

NOTES

FRAME AND GRATE ARE DESIGNED TO WITHSTAND HL93 LOADING.

FRAME, GRATE, PIPE, AND ALL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. PIPE SHALL CONFORM TO ASTM A53, TYPE S. ALL HOLD-DOWN BOLTS AND NUTS SHALL BE AASHTO M164. WASHERS SHALL CONFORM TO AASHTO M293. ALL ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THRU 1020 OR APPROVED EQUAL.

ANCHOR STUDS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON PLANS.

ANCHOR STUDS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.

UPON COMPLETION OF SHOP FABRICATION, ALL STEEL PARTS, INCLUDING BOLTS AND WASHERS, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

WELDING TO BE PERFORMED IN ACCORDANCE WITH THE ANSI/AASHTO/AWS D1.5 WELDING CODE. ALL CONNECTIONS SHALL BE SEAL WELDED ALONG TOP AND BOTTOM HORIZONTAL SEAMS OF CONNECTIONS IN ADDITION TO ANY REQUIRED STRUCTURAL WELDS.

FRAME SHALL BE COVERED DURING THE POURING OF THE DECK CONCRETE.

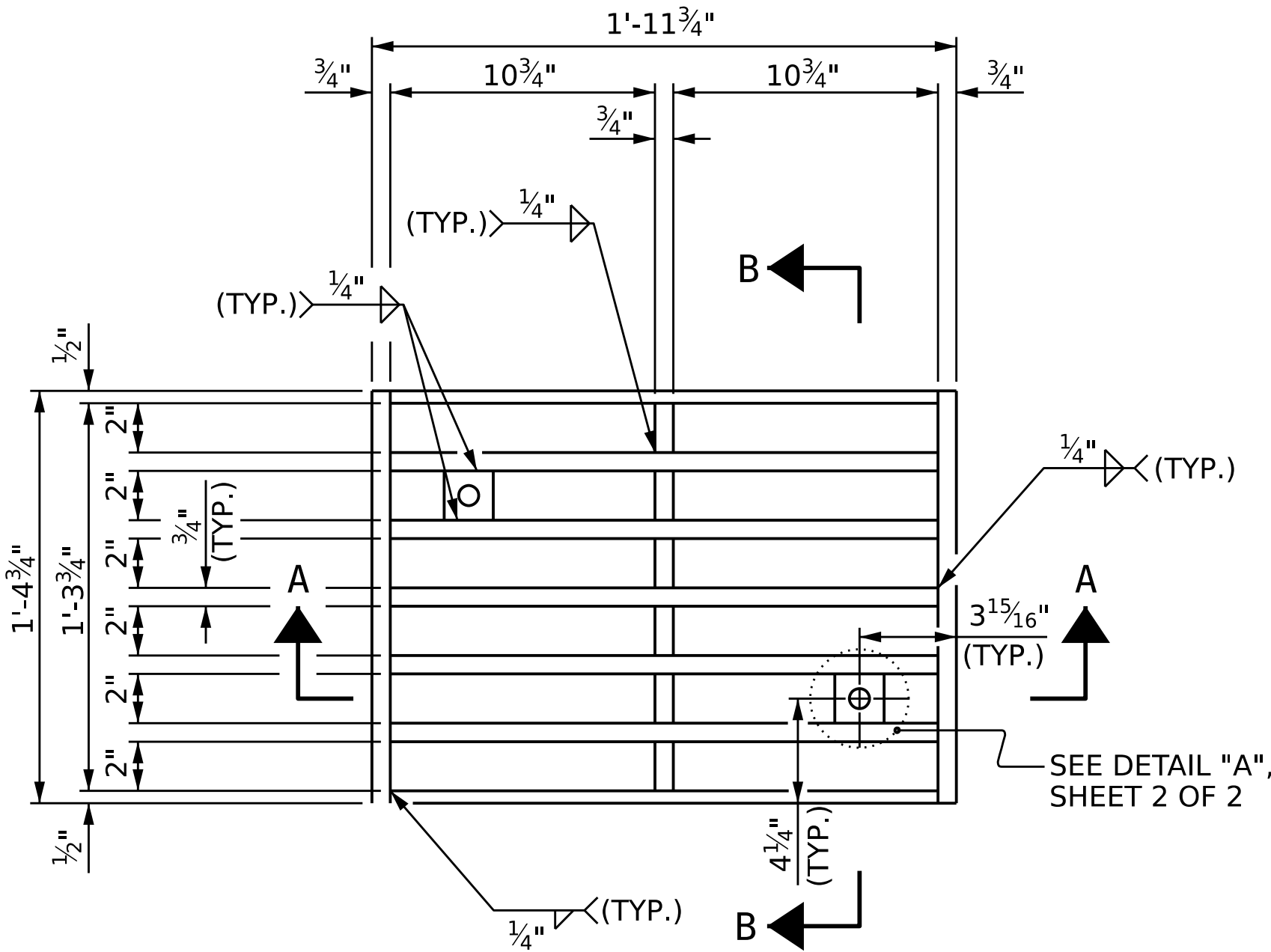
PRIOR TO PLACING THE GRATE, ALL DEBRIS SHALL BE CLEARED FROM FRAME IN ORDER TO ALLOW FOR PROPER SEATING OF THE GRATE AND ELIMINATE POTENTIAL ROCKING HAZARDS.

SHEAR STUDS OR STIRRUPS ON THE GIRDER MAY BE CUT AS APPROVED BY THE ENGINEER TO AVOID INTERFERENCE WITH THE BRIDGE SCUPPER.

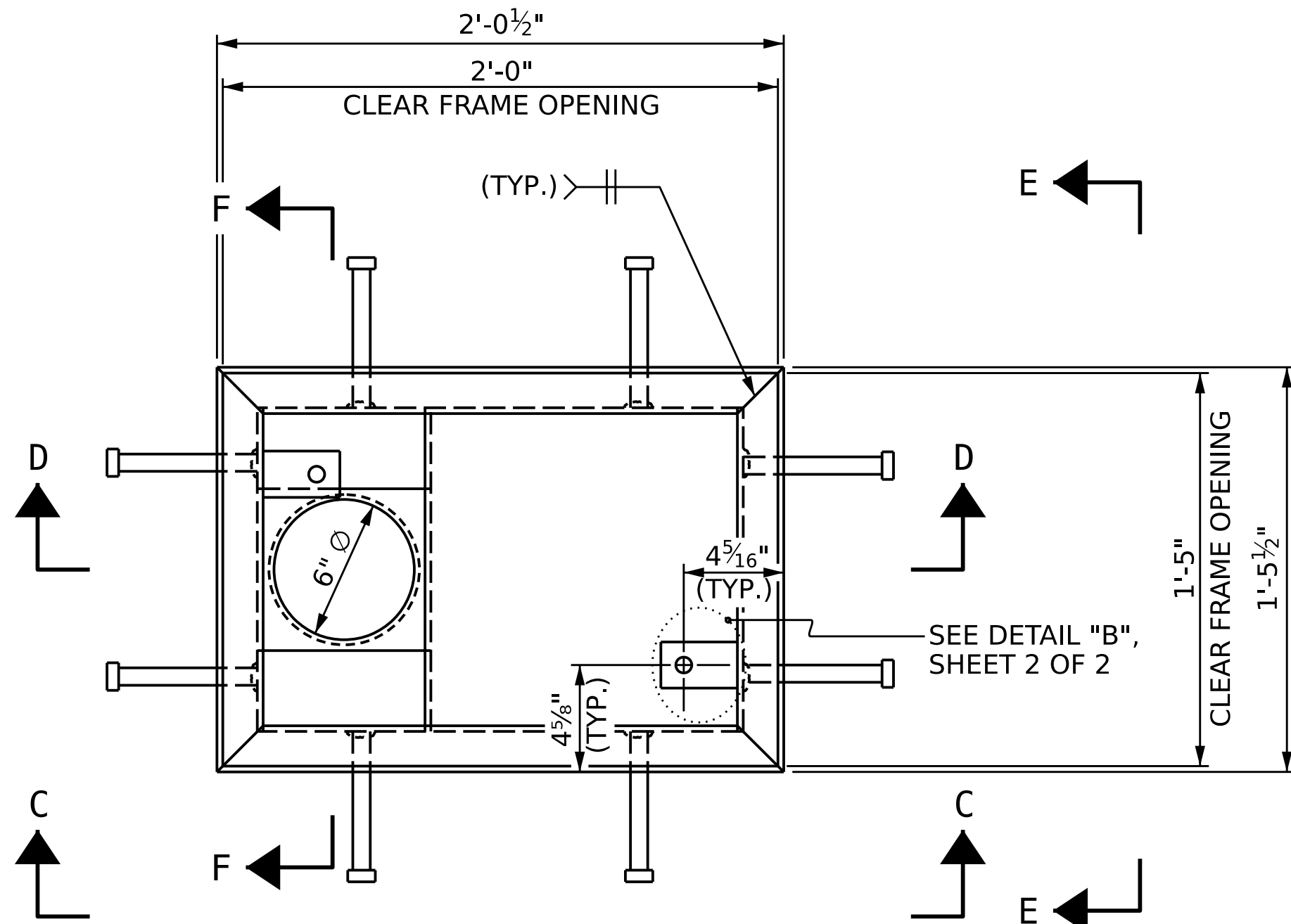
REINFORCING STEEL IN THE DECK AND BARRIER RAIL MAY BE SHIFTED, FIELD BENT, OR CUT AS APPROVED BY THE ENGINEER TO AVOID INTERFERENCE WITH THE BRIDGE SCUPPER.

FOR LOCATION OF SCUPPERS, SEE "SUPERSTRUCTURE PLAN OF SPAN".

NO SEPARATE PAYMENT WILL BE MADE FOR BRIDGE SCUPPERS. THE ENTIRE COST OF FURNISHING AND INSTALLING THE SCUPPERS SHALL BE INCLUDED IN THE PRICE BID FOR "REINFORCED CONCRETE DECK SLAB".

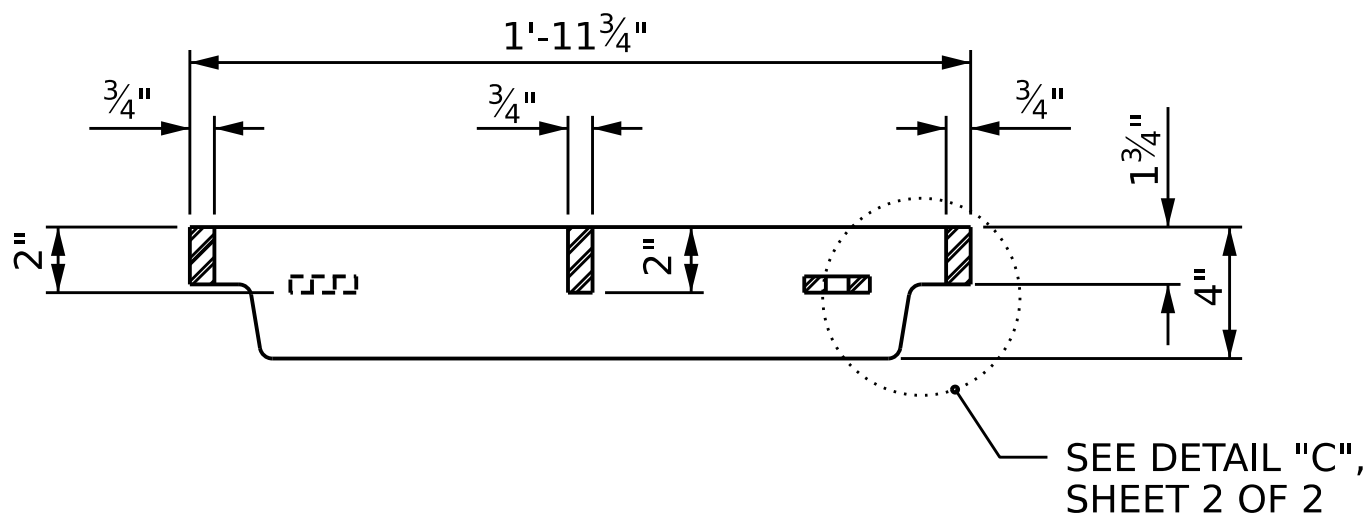


PLAN VIEW OF GRATE

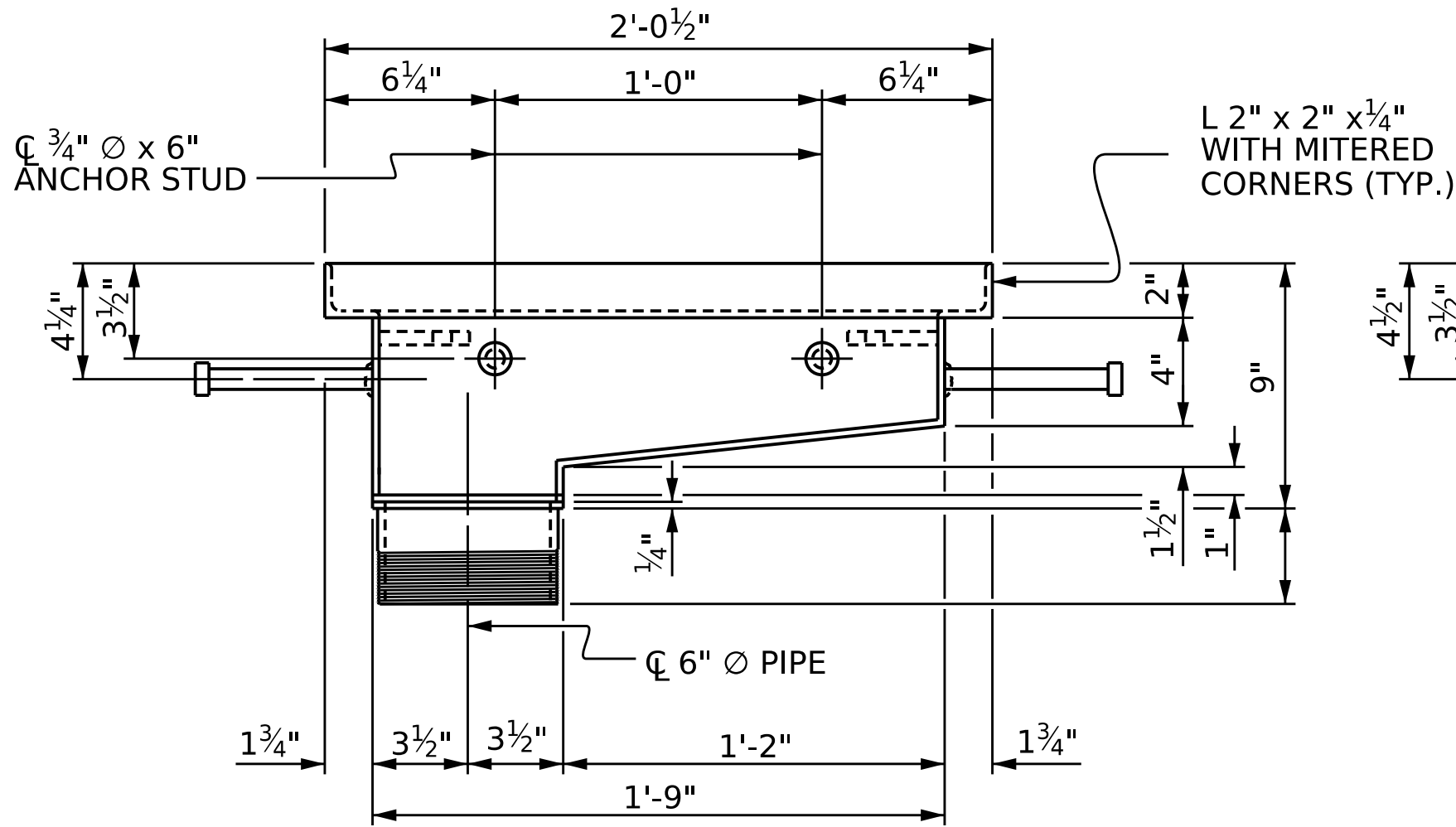


PLAN VIEW OF FRAME

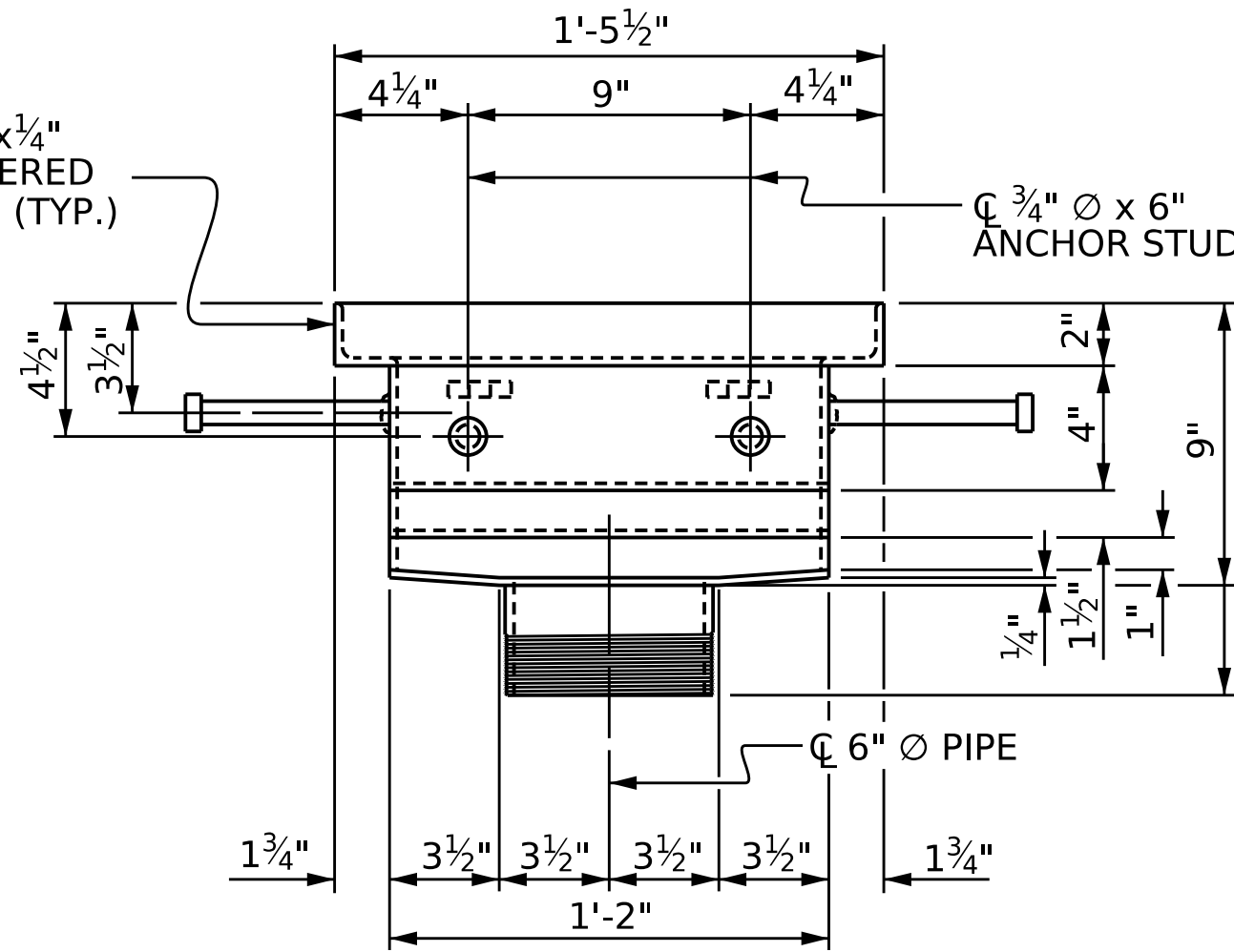
FRAME SHALL BE MADE FROM 1/4" PLATES EXCEPT WHERE NOTED.



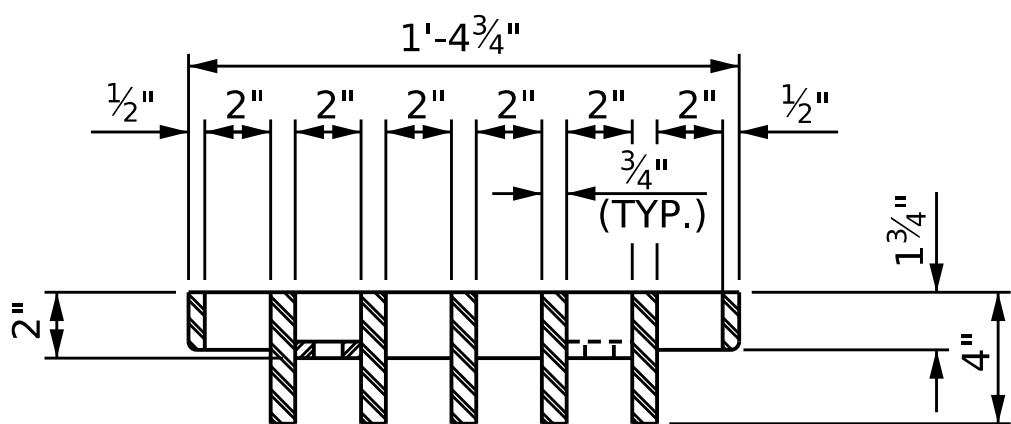
SECTION A-A



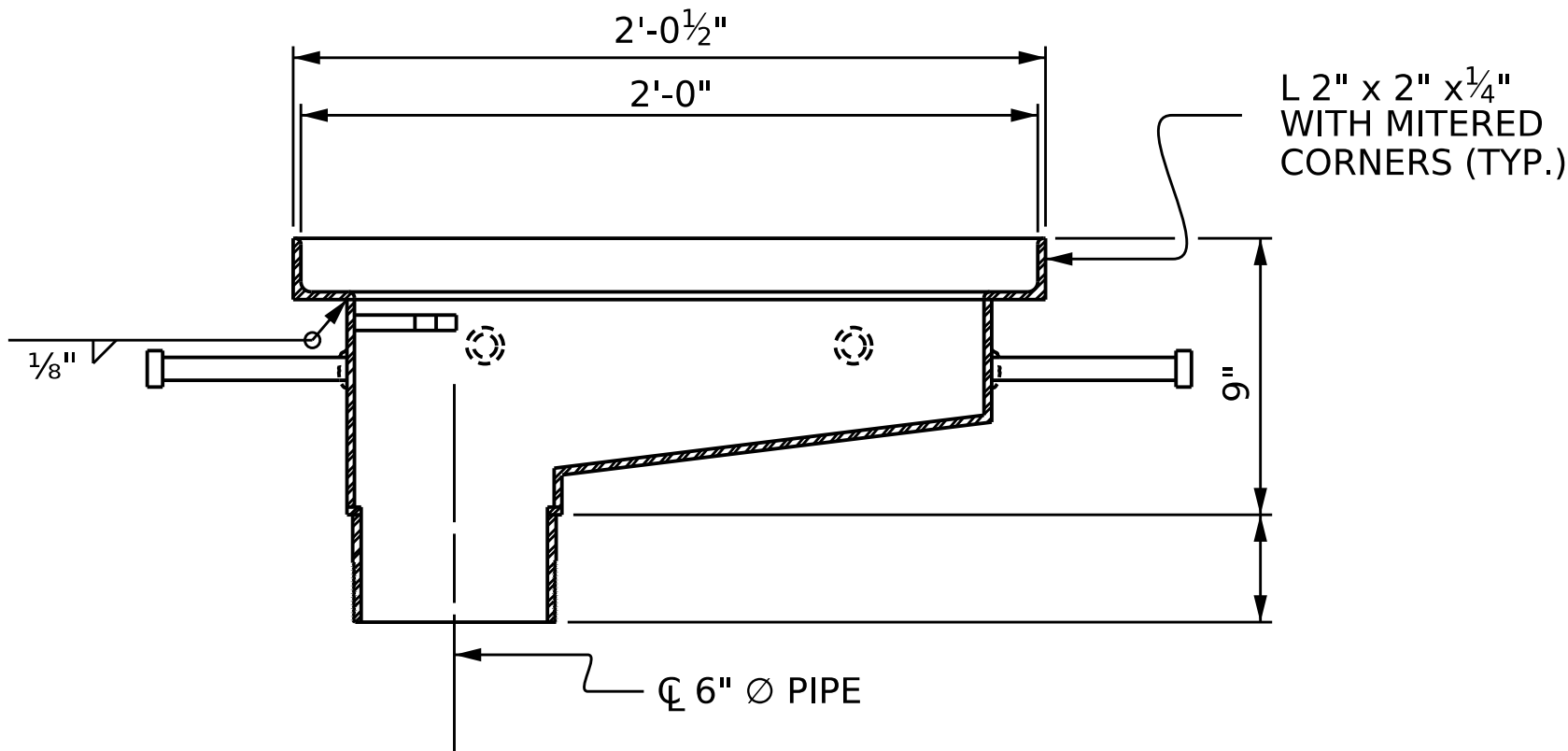
SECTION C-C



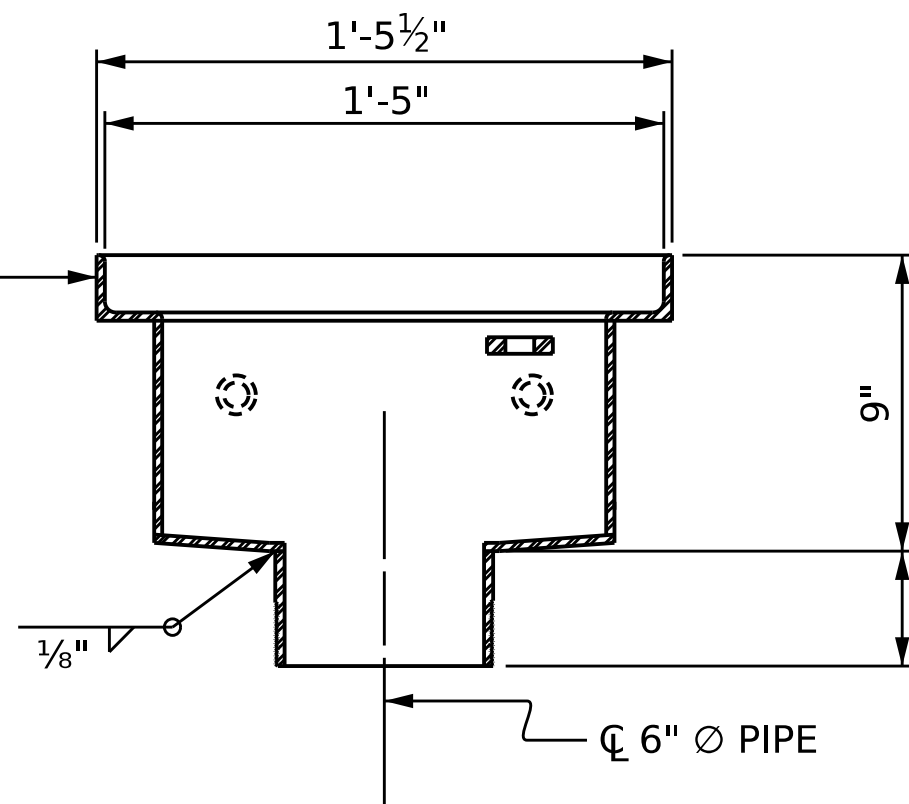
SECTION E-E



SECTION B-B



SECTION D-D



SECTION F-F

ASSEMBLED BY :	DATE :
CHECKED BY :	DATE :
DRAWN BY : LES 2/98	REV. 8/16/99R RWW/LES
CHECKED BY : RDR 4/98	REV. 5/1/06 TLA/GM
	REV. 12/17 MAA/THC

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PROJECT NO. _____

_____ COUNTY

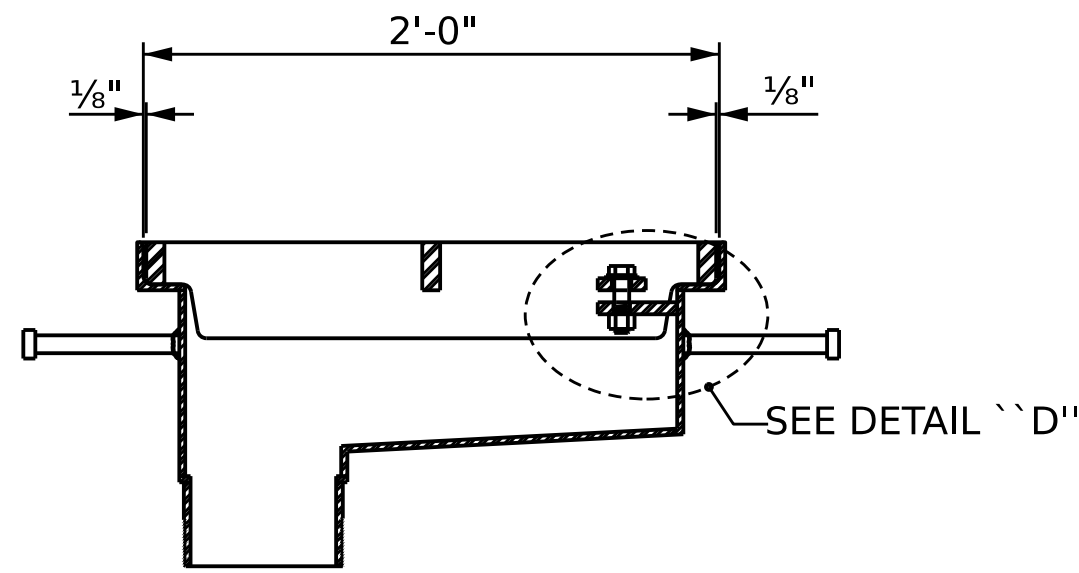
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SHEET 1 OF 2

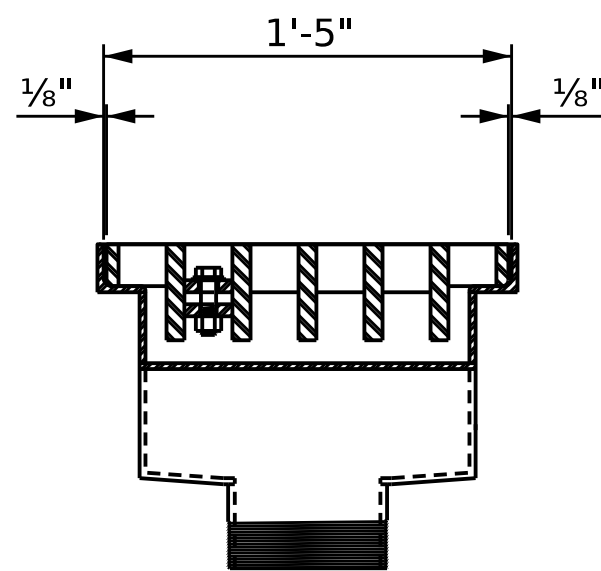
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE SCUPPER
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

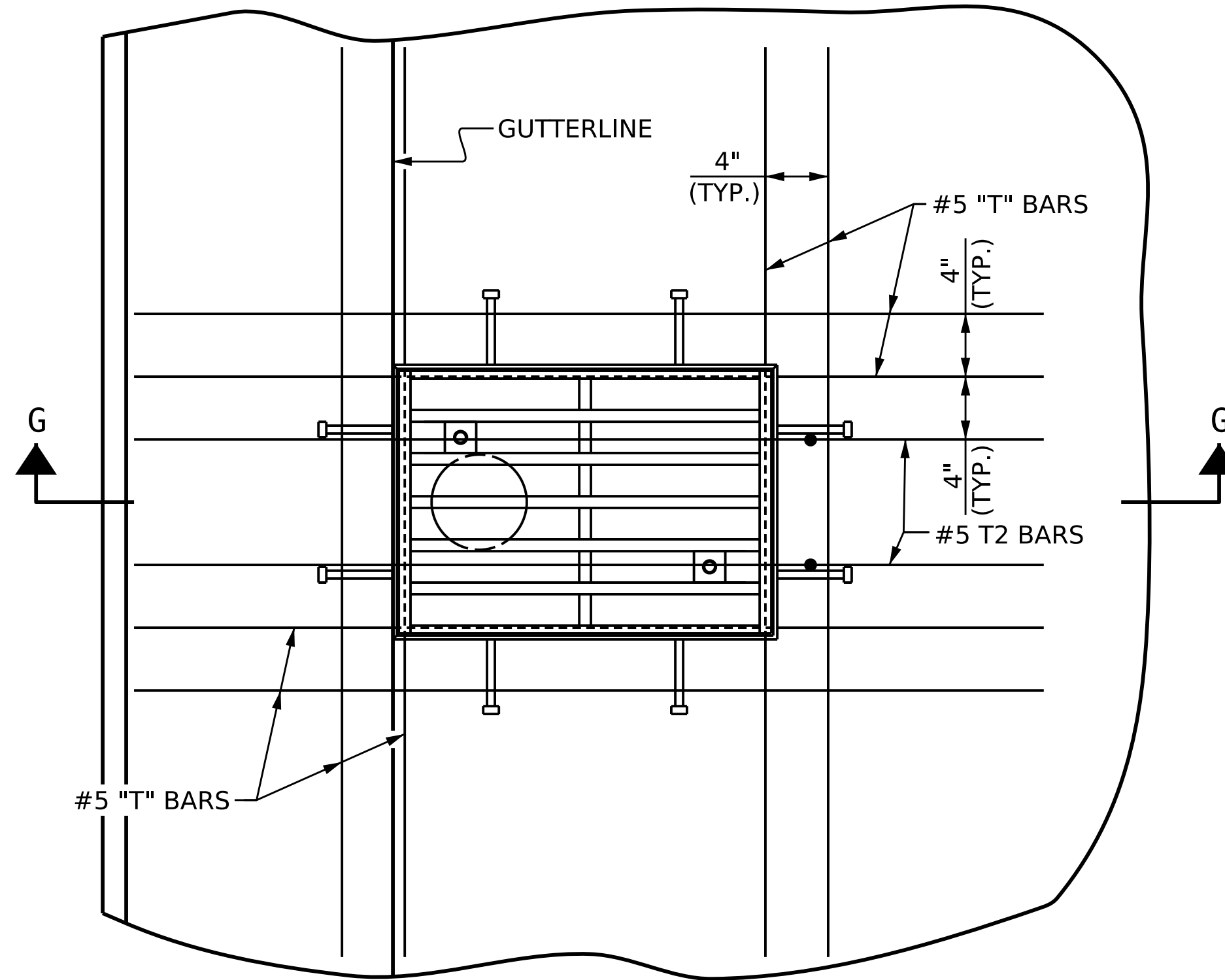
STD.N0.BS1



**ELEVATION VIEW OF GRATE
AND FRAME IN SECTION A-A**



**ELEVATION VIEW OF GRATE
AND FRAME IN SECTION B-B**



PLAN VIEW OF SLAB

SLAB REINFORCEMENT NOT SHOWN FOR CLARITY

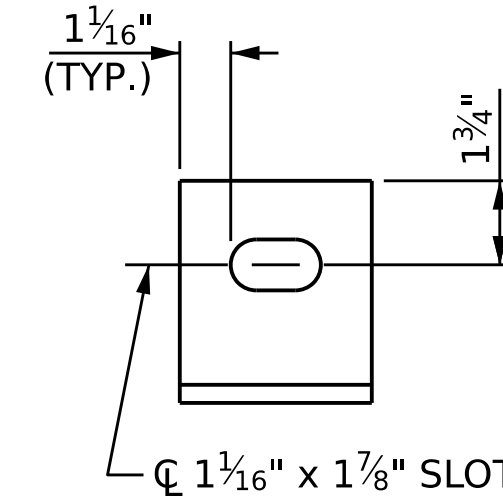
NOTES:

PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. THE 6" Ø PVC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D-1785.

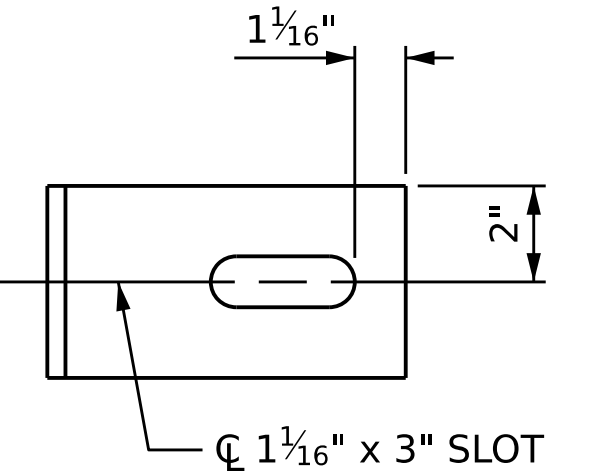
COUPLING IN DRAIN PIPE WILL BE PERMITTED AS APPROVED BY THE ENGINEER.

STAINLESS STEEL WORM HOSE CLAMP SHALL BE COMMERCIAL QUALITY.

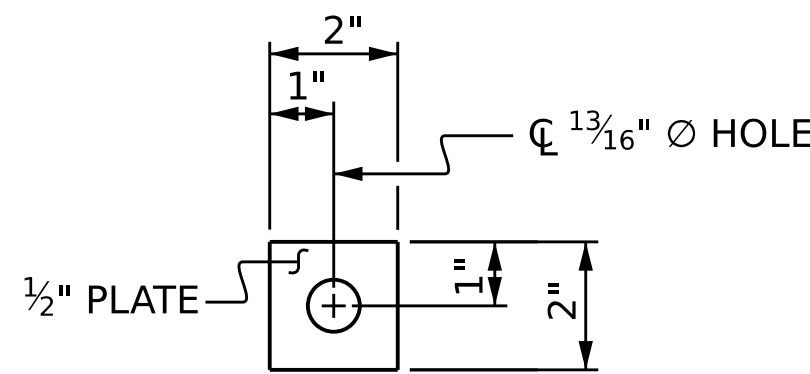
PVC DRAINS SHALL BE PAINTED WITH AN APPROVED VINYL PAINT. SEE SPECIAL PROVISIONS. (GRADE SEPARATIONS ONLY)



SECTION H-H

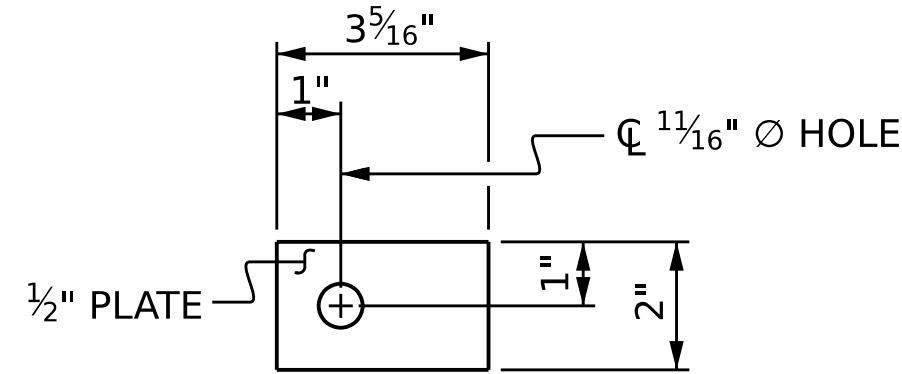


SECTION I-I



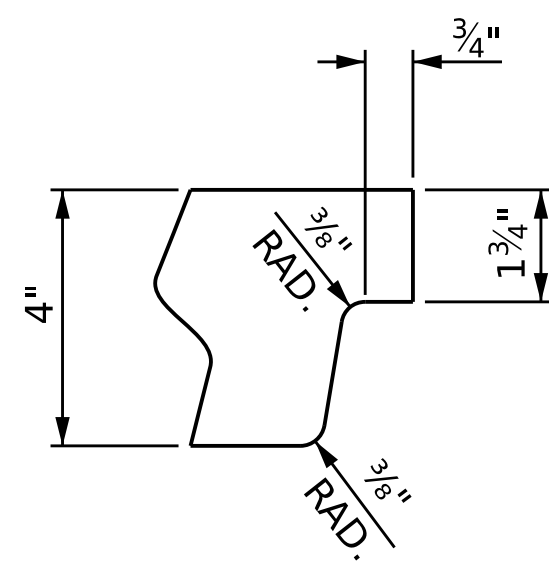
DETAIL "A"

HOLD-DOWN PLATE FOR GRATE



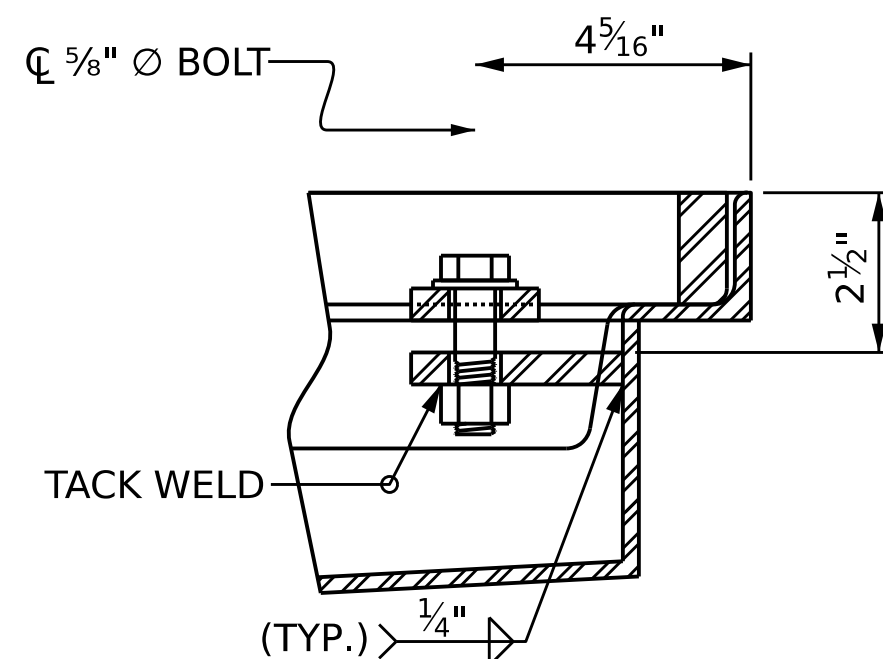
DETAIL "B"

HOLD-DOWN PLATE FOR FRAME



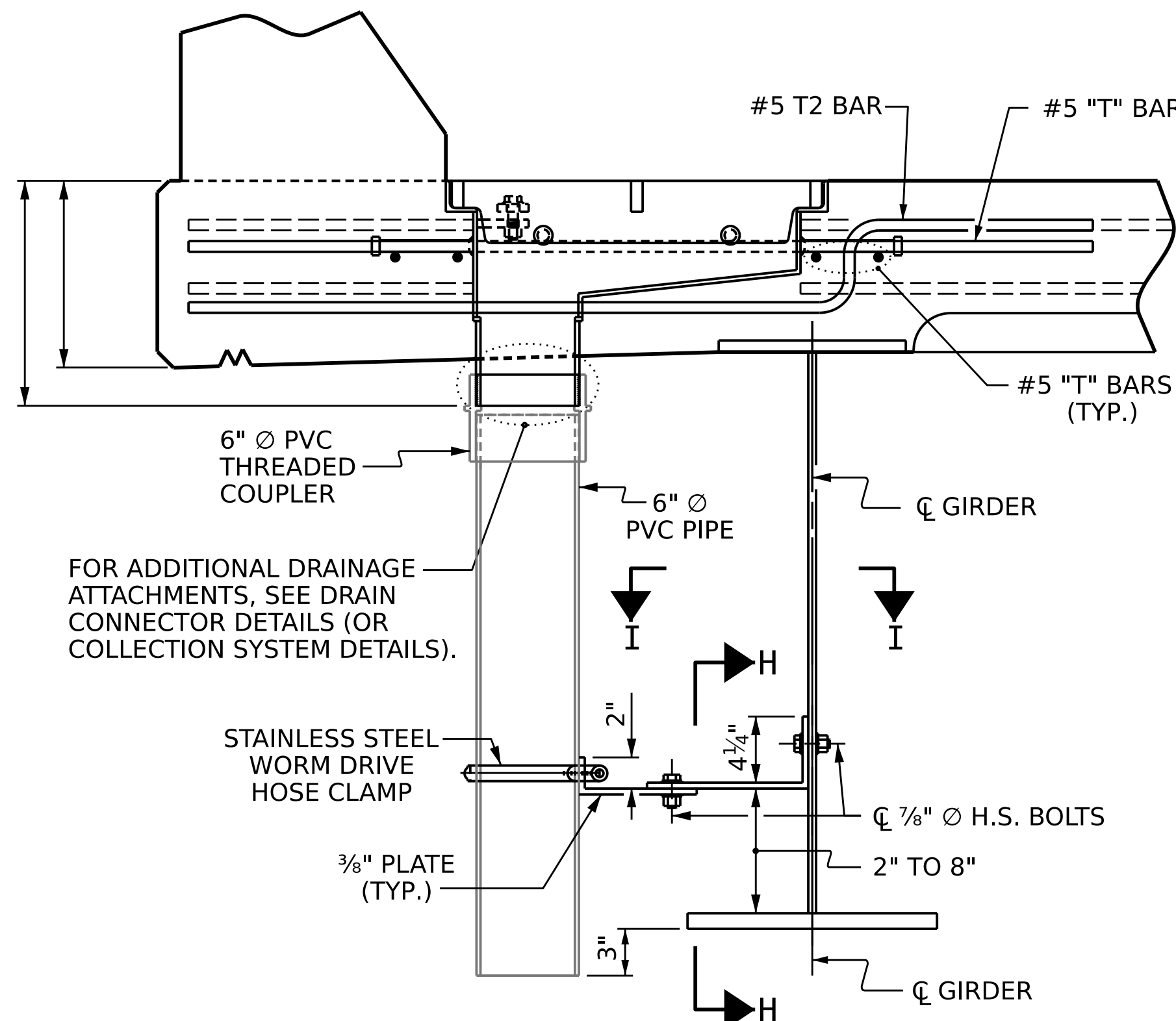
DETAIL "C"

END CUT OF 3/4" x 4" PLATE



DETAIL "D"

5/8" Ø HOLD-DOWN BOLT



**ELEVATION VIEW OF SLAB
AND SCUPPER IN SECTION G-G**

SLAB REINFORCEMENT NOT SHOWN FOR CLARITY

PROJECT NO. _____

_____ COUNTY

STATION: _____

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE SCUPPER
DETAILS

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