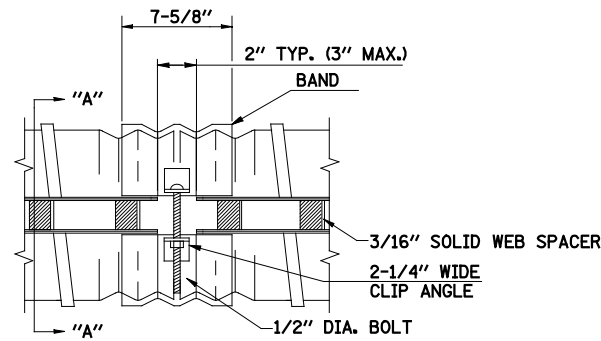
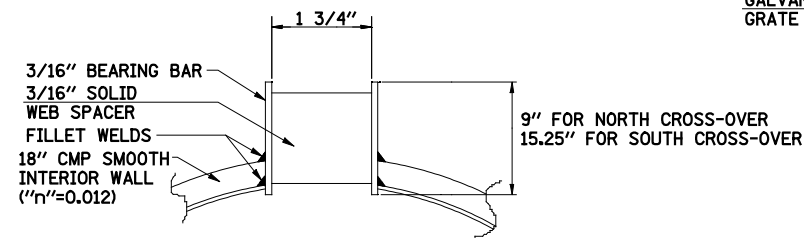


## GENERAL NOTES

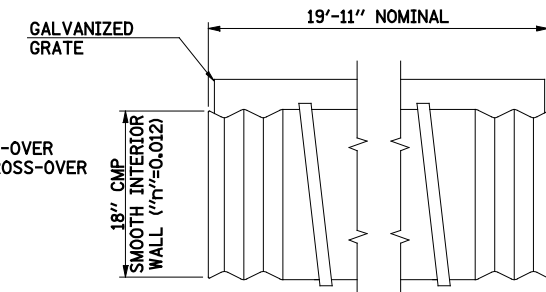
- CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
- THIS SPECIFICATION COVERS SLOTTED DRAIN USED FOR THE REMOVAL OF WATER AS SHOWN ON THE PLANS
- BEFORE PLACING THE CONCRETE ADJACENT TO THE PIPE, THE SLOT SHALL BE COVERED BY EITHER THIN, FLAT METAL SHEETING OR BY A BOARD NOTCHED TO FIT OVER THE GRATE BARS. 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 OPENING WHERE THE SLOT IS REMOVED SHALL BE COVERED TO PREVENT CONCRETE FROM ENTERING THE PIPE.
- THE CORRUGATED STEEL PIPE (CMP) USED IN THE SLOTTED DRAIN SHALL MEET THE REQUIREMENTS OF AASHTO M36/ ASTM A760 & HAVE A SMOOTH INTERIOR WALL MEETING A MANNINGS ROUGHNESS COEFFICIENT OF "n"=0.012.
- THE CMP SHALL BE ALUMINIZED STEEL TYPE 2 PER AASHTO M274 / ASTM A929.
- THE INTERIOR DIAMETER OF THE CMP SHALL BE 18" AND THE GAGE OF THE CMP SHALL BE 16.
- STEEL GRATING SHALL MEET THE GALVANIZING REQUIREMENTS OF AASHTO M111 / ASTM A123.
- USE APPROVED END CAP OF THE SAME PIPE MATERIAL TO PREVENT CONCRETE ENTRY INTO THE PIPE DURING CONSTRUCTION ON THE UPSTREAM END OF THE PIPE.



TOP VIEW



SECTION A-A  
STANDARD DETAIL - VERTICAL GRATE



TYPICAL PIPE SECTION

## CONNECTIONS

- THE CORRUGATED STEEL PIPE SHALL HAVE A MINIMUM OF TWO REROLLED ANNULAR ENDS.
- THE SLOTTED DRAIN BANDS SHALL SECURE THE PIPE AND PREVENT INFILTRATION TO THE BACKFILL.
- WHEN THE SLOTTED DRAIN IS Banded TOGETHER, THE ADJACENT GRATES SHALL HAVE A 2" GAP.

## GRATES

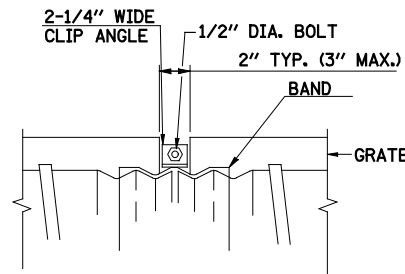
- THE GRATES SHALL BE MANUFACTURED FROM ASTM A1011, GRADE 36 STEEL. THE SPACERS AND BEARING BARS (SIDES) SHALL BE 3/16" MATERIAL ±0.008".
- THE SPACERS SHALL BE ON 6" CENTERS AND WELDED ON BOTH SIDES TO EACH BEARING BAR (SIDES) WITH FOUR (4) 1 1/4" LONG 3/16" FILLET WELDS ON EACH SIDE OF THE BEARING BAR.
- THE PLATE SLOT 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
- THE GRATES SHALL BE VERTICAL (STRAIGHT SIDES) WITH A 1 3/4" OPENING IN THE TOP AND 30 DEGREE SLANTED SPACERS. REFER TO THE PLANS FOR THE GRATE HEIGHT.

## GALVANIZING

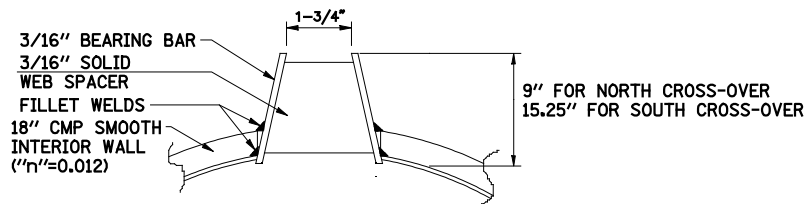
- THE GRATE AND PLATE EXTENDERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 EXCEPT WITH A 2 OZ. GALVANIZED COATING TOTAL BOTH SIDES.

## GRATE ATTACHED TO CSP

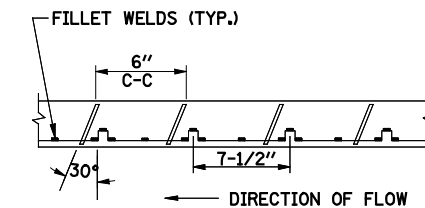
- THE GRATE SHALL BE FILLET WELDED WITH A MINIMUM WELD 1" LONG TO THE CSP ON EACH SIDE OF THE GRATE AT EVERY OTHER CORRUGATION.



SIDE VIEW



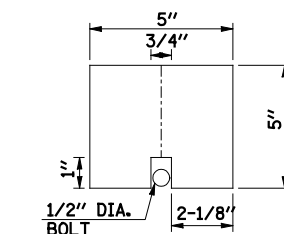
SECTION A-A  
STANDARD DETAIL - TRAPEZOIDAL GRATE



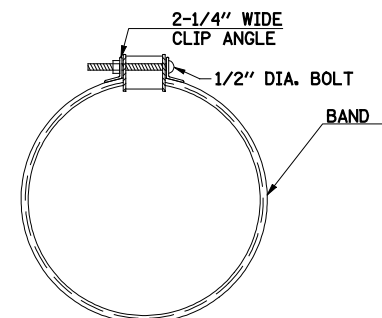
GRATE WELDING DETAIL

## MANUFACTURING TOLERANCES

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



GAP PLATE (OPTIONAL)  
MAY BE PLACED DIRECTLY OVER BAND BOLT TO PROVIDE CONTINUOUS FORM FOR GROUTING.



END VIEW

## SLOTTED DRAIN NOTES

- PIPE SHALL BE SPIRAL RIB CONFORMING TO AASHTO M36, TYPE IR.
- GRATE MATERIAL SHALL CONFORM TO THE DETAILS SHOWN AND CONFORM TO ASTM A1101, GRADE 36. HOT DIP GALVANIZED PER ASTM A123.
- DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.

PLAN	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	BY	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	BY	
	NO.	

FILE NAME = D366944\_sht.dwg

USER NAME = bhenrichs	DESIGNED BAH	REVISED
	DRAWN BAH	REVISED
PLOT SCALE = 1/8" = 1' / IN.	CHECKED KAC	REVISED
PLOT DATE = 12/7/2012	DATE 12/07/2012	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

INTERSTATE 57 OVER LANGAN CREEK  
DETAILS

SCALE: SHEET 1 OF 8 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	141 BR(SB) & 38-1 BR(NB)	IROQUOIS	138	97
CONTRACT NO. 66944			ILLINOIS FED. AID PROJECT	