

**GENERAL**  
CLASS-SI CONCRETE SHALL BE USED THROUGHOUT.

THIS SPECIFICATION COVERS SLOTTED DRAIN USED FOR THE REMOVAL OF WATER AS SHOWN ON THE PLANS.

THE SLOTTED DRAIN SHALL BE CORRUGATED PIPE CULVERT WITH INTEGRAL SLOTTED DRAINS. THE PIPE SHALL BE CAPPED ON ONE END AND DRAIN TO AN EXISTING DITCH VIA A 12" END SECTION.

BEFORE PLACING THE CONCRETE ADJACENT TO THE PIPE, THE SLOT SHALL BE COVERED BY EITHER THIN, FLAT METAL SHEETING OR BY A BOARD NOTCHED TO FIT OVER THE GRATE BARS. THIS COVERING MUST FIT CLOSELY IN THE SLOT TO PREVENT ENTRY OF CONCRETE INTO THE PIPE. PAVING OVER THE SLOTTED DRAIN WILL THEN BE ONE CONTINUOUS OPERATION OVER THE PROTECTED DRAIN. THE PROTECTION FOR THE DRAIN SLOT SHALL THEN BE REMOVED.

THE CORRUGATED STEEL PIPE USED IN THE SLOTTED DRAIN SHALL MEET THE REQUIREMENTS OF AASHTO M36/ ASTM A7860.

THE CMP SHALL BE ALUMINIZED STEEL TYPE 2.

THE DIAMETER AND GAGE SHALL BE AS SHOWN ON THE PLANS OR AS ACCEPTABLE TO THE ENGINEER.

STEEL GRATING SHALL MEET THE GALVANIZING REQUIREMENTS OF AASHTO M111.

THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER FOOT FOR "SLOTTED DRAIN 12" WITH VARIABLE SLOT", AND SHALL INCLUDE ELBOWS, DRILLING HOLES IN GRATING, SUPPLYING AND PLACING A1 BARS, CONCRETE, GRATING AND END SECTIONS AS SPECIFIED ON PLANS.

THE INTENT IS FOR THE SLOTTED DRAIN TO BE UTILIZED IN CONJUNCTION WITH THE TEMPORARY PAVEMENT WITHIN THE I-57 MEDIAN. THE UNIT PRICE SHALL INCLUDE REMOVAL OF THE SLOTTED DRAIN ONCE THE TEMPORARY PAVEMENT IS NO LONGER REQUIRED.

**CONNECTIONS**

THE CORRUGATED STEEL PIPE SHALL HAVE A MINIMUM OF TWO REROLLED ANNULAR ENDS.

THE SLOTTED DRAIN BANDS SHALL BE MODIFIED HUGGER BANDS TO SECURE THE PIPE AND PREVENT INFILTRATION OF THE BACKFILL.

WHEN THE SLOTTED DRAIN IS BANDED TOGETHER, THE ADJACENT GRATES SHALL HAVE A MAXIMUM 3" GAP.

**GRATES**

THE GRATES SHALL BE MANUFACTURED FROM ASTM A670, GRADE 36 STEEL. THE SPACERS AND BEARING BARS (SIDES) SHALL BE 3/16" MATERIAL ±0.008".

THE SPACERS SHALL BE ON 6" CENTERS AND WELDED ON BOTH SIDES TO EACH BEARING BAR (SIDES) WITH FOUR (4) 1/4" LONG 3/16" FILLET WELDS ON EACH SIDE OF THE BEARING BAR.

THE PLATE EXTENDER SHALL BE 7 GAGE STEEL MEETING ASTM A761.

THE ENGINEER MAY CALL FOR TENSILE STRENGTH TESTS ON THE GRATE IF THE GRATE IS NOT IN COMPLIANCE WITH THE ABOVE SPACER SPECIFICATIONS. IF TENSILE STRENGTH TESTS ARE CALLED FOR, MINIMUM RESULTS FOR AN IN-PLACE SPACER PULLED PERPENDICULAR TO THE BEARING BAR SHALL BE:  
T = 12,000 POUNDS FOR 2 1/2" GRATE  
T = 15,000 POUNDS FOR 6" GRATE

**GALVANIZING**

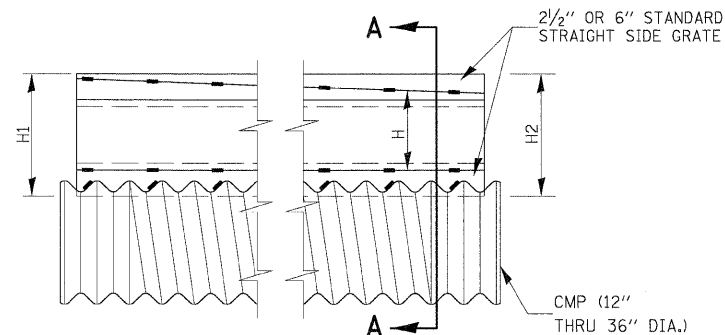
THE GRATE AND PLATE EXTENDERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 EXCEPT WITH A 2 OZ. GALVANIZED COATING.

**GRATE ATTACHED TO CSP**

THE GRATE SHALL BE FILLET WELDED WITH A MINIMUM WELD 1" LONG TO THE CSP ON EACH SIDE OF THE GRATE AT EVERY OTHER CORRUGATION.

**TOLERANCES - FINISHED SLOTTED DRAIN - 20' LENGTH**

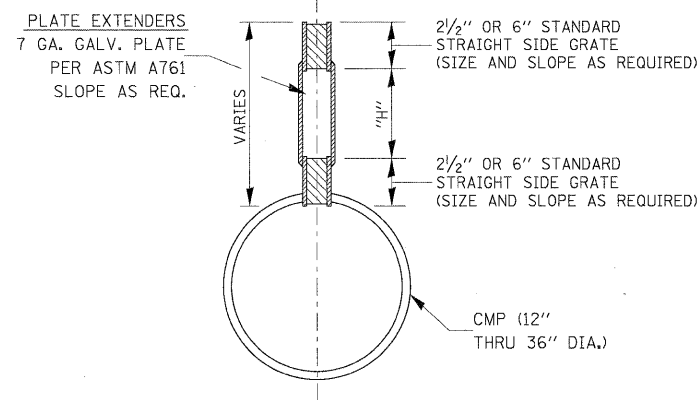
VERTICAL BOW = ±3/8"  
HORIZONTAL BOW = ±5/8"  
TWIST = ±1/2"



**SIDE VIEW  
DETAIL WITH VARIABLE HEIGHT GRATE**

LOADING CONDITION	MAX. EXTENDER HEIGHT - "H"
H20/H25 • 750 PSI CONCRETE	19"

• 125 PSI TIRE PRESSURE



**SECTION A-A**

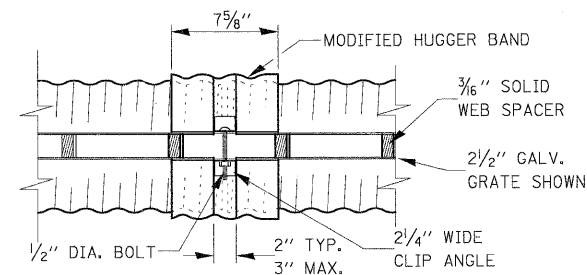
GAGE OF PIPE	DIAMETER OF PIPE					
	12"	15"	18"	24"	30"	36"
16	X	X	X	X	X	X
14	X	X	X	X	X	X
12	N.A.	N.A.	N.A.	N.A.	X	X

GRATE TYPE	"A"
VERT	2 1/2"
VERT	6"
TRAP	2 1/2"
TRAP	6"

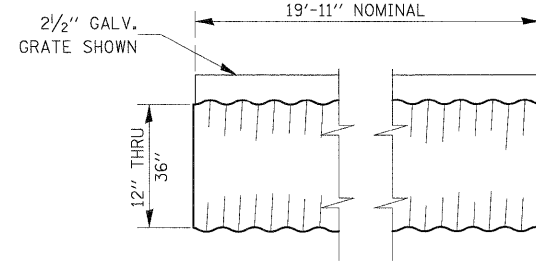
VERT = VERTICAL  
TRAP = TRAPEZOIDAL

**SLOTTED DRAIN NOTES**

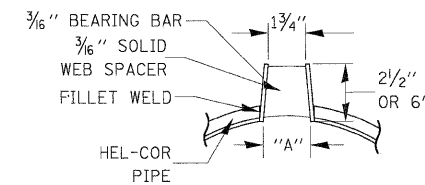
- GRATING IS AVAILABLE IN DEPTHS OF 2 1/2" AND 6".
- VERTICAL GRATING (STRAIGHT SIDES) WITH VERTICAL SPACERS IS ALSO AVAILABLE.
- FOR 6" VERTICAL & TRAPEZOIDAL REQUIREMENTS, THE SLOTTED DRAIN BAND MAY BE FURNISHED WITH THE 4: TECHCO BAND ANGLE.
- DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
- REFERENCE CONTECH BAND MANUAL DWG. NO. 1002697 FOR BAND DETAILS.
- REFERENCE CONTECH SLOTTED DRAIN DWG. NO. 1002697.
- DIMENSIONS FOR H1 AND H2 AS REQUIRED.
- H1 AND H2 MEASURED FROM TOP OF GRATE TO BOTTOM OF GRATE.



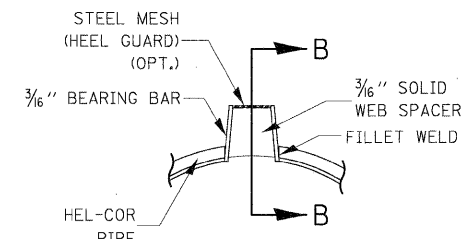
**TOP VIEW**



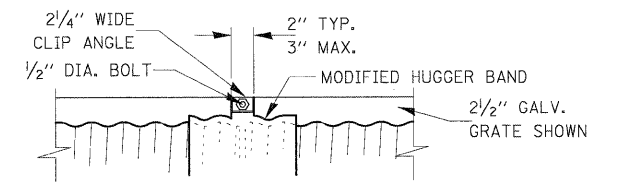
**TYPICAL PIPE SECTION**



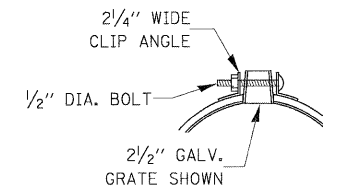
**SECTION A-A  
STANDARD DETAIL**



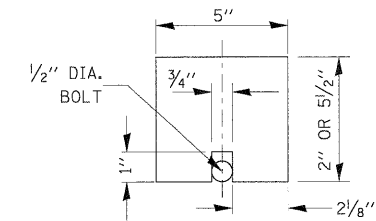
**SECTION B-B  
DETAIL WITH MESH  
(TRAPEZOIDAL GALVANIZED GRATE SHOWN)**



**SIDE VIEW**

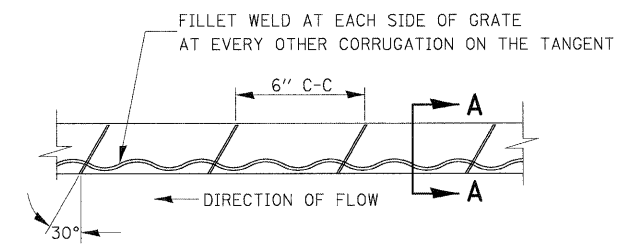


**END VIEW**

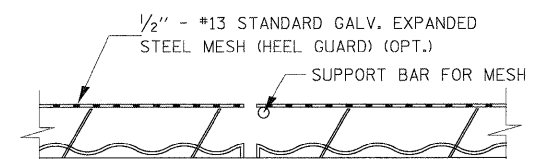


**GAP PLATE (OPTIONAL)**

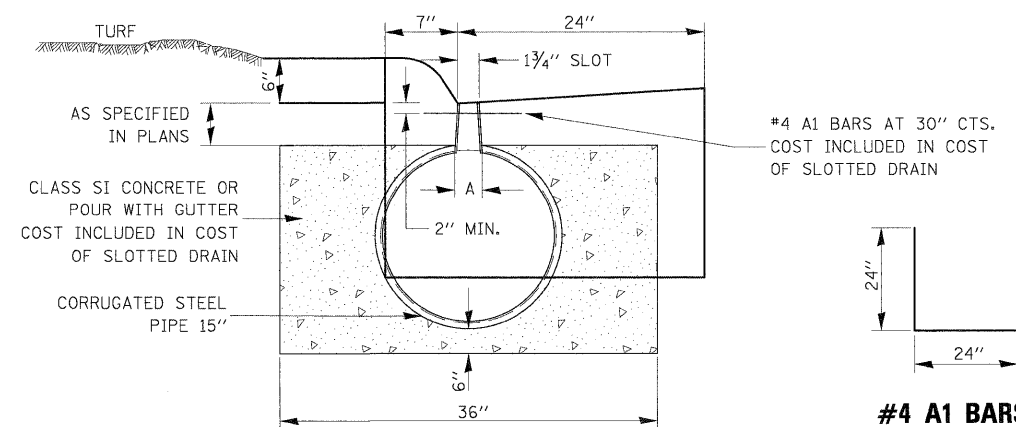
MAY BE PLACED DIRECTLY OVER BAND BOLT TO PROVIDE CONTINUOUS FORM FOR GROUTING



**GRATE WELDING DETAIL**



**SECTION B-B**



**#4 A1 BARS**

FILE NAME = I:\Dgn\Sheets\601-2.dgn	USER NAME = EricG	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DISTRICT 3 DETAILS SLOTTED DRAIN PIPE</b>				F.A. RTE. = 57	SECTION = (46-2) I, HBR, VBR	COUNTY = KANKAKEE	TOTAL SHEETS = 558	SHEET NO. = 390
	PLOT SCALE = 1:150	DRAWN -	REVISED -		SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.	CONTRACT NO. 66409		
	PLOT DATE = 12/21/2010	CHECKED -	REVISED -		FED. ROAD DIST. NO. 3 ILLINOIS FED. AID PROJECT								
		DATE -	REVISED -										