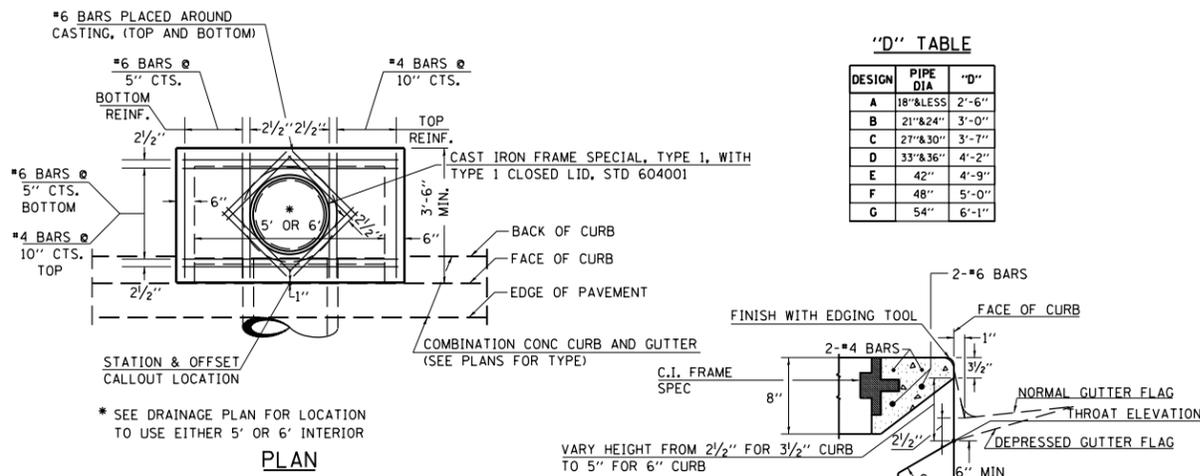
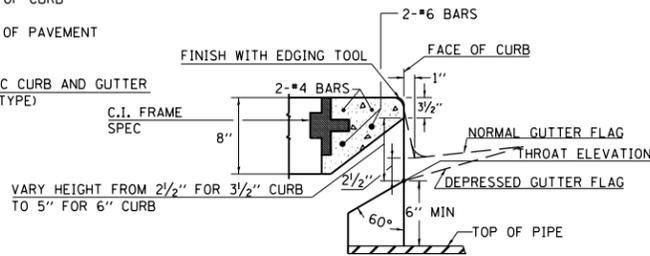


**DETAILS OF INLETS, SPECIAL**

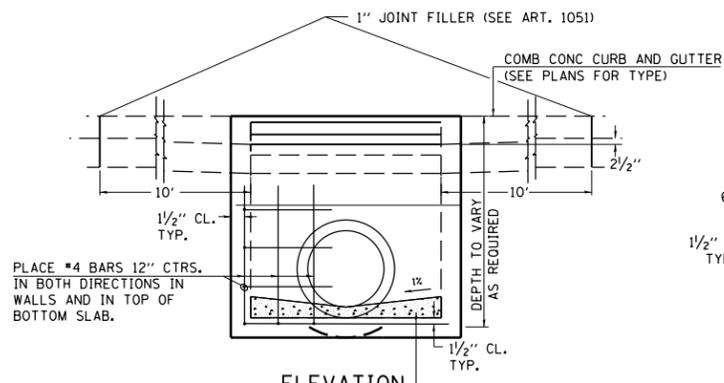


**"D" TABLE**

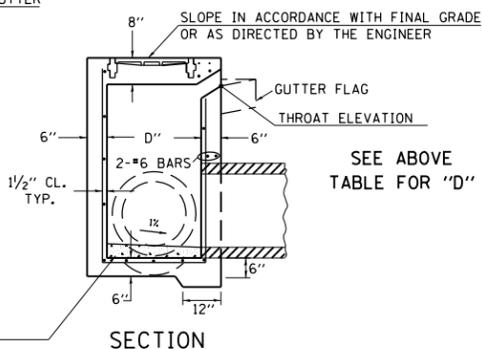
DESIGN	PIPE DIA	"D"
A	18" & LESS	2'-6"
B	21" & 24"	3'-0"
C	27" & 30"	3'-7"
D	33" & 36"	4'-2"
E	42"	4'-9"
F	48"	5'-0"
G	54"	6'-1"



**SECTION AT WEIR**



**ELEVATION**



**SECTION**

**NOTES:**

PROVIDE 1/2" CLEARANCE TYP. ALL REINFORCEMENT UNLESS OTHERWISE SPECIFIED.

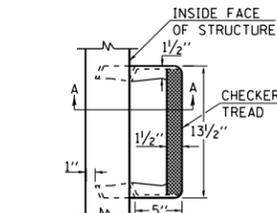
GUTTER FLOWLINE AT INLET 2 1/2" BELOW NORMAL GUTTER FLOWLINE. CONSTRUCT TRANSITION IN FLOWLINE IN 10 FEET EACH SIDE OF INLET. PIPES TO BE CONNECTED TO INLET AS SHOWN ON STORM SEWER LAYOUT.

INLETS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR **INLETS, SPECIAL** WHICH PRICE SHALL INCLUDE THE CAST IRON FRAME, SPECIAL, TYPE 1 WITH TYPE 1 CLOSED LID, THE REINFORCEMENT BARS, METAL STEPS AND JOINT FILLER.

IF THE INLET IS NOT CAST IN PLACE THEN THE INLET SHALL BE PRODUCED ACCORDING TO THE DEPARTMENT'S CURRENT STANDARD SPECIFICATIONS SECTIONS 602 AND 1042.

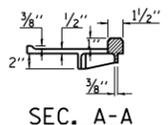
\*\*STEPS WILL BE REQUIRED AT 12" SPACING WHEN INLET IS OVER 4' DEEP. SEE ARTICLE 602.08 OF THE STANDARD SPECS AND DETAILS

CAST IRON STEPS SHALL BE GRAY IRON CONFORMING TO THE REQUIREMENTS OF ARTICLE 1006.14 OF THE STANDARD SPECIFICATIONS.



**\*\* CAST IRON STEPS**

TREAD DIMENSION DETAILS SEE HWY STD 602701



**SEC. A-A**

**\*\* GALVANIZED IRON STEPS**

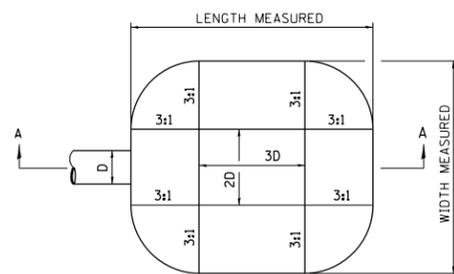
1" ROUND GALVANIZED IRON STEPS 12" O.C. (OPTIONAL STEPS)

REVISIONS

REDRAWN	2-15-89	REVISED	3-26-08
REVISED	8-15-94	REVISED	4-10-13
REVISED	1-19-99	REVISED	
REVISED	5-6-04	REVISED	

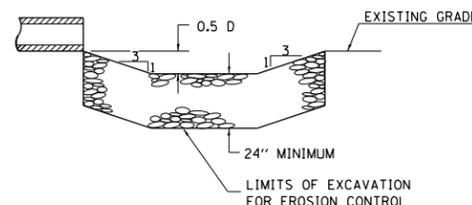
STD. 9-1

**ENERGY DISSIPATOR**



**PLAN**

D= INSIDE DIAMETER OF PIPE CULVERT OR CLEAR HEIGHT OF BOX CULVERT



**SECTION A-A**

**EARTH EXCAVATION FOR ENERGY DISSIPATOR**

THIS WORK INVOLVES THE EXCAVATION OF EARTH AS SHOWN IN THE SKETCH TO THE LENGTH, WIDTH, AND DEPTH AS SPECIFIED. THE EARTH EXCAVATION WILL BE UTILIZED IN THE ROADWAY EMBANKMENT OR WASTED AS DIRECTED BY THE ENGINEER. THE EXCAVATION SHALL BE PERFORMED AT THE SAME TIME AS THE CULVERT OR DITCH IS CONSTRUCTED TO SERVE AS A TEMPORARY SEDIMENT TRAP.

EARTHWORK WILL BE CONSIDERED INCLUDED IN THE COST OF THE RIPRAP.

ENERGY DISSIPATOR IS TO BE CONSTRUCTED AT THE LOCATION INDICATED ON THE PLAN AND PROFILE SHEETS.

**RIPRAP FOR ENERGY DISSIPATOR**

RIPRAP FOR ENERGY DISSIPATOR SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 281 OF THE STANDARD SPECIFICATIONS EXCEPT AS REVISED HEREIN.

THE LENGTH, WIDTH, AND DEPTH FOR RIPRAP PLACEMENT SHALL BE AS SPECIFIED IN THESE DETAILS UNLESS OTHERWISE SPECIFIED IN THE PLANS. THE OUTSIDE CORNERS CAN BE ROUNDED OR SQUARED.

THE RIPRAP FOR THE ENERGY DISSIPATOR SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR **STONE DUMPED RIPRAP**.

THE STONE DUMPED RIPRAP SHALL CONFORM TO THE QUALITY AND GRADATION REQUIREMENTS OF STONE RIPRAP, CLASS A4.

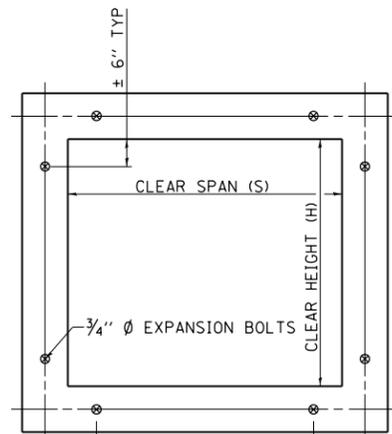
FILTER FABRIC AND BEDDING MATERIAL AS SPECIFIED IN SECTION 281 OF THE STANDARD SPECIFICATIONS WILL NOT BE REQUIRED.

REVISIONS

REDRAWN	2-15-89
REVISED	11-3-93
REVISED	8-15-94
REVISED	12-14-01
REVISED	3-26-08
REVISED	5-16-13

STD 9-6

**EXPANSION BOLTS REQUIRED FOR CULVERT EXTENSIONS**



**CROSS SECTION THRU BARREL**

FOR ANCHOR BOLT REQUIREMENTS, SEE ARTICLE 1006.09 OF THE STANDARD SPECIFICATIONS.

EXPANSION BOLTS SHALL CONSIST OF SELF DRILLING EXPANSION SHIELDS AND 3/4" Ø HOOKED BOLTS. HOOKED BOLTS SHALL EXTEND A MINIMUM OF 9" INTO NEW CONCRETE.

MINIMUM CERTIFIED PROOF LOAD=7500 LBS.

BOLTS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR **EXPANSION BOLTS, 3/4" INCH.**

H OR S	EXTENSION < 15'		EXTENSION > 15'	
	NO.	SPACING	NO.	SPACING
2.0	*	*	*	*
2.5	2	18"	2	18"
3.0	2	24"	2	24"
4.0	3	18"	3	18"
5.0	4	16"	3	24"
6.0	5	15"	4	20"
7.0	5	18"	4	24"
8.0	6	17"	5	21"
9.0	6	19"	5	24"
10.0	7	18"	6	21"
11.0	8	17"	6	24"
12.0	8	19"	7	22"

\* NOTE: USE MINIMUM OF 1 EXPANSION BOLT AT EACH CORNER.

**EXAMPLE:**

6' X 4' BOX CULVERT TO BE EXTENDED 18' AT ONE END ONLY.

**FROM TABLE FIND:**

6' SIDE REQUIRES (4)-3/4" Ø EXPANSION BOLTS AT 20" CENTERS

4' SIDE REQUIRES (3)-3/4" Ø EXPANSION BOLTS AT 18" CENTERS

TOTAL NO. REQUIRED (4+3) = (4)-3/4" Ø EXPLAN. BOLTS

REVISIONS

REDRAWN	2-15-89
REVISED	8-15-94
REVISED	12-14-01
REVISED	3-26-08
REVISED	5-16-13

STD. 9-9

FILE NAME =	USER NAME = \$USER\$	DESIGNED - KN	REVISED -
ci:\pwwork\pwwork\lavenderba\d0363618\DW78221-sht-details-dd-01.dgn		DRAWN - AS	REVISED -
PLOT SCALE = 2.0000' / in.		CHECKED -	REVISED -
PLOT DATE = 1/31/2014		DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DISTRICT DETAILS  
9-1, 9-6, 9-9

SCALE: SHEET NO. 1 OF 8 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(1-3)R-2, N-4, TS-4, HBK-1	WILLIAMSON	733	393
DRAWING NO.	DD-01	CONTRACT NO.	78221	
ILLINOIS FED. AID PROJECT				