

**NOTES:**

DRILLED-IN H-PILES ARE REQUIRED FOR RETAINING WALL AT END BENT 1 & 2.

USE A SOLDIER PILE RETAINING WALL WITH A TIMBER LAGGING RETAINING WALL AT END BENT 1 & 2.

BEFORE BEGINNING SOLDIER PILE WALL CONSTRUCTION FOR TEMPORARY SHORING AT END BENT 1 & 2, SURVEY WALL LOCATION AND SUBMIT A REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.

THE DRILLED-IN PILES SHALL HAVE A MINIMUM EMBEDMENT OF 19'-4".

FOR TEMPORARY SHORING, SEE "TEMPORARY RAILROAD SHORING" SPECIAL PROVISION.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE SHORING AND EXCAVATION PLANS HAVE BEEN SUBMITTED TO THE RAILROAD BY THE STATE. AS OF THE TIME OF PLAN PRINTING FOR ADVERTISEMENT FOR BIDS, RAILROAD APPROVAL HAS NOT BEEN RECEIVED. WHEN SUCH APPROVAL HAS BEEN RECEIVED, THE CONTRACTOR WILL BE NOTIFIED BY ADDENDUM. IN THE EVENT RAILROAD APPROVAL IS NOT GIVEN PRIOR TO SUBMISSION OF BIDS, THE CONTRACTOR SHALL SUBMIT BIDS BASED ON THE CONTRACT PLANS. THE CONTRACTOR SHALL NOT BEGIN EXCAVATION AT THE LOCATIONS SHOWN ON THESE PLANS UNTIL NOTIFIED.

CONTROL DRAINAGE DURING CONSTRUCTION IN THE VICINITY OF SHORING. DIRECT RUNOFF AWAY FROM SHORING.

FOR EXCAVATABLE FLOWABLE FILL, SEE SUBARTICLE 1000-6 OF THE STANDARD SPECIFICATIONS.

THE TOP OF INSTALLED PILES SHALL BE WITHIN 1 INCH OF THEIR PLAN LOCATION IN ANY HORIZONTAL OR VERTICAL DIRECTION AND 1/8" FROM VERTICAL.

NO SPLICES ARE PERMITTED IN H-PILES EXCEPT WHERE LOW VERTICAL CLEARANCE IS AN ISSUE.

DRILLED-IN H-PILES ARE REQUIRED. FOR DRILLED-IN H-PILES INSTALLATION, SEE SUBARTICLE 450-3(E) OF THE STANDARD SPECIFICATIONS EXCEPT EXCAVATABLE FLOWABLE FILL MUST BE USED ABOVE THE PROPOSED EXCAVATION ELEVATION.

THE EXCAVATED HOLE SHALL BE 30 INCH MINIMUM DIAMETER.

WITHIN 12 HOURS OF COMPLETING EACH HOLE, PLACE H-PILES, BACKFILL WITH CONCRETE AND EXCAVATABLE FLOWABLE FILL TO THE ELEVATIONS SHOWN IN DETAIL 'A'.

USE CLASS A CONCRETE THAT MEETS ARTICLE 1000-4 EXCEPT PROVIDING CONCRETE WITH A SLUMP OF 6" TO 8". AN APPROVED HIGH-RANGE WATER REDUCER MAY BE USED TO ACHIEVE THIS SLUMP.

DESIGN OF TEMPORARY SHORING IS IN ACCORDANCE WITH AREMA VOLUME 2, CHAPTER 8 AND CSXT SHORING REQUIREMENTS FOR COOPERS E-80 TRAIN LOADINGS.

TEMPORARY SHORING HAS BEEN DESIGNED FOR THE FOLLOWING SOIL PROPERTIES AND GROUND WATER ELEVATION:  
 EFFECTIVE UNIT WEIGHT = 120 LB/CU.FT.  
 FRICTION ANGLE = 28 DEGREES  
 COHESION = 0 PSF  
 GROUNDWATER ELEVATION = 928.00 FT

CURE CONCRETE AND EXCAVATABLE FLOWABLE FILL AT LEAST 7 DAYS BEFORE EXCAVATING IN FRONT OF TEMPORARY SHORING.

EXCAVATE IN FRONT OF PILES FROM THE TOP DOWN AND IMMEDIATELY INSTALL TIMBER LAGGING BETWEEN PILES TO RETAIN THE SOIL AS EXCAVATION PROGRESSES.

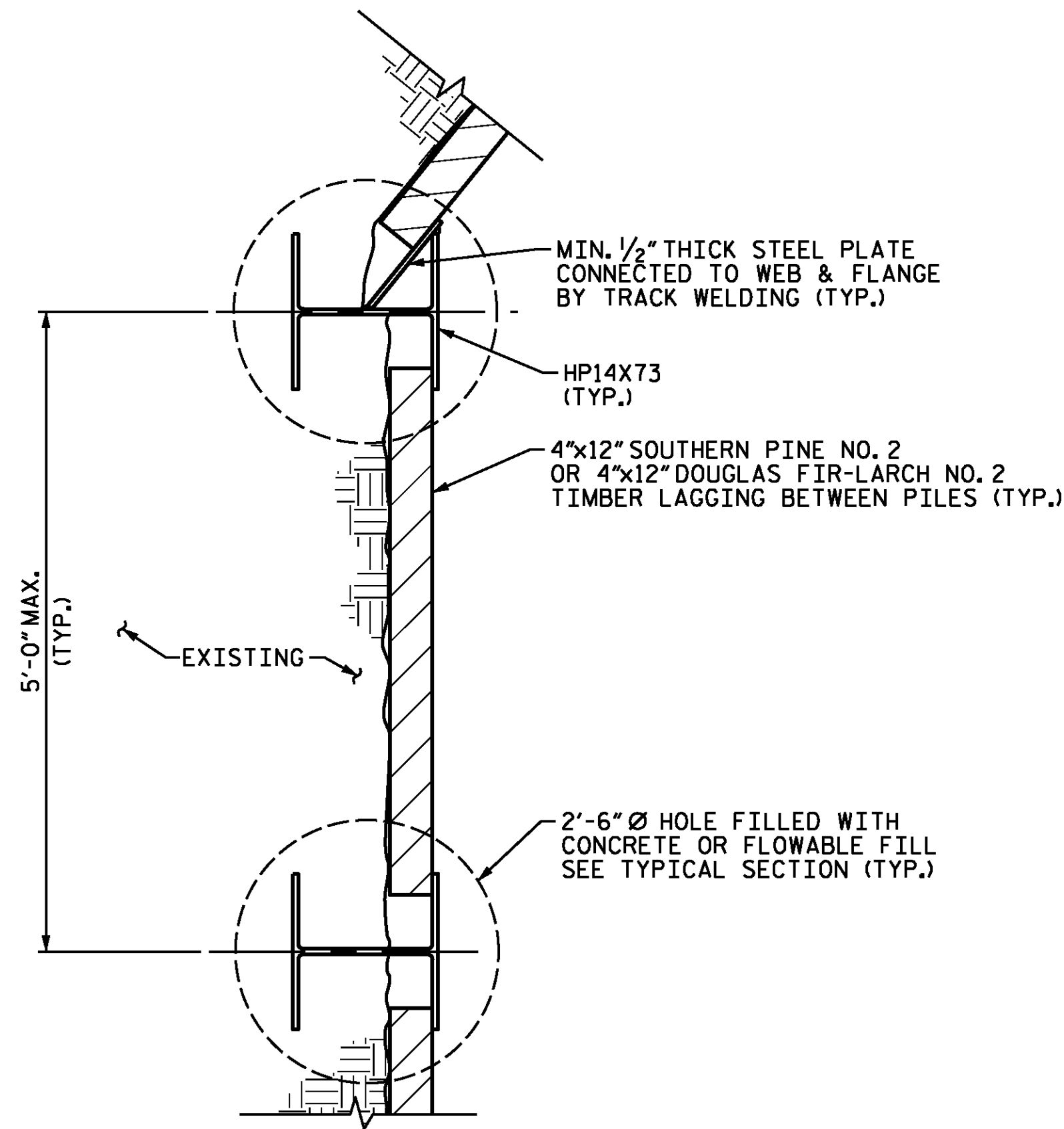
LIMIT OPEN EXCAVATION LIFT HEIGHT TO 6 FEET OR LESS IN HEIGHT.

POSITION LAGGING WITH AT LEAST 3" OF CONTACT IN THE HORIZONTAL DIRECTION BETWEEN LAGGING AND H-PILES FLANGES.

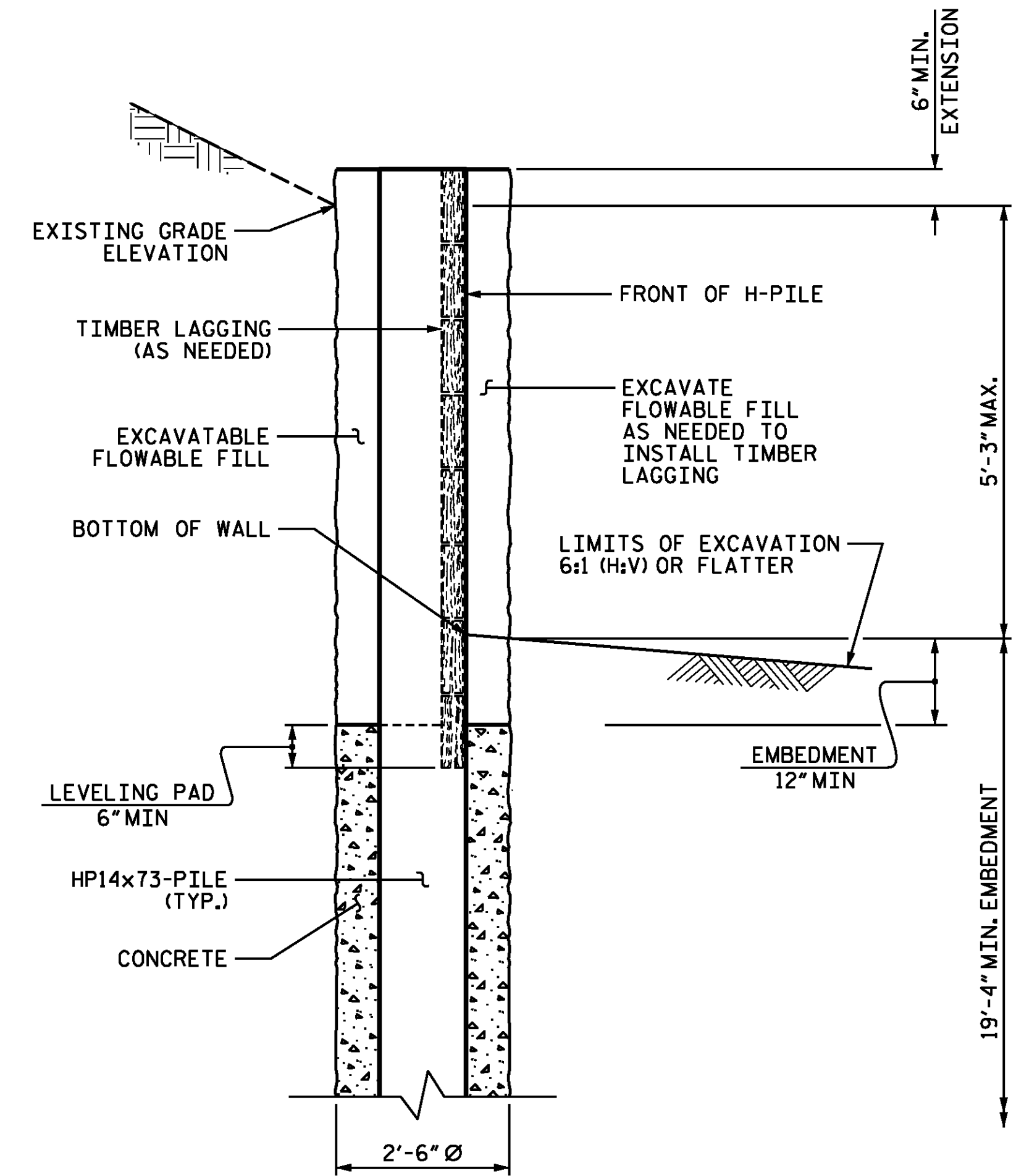
REMOVE TEMPORARY RAILROAD SHORING TO A MINIMUM OF TWO FEET BELOW PROPOSED GROUND.

ANY ALTERNATE DESIGN FOR TEMPORARY SHORING SHALL USE SOIL PARAMETERS NO BETTER THAN THOSE SHOWN ABOVE AND SHALL BE IN ACCORDANCE WITH AREMA VOLUME 2, CHAPTER 8 AND CSXT SHORING REQUIREMENTS FOR COOPERS E-80 TRAIN LOADINGS.

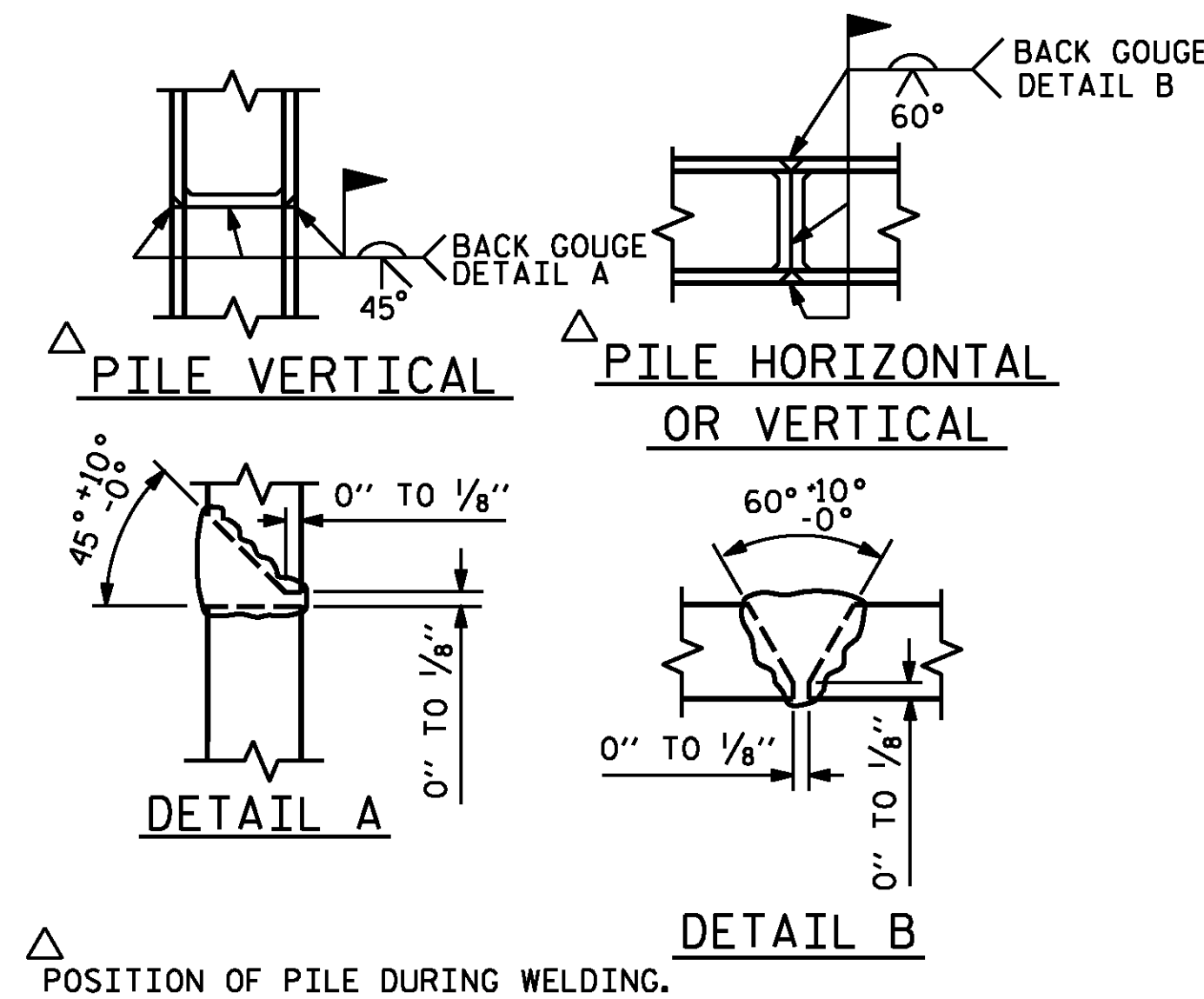
ANY ALTERNATE DESIGN FOR TEMPORARY SHORING SHALL HAVE A MAXIMUM DEFLECTION OF 1 INCH AT THE PILE TOP.



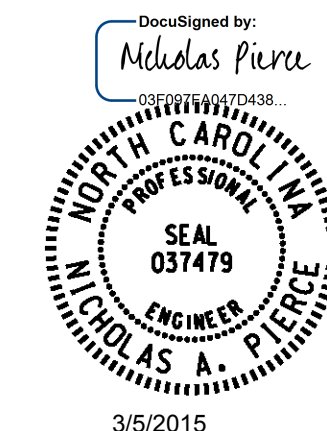
**PLAN - SOLDIER PILE WALL**



**SOLDIER PILE WALL - TYPICAL SECTION**



**PILE SPLICE DETAILS**



PROJECT NO. B-5114  
RANDOLPH COUNTY  
 STATION: 19+99.61 -L-  
22+42.99 -Y4-  
 SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

TEMPORARY SHORING  
 FOR BRIDGE ON SR 1619  
 OVER US 29/70/  
 (BUS 85) BETWEEN  
 SR 1663 AND SR 1621

|  |                 |
|--|-----------------|
| DESIGN ENGINEER OF RECORD<br>N.A. PIERCE | DATE<br>11/2014 |
| DRAWN BY : M.A. HOBBS                    | DATE : 11/2014  |
| CHECKED BY : N.A. PIERCE                 | DATE : 11/2014  |

**WSP**  
 Transportation & Infrastructure  
 15401 Weston Parkway Suite 100  
 Cary, NC 27513 - 919.678.0035  
 www.wspgroup.com  
 LICENSE NO. F-0891

| REVISIONS |     |       |     |     |       | SHEET NO.    |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO.       | BYs | DATEs | NO. | BYs | DATEs | TS01-2       |
| 1         |     |       | 3   |     |       | TOTAL SHEETS |
| 2         |     |       | 4   |     |       | 2            |