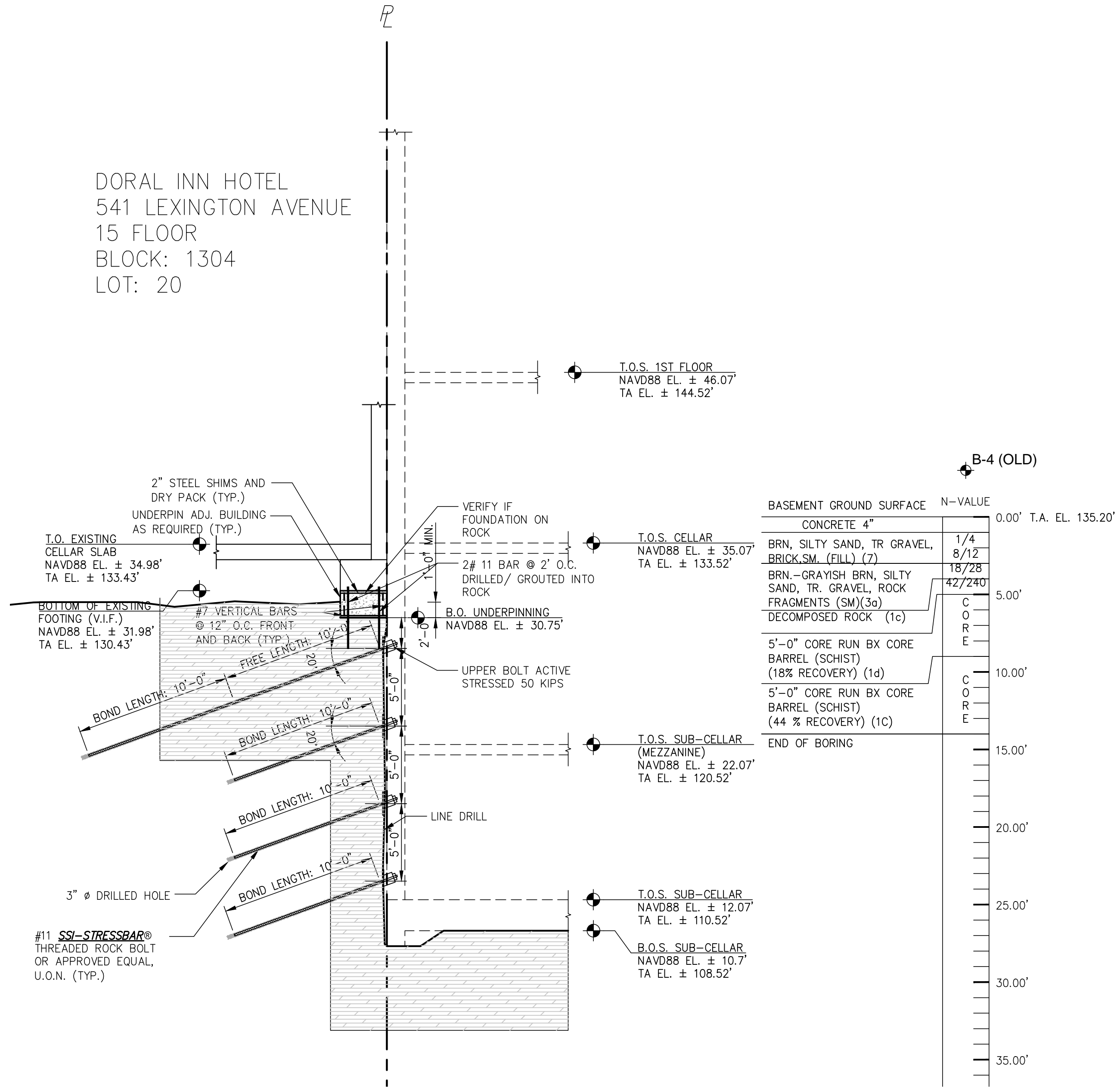


DORAL INN HOTEL
541 LEXINGTON AVENUE
15 FLOOR
BLOCK: 1304
LOT: 20



1
204 SECTION
SCALE: 3/16" = 1'-0"

DORAL INN HOTEL
541 LEXINGTON AVENUE
15 FLOOR
BLOCK: 1304
LOT: 20

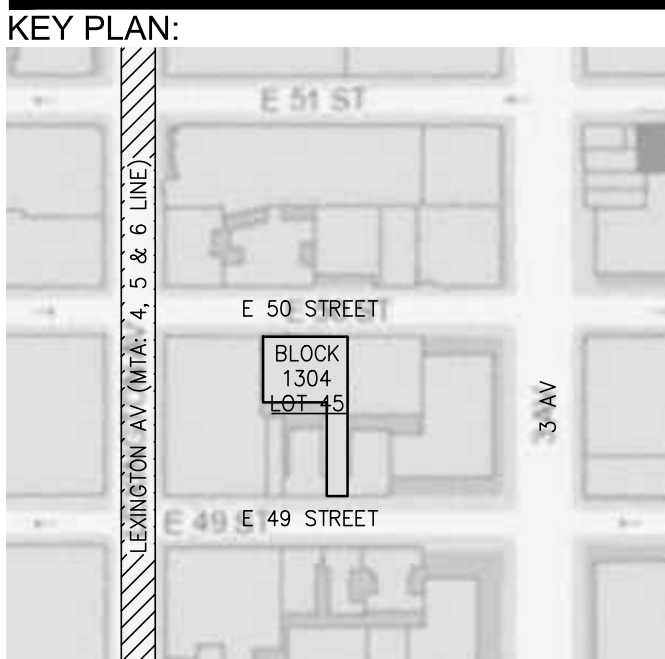


2
204 SECTION
SCALE: 3/16" = 1'-0"

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| 2 | DOB FILING | 10/21/15 |
| 1 | FND UNDATE | 09/30/15 |
| No: Revision: | | Date: |

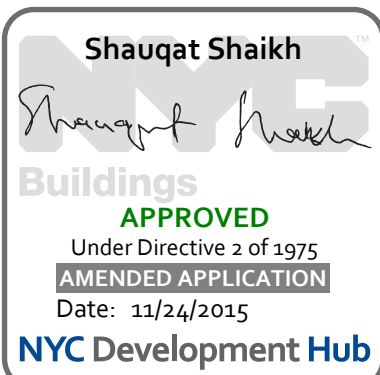
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| SCALE: | AS NOTED |
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DRAWING TITLE:

SECTIONS

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| SEAL | Date: 05-23-14 |
| PROJECT No: 14018 | |
| Drawn By: AB | |
| DWG. No: SOE-204.00 | |
| 8 OF 11 | |

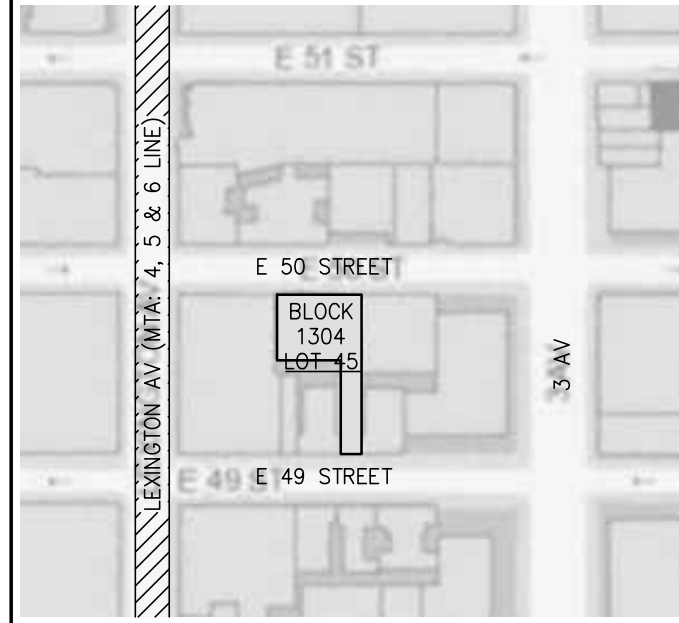


138 EAST 50TH STREET
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2 DOB FILING 10/21/15
1 FND UNDATE 09/30/15
No: Revision: Date:

SCALE:
AS NOTED

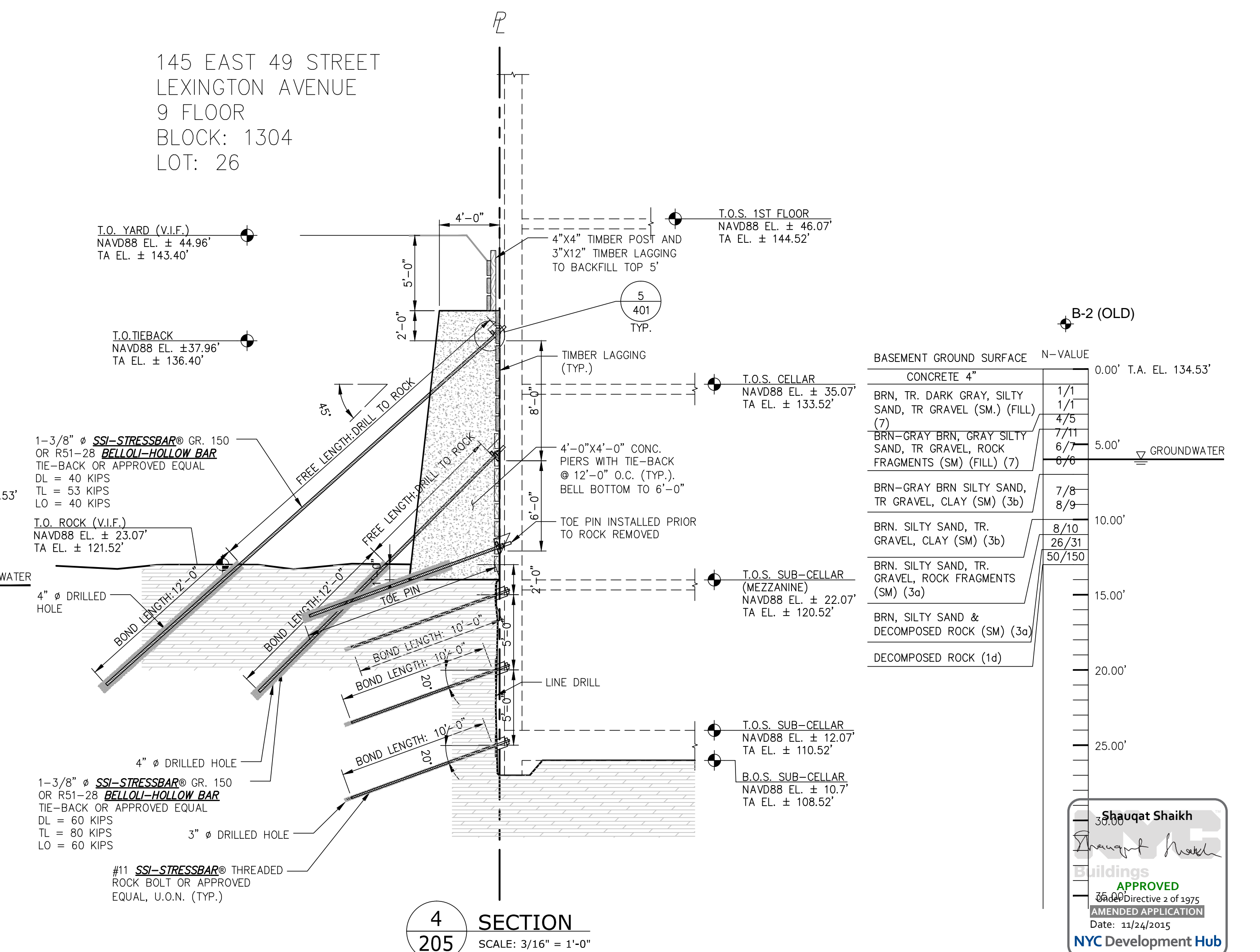
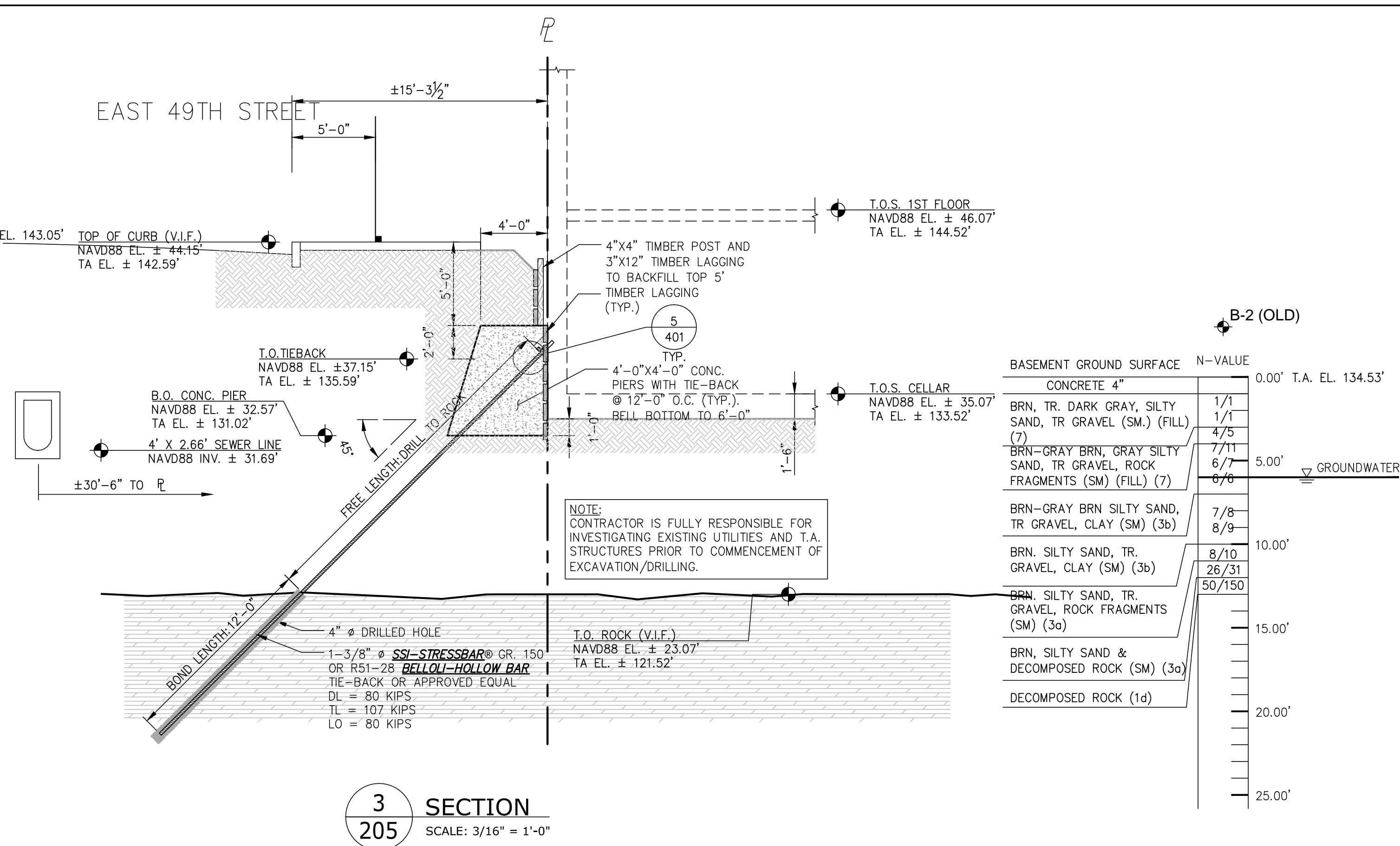
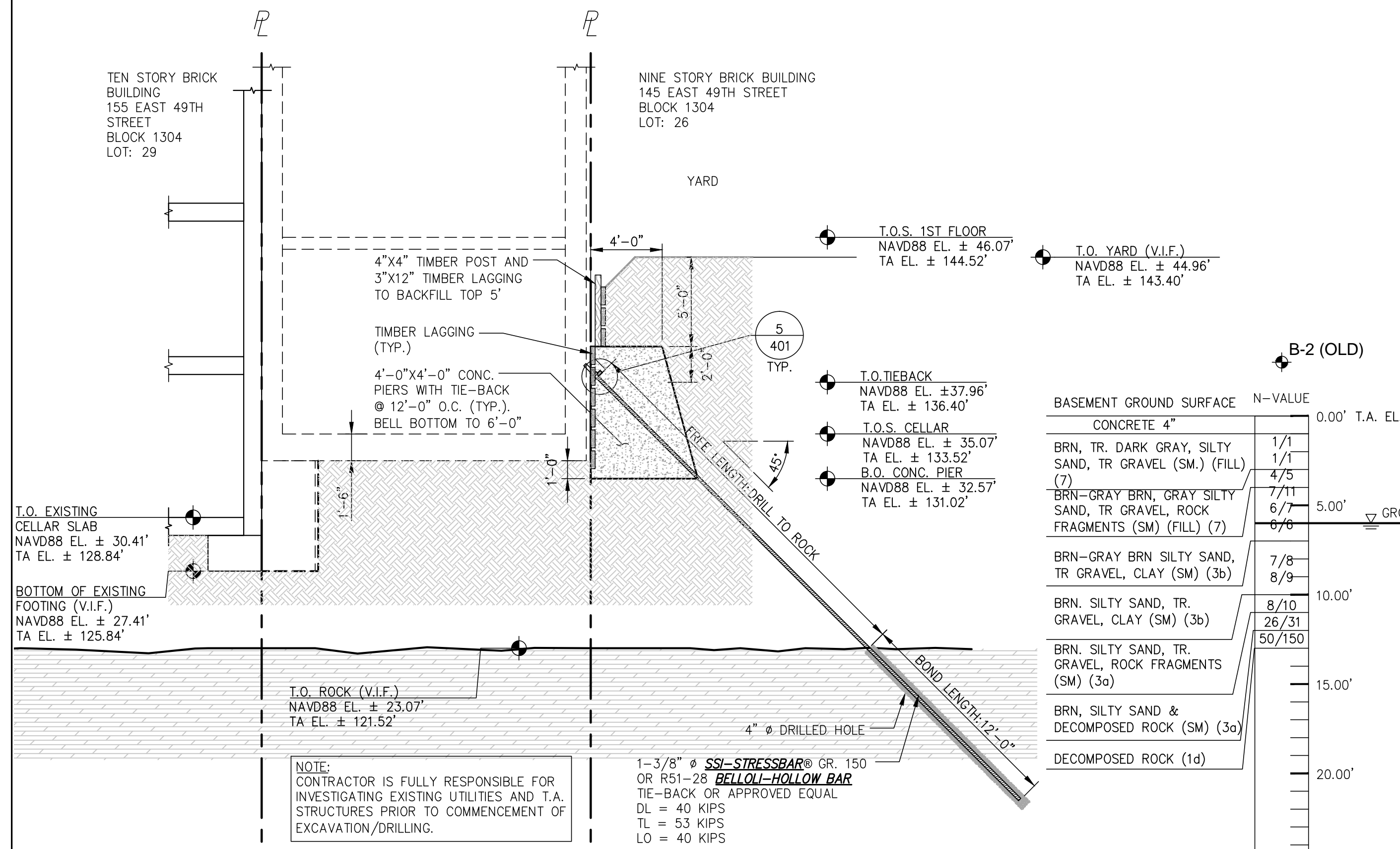
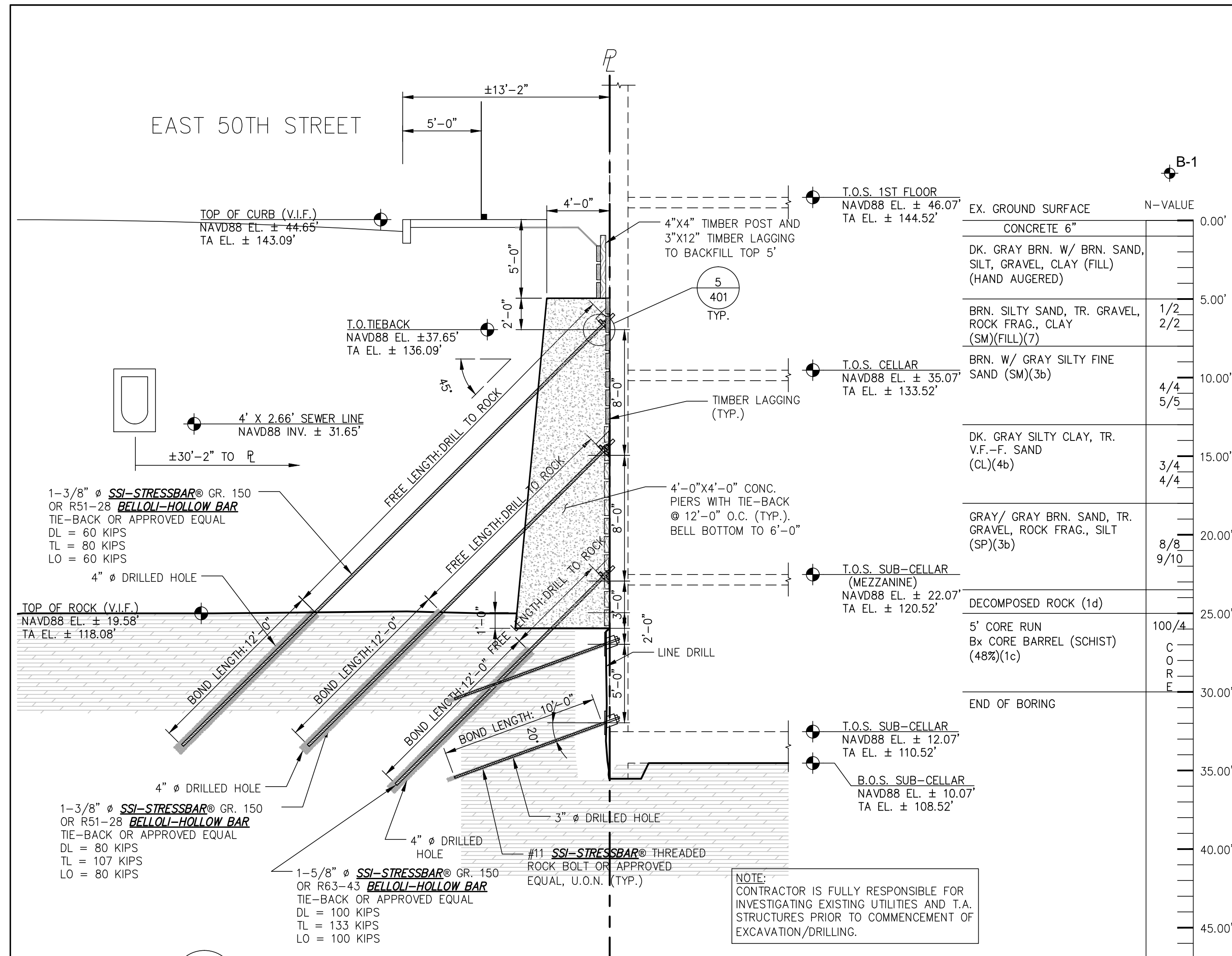
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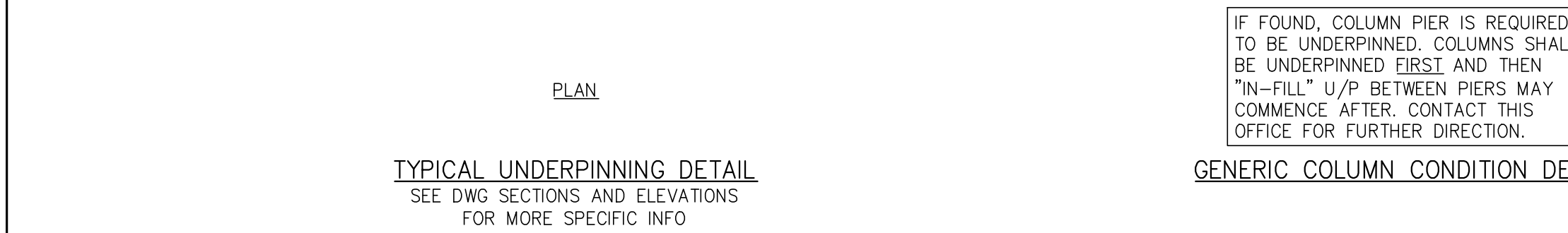
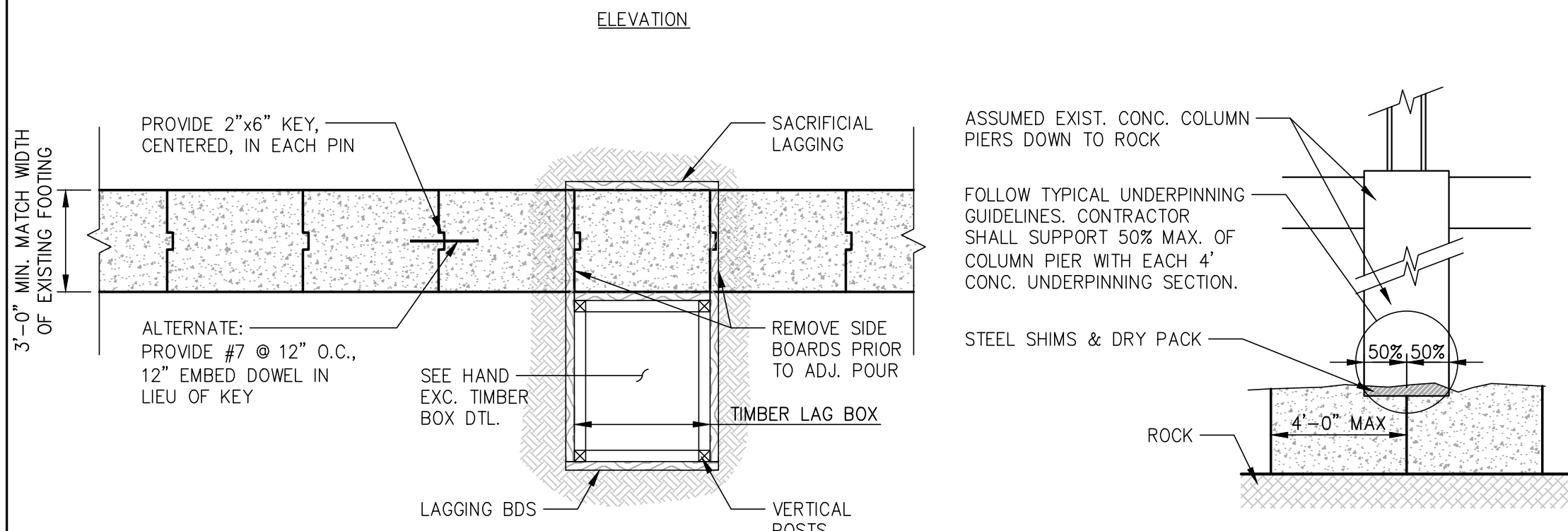
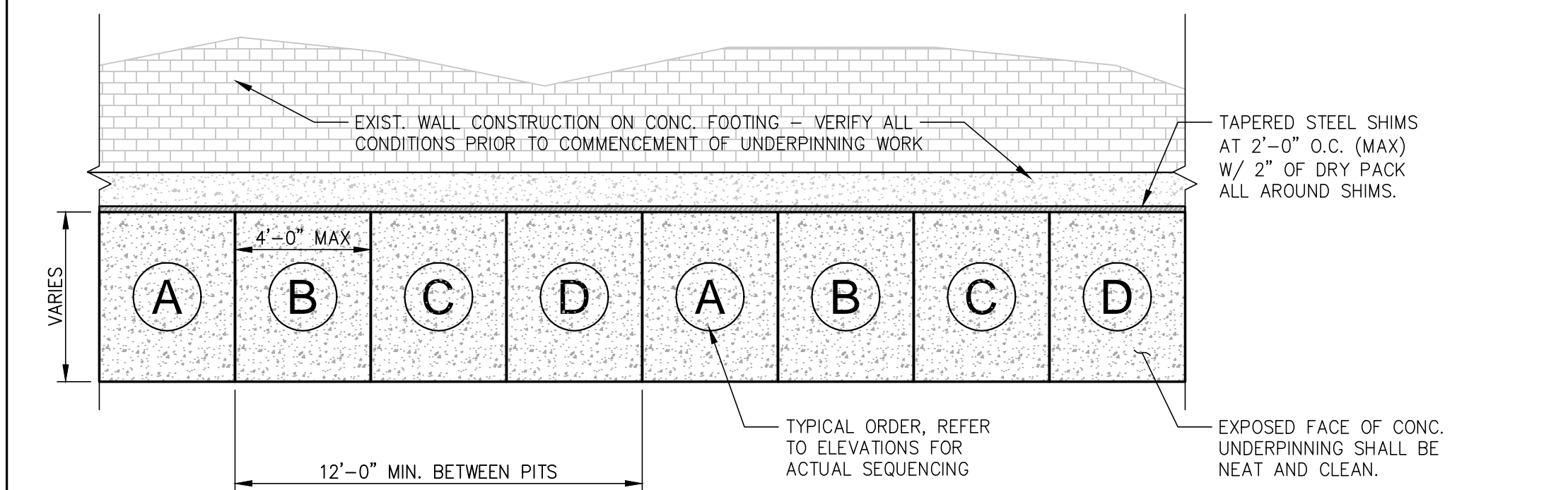


DRAWING TITLE:

SECTIONS

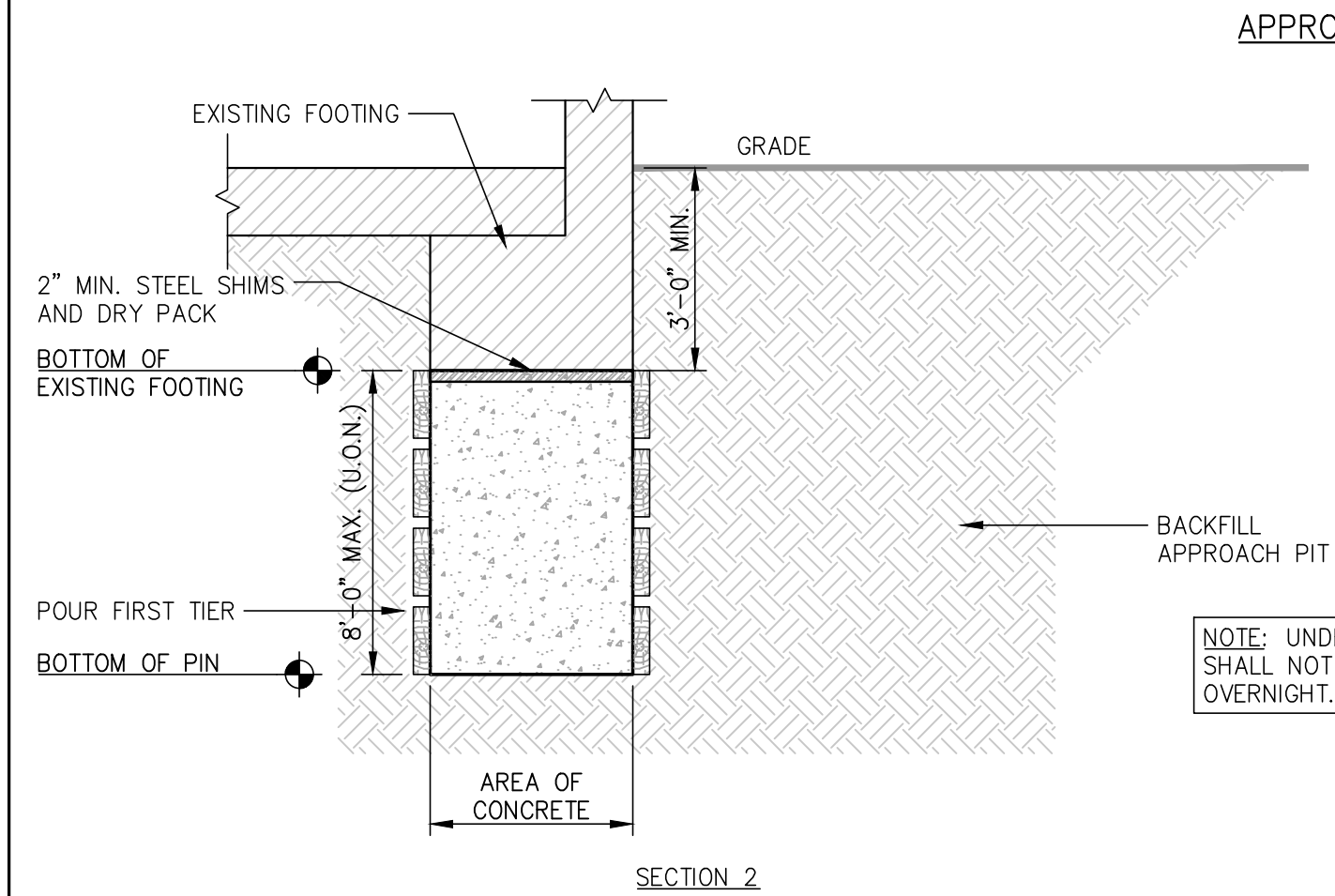
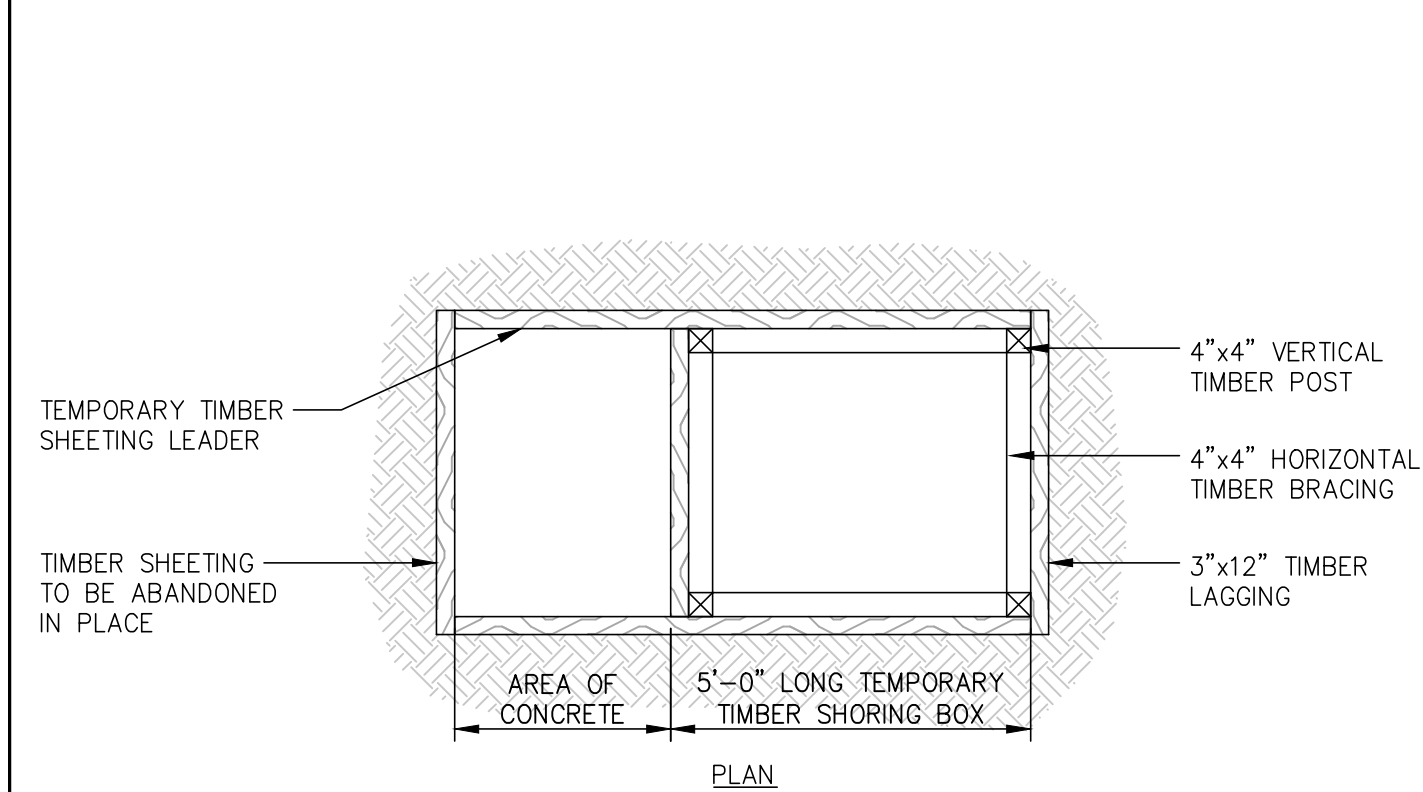
SEAL: SHAUQUAT SHAIKH
Date: 05-23-14
PROJECT No: 14018
Drawn By: AB
DWG. No: SOE-205.00
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1 UNDERPINNING DETAIL

SCALE: N.T.S.



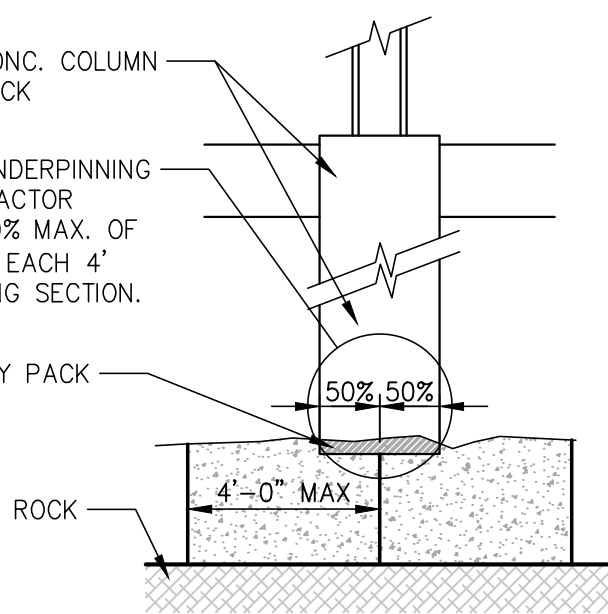
2 APPROACH PIT DETAIL

SCALE: N.T.S.

APPROACH PIT

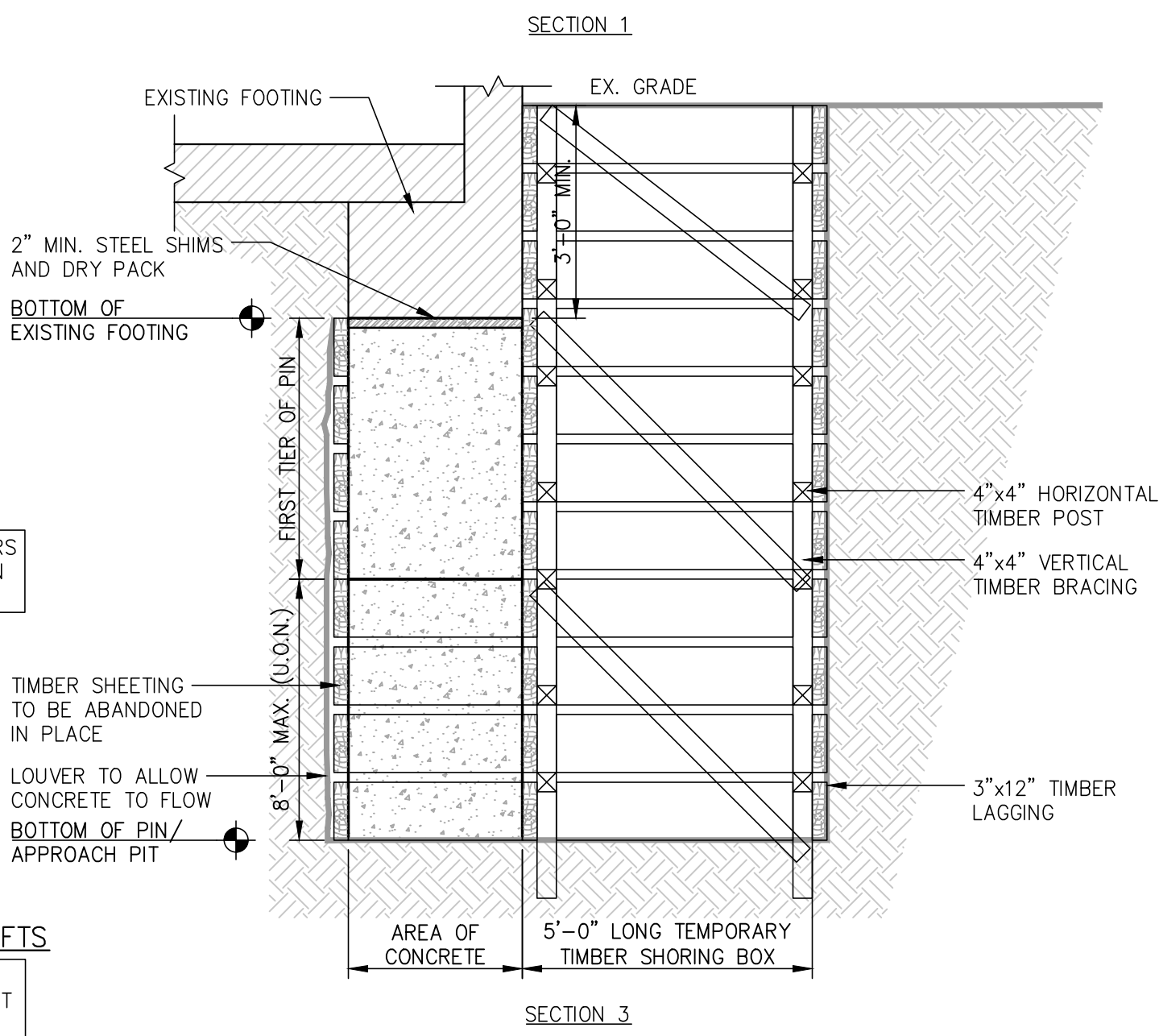
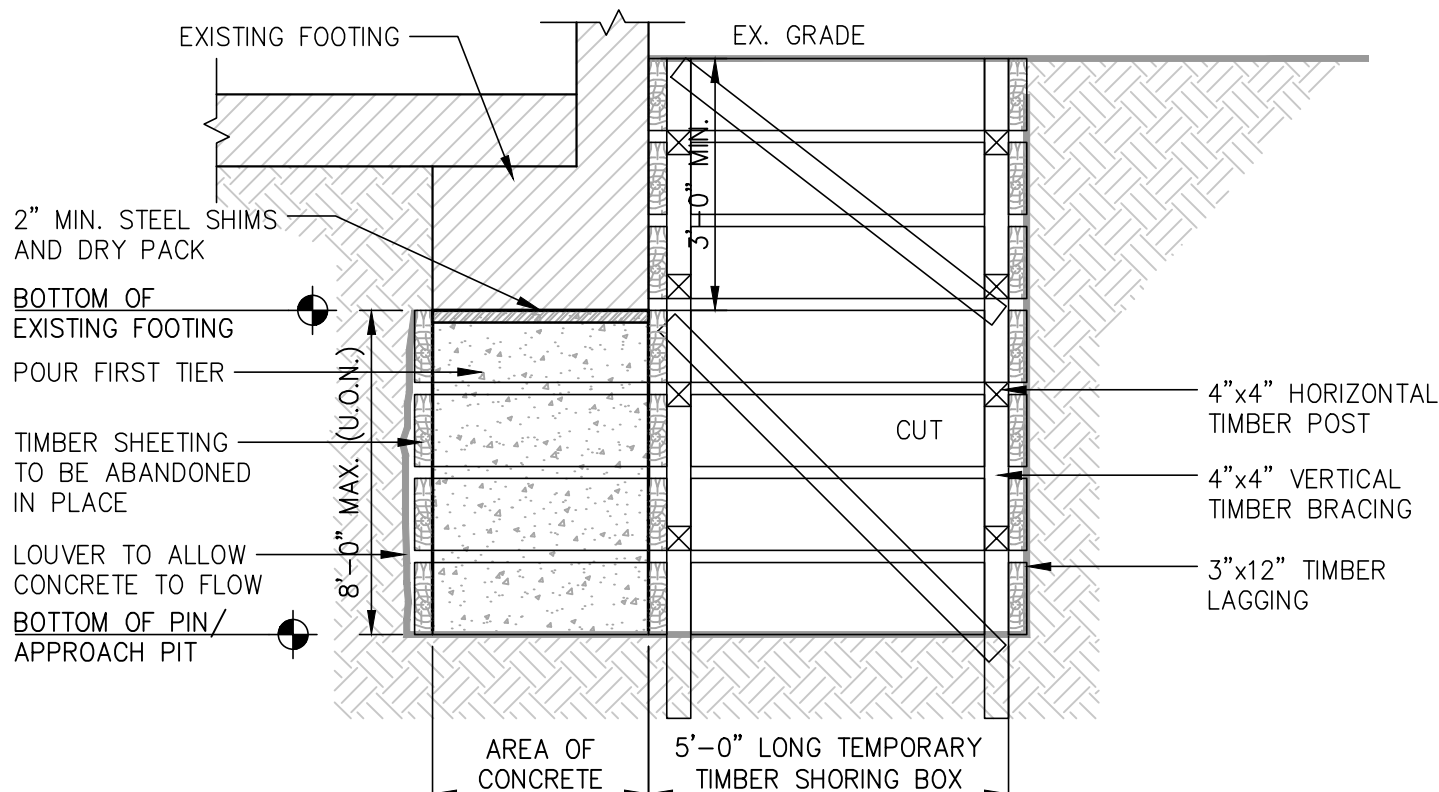
APPROACH PIT W/ 2 LIFTS

NOTE: FOR UNDERPINNING WITH TRIPLE LIFTS, REPEAT SECTIONS 1, 2 AND 3.



GENERIC COLUMN CONDITION DETAIL

IF FOUND, COLUMN PIER IS REQUIRED TO BE UNDERPINNED. COLUMNS SHALL BE UNDERPINNED FIRST, AND THEN "IN-FILL" U/P BETWEEN PIERS MAY COMMENCE. AFTER, CONTACT THIS OFFICE FOR FURTHER DIRECTION.



NOTE: UNDERPINNING PIERS SHALL NOT BE LEFT OPEN OVERNIGHT.

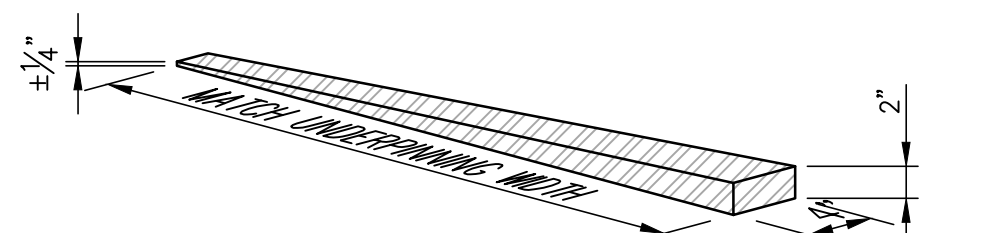
NOTE: FOR UNDERPINNING WITH TRIPLE LIFTS, REPEAT SECTIONS 1, 2 AND 3.

GENERAL UNDERPINNING NOTES:

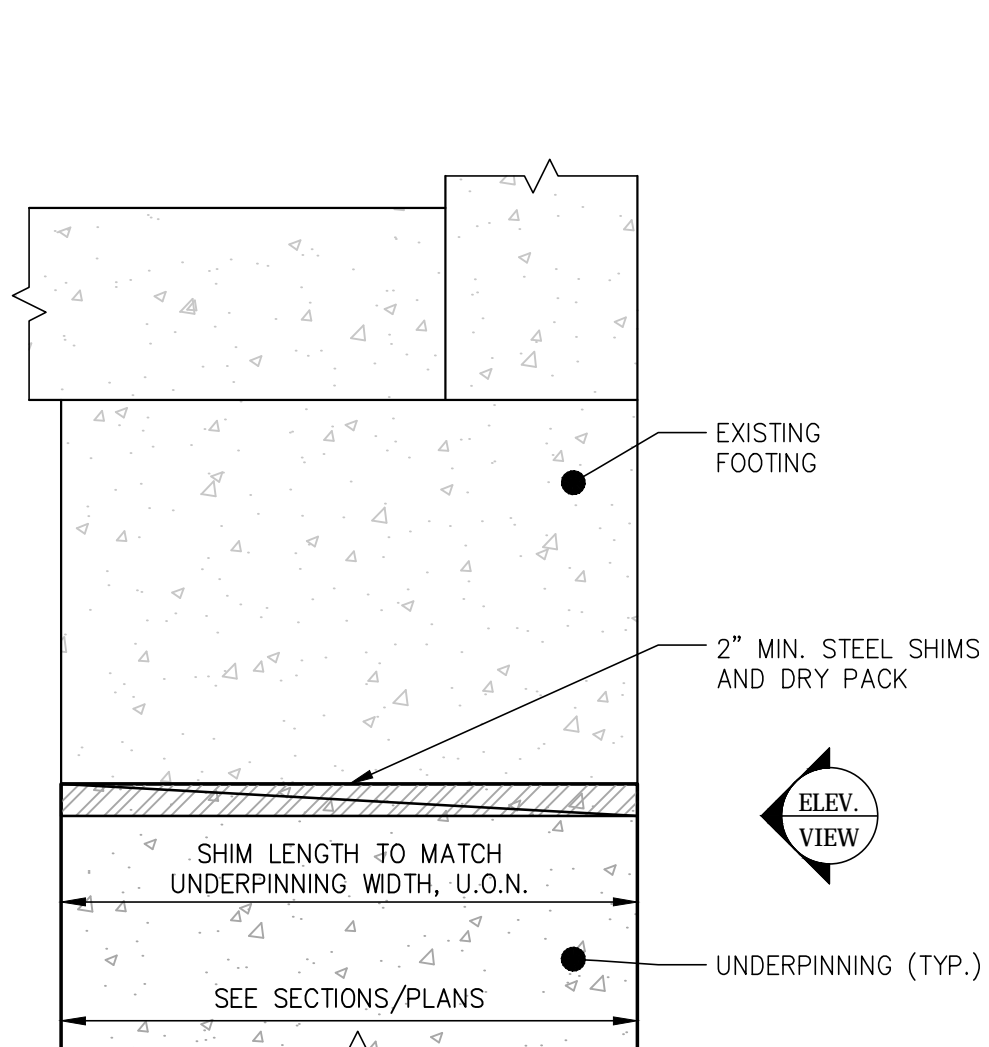
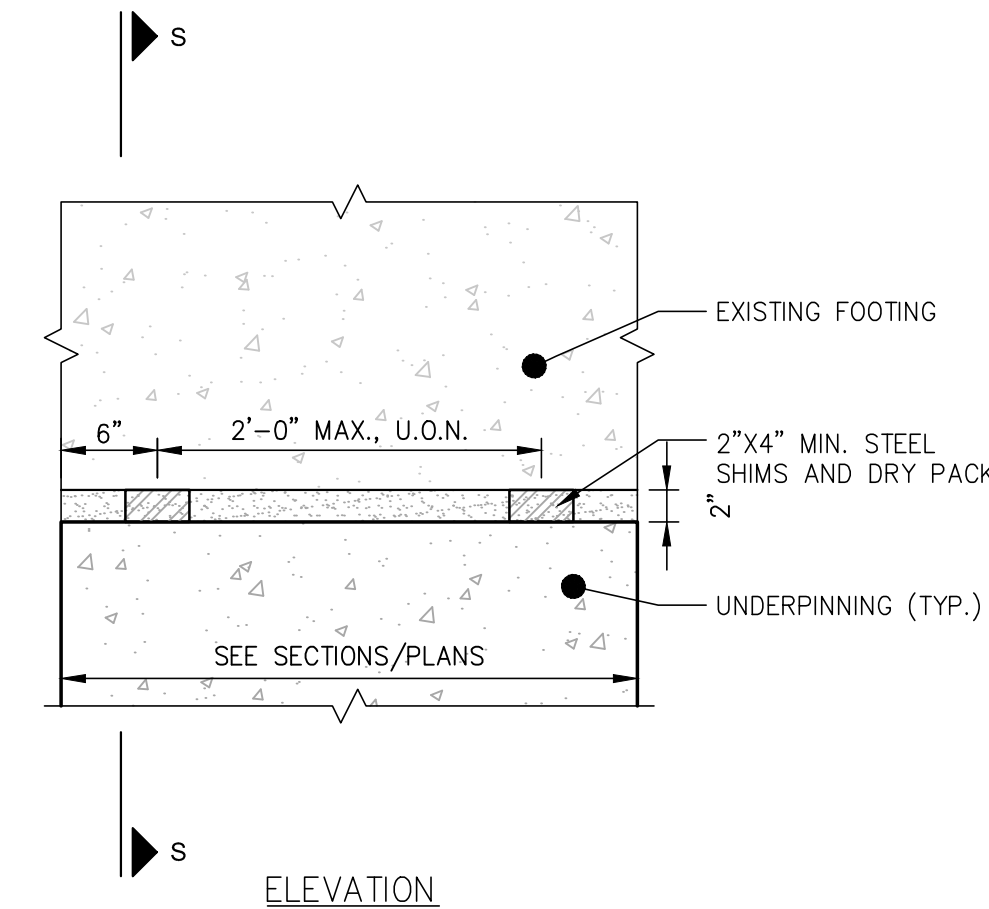
1. THE CONTRACTOR SHALL COMPLY WITH ALL RELEVANT PROVISIONS OF THE NYC BUILDING CODE.
2. ALL FOUNDATIONS AND EARTHWORK OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NYC BUILDING CODE. ALL LOTS, BUILDINGS AND SERVICES ADJOINING THE FOUNDATION AND EARTHWORK AREAS SHALL BE PROTECTED AND PROPERLY SUPPORTED.
3. ALL TEST PITS, BORINGS, EXCAVATION WORK AND UNDERPINNING OPERATIONS ARE SUBJECT TO CONTROLLED INSPECTIONS.
4. THE OWNER SHALL RETAIN A LICENSED SURVEYOR TO SURVEY ALL LOAD BEARING WALLS, PIERS AND COLUMNS TO BE UNDERPINNED (UNLESS CONTRACTUALLY DEFINED OTHERWISE). THE SURVEYOR SHALL CHECK THE DATUM OF SUCH STRUCTURAL ELEMENTS EVERY TWO WEEKS FOR THE DURATION OF THE WORK.
5. THERE SHALL BE A PRE-CONSTRUCTION MEETING WITH THE OWNER, ARCHITECT, ENGINEER OF RECORD, GENERAL CONTRACTOR AND FOUNDATION SUB-CONTRACTOR(S) PRIOR TO WORK COMMENCING.
6. ALL ADJACENT PROPERTIES, INCLUDING BUT NOT LIMITED TO EXTERIOR WALLS AND FOOTINGS ARE TO BE OBSERVED BY THE ENGINEER OF RECORD AND ENGINEER RESPONSIBLE FOR THE CONTROLLED INSPECTIONS PRIOR TO WORK COMMENCING.
7. THE CONTRACTOR SHALL REQUEST PERMISSION TO ENTER BUILDINGS DIRECTLY ADJACENT TO THE AREAS OF PROPOSED UNDERPINNING.
8. NO FOUNDATION OR EARTHWORK PERMIT SHALL BE ISSUED UNTIL AT LEAST FIVE DAYS AFTER A WRITTEN NOTICE OF THE PERMIT APPLICATION HAS BEEN PROVIDED BY THE APPLICANT TO THE OWNER OF ALL ADJOINING LOTS, BUILDINGS AND SERVICE FACILITIES, WHOM MAY BE AFFECTED BY THE PROPOSED FOUNDATION WORK OR EARTHWORK OPERATIONS.
9. THE UNDERPINNING FOUNDATIONS SHALL BEAR ON SUBGRADE HAVING A BEARING CAPACITY EQUAL TO OR GREATER THAN THE SUBGRADE OF THE EXISTING FOUNDATION. THE SUBGRADE AT THE LEVEL OF THE EXISTING FOUNDATION SHALL BE INSPECTED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE OWNER (UNLESS CONTRACTUALLY DEFINED OTHERWISE) TO VERIFY THE BEARING CAPACITY, AND DEFICIENCIES BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD.
10. DO NOT TRANSFER THE BUILDING LOAD ONTO NEW UNDERPINNING WALLS UNTIL ALL WALLS HAVE ATTAINED 50% OF THE CONCRETE DESIGN STRENGTH, AS CONFIRMED BY THE CYLINDER TESTS, OR 96 HOURS.
11. DO NOT PLACE BACKFILL AGAINST NEW UNDERPINNING WALLS UNTIL CONFIRMED BY THE CYLINDER TEST, OR 96 HOURS.
12. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE WITH A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
13. ALL GROUT SHALL BE NONSHRINK WITH A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.
14. ALL DRYPACK SHALL BE A MIXTURE OF 1 PART CEMENT AND 2 PARTS DAMP SAND, WITH 0-INCH SLUMP.
15. ALL UNDERPINNING SHEETING AND BRACING TO REMAIN SHALL BE PRESSURE TREATED LUMBER AND/OR OTHER APPROVED MATERIAL.
16. EXCAVATION BELOW THE WATER TABLE SHOULD BE AVOIDED, IF POSSIBLE, DEWATER THE SITE PRIOR TO EXCAVATION. EXCAVATION MAY ONLY PROCEED AFTER REVIEW BY THE ENGINEER OF RECORD.
17. IF WATER IS ENCOUNTERED IN THE PIT, PROVIDE LOCAL PUMPING TO REMOVE WATER FROM THE PIT.
18. ALL SIDES OR SLOPES OF EXCAVATIONS OR EMBANKMENTS SHALL BE INSPECTED AFTER RAINSTORMS.
19. THE UNDERPINNING SHALL BE CONSTRUCTED IN A MANNER SUCH THAT THE EXPOSED FACE OF THE CONCRETE IS VERTICAL (OR AS OTHERWISE SPECIFIED), CLEAN AND NEAT.
20. UNDERPINNING PIERS SHALL NOT BE LEFT OPEN OVERNIGHT.

UNDERPINNING NOTES & PROCEDURES:

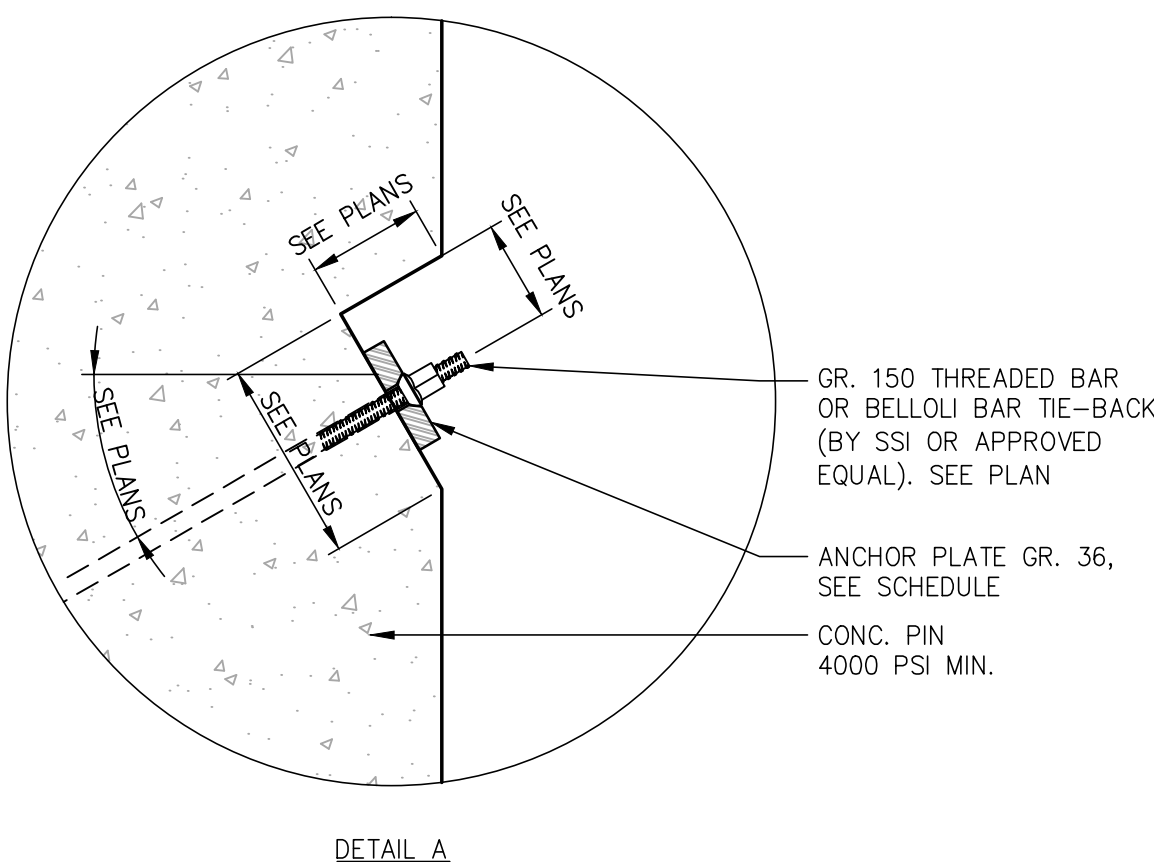
1. STARTING WITH SEGMENTS "A" ONLY, DIG PITS 4'-0" WIDE MAXIMUM, SIMULTANEOUSLY PLACING REQUIRED SHEETING AND BRACING ALL PITS TO BE SHEETED ON ALL FOUR SIDES. PACK VOIDS BETWEEN SHEETING AND SOIL WITH SOIL CEMENT, LEAVE A MINIMUM OF 12'-0" OF EXISTING SOIL BETWEEN PITS.
2. CLEAN BOTTOM OF EXISTING FOOTING AND RECOMPACT DISTURBED SOIL AT BOTTOM OF PIT WITH TAMPERS (APPLICABLE TO SOIL ONLY). COMPACT TO 95% OF MAXIMUM DENSITY OF SOIL. LOSS OF GROUND SHOULD BE KEPT TO A MINIMUM BY BACK FILLING BEHIND THE BOARDS WHERE AND WHEN POSSIBLE WITH GROUT PUMPED INTO VOIDS.
3. THE CONTRACTOR SHALL INSTALL ADEQUATE LATERAL BRACING SYSTEM(S) TO PREVENT MOVEMENT IN THE EXISTING STRUCTURE(S) AND IN THE NEW UNDERPINNING IF NECESSARY.
4. POUR NEW CONCRETE UNDERPINNING FOR SEGMENTS "A". AFTER CONCRETE ATTAINS 50% OF DESIGN STRENGTH, OR 96 HOURS, DRIVE 2"x4" TAPERED STEEL WEDGES AT 2'-0" ON CENTER MAXIMUM, THEN PACK SOLID WITH DRYPACK (MIXTURE 1 PART CEMENT, 2 PARTS DAMP SAND, WITH 0-INCH SLUMP) INTO SPACE BETWEEN TOP OF UNDERPINNING AND BOTTOM OF EXISTING FOOTING TO TRANSFER LOAD. ENSURE THAT THE BACK OF VOID IS FORMED SO THAT DRYPACK IS NOT LOST WHEN RAMMED INTO THE GAPS.
- 4A. ALTERNATE TO #4: "HIGH-POUR METHOD" - POUR NEW CONCRETE UNDERPINNING FOR EACH SEGMENT UP TO THE BOTTOM OF EXISTING FOOTING OF THE BUILDING PERMITTED IN LIEU OF DRY PACK. STONE CONCRETE POURED MINIMUM STRENGTH 4,000 PSI AND VIBRATED UP TO THE BOTTOM OF EXISTING FOOTING OF THE BUILDING AT THE SAME TIME OF UNDERPINNING CONCRETE POURED TO REMOVE ALL VOIDS. OPTION 4A MUST ALSO INCLUDE SIKACONTROL 40, OR OTHER EXPANSIVE ADDITIVE IN CONCRETE MIXTURE. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR MIXING QUANTITIES.
5. FOR SEGMENTS "B" ONLY, DIG PITS 4'-0", MAXIMUM WIDTH, WITH REQUIRED SHEETING AND BRACING.
6. FOR SEGMENTS "B" REPEAT CONCRETING, CLEANING, COMPACTION, STEEL WEDGES AND DRYPACKING AS DESCRIBED IN NOTES 2, 3 AND 4.
7. FOR SEGMENTS "C", DIG PITS 4'-0" MAXIMUM WIDE, WITH REQUIRED SHEETING AND BRACING, AS INDICATED ON DETAILS.
8. FOR SEGMENTS "C" REPEAT CONCRETING, CLEANING, COMPACTION, STEEL WEDGES AND DRYPACKING AS DESCRIBED IN NOTES 2, 3 AND 4.
9. FOR SEGMENTS "D", DIG OUT SOIL BETWEEN COMPLETED SEGMENTS C & A. PROVIDE SHEETING AND BRACING, AS INDICATED ON DETAILS.
10. FOR SEGMENTS "D" REPEAT CONCRETING, CLEANING, COMPACTION, STEEL WEDGES AND DRYPACKING AS DESCRIBED IN NOTES 2, 3 AND 4.
11. WHERE BOTTOM OF ADJACENT UNDERPINNING PITS ARE AT DIFFERENT ELEVATIONS, DEEPER PIT SHALL BE INSTALLED FIRST.
12. UNDERPINNING PITS CLOSER THAN 12 FEET APART SHALL NOT BE EXCAVATED AT THE SAME TIME.
13. WHEN UNDERPINNING ROCK MATERIAL, CONTRACTOR SHALL TAKE PRECAUTIONS SO AS NOT TO FRACTURE ROCK UNDER ADJOINING SECTION OR DAMAGE CONCRETE ALREADY POURED IN PLACE.



SHIM DIMENSIONS

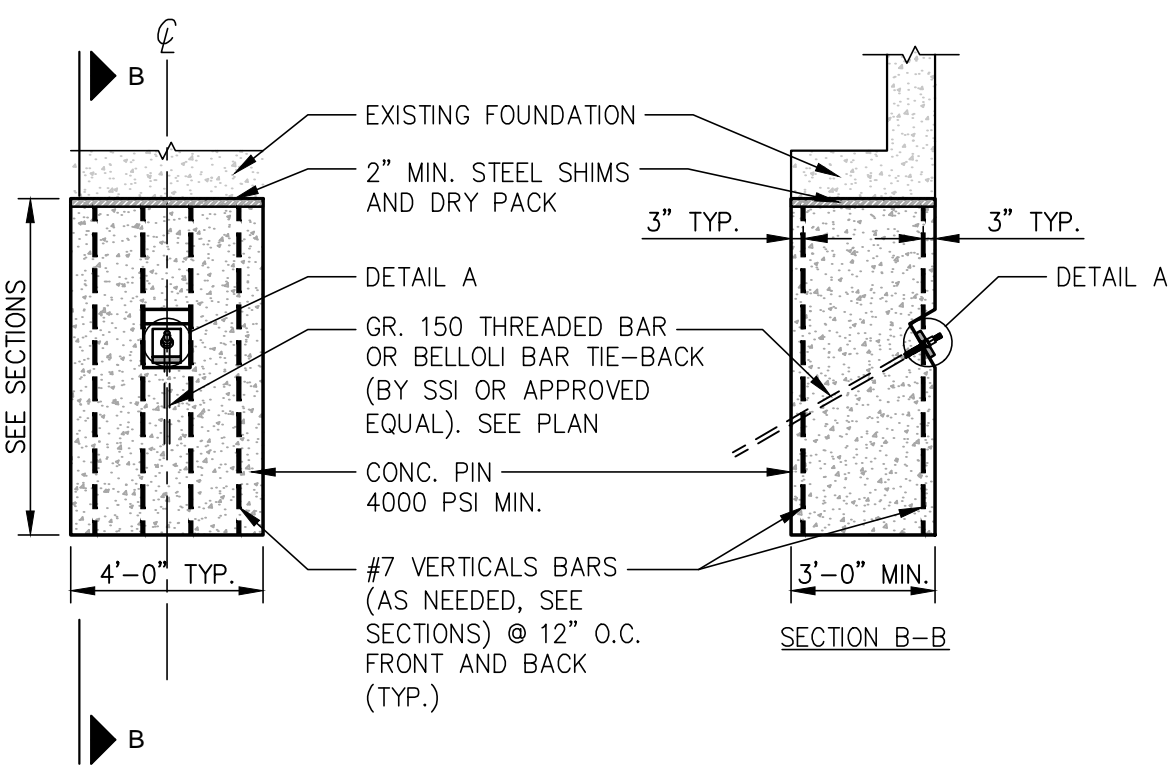


SECTION S-S



DETAIL A

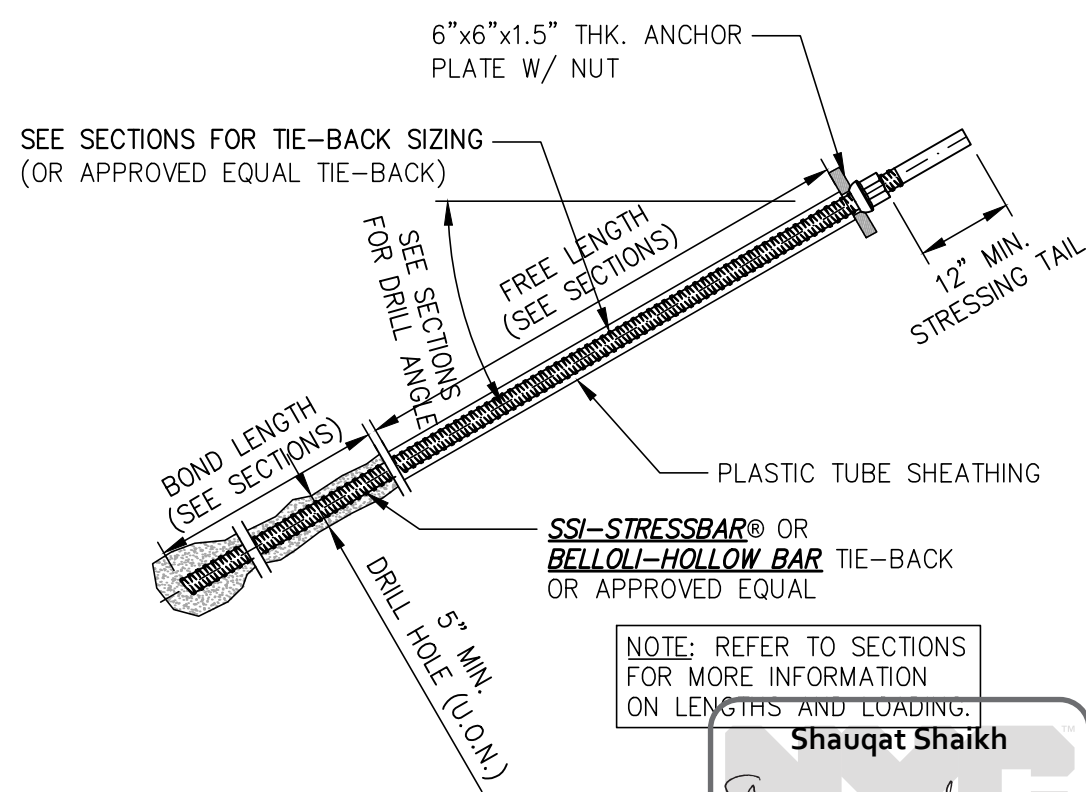
| GRADE 150 BARS (DIAM.) | PLATE A36 SIZE (INCH) |
|------------------------|-----------------------|
| 3/4" | 6x 6x 3/8 |
| 1" | 5x 5x 1 1/4 |
| 1 1/4" | 5x 8x 1 1/2 |
| 1 3/8" | 7x 7 1/2x 1 3/4 |
| 1 5/8" | 8x 8x 2 |
| 1 7/8" | 9x 9x 2 1/4 |
| 2 1/2" | 10x 10x 2 1/2 |
| 3" | 16x 16x 3 1/2 |



TYPICAL SINGLE LIFT UNDERPINNING TIE-BACK DETAIL

3 TIE-BACK THRU UNDERPIN DETAIL

SCALE: N.T.S.



TYPICAL TIE-BACK DETAIL

TYPICAL TIE-BACK DETAIL

SCALE: N.T.S.

5 TYPICAL TIE-BACK DETAIL

SCALE: N.T.S.

FNA
associates, inc.
CONSULTING ENGINEERS
670 BERGEN BOULEVARD | SECOND FLOOR
RIDGEFIELD, N.J. 07657
O: 201-241-2444

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|---------------|----------|
| 2 DOB FILING | 10/21/15 |
| 1 FND UPDATE | 09/30/15 |
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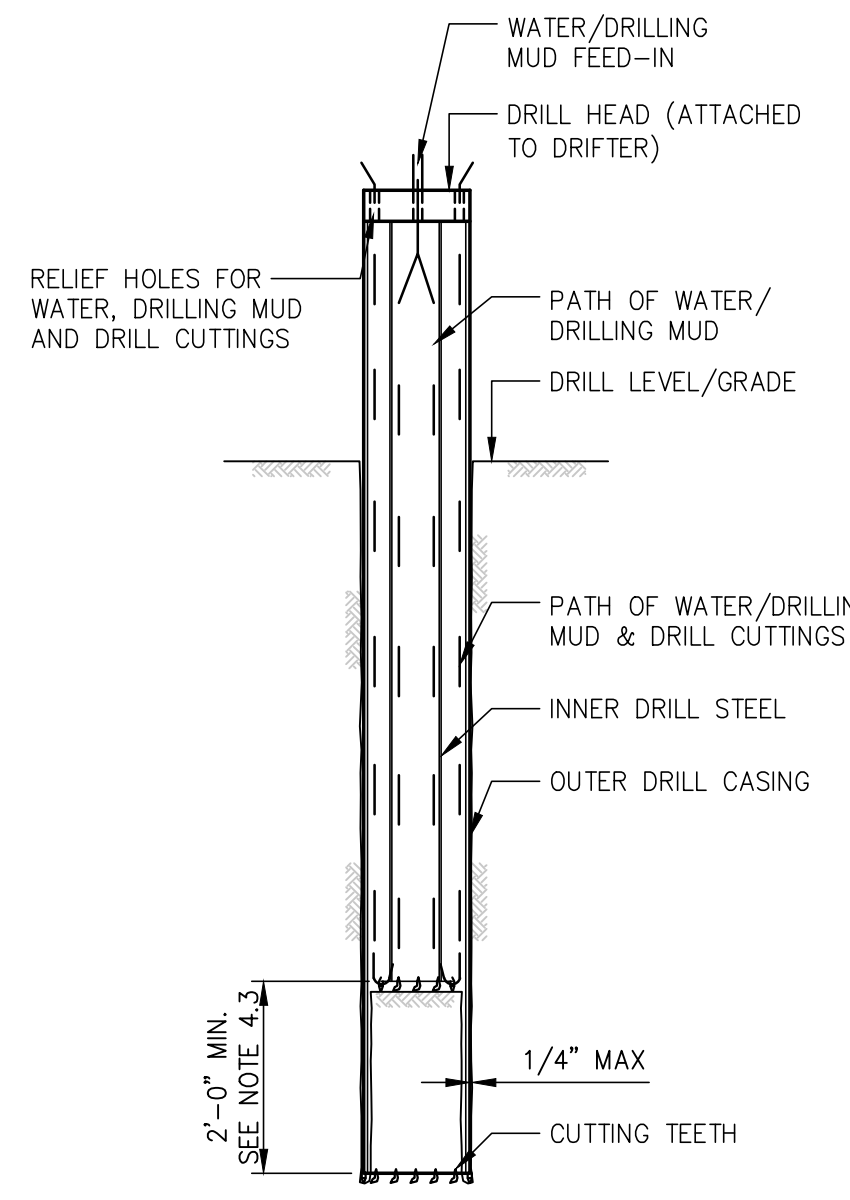
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| SCALE: | AS NOTED |
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DRAWING TITLE:

DETAILS

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| SEAL | Date: 05-23-14 |
| PROJECT No: 14018 | Drawn By: AB |
| DWG. No: SOE-400.00 | 10 OF 11 |

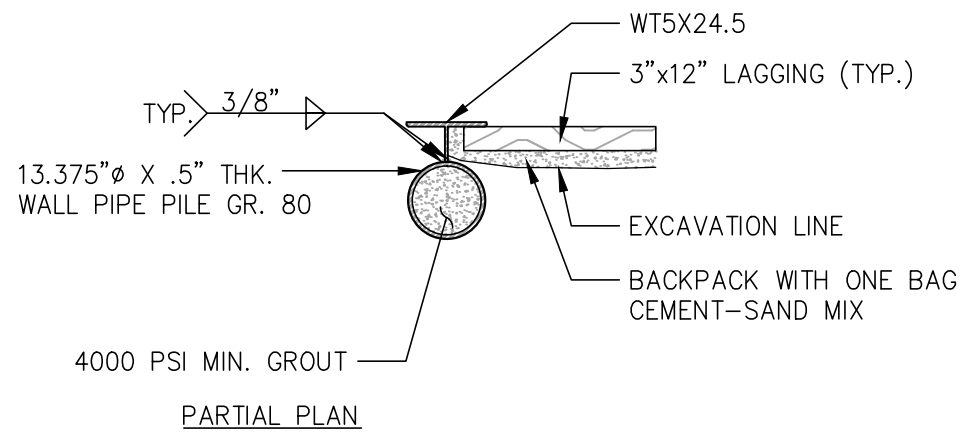


MINIPILE INSTALLATION NOTES:

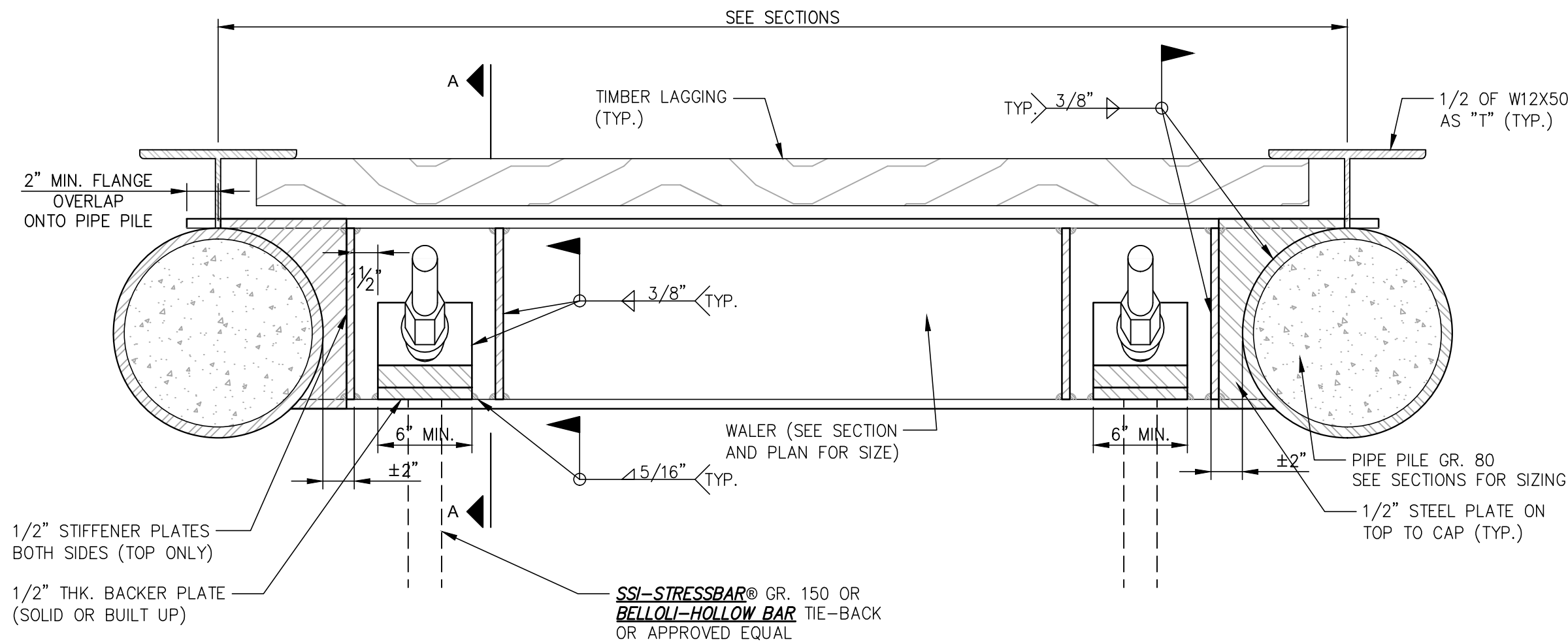
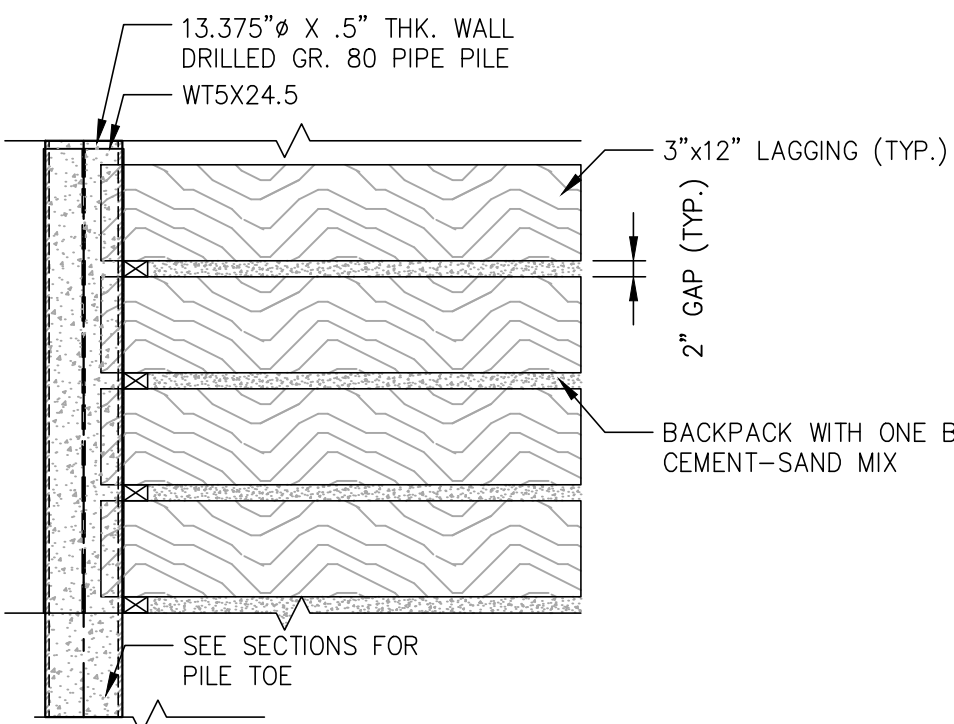
1. ALL PILES SHALL BE INSTALLED AT LOCATIONS AS SHOWN ON CONTRACT DRAWINGS.
2. LAYOUT OF PILE LOCATIONS BY G.C. (SURVEYED IN PLACE).
3. UTILITY IDENTIFICATION AND EXPLORATION AS NECESSARY BY G.C.
4. THE DIAMETER OF THE CUTTING SHOE OF THE CASING SHALL NOT EXCEED THE OUTER DIAMETER OF THE CASING BY 1/4-INCH.
5. "GROUT" TO MIXTURE OF SAND AND CEMENT-GROUT TO ATTAIN SPECIFIED STRENGTH.
6. A SET OF SIX 2-INCH BY 2-INCH CUBES OF GROUT SHALL BE TAKEN EACH DAY DURING WHICH MINIPILES ARE GROUTED. CUBES SHALL BE THEN TESTED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH THE CONTRACT SPECS.

MINIPILE INSTALLATION PROCDURE:

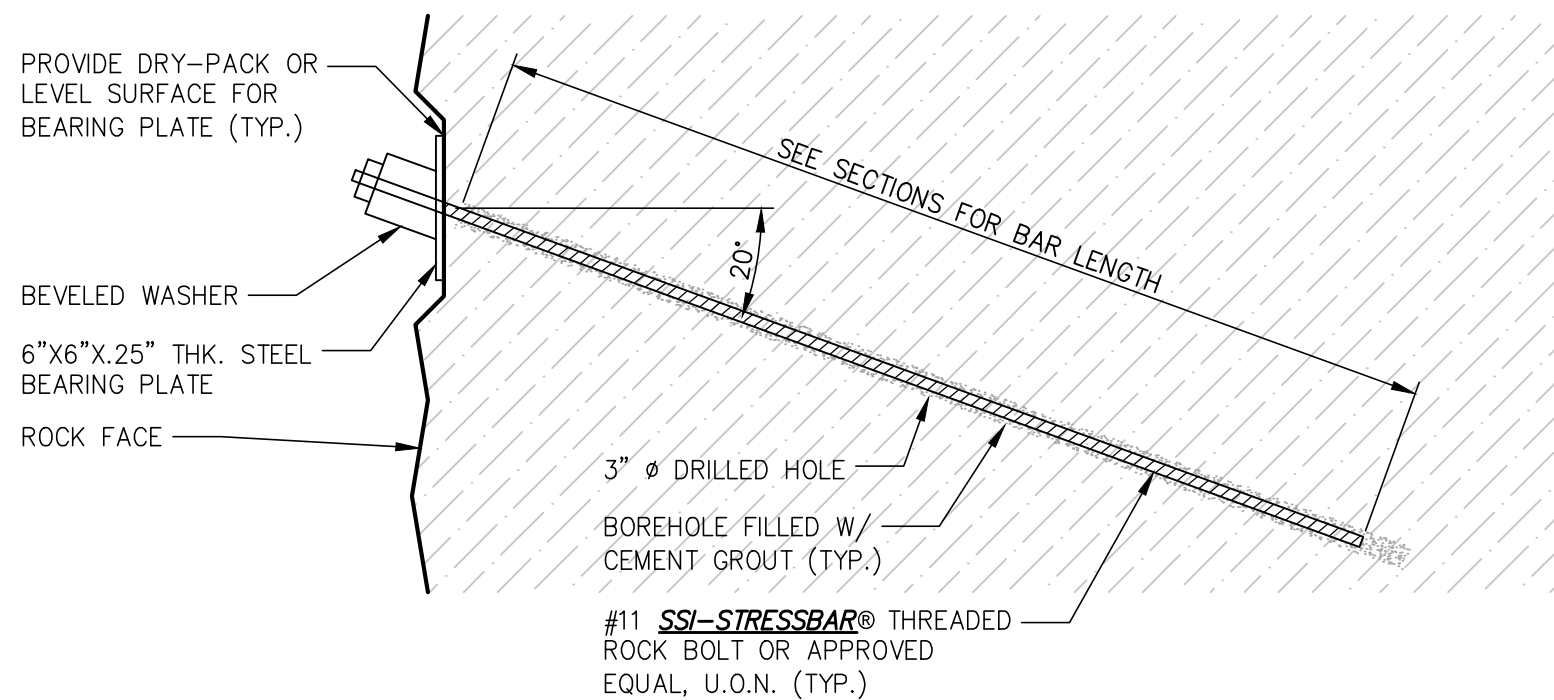
1. MOBILIZATION TO SITE.
2. SET UP RIG ON PROPER LOCATION AND PLUMB MAST.
3. DRILL PILES USING DUPLEX DRILLING METHODS. FLUSH WATER ONLY. NOTE: WHEN CLEANING THE INSIDE CASING, 2-DIAMETERS OR TWO FOOT SHOULD BE MAINTAINED BEHIND THE TIP OF THE OUTER CASING.
4. CASING IS DRILLED-IN TO THE BOTTOM OF THE GROUT (BOND) ZONE AS INDICATED ON DRAWINGS.
5. FLUSH HOLE CLEAN OF SPOILS. IF PILE TIP IS BELOW GWT, FLUID LEVEL INSIDE CASING, AND GROUT THE PILE FROM THE BOTTOM TO DISPLACE THE DRILLING FLUID. CONTINUE GROUTING UNTIL GOOD GROUT FLOWS OUT THE TOP OF THE PILE.
6. INTRODUCE REINFORCING THREADED BAR WITH SPACERS, AND PUSH TO THE BOTTOM OF THE PILE.
7. START PULLING THE CASING IN 5-FOOT INCREMENTS WHILE PUMPING GROUT AND MAINTAINING 75 PSI GROUT PRESSURE BUT NOT EXCEEDING 100 PSI. NOTE: GROUTING OF THE BOND ZONE WILL CEASE IF OVER 150% OF ITS THEORETICAL VOLUME IS PUMPED IN. ACTUAL VOLUME TO BE SPECIFIED BY CONTRACTOR.
8. WHEN CASING REACHES THE ELEVATION REQUIRED BY THE INFLUENCE LINE IT SHALL BE PUSHED BACK DOWN 5-FEET.
9. CUT THREADED BAR TO PROPER ELEVATION AS SHOWN ON CONTRACT DRAWINGS.
10. THE INSTALLATION OF ADDITIONAL PILES IN THE SAME CAP SHALL NOT BE INSTALLED UNTIL GROUT HAS CURED FOR AT LEAST 24 HOURS.



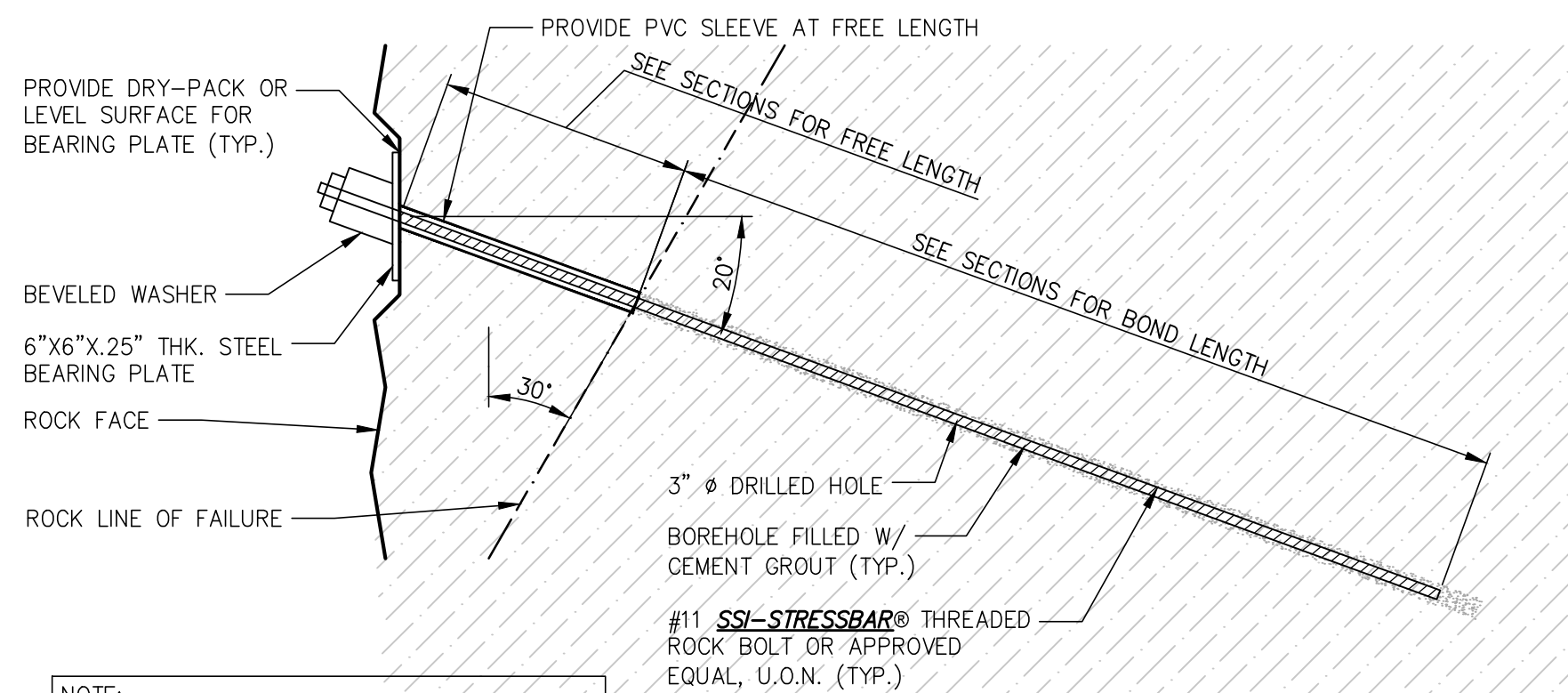
FOR EXTENT OF THE DETAIL, SEE NOTE #11 OF "DRILLED PIPE SOLDER PILES & LAGGING" ON SHEET SOE-001.



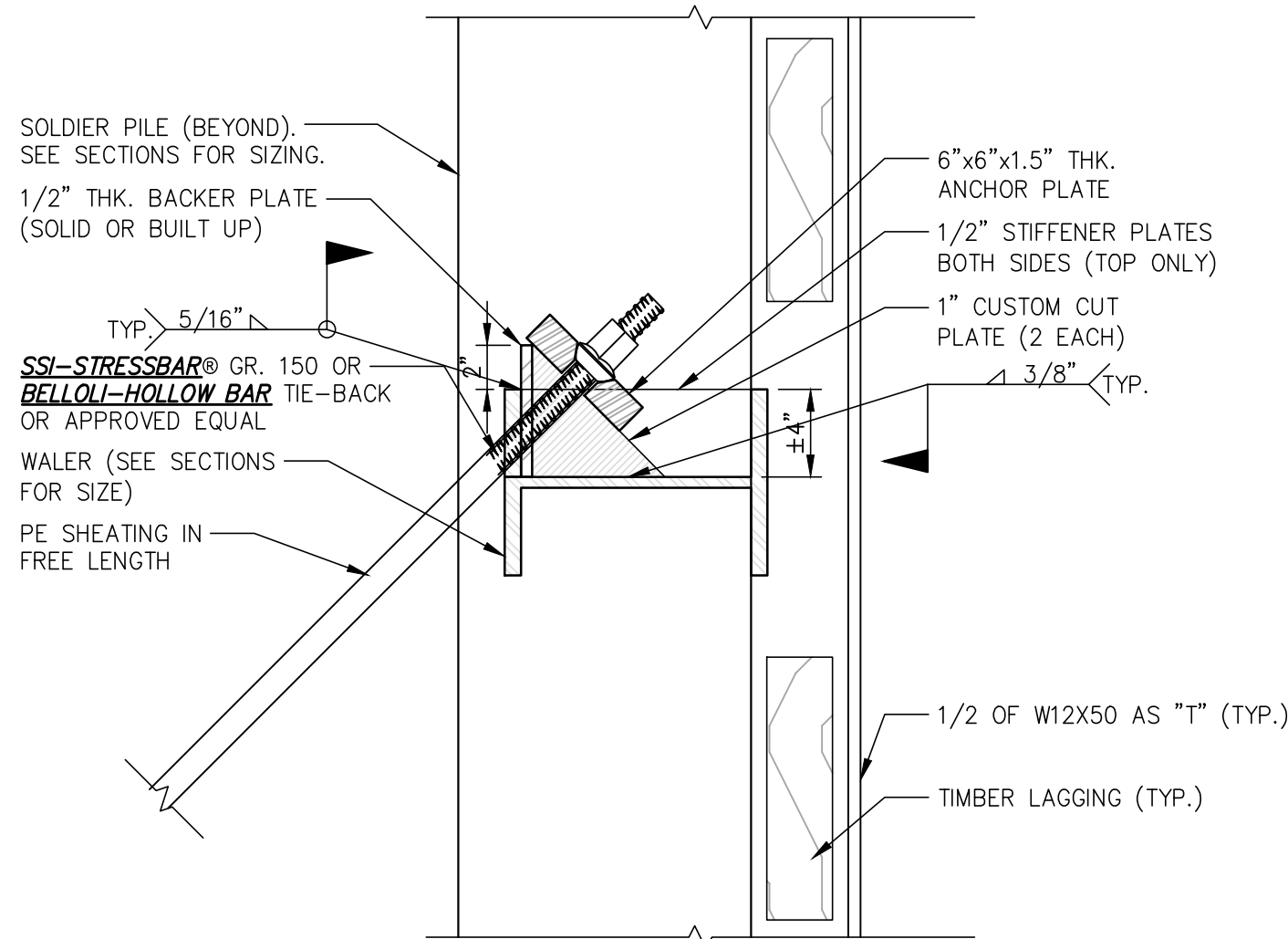
6 2 TIE BACK THRU WALER DETAIL
401 SCALE: N.T.S.



NOTE:
FINAL ROCK BOLT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD WHEN THE ROCK FACE IS EXPOSED AND BASED ON EVALUATION OF ACTUAL ROCK CONDITIONS.

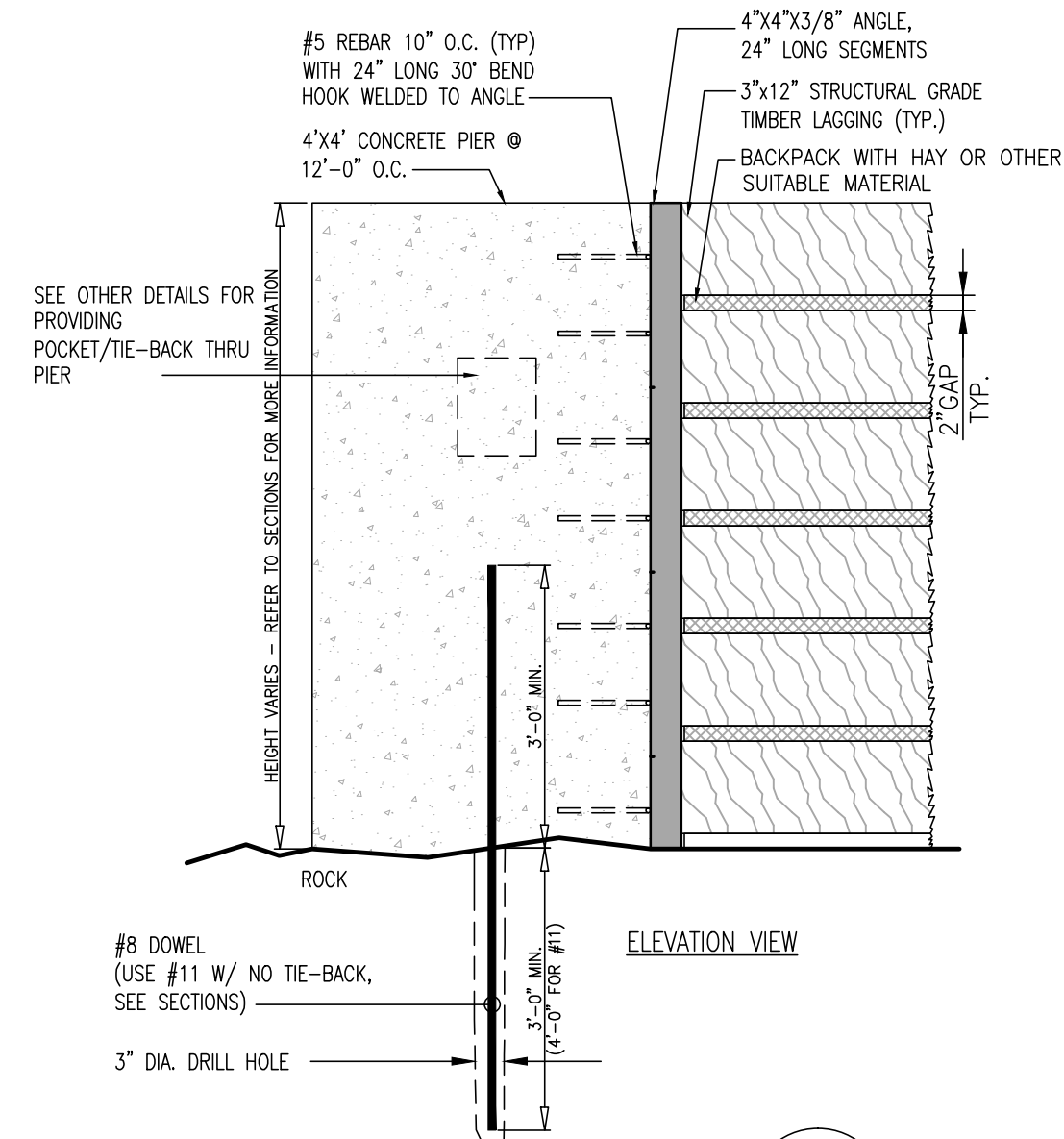


NOTE:
FINAL ROCK BOLT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD WHEN THE ROCK FACE IS EXPOSED AND BASED ON EVALUATION OF ACTUAL ROCK CONDITIONS.

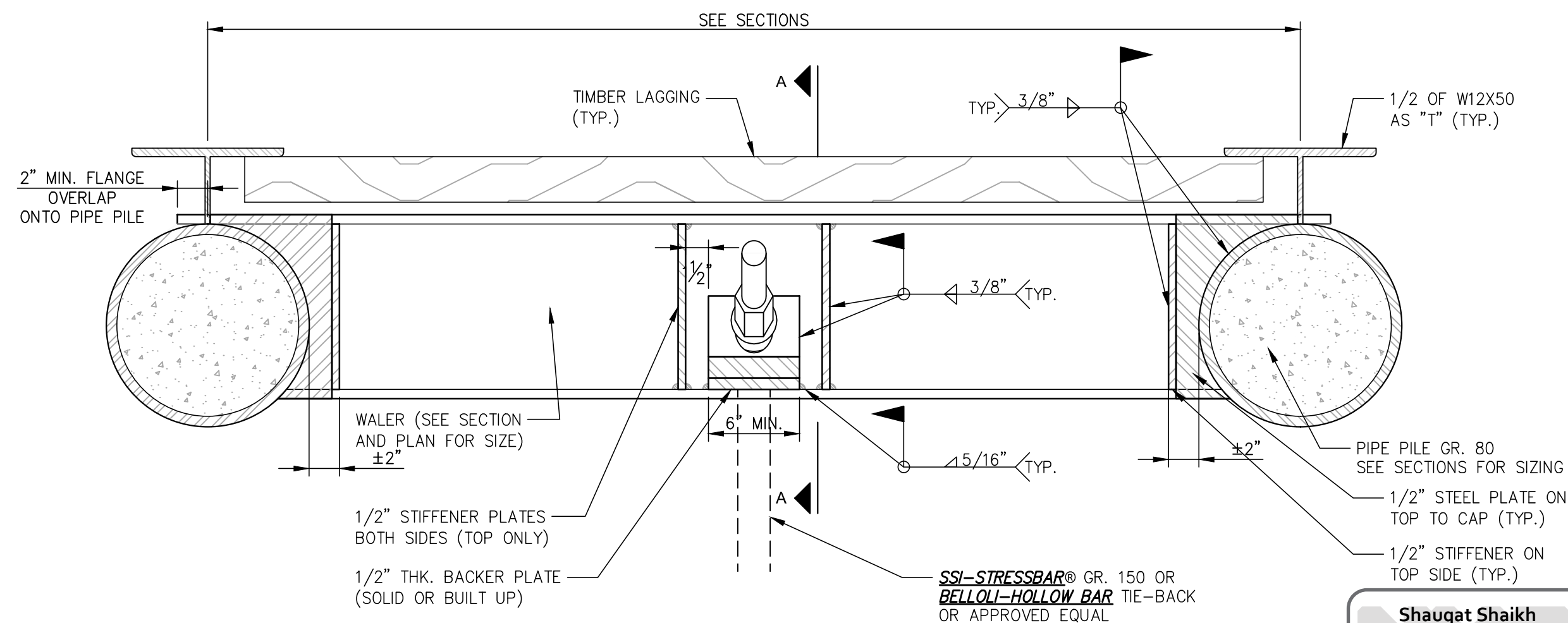


3 PASSIVE ROCK ANCHOR BOLT DETAIL
401 SCALE: N.T.S.

4 ACTIVE / STRESSED ROCK ANCHOR BOLT DETAIL
401 SCALE: N.T.S.



5 STANDARD CONCRETE "BUTTON" PIER DETAIL
401 SCALE: N.T.S.



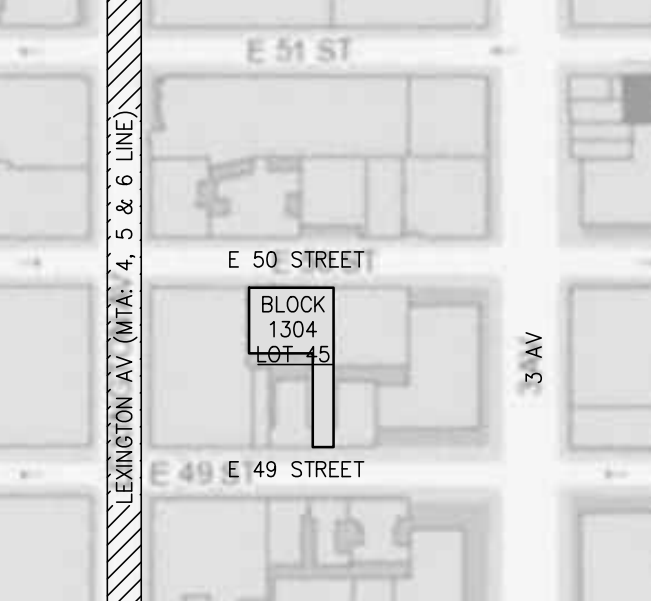
7 1 TIE BACK THRU WALER DETAIL
401 SCALE: N.T.S.

Shauqat Shaikh
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 11/24/2015
NYC Development Hub

| | |
|---------------|----------|
| 2 DOB FILING | 10/21/15 |
| 1 FND UDATE | 09/30/15 |
| No: Revision: | Date: |

SCALE:
AS NOTED

KEY PLAN:



DRAWING TITLE:

DETAILS

| | |
|---------------------|----------------|
| SEAL | Date: 05-23-14 |
| PROJECT No: 14018 | Drawn By: AB |
| DWG. No: SOE-401.00 | 11 OF 11 |