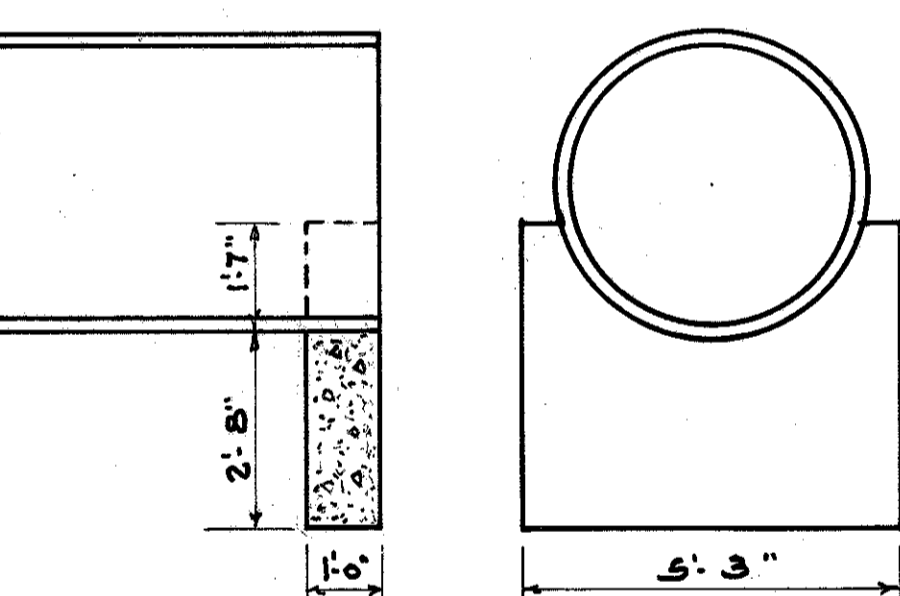


**DETAIL OF CUTOFF WALL**  
CLASS E CONCRETE



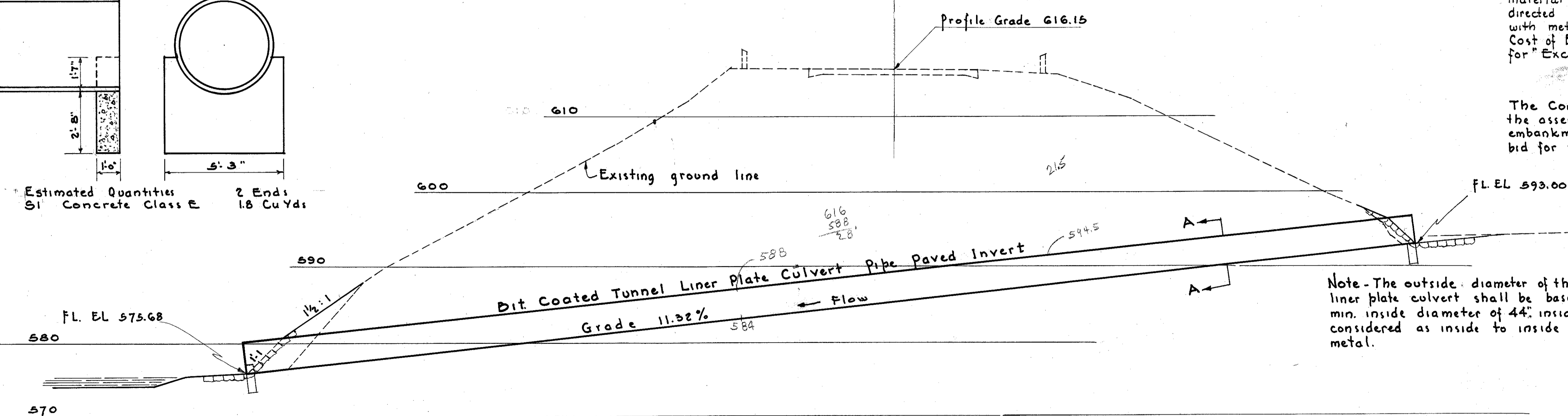
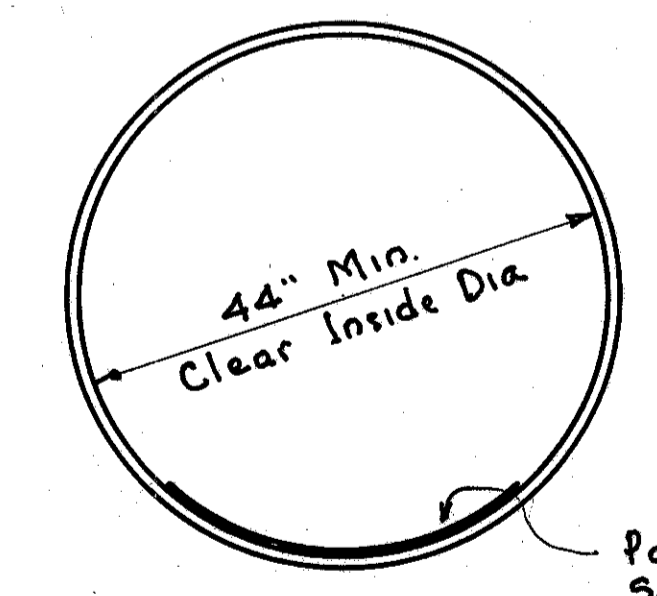
Estimated Quantities  
S1 Concrete Class E 2 Ends  
1.8 Cu Yds

**NOTES**

In lieu of Sec E208 of the Material Specifications, Structure Excavation calculated for the 48" Tunnel Liner Plate Culvert Pipe is the volume based on the outside diameter of the culvert. Back slope around the ends of the 48" pipe shall be backfilled to meet existing slope. Estimated 20 Cu Yds shall be obtained from acceptable excavated material from the structure excavation and shall be placed as directed by the Engineer. Backfill shall be placed in accordance with methods set forth in Sec E207 of the Specifications. Cost of Backfilling to be included in unit price bid for "Excavation for Structures."

The Contractor shall carefully backfill the space around the assembled tunnel liner plate culvert by tamping earth embankment. Cost of backfill to be included in the unit price bid for E2 - Excavation for Structures.

Note - The outside diameter of the tunnel liner plate culvert shall be based on a min. inside diameter of 44" inside diameter considered as inside to inside crest of metal.



**CULVERT DATA**

TYPE - Bituminous coated, paved invert tunnel liner plate culvert pipe  
 SIZE - 44" min. inside diameter by 153'-0" @ 5° L.F. Skew  
 STD. DWG. -  
 WORK REQD - Remove 20 lin. ft. of existing 18" CMP  
 Build new 48" pipe culvert to be placed by tunneling method.  
 Riprap Lt & Rt. ends as shown.  
 Backfill around both ends using excavated material as directed by Engineer.  
 Build cut off walls Lt & Rt as shown.

**ESTIMATED QUANTITIES**

E2 Excavation for Structures (by tunneling method) 80 Cu Yds  
 S5-186 Bituminous coated, paved invert tunnel liner Plate Culvert Pipe as per plan 153 Lin Ft  
 S1 Concrete for structures Class E 1.8 Cu Yd  
 I10 Riprap Type A 12" thick, grouted 25 Sq Yds  
 E12 Remove and Dispose of 18" pipe 20 Lin Ft.

**DRAINAGE STRUCTURE**  
 G-1  
 STA - 23+36  
 Culvert No LA - 283-51  
 Scale 1/8" = 1'-0"