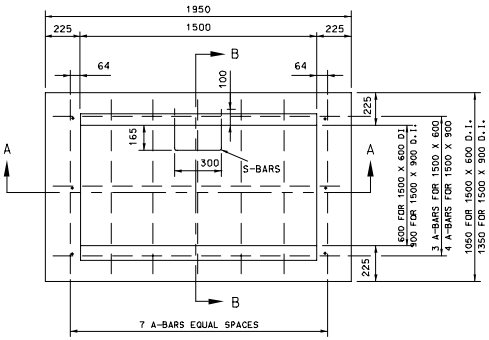

TYPICAL PLAN

QUANTITIES

D	TYPE S-1				TYPE S-2				TYPE S-3			
	1500 X 600		1500 X 900		1500 X 600		1500 X 900		1500 X 600		1500 X 900	
	CONC m^3	STEEL kg	CONC m^3	STEEL kg	CONC m^3	STEEL kg	CONC m^3	STEEL kg	CONC m^3	STEEL kg	CONC m^3	STEEL kg
300									1.06	27	1.25	33
375									1.15	28	1.35	34
450					1.16	34	1.40	41	1.24	35	1.45	42
525					1.25	36	1.49	42	1.32	36	1.54	43
600	1.24	34	1.45	41	1.34	37	1.59	44	1.41	38	1.64	45
675	1.32	36	1.54	42	1.42	38	1.69	45	1.49	39	1.74	46
750	1.41	42	1.64	50	1.51	45	1.78	53	1.58	46	1.83	54
900	1.58	45	1.83	53	1.68	47	1.97	55	1.75	48	2.02	56
1050	1.75	53	2.03	62	1.85	55	2.17	64	1.92	56	2.22	65
1200	1.92	59	2.22	68	2.02	61	2.36	71	2.10	62	2.41	72
1350	2.10	67	2.41	77	2.20	69	2.55	80	2.27	70	2.60	81
1500	2.27	71	2.60	81	2.37	74	2.74	84	2.44	74	2.79	85
1650	2.44	79	2.79	90	2.54	82	2.94	93	2.61	82	2.99	94
1800	2.61	84	2.99	95	2.71	86	3.13	98	2.78	87	3.18	99
1950	2.78	92	3.18	104	2.89	94	3.32	107	2.96	95	3.37	108
2100	2.96	96	3.37	108	3.06	98	3.51	111	3.13	99	3.56	112
2250	3.13	104	3.56	117	3.23	106	3.71	120	3.30	107	3.76	121
2400	3.30	108	3.76	122	3.40	111	3.90	125	3.47	111	3.95	126
2550	3.47	116	3.95	131	3.57	119	4.09	134	3.64	119	4.14	135
2700	3.65	120	4.14	135	3.75	123	4.28	138	3.82	124	4.33	139
2850	3.82	128	4.33	144	3.92	131	4.47	147	3.99	132	4.53	148
3000	3.99	133	4.53	149	4.09	135	4.67	152	4.16	136	4.72	153

CONCRETE DEDUCTION FOR PIPE OPENINGS

300 PIPE = 0.03 525 PIPE = 0.08
375 PIPE = 0.04 600 PIPE = 0.10
450 PIPE = 0.06 750 PIPE = 0.15

QUANTITIES INCLUDE 0.11 m^3 CONCRETE FOR INVERT

BAR BILLS

D	TYPE S-1						TYPE S-2									TYPE S-3										STEPS
	1500 X 600			1500 X 900			1500 X 600				1500 X 900					1500 X 600					1500 X 900					
	A-BARS	B-BARS	C-BARS	A-BARS	B-BARS	C-BARS	A-BARS		B-BARS	C-BARS	A-BARS		B-BARS	C-BARS		A-BARS			B-BARS	C-BARS	A-BARS			B-BARS	C-BARS	S-BARS
	16 AT	1875 NO.	975 NO.	18 AT	1875 NO.	1275 NO.	9 AT	7 AT	1875 NO.	975 NO.	11 AT	7 AT	1875 NO.	1275 NO.	3 AT	4 AT	9 AT	1875 NO.	975 NO.	4 AT	4 AT	10 AT	1875 NO.	1275 NO.	825 NO.	
300															675	525	450	5	10	675	525	450	6	10		
375															750	600	525	5	10	750	600	525	6	10		
450							525	600	8	11	525	675	9	11	825	675	600	7	12	825	675	600	8	12		
525							600	675	8	11	600	750	9	11	900	750	675	7	12	900	750	675	8	12		
600	675	7	11	675	8	11	675	750	8	11	675	825	9	11	975	825	750	7	12	975	825	750	8	12		
675	750	7	11	750	8	11	750	825	8	11	750	900	9	11	1050	900	825	7	12	1050	900	825	8	12		
750	825	9	13	825	10	13	825	900	10	13	825	975	11	13	1125	975	900	9	14	1125	975	900	10	14		
900	975	9	13	975	10	13	975	1050	10	13	975	1125	11	13	1275	1125	1050	9	14	1275	1125	1050	10	14		
1050	1125	11	15	1125	12	15	1125	1200	12	15	1125	1275	13	15	1425	1275	1200	11	16	1425	1275	1200	12	16		
1200	1275	11	15	1275	12	15	1275	1350	12	15	1275	1425	13	15	1575	1425	1350	11	16	1575	1425	1350	12	16	2	
1350	1425	13	17	1425	14	17	1425	1500	14	17	1425	1575	15	17	1725	1575	1500	13	18	1725	1575	1500	14	18	2	
1500	1575	13	17	1575	14	17	1575	1650	14	17	1575	1725	15	17	1875	1725	1650	13	18	1875	1725	1650	14	18	3	
1650	1725	15	19	1725	16	19	1725	1800	16	19	1725	1875	17	19	2025	1875	1800	15	20	2025	1875	1800	16	20	3	
1800	1875	15	19	1875	16	19	1875	1950	16	19	1875	2025	17	19	2175	2025	1950	15	20	2175	2025	1950	16	20	4	
1950	2025	17	21	2025	18	21	2025	2100	18	21	2025	2175	19	21	2325	2175	2100	17	22	2325	2175	2100	18	22	4	
2100	2175	17	21	2175	18	21	2175	2250	18	21	2175	2325	19	21	2475	2325	2250	17	22	2475	2325	2250	18	22	5	
2250	2325	19	23	2325	20	23	2325	2400	20	23	2325	2475	21	23	2625	2475	2400	19	24	2625	2475	2400	20	24	5	
2400	2475	19	23	2475	20	23	2475	2550	20	23	2475	2625	21	23	2775	2625	2550	19	24	2775	2625	2550	20	24	6	
2550	2625	21	25	2625	22	25	2625	2700	22	25	2625	2775	23	25	2925	2775	2700	21	26	2925	2775	2700	22	26	6	
2700	2775	21	25	2775	22	25	2775	2850	22	25	2775	2925	23	25	3075	2925	2850	21	26	3075	2925	2850	22	26	7	
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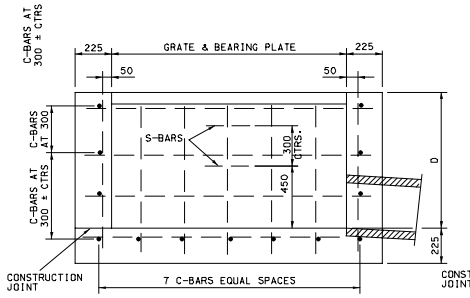
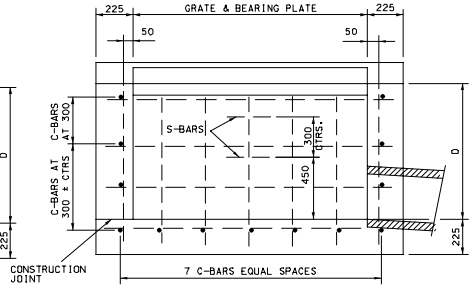
3000	3075	23	27	3075	24	27	3075	3150	24	27	3075	3225	25	27	3375	3225	3150	23	28	3075	3225	3150	24	28	8	

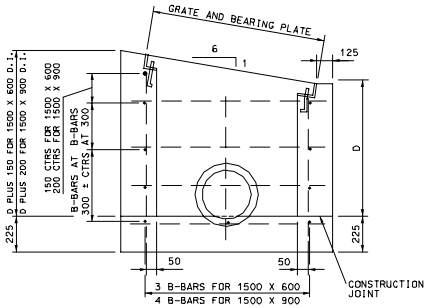
A, B, AND C BARS #13 S-BARS #19



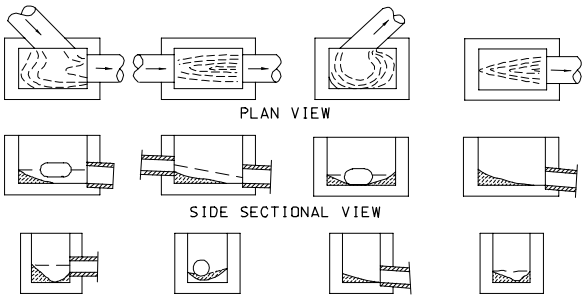
TYPE S-1
SECTION A-A



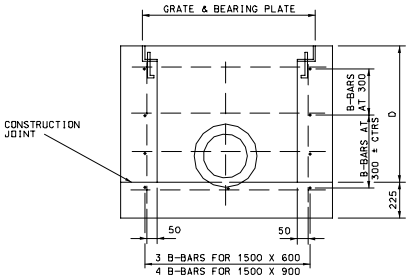
TYPE S-2
SECTION A-A



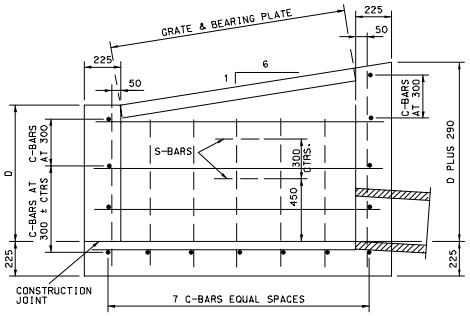
TYPE S-2
SECTION B-B



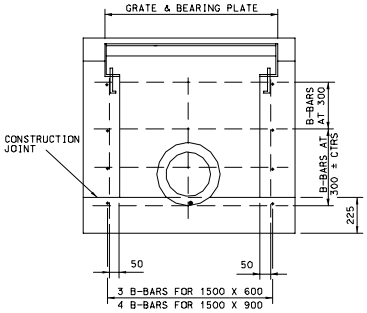
TYPICAL INVERTS



TYPE S-1
SECTION B-B



TYPE S-3
SECTION A-A



TYPE S-3
SECTION B-B

GENERAL NOTES:

ALL DIMENSIONS ARE SHOWN IN mm UNLESS OTHERWISE NOTED.

THE TYPE OF DROP INLET, "S-1", "S-2" OR "S-3" WILL BE DESIGNATED ON THE PLANS. TYPICAL LOCATION DETAILS ARE INDICATED ON SHEET 3 OF 3.

NO DIRECT PAYMENT WILL BE MADE FOR CUTTING OR BENDING THE REINFORCING STEEL OR CUTTING PIPE AT PIPE OPENINGS.

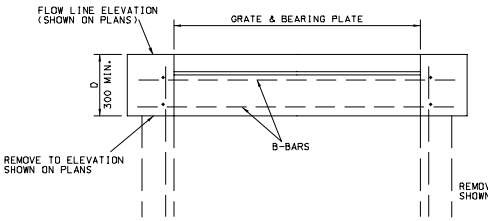
THE CONCRETE FOR INVERTS SHALL BE PLACED AFTER COMPLETION OF THE DROP INLET BOX.

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

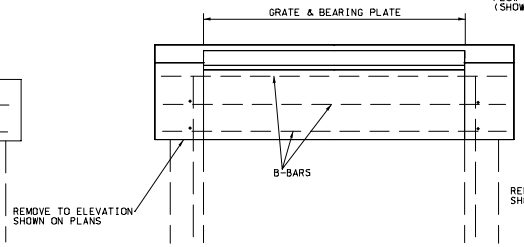
DROP INLET

TYPE S

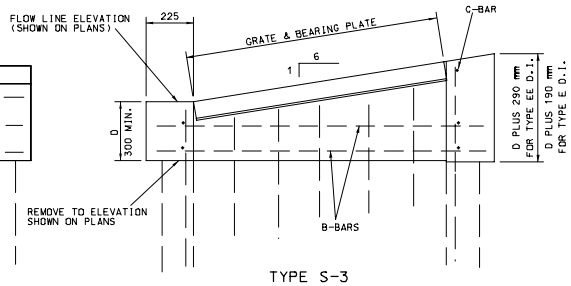
DATE: _____ EFFECTIVE: 05-01-1997 M604.27E 1/3



TYPE S-1
SECTION A-A

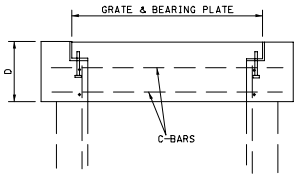


TYPE S-2
SECTION A-A

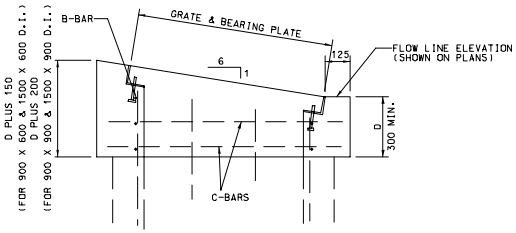


TYPE S-3
SECTION A-A

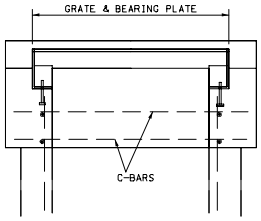
BAR BILL								
TYPE OF EXISTING DROP INLET	BAR	LGTH.	S-1		S-2		S-3	
			FOR D=300	EACH ADD'L 300	FOR D=300	EACH ADD'L 300	FOR D=300	EACH ADD'L 300
E 900 X 600	B	1275	4	2	5	2	4	2
	C	975	4	2	4	2	5	2
E 900 X 900	B	1275	4	2	5	2	4	2
	C	1275	4	2	4	2	5	2
EE 1500 X 600	B	1875	4	2	5	2	4	2
	C	975	4	2	4	2	5	2
EE 1500 X 900	B	1875	4	2	5	2	4	2
	C	1275	4	2	4	2	5	2
ALL BARS ARE #13								



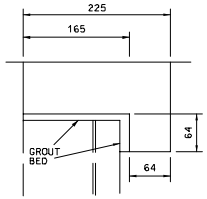
TYPE S-1
SECTION B-B



TYPE S-2
SECTION B-B

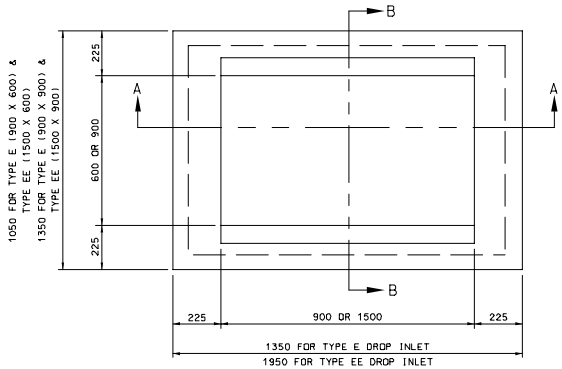


TYPE S-3
SECTION B-B



THE CONTRACTOR MAY, SUBJECT TO THE APPROVAL OF THE ENGINEER, FURNISH A PRECAST UNIT IN-LIEU-OF CAST-IN-PLACE MODIFICATION. IF A PRECAST UNIT IS FURNISHED, IT SHALL CONFORM IN ALL RESPECTS TO THE REQUIREMENTS FOR CAST-IN-PLACE UNITS INCLUDING DIMENSIONS AND REINFORCEMENT. EXCEPT THAT A LIP 64 mm X 64 mm SHALL BE FORMED ON THE BOTTOM OF THE UNIT. EXISTING REINFORCING BARS SHALL BE CUT OFF FLUSH WITH THE REMAINING PORTION OF THE EXISTING INLET AND THE PRECAST UNIT SET ON A FULL BED CEMENT GROUT.

CONCRETE LIP FOR PRECAST UNIT



TYPICAL PLAN

GENERAL NOTES:

ALL DIMENSIONS SHOWN ARE IN mm UNLESS OTHERWISE NOTED.

THE TYPE OF MODIFICATION, "S-1", "S-2", OR "S-3" SHALL BE AS SHOWN ON THE PLANS.

DOTTED LINES INDICATE EXISTING CONSTRUCTION. SOLID LINES INDICATE NEW WORK.

EXISTING REINFORCING BARS EXPOSED AFTER THE REMOVAL OF OLD CONCRETE SHALL BE CUT-OFF TO FIT THE NEW CONSTRUCTION. THAT PORTION OF THE REINFORCING BARS REMAINING WITHIN THE LIMITS OF THE NEW CONSTRUCTION SHALL BE CLEANLY STRIPPED BEFORE PLACING NEW CONCRETE.

WHEN THE EXISTING STRUCTURE IS REMOVED TO EXPOSE ANY CONNECTING PIPE, 1 LAYER OF 25 kg. SMOOTH ROLL ROOFING SHALL BE USED TO FORM A JOINT BETWEEN THE EXISTING PIPE AND THE NEW CONSTRUCTION.

ANY PORTION OF A CONNECTING PIPE THAT IS DAMAGED IN MODIFYING A DROP INLET SHALL BE REPAIRED OR REPLACED WITH NEW MATERIAL MATCHING THE OLD AT THE CONTRACTOR'S EXPENSE.

SAWING WILL NOT BE REQUIRED TO REMOVE NECESSARY PORTION OF EXISTING STRUCTURE.

FOR TYPICAL GRADING, LOCATION AND DITCH BLOCK DETAILS. SEE SHEET 3 OF 3.

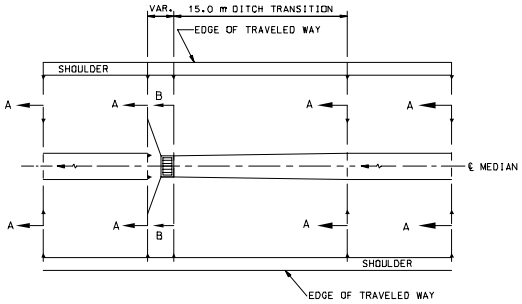
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

DROP INLET

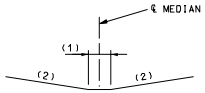
TYPE S

(TYPE E AND TYPE EE MODIFICATION)

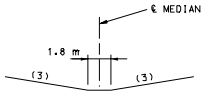
DATE: _____ | EFFECTIVE: 05-01-1997 | M604.27E | 2/3



PLAN



SECTION A-A



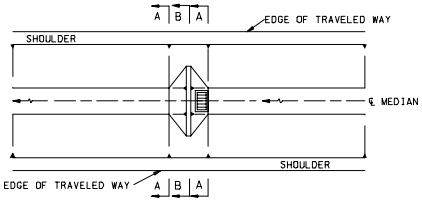
SECTION B-B

(1) DITCH WIDTH AS GIVEN ON TYPICAL SECTION.

(2) DITCH SLOPE AS GIVEN ON TYPICAL SECTION.

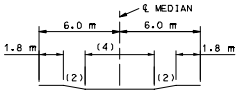
(3) VARY SLOPE TO ACHIEVE MINIMUM 150 mm FREEBOARD ABOVE TOP OF INLET GRATE ON GRADE, OR 300 mm ADDITIONAL DITCH DEPTH BELOW NORMAL DITCH GRADE AT LOW POINT.

(4) VARY WIDTH TO ACHIEVE MINMIMUM 150 mm FREEBOARD ABOVE TOP OF INLET GRATE.

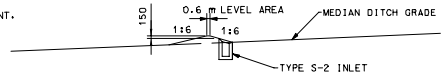


PLAN

SEE SECTION A-A BELOW

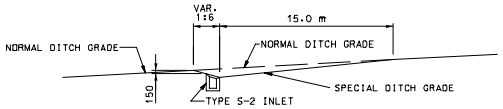


SECTION B-B



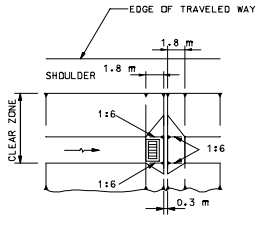
SECTION ALONG ℄ OF MEDIAN

DETAILS FOR MEDIAN RELIEF-ON GRADE
12.0 m MEDIAN



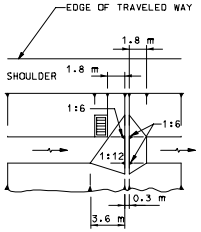
SECTION ALONG CENTERLINE OF MEDIAN

DETAILS FOR MEDIAN RELIEF-ON GRADE
18.0 m MEDIAN



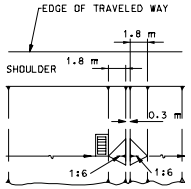
TYPE S-2 INLET IN ROADWAY DITCH
(FLAT DITCH ON GRADE)

PLAN 1



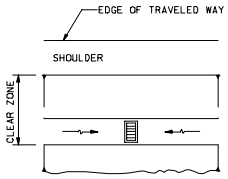
TYPE S-3 INLET IN ROADWAY DITCH
(FLAT DITCH ON GRADE)

PLAN 2



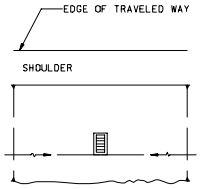
TYPE S-3 INLET IN ROADWAY DITCH
(V DITCH ON GRADE)

PLAN 3



TYPE S-1 INLET AT LOW POINT
(FLAT DITCH)

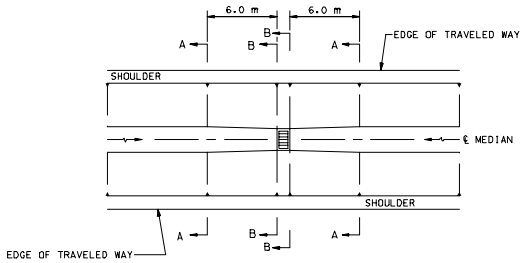
PLAN 4



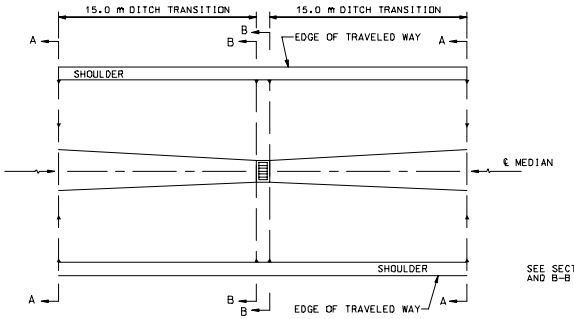
TYPE S-3 INLET AT LOW POINT
(V DITCH)

PLAN 5

DETAILS FOR ROADWAY DITCH INLETS
LOCATED WITHIN THE CLEAR ZONE



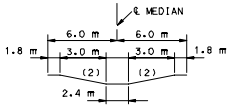
PLAN



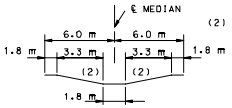
SEE SECTIONS A-A AND B-B ABOVE

SECTION ALONG CENTERLINE OF MEDIAN

DETAILS FOR MEDIAN RELIEF-LOW POINT
18.0 m MEDIAN

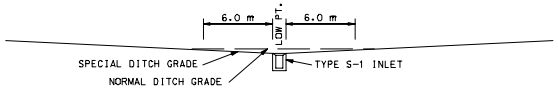


SECTION A-A



SECTION B-B

(2) DITCH SLOPE AS GIVEN ON TYPICAL SECTION.



SECTION ALONG CENTERLINE OF MEDIAN

DETAILS FOR MEDIAN RELIEF-LOW POINT
12.0 m MEDIAN

GENERAL NOTES:

ALL DIMENSIONS SHOWN ARE IN mm UNLESS OTHERWISE NOTED.

THIS DRAWING IS FOR GENERAL INFORMATION ONLY. ACTUAL CONSTRUCTION DETAILS SHALL CONFORM TO THOSE SHOWN ON THE DETAIL PLANS.

DETAILS ON THIS SHEET ARE ONLY FOR USE WITH STRUCTURES LOCATED IN THE MEDIAN OR WITHIN THE CLEAR ZONE.

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

DROP INLET

TYPE S

(TYPICAL LOCATION DETAILS)

DATE: _____ | EFFECTIVE: 05-01-1997 | M604.27E | 3/3