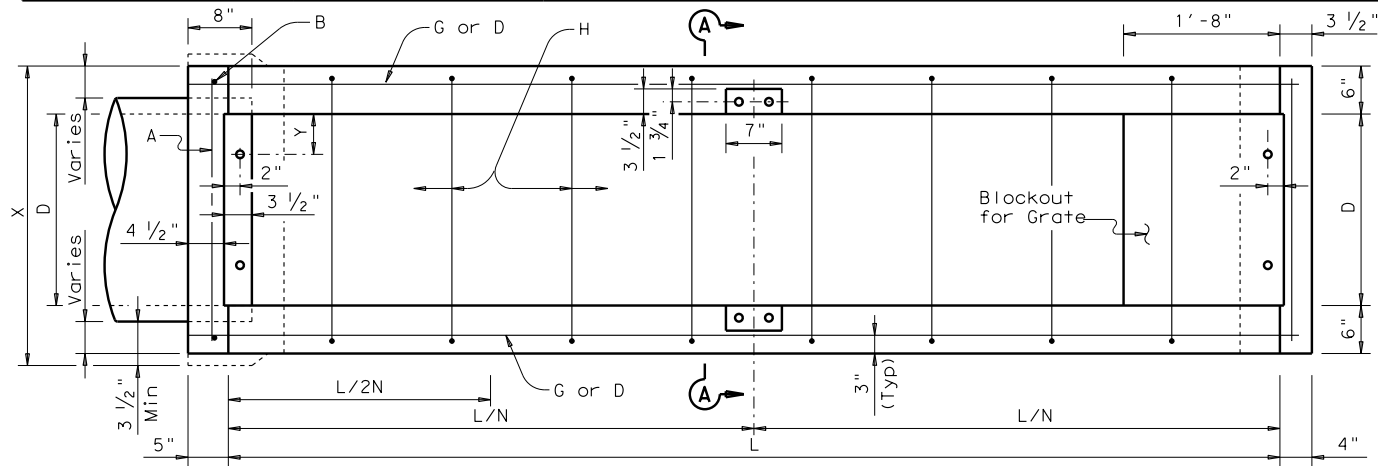


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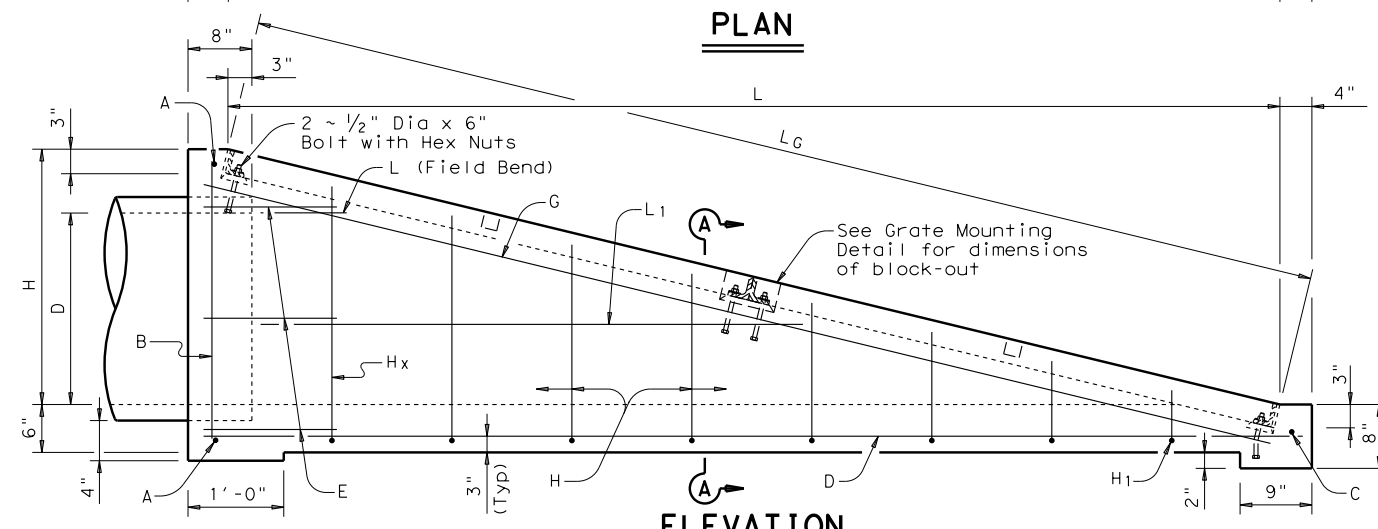
DATE: FILE:

BILL OF REINFORCING STEEL

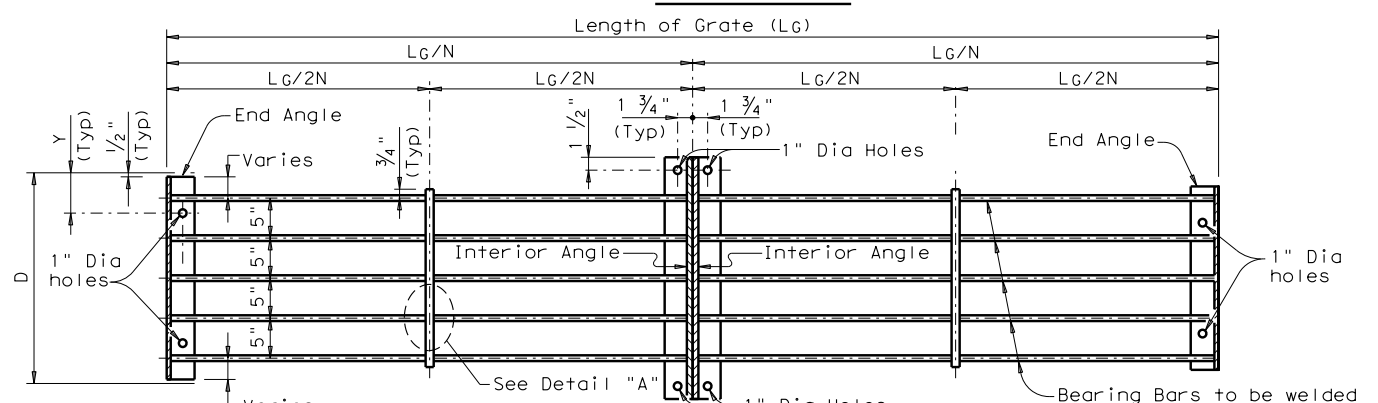
SLOPE	Y	N	DIA OF PIPE = D	TABLE OF DIMENSIONS			BARS A		BARS B		BARS C		BARS D		BARS E		BARS G		BARS H Av		BARS L		BARS L ₁ Av		TOTAL QUANTITIES																			
				X	H	L	No.	Spa	Length	Wgt	No.	Spa	Length	Wgt	No.	Spa	Length	Wgt	No.	Spa	Length	Wgt	No.	Spa	Length	Wgt	No.	Spa	Length	Wgt	Lb	CY												
				6:1	4 1/2"	2	18"	2'-6"	2'-1 1/2"	12'-9"	2	~	2'-3"	3	2	~	2'-5"	3	1	~	2'-3"	2	3	12"±	13'-3"	27	6	12"±	2'-6"	10	2	~	13'-5"	18	12	12"±	4'-5"	35	2	12"±	2'-0"	3	2	12"±
6:1	5"	2	24"	3'-0"	2'-8"	16'-0"	2	~	2'-10"	4	2	~	3'-0"	4	1	~	2'-9"	2	4	12"±	16'-6"	44	8	12"±	2'-6"	13	2	~	16'-9"	22	15	12"±	5'-6"	55	2	12"±	2'-0"	3	2	12"±	9'-10"	13	160	1.7
6:1	5 1/2"	3	30"	3'-6"	3'-2 1/2"	19'-3"	2	~	3'-5"	5	2	~	3'-7"	5	1	~	3'-3"	2	4	12"±	19'-9"	53	8	12"±	2'-6"	13	2	~	20'-0"	27	19	12"±	6'-6"	83	2	12"±	2'-0"	3	4	12"±	10'-1"	27	218	2.4
6:1	6"	3	36"	4'-0"	3'-9"	22'-6"	2	~	4'-0"	5	2	~	4'-2"	5	1	~	3'-9"	3	5	12"±	23'-0"	77	10	12"±	2'-6"	17	2	~	23'-3"	31	22	12"±	7'-7"	111	2	12"±	2'-0"	3	6	12"±	13'-9"	55	307	3.3
6:1	6 1/2"	3	42"	4'-6"	4'-3 1/2"	25'-9"	2	~	4'-7"	6	2	~	4'-9"	6	1	~	4'-3"	3	5	12"±	26'-3"	88	10	12"±	2'-6"	17	2	~	26'-8"	36	25	12"±	8'-7"	143	2	12"±	2'-0"	3	6	12"±	13'-10"	55	357	4.4
6:1	4 1/2"	4	48"	5'-0"	4'-10"	29'-0"	2	~	5'-2"	7	2	~	5'-4"	7	1	~	4'-9"	3	6	12"±	29'-6"	118	12	12"±	2'-6"	20	2	~	29'-10"	40	29	12"±	9'-7"	186	2	12"±	2'-0"	3	8	12"±	14'-5"	77	461	5.7



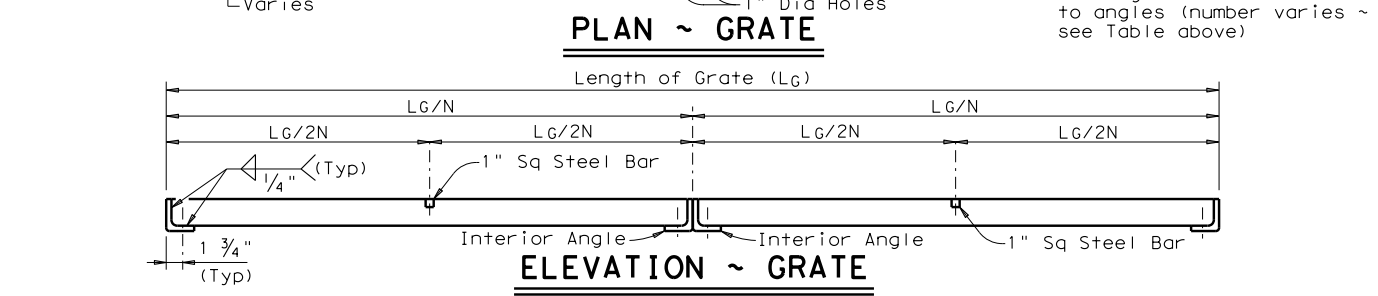
PLAN



ELEVATION



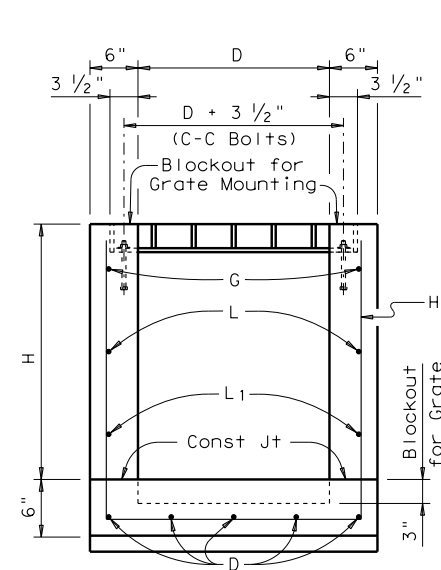
PLAN ~ GRATE



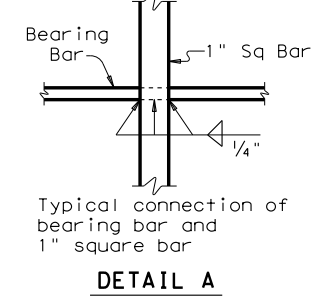
ELEVATION ~ GRATE

SLOPE	Y	DIA OF PIPE = D	N	TOTAL	GRATE QUANTITIES												TOTAL WEIGHT			
					BEARING BARS at 5" C-C				INTERIOR ANGLES				END ANGLES					1" SQUARE BARS		
					No.	Size	Lg/N	Wgt	No.	Size	Length	Wgt	No.	Size	Length	Wgt		No.	Length	Wgt
6:1	4 1/2"	18"	2	2	8	2 1/2"x 1/2"	6'-5 5/8"	220	2	3"x 3"x 1/2"	2'-0 1/2"	38	2	3"x 3"x 1/2"	1'-5"	27	2	1'-4 1/2"	9	294
6:1	5"	24"	2	2	10	2 1/2"x 1/2"	8'-1 3/8"	345	2	3"x 3"x 1/2"	2'-6 1/2"	48	2	3"x 3"x 1/2"	1'-11"	36	2	1'-9 1/2"	12	441
6:1	5 1/2"	30"	3	3	18	2 1/2"x 1/2"	6'-6 1/8"	498	4	3"x 3"x 1/2"	3'-0 1/2"	114	2	3"x 3"x 1/2"	2'-5"	45	3	2'-2 1/2"	23	680
6:1	6"	36"	3	3	21	2 1/2"x 1/2"	7'-7 1/4"	679	4	3"x 3"x 1/2"	3'-6 1/2"	133	2	3"x 3"x 1/2"	2'-11"	55	3	2'-7 1/2"	27	894
6:1	6 1/2"	42"	3	3	24	2 1/2"x 1/2"	8'-8 3/8"	888	4	3"x 3"x 1/2"	4'-0 1/2"	152	2	3"x 3"x 1/2"	3'-5"	64	3	3'-0 1/2"	31	1135
6:1	4 1/2"	48"	4	4	40	2 1/2"x 1/2"	7'-4 1/8"	1249	6	3"x 3"x 1/2"	4'-6 1/2"	256	2	3"x 3"x 1/2"	3'-11"	74	4	3'-10 1/2"	53	1632

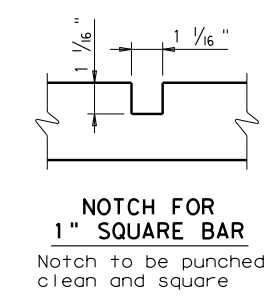
Note: For pipe sizes of 21", 27" and 33" use inlets for pipe sizes 24", 30" and 36", respectively.
N = Number of Grate Units



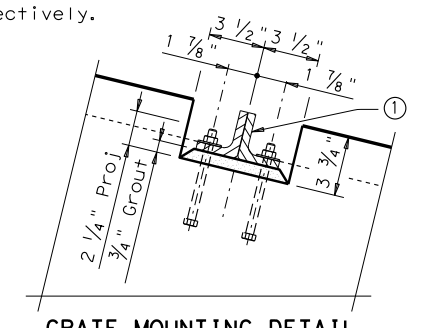
SECTION A-A



DETAIL A

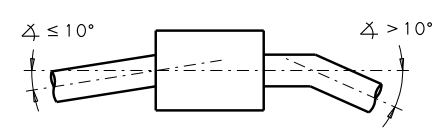


GRATE DETAILS



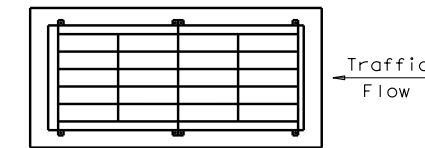
GRATE MOUNTING DETAIL

GENERAL NOTES:
Quantities shown hereon are for Contractor's information only. Unless otherwise shown in the plans, payment will be made for each inlet of the Type specified.
When approved, precast inlets with equivalent structural capacity may be furnished. Sealed engineering calculations and drawings shall be submitted for approval prior to construction. Shop drawings will not be required.
In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.
Structural Steel for grates shall conform to the requirements of ASTM Designation A-36 or AISI Designation M1010-M1020.
All reinforcing steel shall be #4 unless otherwise noted.
All steel components except reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.
All concrete shall be Class "A" (f'c = 3000 psi).



PIPE CONNECTION DETAIL

Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.



GRATE ORIENTATION DETAIL

If possible, horizontal grate inlet should be oriented such that both traffic and ditch water approach parallel to bars on grate. If this is not possible, orientation must favor traffic flow.

Texas Department of Transportation

Bridge Division Standard

SLOPING INLET TYPE S (18" to 48" PIPES)

IL-S

FILE: il-sstde.dgn	DN: TxDOT	CK: TER	DW: MCB	CK: TER/GAF
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REVISIONS				
	DIST	COUNTY		SHEET NO.