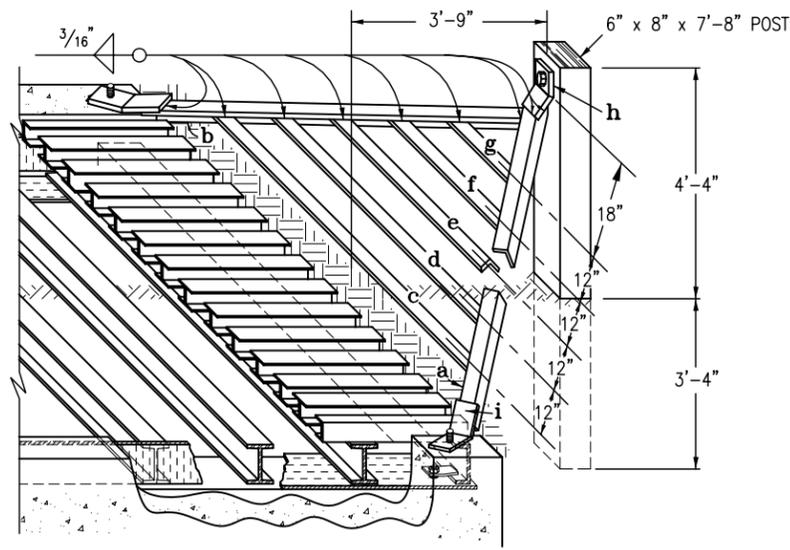


**TIMBER WING**

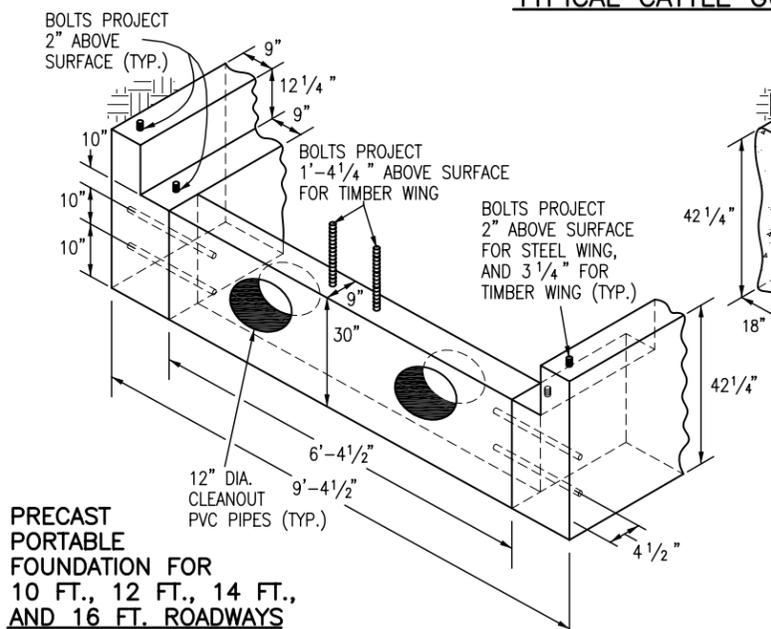


**STEEL WING**

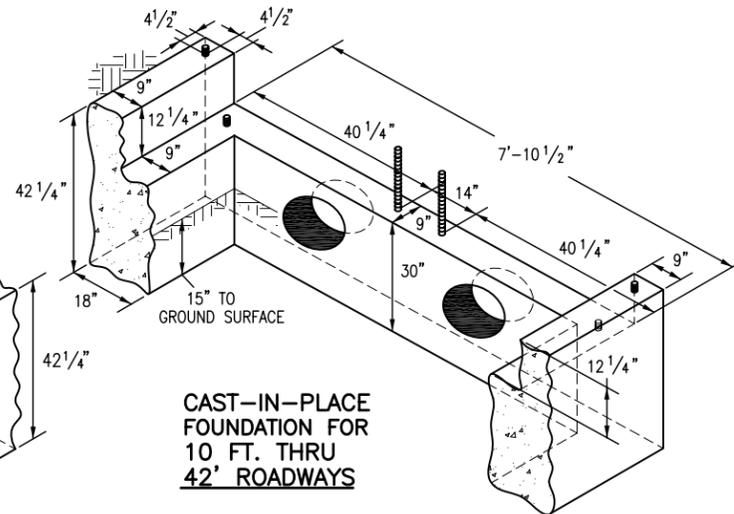
**TYPICAL CATTLE GUARD INSTALLATIONS**

**GENERAL NOTES**

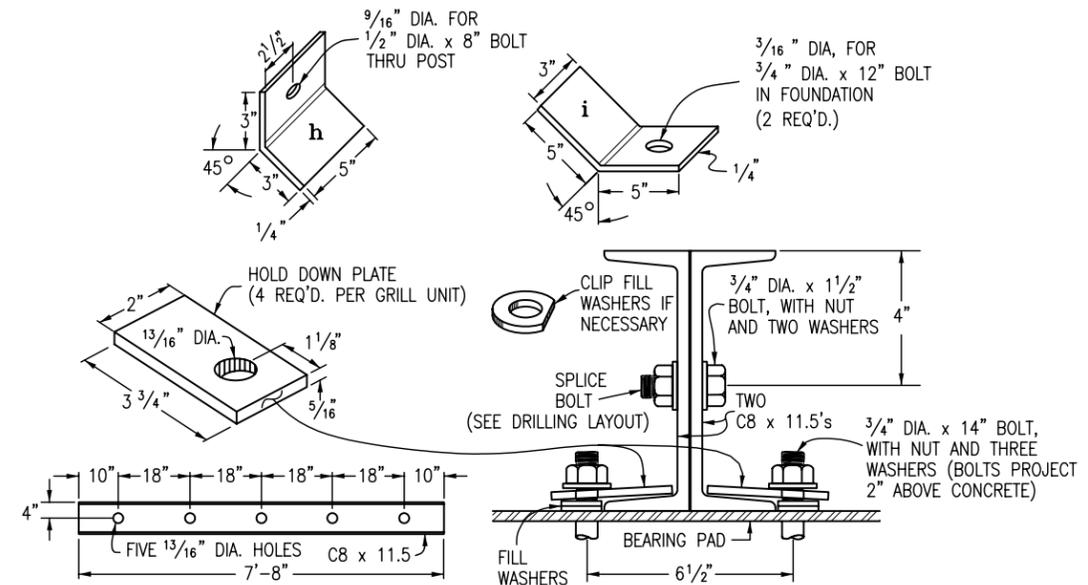
1. CONCRETE SHALL BE CLASS B. FOUNDATION MAY BE CAST-IN-PLACE OR PRECAST.
2. REINFORCING BARS SHALL BE #4, GRADE 60.
3. ALL TIMBER SHALL BE TREATED IN CONFORMANCE WITH ASSHTO M 133 AND AWPA C14.
4. WING POSTS MAY BE MADE FROM 8 IN. ROUND NATIVE TIMBER.
5. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND PAINTED WITH ALUMINUM PAINT IN ACCORDANCE WITH SECTION 509. ALL HARDWARE SHALL BE GALVANIZED IN CONFORMANCE WITH AASHTO M 111 OR PAINTED WITH ZINC-RICH PAINT MEETING MILITARY SPECIFICATION DOD-P-21035
6. ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270 (ASTM A 709) GRADE 36.
7. WELDING SHALL CONFORM TO THE AWS STRUCTURAL WELDING CODE AND AASHTO STANDARD SPECIFICATIONS FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES.
8. WHEN A CATTLE GUARD IS TO BE INSTALLED IN IMPERVIOUS MATERIAL, ADEQUATE DRAINAGE SHALL BE PROVIDED TO INSURE AGAINST POSSIBLE SUBGRADE DAMAGE. DRAINAGE DETAILS SHALL BE AS SHOWN ON THE PLANS. AN OUTLET PIPE MAY BE CONSIDERED.
9. TYPE OF WING (TIMBER OR STEEL) SHALL BE STEEL UNLESS OTHERWISE SHOWN ON THE PLANS.
10. STRUCTURE EXCAVATION AND STRUCTURE BACKFILL WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.



**PRECAST PORTABLE FOUNDATION FOR 10 FT., 12 FT., 14 FT., AND 16 FT. ROADWAYS**

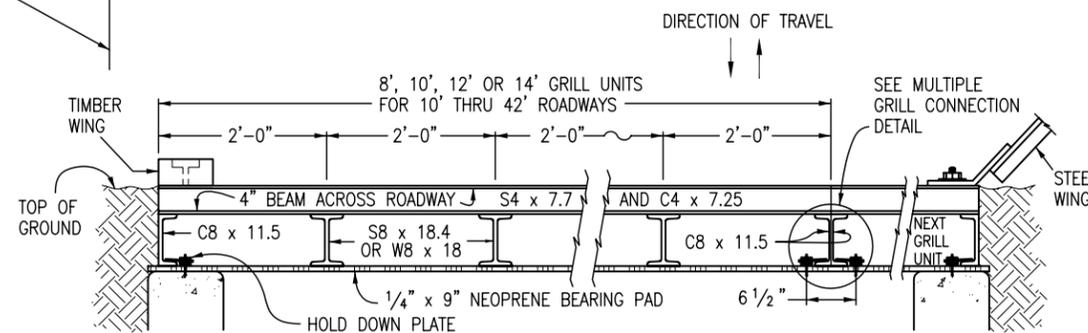


**CAST-IN-PLACE FOUNDATION FOR 10 FT. THRU 42' ROADWAYS**

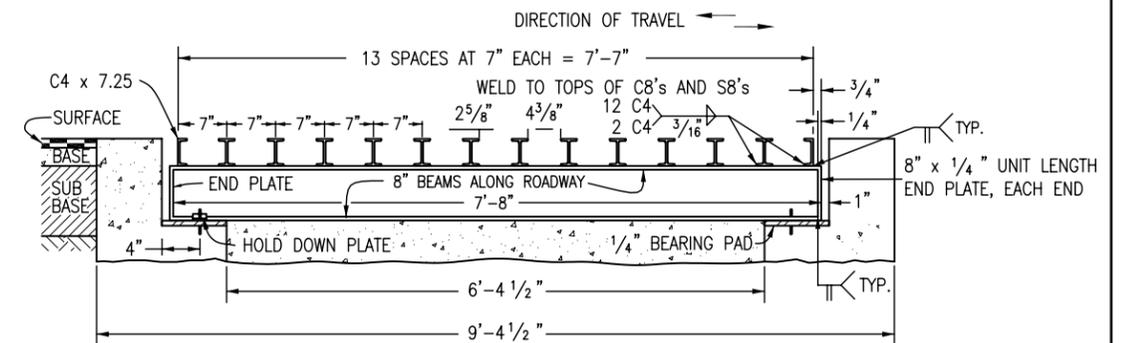


**DRILLING LAYOUT**

**MULTIPLE GRILL UNIT CONNECTION**



**ELEVATION VIEW**



**SIDE VIEW**

**WELDED GRILL CROSS SECTIONS**

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Project Development Branch SRJ/LTA

**CATTLE GUARD**

Issued By: Project Development Branch on July 04, 2006

**STANDARD PLAN NO.**

**M-611-1**

**Sheet No. 1 of 2**