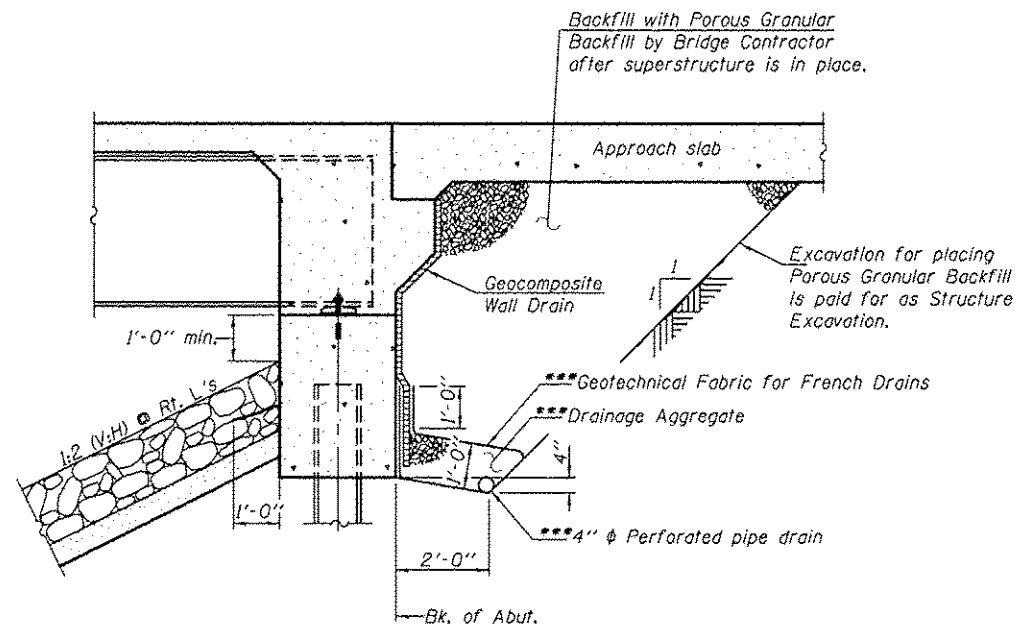


TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|-----------------------------|----------|-------|-----|-------|
| Furnishing Structural Steel | L. Sum | 1 | | 1 |
| Storage of Structural Steel | Cal. Da. | | | 60 |

GENERAL NOTES

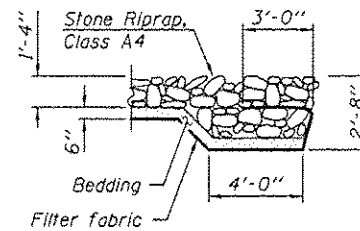
Fasteners shall be ASTM A325 Type 3. Bolts 3/4" in. ϕ , holes 5/16" ϕ , unless otherwise noted.
 Calculated weight of Structural Steel to be furnished = 288,130 lbs (M 270 Grade 50W).
 All structural steel shall be AASHTO M 270 Grade 50W.
 No field welding is permitted except as specified in the contract documents.
 Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Painted areas shall be primed in the shop with a Department approved zinc rich primer. Field painting will not be required.



SECTION THRU INTEGRAL ABUTMENT

***Included in the cost of Pipe Underdrains for Structures.

Note:
 All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



SECTION A-A

DESIGN SCOUR ELEVATION TABLE

| Design Scour Elevation (ft.) | W. Abut. | E. Abut. |
|------------------------------|----------|----------|
| | 568.16 | 568.60 |

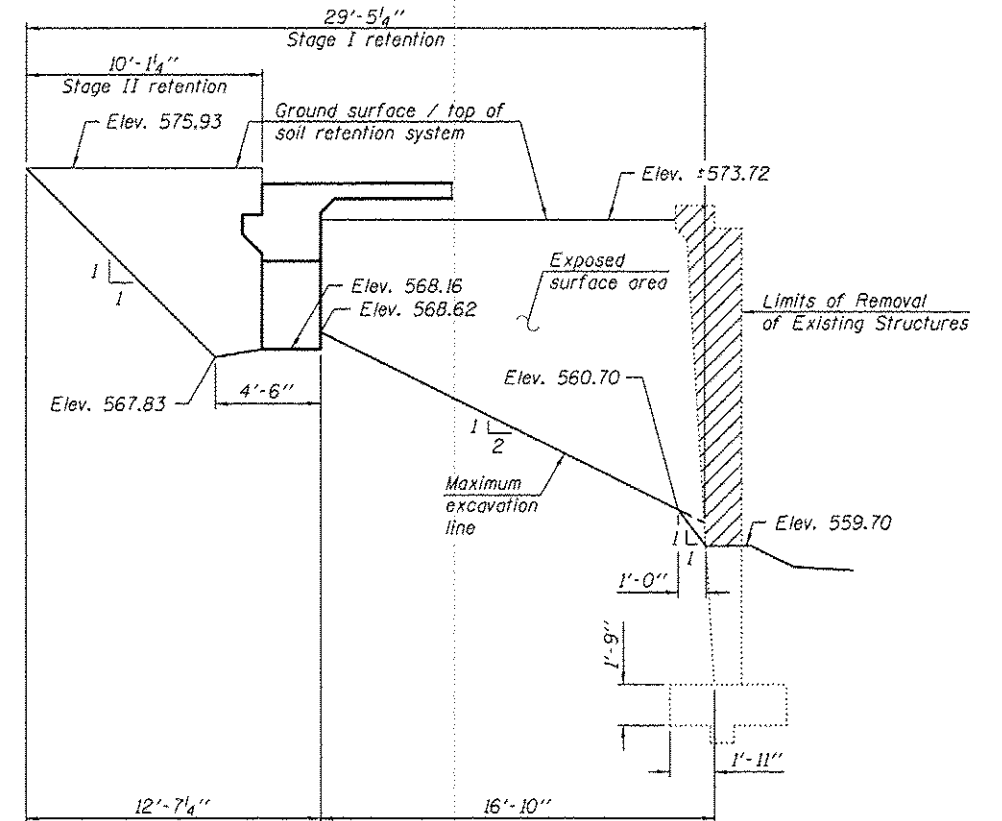
WATERWAY INFORMATION

| Flood | Freq. Yr. | * Q C.F.S. | Opening Sq. Ft. | | ** Nat. H.W.E. | | Head - Ft. | | Headwater El. | |
|-------------|-----------|------------|-----------------|-------|----------------|--------|------------|--------|---------------|--|
| | | | Exist. | Prop. | H.W.E. | Exist. | Prop. | Exist. | Prop. | |
| Design | 10 | 1050 | 313 | 503 | 569.5 | 0.1 | 0.0 | 569.6 | 569.5 | |
| Base | 50 | 1300 | 333 | 535 | 569.9 | 0.1 | 0.1 | 570.0 | 570.0 | |
| Overtopping | 100 | 1350 | 338 | 543 | 570.0 | 0.1 | 0.1 | 570.1 | 570.1 | |
| Max. Calc. | 500 | 1550 | 353 | 567 | 570.3 | 0.2 | 0.1 | 570.5 | 570.4 | |

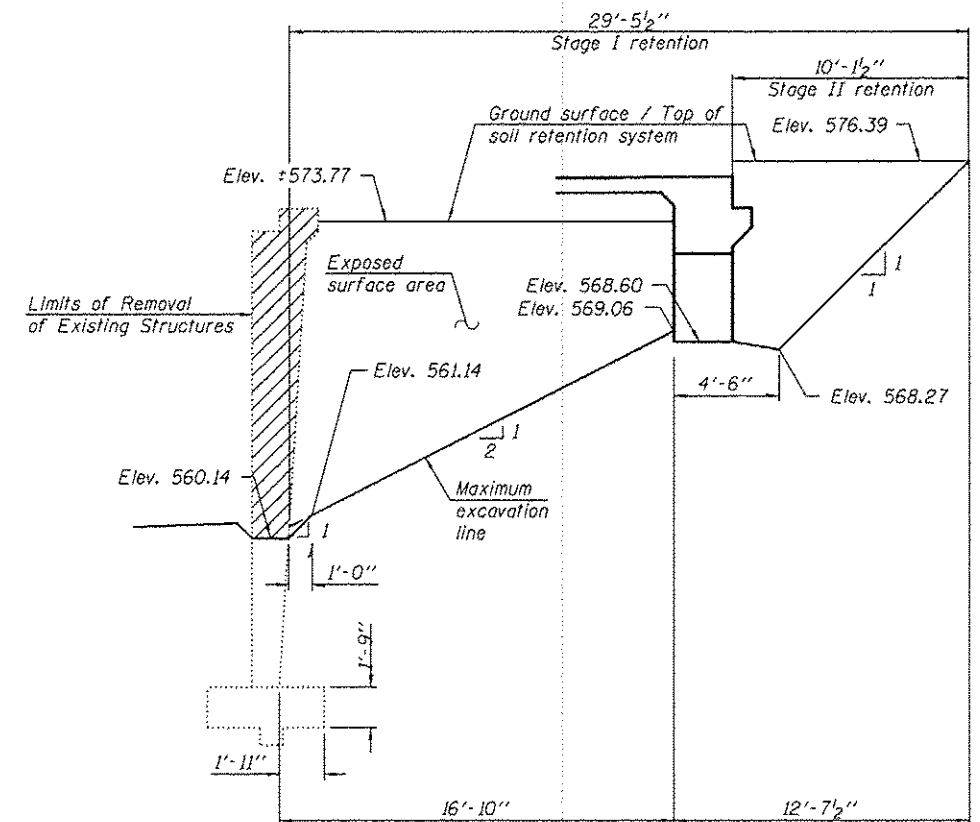
Existing Low Grade Elev. 573.6 @ Sta. 382+25
 Proposed Low Grade Elev. 574.0 @ Sta. 382+50
 10 Year velocity through existing bridge = 3.4 ft./sec.
 10 Year velocity through proposed bridge = 2.1 ft./sec.

- * Total discharge reduced by amount lost to storage after overtopping Niabi Zoo Road.
- ** Shaffer Creek is under the control of the tailwaters of the Rock River at this location.

REVISED SHEET 1-11-13



TEMPORARY SOIL RETENTION SYSTEM (West Abutment)



TEMPORARY SOIL RETENTION SYSTEM (East Abutment)