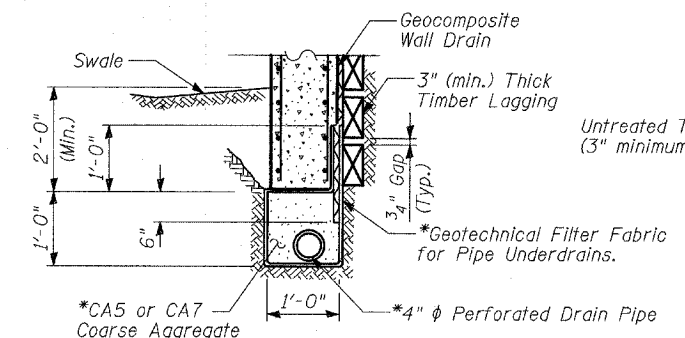
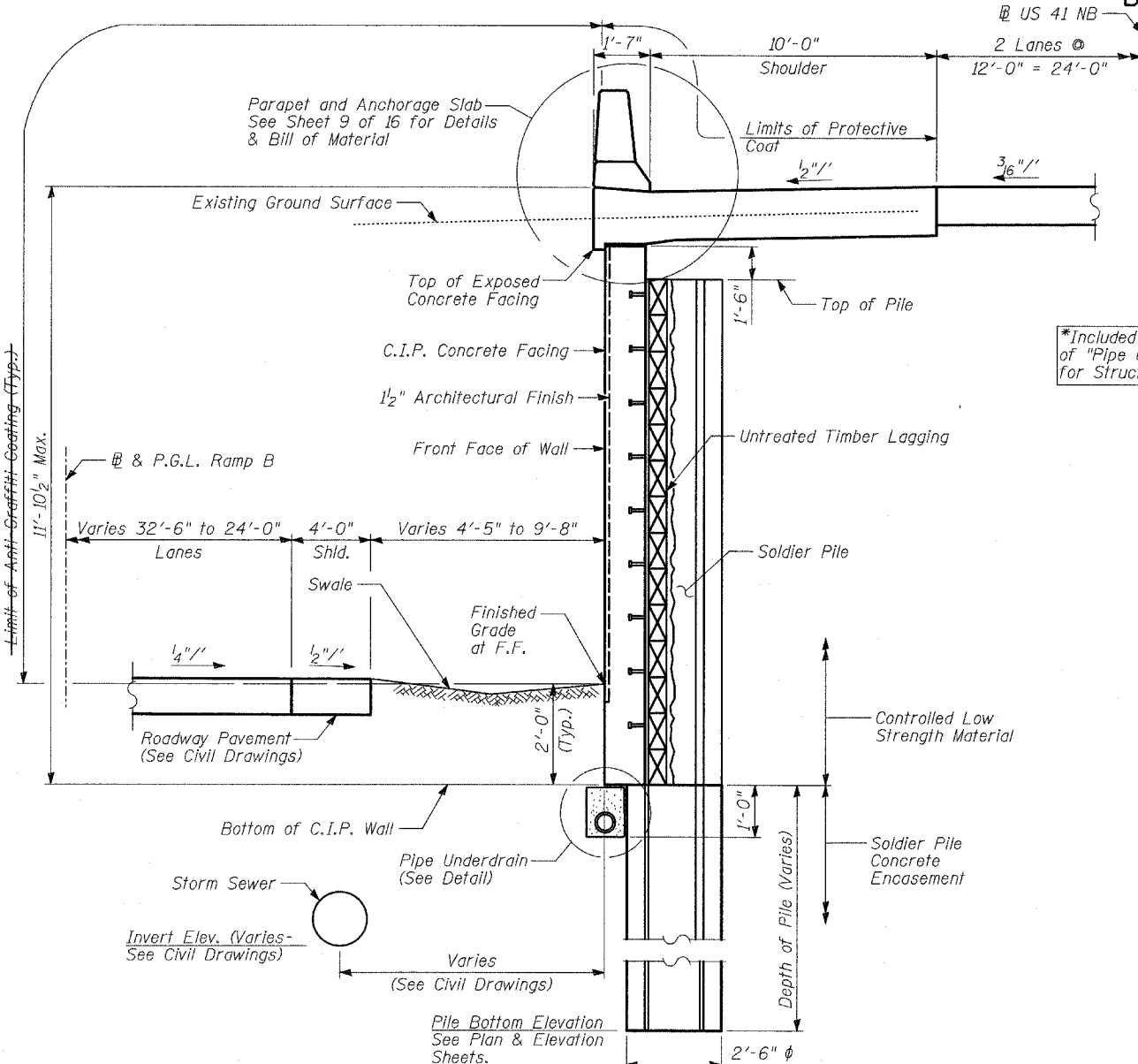
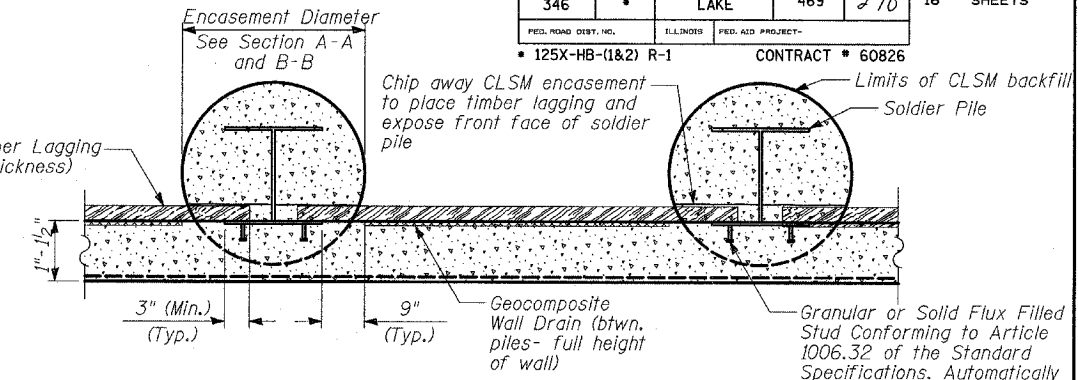


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

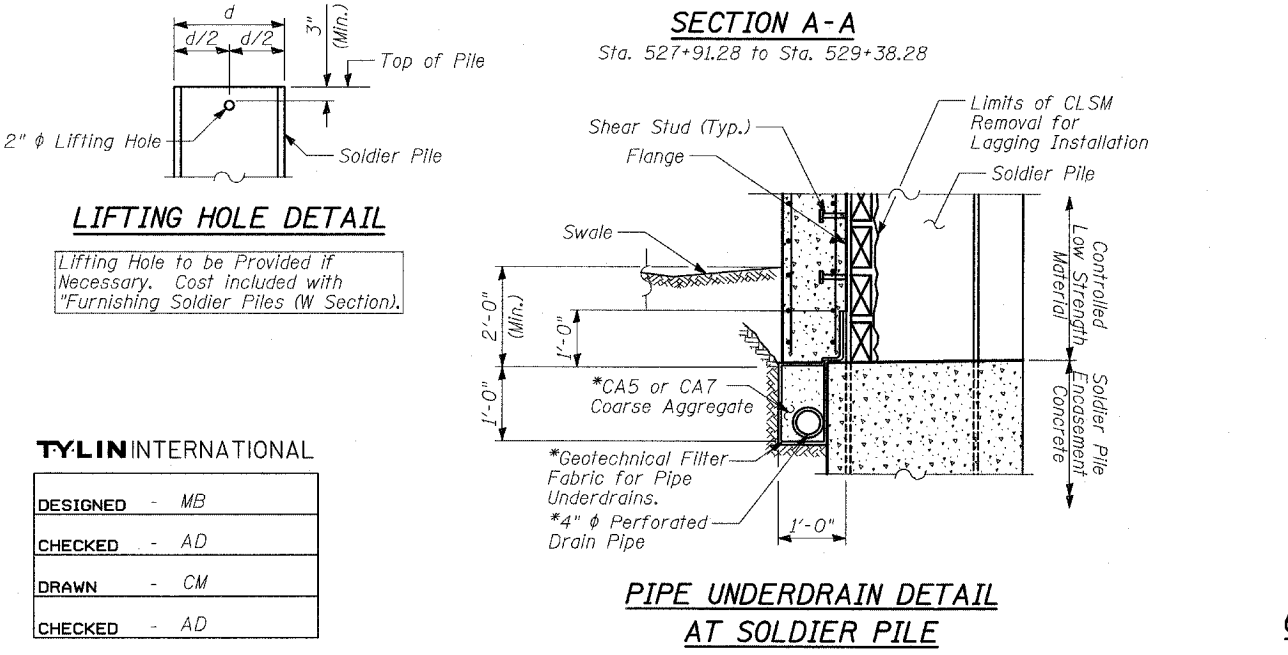
|                     |         |                     |                   |                  |               |
|---------------------|---------|---------------------|-------------------|------------------|---------------|
| ROUTE NO.           | SECTION | COUNTY              | TOTAL SHEETS      | SHEET NO.        | SHEET NO. - 5 |
| 346                 | *       | LAKE                | 469               | 270              | 16 - SHEETS   |
| FED. ROAD DIST. NO. |         | ILLINOIS            | FED. AID PROJECT- |                  |               |
|                     |         | * 125X-HB-(1&2) R-1 |                   | CONTRACT # 60826 |               |



**PIPE UNDERDRAIN DETAIL  
BETWEEN SOLDIER PILES**

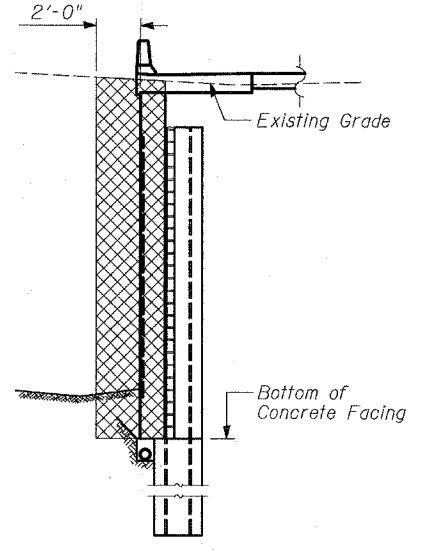


**TYPICAL SECTION THRU  
SOLDIER PILE WALL**

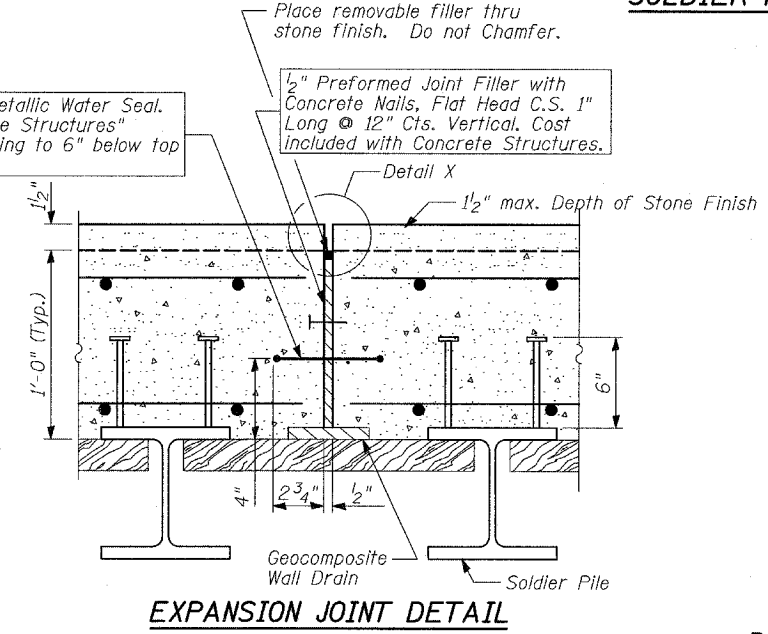


**SECTION A-A**  
Sta. 527+91.28 to Sta. 529+38.28

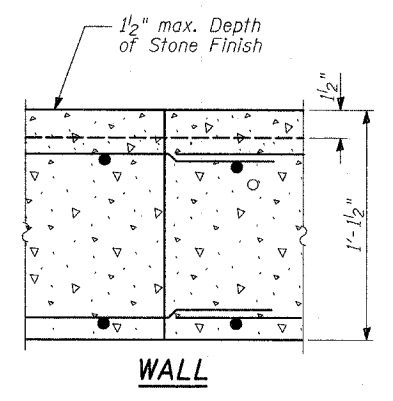
**PIPE UNDERDRAIN DETAIL  
AT SOLDIER PILE**



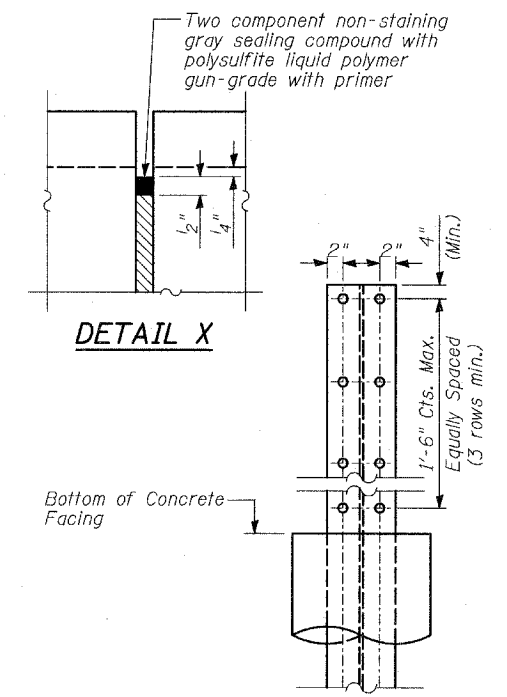
**STRUCTURE EXCAVATION**  
(For Proposed Wall)



**EXPANSION JOINT DETAIL**



**CONSTRUCTION JOINT DETAIL**



**SHEAR STUD CONNECTOR DETAIL**

**BILL OF MATERIAL**

| ITEM                                | UNIT  | TOTAL |
|-------------------------------------|-------|-------|
| Structure Excavation                | CU YD | 239   |
| Stud Shear Connectors               | EACH  | 344   |
| Untreated Timber Lagging            | SQ FT | 1,571 |
| Geocomposite Wall Drain             | SQ YD | 188   |
| Pipe Underdrains for Structures, 4" | FOOT  | 229   |

**NOTES:**

- The Geocomposite Wall Drain shall be constructed according to Section 591 of the Standard Specifications.
- The Contractor is responsible for the design and performance of the lagging using no less than 3" nominal rough-sawn thickness and the minimum tabulated unit stress in bending ( $f_b$ ), used in the design of timber lagging shall be 1000 psi.
- Stud shear connectors shall be 3/4" φ x 6" granular or solid flux filled headed studs, automatically end welded to the front flange of the soldier piles.

**WALL L SECTIONS AND DETAILS  
(1 OF 2)**

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132  
SECTION 125X-HB-(1&2)R-1  
LAKE COUNTY  
S.N. 049-W033

**TYLIN INTERNATIONAL**

|          |      |
|----------|------|
| DESIGNED | - MB |
| CHECKED  | - AD |
| DRAWN    | - CM |
| CHECKED  | - AD |

**LIFTING HOLE DETAIL**

Lifting Hole to be Provided if Necessary. Cost included with "Furnishing Soldier Piles (W Section)."   
 2" φ Lifting Hole