STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION
NASHVILLE, TENNESSEE 37243-0348

INSTRUCTIONAL BULLETIN NO. 08-05

Regarding Standard Drawing for Trench Drain

Effective immediately, the new standard drawing D-TD-01 should be used for the Trench Drains. The design of Longitudinal Drains is included in the Drainage Manual Chapter 7, Section 7.03.3.4.

Until the drawing is added to the standard drawings, it is to be printed with the plans. The drawings shall be identified on the lower left side of the index sheet **"To be printed with plans"**.

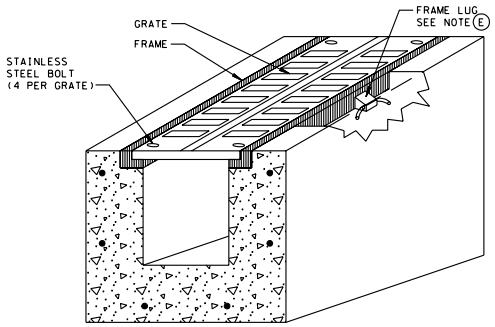
A copy of the drawing is attached. The Metric Standard Drawing DM-TD-01 will be available on the TDOT internet site at:
http://www.tdot.state.tn.us/Chief_Engineer/engr_library/design/Std_Drwg_Metric.htm
at a later date.

ROADWAY DESIGN STANDARDS – ENGLISH

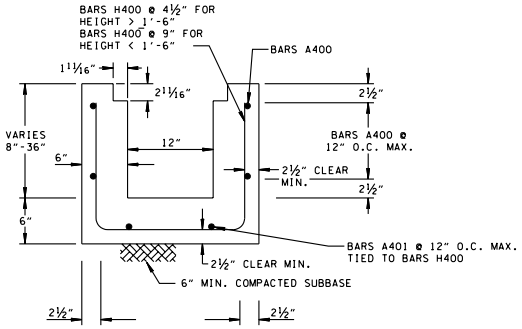
Drawing Number	Current Revision Date	Drawing Title
D-TD-01		TRENCH DRAIN

Original signed by Jeff C. Jones
Jeff C. Jones, Civil Engineering Director
Design Division

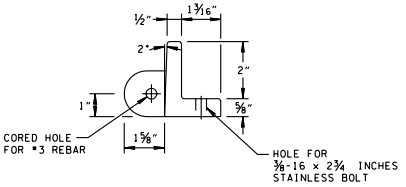
March 31, 2008
JCJ:arh
Attachment



PERSPECTIVE VIEW

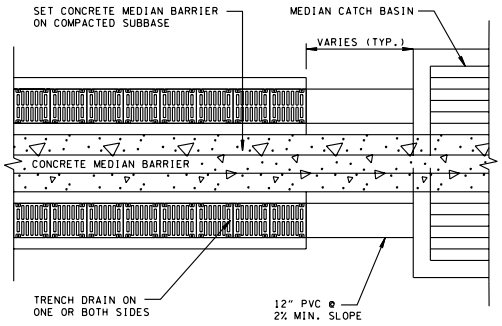


TYPICAL TRENCH CROSS SECTION

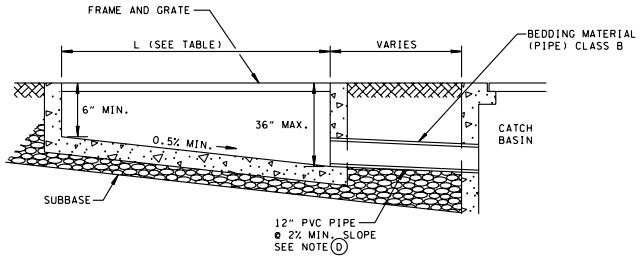


FRAME DETAIL SHOWING LUG

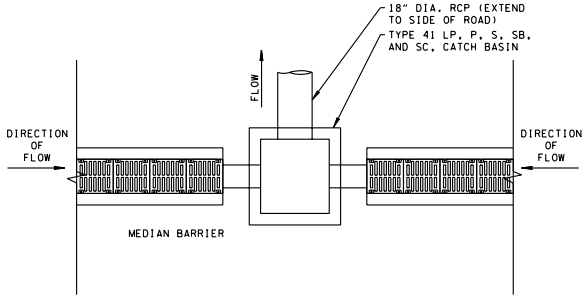
SEE NOTE (E)



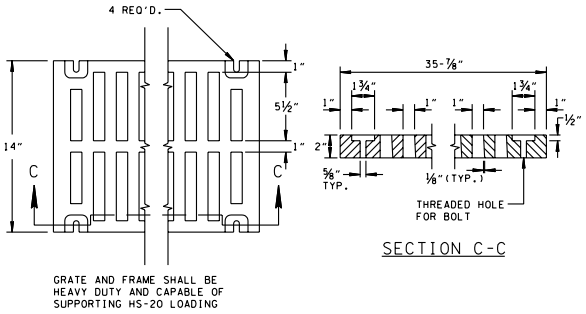
PLAN VIEW -
IN MEDIAN WITH CATCH BASIN



PROFILE VIEW -
IN MEDIAN WITH CATCH BASIN



PLAN VIEW -
IN MEDIAN WITH SIDE DISCHARGE PIPE



SECTION C-C

DETAIL OF SINGLE GRATE UNIT

TRENCH DRAIN GENERAL NOTES

(A) TRENCH DRAIN MAY BE USED TO COLLECT ROADWAY RUNOFF IN AREAS WHERE LONG SECTIONS OF FLAT PROFILE GRADE ARE UNAVOIDABLE. THEY MAY BE USED IN MEDIANS OR IN OTHER AREAS WHERE RUNOFF MAY COLLECT.

(B) THE MAXIMUM ALLOWABLE OUTFLOW RATE THROUGH THE DISCHARGE PIPE SHOULD NOT EXCEED 4.5 CFS. THE DISCHARGE SHALL BE CALCULATED USING THE RATIONAL METHOD AS DESCRIBED IN CHAPTER 4 OF THE DRAINAGE DESIGN MANUAL.

(C) WHERE TRENCH DRAIN IS CONNECTED TO A CATCH BASIN AT THE LOW POINT OF THE PROFILE GRADE, THE OUTLET PIPE SHALL CONSIST OF A FIVE-FOOT LENGTH OF 12-INCH PVC PIPE AT A SLOPE OF AT LEAST 2.0%. IN ORDER TO MAINTAIN MINIMUM COVER, THE TRENCH SHALL BE 36 INCHES DEEP AT THE OUTLET.

(D) PVC PIPE SHALL MEET THE REQUIREMENTS OF ASTM F949.

(E) TRENCH DRAIN FRAMES SHALL BE PROVIDED WITH LUGS SPACED AT 12 INCHES ON CENTER. LUG TYPE MAY VARY BY MANUFACTURER. LUGS SHALL BE PROVIDED WITH A HOLE THROUGH WHICH A #3 REBAR MAY BE PLACED PRIOR TO POURING THE TRENCH WALLS.

(F) GRATES SHALL BE SOLIDLY ATTACHED TO THE TRENCH DRAIN FRAMES BY MEANS OF STAINLESS STEEL BOLTS (⅜-16 x 2¾ INCHES) AND FLAT WASHERS AT EACH CORNER OF THE GRATE.

(G) THE GENERAL INSTALLATION PROCEDURE FOR CAST-IN-PLACE TRENCH DRAINS SHALL BE AS FOLLOWS:

1. SET REINFORCING STEEL.
2. FORM AND POUR TRENCH DRAIN BASE.
3. SET FORMS FOR TRENCH DRAIN WALLS.
4. SET TRENCH GRATES AND FRAMES INTO PLACE ON THE FORMS. GRATES MUST BE BOLTED TO THE FRAMES. INSERT SHORT SECTIONS OF #3 REBAR AS NEEDED INTO THE FRAME LUGS.
5. POUR TRENCH DRAIN WALLS.

(H) PRECAST TRENCH DRAIN SECTIONS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.

(I) PAYMENT FOR TRENCH DRAINS WILL BE MADE UNDER ITEM NUMBER 611-05.01, TRENCH DRAIN PER LINEAR FOOT.

(J) OTHER APPROVED TRENCH DRAIN SYSTEMS ON QUALIFIED PRODUCT LIST MAY BE USED WITH THE APPROVAL OF THE ENGINEER.

TRENCH DRAIN LENGTHS*

DRAINAGE AREA (ACRES)	REQ'D LENGTH, L (FEET)
0.2	40
0.3	60
0.4	80
0.5	100
0.6	120

* BASED ON 50-YEAR DESIGN STORM

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRENCH
DRAIN

2-1-08 | D-TD-1