NOTES

GENERAL

- WHERE REFERRED TO THE ENGINEER SHALL BE A REPRESENTATIVE OF SESI CONSULTING ENGINEERS.
- SESI CONSULTING ENGINEERS HAS BEEN RETAINED TO PROVIDE SPECIAL INSPECTION OF THE SOLDIER BEAM AND LAGGING SYSTEM AS SHOWN ON THESE DRAWINGS.
- PROPER NOTICES SHALL BE GIVEN TO THE SPECIAL INSPECTION AGENCY BY THE OWNER'S REPRESENTATIVE FOR THE PERFORMANCE OF THE SPECIAL INSPECTIONS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 1704.2 OF THE 2020 EDITION OF THE BUILDING CODE OF NEW YORK STATE.
- NOTICE SHALL BE PROVIDED TO ADJOINING PROPERTY OWNERS BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION IN ACCORDANCE WITH LOCAL AND STATE CODES.
- ALL WORK PERFORMED IN CONNECTION WITH SUPPORT OF EXCAVATION SYSTEM SHOWN ON THESE DRAWINGS SHALL ADHERE TO THE APPLICABLE PROVISIONS OF THE LOCAL GOVERNING AGENCY, THE 2020 EDITION OF THE BUILDING CODE OF NEW YORK STATE, REGULATIONS OF THE NEW YORK STATE DEPARTMENT OF LABOR, AND REQUIREMENTS OSHA.
- SESI CONSULTING ENGINEERS HAS BEEN RETAINED TO PERFORM SPECIAL INSPECTIONS FOR THE WORK SHOWN ON THESE DRAWINGS, SPECIFICALLY:
  - EXCAVATION - SHEETING, SHORING AND BRACING
- PERIMETER FENCING AND OTHER PROTECTION SHALL BE PROVIDED ALONG THE PERIMETER OF THE CONSTRUCTION SITE BOTH DURING AND AFTER WORKING HOURS, PROPERLY MARKED AND LIGHTED. SOE DRAWINGS DO NOT ADDRESS TRAFFIC OR PEDESTRIAN SAFETY. THIS IS TO BE DESIGNED BY OTHERS.
- SESI CONSULTING ENGINEERS SHALL BE ADVISED OF CONFLICTS BETWEEN THIS DRAWING AND ACTUAL FIELD CONDITIONS, PARTICULARLY HORIZONTAL CLEARANCES TO EXISTING CONSTRUCTION. ELEVATIONS OF COMPLETED CONSTRUCTION ARE SHOWN FOR GUIDANCE ONLY. THESE DRAWINGS SHALL BE WORKED IN CONJUNCTION WITH THE CONTRACT DRAWINGS TO ASSURE PROPER COORDINATION.
- PRIOR TO COMMENCEMENT OF INSTALLATION OF SOLDIER BEAM AND LAGGING SYSTEM:
  - THE OWNERS REPRESENTATATIVE IS TO OBTAIN WRITTEN PERMISSION FROM OWNERS OF ALL ADJOINING STRUCTURES OR PROPERTIES FOR ACCESS TO THE PROPERTIES IN ORDER TO PROVIDE PROTECTION, DURING INSTALLATION OF SOLDIER BEAMS AND LAGGING, THE UNDERPINNING OPERATION AND THE MASS EXCAVATION.
  - MAKE VISUAL INSPECTION WITH PHOTO DOCUMENTATION OF ALL ADJOINING STRUCTURES.
  - MONITORING OF EXISTING STRUCTURES TO BE PERFORMED BY THE OWNER.
  - MONITORING OF EXISTING STRUCTURES INCLUDES VERTICAL AND HORIZONTAL MONITORING, CRACK MONITORING, AND VIBRATION MONITORING.
- ANY WATER INFLOW INTO THE EXCAVATION AND GROUNDWATER SHALL BE CONTROLLED IN SUCH A MANNER THAT THE WATER LEVEL SHALL BE MAINTAINED AT LEAST 2-FOOT BELOW THE BOTTOM OF ANY LEVEL OF EXCAVATION ADJACENT TO THE SOLDIER BEAM AND LAGGING.
- A COMPETENT PERSON WHO IS A REPRESENTATIVE OF THE CONTRACTOR SHALL INSPECT THE SUBGRADE OF THE EXCAVATION, ALL BRACING AND BLOCKING AND EXISTING ADJACENT STRUCTURES AS NECESSARY AND AT THE COMMENCMENT OF EACH SHIFT, TO ASSURE INTEGRITY, PRIOR TO PERMITTING WORKMAN TO WORK WITHIN THE AREA PROTECTED BY THE TEMPORARY PERIMETER RETAINING SYSTEMS.
  - OSHA 29CFR 1926.650 & 1926.651 ET. SEQ

    1926.651(K)(1)

    "DAILY INSPECTIONS OF EXCAVATIONS, THE ADJACENT AREAS, AND PROTECTIVE SYSTEMS SHALL BE MADE BY A COMPETENT PERSON FOR EVIDENCE OF A SITUATION THAT COULD RESULT IN POSSIBLE CAVE-INS, INDICATION OF FAILURE OF PROTECTIVE SYSTEMS, HAZARDOUS ATMOSPHERES, OR OTHER HAZARDOUS CONDITIONS. AN INSPECTION SHALL BE CONDUCTED BY A COMPETENT PERSON PRIOR TO THE START OF WORK AND AS NEEDED THROUGHOUT THE SHIFT. INSPECTIONS SHALL ALSO BE MADE AFTER EVERY RAINSTORM OR OTHER HAZARD INCREASING OCCURRENCE. THESE INSPECTIONS ARE ONLY REQUIRED WHEN EMPLOYEE EXPOSURE CAN BE REASONABLY ANTICIPATED"

    1926.650 (B)

    "'COMPETENT PERSON' MEANS ONE WHO IS CAPABLE OF IDENTIFYING EXISTING AND PREDICTABLE HAZARDS IN THE SURROUNDS, OR WORKING CONDITIONS WHICH ARE UNSANITARY, HAZARDOUS, OR DANGEROUS TO EMPLOYEES, AND WHO HAS AUTHORIZATION TO TAKE PROMPT CORRECTIVE MEASURES TO ELIMINATE THEM."
- STRUCTURAL INFORMATION SHOWN IS FOR REFERENCE ONLY. REFER TO STRUCTURAL DRAWINGS FOR ALL NEW BUILDING INFORMATION.
- SITE LAYOUT INFORMATION INCLUDING EXISTING GRADES OBTAINED FROM TOPOGRAPHIC SURVEY SOIL TEST LOCATION PLAN" PREPARED BY JMC SITE DEVELOPMENT CONSULTANTS, LLC., DATED FEBRUARY 6, 2018, REVISED FEBRUARY 28, 2018.
- THIS ENGINEER HAS MADE NO FIELD VERIFICATION OF EXISTING SITE GRADES OR SITE UTILITIES. THE ENGINEER SHALL BE ADVISED OF CONFLICTS BETWEEN THIS DRAWING AND ACTUAL FIELD CONDITIONS PARTICULARLY HORIZONTAL CLEARANCES TO EXISTING STRUCTURES.

MATERIALS

- MATERIAL FOR SOLDIER BEAMS SHALL MEET THE REQUIREMENTS N80 PIPE. ALL STEEL SECTIONS SHALL BE NEW MATERIAL AND MILL CERTIFICATES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
- ALL PLATES, MISCELLANEOUS BRACKETS, STIFFENERS, WALERS ETC. SHALL MEET THE REQUIREMENTS OF ASTM A572 GRADE 50
- ALL WELDING ELECTRODES SHALL CONFORM TO A.W.S. STANDARDS FOR BOTH FIELD AND SHOP WELDING. THE APPLICABLE ELECTRODE TYPE SHOULD BE UTILIZED FOR THE TYPE OF WELDING TO BE PERFORMED AS DEFINED BY THE 2004 AWS D1.1 CODE. PROPER ELECTRODE DRYING FACILITIES SHALL BE PROVIDED. ONLY NEWLY OPENED, SEALED PACKAGES OF ELECTRODES SHALL BE UTILIZED.
- TIMBER LAGGING SHALL BE ROUGH CUT (FULL SIZE) SOUTHERN YELLOW PINE, WITH A MINIMUM FB = 1200 PSI, AS ACCEPTABLE TO THE ENGINEER. ANY LAGGING THAT WILL REMAIN IN PLACE SHALL BE TREATED TIMBER LAGGING. MINIMUM THICKNESS SHALL BE 3" THICK.
- EXPANSION ANCHORS TO BE USED SHALL BE HILTI KWIK BOLT II EXPANSION ANCHORS. EXPANSION ANCHORS TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

SOLDIER BEAM INSTALLATION

- ALL PILES SHALL BE INSTALLED IN LOCATIONS AS SHOWN ON THE CONTRACT DRAWINGS.
- THE PROPOSED WALL ALIGNMENT SHALL BE FILLED AS NECESSARY IN ORDER TO PROVIDE A LEVEL-WORKING PLATFORM FOR THE DRILLING EQUIPMENT.
- INSTALL SOLDIER BEAMS UTILIZING DUPLEX DRILLING METHODS WITH WATER FLUSH. UPON CONFIRMATION OF NO EXISTING UTILITIES WITHIN TWENTY (20) FEET OF THE PROPOSED SOLDIER PILES, CONTRACTOR MAY USE AIR IN LEIU OF WATER FOR PILE INSTALLATION. THE PILE SHALL CONSIST OF A MICROPILE CASING WITH A MINIMUM WALL THICKNESS OF 0.50 INCHES. MICROPILE CASING SHALL BE CONSTRUCTED OF MINIMUM N-80 (80 KSI) STEEL CONFORMING TO API SPECIFICATIONS. THE CASING ARE FLUSHED THREADED IN MINIMUM 5-FOOT LENGTHS WITH A TAPERED MODIFIED THREAD OF 5 THREADS PER INCH. THIS CONFIGURATION HAS A MINIMIUM SHOULDER AND THEREFORE FULL STRESSES ARE TRANSFERRED THROUGH THE THREADS IN BOTH TENSION AND COMPRESSION.
- INSTALL SOLDIER PILES TO THE REQUIRED TIP ELEVATION. IF ROCK OR OBSTRUCTIONS ARE ENCOUNTERED BEFORE ATTAINING THE REQUIRED TIP ELEVATION, THE PILE SHALL BE ADVANCED THROUGH THE OBSTRUCTION OR INTO THE ROCK USING ROTARY PERCUSSION DRILLING METHODS. THE INTERIOR OF THE PILE SHALL BE CLEANED FOR THE FULL LENGTH USING A DOWN-THE-HOLE HAMMER PRIOR TO THE PLACEMENT OF GROUT WITHIN THE PILE.
- GROUT SHALL CONSIST OF 1 SACK OF PORTLAND CEMENT TYPE III AND 6 GALLONS OF POTABLE WATER (W/C RATION OF 0.53), WHICH WILL YIELD AT LEAST 5000 PSI IN 7 DAYS. GROUT SHALL BE MIXED THROUGHLY WITH A HIGH-SPEED SHEAR MIXER. GROUT SHALL BE PLACED USING CONVENTIONAL TREMIE METHODS.
- IT IS INTENDED THAT EACH SOLDIER BEAM BE GROUTED AS THE DRILLING PROCEEDS TO PREVENT LEAVING OPEN, COMPLETED PILES. THIS PROCEDURE WILL CONTINUE UNTIL ALL SOLDIER BEAMS HAVE BEEN INSTALLED. THE CONTRACTOR MAY AT HIS ON RISK DELAY THE PLACING OF GROUT WITHIN THE PILES UNTIL SEVERAL PILES ARE READY FOR THE GROUT. THE CONTRACTOR IS ADVISED THAT PROPER PROTECTION OF THE PILES WILL BE REQUIRED FOR THOSE LEFT OPEN AND THAT ANY REMEDIAL WORK NECESSARY DUE TO HIS DECISION WILL BE AT HIS EXPENSE.
- THE SOLDIER BEAMS SHOULD BE PLUMB AND ON LINE. IT MAY BE PRUDENT TO UTILIZE SOME FORM OF JIG DURING THE PLACEMENT OF THE SOLDIER BEAMS TO ASSURE THAT THE ALIGNMENT OF THE SOLDIER BEAMS REMAINS ON LINE.
- GROUT SHALL BE CAREFULLY PLACED INSIDE THE PILE TO WITHIN 1 FOOT OF THE TOP OF THE PILE. THE GROUT SHALL BE PLACED BY TREMIE METHODS TO ASSURE THAT THE ENTIRE PILE HAS BEEN FILLED AND NO VOIDS WERE CREATED DURING THE PLACEMENT OPERATION AND NO CONTAMINATION OF THE GROUT DUE TO INTERMIXING WITH DRILLING SPOILS OCCURS.
- UPON COMPLETION OF THE INSTALLATION OF THE SOLDIER BEAMS, THE MASS EXCAVATION MAY COMMENCE IN CONJUNCTION WITH THE INSTALLATION OF THE TIMBER LAGGING. LAGGING SHALL BE CUT TO PROVIDE A MINIMUM OF 3-INCHES OF BEARING ON EACH OF THE L-BRACKET OR FULLY BLOCKED OUT. TIMBER LAGGING SHALL BE CRIMP NAILED TO THE FLANGES OF THE "I" SECTION WITH 12D NAILS. EXCAVATE NO DEEPER THAN 2 FEET BEFORE INSTALLING THE TIMBER LAGGING.
- EACH LAGGING BOARD SHALL BE BLOCKED AT LEAST 1/4-INCH TO PERMIT DRAINAGE. ANY VOIDS BEHIND LAGGING SHALL BE BACKFILLED WITH ON SITE SOIL RAMIMED IN PLACE, FLOWABLE FILL, OR DRYPACK MORTAR.

TIEBACKS AND TESTING

- ALL ANCHORS SHALL BE SOLID THREAD BARS AND SHALL BE SINGLE-CORROSION PROTECTED (SCP) ANCHORS. BARS SHALL BE MANUFACTURED BY STRESS BAR STEEL SYSTEMS INTERNATIONAL OR APPROVED EQUAL. BARS SHALL BE GRADE 150 KSI.
- ALL PLATES SHALL CONFORM TO ASTM A-50.
- ANCHOR NUTS AND COUPLERS SHALL BE CAPABLE OF DEVELOPING 100% OF THE ULTIMATE STRENGTH OF THE ANCHOR.
- CARE MUST BE TAKEN NOT TO DAMAGE THE THREAD BARS. KEEP THE THREAD BARS FREE OF DIRT AND OTHER DELETERIOUS SUBSTANCES.
- ALL ANCHORS SHALL BE PROOF-TESTED USING A CALIBRATED CENTER HOLE HYDRAULIC JACK. NO LESS THAN 10% OF THE ANCHORS SHALL BE PERFROMANCE TESTED.
- PERFORMANCE TESTING:
  AL, 0.25P
  AL, 0.25P, 0.50P
  AL, 0.25P, 0.50P, 0.75P
  AL, 0.25P, 0.50P, 0.75P, 1.00P
  AL, 0.25P, 0.50P, 0.75P, 1.00P, 1.20P
  AL, 0.25P, 0.50P, 0.75P, 1.00P, 1.20P, 1.33P
  HOLD 1.33P FOR CREEP TEST. RECORD ALL MOVEMENTS USING A DIAL INDICATOR THAT IS CAPABLE OF RECORDING INCREMENTS OF 0.001 INCHES. RECORD THE READINGS AT INTERVALS OF 0, 1, 2, 3, 4, 5, 6, AND 10 MINUTES. RELEASE LOAD BELOW LOCK OFF LOAD AND RELOAD ANCHOR TO LOCK OFF LOAD AND LOCK OFF ANCHOR WITH ANCHOR NUT.
- PROOF TEST
  AL, 0.25P, 0.50P, 0.75P, 1.00P, 1.20P, 1.33P
  HOLD 1.33P FOR CREEP TEST. RECORD ALL MOVEMENTS USING A DIAL INDICATOR THAT IS CAPABLE OF RECORDING INCREMENTS OF 0.001 INCHES. RECORD THE READINGS AT 0, 1, 2, 3, 4, 5, 6, AND 10 MINUTES. RELEASE LOAD BELOW LOCK OFF LOAD AND RELOAD ANCHOR TO LOCK OFF LOAD AND LOCK OFF ANCHOR WITH ANCHOR NUT.
- ALL TIEBACKS SHALL BE LOCKED OFF AT 80% OF THE DESIGN LOAD.
- CONTRACTOR SHALL SUBMIT CERTIFCATION OF JACK CALIBRATIONS FOR APROVAL PRIOR TO COMMENCING TIEBACK INSTALLATION. CALIBRATION REPORT MAY BE NO OLDER THAN 3 MONTHS.

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3	3/23/22	DOT COMMENTS	NG
2	3/17/22	DOT COMMENTS	NG
1	9/7/21	REVISED DOT SUBMISSION	NG
	8/4/21	DOT SUBMISSION	NG

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